



THE TRUSTMARK

مجلس أبوظبي للجودة والمطابقة
ABU DHABI QUALITY AND CONFORMITY COUNCIL



دليل أبوظبي Abu Dhabi Guideline

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دليل تنظيم وتطوير الأراضي الصناعية في منطقة المصفح
Development & Organization of Industrial Lands Guideline
for Mussafah Region.

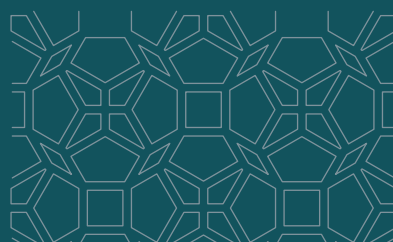
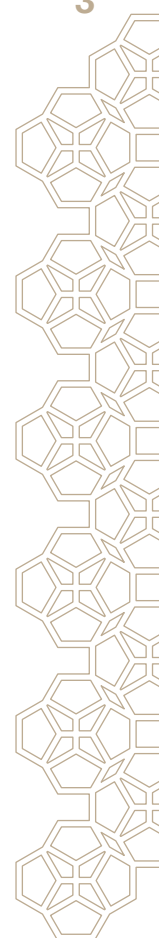


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Amendment Page

To ensure that each copy of this ADG contains a complete record of amendments, the Amendment Page is updated and issued with each set of revised/new pages of the document. This Guideline is a live document which can be amended when necessary. QCC operates Public Realm Working Group which prepared this document and can review stakeholder comments in order to review and amend this document, issuing an updated version when necessary.

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About the Abu Dhabi Quality and Conformity Council

The Abu Dhabi Quality and Conformity Council (QCC) was established by law No. 3 of 2009, issued by His Highness Sheikh Khalifa Bin Zayed Al Nahyan, President of the UAE.

QCC is responsible for the development of Abu Dhabi Emirate's Quality Infrastructure, which enables industry and regulators to ensure that products, systems and personnel can be tested and certified to UAE and International Standards.

Products certified by QCC receive the Abu Dhabi Trustmark. The Trustmark is designed to communicate that a product or system conforms to various safety and performance standards that are set by Abu Dhabi regulators.

Foreword

This document has been discussed and agreed by the QCC Public Realm working group, which was established in July 2013 as a part of Abu Dhabi Emirate Guideline for Infrastructure Services Standards (ISGL). The working group revived the draft guideline prepared by Abu Dhabi Municipality and, and the consensus has been reached by all the related entities in the working group.

In accordance with the principles of Abu Dhabi Economic Vision 2030 and Abu Dhabi Urban Planning Vision 2030, these Development Control Regulations (DCRs) have been produced to guide development within the Mussafah Industrial Estate within appropriate modern industrial standards; to facilitate economic growth and ongoing improvement of the estate's overall appearance and functioning.

The regulations establish standards against which new development will be assessed, and required improvements determined for renewal of existing leases and business licenses.

The Municipality of Abu Dhabi City is committed to the continuous improvement and regeneration of the Mussafah Industrial Estate, and these DCRs will help address critical amenity and operational aspects of existing and future development within the estate.

Acknowledgements

QCC would like to thank the members of the Working Group listed below:

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INTRODUCTION

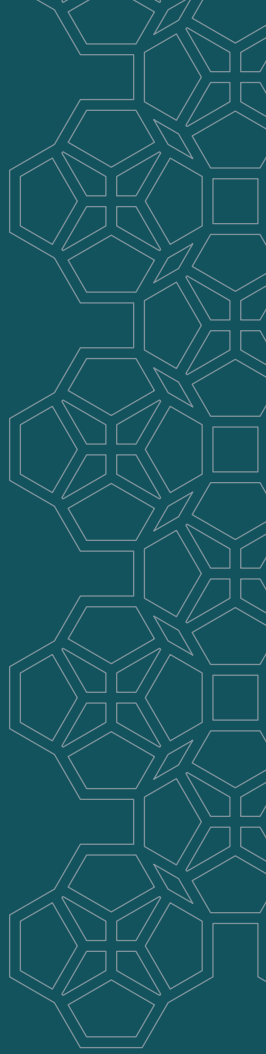
The Municipality of Abu Dhabi City (the Municipality) is responsible for the management and leasing of most plots in the Mussafah Industrial Estate, and for the co-ordination of services. The Municipality also is the responsible authority in respect of all construction permits and the implementation of planning standards across the estate.

Currently, in many parts of the Mussafah Industrial Estate, signage, building quality and general amenity are of a low standard due to a lack of building maintenance, excessive advertising signage, use of undeveloped road reserve areas outside of plots, uncontrolled storage, unapproved sub-leasing and the abandonment of disused vehicles and equipment.

The existing poor image of some parts of the estate is being addressed at the ground level through investment by the Municipality in street works, however the construction and operations on many plots currently operating in Mussafah is considered to be below the expected standard of a well-managed industrial estate.

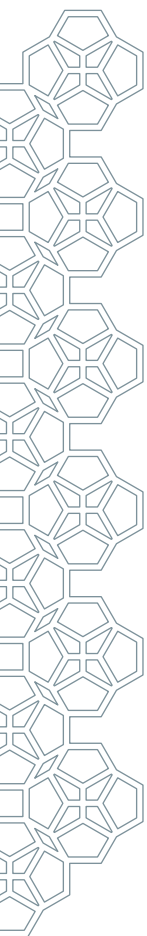
These development controls provide guidance to improve the operating and visual environment of the Mussafah Industrial Estate, and aim to ensure undesirable impacts of industrial activities are mitigated; through proper site layout and visual buffering, controlled signage, implementation of environmental safeguards and systems, waste management, effective traffic and parking provision and streetscape landscaping.

It is recognized that the DCRs will need to be updated and amended over time to address any unintended consequences and deficiencies as they come to light. The practical implementation is to be undertaken with the economic and social interests of all Mussafah employees and businesses in mind, as a partnership between the Municipality and its tenants and clients.



1.

Background



1. BACKGROUND

The Mussafah Industrial Estate is the premier industrial estate serving Abu Dhabi City. It is located conveniently to residential areas, with well-connected road access to the city and beyond.

The estate is primarily owned and leased by the Municipality for the purposes of industrial and large scale commercial development, government services, worker accommodation and related retail uses and services.

These DCRs address development undertaken in the estate, and are a reflection of the aims of the Plan Capital 2030 Urban Structure Framework Plan.

1.1 Plan Capital 2030 Urban Structure Framework Plan

1.1.1 General Overview

Plan Capital 2030 Urban Structure Framework Plan (the Plan) is the primary planning document for Abu Dhabi City.

Under the Plan the elements for sustainability, including economic development in the City, are given a basis for practical implementation, through regulated urban planning provisions for all types of land development.

1.1.2 Industrial Development

Plan Capital 2030, in relation to Industry, provides that:

“Heavy industries are located as close as possible to their transportation hubs – the new port and airport – and light industry is contained to the Mussafah/Mafraq area.” (Executive Summary p.10)

“..., industrial lands are strategically allocated. Heavy industries surround the new port, putting them in close proximity to the in-bound materials that fuel them. High tech industries surround the airport, providing a clean, modern gateway image at this important entry portal.

Smaller service-based industries are allocated to the Mussafah and Mafraq areas and as an integral part of every neighborhood in small, accessible enclaves. All three major industrial areas are linked by the freight rail corridor and truck highway.” (s.4.3 p.56)

“...the types of industry that are more service oriented will be in the existing Mussafah and Mafraq industrial zone” (s.5.2 p.88)

1.2 Abu Dhabi Public Realm Design Manual

The overarching aim of these regulations is to improve the amenity of the Mussafah Industrial Estate.

The improvements have commenced with the Municipal landscaping works in the road reserves.

Public realm in front of plots is now targeted for improvement, with the assistance of businesses operating on those adjoining plots.

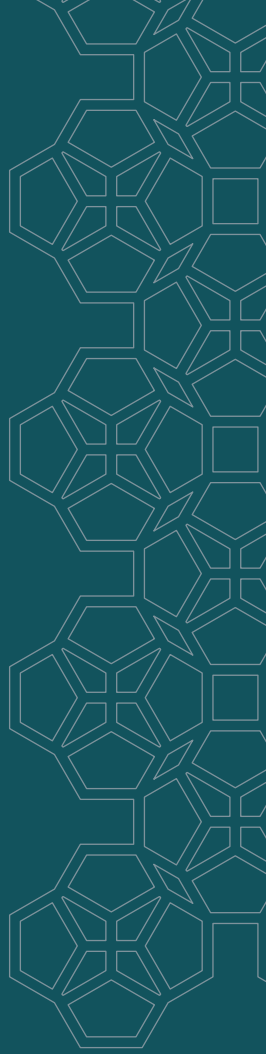
The Abu Dhabi Public Realm Design Manual has as the following guiding principle, upon which these regulations are, in part, based.

Principle 9.0

Shared Ownership & Implementation - The public realm will be developed through a cooperative effort of government and/or private entities to ensure a high-quality resource that all stakeholders will contribute to and enjoy.

9.1 General Policy

9.1.1 Future public realm improvements are enhanced through mutual cooperation and information sharing.



2.

DEVELOPMENT Controls

2. DEVELOPMENT Controls

2.1 Purpose

The purpose of the Mussafah Industrial Estate Development Control Regulations (DCRs) is to provide the framework for better processes to plan, develop and manage the estate.

The estate provides serviced land for warehousing, accommodation, general industrial and some commercial and government services activities, with easy access to the urban centers of Abu Dhabi, and to the highway system.

The DCRs are provided:

- to provide guidance to upgrade the Mussafah Industrial Estate, particularly with respect the visual appearance and use of the public realm areas immediately adjacent plots, within the road reserve;
- to regulate development in accordance with approved design plans and sound operational conditions;
- to foster improved public health, safety and general welfare of the general public of Mussafah Industrial Estate;
- to protect and enhance the value of property, and public and private investment;

These regulations are intended to encourage better architectural and site design that is legible and coordinated and to raise the amenity of Mussafah towards that of a world class industrial estate.

Appropriate control of building design, site layout, signs, outdoor storage, refuse handling and storage, parking, use of the road reserve, landscaping, and environmental emissions is the aim.

2.2 Applicability

Only applies to the built and non-built plots and allocated to beneficiaries under lease contract (musataha) issued by the Investment Office of the Municipality of Abu Dhabi City for industrial uses, commercial and public facilities, whether dedicated to individuals or institutions.

The Mussafah Industrial Estate boundaries are shown in Figure 1 below and include the

following sectors:

M1 to M26, inclusive

M28, M32_01, M32_02

M33 to M40, Inclusive

M42 to M46, Inclusive

MN1 to MN6, Inclusive

MW1 to MW5, Inclusive

Note that under Decree 9 of 2013 all coastal development from the Mussafah Bridge to Al Sila'a is subject to direct approval of the Executive Council. Accordingly, all waterfront plots will require particular attention.



Figure 1: Mussafah Industrial Estate

Planning assessment under the DCRs will be undertaken by the Municipality, as appropriate, within existing processes for:

- Construction Permits.
- Trade license and signage permit applications by DED.
- Applications for new or renewed environmental licenses.
- Lease applications, reviews and renewals, and in all sub-leasing of leased plots.
- External lot rental / usufruct agreement. (To be addressed by relative authority; i.e. ADM Investment Office and MI&A Sector)

Where applications are made for these purposes, the operation, site condition and site suitability, as well as the maintenance of the frontage zone (the area in front of plots), will be assessed in terms of these guidelines prior to issuing approvals or providing Municipality NOCs. §

The assessment will be carried out through the Mussafah Industrial Estate office of the Municipality, which will issue Planning Approval for plot development and associated external works and occupancies.

Over time, all plots will operate under a Municipal Planning Approval.

Referrals to the Mussafah office for NOC in relation to trade or environmental licenses will need to show the plot is operating in accordance with existing approvals and to the proper standards, or trigger a requirement to apply for Planning Approval under these DCRs.

In line with the intention to gradually improve the look and operations of the estate, the guidelines will be used to manage development of plots and the current physical condition of plots. For example, lessees of currently vacant plots might be required to fence and maintain plots in a tidy condition, to prevent unauthorized storage or dumping on those plots.

Where questions arise concerning discrepancies, inconsistencies, or ambiguities within the DCRs or with other regulations and policy, the Municipality shall interpret them to clarify the question.

The DCRs provide, for existing operations, for flexibility in staging improvements, and for the extent and design of improvements carried out in the public realm.

2.3 Overall Desired Outcomes

The aim for the Mussafah Industrial Estate is to have a well-designed and maintained modern industrial estate - a desirable place to establish and do business.

The estate is provided with superb road access infrastructure and port facilities, with a newly dredged shipping canal enhancing and extending the life and functions of the port.

The estate's proximity to residential centers presents ongoing opportunities for city serving, conveniently placed, accommodation, industries and government services; as well as for innovative start up industries to operate in a supportive and well-serviced investment environment.

The aesthetic values of the estate have improved greatly in recent times, through extensive Municipal landscape improvement works in the road reserve. Private initiatives also have contributed to a steady improvement in the estate, mainly in those areas redeveloped with medium to large scale uses, where better design and effort in plot frontage and building appearance has been evident.

The aim of these regulations is to build on these improvements through better attention to presentation and design of buildings and plots.

The use of simple but effective measures to enhance building appearance, signage, storage/parking arrangements and those areas immediately outside of plots is needed.

A better presented and more ecologically sound estate will benefit existing users, including lessees, business owners, residents and visitors.

Improvements will add to the value of investment already undertaken by government and investors, and open up the full potential of the estate.

2.4 Implementation

It is intended that every business in the Mussafah Industrial Estate will establish and operate in accordance with approvals for design and operational standards.

For existing businesses it is intended that progressive implementation of improvements through agreements with the Municipality relating to the design and operation of the plots and external areas is undertaken as part of the annual renewal of trade licenses issued by the Department of Economic Development (DED), or the renewal of plot leases.

All businesses operating out of Mussafah Industrial Estate should, over time, have Planning Approval from the Municipality that combines the following approved aspects.

- Development Plan(s) – showing site layout and building design – indicating compliance with required setbacks, façade treatments, plant and equipment integration into buildings designs, colors and screening etc. including provision for signage. The Development Plan should incorporate all relevant external areas and include the link from the road pavement to the plot.
- Operations management – approving general details of the activities approved, and how the Municipality's Environmental Guidelines for Industry are addressed and emissions are to be managed in the daily operations e.g. highlighting sufficient design for dealing with polluting emissions and potential nuisances. This forms the basis of the planning approval and is related to license approvals, permits

or NOC's from the DED and Environment Abu Dhabi (EAD)/ZonesCorp.

- Traffic Management Plan – indicating agreed entrance treatment, anticipated operational requirements based on delivery/loading, employees and visitors, and on-site parking and maneuvering suitable for the intended operations of the business. Where applicable this will include design of adjacent external areas for landscape, parking and/or, where agreed, loading and unloading.
- Storm Water Management Plan – incorporating plans and text for dealing with the plot storm water runoff – including consents from the Municipality for connection to mains and for dewatering, where applicable.
- Landscape design and maintenance plans – indicating on-site and external landscaped buffers and screening as required, and the ongoing irrigation and maintenance of such areas. This relates to the Development Plan site design, where areas for landscaping are shown.
- Streetscape (external frontage) Zone Design, Use and Management Plan – for where external areas are to be developed and used in conjunction with the plot or, as a minimum, the intended maintenance of such external areas in a neat and tidy condition.
- Waste Management Plan – developed in consultation with the Municipality and the Center of Waste Management - indicating anticipated output of waste, and methods and devices/enclosures for storage, handling and disposal, including provisions for sorting and recycling where possible.

Businesses should also operate under appropriate licenses in relation to:

- Trade License - Department of Economic Development (DED) including signage as agreed to by the Municipality;
- Industrial/Commercial Licenses, Permit or NOC - Environment Agency Abu Dhabi (EAD) as per applicable criteria; or ZonesCorp, and
- Trade Effluent Consent (where applicable) under the Regulations Supervision Bureau (RSB) for discharge to sewers.

2.5 Permitted Uses

Mussafah is designated in the Abu Dhabi Development Code for lower order industrial and port facilities uses, and for associated commercial and retail support services. The Code indicates the estate as a General Industrial Base District with the following listed permitted uses.

Any uses not listed are to be considered prohibited, however the Municipality is not restricted in allowing uses considered otherwise inappropriate where special circumstances can be found to distinguish the use by way of its particular methods of operations and demonstrated compatibility with the design aims of the estate.

2.5.1 Use Regulations

Refer to Abu Dhabi development Code.

2.6 Administration

2.6.1 PLANNING, ESTIDAMA AND BUILDING APPROVAL

2.6.1.1 Development Approval Process

All development proposed in the Mussafah Industrial Estate requires approval of the Municipality.

Development includes building construction, demolition, the use of plots for any purpose, and the re-configuration of a plot through creation of new/changed plots or the sub-leasing of plots or buildings for a separate business.

Proposals will be reviewed for compliance with the lease conditions governing the plot, these DCRs, Estidama and the International Building Code (IBC) before construction or a change of use of premises can commence.

Planning approval is required for any new building work, earthworks and construction of building surrounds (concreting, paving, fencing etc.), expansion of or change to the use of the plot or buildings, and for the sub-leasing of the plot for additional tenants, where not part of previously approved use of the plot.

Note that requirements of EAD/ZonesCorp in relation to Industrial and Environmental Licensing, the requirements of the DED for

business and signs licensing, and Estidama are in addition to the planning approval requirements under these provisions.

All applications for new or renewed Trade Licenses, or for registration of leases by Tawtheeq, will be subject to review of existing approvals and compliance with the current lease conditions, and may be referred to the Municipality office responsible for verification and approval.

The Municipality may refuse to endorse the issue of the license or lease registration, or may require works to be undertaken to renovate the premises, or the associated frontage zone, to comply, or increase the degree of compliance, with these guidelines.

In such cases the submission of a full detailed application for site development or re-development might be required.

In the case of new signage proposals, the DED will assess the designs under these provisions.

For changes of use or expansion of a use on a plot, the process will be to submit details of the existing plot layout and use, with appropriate detail for landscaping, vehicle parking and maneuvering, servicing arrangements, chemical and other goods and waste storage, and an operational description (deliveries, hours, waste provisions, customers, emissions etc.).

The endorsement and permitting by the Municipality for development requiring a building construction permit will be a three stage process:

Stage 1 involves Estidama evaluation of the Pearl Rating standards applicable.¹

Stage 2 involves assessment of detailed building documentation resulting in the issue of a Building Permit. Building drawings will be assessed against the relevant planning approval, in addition to the IBC.

CAD drawings adhering to the Municipality's CAD Data Standards must be submitted for recording into the Municipality's GIS for final detailed planning approval and for the building permit (application and 'as-built' stages).

2.6.2 Assessment Criteria

The criteria for assessment of development proposals in the Mussafah Industrial Estate will be as follows:

- The desired outcomes and requirements of these regulations and any applicable planning policy of the Urban Planning Council (UPC) and/or the Municipality.
- The ADM Environmental Guidelines in Industrial Areas (2011).
- Estidama requirements (in concept).
- The Abu Dhabi Urban Structure Framework Plan - Capital 2030.
- The Specific Criteria set forth in the following subsection.

Specific Criteria

- Whether the overall design of the project including its scale, massing, site plan, exterior design, and landscaping will enhance the project site and surrounding environment in terms of appearance, traffic management, environment and general functioning of the Mussafah Industrial Estate.
- Whether the development would have an adverse impact on any adjacent land use or the public realm, and whether suitable practical conditions on the development can be imposed that would serve to acceptably mitigate such identified impacts.
- Whether the site plan is appropriate to the function of the project and will provide an attractive and comfortable environment for occupants, visitors, and the general community.
- Whether any planned or likely use of the street is consistent with the desired outcomes.
- Where applicable, the interface with the water is appropriate and conducive to sustainable environmental outcomes.
- Whether the overall quality of development will be of benefit to Abu Dhabi and the Mussafah Industrial Estate – environmentally, economically, socially and culturally.

2.6.3 Stage 1 – Estidama Review2

2.6.4 Stage 2 – Building Permit – Documentation Submission Requirements

Building documentation submissions to the Municipality's Construction Permits Division are intended to ensure that the intent of the Planning Approval and Estidama approved matters have been carried through to the construction documentation phase of the development.

Full documentation requirements can be obtained from Construction Permits Division, through its electronic lodging facility (CDP).

For applications made following planning approval under these provisions the submission must include the following:

- A brief statement detailing the proposed operations on the premises.
- Copies of the planning approval and Estidama review approval where applicable.
- Documentation drawings:- engineering and structural documentation (as per the requirements of the Construction Permits Division).
- Health, Safety and Environment plans for construction – see Guidelines for Developing HSE Plans (www.adm.gov.ae/hse)
- Statements how the measures detailed and conditioned in the planning approval and Estidama assessment have been addressed.

Construction Permits Division will assess building documentation and require adjustments if the intent of the guidelines and compliance with the previously approved development proposals (planning and Estidama) is not observed.

2.6.5 Refusal Criteria

The Municipality might reject or refuse an application for the following reasons:

- failure to comply with the DCRs for Mussafah Industrial Estate,
- failure to include information reasonably requested,
- objection to design or materials; including the color scheme, finish, height, bulk, or suitability of any structure,
- objection to proposed environmental protection measures and calculations,
- objection to incompatibility of proposed structures or use with existing structures or uses upon other plots or property within the vicinity of the subject plot,
- objection to the proposed site development including, landscaping, drainage, grading, or parking,
- Any other matter that in the judgment of the Municipality that would render the proposed development or improvements incompatible with the general intent for Mussafah Industrial Estate.

2.7 Site Layout

2.7.1 Desired Outcomes

It is intended that all plots be developed or upgraded to reflect the overall desired outcomes for the Mussafah Industrial Estate.

Improvements of plots and streetscape zone development for existing plots are intended to be implemented as part of the ongoing review of plot lease and Trade License renewals, as well as in assessing proposals for new or expanded uses and buildings.

Generally, all plots should have:

- Well designed and maintained buildings and infrastructure suitable for the requirements of the activities approved to be carried out;
- Appropriate signage in accordance with these provisions;
- Perimeter landscape vegetation and soft landscaped/grassed areas equivalent to 10% of the plot area;
- Appropriately surfaced car and truck

2 Estidama review for Pearl Rating requirements can be accessed at <http://Estidama.org>

maneuvering and parking as per DMAT requirements;

- Loading and servicing access and maneuvering areas, including provision for worker transportation buses where used;
- On-plot, accessible and screened, waste storage and collection areas;
- Appropriate roof and surface area drainage to a storm water network, with suitable pollution prevention devices to maintain discharged water quality;
- Required transformer rooms and other utilities - all suitably screened;
- Shade trees or shade structures to hard-stand and car parking areas;
- Safe storage for products and materials; screened or housed within buildings, with sufficiently bonded areas and spillage containment designed where needed;
- Clearly defined and safe pedestrian paths to all necessary areas on the plot and from the plot frontage to the office or other public access areas;
- Appropriate safety signage and hazardous materials identification;
- Sufficient provision for disaster management, emergency access and firefighting;
- Appropriate facilities for staff and workers in accordance with workplace health and safety requirements, and
- Developed and maintained external areas that present an acceptable standard for a modern and well-functioning industrial estate.
- Clear plot identification at the frontage, adjacent the main entrance, identifying the plot, the occupant/ss and main contact telephone numbers of the occupant/s.

2.7.2 Site Planning Criteria

The following site planning considerations are intended to assist in improving the visual aspects of Mussafah Industrial Estate and form the basis of the development review for development in the Mussafah Industrial Estate:

- Entrance driveways should be readily observable to first time visitors and

located so as to promote safety and minimize traffic conflicts. There should be minimum conflicts between service vehicles, private vehicles and pedestrians within and outside the site;

- Plot entrances, frontages and adjacent public areas on the road reserve should present as clean and tidy – with appropriate fencing and vegetation, with paved surfaces on areas where parking external to the plot is proposed;
- Site grading and drainage should prevent the flow of water onto adjacent plots or public streets and minimize any standing pools of water within the plot. All drainage from the plot should be to the storm water or sewer networks as appropriate for the nature of the discharge, or otherwise contained on the plot;
- All areas inside the plot not covered by buildings or landscape should be paved or otherwise sealed to prevent dust nuisance;
- Landscape buffering should be maximized at the boundaries of the plot, particularly abutting the road reserve and, where possible and as appropriate, along the water;
- Servicing and public access areas should be clearly distinguished and easily accessed;
- Office reception areas should be to the front of the site and accessible directly from visitor parking reserves, and
- Universal access to the site and to visitor areas, and handicapped persons parking should form part of the parking and access design.

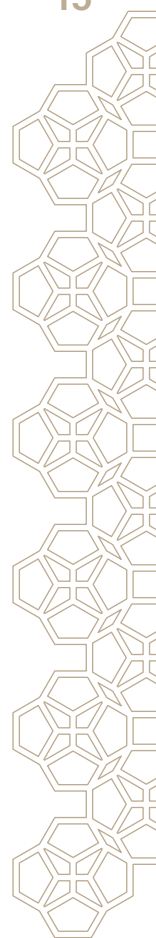
2.8 Boundary Fencing

2.8.1 Desired Outcomes

The intent of boundary fencing is to provide security for businesses without compromising the visual aesthetics and overall character of the development.

Plot boundaries along the street frontage should present as generally visually open or screened by strip vegetation.

Boundary walls and mesh security fences along the front property line are discouraged, however, where considered necessary by the



nature of the use, the impacts can be softened by vegetation in front and behind. Solid walls should be set back 600mm from the plot line to allow such exterior planting. The planting might be otherwise allowed on the exterior public realm through an overall improvement strategy agreed upon by the Municipality for the exterior areas to the plot.

2.8.2 Regulations

- Any front fencing shall not be of link mesh construction. The minimum fencing standard in the Mussafah Industrial Estate for front plot lines and side boundaries to the extent of the buildings set back line on the plot, is an 1800mm high metal tube framed vertical pale and horizontal rail fence with powder coat finish. All vertical pale fencing must feature a minimum nominal open area of 80%. Exceptions for particular industry security needs might be made to allow walls, where either set back into the site and screened or, as part of an agreement for external areas improvement and maintenance, and screened by external planting.
- The minimum standard for side and rear boundary fencing is black PVC coated link mesh fencing. (Note – rear fencing adjoins another plot. Where plots front 2 streets, the front fencing requirements apply to both frontages.)
- No side and rear boundary wall or fence shall exceed 3 meters in height. Barbed or razor wire is not allowed, unless exceptional circumstances and the Abu Dhabi Police require it.
- All boundary walls and fences shall be integrated into the overall site design and be compatible with the architectural building design.
- Security measures on the top of walls and fences must be approved by the Municipality, and if required (e.g. for security cameras) the Abu Dhabi Police.
- Factories, workshops, shops, showrooms, storages, . . . etc.; must be provided with indoor and/or outdoor CCTV systems upon directions by Monitoring & Control Centre.



Figure 2: Security Fencing



Figure 3: Open Steel Picket Fence Provides Security and Visual Enhancement

2.9 Driveway Location

2.9.1 Desired Outcomes

It is essential that each plot in Mussafah Industrial have safe, easily identified, convenient and functional access appropriate for the number and type of vehicles frequenting the site.

2.9.2 Regulations

- Each plot must have access via a sealed and drained permanent driveway that has been approved by the DMAT and the Municipality as a part of traffic and parking management plan.
- The driveway must be clearly shown on the development site plan, including its width, splay and separation distance from each adjacent boundary.
- Note: The driveway location should be chosen having regard to reducing vehicular conflict and enhancing the streetscape. Where possible, driveways for adjoining plots should be located side by side and shared between plots so as to increase available landscaping areas along the frontage of each plot.

- The crossover from the carriageway (i.e. the sealed road or service road), will be permanent and installed prior to the commencement of building works, or a new use of the plot.
- All driveways shall have a minimum of two 50mm diameter spare conduits placed under the driveway outside the plot (for the width of the driveway) to enable future services such as landscaping irrigation.
- The driveway shall be the only point of vehicular access to the plot during and after construction unless otherwise agreed by the Municipality.
- For the duration of the construction period, temporary fencing and gates shall be erected to screen construction activity and prevent uncontrolled access, and to protect existing landscaping on the road reserve (if any) and within the front section of the plot. Such fencing and gates should extend
- The full length of the boundary. Refer to OSHAD SF- V 3.0- July 2016 regulations (<https://www.oshad.ae>).

2.10 Parking and Servicing Access

2.10.1 Desired Outcomes

The DMAT provides standards and requirements for vehicle traffic, access and parking (<http://DMAT.abudhabi.ae/en/home>). The correct application of those standards is intended to produce sufficient, well designed and easily accessed vehicle maneuvering area and parking spaces on-site - or, with agreement, outside the plot.

2.10.2 General Parking Requirements

- The number of onsite car parking bays shall be in accordance with the DMAT requirements. Car parking can be placed forward of the building line. Parking bay sizes, driveway widths and turning circles are to enable the likely maximum size service vehicle to manoeuvre on-site, and to enter and exit the site in forward gear.
- The Municipality, in consultation with the DMAT, may approve suitable on-street vehicle parking/maneuvering where

formalized arrangements are entered into for the design, construction, occupation and maintenance of that off-plot area.

- Arrangements for ongoing inspection and maintenance of underlying utilities and storm water assets within the relevant corridor of the road reserve will need to be considered and designed for appropriately in consultation with asset managers.
- Parking within the areas external to and adjacent the plot shall be indicated on site plans provided for review. Applications for additional parking within the external areas will be reviewed on a case by case basis. Approval will be based on need, ability to accommodate parking on site, adjacent development and vehicle circulation. If approved, external parking areas are to be suitably landscaped with screening vegetation, paved to provide a relatively dust free all weather surface, and graded to drain to a lawful point of discharge.



Figure 4: Landscape Screening of Car Parking

2.10.3 Regulations

All parking and servicing areas shall conform to the following:

- Parking shall be provided within the plot or a contiguous plot or within the road reserve, constructed and landscaped in accordance with an agreed design and maintenance scheme, as approved by Department of Transport (DMAT) and the Municipality.
- If there is a change to the use of the plot, an increase building floor area for an existing business or an increase in the number of employees by 15%, additional parking is to be provided at the applicable DMAT rates.
- Parking areas and driveways shall be paved to minimize dust and provide an

all-weather surface. Surfacing, grading and drainage improvements shall be sufficient to stop the free flow of water onto adjacent properties or public streets and prevent standing pools of water.

- All parking areas shall be designed with adequate isle widths and turning space, and identifiable walking paths, for the safe movement of pedestrians and vehicles. Specific provision for disabled persons parking and access pathways shall be made to the satisfaction of the DMAT.

2.10.4 Guidelines

Access ways, maneuvering spaces and parking within a development should be planned to achieve the following:

- Appropriate provision and separation of service/haulage vehicle maneuvering areas from visitor and staff parking areas.
- Parking located adjacent or convenient to those areas and/or buildings that are commonly accessed.
- Provision of suitable species of shade trees to ensure compliance with Estidama LBo-R3: Refer to (<http://estidama.upc.gov.ae/>)
- Provision of clear paths for pedestrian movement, separate from areas of frequent vehicular movement.
- Provision of at least 1 disabled bay and universal access - with an unobstructed 1200mm wide path of travel - to the principal building entry.

2.11 Outdoor Servicing and Storage Areas

2.11.1 Desired Outcomes

Outdoor storage in many cases determines the visual perception of a commercial or industrial use as being of a high or low standard. Poor regard to safety and efficiency and or the public image of a business harms the business itself and the industrial estate as a whole.

It is intended that most storage outdoors be secured and, apart from display items like new machinery, visually screened from view.

2.11.2 Service and Storage Areas

Open storage of goods, materials, machines, equipment, and vehicles or parts outside of a building should conform to the guidelines of this section. This section does not apply to temporary storage of construction materials reasonably required for construction work on the premises pursuant to a valid building permit.

2.11.3 Regulations

External service and storage areas shall be designed, constructed and maintained to comply with the following:

- No open storage of goods, unserviceable vehicles or machinery shall be carried out within the front boundary setback area or forward of the building line, if building is set back greater than the setback required. The areas forward of buildings shall be used only for landscaping and drainage, car parking, servicing, loading and unloading - where such servicing, loading and unloading is not possible from the rear or sides of the building - or, where appropriate and subject to the approval of the Municipality, for trade display.
- No materials, supplies or equipment shall be stored outside the plot boundary limits unless approved by the Municipality in writing and only on the terms of that approval. Approval will only be granted for exceptional reasons, or if quality landscape screening is developed that can accommodate limited use of the public realm.
- All open storage areas shall be screened from the street and adjoining properties by landscaping, fencing and/or other means acceptable to the Municipality. The degree of screen transparency will depend on the nature of the storage as assessed by the Municipality. The storage of new machinery and vehicles will need fencing and minimal spaced shrubs or trees, whereas the storage of unattractive goods will require greater attention to the design to achieve as little visual permeability as is possible. Areas within the public road reserve immediately adjacent plots may be used for such screen planting, subject to Municipality design and maintenance agreement, to further present a clean and attractive frontage to the street.

- All plant and equipment storage areas are to be adequately screened from public view from all road frontages, and, as appropriate, from neighboring plots; particularly to areas to which the public customers of the neighboring plot have access.
- Outdoor storage areas must be surfaced with permanent materials such as asphalt or concrete, maintained free of structural defects or pavers (such as concrete, clay, natural stone, etc.)
- Vehicle parking, service vehicles loading areas and refuse storage shall be located to allow proper servicing of the activity on the plot, but in a manner to protect the amenity and not be detrimental to the surrounding plots.
- In the case of vehicle repair and parts businesses, all inoperable vehicles shall be stored within a building or within a side or rear yard and screened. The number of vehicles stored within a screened yard shall not exceed one per four hundred square feet of building floor area used for vehicle repair.

2.11.4 Guidelines

- Screening walls and fences should be architecturally compatible with the main structures on the site.
- Appropriate signage on screening walls indicating hazards or directing people to waste enclosures should be used according to EAD license requirements and the Municipality's Environmental Guidelines for Industrial Areas.

2.12 Refuse and Waste Management

2.12.1 Desired Outcomes

The Center of Waste Management – Abu Dhabi (CWM) is the responsible authority for developing and implementing waste sector strategic plans as well as managing waste management operations in the Emirate of Abu Dhabi, whereas Environmental Agency Abu Dhabi is responsible for enacting the waste sector regulations. The Abu Dhabi Municipality is responsible for monitoring and

inspecting the Abu Dhabi City and prevent illegal waste dumping and littering, including investigating and issuing violation notices (fines) to identified offenders and maintain City Image.

The Center of Waste Management (CWM) provides community waste collection bins throughout the estate. These waste collection points are designed to achieve safe and convenient access to small waste generating businesses, with reasonable proximity to all users. Those commercial and industrial entities that are major waste producers, are not allowed to dispose any waste in these community waste collection bins.

All business shall also have on-site provisions for the temporary storage and handling of all waste leaving the site. These areas must be provided in accordance with a Waste Management Plan, approved by CWM and shall be a prerequisite for the any development approval over a site by the Municipality.

On-going monitoring of the performance of businesses in regards the proper storage and treatment of waste will be undertaken. Municipality shall issue violation notices to the non-compliant business and inform CWM. Issuance of NOC by CWM for the renewal of DED Trade Licenses shall depend on the cooperation and compliance of businesses with these requirements.

As further arrangements are made in respect of recycling for the estate, waste reduction, segregation and recycling provisions shall form part of the Waste Management Plan and the design of the storage areas.

2.12.2 Regulations

Refuse shall be stored having regard for the following provisions:

- All Commercial and industrial entities shall segregate recyclables (to be disposed in green bin) from non-recyclable general waste (to be disposed in black bin) as per the Waste Classification Policy (EAD-EQ-PR-P-01).
- Commercial and industrial entities that are classified as major waste producers by Center of Waste Management Abu Dhabi as part of no objection certificate for renewal of their commercial / industrial license are required to use the services of permitted Environmental Service Provider and not dispose any waste in the community waste collection bins provided by CWM contractor.

- All major waste producers shall not keep their waste bins / skips outside their premises or out of their fence / boundary wall.
- Small waste producers shall dispose segregated waste in appropriate community waste bins, recyclable material in green bin and general (non-recyclable) waste in black bin. However, no construction and demolition waste is allowed to be disposed in these community waste bins.
- Any person or a commercial or industrial entity shall not dispose waste outside the community waste bins, this shall be considered as illegal dumping.
- Any person or a commercial or industrial entity that has not obtained adequate permit from CWM shall not collect waste, scavenge recyclables out of community waste bins or carry out illegal operation of waste sorting within the Mussafah Industrial estate.
- Open burning of any waste material is not allowed.
- The dimensions and location of rubbish bin storage areas will be at the discretion of the Abu Dhabi Centre of Waste Management. The details of expected waste generation and disposal methods, including the design, location and practical operation must be submitted to and approved by the Abu Dhabi Centre of Waste Management prior to final planning approval.
- Refuse enclosures shall be designed to contain all refuse generated by activities on the site.
- Refuse enclosures shall be constructed out of durable flame-proof material and be able to be serviced by suitable fire extinguishing equipment – based on the nature of the materials likely to be stored.
- Refuse collection enclosures shall be designed and constructed so refuse can be sorted for easy recycling and to prevent cross contamination of salvageable materials and waste.
- Refuse enclosures shall be accessible for thorough cleaning and wash down, and be adequately provided with surrounding bunds and drainage to control waste release to the environment in accordance with environmental emissions of the Environment Agency Abu Dhabi (EAD) license, the Trade Effluent Control

Regulations 2010 and the Municipality's Environmental Guidelines for Industrial Areas.

- All commercial and industrial entities shall comply to the Waste Sector Policies issued by EAD and CWM.
- Any nonconformity of the above requirement shall be considered as violation of this regulatory requirement and liable for enforcement / judicial action.

2.13 Wash Down Bays and Pollution Prevention Devices

2.13.1 Desired Outcome

In partnership with the Environment Agency Abu Dhabi (EAD), the Municipality aims to manage the levels of pollutants leaking into the environment, including the air, groundwater and the waterways to achieve the aims of Estidama and the standards of the EAD.

2.13.2 Regulations

- Where petrol, or other flammable or explosive substances or grease / oily matter is likely to be discharged, a sealed wash down area and a petrol and oil trap must be installed and operated and connected to either an approved on-site trade effluent treatment system or to the sewer, within EAD license provisions and requirements of the Regulations and Supervision Bureau approval under the Trade Effluent Control Regulations 2010.3
- Appropriate grease traps, oil separators and containment areas are to be installed and maintained according to the requirements for the use of premises, in accordance with the an approved environmental assessment and license and the Municipality's Environmental Guidelines for Industry.

Note: All trade effluent is to be appropriately managed in conjunction with the Environment

3 (see guidelines <http://www.rsb.gov.ae/uploads/TERegs-2010Guide.pdf>)

Agency Abu Dhabi (EAD), Center of Waste Management Abu Dhabi (CWM), and the appropriate Sector Regulatory Authority appointed under the Emirate's Environmental Health and Safety Management System (SRA)⁴.

2.14 Frontage (streetscape) Zone

To be as per DMAT/ADM "Landscape and Public Realm Manuals & Specifications".

2.15 Landscape Design

To be as per DMAT/ADM "Landscape and Public Realm Manuals & Specifications".

2.15.1 Desired Outcomes

The character of the Mussafah Industrial Estate is created by the building architecture, streets, open spaces and site features including lighting, pedestrian ways, and landscape plantings.

Given the existing variety of industrial buildings, other land uses, and wide street rights-of-way, the addition of landscape plantings and frontage zone development will assist greatly in improving the overall visual environment and functional accessibility.

The intent of these DCRs is to provide design criteria which will satisfy the aesthetic considerations and provide a distinctive landscape character to areas within the estate. It shall also serve to ensure functional requirements are met for pedestrian connectivity to other supporting infrastructure such as bus/taxi stops, crossing locations and legible access to and within development plots.

2.15.2 Design Considerations

- For all new development as well as those seeking modifications, a minimum 10% of the plot shall be set aside for landscape improvements. With the formal

agreement of the Municipality, this area may be offset with suitable landscaping immediately external to the plot in the frontage zone.

- Xeriscape⁵ landscape concepts should be considered, or grouping of plants that require similar irrigation requirements that conserve water and reinforce the desert character of the region. Water should be conserved through low water plants, soil conditioning, mulching, and underground irrigation.
- All landscaping is required to include a low flow trickle irrigation system and a programmable water controller/timer system.
- Trees and shade structures should be used to promote shade wherever feasible. Large potted trees and plants can be used in place of in-ground planting where utility clashes may occur, subject to high quality of pots.
- If recommended or accepted by GHQ, Quality gravel/cobbles may be used in beds to create attractive and low maintenance areas surrounding trees. Their use should be avoided when directly adjacent to a road kerb, a buffer of minimum 600m should be included when such situations occur.
- Plant material must be selected from the recommended plant material list as per section 2.15. If special conditions exist that restrict or conflict with the use of these material, alternative plants may be recommended for review and approval by the Municipality.
- All design shall conform to the design guidelines as provided in section 2.13 & 2.14, any deviation from these shall be at the subject of written approval by the Municipality.

⁴ Abu Dhabi environment, Occupational Safety and Health Management System (OSHAD) Abu Dhabi)

⁵ Xeriscaping refers to landscaping in ways that reduce or eliminate the need for supplemental water from irrigation. It is promoted in regions that do not have easily accessible, plentiful, or reliable supplies of fresh water, and is gaining acceptance in other areas as climate patterns shift. See example http://eartheasy.com/grow_xeriscape.htm

On-Plot Parking Areas

This requirement is above and beyond the 10% landscape coverage requirement for on-plot landscaping. Parking areas shall be landscaped with the following requirements:

- Shade tree planting should be done to meet the requirements of Estidama LBo-R3: Outdoor Thermal Comfort Strategy. As a minimum, car parks with 10 or more spaces shall achieve Estidama requirements. Alternative shade structures, or a mix of structures and trees will be considered.
- Trees may be clustered to maximize shade and minimize irrigation networks.
- Low planting areas within paved areas should provide a minimum of 1 meter clear planting space. Note: A triangular planter bed can protrude into and between parking spaces without compromising the number of spaces in a given area.
- Trees and planting areas shall be design that minimizes potential damage by vehicles.
- Exposed planting beds should be mulched with wood bark, pebbles or other approved material.
- Landscape design shall be coordinated with all other related disciplines, including utilities to ensure uniformity and an overall cohesive layout.
- All materials specified shall comply with ADM standard specifications.

Submission of Plans for Landscaping and Site Drainage

Concept landscape drawings are sufficient for initial application to the Municipality to carry out assessment under these guidelines for new development, or for planned works in the frontage zone.

In the case of planning approval, concept landscape and site drainage will be approved, and conditions may require follow up detailed drawings to be submitted and timed to allow such works to proceed following building works, or other site disturbing works. The detailed design drawings should indicate storm water calculations and disposal methods also.

Where applicable, landscape works might be required to be accepted as complete by the Municipality prior to the issue of any

Building Completion Certificate/Certificate of Occupation, where part of the 10% landscape works requirement or required for proper functioning and/or screening of the business.

2.16 Recommended Plant Material List

To be as per the UPC “Public Realm Design Manual (PRDM)” plant list.

To be as per “ relevant EAD published plant lists.

2.17 Storm Water Management

Storm water management concerns both the quantity and quality of storm water runoff. Emphasis on good site design and the implementation of measures in conjunction with a site storm water management plan to prevent excess runoff and pollution (e.g. sweeping to remove surface dust from car parks) will assist the aims of controlling the run off of sediment and pollutants into the waterways near Mussafah. Pollution prevention policies should be included within the Storm Water Management Plan and/or Operations Management Plan.

Mussafah is serviced by trunk storm water mains, however the control of runoff at or very near its source (e.g. on-site infiltration or detention areas or by other infiltration methods and pervious pavements) is desirable and should firstly be considered in the overall site design and operations.

All new projects are assessed for their level of meeting the requirements of Estidama through application of the Pearl Rating System (PRS). This is a framework for sustainable design, construction and operation of communities, buildings and villas. The category within the PRS relevant to storm water management is section PW-4 of “Precious Water”. The intent of PW-4 is: To minimize peak storm water discharge and protect the storm water drainage system and receiving water bodies from pollutant loading during and after storm events. To achieve this credit, it is required to “Demonstrate that the project has developed a storm water management system that prioritizes infiltration, sustainable urban drainage systems, and utilizes structural solutions when necessary.”⁶

6 <http://www.Estidama.org>

2.17.1 Regulations

Storm water management shall meet the following criteria:

- The operator of a facility may discharge storm water run-off from access roads, non-process areas, grassed or recreational areas directly to the municipal storm water drainage system where available, however storm water runoff should, as far as possible, be directed towards an allotment swale and/or to soak wells and disposed of on-site.
- The operator of a facility shall provide an impervious storm water management system, independent of the industrial wastewater system, to collect the first flush storm water from industrial process areas and hazardous material storage and handling areas. The first flush shall be considered to be the first 30mm of rainfall from each storm event.
- After collection of first flush storm water, any additional rain falling on industrial process areas and hazardous material storage and handling areas may be diverted directly to the storm water drainage system.
- The operator of a facility retaining first flush storm water shall discharge the water according to its chemical analysis in accordance with the provisions of the Municipality's Environmental Guidelines in Industrial Areas in Abu Dhabi, and any related conditions under the license issued by or on behalf of the EAD.
- Each plot developer shall provide concept calculations and methods to show the required storm water retention capacity or disposal has been achieved for the proposed site development with the submission for planning approval. Detailed storm water calculations should then be submitted with detailed landscaping and drainage plans to the Municipality for approval. This would generally be after the planning approval, based on the approved concept drawings and methods, unless particular concerns regarding the ability of the proposed treatments to achieve the requirements are raised in the course of the planning review.

2.18 Waste Water Management

ADSSC Design Guidelines, Specification and Drawings (latest version) shall be followed in complete with no exception

Particulate Requirements

- a) All premises those discharges a high risk Trade Effluent have to install Trade Effluent discharge point.
- b) All Restaurant and Cafes premises have to install grease trap as per Code of Practice for low-risk Trade Effluent discharges from restaurants and cafes issued by RSB.
- c) All Car Washes premises have to install sand trap and petrol interceptor as per Code of Practice for low-risk Trade Effluent discharges from vehicle-washes issued by RSB.
- d) Suitable sized discarding facilities shall be available in the vicinity of all private plots for dumping Grease / oil / chemical / rubbish / sand etc..
- e) ADSSC's manholes tops shall to be protected from all types of dumping of excavated materials / debris
- f) Neither permanent nor temporary construction shall be allowed to build over any ADSSC assets

2.19 Building Design - Architectural Guidelines

2.19.1 Desired Outcomes

It is the intent of the architectural guidelines to promote an improved visual quality of the Mussafah Industrial Estate. Emphasis is placed on reducing temporary looking structures and encouraging imaginative and 'clean' designs.

Examples within the estate of renovated facades and external areas planting have demonstrated the simple and effective methods of raising the visual amenity of the existing building stock. Further attention to the adjacent external areas would further improve market image and customer appeal, raising the profiles of businesses, and assist the regeneration of the estate.



Figure 7: Renovated Façade – attention to side area storage and front paving is needed to complete the regeneration

In accordance with environmental policies of Abu Dhabi, design, construction and operation of buildings shall follow Estidama guidelines.

Elements that continue to detract from the desired image of the estate include:

- inappropriate design, and overabundance, of signs,
- visually obtrusive plant and equipment,
- storage outside of buildings and on road reserves,
- un-paved car parks and driveways, particularly in front of plots; and
- Poorly presented facades to the street.

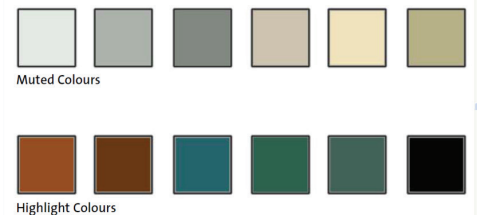
2.19.2 Building Massing and Form

- Massing of the building should be expressed in the fragmenting or layering of walls and building heights in lieu of a solid block form and uniform height and bulk.
- In multiple building complexes, a comprehensive, uniform architectural style should be developed and maintained. This should be done through massing, color and texture of walls and solid-void ratio. Buildings should be separated a minimum of 6 meters to provide for sufficient light and breezes, or more, according to servicing and operational access efficiency. Civil Defence requirements will be applied in all cases.

2.19.3 Facades, Materials and Colours

2.19.3.1 Guidelines

- Proposals which exhibit broad facades of a uniform finish will not be acceptable. The aim is to divide up the facades into contrasting smaller areas by introducing different forms, materials, colors and materials should be fire resistant or fire retardant.
- Renovation and new building design should express contemporary modern design.
- Interesting facades should be developed through:
 - * Use of different materials such as concrete panels, profiled metal cladding, and fiber cement cladding, separately or in combination.
 - * Avoiding blank walls; instead provide vertical or horizontal offsets in the wall surfaces.
 - * Projecting features such as canopies, sun shading, overhanging roof etc. to create shadows on the facades.



Use of building colors generally sympathetic and complementary with the natural environment and site landscaping.

Figure 8: Sample Color Schedule

Small and important building elements such as a feature wall, canopies, steel bracing and columns, sunscreens, ventilation louvers etc. should be treated with strong highlight colors to provide visual interest and relief on the building facades.

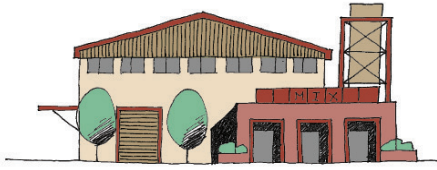


Figure 9: Variations in Building Materials

- Materials should convey a sense of permanence.
- Low maintenance should be a major consideration for material selection.
- Elements such as the louvre vents and screens, exposed steel columns and bracing, careful placement of roller shutters, can be effective to achieve good design, as can the use of vertical, horizontal and/or angled grids to break up unrelieved wall surfaces. These could be expressed feature joints in pre-cast concrete panels, fiber cement panel joints, brick banding or rendered panels.
- Material used to provide screening of roof mounted mechanical equipment should be compatible with the building wall and roofing materials.
- Where a single development comprises multiple separate buildings occupied by independent tenancies, the use of colors, finishes and materials for each unit should be complementary, whilst allowing each tenancy to be easily distinguishable and identifiable.



Inappropriate finishing

- No variety in the forms, materials and colors.
- Large expanse of one material on one plane is generally unacceptable.
- Sign too close to roof edge.
- Sign and graphic not legible.
- AC units not screened.



More appropriate finishing

- Perimeter landscape strip.
- More appropriate signage.
- AC units concealed.

Figure 10: Improved Building Appearance, Landscaping and Signage



Inappropriate finishing

- No landscape.
- Large expanse of one material on one plane is generally unacceptable.
- Sign too close to roof edge and no longer used.
- Signs of irregular size, not respecting the architecture, and graphics not legible.
- AC Units not screened.
- Lack of maintenance of façade elements.



More appropriate finishing

- Building maintained.
- Signs of a consistent form and fitting with the architecture.
- Area streetscape paved and landscaped.

Figure 11: Improved Signage, Landscape and Building Maintenance

2.19.4 Building Frontage and Entry:

- Buildings should be designed to address the street. The main entrance to the building must be clearly visible or otherwise obvious in the design.
- Building elevations on corner lots should address both street frontages, or the corner directly;
- Where more than one building is planned for a site, their design should result in the creation of a group of integrated buildings presenting a harmonious image;
- The main entrance into the building to which the public is invited should be on the front elevation or close to the front of the building, clearly visible from the street; and
- Entrance points to buildings are to be designed to provide protection for pedestrians by means of integrated building elements such as a covered portico, canopy or similar.

2.19.5 Internal Lighting and Ventilation

2.19.5.1 Guidelines - Natural Light and Ventilation

Where feasible and conducive to the nature of the business, natural lighting and ventilation assists in lowering building management costs and meeting sustainability targets of Estidama.

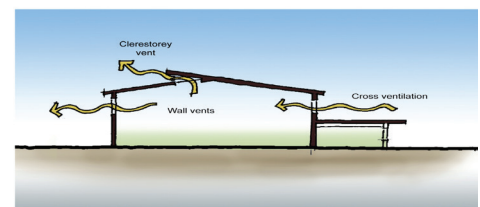
The following elements are suggested for consideration in the design of all new buildings in Mussafah Industrial Estate

- Lighting
 - * Roof-lights - to introduce UV filtered sunlight into the center of the building (consideration should be given to minimizing solar gain by careful selection of the translucent roof-light material - ceilings and solar tube skylights are in many cases recommended over direct translucent sunlight panels, to minimize heat gain within the premises).
 - * Clerestory windows - to introduce natural light, preferable diffused northern light, into the center of the building, thereby reducing the requirement for artificial lighting.

- Ventilation

- * Side wall ventilation openings - to encourage cross-ventilation through the building. The vents should allow the prevailing cooling breezes only and be designed so as to prevent dust intrusion.
 - * Clerestory windows - to provide an outlet for warm air rising to a high level within the building and to promote cross ventilation.
 - * Wind powered ventilation turbines - to aid the relief of hot air at high level and to encourage cooler air to enter at low level in the building, thereby generating a 'chimney stack effect' for air circulation.
- Roof vents active or passive - large relief vents to further increase upward air flow in the building. These can be simple roof vent openings or mechanically driven extraction devices.

Ventilation 1



Ventilation 2

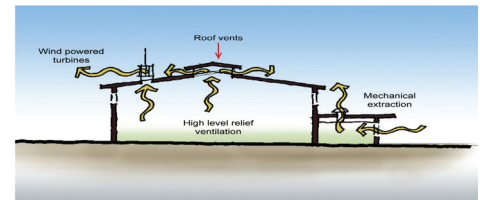


Figure 12: Natural Ventilation

2.19.6 Water Conservation

2.19.6.1 Design Considerations

The supply of potable water is a critical issue in the UAE. All development involving buildings is subject to assessment under the Estidama provisions.

A statement addressing how new or refitted/expanded buildings will be designed and fitted out to meet the minimum Estidama standards for Pearl Rating should be submitted as part

of the planning report accompanying an application for planning approval.

The following options for building fit out are consistent with the aims of the Estidama water efficiency measures:

- Solar or five-star gas (or heat pump) hot water systems;
- Water efficient showerheads;
- Water efficient tap fittings in all kitchen sinks and bathroom basins; and
- Water efficient dual-flush toilets.

2.19.7 Plant and Equipment

2.19.7.1 Design Considerations

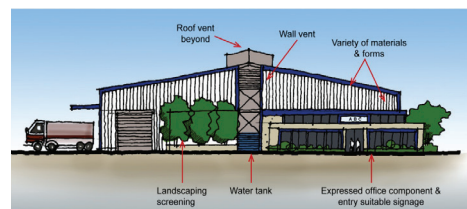
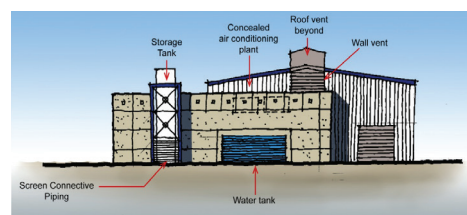
- All plant and mechanical equipment including roof mounted equipment such as water tanks, chillers and satellites should be screened from the main street with material compatible with building design.
- Air conditioning units in particular are a major visual issue that detract from appearance of premises and must be concealed.
- Passive sustainable elements (water tanks /ventilation louvers) should be seen as design features.
- Use of landscaping for screening and shading of equipment at ground level can be an option and contribute to the required landscaping outcomes for the plot.

2.19.7.2 Regulations

- Ground-mounted exterior mechanical equipment shall not be directly visible from the street, for up to a height of 2 meters above the ground level.
- Roof-top equipment shall be screened by a parapet wall of such a height to screen the equipment from street view. If parapet walls do not provide sufficient screening required to conceal the mechanical equipment from relevant surrounding buildings and the street, an unobtrusive screening device should be used that is integrated with the overall architectural design of the building in terms of color, material and design.
- All other plant and equipment shall be screened or remote from public

areas, particularly from the street. The exception to this may be where stacks or ductwork that are necessary for the building function are carefully considered and become feature design elements of the building.

- For new buildings, no exterior mechanical equipment shall be mounted on the exterior wall of a building unless integrated into the overall architectural design of the building. For existing buildings, upgrades to facades will be expected with renovations or changes of use, or where directed by the Municipality prior to the renewal of Trade License, including the fitting of screening devices where required.
- Substations located in high visibility areas shall be screened with either landscape plantings or non-combustible enclosures, harmonious with the architectural character of the building and approved by ADWEA.
- Outdoor wall mounted electric equipment shall be located where it is screened from public view and installed in a neat and orderly fashion. Where possible it should be painted to blend with the wall. And to consider the impact and safety of pedestrians movements
- All exterior on-site utilities - water, sanitary sewer, drainage, power and telecom shall be installed and buried underground as far as is practicable. Temporary overhead power and telephone lines are permitted during construction.





Signage
Appropriate signage treatments integrated into the building form and aesthetic.

Figure 13: Signage, integrated design and screening of utilities

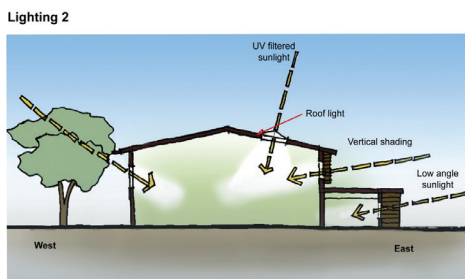
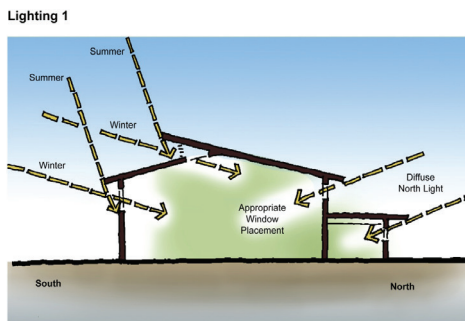


Figure 14: Day-lighting

2.20 Site Lighting

2.20.1 Desired Outcomes

Night time light is to contribute to the safe and efficient vehicle and pedestrian movement, to aid required tasks and provide safety, security and wellbeing whilst minimizing glare onto adjacent properties and streets.

In addition, lighting must be designed, selected and installed to ensure long-term sustainability, energy-efficiency and protection of and from the environment and local ecology.

As a minimum standard all developments in the Mussafah Industrial Estate should feature:

- Light fittings that utilize high efficiency light sources and electronic high

efficiency control gear such as LED (or other equally sustainable technology as defined within the DMAT Lighting Manual). All required lighting fixture technical criteria is contained with the DMAT Lighting Manual and additional guidance document the DMAT Public Realm & Street Lighting Handbook (refer to Regulations below) as part of the DMAT Sustainable Public Lighting Strategy.

- Lighting controlled by daylight and/or occupancy controls for internal environments.
- Lighting controlled by project lighting management systems, timer controls, photosensitive cells, and/or motion sensors to control operation of specific light fixtures or circuits for external applications. All required lighting controls criteria is contained with the DMAT Lighting Manual and additional guidance document the DMAT Public Realm & Street Lighting Handbook (refer to Regulations below) as part of the DMAT/ADM Sustainable Public Lighting Strategy.

2.20.2 Regulations

- All internal lighting is to be designed in accordance with the relevant requirements of International best lighting guidance, the Abu Dhabi International Building & Energy Conservation Codes⁷ and Estidama: Buildings⁸
- All external lighting is to be designed in accordance with the relevant requirements of Estidama: Public Realm and Communities⁷ and The DMAT/ADM Sustainable Public Lighting Strategy's DMAT Lighting Manual and accompanying guidance Handbook:
- 1/ DMAT Lighting Manual* – Latest Version.
- 2/ DMAT Public Realm & Street Lighting Handbook** – 1st Edition 2014
- Lighting shall deploy energy saving techniques – such as project lighting management systems, timer controls, photosensitive cells, and/or motion sensors to control operation of specific light fixtures or circuits for external

7 <http://abudhabibuildingcodes.ae/>
8 <http://Estidama.org/>

applications. As per the requirements of Abu Dhabi International Building & Energy Conservation Codes, Estidama and The DMAT/ADM Sustainable Public Lighting Strategy's DMAT Lighting Manual and additional guidance document the DMAT Public Realm & Street Lighting Handbook.

- All pole mounted lighting potentially visible from the street shall have direct glare-free optics and/or have cut off / shield type attachments. As per the requirements of Estidama and The DMAT/ADM Sustainable Public Lighting Strategy's DMAT Lighting Manual and additional guidance document the DMAT Public Realm & Street Lighting Handbook.
- Service area lighting shall be contained within the service area boundaries with minimal spill over into adjacent properties or street in accordance with Estidama: Public Realm and Communities' requirements, International best design practice & light pollution avoidance policy and The DMAT/ADM Sustainable Public Lighting Strategy's DMAT Lighting Manual and additional guidance document the DMAT Public Realm & Street Lighting Handbook. No glare of light spill shall adversely impact adjoining properties or passing motorists.
- Building illumination shall be indirect and in character with the nature and requirements of the building, with the light sources invisible to normal viewing positions of both building's occupants and pedestrian and road traffic from the outside. Building lighting should be used to highlight architectural features as well as provide clarity and pedestrian safety, and be within the brightness limits set out in The DMAT/ADM Sustainable Public Lighting Strategy's DMAT Lighting Manual and additional guidance document the DMAT Public Realm & Street Lighting Handbook.
- Pedestrian scaled light should be used to clearly identify pedestrian ways, provide safety and direction of travel in accordance with applicable road safety standards and The DMAT/ADM Sustainable Public Lighting Strategy's DMAT Lighting Manual and additional guidance document the DMAT Public Realm & Street Lighting Handbook.
- For external areas lighting fixtures shall have high efficiency light sources and

electronic high efficiency control gear:

- For all roads and public realm they shall be LED (or other equally sustainable technology as defined within the DMAT Lighting Manual) in accordance with DMAT Decree-39 and The DMAT/ADM Sustainable Public Lighting Strategy's DMAT Lighting Manual and additional guidance document the DMAT Public Realm & Street Lighting Handbook.

2.21 Signs

To be as per UPC "Commercial Signage Regulations"

2.22 Amenity and Environmental Nuisance

The Municipality has issued the Environmental Guidelines in Industrial Areas which lists in detail the desired levels of environmental quality for industrial operations and forms the basis of any Planning Approval to operate in the Mussafah Industrial Estate.

Federal Law No. 24 of 1999 for the Protection and Development of the Environment requires that all projects or establishments obtain a License (i.e. environmental permit) prior to starting an activity. As the competent authority for implementation of Federal Law No. 24 within the Abu Dhabi Emirate, the Environmental Agency – Abu Dhabi (EAD) is responsible for permitting of facilities with commercial or light industrial licenses. ZonesCorp is the designated authority for permitting of facilities with an industrial license, generally for manufacturing activities.⁹

The impacts of construction and operation will generally be addressed through that mechanism, however the following provisions set out the minimum required operating-nuisance mitigation guidelines.

2.22.1 Emissions and Nuisance

The following guidelines are extracted from the (draft) Abu Dhabi Development Code. The more detailed provisions of the Municipality's Environmental Guidelines in Industrial Areas

9 (see <http://www.ead.ae/en/portal/fact.sheets.aspx>)

will be the document used in administering the guidelines.

2.22.1.1 General Guideline

Land or buildings should not be used or occupied in a manner creating any dangerous, injurious, or noxious fire, explosive, or other hazard; noise, vibration, smoke, dust, odor, or form of air pollution; heat, cold, dampness, electrical, or other disturbance; glare, refuse, or wastes; unsanitary conditions; or other substances, conditions, or elements that would adversely affect the surrounding area.

2.22.1.2 Heat

Uses, activities, and processes should not produce any emissions of heat that cause distress, physical discomfort, or injury to a reasonable person, or interfere with ability to perform work tasks or conduct other customary activities. In no case should heat emitted by a use cause a temperature increase in excess of three degrees Celsius on another plot.

2.22.1.3 Light and Glare

Activities, processes, uses, and building design should be operated in compliance with the following provisions:

- Mechanical or Chemical Processes
 - * Light or glare from mechanical or chemical processes, high-temperatures processes such as combustion or welding, or from reflective materials on buildings or used or stored on a site, should be shielded or modified to prevent emission of adverse light or glare onto other plots.
- Glare
 - * No use should be operated such that significant, direct glare, incidental to the operation of the use is visible beyond the boundaries of the plot where the use is located.
- Building Glare
 - * A building's exterior cladding material should be designed to preclude unwanted glare into public rights-of-way or public realm from direct solar reflection.

2.22.1.4 Liquid or Solid Wastes

- Liquid Wastes. Liquid wastes of any

kind should not be discharged, whether directly or indirectly, into a public or private body of water, watercourse, or into the ground.

- Solid Wastes. Solid wastes should be handled and stored so as to prevent nuisances, health, safety and fire hazards, and to facilitate recycling. There should be no accumulation outdoors of solid wastes conducive to the breeding of rodents or insects.

2.22.1.5 Odours, Fumes, and Gases

No use, process, or activity should emit excessive fumes or gases or produce objectionable odors that are perceptible without instruments by a reasonable person at the plot lines of a site.

2.22.1.6 Vibration

No vibration should be produced that is transmitted through the ground and is discernible without the aid of instruments by a reasonable person at the plot lines of the site. Vibrations from temporary construction, demolition, and vehicles that enter and leave the subject parcel (e.g., construction equipment, trains, trucks, etc.) are exempt from this regulation.

2.22.1.7 Fire and Explosive Hazards

All activities, processes, and uses involving the use of, or storage of, flammable and explosive materials shall be provided with adequate safety devices against the hazard of fire and explosion and shall comply with the International Building Code and International Fire Code. Firefighting and fire suppression equipment and devices standard in industry shall be approved by Abu Dhabi Civil Defence.

All incineration is prohibited with the exception of those substances such as, but not limited to, chemicals, insecticides, hospital materials, and waste products, required by law to be disposed of by burning, and those instances wherein the EAD deems it a practical necessity.

2.22.1.8 Hazardous and Extremely Hazardous Materials

The use, handling, storage, and transportation of hazardous and extremely hazardous materials shall comply with the safety and security requirements of EAD and Abu Dhabi

Civil Defence. Activities, processes, and uses shall not generate or emit any fissionable or radioactive materials into the atmosphere, a sewage system, or onto the groundwater.

2.22.1.9 Electromagnetic Interference

No use, activity, or process shall cause electromagnetic interference with normal radio and television reception in any residential district, or with the function of other electronic equipment beyond the plot line of the site in which it is situated.

2.22.1.10 Radioactivity

Activities shall comply with local environmental protection standards and guidelines as described in the Municipality's Environmental Guidelines in Industrial Areas.

In order to assure compliance with the above standards, the Municipality may require the owner or operator of any permitted use to make such investigations and tests as may be required to insure adherence to the standards above. Any needed investigations or tests shall be carried out by an independent testing organization as selected by the Municipality after thirty (30) days' notice. The costs incurred in having such investigation or tests shall be borne by the businesses unless such owner/operator is found to be in compliance with the Federal Authority for Nuclear Regulation - Abu Dhabi (FANR) standards, regulations and guidelines.

requirements including but not limited to the following:

- Waste storage and classification
- Discharging of Dewatering
- Discharges from Construction Activities
 - * The Environment Agency–Abu Dhabi (EAD) requires proponents and contractors to prepare and implement a Construction Environmental Management Plan (CEMP) to ensure that construction development considers aspects of environmental protection and pollution control. Development and implementation of the CEMP is in accordance with the requirements outlined in Federal Law No. 24 of 1999 for the Protection and Development of the Environment and the Abu Dhabi Emirate Environment, Health, and Safety Management System Regulatory Framework (Decree 42 of 2009). In support of this objective, EAD developed in 2014 a technical guidance document titled “Best Management Practices for Discharges from Construction Activities”, and is intended to provide proponents and contractors with information about the best management practices (BMPs) that can be used to prevent polluted discharges into the storm drainage system and/or surrounding environment during construction operations.

2.23 Environmental Health & Safety

In all development – including construction and operations, the Abu Dhabi Occupational Safety and Health Management System (OSHAD) Regulations must be followed <http://www.oshad.ae>

Public Health Division will assess all proposals and apply the regulations as required, as part of the development review and permitting processes.

2.24 Environmental Requirements

As part of planning and permitting phases, and during operation for industrial and commercial activities with a land gross area which exceeds 0.05 km² (50,000 m²), Environmental Agency of Abu Dhabi (EAD) approvals, in form of Permit or NOC, should be provided. All developments required to adapt to EAD criteria, standards and procedures. The

2.25 Maintenance and Condition of the Property

The property owner or occupant of any plot shall at all times keep the property and the buildings, improvements and appurtenances (i.e. the areas surrounding and in front of the plot) in a safe, clean and good condition. Compliance shall be at the individual's expense in all aspects of municipal and federal government, health, fire applicable ordinances and regulations. The property owner or occupant shall at regular and frequent intervals remove at its own expense any rubbish and debris which may accumulate upon such areas. All rubbish and debris shall be disposed on in a proper and legal manner.

Property maintenance is subject also to the International Property Maintenance Code adopted in Abu Dhabi.

2.26 Monitoring and Control Requirements

The necessity for CCTV systems provision for indoor and/or outdoor buildings and spaces must be determined by Monitoring & Control Centre during building permit stage and / or Trade license issue or renewal.

All system requirements and specifications must comply with Monitoring & Control Centre regulations and standards.

2.27 Safety and Security Requirements

As part of the comprehensive development for Mussafah Industrial Estate, safety and security measures should be addressed for all projects and as per Abu Dhabi GHQ requirements. All developments should comply with AD-GHQ safety and security requirements when issues are raised and indicated. AD-GHQ safety and security NOC is required for the agencies involved with Economic License issue or renewal, building permit issue, maintenance permit or if recommended by any other agency.

All developments must meet and comply with AD-GHQ criteria upon request, for the following:

- All shops must be provided with security cameras, and as part of Economic License.
- All banks and money exchange outlets must be provided with security fenders and barriers, security cameras, and security alarms.
- Provisions of lateral secured parking for money delivery safe vehicles close to banks and money exchange outlets.
- Provision of internal shutters behind glass facades for banks, money exchange outlets and any other shops with valuable commodities.
- All planted trees should comply with the (List of Trees applicable for Abu Dhabi Emirate) issued by ADFCA that at maturity being with moderate height and sparsity which will help in crime prevention precautions.
- Security clearances are required for hazardous waste disposal.
- AD-GHQ approval for the use of barbed

wires for any developments.

- Discharge of oil or any flammable substance must be coordinated with AD Civil Defense and AD-GHQ.
- Safety and security measures for Labor camps must comply with all related criteria and controls.
- Connect all the buildings and sites of interest to smart devices to detect fires and that sends timely communication.
-
- Providing security escorts by private security companies are licensed and certified by them to secure facilities and sites that fall within the area of industrial steel.
- Building control room must be linked with Central Operations at AD GHQ as deemed necessary and according to AD GHQ instructions.

Off- Plot:

Parking and Servicing Access

Parking areas and driveways outside the plot, where not provided by the Municipality through its general road design and construction programmer, are to be constructed and maintained at the property occupant's (i.e. the beneficiary) expense. These areas shall not be used for storage of goods and materials, or for the carrying out of any aspect of the business to which the area relates or any business purpose whatsoever. Temporary loading and unloading may be permitted where agreement has been reached with the Municipality and the DMAT based on a formal management plan and upon demonstration of adequate and safe vehicle maneuvering areas that do not overly interfere with pedestrian paths, or visitor/employee parking and access.

LandScape

Frontage Zone and External Parking Areas

The Municipality is ultimately responsible for the installation and maintenance of landscape plantings and related development along the edges of the carriageway. However, the plot lessees and occupants are encouraged to undertake planting, suitable formal car parking construction and garden beds in the frontage zone under agreement with the Municipality, to be managed and maintained

by agreement, usually by the occupier of the plot. Utility owners must be consulted for maintenance access requirements, and their NOCs provided.

- Any areas not landscaped by the Municipality and immediately adjacent privately leased plots may be landscaped by the owners of the lease or plot occupant. Prior to any work being done plans must be submitted for approval by the Municipality. Plans are to identify proposed plant material, irrigation method and other landscape treatment and details.
- All works within the road reserve are to be under the agreement and supervision of the Municipality. It is the responsibility of the property lessee/occupant to minimize damage and maintain any plantings, utilities and other municipal improvements during construction activities and re-establish all work in kind that has been disrupted.
- Where the business enters into an agreement to use external areas for parking etc., generally a maximum of 60% of the plot frontage from the plot line to the curb line may be paved including driveways for plot access. The remaining unpaved area shall be landscaped.
- Plant material should be selected from the recommended plant material list.
- Consideration should be given to the additional use of shrubs, ornamental grasses and /or succulents to help visually improve the external parking areas.
- Trees and planting areas should be protected from damage by vehicles.
- Irrigation to the landscaped area shall be provided to meet the requirements of the Municipality Parks & Recreation Facilities Division (PRFD).
- Exposed planting beds should be covered with wood bark, pebbles or like material.



Inappropriate finishing

- No Landscape.



More appropriate finishing

- Off-plot Area Landscape.

Figure 15: Before and Improved



Inappropriate finishing

- No Landscape.
- AC units not screened.



More appropriate finishing

- Landscape screening of car park and screening of AC units.

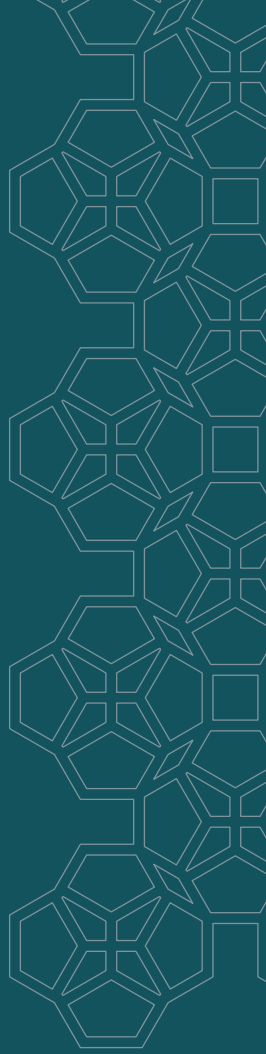
Figure 16: Before and Improved

3. Responsibility Matrix

The following table addresses the Authority having jurisdiction upon Development Control through review processes and procedures, in form of Approval, Permit or NOC.

Development Controls	Review Authority / Agency	
Site Planning Criteria	ADM/BPD - All within plot boundary's activities are part of BPD building Permit Licensing procedures. (that may include other divisions and authorities' NOC's, e.g. UPD / Entrances, MI&A, DMAT)	www.adm.gov.ae
Boundary Fencing	ADM/ BPD	www.adm.gov.ae
Driveway Location	ADM/ MI&A ADM/ UPD	www.adm.gov.ae
Parking and Servicing Access	ADM/ BPD	www.adm.gov.ae
Outdoor Servicing and Storage Areas	DMAT ADM/ MI&A	www.municipalgateway.abudhabi.ae
Refuse and Waste Management	CWM-AD / ADM	www.tadweer.ae
Wash Down Bays and Pollution Prevention Devices	EA-AD ADM / EHS	www.ead.ae
Frontage (streetscape) Zone	ADM/ MI&A	www.adm.gov.ae
Landscape Design	ADM/ MI&A	www.adm.gov.ae
Recommended Plant Material List	ADM/ MI&A	www.adm.gov.ae
Unimproved Plots	ADM / BPD ADM / IO	www.adm.gov.ae

Storm Water Management	ADM/ MI&A	www.adm.gov.ae
Waste Water Management	ADSSC	http://www.adssc.ae/
Building Design - Architectural Guidelines	ADM / BPD	www.adm.gov.ae
Site Lighting	ADM/ MI&A	www.adm.gov.ae
Signs & Signage	DED	www.ded.abudhabi.ae
Amenity and Environmental Nuisance	EA-AD	www.ead.ae
Environmental Health & Safety	ADM / EHS	www.adm.gov.ae
Environmental Requirements	EAD	www.ead.ae
Maintenance and Condition of the Property	ADM / BPD	www.adm.gov.ae
Monitoring and Control Systems	Monitoring & Control Centre	www.mcc.abudhabi.ae
Safety and Security Requirements	AD-GHQ AD Civil Defense	www.adpolice.gov.ae www.adcd.gov.ae/
ESTIDAMA	UPC	www.upc.gov.ae



4. Compliance

4. Compliance

4.1 Managing Non-compliance

The Municipality will adopt a community partnership approach in managing compliance with the guidelines, in formal agreements for frontage zone use, and in planning approval conditions applied.

Compliance procedures are intended to be:

- proportional - the actions taken by the Municipality will take into account of how far the lessee or business has fallen short of what the applicable standard requires;
- targeted – the Municipality will priorities inspections and enforcement actions in proportion to the risks posed by a breach;
- consistent – the Municipality will take a similar approach in similar circumstances to achieve similar ends, and
- Transparent – the Municipality will help the lessee and/or business understand what is expected.

Where a lessee or business is found to be breaching the requirements of its approval or these provisions, the Municipality will take enforcement action that will:

- ensure the lessee or business is encouraged to take action to deal with the breach;
- promote compliance with these guidelines; and,
- Encourage changed future behavior and deter further noncompliance.

To achieve these objectives the Municipality may:

- vary relevant approvals or these provisions;
- appoint qualified inspectors;
- issue improvement and termination notices, and
- Recover reasonable costs incurred due to a breach of relevant approvals or of these provisions.

The Municipality's compliance procedure for the estate will establish a hierarchy of enforcement actions according to the severity of any breach. In order to establish this hierarchy the Municipality will consider how to address:

- significant breaches which present major operational or safety risks;
- minor breaches which do not present an immediate risk, and
- Persistent non-compliant behavior.

The Municipality will decide how to employ the enforcement measures available in a way that achieves the outcomes set out in this document. Communication between the Municipality and operators will be the priority.

Monitoring of compliance might be undertaken as part of future license renewal checks, in response to lease registration or renewal requests, or randomly by inspections.

4.2 Construction without Approval

No plot or streetscape zone works are to take place without written approval of plans and specifications.

If any improvements are erected, placed or maintained on the plot or the exterior design or a new use commenced other than which has been approved, such work shall be deemed in violation and subject to action to stop or reverse the work.

Work or uses may be ordered in writing by the Municipality to be undone/removed or amended to conform to the approved plans and specifications.

If cessation, amendment or removal of work/ use is not done within thirty (30) days of notification, the owner or occupant will be subject to further follow up enforcement procedures, including legal action in the competent court.

4.3 Consistency with Application and Approved Plans

All construction and plot/streetscape zone use shall be consistent with approved plans and documents.

A change to the approved design, layout or other aspects may be applied for through the Municipality at any time. Changes to activities, the layout of the site or any aspects approved in the planning approval, or a change to approval or agreement conditions, will need to be submitted for new review (Step 1).

Changes to aspects approved in the construction permit will need to be submitted to the Construction Permits Division of

the Municipality (Step 2). Changes to both planning and building aspects will need to proceed through Steps 1 and 2.

4.4 Responsibility of Compliance

It shall be the responsibility of all architects, engineers, contractors, applicants and other persons responsible for development projects' construction or alteration and maintenance to ensure that proper approval and permits have been issued prior to such work commencing.

Any architect, engineer, contractor or any person performing work without such approval and permits shall be deemed in violation of the guidelines and shall be held responsible in the same manner as the owner and/or plot occupant.

The owners and operators of businesses within the estate are responsible for the conduct and upkeep of the plots, the external areas of the plots and the daily operations, in accordance with all approvals and agreements.

4.5 Complaints Regarding Violations

Any complaint or objection concerning a violation of the guidelines shall first be filed with Municipality. Such complaints shall fully and clearly state the nature of the alleged violation, the dates of the occurrence and the alleged violating parties. The Municipality will investigate such complaints and take appropriate actions.

4.6 Improvement Notices

In addition to or instead of a notice of violation, the Municipality, as the estate manager, may issue an Improvement Notice.

An Improvement Notice may require immediate or timed action to resolve a breach of a relevant approval, agreement or these provisions.

The notice shall indicate the nature of the violation or non-compliance, and the rectification or improvement measures required. Such action may include discontinuance of construction or illegal use or operation of structures, removal of illegal structures, additions or alterations or discontinuance of illegal work, or the carrying out of maintenance and rectification of

identified issues and improvements to the site and surrounds to the appropriate level, as may be appropriate.

The Municipality will initiate enforcement proceedings for failure to comply with the improvement notice.

4.7 Enforcement against Violations

Appropriate actions and proceedings shall be taken to prevent unlawful construction, to recover damages, or to restrain, correct or abate any violation of the guidelines. The Municipality, or the competent court, shall assess the appropriate penalty.

4.8 Penalties

The Municipality will assess penalties in accordance with current practices against any person or persons who violate the provisions of the guidelines. In the event of continued violation the Municipality may take steps to suspend, cancel or prevent renewal of operating Trade Licenses for the business and operators concerned.

4.9 Revoking and Terminating an Approval or Agreement

A revocation of approval notice can be issued if improvement notice or violation notice procedures fail to remedy an unacceptable breach of the approval, agreement or these standards, or if urgent action is required to protect health and safety or safeguard the environment.

A termination notice requires a lessee or business to cease operations and surrender the Trade License.

The notice will be served in writing thirty (30) days before the notice comes into effect unless urgent action is required to protect health and safety or safeguard the environment.

Appeal against the notice can be made directly to the Manager, Urban Planning Division, within the 30 days period.



4.10 Non-conforming Uses

Existing uses, established lawfully, that do not meet the uses criteria or design provisions of these guidelines are existing lawful non-conforming uses.

Any change to buildings or uses in that category will be considered in terms of the future benefits to the Mussafah Industrial Estate.

In some cases a recommendation by the Municipality might be made for the use to relocate, rather than continue or expand on the same plot.

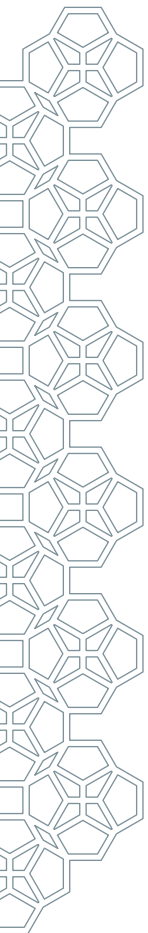
4.11 Recovery of Costs

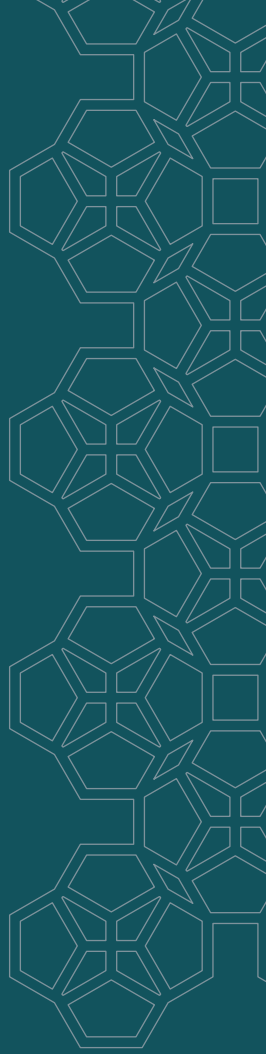
The Municipality is empowered to recover reasonable costs from identified persons and businesses in administering these provisions.

Examples of reasonable costs might include:

- The cost of repairing damage to public assets and infrastructure caused by a violation;
- Costs of investigating and pursuing a violation, and
- The differential costs of additional services, such as waste removal, caused by a violation.

If there is a dispute over what represents a reasonable cost, a court of the appropriate jurisdiction will be requested to settle the matter.





5. Definitions

5. Definitions

5.1 Administrative Definitions

Accessory Use. A use or activity which is a subordinate part of a principal use and which is clearly incidental to the principal use on a site.

Adjacent. Near or close to; neighboring; nearest in position to; sometimes contiguous.

Admiralty Chart Datum (ACD). The base elevation for that particular sea location which is approximately the level of Lowest Astronomical Tide for the Emirate of Abu Dhabi, used as a reference from which to calculate heights or depths.

Affection Plan. A graphic illustration showing the exact coordinated location of a site issued and approved by the government, which includes the following information:

- Name of owner;
- Plot size;
- Allocated land use, and
- Sector and plot number.

Alteration. Any change, addition, or modification of any of the supporting members of a structure, such as bearing walls, columns, beams or girders, that changes the exterior architectural appearance or materials of a structure or object. Alteration includes changes in exterior surfaces, changes in materials, additions (horizontal or vertical), remodels, demolitions, and relocation of buildings or structures but excludes ordinary maintenance and repairs.

Authorized Agent. A person authorized by the property owner or other legal entity that has a legal or equitable title to land that is the subject of a development proposal or otherwise has an enforceable proprietary interest in such land to act on their behalf.

Building. Any structure used or intended for supporting or sheltering any use or occupancy.

Caretakers Residence. A dwelling unit comprising sleeping and cooking facilities established in connection with a principal use on the same plot and used as the residence of a person responsible for the daily security, monitoring and/or maintenance of the facilities on the plot.

Carriageway. The vehicle path within a road reserve, usually sealed. Includes

main thoroughfare and service roads. The carriageway is usually described by kerb and channel along the edge. On-street parking refers to parking along the edges of such carriageways.

Development. The use of land, buildings or waterways, or any change in the use or configuration of land, including:

- The reconfiguration of a plot by amalgamation, expansion, subdivision or sub-lease of a portion of the plot for a period of exceeding 4 years;
- Site works including filling, excavation, clearing of vegetation, mining, or drilling on land;
- The construction, reconstruction, conversion, structural alteration, relocation, demolition or enlargement of any structure, transport infrastructure or utility, and
- The use or the extension or change of the use of building/s or land.

Driveway. The connection provided for vehicles from the carriageway (the area of the public right of way carrying vehicular through traffic) and a plot, and extending into the plot to areas of delivery or vehicle parking.

Dwelling Unit. A building, or a portion of a building, that is designed for residential occupancy and has independent living facilities including provisions for sleeping, sanitation, and one kitchen.

Environment Agency - Abu Dhabi (EAD). The EAD issues No Objection Certificates (NOCs) for the construction and decommissioning phases of development and infrastructure projects. For development and infrastructure projects with an operational component, EAD also issues environmental permits for operation. The NOCs and environmental permits for operation are designed to ensure that the necessary measures to minimize and mitigate potential environmental impacts are implemented during the construction, operation, and decommissioning phases of the project. The EAD, upon an application for an environmental permit or NOC, will advise whether Preliminary Environmental Review, an Environmental Impact Assessment or Strategic Environmental Assessment, or a Construction or Operating Environmental Management Plan is required to be prepared and submitted.

Estidama. The established designation for sustainability of projects within Abu Dhabi and the region. Estidama review implements

the Pearl Rating System for sustainable development and follows the planning review stage, prior to application for building construction permits.

FAR – Floor Area Ratio. The ratio of the gross floor area of all buildings to the total area of the plot upon which such buildings are located, where total gross floor area is expressed in decimal form and plot area is always 1.0, e.g., 10.5 to 1.

Frontage Zone. The frontage (streetscape) zone is the part of the road reserve/public right of way adjacent plots and is the image setting zone to workers and visitor alike.

Gross Floor Area (GFA). The sum of all horizontal areas of each floor of a building or structure, measured from the exterior wall faces of the exterior walls or from the centerline of walls separating two buildings.

- As defined above, GFA is deemed to include:
 - * The floor area of atriums - which are only counted once;
 - * Stairwells at each floor level;
 - * Storage and equipment spaces;
 - * Any covered space enclosed by walls on 3 or more sides and having a headroom of 2.1 meters or more;
 - * Half of the floor area of any floor split by the base reference plane (the imaginary plane passing through the lowest point of the plot perimeter and the highest, oriented along the horizontal axis);
 - * Covered balconies enclosed on three sides;
 - * Floor area devoted to accessory uses;
 - * Habitable enclosed area on a rooftop such as a penthouse dwelling unit, community room, or similar enclosed space used by residents, customers, or employees;
 - * All below grade habitable space, and
 - * All above grade (not at-grade) parking structures.
- GFA does not include:
 - * Any space permanently open to the sky;
 - * Projecting portions of balconies;
 - * Below grade parking, loading, and access;

- * Elevated public walkway/sky-bridge connecting two areas permanently accessible to the public;
- * Covered rooftop terraces and rooftop equipment enclosures to a maximum of 25% of the floor area of the roof level, and
- * Uncovered rooftop terraces and rooftop equipment enclosures.

Height. The vertical distance measured in meters or stories from ground level. Ground level is measured at (a) the highest elevation of the highest adjacent public sidewalk or street curb elevation if no portion of the exterior or walls of a building (the building “footprint”) is not more than two meters from the right-of-way or (b) from the base reference plane to the highest occupied point.

Illegal Use. Any use of land or building that does not have the currently required permits and was originally constructed and/or established without permits required for the use at the time it was brought into existence.

Loading Area. An area located on a site that is for the temporary parking of commercial vehicles for the purposes of loading and unloading.

Non-conforming Use and Development:

- **Non-conforming Use.** A building or use that does not conform to one or more of the provisions of the applicable regulations.
- **Lawful Existing Non-conforming Use.** A use or building that was lawfully in existence prior to new or changed regulations applying in respect of the use that does not conform to the changed provisions.

Plot Coverage (Building Coverage). That portion of a plot or building site that is occupied by any building or structure, regardless of whether said building or structure is intended for human occupancy, typically expressed as a percentage of occupied footprint area to total plot area.

Road Reserve. The public right of way corridor extending in width from plot boundary to the opposite plot boundary, containing the vehicle carriageway, utility network lines, road verges, sidewalks and ‘frontage zones’ along plot frontages.

Setback. The distance between a specified object, such as a building and another point. Setbacks are usually measured from plot lines to a specified object. Unless otherwise

indicated, an unspecified setback refers to a building setback.

Sign-Related Terms:

- **2D Letter Sign.** A sign comprised of 2 dimensional sign elements. It may or may not be attached to a background plate/mounting board.
- **3D Letter Sign.** A sign comprised of 3 dimensional sign elements. It may or may not be attached to a background plate/mounting board.
- **Address Sign.** Building address (Plot ID) details installed by the ADM, typically directly adjacent the front main entry to the plot.
- **Awning or Canopy Sign.** A sign that is painted, printed, or otherwise fixed to an awning, canopy, or other fabric, plastic or structural protective cover mounted to the building façade above a door, entrance, window or outdoor service area.
- **Banner.** A double-faced sign made of flexible material such as fabric or plastic that is mounted perpendicular to a building, typically at the top and bottom edges by brackets or other similar rigid frame.
- **Blade Sign.** A small double-faced sign that is usually internally illuminated and mounted perpendicular to a building typically by the vertical edge by a bracket or other rigid structure.
- **Box Sign.** A sign that is typically rectangular shaped (but can be other geometric shape) with advertising content printed on flex face.
- **Building Name Sign.** A sign containing the name or logo of the building or the principal/anchor tenant of the building placed upon the buildings top story wall or parapet.
- **Directional Sign.** A freestanding sign located at the entrance of an industrial estate designed to direct or guide pedestrian or vehicular traffic to the businesses located within the development, but is otherwise non-advertising in nature.
- **Fascia / Wall Sign.** A sign that is attached parallel to a building or wall, including a boundary wall or fence. This definition includes signs composed entirely of individual sign elements (i.e. 2D or 3D signs without background plate/mounting board).
- **Flag.** A double-faced sign made of flexible material such as fabric or plastic that is mounted on a freestanding flag pole or other rigid structure.
- **For Lease/To Let Sign.** A temporary sign indicating that the premise on which the sign is located is available for lease/rent.
- **Internal Sign.** Signs that are located fully within the building structure and can only be viewed by the occupants and visitors to that building (i.e. not visible from outside the building).
- **Monument Sign.** A permanent, freestanding sign mounted on or supported by a planter, pedestal base or similar ground structure.
- **Pole Sign.** A sign that is permanently supported upon the ground by poles or braces and is not attached to any building or other structure.
- **Principal Tenant.** A single tenant occupying more than 50% of the floor space in a building. This definition includes “Anchor tenant”.
- **Roof Sign.** A sign erected, constructed, attached to and/or maintained upon or above any roof or portion of a roof of any building.
- **Sign.** Any advertising device that is designed, intended, used, or located so as to be visible from outside the building for the purpose of advertising the property, establishment, or enterprise.
- **Sign Area.** The sign area includes all of the sign elements, backboard/mounting plate and frame (if any), but not the structural supporting elements outside the frame (e.g. wall). Where a sign is composed of elements directly applied to a wall or other background (i.e. without a backboard/mounting plate), the sign area shall be calculated as the area of the smallest rectangle that encloses the sign elements only.
- **Sign Elements.** The letters, logo, artwork or symbol used to generate the message of a sign. A sign backboard/mounting plate or similar structure is not included in this definition.
- **Sign Master Plan.** ADM or other regulatory approved drawing or plan that highlights the approve location for signage on a building, development or plot. Reference may be made to minimum/maximum dimensions, projections, illumination methods and duration of display.

- **Sign Zone.** The permissible area of a building, development or plot (private or public) where signs, subject to compliance with sign guidelines, can be lawfully erected and displayed.
- **Street Frontage.** For purposes of this document, street frontage shall mean the single façade of a building abutting a street or containing the primary building entrance. For multi-tenant buildings where each tenant has its own entrance, street frontage shall mean the single façade of each tenant.
- **Temporary Sign.** A sign that is installed, erected, maintained or displayed for a period not exceeding thirty (30) continuous days.
- **Window Sign.** A sign or similar advertising device typically fixed directly to the internal surface of shop front glazing.

Trade License. The purposes of these guidelines, the term Trade License is used in the generic sense, as issued by the Department of Economic Development (DED) and is interchangeable with Commercial License, Industrial License, Agricultural License and Professional License.

Universal Design. Design techniques that accommodate all people, including pedestrians requiring special mobility consideration, pedestrians pushing strollers and delivery carts, and pedestrians that use personal mobility devices.

Universally Accessible. Sufficient in design and space to be utilized or accessed by all persons, including those with disabilities or pushing strollers.

Use. The purpose for which land is or a building is used or arranged, designed, or intended to be used.

5.2 Use Definitions – (Draft) Abu Dhabi Development Code

5.2.1 Commercial Use Categories

- **General Sales & Services.** Include uses that provide a broad range of commercial activities operating out of a permanent structure, and includes the following:
 - * **Automobile/Vehicle Sales, Leasing & Rental.** The use of any building or land for a business involving the

sale, leasing, or rental of new or used motor vehicles and recreational vehicles. Such establishments may include office space, parking lots for the display and storage of vehicles available for sale, and parking areas for customers and employees. Examples include new and used vehicle sales, automobile rentals, and showrooms for new and used vehicle sales. Automobile Rentals. Rental of automobiles, including storage and incidental maintenance. Automobile/Vehicle Sales and Leasing. Sales or leasing of new or used automobiles, motorcycles, trucks, and tractors, including storage and incidental maintenance.

- * **Walk-in Office.** A commercial use that involves transactions between the general public and professional service providers. Walk-in offices are different than regular office in that there is expected to be a higher amount of public traffic. Examples include banks and other financial institutions, real estate offices, travel agencies, and financial services.

- * **Business Services.** Establishments that primarily provide goods and services to other businesses on a fee or contract basis. Examples include printing and copying, blueprint services, advertising and mailing, office equipment rental and leasing, office security, photofinishing, and model building.

- * **Personal Services.** Provision of non-medical services of a personal nature or instructional services or related facilities, including tailors, dry cleaning agents (excluding large-scale bulk cleaning plants), shoe repair shops, and laundries; photography; fine arts; crafts; dance or music studios; driving schools; spas, and single-purpose fitness studios, such as yoga studios or aerobics studios. This classification is intended for small-scale storefront locations and is distinguishable from commercial recreation uses that tend to occupy larger sites and generate more noise. Salon/Spa. A use or facility that provides hair, nail, massage, and other similar services on a walk-in or appointment basis.



- * **Convenience Retail.** Facilities that is generally limited in size and scope that are primarily used for the retail sale to the public of merchandise for on or off-site consumption, including prepackaged food products, sundries, household items and similar consumer items. Examples include Restaurants, Cafes, fast food establishments, pharmacies, video rentals and food & beverage sales (supermarket, grocery store, bakery, and butcher, catering services).
Grocery Store. A store with a maximum gross floor area (GFA) of up to 75 square meters established primarily for the retailing of packed food, packed beverages, day-to-day consumer products such as soaps, shampoo, toothpaste etc. and/or vegetables, and fruits. Such establishments are popularly known as grocery stores, foodstuff establishments, vegetable and fruit markets etc. in Abu Dhabi. Stores attached to petrol stations are not considered to fall under this definition.
Restaurants, Cafes, and Fast Food Establishments. A use in which food and/or beverage preparation and service is provided for individual consumption either on- or off-premise.
Pharmacy. A use in which prescribed or over the counter drugs are dispensed by professional pharmacists.
- * **General Retail.** The retail sale and rental of merchandise not specifically listed under another use classification. This classification includes, but is not limited to, department stores (no food sales), clothing stores, hardware stores, furniture stores, and businesses retailing the following goods: toys, hobby materials, handcrafted items, jewelry, cameras, photographic supplies and services, medical supplies and equipment, electronic equipment, records, sporting goods, kitchen utensils, appliances, antiques, art sales-supplies services, office supplies, bicycles, and new automotive parts and accessories (excluding vehicle service and installation).

5.2.2 Community/Social Services Use Categories

- **Community Centers.** An institution used for athletic, social, civic or recreational purposes, and open to the general public. Activities in a community center may include classes and events sponsored by nonprofit organizations, community programs for the elderly, and other similar activities. Examples include a women's association, women's center/ladies club, men's center, youth center, senior center, day care center/nursery, wedding hall, celebration ground, government club, and club.
- **Cultural Institutions.** Uses that are public or nonprofit institutions within Abu Dhabi Emirate, which engage in the cultural, intellectual, scientific, environmental, educational or artistic enrichment of the people of Abu Dhabi including museums, cultural foundations, cultural centers, performing arts theaters, convention centers, conference centers, auditoriums, galleries, and amphitheaters.
- **Community Social Services.** Uses that are local nonprofit, governmental, or community-based organizations, designed to improve the quality of life for citizens, or to solve particular problems related to their needs. Examples include a handicapped center and orphan's house.
- **Day Care Facility.** A facility that provides care, services, and supervision for less than 24-hours a day to any number of children.
- **Libraries.** A publicly or privately-operated facility used for the housing of a collection of books, magazines, audio and video tapes, or other material for borrowing and use by the general public.
- **Petrol Station.** Any building, or premises used for the dispensing and sale of fuels or oils and accessories for the motor vehicle trade, together with any incidental minor automotive repair or automatic car wash facility.
- **Parking Facilities.** Surface plots and structures offering parking to the public, when such use is not incidental to another activity.
- **Post Office.** A facility of the Abu Dhabi Postal Service that receives and distributes mail. Examples include distribution center, customer service center, and P.O. Box facilities.

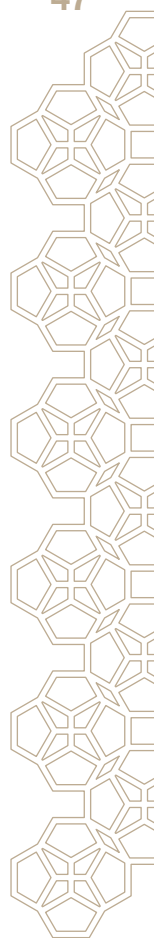
5.2.3 Educational Use Categories

- **School.** Institutions for Instruction. A public school is an institution providing instruction which secures the major part of its funding from the government. A private school is an institution providing instruction which secures the major part of its funding from sources such as tuition and donations, and not from the government. Schools can be male only, female only, or mixed gender. A school should be designed as a community hub., with minimum distance to the residential area , whereas, the school facilities (sport/ theater..etc) can be integrated to serve the community after school hours. All schools building within the emirates of Abu Dhabi are to be licensed and approved by Abu Dhabi Education Council and other related authorities.
- * **Kindergarten.** Sometimes referred to as pre-schools, kindergarten uses are public or private institutions for the education of children not old enough to enter primary schools (ages 4-6).
- * **Primary Cycle I School (C1).** An institution that provides kindergarten Grade 1 through 5th grade education (ages 6-10) and is supported by a public, religious or private organization.
- * **Intermediate Cycle II School (C2).** An institution that provides 6th through 9th grade education (ages 11-14) and is supported by a public, religious or private organization.
- * **Secondary Cycle III School (C3).** An institution that provides 10th through 12th grade education (ages 15-18) and is supported by a public, religious or private organization.
- * **Mixed Level.** Educational institutions comprised of aspects of different cycles Kindergarten, Primary School, Intermediate School, and/or Secondary School.
- **Vocational Training.** An institution which teaches trades, business courses, hairdressing, culinary and similar skills on a post-secondary level.
- **Higher Education.** A school An institution providing higher education beyond secondary schools, which offers advanced degrees in specific disciplines.

- * **College.** A post-secondary educational institution, usually privately owned, that grants associate, bachelor and/or graduate degrees.
- * **University.** An accredited post-secondary level educational institution, operated by a public agency or nonprofit organization, granting associate, baccalaureate and/or graduate degrees. The institution may also carry out research and other activities related to its educational programs.
- **Special Education.** Uses that is associated with providing education to specific type of students. people who are developmentally delayed.

5.2.4 Governance and Institutional Use Categories

- **Governmental Services.** Uses that provide for the everyday operations of the Abu Dhabi Government and may include indoor or outdoor facilities including Government Offices, Courts, and Diplomatic Services/Offices.
- * **Government Offices.** Facilities that house the administrative functions of the government for the Abu Dhabi Emirate. Government office include ministry, directorate, agency, authority, Presidential Dewan, Crown Prince Dewan, council, department, secretariat, quasi-governmental and/ or municipality uses.
- * **Courts.** Uses that is associated with housing the administrative functions of the judicial division of the Abu Dhabi government.
- * **Diplomatic Services/Offices.** Facilities that house the living and administrative functions of a foreign government as a liaison to the UAE. Examples include embassy, consulate, and mission.
- **Safety and Security.**
 - * **Military Facilities.** Uses and facilities associated with the national defense activities of the Abu Dhabi Military. Examples include airbase, air strip, military land base, coast guard facility, and fire field.



- * **Police Facilities.** Uses and facilities associated with the police forces of Abu Dhabi. Examples include police stations, police headquarters, immigration facilities, traffic police facilities, checkpoints, and training facilities.
- * **Civil Defence Facilities.** Uses that provide public safety and emergency response services. They often need to be located in or near the area where the service is provided. Employees are regularly present on-site. Examples include civil defense headquarters, fire stations, training facilities, and emergency operation centers.
- * **Correctional Facilities.** Uses that provide support for the detainment or incarceration of prisoners of the Abu Dhabi Government. Correctional facilities include prisons.

5.2.5 Healthcare Use Categories

- **Clinic.** A facility which is occupied and used for the purpose of providing dental or medical care on an outpatient basis. The term does not include a hospital or a facility which provides for the overnight care or overnight stay of patients. Clinics include general and specialty practices and outpatient surgery centers.
- **Hospitals.** An institution that provides accommodations, facilities and services over a continuous period of twenty-four (24) hours or more, for observation, diagnosis and care of individuals who are suffering from illness, injury, deformity or abnormality or from any condition requiring obstetrical, medical or surgical services, or alcohol or drug detoxification. Hospitals include general and specialty practices.
- **Veterinary Clinics and Hospitals.** A facility that provides medical or surgical treatment for animals or pets, as well as shelter and care during the time of such treatment. Such a facility may, but does not necessarily, include the use of outdoor pens in providing such shelter and care.
- **Medical Offices.** A professional office for the administration of professional medical or dental care, including examinations, laboratory services, screenings and minor outpatient surgical procedures.

- **Blood Banks.** A facility that is used for the collection of human blood and plasma from donors. The term does not include a facility for the provision of medical care or treatment.
- **Ambulance Stations.** Uses, buildings and areas that include a structure or other area set aside for storage of ambulance vehicles, medical equipment, personal protective equipment, and other medical supplies. Most stations are made up of garage bays, parking areas and medical staff room. The station runs over 24 hours.

5.2.6 Industrial Use Categories

- **City Serving Industrial.** A use in which goods that primarily require delivery or pickup by truck are sold, or where service and leasing of large vehicles and boats are conducted. Examples include large vehicle sales, service, and rental, maintenance and repair, construction material sales, printing, warehousing and storage, wholesale distribution, and artist studios/workshops. Sales are retail and/or wholesale, and are made primarily to businesses rather than to individual households, or primarily delivered directly to households without customers visiting the business.
- * **Large Vehicle Sales, Service, and Rental.** A facility or use for the sales, service, and rental of large vehicles such as tractors, boats, semi-trucks, and similarly large vehicles.
- * **Facilities Management Depot.** A facility or area for contracting services such as building repair and maintenance, the installation of plumbing, electrical, air conditioning and heating equipment, janitorial services, and exterminating services.
- * **Maintenance and Repair.** A facility used for the maintenance and repair of vehicles, machinery and equipment: Examples include automobile/vehicle service and repair, car wash facility, mechanical/industrial item service & repair, household item service & repair, janitorial service, and building maintenance service. Automobile/Vehicle Service and Repair. Repair of automobiles, trucks, and motorcycles, including the sale, installation, and servicing of related equipment and parts. This classification

includes auto repair shops, automobile washing, body and fender shops, transmission shops, wheel and brake shops, and auto glass services. Dry-cleaning - Chemical based cleaning services for items such as clothing and linens on a commercial basis, where the chemicals and plant operation are located on-site. Commercial Laundry – the commercial laundering of such items as clothes and linens where carried out on-site.

* **Construction Material Sales.**

Sales, rental, and related services of plumbing, electrical, heating, air conditioning, building supplies, lumber, tools and equipment, plants and garden products, swimming pools, spas and hot tubs, lighting fixtures, kitchen and bathroom fixtures and cabinets, paint, carpeting, floor coverings, or wallpaper. Sales and services are primarily for customers in the building trades, construction businesses, and/or industrial uses.

* **Printing.** An establishment engaged in printing by letterpress, lithography, gravure, screen, offset or other common process including electrostatic (xerographic) copying and other services; and establishments serving the printing trade such as bookbinding, typesetting, engraving, photoengraving and electrotyping. Uses may include establishments that publish newspapers, books and periodicals.

* **Warehousing & Storage.** A use in which space is provided in an enclosed structure for the storage of goods produced off-site, for distribution or transfer to another location. Personal Storage. Uses that provide separate storage areas for individual or business uses. The storage areas are designed to allow private access by the tenant for storing or removing personal property. Examples include facilities that provide individual storage areas for rent. Commercial/Wholesale Storage. Uses that provide large storage areas for commercial and wholesale businesses, indoor or outdoor, that are designed to be secure, and are not usually open to the general public. Vehicle/Boat Storage. Uses that provide storage areas for automobiles, boats, recreational vehicles and other

similar items usually within an outdoor setting.

* **Wholesale Distribution.** A use that includes facilities for the storage, distribution, and sale of goods to other retailers and the general public.

* **Artist Studios/Workshops.** Uses where custom or craft fabrication and construction by artists takes place. Studios may include areas for the sale of art as an incidental use to the production space.

• **General Industrial.** Uses that process, manufacture and/or compound materials or products predominately from raw materials. Industrial uses may include the storage of large volumes of highly flammable, or toxic materials, and generally require large land areas. The manufacturing may involve outdoor operations as part of their manufacturing process.

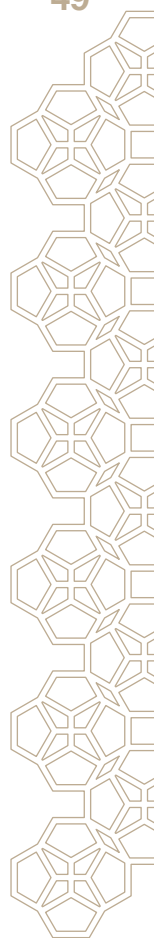
* **Contractor's Yard.** A facility for the storage and maintenance of contractor's supplies and operational equipment. Offices are considered an accessory use.

* **General Manufacturing and Processing.** A use in which articles are produced by hand or by machinery, from raw or prepared materials, by giving to those materials new forms, qualities, properties, or combinations, in a process characterized by the repetitive production of items made to the same or similar specifications. Items produced are generally sold directly to other businesses, or are sold at wholesale.

* **Metal Fabrication and Engineering.** A use that involves the design and processing of metals to create new products that are used individually or together with other products.

* **Parts Recovery and Metal Scraping.** The end of life wrecking for parts and metal of vehicles, appliances and machinery etc.

* **Food Packaging and Processing.** A use that involves the processing and packaging of food for human consumption in its final form. Typically, the food is distributed to retailers or wholesalers for resale on or off the premises.



- * **Food & Beverage Production/ Processing.** Uses that include facilities for the preparation, processing, canning or packaging of food products where all processing is completely enclosed and there are no outside impacts. These processing facilities may include areas for incidental retail sales or restaurants that serve the products processed on site.
- * **Research and Development.** Establishments primarily engaged in the research, development, and controlled production of high-technology electronic, industrial or scientific products or commodities for sale. This classification includes biotechnology firms and commercial laboratories.
- * **Aquaculture.** The intensive production and breeding of live marine animals including fish, crustaceans and shell fish in formal holding tanks or netted areas.
- **Heavy Industrial.** Uses that manufacture, process, and assemble semi-finished or finished products from raw materials. A substantial portion of activities and storage may be undertaken outdoors with resulting noise, glare vibration, and other potentially adverse impacts.
- * **Noxious/Hazardous Industries.** Uses that process, manufacture, store, or conduct other activities that create products or byproducts which have the potential to be dangerous, extremely obnoxious, or cause substantial environmental impacts on or beyond the boundaries of the property on which the activity or use is conducted.
- * **Intense Manufacturing and Processing.** A use that includes facilities for the general mass producing of goods, usually for sale to wholesalers or other industrial or manufacturing uses. These types of uses usually demand high amounts of energy and give off heavy emissions and noise.
- * **Minerals and Chemicals Processing/ Refining.** Uses that are associated with the processing refining and manufacture of inanimate constituents of the earth in a solid, liquid or gaseous state which, when extracted

from the earth, is usable in its natural form or is capable of conversion into a usable form as a metal, metallic compound, chemical, energy source or as a raw material for manufacturing or construction material.

- * **Petroleum Industries.** Uses that is typically associated with the retrieval, refinement, and distribution of petroleum products.
- **Water Dependent Industrial .** A use which can only exist when the interface with a body of water or waterway is necessary for the use.
- * **Ship Building.** Facilities associated with the construction of sea-going vessels.
- * **Dry Dock.** A specialized facility used for the repair of boats where the vessel is removed from the water or placed within a lock and the water is removed leaving the vessel in the dry to facilitate repairs.
- * **Marine Sales and Service.** Establishments engaged in the sale and service of marine equipment, boats and recreational watercraft, corresponding trailers, and accessory parts and supplies. Accessory uses including, but not limited to, towing or minor vessel repair may also be provided.

5.2.7 Infrastructure Use Categories

- **Transportation.** A use that supports or provides a means of transporting people and/or goods from one location to another.
- * **Airport/Airport Facilities.** Any area of land designated and set aside for the landing and taking off of any aircraft together with related refueling and terminal facilities. Examples include facilities for passengers, cargo and industrial, military, royal, and private.
- * **Transport Facilities (land based).** A public right-of-way used for the purpose of transportation. Includes corridors (e.g. roadways, pedestrian sidewalks, bikeways, and tram/metro/ rail corridors), taxi stands, bus stop, bus terminal, transit stations and depot (tram/metro/rail), and control center.

Taxi Stand. A designated location within the public realm for taxis to pick up and drop off passengers.

Bus Stop. A designated location within the public realm for buses to pick up and drop off passengers.

Bus Terminal. A transportation facility where passengers embark on or disembark from buses that provides transportation to passengers for hire. Bus terminals typically include some or all of the following: ticket counters, waiting areas, management offices, baggage handling facilities, restroom facilities, shops and restaurants as accessory uses.

Transit Station. A transit facility whether at grade, above grade or below grade that provides pedestrian access to transit vehicles and facilitates transfer from one mode to other modes of transportation. A transit station may include mechanical devices such as elevators and escalators to move passengers and may also include such passenger amenities as informational signage, seating, weather protection, fountains, artwork or concessions.

Train Depot. A facility where trains load and unload passengers and freight.

- * **Transport Facilities (water based).** A use or activity which can be carried out only on, in, or adjacent water areas because the use requires access to the water body for water-borne transportation such as a harbor, port, marina, ferry station, jetty, water taxi stand, wharf, or other similar use.

Harbor/Port. A sheltered location where ships take on and offload cargo and passengers.

Marina. Is a sheltered harbor, jetty, group of pontoons, or piers where boats and yachts are kept in the water and where services geared to the needs of recreational boating, including berthing, mooring, storage, etc. are served. Marinas also include floating structures or dock space within artificially constructed facilities protected by breakwater or naturally protected regions.

Ferry Station. A transportation facility where passengers embark on or disembark from ferries that provides transportation to passengers for hire by sea. Ferry stations typically include some or all of the following: ticket counters, waiting areas, management offices, baggage handling facilities, restroom facilities, shops and restaurants. A ferry station use on the waterfront may include moorage for cruise ships and/or vessels engaged in transporting passengers for hire.

Jetty. A structure extending into the sea, lake or river to influence the current tide or to protect a harbor or beach to as to facilitate vessel moorings.

Water Taxi Stand. A designated location where small vessels, operated as taxis, can pick up and drop off passengers.

Commercial Port Facility. Any structure used in connection with the carrying of goods or persons by water from one port to another for business or commercial purposes and which has a direct structural connection between the foreshore and the waterway.

Wharf. Structure built along the shore where ships may berth to load or unload cargo, or for fitting and refitting ships.

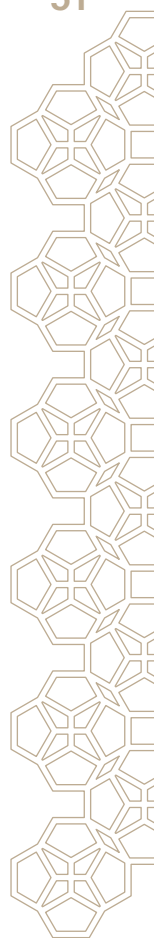
- Utilities
 - * **Potable Water.** A use that conveys water that has been treated or processed for consumption and daily use by humans. Potable water facilities include, but are not limited to the following uses:

Desalination Plant. A utility where water is drawn from the Arabian Gulf, and processed for potable water.

Water Pump Station. A utility use which involves the pumping and conveyance of potable water through a system of pipes to the citizens of Abu Dhabi.

Reservoir. Utility where potable water is stored prior to distribution through a public system of pipes to the citizens of Abu Dhabi.

Elevated Water Tank. A water reservoir that is raised on stilts or a platform for the purposes of distributing water by



gravity through a system of pipes to the citizens of Abu Dhabi.

- * **Power.** Uses for the conveyance and transmission of electricity. Power related utility uses include power stations, primary stations, substations, and transformers.

Power Station. A utility use in which power in the form of electricity is produced by wind, solar or water forces or the combustion of materials such as coal, oil, or gas and/or in which steam is produced by combustion or electricity.

Primary Substation. A facility for transforming electricity from primary distribution networks to secondary distribution networks. **Secondary Substation.** A facility for transforming electricity from secondary distribution networks to end users.

- **Sewerage.**

- * The connection of premises to the Sewerage System and the transportation of wastewater from premises or customers to the Wastewater Treatment System

Sewerage System – a system consisting, wholly or mainly, of sewerage pipes, pumping stations, tankers and other plant and equipment owned or operated by a Collection Licensee and used for the transportation of Wastewater from premises or customers to a Wastewater Treatment System.

Trade Effluent: means any wastewater discharged to a Sewerage System which is produced in the course of any industrial, commercial, agricultural, medical, scientific or trade activity, but does not include domestic wastewater;

Wastewater pre-treatment facility: It is any device, system or equipment that can physically, biologically or chemically change the nature or composition of Wastewater within Trade Premises before discharge to a Sewerage System.

Sewage: The waste matter and wastewater from toilet, sink, or shower

that is conveyed by sewerage network.

Wastewater Treatment: means the reception of wastewater from the Sewerage System, the treatment of such wastewater and delivery of the resulting products and by-products to the Disposal System;

- * **Waste Management.** A use in which solid waste other than recyclable materials is collected, buried, stored, processed or incinerated. Waste management related utility uses include waste disposal facilities, recycling facilities, transfer stations, landfills, and vacuums.

Waste Disposal Facility. A use that involves a location where solid waste is disposed of by burial, processing, or incineration.

Recycling Facility. A use that involves a location where recyclables are collected, sorted, stored, and/or processed for future reuse. A facility that uses recyclable materials to manufacture an end product that does not require further processing is a manufacturing facility, not a recycling facility.

Solid Waste Transfer Station. A use in which discarded materials are collected for transfer to another location for disposal by compaction, shredding or separating.

Landfill. A use which includes the disposal of solid waste by covering and burying it within the earth for eventual decomposition.

- * **Recycled Water:** treated liquid effluent produced by a wastewater treatment plant that is suitable for reuse or dispose to the natural environment.
- * **Stormwater.** A utility that captures and conveys water generated by storms to alternative locations in order to minimize flooding and property damage. Stormwater related utility uses include surface pump stations, reservoirs, elevated water tanks, surface water outfall, drainage, and mainlines.
- * **Natural Gas.** A utility whose purpose is to provide natural gas for cooking,

heating, or other processes that require the provision of heat by the combustion of gas. Natural gas related utility uses include natural gas stations, reservoirs, meter rooms, cathodic protection chambers, distribution lines, and transmission lines.

- * **Cooling.** A utility that provides cool air or water. Cooling related utility uses include cooling stations, reservoirs, meter rooms, and distribution lines.
- * **Communication.** Utilities used for the broadcasting, and or recording of radio and television frequencies such as satellite stations, GSM Towers, TV Stations, Radio Stations, and Navigation Stations. Communication Utilities include satellite stations, telephone exchanges, GSM Towers, mono transmission poles, fiber optic rooms, TV stations, radio stations, navigation stations, post portals, control centers, fiber optic lines, intelligent traffic systems, and telephone lines.
- * **Oil.** A facility or system which includes tanks, piping or equipment (or any combination thereof) and is used or intended to be used for the storage, dispensing or other utilization of petroleum products. Oil utilities include such uses as pumping stations, control centers, oil wells, oil rigs, storage tanks, processing facilities, crude oil lines, and treated oil lines.

5.2.8 Recreation Use Categories

- **Indoor Recreation.** This classification includes indoor facilities such as gymnasiums, fitness centers, tennis clubs, sports clubs (male, female, or mixed), swimming pools, and indoor shooting ranges. This classification may include restaurants, snack bars, and other incidental food and beverage services to patrons.
- **Outdoor Recreation.** This classification includes outdoor facilities including play grounds, shooting ranges, zoos, race tracks (motorsport, horse or camel), country clubs, golf courses, resorts, golf driving ranges, riding arenas, yacht clubs/marinas, boat and fishing facilities (including boat rental/tour operations, marina/recreational boat storage,

marine services, and fishing trips), sports stadiums, boy scout camps, campgrounds, and theme parks/water parks. This classification may include restaurants, snack bars, and other incidental food and beverage services to patrons. Does not include incidental residential uses.

- * **Yacht Club.** A building or place associated with marinas and boating activities including associated facilities such as meeting spaces, restaurants, café, gym, changing rooms, retail, administration services, boat storage, minor maintenance, and parking.

5.2.9 Religious Use Categories

- **Religious Facilities.** Uses that support the religious practices and beliefs of organized religions, and include:
 - * **Eid Prayer Ground.** A generally large open area used for religious purposes.
 - * **Mosque.** A location where Muslim worship services, education and fellowship activities and programs occur. Mosques may include the use of the building and premises for other related activities, such as child care, formal educational programs, preschool classes and recreational activities, but only when those activities are ancillary to the Mosque. Examples include Friday/Large/Jami Mosque, Local Small Mosque.
 - * **Cemetery.** A place dedicated and used or intended to be used as a burial ground. Includes Islamic and other non-Islamic burial grounds.
 - * **Church.** A location where religious worship services, religious education and fellowship activities and programs of a religious organization occur. Churches may include the use of the building and premises for other related activities, such as child care, formal educational programs, preschool classes and recreational activities, but only when those activities are ancillary to the religious use.



5.2.10 Residential Use Categories

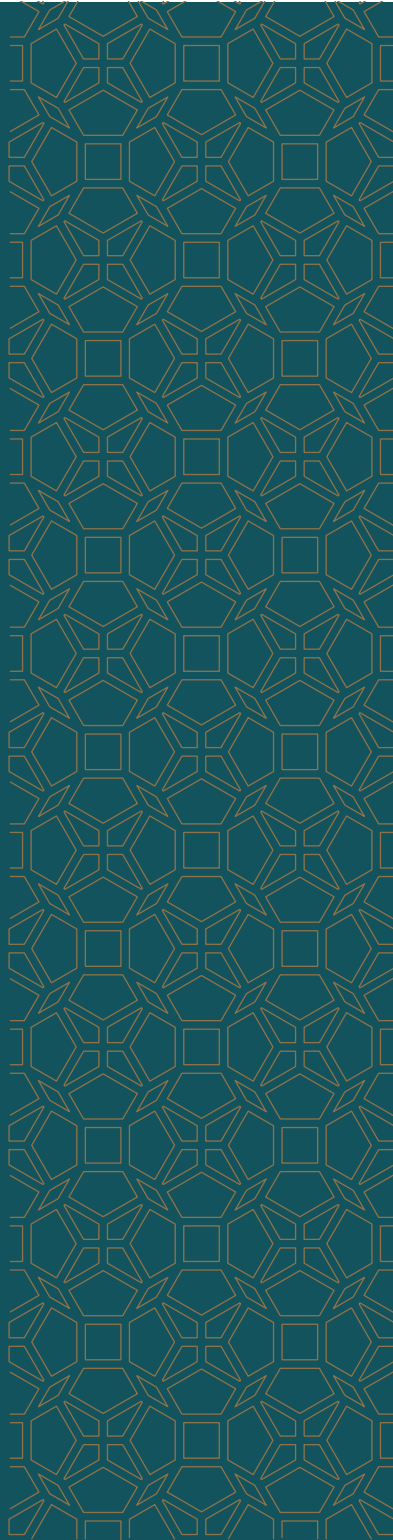
- **Guest Worker Housing.** Facilities provided for temporary housing of a migrant or temporary work force, and includes permanent or temporary housing for individuals housed on large construction projects.
- * **Permanent Guest Worker Housing.** Guest worker housing which is used by guest workers.
- * **Temporary Guest Worker Housing.** Guest worker housing which is dismantled or removed after a temporary use. Example includes a temporary guest worker (labor) camp.

Appendix

QCC	Abu Dhabi Quality and Conformity
ISGL	Guideline for Infrastructure Services Standards
DCRs	Development Control Regulations
DED	Department of Economic Development
NOCs	No Objection Certificate
EAD	Environment Abu Dhabi
RSB	Regulations Supervision Bureau
DMAT	Department of Municipal Affairs & Transport
CWM	Center of Waste Management
SRA	Sector Regulatory Authority
PRDM	Public Realm Design Manual

ADM	Abu Dhabi Municipality
UPC	Urban Planning Council
GHQ	General Headquarter
PRFD	Park & Recreation Facilities Division
PRS	Pearl Rating System
ADWEA	Abu Dhabi Water & Electricity Authority
FANR	Federal Authority for Nuclear Regulation
OSHAD	Occupational safety and Health system
BMPs	Best Management Practices
ADFICA	Abu Dhabi Food Control Authority
BPD	Building Permit Directorate / ADM
IBC	International Building Code
DRS	Development Review Stream
CDP	Community Development Partner (Building Permit Licensing Program)
ACD	Admiralty Chart Datum
GFA	Gross Floor Area





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