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19 REGULATORY REQUIREMENTS

19.1 GENERAL

19.1.1 Scope

- 1 This part specifies the requirements for co-ordination, co-operation, liaison and compliance with the following authorities, utility and infrastructure owners:
 - Any Authorities having Municipal jurisdiction
 - Ashghal (Public Works Authority)
 - Civil Aviation Authority
 - Communication Regulatory Authority (CRA)
 - Kahramaa (Qatar General Electricity and Water Corporation)
 - Ministry of Awqaf and Islamic Affairs
 - Ministry of Interior (Civil Defence Department, Traffic Police, Department of Immigration, Security Systems Department, etc.)
 - Ministry of Environment and Climate Change [MOECC]Ministry of Municipality
 - Ooredoo
 - Qatar Petroleum
 - Qatar Rail
 - Qatar National Broadband Network (QNBN)
 - Vodafone Qatar
- 2 The above shall collectively be known as "Department" in this Part.
- 3 Related Sections and Parts are as follows:
 - This Section
 - Part 01 General
 - Part 17 Project Co-ordination
- 4 Where any requirement(s) conflict with any other requirement(s) of Authorities or Departments in the State of Qatar, the most stringent requirement(s) shall prevail.

19.2 NOTICES

19.2.1 General

- 1 All notices required to be given by the Contractor to the Department shall be in writing and delivered by hand. The Contractor shall furnish the Engineer with a copy of all notices issued by the Contractor.

19.2.2 Notice of Intent

- 1 The Contractor shall give at least seven days' notice to the Department of the date upon which it is intended to operate plant or equipment or carry out any work for which permission has been given in writing by the Department: such operations or work shall only be carried out in the presence a representative of the Department unless written confirmation shall have been obtained that this unnecessary.

19.3 MISCELLANEOUS

19.3.1 Work required to be carried out by the Department

- 1 If the Department requires work to be carried out on its installations during the execution of the Works, the Contractor shall provide all facilities to the Department's contractor or workmen. The Contractor shall co-ordinate the work of the Department and his own activities, and when necessary shall amend his programme to suit the requirements of the Department and shall keep the Engineer informed of all arrangements made.

19.3.2 Regulations of Road Openings

- 1 For Works including road openings, the Contractor shall comply with all relevant provisions of the following Parts of this Section or direction of the Engineer.

Part 16..... Traffic Diversions.

Part 21..... Final Inspection and Handover

19.4 PROVISION FOR PERSONS WITH DISABILITIES

19.4.1 Scope

- 1 The aim of this provision is to set out the fundamental design and construction requirements and guidelines for making buildings specified in Table 1 below accessible to persons with disabilities.

Table 1: Accessibility for Persons with Disabilities

No	Types of buildings	Accessible areas
1	Residential buildings:	
	(a) 3-storeys and below	All communal areas and facilities at ground floor.
	(b) 4-storeys and above	All communal areas and facilities.
2	Office buildings	All areas intended for access by employees or public.
3	Shophouses	The ground floor for non-residential use shall be accessible to employees or public.
4	Shopping complexes and multipurpose complexes	All areas intended for access by employees or public.
5	Hotels and boarding houses	All areas intended for access by employees or public.
6	Religious buildings and Mosques	All areas intended for access by worshippers or public.
7	Places of public resort	All areas intended for access by employees or public.

No	Types of buildings	Accessible areas
8	Cinemas, theatres, concert halls, stadia or other places of public resort where permanent seating arrangement is provided	All areas intended for access by employees or public.
9	Schools, colleges, universities or institutions of learning	All areas intended for access by employees or public.
10	Hostels, halls of residence or dormitories	All areas intended for access by staff, students or public.
11	Sports complexes and public swimming pools	All areas intended for public access.
12	Restaurants and eating establishments	All areas intended for access by employees or public.
13	Markets and hawker or food centres	All areas intended for public access.
14	Hospitals, clinics, dispensaries, nursing homes, homes for the aged and welfare homes	All areas intended for access by staff, patients, inmates or public.
15	Factories, workshops and industrial buildings 4-storeys and above	All areas intended for access by employees or public.
16	Transport stations, interchanges, passenger terminals and administration buildings in depots	All areas intended for access by employees or public.
17	Vehicle parks (surface parking or vehicle parking buildings)	Prescribed areas.

- 2 The Owner is recommended to follow and adopt suitable and relevant international barrier free access guidelines which will allow persons with disabilities to enter, move around and leave an establishment without hindrances.
- 3 Universal Design is a continuous process of innovation targeted at improving usability for everyone. It is also known that Universal Design is the design of products and environment to be usable by all people, to the greatest extent possible, without the need for adaptation or specialised design. It is highly recommended that the Owner adopt Universal Design until the authority (MM) approve reference.

19.5 THERMAL COMFORT

- 1 The heating, ventilation and air conditioning (HVAC) system must be capable of providing the following range of conditions for 95% of the year

	Lower Limit	Upper Limit
Dry bulb temperature	DB: 22.5 °C	DB: 25.5 °C
Relative humidity	RH: 30% (min)	RH: 60% (max)

- 2 For occupant comfort, normal occupied spaces should have a terminal air velocity between (0.2-0.3) m/s.

19.6 THERMAL INSULATION

- 1 As specified in section 15

19.7 ACOUSTICAL CONTROL

- 1 As specified in section 15

19.8 WASTE MANAGEMENT

19.8.1 Construction and Demolition Waste

- 1 For all new buildings unless or until specified otherwise, at least fifty percent (50%) by volume or weight of waste material generated during the construction and/ or demolition of buildings must be diverted from disposal in landfills. Diverted materials must be recycled or reused.
- 2 This should be done through one or more of the following three paths:
 - (a) Concrete and Asphalt waste must be diverted to Construction Waste Treatment Plant.
 - (b) Excavated soil, land-clearing debris and hazardous waste must be diverted to places designated by the concerned Department of MM.
 - (c) Other recyclable materials such as woods plastics and metals can be used at site or diverted to a Recycling Facility.
- 3 The following materials are exempt from the calculation of the percentage of waste diverted from disposal at landfill facilities:
 - (a) Excavated soil and land-clearing debris; and
 - (b) Hazardous waste

19.8.2 Bulk Waste Collection

- 1 For all new residential apartment buildings, an area must be provided for residents to place items of bulky waste such as furniture, electrical appliances and sanitary ware. The area provided must cover a space of approximately ten square meters (10 m^2). The area does not have to be designated solely for the purpose of bulky waste collection (eg: set aside to the car park).
- 2 The bulky waste storage area must be reachable, must not restrict access to the building and comply with safety and fire requirement.

19.8.3 Waste Storage

- 1 For all new villas and apartments (single family units), domestic kitchen must be provided with a minimum storage facility of two ten (10) liter waste receptacles clearly labeled for 'recyclable' and 'non-recyclable'. The storage facility should be in a proper place within the kitchen.

19.8.4 Waste Collection

- 1 All new buildings which require chute for general waste, in accordance with Qatar MM Regulations, one of the following must be provided:
 - (a) A second chute must be provided to handle recyclable material and discharge into a separate receptacle within the waste management area; or

- (b) The garbage room on each floor must have a minimum floor area of two square meters (2 m^2) where recyclable waste can be stored until collected daily by the building operator. Waste must be transported through designated medium (chute, service elevator etc.) into the waste management area.
- 2 All new buildings which does not require chute for general waste, in accordance with Ministry of Municipality Regulations, the garbage room on each floor must have a minimum floor area of three square meters (3 m^2) where non-recyclable and recyclable waste can be stored until collected daily by the building operator. Waste must be transported in a service lift discharge into a designated receptacle within the waste management.

19.8.5 Recyclable Waste Management Facilities:

- 1 For all new buildings other than villas, a sorting and storage facility for recyclable materials must be provided.
- 2 This facility must be easily accessible and comply with the requirements of the location, access and specifications of general waste areas in accordance with Qatar Municipality Building Regulations.
- 3 The sorting and storage facility may be part of the general waste management facility or a separate facility.
- (a) Recycled waste facility incorporated into the general waste collection:
The size of the room must be increased by 10% and not less than 5 m^2 , to allow additional room to sort and store the recyclable waste.
- (b) Recycled waste facility separated from the general waste collection:
The recycled waste facility must be sized as a percentage from the total Built Up Area (BUA) of the building in accordance with Table 2.

Where the Total Built Up Area (BUA) of the building falls between the figures outlined in the Table, linear interpolation must be used to determine an appropriate percentage area for the recyclable storage space.

Table 2: Sizing Requirements for Storage of Recyclables

Built Up Area (BUA)	Minimum Space for Storage of Recyclables
Less than 500 m^2	7.5m^2
500 m^2	1.5% of BUA
$1,000 \text{ m}^2$	0.8% of BUA
$5,000 \text{ m}^2$	0.35% of BUA
$10,000 \text{ m}^2$ or greater	0.25% of BUA

19.9 BUILDING FAÇADE/ EXTERNAL CLADDING MATERIAL

19.9.1 Certification and approval

- 1 External Cladding material must be tested by an approved 3rd party test laboratory. The manufacturer shall have certified ISO 9001 compliant QMS.

- 2 External Cladding materials that are combustible must be submitted to the Qatar Civil Defense for review and approval. Submissions shall include copies of relevant test reports and details on the proposed fixings used to secure the material to the building. On approval, a Qatar Civil Defense certificate for the External Cladding material will be issued to the submitting party.

19.9.2 Material properties

- 1 External Cladding Material (ECM) fixed to buildings shall be non-combustible and shall be composed of environmentally friendly materials and substances.
- 2 ECM not complying with 19.8.2.1 above must have the following fire propagation and flame spread properties.
- (a) When tested in accordance with BS 476 Part 6:
 - (i) Fire Propagation index, no greater than 4.0
 - (ii) any sub index must not be greater than 2.0, and
 - (b) When tested in accordance with BS 476 Part 7:
 - (i) flame spread after 10 minutes must be less than 25 mm
- 3 Alternative test methods and Standards such as AS, BSI and ISO may be used to verify compliance in test reports provided the method of testing is demonstrated to be equivalent and verifies an equal or better fire performance result to those nominated in 19.8.2.2 above.
- 4 Details of the ECM's approval and listings, its method of fixing and the extent of usage shall be included in the proposed Building Plans fire safety submission for compliance verification.

19.10 EXTERNAL FACADE CLEANING AND MAINTENANCE FOR HIGH RISE BUILDINGS

19.10.1 General

- 1 Any building measuring 28 meters or above in height is classified as a high rise building as per Qatar Civil Defense Department. This section is intended to provide a framework for the cleaning and maintenance of the façade for high rise buildings. The façade will require both cleaning and maintenance to achieve its anticipated life and desired purpose. Failure to undertake this work can considerably reduce the life of materials, components and finishes. The provision of correct documentation and instruction at the completion of construction will permit the building owner to gain the best achievable performance from the façade.

19.10.2 Maintenance Manual

- 1 A maintenance manual should be produced for the completed works. The number and specific requirements for the manual should be specified at tender stage. The manual should be developed in parallel with the design and should include, but not be limited to, the following information:
- (a) The name, address and telephone number of each firm and/ or sub-contractor involved in the supply of materials, components, assemblies and finishes.
 - (b) A clear and concise description of the construction used to form the various areas of façade on the particular project.

- (c) Copies of material, component and finishes certification and test reports as required by the Specifier.
- (d) A method statement showing the means of access to all parts of the wall and safe loadings.
- (e) A method statement covering the procedures for replacement of damaged or otherwise defective materials or components, and materials and components that have a design life less than the design of the façade and will therefore require replacement during the life of the façade.
- (f) Recommendations for routine maintenance, cleaning, suitable cleaning agents and any lubrication/adjustments to working parts.
- (g) A full set of construction drawings updated to include any changes made up to the time of completion.
- (h) The terms and conditions of any guarantees.

19.10.3 Access of Cleaning and Maintenance

- 1 The Building Owner/ Specifier should provide a means of access which enables all parts of the façade to be safely reached for the purpose of cleaning, inspection and maintenance. The intended method of access should be established at the design stage and the relevant loads catered for. Particular care should be made to define all possible imposed loads including impact loads and uplift forces on projections by snagging.
- 2 The access system should comply with the appropriate British Standards (BS 6037, BS 5974). Specifiers should also make themselves aware of any statutory obligations related to Occupational Health and Safety at Work.
- 3 The access system should not be capable of imparting forces upon the cladding system exceeding those agreed at the design stage. It is important that the various parties agree the design parameters early in the design process.
- 4 The access equipment should be maintained, examined periodically by a competent person and certified in accordance with statutory regulations.

19.10.4 Cleaning

- 1 The supplier of the façade should provide instruction for the proper cleaning and routine maintenance of the façade.
- 2 Cleaning of the façade should be undertaken by trained personnel working to an agreed procedure, based upon the façade contractor's recommendations, at a frequency not less than the recommended intervals.

19.10.5 Inspection

- 1 The façade should be inspected at regular intervals to an agreed method. The façade contractor, in consultation with the project team, should suggest methods and procedures to be utilized. The purpose of this inspection includes, but is not necessarily limited to, the following:
 - (a) To review the effectiveness of cleaning methods employed.

- (b) To monitor the performance of the materials and components of the façade system against their anticipated life.
 - (c) Inspecting for damage or failure of any part of the system.
 - (d) Checking on the effectiveness of maintenance or remedial work.
- 2 It is recommended that a detailed inspection plan is drawn up at the time of construction in consultation between the design and construction teams. The inspection plan should include procedures and recording methods to enable a systematic monitoring of the condition of the Curtain wall and assist in the prediction of the need for preventative maintenance or replacement of component parts.
- 3 Inspections should be carried out by suitably experienced persons to the specific procedures detailed in the inspection plan. The results of these inspections should be compared with previous inspections where appropriate. The building owner should ensure these results are available for reference.

19.11 PROVISION OF ABLUTION FACILITIES IN PUBLIC BUILDINGS

- 1 The public buildings, for the purpose of provision of Ablution facilities are considered to be Offices, Shopping Centres, Malls and Hypermarkets.
- 2 The occupant load (population) for each building type shall be calculated as per guidelines of Qatar Civil Defense Department.
- 3 Separate Ablution facilities are to be provided for Men and Women close to the Prayer Area.
- 4 The number of Ablution stalls shall be calculated as per Table 3 below.

Table 3: Provision of Ablution Facility

Facility Type	Occupant Population	No. of Ablution Stalls
Office Building	Up to 50	02
	For 51 and above	01 For each additional 50
Shopping Mall	Up to 200	02
	For 201 and above	01 For each additional 200
Shopping Centre Hypermarket	Up to 200	02
	201- 2000 people	01 For each additional 400
	For 2001 and above	01 For each additional 1000

19.12 ECOLOGY REQUIREMENTS:

19.12.1 Landscaping:

- 1 Surrounding Landscape at least one palm's dates tree for each 250m² or fraction of the site (land) area

- 2 A minimum 5% of the site area shall be planted, The green area would be determined as follow:
- (a) 10 m² for each palm's dates tree شجرة نخيل مثمر;
 - (b) 7 m² for each tree of Rhamnus cathrtica; or Terminalia Catappa Almond شجرة اللوز;
 - (c) 5 m² for each Citrus limon (Omani lime) Lemon , شجرة الليمون or Carica papaya شجرة الجوافة (الباباز) or Psidium guajava شجرة البابايا;
 - (d) 3 m² for any other fruitful tree
 - (e) 1 m² for any other non-fruitful trees
 - (f) 0.25 m² for each flower tree
 - (g) Any planted area with grass will be measured to be not more than 1% of the site area
- 3 Green roof about 10 % of roof area would be preferable: and would be planted in easily maintained containers with: Flowers and Roses, herbs, Ramblers, Ornamentals, Fruits bushes and Vegetables.
- 4 Vegetation shall be provide with water-efficient irrigation system (such as drip irrigation system,...). Where feasible, recycle and reuse irrigation water.

19.12.2 Rainwater Runoff :

- 1 New building shall be provided with roof drainage. Proper quantity of rainwater from roof drainage would be collected in a proper storage for reuse.

19.12.3 Heat Island Effect:

- 1 For all new buildings:
- (a) at least 75% of the externally painted walls shall be painted with light colours, and have a minimum Light Reflective Value of 45.
 - (b) Southern and western glazed façades and glazed areas, excluding glazed areas with back insulated panels, shall be treated environmentally.
- 2 For all new buildings with floor area larger than 5000 m² ;
- (a) All opaque external roofing surfaces shall comply with a minimum Roof Solar Reflective Index (SRI) value of 70 for a minimum of 75% of the roof area
 - (b) 50% of the hardscape of the development must demonstrate a Solar Reflective Index (SRI) of at least 29, or be shaded by vegetation or be shaded by materials with an SRI of at least 70, or combination.
 - (c) All pedestrian linkages within the plot area shall be shaded by vegetation or be shaded by materials with a Solar Reflective Index (SRI) of at least 70, or combination.

END OF PART