



**DHA MULTAN CONSTRUCTION & DEVELOPMENT
REGULATIONS – 2021**

4th Edition – Revised, July 2023

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1. **CONSTRUCTION & DEVELOPMENT REGULATIONS**

Whereas, after repeal of the Defence Housing Authority Lahore Ordinance 1999 (Punjab Ordinance LI 1999), Chief Executive's Order No. 26 of 2002, for the reconstitution of Defence Housing Authority Lahore, has been promulgated and published in Gazette of Pakistan dated September 19, 2002.

And Whereas, the Executive Board of the Defence Housing Authority (DHA) is empowered to make Regulations under Article 23 of Chief Executive Order No 26 of 2002 and to get them published in Government Notification in the Official Gazette.

And Whereas, the Executive Board in order to carry out the purposes of the order and in exercise of its powers conferred upon under Article 23 Read with Article 4 and all other enabling provisions of the said Order is pleased to make the following Regulations.

Defence Housing Authority Multan being chapter of Defence Housing Authority Lahore is liable to abide by these rules & regulations, definitely with the provision of incorporation of requisite amendments, as & when deemed necessary.

2. SHORT TITLE, COMMENCEMENT AND EXTENT

- a. These Regulations shall be called Defence Housing Authority Multan Construction & Development Regulations 2021.
- b. These Regulations shall extend to the Specified as well as Notified Area of 'Defence Housing Authority Multan'.

3. **THE CRUX – CONSTRUCTION GUIDELINES**

Defence Housing Authority Multan has approved the Development and Construction Regulations which will be in-effect from **June 2020** with amendments applicable as approved and publicized. DHA Multan has advised their members in their own interest not to violate construction By-Laws as only the owner of the house is responsible for construction and not it's Architect/Consultant or the building contractor. The crux of the important points of construction guidelines are:-

a. **Things to DO (Do's)**

- (1) Do get the latest site plan of the plot before getting the building designed from your architect.
- (2) Do submit contour plan of the plot if level difference of more than **5 ft** from the road level exists.
- (3) Do observe the rules, regulations and instructions of the department for supervision of construction work.
- (4) Do observe the rules, regulations and instructions of the department whose services are utilized i.e. **MEPCO, PTCL, WASA, Sui Northern Gas** etc.
- (5) Do plan your building keeping in view the existing services at site.
- (6) Do take all necessary precautions to respect the privacy of neighbors during construction.
- (7) Do keep photocopy of all necessary documents on site for necessary checking by DHA staff.
- (8) Do obtain **No Observation Certificate** at various stages of construction works.
- (9) Do obtain **Completion Certificate** after completion of building and before occupation.

b. **Things NOT to do (Don'ts)**

- (1) Do not use plot for the purpose other than for which it has been allotted.
- (2) Do not undertake construction work without obtaining **Drawings Approval Certificate**.

- (3) Do not indulge in any violation of Construction Bylaws.
- (4) Do not damage the property on neighboring plots while carrying out excavation.
- (5) Do not encroach upon the neighbor's land or the road while constructing boundary walls.
- (6) Do not construct anything in COS like Servant Room, Bathroom for Servant, Air Raid Shelter / Basement etc.
- (7) Do not carry out road cutting without obtaining permission from DHA Multan.
- (8) Do not install motor pump on the water supply line.
- (9) Do not connect water without permission of DHA.
- (10) Do not grow trees / vegetation so as to encroach / occupy the space outside your plot.
- (11) Do not construct sunshade / any design additional to **2 feet** allowable projection in commercial and residential buildings.
- (12) Do not construct sunshade / pergola / any type of projection outside your plot line.
- (13) Do not construct any type of projections / flower bed on front boundary wall.
- (14) Fixing of hoarding on building is not permitted.

CHAPTER – I

PRELIMINARY

1. Authority

- a. In exercise of the powers vested in the Executive Board under Article 23 of the Presidential Order No. 7 of 1980 and all other enabling powers in that behalf, the Executive Board hereby makes the following By-Laws for carrying out the additions to, or alterations in, or demolition of the existing buildings, or erection or re-erection of new buildings and town planning parameters to be followed in DHAM Authorities (DHAM).
- b. These By-Laws are hereby promulgated and published and will be implemented in full spirit under the title of: “**DHA Multan, Development & Construction Regulations 2021**”.
- c. These By-Laws are hereby promulgated under short title of: “**DHAM By-Laws 2021**”

2. Application and Commencement: These By-Laws shall have an optimistic impact on people living within the jurisdiction of DHAM Authorities.

- a. These By-Laws shall come into force at once.
- b. Any member who intends to construct / carry out building works in **DHAM** Authorities shall strictly comply with the requirements of these By-Laws.
- c. Defaulting members are liable to disconnection of services and financial penalties.
- d. The plot shall be strictly utilized for the purpose it has been allotted. NO DEVIATION SHALL BE PERMITTED.
- e. Every member, within the limits of **DHAM**, intending to erect or re-erect abuilding, carry out addition or alteration to existing building or demolish the existing building, shall comply with the requirements of these By-Laws.

3. Interpretation of By-Laws: In case of any ambiguity in interpretation of these By-Laws, **DHAM** reserves the right to deliver/implement the interpreted contents of these By-Laws.

4. **Modification/Amendments:** These By-Laws shall be reviewed periodically and necessary amendments shall be incorporated as deemed appropriate by the DHAM Authorities from time to time.
5. **Exemptions:** Application of these By-Laws may be relaxed for buildings erected by or on behalf of the Government / Semi Government bodies and DHAM, provided they are sound with respect to engineering, town planning and civic aspects.

CHAPTER – II

DEFINITIONS

2. Definitions

- a. The following expressions shall have the meanings hereby respectively assigned to them or as the context otherwise require:-
- (1) '**Alteration**' of building includes the structural or other physical alternation for making any addition/ removal or other changes in a building.
 - (2) '**Allotment Letter**' means a letter prescribed by the Authority from time to time making allotment of a particular property/ plot to an applicant.
 - (3) '**Allotment/Allocation**' means the conveyance of a particular property / plot to an applicant by way of an allotment letter or transfer letter as prescribed by the Authority.
 - (4) '**Allottee**' means a person to whom an Allotment Letter has been issued by way of a method of conveyance as approved and/ or permitted by the Authority.
 - (5) '**Amalgamation**' means the joining of two or more adjacent plots of the same land use in accordance with prescribed rules/ regulations.
 - (6) '**Amenity Plot**' means a plot allocated exclusively for the purpose of amenity uses, such as government offices, health, welfare, education, worship places, burial grounds, parking and recreational areas.
 - (7) '**Ancillary Building**' means a building subservient to the principal building on the same plot e.g. servant quarters, garages and guardroom etc.
 - (8) '**Apartment**' means an independent residential unit in a building consisting of at least one bedroom, a living room, a bathroom and a kitchen.
 - (9) '**Approved**' means as approved in writing by the Authority.
 - (10) '**Approved Plan**' means plan for the building or lay out plan approved by the Authority in accordance with prescribed regulations.
 - (11) '**Approved Scheme**' means a project duly approved for urban development, redevelopment or renewal, including larger area plan,

area specified and notified for specific use, traffic control plans, housing and zoning scheme.

- (12) **'Area of Defence Housing Authority (DHA)'** means the area of jurisdiction of Defence Housing Authority (DHA) as shown in the master plan of Defence Housing Authority & including any extension or modification affected therein, from time to time.
- (13) **'Arcade'** means a covered walk-way or a verandah between the shops and the road or street on which the shops abut.
- (14) **'Architectural Plan'** means a plan showing the arrangements of proposed building works, including floor plans, elevations and sections, in accordance with the requirements of the rules and regulations of the Authority.
- (15) **'Attached Building'** A building which is joined to another building on one or more sides.
- (16) **'Authority'** means the Defence Housing Authority (DHA), Multan.
- (17) **'Authorized Officer'** means any officer appointed and duly authorized by the Authority to conduct and accomplish such an act or acts or any other such thing as contemplated by the Authority on its behalf.
- (18) **'Addition'** means addition of any unit or structure to any building or structure constructed in accordance with these Regulations.
- (19) **'Architect'** A person currently registered with the Pakistan Council of Architects and Town Planners (PCATP) as an architect and is also registered as architect with DHAM.
- (20) **'Basement'** means the lowest storey of a building partially below ground level.
- (21) **'Balcony'** means a roof or platform projected from the walls of the building surrounded with a railing or parapet walls.
- (22) **'Bathroom'** means a room containing a water tap, wash hand basin and a shower or a bath tub or a bath tray, and may be with or without a WC.
- (23) **'Buildings'** means a house, out-house flats, block of flats, latrine, privy, verandah, fixed platform, plinth, shed, hut or other roofed structure whether masonry, brick, wood, mud, metal or other

material, and any part thereof, and includes a wall (other than a boundary wall not exceeding **eight feet** in height and not abutting on a street) but does not include a tent or other portable and temporary shelter which does not have any foundation.

- (24) **'Building/House Line'** means a line beyond which the outer face of a building except boundary wall must not be projected in the direction of any street existing or proposed.
- (25) **'Building Plans'** means the plans showing the proposed details of the arrangements of intended building works within the property line.
- (26) **'Builder'** means any person having the ownership/ leasehold title, project proponent, institution, company, firm, agency or government department, autonomous and semi-autonomous bodies who intend to undertake, undertake or have undertaken building works.
- (27) **'By-Laws'** means laws, rules and regulations approved by the Governing Body/ Executive Board/ Competent Authority of Defence Housing Authority Multan.
- (28) **'Commercial Building'** means a building or part of a building, which is used as shops, offices, business arcade, show rooms, display centers or market for sale of merchandise for retail only, building used for transaction of business or the keeping of accounts, records for similar purposes, professional service facilities, petrol pumps, restaurants, cinemas, theatres, banks, clubs run on commercial basis. Storage and service facilities incidental to the sale of merchandise shall be included under this group, except where exempted.
- (29) **'Car Porch'** means a shelter or a shed for a car, which is permanently open on at least two sides.
- (30) **'Completion Certificate'** means the certificate issued by the competent Authority on the completion of construction as per approved plan.
- (31) **'Commercial Zone'** means the area where the commercial buildings are located as shown in the Master Plan.
- (32) **'Commercial Mixed-use Building / Plot'** means building / plot constructed for combination of commercial and residential usage in

which on ground floor & basement, retail / commercial activity is allowed whereas on upper floors, only residential accommodation (apartments / pent house) are allowed.

- (33) **'Community Area'** means the area which consists of different amenities as well as commercial and mix use buildings to serve surrounding population of neighborhood.
- (34) **'Competent Authority'** means the Authority competent to approve and regulate building and development plans, licenses, levy charges and do so all such things as authorized under these and other rules and regulations.
- (35) **'Construction'** means site excavation, erection, re-erection of a building/ structure or making additions and alterations to an existing building/ structure.
- (36) **'Carpet Area'** means the net floor area within a habitable, rentable or saleable unit excluding the area of peripheral walls but including the area of internal walls and columns.
- (37) **'Completion Plan'** "As Built Plan" submitted to DHA for the purposes of obtaining approval and occupancy certificate.
- (38) **'Compulsory Open Space (COS)'** means minimum part of a plot which is to be left completely and compulsorily open to sky under the regulations, over which no structure or any integral part of the building shall be permitted.
- (39) **'Corner Plot'** means a plot situated on minimum two vehicular streets.
- (40) **'Covered Area' (for the purpose of determining the floor area)**.
The sum of the gross horizontal areas of the floor/floors, including, verandas, 25 percent of the area covered by pergolas, but excluding shades/projections (not exceeding the maximum permissible limits).
- (41) **'Cultural Zone / Area'** is designated area for cultural, amusement & entertainment activities such as recreation, educational studios for culture & art development / performance, theatres, cinemas, clubs, cafes, libraries, museums, exhibition halls, etc.
- (42) **'Detached Building'** means a building not joined to another building on any side.

- (43) **'Downtown'** is an area consisting of public institutions with an administrative, cultural, educational and commercial character located in the lower part of CBD.
- (44) **'Duplex'** is two identical residential housing units existing under the same roof with a common wall dividing the first unit from the other at all levels with separate entrances / gates is a called a Duplex.
- (45) **'Demarcation Plan / Site Plan'** means plan showing measurement and location of plot.
- (46) **'Development Charges'** means amount on account of development charges is to be paid by the allottee of a plot.
- (47) **'Existing Building'** means a building existing on the date of commencement of the town planning.
- (48) **'Engineer/Registered Engineer'** means a qualified engineer currently registered with Pakistan Engineering Council (PEC) as an engineer.
- (49) **'External Wall'** means any outer wall of a building abutting on an external or internal open space on adjoining property lines.
- (50) **'Extra Land'** means any additional piece of land existing adjacent to any type of Plot will remain the property of DHAM.
- (51) **'Flats/Apartments'** means a multi-storey building containing more than two apartments or block (s)/ block (s) of buildings consisting of number of residential units built in horizontal or vertical manner sharing common stair case, lifts or excess spaces exclusively designed for a human habitation in the residential zone or residential area with all necessary requirements such as kitchen, lavatory, bathroom etc.
- (52) **'Fire Escape'** means an exit from a building, in the event of fire.
- (53) **'Floor Area'** means the horizontal area of floor in a building covered with roof, whether or not enclosed by walls but excluding ancillary covered spaces and projections allowed under these regulations.
- (54) **'Floor Area Ratio (FAR)'** means the total covered area of a building as permissible under these regulations divided by the area of the plot.

- (55) **'Footprint'** means the portion of a plot of land covered, at ground floor level, by a building or part thereof other than basement.
- (56) **'Form'** means Form appended to these regulations.
- (57) **'Foundation'** means a structure entirely below the level of the ground which carries and distributes the load from pillars, beams or walls on the ground.
- (58) **'Frontage of Corner Plot'** In case of plots abutting on more than one road will be with reference to the road mentioned in the allotment/ transfer letter.
- (59) **'Gallery'** means an open or a covered walks way or a long passage and underground passage.
- (60) **'Grey Water'** means all wastewater generated in households or office buildings from streams without fecal contamination, i.e. all streams except for the wastewater from toilets.
- (61) **'Half Bath'** means a bathroom is a room for personal hygiene activities, generally containing at minimum a toilet and sink.
- (62) **'Head Room'** means the clear vertical distance measured between the finished floor level and the underside of lowest obstruction such as ceiling or rafter, whichever is lower.
- (63) **'Height of Building'** means the vertical measurement from crown of the front road to the highest part of the roof.
- (64) **'Height of a Room'** means the vertical distance measured between the finished floor level and under side of the ceiling.
- (65) **'House or Bungalow'** means an independent residential unit for the use of people or a family having at least one habitable room with a kitchen, a bath and a toilet.
- (66) **'Industrial Building'** means a building constructed on a plot allotted exclusively for the industrial purpose under these regulations.
- (67) **'Kanal'** means a size of land equal to **20 marlas or 500 square yards/ 4500 square feet.**
- (68) **'License'** means the permission granted under these regulations by the Authority to perform the requested acts as are allowed under these and other rules and regulations of the Authority.

- (69) **'Licensee'** means an individual or firm who has been duly given license by the Authority to perform the requested act as is allowed under these and other rules and regulations of the Authority.
- (70) **'Licensed Architect'** means a person or an architectural firm authorized by P.C.A.T.P (Pakistan Council of Architects and Town Planners) and permitted to work in field after registration.
- (71) **'Licensed Engineer'** means a person or a firm authorized by P.E.C. (Pakistan Engineering Council) and permitted to work in field after registration.
- (72) **'Legal Attorney'** means a person who is duly authorized to act on behalf of a registered or any other person under Power of Attorney Act.
- (73) **'Loft'** A horizontal slab used only for storage purposes, which shall be allowed in kitchens, baths, corridors and store rooms or shops with access from inside only **upto five feet** clear height between the loft floor and ceiling above.
- (74) **'Light Industries'** Building(s) providing work place free from any obnoxious trade such as chemicals, explosives, noise producing and smoke/smell emitting industries.
- (75) **'Light Reflectance Value (LRV)'** is a measure of visible and usable light that is reflected from a surface when illuminated by a light source.
- (76) **'Low Car Porch'** means car porch having height not more than **eight feet** from floor to ceiling of the porch.
- (77) **'Mixed-use Sub-District'** means a sub-district which blends in residential, commercial, cultural and institutional buildings which are physically and functionally integrated providing pedestrian connections.
- (78) **'Mixed-use Zone'** means a zone dedicated having mixed-use buildings with specific number of floor allocated to each building type as per the Master plan.
- (79) **'Mumty'** means a structure with a covering roof over a main staircase and its landing built to enclose the stairs for the purpose of providing protection from weather.

- (80) **'Obnoxious Industries / Trade'** includes, amongst others, bricks kilns, coke ovens, salt glazing, sulphur working, making of cellulose lacquer, pitch bitumen, charcoal burning, gut scraping, tannery, glue making, fish meal, soap boiling, tallow making, skin dyeing and those which may be specified as Obnoxious Industries by the Industries Department from time to time.
- (81) **'Master Plan'** A development plan for an area providing short term and long term policy guidelines for a systematic and controlled growth, liable to amendments as per future requirements after due approval of the Governing Body.
- (82) **'Mezzanine Floor'** means floor between ground and first floor of commercial building and having headroom of **8 feet**, forming part of ground floor and having access from within the shops.
- (83) **'Marla'** means a size of land equal to **25 square yards or 225 square feet**.
- (84) **'Mosque/ Masjid'** (place of Muslim worship) means a building built/ designated for the purpose of performance of religious affairs/ functions without any sectarian/ethnic affiliations.
- (85) **'NDC'** means No Demand Certificate.
- (86) **'NOC'** means No Objection Certificate.
- (87) **'Non-Standard Plot'** means a plot created due to adjustment in town planning or re-planning of area having irregular shape, dimensions and size, different than adjoining rectangular plots.
- (88) **'Nuisance'** includes any act or omission place or thing which causes or is likely to cause injury, danger, annoyance or offence to the sense of sight, smell or hearing, or which is or may be dangerous to life or injurious to health, property and environment.
- (89) **'Ordinary Repairs or Repair or Renovation'** means repair work to services, painting, white-washing, plastering, flooring, paving, replacement of roof of corrugated sheets, T-iron, girders, wooden/ prefabricated roof with RCC slab without change in the cubical capacity or structure approved by Authority.
- (90) **'Open Staircase'** A staircase in a single storey or two storey (ground and first floor) building of which the roof must be fully open

to the sky and of which at least two sides must be fully open and clear of any adjoining walls of the building.

- (91) **'Parapet'** means wall whether plain, perforated paneled or made of steel angle irons/ pipes protecting the edge of the balcony, verandah, roof of building or terrace.
- (92) **'Park'** means a recreational area which may include all or any of the following facilities:-
- (a) Jogging tracks/walkways
 - (b) Water features like lakes, fountains, gushers etc.
 - (c) Restaurants or cafeterias or food stalls
 - (d) Aviary
 - (e) Tube well
 - (f) Public toilets
 - (g) Any other recreational facilities (outdoor)
- (93) **'Parking Space'** means an area enclosed or unenclosed covered or open sufficient in size to park vehicles in front of the commercial as well as public buildings as specified in the master plan or as recommended by the Authority thereafter.
- (94) **'Pergola'** means a structure with perforated roof consisting of cross bars in the form of reinforced concrete, wood or steel etc. of which at least **50%** of roof is open to sky.
- (95) **'Playground'**
- (a) All open spaces designated for indoor or outdoor sports activities of all types
 - (b) All structures serving sports activities like sports complex, gymnasiums, swimming pools, stadium, race course, golf course and, sports club of all kinds.
- (96) **'Person'** means and includes a registered person, occupant, user, tenant and a licensee of a plot, house or building.
- (97) **'Plot'** means a parcel/ piece of land enclosed by definite boundaries.
- (98) **'Plinth'** means finished floor level of the building. The height of the finished floor level of the ground floor, measured from the top of the finished surface of the road serving the plot, taken from the center of the property line of the plot along the road. In case of more than one

road serving the plot, the plinth will be measured from the road providing principal access. The height of the plinth shall be **limited to four feet** except on plots where the natural contours are **more than four feet** over at least **forty percent** of the plot area as measured from the point at the center of the property line of the road adjacent to it, the plinth level shall be determined as per the site conditions.

- (99) **'Property Line'** means the plot boundary which separates private property from the public property or a private property from another private property.
- (100) **'Public Building'** means a building used or intended to be used either ordinarily or occasionally by the public, such as offices of the Government as well as Semi Government Institutions and agencies, mosque, college, school, library, theatre for cultural activities, public concert hall, club, hospital, public exhibition hall, community center, lecture room or any other place of public assembly.
- (101) **'Place of Assembly'** (social/ recreational activities). Including a building designed for use as a public hall, council/community hall, theatre, cinema, music hall, dance hall or skating ring, a building for the purpose of an exhibition of trade/ industry or a building designed for use in connection with any form of amusement which is intended to be open to the public on payment of charges or a building designed for use as non-residential club or a building for any other similar use.
- (102) **'PDOHA'** means Pakistan Defence Officers Housing Authority, Multan.
- (103) **'Proof Engineer'** An engineer with a minimum of **ten years** of service registered with the Pakistan Engineering Council (PEC) as Consulting Engineer (Structural Design) and is also registered as proof engineer with DHA.
- (104) **'Re-erection'** means the complete demolition and reconstruction of a building in defined premises/ boundaries which includes the re-laying of the foundation of the building.

- (105) **'Registered Architect'** means a qualified Architect registered with Pakistan Council of Architects & Town Planners (PCATP) as well as registered with the Authority.
- (106) **'Registered Person'** means a person whether natural or legal, who is registered under the general regulations of the Authority.
- (107) **'Regulation'** means the Defence Housing Authority construction and development regulations and other regulations made by the Executive Board.
- (108) **'Reserved Area'** means an area shown in the Master Plan as such, which may be developed/re-planned by the Authority for any purpose at any stage.
- (109) **'Residential Zone'** means a zone earmarked for buildings exclusively designed for human habitation and in no case shall include its use in whole or a part thereof for any other purpose e.g commercial activities, school, institution, shop, office, clinic, beauty parlor, guest house, marriage center, gymnasium, tuition center, club activities, work-shop, store or godown etc. or for the purpose of political, religious and sectarian activities. It includes parks, gardens, play grounds, sector shops and other open spaces located in the area earmarked in the residential zone.
- (110) **'Right of Way (ROW)'** means the area of road including shoulder/berms between two opposite boundary walls of row of houses/ shops or where there are no buildings astride it, it extends up to such limits as may be prescribed by the competent Authority.
- (111) **'Revised or Amended Plan'** means a previously approved drawing plan re-submitted for fresh approval with amendments in accordance with the provision of these rules/ regulations.
- (112) **'Residential Building'** A building or part thereof designed, adopted or used for human habitation only.
- (113) **'Revised or Amended Plan'** A previously approved drawing or plan re-submitted in accordance with the provision of these regulations.
- (114) **'Registered Geo-Technical Consultant'** A person holding registration from Pakistan Engineering Council (PEC) and whose

name is listed on the panel of approved geo-tech consultants maintained by the DHA.

- (115) **'Registered Structural Engineer'** A qualified structural engineer registered as such with the Pakistan Engineering Council (PEC) and also registered as structural engineer with DHA.
- (116) **'Registered Town Planner'** A qualified person or a firm registered with Pakistan Council of Architects and Town Planners (PCATP) as an Architect or as an Architectural Firm with minimum 5 years' experience as Town Planner in case of an individual and with at least one Town Planner of at least 10 years' experience in case of architectural firm and is on the approved panel of DHAM Authorities.
- (117) **'Renewable Energy'** is generally defined as energy that is collected from resources, which are naturally replenished, on a human timescale, such as sunlight, wind, rain, tides, waves, and geothermal heat. Renewable energy often provides energy in four important areas: electricity generation, air and water heating/cooling, transportation, and rural (off grid) energy services.
- (118) **'Repair or Renovation'** Repair work to services, painting white-washing, plastering, flooring, paving, replacement of roof of corrugated sheets or of T-iron or girders or wooden roof with RCC slab without change in the cubical capacity or structure approved by DHA.
- (119) **'Residential Building'** A building or part thereof designed, adopted or used for human habitation.
- (120) **'Roof Top of Commercial Buildings'** Roof of the last floor of a commercial building, to house the common facilities like overhead water tank, stair tower, lift well etc being shared by all inhabitants of the building.
- (121) **'Sector Shops'** means a row of shops to be constructed in residential zones for business provided that the height does not exceed the prescribed limit from the road level with provision of mezzanine floor not covering more than 70% of the shop area.
- (122) **'Septic Tank'** means a tank in which sewage is collected and decomposed before its discharge into the public/ main sewer.

- (123) **'Shop'** means a roofed structure primarily used for the retail sale of goods.
- (124) **'Shops/Offices-cum-Flats'** means provision of shops on ground floor and basement with the facility of offices/ flats on the first and subsequent floors.
- (125) **'Site Plan'** means layout plan of the plot approved by the Authority in accordance with these regulations.
- (126) **'Special Purpose Plot'** A leasable plot allocated exclusively for the purpose of Health, Education institutions or any other use as per DHAM master plan.
- (127) **'Stores/ Godowns'** means a building/buildings meant for storage of material or finished goods at ground floor, provided those goods are not of inflammable or objectionable characteristics and with provision of office accommodation above but does not include any garage or residential or commercial building.
- (128) **'Sun/Rain Shade'** means an outer side, **2 feet** wide projection from the building over a minimum height of **7 feet** from the plinth level providing protection from sun/weather.
- (129) **'Specified Clear Space'** means the minimum part of a plot which is to be left completely and compulsorily open to sky under the regulations, over which no structure even temporary or any integral part of the building shall be permitted.
- (130) **'Special Projects'** mean land allotted/ sold/ allocated for a special purpose under an agreement duly approved by the Executive Board of Authority, falls in the category of "Special Projects".
- (131) **'Sub-Division'** means the division of plot held under the same ownership into two plots.
- (132) **'Sustainability'** is a process for meeting human development goals while sustaining the ability of natural systems to continue to provide the natural resources and ecosystem services upon which the economy and society depends.
- (133) **'Sustainable Master Plan & Image Concept (SMPIC)'** A development plan for an area providing short terms and long term policy guidelines for a systematic and controlled growth for Business

& Commercial activities including the façade and architectural elevations of the buildings and the overall area of the DHAM.

- (134) **'Surcharge'** means amount levied on account of default in paying development charges or any other dues on due date.
- (135) **'Structural Calculations'** means detailed calculations showing sufficiency of the strength of every load bearing part of the proposed structures.
- (136) **'Semi Government Institution & Agency'** means company or corporation owned or controlled by Government or a municipal body and agency established by the Authority to perform one or more of its functions under these regulations.
- (137) **'Site Engineer'** A qualified engineer engaged to supervise building operations at the site and registered with the Pakistan Engineering Council (PEC) as professional engineer.
- (138) **'Structure Engineer'** A person who is currently registered with Pakistan Engineering Council (PEC) with specialization in structural engineering and is also registered with DHA.
- (139) **'Temporary Structure'** means a structure constructed purely on temporary basis, wholly within the plot with the approval of Authority for a specific period which shall be demolished on completion of the project or lapse of the approved period.
- (140) **'Thermal Bridge'** It is an area of an object (frequently a building) which has a significantly higher heat transfer than the surrounding materials resulting in an overall reduction in thermal insulation of the object or building.
- (141) **'Thermal Insulation'** It is the reduction of heat transfer (the transfer of thermal energy between objects of differing temperature) between objects in thermal contact or in range of radiative influence.
- (142) **'Toilet'** A Fixture that consists usually of a water-flushed bowl and seat and is used for defecation and urination.
- (143) **'Transfer Letter'** means a letter in such form as may be prescribed by the Authority from time to time transferring the allotment of a particular property/ plot from an existing owner to an applicant.

- (144) **'Total Floor Area'** The sum of the floor areas of all the floors of all the buildings on a plot, less exemption as permitted in these regulations.
- (145) **'Town Planner'** A person currently registered as such with the Pakistan Council of Architects and Town Planners (PCATP) and whose name is registered with DHA Town Planners.
- (146) **'Verandah/Arcade'** means a roofed gallery, terrace or other portion of a building with at least one side open to courtyard or a permanent open space.
- (147) **'Warehouse'** means a building used for storage of commercially saleable goods with appropriate office space for management use.
- (148) **'Zone'** means the area earmarked for a particular use only.

CHAPTER – III

GENERAL BY-LAWS

1. **Applications.** These By-Laws have been framed with a view to facilitate construction by the members. Due relaxation has been ensured while specifying covered area and other details. The following rules shall apply to all types of plots, buildings and land usage:-
 - a. Construction of ramp, stairs/steps leading to the first basement is permitted within side and rear COS without any super structure over them.
 - b. In case of two basements, the ramp leading to the 2nd basement shall only be constructed within the allowable footprint of the building.
 - c. 3 ft wide balcony allowed for corner plots towards roadside and maximum length of 20 ft bay window in front COS is permitted with one door.
 - d. Underground water tank and septic tanks / grey water tank to be kept 3 ft away from boundary walls.
 - e. Pitching of guard's tents/cabins outside the property line on DHAM land or using the open plot for guard living is strictly prohibited. However, in special circumstances DHAM authorities may allow temporary construction of a room along with a toilet not exceeding 125 sft in front COS in addition to guardroom.
 - f. Whatever additional land is available between allotted plot boundary and sector limits for not more than 4 feet depth, the said land may be allotted on payment to the owner on request. In this case building rules of the original category shall be applicable. However, in case land is more than 4 feet, change in area of the allotted Plot will govern as per the By-Laws.
 - g. Where the park is planned in the rear or on the side of the allotted plot, owner is not allowed any opening even a pedestrian way in the park, being a public property.
 - i. Members to ensure clean environment in front / around the property.
2. **Corner Plot.** The owner of corner plot shall be required to pay additional charges equals to 10% of Development Charges as laid down by DHAM. In case a corner plot ceases to be as such because of area adjustment / re planning, the person shall be bound to accept non-corner plot and refund of the additional charges.

3. **Over/Under Size Plots.** Plots having less area of specified category shall be considered as per original allotment category, however if area of plot is less than 95% then DHAM Authorities shall compensate the owner as per prescribed rates. For plots measuring more than the allotment category, Owner shall be required to pay for the extra/additional area as per the prescribed rates decided by DHAM Authorities from time to time. In case plot owner does not agree for payment of additional charges then owner may exercise any of the following options:-
 - a. DHAM Authorities may facilitate the owner for payment of extra land through installments.
 - b. Alternate plot of that allotment category shall be offered in any sector having compatible market prices as decided by the DHAM Authorities.
 - c. DHAM Authorities may buy back the plot as per prescribed rates.
4. **Annexation of Adjacent Extra / Trapped Land.** In case where extra land is available adjacent to the plot, it may be purchased by the member. Rates and permission of such cases is subject to approval by DHAM Authorities. Owner may apply for Extra Land on prescribed form “**Additional Area Request Form**” uploaded on website. DHA Multan Authority can buy the given extra land adjacent to plot at any time as part of its planning on same selling price.
5. **Bifurcation and Amalgamation of Plots.**
 - a. Bifurcation / Sub division is not allowed in any type of category of residential, commercial and amenity plots.
 - b. Amalgamation of residential and commercial plots shall be allowed maximum up to four times the size of the original plot, provided that the allotment conditions of the plots are similar.
 - c. Amenity Plots will not be considered for amalgamation.
6. **Levelling of Plots:** The plot owner shall be responsible for levelling in case of any ditch less than 5’, shrubs, debris, unevenness or abnormality in the plot.
7. **Services.** The DHAM Authorities will provide roads including all services and the members are required to plan extension of these services to their buildings accordingly. Further extension of the services to other users is strictly disallowed. Defaulting members are liable to disconnection of services and financial penalties.

a. **Water Supply**

- (1) Application for water connection shall be made on the prescribed form to the DHAM Authorities, before commencing any work and no water connection/work is to commence before approval.
- (2) No person is permitted to install motor/pump on the water supply line. Only one connection shall be provided for each building.

(3) **Residential**

- (a) No water point/ tap will be left outside the boundary wall.
- (b) Underground water tank will be constructed but not on the slope side.
- (c) Member found violating the instructions on water supply shall have to pay violation charges as prescribed by DHAM Authorities.
- (d) Washing of car on the road is not allowed.
- (e) Flow of water through car porch on the road is not allowed.
- (f) Water Supply to the houses shall be the responsibility of owner through boring until the operations of OHWT of respective sector. Boring is allowed for installing water pumps within the premises of house.

(4) **Commercial**

- (a) Separate water meter connection to be installed by owners of office / shop in commercial buildings & flats in mixed use buildings.
- (b) It will be preferred to make the underground water tank.
- (c) For plots of 8 Marla and above, Boring will be responsibility of the owner.

b. **Sewerage/Manhole**. By-Laws regarding house connection to main sewer are as under:-

- (1) W.C discharge is to be connected with the DHAM manhole through septic tank.
- (2) Wash room and kitchen drainage shall be connected direct to the over flow manhole of septic tank. It must not be connected to the inlet of septic tank.

- (3) Rain water/storm water is to be disposed off in open drains or on the adjacent roads as per design. It must not be connected to the sewer lines.
- (4) Members are required to construct proper manholes and septic tanks (RCC construction only). However, DHAM Authorities can assist them by providing standard designs.
- (5) Members are required to get their septic tanks inspected before covering the tops.
- (6) Connection to the main sewer line shall be allowed by DHAM Authorities on completion of house/building and member will not tamper with main sewer line. Defaulters will be charged as per DHAM Authorities policy issued from time to time.
- (7) For 5 or 8 Marla houses, Sewer Collection Chamber may be provided instead of Septic Tank. Size of collection chamber will be minimum 3' x 3' x 3'.
- (8) Sewer connection for more than 8 marla plots will be provided on special charges.

c. **Gas/Telephone/Electric/ICT**

- (1) The services have been laid by DHAM Authorities and individual connection to houses be obtained from respective departments in accordance with respective departmental By-Laws.
- (2) On completion of construction and before main electrical connection is provided to the building/house, the member shall submit test report of electrical system issued by a government/MEPCO/ or DHAM Electric Department's approved wiring Inspector.
- (3) An independent earth pit will be provided in the building/house. The earth resistance of the pit must be less than 5 ohms.

- d. **Damages**. Damages to roads and utility service is strictly prohibited. In case of extension of services; if any damage is likely to be caused to road, sewer line, rain water line etc. Such work shall not be undertaken without prior approval of DHAM. In case of damages, DHAM Authorities will impose penalties and cost of repair work will be recovered from member.

8. **Bearing Capacity Test.** Bearing capacity tests will be arranged by the member through DHA Lab or DHA approved laboratory.
9. **Termite Proofing.** Members will ensure quality termite-proofing treatment before commencement of construction work.
10. **Blockage of Street.** All construction material shall be stored/kept within property line. No part of street / road or footpath shall be used in connection with any construction activity like:-
 - a. Storage of construction material.
 - b. Disposal of demolished material.
 - c. Mixing of concrete or cement mortar.
 - d. Erection of construction frames / supports / formwork.
 - e. Excavation of street / road for access to utility service, except with prior permission of DHAM.
11. **Structures on Roof.** Following structures of permanent nature may be constructed on roofs provided they are designed and built to the satisfaction of the Authority: -
 - a. Chimneys, air conditioning and other ducts, vents and wind catchers.
 - b. Water tank.
 - c. Four feet high Parapet wall or railing is mandatory in case of accessible roof.
 - d. Stair tower and Mumty (applicable as per related By-Laws).
 - e. Lift machine rooms, Sky light etc.
 - f. Alternate Energy Solutions such as Solar and wind, etc
 - g. Other structure, which the DHAM Authorities may permit by general or specified order.
 - h. No mobile phone antennas and billboards are allowed on roof of residential unit. However, may be allowed for commercial unit subject to approval of DHAM Authorities.
12. **Specific Instructions for Shop Owners:**
 - a. Proper arrangements for disposal of garbage shall be ensured by the owner or occupant in case of tenant of shops / public buildings.
 - b. No AC or its outer unit shall be fixed in front of the shop or the arcade.
 - c. All outer units of split ACs shall be fixed on roof or rear wall of the shops.

- d. Where unavoidable ACs outer units, ACs may be fixed in the front arcade at height not less than 8 feet and with prior permission of the DHAM.
- e. Wall chalking / writing on walls and pasting of posters etc shall not be allowed.
- f. Arcade / passage in front of each shop shall be kept free of any fixed or movable items to provide clear passage to users.
- g. Showcases, sale goods, seating for customers must not be placed outside in the arcade or passage as the case may be.
- h. No room cooler, fan, water cooler, generator, UPS batteries or charger shall be placed outside the shop.
- i. No part of the building shall be altered, modified or pierced for fixing decorative material or display of goods.
- j. Sign or name boards of only specified sizes shall be allowed.
- k. No stand-alone boards will be placed on streets, roads, arcade or passage.

13. **Lighting and Ventilation**

- a. **Size of External Openings:** Every room, other than rooms used predominantly for the storage of goods, shall be provided with natural light and natural ventilation by means of one or more openings in external walls. These openings shall have a combined area of not less than 10% for habitable rooms and 7.5% for other rooms of the floor space of such opening, whole of such openings shall be capable of allowing free and uninterrupted passage of air. Area for openings in case of warehouse, godown, storage places etc shall not be less than 5% of the floor area unless the space is mechanically ventilated.
- b. **Size of Internal Openings.** Unless the light and ventilation requirements are met by an air well or ventilation duct, all internal habitable rooms must have openings in internal air wells in addition to door openings not less than 7.5% of the floor area of such room. Access for maintenance of shaft be provided at level from where the shaft commences.
- c. **Internal Air Wells**

- (1) Habitable rooms may receive daylight and natural ventilation from internal air wells which shall conform to the following minimum sizes:-
 - (a) For buildings up to 2 storeys, 20 Sft with minimum width of well 5ft.
 - (b) For buildings with 3 to 5 storeys, 100 Sft with minimum width of well 8 ft.
 - (c) For buildings higher than 5 storeys, 100 Sft plus 10 Sft for each additional floor over storeys and minimum width of well 10 ft.
- (2) Where only kitchens, W.C and bathrooms receive daylight and ventilation from air wells, the size of wells shall conform to the following minimum widths:-
 - (a) For building up to 2 storeys, 20 Sft with minimum width of well 3ft.
 - (b) For buildings with 3 to 5 storeys, 40 Sft with minimum width of well 5 ft.
 - (c) For building higher than 5 storeys, 40 Sft plus 5 Sft for each additional floor with minimum width of well 5 ft.
- d. **Permanent Openings in Kitchen.** Every kitchen shall have openings for permanent ventilation into the external air space not less than 15 % of its floor area.
- e. **Water Closet, Bath Room & Ablution Places.** Every water closet, urinal stall and bath room and ablution area shall be provided with natural lighting and ventilation by means of one or more openings in external walls having a combined area of not less than 2 Sft (1 ft x 2 ft) per water closet, urinal or bathroom except where adequate and permanent mechanical ventilation is provided which discharges into an open space.
- f. **Garages.** Every garage shall be provided with opening of not less than 5% of the floor area for ventilation and lighting incorporated in a wall or in the door.
- g. **Staircase.** All staircases which are enclosed shall be provided with adequate lighting and ventilation from openings not less than 7.5% of the staircase area.

h. **Mechanical Ventilation and Central Air Conditioning Waiver**

Minimum Requirement:

- (1) Where undertaking for central air conditioning and permanent mechanical ventilation is provided, the relevant clauses of these By-Laws dealing with natural ventilation, lighting and heights of rooms may be relaxed depending upon the duct size of A.C.
 - (2) Where permanent mechanical ventilation in respect of lavatories, water closets, bathrooms or corridors has been provided for and maintained in accordance with the following clauses, conditions relating to natural ventilation and natural lighting under these By-Laws may be relaxed for such lavatories, water closets, bathrooms or corridors.
14. **Blasting.** Use of explosive material for construction & demolition work is not allowed in DHAM.
 15. **Inflammable Material.** Storage of inflammable material is strictly prohibited in DHAM except where allowed by the respective government agencies / departments and DHAM Authorities.
 16. **Disputes.** No member is allowed to stop the construction activity of other members. Any dispute/interpretation of By-Laws shall be referred to DHAM Authorities.
 17. **Possession of Plots.** Following procedure is laid down:
 - a. **Site Plan and Demarcation.** DHAM Authorities shall provide the Site Plan indicating measurements, size and location of Main Gate of the Plot to the member on prescribed form. Member is required to apply for the Possession along with issuance of site plan on prescribed form (uploaded on website).
 - b. **Building Plan.** For preparation of building plans (new or alteration) the member should engage a licensed architect and structural engineer, existing on the panel of approved consultants of DHAM.
 - c. **Submission of Drawings.** Members are responsible to submit the following drawings in accordance with DHAM By-Laws.
 - (1) **Architectural Drawings.** Member shall submit architectural drawings as prescribed in application form, covering following details:-

- (a) All drawings shall be submitted on sheet size of 30 x 40 inches and all details be given at a minimum scale of 1/8" = 1'-0".
- (b) The plans of basement, ground floor, upper floors and roof along with stair tower/Mumty.
- (c) Two-point perspective view in color with material finishes (showing front and side).
- (d) All elevations, two sections along x and y axis passing through stairs providing maximum details.
- (e) Site plan / key plan showing plot dimensions, width of the road(s), detail of neighboring plots, location of gate(s), position of underground water tank, septic tank, grey water tank and location of North.
- (f) Elevation and section of boundary wall, gate(s), ramp and water channel with respect to adjoining road/street.
- (g) External dimensions of building.
- (h) The clear dimensions of all rooms and position of doors, windows and ventilators in each room at every storey.
- (i) The position and dimensions of all projections beyond the walls of the building.
- (j) Roof plan showing the location/dimension of overhead water tank, stair tower/mumty.
- (k) Total height of building with reference-to-reference point including level of finished floor, and split-levels (levels be indicated on plans also).
- (l) Location of reference service manhole and its invert level and location of water connection shall be clearly shown on submission drawing.
- (m) Details of alternate energy solutions on roof/roof top with dimensions and heights.
- (n) Location and size of overhead and underground tank (for commercial/mixed use plots: show domestic and firefighting water in a section along with its calculations).

- (o) The sewerage line and waste water/soap line should be laid independently and marked properly on the plan. The soap water should not be connected directly to the septic tank. It should be connected to underground grey water tank or directly to the main sewer line.
- (p) Schedule of open / covered areas.
- (q) Schedule of doors and windows.
- (r) Covered area calculation block plan.
- (s) Signature of Owner and the Licensed Architect on drawings along with required forms.
- (t) Drawings must be of acceptable Architectural standards.
- (u) All documents as per checklist relating to the plot shall be provided with the application.

(2) **Structural and MEP drawings.** The owner shall submit complete structural and MEP drawings and calculations as prescribed in application form covering following details:-

- (a) Soil investigation report (one hard copy and one soft copy in PDF) along with structural drawings, duly signed by the DHAM's approved structural engineer along with structure stability certificate on both DHA form and Letter Pad. The drawings showing layout and sectional details of foundations, beams, columns, lintels, slabs, underground, and overhead water tanks. This set of drawing is only for DHAM record and Authority has no responsibility regarding the stability / safety of the structure. In case of any building over G+1 storey, the structural design should be duly vetted by the DHAM approved vetting engineer.

d. **Scrutiny of Drawings.** Following procedure will be followed:-

- (1) Member shall submit the plans to DHAM for approval as per the By-Laws.
- (2) Plans not conforming to these By-Laws shall be returned by mail or by hand.
- (3) Members can collect approved drawings along with Approval letter.

- e. **Oversight in Scrutiny of Drawings.** Any oversight in the scrutiny/NOC of documents and drawings at the time of approval and sanctioning of the building plan does not entitle the member to violate the By-Laws.
- f. **Responsibility for Structural Stability.** For any building constructed at DHAM, the structural engineer shall be liable for the design part, whereas the contractor shall be responsible for the structure stability being the constructor of the building. DHAM Authorities shall not be liable for structure stability of any building. In case of structural failure, procedure laid under dangerous buildings shall be followed.
- g. **Inspection Sheet for Construction**
- (1) Inspection Sheet shall be provided by DHAM Authorities to the member. Inspection Sheet shall be held by owner, ensuring safe custody with up-to-date entries of different inspection stages by DHAM official.
 - (2) It is the responsibility of member to ensure that the inspection of work on each stage of construction is carried out as per Inspection Chart/ schedule duly signed by building inspector of DHAM. If any anomaly is identified at a later stage, member will be held responsible.
 - (3) Prescribed charges will also be levied for issuance of new inspection chart, in case of loss.
- h. **Approved Drawings.** The member/contractor must keep one full set of approved drawings on site, which may be made available to DHAM staff during inspection. In case of non-availability of approved drawings; penalty would be imposed as per policy of DHAM at prescribed rates from time to time.
- i. **Inspection of Building at Various Construction Stages:** Inspection of building shall be carried out by team of DHAM and documented as per the procedure laid in the inspection card. Inspection shall be carried out at following stages, however, construction stages may increase/decrease depending on the demand of time/resources/technology:
- (1) In case basement is to be constructed then:-
 - (a) On ground demarcation of area to be dug in.
 - (b) Lean/Foundation.

- (c) Roof level before pouring roof.
 - (d) Ground floor at finish floor level including boundary wall.
 - (2) On attaining roof height of Ground Floor before pouring in of roof.
 - (3) On raising of structure/pillars one (1) foot above floor level of first floor and upper floors.
 - (4) On attaining roof height of first floor and upper floors.
 - (5) On attaining roof height of water tank and mumty whichever is higher (if applicable).
 - (6) On completion of Septic Tank prior to putting their cover.
 - (7) Air & water pressure quality test of Plumbing lines (for commercial buildings).
 - (8) Members who are found violating the By-Laws of DHAM during the course of construction will be charged as approved by DHAM Authorities from time to time.
 - (9) In case member intends to construct the building in phases, the sequence of construction in phases duly numbered shall be indicated on the submission drawing. For purpose of obtaining NOC of a building, the minimum requirement is completion of ground floor in all respect.
- j. **Deviations.** All Construction activities shall be processed as per approved building plans. However, if owner desires to make any changes during the construction, then a deviation plan shall be submitted for approval of DHAM Authorities prior to modification at site. Subsequent construction can proceed as per approved deviation plan. Any construction other than approved building plan or deviation plan shall be considered unauthorized and subject to penalty as per prescribed rates.
- k. **Completion of the Building**
- (1) The member will ensure completion of the residential /commercial building within three years from the date of approval of submission drawings. Any member not ensuring completion within three years will be liable to pay the late completion penalty as per prescribed rates. DHAM authorities may allow extension in time up to maximum

one year meriting justified reasons, if applied by the owner, one month prior to date of completion.

- (2) For special purpose buildings, owner will get the completion time approved prior to start of the construction activities from DHAM Authorities. If timelines are not approved specifically for a project than above mentioned completion time will be applicable and late completion penalty will be imposed accordingly.
- (3) **Duplicate Copy of Document/s.** Copy of submission drawing / completion drawing / CD / soil test report may be given to owner (if available in record) by charging Rs. 5,000/- for each document.

i. **Completion Plan.** The member shall submit completion plans to obtain a completion certificate within 30 days of completion of entire work. Completion certificate will be valid only for 10 years and has to be renewed afterwards. Any member not submitting completion drawings within due date will be liable to a penalty as per prescribed rates.

- (1) The documents to be attached with completion plan are as under:–
 - (a) 5 x set of as built drawings.
 - (b) Prescribed dues as decided by DHAM Authorities from time to time.
 - (c) Inspection Sheet, duly signed by the concerned Officers.
 - (d) All respective forms for adherence to By-Laws & quality control in construction, respectively duly signed by the respective consultants
- (2) After the receipt of completion drawings, DHAM Authorities technical staff shall arrange to inspect such work and after inspection.
 - (a) In case of violations, completion plan shall be returned unsanctioned with an order for demolition of unauthorized construction.
 - (b) In case of no violation, completion case shall be put up to the Completion Board of Officers detailed by DHA Authorities for final approval.

m. **Occupancy of Building**

- (1) Buildings shall only be occupied after obtaining Completion Certificate which will be issued after approval of completion plan.
- (2) If the member wants to occupy partly completed building then he should submit completion plan as per the completed portion with an application showing justified reasons for subsequent occupation of the building.
- (3) For purpose of obtaining occupancy certificate of a building, the minimum requirement is completion of ground floor in all respects.
- (4) If member occupies the building without getting approval from DHAM Authorities, penalty would be imposed as per Authority's regulation.
- (5) Membership of respective DHAM Clubs will be granted after Occupancy Certificate as per the prescribe rates and membership certificate shall be required to be submitted with completion plan.
- (6) Illegal occupants and violators will not be entertained with social & civic facilities of DHAM Authorities.

n. **Addition, Alteration and Renovation of Building after Approval of Completion Plan:**

- (1) Such addition, alteration and renovation may be done to building after obtaining approval for proposed works from DHAM Authorities. Addition and alterations, executed after the approval shall be followed by submitting completion plans and other required documents as per checklist.
- (2) Failing to get approval of addition and alterations on proper completion plan and undertaking such additions and alterations without prior approval of DHAM Authorities, the unauthorized construction shall be demolished at the risk and cost of the owner. In case any resistance in demolition of unauthorized construction, it shall be considered as illegal and plot file will be freezed by DHAM Authorities for any further transactions till removal of violation.

o. **Revised Building Plan.** Submission of revised building plans shall be mandatory in the following conditions:-

- (1) Structural changes required during construction.

- (2) After approval of completion plan, if changes / modification is more than 40% of total constructed area.
- (3) In case of time barred during construction.
- p. **Revised Completion Plan.** Revised completion plan will be mandatory in following conditions:-
- (1) After approval of revised building plan.
- (2) After completing the partially constructed building.
- q. **Construction Period.** The person shall commence construction of the building within a period of 3 years from the date of announcement of possession in respective sector, failing which the person shall be liable to pay non-construction penalty as prescribed by the Authority.
- The person shall complete the building within a period of three years reckoned from the date of approval of the drawing by the Authority. The drawing shall remain valid for one year and is extendable up to two years from the date of its approval. Upon the lapse of the three-year period of validity, the person shall be under an obligation to obtain fresh approval.
18. All utility services such as water supply, sewerage system, sewer treatment plant, drainage, electricity, gas, telecom, internet, etc. shall be developed by DHAM Authorities, in due course of time directly or through other departments/organizations and the development charges for utility services of the same shall be charged to the owner on pro-rata basis from time to time which shall be payable immediately by the owner of plots. In case of non-payment or delay in payment of development charges by the owner of the plots, the allotment/transfer may be cancelled on sole discretion of DHAM Authorities.
- a. **Imposition of Utility Bills.** The utility bills will be issued as soon as member occupy / partially occupy the house or get the completion certificate.
19. For special plots, in case the party to whom the plots are allocated, are not following the agreed Construction plan (approved)/ construction schedule, allotment of such plots is liable to be cancelled.
20. **Special Use Plot** Special use plot reserved for the specific purpose shall not be utilized for any other purpose.
21. **Residential Plots.** Residential plot shall not be utilized for any other purpose.

22. **Commercialization of plots.** Conversion of residential plot into commercial shall be allowed only according to a uniform commercialization policy formulated and revised from time to time with the approval of the Competent Authority through notification on the basis of comprehensive study of various urban areas under pressure for commercialization. Individual plots outside the policy will not be considered for commercialization. Procedure to be followed is as under:
- a. DHAM shall issue a public notice for the change of land use of the plots in accordance with the provisions of these By-Laws and the expenses shall be borne by the applicant.
 - b. DHAM shall give due consideration to the objections from the public, if any, in light of the By-Laws.
 - c. Final No Objection Certificate (N.O.C) of change of land use shall be issued by the DHAM Authorities.
 - d. The applicant shall pay the prescribed fees and other charges to DHAM.
23. **Height of the Building & Height of Floors.** Maximum height of the residential building including water tank / mumty or any structure should not exceed 40ft from the reference point.
24. **No of Storeys.** Maximum two storeys (B+G+1) are permitted. Number of storeys will be counted from the reference street / road.
25. **Drain under Gate.** A water channel of at least 3 inches x 3 inches would be constructed along the main gate line. This drain would be suitably connected to over flow manhole of septic tank. Steel grating shall be provided to cover it.
26. **Electric Meters.** Maximum two electric meters will be provided for each plot.
27. **Two Adjacent Plots.** If member has two adjacent plots and he uses one plot for construction of his house and second as lawn, then he has to follow following procedure:-
- a. Both the plots must be owned by the same member.
 - b. If ownership is different, then an affidavit on judicial stamp paper of Rs100/- and a sketch showing detail of boundary wall and gate duly signed by the approved architect will be required from second owner that he / she has no objection for utilizing his / her plot as green area only.
 - c. Members to get site plan / possession of the plot to be utilized as green / lawn.

- d. Construction of underground water tank and structure using steel, fiber or wood up till 25 ft x 25 ft in the plot utilized as green area will be allowed after approval from Competent Authority.
 - e. Sound proof generator may be placed after approval from Competent Authority.
 - f. Combine boundary wall will be erected and second gate is allowed on plot utilized as green area as per DHAM gate layout plan.
 - g. A passage / drive way from gate to building line would also be allowed, however no construction of any type such as porch etc would be allowed.
 - h. Monthly water charges will have to be paid by the owner.
28. **Two Adjacent Plots at Different Levels.** If two back to back / adjacent plots are at different levels and level difference is more than 5 ft then owner of the plot who first construct the house, will have to construct a common RCC retaining wall at rear side and foundation of RCC retaining wall should start from the lower road level.
29. **Installation of Solar Panels.** Solar panels / geysers on roof top of residential / commercial building will be provisionally allowed and structures including raised solar panel(s) or geyser(s) on roof of mummy and/ or overhead water tank are not allowed. DHAM reserves the right to change the policy, notify the member and the member will change accordingly within one month at his expense, risk and cost.
30. **Occupation.** Any commercial unit like shops / offices / halls / apartments can be occupied after completing the front façade of the whole building and the floor to be occupied should be completed in all respect. However, completion certificate should be obtained within 3 years from the date of approval of first submission drawing.
31. **Lightening Protection.** For all commercial buildings lightening protection should be provided.
32. **Provision for Special Persons**
- a. Minimum one toilet for handicapped equipped with special fixtures.
 - b. Minimum one lift in all commercial and public buildings, which can accommodate a wheel chair.
 - c. Ramp from footpath level to entrance of the building.
33. **Commercial**

- a. Petrol or diesel driven generator with soundproof canopy may be installed.
- b. Noise beyond the boundary limit shall not be allowed i.e noise control arrangement must be made.

34. **Toilets**

- a. Be provided in each commercial block.
- b. Cleaning and maintenance of the toilets is the responsibility of the owner.

35. **Installation of Antenna Tower & Lightening Conductor**

- a. Permission for Installation of Antenna Tower & Lightening Conductor will be valid for one year, which may be renewed every year with prescribed fee.
- b. The position of the tower has to be incorporated in design of the building the weight and placement has to be taken care of in the building structure.

36. **Water Points.** Electric water cooler shall be provided on as required basis.

37. **Instructions for Shop Owners**

- a. Garbage shall not be thrown in front of houses / shops / public buildings. Shopkeepers shall place dustbin in front of their shops and place the garbage in dustbin from where it shall be picked up by Authority.
- b. In order to avoid inconvenience to the customers, air conditioners shall be installed at the height of 8 ft from the level of veranda and proper arrangements shall be made for drainage of water. Preferably split type of air conditioners may be installed.
- c. Wall chalking, writing on walls and pasting of posters etc on the walls shall not be allowed.

38. **Boundary Wall**

- a. Member can construct a boundary wall within his property line. If boundary wall of 4½ inches width is constructed then pillar of 9 inches x 9 inches at 10 ft distance must be provided. If member wants to construct a common boundary wall, approval of both neighbors should be necessary and affidavit in this regard from both neighbors to DHAM should be mandatory.
- b. Both neighbors shall have full right to use it on their respective sides / top. However, no space from right of way of road / street shall be utilized for this purpose.

- c. Maximum height of boundary wall should be 8 ft from the highest point of the road in front of plot. However, 1 ft boundary wall can be increased by paying additional charges as per prescribed rates.
- d. Minimum height of boundary wall should be such to ensure the privacy of the adjacent plot.
- e. The boundary wall should be of RCC or brick masonry wall.
- f. The front / side boundary wall (If there is open space / nullah / road on that side) may be constructed with grill or any other see-through material.
- g. A safety grill up to 2 ft can be provided above boundary wall.
- h. For RUMANZA GOLF COURSE, Boundary Wall will be as follows:-

Ser	Face	By-Laws
(1)	Front	1 Ft Brick Wall (Max) Rest will be Grill of DHA approved design (5ft Height)
(2)	Rear	<u>Golf Course Side</u> 1 Ft Brick Wall (Max) Rest will be Grill of DHA approved design (5ft Height) <u>Rear Side exposed to Outside</u> Masonry Wall can be constructed (up to 8ft from RL)
(3)	Sides	Masonry wall up to max 6'-6" height
(4)	Main Gate	See through Gate (Max Width – 20 ft incl. wicket gate)

39. **Health and Safety Guidelines**

- a. Architect and engineers should make sure safety of the building by practicing proper engineering technique, professional skills and execution procedures as per health and safety standards.
- b. Architects, engineers and other professional persons involved in design of building should make sure not to include anything in the design that would necessitate the use of unwarrantably dangerous structural procedures and undue hazards, which could be avoided by design modifications.
- c. Every member, contractor and sub-contractor shall make an arrangement during operation, handling, transport, storage of building material to ensure the safety and health of the labour and public.
- d. Every member, contractor and sub-contractor shall ensure that all workers are properly informed of the hazards of their respective

occupations and the precautions necessary and adequately supervise to avoid accidents, injuries and risk to health, in particular that of young workers, newly engaged workers and illiterate workers.

- e. Blasting and use of explosives for excavation / demolition is not allowed.
- f. Debris shall be handled and disposed off by a method, which will not endanger workers and public safety and health.
- g. No youth under the age of 14 is permitted on the habitat construction site.
- h. Use of ladders is not allowed during poor weather or on windy days.
- i. Safety of worker, labour and visitor will be sole responsibility of member / owner.

40. **Administrative Aspects**

- a. **Commercial Activity**. No commercial / semi commercial activity is permitted in the residential area.
- b. **Messes / Guest Rooms**. Residential accommodation cannot be used / rented as Mess, Guest House, Guest Room or Hostel etc.
- c. **Utilization of Vacant Plots**. Vacant plots / open area cannot be used for any function / gatherings.
- d. **Fire Works / Discharge of Arms**. To guard against any untoward incident, display of fireworks (Aatish Bazi) and discharge / testing of arms is prohibited in residential area.
- e. **Distinctive Marking / Flags**. Flags / Banners which show Political / Religious / Sectarian affiliations are not allowed on both residential and commercial buildings. Alam Flag may be installed in houses on special request up to 6ft height.
- f. **Grave Yard**. DHAM policy on grave yard will be followed strictly.
- g. **Noise Pollution**. No person shall make, cause or permit to be made any noise or sound which disturbs or tends to disturb the serenity, peace, rest, enjoyment, comfort or convenience of the neighbourhood or of persons in the vicinity. DHAM considers that the acts listed below cause noises or sounds which are objectionable:-

- (1) Playing or operating any radio, stereophonic equipment, television receiving set or other instrument or any apparatus for the production or amplification of sound, where the noise or sound is clearly audible at a point of reception in a residential area.
 - (2) Harboring or keeping any animal or bird which persistently cries, barks or howls.
 - (3) Idling running of a machine for more than 15 minutes.
- h. **Hiring of House.** Any tenant hiring the house will get an NOC from Security Branch of DHAM.
41. **Vehicle Stickers.** All the members residing in DHAM are bound to get their vehicles stickers from Security Branch of DHAM after filling requisite forms.
42. **Rash / Un-safe Driving.** All the residents are requested to drive within allowable limits in DHAM. Driver caught over speeding / un-safe driving will be liable to traffic laws. Underage driving strictly prohibited. Similarly driving a motorbike without safety helmet is not allowed within DHAM premises.
43. **Servant Passes.** Member should get passes for all servants from Security Branch.
44. **Government Servant.** No Government servant / employee is allowed to engage in any trade or undertake any employment or work other than his official duties, except with the prior sanction of the Government. Government employees are thus not authorized to sign or stamp any drawings in any capacity.
45. **Design Element in Setbacks.** Design Element maximum upto 9 inches will be allowed in front setback and 6 (six) inches in sides / rear setbacks.
- a. **Features in Setbacks.**
 - (1) Rockery / water feature / flower pots upto height of boundary wall may be constructed with front boundary wall. In case rockery / water feature is provided along common boundary wall, a gap of minimum 6 inches shall be provided between the wall and rockery / water feature.

- (2) Rockery / water feature / flower pots in sides / rear clear open spaces may be allowed leaving clear passage of 2 ft 6 inches between building & rockery / water feature and minimum 6 inches gap between common boundary wall & rockery / water feature.
- (3) In case of seepage at the boundary wall of adjacent house due to the presence of rockery / water feature, the owner shall address the problem of seepage within 15 days from the issuance of notice from DHAI-R, otherwise, it will be rectified at owner's risk and cost.
- (4) Plants are not allowed in side / rear set-backs.

46. **Water Tank**

(1) **Under Ground Water Tank**

- (a) Maximum size of water tank 1,500 gallons for plots upto one kanal.
- (b) Maximum size of water tank 2,000 gallons for more than one kanal.
- (c) Only one underground water tank is allowed.
- (d) Should have a minimum distance of 3 ft from front boundary wall and should be located in such a way that bowzer filling for water tank may be facilitated from the outside.
- (e) Tank should be constructed in RCC.
- (f) 1 ft free float will be taken while calculating the capacity of water tank.
- (g) Underground Water Tank is mandatory.

(2) **Over Head Water Tank**

- (a) Maximum size of water tank 900 gallons for plots upto one kanal.
- (b) Maximum size of water tank 1,200 gallons for more than one kanal.
- (c) Height of water tank may be allowed upto 8 ft from roof top level.
- (d) Only one overhead water tank (permanent / temporary) will be allowed. However internal partitioning of tank is allowed.
- (e) Tank should be constructed in RCC.
- (f) 1 ft free float will be taken while calculating the capacity of water tank.

47. **Washing Area in Rear Set-back.** One temporary shade of 7 ft x 4 ft will be allowed at rear compulsory open space (for laundry only).
48. **Chamfering of Corner Plots.** For smooth flow of traffic at turning, the corner of a plot bounded by two roads shall be tapered / chamfered by a standard i.e 5 ft x 5 ft or 7 ft x 7 ft on either side from the corner for all categories except commercial plots.
49. **CONSTRUCTION BY-LAWS**
- a. The temporary store would be constructed within the plot or in the adjacent plot without tempering the plot and with the permission of DHAM Building Control Section.
 - b. The construction material would be placed within the plot area or in the adjacent plot without tempering the plot and with the permission of DHAM Building Control Section.
 - c. Every person undertaking building work shall provide adequate readily accessible sanitary conveniences for all persons engaged on that work. The sanitary convenience provided shall be sited in such a position as not to create a nuisance or cause offence to persons, either in a public place or to persons residing or working in any premises adjacent to or near the site where building work is being undertaken. The sanitary convenience provided would be disposed off to DHAM sewer through septic tank. No direct disposal of sewage to main sewer would be allowed.
 - d. In case of open basement 2 ft excavation in the adjacent plot can be done with the permission of owner / DHAM Building Control Section provided the backfilling would be done with sand and the retaining wall would be constructed within 15 days from the commencement of excavation.
 - e. Any dust produced as a result of construction must be kept to a minimum by damping down with water. Stockpiles of materials must be kept damp to prevent windblown dust.
 - f. No noise emitting equipment such as wood / steel cutting machines, marble cutters / grinders can be placed in porch / lawn or outside the building.
 - g. During the construction activities like cutting / grinding of marble, cutting of wood, steel etc cover the outer openings such as doors, windows ventilators

etc. with polythene sheet to avoid spreading of dust into the adjacent houses.

CHAPTER – IV

STANDARDS FOR RESIDENTIAL BUILDINGS

1. **General Conditions.** The following conditions shall apply: -
 - a. No construction shall be allowed in the compulsory open space, hereinafter referred to as COS except a pergola for car porch in side COS, spiral stair in rear COS and a guardroom in front COS not exceeding 65 Sft with clear overall height up to maximum 8 ft above the floor of car porch (from 10 Marla to 1 Kanal plots), 125 Sft with clear overall height up to maximum 8ft above the floor of car porch shall be allowed for guard room with toilet (above 1 Kanal plots). Additional guardroom may also be allowed as a special case.
 - b. Amalgamation of residential plots will only be permitted as under:-
 - (1) Amalgamation plots shall be allowed maximum up to four times the size of the original plot, provided that the original allotment conditions of the plots are similar, and COS will be applicable as per new size.
 - (2) Prescribed fee of amalgamation will be charged.
 - (3) Amalgamation of plots of one constructed, one or both partly constructed, is allowed provided COS conditions of bigger size plot is met.
 - (4) Amalgamation of plots both constructed is allowed by removing central wall, in this case COS of original plots will remain same.
 - c. Sub division shall not be permitted for any size of the plot.
 - d. Swimming pool is permitted to be built on plots of 1 Kanal or above after fulfilling following conditions: -
 - (1) Allowed to be constructed in the basement or ground floor (must be kept 3ft away from boundary wall) ensuring sound structural design duly certified and documented by the Registered Structural Engineer.
 - (2) To be appropriately protected for privacy.
 - (3) Change/shower room is mandatory.
 - (4) Proper filtration plant will be installed.
 - (5) Holding tank of appropriate capacity to be provided.

- (6) Any damage caused to neighboring structure will be made good by owner constructing swimming pool.
- e. Placement of generators and electro-mechanical equipment with proper structural arrangements as may be required is allowed on the roof tops and anywhere in the front COS subject to sound structural design duly verified/certified and documented by registered structural engineer, provided the following is satisfied: -
- (1) Smokeless and noise free.
 - (2) Sound resistance canopy.
 - (3) Should have proper electro-mechanical connections of permanent nature.
 - (4) Covering of the Generator having architectural element not exceeding boundary wall height and protruding maximum one foot on sides of Generator, may be allowed.
 - (5) Anti-vibration pads should be provided under Generator.
- f. Compulsory open space shall always be free from any erection or obstruction except following:
- (1) Landscaping with plants.
 - (2) Steps leading to ground floor.
 - (3) Stairs leading into basement in the rear and side(s) COS not exceeding half the width of COS or in front COS up to max of 3ft.
 - (4) One/two columns and beams in side COS to support car porch, connecting the two picked up columns in line with boundary wall restricting the height of wall up to 10 ft from road level.
 - (5) Car porch will be allowed as a special case in the side COS with a pergola on it. However, covering of pergola with transparent material is allowed.
 - (6) Two / Three columns for gate in line with boundary wall and not exceeding the height of boundary wall.
 - (7) Guard room in front COS as per specified sizes of various plots.
 - (8) Underground water & septic tank.
 - (9) Dog / Bird's cage in the front or rear COS.
 - (10) Electric cabinet, motor / pump cabinet in the front COS with covering of these having architectural element.

- (11) Covering of service pipes with architectural elements.
 - (12) Covering of the Generator set having architectural element not exceeding boundary wall height and protruding maximum one foot on sides of Generator in front COS.
 - (13) A wooden / metallic open stair in the rear COS to climb up to first floor and rooftop.
 - (14) Water body, fountain, rockery, Bar BQ Counter, walk ways, elevated flower beds up to 2 ft in COS, not exceeding half the width of COS.
 - (15) Benches, gazebo / canopy (temporary), rockery in front COS.
 - (16) Water taps, ablution area and washing area in side COS, not exceeding half the width of COS.
 - (17) Temporary covering having three sides open over the steps /air wells leading to basement/windows.
 - (18) Swimming pools in front COS, where applicable as per these By-Laws.
 - (19) Grill gates and railing for pets, etc. up to height of boundary wall.
 - (20) Ramp leading into basement in the side COS leaving 3 ft spare towards boundary wall for COS connectivity.
 - (21) Rear and back side COS up to maximum 50% of its width may be utilized for ventilation and light of the basement commonly termed as 'open to sky'. A fiber glass shade (3 sides open) may be constructed over the open well to stop the rain water. Stairs leading to basement may also be constructed in the open well. Side COS (not less than 10 feet) may also house the open well including stairs from the basement. In cases of plots where level difference is such that basement could be designed as lower ground floor, special permission may be granted by DHAM Authorities for lowering the full COS of back and sides with proper design of services.
- g. Stairs/steps outside the boundary wall shall be strictly prohibited except ramp up to 7 ft (in horizontal length) and steps of wicket gate.
- h. Erection of hoardings and antenna towers on residential buildings is strictly prohibited.

- i. For odd or irregular shaped plots, the requirement of foot print area shall prevail over COS. However, COS in front shall be left as per provision of these By-Laws.
- j. COS on non-rectangular shaped plots shall be measured as average space between buildings and property line. At least 50% permissible COS shall be ensured.
- k. For plots having area 1 Kanal and above, porch columns shall have a clear distance of 15 ft from boundary wall, however, projection of 5 ft towards front for car porch only is allowed.
- l. For residential buildings, the maximum riser of stair steps shall be 7 inches and the minimum tread will be 11 inches.
- m. High car porch is not allowed with columns resting over the boundary wall. They can however be permitted if kept clear of the COS.
- n. A water channel of cross-section at least 3" x 3" size will be constructed in line with a boundary wall under the gate. This will have suitable covering on top (grating) to ensure that water from inside the house does not come on the road.
- o. Construction of barsati with maximum of 6ft projection from the stair tower with three sides open is permitted.
- p. Servant quarters shall not be allowed in compulsory open space. All servant quarters shall be part of the main building.
- q. Area of servant quarter excluding toilet should not be less than 80 sq ft.
- r. For any landscaping outside property line, permission shall be obtained from DHAM authorities.
- s. Kitchen, toilet and bathroom are allowed in basement with mechanical means of disposal and exhaust where required in houses.
- t. Shops, offices and godowns of any description for storing or exhibiting for sale, any merchandise of any type or any commercial/industrial use, are strictly prohibited in residential building plots.
- u. Residential Buildings will not be used as regular place of assembly / worship including Masjid, Jamaat Khana, Imam Bargah, Azza Khana, Church, Temple, marriage or other social ceremonies and concerts etc.
- v. Any commercial activity including establishing the offices, parlors, tuition center, etc. will NOT be allowed in the residential buildings.

- w. Inter floor in residential units may be permitted on top of bathroom/dress provided the clear height below 7'-0".
- x. The parameters for level variations while scrutinizing and evaluating submission plans are as under: -
 - (1) Plots measuring **2 Kanals** and above wherein provision of two main gates is allowed in By-Laws; if the variation in the plot levels between minimum and maximum exceeds 5 ft, then, any one gate may be planned against minimum level. If, however, level variation is less than 5 ft, both the gates would be placed according to the road in front.
 - (2) Due to variation in level or encountering hard strata, wherein excavation becomes difficult, split-level plinth may be planned duly supported by the contour plan.
 - (3) If the contour of a plot depicts level variation of 5ft and above, encompassing up to 40% of the plot area and plot falls on more than one road/street, the bottom of the basement or part thereof, may be planned with respect to one of the road, having direct access to it from the abutting road provided:-
 - (a) It does not interfere with the overall security system /master plan of the area.
 - (b) It does not fall on the main road.
- y. Owner of the plot (1 Kanal and above) will make an arrangement by constructing an underground tank for collection of graywater, (after septic tank) which can be used for lawn, plants and flower beds etc.
- z. The height of area between edge of the road and property line (residential /commercial) shall not be raised. Blocking of such area by placing stones / blocks is not permitted.
- aa. Construction of "Duplex" of any design is strictly prohibited on any size/type of plot.
- bb. All alternative energy solutions shall not be considered in the overall height of the allowable height of the building.
- cc. Single Storey house can be constructed.
- dd. Design element on porch can be constructed up to the allowable width of building shade at front & sides. The design element should be without roof

/ pergola and it will not be counted in covered area. The design element can be constructed after approval from Competent Authority.

2. **Stair Tower:** The area of stair tower shall be governed as under:-

Table 1: Area of Stair Tower

Type of stairs		Plots up to 1 Kanal	Plots of 1 Kanal and above
(1)	Box Stairs	225 sqft	250 sqft
(2)	Dogleg Stairs	180 sqft	200 sqft
(3)	Straight Flight Stairs	150 sqft	180 sqft
(4)	Spiral Stairs	120 sqft	150 sqft

3. **Open Stairs.** Open stairs (Spiral or straight) would be allowed subject to the following:-
- These stairs are provided for servant room located at first floor and for access to roof top for maintenance only.
 - Spiral stairs of 3'-6" dia or straight stair of 2'-6" width allowed in rear COS starting from building line or within the building line for plots measuring 10 Marla and above. Stair tower / mumty cannot be constructed over these stairs.
4. **Mumty.** Mumty conforming following specifications / conditions is allowed and may be used for storage / habitation with toilet whereas window(s) towards neighboring plot / house other than staircase is / are not allowed:-
- Location.** Mumty can be constructed over primary (main) or secondary staircase (within the building line).
 - Width.** Maximum width of mumty including design element shall not be more than half the average width of plot.
 - Height.** Height of mumty including design element shall not be more than 11 ft from top of 1st floor roof slab.
 - Covered Area.** Covered area of mumty including stair tower vis-à-vis area of under mentioned plot may be allowed as shown in front of each.

Plot Size	Allowable Covered Area of Mumty (SFT)
Up to 10 Marla	200 Sq. ft
Above 10 Marla up to 1 Kanal	300 Sq. ft
Above 1 Kanal	400 Sq. ft

- e. Covered area of Mumty including stair tower may be exceeded as an incentive to plot owners which are sharing their load on Solar Energy. Excess covered areas are as under:-

Plot Size	Allowable Covered Area of Mumty (SFT)
Up to 10 Marla	300 Sq. ft
Above 10 Marla up to 1 Kanal	450 Sq. ft
Above 1 Kanal	600 Sq. ft

5. **Entry Gates.**

- a. Position / Location of the gate(s) will be kept on common wall as per approved site plan.
- b. Standard width of main gate including wicket gate excluding pillars should not be more than 20 ft. However, if member desires to increase the width, gate up to 25 ft may be allowed by paying additional subscribed charges as one time measure but services such as transformer, DBs etc would not be shifted.
- c. For plots having level difference of 7 feet or above in frontage of 50 feet can change the main gate location after the approval from Competent Authority, however no services such as transformer, DBs etc will be shifted.
- d. Additional gate with car porch and independent guard room shall be permitted only for plot measuring 2 Kanal and above on title road with special permission.
- e. **No. of Gates.** Number of gates shall be allowed as per following:

Corner Plots

Ser	Plot Size	Entry Gates
a.	5 Marla	Only 1x front entry gate allowed
b.	8 Marla	Only 1x front entry gate allowed

c.	10 Marla	1x entry gate on front and additional gate up to 12 ft may be allowed with special permission on the side
d.	1 Kanal	1x entry gate on front and additional gate may be allowed with special permission on front or side
e.	2 Kanal	2x gates may be allowed with special permission on front and 1x gate on side
f.	4 Kanal	2x gates at front, 1x at side and 1 at rear are allowed for houses where road is available at side and rear as well

Non – Corner Plots

Ser	Plot Size	Entry Gates
a.	5 Marla	Only 1x entry gate allowed
b.	8 Marla	Only 1x entry gate allowed
c.	10 Marla	Only 1x entry gate allowed
d.	1 Kanal	Only 1x entry gate allowed
e.	2 Kanal	2x gates may be allowed with special permission on front
f.	4 Kanal	2x gates at front and 1x at rear are allowed for houses where road is available at rear side as well

6. **Basement for Residential Plots.** Basement shall be permitted up to allowable footprint of ground floor while ensuring safety of adjoining buildings. Any damage occurring to neighboring property or the DHAM property shall be made good by the owner or builder to the satisfaction of the DHAM. Indemnity Bond shall be obtained from owner before issuing approval of building plan.
- a. In case of open basement or COS less than 5 ft, owner shall submit a method statement showing the precautionary measures to be taken by the owner for safe guarding the adjacent property and obtain an NOC from DHAM, prior to any excavation activity.
 - b. Front COS will be left untouched.
 - c. Sides and rear COS may be dug till the plot line ensuring safety of the neighboring property.
 - d. Construction of ramp, stairs/steps leading to the basement is permitted within in the side and rear COS without any super structure over them leaving 3ft clear space

- e. Clear height of the basement shall not be less than 8 feet 6 inches and more than 10 feet.
 - f. Basement walls adjacent to completed houses should be completed within 15 days from the date of commencement of excavation.
 - g. All the retaining walls of the open/closed basement should be of RCC.
 - h. If services, such as bath and kitchen etc, are provided in the basement, the owner must provide mechanical disposal from the basement to the upper level in all cases (irrespective of levels of DHAM AUTHORITIES mains), so that there is no possibility of back flow in case of choked sewer lines. DHAM AUTHORITIES will not be responsible for the consequences in any case. Cost of additional services work shall be borne by the member.
 - i. Closed Basement, vaults, cellars and other structures, wholly or partly below the ground level/approach road level, shall be allowed by the Authority provided minimum 1 x Emergency exit is provided.
77. **Ramp.** Drive way is to have four independent conduits having minimum 6” dia for laying services like telephone, gas, water supply etc under it. This should be indicated in the plan of the house. The slope of ramp should be as under:
- a. Where no footpath exists, the ramp may be extended maximum up to the outer edge of drain kerb stone/plot line. The height of ramp at start of property line should be maximum 18” or in a slope of 1:7. The height of ramp would be taken from intersection of gate center line & reference road crown.
 - b. Where footpath exists, the ramp start point may be taken from outer edge of footpath. The height of ramp at start of property line should be maximum 18” or in a slope of 1:7. The height of ramp would be taken from intersection of gate center line & reference road crown.
8. **CCTV Cameras.** Installation of CCTV Cameras are compulsory for all the residential and commercial buildings in DHA Multan.
- a. Specification of Cameras are as follows:-
 - (1) Min Storage Capacity: 7 Days
 - (2) Min Camera Resolution: 4 MP
 - b. Number of Cameras to be installed will be as follows:-

Ser	Plot Size	Cat	No. of Cameras	Remarks
Normal / Routine Plot				
(1)	Up to 10 Marla	R	2	1x Front Gate / Street 1x Side Passage
(2)	Above 10 Marla	R	3	1x Front Gate / Street 2x Side Passages
(3)	2M / 4M / 8M	C	2	1x Entrance 1x Top / Parking View
Corner Plots or Plots with Rear Open				
(4)	Up to 10 Marla	R	3	1x Front Gate / Street View 1x Side Passage 1x 2 nd Entrance or 2 nd Street
(5)	Above 10 Marla	R	4	1x Front Gate / Street 2x Side Passages 1x 2 nd Entrance or 2 nd Street
(6)	2M / 4M / 8M	C	3	1x Entrance 1x 2 nd Entrance / Street View 1x Top / Parking View

9. **Fire Safety.** Considering the safety in an event of fire, safety measures must be taken account for. Following equipment must be installed in every house before applying for completion certificate:-
- Fire Extinguishers: 2 (Min 10 lbs with rating 2-A: 10-B.C)
 - Fire Blanket: 1 (Min Size: 1.5m x 1.5m and 0.43mm thick)
10. **Residential Buildings Standards.** All residential houses or bungalows shall comply with the following standards: -

Table 2: Residential Building Standards

S. No	Area of Plot	Max Allowable Covered Area (GF)	Front (ft)	Rear (ft)	Sides (ft)	No of Floors
a.	5 Marla	90%	5'-0"	2'-6"	-	B+G+1
b.	8 Marla	90%	5'-0"	3'-0"	3'-0" (On one side only)	B+G+1
c.	10 Marla	75%	5'-0"	3'-0"	5'-0" (On one side Only)	B+G+1
c.	12 Marla	75%	5'-0"	3'-0"	5'-0" (On one side Only)	B+G+1
d.	1 Kanal	65%	15'-0"	5'-0"	5'-0"	B+G+1
e.	2 Kanal	65%	20'-0"	8'-0"	5'-0"	B+G+1
f.	4 Kanal	65%	30'-0"	10'-0"	15'-0"	B+G+1

(In addition detached servant quarter up to 500 sft is permitted)

Note: Boundary Wall is included and will be part of COS. Covered area of first floor shall not exceed 75% of the total permissible area of the ground floor irrespective of the area covered at the ground floor. The second floor shall not be permitted. However, for 5 marla plot 100% area of ground floor may be covered at first floor.

4 Kanal Plots.

- Annexy (if constructed) should be part of main building.
- 50% of the open area shall be in the form of soft landscape.

11. **Minimum Residential Buildings Cubical Capacity Standards**

The following shall be minimum cubical capacity standards for residential buildings:-

Table 3: Minimum Residential Buildings Cubical Capacity

Description	Area (Sft)	Width (ft)	Clear Height (ft)
Living rooms	120	10'-0"	9'-6"
Kitchen	48	6'-0"	9'-6"
Powder Room	15	3'-0"	7'-6"
Bath room	24	4'-0"	7'-6"
W. C only	15	3'-0"	7'-6"
Servant room/quarter	80	8'-0"	9'-6"
Guard room(s) on the gate only	36	6'-0"	8'-0"
Passages, Corridors Galleries etc	-	3'- 6"	7'-6"
Main stair case	-	3'-6"	7'-0"

Notes:

- a. Guard room at gate of plots from 10 Marla to 1 Kanal plots, maximum allowable area is 65 Sft.
 - b. Guard room at gate of plots above 1 Kanal, maximum allowable area is 125 Sft.
 - c. Guard room at gate shall have a height of 8 ft.
13. **Shed on Porch.** Car porch can be covered with shed with temporary structure such as Fiber, Teflon etc. Design and material of the shed must be approved by the authority prior to installation.

14. **Residential Buildings Height Standards**.The following shall be the height standards for residential buildings:-

Table 4: Residential Buildings Height Standards

Description	Clear Height (ft)	
	Max	Min
Level of main gate (being opened on the main street/road) from the road level	1'-6"	1'-0"
Plinth Level (subject to contour of plot as defined in these By-Laws) from the road level	4'-0"	1'-6"
Plinth Level (If Lower Ground Floor / Basement Parking is provided) ONLY FOR RUMANZA PLOTS	5'-0"	3'-0"
Ground Floor (Floor Level to Bottom of roof slab)	14'-0"	9'-6"
1st Floor	12'-0"	9'-6"
Height of main building (up to roof top slab)	35'-0"	22'-0"
Stair Tower	8'-0"	7'-0"
Stair Tower with elevator shaft	12'-0 "	-
Over all height of building including stair tower with elevator Shaft	40'-0"	30'-0"
Parapet Wall (Clear Height after Water Proofing & Insulation)	5'-0"	4'-0"
Parapet Wall for Attached Houses toward adjacent houses (Clear Height after Water Proofing & Insulation)	7'-0"	4'-0"
Boundary wall from crown level of the road	8'-0"	6'-0"
Clear height of basement	10'-0"	8'-6"

Note: 2 ft high iron protective barrier over boundary wall may be permitted by the Authority under special circumstances.

- a. Specified charges will be levied by DHAM for processing the case for vetting of Building Plans and Structural drawings. These rates are subject to the determination by the DHAM from time to time.
- b. Structural design and vetting is compulsory for all types of residential buildings irrespective of height.

CHAPTER – V

STANDARDS FOR COMMERCIAL BUILDINGS

1. **Classification.** In DHAM, two types of buildings fall under this category, namely Commercial Buildings and Mixed-Use Buildings.
2. **Standards for Commercial and Commercial Mixed Use Building:-**
 - a. **Main Commercial Plots up to 1 Kanal.** Following standards for Commercial and Mixed-Use Building will be followed for plots below 1 Kanal:-

Table 5: Standards for Main Commercial – Below 1 Kanal

Plot Size	Foot print	Arcade at GF	COS (Width in ft)			Max Height	Floors
			Front	Rear	Sides		
Up to 8 Marla	100%	6'-0"	-	If building is having both sides 40 Sft compulsory ventilation duct		84 ft	B+G+5
Above 8 Marla & Below 1 Kanal	100%	6'-0"	-	5'-0"	5'-0" (One Side)		

Notes:

- All foundations to be designed in a manner to ensure that they are not going inside other plots.
- Provision of Elevator is compulsory for the buildings above three storeys.
- Relaxation in height up to 6 ft is allowed for Lift Well / Elevator Machine Room.

- b. **Main Commercial Plots above 1 Kanal:** Following standard will be followed for Commercial and Mixed Use Building for plots of 1 Kanal and above:-

Table 6: Standards for Main Commercial – 1 Kanal & Above

Plot Size	Zone	Ground Coverage (Max)	FAR (Max)	No. of Storeys (Max)	Total Height (Max)	ROW of Road (Min)
1 Kanal – Below 2 Kanal	Mid Rise – I	65%	N/A	G + 6	Up to 90 ft	65 ft
2 Kanal – Below 4 Kanal	Mid Rise – II	65%	1:5.5	G + 9	Up to 120 ft	65 ft
4 Kanal – Below 8 Kanal	High Rise – I	65%	1:8	G + 14	Up to 200 ft	80 ft
1 Acre – Below 2 Acres	High Rise – II	65%	1:12	G + 23	Up to 300 ft	150 ft
2 Acres & Above	Skyscraper	65%	No Restriction	No Restriction	No Restriction	150 ft
Mandatory Open Spaces						
Plot Size	Front Space		Side Space		Rear Space	
Below 4 Kanal	15 ft		N/A		5 ft	
4 Kanal & Above	30 ft		16 ft		13 ft	

Notes:

- Detail Working Drawings of all the mega commercial projects (1 Acre or above) must submit their drawings / building model on **BIM**. Level of Development (**LOD**) of BIM must be 300 or above.
- All foundations to be designed in a manner to ensure that they are not going inside other plots.
- Building line has to be followed. However, if design of building requires any change, that may be considered on merit & payment without compromising on the services etc.
- The floor level of mandatory open spaces for all buildings shall not be more than 6 inches higher or lower than the adjoining road level.
- No boundary wall between two adjoining commercial buildings to improve access

of utility vehicles.

- Vehicular entry and exit shall be provided.
- The side spaces and front between two commercial buildings shall be kept at the same level for common use.
- Parking Basements can be constructed according to the soil conditions/water table in the particular area
- Parking shall be provided as laid down in these Building Regulations.
- For mega projects, FAR, Ground Coverage, Height and similar architectural / planning aspects shall be decided by the Authority (Board of Governor) on the request of owner(s) in case of any difficulty, hardship pertaining to planning/ building standards and maximum building plan period.
- For energy efficiency, all new commercial building shall provide LED lights for lighting
- In all new commercial buildings, solar energy systems, shall be provided at least for corridors lights.
- For plots abutting on 60-ft and above right of way, separate plans for basement shall be submitted and sanctioned/released in the first phase in residential buildings.
- Requirement of NOC from the Civil Aviation Authority shall be mandatory as per relevant Rules of Civil Aviation Authority and directions received from time to time in multi-storey building above 300-ft.
- Underground water tank and overhead water tank shall be provided in all types of buildings.
- In commercial building insulation of outer walls, roofs and windows shall be provided for energy efficiency.
- In multi storey buildings, the outer window glass shall be double glazed/heat resistant and tinted in order to control air leakage.
- Walls facing sun shall be insulated in residential and commercial buildings.
- The roofs and sun facing buildings sides shall be insulated.
- Heat/Light repellent paints shall be used on outer walls of buildings.
- The lighting system of buildings shall comply with the provisions of Building Code of Pakistan (energy provision-2011) and LED lights shall be installed in commercial buildings in place of conventional incandescent bulbs.
- For false ceiling and wooden paneling fire ratted building material shall be used with proper fire safety measures.
- Water Supply for commercial plots shall be the responsibility of Owner / Developer.

- For mega commercial projects (1 Kanal and above), owners are responsible for installing all the public utilities including but not limited to electricity, water, gas etc and to take all approvals and submit government fees and dues for this purpose. DHA will only facilitate in obtaining such approvals by issuing NOCs and other required documents. If the utilities load exceeds the capacity of DHA Infrastructure, Owners are required to enhance the capacity at its own cost or optimization will be done by DHA at owner's expense.
- Commercial plot owners who are willing to sell sub-divided units shall be liable to get registered with DHAM all the bookings / sale / transfers / cancellations of the units to be constructed / developed as part of the project. All cases of bookings, cancellations and transfers shall be referred by the Builder / Owner to DHAM along with its NOC as per By-Laws of DHAM and SOP for registration of Large Commercial Plots.

- c. **Commercial and Mixed Use Buildings Height Standards In Sectors / Residential District.** The following shall be height standards for Commercial and Mixed Use buildings in sector shops:-

Table 8: Height Standards for Commercial Buildings in Sector Shops

Description	Height (ft)	
	Max	Min
Plinth level subject to contour of plot as defined in these By-Laws	4'-0"	2'-0"
Ground floor including slab (Above the plinth)	14'-0"	10'-0"
1st Floor and subsequent floors including slab	12'-0"	10'-0"
Parapet Wall	5'-0"	3'-6"
Height of Main Building including parapet wall (B+G+4) for sector shops (4 marla to 8 marla)	72'-0"	55'-6"
Height of Main Building including parapet wall (B+G+1) for sub sector shops (2 Marla)	33'-0"	20'-0"
Stair tower including slab	8'-6"	8'-0"
Stair tower including lift well	13'-0"	10'-0"
Over All height of building is applicable to standard size plots or the amalgamated plots created there from (B+G+4)	With Lift Well 79'-6"	65'-6"
Level of Arcade from crown of road	1'-0"	0'-6"
Ceiling height of basement without obstruction	10'-0"	8'-0"
Min clear height of basement for parking without obstruction	8'-6"	7'-6"

Note:

- DHAM Authorities may allow increase in Height of Ground Floor including slab i.e. more than 14 ft subject to Architectural requirement of the building.
 - Verandah / Arcade for sector and sub sector shops shall be minimum 6 ft.
- d. **Supervision.** Construction supervision and Quality assurance will be the responsibility of Owner's full time Engineers who will supervise the work.

However, Owner must hire a third-party supervision consultant for projects of 75,000 sft covered area or more.

3. **Basement for Commercial Building Plots:**

- a. All commercial buildings, community, office, multi storey buildings must have basement which can be used as underground shelters in case of emergency / war and same can also be used as underground parking.
- b. Construction of basement(s) will be permitted up to allowable footprint of ground floor. For plots having roads on all sides, basement may be allowed up to entire plot area subjected to approval from authority.
- c. Construction of more than one basement will be permitted subject to sound structural design and safety of neighboring / adjoining buildings duly verified / certified and recorded by registered structural engineer.
- d. Use of Basement for residential purpose will be strictly prohibited.

4. **Standards for Petrol Pumps and C.N.G. Stations.** Petrol pumps and CNG stations are only allowed in the designated commercial plots in DHAM Master Plan for this purpose.

- a. The term "Petrol Station" means a station for the sale and retail of petrol and ancillary products for motor vehicles.
- b. The minimum area of a petrol station used for petrol filling facilities and servicing activities shall not be less than 800 sq yds.
- c. The minimum area of a CNG station shall not be less than 600 sq yds.
- d. Access roadways of petrol or CNG station shall be constructed in accordance with the following requirements:-
 - (1) No Access roadway should cross the sidewalk at an angle of more than 45 degrees.
 - (2) The width of each lane shall be at least 12 ft.
 - (3) Both "in" and "out" roadways shall be provided, respectively for leaving and entering the approach traffic lane at an angle of not more than 45 degrees.
- e. Adequate space shall be provided in petrol stations for parking for supply tankers while discharging its load.

- f. In addition to lavatory provided for the staff, at least one lavatory shall be provided each, for ladies and gents, at petrol or CNG station exclusively for public use.
 - g. All requirements for firefighting and fire prevention as laid down in Building Code of Pakistan – Fire Provisions 2016 shall be followed for all Petrol Pumps / CNG Stations.
 - h. On an existing petrol pump, CNG facility shall be allowed only if the area is 1000 Sq yds or more.
 - i. A single storey office and retail mart or shop shall be permitted on an area not exceeding 5% of the plot area in addition to the tyre and puncture shop, telephone booth and drinking water facility.
 - j. All building structures shall be constructed leaving a COS of at least 10 ft from the boundary of the plot of the petrol or CNG stations or according to standards of Explosives Department whichever is more.
 - k. Distance between two dispensers shall not be less than 24 ft.
 - l. Distance between dispenser and road edge shall not be less than 18 ft.
 - m. All title documents including site plan duly attested are to be supplied for Petrol or CNG Station. In addition permission from Ministry of Petroleum and Natural Resources is also required for CNG Station.
 - n. The compressor station shall be located at a minimum distance of 5 ft inside from the boundary walls and all measures provided in CNG Safety Rules, 1992, as amended from time to time will be implemented.
5. **General Conditions**. The following conditions shall apply to all commercial and mixed use buildings:-
- a. **Commercial Buildings**
 - (1) Each building shall have central main entry at ground level from title road/street.
 - (2) **Staircase**
 - (a) **Dimensions.** The riser of stair in commercial building should not be more than 7 inches and the tread should not be less than 11 inches.
 - (b) **Handrails.** Handrails should be provided on both sides of the stairs.
 - (c) Winders are strictly prohibited.

- (d) All Stairs shall be provided with one landing after maximum of 15 risers.
- (e) Provision of elevators is compulsory for buildings above three (3) storeys. Minimum lift requirements and specifications shall be as per following standards:-
 - i. **Capacity / Numbers Required.** Numbers of elevators shall be such that the combined capacity should be able to transport at least half of buildings (approximate) population (Approximate population of a building shall be estimated @ on the scale as one (1) person per 100 Sft) as following:-
 - (i) For buildings on plots up to 8 marla, minimum one elevator is required (to be used for passenger/freight).
 - (ii) For buildings on plots above 8 marla up to 1 kanal, minimum two elevators are required (1 each for passenger and freight).
 - (iii) For buildings on plots above 1 Kanal, following shall be used as 5 trips for buildings up to 12 storeys and 10 trips for buildings more than 12 storeys.
 - ii. **Location.** At least one elevator shall be located within 100 ft of any point on respective floor.
- (3) Corridors and Passages of commercial areas shall be minimum 6ft.
- (4) At least two emergency stair cases are required to be provided in building on plots sizes of 400 sq. yds and above. However, plots larger than 600 sq yds staircases shall be provided as required in Building Code of Pakistan – Fire Safety Provisions – 2016.
- (5) Structural design and vetting is compulsory for all types of Commercial, Mixed Use and Special Use Buildings irrespective of height.
- (6) For plots abutting on park, COS may be condoned on special approval, however, opening of shop will not be allowed.

- (7) Installation of Antenna Tower may be allowed on special permission and by paying prescribed charges, permission will be granted for one year which may be renewed annually.
- (8) Lightning Conductor shall be provided for all buildings.
- (9) Wood, mine coal and rubber material etc is not allowed to be used as fuel.
- (10) Industrial and semi industrial activities are not allowed.
- (11) Common spaces would be utilized for the defined purpose only. Utilization of the same including area under the stairs for commercial/storage is not allowed.
- (12) Access ramps and stairs / steps to the basement or ground floor should not fall outside of property line.
- (13) Placement of generators, electromechanical equipment and solar energy plant, as may be required, is allowed on the roof tops and front COS subject to fulfillment of specific conditions and sound structural design duly verified /certified and documented by registered structural engineer, provided the following is satisfied:-
 - (a) Shall have proper mountings / padding to absorb vibrations.
 - (b) Limited smoke and noise should come.
 - (c) Should have a sound proof canopy.
- (16) Amalgamation of commercial plots will be permitted. However, construction on amalgamated plots would be permitted as per the applicable By-Laws of the original plot area.
- (17) **Stair Tower/Lift Well**. In case of amalgamated plots measuring 1 Kanal and above, construction of additional stair towers will be permitted. Area of stair tower/Lift well shall be governed by the following (stair arrangements will be made accordingly):-

Table 10: Area of Stair Tower/Lift Well

Type		Plots upto 10 Marla	Plots above 10 Marla
(a)	(i)	Box Stairs (Minimum)	200 sqft
	(ii)	Dogleg Stairs (Minimum)	180 sqft
(b)	Lift Well (Maximum)		100 sqft
(c)	The stair tower shall be strictly restricted to the periphery of stairs and in no case be utilized for any kind of living purpose.		

(18) Fixing of tandoor/ kitchen/ bakery, etc., in shops of commercial area will be allowed provided following conditions are fulfilled:-

- i. Only one tandoor per 100 sq.ft area of the shop will be permitted.
- ii. Proper exhaust arrangements for disposal of smoke and hot gases have been made by ensuring that exhaust ducts going upto the height of the building. In case tandoor/kitchen/ bakery, etc., is made after the completion of the building, exhaust duct duly encased in cladding of approved material shall be provided.

(19) Kitchens, tandoor, barbeque and any type of cooking shall not be allowed in any basement.

(20) Shops shall be allowed in the basement, subject to a proper arrangement for natural light and ventilation, fulfilling one of the following:-

- i. Access to basement will be from front through common corridor running in front of shops at basement remaining within property line.
- ii. A common corridor will be provided for the shops at ground floor in front of all shops.
- iii. Ground floor shops can be interlinked with basement shops through proper stairs within the shop areas.

(21) Height of Ground Floor under Mezzanine area shall be 8 feet. Clear head room of mezzanine floor shall be 8 feet.

- (22) Trade license for any commercial activity shall be required to be taken from DHAM Authorities.
- (23) Special permission will be mandatory from DHAM Authorities for the following:-
- i. Tandoor.
 - ii. Grinding machine for flour.
 - iii. Motor Vehicle workshops.
 - iv. Car washing.
 - v. Wheel balancing/alignment.
 - vi. Puncture/tyre shop.
 - vii. Welding shop.
 - viii. Pet animal/bird shop.
 - ix. Chicken/meat shop.
 - x. LPG and Gas Cylinder shop.
- (24) Structure of commercial buildings to have inbuilt safety features against seismic threat, based on the applicable seismic zone parameters e.g. Multan lies in 2-A seismic zone, as such the building should be safe against an earth quake of 6.5 Richter Scale intensity. An endorsement on the right margin of the submission drawing shall be made by the structure engineer duly signed by him as follows: -
- i. For buildings upto G + 20 : “the structure is designed as per the required parameters of Zone-2A Building Codes of Pakistan and UBC-1997 and ACI-318-95, ASCE7-95.”
 - ii. For buildings above G + 20 : “the structure is designed as per the required parameters of Zone-2A Building Codes of Pakistan and IBC-2016.”
- (25) All buildings above G + 4 will mandatorily use ready mix concrete with pumps.
- (26) COS on non-rectangular shaped plots shall be measured as average space between buildings and property line. At least 50% permissible COS shall be ensured.

- (27) Erection of hoardings or any kind of advertisement on the front, rear or sides on buildings in DHAM is strictly prohibited.
- (28) Swimming pools are permitted to be built after giving following undertaking: -
- i. Proper filtration plant will be installed.
 - ii. To be properly designed ensuring structural stability.
 - iii. Swimming pool to be appropriately protected for privacy.
 - iv. Not to be constructed in compulsory open space.
 - v. Any damage caused to neighboring structure will be made good by owner constructing swimming pool.
 - vi. Proof of carrying out complete water proofing.
 - vii. Change Rooms are provided with swimming pool.
 - viii. In case pool is located on the roof top, toilet and change room shall be allowed on roof top provided they are within the allowable covered area / FAR and within the height restriction (where applicable).
- (29) A dedicated prayer area shall be mandatory in all High Rise Buildings in respect of overall requirement of the building.
- (30) Strict adherence of firefighting, fire prevention, fire escape and fire alarm code shall be required which includes but not limited to the provision in each building, facilities like fire exits & fire stairs, heat & smoke detectors, fire hose reels, dry riser, firefighting & fire alarm systems, fire rated doors, etc. all as per Building Code of Pakistan –Fire Provisions 2016.
- (31) All utilities services (Water supply, Sewerage system, Sewer Treatment plant, Drainage, Electricity, Gas, Telecom, Internet, etc.) shall be developed by DHAM, in due course of time, directly or through other departments / organizations; and the Development charges for the same shall be charged to the owner on pro-rata basis from time to time which shall be payable immediately by the owner of plots. In case of non-payment or delay in payment of Development charges by the owner of plots, the allotment /

transfer/may be cancelled or no further transaction of subject plot will be executed on sole discretion of DHAM.

(32) No retail sign boards are allowed. Only name of the building may be displayed on façade of the building.

6. **Special Conditions**

- a. All commercial buildings shall incorporate / install CCTV cameras in both inner and outer periphery of the building which could be linked with DHAM ICT/Security System.
- b. Additional precautionary measures including Gas Alarm System to be taken wherever any Gas Cylinder or relevant facility is provide in the building.
- c. Periodic check / inspections of Electric and Gas utilities by concerned Government and DHAM departments.
- d. All commercial buildings shall use double glazed glass system with external glass color to match the scheme of the particular sector(similar facade element) conforming minimum 60% reflective, high performance glass. All double glazed window spacers should be of aluminum.
- e. It is mandatory to use tempered glass to avoid accidents.

7. **Mumty (Incentive for alternate energy usage):-**

- a. Mumty should be adjacent to the primary or secondary staircase.
- b. No window will be allowed on sides of neighboring plot.
- c. Internal clear height of mumty will not be more than 8 ft from top of last floor slab.
- d. Mumty shall only be allowed as an incentive to those plot owners of Commercial and Mixed Use Commercial Buildings who will provide at least 30% of their electrical loads on alternate energy solutions. The details of mumty areas allowed in this condition is as following:-
 - (1) Plots 10 Marla and below – 150 Sft.
 - (2) Plots above 10 Marla to 1 Kanal– 300 Sft.
 - (3) Plots above 1 Kanal– 400 Sft.

8. **CCTV Cameras.** Installation of CCTV Cameras are compulsory for all the residential and commercial buildings in DHA Multan.

- a. Specification of Cameras are as follows:-
 - (1) Min Storage Capacity: 7 Days

(2) Min Camera Resolution: 4 MP

b. Number of Cameras to be installed will be as follows:-

Ser	Plot Size	Cat	No. of Cameras	Remarks
Normal / Routine Plot				
(1)	Up to 10 Marla	R	2	1x Front Gate / Street 1x Side Passage
(2)	Above 10 Marla	R	3	1x Front Gate / Street 2x Side Passages
(3)	2M / 4M / 8M	C	2	1x Entrance 1x Top / Parking View
Corner Plots or Plots with Rear Open				
(4)	Up to 10 Marla	R	3	1x Front Gate / Street View 1x Side Passage 1x 2 nd Entrance or 2 nd Street
(5)	Above 10 Marla	R	4	1x Front Gate / Street 2x Side Passages 1x 2 nd Entrance or 2 nd Street
(6)	2M / 4M / 8M	C	3	1x Entrance 1x 2 nd Entrance / Street View 1x Top / Parking View

CHAPTER – VI

STANDARDS FOR SPECIAL PURPOSE BUILDINGS

1. **General Conditions.**

- a. Basement will be permitted over the entire foot print area.
- b. Basement may be utilized for laboratories; however, separate emergency exits will be provided.
- c. Placement of generators and electromechanical equipment and solar energy (as may be required) is allowed on the roof tops subject to fulfilment of specific conditions and sound structural design duly verified/certified and documented by registered structural engineer.
- d. For plots which are bigger than 4 Acres, main entrance from the road should be planned in such a way that queue length of at least five vehicles should be within the plot limit to avoid vehicle blocking the main road.
- h. Integral/dedicated parking arrangements will be ensured within the premises. Parking on the roads and streets is not allowed.
- i. Facilities related to the purpose (like small canteen/tuck shop and medical stores/floral shops etc.), if planned, shall remain part of the main building.
- j. Special purpose plots neither shall be converted nor shall be utilized for any other purpose than the allotted.
- k. Proper ramps/entrance shall be made for entrance/exit of handicapped persons.
- l. Special use plots shall not be considered for subdivision. However, amalgamation may be allowed under special conditions by competent Authority.
- m. Administration of the institutions shall submit a Master Plan of proposed construction, future construction and open areas along with drawing. The Master Plan shall clearly indicate the playing areas, which shall never be utilized for construction purposes. The assessment of such areas shall be made keeping in view the standard sizes of playground for various games indicate the playing areas, which shall never be utilized for construction purposes.

2. **Standards for Masajid**

- a. Building plans of Masajid shall be considered for B+G+2 floor on case-to-case basis.
- b. Reasonable residential area for Khateeb and Moazzan not exceeding 1000 Sft may be allowed.
- c. Adequate provisions shall be made for handicapped persons at entrance/exit in the shape of ramp.

3. **Standards for Special Purpose Buildings.** Special purpose buildings shall observe the following standards:-

Table 11: Standards for Purpose Buildings

Type of plot	Plot Sizes	FP (Max)	Minimum COS (ft)				Height
			Sides				
			Front	Right	Left	Rear	Decide by Authority
Educational	Less than 3 Kanals	60%	10	8	8	6	
	3 Kanals to 13 Kanals	60%	20	10	10	8	
	Above 13 Kanals	60%	30	10	10	10	
ICT	All Sizes	60%	10	10	8	6	
Other Special Purpose Buildings	All Sizes	60%	10	10	10	10	
		60%	10	10	10	10	

4. **Height Standards for Special Purpose Buildings:** Special purpose plots shall observe the following standards:-

Table 12: Height Standards for Special Purpose Buildings

Description	Clear Height (ft)	
	Maximum	Minimum
Level of main entrance (being opened on the main street/road)	4'-0"	2'-0"
Plinth level subject to contour of plot as defined in these By-Laws	5'-0"	3'-0"
Ground Floor including slab (above the plinth)	14'-0"	10'-0"
1st Floor and subsequent floors (including slab)	13'-0"	10'-0"
Parapet Wall	4'-0"	3'-0"
Height of Main Building excluding parapet wall	Decide by authority	
Stair tower with lift machine room and / or with water tank built over it	16'-0"	13'-0'
Over all height of special use building including stair tower with lift machine room and / or water tank	Decide by authority	
Boundary wall from crown of the road	8'-0"	6'-0 "
Ceiling height of basement without obstruction	10'-0"	8'-6"
Clear height of basement for parking without obstruction	8'-6"	7'-6"

5. Standards for Special Buildings in Healthcare and Educational District:-

- a. Following additional conditions shall also be applicable to buildings related to Health and Education in Healthcare District and Educational District respectively:-
- (1) In case where a number of blocks are designed within the plot boundary, open space in between two blocks on front and rear sides shall be minimum 20 ft.
 - (2) In all buildings a minimum of 10% of the mandatory open spaces shall be properly landscaped. This landscaped space shall be left open to sky and shall not be used for parking vehicles.
 - (3) In case a hospital (50 Beds and above) is constructed, all requirements as laid down by Environmental Protection Agency, Pakistan and Punjab Environmental Protection Agency are to be followed, including the following important points:
 - (4) Water, waste water, grey water, sewerage, radiation, toxic gases, disposal of hospital waste, etc.
 - (5) Each hospital shall provide its own treatment plant to ensure that no infected material is going into municipal waste water disposal network.
 - (6) All kinds of hospital and medical waste shall be safely collected, transported and disposed-off:-
 - (a) In accordance with the public health standards as prescribed by Punjab Environmental Protection Agency.
 - (b) Disposal of medical waste as per National Environmental Quality Standards (NEQS).
 - (c) All requirements as laid down by Environmental Protection Agency, Pakistan and Punjab Environmental Protection Agency are to be followed.
 - (d) In addition to above, as per full satisfaction of DHAM.
 - (7) In case a hospital (50 Beds and above) is constructed, all requirements of Pakistan Atomic Energy Commission shall be fulfilled especially for radiation, etc.
 - (a) In case a hospital (50 Beds and above) is constructed, all required certifications from Pakistan Atomic Energy

Commission and Environmental Protection Agencies are required to be taken and copies to be submitted to DHAM for their record.

- (b) All hospitals shall provide incinerator or other means of hospital waste disposal and ensure that it should be properly designed with respect to its orientation which do not causes any effect on residents of nearby vicinity.
- (8) Dedicated parking for institution / hospitals should be provided within the premises as per the required numbers based on the planned capacity. Major or associated roads shall not be utilized for car parking.
- (9) Day care center may be included in educational universities.
- (10) Separate medical or first aid unit shall be provided in all educational buildings.

6. **Standards for Healthcare Buildings:-**

Table 15: Standards for Healthcare Buildings

Ser	Types of Plots	Footprint	COS (in feet)			Floors
			Front	Sides	Rear	
a.	Plot Size 10 Kanals & above	G.F = 60% Above G.F =50%	20'-0"	20'-0"	20'-0"	Decide by Authority
b.	Plot Size less than 10 Kanals	G.F = 70% Above G.F =60%	10'-0"	10'-0"	10'-0"	

7. **Standards for Sports / Entertainment / Recreational Facilities.** Special use plots allocated for sports/entertainment and recreational facilities to have these By-Laws parameters: -
- a. Foot Print Area - 50%
 - b. Building configuration - B+G+4
 - c. Swimming pool can be either in basement or ground floor ensuring adequate structural design.

CHAPTER – VII

UTILITIES REQUIREMENTS FOR COMMERCIAL AND MIXED USED BUILDINGS

1. **Central Air-Conditioning**

- a. All buildings in DHAM should have centrally air conditioning in such a way that external units are not visible on the elevations (external). Particularly, for buildings located in Central Business District (CBD), shall be required to have properly designed central A/C systems.
- b. The Design & Drawings of Central A/C system, to be prepared by recognized Consulting firms, shall be required to be submitted for approval.
- c. For air conditioning, only green gases shall be used i.e. Chlorofluorocarbon (CFC) Free Refrigerant, in HVAC&R Systems for domestic and commercial use. Also, those Refrigerants are allowed that have an Ozone Depletion Potential (ODP) of zero and a Global Warming Potential (GWP) of less than 50.

2. **Service Elevators**

- a. Each building (1 Kanal & above) shall have an independent Service Elevator besides the Passenger Elevators.
- b. Minimum size of all service elevator cabin shall be 4 ft x 6 ft with 4 ft wide opening accompanied by two speed doors.
- c. The number of Elevators shall be installed as per the latest International Building Code (IBC).

3. **Utility Policy**

- a. Utility spaces / structures / machine room (sub-stations, meter rooms, etc.) with proper design allowed in basements or Ground Floor and will not be allowed in COS.
- b. Only generators shall be allowed in rear COS (where available & as per approval).
- c. Cooling tower/Chiller Plants shall be allowed on roof top.
- d. Central back-up Generator for the whole of commercial or high rise building shall be provided & maintained by the owner & incorporated in the MEP plans.

- e. Detailed Utility Design & Drawings for Electrical, Solar Energy, Gas, Telecom, Water, and Sewer & Drainage shall be prepared & submitted by the Owner / Developer for approval (as per DHAM utility policy updated from time to time).
- f. Development charges for utilities shall be levied separately.

4. **Maintenance Policy for Commercial / Mix Use & High-Rise Buildings:-**

- a. Each commercial / mix use or high-rise building in DHAM, shall be maintained by the Owner / Developer of the Building directly or through a proper Maintenance Company registered at DHAM. A heavy penalty will be imposed if maintenance system of the building is not created by the owner /developer.
- b. Monthly Maintenance Fees shall be charged to the occupants on pro-rata Sft basis by the Owner / Developer (this term shall be mandatory at time of sale of floor space as per By-Laws).
- c. Maintenance shall include the cleaning (external & internal) & maintenance items including common utilities, Electrical & Mechanical works, Central A/C, Central Backup Generator, Fire-Fighting, Lifts, Trash handling, External Window Cleaning, etc.
- d. Trash handling shall be done using trash/refuse chutes and receptacles. These shall be provided of a type approved by the DHAM and shall confirm with the following clauses:-
 - (1) At least one garbage chute, non-corrosive, non-stick, smooth finished impervious inner surface; linking all floors in the building will be provided with a collection room at basement, ground or parking floor level for final disposal. The Garbage chute should be:
 - (a) Be vertical for the whole length.
 - (b) Have an internal diameter of not less than 24 inch.
 - (2) Shall be provided 4 ft above the roof and shall be covered with a ventilating skylight and flushing spray and sprinkler head above top loading door.
 - (3) Discharge into a suitable movable receptacle or receptacles of adequate size and pattern.
 - (4) Be fitted with a self-closing hopper tight fitting plank or hopper, constructed of non-inflammable materials.

- (5) Be enclosed with walls of masonry of minimum two hours of fire resistance.
- (6) Refuse receptacles shall be housed in a chamber which shall:-
 - (a) Be provided with concrete curbs for the refuse receptacles to stand on.
 - (b) Be adequately fly and vermin proof.
 - (c) Be connected to and drained by a foul water drain.
 - (d) Open to the external air.
 - (e) Be lined throughout with glazed tiles.
- e. Commercial, Mixed-Use and all Buildings shall be required to have façade cleaning done periodically.

5. **Water Conservation (for all types of buildings):-**

- a. Construction of grey water tank:-

Grey water tank shall be constructed by every plot holder having area of 1 Kanal and above. Tank shall be connected with building through separate plumbing for grey water collection, appropriate grey water treatment shall be emplaced. Only health facilities are exempted due to anticipated high rate pathogen.
- b. Use of water efficient fixtures i.e. shower, kitchen sink, taps, laundry machine, toilet flush, faucets etc. with the target of above 50%reduction in water.
- c. No plot holders will be allowed to install ground water extraction facilities (including open well, bore hole etc.). In any justifiable requirement where it will be required, prior permission from DHAM shall be obtained.
- d. DHAM will strictly monitor and audit the water utilization plan according to approvals given to any plot holder. Any anomalies found legitimate action will be taken against the individual.

CHAPTER – VIII

PARKING REQUIREMENTS

1. Scope

- a. Parking requirements for vehicles in these By-Laws shall be applicable in following conditions:
 - (1) A new building is constructed or a change of use of existing building is established.
 - (2) An existing building is altered and there is an increase in the floor area of the building, then additional parking requirement shall be totally applicable to the proposed addition only within the property limits as required under these By-Laws.
- b. General Conditions
 - (1) Mechanical ventilation shall be provided for parking in the basement(s).
 - (2) Multiple basements for parking can be permitted with sound engineering practices.
 - (3) Sixteen percent of the total car parking space will be utilized to provide space for motorcycle and bicycle parking - six motorcycles and eight bicycles for every one car.
 - (4) When units of measurement used in computing the number of parking spaces result in the requirement of a fractional space, the nearest whole number to next higher side of parking spaces shall be taken.
 - (5) Proper ramp should be provided for handicap persons.
 - (6) Two parking spaces out of every 100 parking spaces shall be earmarked, duly labelled as such, for disabled persons at the most convenient location.
 - (7) Dedicated parking for institution/ hospitals should be provided within the premises as per the required numbers based on the planned capacity. Major or associated roads shall not be utilized for car parking.
 - (8) Total parking requirement of every building shall be determined as a sum of parking requirement for each type of use of the building.

- (9) Minimum clear height of parking structure without obstruction shall not be less than 7'-6".
- (10) Detailed plan shall be submitted showing entry, exit gradient of ramp, turning radius, storage spaces, circulation and movement of vehicles.
- (11) Parking can be provided on any floor i.e. basement, ground and upper floors, with ramp/car lifts as means of access. Car lifts (minimum two) shall be allowed as means of access for car parking. However, Parking through car lift shall be meant for shop owners/resident. Parking for visitors, customer of shops shall be through ramp.

c. **Application of Parking Requirements.**

- (1) One motor vehicle space for every eight hundred square feet of Net Area for retail shops area, business offices, for all facilities of hotels e.g. bedrooms, restaurants, conference room & retail outlets.
- (2) One motor vehicle space for every one thousand square feet of Net Area for apartment building or residential building.
- (3) **Places of Public Assembly.** One space per eight fixed seats or one space per 100 square feet of assembly area, whichever is greater.
- (4) **Theatres.** One space per three seats
- (5) **Educational Institute.** One car per 4000 sq.ft of Net Area or min one fourth of motor vehicle parking space per classroom, whichever is more.
- (6) **Hospitals.** Three spaces per bed
- (6) Any use not listed above shall meet the requirements of the most similar use as determined by the Authority.
- (7) **Handicapped Spaces.** All retail commercial, offices, personal services, health care, community facilities, multi-family buildings with dwelling units for rent, and other places of public accommodation shall provide handicapped spaces as required by the International Building Code.

- (7) **Standards for Parking Spaces:** The following shall be standards for parking space:

Table 16: Standards for Parking Spaces

Description	Car	Motorcycles
Bay width	8 ft	2.5 ft
Bay length	16 ft	6.0 ft
Gradient of ramp	1:7.5	1:7.5
Straight turning radius (outer)	24 ft.	-
Helical ramp turning radius (outer)	32 ft	-
Lot turning radius	17.5 ft	-
Minimum ramp & driveway width:		
Two way traffic	18 ft	-
One way traffic	11 ft	-
Minimum space for parking one car	8 x 16 ft	-

CHAPTER – IX

DRAINAGE AND SANITATION

1. **Connection to Public Sewer.** A sludge water shall be conveyed through septic tank to public sewer. Sewer connections shall not be granted without septic tanks.
2. **Trenches for Drains and Private Sewers**
 - a. Where any drain or sewer is constructed adjacent to a loadbearing part of a building, such precaution shall be taken to ensure that the trench should not impair the stability of the building.
 - b. Except where the nature of the ground makes it unnecessary, where any drain or private sewer is adjacent to a wall and the bottom of the trench is lower than the foundation of the wall, the trench shall be filled in with concrete to a level which is not lower than the bottom of the foundation of the wall by more than the distance from that foundation to the near side of the trench less than twelve inch.
 - c. In case, where the trench is within three feet of the foundation of the wall, the trench shall be filled in with concrete to the level of the underside of the foundation.
3. **Sanitary Provisions.** The minimum sanitary provisions as prescribed shall be followed as under:
 - a. **Single Rooms.** For every five (5) single room units or servant quarters, there shall be one (1) wash basin, one (1) W.C. and one (1) Bathroom shall be provided.
 - b. **Boarding or Guest Houses.** For every ten (10) bedrooms or less in a boarding house or guest house, there shall be at least two (2) W.C's, two (2) wash basins and two (2) showers.
 - c. **Dormitory or Hostels:** For every twenty (20) persons in a dormitory and hostel, there shall be at least three (3) W.C's, three (3) washbasins and three (3) showers, and for every ten (10) additional persons one (1) W.C., one (1) wash basin, and one (1) shower is to be added.
 - d. **Office.** In an office with twenty (20) persons (calculated at a rate of one person per one hundred square feet (100 Sft), there shall be minimum of two (2) W.Cs., two (2) wash basins and one (1) urinal. For every

additional twenty persons (20) there shall be one (1) W.C., one (1) wash basin and one (1) urinal. One (1) wash basin or equivalent washing space per twenty five (25) or less persons shall be provided for ablution purposes.

- e. **Shopping Center**. A minimum of three (3) W.C.'s, one (1) urinal, and one (1) wash basin shall be provided for 3000 sq.ft total floor area. For every additional 2000 sq.ft floor area, one (1) W.C., one (1) washbasin and one (1) urinal shall be provided.
- f. **Public Assembly Building**. Two (2) W.C's, one (1) washbasin, and three (3) urinals shall be provided for 1500 Sft total floor area and for every additional 1500 Sft total floor area one (1) W.C., one (1) wash basin and two (2) urinals shall be provided.
- g. **Masjid**. Eight (8) ablution spaces for 100 Namazis, two (2) W.Cs., one (1) shower room shall be provided. In addition to this, special arrangement for female worshippers having a capacity of 100 Namazis, three (3) ablutions and one (1) W.C shall be provided.
- h. **School**. Four (4) W.C.'s and two (2) wash basins per 100 students and for every additional fifty (50) students, one (1) W.C. and one(1) wash basin shall be provided.
- i. **Hospital**. For every ten (10) beds in a general ward, there shall be at least one (1) water closet, one (1) washbasin, one (1) ablution tap and one (1) bathroom with shower. One (1) kitchen sink shall be provided in each ward.
- j. **Restaurants**. For fifty (50) seats of restaurant, one (1) water closet, one (1) urinal, one (1) wash basin shall be provided.
- k. All fixtures shall be divided proportionately amongst the genders.
- l. Two (2) urinals may be replaced by W.C., while proportionately dividing the fixtures for ladies.
- m. **Handicapped Persons**
 - (1) Provision of one (1) W.C. for special (disabled) persons shall be provided.
 - (2) Shopping centers, Masjid, clubs, hotels, restaurants and schools must have adequate arrangements of toilets for handicapped persons.

CHAPTER –X

LIGHTING AND VENTILATION

1. Size of Internal Openings

- a. Unless the light and ventilation requirements are met by an air well or ventilation duct, all internal habitable rooms must have openings in internal air wells in addition to door openings not less than seven and half percent of the floor area of such room. Access for maintenance of shaft be provided, at the level, where the shaft commences.

2. Size of External Openings

- a. Every room, other than rooms used for the storage of goods shall be provided with natural light and natural ventilation by means of one or more openings in external walls. These openings shall have a combined area of not less than ten percent of floor area for habitable rooms and seven and half percent for other rooms, and the whole of such openings shall be capable of allowing free and uninterrupted passage of air.
- b. Area for openings in case of warehouse, godown, and storage places etc. shall not be less than five percent of the floor area unless the space is ventilated mechanically.
- c. **Garages**. Every garage shall be provided with opening of not less than five percent of the floor area for ventilation and lighting.
- d. **Staircase**. Seven and half percent of the staircase area shall be provided with opening for adequate lighting and ventilation.

3. Internal Air Wells

- a. Sizes of internal air wells for daylight and natural ventilation of habitable rooms shall be: -
 - (1) Building up to two storeys, 40 Sft with minimum width of well as 5 ft.
 - (2) Buildings up to five storeys, 80 Sft with minimum width of well as 8ft.
 - (3) Each additional floor over five storeys, 80 Sft plus 10 Sft for each storey with minimum width of well as 10 ft.
- b. Sizes of internal air wells for daylight and natural ventilation of kitchen, W.C and bathroom shall be:

- (1) For building up to two storeys, 20 Sft with minimum width of well as 3ft.
 - (2) For building with 3 to 5 storeys, 40 Sft with minimum width of well as 5 ft.
 - (3) For buildings higher than five storeys, 40 Sft plus 5 Sft for each additional floor with minimum width of well 5 ft.
 - (4) Access for maintenance of each such shaft shall be provided at lowest level of the shaft.
 - (5) The above 20 and 40 sqft natural ventilation well shall not be enforced in case mechanical ventilation is provided and substantiated with calculations.
4. **Water Closet, Bath Room and Ablution Places.** Every appliance including water-closet, urinal stall, bathroom or ablution area shall be provided with natural lighting and ventilation with openings in external walls having a combined area of not less than two square feet per appliance except where adequate and permanent mechanical ventilation is provided which discharges into open space.
 5. **Permanent Openings in Kitchen.** Every kitchen shall have openings for permanent ventilation into the external air space not less than fifteen percent of its floor area.
 6. **Promote and Support Acoustic Comfort and Control.** For all commercial and mixed use buildings where FAR is applicable along with all healthcare and educational buildings where central air conditioning is used, the acoustic performance relating to Internal Noise Criteria from External Noise Sources, Internal Noise Criteria from Mechanical Services Noise, Internal Airborne Sound Insulation Guidance Values, and Internal Impact Sound Pressure Levels meet the control requirements as set out as per prevalent ASHRAE requirements.
 7. Promote indoor air quality in air conditioned buildings with mechanical ventilation shall be as per prevalent ASHRAE requirements.

CHAPTER –XI

BUILDING DESIGN AND CONSTRUCTION REQUIREMENTS

1. **Loads and Design.** Structure analysis, design, detailing and loading shall be in accordance with the requirements of current Uniform Building Code hereinafter referred to as UBC and American Code or British relevant Code or any other Code. Structure shall however be designed by only one approved Code.
2. **Protection of Existing Services.** During the making of an excavation in connection with a building works or services, adequate precautions shall be taken to secure the existing services.
3. **Foundation near Drains.** Where a building is to be erected adjacent to existing buildings, or near a drain or nallah, or an excavation at a distance less than depth of the said drain or nallah or excavation, or such as to affect the stability of drains or nallahs, the owner through a structural engineer shall satisfy the Board that the foundations of the building have been carried down to a level safe guarding its stability.
4. **Seismic Design.** Seismic Risk Zone for Multan will be Zone-2B (with reference to UBC-97) which is equivalent to Peak Ground Acceleration (PGA) of 16% g to 24% g.
5. **Sub Soil Investigation.** In view of the structural design in seismic hazard zone, type of sub-soil for foundation should be thoroughly ascertained by geo-technical investigation under the direct supervision of qualified and experienced geo-technical engineers. The soil report should correlate sub-soil type with UBC-97, or current sub-soil list.
6. **Wind Load.** Wind load should be based on the velocity and gust factors data from local Meteorological Department.
7. **Erection on Reclaimed Site.** Erection on reclaimed site will be avoided. However:-
 - a. No building foundation shall be erected upon a site reclaimed by town sweepings or other refuse, except on recommendation of geotechnical and structural engineer.
 - b. No building plans shall be approved on open nallahs public sewers and the like.

8. **Specifications** Specifications of material quality control and workmanship will be of high quality and in accordance with the requirements of ACI Building Codes, Uniform Building Code (UBC) and ASTM Standards.
9. **Supervision.** Construction supervision and quality assurance will be responsibility of the Owner/Builder full time Engineers who will supervise the work and under the guidance of Consultant on full time or top supervision, supervising engineers, and inspectors, etc., as required in these By-Laws. Contractors, Builders or Developers will arrange full time supervisory staff shall carry out supervision and quality control for the category of buildings in these By-Laws.
10. **Testing of Materials.** Regular testing will be carried out of materials such as aggregates, cement, concrete, reinforcing steel and all architectural materials, the quality control and quality assurance criteria laid down in standards of FIDIC, American Standard Testing method (ASTM), ACI or UBC and project specifications. Quality assurance program of architect or engineer may also be followed.
11. **Electric Conduit outside House Boundary.** Owner / Member is responsible for the installation of electrical conduit pipe from feeder pillar to house at his own cost / expense.
12. **Own Water Supply Arrangements.** Owner / Member will be make his / her own arrangement of water supply through a bore and installing water pump for construction purpose only at his / her own expense within own area of plot / 3ft away from commercial plot in road space. Installation of pump in other open plot or vicinity of other plot is not allowed. After completion of house / building, owner will remove the water pump and destroy the bore completely to the satisfaction of DHA.

CHAPTER –XII

ADMINISTRATIVE ASPECTS

1. **Commercial Activity.** Commercial / semi commercial activity cannot be allowed in the residential area.
2. **Clubs /Guest Houses.** Residential area cannot be used / rented as Clubs, Guest House, Guest Room or Hostel etc
3. **Utilization of Vacant Plots.** Vacant plots/open area cannot be used for any function/gatherings.
4. **Fire Works / Discharge of Arms.** Display of fireworks (Aatish Bazi) and discharge / testing of arms are strictly prohibited in DHAM Authorities.
5. **Distinctive Marking / Flags:** Flags / Banners showing Political /Religious / Sectarian affiliations are not allowed on both residential and commercial buildings in DHAM.
6. **Grave Yard.** Burial in DHAM grave yards will only be carried out after formal approval and procedures from DHAM Authorities.
 - a. **Burial Policy - Eligibility for Burial.** Following categories of deceased are eligible for burial DHA graveyard:-
 - (1) Owner of a plot/building (residential/commercial) and his / her spouse (s).
 - (2) Parents, mother and father and mother-in-law and father-in-law of the owner of plot/building.
 - (3) Dependent children of the owner of plot/building as under:-
 - (a) Sons unmarried and dependents of any age, living in the same house.
 - (b) Daughters of any age who are dependent being unmarried /divorced or widow and living in same house.
 - (c) Dependent unmarried divorced or widow sisters and their dependent children living with their brother.
 - (d) Members should register their family members living in the house with DHA and also in the address column of CNIC /FORM 'B' (children).
7. **Hiring of House/Shop/Apartment.** Any tenant hiring of house/shop/apartment will get NOC from DHAM Authorities prior to occupation.

8. **Vehicles Stickers**. All the members residing in DHAM are bound to get their vehicle's sticker from DHAM Authorities.
9. **Rash / Un-safe Driving**. All the residents are requested to drive within allowable limits in DHAM Authorities. Driver caught overs-speeding / un-safe driving will be liable to traffic laws. Underage driving strictly prohibited. Similarly, driving a motorbike without safety helmet is not allowed within DHAM AUTHORITIES premises.
10. **Servant Passes**. Member should get passes for all servants from DHAM after proper registration.
11. **Hazardous Materials / Chemicals**: Storage of any kind of hazardous materials / chemicals/explosives in any building is strictly prohibited.

CHAPTER –XIII

SAFETY AND SECURITY MEASURES DURING CONSTRUCTION

1. **Site Hoardings.** No member shall start construction of building work on a site abutting on a street without having first arranged hoarding or barriers to the satisfaction of the DHAM along the peripheral length of such site so as to prevent danger/injury/mishap to the public or the persons employed at the site. However that these By-Laws do not apply in the case of building works in connection with structures situated at least 15 ft away from a public street and being not more than 25 ft in height.
2. **Neighbors Safety.** If entire plot is excavated for the foundation, it is essential for the owner to ensure that adequate safety measures are taken against possible damage to neighboring compound walls, foundations and structures etc. A safety distance of 5 ft is to be left while excavating the basement(s). Any damage occurring due to excavation shall be made good by the owner of under constructed property who started excavation for basement. Work may be stopped by DHAM Authorities if the owner fails to take remedial action.
3. **Use of Public Streets.** No part of any street shall be used in connection with the construction, repair or demolition of any building except with the written permission of the DHAM Authorities. Any person holding such permission shall put up and maintain to the satisfaction of the DHAM Authorities, fences or barriers in order to separate the building work from such street. Where such separation is not possible member shall make arrangement for the security of public to the satisfaction of DHAM Authorities.
4. **Caution Light's for Obstructions.** Any person causing any building material or other things to be deposited, any excavation to be made or any hoarding to be erected shall at his own expense cause sufficient and adequate red lights to be fixed upon or near the same while such materials, hoardings, things or excavation remain. In addition to above red flags of reflective material shall be provided during day time.
5. **Utility Services not to be obstructed.** All materials, hoarding, fences or other obstructions on any street shall be kept clear of any fire hydrants of any and other utility services installation or alternative arrangements shall be made and precautions shall be taken according to the laid down procedure of the

utility agencies and to the satisfaction of the DHAM Authorities to divert and to keep clear of obstruction of any road side or other drain during the period of temporary obstruction.

6. **Removal of Obstruction after Completion of Works.** All obstructions shall be removed within seven days of the completion of the construction work and the street and all drains and public utility installation made clean, tidy and serviceable conditions.
7. **Dangerous Obstruction.** If any material, hoarding, excavation or any other thing near or on any street shall be in the opinion of the DHAM Authorities dangerous to the passers-by along such street, the DHAM Authorities shall cause the same to be removed, protected or enclosed so as to prevent danger there from and shall be entitled to recover the expenses thereof from the owner of such materials or from the person who made such hoarding, excavation or other thing to become dangerous.
8. **Stability of Adjacent Building.** No excavation, dewatering, earthwork or demolition of a building which is likely to affect the failure of adjacent building shall be started or continued unless adequate steps are taken before and during the work to prevent the collapse or damage of any adjacent building or the fall or any part of it.
9. **Filling of Excavated Site.** A site once excavated shall not be kept open and idle for a period beyond the validity period of building plan failing which DHAM shall not revalidate the plan and in case of any mishaps, the owner shall be responsible for life and property of the effectees. Excavated site shall be filled in by DHAM Authorities at the risk and cost of owner, if found appropriate.
10. **Adequate Safety Measures**
 - a. Adequate safety measures shall where necessary be provided and used to protect any person from falling on earth, rock or other material of or adjacent to any excavation or earth work.
 - b. Material shall not be placed or stocked near the edge of any excavation so as to endanger persons working below.
 - c. No load shall be placed or moved near the edge or any excavation where it is likely to cause a collapse of the side of excavation and to endanger any person.

- d. Where vehicles or machineries are used close to any excavation there shall be measures to prevent the vehicles or machineries from over-running and falling into the excavation or causing collapse of any side of the excavation.
 - e. In all buildings of greater than twenty feet height temporary rails, scaffolding or barriers shall be installed during construction at the edge of slabs and around all openings such as lift or stairwell, etc.
11. **Supervision of Demolition Work.** The demolition of a building and the operations incidental thereto shall only be carried out under the direct supervision of a professional.
12. **Safe Loading.** No roof, floor or other part of the building shall be loaded at the demolition and construction with debris or materials as to render it unsafe.
13. **Scaffolds.**
- a. Suitable and sufficient scaffolds shall be provided for all work that cannot safely be done from the ground or from part of the building or, from a ladder or other available means. Support and sufficient safe means of access shall be provided to every place at which any person has to work at any time.
 - b. Every scaffold and means of access and every part thereof shall be adequately fabricated with suitable and sound material and of required strength to ensure safety. All scaffolds, working platforms, gangways, runs and stairs shall be maintained to ensure safety and security.
 - c. All vertical members of scaffolds on ground level facing roadside should be adequately wrapped with spongy material upto a height of at least seven feet. Any horizontal member if used, upto a height of seven feet from ground, should be wrapped all along its length with such material.
14. **Roadside Protection**
- a. To ensure adequate safety of the pedestrian and other road users, all buildings having a height of more than ground + two floors should have adequate arrangement by way of providing protective covering of suitable material.
 - b. Adequate provision of safe passage for pedestrian shall be provided, in case the scaffolding covers part of the road or footpath.
15. **Working Platform**

- a. Every working platform, which is more than seven feet height from which a person is liable to fall, shall be at least two feet wide provided the platform is used as a working platform only and not for the deposit of any material.
 - b. A clear passage-way at least one and half foot wide shall be left between one side of any working platform and any fixed obstruction or deposited materials.
16. **Guard Rails.** Every side of a working platform height, gangway and stair shall be provided with a suitable guardrail of adequate strength, upto at least one meter above the platform, gangway or steps.
17. **Ladders**
- a. Every ladder shall be of good construction, sound material and adequate strength for the purpose for which it is used.
 - b. Every ladder shall be securely fixed when in use and shall not have any missing or defective rungs.
18. **Work on Slopping Roofs**
- a. Where work is to be done on the slopping surface of a roof, suitable precautions shall be taken to prevent persons employed from falling off.
 - b. Suitable and sufficient ladders or wooden planks, securely supported, shall be provided and used to avoid concentration of loads.
 - c. Where persons are employed in a position below the edge of sloping roof and where they are in position of being endangered by work done on the roof, proper protection shall be taken to prevent tools or materials falling from such roofs so as to endanger such persons or passers-by.
19. **Precautions for Raising and Lowering Loads.** For raising or lowering loads or for suspending those by hand or power operation, every precaution shall be observed to ensure safety of human and materials on the construction site.

CHAPTER –XIV

FIRE SAFETY PRECAUTIONS

1. Emergency Fire Exits

- a. Emergency fire exits of non-combustible material shall be provided in all commercial and public use buildings.
- b. Complete Civil Defence drawings for Fire Safety Precautions shall be required to be submitted for approval of DHAM prior to construction.

2. Portable Fire Extinguishing in Commercial and Public Buildings. These shall be provided:-

- a. Two extinguishers in stage area, in each dressing room and one immediately outside each entry in theatres;
- b. One extinguisher in each 2000 square feet of area of public assembly buildings, but not less than one on each occupied floor, and not less than one in each lab, workshop or vocational room;
- c. At least one extinguisher on each floor at stairway landing and in corridor at each lift or group of lifts in mixed use and commercial buildings.

3. Fire Escapes/ Emergency Staircase

- a. Every Building in DHAM of 1 Kanal and above shall have at least two emergency staircases.
- b. Emergency Staircase shall be designed with Fire Rated Doors (1 ½ hours rated), Fire resistance rated floor or commonly known as fire door within 2 hours rated walls and shall be naturally ventilated. It will exit towards open space on ground floor.
- c. At Least one emergency staircase will be located within 100 ft of any point on a floor for building larger than 1 Kanal.
- d. All elevators / lifts should be equipped with functions for emergencies like power failure, fire and earthquake.
- e. All elevators / lifts should have in-built emergency landing devices, so that upon power failure, a car automatically moves to the nearest floor using a rechargeable battery to ensure that the lift door is opened to facilitate the safe evacuation of passengers.

- f. In case of an earthquake, seismic sensors installed in elevator should detect the earthquake and move the elevator car to nearest floor and open to the doors for safe evacuation of passengers.
- g. Door Safety sensors, emergency light, emergency call button/ phone, all required safety features for the stability of the elevator system, safety brakes.
- h. All elevators should be in Handicapped Accessibility compliant as per the following ADA requirements as a minimum:-
 - (1) Elevator hall and car buttons should be mounted at 42 inches height with call buttons minimum 0.75 inches in diameter, with illumination levels for buttons.
 - (2) Braille plates next to buttons and at entrance jambs.
 - (3) Two way communication in elevator cab / car so that Deaf /Blind users can utilize it effectively.
 - (4) Chimes / verbal announcements that indicate floor passing and the next arrival floor.
 - (5) A car / cab large enough to accommodate a wheelchair and a 360-degree turn.
 - (6) Door protective / re-opening devices that will re-open the door without physical contact.
 - (7) Emergency control that is grouped at the bottom of the elevator control panel and have their center lines not less than 36 inch above the finish floor.
 - (8) Handrails to be provided at a height of 30-inches.

4. Stand Pipe Equipment (Hose Reel)

- a. For the purpose of prevention and fire extinguishments, every multi-storeyed building shall be equipped with stand pipes as under:-
 - (1) From four to eight storeys in height shall be equipped with not less than 2.5 inch dia pipes.
 - (2) Over eight storeys in height shall be equipped with not less than 4 inch dia stand pipes.
- b. The number of standpipes shall be such that all parts of every floor area are at a maximum distance of one hundred and twenty feet from the stand point.

- c. Insofar as practicable, standpipes shall be located with outlets within stairway enclosures, but if these are not available, the standpipes shall be located in a common corridors. In any case one shall be located in the main.
- d. The construction of standpipes be of galvanized iron/gunmetal.
- e. Stand pipe risers shall extend from the lowest to the top most storey of the building or part of building which they serve.
- f. When more than one stand pipe is required, they shall be interconnected at their bases by pipes equal in size to that of the largest riser.
- g. Every standpipe or stand-system in case of interconnected stand-pipes, shall be equipped with a fire department approved in-let connection of corrosion resistant metal (e.g. gunmetal) located on an outer building face nearest to street approximately twenty to thirty feet above finished ground and suitably marked "fire department connection standpipe.
- h. Standpipes shall be provided in every storey with a one and half inch dia flexible hose not less than one hundred feet long, with a half inch nozzle, being in an approved rack or cabinet.
- i. The standpipe shall be fed by an overhead water tank reserved solely for this purpose. The minimum capacity of this tank shall not be less than five thousand gallons, with a minimum of seven feet head above the highest discharge point.

5. **Dry Riser.**

- a. For each commercial and mixed use building, 18 meter tall, a dry riser (supply system intended to distribute water to multiple levels or compartments of a building, as a component of its firefighting systems) shall be provided to ensure that firstly a fixed distribution system within the building is provided that requires no fire service resources or equipment. Secondly, to maintain, the compartmentation of the building.
- b. Dry risers are a building By-Laws requirement in occupied buildings over 18 meter tall. The designers or architects may opt for the superior protection of wet risers. Wet risers are a building By-Laws requirement in buildings over 50 meter. Dry risers may also be found in environments where access is limited or compartmentation is an issue i.e. multilevel basements, car-parks or hospital corridors etc.

- c. Dry riser shall consist of 3 components to meet BS 5041 BS5306, BS 9990 or other National Fire Protection association (NFPA) equivalent.

6. **External Inlets.**

- a. Inlets enable connection of fire service water supplies shall be required to be provided with an external cabinet or enclosure marked 'DRY RISER INLET'. Within this enclosure, a collecting head with at least 2 BS Instantaneous male couplings shall be provided. In this cabinet, a drain down valve to enable the dry riser to be emptied of water following fire service operations or testing shall also be provided. These enclosures should be secure from vandalism but should be designed for immediately accessible with a breakable area in the door to facilitate urgent fire service connection.

7. **Pipe work.**

- a. All required pipe work shall be provided to make it functional by ensuring that the pipe is maintained EMPTY of water. The designer should ensure that the pipe work of dry riser distribution systems is of Galvanized steel pipe based on British standards laid down requirements for the pipes internal diameters or equivalent National Fire Protection Association (NFPA) requirements.
- b. In buildings over 18 meters provide single outlets on each floor (100 mm or 4 inch internal diameter pipe work fitted). For taller buildings and for situations where multiple outlets on floors are required, 150 mm or 6 inch internal pipe work is fitted. Where larger diameter dry riser pipe work is required, the same should be accompanied by a 4 way inlet collecting head. The pipe work is usually enclosed within fire resisting enclosures or shafts.
- c. The top of the pipe work should be provided with vent pipe to allow the air in the dry riser to be expelled when it is charged with water.

8. **Outlet Points.**

- a. Outlets (Landing Valves) - the connection points for enabling the fire service, are to be attached and advance its hose lines within a building. Each outlet should consist of a single or double BS instantaneous female outlet, under the control of a gate valve. Also, outlets should be protected by enclosures with a breakable area in the door to facilitate urgent Fire

Service connection. Outlets are to be situated in a protected lobby, stairway or cupboard, one of a buildings fire escape staircases, enclosures or lobbies. Provision is to be made at roof level for an additional testing outlet, where possible.

9. **Automatic Sprinkler System.** Automatic sprinkler system shall be provided in:-
- a. Every public use / institutional building which serves restrained or handicapped persons.
 - b. Covered car parking areas in building of which upper storeys are designed for other uses when such parking area exceeds five thousand square feet.
 - c. Out garages or terminals for passengers serving more than four buses at a time.
 - d. All building compartments used for cottage manufacturing display or sale of combustible materials and products which are more than 7500 square feet in covered area.
 - e. All areas of theatres except auditorium, music hall and lobbies.
 - f. All building areas used primarily for storage of goods, and materials including areas clearly specified for storage of incombustible materials and goods, which are more than 1000 square feet in area.
 - g. Sprinkler provision shall be made in the immediate vicinity of generators or any electrical equipment.
10. **Construction of Sprinkler System.** Sprinkler pipes, hangers and sprinkler heads shall be protected from corrosion.
- a. Every sprinkler system shall be equipped with a fire department approved inlet connection located on an outer building face nearest to street approximately twenty to thirty feet above finished ground and suitably marked "Fire department connection-Automatic sprinklers".
 - b. Automatic sprinkler system from the incoming supply along with automatic fire booster pump set, shall be connected to a building's RCC water storage tanks. This tank shall be of enough capacity to meet the daily storage requirements of the building's occupancy along with the minimum water storage requirement as recommended by NFPA. There

shall be minimum pressure (3 bars or 20 PSI) above the highest discharge point according to NFPA.

- c. Automatic sprinkler system shall set off automatic alarm system simultaneously.
- d. Every sprinkler system shall be provided with a readily accessible outlet valve to control all sources of water supply.

CHAPTER –XV

VIOLATION OF BY-LAWS

1. Removal or Prevention of Violation

- a. DHAM shall take other appropriate measures to ensure compliance with these By-Laws. For compliance of the By-Laws, DHAM shall carry out inspections of any Residential as well as Commercial premises. Inspections shall be arranged on periodic, on occasional, on any observation, or on any complaint from the neighborhood, basis. Owner/Occupant of the property shall arrange the inspection of the premises by DHAM detailed inspection team. Inspection of premises may be asked through writing (notice), verbal or Telephonic correspondence. However, owner shall verify the identification of DHAM inspection team before entry to the premises. Representative of the owner/occupant shall accompany the DHAM Inspection Team during the inspection.
- b. If DHAM finds that any of the provisions of these By-Laws, or any rules relating thereto, or any conditions of a general or special permit, are being or have been violated, it shall serve a notice in writing to any person responsible for the violation.
- c. The notice shall indicate the nature of the violation and DHAM may order such action as it may deem appropriate to correct the violation including but not limited to:-
 - (1) Discontinuance of any illegal work being done on, or activities being conducted in relation to, building.
 - (2) Requiring the owner or builder who are carrying out or have carried out such building works, on or before such day as shall be specified in such notice, by a statement in writing subscribed by him or by an agent duly authorized by him and addressed to DHAM, to show sufficient cause why such building works or such part thereof shall not be removed or altered to comply with these By-Laws.
 - (3) If such person fails to show sufficient cause to the satisfaction of DHAM why such building works or part thereof shall not be removed or altered. DHAM may take following actions:-

- (a) Require the person who has carried out the works against the provisions of these By-Laws to alter or cessation of the whole or part of construction works thereof.
 - (b) Any other measures authorized by these By-Laws, or with the conditions of permit.
 - d. The order shall specify the period within which the violation shall be corrected and in the event of non-compliance with the order, DHAM may take appropriate measures under the relevant By-Law or Act to be taken to effect compliance. The expenses shall be recoverable from the owner in the manner provided for the recovery of arrears of revenues or taxes.
 - e. The giving of notice and making and serving of an order under this clause shall not be a prerequisite to the initiation of, and shall not bar, any prosecution under any applicable law, and DHAM may take action under this clause whether or not a prosecution has been initiated.
2. **Enforcement by DHAM.** Administrator/Secretary DHAM may direct the concerned officer (under whose jurisdiction violations have occurred) to take action under these By-Laws with respect to any violation including entering upon and sealing of premises.
3. **Appeals**
- a. Within thirty days from the date of receipt of any order of DHAM under these By-Laws or of its determination on an appeal under the preceding sub By-Laws, the aggrieved person so served may appeal to the Administrator, which may give him an opportunity to be heard, if deemed appropriate or worth hearing, and within reasonable time.
 - b. Administrator, may arrange hearing of the person by himself for depute an officer for the purpose. The deputed officer or officers shall report, may be written or verbal, alongwith recommendations to Administrator.
 - c. DHAM after considering a report and any recommendations of the hearing officer, may affirm, modify or amend the order or determination.
4. **Finality of Orders or Determination.** Unless an appeal has been admitted as provided by By-Laws an original or appellate order, or determination of the Administrator shall be final.

List of Abbreviations

SMPIC	-	Sustainable Master Plan Image Concept
CBD	-	Central Business District
COS	-	Compulsory Open Space
PEC	-	Pakistan Engineering Council
PCATP	-	Pakistan Council of Architectures and TownPlanners
FAR	-	Floor Area Ratio
HVAC	-	Heat Ventilating and Air Conditioning
LED	-	Light Emitting Diode
LRV	-	Light Reflective Value
SRI	-	Solar Reflectance Index
TP&BC	-	Town Planning & Building Control
UHI	-	Urban Heat Island
RCC	-	Reinforced Cement Concrete
ICT	-	Information Communication Technology
UBC	-	Uniform Building Code
WC	-	Water Closet
MEP	-	Mechanized Electrical Plumbing
NOC	-	No Objection Certificate
PVC	-	Poly Vinyl Chloride
DPC	-	Damp Proof Course
SOP	-	Standard Operating Procedure
LPG	-	Liquid Petroleum Gas
CNG	-	Compressed Natural Gas
ASME	-	American Society of Mechanical Engineers
COP	-	Car Operating Panel
ASHRAE	-	American Society of Heating Refrigerating and Air Conditioning Engineers
ASTM	-	American Society for Testing and Materials
SWH	-	Solar Water Heaters
VVVF	-	Variable Voltage and Variable Frequency
TLV	-	Threshold Limit Value
VOC	-	Volatile Organic Compound
ODP	-	Ozone Depletion Compound

NFPA	-	National Fire Protection Agency
CIBSE	-	Chartered Institute of Building ServiceEngineers
BF	-	Basement Floor
FF	-	First Floor
GF	-	Ground Floor
GWP	-	Global Warming Potential