Bye Laws Regulating the Erection, Re-Erection, Additions to, or Alterations in, Buildings located in Clifton Cantonment

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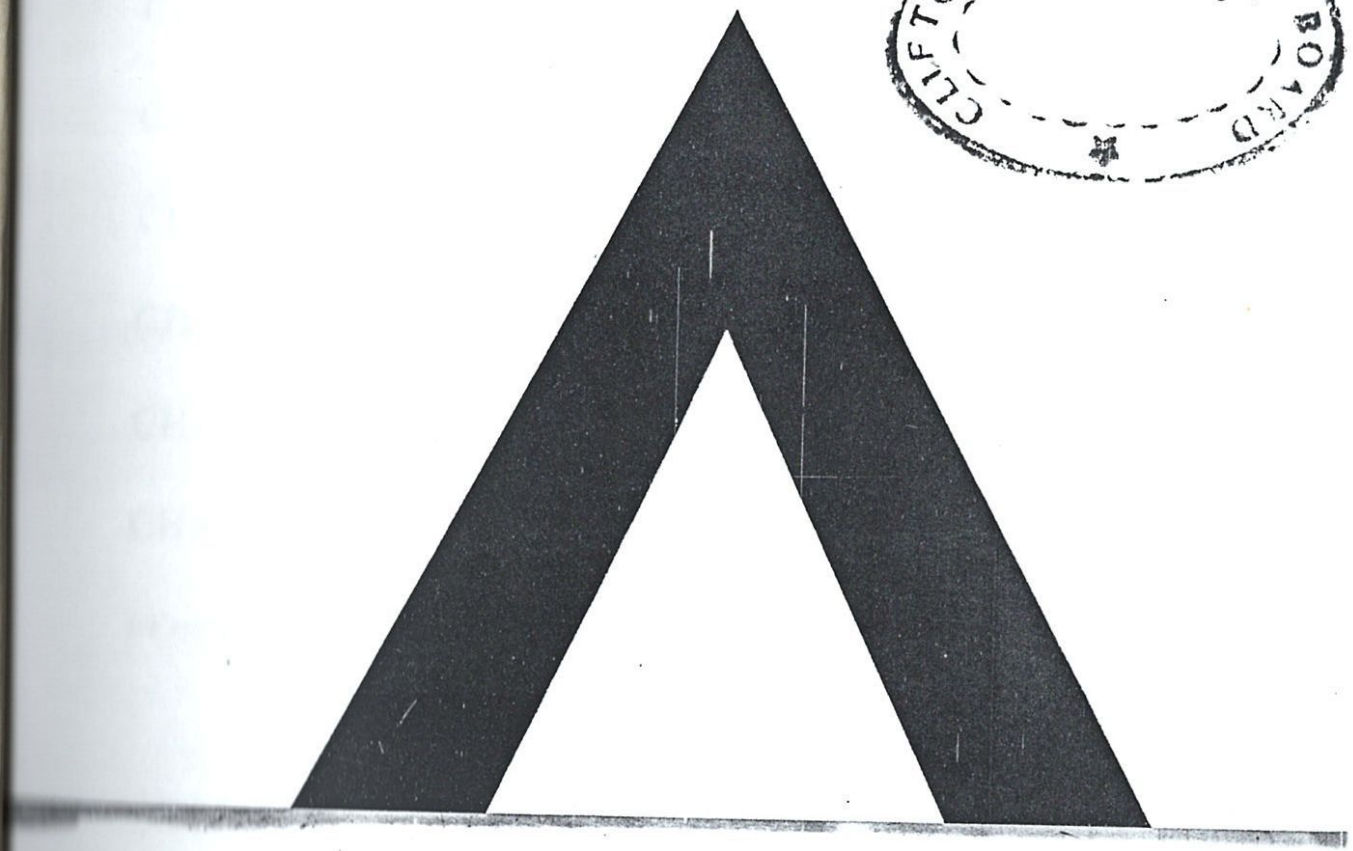

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GOVERNMENT OF PAKISTAN
MINISTRY OF DEFENCE
Rawalpindi, the 26th March, 1998

NOTIFICATION

S.R.O. 233 (I)/98: The following bye-laws for regulating the erection or re-erection of, or addition to or alteration in, buildings in Clifton Cantonment, made by the Cantt. Board, Clifton in exercise of the powers conferred by Section 186 of the cantonment Act 1924 (II of 1924), and in supersession of the bye-laws published under Notification No. 266/52 dated 13th June 1952, are hereby published for general information, the same having been published by the said Cantonment Board, and approved and confirmed by the Federal Government as required by sub section 284 of the said Act, namely:-

BYE-LAWS REGULATING THE ERECTION OR RE-ERECTION OR ADDITIONS TO OR ALTERATION IN BUILDINGS IN THE CLIFTON CANTONMENT.

CHAPTER 1

DEFINITIONS

1. ***Definitions:*** In these bye-laws, unless there is any thing repugnant in the subject or context,

(a) "Act" means the Cantonments Act, 1924 (II of 1924);

(b) "arcade" means a covered foot-path for pedestrians in the building, facing a road;

(c) "Authority" for purpose of these bye-laws means the Pakistan Defence Officers Housing Authority established under the Pakistan Officers Housing Authority Order, 1980 (P.O. of 1980);

(d) "balcony" means any platforms or other similar structure projecting outwards form the walls of any building and supported by bracket or contilever, and not used as a passage ;

(e) "basement" means the lowest portion of building partly or wholly below ground level ;

(f) "Board" means cantonment Board, Clifton ;

(g) "building experts" means the technical experts in the fields of structural engineering, architecture and soil testing to whom the Board may refer for technical advice, before the final sanction of building application ;

(h) "built- up area" means the total sum of all floors area of a building;

(i) "commercial building" means a building constructed wholly for commercial use on a commercial plot;

(j). "Form" means "Form appended to these bye-laws;

(k) "height of the building" means the vertical measurement from the mean level of the ground adjoining the building to the highest part of the roof;

(l) "industrial building" means a building designed for as a factory or workshop and includes any office or other accomodation on the same site for the use and convenience of worker ;

(m) "low car porch" means car porch having height not more than 8' from floor to ceiling of the porch ;

(n) "mezzanine floor" means a floor interposed between the ground floor and the first floor of a building and having head room less than 6 feet and not more than seven and half feet entrance inside and separate from the typical floor ;

(o) "multi-storeyed building" means any building above ground plus two storeys ;

(p) "pergola" means a structure of which the roof must be at least seventy-five percent open ;

(q) "plot-ratio" means built up area of habitable space of building as compared to the plot area, but does not include space allocated for service and amenities ;

(r) "registered architect" means a qualified architect registered by the Board and also holding registration from Pakistan Council of Architects and Town planners ;

(s) "registered environmental engineer" means a person holding registration from Pakistan Engineering Council as a professional engineer and also registration by the Board ;

(t) "registered geo-technology consultant" means a persons holding registration from Pakistan Engineering Council as a Geo-Technologist and also registered by the Board ;

(u) "registered structural engineer" means a qualified structural engineer registered with Pakistan Engineering Council and also registered with the Board ;

(v) "site engineer" means a qualified engineer engaged to supervise building operations at the site and registered with the Pakistan Engineering Council as professional engineer;

(w) "special buildings" mean shopping centres, hospitals, schools, cinemas, industrial buildings and similar other buildings: and

(x) "Utility Services Certificate": means a certificate issued by the organisations managing water supply, sewerage, gas and electric power, to the effect that adequate arrangement shall be available for connection to the proposed building before its completion for occupation.

CHAPTER II

SUBMISSION OF APPLICATIONS AND PLANS FOR SANCTION

2. *Notice under section 179 of the Act*

1) Every person intending to erect, re-erect, or alter a building shall apply for sanction under section 179 of the Act in form I along with the necessary documents specified therein.

2) Every person intending to erect, re-erect or demolish a multi-storyed and special building shall engage a registered architect or a registered structural engineer, registered geo-technologist and registered environmental engineer.

3) A registered professional as specified in Clause (2) above, shall give notice of his having undertaken the preparation of plans and supervision of building works, in Form 2. When the person so engaged ceases to be incharge of such building works before the same is completed, further such work shall forthwith be suspended until a fresh appointment is made under Clause (2) and a certificate in Form 3, duly signed by the previous professional, shall be obtained by the owner and submitted to the Board to the effect that the professional has ceased to be in charge of the work and that the work carried out under his supervision was to his entire satisfaction.

3. *Site plan* (1) Every notice in Form 1 shall be accompanied by

a) site plan drawn to a scale of not less than 40 feet to an inch, or 12.200 meter to 2.54 centimeter and the scale used shall be indicated on the plan which shall clearly show:-

i) the direction of the north point;

ii) the boundaries of the site on which it is proposed to erect, re-erect or add to or alter in the building;

iii) the position of all adjacent streets vacant lands and drains;

iv) fixed distance from the centre of roads;

v) the names, if any, and width of street on which the site abuts. together with the numbers, if any, of adjoining house or premises;

vi) the alignment of adjoining building;

vii) the alignment of drain showing the manner in which the roof and house drainage and surface-drainage will be disposed of; and

viii) a sketch of the building and premises showing all electric wiring and poles and water pipes within 20 feet or 8.10 meter boundaries of the site.

b) building plan to a scale of not less than 8 feet to an inch or 2.440 meter to 2.54 centimeter and the scale used shall be indicated on the plan which shall include the section elevation and shall inter alia show:-

i) the external dimension of the main building;

ii) the ground floor, upper floor, if any, and the roof;

iii) the thickness and composition of all beams, rafters and all other support;

iv) the position and dimension of all projections beyond the walls of the building;

v) the position of underground and overhead tanks;

vi) the position of all the proposed and existing drains, urinals, privies, fireplaces, kitchens, gutters and down pipes;

vii) the dimension of all rooms and position of doors, windows and ventilators in each room of every storey;

viii) the material to be used in the foundation, walls, floors and roofs;

ix) the purpose for which it is intended to use the building;

x) the level and width of the foundation and the level of the ground floor with reference to the level of the centre of the street on which the front of the proposed building is to abut; and

xi) boundary wall corners of roadside are rounded off properly and there are no blind corners.

c) detailed drawings and structural calculations, duly signed by the registered structural engineer in Form 4 in respect of building having a height over 13 metre and any other special building;

d) complete soil investigation in respect of building having an over all height of above 13 meters and for other special type of public assembly building or halls;

e) for industrial buildings, environmental plan to control air, water and noise pollution, prepared by a registered Environmental Engineer;

f) for building less than 13 metre in height all necessary soil tests if so required by the Board to prove the nature of the ground;

g) for multi-storeyed building intended to be constructed for sale or rental purpose, utility service certificates; and

h) any other information or document required by the Board to deal satisfactorily with the plan.

2) All new works shall be indicated on the site plans and building plans by a distinct colour and key to the colour used shall be given thereon as under:-

Proposed work	.....	Red
Existing work	.....	Black
Demolition	.....	Yellow

3) All the site plans and building plans prepared and signed by a registered architect and a registered structural engineer; if enaged as envisaged in Clause (2) of bye-law 2, shall be submitted.

4) All the document of the title relating to the plot showing his right to carry out such works, shall be accompanied with application;

5) The applicant shall furnish:-

a) while giving notice in Form 1, seven copies, one being traced on linen, of every such plan and minimum two copies each of other documents;

b) the copy of linen shall, after the plan is sanctioned, be retained by the Board together with one more copy;

c) two copies of the plan signed by the Executive Officer signifying its sanction shall be returned to the person by whom the same were furnished. Copies of the sanctioned plans will also be forwarded to the Military Estates Officer and the Authority if the plot falls in the Authority area; and

d) authenticated copies of all documents relied upon by the applicant shall, when required, be produced for inspection.

4. ***Return of defective plans.*** Where the plans are unintelligible, ambiguous or are in contravention of section 181 of the Act or these bye-laws, Executive Officer may return such plan to the applicant giving his reasons in writing and until a rectified plan and required documents are submitted the applicant shall be deemed to have given no notice under section 179 of the Act: provided if the plot was allotted by the Authority, it may return the plans to the applicant at the initial stage in case there is a violation of Allotment order, Lease in Form 'A' or From 'C'.

5. ***Reference to building experts.*** In case of building other than an ordinary residential building the Board may refer the plan to a building expert for technical scrutiny from architectural, town planning and structural point of view on payment of a fee by the applicant as determined by the Board from time to time. The building expert will return the plan along with technical clearance and comments, if any, within seven days after receipt of the plan from the Board.

6. ***Evidence of permission.*** Wherever under any of these bye-laws the doing of or omitting to do a thing or the validity of anything depends upon the sanction, permission, approval, direction, requisition, or any satisfaction of the Board, a written documents signed by the Executive officer duly authorised by him purporting to convey or set forth his sanction, permission, approval, order, direction, requisition, notice or satisfaction shall be sufficient prima facie evidence thereof.

7. ***Compliance of permission.*** Every person who carries out building works shall comply with the direction and conditions specified, in the permission.

8. ***Verification of building lines.*** Every person who commences any building works, shall give notice to the Board in Form 5. The builder, lessee or applicant shall also associate the Cantonment Engineer at the important stages of construction i.e. the foundation, plinth level and pouring of roofs etc.

9. ***Cancellation of permission.*** If any time after permission to carry out building work has been granted, the Board is satisfied that such permission was granted in consequence of any defective title of the applicant, material misrepresentation or fraudulent statement contained in the application made or submitted therewith in respect of such building, such permission may be cancelled and any work done thereunder shall be deemed to have been done without permission.

10. ***Inspection of building.*** The Board may, without giving previous notice, cause the premises to be inspected:-

a) at any time before the sanction of an application received under these bye-laws:

b) at any time during the progress of the building works;

c) within 30 days from the receipt of the notice of completion or the certificate of completion with respect to any such building: and

d) if no notice of completion or certificate has been received, at any time after the building has been erected, added to or altered,

11. ***Notice of completion and occupation.*** (1) Every person who carries out and completes building works sanctioned under these bye-laws shall give notice thereof under section 74 of the Act in Form 6 to the Cantonment Executive Officer within thirty days of the completion of such works.

2) After receipt of the notice of completion, the Cantt. Executive Officer may cause such works to be inspected and after such inspection he may approve or disapprove the building for occupancy or may make such further orders as he may deem fit.

3) No person shall occupy any such building or use any part affected by the erection or re-erection of such building until the permission referred to in sub bye-law (2) has been granted.

12. ***Submission of deviated plans.*** Where a person has erected or re-erected a building which is not in conformity with the building plans sanctioned by the Board such person shall, together with the report of completion of the building, submit a completion plan showing the building exactly completed and the deviation made in the building from the sanctioned building plan in Form 7 for consideration of the Board; Provided that for the sites allotted by the Authority, the deviated plans shall be submitted to the Board through the Authority.

13. ***Federal Government instructions and policies.*** The Board shall follow the instructions and policies issued by the Federal Government from time to time on the subject of environment, lightening and earthquake.

CHAPTER III

SPACE REQIUREMENTS AND ABUTTING OF BUILDING

14. ***Space for electric sub-station.*** In all buildings where the quantum of electricity load is more than 30 kW a space measuring 5m x 6.05m abutting on road side or street with a clear passage of 6m wide shall be left for electric supply agency sub-station.

15. Built up area of residential plots and compulsory open spaces (1) For residential plots, the ratio of the built up areas and compulsory open spaces shall be as under:-

Area of the plot	Allowable built up area	Open space Right side	Left side	Front side	Rear side	Remarks
100 SYDS and below	Whole may be built up					
101 to151 SYDS	''	3'-00"			3'-00"	
151 to 300 SYDS	3/4	5'-00"	3'-00"	5'-00"	5'-00"	
301 to 600 SYDS	2/3	5'-00"	5'-00"	7'-6"	5'-00"	
601 to 700 SYDS	1/2	5'-00"	5'-00"	10'-00"	7'-6"	
701 to 1500 SYDS	1/2	10'-00"	10'-00"	20'-00"	10'-00"	

Not exceeding 4500 sft					
Above 1500 SYDS	1/3	10'-00"	10'-00"	20'-00"	10'-00"

When divided into two portions only, may have 5' open space instead of 10' on the dividing line.

Note: (1) The number of storeys shall be restricted to ground plus one.
(2) No cnstruction shall be allowed within 5' of the boundary wall except a pergola or a low car porch

16. ***Servant quarters.*** (1) Servant quarters may be allowed in the rear provided the compulsory open space is maintained and that height does not exceed 8'.

2) Where the servant quarters are constructed above the ground floor, the placing of opening in those rooms will be in such a manner that the overlooking of the adjoining compound is completely avoided and the top roof level of the servant quarter in not accessible fo use as terrace.

17. ***Frontage.*** In the case of plots abutting on more than one roads frontage will be witl reference to the more important road, and where more than one building are to be sited in th same plot, frontage may be availed on main as well as side roads subject to the condition tha the required open spaces are left in the direction of adjoining plot.

18. ***Method of measurement of clear space.*** The minimum clear space prescribed between building and the boundaries of its plot shall be measured between the greatest projection o the covered building and the plot boundaries at right angel thereto.

19. ***Suitable access for the building.*** Every building not abutting on a street shall have an acces or a right of way for an approach from the street to the sky and at least 2.5 metre wide i length of such access or right of way does not exceed 15.25 meters from the street. If th length exceeds 15.25 meters the width shall be at least 5 meters in order to facilities access b the fire brigade to the rear building.

20. ***Rounding off of road corners.*** Boundary wall on round corners and junctions shall b rounded off properly for traffic visibility.

21. ***Projection allowed.*** Maximum projection of Chhajjas and sunshade in compulsory ope spaces shall not exceed one meter.

22. ***Projection in public street not allowed.*** Sunshades over doors, windows and ventilators of building abutting on a street, shall not be made to open towards the street.

23. ***Gates, doors, etc, not to open on street.*** Gates, doors, windows and shutters on the ground floor of the building abutting on a street, shall not be made to open towards the street.

24. ***Construction of steps.*** No steps shall be constructed so as to project on to a street or beyond the public drain running in the street.

25. ***Construction near drain or excavation.*** Where a building is to be erected near drain or an execution at a distance less than the depth of such drain or excavation, the owner shall satisfy the board that the foundation of the building is safe and

a) proper damp proofing shall be provided for walls and floors according to the standard specifications; and,

b) where the floor of a building is in the opinion of the Board subject to water pressure, that portion of the building below ground level, shall be suitably water proofed to the satisfaction of the Board.

26. ***Plinth of building.*** The plinth of all buildings shall be at least one foot or 0.31 meter above the level of the road on which the building abuts and every wall of such building shall have a damp proof course of not less than one inch or 2.54 centimeter in thickness above the plinth level which shall consist of cement concrete or plaster.

27. ***Boundary fencing.*** Boundary line abutting on public streets, footways or places which the public are allowed to use, shall not have fencing consisting of barbed wire or any material likely to cause injury to persons or animals.

28. ***Balcony.*** No balcony shall be so constructed as to be wider than 3 feet or 0.9 meters.

29. ***Mezzanine and loft.*** (1) The height of mezzanine and loft shall be between 6 and 7 -6 ;

(2) No mezzanine or loft shall be permitted in shops having less than 16 feet from floor to ceiling;

(3) The total mezzanine or loft area in any shop shall not exceed 1/3rd of the floor area of the shop;

(4) In no case shall a mezzanine or loft be permitted within 6 feet from the front wall of the shop;

(5) No mezzanine or loft shall be permitted for human habitation unless it complies with the minimum height of rooms prescribed in these bye-laws,

30. ***Basement.*** The Board may allow a basement in the building on the feasibility of the site and subject to the following conditions, namely:-

i. the location and contours of the plot so permit and the clear height of the basement is not les than 8 feet or 2.440 meter;

ii. the minimum area of the basement is 100 sq. feet or 9.20 meter.

iii. the area of basement floor except for car parking is included in the built up area of th building;

iv. the basement is served with an independent entrance and in addition has an emergency exit;

v. no difficulty is felt for the proper sanitary arrangement of the basement, and it can directly b connected to sewer, or if it may not be possible, pumping arrangement are installed; and

vi. the drainage passing under the basement is gas tight.

31 ***Area of living room.*** Every room in a building intended to be used for human habitation shall be provided with:-

a) floor area of not less than 100 sq. feet

b) a floor width of not less than 8 feet or 2.440 meter;

c) at least one door, one window and one ventilator, the total area of which shall not be less tha 1/10 of the floor area of room;

d) the minimum floor area of a kitchen shall be 50 sq. feet or 4.60 sq. meter having a minimur width of 6 feet or 2.1 meter; and

e) the minimum floor area of a shop shall be 100 sq. feet or 9.20sq meter having a minimur floor width of 8 feet or 2.410 meter.

32. ***Height of rooms.*** The height of rooms in a building shall not be less than;

a) 10 feet or 3.10 meter from the ground floor;

b) subsequent storey 10 feet or 3.10 meter from the roof of the storey below;

c) inter floor shall only be permitted in rooms other than those meant for habitation purpose: such as bath rooms, stores, kitchens, passages, garages, if combined with the main verandas o rooms meant for similar ancillary uses; and

d) a minimum clear height of all the rooms referred to in clauses (c) above shall be seven feet six inches or 1.845 metres except that the inter floor may have a clear height of 5 feet 6 inches or 1.540 metre when used as storage space.

33. ***Special provisions about number of storeys and height of buildings.*** (1) Subject to clause (2) the Board may remove restriction of height and the number of storeys for building to be erected or re-erected in certain declared zones, or on case to case basis.

(2) The provisions of clause (1) shall not apply to commercial building or plots.

(3) If the height of a building exceeds 1-1/2 times of the width of a road on which it abuts, it shall be so set back as to be under the four plans drawn from the four sides of permissible perimeter of the building at the height and inclined at an angle of 62^0 at the horizontal plan passing these four sides.

(4) The Board shall consider exterior of the building while sanctioning building plans of multi storeyed building to maintain aesthetic harmony, particularly to be constructed on main roads.

34. ***Doors and windows.*** All doors and windows provided for rooms in a building shall not be less than

a) doors 3□x 6□ or 0.915 meter x 1.83 meters; and

b) windows 2□x 3□ or 0.610 meter x 0.915 meters.

35. ***Distance between blocks of multi storeyed buildings.*** For buildings in adjacent plots or constructed in the form of multi-storeyed building blocks with in the same plot, there shall be a minimum distance of six meter between the building or block of building as the case may be.

36. ***Commercial or commercial- cum-residential buildings.*** (1) The minimum floor area of a shop shall be 9.5 sq. meters and the minimum width of the shop shall be 2.5 meters.

(2) The minimum height of a shop shall be 3 meter

(3) The underside of a gallery or loft shall not less than 2.5 meters above the floor of the shop.

(4) Every such gallery or loft shall be open except for a railing not exceeding 1meters in height.

(5) Every such gallery or loft shall be accessible by ladder or a staircase of non-inflammable material and located inside the shop.

(6) The minimum ceiling height of an arcade inside shall be less than 2.5 meters. The width of the arcade shall not be less than 7□-6□ or 6.858 meters.

(7) The minimum areas and widths of W.Cs and bath rooms for commercial building shall respectively be as under:-

(a) W. C 1.2m²

(b) Bath Room 1.4m²

(8) Arcades, wherever provided shall be without any obstruction.

(9) In commercial plots, the following criteria of built up area and compulsory open spaces shall be observed:-

Area of plot space Left	Allowable built up area	OPEN SPACE Right side	left side	front side	rear side	Remarks
Less than 250 SYDS	Whole					
251 to 650 SYDS	2/4	5'-00'	5'-00"		7-6"	
Exceeding 650 SYDS	2/3	5'-00'	5'-00'	15'-00'	10'-00'	

Note Ground plus three storeys shall be allowed with 1/3rd mezzanine floor. If considered necessary ground plus four storeys may be allowed without mezzanine floor.

37. ***Parking space for cars.*** For the following buildings, parking space at the rate of 250 sqft. per car shall be provided according to the requirement indicated against each:-

1) five star hotels — One car space for 5 bed rooms

2) four star hotels and lower categories — One car space for 10 bedrooms

3) Residential flats — One car space for every flat

(4) Offices	One car space for every 500 sq. meters of floor area
(5) Shopping centres	One car space for every 250 sq. meters of floor area

CHAPTER IV

SPECIAL BUILDINGS

38. ***Industrial buildings.*** (1) Approval of the chief inspector of factories shall be obtained by the applicant prior to submission of an application to the Board for the erection or re-erection of an industrial building.

(2) In matter of built area and compulsory open spaces. industrial building shall also be regulated by the provisions of clause (9) of bye-laws 36 pertaining to the commercial buildings.

(3) In the case of a building providing an explosive stores, permission will have to be obtained, by the applicant, from Inspector of Explosives, in respect of the location of the stores.

(4) Gate post and time-office shall not be more than 3.0m x 2.4m and 3.7m x 6.0m respectively and in any case shall not be of less than 1.2m x 1.2m and 2.4m x 3.0m respectively.

(5) Height of the compound wall shall not to be less than 2.1m from the ground.

(6) Area of kitchen shall not to be less than $10m^2$

(7) Area of bathroom shall not be less than $2m^2$ with a minimum width of 1.5m

(8) Area of W.C shall not be than $1.5m^2$ with a minimum width of 1m

(9) Disposal of industrial waste, domestic sewage as well as supply of water shall be shown on the plan.

(10) The area of the following structure will not be treated as built up area:-

a) Overhead tank

b) Underground tank

c) Open platform

d) Above ground washing and water tank.

e) Underground hazardous chemical stores.

f) Gas sub-station

g) Oil tank

h) Soak-pit and septic tank

i) Drinking water tap

j) Well

k) Underground air-raid shelter

39. ***Hotel and restaurants.*** (1) The minimum area of the rooms for a hotel shall be:-

(a) Single room $10m^2$;and

(b) Double room $16.5m^2$

(2) The minimum area of bath room for hotel shall be $3.5m^2$

(2) The minimum height of rooms for hotel with air conditioning shall be 2.5m

(3) The minimum height of rooms of hotels without air conditioning shall be 2.8m

(4) The minimum height of restaurants shall be 3.7m

40. ***Hospitals and clinics.*** (1) Hospitals, maternity and nursing homes and like buildings shall be planned in accordance with the standard and specifications laid down by the Federal Government.

(2) Details of disposal of hospital waste shall be attached with building plans.

(3) The minimum height of room used to accommodate patients shall be 3m

(4) The entrance to any ward or room used for accommodation of patients shall be within 25m from the nearest staircase and from each such ward or room there shall be access to a secondary staircase and the width of all staircase and the width of all stairs shall not be less than 1.8m

(5) For clinical building the minimum requirement shall be:-

a) Doctor's office:-

i)	waiting rooms	3.4m x3.7m
ii)	receptionist-combination	1.8m x 3.0m
iii)	doctor's consultation office	4.3m x 3.7m
iv)	examination room	3.0m x 2.4m
v)	corridors	1.5m
vi)	toilet room	1.5m x 1.8m
vii)	laboratory	4.5m x 3.7m
viii)	x-ray	4.5m x 3.0m
ix)	dark room	1.55m x 1.8 ; and
x)	heating and general storage	3.0m x 2.4m

(b) Hospitals (General):-

Optometry and pharmacy:-

i)	General waiting room	2.7m x 6.0m
ii)	Pharmacy	2.4m x 6.0m
iii)	Refractory	3.0m x 3.7m
iv)	Secretary office	2.4m x 3.0m

Physiotherapy:-

v)	treatment room	2.1m x 2.6m
vi)	exercise and desk space	1.8m x 6.0m

Laboratory:-

vii) lab technician to handle CKG, BMR and possible X-ray — 3m x 12m

Recovery and EKG and BMR:-
(Adjoining lab) — 2.9m x 4.3m

e) Recovery Blood Letting and injections;

i) Adjoining laboratory — 2.9m x 4.3m

ii) general toilets — 1.5m x 2.4m

iii) x-rays room — 3.7m x 4.5m

iv) dark room — 1.8m x 2.4m

v) dressing alcove — 1.2m x 1.8m

vi) surgery — 3.0m x 4.0m

vii) cast and injection room — 3.0m x 4.0m

(d) central supply storage;

i) for sterilized supplies, central sterilizers and autoclave, deep sink for scrubbing — 2.4m x 4.5m

ii) kitchen — 2.4m x 2.4m

iii) library — 2.9m x 4.3m

iv) conference room — 2.9m x 4.3m

(e) Utility rooms;

i) furnace room — 5.5m x 4.0m

ii) janitory room and tools — 2.9m x 4.3m

iii) general storage 2.9m x 4.3m

iv) linen storage 2.9m x 4.3m

v) nurses lounge with lockers, couch and table, for lunches 3.7m x 4.9m

CHAPTER V

LIGHTING AND VENTILATION

41. ***External Openings*** (1) Every room, others than used for the storage of goods, shall b provided with natural light and ventilation by means of one or more openings, excluding doo opening, in external walls having a combined area of not less than ten percent of the floo space of such room and the whole of such openings shall be capable of allowing free an uninterrupted passage of air.

2) Area for openings in case of warehouse, godown and storage places shall not be less than five percent of the floor space of such warehouse, godown or storage place.

42. ***Internal openings.*** Unless the light and ventilation requirements are made by an air duct o ventilation duct, all internal habitable rooms shall have openings in internal walls in additio to door openings and such openings shall not be less than seven and half percent area of suc room.

43. ***Internal air ducts.*** Habitable rooms and service rooms, particularly in jointed apartment may receive day light and natural ventilation from internal air ducts; provided that:-

i) if shall be constructed vertical for the whole length of the building and be open to sky fro the top;

ii) if shall not to be less than 3 feet in width and not less than 24 sq.ft. in area; and

iii) all internal habitable rooms must have openings in internal ducts not less than seven and h percent floor area of such room while for kitchen, if shall not to be less than ten percent of t floor area.

44. ***Permanent Openings in kitchen.*** Every kitchen shall have openings for permanent ventilati into the external air and it shall not be less than ten percent of its covered area.

45. ***Water-closet and bath rooms.*** Every water-closet, urinal stall and bathrooms shall provided with natural and ventilation by means of one or more openings in external wa

having a combined area of not less than 2 sq. meter for water closet, urinal stall and bath room and such openings shall be capable of allowing free and uninterrupted passage of air.

46. ***Garages.*** Every garage shall be provided with opening for ventilation and lighting

47. ***Staircases.*** All staircases shall be provided with adequate lighting and ventilation to the satisfaction of the Board.

48. ***Mechanical ventilation and air-conditioning.*** (1) Where permanent air-conditioning is intended, the relevant bye-laws dealing with natural ventilation, natural lighting and height of rooms may be waived at the discretion of the Board.

(2) Consideration to the waiver of the relevant bye- law may be given only if in addition to the permanent air- conditioning system there are provided alternative approved means of ventilating the air- conditioned enclosure.

(3) Where permanent mechanical ventilation in respect of lavatories, water closet, bath rooms or corridors if provided to the satisfaction of the Board the provisions of the bye-law dealing with natural ventilation and natural lighting will not apply.

(4) Every hospital building where mechanical ventilation has to be provided shall conform with the following minimum requirement; namely:-

a) Hospital wards, rooms, with no external walls and other enclosure shall be provided with mechanical ventilation or air conditioning having a minimum fresh air change at the rate of 10 to 15 cfm per person.

b) Isolation wards and other such areas for infectious, contagious or other dangerous diseases shall be provided with mechanical ventilation of air change at the rate of 10 to 15 cmf per person.

c) Filter for the removal of airborne bacteria shall be provided for all exhaust air discharge points to the satisfaction of the Board and such points shall not in any case be lower than 4.5 to 6m from the external ground or pavement level.

d) Operation theaters and other similar enclosures shall be provided with mechanical ventilation or air conditioning having a minimum fresh air change at the rate of 2 cf. per square meter of floor area and shall further have fifty percent -100% fresh air introduction into such theaters and ,

i) air inlet points and exhaust openings shall be located at suitable height; and

ii) air shall not be recalculated or combined with any other air conditioning or ventilating system and all air introduced into the enclosure shall be exhausted to the atmosphere without recalculation.

(5) Where mechanical ventilation or air conditioning is provided,

a) foul or vitiated air shall not be discharged into an air duct; and

b) the underside of opening for the entry of air into any mechanical ventilation or air conditioning plant shall not be lower than from any external pavement, road way, ground level or similar external surface.

(6) Where mechanical ventilation or air conditioning is provided to any of the enclosures from which foul air will be exhausted, the ducts, trunking, service shafts or other such items containing or conveying or conveying the foul or vitiated air from such enclosure shall in on way; be connected to any other air exhaust or extract, or air inlet system.

(7) Unless otherwise specified, where air conditioning in mentioned herein, it shall be deemed to include air filtration down to a particle size of ten microns with an efficiency of not less than seventy percent.

(8) Basement or other enclosures below the ground level, used for working area or for occupancy of more than 2 hours duration shall be provided with mechanical ventilation or air conditioning, having a minimum of two fresh air changes per hour.

(9) Basement or underground carparks shall be provided with such mechanical ventilation that the air exhausted to the external atmosphere should constitute not less than four air changes per hour, air extract openings shall be so arranged that not less than two-thirds of the extracted air volume shall be removed from within not more than one third of the height of the room.

(10) Cinemas or other projection rooms where photographic film is being used, processed or stored, which are situated in the internal portion of the building and in respect of which no such external walls or those overlooking verandahs, pavements or walk ways are present, shall be provided with mechanical ventilation or air conditioning, and all plants conveying extract or exhaust air shall not be combined in any way to other such plant serving the auditorium or any other parts of the premises.

(11) Where rooms or enclosures in any building not specified in this bye-law are situated in the internal portions of the building and not such external walls or those overlooking verandahs, pavement or walk ways are present, mechanical ventilation or air conditioning having a minimum of one fresh air change per hour shall be provided.

(12) Water closets, toilets, bathrooms, latrines or rooms used for ablutions which are situated in the internal portions of the building and in respect of which no such external wall or those

overlooking verandahs, pavements or walk ways are present, shall be provided with mechanical ventilation or air conditioning having a minimum or fresh air change at the rate of 2 cfm per square meter of floor area.

(13) Where room, windows or wall air conditioning units are provided as means of airconditioning such units shall be capable of continuously introducing fresh air at the rate of not less than fifteen percent of their total air delivery capacity.

(14) The minimum scale of ventilation in terms of fresh air changes in conjunction with re-circulated and conditioned air, shall be:-

a) basement and garages	Minimum 4 air changes per hour with fresh air at one cfm per square meter of floor area
b) residential buildings	10 – 15 cfm per occupant.
c) toilets and lavatories	2 cfm per square meter of floor a area.
d) commercial premises	10 – 15 cfm per square meter of floor area.
e) factories and workshops	1-1/2 cfm per occupant.
f) operation theatres	2 cfm per square meter of floor area
g) hospital wards (General)	15 cfm per occupant
h) hotel rooms	0+ 33 cfm per square meter of floor area
i) school class rooms	7-1/2 cfm per oecupant
j) projection rooms	7-1/2 cfm per occupant
k) theatres and auditoriums	10- 15 cfm per occupant
l) canteens	10- 15 cfm per occupant
m) kitchen	4 cfm per square meter of floor area

n) building of public resort — 7-1/2 cfm per occupant

o) offices — 10 cfm per occupant

49. ***Exhaust fans.*** Where exhaust fans are used for ventilation purposes the size of the opening may be reduced to seventy five percent of that provided in bye-laws 41, 42 and 43 of the bye-laws and the exhaust fans shall be so located that foul air does not affect the free an uninterrupted passage of fresh air as indicated specifically.

50. ***Fixing of air conditioning units.*** (1) All self contained or window type air conditioni units shall be installed in such manner that the consenser air should not affect the passin persons near by the units.

2) All self-contained package air conditioning units shall be installed about 0.76m away from t wall.

51. ***Circulation of chilled water.*** Chilled water circulation in all central air conditioning un shall properly be insulated with chilled water pumping going to air handling units of floor floors and shall properly be enceased ducted.

CHAPTER VI

DRAINAGE AND SANITATION

52. ***Connection to public sewer.*** Where there is a public sewer all sullage water shall connected thereof.

53. ***Cesspools, septic tanks and soak pits.*** (1) Where no public sewer is in existence, all sull water shall be connected to septic tanks.

2) Where no public sewer is in existence all waste water shall be connected though septic tan soak pits.

3) Septic tanks shall be so:-

a) constructed as to be impervious to liquid either from the out-side or inside; and

b) sited as not to render liable to pollution any spring of water or any well the water of whic used or likely to be used for drinking or domestic purposes subject to minimum distanc six meter.

4) Septic tanks and drainage mains, within boundaries of the plot, be so sited as not to render liable to pollution any water line. There shall be a minimum distance of 1 meter between the two, and where this distance is to be reduced due to any unavoidable reason, then the water main be protected by encasing of concrete which shall be completely impervious to liquid from outside.

5) Any settlement tank or septic tank shall be:-

a) of suitable depth;

b) of adequate size and in no case the capacity should bee less than $2.7m^3$

c) covered or fenced in; and

d) if covered , adequately be ventilated and shall be constructed with mean of access for the purpose of inspection (including inspection of the inlet and outlet), emptying and cleaning.

54. ***Draining roofs and balconies.*** The roofs of every building and the floor of balconies abutting on a street or constructed over a street shall be drained by means of gutters and down pipes to the satisfaction of the Board.

55. ***Soil pipes, water pipes and ventilating pipes.*** (1) Every soil pipe, water pipe or ventilating pipe shall be of adequate size for its purpose but in no case shall the internal diameter of any soil pipe or waste pipe be less than the internal diameter of any pipe or the outlet of any application which discharges into it.

2) The internal diameter of a soil pipe shall be not less than:-

a) 50mm, if it exclusively serves one or more urinals;

b) 75mm, in any other case; and

c) in the case of a waste pipe, 32mm, if it serves a lavatory basin.

3) Any soil pipe, waste pipe or ventilating pipe shall:-

a) be composed of suitable materials of adequate strength and durability; and

b) have all joints formed in a manner appropriate to the materials of which the pipe is composed and in such a way that the joints shall:-

i) remain airtight;

ii) not cause electrolytic corrosion due to the association of dissimilar materials; and

iii) not form any obstruction in the interior of the pipe

c) if it is necessary to have a bend, it be so constructed that the bend does not form an acute angle but has the largest practicable radius of curvature and that there is no change in the cross section of the pipe throughout the bend.

d) be adequately supported through its length without restraining thermal movement, by fitting which gives such support being securely attached to the building;

e) be so constructed as to be capable of withstanding as smoke or air test for minimum period of three minutes at a pressure equivalent to a head of not less than 38mm of water;

f) be so placed as to be reasonably accessible for maintenance and repair through its length; and

g) have such means as are necessary to permit internal cleaning,

4) Any soil pipe from a soil appliance and any waste pipe from a waste applicant shall have fitted close to such appliance a suitable and readily accessible trap of adequate diameter having an adequate water seal and means of access for internal cleaning; provided that this clause shall not apply to:-

a) any soil pipe serving only soil appliances or any waste pipe serving only a waste appliance if the appliance has an internal trap;

b) any waste pipe serving a bath or lavatory basin is so fixed in a range that waste pipe discharged into a semi-circular and accessible open channel of glazed stone-ware or other equally suitable mateials, formed or fixed in, on or above the floor immediatly beneath such baths or lavatory basins and discharging over, or into a suitable trap; or

c) any waste pipe serving a lavatory, basin or shower trays or both are so fixed in a range that each such waste pipe discharges into a common waste pipe which:-

i. does not exceed five meter in length;

ii. is fitted with a suitable trap; and

iii. has means of access suitable and adequate for the cleaning of the trap and of the whole length of the trap.

5) No soil pipe or waste pipe shall be placed outside the external walls of a building so as to cause dampness in that building.

56. ***Overflow pipes.*** An overflow pipe connected to a waste appliance shall either discharge into a waste pipe in such a way as to be disconnected from the drainage system by the trap installed in accordance with clause (4) of bye-law 55 or otherwise so discharged as not to cause dampness in, or, to, any part of any building.

57. ***Ventilating pipe.*** Every ventilating pipe shall be carried upwards to such a height and so positioned as not to transmit foul air in such a manner as to become prejudicial to health or a nuisance and it shall be fitted at its topmost with a durable cowl or other cover which does not unduly restrict the flow of air.

58. ***Rain water pipes.*** Every rain water pipe which is on a building and intended for collecting rain water shall be:-

a) of adequate size for its purpose;

b) composed of suitable materials of adequate strength and durability;

c) adequately supported through its length without restraining thermal movement, and fitting which gives such support being attached to the building;

d) so arranged as not to cause dampness in, or damage to any part of a building;

e) jointed in a manner appropriate to the material or materials of which it is composed so a to remain watertight; and

f) fitted with an adequate outlet or outlets so placed as to drain the whole length of the pipe.

59. ***Inlets to drains.*** Any inlets to a drain, other than a junction between the drain and a soil pipe, a waste pipe or a ventilating pipe, shall be effectively trapped be means of a suitable trap having a seal not less than 50mm in depth.

60. ***Trenches for drains and private sewers.*** (1) Where any drain or sewer is constructed adjacent to a load bearing part of a building, such precaution shall be taken as may be necessary to ensure that the trench in which the drain of private sewer is laid in no way impairs the stability of the building.

2) 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 150 millimeters;

Provided that, where the trench is within 1.0 m of the foundation of the wall, the trench shall be filled in with concrete to the level of the underside of the foundation.

61. ***Sanitary provisions.*** (1) Every residential dwelling shall have at least one latrine or W.C and one bathroom.

2) single room tenements shall have one latrine or W.C or W.C and one bathroom per five tenements subject to a minimum provision of two W.C.'s or latrines.

3) In the case of servant quarter attached to dwelling houses one W.C. or latrine and one bathroom shall be sufficient for every five quarters.

4) For every ten bedrooms or less in hotel, boarding house and guesthouse there shall be provided at least two W.C.'s or latrines and two bathrooms.

5) For every 20 persons in a dormitory there shall be provided at least two W.C.'s or latrines and one bathroom.

6) For over twenty-five upto one hundred persons in an office, departmental store or factory there shall be provided one W.C. or latrine and one urinal and one additional W.C. or latrine plus on urinal for every fifty persons in excess of one hundred twenty five .

7) One wash basin or equivalent washing trough space per twenty-five or less persons for ablution purposes.

8) Communal sanitary facilities shall be provided at the discretion of the Board for shops and stalls having a floor area of less than $37m^2$. But shops and stalls having a floor area of more than $37m^2$ shall have a minimum of one W.C. or latrine and one draw off tap at the premises.

9) One W.C. and two urinals for every two hundred persons or part therefore in places of public assembly for males and one W.C. for one hundred females or part therefore shall be provided and in each room, for sanitary purpose there shall be at least one wash basin.

10) Two W.C.s' and three urinals per one hundred boys, two W.C. s' per one hundred girls and one wash basin or equivalent washing trough space per twenty five pupils for ablution purposes shall be provided in school.

11) There shall be provided at least one W.C. one wash basin and one bath for every ten persons (patients and staff) in a hospital.

62. ***Walls and floors of latrines W.C.'s and bathrooms.*** (1) All walls of W.C.'s and bathrooms shall be finished in cement mortar or other impervious materials to a minimum height of 1.2m, All floors to W.C.'s and bathrooms shall be paved in concrete with cement or other approved material rendering it impervious and laid in the case of bathrooms with proper falls to an approved outlet.

2) No, latrine shall be allowed to open on any public street or lane unless screened by a five feet high purdah wall. and also no latrine or refuse water pits shall be constructed within six feet of a kitchen.

3) Every latrine shall be constructed of bricks, concrete or other impervious approved material.

4) Where there is no water carriage system, latrine shall be separated from the main buildings by cross-ventilated passages not less than 1.5m wide or be accommodated in separate buildings.

63. ***Wells.*** A well constructed in connection with a building and intended to supply water for human consumption shall comply with the following provisions; namely:-

a) the well shall be so situated as not to be liable to pollution, subject to a minimum distance of 6m from any cesspool, soak pit and septic tank.

b) The ground adjoining the well shall for a distance of not less than 1.2m in every direction be covered with a watertight paving constructed so as to slope away from the well.

c) The sides of the well shall be rendered impervious for such a depth as to prevent contamination through the adjoining ground. This will normally be of a depth of 1.8m.

d) A dug well shall be so constructed as to be readily accessible for cleansing and the opening shall be guarded by a railing or parapet at least 0.8m high.

e) The top of a dug well shall be surrounded by a kerb extending not less than 1.5cm. above the level of the paving and so constructed as to prevent any surface water gaining access to the well.

f) The lining tubes to a a bored well shall project not less than 15 cm above the level of the paving and such projection shall be surrounded with concrete not less than 15cm thick or with other adequate means of projection for its full height.

g) A well from which water is drawn by a bucket shall be provided with a cover so fitted as to prevent surface water or other matter from gaining access to the well; and

h) A well from which water is drawn by a pump shall be provided with a cover so fitted as to prevent surface water or other matter from gaining access to the well.

64. ***Water closets.*** (1) The receptacle shall have a smooth and readily cleansed non-absorbent surface and shall be so constructed and fitted as to discharge through an effective trap of suitable dimensions, without storage, to a soil pipe or a drain.

2) The flushing apparatus shall be capable of securing the effective cleaning of the receptacle.

3) No part of the receptacle shall be directly connected with any pipe other than a soil pipe. flush pipe, trap vent pipe or drain.

65. ***Urinals.*** (1) The urinal shall have one or more slabs, stalls, trough bowls or other suitable receptacles, which shall _____

a) have a smooth and readily cleansed non-absorbent surface;

b) have an outlet fitted with an effective grating and trap; and

c) be so constructed as to fitted as to facilitate cleansing.

(2) No urinal or urinal fitting shall be constructed or installed unless it is furnished with an automatic flushing apparatus which is capable of securing the effective cleansing of the receptacle.

(3) No part of receptacle shall be directly connected to any pipe other than a soil pipe, flush pipe, trap vent pipe or drain.

CHAPTER VII

FIRE RESISTANCE AND FIRE PRECAUTIONS.

66. ***Stand pipe equipments.*** (1) for the purpose of the prevention and fire esxtinguishment, every building,

a) from 4 storeys upto 8 storeys in height shall be equipped with not less than six cm dia pipes; and

b) over 8 storeys in height shall be equipped with not less than ten cm dia stand pipes.

(2) The number of standpipes shall be such that all parts of every floor area are at a miximum distance of thirty six meters from the stand point.

(3) Insofar as particapable, stand pipes hall be located with outlets within stairway enclosures, but if these are not aviable, the stand pipes shall be located in a common corridor. In any case one shall be located in the main.

(4) The construction of stand pipes be of galvanized iron.

(5) Stand pipe risers shall extend from the lowest to the top most storeys of the building or part of building which they serve.

(6) When more than one stand pipe is required, they shall be interconnected at thier bases by pipes equal in size to that of the largest riser.

(7) Every stand pipe 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 six meter to nine meter above finished ground and suitably marked "fire Department connection-stand pipe."

(8) Stand pipes shall be provided in every storey with a four centimeter diameter flexible base not less than 30 m long, with a 1.24 centimeter nozzle, being in an approved rack or cabinet.

(9) The stand pipe shall be fed by an overhead water tank reserved solely for this purpose. The minimum capacity of this tank shall be 5000 gallons, with a minimum of 2.1 meter load above the highest discharge point.

67. ***Automatic sprinkler system.*** (1) Automatic sprinkler system shall be provided in:-

a) every insitutional building which serves restrained or handicapped persons;

b) cover car parking areas in building of which upper storeys are designed for other uses when such parking area exceeds 465m^2.

c) out garages or terminals for passengers serving more than four buses at a time;

d) each floor of mercantile and industrial buildings which are more than one storey high and which exceed 186m^2 covered area;

e) all building compartments used for manufacture, display or sale of combustible materials and products which are more than 700m^2 in covered area;

f) all areas of theaters except auditorium, music hall and lobbies; and

g) 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 93 m^2 in area.

(2) No sprinkler provision shall be made in the immediate vicinty of generators or any electrical equipment.

68. ***Construction of sprinkler system.*** (1) sprinkler pipes, hangers and sprinkler heads shall be protected from corrosion.

(2) Every sprinkler system shall be equipped with a fire department approved inlet connection located on an outer building face nearest to street approximately six meter to nine meter above finished ground and suitably marked "Fire department connection-Automatic sprinklers"

(3) Automatic sprinkler system shall be fed by overhead water tank(s) reserved solely for this purpose. The tank shall be capable of supplying 25 percent of the sprinkle heads for twenty minutes but the minimum capacity of any tank shall be five hundred gallons. There shall be minimum head of 1.05 kg-cm^2 above the highest discharge point.

(4) Automatic sprinkler system shall be arranged to set- off automatic fire alarm system simultaneously.

(5) Every sprinkler system shall be provided with a readily accessible outlet valve to control all sources of water supply.

69. ***Natural fire extinguishing in public buildings.*** There shall be provided:-

a) two extinguishers in stage area, in each dressing room and one immediately outside each entry in theaters;

b) one extinguisher in each 230m^2 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; and

c) at least one extinguisher on each floor at stairway lending and in corridor at each lift or group of lifts in residential and commercial buildings.

70. ***Interior fire alarm system and signal stations.*** (1) Interior fire alarm system shall be installed in all

a) hotels, motels, dormitories, and similar buildings with a capacity of fifty or more occupants above the ground level;'

b) hospitals, asylums, nursing houses, and similar institutional buildings accommodating more than twenty occupants above the ground floor;

c) school buildings, with provision of more than thirty students above the ground floor;

d) mercantile buildings with more than 186m^2 above the first floor;

e) factory buildings exceeding two storeys in height and with more than 373 m^2 area above the first floor;

f) office buildings more than five storeys in height and with occupancy area of more than 900m^2 above the ground floor; and

g) cinemas, theaters and similar places of public assembly.

(2) at least one signal station shall be located in each storey in accessible location in the natural depth of exit way or escape.

(3) Every signal station shall be so located that no point on any floor or the building is more than fifty meter from such station.

CHAPTER VIII

SOUNDNESS OF BULDING STRUCTURES

71. ***Protection against dampness.*** (1) No building shall be constructed on a site reclaimed by town sweepings or other refuse, until the whole ground surface or site has been covered with a layer of clean earth, sand, core, cinder or ash at least thirty centimeter thick.

2) No buildings shall be erected upon open nallas, drains and public sewers.

73. ***Building materials.*** (1) Any materials used

a) in the erection of a building;

b) in the alteration or extension of a building;

c) in the execution of works or the installation or fitting, being works or fittings to which any provision of these bye-laws applies; shall be:-

i. of a suitable nature and quality in relation to the purpose or the condition in which they are used;

ii. adequately mixed or prepared; and

iii. applied, used or fixed so adequately as to perform the function for which they are designed.

(2) The use of any material or any method of mixing or preparing materials or applying, using or fixing materials which conforms with a standard specification or code of practice prescribing the quality of materials or standard of workmanship shall be deemed to be a sufficient compliance with the requirement of this bye-laws if the use of that material or method is appropriate for the purpose and condition in which it is used.

73. ***Cargo lifts.*** The floors of goods lift or lifts used for other industrial purposes shall be designed to carry safely the heaviest loads likely to be placed in them, which loads shall be considered also as being moved, wheeled or rolled over the car floor nosing.

74. ***Brick footing.*** (1) Where brick footing are provided in the foundations of a wall they shall be in regular effects of six meter wide and the height from the bottom of such footing to the base of the wall shall be equal to at least two-thirds of the thickness of the wall to base. Wherever possible, the brick in the footings shall be laid as hooders.

(2) Brick footing in the foundations of a wall may be omitted if allowance is made for such omission in the thickness of the concrete foundations for all the walls.

(3) Where, in the opinion of the Board, the ground conditions are favourable the foundations for non-located walls may be formed by increasing the depth of the concert floor slabs under such internal walls.

75. ***Load bearing structures.*** (1) The structure of a building above the foundations shall be designed and constructed to safely sustain and transmit to the combined dead and imposed loads and wind loads without such deflection or deformation as will impair the stability of. or cause demage to, the whole or any part of the building.

(2) The construction of the structure or a part thereof also be made with the following codes of practice or standard specifications;

a) BS 449 — The use of structural steel in buildings;

b) BSCP 111 — Structural Recommendations for load bearing walls;

c) BSCP 112 — Structural Use of timber in Building;

d) BSCP 110 — Structural Use of Reinforced Concrete in Building;

e) BSCP 115 — The Structural Use of prestressed Concrete in building;

f) BSCP 116 — The Structural Use of precast Concrete;

g) BSCP 117 Composite Construction in Structural Steel and Concrete;

h) BSCP 118 The Structural Use of Aluminimum; and

I) BSCP 2007 Design and Construction of Reinforced and prestressed Concrete Structure for the storage of Water and other Aquesus Liquids.

Explanation For the purpose of these bye-laws, B.S, and B.S.C.P, mean " the British Standard of Specification" and "British Standard Code of Practice", respectively.

76. ***Structural calculations.*** The owner shall submit structural calculation to the Board to prove the stability of foundation and super structure where reqiured under these bye-laws.

77. ***Earthquake proof buildings.*** The Board may, at any time, require that such builidng, as it may prescribe, shall be so disigned and constructed as to be proof to earthquakes and may issue such direction in this behalf as it may deem necessary.

78. ***Containg walls.*** Every building shall be contained within its own walls or party walls which, together with all cross walls, shall be constructed of bricks, stone, concrete (properly bounded and solidly built together with lime cement mortar or with cement mortar) or other hard and non-inflamable materials.

79. ***Underpining.*** The owner or his agent shall, if underpinning is required, give written notice thereof to the Board stating therein the method to be used and shall obtain the written permision of the Board before proceeding with the works.

80. ***Structural strength of floors.*** Every floor shall be capable of sustaining adequately its own weight and any dead loads and live loads which it is likely to be subject to.

81. ***Impervious floors.*** (1) The floor of every factory and warehouse intended to be used for the manufacture or storage of articles for human consumption shall be constructed of impervious material.

(2) The floor of every garage shall be constructed of impervious materials.

82. ***Pitch of staircase.*** (1) The risers shall normally be not more than eighteen centimetres.

(2) In house occupied by not more than one household, eighteen centimetre risers will be permitted.

83. ***Handrails.*** (1) All staircases shall be provided with a continuous handrail.

(2) In non-residential building a continuous handrail shall be provided on each side of the staircase when the staircase is 1.5m wide clear or over. Where a staircase is 3.0m wide or more, there shall be provided in addition a handrail down the center of the stair.

84. ***Maximum flight.*** (1) There shall not be more than fifteen risers between each landing. A landing shall not be less than one meter in depth.

(2) Winders may be permitted in residential building other than blocks of flats.

85. ***Timber staircases.*** Timber staircases are permissible only for residential building occupied by not more than one household.

86. ***Passenger Lifts.*** Lifts shall be provided in building where the climbing from the ground floor level to the top floor exceeds thirteen metres.

87. ***Roofs.*** (1) Timber for roof construction shall be of adequate sizes and properly framed in accordance with bye-law 75(2) (c).

(2) All built-in or hidden roof timber shall be protected against damp and insect attack by treatment with a suitable preservative.

(3) Where steel work or reinforced concrete is used in roof construction the design shall be in accordance with bye-law 75 (2) (d) and (g) respectively.

(4) Any other type of roof construction not specified in these bye-laws shall require sanction of the Board.

88. ***Roof covering and drainages.*** (1) On pitched roofs the following materials shall be used, namely:-

a) burnt clay or concrete tiles;

b) slates;

c) metal or asbestos cement sheets;

d) glass; and

e) any other material approved by the Board.

(2) The roof of a building whether flat or not shall be so constructed as to effectively drain to suitable and adequate channels, gutters, chutes or troughs.

89. ***Lightening conductors.*** Lightening conductors. if provided shall be of a type provided b the Board and shall be earthed and fixed in a manner approved by the Board.

90. ***Refuse chutes.*** (1) Refuse chutes shall be of type approved by the Board and shall confor with the following minimum requirements;

a) All buildings which are four storeyed and above shall be provided with chutes.

b) The number of refuse chutes for a building shall be determined by the Board.

c) Refuse chutes shall

i) be vertical for the whole length and shall be constructed with a smooth finished imperviou inner surface;

ii) have and internal diameter of not less than 38mm;

iii) be adequately ventilated at the top and shall be provided with suitable arrangements fo flushing with water for the full length of the chute;

iv) discharge into a suitable movable receptacle or receptacles of a size and pattern approved by the Board;

(v) be 1.2 m above the roof and shall be covered with a ventilation sky light;

(vi) be fitted with a self-closing hopper light fitting plank or hopper, constructed of inflammable materials, and

(vii) be enclosed with walls of masonary of not less than two hours fire resistance.

(2) 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 proofed;

(c) be connected to and drained by a foul water drain;

(d) open to the external air; and

(e) be lined throughout with glazed titles;

91. *Chimneys and flues.* (1) Every chimney included in a building shall be built on stabl foundations.

(2) Construction shall be of non-combustible materials of such a nature, quality and thickness a not to be unduly affected by heat, condensation or the products of combustion.

(3) The chimneys of an industrial and factory plant shall not be built at a distance of three mete of the street lines.

(4) The inside of every flue included in a buildings shall be properly rendered or pargetted such flue is carried up unless the whole flue shall be lined with fire-brick or fire proof pipi of fire-clay at least one inch thick, and unless spandrol angels shall be filled in solid w brick work or other incombustible material.

(5) The back or outside of such flue, which shall be constructed so as to form part of the ou face of an external wall, shall be properly rendered in every case where the brick work such back or outside is less than nine inches thick.

(6) Every flue included in a building and intended for use in connection with any furnace copper, steamboiler or close fire constructed for any purpose of trade, business manufacture or in connection with any cooking range or cooking apparatus of such build when occupied as a hotel, tavern or eating house shall be surrounded with fire-brick at l four and a half inches for a distance of three meter at least in height from the floor on wh such furnace of cooper, steamboiler, close fire, cooking range or cooking apparatus may constructed or placed.

CHAPTER IX

TEMPORARY WORKS IN CONNECTION WITH BUILDING OPERATIONS

92. *SITE HOARDINGS.* No person shall start building works on a site abutting on a st without having provided hoarding or barrier to the satisfaction of the Board along the w length of such site so as to prevent danger or injury to the public or to the persons empl in the work.

Provided that this bye-law shall not apply in the case of building works in connection structure situated at least 4.5m away from a publics street and being not more than 7.5m h

93. *Use of public streets.* (1) No part of any street shall be used in connection with construction, repair or demolition of any building except with written permission o Board.

Any person holding such permission shall put-up and maintain to the satisfaction of the Board, fences or barriers in order to separate the building work from such street.

(2) No excavation shall be made in any street without written permission of the Board. The person to whom it is issued shall inform the telephone, electricity, gas, water, sewerage or other utility undertakings whose installations are likely to be affected thereby and at the expiration of the period of the permission the surface shall be made good to the satisfaction of and to the specification laid down by the Board.

94. ***Obstruction to be lit and marked.*** Any person causing any building material or other things to be deposited, any excavation to be made or any hoarding to be erected in any street shall, at his own expense, cause sufficient and adequate red light to be fixed upon or near the same during every night from sunset to sunrise and red flag shall be provided during day time.

95. ***Removal of obstruction.*** All obstructions and erection in any street shall be removed within seven days of the completion of the work and the streets and all drains and public utility installations shall be left in a clean, tidy and serviceable condition.

96. ***Scaffolding etc.*** (1) Scaffolding for heights more than six meter shall be of steel pipes, clamps and bamboos with proper brackets.

(2) All scaffolds, working platform, gangways, rungs and stairs shall:-

a) be properly maintained;

b) be inspected by a competent person at least once in every seven working days after erection, alteration or extension and also after exposure to weather likely to have affected their strength or stability;

c) not to overloaded ;and

d) be kept free from unnecessary obstruction and from projecting nails.

3) Every working platform :-

a) shall be at least sixty centimeters wide if it is used as a working platform only not for the deposit of any material; and

b) a clear passageway of at least fifty five centimeters wide shall be left between one side of any working platform and any fixed obstruction or deposited material.

(4) Every side of working platform, gangway and stair shall be provided with a suitable guardrail or guardrails of adequate strength to a height of a least one-meter above the platform, gangway or steps.

97. ***Ladders.*** (1) Every ladder shall be of good construction, sound material and adequate strength for the purpose for which it is used.

(2) Every ladder shall be accurately fixed so that it can move neither from its top not from its bottom points or rest.

(3) No ladder shall be used which has missing or defective rung.

98. ***Raising or lowering the loads.*** (1) No chain, rope or lifting gear shall be used unless it is of good construction, sound material, adequate strength, suitable quality and free from any defect.

(2) No wire rope shall be used if any length of ten diameters the total number of visible broken wires exceeds five percent of the total number of wires in rope.

(3) No chain shall be used which has been shortened or jointed to another chains by means of bolts and nuts.

(4) No chain of wire rope shall be used which has knot tied in any part which is under direct tension.

(5) No hook shall be used unless it is either provided with an effective device to prevent the displacement of the sling.

(6) No chain, ring, link, hook, shackle, swivel or eye-blot which has been lengthened, altered or repaired by welding shall be used unless it has been examined and tested in a tensile machine and approved by a competent person approved by the Board.

(7) The area where a vertical hoist is used shall be enclosed by a proper barrier.

99. ***Inspection of pulley, cranes etc.*** (1) Every pulley block, and crane shall be inspected weekly by a competent person approved by the Board.

(2) Every rope or chain used for raising, lowering or suspending a load, and every item of lifting gear other than a pulley back, winch or crane shall be inspected once in six months by a competent person approved by Board.

CHAPTER X

MISCELLANEOUS.

100. ***Inspection by the Cantonment Engineer.*** The Cantonment Engineer or a person appointed in this behalf by the Cantonment Executive Officer, may inspect any building so as to determine whether any action is required to be taken in respect of such building or any thing affixed thereof.

101. ***Not to enter into dangerous building.*** Except with the permission in writing of the Board, no person shall enter into or remain in any building from which the occupier has been removed by the Board on becoming of such building a dangerous one.

103. ***Availability of Forms.*** The Forms prescribed in these bye-laws shall be obtainable from the office of the Board on payment of price fixed by the Board from time to time.

FORM 1

APPLICATION FOR SANCTION OF PLANS

[bye-law 2 (1)]

To
The Executive Officer,
Clifton Cantonment.

1. In pursuance or Section 179 of the Cantonment Act, 1924, (II of 1924), I/We hereby apply for permission to erect/re-erect/make additions to and/or alterations in the building on plot No._____ Clifton Cantonment in accordance with the Building Plans submitted herewith for sanction;

2. Necessary particular are given below and certified to be true:-

i) Plot held from
ii) Reference of title deed. (In case of Authority area attach 2 copies each of Allotment order/ Transfer order issued by the Authority and of lease 'A' or 'C' as the case may be)
iii) Intended use of proposed building works; and
Description of the proposed building works

3. Particulars/Enclosures:-
   1) Seven copies of proposed plans (in case of plot held from the Authority, seven copies of the site plan issued by the Authority shall also be attached and the building application shall be forwarded through the Authority)
   2) Receipt of payment of scrutiny fee
   3) Copy of power of attorney in case the owner is not submitting the plans himself.
4. Mr._____, Registered Architect/ Engineer, Registration No. _____ is hereby authorized by me/ us to do all things required to be done under these bye-laws on my/our behalf.
5. I/We undertake that I/we shall be personally responsible for any violation of these bye-laws and conditions, if any, accompanying the sanction of the plan/plans.

Signature: _____
Owner/Attorney

Dated: _____

Address: _____

_____

FORM 2

REGISTERED ARCHITEC/ENGINEER'S CERTIFICATE

[bye-law 2(3)]

(To be accompanied with Form 1)

This is to certify that the building plans submitted by_____
for Plot No._____ have been prepared by me/us and that I/We undertake to supervise the proposed construction as per specifications submitted herewith in triplicate. I/We further undertake that if I/We discontinue supervision of the work, I/We shall give immediate intimation thereof, as required under the above Bye-Law.

Architect/Civil Engineer/Engineer/
Structural Engineer/Building Technologist

Date: _____

Registration No.
with Category

SPECIFICATIONS

1. Nature of the soil below foundation.
2. Specification of foundation.
3. Specification of plinth.
4. Specification of superstructure.
5. Specification of floor.
6. Specification of roof.
7. Method of drainage and sewerage.
8. Kind of slab.

FORM 3

NOTICE OF DICONTINUANCE

[bye-law 2(3)]

To

The Executive Officer,
Clifton cantonment

I hereby give notice of may discontinuance from the building works with effect from _____ as the Registered Architect/Engineer/Building Technologist in respect of Plot No _____ situated at _____. It is certified that the following building work on the said plot has been carried out under my supervision and to my entire satisfaction.

Name and Signatures
Registration No.

Description of the work

1.
2.
3.

Copy to:-

_____ owner

_____

FORM 4

[bye-law 3(1)(c)]

CERTIFICATION OF STRUCTURAL SOUNDNESS OF BUILDINGS.

We/ I certify that:

1. We/I have been appointed Consulting Structural Engineer by M/s. _____ for the structural design of the building on Plot No. _____ on _____19 which

(a) Is likely to be constructed from _____ 19
(b) Is under construction since _____19
(c) Has been virtually completed on _____ 19
(d) Stage of construction _____

2. i) No. of storeys designed _____
ii) No. of storeys approved _____
_____ vide letter No. _____
_____ date
_____ 19 _____.

3. The structure designed has been based on international codes/ Bye-Laws rationally coupled with Engineering knowledge and judgment where necessary.

4. The sub- surface investigation was carried out by
M/s. _____
during _____ 19

5. (his/my contractual responsibilities were / are limited to:
(a) Structure analysis and design.
(b) Preparation of working structure drawings.
(c) Preparation of bar bending schedule.
(d) Checking bar bending schedule prepared by the contractors/ constructors / builders.

6. The following documents are attached:-
i) Set of working structural drawings.
ii) Set of bar bending schedule.
iii) Set of design calculations.
Set of specifications relevant to structural work.

Name of Structural Engineer: _____
Signature: _____
Registration No. _____
PEC registration No. _____

FORM 5

VERIFICATION OF BUILDING LINES

[bye-law 8]

To

The Executive Officer,
Clifton Cantonment.

I/We hereby inform that the first course of plinth foundation of the basement of building.

On Plot No._____

Location _____

_____

has been laid. You are, thereof, requested to depute a representative to verify the building line so to enable me/us to carry out the building work.

Owner's Signature and Address:_____

_____

ARCHITECT'S CERTIFICATE

I/We hereby certificate that the setting out of building for Plot No. _____ has been carried out in accordance with the sanctioned plan (s).

Registered Architect/Site Engineer

_____

Registration No._____

FORM 6

NOTICE OF COMPLETION

[bye-law 11]

To
The Executive Officer,
Clifton Cantonment.
Office_____ Date of delivery at the

I/We hereby give notice of completion of building/ additions or alteration in the building on Plot No._____
_____and of drainage and water arrangement therein, and apply for permission for occupation for the said building.
The said work has been carried out in accordance with Building Plans sanctioned vide No._____ Dated _____

Owner's Signature, address and
Telephone No._____
_____
_____

Dated the _____ 19

ARCHITECT'S CERTIFICATE

I hereby certify that the building/ additions or alteration of the building on Plot No._____ have been completed/ partly completed under my supervision and to my satisfaction in accordance with the building plans sanctioned vide No._____ Dated _____.

Registered Architect/Site Engineer/
Structural Engineer/Building Technologist.

Registration No._____
Address _____
_____

FORM 7

REGULARIZATION OF WORKS CARRIED OUT WITHOUT PERMISSION

[bye-law12]

To

The Executive Officer
Cantonment Board Clifton

1. Whereas I/We have constructed _____
_____
_____
on Plot No _____ as shown on
the plan attached here with your prior permission.
2. Where as I/We have made deviations from building plans sanctioned under No. _____
_____
dated _____ in the course of construction of the building/ alteration and additions to the building on plot No. _____ as shown on the plans attached herewith.
3. Where as I/We are willing to make any alteration required to be made in the said structure so as to make it consistant with the permission of the Board. it is, therefore, requested that plans may be regularised as per law and permission to the occupy the said building may be granted.

(Delete whatever is inapplicable)
Owner's Signatures and Address _____
_____

ARCHITECT'S CERTIFICATE

I/We hereby certify that existing structure on plot No._____
_____ has been fully and correctly shown on the plan submitted by me.
And I/We further certify that the building is structurally stable. Necessary structural calculations and detail are attached herewith.

Registered Architect/ Structural Engineer

_____

(No: 38/3/Budget/M.L&C/ 96/851/D-12/M.L & C/98)
Sd. Muhammad Sadiq
Section Officer