



KARACHI MUNICIPAL CORPORATION

BUILDING CONTROL

BYE-LAWS

1975

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Manager, K. M. C. Printing Press Karachi.*

GOVERNMENT OF SIND
HOUSING, TOWN PLANNING & LOCAL
GOVERNMENT DEPARTMENT

Karachi Dated, the 20th May, 1975.

NOTIFICATION

No. MC-1/8(27)/72—, In exercise of the powers conferred by Sub-Section (2) of Section 91 of the Sind People's Local Government Ordinance, 1972 read with item Nos. 1, 2 and 3 under heading "Building Control" of part II of the Schedule II and item No. 19 of the Schedule IX to the Ordinance, the Government of Sind are pleased to sanction the following Bye-laws of the Karachi Municipal Corporation, Karachi :-

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| (1) Short title, extent and commencement: | (1) These Bye-laws may be called the Karachi Municipal Corporation (Building Control) Bye-laws, 1975. |
| | (2) These shall extend to the whole of the Karachi Municipal Corporation Limits. |

(3) These shall come into force with effect from the date of publication in the Sind Government Gazette.

(2) Definitions:- (a) In these Bye-laws, unless the context otherwise requires, the following expressions shall have the meanings hereby respectively assigned to them, that is to say :-

(1) "Assembly" (Place of public assembly) means a building used, either ordinarily or occasionally, as a place of worship, theatre, public hall, public concert room, public lecture room, public exhibition room, dharamshala or musafirkhana.

- (2) "aviary" means a structure for keeping or breeding birds;
- (3) "balcony" means an outside projection from a building overlooking a compound, road or court yard and projecting in front of a room and not used as a passage;
- (4) "base" (applied to a wall or pillar) means the underside of the course immediately above the plinth, if any, or in the case of a wall carried by a bressummer immediately above such bressummer or in the case of a building having no plinth, immediately above the footings;
- (5) "basement" means the lowest storey of a building, partly or wholly below ground level;
- (6) "bathroom" means a room containing a water tap or a shower or a bath tub;
- (7) "block of flats" means a structure occupied by more than one family and having more than one storey;
- (8) "bressummer" means a wooden, metal or R.C.C. beam which carries a wall;
- (9) "building works" means erection or re-erection of a building or making additions and alterations to an existing building;
- (10) "canopy" means a roof-like projection from the face of a building;
- (11) "cardinal points" means a diagram showing North, South, East and West;
- (12) "ceiling" means the underside of a roof or floor either covered with plaster, ceiling boards or other similar material;
- (13) "cellar" or "vault" means any storey wholly below the level of land adjacent to the building; material.
- (14) "cesspool" means a tank intended to receive waste water and sewage.

- (15) "chairman" means the Chairman of the Karachi Municipal Corporation;
- (16) "chaw" see tenement;
- (17) "corporation" means the Karachi Municipal Corporation and shall include Chairman while exercising powers vested by the Ordinance and also officers exercising delegated powers;
- (18) "cross wall" means an internal load bearing wall built at right angles to an external wall;
- (19) "damp-proof course" means a layer of material impervious to moisture;
- (20) "dead load" means the actual weight of walls, floors, roofs, partitions and all other components forming part of a building;
- (21) "detached building" means a building not joined to another building on any one side;
- (22) "domestic building" means a building used solely or predominantly as a dwelling house;
- (23) "dormitory" means a sleeping room with several beds;
- (24) "dwelling house" means a building used for human habitation;
- (25) "external wall" means any outer wall or a building abutting on an external or internal open space;
- (26) "factory" means a building used for manufacture, production or repair of any article;
- (27) "fan-light" means any aperture above the top level of a door or a window so constructed that the whole of it can permit air and light to pass through without obstruction;

(28) "fettings" means the projecting courses at the base of a wall spreading the weight of the building or structure over the foundation;

(29) "form" means a form appended to these Bye-laws;

(30) "form work" or "centering" means all forms, moulds, sheetings, shutterings, planks, poles, posts, shores, struts, ties, uprights, and all other temporary supports to the concrete during the process of setting;

(31) "foundation" means a structure entirely below the level of the ground, which carries and distributes the load from pillars, beams or walls on to the ground.

(32) "frame building" means a building constructed of timber, metal or R.C.C. load bearing frame-work with non-load bearing panel walls;

(33) "height of a building" shall be taken to be the vertical measurement from the mean level of the ground adjoining the building to the highest part of the roof of that building less one half of the vertical measurement between the levels of the lowest and highest parts of the roof;

(34) "height of a room" shall be taken to be the vertical measurement from the upper surface of the floor to the underside of the highest part of the half of the vertical measurement between the lowest and highest parts of the ceiling; where there is no ceiling the measurements shall be to the underside of the rafters;

(35) "imprevious material" means any material which prevents the passage of dampness;

(36) "licence" means a licence granted or deemed to have been granted under these Bye-laws.

(37) "licensed" architect" means a person licensed by the Chairman under the Karachi Development Authority licensing of Architects Regulations or by the Chairman of the Karachi Municipal Corporation under these Bye-laws;

(38) "loft" means a balcony inside a room with no access to it except from inside such room;

(39) "masonry" mean stone, bricks or cement concrete block laid in lime, cement or mud mortar;

(40) "mezzanine floor" for the purpose of these building regulations means a loft;

(41) "open staircase" in a single storey or two storey (ground and first floor) building means a staircase 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;

(42) "ORDINANCE" means the Sind People's Local Government Ordinance, 1972 (Sind Ordinance II of 1972);

(43) "ordinary repairs" means painting, white-washing, plastering, pointing, paving and minor renewals or alterations;

(44) "owner" means a person who lawfully owns any premises or any piece of land;

(45) "panel wall" means a wall which is built between posts or pillars and wholly supported by beams and which supports no load other than its own weight;

(46) "partition" means an internal vertical structure which sub-divides a storey of a building into sections and which supports no load other than its own weight;

(47) "party wall" means a common wall between two adjacent buildings;

(48) "parapet" means a dwarf wall whether plain, perforated or pannelled along the edge of a roof, balcony, verandah or terrace;

(49) "pergola" means a structure of which the roof must be at least 75 percent open to the sky;

(50) "plinth" means the portion of the building between the level of the street and the level of the ground floor;

(51) "research and new forms of construction" means introduction and use of structural systems calling for spatial standard different from those accepted for normal load bearing and frame structures;

(52) "residential building" means a buildings used solely or predominantly as a dwelling house;

(53) "semi-detached building" means two buildings constructed on adjacent sites without intervening open space;

(54) "septic tank" means a system of chambers made of impervious material intended for reception and treatment of sewage;

(55) "sock pit" means a pit filled with aggregate boulders or brick bats and intended for reception of waste water ;

(56) "structural calculations" means detailed calculations prepared by a suitably qualified person showing the sufficiency of the strength of every load bearing part of the proposed structure ,

(57) "superimposed load" means all loads other than the dead load;

(58) "tenement" means a building suitable for letting in separate units each consisting of not more than two rooms with a cooking place attached, a common passage and common sanitary arrangements;

(59) "verandah" means a part of a building" facing a street or an internal or external open space with at least half of the external wall space permanently open to light and air;

(60) "warehouse" class building" means a building in which merchandise and other goods are stored and includes a factory.

(b) Any expression not defined in these Bye-laws shall have the meaning assigned to it in the Ordinance.

APPLICATION OF BUILDING BYE-LAWS.

3. (1) Every person who intends to carry out building works within the boundaries of the Corporation shall comply with the requirements of these bye-laws.

(2) No building plan shall be approved for commercial use of a building or any part thereof except in case the plot is allotted for commercial use.

4. The following building shall be exempted from the operation of these bye-laws;

(a) Building erected by or on behalf of Government shall be exempted from these bye-laws, provided such buildings serve purposes of defence only;

(b) any structure erected or used, or intended to be erected and used exclusively for the purpose of a plant house in connection with a domestic building, and

(c) any structure intended to stand for a period of not more than six months, provided that previous permission of the corporation has been obtained in writing and a undertaking is given to remove such structures within six months.

5. (1) In order to meet special emergency conditions and the requirements of person in the sub-economic income group, the Corporation may relax these bye-laws in relation to any special areas where building is subject to special low cost housing codes.

(2) The Corporation may waive the application of these bye-laws in special cases of research and new forms of construction at their discretion.

FORM OF APPLICATIONS AND CERTIFICATES

6. All forms of applications and certificates referred to in these bye-laws shall conform to the proforma appended at Schedule I

Every person, who intends to carry out building works or to demolish a building or to secure a dangerous building involving additions and alterations, shall employ a Licensed Architect to supervise the building works, demolishing operation or the securing of such dangerous building involving additions and alterations.

(2) The Licensed Architect so employed shall give notice to the corporation in writing on the prescribed form A-2 of his having undertaken to supervise such work, where the Architect so employed ceases to be in charge of such building works before the same is completed, further execution of such work shall forth-with be suspended until a fresh appointment is made as required under sub Bye-law. A certificate on the prescribed form B-2 duly signed by the Licensed Architect employed under this Bye-law shall be obtained by the owner, in token of the work or part of the work having been satisfactorily done under his supervision.

B. Every person who intends to erect or re-erect a building shall submit to the corporation an application in writing on the prescribed form A-1 for permission to execute the work and the name of the Licensed Architect whom the owner employs to supervise its erection. The Architect so employed shall submit to the corporation the following along with a notice on the prescribed form A-2.

(a) A block plan of the site drawn to a scale of not less than 40 feet to one inch showing the position of the proposed building and existing buildings, if any; the width and level if necessary of the streets if any, on which the plot abuts and the survey number or numbers of the adjoining plot or plots if any, together with the cardinal points.

(b) Plans, sections and elevations of every floor including basement, collar or vault, if any, of the building intended to be erected, which shall be drawn to a scale of not less than one inch to eight feet or if the building is so extensive as to make a smaller scale necessary not less than one inch to sixteen feet. Such plans and sections shall show the purpose for which the building or

parts thereof are intended to be used; the access to and from the several parts of the building and its appurtenances; the position, form, dimensions, means of ventilation, the depth and nature of the foundations, the proposed height of the plinth and superstructure at the level of each floor together with the dimensions and descriptions of all the walls, floors, roofs, posts, columns, beams, joints, girders and scantlings to be used in the walls, staircases, floors and roofs of such building.

(c) A plan showing the intended line of drainage of such building and the size, depth and slope of each drain and the details of the arrangement proposed for the ventilation of the drains. A description of each item of work proposed to be executed and of materials to be employed. Such description shall include details of the proposed method of the drainage of the building intended to be erected, of the sanitary fittings to be used and also of the means of water supply.

(d) Detailed calculations showing the sufficiency of the strength of every load bearing part of such building, if required.

(e) Any other information or document required by the corporation to deal satisfactorily with the plan.

9. Every person who intends—

(a) to make any addition or alteration to a building involving the removal or re-erection or any roof or any outer wall, or of any wall which supports the roof thereof or change the size of any existing room or passage thus effecting the light and ventilation of the building;

(b) to remove or renew posts, columns and beams of a building;

(c) to make any structural alterations;

(d) to make any alterations in a building involving—

(i) the sub-division of any room or a shop or any other part of the building so as to convert the same into two or more separate rooms or shops or parts of the building; and

(ii) the conversion of any passage or space or a garage in such building;

(e) to reconstruct any building or any portion thereof;

(f) to demolish a building—

shall submit an application to the corporation in writing on the prescribed form A-1 for permission to execute the work and in cases where the employment of a Licensed Architect is necessary the name of the Licensed Architect whom he has employed to supervise its execution. The Licensed Architect shall submit to the corporation an application on Form A-2 along with all the information & documents, as required under Bye-law 9.

10. Every person who intends to carry out building work under bye-laws 8 & 9 shall, if required, produce all documents of the title relating to the plot showing his right to carry out such works.

11. (1) Every person, who under bye-law 8 or bye-law 9 is required to furnish to the corporation any plan or other documents, shall furnish three copies of every such plan. One of such triplicate plan shall be mounted or drawn on linen, and shall be retained by the corporation together with one more copy. The third copy shall be signed by the Chairman or any other officer authorised by him on his behalf when signifying his approval and shall be returned to the person by whom the same were furnished. Authenticated copies of all documents relied upon by the applicant and documents shall, when required, be produced for inspection.

(2) Every plan of any building submitted under bye-law 9 and bye-law 10 shall, in token of its having been prepared by a Licensed Architect or under his supervision, bear his signature.

12. After the receipt of an application, for permission to carry out building works, the corporation shall, within sixty days as specified in clause (3) of paragraph 1 of the provisions relating to building control in Schedule II to the Ordinance—

(a) pass orders granting or refusing permission to carry out such building works, and in the case of refusal specifying the provisions of the bye-laws violated; or

(b) require further details in the plans, documents, specifications and any other particulars to be submitted to it.

13. Whenever under any of the bye-laws the doing or the omitting to do a thing or the validity of anything upon the sanction, permission, approval, order, direction, requisition, notice or satisfaction of the Corporation, a written document signed by the Chairman or any Officer duly authorised by him purporting to convey or set forth such sanction, permission, approval, order, directions, requisition notice or satisfaction shall be sufficient prima facie evidence thereof.

14. If at any time after permission to carry out building works has been given, the corporation 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 under bye-laws 8 or 9 in the plans, elevations sanctions or specifications and documents submitted therewith in respect of such building, such permission may be cancelled and any work done there-under shall be deemed to have been done without permission.

Provided that the applicant shall have a right of appeal to the Controlling Authority within thirty days of the order of cancellation.

15. (1) If the building works are commenced or carried out contrary to the provisions of the Ordinance or these bye-laws, the corporation shall—

(a) by written notice require the person who is carrying out such building works forthwith to cause to be stayed all work thereupon:

(b) by written notice require the person who is carrying out or has 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 authorised by him and addressed to the corporation to show sufficient cause why such building works or such part thereof shall not be Removed or altered to comply with these bye-laws:

(c) require the said person on such day at such time and place as shall be specified in such notice to attend personally or an agent duly authorised by him and show sufficient cause why such building works or part thereof shall not be Removed or altered.

(2) If such person fails to show sufficient cause to the satisfaction of the corporation why such building works or part thereof shall not be removed or altered, the corporation shall take action in accordance with the paragraph 2 of the provisions relating to building control in Schedule II to the Ordinance.

16. (1) The corporation shall charge for the scrutiny of building plans required to be submitted under these bye-laws a fee to be known as scrutiny fee at the rates specified in Schedule 5.

(2) The corporation may exempt any building plans for premises which in the opinion of the corporation will be used for religious, charitable, or educational purposes from payment of scrutiny fee.

(3) If the building plans previously approved are amended, the corporation may charge a fee for scrutiny of the amended building plans.

(4) If plans of an actual building submitted after completion of such building show substantial deviations from the plans previously approved, the corporation may charge the fee for scrutiny of such plans.

(5) No scrutiny fee shall be charged for renewal of approval of any building plans.

(6) No scrutiny fee shall be charged for granting permission to occupy a building, if the building has been completed, entirely in accordance with building plans approved or if the building has been completed with such deviations from the said building plans as are in the opinion of the corporation insignificant or minor.

PROCEDURE, NOTICES, INSPECTIONS AND CERTIFICATES DURING CONSTRUCTION

17. Every person who carries out building works or demolition works shall comply with the directions accompanying the sanction.

18. Every person who carries out building works shall use sound building materials which shall be of good quality and properly put together so as to ensure safety and stability of the building.

19. Every person who commences any building works, under bye-laws 8 or 9 shall give notice to the corporation in writing in form 'D' and shall not proceed further with the work for a period of one week to enable the corporation to verify the building lines. The corporation shall intimate within the aforesaid period to the owner or his representatives any error which may be found in the building line. Failing such intimation from the corporation the owner will be entitled to proceed with the building work.

20. The Corporation may-

(a) at any time, before the approval of an application received under bye-law 8 or 9:

(b) at any time during the carrying out 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:

(d) If no notice of completion or certificate has been received, at any time after the building has been erected, added to or altered, inspect such building without giving previous notice.

21. (1) If on making any inspection under bye-law 20 the corporation finds that the building works-

(a) are otherwise than in accordance with the plans that have been approved: or

(b) contravene any of the provisions of the Ordinance or any bye-laws made there under, it may, by written notice, require the person carrying out building works within a period to be specified in such notice either to make such alterations as shall be specified in such notice with the object of bringing the work into conformity with the said plans or provisions of the bye-laws or to get amended plans approved after complying with the requirements of the Ordinance and these bye-laws.

(2) In the event of non-compliance with the requisition made under sub bye-law (1) above it shall be competent for the corporation to order cessation of work or order demolition of so much of the construction as contravenes any of the provisions of the Ordinance or any bye-law made thereunder, and the expenses thereof shall be paid by the owner.

22. (1) If there be reasonable ground for suspecting that in the carrying out of building works anything has been done contrary to any provision of the Ordinance or any bye-laws or rules made there-under, or that any thing required by any such provision or bye-laws or rules to be done has been omitted to be done: and if, on inspecting such building, it is found that the same has been completed or is too far advanced to permit of any such fact being ascertained; the chairman may, by written notice required the person who has carried out the building works to cause so much of such building as prevents any such fact from being ascertained to be drilled, cut into, laid open, exposed or pulled down to a sufficient extent to permit of the same being ascertained.

(2) If it shall thereupon be found that in the carrying out of such building works nothing has been done contrary to any provision of the Ordinance or any rule or bye-law made thereunder, and that nothing required by any such provision or bye-law to be done has been omitted to be done compensation shall be paid by the corporation to the person aforesaid for the damage and loss incurred by drilling, cutting into, laying open, exposing or pulling down the building.

23. (1) Every person who carries out and completes building works approved under these bye-laws shall within one month of the completion of the work deliver to the corporation at its office in writing on the prescribed form, as the case may be, of such completion together with a certificate or certificates on the prescribed form duly signed by the Licensed Architect employed under bye-law 7.

(2) After the receipt of the notice of completion under sub-bye-law (1) the corporation shall depute an officer to inspect such work and after such inspection, either approve or disapprove the building for occupancy or make such further order as it may decide.

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

(4) Any action taken under this bye-law shall be in consonance with the provisions of clause (2) of paragraph 2 of the provisions relating to building control in Schedule II to the Ordinance.

24. Where a person has erected or re-erected or commenced to erect or re-erect a building without submitting to the corporation building plan for sanction then not with-standing and in addition to, any other action that the Corporation may take under the Ordinances, rules or bye-laws, the corporation may give notice in writing directing such person to submit to the corporation within such time as specified in the notice, building plan showing

the building so erected or re-erected or proposed to be erected or re-erected-

25. Where a person has erected or re-erected a building which is not in conformity with the building plan sanctioned by the corporation in any manner whatsoever, such person shall, together with the report of completion of the building, submit a completion plan showing the building exactly as completed and the deviation made in the building from the sanctioned building plan, for approval of the corporation.

26. (1) The corporation may refuse permission to erect or re-erect a building and sanction to building plan or completion plan, if the proposed or completed building contravenes or is in any manner inconsistent with any building or zoning rule, or restriction, or order or direction whether made under the Ordinance or under any other law, or terms and conditions or covenant of lease, whether express or implied, or any building custom or practice, by whatever name called, laid down or heretofore generally imposed or followed by the Government, or any local or governmental body or co-operative housing society, generally or in respect of building operation in any particular area.

(2) Where the owner of building fails to carry out repairs thereto within specified time as directed under the Ordinance, the corporation may make order directing the occupier thereof to effect such repairs.

PART 2—SPACE REQUIREMENTS IN AND ABOUT BUILDINGS, LIGHT AND VENTILATION REQUIREMENTS.

SPACE ABOUT BUILDINGS :

27. All space between buildings and plot boundaries shall comply with Part 5 of these bye-laws.

28. (1) For detached residential buildings there shall be at least 7'-6" clear open space between the building and the front boundary of its plot. For all other buildings there shall be a minimum distance of 30ft. measured at right angles between the face of the building and the building in front of it. Pro-

vided, that, if the building fronts on a street of a less width thirty feet, the distance must be not less than the width of the street together with one half of the difference between that width and thirty feet.

(2) The minimum distance of 30 feet may be reduced by the Chairman in the case of building facing on to a footpath (pedestrian way). Such cases are to be considered by Chairman on their merits.

29. Space at rear of building and day lighting will be as follows, except for the plots with a depth of less than 25 feet :-

There shall be a space at the rear of every building of minimum depth of 7'-6". This shall extend for the full width of the site, provided the rear does not abut on a public road or a lane.

30. The minimum clear space prescribed between a building and the boundaries of its plot shall be measured between the greatest projection of the covered building and the plot boundaries at right angles thereto.

31. (1) Every person who erects or re-erects a building other than a shop or a godown shall cause at least one side of every room included in such building and intended for human occupation and not being a verandah, kitchen, bath or a store room to abut :

(a) On an interior or exterior open air space of the width or dimension and fulfilling the conditions hereinafter prescribed for such open air spaces;

or

(b) On an open verandah opening on to such interior or exterior open spaces aforesaid.

(2) Every such interior open space shall be of such dimension that no portion of any face of a building abutting on such open space shall intersect any of a series of imaginary lines drawn across the open space from the remote end of the building at the level of the plinth at an angle of 68 degrees with the horizontal.

(3) In determining the exterior open air space required, any neighbouring open air space which is assured, by legislative enactment or by Rules or by contract recognized by the Corporation to be permanently or irrevocably appropriated as an open air space may be treated as a permanently open space required for the purpose of this bye-law.

32. Every building not abutting on a street shall have an access or a right of way for an approach from the street open to the sky and at least 8 feet wide if the length of such access or right of way does not exceed 50 feet the width shall be at least 16 feet in order to facilitate access by the Fire Brigade to the rear building. In cases where conditions do not permit the application of this bye-law, a waiver may be considered at the discretion of the corporation.

33. Where a building is erected at the junction of two streets and in cases where the degree of splay or rounding off is not shown in an approved Town Planning Scheme of the Karachi Development Authority or a layout plan sanctioned by the corporation, the corner shall be splayed or rounded off in a manner as provided in the Town Planning Regulations of the Karachi Development Authority.

34. (1) Projections of steps, string courses, cornices, caves, chhajjas and similar projections over a public street are permissible free of any fee subject to the condition that :-

(a) the string courses or steps shall not project more than 2 inches beyond the street line on any public street;

(b) the projection of cornices shall be as follows:

Width of street	Maximum Projection
20 ft. and less	1 foot.
more than 20 ft. upto 40 ft.	1 foot 3 inches.
more than 40 ft.	1 foot 6 inches.

(c) The projection of top cornices, chhajjas, caves and the like shall be as follows:

Width of street	Maximum Projection
20 ft. and less	1 foot.
more than 20 ft. up to 40 ft.	2 feet.
more than 40 ft.	3 feet.

(2) Any projection over a public street beyond what is prescribed in sub-bye-law (1) may be permitted by the corporation at its discretion on such conditions as may be specified by the corporation and on payment of a fee.

(3) The corporation may in its discretion give written permission on payment of the prescribed fees to an owner of a building abutting on a public street to construct open balconies and sun shades projecting from such buildings over such streets, subject to the conditions that the maximum length, height and projection of balconies and sun shades with reference to the width of the street over which these are permitted to project shall be as under:

Width of street	Maximum length of		Maximum Projection	Minimum height above centre of street	
	balconies	sunshades		balconies	sunshades
30 ft. & less than 35 ft.	20 ft.	...	2 ft.	16 ft.	12 ft.
35 ft. & less than 40 ft.	20 ft.	...	2 ft. 6 in.	16 ft.	12 ft.
40 ft. & less than 50 ft.	20 ft.	...	3 ft.	16 ft.	12 ft.
50 ft. & more	20 ft.	...	4 ft.	16 ft.	12 ft.

The minimum permissible height of balcony projections above the centre of street may be decreased by the corporation at its discretion in suburban areas.

In case of corner plots the maximum projection of a balcony at corner shall be in accordance with the width of the wider of the two streets as specified in the table above; provided that if half the length or more of the said balcony projects on the narrower of the two streets, the maximum projection of the balcony shall be regulated in accordance with the width of the narrower of the two streets.

(4) All projections of step; string courses; sun shades; cornices, caves, chhajjas and balconies over a public street may be in continuation of projections within the owner's plot.

35. The town planning schemes of the Karachi Development Authority may require the formation of covered arcades (verandah ways) within the curtilage of building plots. The minimum width of such arcades shall be 7 ft. 6 inches measured at pavement level between the street line and the front of the building. Piers or columns along the street line shall not exceed 2 feet in depth leaving a minimum clear space of 5 ft. 6 inches between the piers or columns and the front of the building. The "front" of the building shall be that part of the building nearest to the street.

36. Pergolas shall not be permitted within the minimum open space required by these bye-laws.

INTERNAL LIGHTING AND VENTILATION

37. Every room other than rooms used predominantly for the storage of goods shall be provided with natural lighting and natural ventilation by means of one or more openings in external walls having a combined area of not less than 10 per cent of the floor space of such room and the whole of such openings shall be capable of allowing free uninterrupted passage of air.

38. In addition to the requirements of the preceding bye-law there shall also be provided in the case of domestic buildings constructed in continuous rows (terrace development) permanent ventilation by the provision of ventilators in all internal walls which are parallel to the external walls at each storey. Such ventilators shall have a net opening of not less than 6 sq. feet per room.

39. (1) Kitchens, lavatories, W. Cs. and bath rooms may receive daylight and natural ventilation from internal air wells. In such cases air wells shall conform with the following minimum sizes:

area	for buildings upto two storeys in height	...	50 sq. ft.
floor	minimum width of well	... ..	5 ft.
origi	for buildings higher than two storeys	...	100 sq. ft.
1. the	minimum width of well	... ..	8 ft.

(2) The floor of each air well shall have impervious paving and shall be adequately drained.

(3) Reasonable access shall be provided at the bottom of each air well.

(4) No internal air-well or portion thereof shall be roofed over.

40. Every latrine shall have openings for permanent ventilation into the internal air of not less than 2 sq. ft. aggregate area.

41. Every Water Closet, urinal stall and bathroom 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 sq. ft. per water closet, urinal stall or bathroom and such openings shall be capable of allowing free uninterrupted passage of air.

42. Every garage shall be provided with adequate ventilation and lighting as required by the Corporation.

43. All staircases shall be provided with adequate lighting and ventilation to the satisfaction of the Corporation.

MECHANICAL VENTILATION

44. (1) Where permanent air-conditioning is intended the relevant building bye-laws dealing with natural ventilation, natural lighting and heights of rooms may be waived at the discretion of the Corporation.

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

(3) A minimum number of air changes per hour for any one type of accommodation shall be provided to the satisfaction of the Corporation.

45. In lavatories, W.Cs., and bathrooms, where permanent mechanical ventilation is provided to the satisfaction of the corporation the relevant building bye-laws dealing with natural ventilation and natural lighting will not apply.

SPACE REQUIREMENT INSIDE BUILDINGS

46. (1) The minimum total habitable floor area for residential buildings (other than servants quarters) excluding corridors, lobbies, staircases, kitchens, bathroom, W.Cs., and latrines shall be as follows:

One room dwellings, ... 140 sq. ft.

Two room dwellings: ... 200 sq. ft.

and an additional 100 sq. ft. for each additional room. No habitable room shall have a floor area of less than 100 sq. ft.

(2) The minimum width of a habitable room shall be 7 feet.

(3) The minimum floor area of a servant room shall be 120 sq. ft.

(4) The minimum floor area of kitchens shall be 50 sq. ft. The minimum width of kitchen shall be 5 ft.

47. The minimum floor area of a shop shall be 100 sq. ft. and the minimum width of a shop shall be 8 feet.

48. In all types of buildings the minimum areas and widths of latrines, W.Cs., and bathrooms shall be:

	Min. area	Min. width
Latrines or W.C.	12 sq. ft.	3'-0"
Bathroom	15 sq. ft.	3'-0"
Combined W.C. and Bathroom	24 sq. ft.	3'-0"

49. (1) RESIDENTIAL BUILDINGS:

The minimum clear height of rooms shall be :-

Habitable rooms ... 8 ft. 6 inches.

Kitchens ... 8 ft. 6 inches.

Bathrooms, W. Cs., Latrines ... 7 ft. 6 inches

Garages and Porches ... 7 ft. 6 inches

(2) SCHOOLS:

The minimum height of rooms used for teaching shall be 12 feet.

(3) HOSPITALS, MATERNITY AND NURSING HOMES:

The minimum height of rooms used to accommodate patients shall be 10 feet.

(4) FACTORIES AND WORKSHOPS:

The minimum height of all working areas shall be 100 feet.

(5) PLACES OF ASSEMBLY:

The minimum height of rooms shall be 12 feet.

(6) ANY OTHER TYPE OF BUILDING, INCLUDING SHOPS:

The minimum height of rooms shall be 10 feet.

(7) BASEMENTS, CELLERS, VAULTS:

The minimum height of any basemen, cellar or vault shall be 7 feet, 6 inc.

The Corporation will grant permission for the construction of basements, cellars and vaults at its discretion.

(8) OPEN GROUND FLOORS :

Where the greater part of a ground floor is left open for use as a car park or a covered play space the minimum height shall be 8 ft.

(9) MEZZANINES AND LOFTS :

The minimum height of rooms in Mezzanines and Lofts shall conform with

the height applicable to the buildings in which they are being provided, with the exception of shops where the height may be reduced to seven feet, provided that—

- (a) no mezzanine or loft shall be permitted in shops having a height of less than 16 feet from floor to ceiling;
- (b) the total mezzanine or loft area in any shop shall not exceed one-third of the total floor area of the shop;
- (c) the underside of every mezzanine or loft shall not be less than 8 feet above the floor of the shop;
- (d) in no case shall a mezzanine or loft be permitted within 6 ft. from the front wall of the shop;
- (e) every such mezzanine or loft shall be open except for a railing not exceeding 4 feet in height.
- (f) Every such mezzanine or loft shall be accessible by a ladder or a staircase of non-inflammable material and located inside the shop.

(10) MINIMUM HEADROOM:

The minimum headroom under beams and lintels shall be 6 feet and 3 inches.

MEANS OF ESCAPE IN CASE OF EMERGENCY

50. (1) All means of escape from a building including exit ways, corridors, stairs or other devices should permit unobstructed access to a street or to an open space or to an adjoining building or roof from where access to the street may be obtained.

The Corporation shall deal with each case on its merits after full consideration of the circumstances. Nothing contained in bye-law 51 shall be taken as in any way derogating from the powers of the Corporation to secure reasonable and adequate means of escape in case of emergency.

(2) As a guide to assessing the requirements for means of escape the population of various portions of buildings, the number of persons and the population density (where not specifically stated or shown on layout or seating plans) the following is the basis of calculation:

One person per—

5 square feet for a closely-seated audience.

5 square feet of circulating gangways leading up to or provided between the sale stalls or counters in bazars or retail trade premises frequented by persons in large numbers.

6 square feet in dance halls.

12 square feet in restaurants.

40 square feet in workrooms and factories.

50 square feet in shops and show rooms.

100 square feet in offices.

300 square feet in warehouses.

(3) All buildings shall have windows on the street elevation within convenient reach and of adequate shape and size to enable to persons to escape in case of emergency.

51. (1) The clear widths referred to in this bye-law shall mean the unobstructed and clear width of the staircases between finished wall surfaces or face of stringer beams in the case of stairwalls. This width shall apply (except where specifically laid down) to all corridors and passages leading to the staircases and from the staircases to the exits and shall also apply to the exits. There shall be no projection inside the "clear width" of any corridor, passage, stairway or ramp (other than handrails) at a level lower than 6'-9" above the floor or above any stair.

Every exit way shall open directly on to an open space or a porch leading to a street and shall be easily accessible therefrom. Doors in exit ways shall open in the direction of escape.

(2) In buildings where the floors above the ground floor are occupied by more than 250 persons two staircases shall be provided as follows:

Population	First Stair case	Second Stair case
upto 350 persons	4 ft.—0 inch wide	3 ft.—0 inch wide
" 450 "	4 ft.—6 inch "	3 ft.—0 inch "
" 550 "	5 ft.—0 inch "	3 ft.—6 inch "
" 650 "	5 ft.—6 inch "	3 ft.—6 inch "
" 750 "	6 ft.—0 inch "	4 ft.—0 inch "

Staircases and exits for buildings accommodating more than 750 persons shall be calculated in proportion.

(3) The width of first and second staircases may be varied as long as the combined width of all staircases is as specified.

(4) RESIDENTIAL PREMISES (OTHER THAN BLOCKS OF FLATS).

The minimum width of staircases shall be 2'-0" clear for buildings not exceeding two storeys in height. For every additional storey the width of staircases shall be increased by 3" throughout their entire height. The minimum width of corridors and passages shall be 2'-9" clear in all cases.

BLOCK OF FLATS (HEIGHTS NOT EXCEEDING 42'-6" TO HIGHEST FLOOR LEVEL)

At least one staircase shall be provided having the following minimum widths throughout its entire height:

Upto four storeys in height	... ..	... ..	3'-6" clear.
In excess of four storeys in height	... ..	... ..	4'-0" clear.

Where only one staircase is provided the maximum number of flats on each storey shall be limited to eight.

Where only one staircase is provided in blocks of flats over four storeys in height reasonable access shall be provided to the satisfaction of the corporation for a fire engine to reach a point below each flat.

Access corridors leading from staircases to flats shall have a minimum width of 4 feet clear. The minimum distance from the entrance door of a flat to the head of a staircase shall not exceed 70 feet.

BLOCKS OF FLATS (HEIGHT EXCEEDING 42'-6" TO HIGHEST FLOOR LEVEL)

All flats shall have access to a secondary staircase which shall be continuous to street level. A secondary staircase shall not serve more than eight flats per storey and it shall be located to the satisfaction of the corporation. Secondary staircases and passages leading thereto shall have a minimum width of 2'-9".

BLOCK OF FLATS (ALL TYPES)

The minimum width of passages and corridors inside flats shall be 2'-9" clear.

(5) COMMERCIAL AND BUSINESS PREMISES.

For buildings not more than two storeys high and accommodating on the first floor not more than 50 persons one staircase of a width not less than 3'-6" wide shall be provided. In all other cases an additional means of escape must be provided of a minimum width of 2'-6".

The distance from any point to the nearest staircase shall not exceed 100 feet.

(6) DEPARTMENTAL STORES, SHOPS, AND FACTORIES.

At least two staircase shall be provided; one of a minimum width of 3'-0" and other of a minimum width of 2'-6".

The distance from any one point to the nearest staircase shall not exceed 100 feet.

Passages between rows of shops or stalls shall conform with following

minimum widths: Length of Passage	Shops or Stalls	
	On one side only	On both sides
Up to 50 feet ...	5 feet	7 feet
" 150 " ...	6 "	8 "
More than 150 feet	7 "	9 "

(7) WAREHOUSES

For buildings not more than two storeys high and accommodating not more than 50 persons at first floor level, one staircase of a minimum width of not less than 3'-6" shall be provided.

The normal requirements for staircases and exit ways shall be increased at the discretion of the corporation if the goods stored present a special fire hazard.

The distance from any one point to the nearest staircase shall not exceed 100 feet.

(8) HOSPITALS

The entrance to any ward or room used for accommodating patients shall be within 70 feet from the nearest staircase. From each such ward or room there shall be access to a secondary staircase. The width of all staircases shall be not less than 4'-6" and the

width of corridors and passages leading to such staircases shall not be less than 6 feet wide.

(9) SCHOOLS AND PLACES OF PUBLIC ASSEMBLY.

Exit ways, viz, exit doors, staircases, corridors, passages and exits to a street or large open space shall be provided for every floor or tier as follows :

Occupation	Two exit ways
upto 200 persons	3'-6" each
" 300 "	4'-0" each
" 400 "	4'-6" each
" 500 "	5'-0" each

An additional exit way of 5 feet shall be provided for each additional 250 persons or part thereof. Additional exits from stages, where there is a fire curtain, shall be provided to the satisfaction of the corporation.

(10) PLACES OF PUBLIC ASSEMBLY : ADDITIONAL REQUIREMENTS.

- A clear passage or gangway not less than 4 feet wide shall be provided around the stalls and balcony provided that if the passage or gangway on the balcony leads to exit, of equal width the rear passage may be omitted; and no passage is necessary at the front of the balcony.
- Where considered necessary by the corporation gangways not less than 4 feet wide running parallel to the seating shall be provided.
- Gangways not less than 4 feet wide shall be provided intersecting the rows of seating in such a manner that no seat shall be at a greater distance than 7 seats from a gangway measured in the line of seating.
- Steps shall not be used to overcome differences in level in a gangway unless the slope of such gangways exceed 1 in 10
- Where steps of a pitch exceeding 30 degrees or ramps of a slope exceeding 1 in 10 are provided in gangways flanking the seating suitable handrails shall be provided.

- (f) The treads of steps in gangways shall have a nonslip surface and the edges of such steps shall be illuminated at step level.
- (g) Guard rails not less than 3 feet 3 inches above floor level shall be provided at the foot of gangways in circles and galleries or areas where the incline exceeds 15 degrees.
- (h) The slope of the tiers shall not exceed 30 degrees.
- (i) Lobbies, corridors or passage ways intended for the use of the audience outside the auditorium shall be at least 6 feet wide.
- (j) All exit doors and doors through which the public pass on the way to open air shall be without locks, bolts or other fastenings while the public are in the building; except that doors used for exit only may be fitted with panic bolts.
- (k) Panic bolt shall be not more than 3 feet nor less than 2 feet 6 inches from the ground.
- (l) Only panic bolts which are operable by horizontal thrust shall be employed.
- (m) Turnstiles, if installed, shall be arranged clear of the line of exit, and shall not be included in the calculation of exit width.
- (n) Every external doorway used by the public which is necessary locked when the public are not in the building and every collapsible gate shall, during the whole time that the public is present, be made capable of being locked in the fully open position in such a way that a key is required to release it.
- (o) No ticket window shall open on to any public street and cause obstruction thereon.

(11) STAIRCASES: GENERAL STRUCTURAL REQUIREMENTS.

The design of staircases and the provision of handrails shall comply with bye-law 77-78.

PART 3 - BUILDING STRUCTURES

Sites.

52. No building shall be erected upon a site reclaimed by Town sweepings or other refuse, until the whole ground surface or site of such building has been rendered or become innocuous by covering it with a layer of clean earth, sand, hard core, clinker or ash, rammed solid at least 12 inches thick.

53. (1) In the absence of an effective storm water drainage system the ground floor of every house abutting on a street shall be raised above the level of the varandah way or foot-way and shall not be less than two feet above the level of the road at the centre.

(2) In the case of shops the ground floor abutting on a street shall not be less than one foot above the level of the road at the centre.

54. (1) Boundary walls may be erected on the boundaries of plots to any height (consistent with stability) approved by the corporation at its discretion.

(2) Boundary walls which abut on a public street, pathway or place which the public are allowed to use, shall not consist of fencing in which is used barbed wire or any material likely to cause injury to persons or animals.

(3) The owner of every building with a compound and every open plot shall, if so required by the corporation, provide a boundary wall or fencing and every such wall or fencing shall be maintained in good condition and repair.

FOUNDATIONS

55. The owner shall cause tests as required by the corporation to be made to prove the nature of the ground.

56. Where a building is to be erected near a drain or an excavation at a distance less than the depth of the said drain or excavation the owner shall satisfy the corporation that the foundations of the buildings are carried down to a level safeguarding its stability.

TABLE OF SAFE LOADS ON DIFFERENT SOILS FOR GUIDANCE

Group	Type of sub-soil	Condition of sub-soil	Tons per sq. ft.
I	Rock	Not inferior to sand stone, lime stone or firm chalk	5 and above
II	Murram Kunkur	compact	1.5-2
III	Gravels and Red Earth	Compact	1
IV	Clay, Sandy Clay	Stiff	1
V	Clay Sandy Clay Alluvial Earth	firm	3/4
VI	Sand Silty Sand Clayee Sand	Loose	1/2
VII	Silt Clay Sandy Clay Black Cotton Soil	soft	1/2
VIII	Silt Clay Sandy Clay Silty Clay	very soft	1/4

58. (1) Unless supported on a beam every load bearing wall or pier or the footings thereof, if any, shall rest on concrete and such concrete shall extend horizontally beyond each of the side and end faces of the wall or pier to a distance of not less than six inches.

(2) The thickness of concrete foundations shall be taken at an angle of dispersion of not less than 45 degrees.

(3) If constructed in reinforced concrete the foundations shall comply with the requirements of these bye-laws for reinforced concrete.

LOAD BEARING REQUIREMENTS

59. The load bearing structure of a building above the foundations shall be capable of safely sustaining and transmitting the dead load and imposed loads and the horizontal and inclined forces to which it may be subjected without exceeding the appropriate limits of stress for the materials of which it is constructed and without undue deflection.

(2) The dead load and imposed loads, including wind loads, shall be calculated in accordance with the provisions of Schedule 2.

3. Until such time when the relevant Pakistani Codes of practice and standard Specifications have been drafted structural calculations shall be based on British Codes of Practice and Standard specifications as shown on schedule 4.

(4) Table of maximum permissible loads on masonry for guidance.

Type of Masonry	Limit of total permissible load in tons due to super incu mbent weight and all other loads per sq. ft. of horizontal sectional area.
Ashlar or Masonary (1st class) with Lalbucker, Hub, Gieri, Jungshahi or local stones in lime mortar	15
Ashlar or Masonary in cement mortar (1:4 i.e. one part of cement to four parts of sands)	18
Ashlar or masonary 2nd class with Lalbucker, Hub, Gieri, Jungshahi or local stones in lime mortar	12
do do in cement mortar (1:4)	15
Burnt bricks (Karachi) in lime mortar	3
do do in cement mortar (1:6)	5
Burnt bricks (table moulded) in lime mortar	5
do do in cement mortar	7

Structural steel work shall be deemed to comply with bye-law 59 (load bearing structures generally) if the design and construction of the steel work are based upon the relevant recommendations of British Standard Code of Practice CP 113. The structural use of steel in building; or,

b the steel work is designed and constructed in accordance with the relevant rules given in British Standard 449 "The use of structural steel in buildings."

61. Structural work reinforced concrete shall be deemed to comply with bye-law (59 load bearing structures generally) if the design and construction are based upon the relevant recommendations of British Standard Code of Practice CP 114. The structural use of normal reinforced concrete in buildings"

62. Structural work of timber shall be deemed to comply with bye-law 59 (load-bearing structures generally) if its design and construction are based upon the relevant recommendations of British Standard Code of Practice CP 112, "Structural use of timber in buildings".

63. A wall, pier or column shall be deemed to comply with bye-law 59 (load-bearing structures generally) if its design and construction are based upon the relevant recommendations of British Standard Code of Practice CP 111 "Structural recommendations for load-bearing walls".

64. The owner shall submit structural calculations to prove the stability of foundations and super-structure if required by the Corporation,

RESISTANCE TO WEATHER AND DAMP

65. Every roof and external wall, including any parapet, of any building in which people live or work shall be constructed to adequately resist the penetration of rain.

66. (1) Every wall of a building shall be provided with a damp proof course at a height of not less than six inches above the surface of the ground

adjoining the wall and not higher than the level of the upper surface of the concrete or other similar solid material forming the structure of the floor.

(2) Where any part of a floor of the lowest or any storey of a building is below the surface of the adjoining ground and the wall or part of a wall of the storey is in contact with the ground,

(a) the wall or part of a wall shall be constructed or be provided with a vertical damp-proof course so as to be impervious to moisture from its base to a height of not less than six inches above the surface of the ground; and

(b) an additional damp-proof course shall be inserted in the wall or part of a wall at its base.

(3) Where the floor of a building is in the opinion of the corporation subject to water pressure that portion of the building below ground level shall be suitable water-proofed to the satisfaction of the corporation.

W A L L S

67. 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 bonded and solidly built together with lime cement mortar with cement mortar) or other hard and non-inflammable materials.

68. If under-pinning is required the owner or his agent shall give written notice to the corporation stating the method of under-pinning proposed to be used and shall obtain the written sanction of the corporation before proceeding with the work.

69. In the case of residential buildings with storey heights not exceeding 12 feet, the following wall thicknesses are deemed to be adequate, provided the walls are constructed in concrete blocks of a mix (by volume) of one part of cement; 3 parts of sands; 6 parts of aggregate and of a minimum crushing strength of 400 lbs./sq. inch.

(a) External and Party Walls:		Thickness
Single storey buildings	...	9 inch
Building up to 30 ft. in height: (length of wall not exceeding 30 feet)		
Ground floor	...	12 inch
Upper floor	...	9 inch
Buildings up to 45 ft. in height: (length of wall not exceeding 30 feet)		
Ground floor	...	15 inch
Intermediate floor	...	12 inch
Top floors	...	9 inch

(b) Cross Walls:

The thickness of every internal cross wall shall be at least two-thirds of the thickness prescribed for an external or party wall of the same height and length, provided that if such cross wall supports a load, the whole of such cross wall shall be of the thickness prescribed for an external or party wall and all cross wall shall be bonded to the main walls to which they abut.

(c) MORTAR

The mortar shall be of a mix of one part cement and five parts of sand.

(d) FLOOR SPANS:

The wall thicknesses specified shall be assumed to be sufficient to carry R. C. floors up to 14 feet span. Where walls carry floors of a span exceeding 14 ft. the thickness shall be calculated in accordance with British Standard Code of Practice CP. 111. Adequately designed bed plates shall be provided for beams in all cases.

70. If a building is fully framed and no part of the panel wall sustains or transmits any load other than that due to its own weight and to wind pressure on its own surface, such panel wall may be of:-

(a) 4 1/2 inches brickwork reinforced with suitable expanded metal in every eight course, the panel not being greater than 16 feet in length and 11 feet in height and suitably fixed to the framework. For a greater length or height the panel wall shall be 9 inches thick.

(b) 6 inches thick precast concrete blocks, the panel size being as for 4 1/2 inch brickwork. For a greater length or height the panel wall shall be 8 inches thick.

71. Any other form of panel filling or cladding to framed buildings not specified in these bye-laws shall be subject to special sanctions by the corporation.

FLOORS

72. Every floor shall be capable of sustaining adequately its own weight and any imposed loads which it is likely to be subjected to.

73. (1) In every storey, except where the floor is one used for residential purposes, there shall be exhibited by the owner at each staircase or at some other appropriate place permanently and conspicuously a notice incised or embossed on metal plate or similar permanent material in the following form, stating the imposed load for which the floor has been designed, letters to be at least 1 1/4 inch high.

NOTICE

This floor has been designed to sustain an imposed load of lbs per square foot.

(2) Where floor of different rooms or different parts of floors have been designed for different imposed loads, a notice in the above form shall be suitably displayed in each room or on each part of the floor as the case may be indicating the variations.

74. Where steel, reinforced concrete or timber is used in floor construction the design shall be in accordance with bye-laws 60, 61 and 62 respectively.

75. Every floor shall be finished in a manner adequate for its intended use.

76. (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 material.

STAIRCASES AND LIFTS

77. (1) The rise shall normally not be more than 7 inches and the tread shall not be less than 9 inches.

(2) In houses occupied by not more than one household 7½ inches risers will be permitted.

78. (1) All staircases shall be provided with a handrail or handrails.

(2) In non-residential buildings a handrail shall be provided on each side of the stair case when the staircase is 5 ft. wide clear and cover. Where a staircase is 10 feet wide or more, there shall be provided in addition a handrail down the centre of the stair.

79. There shall not be more than 15 risers between each landing. A landing shall not be less than 3 feet in depth.

80. Winders may be permitted in residential buildings other than blocks of flats.

81. (1) Timber staircases are permissible only for residential buildings occupied by not more than one household.

(2) All other staircases shall be of reinforced concrete or other non-inflammable material.

82. Lifs shall be provided in buildings where the climbing height from the ground floor level to the top floor level exceeds 42 feet and 6 inches.

R O O F S

83. (1) Framings :

Timber for roof construction shall be adequate sizes and properly framed in accordance with bye-law 62.

(2) Preservative :

All built-in or hidden roof timbers 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-laws 60 and 61 respectively.

84. Any other type of roof construction not specified in these bye-laws shall require special sanction of the corporation.

85. (1) On pitched roofs the following materials only may be used :

Burnt clay or concrete tiles.

Slates.

Metal or asbestos cement sheets.

Glass.

Other materials approved by the Corporation.

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

86. Access shall be provided to the space within a pitched roof where such space is enclosed by a ceiling.

87. Lightning conductors, if provided, shall be of a type approved by the corporation and shall be earthed and fixed in a manner approved by the corporation.

REFUSE CHUTES.

88. Refuse Chutes shall be of a type approved by the corporation and shall conform with the following minimum requirements :

- (a) They shall be formed with glazed pipes or asbestos cement pipes of at least 12 inches internal diameter.
- (b) All chutes shall be adequately ventilated at the top and shall be provided with suitable arrangements for flushing with water for the full length of the chutes.
- (c) All chutes shall discharge into a suitable removable receptacle or receptacles of a size and pattern approved by the corporation.
- (d) The chamber housing the receptacles at the foot of the chutes shall be drained and shall be adequately fly and vermin proof and shall open into the external air and shall be lined throughout with glazed tiles.
- (e) The opening into the chutes from each floor shall be fitted with a self-closing hopper type flat.

FLUES AND CHIMNEYS.

89. (1) Every chimney included in a building shall be built on solid foundations and with footings similar to the footings of the wall against which such chimney is built and shall be properly bonded into such wall. Provided that any such chimney may be built on sufficient corbels of brick, stone or other hard and incombustible materials if the work so corbelled out does not

project from the wall more than the thickness of the wall measured immediately below the corbel.

Provided further that the chimney of an industrial and factory plant shall not be built nearer than 10 feet of the street line.

- (2) The inside of every flue included in a building shall be properly rendered or pargetted as such flue is carried up unless the whole flue shall be lined with fire-brick or fire-proof piping of fire-clay at least one inch thick, and unless the spandrel angles shall be filled in solid with brick work or other incombustible material.

The back or outside of such flue, which shall not be constructed so as to form part of the outer face of an external wall, shall be properly rendered in every case where the brick work of such back or outside is less than nine inches thick.

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

90. (1) This bye-law and bye-laws 91 and 92 shall apply to chimney shafts which are structurally independent and erected in connection with any factory or place in which steam, water or other mechanical power is to be employed.
- (2) A shaft and its foundations shall be designed and constructed in accordance with the following provisions of this building bye-laws.

(3) The appropriate Limits of stress for the materials of which the shaft is constructed shall not be exceeded when the shaft is subjected to a horizontal wind pressure diffied by appropriate shape factor specified in the following Table of :-

- a) 12 pounds per square foot if the height of the shaft does not exceed 40 feet ;
- (b) 14 pounds per square foot if the height of the shaft does not exceed 50 feet ;
- (c) 15 pounds per square foot if the height of the shaft does not exceeds 60 feet ;
- (d) 17 pounds per square foot if the height of the shaft does not exceed 80 feet ;
- (e) 18 pound per square foot if the height of the shaft does not exceed 100 feet;
- (f) 19 pounds per squarefoot if the height of the shaft does not exceed 120 feet ;
- (g) 21 pounds per square foot if the height of the shaft does not exceed 140 feet;
- (h) 22 pounds per square foot if the height of the shaft does not exceed 160 feet;
- (i) 23 pounds per square foot if the height of the shaft does not exceed 180 feet;
- (j) 24 pounds per square foot if the height of the shaft does not exceed 180 feet;

and the shaft shall be capable of resisting, without overturning, a wind pressure of one-and-a-half times that specified for its height in this sub bye-law,

The wind pressure shall be subject to the shape factor given in the following tables :-

PLAN SHAPE OF STRUCTURE				FACTOR
Circular	...	...	...	0.7
Octagonal	...	...	...	1.0
Square (wind perpendicular to diagonal)	...	...	...	1.0
Square (wind perpendicular to face)	...	...	...	1.3

(4) For the purposes of sub-bye-law (3) the wind pressure shall be assumed to be acting uniformly over the whole height of the shaft, the total lateral force being taken as the product of the wind pressure and the maximum vertical projected area.

(5) The base of the shaft shall rest upon solid undisturbed rock, or upon some suitable foundation so constructed that when the shaft is subject to the wind pressure specified for its height and shape by sub-bye-law (3) the pressure on the ground under the foundation does not exceed the safe bearing capacity of the ground.

91. (1) A shaft constructed of brickwork shall be deemed to be designed and constructed in accordance with sub-bye-laws (3) to (5) of bye-law 90 if it complies with the following provisions of this bye-law.
- (2) The bricks shall be hard and well-burnt clay bricks, or sand lime bricks being bricks described as Class A in British Standard 187, and they shall be properly bonded and solidly put together with mortar.
 - (3) Where the horizontal section of the shaft is circular or in the form of a regular polygon, the external diameter or least width at its base shall be not less than one twelfth of the height of the shaft.

- (4) Where the horizontal section of the shaft is rectangular the lesser width at its base shall not be less than one-tenth of the height of the shaft.
- (5) The thickness of the brick work shall not be less than eight-and-a-half inches at the top of the shaft and for not more than twenty feet below the top and shall be increased by not less than four inches for each additional twenty feet or part of twenty feet of the height of the shaft measured downwards.
- (6) The shaft shall have a batter of not less than two-and-a-half inches in every ten feet.
- (7) Any footings provided at the base of the shaft shall.
 - (a) project in every direction from the base for not less than two-thirds of the thickness of the brickwork of the shaft at the base;
 - (b) be in height not less than one and one-third times their projection;
 - (c) be either in regular offsets from the base or in one offset;
 - (d) be built solid to the level of the base.
- (8) The footings or the base of the shaft shall rest upon a suitable and sufficient foundation.
- (9) Where the footings or the base of the shaft rest upon cement concrete and the bearing capacity of the ground under the concrete is not inferior to that of firm clay, the requirements of the last preceding sub-bye-law shall be deemed to be satisfied if
 - (a) the projection of the concrete in every direction from the base of the shaft is not less than one-and-a-half times the thickness of the brickwork at the base;

- (b) the thickness of the concrete is not less than one and one-third times the projection of the concrete beyond the footings or beyond the base if footings are not provided; and-
 - (c) the concrete is composed of cement and well-graded aggregate in the proportion of one hundred and twelve pounds of cement to not more than twelve-and-a-half cubic feet of well-graded aggregate.
- (10) Where an opening is formed in the side of a shaft the sides of the opening shall be strengthened to offset any loss of strength due to the formation of the opening.
92. (1) A shaft constructed of cut stone masonry shall be deemed to be designed and constructed in accordance with sub-bye-laws (3) to (5) of bye-law 90 if it complies with the provisions of this bye-law.
- (2) Every such chimney shall be built of a diameter at the base of not less than one-twelfth of the height and for a height of at least twenty feet from its base every such chimney shall be lined in the following manner, that is to say, the shaft shall be provided with an independent lining of fire-bricks, separated from the masonry enclosing the shaft by a cavity at least one inch in width and every such cavity shall be covered at the top with corbelled brick work.
 - (3) The batter of every such chimney shall be not less than one-third of an inch to the foot.
 - (4) Where the inside diameter of the chimney at the top does not exceed four feet and six inches, the thickness of the masonry shall be as follows:

- (a) From the top of the chimney to the level of twenty-five feet below the top, it shall be twelve inches thick.
- (b) From the level of twenty-five feet below the top of the chimney to the level of fifty feet below the top, it shall be eighteen inches thick.
- (c) For each further space of twenty-five feet below the level of fifty feet from the top, the thickness shall be in like manner further increased to the extent of six inches.
- (5) Where the inside diameter of the chimney at the top exceeds four feet and six inches, the thickness of the masonry shall be as follows:
- (a) From the top of the chimney to the level of twenty five feet below the top, it shall be eighteen inches thick.
- (b) From the level of twenty-five feet below the top, it shall be two feet thick.
- (c) For each further space of twenty-five feet below the level of fifty feet from the top, the thickness shall be in like manner further increased to the extent of six inches.
93. Where reinforced concrete is used in chimney shaft construction the design shall be in accordance with Building bye-law 61.

PART 4-DRAINAGE AND SANITARY PROVISIONS.

Drainage.

94. All drainage and sanitary installations shall be carried out in accordance with the relevant bye-laws for drainage, plumbing and sanitary fittings.

95. Where there is a public sewer all sullage water shall be connected thereto.
96. (1) Where no public sewer is in existence all sullage water shall be connected to cess pools or septic tanks.
- (2) Where no public sewer is in existence all waste water may be connected to soak pits.
- (3) Cesspools and septic tanks shall-
- (a) be so constructed as to be impervious to liquid either from the outside or inside.
- (b) be so sited as not to render liable to pollution any spring or stream of water or any well the water from which is used or likely to be used for drinking or domestic purposes subject to a minimum distance of 20 feet.
97. The roof of every building and the floor or balconies abutting a street or constructed over a street shall be drained by means of gutters and down pipes to the satisfaction of the corporation.

Sanitary Provisions.

98. (1) Residential
- a. Every dwelling shall have at least one Latrine or w.c and one bathroom.
- b. Single room tenements shall have one Latrine or w.c. and one bathroom per five tenements subject to a minimum provision of two w.c's or Latrines.
- c. In the case of servant's quarters attached to dwelling houses one W.C's or Latrine and one bathroom shall be sufficient for every five quarters.
2. Hotels, Boarding Houses and Guest Houses.

For every ten bedrooms or less there shall be provided at least two w.c's or Latrines and two bathrooms.

3. Dormitories.

For every 20 persons there shall be provided at least two W.C.s or Latrine and one bathroom.

4. Offices Departmental Stores and Factories.

For every 25 person upto 100 persons there shall be provided one W.C. or Latrine and one Urinal and one additional W.C. or Latrine plus one Urinal for every 50 persons in excess of 100 persons.

Ablution facilities.

One wash basin or equivalent washing trough space per 25 or less persons.

The above figures refer to staff only. If provision is to be made for the public it shall be made according to the above specification.

5. Shops and Scalls

Communal sanitary facilities shall be provided at the discretion of the corporation. Shops of a floor area of 400 sq. ft. and more shall have a minimum of one W.C. or Latrine and one draw off tap on the premises.

6. Places of public assembly;

Males-

One W.C. and two urinals for every 200 persons or part thereof.

Females-

One W.C. for every 100 persons or part thereof. In each room provided for sanitary purposes there shall be at least one wash basin.

7. Schools:

Boys :

Two W.C's. and three urinals per 100.

Girls-

Three W.C's. for the first 50.

Two W.C's. for each subsequent 50.

Ablution facilities-

One wash basin or equivalent washing trough space per 25 pupils.

8. Hospitals:

At least one W.C., one wash basin and one bath for every 10 persons (patients and staff.)

99. 1. All walls of W.C's and bathrooms shall be finished in cement mortar or other impervious material to a minimum height of 4 feet. 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. Every latrine shall be constructed of brick concrete or other impervious approved material.

(3) Where there is no water carriage system latrines shall be separated from the main buildings by cross ventilated passages not less than 3 feet wide or be accommodated in separate buildings.

W E L L S

100. A well constructed in connection with a building and intended to supply water for human consumption shall comply with the following provisions—

- (a) The well shall be so situated as not to be liable to pollution, subject to a minimum distance of 20 feet from any cesspool, soak pit and septic tank.
- (b) The ground adjoining the well shall for a distance of not less than four feet 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 a depth of six feet.
- (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 2'-6" high.
- (e) The top of a dug well shall be surrounded by a curb extending not less than six inches above the level of the paving required by paragraph (b) of this bye-law and so constructed as to prevent any surface water gaining access to the well.
- (f) The lining tubes to a bored well shall project not less than six inches above the level of the paving required by paragraph (b) of this bye-law and such projection shall be surrounded with concrete not less than six inches thick or with other adequate means of protection for its full height.
- (g) A well from which water is drawn by a bucket shall be provided with an efficient hinged wooden or iron or other suitable cover which will close the well when not in use.
- (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.

PART 5-FIRE RESISTANCE AND FIRE PRECAUTIONS.

Fire Resistance-General.

101. A structural part of a building shall be deemed to have the requisite fire resistance if it is so constructed as to have a period of fire resistance not less than the appropriate period specified in Schedule 3.

Until such time, when an appropriate Pakistan Standard Specification has been drafted, the fire resistance of building materials shall be ascertained from British Standard 476: Fire Test on Building Materials.

Fire Resistance-Small Houses.

102. A "Small House" for the purpose of these bye-laws shall be a house of up to 18000 Cuft. capacity on not more than two storeys and occupied by only one household and the servants quarters attached thereto.

103. Every external wall of a small house shall comply with Table A.

TABLE A.

	(1)		(2)
	Distance of wall in feet from nearest boundary of premises		
	Not less than	Less than	Appropriate requirements as to non-inflammability and fire resistance
six	10	—		No requirement.
of	5	10	To be externally non-inflammable.
ste	3	5	To be non-inflammable throughout.

104. A wall separating two small houses shall have a fire resistance of one hour.

Where the external walls of small houses are of timber or other inflammable material, the walls separating such houses shall—

- (a) have a fire resistance of two hours.
- (b) extend not less than nine inches beyond the outer surface of the external walls.

No inflammable material shall be built into a separating wall other than the ends of wooden joist or purlins which are properly protected by brick-work or other solid and non-inflammable material not less than four inches thick.

In every small house all load bearing walls not already referred to in this bye-law shall have a fire resistance of half-an-hour.

Fire Resistance: Buildings other than small houses-

105 (1) The external walls of any building other than a small house shall be non-inflammable throughout and have a fire resistance of two hours.

(2) Every external wall of a domestic or public building of one storey, not being a small house; shall comply with the requirements of Table B.

TABLE B.

Capacity of building in cubic feet		Distance of wall in feet from nearest boundary of premises		Appropriate requirements as to non-inflammability and fire-resistance.
Not less than	Less than	Not less than	Less than	
—	18,000	10	—	No requirement. To be externally non-inflammable. To have a fire resistance of one hour.
		5	10	
		3	5	
18,000	36,000	20	—	No. requirement. To be externally non-inflammable. To have a fire resistance of one hour.
		10	20	
		5	10	
36,000	10	10	—	To be externally non-inflammable and, unless it is an office building more than 30 feet from the nearest boundary of the premises, to have a fire resistance of one hour.

(3) Every external wall of a building of the warehouse class not intended to be used wholly or predominantly for storage and comprising only one storey shall comply with Table C.

TABLE C

(1) Distance of wall from nearest boundary of premises		2 Appropriate requirements as to non-inflammability and fire resistance
Not less than	Less than	
20 feet of a distance equivalent to half the height of the building (which-ever is greater)	40 feet or a distance equivalent to the height of the building which-ever is greater	To have a fire resistance of one hour
40 feet or a distance equivalent to the height of the building (whi ch-ever is the great er)	—	To be externally non-inflammable

(4) Every external wall of a building of the warehouse class intended to be used wholly or predominantly for storage shall, if the capacity of the building exceeds 250,000 cubic feet or if its height exceeds 75 feet, be non-inflammable throughout and have a fire resistance of four hours :

Provided that where a building is completely separated into two or more parts by fire division walls the provision of this building bye-law shall apply as if each part were a separate building.

Provided that the fire resistance in the case of buildings of the warehouse class intended solely for the storage of non-inflammable goods may be reduced at the discretion of the Corporation.

(5) Where an external wall of a domestic building of two or more storeys (other than a shop or small house) is a panel wall supported in a structural frame of metal or reinforced concrete and is constructed of non-inflammable material and is not less than ten feet or a distance equivalent to half the height of the building (whichever is the greater) from the nearest boundary of the premises, the frame and panels shall have a fire resistance of one hour.

106. Walls separating building other than small houses or flats shall be non-inflammable throughout and shall have for the separation of domestic buildings other than shops a fire resistance of four hours and in any other case six hours. No inflammable material shall be built into a separating wall other than the ends of wooden joists or purling which are properly protected by brickwork or other solid and non-inflammable material not less than four inches thick.

107. Fire division walls in buildings of the warehouse class for use wholly or predominantly for storage shall have a fire resistance of four hours. In any other building they shall have a fire resistance of two hours

Any opening a fire division wall shall be protected by doors or shutters having a fire resistance of half the period required for that of the wall.

108. Walls constructed for the separation of flats shall be non-inflammable throughout and have a fire resistance of:-

(a) one hour if the building exceeds either fifty feet in height or 2,500 square feet on any one storey in floor area.

(b) half an hour in any other case.

109. (1) In every building (other than a small house) which comprises more than one storey every-

(a) floor above the lowest storey;

(b) load bearing wall (other than an external wall), wall separating building or fire division wall;

(c) column and beam; and

(d) wall enclosing a common stairway or a lift shaft shall have a fire resistance as specified in Table 'D' Provided that :-

(i) Where more than one fire resistance period would be required according to whether regard is had to the height or the floor area or capacity of the building the longest period shall apply.

(ii) Where a building is completely separated into two or more parts by fire division walls, each such part shall be treated as a separate building.

(2) Every opening in an external wall enclosing a common stairway or a lift shall be protected by doors or shutters having a fire resistance of half the period required for the wall, but in no case less than half an hour.

(3) In this bye-law

"common stairway" means a stairway used by more than one family or occupier.

"floor area" means the floor area of any one storey in a building.

TABLE D

Class of building (1)	Height, cubic capacity, floor area (of any one storey) (2)	Fire resistance (3)
Domestic buildings intended to be used wholly or pre-dominantly for human habitation.	(a) Exceeding two storeys but not exceeding 50 ft in height, or	1/2 hour
	(b) exceeding 1,000 square feet but not exceeding 2,500 square feet in floor area.	
	(a) Exceeding 50 feet in height, or	1/2 hour
	(b) exceeding 2,500 square feet in floor area.	

Domestic buildings intended to be used wholly or pre-dominantly for human habitation.	(a) Exceeding 50 feet but not exceeding 75 feet in height, or (b) exceeding 50,000 cubic feet but not exceeding 125,000 cubic feet in capacity.	1/2 hour
	(a) Exceeding 75 feet in height, or (b) exceeding 125,000 cubic feet in capacity:	1 hour
Public buildings and building of the ware-house class not used wholly or pre-dominantly for storage.	(a) Not exceeding 50 feet in height, or (b) exceeding 50,000 cubic feet but not exceeding 125,000 cubic feet in capacity.	1/2 hour
	(a) Exceeding 50 feet but not exceeding 75 feet in height, or (b) exceeding 125,000 cubic feet not exceeding 250,000 cubic feet in capacity, and not exceeding 7,500 square feet in floor area.	1 hour
	(a) Exceeding 75 feet in height, or (b) exceeding 250,000 cubic feet in capacity or (c) exceeding 7,500 square feet in floor area.	2 hours
Buildings of the warehouse class used wholly or pre-dominantly for storage.	(a) Exceeding 25 feet but not exceeding 50 feet in height, or (b) exceeding 25,000 cubic feet but not exceeding 50,000 cubic feet in capacity. Exceeding 50,000 cubic feet but not exceeding 125,000 cubic feet in exceeding.	1/2 hour
	(a) Exceeding 50 feet but not exceeding 75 feet in height, or (b) exceeding 125,000 cubic feet but not exceeding 250,000 cubic feet in capacity and not exceeding 7,500 square feet in floor area.	1 hour
	(b) exceeding 125,000 cubic feet but not exceeding 250,000 cubic feet in capacity and not exceeding 7,500 square feet in floor area.	2 hours
	(a) Exceeding 75 feet in height, or (b) exceeding 250,000 cubic feet in capacity or (c) exceeding 7,500 square feet in floor area.	4 hours

FIRE RESISTANCE : MISCELLANEOUS PROVISIONS

10. (1) In the case of a building, other than a house of not more than two storeys, where any part of an opening in an external wall is vertically above an opening in an adjoining storey, suitable provision shall be made to prevent the spread of fire from the lower to the upper opening.
- (2) The requirements of this building bye-law shall be deemed to be satisfied if—
- (a) the bottom of the higher opening is not less than three feet above the top of the lower opening and not less than two feet above the top of the lower opening and not less than two feet above the upper surface of the floor separating the storeys; or
- (b) a balcony of non-inflammable material with a solid floor or some similar horizontal projection is constructed between the two openings to project two feet from the wall.
11. Any part of a structural frame or any beam or column carrying an external wall, a wall separating buildings or a fire-division wall shall have the same fire resistance as that required by these bye-laws for the wall it carries.
112. (1) In every building of the warehouse class, in every public building or house exceeding thirty-six thousand cubic feet in capacity and in every house forming part of a block of more than two houses the roof shall be covered as to afford adequate protection against the spread of fire into the building or to adjoining buildings.
- (2) In every building other than a building to which the preceding paragraph relates—

- (a) the roof shall be so covered; or
- (b) the building shall be so isolated from other buildings; as to afford adequate protection against the spread of fire into the building or to adjoining buildings.
- (3) A roof shall be deemed to satisfy the requirements of sub-byelaws (1) and (2) if it is covered with any one or more of the following materials:-
- (a) natural slates or slabs of stone ;
- (b) tiles or slabs of burnt clay or concrete;
- (c) slates, tiles or sheets of asbestos cement;
- (d) corrugated sheets of galvanized steel or of other not less suitable metal of an adequate thickness ;
- (e) glass tiles or sheets or glass bricks or blocks in concrete or metal frames ;
- (f) lead, copper, zinc or aluminium ;
- (g) asphalt mastic containing not less than eighty-three per cent of mineral matter and laid not less than three-quarters of an inch thick on a suitable base ;
- (h) asbestos based roofing felt which conforms with British Standard 747 ;
- (i) organic based roofing felt laid directly on a base of non-inflammable material not less than one-half inch thick ;
- (j) organic based roofing felt covered with non-inflammable material not less than one-half inch thick, or with bituminous macadam composed of fine gravel or stone chippings with no greater percentage of bituminous material than seven per cent.

- (4) A building shall be deemed to satisfy the requirements of sub-byelaw (2) if it is distant from the nearest boundary of the premises by not less than its height.
- 113: Every garage shall be constructed of non-inflammable materials having a fire resistance of half an hour.
114. Where in a small house a habitable room or any part of a habitable room is situated immediately above a motor garage the following provisions shall be complied with : The ceiling of the garage shall be made of non-inflammable material having a fire resistance of half an hour. All walls separating the garage from the remainder of the building shall be made of non-inflammable material having a fire resistance of at least half an hour. An opening in any such wall shall at its lowest point be at least four inches above the level of the floor of the garage and shall be protected by self closing doors having a fire resistance of half an hour.
115. (1) Every building used as a place of public assembly shall be self-contained provided that if the place of public assembly forms part only of a building, the part used as a place of public assembly shall be completely separated by fire division walls from the rest of the building and shall have separate doors not communicating with any other building or part of a building.
- (2) Restaurants may be included in a place of public assembly : provided they can not be entered directly from the auditorium and provided the kitchens are situated to the satisfaction of the corporation.

(3) Any shop, dwelling or sleeping place situated in or forming part of a place of public assembly shall be completely shut off from the place of public assembly, its offices and passages by a brick, stone or concrete partition wall having a fire resistance of one hour.

(4) The floors of balconies or tiers shall be constructed entirely of reinforced concrete.

116. (1) In premises seating over 400 persons, in which scenery is employed (other than school halls or other similar halls where scenery is used infrequently), the stage shall be separated from the auditorium on either side of the proscenium opening by a fire-resisting wall of 9 inch brick-work or the equivalent, carried down to a solid foundation and up to at least 3 feet above the roof level unless the roof is of fire-resisting construction.

(2) Not more than two openings shall be provided in the proscenium wall in addition to the proscenium opening no such additional opening to have an area exceeding twenty square feet. Each opening to be fitted with a door of half hour fire-resisting material.

(3) A sprinkler system shall be provided for the whole of the fire risk behind the proscenium wall.

(4) A fire resisting curtain shall be provided to the proscenium opening.

117. (1) Cinematograph apparatus shall be operated or set up for operation only within an approved enclosure.

(2) Cinematograph apparatus shall be contained in an enclosure outside the auditorium. The enclosure shall be constructed of fire-resisting material of two hours fire resistance. Minimum floor area shall be 48 square feet for one projector with an additional 24 sq. ft. for each additional projector.

(3) Two exits shall be provided to each enclosure, and these shall be outside the auditorium and each shall be fitted with a self-closing, close-fitting door of half hour fire resisting material opening outwards from the enclosure. No opening other than projection and observation apertures shall be permitted between the enclosure and the auditorium.

(4) Two openings for each projector shall be provided; the observation port shall be not larger than 200 square inches and the projection port shall be not larger than 120 square inches. Where separate slide projectors, spot or flood light machines are installed in the same enclosure, not more than one opening for each such machine shall be provided both for the operator's vision and for the projection of the light. Such openings shall be as small as practicable and shall be protected by approved automatic shutters.

(5) Each opening shall be provided with an approved type gravity shutter of half hour fire-resisting material set into guides not less than one inch at sides and bottom and overlapping the top of the opening by not less than one inch when closed. Shutters shall be suspended, arranged and interconnected so that all openings will close upon the operating of some suitable fusible or mechanical releasing device. There shall be provided suitable means for manually closing all shutters simultaneously from any projector head and from a point outside each exit door.

(6) Enclosures used for the purpose of rewinding films and battery installations shall be provided and each shall be separate from the projecting enclosure.

(7) All openings and joints in the enclosure shall be so constructed and maintained as to prevent as far as possible the escape of any smoke or noxious fumes into the auditorium.

- (B) All enclosures shall be provided with adequate means of ventilation by suitable openings or shafts of fire resisting material which shall lead to the open air.
118. (1) All air-conditioning or ventilation ducts including framing, except for ducts in detached and semi-detached houses, shall be constructed entirely of non-inflammable materials and shall be adequately supported throughout their length.
- (2) No air-conditioning ducts shall pass through fire division walls, party walls or adjoining external walls.
- (3) Where ducts pass through floors or walls not being fire division walls, party walls or adjoining external walls the space around the duct shall be sealed with rope asbestos, mineral wool or other non-inflammable material to prevent the passage of flames and smoke.
- (4) The air intake of any air-conditioning apparatus shall be so situated that air shall not be recirculated from any space in which objectionable quantities of inflammable vapours or dust are given off and shall be so situated as to minimise the drawing in of inflammable material or other fire hazard.
- (5) Where duct systems serve two or more floors of a building or pass through walls or partitions not being fire division walls, party walls or adjoining external walls approved fire dampers with fusible links and access doors shall be located at the duct openings and such dampers shall be so arranged that the disruption of the duct will not cause failure to protect the openings.
119. Stair walls in buildings accomodating more than 250 persons above ground floor shall have a fire resistance of one hour and doors leading thereto shall have a fire resistance of half an hour.

120. Every new building (except residential buildings up to four storeys in height and except commercial and business premises up to four storeys in height and not exceeding 2,000 sq. st. at first floor level) shall, if required by the corporation, be provided with sufficient means for extinguishing fires in the shape of :-
- fire fighting buckets,
 - fire extinguishers,
 - an independent water supply system in pipes of steel or cast iron with adequate hydrants, pumps and hose reels.
121. Every multi-storeyed building shall have sufficient space on ground floor for construction of letter boxes.

PART 6 - LICENSING OF ARCHITECTS

122. No person shall act as Architect for the purposes of the Ordinance and the bye-laws and schemes framed thereunder, except under a licence granted or deemed to have been granted by the Chairman under these bye-laws.
123. The following persons shall be eligible to apply for grant of a licence :-
- any persons who holds
 - F. R. I. B. A., A. R. I. B. A., or any other Architectural qualification which in the opinion of the Chairman is equivalent thereto;
 - B. E. (Civil) or Diploma in Architecture from any recognized institution or any other Diploma or Degree which in the opinion of the Chairman is equivalent thereto; subject to the condition that such person has practical experience of not less than two years in Building Design and Corporation, or Architecture or both.
 - Any person whose case is not covered by clause (a) but who
 - holds a licence granted by the Corporation or Karachi Development Authority; and

(2) has executed a large number of works, of Architectural importance and acquired proficiency in his work.

124. (1) Every application for licence accompanied by such fee as may be prescribed by the Chairman shall be made in Form I and shall be addressed to the Chairman. If the application is rejected, the fee shall be refunded.

(2) All applications for licences shall be dealt with as promptly as possible and after such scrutiny and inspection as may be necessary, the Chairman may-

(a) sanction the grant of a licence; or

(b) reject the application, recording reasons therefor.

(3) When an application for a licence is sanctioned, the licence in Form II shall be issued to the applicant.

(4) When an application for a licence is rejected the rejection with reasons therefor shall be communicated to the applicant.

125. The licence granted under bye-law 124 shall be valid for one year.

126. An Architect's licence granted by the Karachi Development Authority immediately before the commencement of these bye-laws, shall continue in force until the date of expiry thereof and for all purposes, including renewal and revocation, shall be deemed to be a licence granted under these bye-laws.

127. (1) The application for renewal of licence granted or deemed to have been granted under those bye-laws accompanied by such fee as may be prescribed shall be made to the Chairman in Form III, thirty days before the date on which the current licence is due to expire.

(2) The Chairman may in his discretion renew an expiring licence for such period not exceeding one year as he may deem fit.

128. Without prejudice to any other action that may be authorised under the Ordinance or the rules thereunder, the Chairman may revoke or suspend the licence if the licensee,

(a) executes or supervises carelessly or negligently any work for which he has been engaged.

(b) executes or supervises any unauthorised work or any work which is not in accordance with the plans approved therefore by the Corporation.

(c) wilfully misrepresents any fact or makes any false statement to the Corporation or suppresses the information of any material fact relating to the work for which he is employed;

(d) disturbs, defies or breaks the discipline of any office of the Corporation.

(e) proves to be incompetent or frequently prepares plans which are liable to objection by the Corporation or prepares plans in grave disregard of the provisions of the Ordinance and the rules and schemes framed there-under;

(f) having been granted a licence before the commencement of these bye-laws, does not possess the qualifications specified in bye-law 123.

129. (1) Any person aggrieved by an order made by Chairman under these bye-laws, may within thirty days of such order prefer an appeal to the Controlling Authority, under the West Pakistan Municipal Committees (appeal) Rules, 1960.

(2) The order passed by the Controlling Authority on appeal under sub-bye-law (1) shall be final.

SCHEDULE I.

(See Bye-Law 7)

Form I,

KARACHI MUNICIPAL CORPORATION
APPLICATION FOR ENLISTMENT AS LICENCED ARCHITECT

The Administrator,
Karachi Municipal Corporation,
Karachi.

I,son of.....

(Name in full in block letters)

hereby apply for the grant of a licence for practising as Architect in
Karachi Division.

My particulars are given belows-

1. Date of Birth

2. Residential Address.

3. Office Address.....

4. Nationality.....

5. Technical education and qualifications including particulars of Examination
passed (attested copies of certificates are to be attached)

6. Membership of any other Professional Institutions.

7. status Practising Independently or serving in Architectural Firm or with
any other organisation, etc.

8. Practical Experience (attested copies of certificates are to be attached)

(a) Preparation of Architectural Designs (Sponsor)*

(b) Supervision

(c) Other Experience in Matters relating to Building

9. (a) Date and No. of previous Architect's Licence, if any.....

(b) Challan No. and Date of the payment lastly made towards licence
fee.....Dated.....Signature of the applicant.

Notes- (1) Strike out whichever is not applicable.

(2) The applicant should state precisely the position he held in relation to
each of the subjects of which details are given above, together with dates.

*Items under headings 8, (a), (b), and (c) should be endorsed where
practicable by one or more of the sponsors to this application.

(3) Separate paper may be used if the space in any of the columns is
found short.

CERTIFICATE OF THE EMPLOYER IN CASE THE APPLICANT IS SERVING
IN ANY GOVERNMENT ORGANISATION OR PRIVATE FIRM.

This organisation has no objection if a licensee to practise as an Architect is granted to Mr.....who is employed as..... in our organisation. He shall.

(1) only at as a licensed Architect for our projects.
(2) act as our Architect and also he is permitted to do his own private practice at a private office and will be afforded reasonable time to attend to and supervise buildings under his private arrangement.

(3) be permitted to do his own private practice and will be afforded reasonable time to attend and supervise buildings under his private arrangement

Signature of Employer or
Head of the Department
(Seal)

FORM 2

KARACHI MUNICIPAL CORPORATION
ARCHITECT (CONTROL) DEPARTMENT

No. _____ Dated the.....
ARCHITECT LICENCE

Mr..... is hereby licensed under the (Karachi Municipal) Corporation Building Control bye-laws, 1975 to act as an Architect for the purposes of the Sind People's Local Government Ordinance 1972 and bye-laws framed thereunder.

This License is subject to the terms and conditions annexed hereto and will remain valid for the period ending 30th June 19 ..

ARCHITECT (CONTROL)

Mr.....
.....
Karachi.

FORM "A"
KARACHI MUNICIPAL CORPORATION
KARACHI.

Karachi:

(Date of Delivery at the K.M.C.)

APPLICATION FORM FOR SUBMISSION OF BUILDING PLAN

To,
The Architect (Control),
Karachi Municipal Corporation,
Karachi.

Dear Sir,

In pursuance of the provision of section 14 of the Sind Peoples Local Government Ordinance, 1972 read with Item No. 1 under heading "Building Control" of part II of Schedule II to the Ordinance. I hereby apply for your permission to erect/re-erect/make additions and or/alteration in building on Plot No.....Karachi in accordance with building plans sent herewith (in quadruplicate) for your approval.

Necessary particulars are given below and certified to be true:

1. Reference of title deed : (Please attach copies of allotment order and receipt of payment of last instalment/Lease Deed/Sale Deed/sand Power of attorney/F.T.O. and Demarcation plan from the Settlement Authority duly attested by the Licensed Architect).
2. Verification of area and dimensions of the Plot (Please attach copies of Site Plan and acknowledgement of possession duly attested by the Licensed Architect in case of plot situated in suburb areas and certified copies of Extract and Sketch from C.D.C. in duplicate in case of city's plots).
3. No. and date of previous approved plan if any.....

4. In case plot held from Society, please get the plans forwarded and stamped by the Society.
5. Description of the proposed construction
7. Name and address of the Architect employed to prepare the plans and supervise the work
8. Nature of soil in Foundation.....
9. Nature Foundation.....
10. Nature of Plinth.....
11. Nature of Superstructure.....
12. Kind of slab.....
13. Kind of Floor.....
14. Method of Drainage to sewerage.....
(N. B. Specification and nature of work should be given against items of work mentioned above).

Mr..... Licensed Architect is hereby authorized by me to do all things required to be done in this regard under the Sind People's Local Government Ordinance, 1972 or rules or bye-laws framed there-under for me and on my behalf.

Yours faithfully,

() Owner,

Address :

To,

The Building (Control).
Karachi Municipal Corporation,
Karachi.

Sir,

This is to Certify that Building Plans submitted, by
Mr./Mrs./Mat./M/s
for Plot No.....

.....
have been prepared by me and I have undertaken to supervise the proposed construction. I further undertake, that if I discontinue supervision of the work, or if any deviation from the approved plan is made in the construction or if the work is started before approval of plans I shall give immediate intimation, thereof to you.

Yours Obediently,

()

Licensed Architect.

License No.

Address:

.....

.....

FORM "B"
KARACHI MUNICIPAL CORPORATION
(BUILDING CONTROL DEPARTMENT)

Karachi,

(Date of delivery at KMC)

To,
The Building (Control)
Karachi Municipal Corporation,
Karachi.
Dear Sir,

I hereby give you notice of completion of Building/Additions and alterations in the building on Plot No.
and of drainage and water arrangement therein, and apply for your permission to occupy and let occupy the said building.

The said work has been carried in accordance with the Building Plans approved under your No. KMC/AC./BP.
Dated (Strike if this para is in-applicable).

Yours faithfully,

Applicant.

Karachi the 197

Address

ARCHITECT CERTIFICATE

I hereby certify that the Building/Additions & Alterations in the building on Plot No. has/have been completed under my supervision and to my satisfaction in accordance with the building plans approved under the KMC/KDA No. AC./BP. Dated Strike of whatever is in applicable).

Licensed Architect
License No
Address:

KARACHI MUNICIPAL CORPORATION
(Building Control) Bye-Laws, 1975
Works Carried out Without Permission

To,
The Karachi Municipal Corporation,
Karachi.

Dear Sir,

Whereas I have constructed.....

.....
.....
on Plot No——as shown on the Plans attached herewith without your prior permission:

Whereas I have made deviations from the Building Plans approved under your No——dated——in the course of construction of the Building/alterations and additions to the Building on Plot No——as shown on the Plans attached herewith:

Whereas I am willing to make any alterations required to be made in the said structure so as to make it consistent with the provisions of the K. M. C. Building Control, Bye-Laws, 1975.

It is, therefore, requested that the unauthorised and offensive nature of the said structure may be condoned, the said plans may be approved and permission to occupy the said Building may be granted.

(Delete whatever is inapplicable)

Yours faithfully

(Owner)

Address-----

Karachi-----

To,

The Karachi Municipal Corporation
Karachi

Dear Sirs,

I hereby certify that the existing structure on Plot No-----is consistent with the provisions of the Sind People's Local Government Ordinance, 1972 and bye-laws framed thereunder:

And I further certify that the said existing structure has been fully and correctly shown on the Plan submitted by-----along with those which have been prepared by me.

Yours faithfully

Karachi-----
(Date)

Licensed Architect-----
Licence No-----

To,

The Karachi Municipal Corporation,
Karachi,

Dear Sirs,

I hereby inform you that the first course of plinth of my building,

on Plot No

Survey Sheet.....

Quarter

has been laid. You are, therefore, requested to depute an officer to verify the building line so as to enable me to carry on my building work.

Yours faithfully,

(Owner)

Karachi.....
(dated)

Address :.....
.....

SCHEDULE 2
(See Bye - Law 59)
CALCULATION OF LOADING

1. (a) In the calculating dead load the unit weight of the materials shall be deemed to be those specified in the table below :

TABLE I

Weights of Materials	
Earth (in natural state or rammed)	112 lbs. per cubic ft.
Sand (wet) "	125 " " "
Gravel "	120 " " "
Granite in masonry	165 " " "
Brick work in cement mortar	120 " " "
Concrete (mass)	144 " " "
Concrete (reinforced)	150 " " "
Timber	50 " " "
Cement plaster 1" thick	10 lbs. per sq. ft.
Class per 1" thickness	14 " " "
Asbestos Cement sheeting	4 " " "
18 Gauge galy. Iron sheeting with bolts	3 " " "

Other materials not specified above shall follow the values set out in

B. S. S. No. 648

- (b) The dead load of any partitions, thereof the positions are not definitely located in the design of the building, shall be deemed to be a uniformly distributed load per square foot of the floor (on which the partitions are to be erected of not less than 20 lbs. per square foot or the actual calculated load whichever is the greater.

Super-
imposed
Load

2. In all cases the superimposed loads to be provided for shall be as specified in Table II and for slabs forming part of and for beams supporting such floors, roofs, stairs and landings shall be either—
—the loads specified in the third column of that Table; or
—the loads specified in the fourth column or the fifth column (as the case may be) of that Table; which ever shall be the heaviest.

TABLE II
Minimum Superimposed Loads

In this Table, reference to a floor includes a reference to any part of that floor to be used as a corridor and "slabs" includes beams and ribs spaced not further apart than three feet between centres and "beams" means all other beams and ribs.

Class	Types of floors	Pounds per Sq. ft. of floor area	Slabs pounds Uniformly distributed over the span per ft. width	Beams pounds uniformly dis- tributed over span*
(1)	(2)	(3)	(4)	(5)
1.	Floors in dwelling houses of not more than two storeys designed for one occupation.	30	240	1,920
2.	Floors (other than those of Class No. (1) for residential purposes including dwelling houses of more than one occupation, tenements, hospitals wards, bedrooms and private sitting rooms in hostels, dormitories.	40	320	2,560
3.	Office floors above the entrance floors of light workrooms without storage.	50	400	3,200
4.	Floors of banking halls; Office entrance floors and office floors below entrance floor; floors classrooms in schools.	60	480	3,840
5.	Shop floors used for the display and sale of merchandise; workrooms generally; garages for vehicles not exceeding 2½ tons gross weight; places of assembly fixed seating; churches chapels; restaurants, circulation space in machinery halls, power stations, etc., where not occupied by plant or equipment	80	640	5,120

TABLE II (Contd.)

Class	Types of floors	Pounds per Sq. ft. of floor area	Slabs pounds Uniformly distributed over the span per ft. width	Beams pounds uniformly distributed over span
(1)	(2)	(3)	(4)	(5)
6.	Floors of warehouses, workshops, factories and other buildings or buildings of similar category for lightweight loads; office floors for storage and filling purposes; places of assembly without fixed seating, including public rooms in hotels, dance halls, etc.	100	800	6,400
7.	Floors of warehouses, workshops, factories and other buildings or parts of buildings of similar category for medium-weight loads, floors of garages for vehicles not exceeding 4 tons gross weight.	150	For garage floors only 1.5 times the maximum wheel load but not less than 2,000 lbs. considered to be distributed over a floor area 2 ft. 6 in. square.	
8.	Floors of warehouses, workshops, factories and other buildings or parts of buildings of similar category for heavy weight loads; floors of book stores and stationery stores; roofs and payments lights over basements projecting under the public foot path.	200	...	...
9.	Flat roofs.	30	240	1,920

TABLE II (Contd.)

Class No.	Types of floor	Pounds per sq. ft. of floor area	Slabs pounds Uniformly distributed over the span per ft. width	Beams pounds uniformly distributed over span
(1)	(2)	(3)	(4)	(5)
10.	Pitched roofs (where no access is provided to the roof)	15	...	...
11.	Stairs and landings (lb. per sq. ft. of area measured horizontally)			
	(a) Used in connection with floors of Class No. 2—	30	...	...
	(b) Used in connection with floors of Class No. 2—	60	...	...
	(c) Used in connection with floor of any other classes	100	...	...

3. (a) In calculating the total load on any column, pier, wall or foundation the minimum super imposed loads for every floor specified in Table II, may be deemed to be subject to the reductions specified in Table III

TABLE III

Reductions of Minimum Super Imposed Loads.

Number of floors carried	Percentage reduction of Minimum superimposed load
1	0
2	10
3	20
4	30
5 or more	40

(b) The reductions specified in sub-paragraph (a) of this paragraph shall not apply with respect to:

—the floors of factories and workshop whereof the minimum superimposed load is less than 150 lbs per sq foot:

—the floors of warehouses, garages and any floor used for storage purposes.

(c) No Building or part of a building shall with respect to any moving load, be deemed to be capable of safely sustaining and transmitting same, unless all proper provision to the satisfaction of the Authority has been made for all dynamic effects.

Winding Loading 4. Wind loading on a building shall be calculated on the basis of the recommendations of British Code of Practice CP 3, Code of Functional Requirements of Buildings, Chapter V, Loading.

SCHEDULE 3

(See Bye-Law 101)

PERIODS OF FIRE RESISTANCE FOR CERTAIN ELEMENTS OF CONSTRUCTION

TABLE No. A (1)

Walls and Partitions

In this Table :-

Class 1: Aggregate means foamed slag, pumice, blast furnace slag, crushed brick and clay products, including expanded clay, well burned clinker, crushed limestone.

Class 2: Aggregate means flint, gravel, granite and all crushed natural stones other than limestone.

Construction and Materials (1)	Minimum thickness in inches (excluding plaster) for period of				
	6 hrs (2)	4 hrs (3)	2 hrs (4)	1 hrs (5)	1/2 hrs (6)
SOLID CONSTRUCTION:					
shall Bricks of clay, concrete or sand lime : No Plaster ...	8 ₂	8 ₁ * ²	8 ₁ * ²	4	4
Concrete Blocks:					
Class 1 Aggregate :					
No Plaster ...	...	...	4	3	2 ₁
Plastered at least 1/2 inch thick on each side ...	...	...	4	2 ₁	2
Class 2 Aggregate :					
No Plaster ...	...	...	...	4	3
Plastered at least 1/2 inch thick on each side ...	...	...	4	3	2
Gypsum blocks:					
No Plaster ...	...	...	4	3	2
Plastered at least 1/2 inch thick on each side ...	...	...	3	2	2
Wood Wool Slabs:					
Plastered at least 1/2 inch thick on each side ...	...	...	3	2	2

on basis
Code
loading.

*Where plastered at least 1/2 inch thick on each side with gypsum/vermiculite plaster not leaner than 1:2 and where the wall does not exceed 10 feet either in height or length, the thickness for this period may be 4 inches.

**Where plastered at least 1/2 inches thick on each side and where the wall does not exceed 10 feet either in height or length, the thickness for this period may be 4 inches.

TABLE A (1) - (Contd).

Construction and Materials (1)	Minimum thickness in inches (excluding plaster) for period of				
	6 hours (2)	4 hours (3)	2 hours (4)	1 hours (5)	$\frac{1}{2}$ hours (6)
Solid Construction-Contd.					
Reinforced concrete :					
Aggregate with reinforn cement (in two layers in walls over 5 inches in thickness) in two directions spaced not further apart than 6 inch centres, the volume of which is not less than 0.2 per cent of the volume of the concrete, with minimum concrete cover of 1 inch	9	7	4	3	3
Plaster Board :					
Supported at top and bottom edges in steel channels and plastered on each side at least 5/8 inch thickness with gypsum plaster	-	-	-	2	-
Glass Bricks :					
In panels not exceeding 40 square feet in area with expansion joints not less than 1/10 inch per foot width of the panel at each side of the panel, not less than 1/10 inch per foot of the height of the panel at the top of the panel	-	-	-	4	-

TABLE (1) - (Contd)

Construction and Materials (1)	Minimum thickness in inches (including plaster) for period				
	6 hours (2)	4 hours (3)	2 hours (4)	(1) hours (5)	$\frac{1}{2}$ hours (6)
Hollow Block Construction :					
Clay Blocks :-					
Plastered at least $\frac{1}{2}$ inch thick on each side and shells not less than $\frac{3}{8}$ inch thick-	-	-	-	-	-
1 cell in each block and each block not less than 50 per cent solid	-	-	-	4	3
1 cell in each block and each block not less than 30 per cent solid	-	-	-	6	-
2 Cells in each block and each block not less than 50 per cent solid	-	-	-	4	-
2 cells in each block and each block not less than 30 per cent solid	-	-	-	6	-
Concrete Blocks					
Plastered at least $\frac{1}{2}$ inch thick on each side and 1 cell in wall thickness :					
Class 1 Aggregate	-	8 $\frac{1}{2}$	4 $\frac{1}{2}$	3	2 $\frac{1}{2}$
Class 2 Aggregate	-	-	-	8 $\frac{1}{2}$	3
Hollow Block Construction-Gypsum Blocks :					
Not less than 70 per cent solid :					
No plaster	-	-	4	3	2
Plastered at least $\frac{1}{2}$ inch thick on each side	-	-	3	2	2

TABLE A (2)
Hollow Stud Partitions

Construction and Materials (1)	Minimum thickness of Plaster in inches on each face for period of			
	4 hours (2)	2 hours (3)	1 hour (4)	1/2 hour (5)
Steel or Timber Studding :				
Plaster on metal or timber lathing :				
Portland cement plaster, portland cement lime plaster or gypsum plaster	-	-	1/2	1/4
Plaster board with or without gypsum plaster :				
3/8 - inch thick plaster board on each side	-	-	-	3/16 (neat single coat)
3/8 - inch thick perforated plaster board on each side	-	-	1/2	
Two 3/8 - inch thick plaster boards on each side	-	-	Nil	
1/2 - inch thick plaster board on each side	-	-	3/8	Nil
3/4 - inch thick plaster board on each side	-	-	Nil	-

TABLE B
FLOORS

Construction and Materials (i)	Minimum thickness inches for				
	Period of 4 hours (2)	Period of 2 hours (3)	Period of 1 hour (4)	Period of 1/2 hours (5)	Period specified for small hours (6)
FILLER JOINT CONSTRUCTION					
Thickness of concrete —	6	5	4	3 1/2	—
Concrete cover on bottom of joist —	1	1	1/2	1/2	—
Solid Reinforced Concrete Construction: (including flat slab construction and floors constructed of pre-cast inverted "U" channel or T-sections, without a ceiling or soffit)					
Thickness of concrete —	6	5	4	3 1/2	—
Concrete cover to reinforcement	1	1/2	1/2	1/2	—
HOLLOW BLOCK FLOOR CONSTRUCTION: (including floors constructed of pre-cast concrete units box-section or I-section):					
Aggregate thickness of non-inflammable material					
(excluding ceiling finishes, if any)					
Concrete cover to reinforcement —	5	3 1/2	3	2 1/2	—
	1	1/2	1/2	7	—

TABLE B (Contd.)

Construction and Materials (1)	Minimum thickness inches for				
	Period of 4 hours (2)	Period of 2 hours (3)	Period of 1 hours (4)	Period of 1/2 hours (5)	Period specified for small hours (6)
Structural Timber Construction:					
(A) Plain edge boarding on timber joists not less than 1 1/2 inches wide with ceiling of :-					
(i) Timber lath and plaster Thickness of plaster	—	—	—	—	5/8
(ii) Timber lath plaster with plaster of minimum thickness of 5/8 inch covered on underside with plaster-board of thickness of plaster	—	—	—	1/2	—
(iii) Metal lath and plaster Thickness of plaster	—	—	—	5/8	—
(iv) One layer of plaster-board of thickness	—	—	—	—	1/2
(v) One layer of plaster-board of minimum thickness of 3/8 inch finished with gypsum plaster of thickness.	—	—	—	—	1/2
(vi) One layer of plaster-board of 1/2 inch finished with gypsum plaster of thickness.	—	—	—	1/2	—
(vii) Two layers of plaster board of total thickness.	—	—	—	1	1/2

TABLE B (Contd.)

Construction and Materials (1)	Minimum thickness in inches for				
	Period of 4 hours (2)	Period of 2 hours (3)	Period of 1 hours (4)	Period of 1/2 hours (5)	Period specified for small hours (6)
Structural Timber Construction Contd.					
(viii) One layer of insulating board of minimum thickness of 1/2 inch finished with gypsum plaster of thickness.	—	—	—	—	1/2
(ix) Wood-wool slab 1 inch thick finished with gypsum plaster of thickness	—	—	—	3/16	—
(B) Tongued and grooved boarding not less than 1/2 inch (nominal) thickness on timber joists not less than 1 1/2 inches wide with ceiling of :-					
(i) Timber lath and plaster, Thickness of plaster	—	—	—	—	5/8
(ii) Thickness lath and plaster with plaster of minimum thickness of 5/8 inch covered on underside with plaster board of thickness	—	—	—	3/8	—
(iii) Metal lath and plaster thickness of plaster	—	—	—	5/8	—
(iv) One layer of plaster-board of thickness	—	—	—	—	3/8

TABLE B (Contd.)

Construction and Materials (1)	Minimum thickness in inches for				
	Period of 4 hours (2)	Period of 2 hours (3)	Period of 1 hour (4)	Period of 9 hours (5)	Period specified for small houses (6)
(v) One layer of plasterboard of minimum thickness of $\frac{1}{2}$ inch finished with gypsum plaster of thickness.	—	—	—	3/16	—
(vi) Two layers of plasterboard of total thickness.	—	—	—	7/8	—
(vii) One layer of insulating board of minimum thickness of $\frac{1}{2}$ inch finished with gypsum plaster of thickness	—	—	—	3/16	—
(viii) Wood-wool slab 1 inch thick finished with gypsum plaster of thickness.	—	—	—	3/16	—
(C) Tongued and grooved boarding not less than 1 inch (nominal) thickness on timber joists not less than 7 inches deep by 2 inches wide with ceiling of :-					
(i) Timber lath and plaster Thickness of plaster.	—	—	—	5/8	—
(ii) Metal lath and plaster Thickness of plaster.	—	—	—	5/8	—

TABLE B - (Contd.)

Construction and Material (1)	Minimum thickness in inches for				
	period of 4 hours (2)	period of 2 hours (3)	period of 1 hour (4)	period of 9 hours (5)	period specified for small houses (6)
Structural Timber Construction (Contd.)					
(iii) One layer of plasterboard of thickness ...	—	—	—	—	3/8
(iv) One layer of plasterboard of minimum thickness of $\frac{3}{8}$ inch finished with gypsum plaster of thickness ...	—	—	—	$\frac{1}{2}$	—
(v) One layer of plasterboard of minimum thickness of $\frac{1}{2}$ inch of thickness ...	—	—	—	3/16	—
(vi) Two layers of plasterboard of total thickness	—	—	—	3/4	—
(vii) One layer of insulating of thickness ...	—	—	—	—	$\frac{1}{2}$
(viii) One layer of insulating board of minimum thickness of $\frac{1}{2}$ inch finished with gypsum plaster of thickness ...	—	—	—	$\frac{1}{2}$	—
(ix) wood wool slab 1 inch thick finished with gypsum plaster of thickness ...	—	—	—	3/16	—

TABLE C
Steel Column and Beams

In this Table:

SOLID PROTECTION means casing which is bedded close up the steel without any intervening cavities and with all joints in that casing made full and solid.

HOLLOW PROTECTION means that there is a void between the protective material and the steel. All hollow protection to columns shall be effectively sealed at floor level.

REINFORCEMENT. Where reinforcement is required in this Table, that reinforcement shall consist of steel binding wire not less than No. 13 S. W. G. in thickness, or a steel mesh weighing not less than 1 lb. square yards. In concrete protection the spacing of that reinforcement shall not exceed 12 inches in any direction.

Construction and Materials	Minimum thickness of protection			
	4 hours	2 hours	1 hour	1/2 hours
Solid Protection				
Columns				
Reinforced concrete	2 1/2*	2*	1	1
Solid bricks of burnt clay or sand lime	3	2	2	2
Solid block reinforced every horizontal joint				
(i) Foamed slab or pumice concrete	2 1/2	2	2	2
(iii) Gypsum blocks	2	2	2	2
Sprayed asbestos	2	1	1/2	1/2
Beams				
Reinforced concrete	2 1/2**	2**	1	1
Sprayed asbestos	2	1	1/2	1/2
Hollow Protection				
Columns				
Solid bricks of burnt clay or sand lime reinforced in every horizontal joint	4 1/2	3	2	2
Solid bricks of foamed slag or pumice concrete or gypsum reinforced in every horizontal joint	3	2	2	2
Moulded asbestos bound in position with nicrome wire not less than No. 16 S. W. G. in thickness, the wires to be sunk not less than 1/8 inch deep in the outer surface of the asbestos and the grooves and all joints in the asbestos to be filled with refractory cement	2 1/2	1 1/2	1	1

*The thickness of protection on any projecting cleat, projecting rivet head and the like need not exceed 1 inch.

**The thickness of protection on the upper surface of the upper flange of an internal beam, and on any projecting cleat, protecting rivet head and the like need not exceed 1 inch.

TABLE C (Contd.)

Construction and Materials	Minimum thickness of protection in inches for period of			
	4 hours	2 hours	1 hour	1/2 hrs
Hollow Protection-Contd				
Portland cement plaster or Portland cement lime plaster or on metal lathing	—	—	—	3/4
Portland cement plaster or Portland cement lime plaster on metal lathing with reinforcement over rendering coat.	—	—	1	3/4
Gypsum plaster on metal lathing	—	—	7/8	5/8
Gypsum plaster on 3/8-inch gypsum plaster board with No. 16 S.W.G. wire binding at 4 inches pitch	—	—	1	—
Gypsum plaster on 7/8-inch gypsum plaster board with No. 16 S.W.G. wire binding at 4 inches pitch	—	1/2	—	—
Two layers of metal lathing plastered with gypsum plaster on each layer, each	3/4	—	—	—
Precast concrete consisting of 4 volumes of vermiculite to 1 volume of Portland cement, reinforced with expanded metal, wire mesh or with No. 16 S.W.G. wire binding at 4 inches pitch	—	—	1	—
Beams				
Moulded asbestos bound in position with nicrome wire not less than No. 16 S.W.G. in thickness, the wires to be sunk in grooves not less than 3/8-inch deep in the outer surface of the asbestos and the grooves and all joints in the asbestos to be filled with refractory cement	2 1/2	1 1/2	1	1
Portland cement plaster or Portland cement lime plaster on metal lathing	—	—	—	3/4
Portland cement plaster or Portland cement lime plaster on metal lathing with reinforcement over the rendering coat	—	—	1	—
Gypsum plaster on metal lathing	—	7/8	5/8	—
Gypsum plaster on 3/8-inch gypsum plaster board with No. 16 S.W.G. wire binding at 4 inches pitch.	—	—	1/2	—
Gypsum plaster on 3/8 inch gypsum board supported on wood battens	—	—	—	3/4
Gypsum plaster on 7/8-inch gypsum plaster board with No. 16 S.W.G. wire binding at 4 inches pitch.	—	1/2	—	3/4 16 NEAT SINGLE COAT

TABLE C-(Contd).

Construction and Materials	Minimum thickness of protection in inches for period of-			
	4 hours	2 hours	1 hour	$\frac{1}{2}$ hour
Hollow Protection-Contd. Beam-Contd. Precast concrete consisting of 4 volumes of vermiculite to 1 volume of Portland cement reinforced with expanded metal, wire mesh or with No. 16 S.W.G. wire binding at 4 inches pitch.	1.	...

TABLE D
Reinforced Concrete Columns and Beams

Construction and Materials	Minimum overall size of column in inches for period of *			
	4 hours	2 hours	1 hour	$\frac{1}{2}$ hour
Reinforced concrete column		12	10	$\frac{1}{2}$ hour
Reinforced concrete columns with light 2 inch mesh reinforcement placed centrally in the concrete cover to longitudinal reinforcement	12	10	...	...
	Minimum concrete cover to reinforcement in inches for period of			
	4 hours	2 hours	1 hour	$\frac{1}{2}$ hour
Reinforced concrete beams	2 $\frac{1}{2}$	2	1 $\frac{1}{2}$	1

SCHEDULE 4

(See Bye-law 59 (3))

The following British Codes of Practice and British Standard Specifications have been referred to in these buildings Bye-laws.

- CP 3 Code of Function Requirements of Buildings Chapter V Loading
- CP111 Structural recommendations for load bearing walls.
- CP112 The structural use of timber in buildings.
- CP113 The structural use of steel building.
- CP114 The structural use of normal reinforced concrete in building.
- BSS187 Bricks
- BSS449 The use of structural steel in building.
- BSS476 Fire tests on building materials.
- BSS648 Weights of materials.
- BSS747 Asbestos based roofing felt.

SCHEDULE 5
RATES OF SCRUTINY FEES

(See Bye-law 16 (1))

1. The scrutiny fee shall be charged on the cost of construction for which the plan is scrutinised in accordance with the following schedule of rates :-

Cost of Building		Rate of fee per Rs. 1,000/- of the cost of Building
from Rs.	up to Rs.	
	5,000/-	Nil
5,001/-	10,000/-	Rs. 0.50
10,001/-	20,000/-	" 0.75
20,001/-	50,000/-	" 1.00
50,001/-	1,00,000/-	" 1.50
1,00,001/-	Any amount	" 2.00

2. The cost of construction for the purpose of charging the fee shall be assessed at the rate of 20/-per square foot of the area shown on plans as built-up on the ground floor and at the rate of Rs. 18/- per square foot of the area shown on the plans as built-up on the upper floors.

3. The cost of Compound wall will be included at Rs. 16/-per Rft.

(Sd/- MAZHAR RAFI)
Secretary to Government of Sind,
Housing, Town Planning & Local Govt. Deptt.

Karachi dated the 22 May, 1975

No. MC-1/8 (27)/72.

A copy is forwarded to :-

1. The Administrator, Karachi Municipal Corporation Karachi.
2. The Superintendent, Sind Government Printing and Stationery, Karachi for publishing in next issue of the Extra Ordinary Sind Govt. Gazettee and supply 50 copies thereof this Department.

(Sd/- MOHSIN DINA)
Section Officer-IV
for Secretary to Govt. of Sind