

# BUILDING BYELAWS

MADE UNDER THE PUBLIC HEALTH ACT, 1936

BY THE

RURAL DISTRICT COUNCIL  
OF COWBRIDGE

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### PART I—INTRODUCTORY.

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#### INTERPRETATION OF TERMS.

1. In these byelaws, unless the context otherwise requires,—
  - “base”, applied to a wall, means the under side of that part of the wall which immediately rests upon the footings or foundation or upon any bressummer or other structure by which such wall is carried;
  - “bressummer” means a beam or girder which carries a wall;
  - “building of the warehouse class” means a warehouse or factory;
  - “council” means the Rural District Council of COWBRIDGE;
  - “dead load” means the weight of all walls, floors, roofs, partitions and other like permanent construction;
  - “district” means the Rural District of COWBRIDGE;
  - “domestic building” means a dwelling-house, shop, office building or any other building which is neither a public building nor a building of the warehouse class;



“external wall” means an outer wall of a building not being a party wall, even though adjoining a wall of another building;

“height”, applied to a building, means the height of the building measured from the mean level of the ground adjoining the outside of the external walls to the level of *half* the vertical height of the roof, or to the top of the walls or of the parapet, if any, whichever is the higher;

“mortar” means cement mortar, cement-lime mortar, lime mortar or black mortar;

“party wall” means—

(1) a wall forming part of a building and used or constructed to be used for separation of adjoining buildings belonging to different owners, or occupied or constructed or adapted to be occupied by different persons; or

(2) a wall forming part of a building and standing, to a greater extent than the projection of the footings, on lands of different owners;

“public building” means a building used or constructed or adapted to be used, either ordinarily or occasionally, as a church, chapel or other place of public worship, or as a hospital, public institution, college or school (not being merely a dwelling-house so used), theatre, public hall, public concert room, public ballroom, public lecture room or public exhibition room, or as a public place of assembly for persons admitted thereto, by tickets or otherwise, or used or constructed or adapted to be used, either ordinarily or occasionally, for any other public purpose;

“slenderness ratio”, applied to a wall, means the number resulting from dividing the height of the wall by its least overall thickness, and for this purpose the height shall be the clear distance between lateral supports;

“slop sink” means a sink intended for receiving solid or liquid filth;

“superimposed load” means all loads other than the dead load.

#### APPLICATION OF BYELAWS.

2.—(1) A person who erects a building shall comply with <sup>Buildings.</sup> the requirements of these byelaws, and for the purposes of these byelaws any of the following operations shall be deemed to be the erection of a building:—

(a) the re-erection of any building or part of a building when an outer wall of that building or, as the case may be, that part of a building has been pulled down, or burnt down, to within *ten feet* of the surface of the ground adjoining the lowest storey of the building or of that part of the building;

(b) the re-erection of any frame building or part of a frame building when that building or part of a building has been so far pulled down, or burnt down, as to leave only the framework of the lowest storey of the building or of that part of the building;

(c) the roofing over of any space between walls or buildings.

(2) A person who executes work or instals fittings in con- <sup>Works and fittings.</sup> nection with a building shall comply with the requirements of byelaws 8 to 18 (inclusive) (as to materials) so far as they are applicable, of Part III of these byelaws (which relates to works and fittings), and of Part IV of these byelaws so far as applicable to such matters.

(3) Part II of these byelaws (which relates to buildings), and Part IV of these byelaws so far as applicable to buildings, shall <sup>Alterations and extensions.</sup> apply to structural alterations or extensions of a building, and a building so far as affected by alterations and extensions, whether the building is erected before or after the date of the operation of these byelaws, and a person making any such structural alteration or extension shall comply with the requirements of these byelaws accordingly.

(4) Part II of these byelaws (which relates to buildings), and Part IV of these byelaws so far as applicable to buildings, shall apply to a building or a part of a building, whether erected before or after the date of the operation of these byelaws, in a case where a material change within the meaning of section 62 of the Public Health Act, 1936, takes place in the purposes for which the building or, <sup>Material change of user.</sup> as the case may be, a part of the building is used, and a person making such material change shall



comply with the byelaws relating to buildings erected for the purpose for which the said building or part of the building is intended to be used.

(5) The provisions of paragraphs (3) and (4) of this byelaw shall not impose requirements in relation to a building which would not have been required if the building had been originally erected, as altered or extended, after the date of the operation of these byelaws.

#### EXEMPTIONS.

3. The following buildings shall be exempt from the operation of these byelaws:—

(1) a building (not being a dwelling-house) erected in connection with any mine, and used or to be used exclusively for working of the mine; Mine buildings.

(2) a moveable dwelling to which section 269 of the Public Health Act, 1936, applies; Moveable dwellings.

(3) a building constructed to be used exclusively for the accommodation of hop-pickers and other persons engaged temporarily in picking, gathering or lifting fruit, flowers, bulbs, roots or vegetables. Buildings for hop-pickers, etc.

4. The following byelaws, except byelaw 122 so far as it requires notice to be given of the intention to erect buildings, the submission of written particulars and notice of a material change of user, shall not apply to—

(1) a building constructed to be used exclusively as a poultry-house or aviary, if it is wholly detached and distant not less than *ten feet* from every building other than a building specified in this byelaw or in byelaws 5 or 6; Poultry-houses and aviaries.

(2) a building constructed to be used exclusively as a plant-house, greenhouse, conservatory, orchard-house, summer-house, boat-house not intended for the accommodation of a motor boat, coal-shed, garden tool-house, potting shed or cycle-shed, if it is either— Green-houses, coal-sheds, etc.

(a) not more than *one thousand cubic feet* in capacity; or

(b) wholly detached and distant not less than *ten feet* from every building other than a building specified in this byelaw or in byelaws 5 or 6;

(3) a building constructed to be used only in connection with and during the construction, alteration or repair of any building or other work. Builders sheds, etc.

5. The following byelaws, except byelaw 79 (as to short-lived materials) and byelaw 122 so far as it requires notice to be given of intention to erect buildings, the submission of written particulars, the delivery of plans, and notice of a material change of user, shall not apply to—

(1) a building constructed to be used exclusively as a motor garage or boat-house intended for the accommodation of a motor boat, if it does not exceed *three hundred square feet* in floor area and either— Garages and motor-boat houses.

(a) the walls and floor (if any) are constructed of incombustible material, and the roof is constructed of or externally covered or internally lined with fire-resisting material; or

(b) it is not fitted with any form of heating apparatus designed or adapted for the combustion of fuel or gas within the building, and is wholly detached and distant not less than *ten feet* from every building other than a building specified in this byelaw or in byelaws 4 or 6, and (where the walls and roof are not constructed of or externally covered or internally lined with fire resisting material) from the nearest boundary of any adjoining lands or premises;

(2) a building which is not a public building, and is not constructed to be used either wholly or partly for human habitation, or as a place of habitual employment for any person in any manufacture, trade or business, if it— Buildings for storage, agricultural buildings, etc.

(a) does not exceed in height *thirty feet* and does not exceed in capacity *one hundred and twenty-five thousand cubic feet*, and is distant not less than *eight feet* from any street, and not less than *thirty feet* from any building other than a building exempt under this byelaw or byelaws 4 or 6, and from the nearest boundary of any adjoining lands or premises;

(b) exceeds either in height or capacity, but not in both, the figures specified in the last sub-paragraph, and is distant not less than *twenty feet* from any street, and not less than *fifty feet* from any building



other than a building exempt under this byelaw or byelaws 4 or 6, and from the nearest boundary of any adjoining lands or premises;

(c) exceeds both in height and capacity the figures specified in sub-paragraph (a) of this paragraph, and is distant not less than *thirty feet* from any street, and not less than *sixty feet* from any building other than a building exempt under this byelaw or byelaws 4 or 6, and from the nearest boundary of any adjoining lands or premises.

6. Part II of these byelaws, except byelaw 79 (as to short-lived materials), shall not apply to—

(1) a building constructed to be used by day only for private occupation and not for any trade or business, which does not exceed *one thousand cubic feet* in capacity; Buildings for private occupation by day.

(2) a building constructed to be used, for a limited period only, in connection with the sale or letting of buildings or building plots in the course of the development of an estate and erected on or in close proximity to the estate. Temporary estate, etc., offices.

7. The byelaws with respect to sites, foundations and walls shall not apply to a building which is not constructed to be used either wholly or partly for human habitation if— One storey buildings not for human habitation.

(1) the building comprises not more than *one* storey; and

(2) the height of the building does not exceed *thirty feet*; and

(3) the capacity of the building does not exceed *eighty thousand cubic feet*; and

(4) the external walls rest on a suitable and sufficient foundation; and

(5) the external walls are so constructed as to provide a suitable degree of fire-resistance; and

(6) the external walls are constructed of sufficient strength to secure due stability; and

(7) the building is distant from the boundary of any adjoining lands or premises (not being a street) not less than—

(a) *ten feet*, where it does not exceed *two thousand cubic feet* in capacity;

(b) *fifteen feet*, where it exceeds *two thousand cubic feet* but does not exceed *fifteen thousand cubic feet* in capacity;

(c) *thirty feet*, where it exceeds *fifteen thousand cubic feet* in capacity.

## PART II—BUILDINGS.

### MATERIALS USED IN THE CONSTRUCTION OF BUILDINGS.

8.—(1) Every brick and block in a structural wall (including a pier or chimney forming part of the wall) shall be composed of hard well-burned clay or terra-cotta, natural or cast stone, concrete, calcium silicate (in compliance with Class A of British Standard Specification No. 187—1934), or other incombustible material of like hardness and durability, or a combination thereof, and shall be of such size, shape and surface as to permit of proper bonding and jointing. Bricks and blocks.

(2) Every such brick and block of concrete shall be suitably matured before it is used.

(3) The volume of solid material in every such brick and block formed with cavities, hollows or perforations (other than an air-brick or a ventilating block) shall be not less than *one-half* of the total volume of the brick or block, and the solid material shall be so disposed that its aggregate width (measured horizontally at right angles to the face of the brick or block as laid) is nowhere less than *one-third* of the width of the brick or block.

9. Cement shall be either, but not a mixture of,— Cement.

(1) cement complying with British Standard Specification No. 12—1931 for Portland Cement; or

(2) cement complying with British Standard Specification No. 146—1932 for Portland-Blastfurnace Cement; or

(3) High Alumina cement complying with the requirements of British Standard Specification No. 12—1931, as regards tensile strength, soundness and setting time, and of such a fineness that the residue on a No. 170 British Standard sieve does not exceed *twelve per cent.*; or



(4) any other cement not inferior in strength, soundness, durability and suitability to that first mentioned above.

10. Sand used for mortar shall be clean, well-graded, and substantially free from pebbles and large particles and material which will pass through a No. 100 British Standard sieve, and shall consist of —

- (1) hard natural sand containing not more than *six per cent.* of loam or clay; or
- (2) crushed hard rock; or
- (3) crushed brick free from old plaster; or
- (4) crushed hard furnace clinker free from dust; or
- (5) other not less suitable material.

11. Water shall be clean and free from deleterious matter.

12.—(1) Cement mortar shall be composed of cement and sand in the proportion of *one part* of cement to not less than *two* nor more than *four parts* of sand measured by volume of the materials when dry.

(2) Cement-lime mortar shall be composed of Portland cement or Portland-Blastfurnace cement, and either high calcium lime or true moderately hydraulic lime (either in the form of properly slaked lime putty of normal consistence or sound dry hydrate), and sand. The proportion of cement to lime shall be *one part* of cement to not less than *one* nor more than *three parts* of lime measured by volume of dry cement, dry hydrate or lime putty respectively: the proportion of the mixture of cement and lime to sand shall be *one part* of the mixture to not less than *two* nor more than *four parts* of sand measured by volume.

(3) Lime mortar shall be composed of sand and either —

(a) high calcium lime, used either as putty of normal consistence from sound hydrated lime or as sound matured putty of normal consistence from properly run quicklime, in the proportion of *one part* of putty to not less than *two* nor more than *four parts* of sand measured by volume; or

(b) magnesian lime, properly slaked, in the proportion of *one part* of lump quicklime to not less than *two* nor more than *three parts* of sand, measured by volume; or

(c) true moderately hydraulic lime, used as sound dry hydrated lime or properly slaked quicklime, in the proportion of *one part* of hydrated lime or slaked quicklime to not less than *two* nor more than *four parts* of sand, measured by volume; or

(d) eminently hydraulic (lias) lime, properly slaked, in the proportion of *one part* of lime to not less than *two* nor more than *four parts* of sand, measured by volume of the materials when dry.

(4) Black mortar shall consist of high calcium lime or hydraulic lime and a filler consisting of clean furnace clinkers reasonably free from unburnt coal, soot or flue refuse, with or without sand. The lime shall be used either as sound dry hydrated lime run to putty of normal consistence, or as properly slaked quicklime run to sound putty of normal consistence, or as fresh quicklime. The lime shall be thoroughly and finely ground with the filler and with water in a suitable mill. The mortar shall be composed of *one part* of lime putty to not less than *two* nor more than *four parts* of the filler measured by volume, or *one part* of fresh quicklime to not less than *four* nor more than *eight parts* of the filler measured by volume.

13.—(1) (a) Aggregate for reinforced concrete shall be natural siliceous sand or gravel, crushed natural stone, broken brick or suitable blastfurnace slag. It shall be hard, strong and durable and shall be clean and free from clay films and other adherent coatings. It shall contain no coal or coal residues (such as clinker, ashes, coke-breeze, pan-breeze or slag) copper slag, forge breeze, dross, soluble sulphates (such as gypsum), or porous or other materials, in so far as any of such materials are liable to reduce the strength or durability of the concrete or to attack the reinforcement;

(b) fine aggregate shall be of such a size that it will pass through a *three-sixteenths-of-an-inch* mesh. Not more than *three per cent.* by weight shall pass through a No. 100 British Standard sieve;

(c) coarse aggregate shall be of such a size that it will not pass through a *three-sixteenths-of-an-inch* mesh. Where bars are used, the maximum size of coarse aggregate shall be *three-quarters* of the cover or of the minimum clear lateral distance between any two reinforcing bars



whichever is the less, except where the minimum clear lateral distance between reinforcing bars is less than *one inch*, in which case the maximum size shall be *one-quarter-of-an-inch* less than such distance. Where expanded metal is used, the maximum size of coarse aggregate shall be *three-quarters* of the clear mesh opening on the shortway of the mesh;

(d) the grading between the limits specified in the last preceding sub-paragraph shall be such as to produce a dense concrete of a consistence that will work readily into position without segregation and without the use of an excessive amount of water.

(2) Aggregate for plain concrete shall consist of a proper grading of suitable sizes of such materials as are specified in paragraph (1) of this byelaw, or of other material of like suitability. Aggregate for plain concrete.

(3) (a) Steel reinforcement shall comply with the requirements of British Standard Specification No. 785—1938. Expanded metal shall conform with British Standard Specification No. 405—1930; Reinforcement.

(b) all metal for reinforcement shall, immediately before being surrounded by the concrete, be free from loose mill scale, loose rust, oil, grease, and other matter which will interfere with the proper adhesion of the concrete to the metal.

(4) Cement concrete shall consist of aggregate and cement (mixed with water) in the following proportions:— Proportions of cement and aggregate in cement concrete.

(a) for all load-bearing members in reinforced concrete and for the protective encasement of structural steel and reinforced concrete members—not less than *one hundred and twelve pounds* of cement to every *two-and-a-half cubic feet* of fine aggregate and *five cubic feet* of coarse aggregate, or such proportion of fine aggregate to coarse aggregate as will produce a concrete of a compressive strength not less than *three thousand three hundred and seventy-five pounds per square inch* when tested in accordance with the standard method of making preliminary cube tests of concrete set out in Appendix VII to the Report of the Reinforced Concrete Structures Committee of the Building Research Board, dated July, 1933;

(b) for covering the site of a building—not less than

*one hundred and twelve pounds* of cement to every *three-and-a-half-cubic feet* of fine aggregate and *seven cubic feet* of coarse aggregate;

(c) for foundations, the support or protection of drains, and similar purposes—not less than *one hundred and twelve pounds* of cement to every *fifteen cubic feet* of coarse and fine aggregate in combination.

(5) (a) The quantity of water for reinforced concrete shall be sufficient only to produce a consistence to enable the concrete to surround, cover, embed and grip adequately all the reinforcement; Mixing and depositing of cement concrete.

(b) the quantity of water for making plain concrete shall be sufficient only to produce a concrete mixture of a uniform colour and to ensure that the concrete shall be suitable for its purpose;

(c) the concrete shall be so mixed as to secure uniform distribution of the materials throughout the mixture;

(d) the concrete shall be deposited without segregation of the materials, and all voids shall be filled by punning, rodding, vibrating or other means of consolidation after the concrete has been deposited and before it has begun to set;

(e) where formwork is employed, it shall be sufficiently rigid to retain the concrete in position and shape during depositing and consolidation;

(f) after the concrete has been consolidated and during setting, it shall remain undisturbed and shall be protected from the effect of frost, heat, running water, evaporation, vibration or any other cause which may reduce its strength or tend to form voids in it;

(g) during mixing, depositing and setting, the temperature of the concrete shall not be allowed to fall below *forty degrees Fahrenheit*.

14.—(1) Material used for a damp-proof course shall be durable and impervious to moisture, and when placed in a wall shall be capable of withstanding the dead load of the wall Damp-proof courses.



and all superimposed loads on the wall and all horizontal and inclined forces in such a manner as will not impair the efficiency of the damp-proof course and will not allow such movement of the wall as may lead to instability of any part of the structure.

(2) The requirements of this byelaw shall be deemed to be satisfied by—

(a) two or more courses of slates laid so as to break joint and bedded in cement mortar; or

(b) a layer of sheet lead weighing not less than *four pounds per square foot* completely embedded in lime mortar, any joint being overlapped to the extent of not less than *three inches*; or

(c) a layer of soft-tempered sheet copper weighing not less than *one pound per square foot* bedded in lime mortar or cement mortar or cement-lime mortar, any joint being overlapped to the extent of not less than *three inches*; or

(d) two or more courses of blue bricks or other engineering bricks which are incapable of absorbing more than *three per cent.* of moisture when submerged for *twenty-four hours* after previous drying at *one hundred and five degrees Centigrade*, bedded in cement mortar; or

(e) asphalte, or other bituminous material conforming to British Standard Specification No. 743—1937.

15. The steel in every structural element in a building shall— Structural steel.

(1) as rolled, be not inferior in strength and suitability to steel complying with British Standard Specification No. 15—1936 for Structural Steel; and

(2) be free from loose mill scale, loose rust, and other deleterious matter.

16. Timber shall be of a quality and strength sufficient for its purpose and shall be well-seasoned, sound, and free from rot, worm, beetle and vermin. It shall not contain large, loose or dead knots, splits or other defects to such an extent and so situated in the piece as to render it insufficient in strength or stiffness. Timber.

17. All other materials used in the construction of a building shall be of a suitable nature and quality for the purpose for Other materials.

which they are used and, when necessary, shall be adequately mixed or prepared.

18. All materials used in the construction of a building shall be applied, used or fixed so as adequately to perform the functions for which they are used. Application of all materials.

#### SITES.

19. The subsoil of the site of a building (other than a building of the warehouse class intended to be used wholly or principally for storage or the accommodation of plant) shall, wherever the dampness or position of the site renders the precaution necessary, be effectually drained, or such steps shall be taken by the construction of a layer of impervious material upon the site as will effectually protect the building from damp arising from the subsoil. Drainage of subsoil.

20. The ground surface enclosed within the external walls of a domestic building shall, unless the exceptional condition of the site or exceptional nature of the soil renders this requirement unnecessary, be— Prevention of damp.

(1) properly asphalted; or

(2) covered with a layer of spade-finished cement concrete, at least *six inches* thick, or *four inches* thick if properly laid on a bed of clinker, broken brick or similar material; or

(3) covered in a suitable manner with some not less suitable material.

21. Where the intended site of a building (other than a building of the warehouse class intended to be used wholly or principally for storage or the accommodation of plant) forms or has formed part of a clay-pit, or where by reason of excavation the whole or part of such site requires raising to prevent dampness in the building, the site or the part of the site, as the case may require, shall be raised to an adequate height by the deposit of layers of sound and suitable material, properly consolidated. Elevation of sites.

#### FOUNDATIONS.

22. The foundations of every building shall be— Foundations of buildings.

(1) so constructed as to sustain the combined dead



load of the building and the superimposed load and to transmit those loads to the subsoil in such a manner that the pressure on the subsoil shall not cause such settlement of the building or any part of the building as may impair its stability; and

(2) taken down to such a depth or so constructed as to render the building immune from damage from movements due to seasonal variations in the content of moisture in the ground.

23.—(1) Every structural wall (including a pier forming part of the wall) shall rest upon—

Foundations of structural walls.

(a) solid undisturbed rock; or

(b) a layer of cement concrete of sufficient width and thickness; or

(c) proper footings of sufficient width built directly on suitable ground; or

(d) proper footings built on a layer of cement concrete of sufficient width and thickness; or

(e) proper footings built on a layer of lime concrete of sufficient width and thickness; or

(f) a sufficient raft of cement concrete properly constructed and where necessary suitably reinforced; or

(g) a layer of cement concrete of sufficient width and thickness on suitable piles driven to a proper depth; or

(h) a bressummer of sufficient strength; or

(i) some other not less sufficient substructure as a foundation.

(2) In the case of a domestic building the walls of which are constructed otherwise than with framework, the requirements of sub-paragraphs (b), (c) and (d) of paragraph (1) of this byelaw shall, where the wall is not more than *fifty feet* high and the bearing capacity of the ground under its foundation is not inferior to that of firm clay or coarse sand, be deemed to be satisfied if—

(a) (i) the width of the bottom of the foundation (except where an adjoining wall or pier interferes) is not less than *twelve inches* or not less than *twice* the thickness

of the wall in the lowest storey, whichever is the greater; and

(ii) where there is a pier forming part of the wall, the foundation is carried round the pier on all sides so as to project at least to the same extent as it projects beyond the wall; and

(b) the foundation is situated centrally under the wall or pier (except where an adjoining wall or pier interferes); and

(c) the height from the bottom of the foundation to the base of the wall or pier is not less than *nine inches* or not less than *one and one-third* times the projection of the foundation from the base, whichever is the greater; and

(d) where there are footings of brickwork, the footings—

(i) are built in cement mortar; and

(ii) are either in regular offsets from the face of the wall or pier or in one offset; and

(iii) where they are built directly upon the ground, and the wall is more than *nine inches* thick, have a further course of brickwork at the bottom of the footings; and

(e) where there are footings built upon cement concrete, the thickness of the concrete is not less than *one and one-third* times the projection of the concrete from the footings.

24. A pier which does not form part of a wall shall rest upon one of the foundations specified in paragraph (1) of the last preceding byelaw.

Foundations of piers.

#### WALLS.

25. Byelaws 26 to 53 (as to the construction of walls), except when otherwise stated or unless the context otherwise requires, apply to the structural walls of a building.

Application of byelaws to structural walls.

26. Byelaws 27 to 53 (as to the construction of walls) except byelaws 36 (as to damp-proof courses) and 52 (as to coping) shall not apply to a domestic building if—

Exception for certain domestic buildings.

(1) the building comprises not more than *two* storeys; and



(2) the capacity of the building does not exceed *thirty-six thousand cubic feet*; and

(3) each external wall of the building is constructed of good and suitable material so as to be of sufficient stability and reasonably weatherproof and either—

(a) to a height not less than *six inches* above the surface of the adjoining ground is constructed of—

(i) bricks or blocks not less than *eight-and-a-half inches* thick properly bonded and solidly put together with mortar; or

(ii) other good hard and suitable incombustible material of sufficient thickness properly and solidly put together; or

(b) at a height not less than *six inches* above the surface of the adjoining ground is carried upon sufficient piers; and

(4) the building is distant from the boundary of any adjoining lands or premises (not being a street and not comprising buildings forming part of the same block) not less than—

(a) *five feet*, if the capacity of the building does not exceed *eighteen thousand cubic feet*, or *ten feet*, if the capacity is greater, where the external walls are constructed of incombustible material, or with framework of incombustible material, or of oak, teak or other hard timber either alone or in combination with incombustible material, or with framework which is either filled with or externally covered with incombustible material;

(b) *ten feet*, if the capacity does not exceed *eighteen thousand cubic feet*, or *twenty feet*, if the capacity is greater, where the external walls are not so constructed; and

(5) where the building forms or is intended to form part of a block of buildings—

(a) the number of buildings in the block does not exceed *four*; and

(b) no building in the block exceeds *eighteen thousand cubic feet* in capacity; and

(c) the buildings are separated by walls which notwithstanding anything hereinbefore contained are constructed in accordance with the requirements of the byelaws with respect to party walls; and

(d) where there are more than *two* buildings in the block, their external walls are constructed of incombustible material, or with framework of incombustible material, or of oak, teak or other hard timber either alone or in combination with incombustible material, or with framework which is either filled with or externally covered with incombustible material.

#### *Special Classes of Walls.*

27. The *General Byelaws as to the Construction of Walls*, except byelaw 53 (as to additional provisions as to party walls), shall not apply to the walls provided for in byelaws 28, 29 and 30, except in so far as they are expressly applied. Exception for special classes of walls.

28. A wall or part of a wall which does not exceed *one* storey in height and is constructed with piers of bricks or blocks or other hard and incombustible material shall comply with the following requirements :— One storey walls (pier construction).

(1) the piers shall be properly distributed throughout its length, and be of sufficient size and strength;

(2) the spaces between the piers, in the case of a public building or a domestic building, shall be filled with bricks or blocks or other hard and incombustible material, and, in the case of a building of the warehouse class, shall be filled or covered with material giving a suitable degree of fire-resistance, the filling or covering in either case to be of sufficient thickness to secure due stability;

(3) where the wall is a wall of a public building or a domestic building, it shall satisfy byelaw 36 (as to damp-proof courses) and byelaw 52 (as to coping), and, if it is an external wall, shall be so constructed or treated as to be reasonably weatherproof.

29.—(1) Every part of a wall with a structural framework of steel, iron or reinforced concrete shall be so constructed that— Walls with a structural framework of steel, iron or reinforced concrete.

(a) the wall shall be capable of safely sustaining and transmitting the dead loading and the superimposed loading to which it may be subjected calculated in accordance



with the First Schedule to these byelaws so far as it is applicable, and the horizontal and inclined forces to which it may be subjected, without undue settlement or deflection and without exceeding the appropriate limits of stress for the materials of which it is constructed;

(b) the wall shall be durable;

(c) the wall shall possess a degree of fire-resistance appropriate to the purpose for which the building is intended to be used;

(d) the spaces of the framework shall be filled with panels of, or externally covered with, hard and incombustible material, which shall be properly secured to the framework and, where the wall is an external wall, be reasonably weatherproof.

(2) Where the framework is of steel, the requirements of this byelaw, so far as it relates to framework, shall be deemed to be satisfied—

(a) as regards structural stability, if every element of the framework is designed in accordance with the rules set out in British Standard Specification No. 449—1937 for the Use of Structural Steel in Building;

(b) as regards durability, if the framework is protected against corrosion by a sufficient encasement of concrete or by a suitable coating of paint or bitumen;

(c) as regards fire-resistance, in the case of a domestic building the uppermost floor of which is not more than *forty feet* above the adjoining ground, if the framework is encased in one of the following materials of the thickness specified below, except at rivet heads, angle cleats, plate covers and similar places, and, except where otherwise provided, all re-entrant spaces are filled with concrete or other not less suitable material properly bonded or tied into the encasement:—

concrete, of the quality specified for the protective encasement of structural steel in the byelaws with respect to materials, not less than *one-and-a-half inches* thick;

solid bricks of clay or calcium silicate or solid pre-cast concrete blocks, in which the courses are properly bonded and secured, not less than *two inches* thick;

suitable hollow blocks of clay or concrete properly bonded, anchored or tied, not less than *two inches* thick;

suitable hollow gypsum tiles, properly bonded, anchored or tied, not less than *two inches* thick;

solid gypsum tiles, properly bonded, anchored or tied, not less than *one inch* thick;

Portland cement rendering or gypsum plaster, on a suitable metallic mesh, not less than *one inch* thick, the re-entrant spaces not being filled.

(3) Where the framework is of reinforced concrete, the requirements of this byelaw, so far as it relates to framework, shall be deemed to be satisfied, as regards structural stability and durability, if every element of the framework is designed in accordance with the rules set out in the Report of the Reinforced Concrete Structures Committee of the Building Research Board, dated July, 1933.

(4) The requirements of this byelaw, so far as it relates to the panels in any external wall of a domestic building, shall be deemed to be satisfied, in the case of single-leaf panels, if the panels are not less than *eight-and-a-half inches* thick exclusive of any plaster, and are constructed of solid or hollow bricks or blocks of clay, concrete, calcium silicate, natural stone or cast stone, or a combination of any of those materials securely bonded or tied together.

30. A wall built of cement concrete or reinforced concrete shall be so constructed as to secure due stability, and if it is an external wall shall be reasonably impervious to moisture. Walls of cement concrete or reinforced concrete.

#### *General Byelaws as to the Construction of Walls.*

31. Subject to the provisions of the next two succeeding byelaws, every external wall and every party wall of a building (including piers forming part of the wall), and every cross wall which in pursuance of the provisions of these byelaws may be deemed a means for determining the length of any external wall or party wall, shall be constructed of bricks or blocks properly bonded and solidly put together with mortar, or other good hard and suitable incombustible material properly and solidly put together. Construction of walls (general).



32.—(1) An external wall or part of an external wall of a domestic building, which comprises not more than *three* storeys and does not form part of a block of more than *four* domestic buildings, may be constructed from a height not less than *six inches* above the level of the adjoining ground with framework of timber, or of timber in combination with incombustible material, and if so constructed it shall comply with the following requirements :—

Special provision as to certain domestic buildings comprising not more than three storeys.

(a) the framework shall be of sufficient size and strength to secure due stability and be properly framed together;

(b) every party wall shall be carried out at least to the external face of any framework in any adjoining external wall;

(c) the framework shall be filled with suitable incombustible material reasonably weatherproof, except where the wall or part of a wall is constructed as a bay for a bay window above the level of the lowest window opening in the bay, or as a gable above the level of the floor of the topmost storey of the building, when the framework may be externally covered with tiles, slates or other equally suitable incombustible material in such a manner that the wall or part of a wall is reasonably weatherproof;

(d) the wall or part of a wall shall be distant from the boundary of any adjoining lands or premises (not being a street and not being lands or premises comprising buildings forming part of the same block) not less than—

(i) *eight feet*, where the building comprises *one* or *two* storeys; or

(ii) *sixteen feet*, where the building comprises *three* storeys; or

(iii) *half* these distances, where the wall or part of a wall comprises, or forms part of, a bay or gable only, or its framework is of oak, teak or other hard timber either alone or in combination with incombustible material;

(e) below the part constructed with framework, the wall shall be constructed in the same manner as if it were constructed throughout its whole height of bricks or blocks or other good hard and suitable incombustible material.

(2) Byelaw 45 (as to the thickness of walls not built in horizontal courses) shall not apply to a wall or part of a wall constructed in accordance with this byelaw.

33.—(1) An external wall or part of an external wall of a building of the warehouse class may be constructed from a height not less than *six inches* above the level of the adjoining ground with framework of timber, and if so constructed it shall comply with the following requirements :—

Special provision as to certain buildings of the warehouse class.

(a) every part of the building shall be distant not less than *fifty feet* from the boundary of any adjoining street or lands, or premises comprising buildings, and from every other building;

(b) the building shall be so constructed as to have a suitable degree of fire-resistance;

(c) the framework shall be of sufficient size and strength to secure due stability and be properly framed together;

(d) the covering or filling (if any) of the framework shall be reasonably weatherproof;

(e) below the part constructed with framework, the wall shall be constructed in the same manner as if it were constructed throughout its whole height of bricks or blocks or other hard and suitable incombustible material.

(2) Byelaw 45 (as to the thickness of walls not built in horizontal courses) shall not apply to a wall or part of a wall constructed in accordance with this byelaw.

34. Where any wall or any part of a wall is constructed as a hollow wall—

Hollow walls.

(1) the cavity between the inner and outer parts of the wall shall throughout be of a width not exceeding *three inches*;

(2) the inner and outer parts of the wall shall be securely tied together with suitable bonding ties of adequate strength formed of galvanized iron, iron tarred and sanded, glazed stoneware, copper, bronze or other not less suitable material, the ties being placed at distances apart not exceeding *three feet* horizontally and *eighteen inches* vertically;

(3) the inner and outer parts of the wall shall each be not less than *four inches* thick throughout, except that in a wall



not exceeding *twenty-five feet* in length and *twenty feet* in height the thickness of each part may be not less than *three inches* throughout if all courses of less height than *six inches* are put together with cement mortar or with cement-lime mortar of the strongest mixture prescribed by the byelaw in that behalf or the wall has at least *twice* the number of ties required by the preceding paragraph;

(4) the cavity may be reckoned as part of the thickness prescribed for walls by these byelaws where such thickness does not exceed *eight-and-a-half inches* but shall not be so reckoned where such thickness exceeds *eight-and-a-half inches*.

35. Where a wall or part of a wall is constructed as a hollow wall or with hollow blocks, all Woodwork in hollow walls or walls of hollow blocks. Provision of damp-proof courses. woodwork inserted in the wall so as to project into or extend across a cavity shall be effectually protected on the upper side with a layer of sheet lead or other equally suitable material impervious to moisture.

36.—(1) Every wall of a public building or a domestic building (including a pier forming part of the wall) 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 or pier and—

(a) beneath the level of the under side of the lowest timbers resting on the wall;

(b) where there is a solid floor, not higher than the level of the upper surface of the concrete or other similar solid material forming the structure of the floor and beneath the level of the under side of all boards, planks, wood blocks and other wood laid or bedded upon or in the concrete or other material and carried up on the inner face of the wall to the under side of the flooring;

(c) where a site or building is required by these byelaws to be raised, not lower than the height so required.

(2) Where any part of a floor of the lowest or only storey of the building, not being a cellar for storage only, is below the surface of the adjoining ground, and a 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 so as to be impervious to moisture, or as a hollow wall in accordance with the byelaws in that behalf, 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 the wall at its base.

37.—(1) In the case of a private dwelling-house, and in the case of other buildings where walls are constructed of hard and incombustible material other than bricks or blocks laid in horizontal beds or courses, every wall or part of a wall shall be constructed in accordance with byelaws 38 to 45 (as to the thickness of walls). Thickness of walls of brickwork or masonry

(2) In the case of a building (other than a private dwelling-house), where walls are constructed of bricks or blocks laid in horizontal beds or courses, every wall or part of a wall shall either—

(a) be constructed in accordance with byelaws 38 to 44 (as to the thickness of walls); or

(b) be so designed and constructed as to be capable of safely sustaining and transmitting the dead loading and the superimposed loading to which it may be subjected calculated in accordance with the First Schedule to these byelaws so far as it is applicable, and the horizontal and inclined forces to which it may be subjected, without undue settlement or deflection and without exceeding the intensity of pressure on the material shown in the appropriate Tables in the Second Schedule to these byelaws determined in the manner specified in that Schedule.

38. For the purpose of the following byelaws relating to the thickness of walls, the height of storeys and the height and length of walls shall be measured in accordance with the following rules:— Rules for measuring height of storeys and height and length of walls.

(1) the height of the lowest or only storey shall be measured from the base of the wall, and

the height of any other storey shall be measured from the level of the under side of the floor-structure of the storey,

to the level of the under side of the floor-structure of the storey next above it or, if there is no such storey, then to the highest part of the wall or in a storey comprising a gable to *half* the height of the gable;

(2) the height of a wall shall be measured from its base to the base of the gable in a party wall comprising a gable, to *half* the height of the gable in any other wall comprising



a gable, and to the highest part (excluding any parapet) in any other wall;

(3) walls shall be deemed to be divided into distinct lengths by—

(a) return walls which are external walls, party walls or cross walls, of a height equal to the height of the wall so deemed to be divided and of the thickness prescribed by the byelaws, or of such other height and thickness as will give at least equal strength and stability, and are bonded with or otherwise securely tied into the walls so deemed to be divided; or

(b) piers of a height equal to the height of the wall so deemed to be divided and of a breadth not less than *twice* the thickness of the wall so deemed to be divided, projecting on each side of the wall for a distance not less than the thickness of the wall or on one side of the wall for a distance not less than *twice* the thickness of the wall, or by piers of such other dimensions and height as will give not less strength and stability;

(4) the length of a wall shall be measured from the centre of one return wall or pier to the centre of another, or to the end of the wall if there is no return wall or pier;

(5) for the purpose of these rules—

(a) a wall shall not be deemed a cross wall unless it is carried up to the top of the wall deemed to be divided by it or, if that wall comprises a gable, to the level of the base of the gable, and unless in each storey the aggregate extent of the vertical faces or elevations of all the recesses and that of all the openings therein, taken together, does not exceed *one-half* of the whole extent of the vertical face or elevation of the wall in such storey;

(b) a chimney, or two chimneys built back-to-back, may be reckoned as a pier if—

(i) the least horizontal sectional area of solid material in the jambs and in the chimney breast or breasts, added together, are not less than the area required for a pier by paragraph (b) in rule (3); and

(ii) the thickness of the back of the fireplace opening, or of the back common to two fireplace

openings built back-to-back, is not less than the thickness of the wall deemed to be divided.

39.—(1) In the case of a domestic building, every external wall and every party wall built of bricks or blocks laid in horizontal beds or courses shall, subject to the provisions of the succeeding paragraphs of this byelaw and to the provisions of byelaws 41 (as to reinforced brickwork or masonry), 42 (as to pier construction) and 43 (as to recesses, bays, etc.), be constructed of at least the thicknesses specified in column 3 of the Table in this byelaw, set opposite the particulars in columns 1 and 2 of the Table specifying the height and length of the wall:—

Thickness of walls (domestic buildings).

1 Height of wall.	2 Length of wall.	3 Thickness of wall.
Not exceeding 15 ft. Exceeding 15 ft. but not exceeding 25 ft.	Whatever the length. Not exceeding 30 ft.	8½ in. for the whole of its height. 8½ in. for the whole of its height.
	Exceeding 30 ft.	13 in. from the base for the height of 1 storey. 8½ in. for the rest of its height. 8½ in. for the whole of its height.
Exceeding 25 ft. but not exceeding 30 ft.	Not exceeding 25 ft.	13 in. from the base for the height of 1 storey. 8½ in. for the rest of its height. 8½ in. for the whole of its height.
	Exceeding 25 ft. but not exceeding 35 ft. Exceeding 35 ft.	13 in. from the base for the height of 1 storey. 8½ in. for the rest of its height. 13 in. from the base for the height of 2 storeys. 8½ in. for the rest of its height.
Exceeding 30 ft. but not exceeding 40 ft.	Not exceeding 35 ft.	13 in. from the base for the height of 2 storeys. 8½ in. for the rest of its height. 17½ in. from the base for the height of 1 storey.
	Exceeding 35 ft.	13 in. from the base for the height of 2 storeys. 8½ in. for the rest of its height. 17½ in. from the base for the height of 1 storey.
Exceeding 40 ft. but not exceeding 50 ft.	Not exceeding 35 ft.	13 in. for the height of the next 2 storeys. 8½ in. for the rest of its height. 17½ in. from the base for the height of 1 storey.
	Exceeding 35 ft. but not exceeding 45 ft. Exceeding 45 ft.	13 in. for the height of the next 2 storeys. 8½ in. for the rest of its height. 17½ in. from the base for the height of 2 storeys. 13 in. for the rest of its height. 22 in. from the base for the height of 1 storey. 17½ in. for the height of the next storey.
Exceeding 50 ft. but not exceeding 60 ft.	Not exceeding 45 ft.	13 in. for the rest of its height. 17½ in. from the base for the height of 2 storeys. 13 in. for the rest of its height. 22 in. from the base for the height of 1 storey.
	Exceeding 45 ft.	17½ in. for the height of the next 2 storeys. 13 in. for the rest of its height.



1 Height of wall.	2 Length of wall.	3 Thickness of wall.
Exceeding 60 ft. but not exceeding 70 ft.	Not exceeding 45 ft.	22 in. from the base for the height of 1 storey. 17½ in. for the height of the next 2 storeys. 13 in. for the rest of its height. The above thicknesses shall be increased by 4 in. in each storey below the uppermost 2 storeys.
	Exceeding 45 ft.	22 in. from the base for the height of 1 storey. 17½ in. for the height of the next 3 storeys. 13 in. for the rest of its height. The above thicknesses shall be increased by 4 in. in each storey below the uppermost 2 storeys.
Exceeding 70 ft. but not exceeding 80 ft.	Not exceeding 45 ft.	26 in. from the base for the height of 1 storey. 22 in. for the height of the next storey. 17½ in. for the height of the next 3 storeys. 13 in. for the rest of its height. The above thicknesses shall be increased by 4 in. in each storey below the uppermost 2 storeys.
	Exceeding 45 ft.	26 in. from the base for the height of 1 storey. 22 in. for the height of the next storey. 17½ in. for the height of the next 3 storeys. 13 in. for the rest of its height. The above thicknesses shall be increased by 4 in. in each storey below the uppermost 2 storeys.
Exceeding 80 ft. but not exceeding 90 ft.	Not exceeding 45 ft.	26 in. from the base for the height of 1 storey. 22 in. for the height of the next storey. 17½ in. for the height of the next 3 storeys. 13 in. for the rest of its height. The above thicknesses shall be increased by 4 in. in each storey below the uppermost 2 storeys.
	Exceeding 45 ft.	26 in. from the base for the height of 1 storey. 22 in. for the height of the next storey. 17½ in. for the height of the next 3 storeys. 13 in. for the rest of its height. The above thicknesses shall be increased by 4 in. in each storey below the uppermost 2 storeys.
Exceeding 90 ft.	Not exceeding 45 ft.	26 in. from the base for the height of 1 storey. 22 in. for the height of the next storey. 17½ in. for the height of the next 3 storeys. 13 in. for the rest of its height. The above thicknesses shall be increased by 4 in. in each storey below the uppermost 2 storeys.
	Exceeding 45 ft.	26 in. from the base for the height of 1 storey. 22 in. for the height of the next storey. 17½ in. for the height of the next 3 storeys. 13 in. for the rest of its height. The above thicknesses shall be increased by 4 in. in each storey below the uppermost 2 storeys.

(2) A wall, the height of which in any storey of a building comprising more than *one* storey exceeds *sixteen* times the thickness hereinbefore prescribed, shall throughout that storey be increased in thickness to *one-sixteenth* of the height of the storey, and the thickness throughout any lower storey or storeys shall be proportionately increased.

(3) A wall of an out-building not communicating directly with the building to which it is appurtenant, if the wall does not exceed *nine feet* in height and *ten feet* in length and is properly put together with cement mortar, or with cement-lime mortar of the strongest mixture prescribed by the byelaw in that behalf, may be not less than *four inches* thick.

40.—(1) In the case of a public building or a building of the warehouse class, every external wall and every party wall built of bricks or blocks laid in horizontal beds or courses shall, subject to the provisions of paragraph (2) of this byelaw and to the provisions of byelaws 41 (as to reinforced brickwork or masonry), 42 (as to pier construction) and 43 (as to recesses, bays, etc.), be constructed of at least the thicknesses specified hereunder :—

Thickness of walls (public buildings and buildings of warehouse class).

(a) the thickness at the base of the wall shall be the thickness specified in column 3 of the Table in this byelaw, set opposite the particulars in columns 1 and 2 of the Table specifying the height and length of the wall;

(b) the thickness immediately below *sixteen feet* from the top of the wall shall be the thickness specified in column 4 of the Table opposite the before-mentioned particulars in columns 1 and 2;

(c) the intermediate part of the wall between the base and *sixteen feet* below the top shall be built so as to fill at least the space between straight lines drawn on each side of the wall and joining the thickness at the base to the thickness immediately below *sixteen feet* from the top;

(d) for *sixteen feet* from the top of the wall, the thickness shall be *thirteen inches* :

Provided that, where the wall does not exceed *thirty feet* in height, the wall for *eleven feet six inches* from the top may be *eight-and-a-half inches* thick.

1 Height of wall.	2 Length of wall.	3 Thickness at base.	4 Thickness immediately below 16 feet from the top.
Not exceeding 25 ft. Exceeding 25 ft. but not exceeding 30 ft.	Whatever the length. Not exceeding 45 ft.	13 in.	13 in.
		13 in.	13 in.
Exceeding 30 ft. but not exceeding 40 ft.	Exceeding 45 ft. Not exceeding 35 ft.	17½ in.	13 in.
		13 in.	13 in.
Exceeding 40 ft. but not exceeding 50 ft.	Exceeding 35 ft. but not exceeding 45 ft. Exceeding 45 ft. Not exceeding 30 ft.	17½ in.	13 in.
		22 in.	13 in.
	Exceeding 30 ft. but not exceeding 45 ft. Exceeding 45 ft.	17½ in.	13 in.
		22 in.	13 in.
		26 in.	13 in.



1	2	3	4
Height of wall.	Length of wall.	Thickness at base.	Thickness immediately below 16 feet from the top.
Exceeding 50 ft. but not exceeding 60 ft.	Not exceeding 45 ft.	22 in.	13 in.
Exceeding 60 ft. but not exceeding 70 ft.	Exceeding 45 ft. Not exceeding 45 ft.	26 in. 22 in.	13 in. 13 in.
Exceeding 70 ft. but not exceeding 80 ft.	Exceeding 45 ft. Not exceeding 45 ft.	26 in. 22 in.	17 in. 13 in.
Exceeding 80 ft. but not exceeding 90 ft.	Exceeding 45 ft. Not exceeding 45 ft.	26 in. 26 in.	17 in. 13 in.
Exceeding 90 ft.	Exceeding 45 ft. Not exceeding 45 ft. Exceeding 45 ft.	30 in. 26 in. 30 in.	17 in. 13 in. 17 in.

(2) A wall, the height of which in any storey of a building comprising more than *one* storey exceeds *fourteen* times the thickness hereinbefore prescribed, such thickness being measured at a height above the surface of the floor equal to *two-thirds* of the total height of that storey, shall throughout that storey be increased in thickness to *one-fourteenth* of the height of that storey, and the thickness throughout any lower storey or storeys shall be proportionately increased.

41. Any external wall or party wall built of bricks or blocks, properly reinforced and properly bonded and solidly put together with cement mortar, or with cement-lime mortar of the strongest mixture prescribed by the byelaw in that behalf, may be reduced in thickness by not more than *four-and-a-half inches* but not so as to be of less thickness than *eight-and-a-half inches*.

42. Where a wall is required by byelaw 39 (as to the thickness of walls of domestic buildings) or byelaw 40 (as to the thickness of walls of public buildings and buildings of the warehouse class) to be more than *eight-and-a-half inches* thick, the additional thickness may be confined to piers properly distributed throughout its length, if either—

(1) (a) the thickness of the wall between the piers is not less than *one-half* of the required thickness; and

(b) the collective width of the piers amounts to *one-quarter* of the length of the wall, it being permitted to reduce the width of any pier of which the horizont-

Thickness reinforced brickwork or masonry

Thickness (pier construction)

al sectional area is not diminished if the width of the pier is not less than that required to give the necessary area when the projection is *one-third* of the width; or

(2) (a) piers are placed at the ends of the wall; and

(b) the mean thickness of the wall, including the piers, is not less in any storey than the thickness hereinbefore prescribed for such wall for such storey.

43. The provisions of byelaws 39 (as to the thickness of walls of domestic buildings) and 40 (as to the thickness of walls of public buildings and buildings of the warehouse class) shall not apply to—

Thickness (recesses, bays, etc.).

(1) any portion of a wall which is recessed or chased, or forms part of a chimney constructed in accordance with the byelaws with respect to chimneys;

(2) any part of an external wall which is constructed as a bay for a bay window, or as a gable, of bricks or blocks of such thickness as shall be necessary to secure due stability, properly and solidly put together with cement mortar, or with cement-lime mortar of the strongest mixture prescribed by the byelaw in that behalf, and is, as the case may be, above the level of the sill of the lowest window opening in such bay or above the level of the floor of the topmost storey in such building.

44.—(1) Every cross wall built of bricks or blocks laid in horizontal beds or courses, which in pursuance of these byelaws may as a return wall be deemed a means of determining the length of any external wall or party wall of a building, shall, except where it forms part of a chimney constructed in accordance with the byelaws relating to chimneys and subject to paragraphs (2) and (3) of this byelaw, be of a thickness of at least *two-thirds* of that prescribed by the preceding byelaws for an external wall or a party wall of the same height and length and belonging to the same class of building, but shall be not less than *eight-and-a-half inches* thick.

Thickness of cross walls.

(2) Where the building is intended to be used as a dwelling-house, and the external wall which is deemed to be divided into distinct lengths by the cross wall does not exceed *twenty feet* in height and *thirty-five feet* in length, the cross wall may be not less than *four inches* thick.

(3) A cross wall which supports a superincumbent external



wall shall be of a thickness not less than that prescribed by the preceding byelaws for an external wall or a party wall of the same height and length and belonging to the same class of building.

45. The following requirements shall regulate the thickness of every external wall, every party wall, and every such cross wall as is referred to in the last preceding byelaw, where the wall is constructed of material other than bricks or blocks laid in horizontal beds or courses:—

Thickness of walls not built in horizontal courses.

(1) a wall built of stone, or of clunches of bricks or other burnt or vitrified material, or of flintwork, shall be *one and one-third* times the thickness prescribed by the byelaw in that behalf for a wall built of bricks or blocks in horizontal courses, and of the same description, height and length, and belonging to the same class of building;

(2) a wall built of brickwork and flintwork, in which the proportion of brickwork is not less than *one-fifth* of the entire content of the wall and is properly distributed in piers and horizontal courses, or built of other suitable material not specifically mentioned in this byelaw, shall be of the thickness prescribed by the byelaw in that behalf for a wall built of bricks or blocks in horizontal courses, and of the same description, height and length, and belonging to the same class of building;

(3) where the preceding paragraphs of this byelaw require a wall to be more than *eight-and-a-half inches* thick, the additional thickness may be confined to piers properly distributed throughout its length, if—

(a) piers are placed at the ends of the wall; and

(b) the mean thickness of the wall, including the piers, is not less in any storey than the thickness hereinbefore prescribed for the wall for that storey.

46. Where a recess is made in an external wall or a party wall—

Recesses.

(1) the wall at the back of the recess shall be not less than *eight-and-a-half inches* thick;

(2) a sufficient arch or lintel of incombustible material shall be built in every storey over the recess;

(3) in each storey the aggregate extent of recesses

causing the wall at the back to be of less thickness than that prescribed by these byelaws shall not exceed *one-half* of the superficial extent of the wall;

(4) that side of the recess which is the nearer to the inner face of a return external wall shall be distant not less than *thirteen inches* therefrom.

47. A chase made in an external wall or a party wall shall—

Chases.

(1) be not less than *seven feet* from every other chase on the same side of the wall;

(2) be not less than *thirteen inches* from any other chase and from any return wall;

(3) be not more than *fourteen inches* wide;

(4) be not more than *four-and-a-half inches* deep from the face of the wall;

(5) leave the wall at the back not less than *eight-and-a-half inches* thick.

48. Where there is left in an external wall an opening of greater extent than *one-half* of the vertical elevation of the storey or storeys in which the opening is left, sufficient supports so disposed as to carry the superstructure and so constructed as to give a suitable degree of fire-resistance shall be provided.

Openings.

49. Every bressummer shall—

Bressummers.

(1) be borne by a sufficient template of stone, iron, terracotta, vitrified stoneware or other not less suitable material, of at least the full breadth of the bressummer, and shall have a bearing in the direction of its length of not less than *four inches* at each end; and

(2) where necessary, have such storey posts, iron columns, stanchions or piers, of brick, stone or other not less suitable material, on a solid foundation sufficient to carry the superstructure.

50. A wall shall not be so constructed that a part overhangs any part beneath it, unless the projection is properly corbelled out or supported.

Overhang-ing.

51. A wall or pier which is built at an angle with another wall shall be properly bonded therewith or otherwise securely tied thereto.

Bonding.



52. Where a wall of a public building or a domestic building is carried up above a roof, flat or gutter, so as to form a parapet, it shall be properly coped or otherwise protected to prevent water from running down the sides of the parapet or soaking into any wall.

Coping.

53. Where a wall is a party wall—

Additional provisions as to party walls.

(1) it shall be carried up at least as high as the underside of the slates or other covering of the roof;

(2) if the wall is not carried up above the underside of the slates or other covering, the slates or other covering shall where practicable be properly and solidly bedded in mortar on the top of the wall;

(3) no opening shall be made or left in the wall;

(4) the end of every wooden bressummer, beam, joist, purlin or plate, and of all bond timber, placed in the wall—

(a) shall not extend beyond the middle of the wall; and

(b) shall be properly encased in either brickwork or other solid and incombustible material, not less than *four inches* thick, or an iron beam box with a solid back;

(5) no timber or woodwork forming part of the roof of the building, except laths and slate battens properly embedded in mortar or other not less suitable incombustible material, shall extend upon or across the wall.

#### CHIMNEYS AND FLUES.

54. For the purpose of the following byelaws relating to chimneys and flues, "flue" means any duct through which smoke or other products of combustion pass, and "chimney" means the material surrounding the flue.

Definition of "flue" and "chimney".

55. The following byelaws relating to chimneys and flues shall not apply—

Exceptions.

(1) to any chimney shaft for the furnace of a steam boiler, engine, brewery, distillery or manufactory, or any duct or pipe in connection therewith if the duct or pipe is

properly constructed of good, hard and incombustible material and is so arranged as to avoid the risk of fire;

(2) to any chimney which is so constructed as not to be capable of use except in connection with a fire or stove which burns gas only, or to any chimney which does not form part of the structure of a building, if the chimney is constructed of incombustible material of sufficient thickness and suitably insulated from any floor, wall or roof through which it passes, and if suitable provision is made effectually to prevent the flames of the fire or stove from coming into contact with the floor of the room in which it is situated.

56. Every chimney shall be constructed of—

Materials.

(1) bricks or blocks properly bonded and solidly put together with mortar; or

(2) other good hard and suitable incombustible material properly and solidly put together, and this requirement as to material to be used shall be deemed to be satisfied by the use of any material which complies with the test for materials for flues, furnace casings, hearths and similar purposes prescribed in British Standard Specification No. 476-1932.

57.—(1) A chimney which is built against or forms part of a wall and extends to or below the surface of the ground adjoining the wall shall—

Foundations, bonding, etc.

(a) rest upon a foundation which would comply with the requirements of byelaw 23 (as to the foundations of structural walls) if the chimney were a pier forming part of the wall;

(b) have a damp-proof course if the wall is required to be provided with a damp-proof course;

(c) be properly bonded with or otherwise securely tied into the wall.

(2) A chimney which is built against or forms part of a wall but does not extend to the surface of the ground adjoining the wall shall—

(a) be properly bonded with or otherwise securely tied into the wall; and



(b) rest upon a metal or concrete beam, or on sufficient corbels of brick, stone or other hard and incombustible material if the work so corbelled out does not project from the wall more than the thickness of the wall measured immediately below the corbel.

58. The jambs of a fireplace opening shall be not less than *eight-and-a-half inches* wide on each side. Jambs.

59.—(1) A sufficient arch or lintel of brick, stone or other hard and suitable incombustible material, or a sufficient bar of steel, wrought iron or other not less suitable metal, shall be built over the fireplace opening to support the chimney breast. Lintels, etc.

(2) Where the chimney breast projects more than *four-and-a-half inches* from the face of the wall, and the jamb on either side is less than *thirteen inches* wide, the abutments of any arch so built shall be tied in by a bar or bars of steel, wrought iron or other not less suitable metal, of sufficient strength, *eighteen inches* longer than the opening, turned up and down at the ends, and built into the jambs on each side.

60.—(1) Where a fireplace opening is in an external wall, the back of the opening shall be not less than *four inches* thick. Thickness of back of openings.

(2) Where two fireplace openings are built back-to-back in a wall other than a party wall, the back common to the two openings shall be not less than *four inches* thick.

(3) The back of every other fireplace opening shall be not less than *eight-and-a-half inches* thick.

(4) The thickness required by this byelaw shall extend to a height not less than—

(a) *twelve inches* above the fireplace opening; and

(b) if the opening is in a party wall and is constructed for use in connection with a cooking range, *nine feet* above the level of the hearth.

61. A chimney breast and the material surrounding a flue shall not be less than *four inches* thick. Thickness of breasts, etc.

62. Where the face of any material surrounding a flue or fireplace opening is less than *two inches* from any timber or woodwork and the material is less than *eight-and-a-half inches* thick, the face of the material, if of bricks or blocks, shall be properly rendered, and, if of other material, shall be such as to afford adequate protection from fire to the timber or woodwork. Rendering of brick-work.

63. The inside of a chimney, if constructed of bricks or blocks, shall be properly rendered or pargeted as it is carried up, and, if of other materials, shall be otherwise suitably protected, except that, where any part of the chimney is lined with fireclay or stoneware not less than *three-quarters-of-an-inch* thick or other not less suitable incombustible material of sufficient thickness, such part of the chimney as is so lined need not be rendered or pargeted or otherwise protected. Rendering of inside of chimneys.

64. Where the back or outside of a chimney does not form part of the outer face of an external wall and the material of which it is constructed is less than *eight-and-a-half inches* thick, the back or outside of that part of the chimney which is below the roof, flat or gutter shall be properly rendered or otherwise suitably protected. Rendering of outside of chimneys.

65. Where the course of a flue makes with the horizontal an angle of less than *forty-five degrees*, the upper side of that part of the chimney shall be not less than *eight-and-a-half inches* thick. Oblique flues.

66. Where a chimney is constructed in connection with any furnace, steam boiler or close-fire, used or intended to be used for any purpose of trade, business or manufacture, or is constructed in connection with any cooking range or cooking apparatus of a building used or intended to be used as a hotel, inn or restaurant, the flue of the chimney shall be surrounded with brickwork not less than *eight-and-a-half inches* thick, or other solid and incombustible material of adequate thickness giving at least an equivalent degree of heat insulation. Flues of furnaces, etc., used for trade purposes.

67. Where a flue is in a party wall and is not back-to-back with another flue, the material at the back of that part of the flue which is below the roof, flat or gutter shall be not less than *eight-and-a-half inches* thick. Flues in party walls.

68. A chimney shall be carried up all round in brickwork or other not less suitable material not less than *four inches* thick to a height not less than *three feet* above the adjoining roof, flat or gutter, measured from the highest point in the line of junction with the roof, flat or gutter. Projection above the roof.

69. A chimney, or group of chimneys bonded together, shall not be built higher above the highest point in the line of junction with the roof, flat or gutter of the building than a height equal to *six* times the least width of the chimney, or *six* times the overall width of the group of chimneys measured Maximum height of projection above roof.



horizontally at right angles to its greatest horizontal dimension, as the case may be, unless the chimney or group of chimneys is otherwise made secure.

70. An iron holdfast or other metal fastening shall not be placed within *two inches* of a flue or fireplace opening. Iron hold-fasts, etc.

71. Timber or woodwork shall not be placed in a wall or chimney breast within *nine inches* of a flue or fireplace opening. Woodwork in chimneys.

72. A wooden plug shall not be driven into or built into a wall or chimney breast within *six inches* of a flue or fireplace opening. Wooden plugs in chimneys.

73. No opening for the insertion of a pipe for conveying smoke or other products of combustion, or for the insertion of a ventilating valve, or for any other purpose, shall be made or left in a chimney within *nine inches* of any timber or other combustible substance. Openings for pipes, etc.

74. A flue which communicates with a room intended for human habitation shall not communicate with any other room: Flues communicating with habitable rooms.

Provided that a flue may communicate with a single fireplace which is common to a living room and a kitchen or scullery.

75. A hearth shall be constructed in connection with every fireplace opening and shall— Hearths.

- (1) be fixed under and in front of the opening;
- (2) be properly constructed of stone, slate, bricks, tiles or other incombustible material properly and securely supported;
- (3) be not less than *six inches* thick;
- (4) extend not less than *six inches* at each end beyond the opening;
- (5) project not less than *sixteen inches* from the chimney breast;
- (6) be so laid that its upper surface is not lower than the floor of the room in which the opening is situated.

76. Timber or woodwork shall not be placed under a fireplace opening within *ten inches* of the upper surface of the hearth. Woodwork under fireplace openings.

## FLOORS.

77.—(1) Every floor of boards, planks or wood blocks laid or bedded directly upon concrete or other solid foundation resting on the ground shall be so constructed or treated as to protect the floor from dampness or dry-rot. Solid floors.

(2) Where there is no water pressure under the floor, this requirement shall be deemed to be satisfied if—

(a) the boards, planks or wood blocks are laid or bedded upon a continuous layer, not less than *one-eighth-of-an-inch* thick, of bitumen of a suitable grade or coal tar pitch, which is carried up against the walls adjoining the floor to the level of the upper surface of the floor; and

(b) where the boards or planks are nailed to wooden fillets embedded in concrete, the fillets are thoroughly impregnated with creosote.

## ROOFS.

78.—(1) The roof of a building shall be weatherproof and, except as provided in paragraph (2) of this byelaw, shall be constructed of or externally covered with one or other of the following materials, or partly of one and partly of another:— To be weather-proof, and materials for roofs.

- (a) natural or asbestos cement slates;
- (b) tiles or slabs of burnt clay, concrete, stone, glass or asbestos cement;
- (c) lead, copper or zinc;
- (d) asphalte mastic (containing not less than *eighty-three per cent.* of mineral matter) not less than *three-quarters-of-an-inch* thick laid on boards of a finished thickness not less than *one inch* or on a base of concrete or hollow tiles;
- (e) built-up material of a total thickness of not less than *three-tenths-of-an-inch* composed of not less than *three* layers of bituminous felt laid in bituminous mastic on a base of concrete or hollow tiles;
- (f) asbestos cement sheeting, wired glass sheeting, iron or steel sheeting well galvanised and of a thickness not less than that known as No. 24 Birmingham Wire Gauge, or protected metal sheeting of a not less thickness of metal;
- (g) bituminous material laid on a base of boards, con-



crete or hollow blocks, and covered with a continuous layer not less than *one inch* thick of cement mortar or cement concrete, or with tiles made of clay, concrete or asbestos cement, or with not less than *one-half-of-an-inch* thickness of bitumen macadam composed of fine gravel or stone chippings with no greater percentage of bitumen than *seven per cent.*;

(h) any other suitable slates, tiles, metal or sheeting affording at least an equal degree of fire-resistance to that of the comparable materials set out respectively in subparagraphs (a), (b), (c) and (f) above, or any other suitable combination of materials affording at least an equal degree of fire-resistance to that of the comparable combination of materials set out respectively in subparagraphs (d), (e) and (g) above.

(2) This byelaw shall not apply so as to require a roof to be constructed of or covered with fire-resisting material in the case of a domestic building which is distant not less than *twice* its height from the nearest boundary of its curtilage and from any other building.

(3) In this byelaw the expression "roof" includes any turret, dormer, lantern light, skylight or other erection forming part of the roof, but does not include a door, door frame, window or window frame of a turret, dormer, lantern light, skylight or other erection.

#### SHORT-LIVED MATERIALS.

79. The provisions of section 53 of the Public Health Act, 1936, shall apply to the following materials as being materials which are, in the absence of special care, liable to rapid deterioration, or are otherwise unsuitable for use in the construction of permanent buildings:—

(1) so far as they are used wholly or principally for the construction of the weather-resisting part of a roof or external wall of a building—

- (a) match boarding;
- (b) sheets of compressed fibre or wood pulp;
- (c) ply-wood;
- (d) plaster board;

- (e) fibrous plaster;
- (f) lime or gypsum plaster on wood or metal lath;
- (g) cement plaster not exceeding *one-and-a-half inches* in thickness on wood or metal lath;
- (h) sheet iron or steel (whether galvanised or not) which is not painted or otherwise protected by a bituminous or other not less suitable coating;
- (i) felt;
- (j) canvas or cloth;

(2) so far as it is used wholly or principally for the construction of the weather-resisting part of a roof of a building—

unprotected softwood boarding.

#### SPACE ABOUT BUILDINGS.

80.—(1) There shall be provided in front of a domestic building intended to be used wholly or partly for human habitation an open space which, measured at right angles from the building to the boundary of any land or premises immediately opposite, or in the case of a building fronting on a street to the opposite side of the street, shall throughout the whole frontage of the building extend to a distance of not less than *twenty-four feet* : Space in front of buildings.

Provided that, if the building fronts on a street of a less width than *twenty-four feet*, the distance may be not less than the width of the street, together with *one-half* of the difference between that width and *twenty-four feet*.

(2) Any open space provided within the curtilage of the building in pursuance of this byelaw shall be free from any erection thereon above the level of the ground, except a fence or wall not exceeding *seven feet* in height, or a portico, porch, step or other like projection from the building, or a gate.

81. There shall be provided in the rear of a domestic building intended to be used wholly or predominantly for human habitation an open space exclusively belonging thereto and of an extent not less than *one hundred and fifty square feet*. Amount of space at rear of buildings.

82.—(1) The open space required by the last preceding byelaw shall extend throughout the entire width of the building, and the distance across the open space from the line of the rear— Measurement of space at rear of buildings.



most wall of the building and from any projection from the building to the boundary of any lands or premises immediately in the rear of the building shall be not less in any part than—

(a) *fifteen feet*, if the height of the building is not more than *twenty-five feet*;

(b) *twenty feet*, if the height of the building is more than *twenty-five feet* but is not more than *thirty-five feet*;

(c) *twenty-five feet*, if the height of the building is more than *thirty-five feet* but is not more than *fifty feet*.

(2) Where by reason of the exceptional shape of the site of the building the distance across the open space required by paragraph (1) of this byelaw cannot be obtained throughout the entire width of the building, it shall be sufficient if the mean distance across the open space is not less than the required minimum distance.

(3) If the height of the building exceeds *fifty feet*, the distance across the open space shall be such a distance as is equal to not less than *half* the height of the building, and, if in consequence of the exceptional shape of the site or of the design of the building it is not reasonably practicable to provide such open space at the rear of the building, it shall be sufficient if so much of the open space as it is not practicable to provide at the rear of the building is provided at a side of the building other than the front.

83.—(1) Where it is intended to erect a building to which the last two preceding byelaws apply on a site abutting on two or more streets, or to re-erect a building to which the last two preceding byelaws apply, and it is not reasonably practicable to comply with the requirements of those byelaws, it shall be sufficient if there is provided at the rear, or on one side of the site other than the front of the building, an open space exclusively belonging to the building of an extent—

(a) in the case of a new building, of not less than *one hundred and fifty square feet*; or

(b) in the case of a re-erected building, of not less than that of any open space previously provided in connection with the building but in no case less than *one hundred square feet*.

Buildings on sites abutting on two or more streets, and re-erected buildings.

(2) An open space provided in accordance with the provisions of this byelaw—

(a) shall extend throughout at least *ten feet* of the width or depth of the building for a mean distance across of not less than *ten feet*; and

(b) shall either abut on a street or be connected with a street by a passage or other similar opening so arranged as to be capable at all times of affording a free circulation of air between the open space and the street.

84. Where in a building the accommodation for human habitation is wholly above the ground floor, the open space required by byelaws 81, 82 or 83 (as to space at the rear of buildings) shall be measured at the level of the lowest floor on which the accommodation for human habitation is provided, and for the purposes of those byelaws the height of the building shall be measured from that level.

Measurement when lower storeys are used for trade, etc.

85. The open space required by byelaws 81, 82 or 83 (as to space at the rear of buildings) shall be free from any erection thereon above the level of the ground, except a watercloset, earthcloset or privy, or an ashpit; and the open space when measured in accordance with the last preceding byelaw shall be free above the level therein referred to from any erection, except a parapet, ventilator, lantern light or skylight, not exceeding *three feet* in mean height above that level, or a chimney stack.

Open space to be free from erections.

86. There shall be provided for a building intended to be used as a stable in connection with a domestic building an open space adjoining and exclusively belonging thereto of an extent of not less than *one hundred and fifty square feet* and free from any erection thereon above the level of the ground except a suitably constructed receptacle for dung.

Stables.

87. No alteration or addition shall be made to a building and no building shall be erected that shall cause the open space provided about a building to be less than that required by these byelaws.

Alterations etc., to buildings.

#### VENTILATION OF BUILDINGS.

88.—(1) A sufficient number of windows shall be constructed in a wall of every storey of a domestic building in such a manner and in such a position that each of the windows

Windows.



affords effectual means of ventilation by direct communication with the external air.

(2) Every habitable room shall be provided with a window or windows which shall open directly into the external air and—

(a) have a total area not less than *one-tenth* of the floor area of the room; and

(b) be so constructed that a total area not less than *one-twentieth* of the floor area of the room may be opened, and so that at least to the extent of this requirement the windows can be opened at the top.

(3) Paragraph (2) of this byelaw shall not apply to any room used or adapted to be used for the lawful detention of any person.

89.—(1) No window in a habitable room required in pursuance of the last preceding byelaw shall be constructed so as to open to a court enclosed on every side unless the distance across the court, measured from the window to the opposite wall of the court, is equal at least to *two-thirds* the height measured from the level of the top of the window to the level of the eaves or top of the parapet of the opposite wall.

(2) No such window shall be constructed so as to open to a court which is open on one side, and of which the length measured from the open side exceeds *twice* the width, unless the window opens to the court on the side opposite to the open end, or unless the distance across the court, measured from the window to the opposite wall of the court, is equal at least to *half* the height measured from the level of the top of the window to the level of the eaves or top of the parapet of the opposite wall.

90. The floor of the lowest storey of a domestic building, if it is a boarded floor and is not a solid floor composed of boards, planks or wood blocks laid or bedded directly upon concrete or other similar dry and impervious foundation, shall be so constructed that there shall be, between the underside of every joist on which the floor boards are laid and the upper surface of the ground or of the asphalt, concrete or other material with which the ground surface or site of the building is covered, a clear space of not less than *three inches* in every part if the ground is covered with asphalt, concrete or other material, and of not less than *nine inches* in every part if the

Windows opening to courts

Ventilation of lowest floors.

ground is not so covered, and such space shall be thoroughly ventilated by means of suitable and sufficient air-bricks or by some other effectual method:

Provided that, if a floor is constructed partly as a solid floor and partly as a boarded floor, the part of the floor which is boarded shall, if it is not otherwise thoroughly ventilated, be ventilated by an air channel through the concrete or other foundation of the solid floor.

91. Every habitable room of a building which is without a fireplace opening shall, in addition to any ventilation afforded by a window or a door, be provided with a fanlight opening to a ventilated lobby or corridor, or other sufficient aperture or air-shaft having an unobstructed sectional area of not less than *thirty square inches*.

Ventilation of habitable rooms without flues.

92. Every pantry or larder provided in a domestic building for the storage of perishable food shall either be ventilated to the external air by an opening fitted with a fly-proof cover so constructed as to allow an adequate flow of air, or be provided with mechanical means of ventilation.

Ventilation of larders.

93. In the case of a building intended for separate occupation by more than *two* families, every part of a staircase intended for common use, which is above the ground storey and not open to the external air, shall be adequately ventilated.

Ventilation of staircases in buildings divided into tenements.

#### DIMENSIONS OF ROOMS.

94. Every room intended for human habitation in a building shall comply with the following requirements:—

Height of rooms.

(1) if the room is not a room wholly or partly in the roof of the building, it shall in every part except beneath an uncovered beam or joist be *eight feet* at the least in height;

(2) if the room is a room wholly or partly in the roof of the building, it shall be *eight feet* at the least in height over not less than *one-half* of the area of the room, measured at a height of *five feet* above the floor level of the room.

#### PART III—WORKS AND FITTINGS.

##### DRAINAGE.

95. The lowest or the only storey of a building (other than so much of a storey as comprises a cellar or other chamber intended for storage only, and constructed in a dry soil or so

Level of lowest storey.



as to be impervious to water) shall be at such a level or so constructed as to allow the construction of a drain or drains sufficient for the effectual drainage of that storey.

96. The roof of a building (whether flat or not) shall be so constructed as effectually to drain to suitable and sufficient gutters, shoots or troughs, which shall be provided for receiving and conveying all water which may fall on the roof and shall be connected with a sufficient number of suitable down-pipes constructed so as to carry away all such water without causing dampness in any part of any wall or foundation of the building or any adjacent building: Drainage of roofs.

Provided that this byelaw shall not apply to any building the roof of which is covered with thatch or other similar material, if other proper and sufficient arrangements are made to prevent any water which may fall on the roof from causing dampness in any part of any such wall or foundation.

97. Every drain (other than a subsoil drain or a drain for the conveyance solely of trade effluent) constructed in connection with a building shall comply with such of the following requirements as are applicable:— Materials and construction of drains.

(1) it shall be constructed of good sound pipes of suitable material, and this requirement shall be deemed to be satisfied if new glazed ware pipes conforming to either British Standard Specification No. 65—1937 or No. 540—1937, or new cast iron pipes conforming to British Standard Specification No. 437—1933, or new concrete pipes conforming to British Standard Specification No. 556—1934, are used;

(2) it shall be properly supported and protected against injury, laid at a proper inclination, and provided with suitable watertight joints;

(3) it shall be capable of withstanding a reasonable hydraulic test, smoke or air test under pressure, or other suitable test;

(4) it shall be of adequate size, and if intended for the conveyance of foul water shall have an internal diameter of not less than *four inches*;

(5) where it passes through a building it shall to that extent be constructed of cast iron or other not less suitable metal;

(6) where it is laid on or in the ground—

(a) if it is constructed of material other than cast iron or other metal of not less strength, it shall, so far as it lies within a distance of *fifty feet* from the building, be laid on a bed of concrete unless the nature of the soil renders this unnecessary;

(b) if it is constructed of corrosible material, it shall be suitably protected inside and outside against corrosion;

(7) no part of the drain shall be laid under any building where any other mode of construction is practicable;

(8) where a part of the drain is laid under a building, that part shall—

(a) be laid in a straight line for the whole extent beneath the building or, if this is impracticable, in a series of straight lines;

(b) if laid in the ground and constructed of material other than cast iron or other metal of not less strength, be completely surrounded with concrete not less than *six inches* thick;

(c) be provided with adequate means of access for its whole length and, if not laid in one straight line, be provided with an inspection chamber at each change of direction;

(9) every inlet to the drain, other than an inlet provided for the ventilation of the drain, shall be properly trapped.

98. Every drain and private sewer intended solely for the conveyance of trade effluent shall be constructed of good sound pipes of suitable material, and shall be properly supported and protected against injury, laid at a proper inclination, and provided with suitable watertight joints. Drains and private sewers for trade effluents.

99. Where a drain passes through or immediately under a wall, a sufficient arch shall be turned over the drain, or some other not less suitable support for the wall shall be provided so as effectually to prevent the wall from damaging the drain by settlement or otherwise. Drains passing through or under walls.

100. Every branch drain or tributary drain shall join any other drain obliquely in the direction of the flow of that drain. Branch drains.

101. No inlet to a drain, other than a drain for the conveyance solely of trade effluent, shall be made within a building, except— Inlets within buildings.



- (1) a trapped gully fitted with a suitable cover;
- (2) an inlet which is a necessary part of the connection of any watercloset, bath, sink, urinal, bidet or lavatory basin;
- (3) a junction with another drain.

**102.** The drains intended for conveying foul water from a building shall be provided with at least *one* ventilating pipe, situated as near as practicable to the building and as far as practicable from the point at which the drain empties into the sewer or other means of disposal:

Ventilating pipes to be provided for foul water drains.

Provided that a soil pipe from a watercloset, or a waste pipe from a slop sink, constructed in accordance with these byelaws may serve for the ventilating pipe of the drain, if its situation is in accordance with this byelaw.

**103.** The soil pipe from a watercloset, and the waste pipe from a slop sink, other than parts of such pipes carried up as ventilating pipes, shall be—

Construction of soil pipes, etc.

(1) formed of suitable material, and this requirement shall be deemed to be satisfied if new cast iron pipes conforming to British Standard Specification No. 416-1935 for heavy grade pipes, or new lead pipes conforming to either British Standard Specification No. 602-1935 or No. 603-1935, are used;

(2) of an internal diameter not less than that of any pipe connecting it with the watercloset or slop sink, and in any case not less than *three inches*.

**104.** A ventilating pipe to a drain, and the part of a soil pipe from a watercloset or of a waste pipe from a slop sink which is carried up as a ventilating pipe, shall—

Construction of ventilating pipes.

(1) be formed of suitable material to secure adequate durability, and this requirement shall be deemed to be satisfied if new cast iron pipes conforming to British Standard Specification No. 416-1935 for medium grade pipes, or new lead pipes conforming to either British Standard Specification No. 602-1935 or No. 603-1935, are used;

(2) be not less than *three inches* in internal diameter;

(3) be carried upwards to such a height and in such a manner as effectually to prevent the escape of foul air from the drains into any building;

(4) be covered at its open end, as a protection against obstruction, with a wire cage of copper or galvanised iron or other not less suitable cover admitting the free passage of air.

**105.** A ventilating pipe to a drain, a soil pipe from a watercloset, and a waste pipe from a slop sink, shall be capable of withstanding after erection a reasonable smoke or air test under pressure, and shall not—

Other requirements for ventilating pipes, soil pipes and waste pipes from slop sinks.

(1) have a trap at its point of junction with the drain, or (except where necessary as part of the apparatus of any watercloset or slop sink) in any other part of the pipe;

(2) have any bend or angle, except where unavoidable in which case the bend or angle shall be as obtuse as possible and shall not reduce the internal diameter of the pipe;

(3) except in so far as it passes through any cornice or similar external architectural feature, or being a ventilating pipe is carried immediately beneath the covering of the roof, be enclosed by any part of the building, unless—

(a) it is formed of material satisfying the requirements of byelaw 103 (as to the construction of soil pipes); and

(b) if formed of lead or other material similarly susceptible to external injury, it is exposed throughout so much of its length as is enclosed by any part of the building (except where it passes through a floor or ceiling) or is adequately protected by enclosure in a chase with a metal or metal lined front.

**106.** A waste pipe from a bath, sink (not being a slop sink), bidet or lavatory basin, and a pipe for carrying off dirty water, shall—

Waste pipes from baths, etc.

(1) discharge so as not to cause dampness in a wall or foundation of a building;

(2) if it discharges to a drain otherwise than by a soil pipe from a watercloset or a waste pipe from a slop sink, be disconnected from the drain by a trapped gully with a suitable grating above the level of the water in the trap;

(3) if it is more than *six feet* in length, be provided with a suitable trap;

(4) if it discharges into a soil pipe from a watercloset or a waste pipe from a slop sink, be provided whatever its



length with a suitable trap adequately secured against destruction of the water seal.

107. An overflow pipe from a water cistern shall discharge in an exposed and conspicuous position, and so as not to cause dampness in any part of a building. Overflow pipes.

108. A private sewer (not being a sewer for the sewerage of a new street or a sewer for the conveyance solely of trade effluent) shall comply with the following requirements:— Private sewers.

(1) the provisions of byelaw 97 (as to the materials and construction of drains) shall apply to the sewer with the following modifications:—

(a) paragraph (4) shall apply as if “six inches” were substituted for “four inches” in the last line;

(b) in place of paragraph (6) there shall be substituted the following requirement—

“(6) if constructed of corrosible material, it shall be suitably protected inside and outside against corrosion;”

(c) paragraph (9) shall not apply;

(2) the sewer shall, unless it exceeds *thirty inches* in diameter, be laid in a straight line or in a series of straight lines;

(3) where the sewer does not exceed *thirty inches* in diameter, a manhole shall be provided at every point at which the sewer changes either its direction or gradient, and manholes shall be provided on every sewer at intervals not exceeding *three hundred feet*;

(4) a manhole shall be of such size as to allow access to the sewer for rodding and shall be constructed of brickwork or concrete in such a manner as to exclude all sub-soil water, the brickwork or concrete being carried up to ground level and provided with a proper iron cover;

(5) all inverts to manholes shall be formed with proper channels and benching.

109.—(1) (a) A connection between a drain and a private or public sewer shall be so made that the drain shall join the sewer obliquely in the direction of the flow of the sewer; Communications between drains and sewers and between sewers.

(b) if practicable the connection shall be made at an existing junction in the sewer;

(c) where a junction is made in a sewer, the sewer shall be properly rejointed and made watertight;

(2) (a) if a connection between a private sewer and a public sewer or between two private sewers is not made at a manhole, a manhole shall be made upon the private sewer within *forty feet* of the public sewer or other private sewer to which it is connected;

(b) every such manhole shall comply with the requirements as to manholes set out in the byelaw relating to private sewers.

#### WATERCLOSETS.

110. A watercloset constructed in connection with a building shall comply with the following requirements:—

(1) the pan, basin or other receptacle (hereafter in this byelaw called “the pan”) shall be of non-absorbent material so constructed and fitted as to receive and contain sufficient water and to allow any filth to fall free of the sides directly into the water; Receptacles.

(2) the flushing apparatus shall be such as to secure the prompt and effectual flushing and cleansing of the pan; Flushing apparatus.

(3) no part of the watercloset apparatus, other than the flushing apparatus, shall be directly connected with a supply or distributing pipe; Communication with supply pipes, etc.

(4) no container or similar fitting shall be fixed under the pan; Containers.

(5) no trap of the kind known as a “D” trap shall be fixed in connection with the watercloset; “D” Traps.

(6) where the watercloset discharges into a soil pipe which also receives the discharge from another watercloset, or from a bath, sink, urinal, bidet or lavatory basin, the trap of the watercloset shall be ventilated by a pipe which shall— Ventilation of traps.

(a) have an internal diameter of not less than *two inches*;

(b) be connected with the arm of the soil pipe at a point not less than *three* and not more than *twelve inches* from the highest part of the trap, on that side of the water seal which is nearer to the soil pipe;

(c) either have an open end as high as the top of the soil pipe or be carried into a soil pipe at a point



not less than *three feet* above the highest connection to the soil pipe;

(7) where the watercloset is in connection with a domestic building and is entered directly from the external air, it shall be provided with a sufficient opening for lighting and ventilation as near the top as practicable and communicating directly with the external air;

Lighting and ventilation of external water-closets.

(8) where the watercloset is in a domestic building and is not entered directly from the external air, it shall either—

Lighting and ventilation of internal water-closets.

(a) have an external wall for at least one of its sides and a window of an area of not less than *two square feet*, exclusive of the frame, opening directly into the external air; or

(b) be sufficiently ventilated by mechanical means and sufficiently lighted;

(9) for the purpose of this byelaw the expression "watercloset" shall include any room which is partitioned or divided into two or more cubicles, each containing a pan, if the partitions or divisions are so constructed as to allow the free circulation of air throughout the room.

Definition.

#### URINALS.

111. A urinal connected with a building which has a supply of water laid on shall comply with the following requirements:—

(1) the urinal shall be provided with a basin, stall, trough or other suitable receptacle or receptacles of non-absorbent material;

Receptacles.

(2) the outlet from the receptacle or receptacles shall be provided with an efficient grating;

Grating on outlets.

(3) the urinal shall be provided with suitable apparatus for effectually flushing and cleansing the receptacles provided;

Flushing apparatus.

(4) no part of the urinal apparatus, other than the flushing apparatus, shall be directly connected with a supply or distributing pipe;

Communication with supply pipes, etc.

(5) if the urinal can be entered from within the building, and is constructed to discharge into a soil pipe which also receives the discharge from another urinal, or from a water closet, bath, sink, bidet or lavatory basin, the

Ventilation of traps.

trap of the urinal shall be ventilated by a pipe which shall—

(a) be of an internal diameter not less than that of the trap or *two inches*, whichever is less;

(b) be connected with the waste pipe from the urinal at a point not less than *three* and not more than *twelve inches* from the highest part of the trap, on that side of the water seal which is nearer to the soil pipe; and

(c) either have an open end as high as the top of the soil pipe or be carried into a soil pipe at a point not less than *three feet* above the highest connection to the soil pipe.

#### EARTHCLOSETS.

112. An earthcloset constructed in connection with a building shall comply with the following requirements:—

(1) its only direct entrance shall be from the external air;

Entrance.

(2) it shall be not less than *forty feet* from any well, spring or stream of water, used or likely to be used by man for drinking or domestic purposes, or for the manufacture or preparation of articles of food or drink for human consumption, or for the cleansing of vessels with a view to the preparation or sale of such articles, and otherwise in such a position as not to render any such water liable to pollution;

Position.

(3) it shall be provided with a sufficient opening for lighting and ventilation as near the top as practicable and communicating directly with the external air;

Lighting and ventilation.

(4) the floor shall be of non-absorbent material which shall in every part, including the part beneath the seat, be not less than *three inches* above the surface of the adjoining ground and have a fall or inclination towards the entrance door of not less than *one-half of an inch to the foot*;

Floors.

(5) the receptacle for faecal matter (hereafter in this byelaw called "the receptacle") shall be of non-absorbent material so constructed and placed that its contents shall not escape by leakage or otherwise or be exposed to rainfall or to the drainage of any waste water or liquid refuse;

Construction of receptacles.



(6) the receptacle shall be of a capacity not exceeding *two cubic feet* (or such less capacity as may be sufficient to contain all faecal matter, earth or other material, which may accumulate therein during a period of not more than *one week*);

(7) no part thereof or the receptacle therein shall communicate with any drain;

(8) it shall be provided with—

(a) a suitable vessel of adequate capacity for dry earth or other suitable deodorising material so constructed and placed as to admit of ready access for depositing therein the necessary supply of the earth or other material; and

(b) sufficient means for applying the earth or other material to the faecal matter in the receptacle;

(9) the containing walls of the space beneath the seat, except such opening as may be necessary for affording access to the space, shall be impervious to moisture;

(10) the seat, the aperture in the seat, and the space beneath the seat, shall be of such dimensions that the receptacle can be so placed and fitted beneath the seat as to prevent the deposit of faecal matter elsewhere than in the receptacle;

(11) adequate access for cleansing the space beneath the seat and for removing therefrom or placing and fitting therein the receptacle shall be provided by means of the adjustment of or removal of the seat or by some other suitable means.

#### ASHPITS.

**113.** An ashpit constructed in connection with a building shall comply with the following requirements :—

(1) it shall be—

(a) not less than *ten feet* from any dwelling-house, or public building, or any building in which any person is employed in any manufacture, trade or business;

(b) not less than *thirty feet* from any well, spring or stream of water, used or likely to be used by man for

Size of receptacle.

Not to communicate with any drain.

Provision of vessels for deodorising material.

Walls.

Seats and spaces for receptacles.

Access to spaces for receptacles.

All ashpits.

Position.

drinking or domestic purposes, or for the manufacture or preparation of articles of food or drink for human consumption, or for the cleansing of vessels with a view to the preparation or sale of such articles, and otherwise in such a position as not to render any such water liable to pollution;

(2) there shall be ready means of access for cleansing the ashpit and, if practicable, for removing its contents without carrying them through any dwelling-house, or public building, or any building in which any person is employed in any manufacture, trade or business;

(3) its floor shall be not less than *three inches* above the surface of the adjoining ground, and shall be formed of flag-stones, concrete or other suitable material properly laid;

(4) its walls shall be constructed of hard smooth brickwork not less than *four inches* thick in cement mortar, or of common brickwork not less than *eight-and-a-half inches* thick, rendered inside with cement and sand in suitable proportions, or of other suitable and non-absorbent material of sufficient thickness;

(5) no part of it shall communicate with any drain.

**114.** An ashpit constructed in connection with a private dwelling-house shall comply with the following additional requirements :—

- (1) it shall be not more than *twenty cubic feet* in capacity;
- (2) it shall be properly roofed and adequately ventilated;
- (3) the door shall be so fitted and placed as to admit of being securely closed and fastened and to prevent the escape of the contents.

#### CESSPOOLS, ETC.

**115.** A cesspool constructed in connection with a building (other than a tank intended for the reception or disposal of trade effluent) shall comply with the following requirements :—

(1) it shall be—

(a) not less than *fifty feet* from any dwelling-house, or public building, or any building in which any person is employed in any manufacture, trade or business;

Access for cleansing.

Floors.

Walls.

Not to communicate with any drain.

Ashpits for private dwelling-houses.

Capacity.  
Roof and ventilation.  
Doors.

Position.

Cesspools and sewage tanks.



(b) not less than *sixty feet* from any well, spring or stream of water, used or likely to be used by man for drinking or domestic purposes, or for the manufacture or preparation of articles of food or drink for human consumption, or for the cleansing of vessels with a view to the preparation or sale of such articles, and otherwise in such a position as not to render any such water liable to pollution;

(2) it shall be so constructed and situated that there shall be ready means of access for cleansing it and for removing its contents without carrying them through any dwelling-house, or public building, or any building in which any person is employed in any manufacture, trade or business;

(3) it shall be so constructed as not to discharge any foul matter or foul water into a sewer or watercourse;

(4) it shall be so constructed as to be impervious to liquid either from the outside or the inside, and if constructed of brickwork shall be rendered inside with cement and sand in suitable proportions or properly asphalted, and if constructed in a soil liable to be waterlogged shall be backed with not less than *nine inches* of well-puddled clay;

(5) a cesspool (not being a settlement tank or other tank for the reception or disposal of foul matter) shall be arched or otherwise properly covered and adequately ventilated;

(6) a tank, if covered, shall be either adequately ventilated or provided with adequate mechanical means for drawing off gases.

**116.** A tank intended for the reception or disposal of trade effluent shall be so constructed and placed as not to cause pollution to any well, spring or stream of water, used or likely to be used by man for drinking or domestic purposes, or for the manufacture or preparation of articles of food or drink for human consumption, or for the cleansing of vessels with a view to the preparation or sale of such articles.

#### WELLS.

**117.** A well constructed in connection with a building and intended to supply water for human consumption shall comply with the following requirements:—

(1) it shall be—

Access for  
cleansing.

Discharge.

Construc-  
tion.

Covering  
and venti-  
lation of  
cesspools.

Ventilation  
of tanks.

Tanks for  
trade  
effluents.

Position.

(a) not less than *thirty feet* from any ashpit;

(b) not less than *forty feet* from any earthcloset or privy;

(c) not less than *sixty feet* from any cesspool;

(2) 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;

(3) the sides of the well shall be rendered impervious for a depth of not less than *six feet* from the level of the adjoining ground;

(4) a dug well shall be so constructed as to be readily accessible for cleansing;

(5) the top of a dug well shall be surrounded by a curb extending not less than *six inches* above the level of the paving referred to in paragraph (2) of this byelaw and so constructed as to prevent any surface water gaining access to the well;

(6) the lining tubes of a bored well shall project not less than *six inches* above the level of the paving referred to in paragraph (2) of this byelaw, and such projection shall be surrounded on the outer side with concrete not less than *six inches* thick for its full height;

(7) a well from which water is drawn by a bucket shall be provided with—

(a) an efficient hinged wooden or iron cover which will close the well when not in use; and

(b) a stand for the bucket not less than *six inches* above the level of the paving referred to in paragraph (2) of this byelaw;

(8) 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.

#### WATER TANKS AND CISTERNS.

**118.** A tank or cistern constructed or fitted in connection with a building and intended to be used for the storage of rainwater for human consumption shall comply with the following requirements:—

(1) if the tank or cistern forms the sole supply of water for domestic purposes, it shall have a minimum working

Paving of  
adjoining  
ground.

Construc-  
tion of sides.

Access for  
cleansing.

Curbing  
of dug  
wells.

Lining of  
bored wells.

Covering,  
etc., of  
bucket  
wells.

Covering  
of pump  
wells.

Capacity.



capacity of not less than *one thousand five hundred gallons*, but such capacity may be divided into two or more units;

(2) it shall be provided with an overflow pipe so placed or fitted as not to allow animals to enter through it; Overflow pipes.

(3) any draw-off tap or the end of any suction pipe shall be not less than *three inches* from the bottom of the tank or cistern; Draw-off apparatus.

(4) if the tank or cistern is wholly above the adjoining ground, it shall be provided with a solid and close fitting cover so constructed and fitted as to exclude all polluting matter; Covering.

(5) if the tank or cistern is either wholly or partly below the level of the adjoining ground— Construction, etc., of tanks and cisterns below ground.

(a) its walls, floor and roof shall be constructed of brick, concrete or other suitable material, and if constructed of a material which is not impervious to water shall be properly lined with an impervious material; and

(b) all pipes connected to it shall be so connected by proper and watertight joints;

(6) a tank or cistern provided with a fixed cover shall— Covered tanks and cisterns.

(a) have a manhole fitted with a proper iron cover and of sufficient size to allow the tank or cistern to be entered and cleansed; and

(b) be provided with a sufficient ventilator or ventilators the open end of which shall be fitted with a cover of copper wire gauze.

#### STOVES AND OTHER FITTINGS.

119. Where a stove, oven, copper, steam boiler or other similar apparatus (not being apparatus in which the heat is supplied by gas or electricity) is fitted in a building elsewhere than on a hearth constructed in connection with a fireplace opening in accordance with byelaw 75 (as to hearths), the floor under the apparatus and for a distance of *sixteen inches* beyond its front and *six inches* beyond its back and sides shall be constructed of incombustible material of sufficient thickness or protected by a sufficient slab or plate of incombustible material: Floors under detached stoves, etc.

Provided that, in the case of a domestic anthracite stove used solely for directly heating the room, hall or passage

in which it is placed, the distance for which the floor in front of the stove is required to be so constructed or protected shall be *nine inches*.

120. Every habitable room of a building, in which a gas fire or other similar apparatus for heating the room is fitted, shall be provided with an adequate flue pipe connected with such gas fire or apparatus properly fitted and not communicating with any other room, and discharging either— Flue pipes for gas fires.

(1) into a chimney not communicating with any other room; or

(2) directly into the external air in a suitable position, in which case the flue pipe shall be fitted with a suitable terminal or outside windguard.

121.—(1) Where a geyser or similar gas-heated water apparatus of the rapid water-heating type is fitted in a room, an adequate flue pipe shall be constructed in connection therewith and shall— Flue pipes for geysers, etc.

(a) be properly and securely fixed and of a diameter not less than that of the flue spigot at the top of the geyser or other apparatus;

(b) be fitted with a suitably constructed baffle;

(c) discharge either into a chimney not communicating with any other room, or directly into the external air in which case the flue pipe shall be fitted with a suitable terminal or outside windguard, or, where neither of the foregoing methods is reasonably practicable, into a space immediately below the roof which does not form part of any room and is itself freely ventilated to the external air.

(2) No such apparatus shall be fitted in a room which is without a window capable of being opened.

#### PART IV—MISCELLANEOUS.

##### GIVING OF NOTICES, ETC.

122.—(1) A person who intends to erect a building to which the foregoing byelaws relate shall give to the council notice in writing of his intention, and shall send or deliver the notice to the clerk or surveyor of the council with written particulars, so far as this may be necessary to show whether the building complies with any of the foregoing byelaws or any conditions of exemption which apply to it, of— Notice of intention to build.



- (a) the class or nature of the building and whether it will be used wholly or in any part as a dwelling-house;
- (b) the materials of which the building will be constructed;
- (c) the mode of drainage;
- (d) the means of water supply.

(2) He shall also send or deliver to the clerk or surveyor the following plans and sections, drawn or reproduced in a clear and intelligible manner on suitable and durable material:—

(a) a plan of every floor, and sections of every storey, floor and roof of the building (not being a floor, storey or roof not governed by or material for the purposes of any of the foregoing byelaws or any conditions of exemption which apply to the building);

(b) a block plan of the building;

(c) a key plan showing the position of the site when it is not sufficiently identifiable from the block plan.

(3) The plans and sections shall be to a scale of not less than *one inch* to every *eight feet* or, if the building is so extensive as to render a smaller scale necessary, not less than *one inch* to every *sixteen feet*; and the block plan shall be to a scale not less than *one inch* to every *forty-four feet*.

(4) There shall be shown, so far as may be necessary to show whether the building complies with any of the foregoing byelaws or any conditions of exemption which apply to it—

(a) upon the plans and sections—

(i) the level of the site of the building, the level of the lowest floor of the building, and the level of any street adjoining the curtilage of the building, in relation to one another and above some known datum;

(ii) the position, form and dimensions of the foundations, walls, floors, roofs, chimneys and the several parts of the building;

(iii) the form and dimensions of every watercloset, urinal, earthcloset, ashpit, cesspool, well and water tank or cistern to be constructed in connection with the building;

(b) upon the block plan—

(i) the size and position of the building and of the appurtenances of the properties immediately adjoining the building;

(ii) the position and width of every street adjoining the curtilage of the building;

(iii) the size and position of every yard and open space belonging to the building;

(iv) the position of every watercloset, urinal, earthcloset, ashpit, cesspool, well and water tank or cistern in connection with the building;

(v) the lines of drainage of the building, the size, depth and inclination of every drain, and the means to be provided for the ventilation of the drains;

(vi) the position and level of the outfall of the drains;

(vii) where the drainage is intended to be connected to a sewer, the position of the sewer.

(5) In addition to the foregoing requirements of this byelaw, a person who intends to construct a wall or part of a wall in accordance with byelaw 29 (as to walls with a structural framework of steel, iron or reinforced concrete), or byelaw 30 (as to walls of cement concrete or reinforced concrete), or to design and construct a wall or part of a wall in accordance with sub-paragraph (b) of paragraph (2) of byelaw 37 (as to the thickness of walls of brickwork or masonry), shall, when required by the clerk or surveyor, send or deliver to him such of the following information as is necessary to show whether the wall or the part of a wall complies with any of the foregoing byelaws which apply to it:—

(a) a specification of the materials proposed to be used;

(b) the proportions of the materials in any concrete or mortar;

(c) drawings showing the details of construction and, in particular, of any framework, and the sizes and position of any reinforcing metal;

(d) calculations of strength.

(6) A person who intends to make a material change within the meaning of section 62 of the Public Health Act, 1936, in the purposes for which a building or part of a building is used, shall send or deliver notice of such change to the clerk or surveyor, whether or not it is proposed to execute any work in connection with the change.

23. A person who intends to execute works of drainage in connection with a building shall give to the council notice of his intention, and shall send or deliver the notice to the clerk or surveyor of the council with a description in writing of the

Deliver  
plans, e

Scale of  
plans, e

Content  
plans, e

Additional  
information  
in respect  
of certain  
walls.

Notice of  
material  
change of  
user.

Notice and  
plans of  
works of  
drainage.



works, and shall, so far as may be necessary to show whether the works comply with the byelaws relating to such works, send or deliver to the clerk or surveyor plans as required by the last preceding byelaw showing—

(1) the lines of the proposed drainage, the size, depth and inclination of each new drain, and the means to be provided for the ventilation of the drains;

(2) the position and level of the outfall of the drains;

(3) where the drainage is intended to be connected to a sewer, the position of the sewer.

124. A person required by the last two preceding byelaws to deposit plans or other documents shall deposit them in duplicate.

Plans, etc.,  
to be  
deposited  
in duplicate.

125. A person who intends to erect any building, or otherwise execute any work or instal fittings to which any of the foregoing byelaws apply—

Notice of  
commence-  
ment of  
work, etc.

(1) shall give to the surveyor of the council not less than *twenty-four hours'* notice in writing—

(a) of the date and time at which the erection of the building, or the execution of such work or matter as aforesaid, will be commenced; and

(b) before the covering up of any drain, private sewer, concrete or other material laid over the site, foundation or damp-proof course, involved by the erection of the building or the execution of the work;

(2) if he neglects or refuses to give any such notice, shall comply with a notice in writing by the surveyor requiring him within a reasonable time to cut into, lay open or pull down so much of the building or work as prevents the surveyor from ascertaining whether any of the foregoing byelaws have been contravened;

Opening up  
work.

(3) shall permit the surveyor to take such samples of the materials to be used in the construction of the building, or the execution of such work or matter as aforesaid, as may be necessary to enable him to ascertain whether such materials comply with these byelaws;

Taking of  
samples.

(4) if he has received a notice in writing from the surveyor pointing out the respects in which the building or work contravenes these byelaws, and as a result of such notice shall have amended or added to the building or work so as to secure compliance with these byelaws, shall within a reasonable time after the completion of such work give notice in writing to the surveyor of its

Notice of  
completion  
of work  
required by  
surveyor.

completion;

(5) shall give to the surveyor notice in writing—

Notice of  
completion  
of building  
and of  
proposal to  
occupy.

(a) of the erection of the building or of the execution of the work within a reasonable time after its completion; and

(b) in the case of a building, not less than *seven days* before it is occupied, of the proposal to occupy.

126.—(1) A person who is required by the foregoing byelaws to give, send or deliver any notice or any plans, sections or written particulars shall sign such notice, plans, sections or written particulars or cause them to be signed by his duly authorised agent.

Signature  
and deliv-  
ery of  
notices, etc.

(2) If such notice or other document is signed by an agent, it shall state the name and address of the person on whose behalf it has been given, sent or delivered.

(3) Any such notice or other document shall be sent or delivered either to the office of the council or to the office of the person to whom the notice is required by the foregoing byelaws to be sent or delivered.

#### PENALTIES.

127. Every person who shall offend against any of the foregoing byelaws shall be liable on summary conviction to a fine not exceeding *five pounds*, and in the case of a continuing offence to a further fine not exceeding *forty shillings* for each day during which the offence continues after conviction therefor.

#### REPEAL OF BYELAWS.

128.—(1) The byelaws with respect to new streets and buildings which were made on the eighteenth day of March, 1930, by the Council and were confirmed on the twelfth day of May, 1930 by the Minister of Health, except in so far as they relate to new streets, are hereby repealed.



(2) This repeal shall not apply as regards any work begun before the date of operation of this byelaw, or any work not so begun if before that date the plans shall either have been passed by the council or the prescribed period for their rejection shall have expired.

(3) The exceptions from repeal contained in the last preceding paragraph shall not prohibit any such work from being executed in accordance with or so as not to contravene the foregoing byelaws.

### SCHEDULES.

#### FIRST SCHEDULE.

##### 1.—Dead Loading.

For the purpose of calculating the dead loading of a building or any part of a building, the weights of the materials shall be assumed to be those set out in British Standard Specification No. 648—1935 (Schedule of Unit Weights of Building Materials), or if not set out in that Specification shall be determined by test.

##### 2.—Superimposed Loading.

For the purpose of calculating the superimposed loading on beams, pillars, piers and walls, the minimum superimposed load on each floor and on the roof of a building shall be estimated as equivalent to the dead load specified in the following table for the appropriate type of building, floor or roof:—

Type No.	Description of building, floor or roof	Pounds per square foot of floor area.
1	Rooms of dwelling-houses, flats, hotel buildings and similar residential buildings; hospital rooms and wards; corridors, staircases and landings of dwelling-houses and flats.	40
2	Offices—floors above entrance floor.	50
3	Offices—entrance floor and floors below entrance floor.	80
4	Churches, schools, reading rooms, art galleries and similar buildings.	70
5	Retail shops and garages for cars of not more than <i>two tons</i> dead weight.	80
6	Assembly halls; drill halls; dance halls; gymnasias; light workshops; public spaces in hotels and hospitals; corridors, staircases and landings for the buildings mentioned in this table other than those described in Type No. 1 above; cinemas; restaurants and grand stands.	100
7	Warehouses, book stores, stationery stores and buildings similarly used, and garages for motor vehicles exceeding <i>two tons</i> dead weight. Actual load to be calculated but not less than	200
8	Flat roofs and roofs inclined at an angle with the horizontal of not more than <i>twenty degrees</i> .	30 (per square foot of covered area).
9	Roofs inclined at an angle with the horizontal of more than <i>twenty degrees</i> .	10 (per square foot of covered area).

(a) For the purpose of calculating the total load to be carried on pillars, piers and walls of buildings of more than *two storeys* in height, the superimposed loads for the roof and topmost storey shall be calculated in full in accordance with the schedule of loading set out above, but for the lower storeys a reduction of superimposed loads may be allowed as under:—

#### Reduction of Superimposed Loads on Pillars, Piers and Walls.

For the first storey below the topmost storey—10 per cent. reduction of its superimposed load.

For the second storey below the topmost storey—20 per cent. reduction of its superimposed load.

For the third storey below the topmost storey—30 per cent. reduction of its superimposed load.

For the fourth storey below the topmost storey—40 per cent. reduction of its superimposed load.

For the fifth storey and each lower storey below the topmost storey—50 per cent. reduction of its superimposed load.

These reductions may be made by estimating the proportion of floor area carried by each pillar, pier or wall. No such reduction shall be allowed on any floor scheduled for an applied superimposed load exceeding *one hundred pounds per square foot*.

(b) Except as hereinafter provided, the wind pressure on a building shall be assumed to be not less than *fifteen pounds per square foot* in any horizontal direction on the upper two-thirds of the vertical projection of the surface of the building, with an additional pressure of not less than *ten pounds per square foot* on all projections above the general roof level:

Provided that, where the height of a building is less than *twice* its width, and where the building is stiffened by walls and floors, the wind pressure may be neglected.

(c) A superimposed load which may roll or move on wheels shall be calculated as being equivalent to a static loading which exceeds the weight of the rolling or moving load by not less than *fifty per cent*.

##### 3.—Partitions.

Where the position of a partition in a building is definitely located in the design, the actual weight of the partition shall be included in the dead floor load.

Where the position of a partition is not definitely located in the design, a uniformly distributed load sufficient to allow for it shall be added to the dead floor load, and for all such floors used for offices the minimum total allowance for partitions shall be at the rate of *twenty pounds per square foot* of floor area.

#### SECOND SCHEDULE.

In determining the maximum permissible pressures on walls constructed of bricks or blocks, the crushing strength of the individual brick or block shall be determined in the following manner:—

Twelve whole bricks or blocks with sides not less than *three inches* long shall be taken. The materials shall be soaked for *twenty-four hours* in water at a temperature between *fifteen degrees* and *twenty degrees* Centigrade. The frogs in bricks shall then be filled with mortar and the top and bottom surfaces of hollow bricks or blocks shall be made plane and parallel with mortar. The mortar shall consist of *one part* (by weight) of cement and *three parts* (by weight) of dry and clean Leighton pit sand, the cement used being either normal Portland cement or rapid-hardening Portland cement. After the application of the mortar to the bricks or blocks, the specimens shall be covered with damp cloths for *six hours*, then immersed in water at a temperature between *fifteen degrees* and *twenty degrees* Centigrade for *twenty-seven days* in the case of normal Portland cement mortar, and for *six days* in the case of rapid-hardening Portland cement mortar, or for such period, being not less than



two days, at which the mean crushing strength of three cubes each with sides *three inches* long made from the batch of mortar used in the preparation of the bricks or blocks and stored under similar conditions will be between *two thousand* and *four thousand pounds per square inch*.

The test pieces shall finally be crushed between three-ply wood sheets *one-eighth-of-an-inch* thick, the load being applied at a uniform rate of approximately *two thousand pounds per square inch per minute*. The average value of the crushing stress thus obtained for the twelve test pieces, calculated over the gross area of the test pieces, shall be taken as the crushing strength of the individual brick or block for the purposes of Tables 1 and 3 of this Schedule.

TABLE 1.

*Permissible Pressures on Walls constructed of bricks or solid blocks and having a slenderness ratio not exceeding 6.*

*Column A* shows the pressures allowed where the combined dead loading and superimposed loading can be assumed to be uniformly distributed over the area sustaining the load.

*Column B* shows the pressures allowed (subject to the average pressure not exceeding that in *Column A*) where the loading is a combination of the uniform pressure in *Column A* with increases in pressures due to eccentric loading and lateral forces.

*Column C* shows the pressures allowed at girder bearings, stanchion bases or other similar places where there are concentrated loads, taking into account the pressures in *Columns A* and *B*.

Crushing strength of the individual brick or block in pounds per square inch.	Mortar proportioned by volume not weaker than	Maximum permissible pressures in tons per square foot of overall area of the wall.		
		A.	B.	C.
Not less than 1,500	Lime mortar or black mortar	4	6	6
	1 : 3 : 12 cement-lime mortar	5.5	8.25	8.25
	1 : 1 : 6 cement-lime mortar	7	10.5	10.5
	Hydraulic lime mortar	5.5	8.25	8.25
	Cement mortar	8	12	12
Not less than 3,000	Lime mortar or black mortar	4	6	6
	1 : 3 : 12 cement-lime mortar	7	10.5	10.5
	1 : 1 : 6 cement-lime mortar	10	15	15
	Hydraulic lime mortar	7	10.5	10.5
	Cement mortar	11	16.5	16.5
Not less than 4,000	Lime mortar or black mortar	4	6	6
	1 : 3 : 12 cement-lime mortar	8	12	12
	1 : 1 : 6 cement-lime mortar	10	15	15
	Hydraulic lime mortar	8	12	12
	Cement mortar	13.5	20.25	20.25
Not less than 5,000	Cement mortar	16	24	24
Not less than 7,500	Cement mortar	23	34.5	34.5

Crushing strength of the individual brick or block in pounds per square inch.	Mortar proportioned by volume not weaker than	Maximum permissible pressures in tons per square foot of overall area of the wall.		
		A.	B.	C.
Not less than 10,000	Cement mortar	30	40	45
Permissible pressures on masonry in which units of intermediate strength are used may be obtained by interpolation.				
Exceeding 10,000	1 : 2 Cement mortar	$\frac{X}{500} + 10$ but not exceeding 40 where X is result of test defined in this Schedule	40	48

TABLE 2.

*Percentage reduction of permissible pressures for slenderness ratios exceeding 6 but not exceeding 12.*

Value of slenderness ratio.	Reduction of maximum permissible pressures in Table 1.
Over 6 but not more than 8	20 per cent.
Over 8 but not more than 10	40 per cent.
Over 10 but not more than 12	60 per cent.



TABLE 3.

Permissible pressures on walls constructed of hollow blocks in cement mortar or mortar not weaker than 1 : 1 : 6 cement-lime mortar.

Crushing strength of the individual brick or block in pounds per square inch.	Maximum permissible pressures in tons per square foot of overall area of the wall.
Not less than 500 .....	2.0
Not less than 1,000 .....	4.25
Not less than 2,000 .....	8.5

The Common Seal of the Cowbridge Rural District Council was affixed hereto at a Meeting of the said Council held on the Third day of May, One thousand nine hundred and thirty-nine, in the presence of:

JOHN LEWIS,  
*Chairman.*

VIVIAN S. GWYN,  
*Clerk.*



The foregoing byelaws are hereby confirmed by the Minister of Health this Twenty-ninth day of June, 1939, and shall come into operation on the twenty-ninth day of July, 1939.

F. SLATOR,  
*Assistant Secretary  
Ministry of Health.*



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