20. MD 05/86 1998 REGULATIONS FOR EXTERNAL BUILDING DRAINAGE

MINISTERIAL DECISION 5/86 DATED 17TH MAY, 1998REGULATIONS FOR EXTERNAL BUILDING DRAINAGE

MINISTRY OF ENVIRONMENT AND WATER RESOURCES P.O. Box 323, MUSCAT TEL: 696444 REGULATIONS FOR EXTERNAL BUILDING DRAINAGE

SECTION 1 -GENERAL RULES

Article (1): In compliance with the Law on the Conservation of the Environment and Prevention of Pollution issued by Royal Decree 10/82 and its amendments and in order to provide the greatest possible health and social welfare for the Nation and citizens, these Regulations concerning External Building Drainage have been effected

Article 2

The terms used in these Regulations shall be as defined in Royal Decree 10/82 with the following additions:-

Drain: Means any pipe or channel including chambers and manholes thereon not vested in the Municipality for the Area and which is used for the foul and/or surface water drainage of a building and any buildings or yards appurtenant there to and laid externally to those buildings.

Foul Drain: Means any drain to convey sewage from a building to a sewer or other point of disposal**.**

Foul Drain Connection: Means that portion of a foul drain that lies between the boundary of private property and its junction with a. public sewer or where the connection is to be made to a public sewer on private property, it shall mean the last 2 metres of the foul drain measured horizontally.

Gully Trap: Means a water sealed trap to prevent the passing of air and gases from the drain and to receive the sullage from waste pipes, and from the roofs and yards.

Chamber: Means a small concrete or brick chamber existing on a length of drain and provided with a cover. The depth of which does not exceed 600mm and is large enough to permit sewer rods to be used without difficulty.

Manhole: Means a chamber provided in the length of a drain, designed to enable a man to descend into it and move about comfortably and safely for the purpose of inspection, testing or clearing an obstruction.
Means a sewer for surface water "drainage, constructed and maintained at the expense of the owner

Public Channel: Means a channel for surface water drainage which is vested in and main- tained by the Municipality for the Area.

Private Sewer: Means any sewer vested in and maintained by the Municipality for the Area

Septic Tank: Means any structure designed to treat biodegradable wastewater by settlement and anaerobic biological degradation

Sewer: Means any pipe or channel together with associated manholes designed to convey sewage from two or more buildings and any buildings or yards appurtenant thereto Soil
Means the discharge from soil fitments.

Soil Fitment: Means a w.c. or urinal or water basin or any similar fitments.

Soil Pipe: Means a pipe used to convey soil from a soil fitment to a foul drain

Sullage: Means the discharge of liquid wastes from the kitchen.

Surface Water Drain: Means any channel or pipe used to convey surface water from any part of a building and from the surface of the ground and any paved area to a public channel or other point of disposal.

Liquid Trade Wastes: Means any liquid, with or without suspended solid matter, resulting from any trade or manufacturing process or any cleaning operation associated there- with.

Trap: Means a device incorporating a water seal built into a pipe or fitment to prevent gas passing upstream of the trap.

Ventilation Pipe: Means any pipe used for ventilating any foul drain or sewer.

Waste Fitment: Means a bath, shower, wash-basin, and floor gully or sink.

Waste Water: Means soil, sullage and liquid trade wastes,

Waste-Seal: Means the water normally retained in a trap without which air or gases would have free passage through the trap.

SECTION 2:
Drainage system

CHAPTER 1:
Surface Water Drainage System

Article (3):

(a) Every building will be provided with pipes or channels as are necessary to effectively divert all surface water away from the building in such a manner as to minimise incidents of flooding.

(b) All surface water shall be either conveyed to a public surface water channel or drain, or shall be disposed of in such other manner as the Municipality for the Area may direct.

c) No surface water shall be discharged to any foul drain or public sewer unless specifically permitted by the Municipality for the Area under the terms of Article 4.

(d) All surface water drains shall be supplied, installed and maintained by the owners

Article (4): The Municipality for the Area may, at its discretion, permit any yard attached to or forming part of a stable or a cattle shed, or an abattoir, or any paved yard of any shop, house or other development used for the preparation of food or the washing of clothes or utensils, or any paved yard subject to spillage from road vehicles, or any other paved area potentially subject to pollution to drain to a foul drain or sewer. Such permission shall only be given if the paved area is drained to the foul drain or sewer via a trapped gully. The level of such trapped gully must be higher than the highest known flood level or the paved area must be fully protected from any flood waters.

Article (5): No solid refuse of any kind shall be deposited in any surface water drain or channel.

Article (6): No trade wastes of any kind shall be discharged to any surface water drain or channel except as provided for under Article 27.

Article(7): No pipes or channels provided for the carriage of surface water shall discharge across the surface of any foot-path in a street. Carriage shall be through cast iron conductors beneath the foothpath or by such other means that shall be approved by the Municipality for the Area.

Article (8): Channels provided for the carriage of surface water shall be of adequate size, constructed of approved impervious material, finished off smooth, and laid to a gradient of not less than 1 in 100.

Article (9): Channels shall be provided with grilles to prevent any debris from entering any public channel, watercourse or wadi and, where directed by the Municipality for the Area, a suitable and approved silt trap shall also be provided.

Article (10): Pipes provided for the carriage of surface water shall comply with the require. ments of Article 16 to 22 and shall have a minimum internal diameter of 150mm.

CHAPTER 2
Private Foul Drains and Sewers

Article (11): Every house or property connecting to an external drainage system shall be provided with soil and waste fitments generally complying with the requirements of British Standard Code of practice CP 305, or any equivalent standard, approved by the Municipality for the Area.

Article (12): Soil and waste pipe systems shall generally comply with the requirements of British Standard 5572, or any equivalent standard, approved by the Municipality for the Area.

Article (13): The whole of the sanitary installation of a building shall be constructed so that all fittings, pipes and joints are properly made and watertight.

Article (14): (a) Every building shall be provided with a foul drain to effectively convey sewage from the building to a sewer or other approved point of disposal.

(b) Foul drains and private sewers shall be connected to a public sewer where one is available at a suitable level, and in a suitable position within 30m of the boundary of the relevant premises. Should an owner fail to carry out the work necessary within a period specified to the owner by the Municipality for the Area, in writing, the Municipality may carry out the work and recover the whole of the costs from the owner.

(c) Where there is a no suitable public sewer, the Municipality for the Area has to require the provision of a septic tank or any other proper means of treatment.

(d) Such foul drains and private sewers shall be supplied, installed, maintained and operated by the owners concerned at their own cost, and as approved by the Municipality for the Area.

Article (15): Foul drains, pipes should be free from defects and constructed as follows :-
Asbestos-cement pipes conforming to ISO 391, ISO 392, ISO 881 or ISO 4488, or approved equivalent standard;
Vitrified clay pipes conforming to 8SS 65 or DIN 1230 or approved equivalent standard;
Cast iron pipes conforming to ISO 2531, ISO 49 or BSS 437, BSS 1211 (Class B) or BSS 78, or approved equivalent standard;
Concrete pipes conforming to BSS 556 or approved equivalent standard;
UPVG pipes conforming to BSS 4460, or approved equivalent standard, or
Such other material approved by the Municipality for the Area.

Article (16): All pipes shall be of adequate size and shall be not less than 150mm internal diameter where used for drains or not less than 200mm internal diameter where used for sewers.

Article (17): Every foul drain or private sewer shall be laid to gradients within the following limits :

	150mm dia	200mm dia	225mm dia
Flattest Gradient	1 in 60	1 in 90	1 in 100
Steepest 1 in 1 in 1 in			
Gradient 8			
13 14			

except where compliance can only be achieved by recourse to pumping; then the Municipality for the Area may permit flatter gradients, but in no case will gradients flatter than the following be allowed :

150mm dia	200mm dia	225mm dia
1 in 100	1 in 175	1 in 200

Article (18): (a) Pipes other than cast iron that lie within 15 metres of any building, or lie under any road, or are laid under buildings, or have less than 1250mm cover shall be completely surrounded by concrete not less than 150mm thick.

(b) Notwithstanding the requirements stated in the previous paragraph, and regardless of the type of pipe used, the Municipality for the Area may direct that added measures be taken against corrosion at its discretion.

(c) Pipes shall be supported along the full length, and not only at their joints.

(d) Where any pipe is laid in soft and yielding ground, the material of the pipe and the method of its support shall be as directed by the Municipality for the Area.

(e) Where any pipe is laid above ground, it shall be of cast iron and shall be supported by concrete piers at each joint, and at such intermediate points as the Municipality for the Area may direct.

Article (19): (a) Laying any part of any drain under any building shall be avoided as far as possible.

(b) Where part of a drain is laid under a building, that part shall be laid in a straight line and shall be provided with means of access for its whole length.

(c) No building shall be erected over any existing sewer or drain without the written consent of the Municipality for the Area, and subject to the conditions of the Municipality and at its discretion.

Article (20): No trees shall be planted within 1800mm, measured in plan of any sewer or drain.

Article (21): Where a drain passes directly under wall flexible joints shall be provided in the pipe on either side of the wall at distances equal to the pipe diameter.

Article (22): (a) Every inlet to every drain, except for a soil pipe or a ventilating pipe, shall be properly trapped between the sewer and the sanitary fitting. The trap shall be formed and fixed to ensure a permanent water-seal of not less than 75mm. The water-seal gully shall be provided with a grating above the level of the water-seal and above all openings discharging to this. (The gully shall be protected from the ingress of flood waters to the highest known flood level).

(b) No inlet to any foul drain shall be made except - The connections of sanitary fitments. Yard gullies, but only if the Municipality for the Area judges that the surface water from the yard is sufficiently polluted to preclude direct discharge to the environment.
Trade effluent connections, but only with the prior approval and consent of the Municipality for the Area, as required under Regulations and Standards for Discharge of Trade Effluents issued by the Council Decision No.7 /84.

Article (23): (a) Every branch drain shall be straight throughout its length and shall join any other foul drain or sewer obliquely so that flow in the branch is travelling in a similar direction to the flow in the main drain, or sewer. Where it joins the other drain, an inspection chamber or manhole shall be provided.

(b) Where a junction is made directly to a sewer, the sewer shall be properly rejoined and made watertight.

(c) If a junction between a foul drain and a sewer is not made at a manhole on the sewer, then a manhole shall be provided on the foul drain within 12 metres of the sewer.

(d) Every such manhole shall comply with the requirements set out in Article 26.

Article (24): Every joint in a drain or sewer shall be properly made so as to prevent water leakage and able to resist a pressure of 1.5 metres head of water, and no material forming such a joint shall project into the interior of the pipe.

Article (25): (a) Every foul drain shall be ventilated by means of a ventilating pipe which shall be carried to a height not less than 1 metre above the roof of the building to which it is fixed or above the eaves of such a building, if the building has a pitched roof.

(b) No ventilating pipe shall be fixed so as to allow the escape of foul air into any building.

(c) The internal diameter of every ventilating pipe, or any other pipe acting as a ventilating pipe, shall be not less than 100mm or the diameter of the drain it serves, whichever is the greater .

(d) The open end of every ventilating pipe shall be provided with a suitable wirenetting to prevent the access of adventitious matter whilst not impeding air flow.

(e) Ventilating pipes shall not be used for carrying rain water.

(1) Ventilating pipes shall be straight except where this is unavoidable, in this case the approval of the Municipality for the Area must be obtained.

(g) Air or gases from the public sewers shall be allowed to flow through the foul drains and to escape into the free air by means of the ventilating pipes, and no interceptor trap shall be provided in any foul drain unless specifically required by the Municipality for the Area.

(h) Ventilation covers shall not be used on any manholes.

Article (26): (a) A manhole or inspection chamber shall be provided at every point at which a foul drain or sewer changes either its direction or its gradient and elsewhere so as to ensure that the maximum distance between manholes or chambers does not exceed 60 metres.

(b) A manhole or inspection chamber shall be of a size sufficient to allow access to the drain or sewer for rodding. An inspection chamber shall not be less than 800 mm long and

600mm wide or, if circular, shall have an internal diameter not less than 800mm. A manhole shall be not less than 1200mm long and 900mm wide or have an internal diameter not less than 1000mm, when it is circular.

(c) A manhole or inspection chamber shall be constructed of concrete brickwork, in situ concrete or precast concrete sections in such a manner as to exclude all subsoil water and surface water. For walls deeper than 600mm below ground level concrete blocks shall not be used and internal rendering shall not be permitted. The concrete brickwork, in situ concrete or concrete sections shall be carried up to ground or floor level and shall be provided with a sealed manhole cover of suitable duty to BSS 497, or approved equivalent standard. Covers for inspection chambers and shallow manholes shall have a clear opening of not less than 600mm by 450mm. Covers for deeper manholes shall have a clear opening of not less than 600mm by 500mm. The minimum thickness of concrete brickwork shall be 225mm. The minimum thickness of concrete shall be 150mm. Where ordinary portland cement concrete is liable to attack, special precautions shall be taken after approval by the Municipality for the Area.

(d) Benchings shall be formed above the level of every drainage channel in a manhole or inspection chamber and fall towards the channel at a gradient of 1 in 2.

(e) The benchings of every manhole or inspection chamber shall be rendered with cement mortar to provide a smooth and impervious surface.

(f) Every drainage channel in a manhole or inspection chamber shall have a diameter not less than that of the largest drainage inlet into, and not more than that of the outlet from manhole or inspection chamber.

(g) Every drainage inlet into a manhole or inspection chamber shall discharge into the drainage channel therein with properly made bends constructed within the benching of the manhole or inspection chamber, such that the flow travels in a similar direction to that in the channel.

CHAPTER 3

Liquid Trade Wastes

Article.(27): No trade wastes shall be discharged into any surface water channel or drain connected with any public channel or any foul drain connected with any public sewer without the prior consent of the Municipality for the Area. Such consent may be granted but only with conditions that the Municipality may consider necessary for the protection of the drain, sewer or public channel, and so as not to interfere with the full flow of its contents nor to affect prejudicially the treat- ment or disposal of its contents.

Article (28): (a) Every drain intended solely for the conveyance of trade waste shall be constructed of pipes free from defects made of suitable materials and shall be properly supported and protected. They have to be laid at a proper gradient and provided with leak proof joints.

(b) Every such drain shall be ventilated as provided for in Article 25.

(c) Every such drain shall have a manhole provided with an intercepting trap as near to the public sewer as possible, but within the curtilage of the owner's property. The trap shall be on the side of the manhole nearest to the public sewer.

(d) Such intercepting trap shall be formed and fixed so as to have a water seal of not less than 75mm and shall have a metal arm fitted with a stopper and accessible from ground level. When the fall allows, there should be a drop of 75mm from the invert of the manhole to the water level in the intercepting trap.

Article (29): Where large quantities of grease and oil are discharged into drains as from can- teens and kitchens, grease traps of a design approved by the Municipality for the Area shall be installed.

Article (30): Petrol and oil traps of a design approved by the Municipality for the Area shall be provided at all garages and at all other places where petrol and oil may reach the drain or sewer.

CHAPTER 4

Testing

Article (31): All sewers and drains shall be tested for imperviousness to a pressure of at least 1.5m head of water, or as required by the Municipality for the Area. The test should be carried out before the pipes are haunched or surrounded with con-crete or covered in and it shall be repeated after all backfilling is complete. After standing full of water for 30 minutes the water level should be topped up as necessary and then if in the following 60 minutes the loss of water shall exceed 7.5 litres per metre diameter of pipe per 30m length of pipeline the test will not be considered as satisfactory.

CHAPTER 5

Foul Drain Connections

Article (22): Every foul drain connection shall be made by the Municipality for the Area who may, at their discretion, recover the cost thereof from the owner.

Article 33

The Municipality for the Area shall not make any such connection until fully satisfied that the drainage work or the private sewer has been carried out in accordance with the provisions of these Regulations.

CHAPTER 6

Declaration of Public

Article (34): If any sewer, not being a public sewer is constructed to the satisfaction of the Municipality for the Area, it may at its discretion, whether at the request of the owners or otherwise, by writing under its hand, declare that after the expiration of one month from the date thereof the said sewer shall become a public sewer.

Article (35): At the expiration of the said period, unless the owner shall have objected by notice to the Municipality for the Area, the said sewer shall become a public sewer and shall be vested in the Municipality who shall thereafter maintain it. An objection by the owner shall not prevent the declaration of a public sewer if this is deemed to be in the public interest.

CHAPTER 7

Submitting Application for Permits

Article (36): Every person who intends to layout or alter any drain, sewer or pipe shall comply with the following requirements:-

(a) Submit a written application, in triplicate, on the form prepared for that purpose to the Municipality for the Area before commencing any such work.

(b) Together with such notice he shall deposit in triplicate plans and sections showing thereon the whole of the intended surface water drains, foul drains, and private sewers together with their proposed sizes and gradients. The level of the ground surface and the depths of the proposed drains shall also be shown together with the position of every building, gully, soil pipe, water pipe, ventilating pipe, trap or other fittings. Such plans shall also show how the building is to be connected with any other drains, sewers or public channels. The scale to which any plan is drawn shall also be shown.

(c) Such plans shall be drawn to not less than the following scales:-

- Building plans and section Site plans
- Drainage sections: Horizontal Vertical
- 1: 100 -1: 500
- 1: 100 -1: 30

(d) The proposed new drains shall be shown in red and existing buildings and drains in black.

Article (37): (a) After deposit of the notice, plans and sections required under Article 36 the approval or disapproval of the Municipality for the Area shall be conveyed in writing to the person who gave notice. Such approval or disapproval will show such person the required alterations to his proposals and he has to alter the plans and sections accordingly.

(b) When such plans and sections have been approved by the Municipality for the Area, one copy, appropriately endorsed, shall be returned to such per- son.

(c) Such person may then proceed with the work excepting final connection with any public sewer, provided that if the work is not commenced within six months from the date of the notice of approval, such approval may be cancelled.

(d) No person shall commence any such work until the plans and sections have been approved.

Article (38): Every person who constructs or alters any surface water drain, foul drain or private sewer, or other ancillary works shall, before proceeding to cover the foundations or drains or surrounding any pipe with concrete, give the Municipality of the Area four days notice in writing.

Article (39): (a) Every person who constructs or alters any surface water drain, foul drain or private sewer, or other ancillary works shall give the Municipality for the Area four days notice in writing specifying the date on which such drains or works will be ready for final inspection and testing before connecting to any existing drain or sewer

(b) Such person shall, if required by the Municipality for the Area, deposit such sum of money as the Municipality may demand to meet the cost of the connection with any sewer before such connection is commenced.

Article (40): Every person who neglects to notify the Municipality or covers up such foundations or drains prior to inspection shall be required by the Municipality for the Area to remove as much of the work as prevents the Municipality from ascertaining whether he has followed the required conditions.

Any person who:

(a) Commences or resumes drainage operations in contravention of these Regulations.

(b) Changes plans or specifications approved by the Municipality for the Area without prior written permission from the Municipality for the Area for such change.

(c) Executes any drainage operation in contravention of any of the provisions of these Regulations.

(d) Fails to comply with any lawful order or written directions of the Municipality for the Area, or with any terms or conditions attached by the Municipality, any modification or waiver of any of the requirements of these Regulations

(e) Commits any other breach of these Regulations:

Shall be liable to a fine not exceeding R.O. 500 and to a daily fine not exceeding R.O. 100 for every day on which the offence is continued. Furthermore, the Municipality for the Area shall have the right to enter upon the land of the person concerned and to take action it considers necessary to prevent the breach of these Regulations where a hazard to public health exists, and to charge the cost of this action to the householder.