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**BULLETIN 2008-007-EV/PL**

**November 10, 2008**

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## **PARKADE DRAINAGE TREATMENT SYSTEM**

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The majority of water discharged to sewers in covered or underground parking areas is neither rainwater nor storm water runoff. Most of the wastewater generated in these areas comes from activities such as floor washing, vehicle washing, sprinkler system tests and other building maintenance activities. Wastewater generated from these activities contains dirt, debris, oils, greases, metals, detergents and other contaminants that may not be discharged to the storm sewer system.

Section 3.2(1) of the Sewer and Watercourse By-law states “No person shall cause or permit contaminated water or wastewater to be discharged to a storm sewer”.

### **Requirements**

For new construction, effective January 1, 2009 all drains in underground parking lots or covered parking lots are required to be connected to a Parkade Drainage Treatment System (PDTs) prior to discharge to the building sanitary sewer system (see attached guidelines).

The system shall be designed to Part 7 of the Vancouver Building By-law and shall be able to handle the flows discharged. Consideration shall be given to the flows from sprinkler system tests, backflow preventors, and other periodic drainage discharges. The system shall also be designed to meet the standards for wastewater discharge set in the Sewer and Watercourse By-law. Section 3.1 (4) of the By-law states that no person shall discharge or permit to be discharged into a sanitary sewer or combined sewer any substance with the following characteristics:

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|----------------|---|
| <b>Solids</b>  | (a) any wastewater with particles larger than 0.5 cm in any dimension;<br>(b) any wastewater having a suspended solids content of more than 600 milligrams per litre;<br>(c) any garbage;   |
| <b>Greases</b> | (d) any water or waste which contains grease, whether or not emulsified, at a concentration in excess of 150 milligrams per litre or which contains more than 15 milligrams per litre of substances derived from petroleum sources. |

Plans of the Parkade Drainage Treatment System and sizing calculations shall be submitted prior to installation and plumbing permits will be required.

### **Maintenance**

Servicing and maintenance is essential for the efficient and effective operation of the Parkade Drainage Treatment System. Catch basins, sand traps, and interceptors must be inspected regularly and accumulations of oils and/or solids removed before they exceed the waste storage capacity of the system. The frequency of servicing is site specific and is dependent on the design of the system and the activities that occur in the parking lot. The manufacturer or service providers can help you to determine the frequency of maintenance and servicing.

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Attachment

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## **Parkade Drainage Treatment System (PDTS) Guidelines**

### Drainage *required* to discharge to the PDTS

All sources in covered parking areas which contain higher than the allowable discharge limits set out by Bulletin 2008-007-EV/PL including but not limited to:

- Floor drains and catch basins in the parkade area
- Mechanical room and sprinkler room floor drains near the parkade.
- Car wash facilities in the parkade

### Drainage which may *optionally* discharge to the PDTS

- Trench drain(s) at entrance to parkade
- Steam traps
- Condensate drains
- Backflow preventor drains
- Boiler room relief valves and drains
- Clearwater waste
- Garbage room drains
- Loading bays up to 6 small bays
- Electrical pull pit drains (via sump with check valve)
- Air shaft drains
- Parkade stairwell drains
- Fire pump test drains
- Elevator pit drains (via sump with BWV)

### Drainage *not permitted* to discharge to the PDTS

- Drain tile, weeping tile, subsoil drainage
- Deck drains
- Planter drains
- Roof drains
- Repair garages
- Service bays
- Tire repair shops
- Oil change facilities
- Salvage operations
- Domestic sanitary waste i.e. toilets, sinks, baths, showers etc.
- Blackwater waste (before or after treatment)

## **Parkade Drainage Treatment System (PDTS) Guidelines**

### **PDTS Design**

1. Vents are *not permitted* to be installed *upstream* of the PDTS separator. Traditional sanitary venting methods are not acceptable if installed upstream of the PDTS separator. Vents shall be installed connected at their inlets to each compartment of the PDTS separator and at their outlet(s) to the building's sanitary venting system or to open air in accordance with the VBBL. Where pumping is necessary, the sanitary sump shall also be vented in accordance with the VBBL.
2. All drains in enclosed areas are to be provided with a p trap and a reliable means to maintain the trap seal.
3. A permanent source of priming water shall be connected to the Parkade Drainage Treatment System to maintain a water seal at the PDTS separator.
4. The outlet of the PDTS separator shall discharge to the building's sanitary drainage system. Where sanitary fixtures are connected to a sanitary pumped sump which also serves the Parkade Drainage Treatment System, a backwater valve shall be installed on the outlet piping of the PDTS separator.
5. The PDTS separator shall have a gas tight seal and drop legs installed on the inlet and outlet piping to prevent sewer gases from entering the building. The 90° drop legs are to be extended to 8" from the bottom surface of the separator to provide a water seal and sediment accumulation.
6. The PDTS separator shall have means to access each compartment for cleaning and maintenance as required.
7. A sediment sump installed upstream of the PDTS separator is recommended where accumulation of sand or grit may impair the system operation - i.e. upstream of pump chambers.
8. The minimum size of drainage piping on the inlet to the PDTS separator shall be 4" diameter. Where the system flow rate exceeds the design rate of the PDTS separator, flow restriction orifices or other methods may be required.
9. The PDTS Separator shall have a minimum liquid capacity of one cubic meter. The following flow rates will be used to design the PDTS Separator:

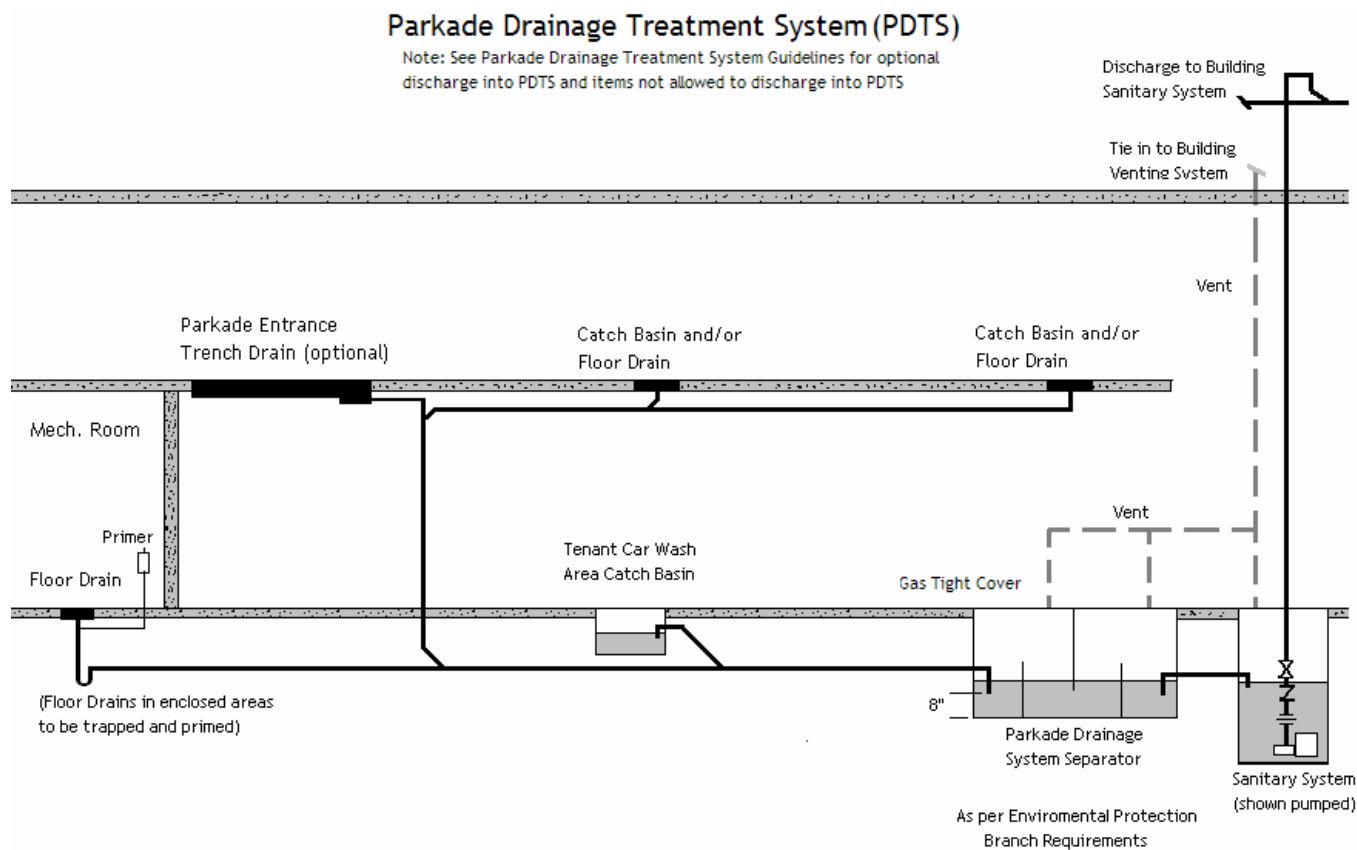
<u>Inlet Diameter (inches)</u>	<u>Allowable Flow (GPM)</u>
4"	87
6"	257
8"	554

10. Other design factors such as materials, location of baffles etc. shall be acceptable to the Environmental Protection Branch.

## Parkade Drainage Treatment System (PDTs) Guidelines

### System Maintenance

- Maintenance should be performed by a reputable service provider. Do not use any methods or products that cause accumulated oils, greases or solids to pass through the separator.
- Check the system after any large amounts of oil or grease are spilled and remove any accumulated oils.
- Call the Fire Department immediately if a flammable liquid spill occurs. The system will have to be cleaned out by a reputable service provider.
- Clean out the system prior to discharging large volumes of water through the separator.



Drawing for clarity only  
Not to scale, grade not shown