MAKING THE MOVE TO GREY WATER IN BURLINGTON

OTS HIGHLIGHT ARTICLE • TOM BRAIN, SUPERINTENDENT • BURLINGTON GOLF & COUNTRY CLUB

The use of grey water at Burlington Golf & Country Club was predicated by the need for a new maintenance building. We had simply outgrown our existing building and there were a number of health, safety and staff issues that needed to be addressed, along with equipment storage space requirements. Planning for the new building was a long, intricate process taking almost ten years. Approval for the project was received in 2004, with construction set to begin in December 2005. The new facility afforded us the opportunity to incorporate some up-to-date design concepts and environmental initiatives.

Due to the proximity of Falcon Creek and the steep ravine, we had very little space to work with in order to place the new building. A number of alternate locations on the property were investigated. However, none were suitable without interfering with the golf course or neighbouring properties. Eventually, permission was granted by the Halton Conservation Authority and the City of Burlington to expand our maintenance building at the existing site.

While preferable in terms of aesthetics and access to the property, the expanded building at the existing location would not leave much space for more than parking and vehicle traffic.

Designing the New Grey Water System

Our existing wash pad had been in place for approximately 30 years. It consisted of a 10 x 10 concrete pad with a grate and water supplied from irrigation water. All the wash water filtered through the grate and ran, essentially untreated, into Falcon Creek. Although we had always intended to incorporate a wash water treatment/recycling system into the design of the new facility to address our woefully inadequate wash pad, the question of the location of the wash pad became something of a challenge. We worked closely with John Glover, our sales representative from ESD Waste-2-Water during the design phase. ESD has many units operating in the United States, and a few operating in southern Ontario. Upon John's suggestion, the wash pad was located inside the building.

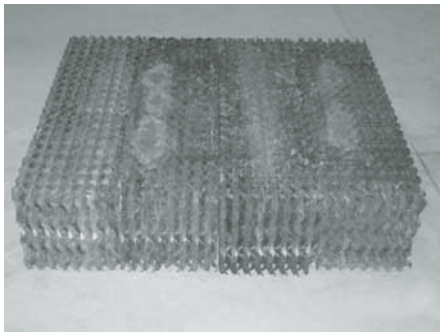
We had designed the building to maximize our access to equipment, and it only made sense to place the wash pad inside one of the two drive through entrances. Placing the system inside also had further benefits. One of the problems we had identified with outdoor systems was the tendency to overfill the system when it rained from water collecting on the wash pad. Having the wash pad under roof eliminated rainfall supercharging the system. Also, the system would be functional year round.

The main drawback was the potential for odour with the solid separator and the treatment unit itself. As it turned out, neither were issues. As long as the clipping cart is emptied regularly, odour is not an issue.

Use, Maintenance & Mechanics

The unit requires some minor daily maintenance, the addition of microbes weekly and some ongoing regular maintenance. Maintenance of the unit is the responsibility of our 2nd Assistant, Jeff Lockhart.

The system consists of a 20' x 20' wash pad with a main sump in the centre. There are two hoses on either side of the pad and the pad can accommodate two fairway mowers or two rough mowers at a time.

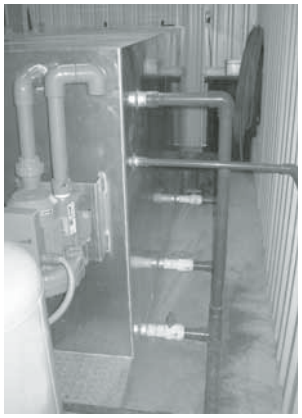


The wash water is pumped from the self cleaning sump to a solid separator. The clippings are separated out and collected in a draining wheel barrow and two additional chambers separate out fine particles.

The water is then pumped to the central unit which is housed in a separate heated room. The water is cycled through three aerated chambers and the unit is seeded weekly with microbes that feed on the organic and inorganic residues in the water. The microbes are shipped on a bi-monthly schedule from ESD in the U.S.

Plastic honeycomb type cores help the microbes to colonize the unit and increase the exposure of water to the microbes. The water works its way through the system and is then returned to the hoses, completing the cycle.

As I stated earlier, because the wash pad is under roof, our system never overfills, however some water is lost due to evaporation. The system uses a float valve to automatically top up when the water level gets low. A sump is also located in our mechanics work shop and is connected to the system with an air diaphragm pump for the occasional wash activities that take place in the shop.



Also installed at the time of construction was a wash and spill containment system in the mix load area for our sprayer. The system allows us to reclaim any water or products spilt while filling the sprayer or in the event of a serious leak. Spillage is directed to a sump by a beveled floor, pumped to a holding tank, filtered and returned to the sprayer to be applied on the golf course. Use of the system has been limited to testing and maintenance, but it is nice to know it is in place, should a spill occur, to contain contaminated water and prevent potential discharge to the environment.

Preserving the Natural Environment

The adjacent Falcon Creek ravine is a wonderful land feature that runs through and defines our property and characterizes our golf course. We want to do everything we can to protect and enhance the ravine and the creek for generations to come.

We feel we have made some major advancements to protect our immediate environment, including those down stream, and to reduce our impact on the environment as a whole.

I would encourage those of you considering improvements to your equipment washing facilities to consider installing a wash water recycling system and say, "Yeah to Grey!" ♦

— Green is Beautiful, Ontario Golf Superintendents' Assoc'n, May 08

Articles Welcome!

Contact Lee Huether at the STA office if you are interested in contributing to the *Sports Turf Manager*. We appreciate feature-length articles, column ideas and newsworthy items.