

Going Green

Composting Toilets on the Course

If you can find a green solution that actually saves money, then the investment is a multiple win situation. Bill Gates says the next big thing will be toilet technology. Some of that change is here today.

PROPER FACILITIES

Recent demographic changes have altered the demands on golf courses. There are more seniors and women playing and increasing competition for golf dollars. What this means, quite logically, is that as we age we will have to use the “facilities” more often. The old standard of “go hide behind the tree” or see “Johnny-on-the-spot” is no longer

acceptable. A memorable golf experience includes clean, well built on-course restroom facilities.

On course restroom options range from the low-end port-a-potty or out-house, mid cost building on a pump out tank, to flush toilets connected to septic systems or municipal sewage, to the full-service half way house. However, another option does exist. By removing

the infrastructure costs of running long distance buried electrical cable, water lines and sewer connection / septic bed construction, a fine facility can be made at a modest price.

Green thinking can create a relatively low-tech solution. By combining compost toilet technology, solar power and evaporation bed vs. septic / sewer, all the infrastructure ties are cut, making the building much more site flexible. Furthermore, the budget is spent on the facility and not on the connections. The savings potential can be in the order of \$30,000 plus. Composting systems work well for remote buildings, recreation and off grid home use.

What does this mean for water savings? If a course has an average of 150 golfers per day with 200 golf days in a season, and half the players use the on-course facility, a six-litre toilet facility requires 90,000 litres of water. For an old 3.5 gallon guzzler, that would be 216,000 litres! With a one-pint flush toilet, water usage is REDUCED by 81,000 litres and 225,000 litres respectively! And with a no-water composting system, the water savings are 100 per cent.

Composting toilets come in 3 system types; single high seat composters that sit on the floor, below floor larger units or the full basement complex bio system. Composting toilets can be waterless or use existing irrigation systems with ultra low water flush toilets – below floor composting. Reviewing course needs is important to ensure the right composting capacity. Brand names for composting toilets include Sun-Mar and EcoEthic.

ENVIRONMENTALLY FRIENDLY

In keeping with the spirit of “going green,” the key pieces for the composting toilet are environmentally sound. Composting toilets use bacteria to break down solids. The liquid keeps the compost moist and combined with air flow allows for happy aerobic bacteria to do their thing. Any excess liquid can go into

an overflow drain which enters a mini evaporator bed.

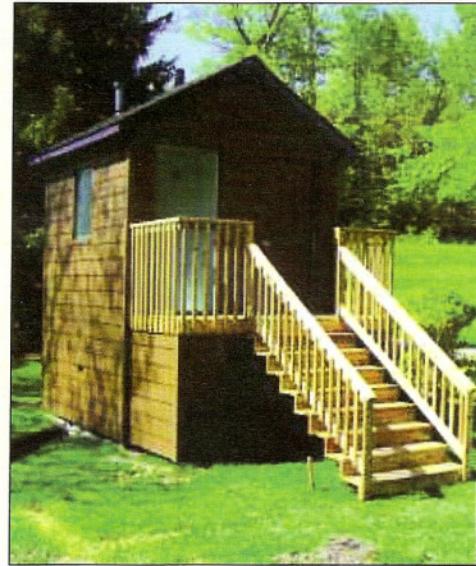
A small solar panel, battery, and controller, is all that is needed for lighting and venting fans. The evaporation bed is designed to encourage liquid to be drawn up from the shallow bed. Ultra low water flush toilets or a non water system mean very little liquid into the ground. The small excavation area is less destructive to tree roots or natural terrain. Green building materials can be incorporated into the structure along with easy to clean surfaces.

The solutions are by no means cookie cutter. There are specific course requirements, location considerations, design details, building logistics and possible septic and building permits. My experience with permits for composting systems is that each municipality determines its own regulations, with the responses being from “no permit required”, to “permit required, how can we help”, to well, some challenges. On a positive note though, the acceptance of composting toilets is definitely growing.

Recently, an East Coast club challenged us to convert their pump out tank with irrigation water supplied toilets to composting toilets, for cost savings and reduced water use. We worked with a local engineering firm to determine site steps. Because of ground slope and mature tree locations, we could not easily get the conversion done. However, getting off the water can be done using existing septic beds or using a small open area for the overflow evaporating bed. Local municipalities will need to be consulted in the process.

GOING GREEN

Going green with a washroom facility does take a little maintenance care to keep the bio system happy. The payoff is the budget, the golfers and the environment. The triple bottom line!



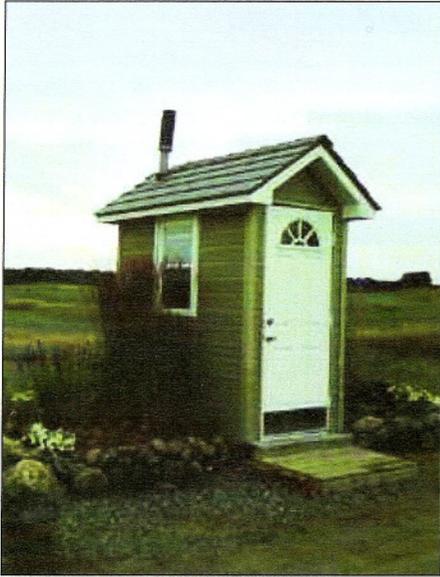
Credit Valley Golf and Country Club, Mississauga, ON

Credit Valley Golf and Country Club have had three seasons with their composting toilet system. They decided to go with one-pint ultra low flush toilets, so the users would feel that the facility was like a more normal washroom experience. The twin Sun-Mar composters are connected to a small evaporation bed which has become a high grass area.

Jeff Stauffer, course Superintendent, says “our decision to go with composting toilets has proven to be a success! They are ideally located and have been well received by our members and their guests.”

CASE STUDIES

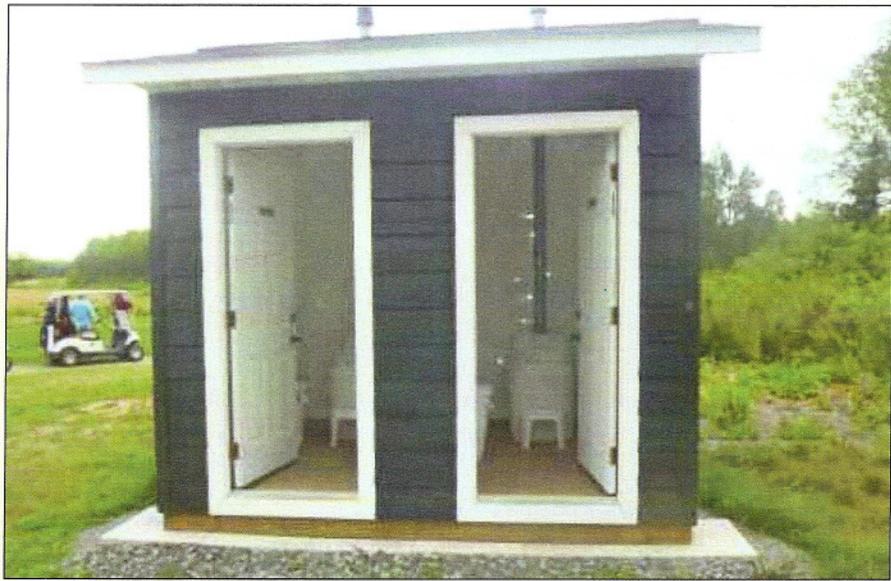
A number of successful installations exist at various golf courses across Canada. The following are some examples:



**Muskoka Highlands Golf Links,
Bracebridge, ON**

Muskoka Highlands Golf Links has a single Sun-Mar toilet facility, powered by a small solar panel. For the past two seasons the "house on the hill" has been the mid course stop. Don MacKay, course owner and current President of the National Golf Course Owners Association Canada has been greening his course as a matter of principle and pride.

He comments "being an open links-style course which appeals to the walking golfer, we have no room for those "little walks". So it is important to our players that they can find respite every few holes. The location of this house is critical to this plan - as we now have washrooms every four holes and this seems to work for the majority of our guests."



**Silver Creek Golf Club, Garden River
First Nation, Sault Ste. Marie, ON**

The creative Band Council at Garden River First Nation near Sault Ste. Marie recently opened Silver Creek Golf Club. With no on-course facilities, other than portables, in 2011, they decided to make both a green and player comfort statement by putting in three off grid washrooms. The off grid washrooms combined solar power, composting toilets and mini in-ground evaporation systems.

This is further proof that this model can work anywhere, using current e-technology and local builders to reduce cost and eco footprints of projects. We are able to support the design and engineering

from a distance, and as most courses have local skilled people we can do a "home and away" combination. We have had inquiries from across Canada with several proposals from clubs beyond Ontario.



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