

Cluster treatment system



Brew Creek Lodge

Customer: Brew Creek Lodge, BC, Canada

Brew Creek Lodge is an intimate property nestled in a lush natural setting, 17 km (10,5 mi) south of Whistler, BC. It offers rustic elegance for group or corporate retreats and family gatherings. Brew Creek Lodge offers full -facility bookings - up to 70 guests. With Whistler currently shifting to position itself as a distinctively west coast holistic retreat destination, Brew Creek Lodge has gained a well earned recognition as the ideal retreat venue.

Facts

Brew Creek Lodge consists of a number of buildings sprawled throughout a multi-acre site situated on a flood plain with a creek meandering through the middle. Potable water is supplied from a well installed in an unconfined aquifer. All wastewater flows are regrouped and treated by an advanced treatment technology. The treated effluent is dispersed to two preferred locations, as identified in the environmental engineering study of the site.

As Brew Creek Lodge will be housing Olympics athletes in 2010 they needed to expand the buildings to increase accommodations to up to 70 guests. This expansion significantly increases the production of wastewater to be treated. As such, a rehabilitation of the actual treatment system needed to be addressed.

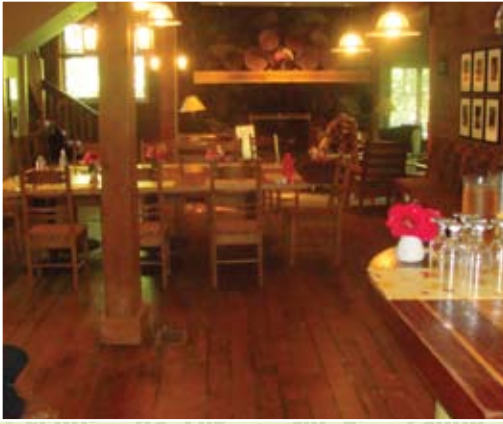
Challenges

The owners of Brew Creek Lodge were very sensitive to find an “eco-efficiently” solution:

- **High performance** An ecofriendly system that preserves the sensitive environment and the groundwater
- **Passive** A low consumption energy solution that remains operational even during power outages
- **Aesthetic** A treatment system that discretely adapts to the immediate environment of the site

Occupancy being quite variable with any lodge or inn, the treatment system had to be able to handle peaks without compromising performance, and while maintaining reasonable operational costs, such as energy.





Solution

After evaluating a number of treatment technologies, Bert Telder from MB Telder Engineering concluded that the most suitable technology for this site was the Ecoflo® Biofilter.

MB Telder Engineering chose a modular system option. The treatment units would be clustered on the property in three (3) treatment plant locations minimizing piping runs and site disruption during construction, and favouring the utilization of existing infrastructure.

With a potentially high groundwater level at the sites, Ecoflo® concrete tanks were selected enabling in-ground installation which reduced the visual impact to a minimum. While a passive treatment system can result in a bigger footprint than an active treatment system, the below grade layout reduced the impact.

Native vegetation was used to screen out at grade features and no trees were removed during the installation. This was a worthwhile trade-off and the site layout was able to take advantage of gravity flow wherever possible to minimize the requirement for pumps - something not possible with many technologies.

Benefits and future

The key considerations the project had to address were:

- Minimal power consumption or minimal need for stable power availability
- Minimal use of pumps
- Minimal visible footprint
- No odour, no noise
- High reliability, ease of operation and maintenance
- Minimal impact on the existing natural setting of the retreat

Performance assessment by independent testing facilities demonstrated the capacity of the Ecoflo® system to handle a multitude of loading conditions. The proven consistent high quality output ensures minimized risk of contamination. The modular nature (clusters) of the treatment technology allows for effective tailoring of size and location of the treatment modules to fit the constraints of any property.

The passive treatment process and residual storage volume afforded by the treatment tanks, coupled with the few required pump tanks, were advantageous as power failures are fairly common in this area. Although the Lodge has backup power, the treatment system and operational capacity is not adversely affected by power outages.

Ecoflo® Biofilters are one of the few advanced treatment technologies where process noise and odour does not exist and is not a concern. The system is naturally ventilated without the help of any fan which helps maintain aerobic conditions in the filter and avoid release of odors.

Ecoflo® treatment technology allows the owner to reuse the existing dispersal areas with significant effluent quality improvement. For the new low pressure dispersal field closest to the drinking water well [which meets provincial setback requirements] the quality and reliability of Ecoflo® treatment ensures that the drinking water source is not at risk.

"Because the advanced treatment process is passive, using peat, a natural biological treatment material, we believe that this system represents a significant carbon footprint reduction as compared to other technologies."

"We were impressed with the BNQ rating, the number of existing installations in North America and the multi decade established performance record."

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