CASE STUDY: 
PURPOSE ENERGY
ANAEROBIC DIGESTER

Challenge
A Vermont-based microbrewery was growth – constrained by the biochemical oxygen demand (BOD) capacity of the downstream municipal wastewater treatment plant. Facing high municipal surcharges and increasing costs to truck its high solids concentration slurries offsite, an anaerobic digestion process was selected to ensure discharge permit compliance.

The process to treat the organic waste products required a very large and complex vessel with interior features uncommon in standard glass-lined steel tanks. PC Construction investigated two material options for the digester vessel: cast-in-place concrete and a glass-lined steel tank. It was determined that using a glass-lined steel tank would be more costly and require more time to install than a cast-in-place concrete tank. The installation of a cast-in-place tank would also provide greater flexibility with the design of the project. After the design was adjusted to account for the cast-in-place tank, the project was delayed due to financing and required permits.

Following these delays, the project faced a winter construction start and dramatically changed world market conditions, both of which impacted the glass-lined steel tank design.

Solution
Recognizing that placing concrete during the winter months in Vermont is more costly and difficult, the design-build team reconsidered the use of a cast-in-place digester. Further investigation and analysis revealed that the glass-lined steel tank was now less expensive than the cast-in-place option and could be installed during the winter for far less time and money than the concrete.

Results
PC Construction’s continued diligence, knowledge, and ability to quickly react to changing market conditions allowed the client to move forward with construction on schedule. The manufacturer has since more than doubled production at its facility and reduced byproduct management costs significantly. This project went on to receive an AGC of Vermont 2010 Best Builders Award in the New Green Construction category and was recognized by Power Engineering Magazine as a global finalist in the Best Renewable/Sustainable project category of their 2010 Projects of the Year Awards.