Kirk T. Mescher, P.E., LEED® AP, is a founding partner of CM Engineering Inc. Throughout his career, Kirk has been a leader in design, development and installation of ultra high efficiency heating and cooling systems. In the early 1980s, he developed and patented an air-to-air energy recovery system that allows heating and cooling energy to be captured and recycled in streams of inside and outside ventilating air.

For the past eight years, Kirk has been developing high efficiency ground source geo-exchange heating and cooling systems for schools, with an emphasis on retrofit designs for older facilities. His "One Pipe" system features installation costs that are among the lowest in the entire geo-exchange industry.

Currently, Kirk has more than 100 one-pipe geo-exchange installations to his credit, and with more than 65 of these systems found in schools, colleges and universities. An ASHRAE Member, Kirk authored the cover article of the October 2009 *ASHRAE Journal*, "One Pipe Geothermal Design—Simplified GCHP System." He co-authored "High Performance Schools" in the May 2007 *ASHRAE Journal*. In 2009, he received ASHRAE's Distinguished Service Award, and he was named an ASHRAE Distinguished Lecturer for 2011-2013.

Kirk T. Mescher, P.E., LEED® AP

Kirk T. Mescher is a licensed professional engineer and founding partner of CM Engineering, Inc., in Columbia, Missouri. The firm was established in 1993.

Throughout his career, he has been a leader in design, development and installation of ultra high efficiency heating and cooling systems. In the early 1980s, he developed an air-to-air energy recovery system which allows heating and cooling energy to be captured and recycled in streams of inside and outside ventilating air. He is the co-holder of *Patent 5,496,397, USA, Application of desiccants to aluminum foil substrates*, which facilitates the energy transfer in these systems. These systems are now seen, in one form or another, in most new building designs.

For the past eight years, Mescher has been developing high efficiency ground source geo-exchange heating and cooling systems for schools, with an emphasis on retrofit designs for older facilities. His projects have shown consistent, repeatable results—often cutting energy consumption by as much as half and providing his clients with remarkable savings in their utility expenses. His "One Pipe" system features installation costs that are among the lowest in the entire geo-exchange industry. Mescher's projects typically receive very high Energy Star ratings.

With more than 100 one-pipe geo-exchange installations to his credit, and with more than 65 of these systems found in schools, colleges and universities, Kirk Mescher is rightfully considered one of the leading geothermal experts in the country.

Mescher is a member of the American Society of Heating, Refrigeration and Air Conditioning Engineers. He authored the cover article of the October, 2009 ASHRAE JOURNAL, "One Pipe Geothermal Design—Simplified GCHP System". He co-authored "High Performance Schools"
in the May, 2007 of ASHRAE JOURNAL. In 2009, he received ASHRAE's Distiguished Service Award. He has been named an ASHRAE Distinguished Lecturer for a two-year term, 2011-2013.

Lecture topics include:
1. Geo-Exchange 101 for Owners, Architects and Engineers--What They Need to Know
2. 12 Steps to Improved Geo-Exchange System Design and Performance
3. Outside Air Systems for Geo-Exchange

Project experience highlights:
• More than 100 geo-exchange systems--65+ in schools, colleges and universities
• More than 40 conventional HVAC systems in schools