



**ANDREW J. THIELEN, P.E.
PRINCIPAL**

ajthielen@engsys.com

Andy Thielen is a Principal for ESi. He is an accomplished Mechanical Engineer with more than 39 years of experience in the following areas: Construction Management with an understanding of the roles and duties of each participant in the construction process, and HVAC systems which includes plumbing, humidity control, district heating, and cooling systems, in residential, commercial and industrial settings. He provides expert consultation to the construction industry, primarily in terms of HVAC, plumbing, district heating, and cooling systems. In addition, he was the primary editor of the State of Minnesota Commercial Energy, Mechanical and Fuel Gas Building Codes used in Minnesota from 2008 to 2014. Andy also performs failure analysis.

Areas of Specialization

- Cooling Systems
- District Heating
- Failure Analysis
- HVAC
- Mechanical
- Municipal Utilities
- Plumbing
- Utility Easements

Education

B.S. Mechanical Engineering, University of North Dakota, Grand Forks, ND, 1985

Licenses/Certifications

- State of Alabama P.E. License 20212
- State of Idaho P.E. License 20029
- State of Illinois P.E. License 062.076531
- State of Minnesota P.E. License 22220
- State of Montana P.E. License 59388
- State of North Dakota P.E. License PE-28120
- State of New York P.E. License 110257
- State of Ohio P.E. License 82027
- State of South Dakota P.E. License 5633
- State of Texas P.E. License 109571
- State of West Virginia P.E. License 027131
- State of Wisconsin P.E. License 34550-6



Certified Construction Contract Administrator
Certified Instructor, Plumbing Related Topics, State of Minnesota – Continuing Education, St. Paul, MN

Professional Affiliations/Honors

International Code Council (ICC) – Member
American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) – Member
Construction Specification Institute (CSI) – Member
Minnesota Association of Plumbing and Mechanical Officials – Member
Minnesota Mechanical and Fuel Gas Code Technical Advisory Group – Member
National Fuel Gas Code (NFG-AAA) Technical Committee – Alternate Member
City Councilor, Hermantown, MN, 2005-2008
Adjunct Professor, Industrial Engineering Department, University of Minnesota, Duluth, MN, 2000
Northwest Loss Association, Inc.

Positions Held

Engineering Systems Inc., Plymouth, Minnesota
Principal, 2023 – Present
Senior Managing Consultant, 2019 – 2022
Crane Engineering, Plymouth, Minnesota
Consulting Mechanical Engineer / HVAC Plumbing Specialist, 2013-2018
Andrew Engineering, Duluth, Minnesota
Principal Engineer/Owner, 2007-2012
State of Minnesota, St. Paul, Minnesota
Administrative Engineer, 2006-2007
LHB, Duluth, Minnesota
Project Manager, 2000-2006
Foster, Jacobs & Johnson, Inc., Duluth, Minnesota
Project Manager, 1997-2000
Sebesta Bloomberg, Inc., Minneapolis, Minnesota
Mechanical Project Engineer, 1995-1997
3M, St. Paul, Minnesota
Contract Mechanical Engineer, 1989-1995

Gausman & Moore, Inc., St. Paul, Minnesota

E.I.T. Designer, 1987-1989

Foster, Jacobs & Johnson, Inc., Duluth, Minnesota

E.I.T. Designer, 1986-1986

Publications/Presentations

“Boilers, Blowouts and Booms – OH MY!”, **A. Thielen**, webinar presenter for Cozen O’Connor, Webinar, November 2023

“Reviewing Heating and Cooling Load Calculations”, **A. Thielen** presented at the International Code Council Region III Upper Great Plains Annual Educational Institute, February 2023

“Building Failures: Reviewing Heating and Cooling Load Calculations”, **A. Thielen** presented at the University of Minnesota’s Annual Institute for Building Officials Conference, January 2023

“Inspecting Complete HVAC Systems: Heating and Cooling Load Estimation”, **A. Thielen**, presented at the University of Minnesota’s Annual Institute for Building Officials Conference, January, 2022

“What Happens When You Ignore the Plumbing and Mechanical Codes,” **A. Thielen** presented at the ICC Region III Conference, Chaska, MN, February 2020

“Metallurgical Pipe Evaluations,” **A. Thielen** presented at Energy Management, University of Minnesota, Minneapolis, MN, July 2019

“Claims & Litigation Involving Destruction Defects, a Lack of Maintenance and the Building Codes,” **A. Thielen** presented at Crane Engineering, Plymouth, MN, March 2019

“Construction Defects, Maintenance, and Building Codes,” **A. Thielen** presented at Crane Engineering, Plymouth, MN, March 2019

“HVAC Case Study,” **A. Thielen** presented at Crane Engineering, Plymouth, MN, 2018

“When Building Codes Aren’t Followed Part Deux,” **A. Thielen** presented at Earl Brown Center, 2018

“From Uptown to Downtown: Issues Regarding Mixed-Use Multi-Level Construction,” **A. Thielen** presented at Crane Engineering, Plymouth, MN, January 2018

Contributing editor of the National Fuel Gas Code Handbook, Tenth Edition, 2018

“Minnesota Energy Code,” **A. Thielen** presented at the Minnesota Blue Flame Association, MN, September 2015

“When Building Codes Aren’t Followed,” **A. Thielen** presented at ASHRAE, MN, April 2015

“Building Officials: Refrigeration Machine Room Requirements,” **A. Thielen** presented at the University of Minnesota, Minneapolis, MN, January 2015

- “Building Officials: When Building Codes Aren’t Followed,” **A. Thielen** presented at the University of Minnesota Annual School for Building Officials, MN, January 2015
- National Association of Power Engineers – State of Minnesota Boiler Seminar Continuing Education Presentation, October 2014
- “US Water Presentation: Common Mechanical Failures in Buildings,” **A. Thielen** presented at U.S. Water Headquarters, St. Michael, MN, October 2014
- “Premise Liability,” **A. Thielen** presented at Collier’s College, MN, June 2014
- “When Building Codes Aren’t Followed,” **A. Thielen** presented at Minnesota Plumbing Heating Cooling Contractors Association, Brooklyn Center, MN, February 2014
- “Building Codes #1 and Building Codes #2,” **A. Thielen** presented at the University of Minnesota Annual School for Building Officials, Minneapolis, MN, January 2014
- “Commercial Energy Code Update,” **A. Thielen** presented at the University of Minnesota Annual School for Building Officials, Minneapolis, MN, January 2014
- “Forensic Engineering,” **A. Thielen** presented at the University of Minnesota Facilities Engineering, MN, October 2013
- “When Building Codes Aren’t Followed” and “Upcoming Commercial Energy Code,” **A. Thielen** presented at the Minnesota Association of Plumbing and Mechanical Officials, MN, October 2013
- “When Building Codes Aren’t Followed,” **A. Thielen** presented at Dakota Electric Cooperative Trade Show, MN, October 2013
- “When Building Codes Aren’t Followed,” **A. Thielen** presented at Minnesota Blue Flame, MN, September 2013
- “Converting Hospitals from Steam to Hot Water,” **A. Thielen** presented at Minnesota Health Care Engineers Association, September 2011
- “Things Design Professionals Miss and Mechanical Code Updates,” **A. Thielen** presented at ASHRAE Minnesota Chapter, MN, January 2010
- “Minnesota Commercial Kitchen Ventilation Guidelines,” **A. Thielen**, Ventilation Committee of the Inter-Agency Review Council, Fourth Edition, 2010
- “Building Retro-commissioning”, Arrowhead Chapter - Minnesota Health Care Engineers Association, March 2009
- Minnesota Fuel Gas Seminar, State of Minnesota, Department of Labor and Industry, Construction Codes and Licensing Division, Spring Seminar Series, January - May 2009
- “Mechanical Code and Commercial Energy Code Update,” **A. Thielen** presented at the University of Minnesota Annual School for Building Officials, Minneapolis, MN, January 2008

“Upcoming Changes to the Minnesota Mechanical, Fuel Gas and Commercial Energy Codes,” **A. Thielen** presented at State of Minnesota, Department of Labor and Industry, Construction Codes and Licensing Division, Spring Seminar Series, January - May 2007

“Changes to the Minnesota Elevator Code,” **A. Thielen** presented at State of Minnesota, Department of Labor and Industry, Construction Codes and Licensing Division, Spring Seminar Series, January - May 2007