GARY HAYDEN, P.E.
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Gary Hayden, P.E. is the owner of gbH Engineering P.L.L.C., a consulting engineering company focused on hydronic design for HVAC systems, and Premier Comfort Systems L.L.C., a design /build contracting company for turnkey installation of hydronic systems. He also consults for various manufacturers of hydronic related equipment, assisting them with product and/or program development. Mr. Hayden received his Bachelor of Science in Mechanical Engineering from Clemson University in 1982. He is a Registered Professional Engineer in Virginia, is a past board member of the Radiant Panel Association, current Chair of ASHRAE TC6.5: Radiant and Convective Space Heating and Cooling and the Hampton Roads ASHRAE Chapter ODU Student Advisor.

Mr. Hayden's career has taken him through all aspects of engineering and implementation in the area of panel radiant cooling and heating used in conjunction with traditional air systems. He assisted with the development of two radiant heating and snow/ice melting programs for two different manufacturers. His experiences have allowed him to understand both the theory and the implementation of hydronic radiant systems and at the same time the equipment required to support these systems as well as the design of the related piping, circulators, tanks and controls. He fully understands the interdependent design protocol of using water and the advantages to zoning, minimizing the use of energy and influencing the design of the building envelope to support these technologies. Recent designs include the following systems used interdependently: radiant floor heating, chilled beams, radiant cooling, geothermal heat pumps, condensing boilers, solar panels and dedicated outside air with air cooling and heating with the use of PLC control systems. Projects are designed to earn and/or meet L.E.E.D. certifications.

From the product development, to design, to implementation, Mr. Hayden has been involved with heating and cooling of many different types of projects, both new and retrofit, such as aircraft hangars, zoos, garages, manufacturing buildings, office buildings, residential homes and one room applications. He has written numerous articles on hydronics and related topics which have been published in PM Engineer, RSES Journal, HPAC, Contracting Business, Contractor, ACHR News, and the RPA Newsletter. He is a member of ASHRAE and ASME.

LECTURE TOPICS:

<u>LowEx</u>

LowEx is hydronic system design using the lowest water temperature for heating and the highest water temperature for cooling. Interdependent design of Hydronic Systems with Radiant Panels, Chilled Beams and Air Handlers with Chillers, Condensing Boilers, and Solar Thermal with PLC controls. Implementation begins with the building envelope and ends with minimizing available energy. The design process works best with integrated design concepts that emphasize the comfort of the buildings occupants while conserving energy.

Radiant Heating and Cooling

Understanding how radiant heating and cooling is designed, planned and implemented is explained. Discussion is included on the design “do's and don'ts” with simple rules of thumb that make or break a system, and looking at the project from the standpoint of not only designing the system, but also from the project planning and coordination issues to installing the systems.