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April 19, 2018
Sherm Sweeney
ASHRAE Region VI Regional Historian

Dear Mr. Sweeney,

I am enclosing the La Crosse Area Chapter's 36th entry for the Gold Ribbon and Lou Flagg award. The La Crosse Area Chapter, 115, is pleased to present the history of Duane Lom.

A native of Wisconsin, and Past President of the La Crosse Area ASHRAE Chapter, Duane Lom was born in Green Bay, raised on a farm near Appleton, and received his Mechanical Engineering degree from UW-Madison. In 1974, Duane began working at Trane Company in La Crosse. At Trane, he worked as a development engineer, where he designed large rooftop unitary equipment and received a patent for a VAV controller. In 1988, Duane transitioned to a role at Northern States Power (now Xcel Energy) in Eau Claire. He was hired as an air conditioning, refrigeration, and custom equipment rebate engineer. In 1993, he became a department manager for all residential, commercial and industrial rebates at Northern States Power. In 1997, Duane came back to Trane to work in the Unitary Engineering group as a project manager and engineering manager. Duane retired from Trane in 2008. Shortly after retiring, he became a consultant at GEA Consulting. These days, Duane is giving back to his community by inspiring young people to be science and technology innovators. Since 2010, he has been heavily involved in FIRST Robotics— a STEM program that organizes robotics competitions for high school teams.

Respectfully Submitted,



John L. Sustar
Historian
La Crosse Area Chapter



Figure 1. Duane Lom

ASHRAE History of a Person: Duane Lom

A native of Wisconsin, and Past President of the La Crosse Area ASHRAE Chapter, Duane Lom was born in Green Bay, raised on a farm near Appleton, and went to high school in a small town just outside of Appleton in Seymour, Wisconsin. After high school, he enrolled in pre-engineering courses at UW-Fox Valley in Menasha, Wisconsin. After 2 years in Menasha, he transferred to UW-Madison and received his B.S. in Mechanical Engineering in 1974.

After graduation, Duane began working at Trane Company in La Crosse. At Trane, he first worked as a development engineer, where he designed large rooftop unitary equipment. His design work focused on controls and electrical systems. In the early 1980s, he worked on variable air volume (VAV) controllers for rooftop units. At the time, Trane was using a basic controller and was interested in pursuing a more advanced controller for their VAV system from other controls companies. When it came time to invest in another company's controller, Duane decided that he could design a VAV controller that was capable of meeting the advanced control requirements for the VAV rooftop system. As a result, Trane started manufacturing his design and in 1983, he received a patent for his controls design of a multi-stage VAV cooling system with a modulating outdoor air economizer (Patent #4379484). He shares this patent with John Klouda, who was a past president of ASHRAE chapter in 1986-87.

In the 1980's, he was tasked with getting UL (Underwriters Laboratories) certification for a whole range of Trane air conditioning products which had recently undergone a redesign and required a UL approval. As part of this work, he made weekly trips for a year to the UL office in Northbrook, IL. Every Thursday at 6:30AM, he would fly to O'Hare in Chicago, take a cab to UL office, meet with them for an hour, and then take a flight back to La Crosse and get back to his desk by 11AM.

In 1988, engineering support for rooftop units moved to Clarksville, TN. Duane wanted to stay in the La Crosse area, so he transitioned to a role at Northern States Power (now Xcel Energy) in Eau Claire. He was hired as an air conditioning, refrigeration, and custom equipment rebate engineer. Northern States Power and all the other utilities in Wisconsin worked with the Public Service Commission to determine rebate levels for energy efficiency and demand response technology. For air conditioning rebates, the commission focused on individual equipment efficiency instead of system efficiency. For example, the commission approved rebates on chillers that were below a certain kW/ton, but they neglected to look at the efficiency of the rest of the system like fans, pumps, and towers. Duane lobbied to restructure rebates for air conditioning systems. As a result, he persuaded them to create rates programs for all types of unitary and applied systems with minimum efficiency requirements.

In 1993, he became a department manager for all residential, commercial and industrial rebates at Northern States Power. As department manager, he signed up with the commission to reduce a certain amount of annual kWh and requested money to do so. "At the end of the year, we would meet our goals but hadn't spent all the money. The Public Service Commission would chew me out for not spending all the money," says Lom. The commission did not like when all the money wasn't spent because it meant they had to return the money to the rate payers in the next rate case.

In 1997, Duane came back to Trane to work in the Unitary Engineering group as a project manager for Water Source Heat Pumps and Commercial Self Contained products. He later became Engineering Manager for a group of development engineers. His group's duties included the implementation of R-22 to R-410A refrigerant equipment upgrades for water source heat pumps, light commercial rooftops and large commercial rooftop unitary equipment.

Duane retired from Trane in 2008. Shortly after retiring, he became a consultant at GEA Consulting. As a consultant, he worked with heating and air conditioning equipment manufacturers and entrepreneurs to evaluate their products and create plans for redesign, UL/CSA certification, and lab testing.

Duane still lives in La Crosse in a geodesic dome house that he and his wife built in 1979. "When getting a loan to build the house, the first bank I walked into to obtain a mortgage turned me down once I told them I was building a dome house," says Duane. Luckily the second bank that he came to was willing to lend him the money to build the house. Over the years, Duane has given lectures on geodesic dome construction at ASHRAE meetings and at Western Wisconsin Technical College.

These days, Duane is giving back to his community by inspiring young people to be science and technology innovators. Since 2010, he has been heavily involved in FIRST Robotics— a STEM program that organizes robotics competitions for high school teams. These competitions provide real-world team-based engineering experiences. Duane has volunteered as a mentor for local high school teams at La Crescent High School and Aquinas High School. He continues to be an active member of the FIRST Robotics Wisconsin Executive Advisory Board and a member of the planning committee for the FIRST 7 Rivers Regional competition in La Crosse.

RELATED ACTIVITIES

Former Licensed Professional Engineer E17821 - Wisconsin

PMP - Project Management Professional

Co-Inventor of Patent #4,379,484 "Control for a Variable Air Volume Temperature Conditioning" System - Outdoor Air Economizer"

DFSS Black Belt

Member of ASHRAE - President of La Crosse Area Chapter, 1988-89

Member TC7.6 Building Energy Performance, 1985-87; Chair of CRC2002, 2001-02

Member of Wisconsin Utilities Association - Marketing Executive Committee, 1993-97

Eau Claire United Way Campaign Account Executive, 1991-93

EDUCATION

University of Wisconsin - Madison, WI, 1971-74, Bachelor of Science - Mechanical Engineering

University of Wisconsin - Menasha, WI, 1969-71, Pre-engineering courses

Western Wisconsin Technical College - La Crosse, WI, 1976-84, Associate Degree - Accounting



Figure 2. Duane still lives in La Crosse in a geodesic dome house that he and his wife built in 1979 (pictured above)