

JOHANN (JOHN) L. WILLERS, P.E., R.R.C.

EDUCATION

B.S., Civil Engineering, Iowa State University, 1965

SUMMARY OF EXPERTISE

Mr. Willers has been actively involved as a roofing engineer in the evaluation, design and construction management of roofing systems on a wide range of institutional, commercial, and industrial facilities. He has experience with numerous roof assemblies that have been or are currently on the market to include conducting nondestructive moisture surveys (infrared, capacitance and nuclear), laboratory testing of various built-up and single ply materials, and life-cycle costing. He has also been retained to conduct roof failure investigations.

PROFESSIONAL REGISTRATIONS AND HONORS

Registered Professional Engineer:

Iowa, #6379	New Jersey, #35009
North Carolina, #11102	South Carolina, #9892
Tennessee, #103612	Virginia, #14717

Registered Roof Consultant: RRC #8

Roof Consultants Institute: Fellow of the Institute - 1995
President's Award - 1995 & 1994

PROFESSIONAL MEMBERSHIPS/AFFILIATIONS

- Roof Consultants Institute: Chairman of Registered Roof Consultant Examination Committee - from 1988 through 1995.
- National Society of Professional Engineers
- American Society of Civil Engineers

CONTINUING EDUCATION

- Built-up Roofing Design, 1979, University of Wisconsin
- Single-Ply Roofing Seminar, 1983, Charlotte, NC
- Operators Training Course, 1984, Inframetrics, Inc., Bedford, MA
- Carlisle Roofing Seminar, 1984 & 1989, Carlisle, PA

- NRCA Annual Convention, 1984 & 1989
- RIEI - Update Seminar, 1985, Richmond, VA
- CRSMCA Midwinter Meetings, Winston-Salem, NC (annually)
- Second International Symposium on Roofing Technology, 1985, Gaithersburg, MD
- Roofing Consultants and Design Engineers Seminar, 1985 & 1987, Dow Chemical Co.
- Various technical sessions, Roof Consultants Institute National Convention, 1986-1988 and 1990-2004
- AHERA Course for Management Planners, 1987, UNC-OSHERC - Refresher Course - 1988
- AHERA Course for Inspectors, 1987, UNC-OSHERC Refresher - Course - 1988
- Asbestos Abatement Projects in the Roofing Industry, 1988, Georgia Institute of Technology
- RIEI Seminar on Roofing and Asbestos, 1988
- BURSI Mini-Seminar, October 1990
- SPRI Seminar on Commercial Roofing Systems, November 1990
- RIEI Re-roofing Seminar, April 1991
- Masonry Design and Wind Resistance of Sheet Metal, March 1992
- Copper Roofs, November 1992
- Metal Roofing, April 1993
- RCI Mid-Atlantic Building Envelope Conference, February 1994
- ASCE Wind Design Conference, August 1994
- Factory Mutual Update, March 1995

FIELDS OF COMPETENCE

Various roofing systems and materials

- Low slope roofs

Built-up

Modified Bitumen

EPDM, Neoprene, CSPE, PIB PVC, EIP

Metal

Sprayed polyurethane foam roofs

- Steep slope roofs

Asphalt shingles

Clay tile

Concrete tile

Metal

Wood shakes and shingles

Slate

- Roof evaluations

- **Nondestructive moisture surveys (infrared, nuclear, and capacitance)**

- **Design**

re-roofing, new construction, and repairs
wind
drainage
problem identification and resolution

- **Construction contract administration and construction monitoring**

KEY PROJECTS AND ASSIGNMENTS

- Designed the re-roofing of the barrel roof portion of the Atlantic City Convention Center, Atlantic City, NJ. The cost to re-roof the complex structure (185,000 S.F.) was approximately \$7,000,000. Design dealt with such factors as roof shape, marine environment, costal winds, limited construction access and building age (constructed in 1929),
- Roof evaluation and re-roofing design for Bowater Southern Paper Company, Calhoun, TN. In 1984 evaluated all mill site roofs (approximately 700,000 square feet); over 100 separate roof sections. Designed re-roofing system to meet the extreme needs of the harsh industrial environment and applied this design to several projects beginning in 1985, construction costs ranged from \$100,000 to approximately \$3 million.
- Numerous re-roofing evaluations and re-roofing designs for the Savannah River Plant, Aiken, South Carolina. Provided services from 1984 through 1989 on several buildings where radioactive materials were produced, requiring a high degree of safety and security during re-roofing.
- Performed numerous roof evaluations and moisture surveys for Westinghouse Electric Corporation. The largest roof was on their facility in Raleigh, North Carolina, encompassing in excess of 470,000 square feet.
- Investigated and identified persistent roof leaks and designed the remedial reroofing of the three small roofs at the top of the control tower at the Raleigh/Durham International Airport.
- Consulted with design architect, recommended an insulation and membrane system, performed wind uplift design calculations, wrote specifications for insulation and membrane systems, and performed construction phase services for the 800,000 sf roof of the Atlantic City Convention Center/Rail Terminal.

- Evaluated the roof and designed the re-roofing of three major roof areas of the Georgia Pacific paper mill in Monticello, MS. Design involved concrete slab deck replacement, cleaning and painting structural steel, reconstructing equipment curbs, tapered insulation and drainage provisions, and a 20-year membrane and flashing system. Bid at \$1,500,000.
- Forensic investigation of single ply membrane failure and metal deck deterioration associated with phenolic insulation on the 1,000,000 sf roof of the Army & Air Force Exchange Service warehouse in Newport News, VA.
- Designed the re-roofing of 14 buildings on the campus of the Governor Morehead School for the Blind, Raleigh, NC; many buildings were over 70 years old. Roof systems included French tile, slate, & asphalt shingles. Design involved repair of wooden rafters and beams, attic ventilation, and developing improved copper counter flashings for the tile and slate roofs that had the potential of lasting as long as the tile or slate.

WORK HISTORY

FORCON International - Roof Consultant

Self-employed, Roof Consulting Engineer, Raleigh, NC

Robert M. Stafford, Inc. - Raleigh, NC - Senior Project Engineer

S& ME, Inc, Raleigh, NC - Director, Roof Engineering Services

Shive-Hattery & Associates - Iowa City, Iowa - Civil Engineering designer & project manager

Peterson and Appell Engineers - Des Moines, Iowa - Structural Designer

U. S. Army Corps of Engineers - Korea - Construction Engineer Officer