

Roofing in Europe

By MICHAEL BLANCHETTE, RRC, RRO

AS I SIT IN THE BIG SILVER BIRD ON THE WAY back from Denmark, I thought I would report on roofing across the "pond." I was fortunate enough to attend the Tenth Congress of the International Waterproofing Association (IWA) held June 10 through 12 in Copenhagen, Denmark. The country and city are nothing short of beautiful, with extremely cordial people who make an English-speaking tourist's dream come true.

I must first thank Angela Dry of NRCA, who set this tour in motion. Her planning and attention to detail were exceptional. Next, Paul Newman, Executive Director of IWA, is to be commended on a great technical program and very successful social engagements. The weight gain in great food alone is testament to the fact that I must have enjoyed myself (either that or American Airlines is reducing the size of these damn seatbelts).

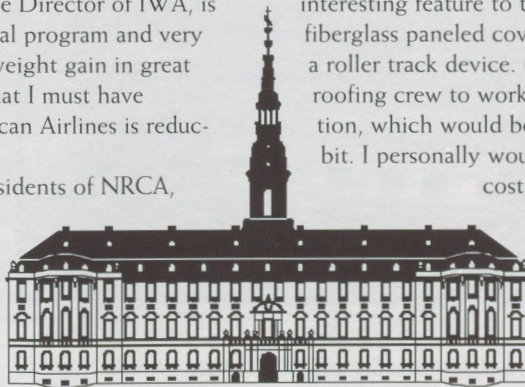
In the company of several past presidents of NRCA, their wives, Bill Good, Carl Good and Angela Dry of NRCA's staff, my wife Nancy and I had a great week of site visits, Congress meetings and tours. I played hooky one day and went to the city of Roskilde to tour the Rockwool

insulation plant. I saw some startling fire tests when comparing mineral fiber type insulations to other types and I see a great potential for this type of insulation in the U.S. I think the biggest obstacle in our market for this insulation is the softer than normal feeling to the finished roof surface.

Our site visits included modified bitumen roof assemblies by Performance Roof Systems. This was a well-rounded and well thought-out tour put on by our hosts, Johnny Poulsen and Peter Kranz of Urotag, which is a Danish distributor of roofing products. The first roof we visited was a one-year-old granular-surfaced assembly installed on a steep-sloped wood roof deck. An interesting facet was the cant strip-like device incorporated into the system which gives it the appearance of a finished standing seam metal roof. The sheet metal details were very similar to ours, but finished rake edges included a fastened and folded back modified bitumen sheet which is sealed to the adjoining membrane. The end result was a very practical and aesthetically pleasing roof.

Our second site visit was to an ongoing re-roof project on a multi-story office complex. It was great to see Angela, the

only female in attendance that day, climb several stories of exterior scaffolding. This project included tear-off of the existing roof, new vapor retarder attached to the concrete roof deck, tapered mineral fiber insulation and a mechanically fastened modified bitumen roof system. Other than the soft feeling of the finished roof, practices and standards were very similar to those normally seen in the U.S. and Canada. I would have felt more comfortable with a second cap ply going over the entire finished assembly, but I guess that's just my conservative consulting nature coming out. The really interesting feature to this site was the fact that a movable fiberglass paneled cover assembly was erected and placed on a roller track device. (See photo, page 24). This allowed the roofing crew to work in nearly any type of weather condition, which would be a plus in Denmark, as it rains quite a bit. I personally would have a hard time selling this extra cost to my clients, but the concept was exceptional.



The final visit took us to a 20-year-old assembly on a large fire station complex. This visit was equally impressive, as the roof membrane is holding up extremely well. Conrad Kawulok and I both agreed that this roof had all the right ingredients working for it—good positive slope and minimal or no insulation. The only problems seen on this particular roof were typical to many of our projects—penetrations which were added after the fact and not properly flashed into the existing membrane. Sound familiar?

While Nancy and other spouses burned plastic and helped out the European economic situation, I spent Wednesday and Thursday in a large auditorium listening to authors presenting their papers on a vast array of roofing and waterproofing topics. These included some very interesting job profile documentation. To be honest, there was not anything too earth shattering presented. I guess I was hoping for a magic formula on turning sea water into asphalt or something.

I was especially interested in the "green" roof concept which is really gaining momentum throughout Europe. I'm not sure if or when this will catch on in North America, but it is definitely something to consider. The "green" roof means installing a waterproofing assembly to the deck, then adding a drainage layer, root-resistant barrier, and several inches of soil

into which grass or other selected vegetation is planted and maintained. While this assists the environment, it requires a very strong deck and structure, coupled with the need for a very dependable (to say the least) roof/waterproofing system below.

The 400+ delegates and representatives were also presented papers on recycling asphalt, full-scale dimensional testing for modified bitumen systems, historical plaza waterproofing, improvements in artificial aging techniques, and large-scale project profiles, to name a few. RCI's own Tom Hutchinson, AIA, RRC of Legat Architects, co-presented with Keith Roberts from the United Kingdom updates on CIB/RILEM, the issue of sustainable roofing. Kyoji Tanaka of the Tokyo Institute of Technology & Materials & Structures Lab presented his team findings on recovering asphalt from old built-up

aspect, the area of interest was the roof, which was originally designed as an auto test track. The track was re-roofed and can still take auto, bicycle, or pedestrian traffic. I wonder about warranty exclusions from motor oil and gasoline, but, hey, it is a neat roof!

Our good friend Walt Rossiter from NIST presented his findings on the performance of tape-bonded seams in EPDM membranes and another RRC, Tom Smith, formerly of the NRCA, was also a speaker. Tom presented "Field Performance of APP Modified Bitumen Roof Membranes and Coatings—the First Six Years." Walt had to wait until the last day, and I am sure special translators had to be smuggled in to help with that New England accent.

The last few days, Nancy and I rented a car and set out to pay a quick visit to northern Germany. While I don't mind driving and seeing the sights, my darling wife kept asking me why we didn't get on a plane and "just get there." Six hours later and one ferry ride behind us, we ended up in Hamburg, Germany. Even if she does complain, Nancy is a pretty good map reader and got us through Hamburg where we ended up at the Hotel Prem, a great place. After being shown to our room, I went into my normal routine of opening the drapes and windows to start looking at nearby roofs. Both from my hotel observation point and in our driving tour the next day, I can conclude that the Europeans are not afraid to use a lot more copper than we do in our urban roof design. They use huge amounts of flat lock and standing seam copper roofs on a variety of slope configurations. This may be due to the fact that construction



Mike Blanchette, left, and Johnny Zamrzla, past president, NRCA, help to move an enclosure during an on-site visit to a roof in Copenhagen.

roof systems. Rather than extract through a chemical medium, this group pressed the asphalt out from the reinforcing felts under pressure. To achieve proper softening point and penetration characteristics, oils and new asphalt had to be blended but a suitable mix was achieved, showing that recycling is possible and further research is needed.

Project profile examples included a "green" roof and an historical plaza waterproofing conversion from traffic to pedestrian mall, both in Madrid. The green roof is currently available on the Internet and we were shown real-time readouts from the moisture and temperature sensors contained within the existing assembly. Another really interesting profile was a closed-down Fiat auto assembly plant (now called the Lingotto) in Torino, Italy. This huge manufacturing complex was converted into a world class facility complete with shopping mall, hotel, congress center and a soon-to-be-complete center of higher learning. From a roofing and waterproofing

and building life expectancy are geared towards a much longer norm than we tend to standardize in North America.

All in all, the Congress was a success. It's interesting to talk with contractors from Europe and other parts of the globe, as they all seem to share the same concerns—qualified help, difficult bid situations, government intervention and competition with those who just don't keep up. Manufacturers, wherever you go, all tout their products as being the best (big surprise). From a designer's standpoint, the roofs in Europe go through less dramatic temperature extremes, but clients there, like here, are demanding better systems and designs.

I want to extend a special thanks to George and Sally Burns from New York and Sean and Narsis Taba Zadeh from California, who helped us have such a great time in Denmark. Finally, thanks to Karl-Eric Hansen and Kim Brandt of Rockwool International for being such gracious hosts on such a short notice.