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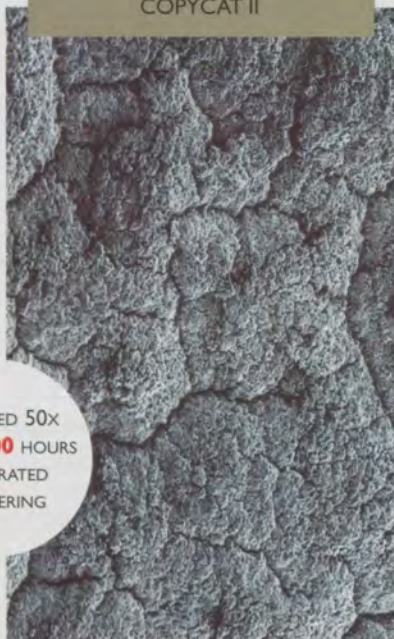
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RCI was chartered, in part, to bridge the gap between the seemingly disparate elements of the roofing profession. It is the intent of *Interface* to connect with these elements, educate and inform about roofing-related topics, establish a common ground for discussion, promote Institute programs, and branch out toward even more people. *Interface* is circulated monthly to over 3,000 people (nationwide and overseas) including RCI members, specifiers, facility managers, owners, industry contacts, and a growing num-

ber of highly placed professionals. *Interface* is frequently distributed at various trade shows, as well as educational and institutional functions.

The articles contained in this publication are intended to provide information that may be useful to members of the Roof Consultants Institute. RCI does not necessarily endorse this information. The reader must evaluate the information in light of the unique circumstances of any particular situation and independently determine its applicability. Entire contents, © RCI.

On The Cover: Scenes from RCI's 13th Convention & Trade Show, Clockwise from top left: incoming President Mike Blanchette makes a grand entrance at the Annual Meeting; outgoing President Robb Smith welcomes attendees to the President's Banquet in a "big" way; keynote speaker John Busch delivers a rousing message as Smith, Executive Director Francis A. Acquaviva, and Mike Blanchette look on (left to right); attendees at an artisan demonstration examine materials; the Trade Show floor is busy; First Vice President James P. Sheahan sits by the pool and takes in an artisan's demo.

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Peer Review

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Advertising Sales

William Myers
RCI Headquarters
7424 Chapel Hill Road
Raleigh, NC 27607
800-828-1902 • 919-859-0742
FAX 919-859-1328

RCI Counsel

Jeffrey L. Knapp, RRC
David M. Orbach
Paul E. Ridley
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Francis A. Acquaviva, Executive Director
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RCI Headquarters

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Change Is Good



Mike Blanchette, RRC, RRO

ALTHOUGH WE OFTEN dislike change, it really is something we have to face. I am as guilty as most when it comes to resistance in altering my norms. Too often, the need for change comes about when I am busy or not in the mood for a necessary adjustment which only makes change harder to accept. Let's put all of that in perspective and talk this month about change being good.

I think most of us will agree that when it's freezing outside, we would surely enjoy a change of climate. Florida or Hawaii can sure sound appealing when it's February and you're sick of coats, boots and scraping off your windshield. Conversely, for me in Texas, when it's over a hundred degrees in July or August before noon, I dream of change and the chance to look at a roof in the mountains of Colorado or other cool mountain area. Those individuals who do not frequent a roof often will never appreciate that there are about two or three days a year when a roof surface is nice to be on, it's usually either too hot, too cold, too wet, or too windy.

Another change we often forget about is a raise in pay. Or how about a newer, dependable vehicle for business or pleasure? A change in your wife's wardrobe is good (you better say that it's nice or you're in trouble). Hey, the change into or out of daylight savings time can be good when you consider the extra hour of sleep or the adjustment to sunlight and its relativity to daily working hours.

So what about change and its relationship to RCI, or, more importantly, to your business? If you are like me, change often comes about when I least need it or have time, but I somehow live through it. For example, I hate, detest, and despise a change in a computer program or even an upgrade. There just never seem to be enough hours in the day to keep up with the ever-changing computer industry, but my company makes the commitment to try and keep up with the thought that it will keep us competitive.

A large national account that we try to keep happy recently instituted a change in the way that they pay us. Now you want to talk about a change, listen to this. Like most of you, my consulting firm deals with clients by 1) providing a quote for service, 2) client acceptance of the quote, 3) our forces performing said services, 4) our forces issuing an invoice for services, and 5) our receipt of a check for payment. It seems normal, natural, and good. Well, this client has decided to change the ever-important

number 5) above. The change involves my company becoming a vendor capable of receiving payment on a national credit card account. Being a babe in the woods with regard to receiving payment through financial institutions by credit card, I figured that only retail stores and RCI Headquarters played this game. But no, we are now required to set up a Visa/MasterCard account with an intermediary company, get authorization after service is performed, and process the information with yet another software package and keep calling the bank to see if the payment has been put through to our account. There is a monthly fee for this service and a cost for the software package. In addition, the processing fee from Visa or MasterCard is anywhere from 1.2% to 3%, right off the top. Needless to say, this change did not immediately appeal to me.

I have tried to remain objective and look at the big picture. First, the up side to this procedure is that we are to receive payment in three days instead of the normal 30 or more days. Second, this cuts down on a process step in our daily administrative needs at the office. We no longer have to fill out a deposit slip and make a trip to the bank. Finally, if this is the way a client can better account for and use his or her resources, well, "I live to serve or keep the client happy" is the phrase to live by. Change is good.

In our ever-changing industry, I think we all need to look around and keep up with change. I have already touched on the computer industry, but there is so much more. How about the roof management programs available? These can be a valuable tool in enhancing your ability to sell your services or better handle client needs. Or how about the Internet? We are able to go to a Web page for nearly all roofing material manufacturers, or, more importantly, RCI's home page or RCI-Mercury. If you haven't had a chance to see Mercury yet, please do so immediately. Its resources are huge. I look forward to the day when I don't have to pay rent on the storage of industry publications, manufacturer three-ring binders and other resource information.

To sum it all up, I think all of us in RCI need to be on the lookout for change and be ready to accept it as quickly as possible. That entails making mistakes occasionally. But the other side of the coin, or not accepting change, may make us dinosaurs, so to speak. So check out that new software package you've put off in a corner. Look into leasing instead of buying. Sign up for educational courses that you keep telling yourself you never have time for. And accept the changes in our fast-paced world as best you can. Just keep telling yourself, "Change is Good!"

A handwritten signature in dark ink that reads "Michael J. Blanchette". The signature is written in a cursive style with a large, prominent initial "M".

President

Letter to the Editor

I have just attended the 13th Annual Convention and Trade Show of the Roof Consultants Institute in Dallas, Texas. I would like to give a big "hats off" and round of applause to our RCI staff in Raleigh as well as Gale Luce Associates representative Laurie Ybarra. I have attended the last nine RCI conventions and in the past there always seemed to be a sense of urgency or something that wasn't quite done or that wasn't quite right. At this convention, the staff had everything in place and there were virtually no surprises whatsoever. This took a tremendous effort from all those involved.

Again, I would like to



thank the staff personally, and I think a nice way to show our appreciation for their hard work is for everybody to show up in Charlotte next year.

Look forward to seeing you all in Charlotte.

Regards,

Nelson Hall, RRC

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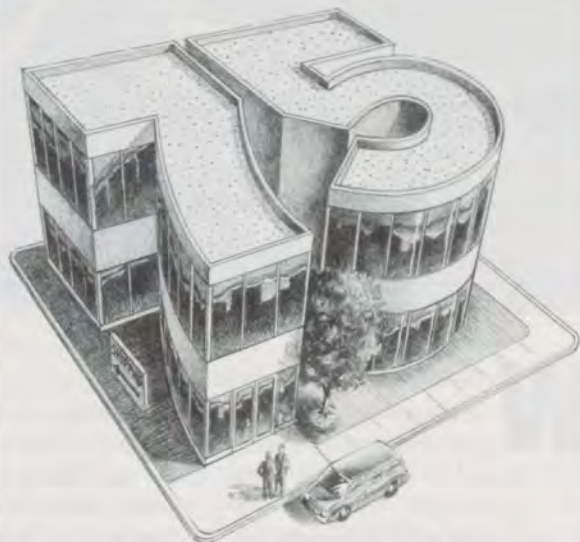
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Walkways

BY KARL A. SCHAACK, P.E., RRC

WALKWAYS, WALK PADS, OR TRAFFIC PADS are commonly installed on the various types of conventional commercial roof systems to provide some level of protection from foot traffic. These "paths" are typically originated at a roof access point (i.e., ladder, hatch, door, etc.) and extend outward across the surface of the roof. The paths are directed toward and around rooftop mechanical equipment where future maintenance and/or service is anticipated. They are normally installed in relatively straight linear directions with right angled turns.

A variety of materials and installation scenarios is available for providing walkways on various roof coverings. A common material that was used extensively in the past and is still available today is an asphaltic-based rigid board with mineral granule surfacing. The board is comprised of a core of asphalt, plasticizers and fillers bonded between inorganic sheets. The bottom sheet is a standard fiberglass ply and the top sheet is a mineral surfaced cap sheet. This type of product is available in thicknesses of 1/2", 3/4" and 1" with panel sizes of 3'x3', 3'x6', and 3'x5'. These panels can be installed on either bituminous or single-ply roof systems. For bituminous roofs, the panels are installed on top of the surfacing in spot applications of plastic roof cement. For single-ply systems, the panels are either set in spot applications of a compatible adhesive or adhered using seam tape. Adjacent panels should be installed with a 3" to 6" spacing. Commonly available products are "Carey Tred" by Celotex and "Whitewalk" by W. R. Meadows.

Another type of available walkpad consists of a board composed of reclaimed rubber particles that are held together

with a binder. This product is available in thicknesses of 3/8", 1/2", 3/4", and 1" and sizes of 3'x4' and 1'x2'. These panels can also be installed on both bituminous or single-ply roof systems. The panels can be installed in spot applications of plastic roof cement/adhesive or in full moppings of bitumen. Examples of these types of products are "Trafblok" by Siplast, "Duo-Pad" by W. R. Meadows and "J-Walk" by Johns Manville.

Mineral-surfaced modified bitumen sheet products have gained popularity for use as walkpads on both modified bitumen and built-up roof assemblies. This type of product is typically polyester reinforced and is available in rolls of 30-36 inches in width. Examples of these types of products are "Paratred" by Siplast, "Dyna-Tred" by Johns Manville and "Brai Walk Pad" by U.S. Intec.

Cut segments from a standard roll of polyester-reinforced modified bitumen sheet flashing or cap sheet membrane can also be used to create walkpads. When installed on top of a granule-surfaced roof membrane, the walkpads constructed from mineral-surfaced products typically have a contrasting granule color from the membrane surfacing to create an obvious demarcation for the walkway.

Single-ply membrane manufacturers typically provide walkpads produced from the same material as the membrane. These products are usually provided with a textured or non-slip surface. Walk pads for thermoplastic single-ply membranes commonly have a tread, embossed or gridded type of surface. These types of walk pads are approximately 1/4" thick and 2'x2' or 2'x3' and bonded to the membrane with an adhesive. The pads can also be heat welded directly to the



Modified bitumen walk pads around roof-top HVAC unit.



Concrete paver walkway for ballasted EPDM roof system.



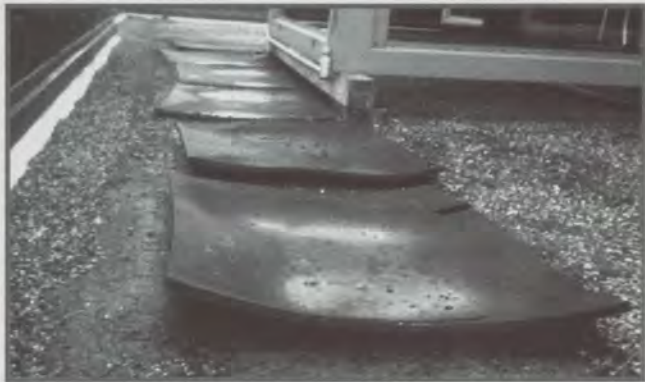
Walk pads with tread-type surfacing for single-ply roof membrane.



Modified bitumen walk pads around roof hatch.

membrane or attached by tabs that are welded to the membrane. A few examples are "Sarnatred" by Sarnafil, "Hi-Tred Walkway Pads" by JPS Elastomerics, and "Bondgard Walkpads" by Bondcote Roof Systems. The walk pads for EPDM single plies are composed of rubber and often have raised nibs on the top surface. These kinds are approximately 1/2" to 3/4" in thickness and available in sizes of 4'x6', 2'x6' and 3'x4'. They are usually adhered to the surface of the EPDM roof membrane with a contact-type adhesive. A few examples of these are "Molded Walkway Pads" by Carlisle, "Roof-Gard Pads" by Humane Manufacturing, and "Protection Mat" by Firestone.

On spray-applied polyurethane foam roof coverings, high traffic areas or walkways can be treated with two different concepts. One approach consists of broadcasting granules into the elastomeric coating on top of the foam. This is accomplished by broadcasting the granules into the initial elastomeric coating that is applied onto the top of the foam. After the coating cures, any loose granules are swept away and a second application of the coating is applied over the previously embedded granules. While the second layer of coating is wet, a second application of granules is broadcast into the coating. After the second coating cures, loose granules are again swept away and bare spots or voids are filled in with coating and granules. An alternative method involves embedding a ply sheet into the wet coating. This method consists of embedding either a fiberglass or polyester felt ply into the initial application of the coating.



Curled processed rubber walk pads.

The felt ply or fabric is then overcoated with an additional layer of the elastomeric coating. While the top coat remains wet, granules are broadcast into the coating in the same manner as the first option previously discussed. Factory-formed walkpads are not recommended for use as walkways on foam roofs. Isolated applications of individual walk pads may be spot adhered to the foam as approved by the foam manufacturer.

Walkways traditionally are not installed on metal roofs due to the lack of either rooftop equipment or the degree of slope, or both. However, if required or necessary, metal grating planks such as "Roofwalks" as provided by Unistrut can be installed on the metal roof system. This system consists of planks that are 6" or 9" wide and are roll-formed from either 12, 14 or 18 gauge galvanized steel. The planks are available in 20 to 24 foot lengths. The top of the planks have an open grid grating that provides a 360 degree anti-skid surface. These planks are typically installed over a support system that spans the panel and rests on or is anchored to the standing seams. This system can also be installed on a conventional low-slope roof. This type of application could utilize a steel support structure (steel pipes or tubes) which penetrates the roof and is anchored to the decking or the supports could be set directly on a rubber pad set on top of the roof system. A similar system is also available that does not involve penetrating the roof system. This system was developed by Portable Pipe Hangers and GS Metals and is



Pre-fabricated metal plank walkway system on built-up roof system.

called the "GrateWalk" system. It utilizes a combination of the previously mentioned steel planks, steel tubing and channels and pre-manufactured bases. The steel channels/tubes extend vertically upward from the base, providing both a support for a horizontal member and a post for a handrail. The planks are then installed on top of the horizontal members to form the walkway. The bases are injection-molded plastic and are set on top of a protection pad placed on the roof surface.

An unusual product that has been used for walkpads is called "Yellow Spaghetti," which consists of continuously-bound strands of polyethylene (plastic). These products have been used for walkpads on single-ply membrane roof systems and spray-applied polyurethane foam roof coverings.

Precast concrete pavers can also be used to construct a walkway on a roof. Pavers are commonly used to construct walkways on single-ply membranes that have a stone ballast surfacing. Walking on stone ballast is difficult due to the relative size (1-inch to 1-1/2-inch diameter), quantity of ballast (10 to 15 psf), and roundness of the stones. Furthermore, foot traffic on top of the ballast could cause damage (i.e. puncture) to the membrane if an angular piece of stone is located below the point of loading. When used to construct walkways on a roof, pavers should have drainage channels on the underside of the paver. A slip sheet or protection pad should be installed on the membrane prior to installing the paver. Examples of concrete pavers that are utilized in roofing are "Ballast Paver" by Westile and "Hanover Prest Paver" by Hanover Architectural Products.

The general function of walk/traffic pads is to protect the roof covering from damage and/or abuse due to roof-top traffic. However, since walkways are installed by the roofing contractor and the location often determined by a designer, the paths are often not the most direct way to a specific area and often are not utilized by the respective personnel performing their rooftop duty. Sometimes, the most practical installation scenario for walkpads is to install them only at the roof access point and around the desired roof-top equipment. Each product, roof covering and manufacturer has specific recommendations regarding the installation of walkpads. Therefore, the products and their intended use should be properly evaluated in relation to the type of roof covering and the anticipated service in order to provide the best option for the building owner/user.

About The Author



Karl A. Schaack received a bachelor of science degree in civil engineering from Clemson University and is a professional engineer in the states of South Carolina, North Carolina and Texas. He is Vice President of Houston Operations for Price Consulting, Inc., and is a Registered Roof Consultant through RCI.

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Asphalt Fumes - A Growing Concern

BY PAT A. COOK, ATTY., AND JAMES E. KRAUSE

There is a growing concern over possible harmful effects of asphalt fumes on workers, particularly in the hot mix roofing and roadwork industries. OSHA has designated asphalt fumes as its number one non-regulatory priority. According to Ed Geddie of the North Carolina Occupational Safety and Health Administration (NC OSHA), the fume issue is on the priority planning list of issues to be considered for federal rule planning, and he expects a rule on asphalt fumes to be out within the next few years.

The effect of asphalt fumes on workers has been the subject of studies for many years. In one such study done on hot asphalt mixes at two hot mix facilities involving four asphalts from three refineries, air contaminants were found to be within the threshold limit values (TLV). The study concluded there were no serious air pollution or employee health problems resulting from the use of petroleum-derived asphalt in hot mixes.

A later 1988 study showed the amount of volatile material measured from asphalt at temperatures above 316 degrees C had increased 9-16 times the earlier measured amounts, and 2-7 times more from coal tar. The authors of the study concluded that the asphalt and especially coal tar pitch are highly carcinogenic, particularly at elevated temperatures. Studies all show that the fumes from coal tar (a common ingredient in roof patching materials) are more carcinogenic than asphalt fumes.

Between 1976 and 1993, a total of 19 epidemiological studies examined the potential carcinogenic effects of bitumens on workers through inhalation and dermal exposure. Lung cancer excesses occurred in 11; lung cancer and bladder cancer excesses occurred in 8; and asphalt exposure was significantly associated with an excess of ureter and pelvic cancer, stomach cancer, and colon cancer in most groups.

OSHA currently has no permissive exposure limit (PEL) for asphalt. Since there is no regulation without a PEL, OSHA must enforce current hazardous conditions from asphalt fumes under the General Duty Clause, if it attempts to enforce them at all.

The General Duty Clause [OSHA Section 5(a)(1)] was enacted to cover serious hazards to which no specific standard applies. These three elements must be shown for a General Duty violation:

- 1) The employer failed to render its workplace free of a hazard;
- 2) The hazard is recognized by the employer or its industry; and
- 3) The hazard is causing or is likely to cause death or serious physical harm.

NIOSH (National Institute for Occupational Safety and Health) lists asphalt as a suspect carcinogen with a threshold limit value (TLV) of 5mg/m³ (milligrams per cubic meter) measured over a 15-minute period. This is a very low standard. Mark Wiggins (South Carolina OSHA) indicated that a TLV of 5 mg/m³ particulate matter is visible as a cloud or smoke.

OSHA can enforce this NIOSH standard under the general duty clause if it so chooses. Currently, OSHA must prove overexposure to support a General Duty violation, since there is no PEL regulation to enforce. This will change, of course, if and when an OSHA regulation is implemented dealing with asphalt fumes.

Asphalt fumes are a definite and growing concern in regulatory agencies; there will be regulations governing it within a very few years. The current projection of regulation includes rotation of workers, respiratory protection, monitoring of temperatures, and measuring of air quality. Studies show that several simple measures will keep exposure of workers to a minimum, especially proper ventilation and careful attention to constant temperatures of hot mix. You should help ensure that your client won't be a target of an OSHA investigation by taking such measures seriously and bringing them to the attention of those who can effect these precautions.

Pat A. Cook is an attorney, and James E. Krause, a law clerk with Safran Law Offices, Raleigh, NC. The law offices specialize in construction-related litigation.

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RCI's 13th Annual Convention and Trade Show in Dallas, Texas was a resounding success. Professionals came from all over North America to learn, network, and recreate. The following pages review some of the many happenings. If you were there, perhaps you will see yourself in these pages. If you weren't, we hope to see you at next year's convention in Charlotte...



Charlotte, North Carolina

Put Charlotte on your calendar for next year. You don't want to miss another great RCI gathering—this one in the sunny South. There will be more opportunities for education, professional networking, great golfing, and product information at RCI's 14th International Convention and Trade Show.

March 13-18, 1999

Annual Meeting

By KRIS AMMERMAN, EXECUTIVE EDITOR



Mike Blanchette makes a grand entrance on his motorcycle following his election as President. "If you want to rescind your votes after that," he announced, "it's too late."



Ian Lurie, developer of RCI's website, demonstrated it and RCI-Mercury, an on-line searchable database of roofing information.



Executive Director Fran Acquaviva explains Headquarters changes and membership numbers.

Mike Blanchette literally zoomed his way into office and RCI members elected their first Canadian to the Executive Committee at the Annual Meeting of the Institute Wednesday, April 8 in Dallas.

Mike Blanchette gunned in on his motorcycle, dressed in shades and with a cigarette dangling from his mouth, to announce, "This is the most radical thing I intend to do this year in office. But if you're having second thoughts about electing me, it's too late!"

"My whole desire this year is to do better what we do," Blanchette stated, taking the helm from Outgoing President Robb Smith. Smith, in giving his "State of the Institute" address, reviewed the advancements the Institute has made in the past year under his leadership. "We are on the right path," he declared.

Al Duwyn, previously Director of Region VIII, was elected Treasurer of RCI from a field of three candidates, including Mike DeFrancesco, Region I director, and John Willers.

Treasurer (now Secretary) Warren French gave a financial overview and noted the Institute continues to "expand." French made a motion, approved by the voting membership present, to authorize employment of a CPA to audit the books of the Institute at an estimated cost of \$6,000 to \$8,000.

RCI's Webmaster, Ian Lurie, gave a brief demonstration of RCI's Website (www.rci-online.org) and of RCI-Mercury. (See "RCI on the Internet," under Round Table Discussions, elsewhere in this issue).

Executive Director Fran Acquaviva briefly discussed the Institute's new integrated management computer system at Headquarters. He noted there are currently 1,004 active and paid members out of a total database of 1,405 one-time members. A membership survey will be launched in the near future to research the size of the potential market for membership and to canvas member characteristics and needs.

Committee reports were given. Pat Downey discussed the Bylaws Committee (see upcoming issue of *Interface*).



Al Duwyn won election as Treasurer of the Board of Directors of RCI. "We witnessed democracy in action today," Duwyn, formerly Director of Region VIII, announced. Region VIII, which encompasses Canada, was the second fastest growing region in membership during 1997.



Treasurer Warren French (now Secretary), announced the Institute is growing.



Members prepare to elect a new board.

Joe Hale, Education Committee Chairman, noted his committee disseminates information to one another through RCI's website, where committee members can review textbook chapters, etc. The RRO course has been rewritten, but "we're about five chapters short," Joe stressed. He announced that a home study course will be developed to help prepare people to take the exam.

RRC Exam Committee Chairman Don Bush Sr. noted his committee is working on Part II of the exam to make it "more user-friendly instead of the 'chug and plug' format currently in place." A new study guide is being developed, and the committee is working on increasing the pass/fail ratio, which has fallen off the last three years (10% now, down from 30 to 40% three years ago, though the test hasn't changed).

Curt Liscum, RRO Exam Committee Chair, stated the RRO pass rate is an estimated 80 to 90 percent. Fifty individuals took the test last year and there are now about 240 RROs. A dual format exam has been developed with "A" and "B" tests. With the help of SPI/SPFD, a spray polyurethane foam exam has been added. The committee is always looking for new materials and would like members to submit suggested questions. They are planning to develop metal roof, tile, and slate roof exams.

Standards and Practices Committee Chair Brian Gardiner discussed development of the Manual of Practice.

Dave Roodvoets, with RICOWI, noted the organization has incorporated and changed its bylaws and director. Anyone can now become an affiliate member. The next meeting of the group will be in October, probably at Mississippi State.



The new board. Seated, left to right: C. Alan Kidd, Region II Director, Art Sark, President 1995 to 1996, William Cypber, Secretary, Mike Blanchette, President, J. P. Sheaban, First Vice President, Warren P. French, 2nd Vice President, Paul Ridley, Region IV Director, Colin Murphy, Region VII Director. Standing, left to right: Francis Acquaviva, Executive Director, Robb Smith, Immediate Past President, Doug Fishburn, Region VIII Director, Dennis McNeil, Region III Director. Absent when photo taken: Al Duwyn, Treasurer, Interim Region VI Director, Todd Brooks, Dan Neubaum, Region V Director.



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President's Banquet

Snapshots



The staff of RCI welcomes attendees to the President's Banquet. Left to right: Publications Coordinator, Kris Ammerman, Executive Director, Fran Acquaviva, Membership and Registration Coordinator and Convention Coordinator, Micki Kamszik, Marketing Coordinator Bill Myers, and Administrative Assistant and Receptionist, Sharon Dupre. Remaining at Headquarters to hold down the real "fort": was Financial Coordinator, Laurice Hewitt.



Dick Canon served once again as Master of Ceremonies.



Line dance lessons were popular.



Cheek...



How to walk on a roof....



...to cheek. Dick Canon and Joe Hale do some mutual admiring.



The banquet hall was full to hear Dick Canon announce award winners.

President's Banquet Awards

Colin Murphy Honored With Herbert Busching Jr. Award



Colin Murphy, right, was granted the Herbert Busching Jr. Award for a "significant contribution to the general betterment of the roof consulting industry."

The Herbert Busching Award is named after the late Dr. Busching, PE, a full professor at Clemson University. Busching joined RCI in 1984 and took a leading role as the first member and eventual chairman of the Board of Regents (one of RCI's early efforts to secure technical and unbiased expertise in the field of roofing). He epitomized the type of professionalism which RCI was founded to promote.

The award is given to individuals who have contributed significantly to the professionalism of roof consulting. RCI contributes \$1,000 to the architectural, engineering, or construction management department of the recipient's school or university of choice. The recipient also receives an engraved plaque.

Colin Murphy, RRC, is the third recipient of the award since its inception in 1994. He was granted this honor for his exceptional generosity and benefaction to RCI; for his unwavering commitment to the Institute; his insight into the needs of the profession; development of the RCI-Mercury database and system; and as author of *Roofing Knowledge for General Contractors*, the proceeds of which, when sold, he has donated to RCI.

Murphy, owner of Exterior Research & Design and Trinity Engineering, Seattle, WA, is a Registered Roof Consultant and Director of Region VII.

Previous winners of the Herbert Busching Jr. Award were Richard Canon, PE, RRC, FRCI, and William Correll, AIA, FRCI.

Chuck Marvin Wins Horowitz Award for Interface Contribution



For the best technical article published in *Interface* during the previous year, Chuck Marvin, right, was awarded the Horowitz Award.

The Horowitz Award is named after Dick Horowitz and is presented for the best technical article published in *Interface* during the previous calendar year. The late Dick Horowitz, a man who contributed much to the Institute, was respected for his sharp intellect and ability to write eloquent prose.

A panel of judges chose Chuck Marvin the winner of the 1997 Horowitz Award. Chuck's article, "Asbestos and Roof Consulting: Watching Your Step," in the April 1997 issue of *Interface*, was one of several Marvin has published in the journal since 1984. Chuck received an engraved desk clock and pen set and will be provided with free registration to next year's RCI convention in Charlotte, NC. His name will appear on the permanent plaque displayed at RCI Headquarters, joining previous recipients of the award, Colin Murphy and Lyle Hogan.

"Dick Horowitz's words helped many people to pick up a pen, including yours truly, despite moderate English skills...I am very honored and appreciative," Marvin noted in a letter to Senior Editor Lyle Hogan following the convention. Hogan had encouraged Marvin to attend and remain at the convention through the banquet (to receive the award, a surprise to Marvin), despite pressing work back at Roof Solutions Inc., Charlotte, where Marvin is employed.

The President's Banquet was sponsored by Siplast. The reception was sponsored by W. P. Hickman Co. and T. Clear Corporation.

President's Banquet Awards

Smith Named Fellow of RCI



Robb Smith, right, was made a Fellow of the Institute. He is congratulated by Master of Ceremonies Dick Canon.

Robb Smith, Outgoing President of RCI, was named the 20th Fellow of the Institute by the Board of Fellows and presented with the award at the President's Banquet in Dallas on April 7 by emcee Dick Canon, FRCI.

A member of RCI since 1988, Smith became registered as an RRC in 1991 and as an RRO in 1995. He is a member of RCI's RICOWI team and a frequent lecturer for RCI educational courses. In 1994, he was elected Treasurer of RCI, advancing up the Executive Board ladder thereafter.

Robb has published several technical articles in industry publications. He is a member of the NRCA, WSRCA, ICBO, ASTM, and the Alliance for Construction Excellence at the Del E. Webb School of Construction, Arizona State University.

Smith has been President of Advanced Roof Technology, Reno, NV since 1988, serving clients in Arizona, California, and Nevada. He has over 18 years of experience in the roofing industry. Smith has investigated over 30 million square feet of roofs and developed reroofing specifications for over 350 "roofing only" projects totaling over \$25 million.

Robb may now use the designation "FRCI" after his name.

The President's Banquet was sponsored by Siplast. The reception was sponsored by W. P. Hickman Co. and T. Clear Corporation.



New RRCs at the convention, left to right: Frank Zuloaga, Michael Goolsby, and Kenneth Everett.

New RRCs since the 1997 Convention:

Donnie Wayne Christmas
Michael Loyce Goolsby
Ronald Lee White
Frank H. Zuloaga



New RROs at the convention, left to right: Paul Mitchell, Paul Beavers, Wilson Gin, Jim Barton, Bill Hale.

New RROs since the 1997 Convention:

Jeffrey Todd Alawine	Derek Arthur Hoidgen	Richard Wayne Perry
Kenneth C. Areskog	David Walter Honeycutt	Anthony Sam Poletto
Bryan Thomas Barry	Earnest L. Jewell	Reynaldo T. Reyna, Jr.
James Marshall Barton	Frank Elroy Jones	John William Ritchey
Paul Brett Beavers	David Wayne Kendrick	Bruce Anthony Ryan
Gregory Allen Beck	Ronald D. Kinne	Joseph Michael Schneider
Christopher James Clark	Norm David Klugerman	Robert I. Schackleton
J. Russell Cox	Dennis Charles Knoll	Lerald G. Sharp
Nathan Dorn	Robert E. Lucas, Jr.	Robert B. Stanford
Steven R. Eisenbarth	Phillip J. Maban	Gilbert L. Stewart
Nathaniel Jared	Claude Cleveland Malone	Richard Alan Susanson
Ellenberger	Rachel E. Marcum	Dick Tallichet
Billy F. Gardner	Dennis Wayne Masbourn	Timothy J. Waisdorf, Jr.
Wilson Gin	Terence James McKelvey	Albert I. White
William F. Hale	Melissa Lynn Obiso	Garret Darilyn Zolmer
Jeffrey A. Hartman	Michael Oakley Page	

President's Banquet Awards



Joe Hale, right, was presented with the President's Award by Robb Smith for his enduring commitment to the health and welfare of RCI.



Jean-Guy Levaque, right, received an Outstanding Volunteer Award from President Robb Smith for his admirable initiative in preparation of guidelines for committee structure.



Receiving Certificates of Appreciation for "Determined efforts in revising the education manuals, Levels II and III. Pictured, left to right: Ted Sheridan, Dave Siple, Kami Farahmandpour, Education Committee Chairman Joe Hale, and Patrick Downey. Other members of the committee recognized were Hitesh Dosbi, Chris Campbell, Tom Tisthammer, Jocelyn Brie, Phil Smith, and Deb Cox, secretary.



Don Bush Sr., Chairman, right, of the RRC Exam Committee, was presented with an Outstanding Volunteer Award for his steadfast devotion to the RRC exam by President Robb Smith.



Rick Cook (pictured), as well as Scott Pfeffer and Dan LaFontaine, were recognized for their work on the RRO Exam Committee. Curt Liscum is the chairman of the committee.



Kami Farahmandpour was honored as an Outstanding Volunteer for his energetic leadership in organizing three Building Envelope Symposia.



Bill Tipton (pictured), Mike Mele and Chris Clark were recognized for their outstanding efforts in coordinating RCI's Building Envelope Symposia.

Golf Tournament

Rising President's Golf Tournament

By WILLIAM HALE, RRC (REALLY RELIEVED TO NO LONGER BE CHAIRMAN), RRO



Yes, we're Golfers....



Somewhere in here it tells how to operate this thing....

I don't mind reporting at all about the golf outing this year at Chase Oaks Golf Club in Plano, TX. Mike Blanchette deserves a special thank you for selecting this wonderful course. It was in great shape and left you knowing you played golf in Texas—"everything's bigger in Texas." The event was the best yet. Good times and a spirit of camaraderie were fueled by the presence of famous retired Dallas Cowboys such as Ed "Too Tall" Jones (#72); Tony Hill (#80); Doug Donnelly (#83); Bill Joe DuPree (#89, all-pro); and '96 NFL Hall of Fame member Mel Renfro (#20). Visiting Dallas, TX and playing golf with my heroes was a time never to be forgotten. I'll probably tell my children and hopefully grandchildren about it a hundred times.

Awards were presented for the highest score, first through third lowest scores, longest putt, closest to the pin, and longest drive. Special contests were Hole in One for a Jeep, jet skis, a mountain bike, vacation and one lucky guy had a chance to hit one shot for a million dollar hole-in-one. E.S. Products and MS had great games on par three holes as well. The Texas-style lunch barbecue was fantastic as prepared by Spring Creek BBQ. Advantage Golf was great with professional tournament assistance, i.e., trophies, towels, large prizes and celebrity management. For any of you working on events these guys are nationwide and can be reached at 1-800-753-9538. Doug Donnelly or Debra Price can help. The awards, contests, celebrity participation and hospitality would not exist without the generous support of our sponsors.

This year I had folks contact me and ask, can we help? How can we get involved? This type of excitement and support means a great deal to a volunteer or anyone working on an outing like this. I deeply appreciate the support and kind words from all over the past three years. Many of you have become great fiends. Special thanks this year to Teddy Black, my mom; our new First Lady, Nancy Blanchette; a great roofer, Greg Sherock with Seyforth Roofing, and Karen Travis for awesome assistance on-site with set-up and service. Don't miss next year's outing in Charlotte, NC. Contact Nelson Hall for details. Thankfully, I've passed the torch.

Sponsors were:



Some of the winners pose with awards and celebrities. Left to right, front row: Mary Beth Duwyn, Sam Huff, Lori Baxter, Teddi Black. Rear: Billy Joe DuPree and Doug Donnelly, ex Dallas Cowboys.



More winners pose with prizes and heroes.

Major Events

Firestone Building Prod.

Georgia-Pacific

Seyforth Roofing Co., Inc.

Carlisle Syntec Systems

Hole and Special Sponsors

Am-Tech
GAF Materials Corp.
ES Products, Inc.
HDH Associates
Olympic Fasteners
2001 Roof Systems

Arch. Building Components
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Siplast
Koppers
Rohm & Haas Co.
North American Rfg. Sys.

Charter Rfg. & Waterprfg.
Fields Corp.
Orbach & Huff
Tamko
Allied Signal, Inc.
Barret Co.

JPS Elastomerics
Dekfast
Shencorp

Document Competition

A panel of five judges met prior to the Trade Show to judge the largest number of entries ever for RCI's Annual Document Competition. After five hours of diligently pouring over documents and analyzing individual judgements, the following winners were announced:

Large Roofing Project (\$100,000 and over)

First

Vernon Dunagin
Amtech Roofing Consultants Inc.
Sunset Train Station, San Antonio, TX

Second

Mason Montgomery
HDH
Seacobeck Hall, Mary Washington College

Honorable Mention

Mike Cornett
HDH
Newman Library, Virginia Polytechnic

Small Roofing Project (Under \$100,000)

First

Mike Cornett
HDH
Roanoke City Library

Second

Richard L. Cook Jr.
Austin•Dillon•Cook
Allied Health Services, Charleston, SC

Roofing Report

First

Mason Montgomery
HDH
Wyoming State Capitol Building

Honorable Mention

Forrest Whitescarver
Conley Design
Adolphus Hotel, Dallas, TX



Document Competition winners present at the banquet, left to right: Mike Cornett, HDH, Rick Cook, Austin-Dillon-Cook, Mason Montgomery, HDH, and Vernon Dunagin, Amtech Roofing.



Vernon Dunagin, Austin office of Amtech, poses with his 1st place entry for Large Roofing Projects.



HDH won several awards in the Document Competition. Posing with their winning entries are, left to right: HDH owner, Joe Hale, left, Mike Cornett, and Mason Montgomery.

Keynote Address: "Partnering for Performance"

BY JOHN BUSCH • REVIEWED BY GARY R. CATTEL, PE, RRC

What a great start to a great week in Big D! John Busch, Director of Growth Planning & Development, Johns-Manville Corp., noted the continuing growth and influence of our organization and membership. The crowded Trade Show floor reflects the impact of RCI. With a decrease in the number of manufacturers, the consultant's role increases in significance and value to the manufacturers' and consultants' common denominator, the customer. Likened to the three-legged stool comprised of

Owner, Contractor and Manufacturer, the Consultant is the seat which unites the individual legs.

John issued a challenge to manufacturers to commit to RCI by:

- ▼ taking the RRC test,
- ▼ establishing a consultant advisory board,
- ▼ welcoming plant tours, and
- ▼ staying out of construction management.

In closing, we (consultants) were asked to better communicate and encouraged to "Think Outside the



John Busch

Box." What a great start to a great week.

Hail Resistance and Performance Analysis of Elastomeric Coated SPF Roof Systems

BY DEAN T. KASHIWAGI, PhD, AND MANOJ K. PANDEY, MS • REVIEWED BY GARY R. CATTEL, PE, RRC



Dean T. Kashiwagi, PhD

What is severe (1" diameter) or oversized (greater than 1" diameter) hail? Where can you expect it to occur and with what frequency? In addition to providing an annual occurrence map for the US, Dr. Kashiwagi also provided attendees with practical knowledge to minimize the risk undertaken with any specification.

Performance differences for various SPF densities and coatings were provided. In-field test procedures were presented and a "warranty inclusion"

statement provided as an effort to ensure continued hail resistance with aged coatings.

Armed with the type of data, test results and past performance documentation provided at seminars such as this, consultants can make better choices for long-term system performance, even under extreme conditions. As Dr. Kashiwagi said, "Information reduces risk." In this business, we can all do with a little less risk.

Hail Damage to Shingles

BY COLIN MURPHY, RRC • REVIEWED BY AL MACCAGLI, RRC

This presentation covered the information from two past articles in *Interface* and the third part of the series that will be published in the July issue of the journal.

This presentation was an overview of a five-year study on the effects and options to reduce hail damage to asphalt shingles. Similar past studies by others and the

information accrued from them were also discussed.

First, the test methods and their validity were discussed. Past tests used steel balls or ice balls to simulate hail striking the shingle. Murphy noted that there was virtually no difference between the two methods and used a modified version of Factory Mutual's standard 4470. This method

utilized a steel ball dropped onto the shingle with a 14 pound force of impact energy.

Research roofs were found using warranty information from a group of buildings that suffered hail damage in 1991. Field samples were also taken from undamaged four-year-old roofs. The study compared:

- ▼ Mat damage vs. surface damage
- ▼ New shingles vs. weathered
- ▼ Strip shingles vs. dimensional shingles
- ▼ Airblown bitumen vs SBS
- ▼ Various roof slopes
- ▼ The use of felt underlayment

▼ Various deck types

The results confirmed some of the conclusions of past studies and indicated that it is difficult to determine damage from visual examination alone in SBS shingles. Other conclusions included that there was less damage from hail when higher mat weights, harder substrates, dimensional shingles or SBS shingles were used.

Some questions from the floor raised the issues of the effects of temperature on hail damage, and the effect of hail damage on the useful life of a shingle roof. Murphy stated that his study did not include these issues, and further testing would be required.



Colin Murphy, RRC

Consultant's Guide to the Use of Siliconized Gypsum-based Roof Boards

BY GERALD TEITSMAN, RRC • REVIEWED BY WILLIAM T. RUBEL, RRC

Jerry Teitsma's presentation was a broad overview of technical information on siliconized gypsum-based roof boards. His information was gathered from a variety of sources: literature reviewed, manufacturer interviews, and a survey of major roofing system manufacturers. Glass mat gypsum board is similar to gypsum wallboard in that the core product is gypsum. However, the core is modified with silicone for increased moisture resistance, and the facing surfaces are non-woven glass mats for strength, moisture resistance, and adhesion characteristics. To illustrate his findings, Jerry used some simple but effective home demonstrations to make the point that after six weeks in water, the product was still capable of being handled and was not falling apart.

In conclusion, Teitsma presented five recommendations:

1. Glass mat gypsum board should be considered as part of

the roof deck and not be included in roof system warranties.

2. Be cautious with direct application of hot mopped surfaces and have the roofing manufacturer's endorsement.

3. Prequalify torch-on manufacturers.

4. Protect the product from incidental and entrapped moisture as you would any other product to be incorporated into a roofing system.

5. Specify glass mat gypsum board as a replacement for gypsum wallboard in roofing system applications.



Gerald Teitsma

Disaster Readiness

BY JOE HALE, FRCI • REVIEWED BY NELSON HALL, RRC

Joe Hale, FRCI of HDH Associates in Salem, Virginia, spoke to a full room on disaster readiness. The focus of his presentation was to minimize losses during a natural or man-made disaster by preparing in advance and having a plan of action for response after a disaster has occurred. Joe explained Phase I, a pre-event mitigation. The first step in this process is the site investigation and determination of

existing conditions. This is necessary to enable post disaster identification of equipment or items damaged as a result of the disaster. He noted that the team must be formed and drilled prior to a disaster. The team must consist of people who will be there and available during a disaster and each person must have a backup who is also trained in the processes required of the team. Each team must have a pro-

gram coordinator who will have the authority, knowledge and use of available resources. This person must be able to deviate from normal procurement policy requirements due to the quick action required after a disaster.

Phase II of the presentation covered the post event mitigation Communication, of course, is the key to the ability of the disaster response team to be able to perform their assigned functions. The team coordinator must begin contacting a list of professionals with prearranged contacts which will include architects, engineers, structural engineers, roof consultants, contractors, service and material suppliers, and manufacturers to mobilize during the second phase of the investigation and repair. These professionals should of necessity be out of the



Joe Hale, FRCI

immediate area of the disaster in order to take care of problems. Officials inside the area will be busy with their own problems and constituency.

The importance of rapid response to the disaster was stressed. It was noted that during Hurricane Andrew the damage by the actual storm was much less than the damage that was incurred as a result of poor response to the disaster. Rainwater entering homes and buildings after the storm caused a great deal more damage than the actual storm itself. Proper and appropriate response by a trained and ready disaster response team could have prevented large insurance claims after Hurricane Andrew and decreased the damage inflicted by the storm and subsequent rains by a huge margin. It is my hope that Joe will follow up this presentation with an article in *Interface*.

Cold-Applied Roofing Products and Systems

BY MONTY BANNER • REVIEWED BY C. ALLAN KIDD



Monty Banner

Monty Banner briefly touched on numerous cold applied roofing topics, including a summary of cold-applied products, repairs, and reroofing with cold applied products. Mr. Banner's experience and expertise was obvious as he discussed each of the topics. The presentation was an eye-opener for many of us with limited cold applied experience. Several new scenarios and possibilities were raised. According to Mr. Banner, cold-applied products are suitable for a wide variety of applications and substrates and are available for warranties similar to conventional applied systems.

Ethical and Contractual Issues

BY MICHAEL TAYLOR AND EDWARD BETKER • REVIEWED BY DAVID H. SIPLE, RRC, FRCI, RSO

Michael Taylor and Edward Betker presented a number of hypothetical cases between a building owner, Mighty Malls, and a roof consulting Firm, Roofs R Us. They were all based upon real situations with only slight changes to protect those involved. Each case was presented to illustrate a principle concerning contractual agreements.

After each case was presented, attendees were asked to vote on their opinion, like a judge or jury. Then the audience was allowed to comment on

why they voted. It was interesting to see how many split votes occurred and yet in the discussion periods, sound reasoning was used to support both sides.

Attendees came away with new cautions about the contracts they enter into, the consulting services they provide, and the liabilities they may be assuming. (For more on this, read the article, "You Be the Judge," by Michael G. Taylor in the February 1998 issue of *Interface*.)



Michael Taylor (left) and Edward Betker

Communications Systems

BY MIKE McCABE • REVIEWED BY EDWARD O. BETKER, RRC

Michael McCabe of Lucent Technologies explained to the audience the systems available to improve the quality and efficiency of our business communications for voice, fax, video, computers, etc. The efficiency and merits of the various systems related to cost, speed, access, flexibility, compatibility and capability were reviewed. McCabe's presentation also elaborated on the cost versus value of the systems currently available and their potential.

Communication industry buzzwords were translated into English. New emerging technologies and year 2000 dilemmas were also previewed. The presentation was well organized and very informative.



Mike McCabe

Auto-CAD LT® for Small Business

BY BRUCE COTTON • REVIEWED BY AL MACCAGLI, RRC

Bruce Cotton, Arnold & Associates, covered the basic principles of Computer Assisted Design (CAD), and some specific ways to use the program Auto-CAD LT® in roof-related drawings. Auto-CAD LT® is a simplified version of the granddaddy of all CAD programs, AutoCAD. In most instances, roof consultants' drawings are relatively simple and there is no need for the full version of AutoCAD, which is a difficult program to learn and use. AutoCAD LT® is also comparatively inexpensive, with a list price of about \$400.

The first step Cotton covered was to plot roof drawings on an X,Y axis, with X being the horizontal dimension, Y the vertical. This makes it easier to transpose the drawing into the program later, resulting in an extremely accurate drawing. Each measurement, each piece of rooftop equipment, and the configuration of the roof itself are located in rela-

tion to the X,Y axis starting in the lower left-hand corner of your drawing. The extreme lower left-hand corner would be X,0; Y,0. For example, an air handler that existed ten feet in from the left wall of the roof, and one foot from the bottom wall of the roof, would be located at X,10 Y,1.

The creative use of layers was discussed in relation to roof consulting. Even though the drawing is two dimensional, layers can be used to group similar items together. Cotton explained that the repairs for a specific year could be drawn on one layer, and the repairs for another year could be drawn on a different layer. This would create a very simple method of comparing the repairs and illustrate repairs that were performed multiple times.

Bruce suggested the use of a spreadsheet to record the location of rooftop items. This would reduce the cluttered



Bruce Cotton

notations on a traditional roof sketch, and provide a record that could be entered into a database. Examples of this type of spreadsheet were handed out.

This comprehensive presentation was very helpful to the experienced CAD users and the consultants interested in starting using CAD. Using the program as Cotton described will enhance anyone's roof management records.

Benefits of CAD Systems

BY RICHARD BOOTHMAN • REVIEWED BY VINCE JONTÉ

Keith Bradford and Richard Boothman of Avatech Solutions, Irving, Texas, conducted a one-hour presentation on AutoCAD systems. Bradford operated the demonstration from a laptop computer hooked to an electronic overhead, while Boothman delivered

the oral presentation.

Boothman gave the group a brief history lesson on some of the original systems which were physically large as well as very costly. He indicated that early systems would cost in the range of \$200,000 and might support ten

workstations. Today, desktop CAD systems are fairly affordable and can range from \$3,000 to \$5,000, depending on the hardware and software. Most come with learning and tutorial programs on CD-ROM to aid in quick implementation. Some of the capabilities of Auto-

CAD 14 include easier commands for zooming, matching or changing properties within a drawing and the ability to customize the toolbar for each drawing. Other features include the Microsoft compliant program to integrate with other Microsoft documents such as spreadsheets in Excel. This was truly neat, as the system can plot a feature on a drawing such as a light fixture (sample used) and the addition is automatically added to a spreadsheet calculating quantity and cost. Since you format the spreadsheet and define your properties, you can easily produce a drawing that can also prepare a budget cost at the same time. What a tool!

Obviously, the system is quite complicated, and most of those attending



Richard Boothman

had a look of bewilderment on our faces. Several questions were asked by the group, and many were interested in the comparison of the "full blown" (whatever that means) AutoCAD sys-

tem vs. The "AutoCAD LT® system. The general consensus seemed to be that the LT system would perform 99% of the functions needed for roof consulting. I don't know what the other 1% might be, but clearly AutoCAD 14 is for someone who is dedicated to using it. A great deal of training, education, and continual usage will be required to become proficient as well as efficient. Personally, I'll spend my time on a rooftop where I know what's what and hand my field drawing to the CAD operator with my usual demand for production being some unreasonable timeframe, especially since I now know how simple it really is...for CAD operators, anyway.

Contract Essentials for the Consulting Business

By DAVID M. ORBACH • REVIEWED BY GENE LAWRENCE

David Orbach both educated and entertained a large audience. He said that often we have to be "proud to be a weasel" to ensure that we protect the interests of our companies and our contractual positions. There are two approaches to a contract. One is the "Bunny Rabbit," and the other is the "Weasel." The Bunny Rabbit is the nice guy who bends over backward to please everyone, and tries hard not to offend. Nice guys often finish last. The Weasel uses language to act as a shield from a mistake or a perceived mistake. He maintains caution and protects the right to be paid. The Bunny Rabbit makes "nice" contacts.

Orbach said, be a Weasel. Put your contract on the table first and use a standard form contract. Remember that fine print will work to the advantage of the Weasel.

Orbach distributed samples of the standard form contract containing helpful verbiage for aspiring Weasels.



David M. Orbach

Marketing for Consultants

By ROBERT W. LYONS • REVIEWED BY GENE LAWRENCE

Bob Lyons, CEO of Roofing Intelligence Inc., explained that if we are not selling Value, we will forever butt our heads against the proverbial wall competing on Price. He spoke about getting a grasp of our clients' perception of value so that we can satisfy them.

We have three options in regard to price: cut, hold fast, or sell. Or promote our services until the client feels he or she has to have it. Six major attributes of products or services are:

1. Physical: What is it?
2. Function: What does it do for the client?
3. Emotional: How much trust is elicited from the client?

4. Procedural: How user-friendly is it?
5. Financial: What is the cost?
6. Security: What warranties does the product afford the client?

Bob has developed the S.A.P.A.M.S. (Services And Products Attributes Matrix System) With this chart, we can lead our clients through all the relevant issues to show them how our product or service may be superior to the competition.



Robert Lyons, FRCI, RRO

Mock Trial: Roof Litigation

BY WARREN FRENCH, MIKE TAYLOR, PAUL RIDLEY, AND STEVE BADGER
REVIEWED BY JIM D. KOONTZ, PE

The Players

One of the highlights of the convention was the presentation of a mock trial, performed with two practicing attorneys from Dallas: Steven Badger for the plaintiff and Paul Ridley for the defendant. Providing testimony as expert witnesses were Ed Betker and Warren French. Presiding as judge was Mike Taylor, an attorney from Minneapolis. The jury consisted of the audience.

Descriptive Facts

Mac MacDonald, owner of Dependable Roofing Consultants, provided Sallie Mae Cosmetics with an oral proposal to do a visual roof survey for \$299. The consultant's one-page report indicated that the in-place PVC roofing system appeared to be in good condition with no recent history of adverse performance. The report also indicated that the owner could expect satisfactory performance from the roofing system for several more years. The survey did not include core testing, drainage analysis, structural calculations or determination if the PVC roofing system had been installed over an existing roofing system. The building owner relied upon the roofing consultant's report and continued to utilize the roofing system.

Shortly after issuance of the report, an extreme rain event resulted in water accumulation on the roof which caused collapse of the building. The owner sued the roofing consultant for negligence.

Trial Presentation

Plaintiff's Attorney Badger raised issues that the roofing consultant failed to provide an adequate degree of care in his work. Facts were presented that the consultant failed to core the roof, report the presence of two roofs below, to identify the absence of an overflow drainage system or scuppers, and to identify the inadequacy of the primary drainage system. The owner also claimed an analysis of drainage was within the scope of the consultant's work. The attorney also raised the issue that the roofing consultant was providing services that required he be a licensed professional architect or engineer. The plaintiff's expert, a registered engineer, testified that the consultant failed to follow a reasonable standard of care. Under cross examination, the engineer verified that he had a limited degree of experience in roofing and specialized in structural engineering.

Defendant's Attorney Ridley raised issues that the consultant's report was not an insurance policy, but was a limited visual survey which had been completed within standards of the roofing consultant industry. It was argued that the dollar amount of the survey should have a bearing on the degree of responsibility of the consultant. Other issues raised were that the proposal from the consultant to the owner did not indicate any type of structural or drainage calculations would be performed. The defense's expert witness testified the report was within standards for the roofing consultant industry and that the roofing consultant was under no duty to perform structural or drainage studies. The defense expert demonstrated long-term experience in the roofing industry.



Clockwise, starting with the "Judge," far left (Michael Taylor), Burt Burton (Ed Betker), Atty. Paul Ridley, "Hank Hankins" (Warren French), and Atty. Steven Badger.



The full-house audience was held rapt by the legal scenario.



"Jury members" ask questions of the panel.

The Verdict

The audience, comprised of roofing consultants, not surprisingly found for the defendant, a roofing consultant.

Important Points

The critical point raised by the attorney was that roofing consultants should always have clearly-defined written contracts. Otherwise, disputes will arise as to scope of work. Another point was that roofing consultants should not provide services in areas in which they are not competent and should be careful about practicing in areas that may require licensing by state boards of engineering or architecture. Lastly, roofing consultants providing expert testimony should avoid any actions which would give the appearance of impropriety or cause a jury to question their credibility. Such actions would include prior inconsistent testimony or articles, compensation dependent on outcome of a case, working on matters involving friends or relatives, and deriving a large percentage of revenue from a single client.

RCI Research: Performance of Seam Tape for EPDM Membranes

BY WALTER J. ROSSITER, JR. AND JOE HALE • REVIEWED BY MICHAEL S. CORNETT, PE, RRC

As part of the report on RCI Research Programs, Walter J. Rossiter, Jr. of NIST (National Institute of Standards & Technology) gave an excellent report on a NIST Research Program (cosponsored by RCI) concerning EPDM Seam



Walter J. Rossiter

Tape. This was a summary of Phases I & II of the industry/government consortium study.

EPDM roofing membranes account for approximately one-third of the low-slope roofing systems installed annually in the U.S. In the past, the bonding process typically used liquid-based contact-

type adhesives, although some pre-formed adhesive tapes had also been used. Today, pre-formed tapes have begun

to supplant the liquid adhesives primarily due to their ease of application and decreased application time, the availability of an adhesive system that has uniform properties such as width and thickness, and the reduction in the amounts of volatile organic compounds released during seam fabrication.

Conclusions of Phase I and II of the three-phase study are as follows:

- ▼ Specimens of tape-adhesive systems had times-to-failure that were in most cases comparable to, or greater than those of liquid adhesives.
- ▼ Primed, clean EPDM provided the longest times-to-failure and highest peel strength.
- ▼ Application temperatures and pressures used in the study did not affect the times-to-failure of specimens prepared with primed, clean EPDM.
- ▼ Standard thickness seam tape provided significantly longer times-to-failure than thinner tape.

RCI Research: Pembroke Drying Rate Project

BY ANDRÉ DESJARLAIS AND JAMES P. SHEAHAN, RRC • REVIEWED BY MICHAEL S. CORNETT, PE, RRC

RCI continues its collaboration with Oak Ridge National Laboratory (ORNL) and Sheet Membrane & Component Suppliers to the Commercial Roofing Industry (SPRI) on the subject of roof drying. André O. Desjarlais of ORNL gave an excellent update on an ongoing research project (cosponsored by RCI) concerning full scale drying of a moisture-laden roof system. The project was begun in April of 1995 on the approximately 4000-sq.-ft. Pembroke Municipal Building in Pembroke, VA. It consists of four different roof recover combinations (each approximately 1000 sq.ft.) utilizing variations of extruded polystyrene insulation thickness and thermoplastic single-ply membrane color (i.e. black membrane and 1/2" XEPS, black membrane and 3" XEPS, white membrane and 1/2" XEPS, and white membrane and 3" XEPS).

The existing 27-year-old moisture-laden roof system is a four-ply organic felt asphalt built-up roof over 1.5" wood fiberboard over 1.5" metal roof deck.

Some results of the Pembroke Drying Rate Project, to date, are as follows:

- ▼ Roof does not leak (previously leaked badly).
- ▼ Fastener corrosion is an issue. Fasteners installed in very wet areas may have reduced pull-out strength.
- ▼ Dried (previously wet) wood fiberboard has compressive strengths of 50% or less of the original compressive strengths.
- ▼ The thermal value and resistance to water ingress for the extruded polystyrene insulation (both the 1/2" and 3") are essentially unchanged.
- ▼ The reflectivity of the black membrane is essentially unchanged; how-



André Desjarlais

ever, the reflectivity of the white membrane has decreased.

- ▼ Roof is drying.

As stated previously, the project is ongoing; thus, additional information will be presented in the coming years. Also, a second drying rate research project will begin in Rossville, IL in the near future.

RCI Research: RICOWI

By **DAVID L. ROODVOETS**

David L. Roodvoets, Chairman of the Roofing Industry Committee on Wind Issues (RICOWI), discussed the work of the wind event investigation program. The program's objectives are to investigate the field performance of roofing assemblies after major wind events, to factually

describe roof assembly performance and modes of damage, and to formally report the results for substantiated wind speeds.

(For more, read the RICOWI committee report on page 42.)

David L. Roodvoets



RCI Research: SIGDERS

By **DR. A. "BAS" BASKARAN, P. ENG., AND JAMES P. SHEAHAN, RRC**
Reviewed by **MICHAEL S. CORNETT, PE, RRC**

Dr. A. "Bas" Baskaran, P.Eng. of the National Research Council of Canada (NRC) and J. P. Sheahan, RRC, gave a very interesting report on an NRC research program co-sponsored by RCI concerning dynamic wind loading evaluations of single-ply membrane roof systems. Since typical North American single-ply membrane roof test procedures for certification are limited to static wind-loading conditions, the NRC has started a consortium project entitled, "Special Interest Group for Dynamic Evaluation of Roofing Systems (SIGDERS) to evalu-

ate the performance of single-ply membrane roof systems subjected to dynamic wind-loading conditions.

One interesting finding from Phase 1 of the ongoing SIGDERS study is that for mechanically-attached thermoplastic (PVC, TPO), thermoset (EPDM), and modified bitumen single-ply roofing systems, the most common static wind-loading failure mode was due to fastener pull-out from the deck. However, under dynamic wind-loading conditions, membrane tearing at the fastener was the most common failure mode.



J.P. Sheahan, RRC



Dr. A. "Bas" Baskaran, P.Eng.

AUXILIARY SEMINARS

Photographic Documentation and Presentation

By **DICK CANON, MARK VANDERSLICE, AND DICK TALLICHET** • Reviewed by **RICHARD L. WAGNER, RRC, CCS**

The auxiliary seminar on photographic documentation and presentation focused on the different techniques for capturing and providing images for reports, litigation, and large forums. Standard film photography, digital photography, and videography were covered.

The basics of photography were reviewed by Richard P. Canon, RRC, PE, of Canon Consulting. He touched upon

types of cameras, lenses, and film that are most effective in a rooftop environment. Methods for composing photos and highlighting the salient subjects within them were shown. The presentation distinguished between the requirements for a survey-type report and the more exacting standards for a forensic investigation. As a preference, the speaker chose an auto-focus camera with a zoom lens and data pack for general

Auxiliary. Seminars



Mark Vanderslice

documentation, but used a high quality camera with manual adjustments for photos that would be more thoroughly scrutinized.

In the videography segment, Mark C. Vanderslice, RRC, of MTBV, Inc., began by discussing some of the possible uses for this medium, including surveys, documentation, and training. Comparisons between video and still photography were made. Advantages of videography included the ability to add narrative, better perspective by using movement and zoom, instant review, and the ability to establish the sequence of events. Some of the limitations included lower resolution than film or digital

photography, loss of resolution when duplicating, and difficulties in editing and retrieving information. A review of the different tape formats, equipment, and available features and options was also presented.

Digital photography is expected to become increasingly prevalent. The presentation by Dick Tallichet concentrated on the equipment currently available and on the advantages of digital over film photography. Prices on the basic equipment have been falling and quality units can now be purchased for between \$500 and \$800. The technology allows the photographer to preview photos before shooting, to view before printing, to enhance/manipulate photos, to insert photos directly into the body of a report, allowing "paperless" reports, and to transfer photos on the Internet. The units can provide very high resolution photos, but there is a trade-off: The amount of computer memory required increases exponentially as the resolution increases. One disadvantage is that the digital photos may not be accepted for court cases because of the ease with which they can be altered.

Factory Mutual

BY PHIL SMITH AND GEORGE SMITH • REVIEWED BY JEFF EVANS, RRC

As anyone in the roofing industry can relate, keeping up with the activities of Factory Mutual is no easy task. About the time you think you're FM-competent, you find they have changed something...again. Approximately 40 attendees of the day-long Factory Mutual seminar got the opportunity to learn from George Smith and Phil Smith of FMRC. They reviewed the history and goals of the FM system, how design professionals should use the 1998 Factory Mutual Approval Guide and FM data sheets, and related their observations about preventing losses on roofing systems.

The group also heard about FM's current wind testing research, using a test apparatus capable of simulating cyclic wind forces, similar to dynamic testing conducted in Europe and Canada. While the testing is ongoing, information about the testing may be available later in 1998.

Joining the Factory Mutual presentation was Lorraine Aulisio of Intech Consulting, who showed a dramatic video of an FM 4480 fire test conducted at Factory Mutual of extruded polystyrene insulation direct to a steel deck. This test was conducted, in part, as a comparison to recent UL testing that showed acceptable fire testing results of thermoplastic foams direct to

steel decks. In the FM 4480 testing, the polystyrene showed unsettling fuel contribution to the fire, causing the spread of under-deck fire. George Smith was steadfast in his position that expanded or extruded polystyrene insulation must first be protected by a thermal barrier when used over a steel deck. Given the reaction of the attendees, there were few dissenters.

George also took the opportunity to address FM's loss experiences with structural standing seam roofs under heavy snow loading conditions. While he noted most RCI members are not structural engineers, he outlined the causes of roof and structural failure, and FM's forensic analysis of several collapses.

The information was interesting and well presented, and served as a reminder that FM's work is ongoing and ever-changing. If you serve FM-insured clients, or if you attempt to follow FM guidelines, this seminar was a valuable one.



Phil Smith

Spray Polyurethane Foam Design and Inspection

BY TOM TISTHAMMER, BONNIE STRICKLER, JIM NELSON, AND ROBB SMITH • REVIEWED BY WM. HALE, RRC, RRO

The Sprayed Polyurethane Foam auxiliary seminar was a great success. The seminar consisted of an educational

course developed by the Spray Polyurethane Foam Division of the Society of Plastics Industry Inc.



Tom Tisthammer

(SPI/SPFD). A section on wind issues was presented in addition to the information on design and inspection as outlined in the course binder. The main focus of the seminar was to enhance the knowledge and capabilities of attendees with regard to system design and quality assurance. Based on my observations and talk with other

attendees, this seminar receives a big thumbs up.

Tom Tisthammer of Wattel and Daub Contractors presented in-depth information on background, history, design guidelines, inspections, and comparison of details. Bonnie Strickler of Puff Inc. provided comprehensive information on foam chemistry, equipment, application procedures, coating equipment and application, and

aggregate. Jim Nelson with Neogard gave a specialty presentation on coating chemistry, as did Robb Smith, RRC, RRO, FRCI, Advanced Roof Technology, on wind.

The seminar took all day and was still short of time. Many attendees wanted more. The information was presented so well that most taking the test passed with flying colors, or should I say, "spraying colors." Strickler informed attendees that all RRCs or RROs passing the test are eligible to become accredited independent inspectors. RCI is proud to have industry members like these presenting this program. Without this kind of support and sharing, advancement in professionalism and overall roof quality would only be a dream.



Jim Nelson

The Sprayed Polyurethane Foam Session was sponsored by National Coatings, Neogard, Polythane, and Quantum Coatings.

Communication Skills: Writing Techniques, Proposal & Report Drafting

By FRANCIS A. ACQUAVIVA, WILLIAM F. HALE, RRC, RRO, AND RICK COOK, RRC, RRO

REPORT BY FRANCIS A. ACQUAVIVA

Fran Acquaviva, Executive Director of RCI, started off the Communications Skills session with a discussion of the principles of communication and their application to the craft of writing. He followed that with a description of the characteristics of good writing, identifying important signals that indicate good and poor writing. After a third segment on the steps to follow in any writing

task, he finished with a list of tools and references to use in writing.

Rick Cook and Bill Hale gave separate sessions on writing specific to roof consultants. Rick, with Austin-Dillon-Cook, Hanahan, SC, concentrated on writing reports that meet the clients' needs, and on a wide variety of forms and systems that his firm uses to track work progress and execute all of the various operations

in which a roof consultant is involved.

Bill Hale, now of Shencorp, Powhatan, VA, focused his presentation on writing proposals and techniques and procedures for ensuring a favorable direct response. He counseled attendees to be sure to do sufficient research on the firm issuing the Request For Proposals, and to exactly follow their requirements, particularly that portion

where the consultant describes the scope of work he will perform. Bill also provided the attendees with a detailed list of items that should be included in reports to clients after the consultant's work has been completed.



Francis A. Acquaviva



Richard Cook, RRC, RRO



William F. Hale, RRC, RRO

Tile Roofing

By AL MACGAGLI, RRC

This year's tile installation demonstration was skillfully presented by Reese Moody of Monier Tile. The presentation was extremely informative for consultants who are familiar with tile installations as well as those that may be novices. Moody explained the basics of tile roof installations and the newest changes in building codes that will affect the tile roof designs.

The Texas Department of Insurance has published a guide for tile installations that becomes effective June 1, 1998. The Department also evaluates products and has designated Catastrophe Areas divided into three separate zones: Seward, Inland and Inland 2. Copies of a few pertinent pages of the guide were distributed describing tile attachment according to various roof slopes, heights and wind speeds.

Moody also reviewed a related roof tile document published by a joint committee of the National Tile Roof Manufacturers Association (NTRMA), and the Florida Roofing and Sheet Metal Contractors Association.

The tile system Moody used to illustrate a proper installation was a flat concrete tile, mechanically attached to horizontal battens over an unsealed underlayment with



Reese Moody, National Tile Roofing Manufacturers Assoc (NTRMA), explains a point.

pre-formed flashings. He explained that this system was one of three general types of systems, and is preferred by Monier as it reduces the chance of error during installation.

In addition to the basic techniques and components of tile systems, some tips were given, including:

- The use of customized pneumatic nailers are needed to eliminate tile breakage.
- Plastic batten extenders can be used to extend the support that wood battens provide into valleys without damaging the valley metal.

Slate Roofing

By VICKIE CRENSHAW

Breezy conditions did not prevent attendees from receiving an informative demonstration of slate installation techniques by Brian Stearns and John Meyer, Vermont Slate and Copper Services, Stowe, VT. Subsequent to the demonstration, a roof mock-up with 34 different installation mistakes allowed members to identify and record the incorrect application techniques.

A review of the improper application techniques, coupled with recommended design and slate applications, provided members with invaluable insight into this time-honored, exquisite roof system. A unique part of the demonstration included the splitting and trimming of slate. John Meyer split, trimmed, punched and fitted slate for actual job-site conditions. Also presented were advantages and disadvantages of repair techniques, underlayment applications, flashings, venting, ridge and valley installations.



Brian Stearns, left, and John Meyer, both of Vermont Slate and Copper, Stowe, VT, demonstrate how to apply slate roofing. They shipped a ton of slate to Dallas for the purpose.

RCI member Robert Elsdon, Inter-Provincial Inspectors, Ltd., Surry, BC, Canada, identified the most errors in the roof mock-up, winning the pint of Vermont Maple Syrup.

Learn more about these topics and other slate roofing issues in *The Slate Book, How to Design, Specify and Repair a Slate Roof*, distributed through RCI.

Modified Bitumen

BY T. W. FREEMAN

This presentation/demonstration focused on the fact that Siplast Paradiene 20 and Paradiene 30 membranes do not necessarily have to be applied with hot asphalt or with a torch. They may also be installed with cold process materials. Siplast representatives constructed a mock-up roof deck consisting of NVS light-weight insulating concrete to demonstrate the cold process application.

The installation started with the application of a loose-laid red rosin sheet. Next, a Parabase (G2 base sheet) was mechanically attached (NVS short leg fasteners) down through the red rosin sheet. The fastening pattern utilized was 9" on center at the laps and two rows of fasteners installed 12" on center down the field of the sheet. This process is utilized, as opposed to a nailed base sheet alone, to eliminate the cold process materials from coming in contact with the light-weight insu-

lating concrete. This is followed with the cold process application (Siplast PA-311 adhesive) of the Paradiene 20 and Paradiene 30 (the Paradiene 20 and 30 are both SBS Modified, with a fire rated Paradiene 30 version available, also in colors). A special notched trowel type squeegee is utilized to apply the adhesive at the appropriate rate. The cold process materials also may be spray applied.

Optimum application temperature is 70 to 100 degrees Fahrenheit.

However, the application can be done down to 40 degrees Fahrenheit by following good cold weather application procedures (make sure rolls are kept warm; keep adhesive inside). The rolls are overlapped three inches on the edges and are watertight immediately. Flash off of the solvents usually takes about eight hours but depends on sunlight, relative humidity, and the amount of adhesive used. A roller or



Michael Steele, left, and Randy Froelich, right of Siplast, Las Colinas, TX, demonstrated application of modified bitumen.



Richard Schneider, manager, Clements National Corp., Chicago, IL, gave a demonstration of heat welding for modified bitumen.

special aluminum broom/rake is then utilized to smooth out air pockets and minor wrinkles. Maximum typical slope recommended is 2-1/2" in 12" (steeper slopes can be achieved). Factory Mutual 1-60 and 1-90 wind uplift ratings are available.

Sheet Metal

BY NELSON HALL, RRC

Seyforth Roofing, with installer John Wayne Whitten and narrator Greg Sharrock, presented the Sheet Metal Roofing Installation demonstration. The presentation covered the installation of two different systems. One was a five-ply double lock traditional standing seam roof with concealed clips. Part of this installation demonstrated how to install the roof system without a ridge cap and simply fold the panels over at the top. The system was installed with a ridge area cap with "Z" clips to hold the cap in place and prevent wind-driven rain from entering the ridge area.

The other demonstration covered a batten system. The batten system was installed with approximately 14" copper panels and laid between two-by-two battens. The roof was fastened to the batten strips and the batten cover installed. The batten system demonstration was installed with a ridge cap with "Z" clips.



John Wayne Whitten, Superintendent of Operations, Seyforth Roofing Co., Dallas, demonstrates sheet metal roofing to a rapt crowd at poolside.

In addition to these two systems, Mr. Whitten demonstrated how to install a dormer on a standing seam roof system. The dormer installed had a vent in the front face; however, this same type of installation could be used with a window or a door. Also included in this portion of the demonstration was the flashing technique for the dormer which could also be used on other types of through-roof penetrations on a metal roof assembly of either of these two types.

Roundtable Discussions

Goals of RCI

Discussion began almost immediately after the table completely filled with eight RCI members. About ten minutes into the dialogue of what goals are needed for RCI in the future, it was decided that a simple mandate or list would not be easy. While each member of the discussion group had specific ideas, all could agree that topics presented by others seemed equally important.

The quick or short list developed include communication, education, marketing, improved recognition of our registration program, a model law for registration, improved member services, more research, removal of the stigma of RCI as a "good old boy network," and the RCI Foundation. We finally came to a general agreement that if any one item had to be put on top, it was a toss-up

between education and communication. The term communication here means what RCI is up to daily, weekly, annually, and in the future.

Other ideals that the group discussed were surveying the industry, possibly out-sourcing services in our education and registration programs, and how to get more members to sit for and pass the RRC examination. Future conventions and region matters were lumped into the discussions. To say the least, our membership is concerned about the goals of our Institute, and this topic needs to be constantly discussed, not only at our annual convention, but also at region and chapter meetings.

—By Moderator Mike Blanchette, RRC

Value of Early Leak Detection

Eleven people representing roof consultants, building owners, facility managers, manufacturers and distributors participated in the round table discussion. All participants agreed that a leak could be defined as "water infiltration" and/or "air infiltration or exfiltration."

The group quickly concurred that early leak detection is fundamental in any pro-active roof management program. The primary benefits are:

- ▼ Increased life expectancy.
- ▼ Early warning of even greater problems (workmanship, materials or design).
- ▼ Less costly repairs.
- ▼ Decreased consequential damages.
- ▼ Reduced energy costs.
- ▼ Comfort of building occupants.

It was suggested that RCI should endeavor to educate consultants and owners to the benefits of:

- ▼ Organized roof/building management and maintenance programs.
- ▼ Use of qualified individuals and firms to implement programs.
- ▼ Establishment of guidelines for programs in



Discussing Value of Early Leak Detection

conjunction with NRCA.

- ▼ Knowing who is going on your roof (mechanical contractors, etc.)
- ▼ Annual maintenance and inspections as called for in certain warranties.
- ▼ Appropriate tools and equipment for leak detection (visual and electronic).
- ▼ What an effective maintenance program entails.
- ▼ Valuation of an effective maintenance program.

—By Moderator Albert J. Duwyn, RRC

Shingles

An overflow table came together to talk about topics, concerns and problems with asphalt shingles. Discussion was lively and could have extended long beyond the allotted time. Those topics for expansion or research are:

Substrates

- ▼ Installation of deck materials.
- ▼ Proper materials and thickness
- ▼ OSB Board - Siliconized Gypsum-based boards—fit

for use?

- ▼ Different manufacturers approval or disapproval of substrates —why?

Ventilation

Would like manufacturers to take a stronger stand on what constitutes proper ventilation and expand beyond HUD or code requirements.

- ▼ Building code and ventilation formula
 - Problems with sporadic or uneven ventilation throughout the attic space instead of a complete ventilation solution ((i.e., all venting in one section of the attic space and nothing in another section).
 - More in-depth definition of vent ratio.
 - Expand on the research done by Tobiasson, Buska and Greatorex ("Attic Ventilation Guidelines to Minimize Icing at Eaves, Jan. 1998 issue *Interface*).

Insulation

- ▼ The use of insulation with shingles.
- ▼ Application of vented, nail-based insulations (VentBoard - Vented R)
 - How to specify; venting requirements (edge and ridge details).
 - Manufacturer acceptance.

Material Composition

- ▼ Mat weight and composition.
- ▼ Type of asphalt.
- ▼ Amount of filler and effect on shingle performance.
- ▼ Sealant tabs or strips and "do they work?"
- ▼ Nail lines.
- ▼ ASTM D-3462.
- ▼ Reflectivity/emissivity.
- ▼ Hail resistance standard, Texas.

Fasteners

- ▼ Types for specific applications.

Low-slope Application Techniques

- ▼ Investigations are showing a lack of understanding or ignoring low-slope application recommendations.

Contractors

- ▼ Lack of understanding of how to apply specific types and lay-ups of asphalt shingles.
- ▼ Will not follow manufacturer's instructions.

Material Complaints and Failures

- ▼ Horizontal cracking.
- ▼ Vertical cracking.
- ▼ Granule loss, lack of adhesion

—By Moderator Skip Leonard, RRO

How to Dry Wet Insulation

The premise that wet roofs could dry out once they were made water-tight by repair or the installation of another roof above the existing system was unanimously accepted. On the other hand, the time to dry and the resultant condition of the existing roof were not known and therefore not accepted. There was concern that the condition of the structure and the actual wetting condition of the roof, (as it varied throughout the area of the roof), were difficult to determine without removing the existing roof. There was a general lack of confidence expressed in the non-destructive moisture determination systems available in the field to ascertain the actual water content, as it varies throughout the roof. But participants agreed that core cuts and investigation of the roof from below with fastener pull tests, etc., would be of assistance in determining the condition of the roof structure.

Recovering the roof would delay putting the old roof into a landfill, but would not eliminate it. Reducing the loads into landfills was considered to be of a limited benefit. The new roofing system could be compromised should leaks occur over time because the old roof would act as a barrier to the movement of water into a roof, therefore delaying the indication of a roof leak. The cost savings of a recovered system



Discussing How to Dry Wet Insulation

versus a tear-off could be diminished by employing proper diagnostic activity to a properly designed roofing system. On a positive note, it was agreed that the work done when analyzing drying rates by the use of models and correlation with roofing demonstrations such as that being cooperatively done by RCI and other industry bodies, was of value. A mathematical model developed by Oak Ridge National Laboratory is available on their web page and can be used to determine the drying rate of any particular roofing condition in any climate in the U.S.

—By Moderator J. P. Sheahan, RRC

Research Topics for RCI

The following potential research topics were discussed:

1) The use of fasteners to attach roof insulation and roof systems.

One consultant noted that in several projects they are trying to get away from the use of hot asphalt. Therefore, the following issues were raised:

- ▼ What alternatives are available.
- ▼ If fasteners are used to attach all layers of the roof system, what is the impact relative to thermal bridging, dew point and corrosion?

Discussions centered on the use of foam adhesives and conditions under which they perform and fail to perform.

2) The development of field test procedures for use during construction and the effects of various conditions on these tests.

These conditions would include heat, wind, weather, etc. Field tests and how these variables might impact them include:

- ▼ Seam tests.
- ▼ Asphalt temperature.
- ▼ Adhesive curing.
- ▼ Existing deck/substrate preparation to receive new roofing, both in new and reroofing conditions.

3) Aggregate/ballast and wind speeds.

A member from NRCA reported that the BOCA code



Discussing Research Topics for RCI

requires proof that aggregate and ballast on the roof be proven to remain under specific wind speeds. Although this is not uniformly enforced, contractors and consultants are installing and designing roofs which don't meet code. NRCA is preparing to do mathematical models and subsequent testing as needed to satisfy the code requirements, and would like RCI's involvement.

4) Cool Roof Rating Council

The federal government is establishing a "Cool Roof Rating Council" which will rate the reflectivity of roofs similar to the way in which fenestration ratings are provided for glazing. It was suggested that RCI should participate in this program and work with the council to provide knowledge and expertise.

—By Moderator Dan Neuhaus

Ethics

The discussion on ethics was lively, spirited, and sometimes contentious. It started with a discussion of the different definitions of ethical terms people have and quickly moved into the topic of manufacturers representatives as consultants and conflict of interest. These topics took most of the allotted time. The need for full disclosure to our clients regarding relationship and fee rates and payment was stressed. There was also a general consensus that the client

does bear some of the responsibility to understand what and how he is paying for professional services. A very applicable quote attributed to General George S. Patton was observed in the March 15, 1998 Bottom Line/Personal: "If rascals knew how much money they could make by being honest, they would become honest from just sheer rascality."

—By Moderator C. Allan Kidd

RCI on the Internet

RCI's website, found at www.rci-online.org, gets 20 to 40 hits/day now. It is constantly being updated, and has forms to become a member and to register for classes and purchase products. Articles from *Interface* may also be found there, as well as a searchable member database. Directors and staff members at Headquarters may be e-mailed directly through the website.

RCI-Mercury, RCI's new searchable database on roofing, is similar to Lexus/Nexus and is available by annual subscription. Fifteen-hundred articles encompassing 30,000 pages have been scanned and are available for download at this time.

—Moderator Colin Murphy, RRC

Roof Surveys for the Expert Witness

The roof consultant conducting a roof survey as an expert witness should consider several issues. He should first ask the attorney or party hiring him whether a written report is desired or whether a verbal briefing is preferred. Many attorneys prefer that an expert not prepare a written report until they know the substance of the expert's opinions. The attorney also may want a particular format or specific information in the report based upon the expert's initial findings. The expert also should ask if there are any reports from other roof experts or other parties and whether he will be asked to review and comment on the opinions expressed in those other reports. Review of another expert's report also can direct the expert's roof survey to the particular problems at issue.

The difference between a standard survey and a pre-litigation or litigation survey was also discussed. When requested to do a roof survey, the consultant should ask his client its purpose. If there is an indication of a potential claim or anticipated litigation, the client may desire a more detailed and thorough survey than if it is a survey

done for a prospective purchaser of a building where there is no indication of substandard performance of the roof.

Another issue the expert witness should be aware of is consistency with prior opinions in other cases. It is common for experts to be asked in a deposition if they have copies of depositions or reports given in other cases. It can be embarrassing to present a diametrically opposed opinion from that expressed in an earlier case. This can destroy the credibility of the witness.

The round table also addressed whether roof consultants can provide competent opinions as to the cost of any roof repair or remedial recommendations. Many times, the consultant will have knowledge of costs, either on a per square foot or unit basis, or for particular products and labor costs as a result of reviewing contractors' bids, estimates or pay applications. The fact that the consultant is not himself a contractor does not automatically disqualify him from testifying as to cost of repair.

—By Moderator Paul E. Ridley



Next Year In
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Committee Meetings

RRC Examination Development Committee

The committee participated in three separate meetings during the annual RCI convention. On April 4, the committee proctored the RRC examination and graded completed exams. The grading process continued on April 5 and was completed on April 6. All grading results were compiled and delivered to Micki Kamszik, RCI's Registration Coordinator.

During the meeting on April 6, time was also devoted to discussion of the three major tasks currently assigned to the committee: Part I reference updating and question re-coding, development of a new Part II examination, and development of a new study guide. Projections on completion of these tasks were set for early third quarter, 1998.

The committee also discussed the impact of a reduction in size to five members as recommended by the proposed restructuring of RCI committees. The consensus of opinion from those members present was that the five member limitation would be too restrictive to permit timely accomplishment of assigned tasks. It was agreed that the ideal structure would include one RRC member from each RCI region with a maximum membership of ten. This recommendation will be forwarded to the Board for



RRC Exam Committee Meeting: Left to right: David Hawn, RRC, Jim Magowan, RRC, Robb Smith, RRC, Al Maccagli, RRC, Alvin Nunnikhoven, RRC.

consideration.

Three members of the RRC Examination Development Committee completed their three-year commitment. David Hawn, Rolf Snobeck, and Kevin Ernster were recognized by the committee and a special expression of gratitude given for their hard work, devotion, and dedication to the RRC program.

A report of committee activity was rendered to the RCI membership at the RCI Annual Meeting on April 8.

—By Don Bush Sr., Chairman

Education Committee



Education Committee members and guests, left to right: Kami Farahmandpour, Ted Sheridan, Dennis Knoll, Don Best, Roger Staley, John W. Hickman.

The Education Committee met and discussed many issues. The Board has reaffirmed RCI's commitment to education. The committee's first priority is to redo RRO materials. Its second priority is the establishment of custodial/update services for materials. A third priority is establishment of self study exam materials. Hitesh Doshi estimated a cost of \$2000/chapter (maximum \$12,000/course).

Further negotiations are pending with Ryerson University. Hale was asked to contact Ryerson for update of RRO materials. The committee will rework the RRO manual, and upon completion, Ryerson will submit a proposal to format the finished committee work.

John Hickman will contact SPRI for education information.

Chairman Joe Hale and Debi Cox, of HDH, are to handle the Institute's education course efforts for the near future until a new Education Coordinator is hired at Headquarters.

The following prices for "Fundamentals of Roof Consulting" and "Advanced Roof Consulting" textbooks were established by the board: \$75.00 per book for members; \$125.00 per book for non-members.

Hale recommended the rapid formation of a Publications Committee to ready materials for the CSI convention. The Education Committee is advised to develop series of publications for the CSI convention using existing materials (i.e., pull and reprint individual chapters as small booklets).

—By Joe Hale, FRCI, Chairman

Interface Editorial Board

The Editorial Board of *Interface* journal met in Dallas during the convention. In the absence of Senior Editor Lyle Hogan, staff Executive Editor Kris Ammerman chaired the meeting. It was attended by Peer Review members Gary Cattel and Bill Rubel, past Horowitz Award winner Colin Murphy and new member Ed Betker.

Discussion was held concerning submissions for publication and how to streamline the review process. Eventually, submissions will be scanned and e-mailed to review members.

A list of upcoming theme issues will be published in *Interface* and past contributors targeted to submit articles when needed. Distribution and sale of past journals on CD Rom was discussed.

It was noted that production costs of the journal have been cut a projected 57 percent for Fiscal Year 1997-98 over 1996-97. This was done by changing printers and designers, more judicious use of color, using our own mailing permit, and bringing scanning in-house.

Updating of the VIP list of free subscriptions was discussed. Committee members will be sent copies.

—By Kris Ammerman, Executive Editor



Interface Editorial Board Committee Meeting: Left to right: Ed Betker, Colin Murphy, Kris Ammerman (Editor), Gary Cattel, Bill Rubel.

Standards and Practices

A small, but enthusiastic group of RCI members met to discuss RCI's goal to publish a *Manual of Practice for Roof Consultants* by the next convention.

Progress to-date was reviewed, and ideas were presented to improve communications. It was agreed that much of communications would be accomplished over the Internet. Ian Lurie, with The Written Word (authors of RCI's Web Page), has recently volunteered to help in this committee's communication efforts.

Each person attending the meeting agreed to review the original outline for the Manual, and propose modifications. They would also select chapters in which they would like to assist during this process.

This committee still needs the help of other interested RCI members. Those volunteering should find the experience rewarding, including how to communicate more effectively across the Internet. If you would like to help, please contact Brian Gardiner at 512-443-7255, or E-mail at austech@compuserve.com. This is one of the most important items on RCI's agenda. If you agree, please contact

Brian.

—By Brian Gardiner, Chairman



Standards and Practices committee members, left to right: R. Edward Owen, Allen D. Nicholson, and Judy Holleran. Chairman Brian Gardiner present but not pictured.

Public Affairs Committee

The Public Affairs Committee met during the convention in Dallas. Three individuals attended—chairman, Jean-Guy Levaque, staff liaison, Marketing Coordinator Bill Myers, and Bill Tipton. The purpose of the Public Affairs Committee, is to recommend to the Board of Directors policy on matter regarding the committee and to regularly make recommendations to the Board concerning the scope, form and intensity of the Institute's relationship with outside groups.

Discussion was held regarding trade show recommendations regarding relations with vendors, and budgeting. The group discussed approval of the language in RCI's promotional materials.



Committee chairman Jean-Guy Levaque, left, discusses Public Affairs Committee issues with RCI Marketing Coordinator Bill Myers, center, and Bill Tipton, right.

Committee Meetings

Building Codes and Standards Committee

Members of RCI's Building Codes & Standards Committee met during the convention on April 5. Dean Larsen, Jr., replaced Patty Wood-Shields as chairman and Wood-Shields replaced Marty Obando as secretary.

The committee is recommending that a second edition of the *Roofing Reference Guide* be reprinted in the tabbed 8-1/2" x 11" three-ring binder format, with current revisions, including the update on the International Building Code. Plans are also underway to publish a companion *User's Guide* which will focus on wind. Watch *Interface* for future updates.

—By Patty Wood-Shields, Secretary



Building Codes Committee meeting. Left to right: Chairman Dean Larsen Jr., Patty Wood-Shields, Marty Obando, Gene Lawrence. Present at the meeting but absent from photo: Hitesh Doshi.

Bylaws Committee

The Board approved action on Bylaws Committee recommendations made during the convention. These actions will be published in a future issue of *Interface*.

Members of the committee are as follows: Patrick L. Downey, RRC, Merik, Inc., Chairman; Richard P. Canon, PE, RRC, FRCI, Canon Consulting & Engineering; Marc A. Caputo, RRC, MCRCI, Vice-Chair; George F. Kanz, PE, RRC, FRCI, RRO, Shive-Hattery, Inc.; Jean-Guy Levaque, Levaque Enterprises, Inc. Executive Director Fran Acquaviva is staff liaison.



Bylaws Committee meeting attendees, left to right: Jean-Guy Levaque, Mark Caputo, Chairman Patrick Downey, Fran Acquaviva, and Dick Canon. Absent from photo: George Kanz.

RICOWI Meets During RCI Convention

The Roofing Industry Committee on Wind Issues, Inc. (RICOWI) met in an all-day session Saturday, April 4 in conjunction with RCI's convention. Under RICOWI's new corporate status, both a Board of Directors' meeting and a General Membership meeting were held. Officers elected for the ensuing term are: David Roodvoets, Chairman; Bas Baskaran, Vice Chairman; Andre Desjarlais, Treasurer; Joe Wilson, Secretary. Patty Wood-Shields will continue as Executive Director.

Members gave industry reports, which included a report by new Affiliate Member Richard Herzog, Haag Engineering. Herzog's report included a review of hail impact testing and hail frequency software programs. The Wind Event Investigation Program was reviewed and the teams, drawn from a pool of 72 trained investigators, are ready to respond when the next hurricane hits the U.S.

RICOWI has an Affiliate Membership available to any per-



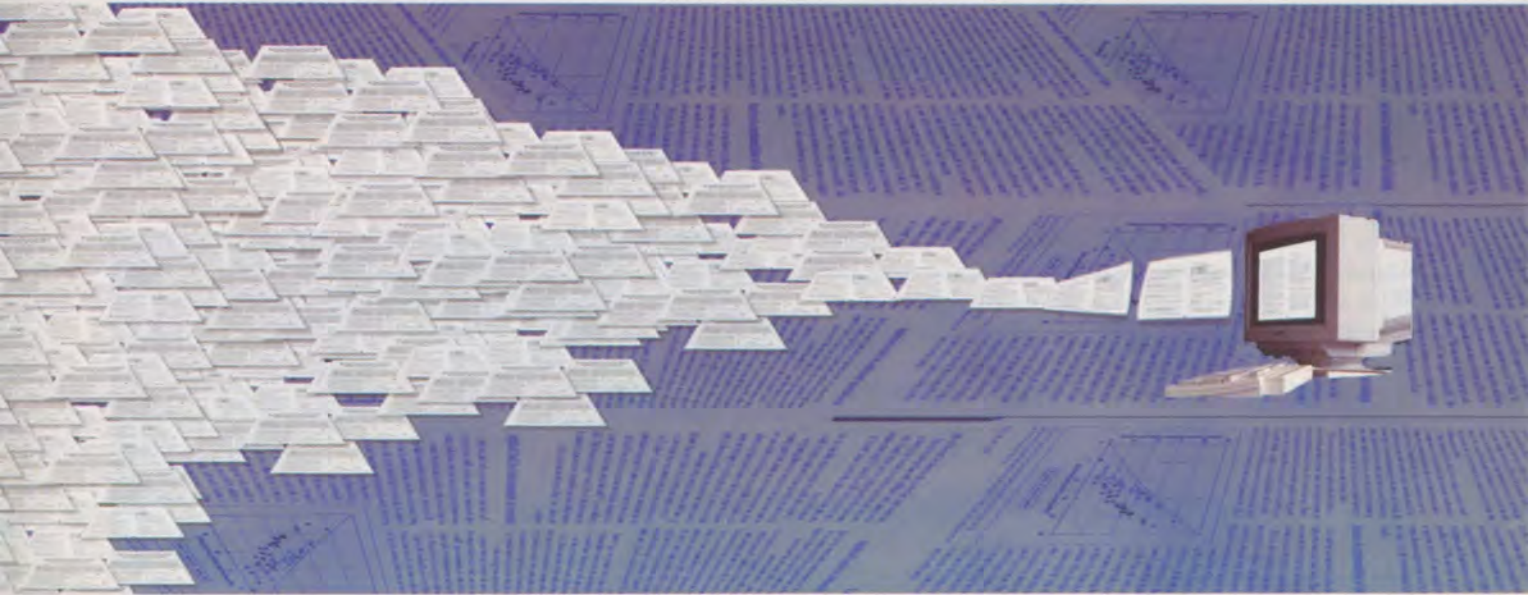
Pictured, left to right: Dave Roedvoets, SPRI, Patty Wood Shields, Marty Obando, CSSB, Bob Martin, Andre Desjarlais, ORNL, Chris Clarke, RCI. Absent from picture, but present at meeting: Board of Directors members A. "Bas" Baskaran, NRCC, Don Best, SPFD, Lee Shoemaker, MBMA, Joe Wilson, WAMA. Also, Affiliate members: John Hickman, W. P. Hickman Co., Dave Hunt, Revere Copper, Tom Kelly, 2001 Co, and guest Bob Tedder Jr., Independent Roof Testing Inc.

son, firm, institute, corporation, or other entity that has an interest in roofs and roofing related products. For an application and additional information on membership or RICOWI activities, contact Patty Wood-Shields (770-914-7235; fax, 770-914-7102; or e-mail: PAWSROOF1@aol.com).

—By Patty Wood-Shields, Executive Director



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Allan Kidd Elected Director of Region II

The professional members of Region II have elected C. Allan Kidd, RRC, as their new director to succeed Joe Hale, RRC, whose term recently expired. Mr. Kidd is the Charlotte, NC, Branch Manager of CTL Engineering, Inc., of Columbus, OH. Since its inception in 1927, CTL has been providing engineering and testing services for the transportation, facilities management, environmental and industrial disciplines. CTL's Charlotte office specializes in roof consulting.

Allan has a BS in Aerospace Engineering from North Carolina State University. After graduation, he was employed by a roofing contractor for a year. In 1987, he began his consulting career with past RCI President Dick Canon, RRC. After learning a considerable amount in his 6-1/2 years with Dick, Allan came to work with CTL.

In 1988, Allan became a professional member of RCI. He was the first RCI representative to the Roofing Industry Committee on Wind Issues (RICOWI) and has been active with the education programs. Allan was recognized as an RRC in 1992.



C. Allan Kidd, center, chaired a meeting of Region II at the RCI convention in Dallas. Present were Art Sark, left, and Lewis Newlan, right.

Kidd is an avid golfer and some day hopes to play as well as Joe Hale. When not at work or on the links, he spends time with his wife Charlene and their children Katie, 4-1/2, and Ryan, 3.

Region I Hears about EPDM in Monroeville

Region I held a meeting Friday, March 20 at the Monroeville Holiday Inn, Monroeville, PA. Thirty-two attendees heard an update on the RCI Convention and the election process for the new Region I director. Director Mike DeFrancesco expressed his gratitude to the members for their help in keeping the wheels of the region moving.

The technical program began with a presentation by Jim Burkett, General Manager, EPDM, of Firestone Building Products. Burkett addressed the question, "What to do with aging EPDM roofs?" His presentation centered around four topics: current inventory of EPDM roofs, long-term performance of EPDM systems, what to look for on aging EPDM roofs, and their repair.

Jim was able to relate the difference in system improvements (for example, the improved resistance of base tie in details), maintenance costs of various systems, and physical property testing data on aged membranes. A handout which accompanied the slides included inspection techniques and report forms, repair and system upgrading procedures and reference information (a total of 49 pages).

Next was an extremely interesting presentation on slate roof-



Members of Region I gather for a bus trip to the Firestone ISO plant in Youngwood, PA.

ing by member Brian Stearns of Vermont. Brian is one of the authors of the new book, *The Slate Book—How to Design, Specify, Install and Repair A Slate Roof*. The group was fortunate to have him share his expertise on the subject. Included in his presentation were the ten most common questions asked about slate roofing and a slate roofing quiz designed to test the knowledge

of roofing professionals concerning slate roofing systems.

Following an excellent buffet lunch and a technical presentation by John French of NTE Inc. on fume arresters for hot kettles, everyone gathered in the parking lot for a live demonstration with hot coal tar pitch (no one got sick)!

The group then boarded a bus and proceeded to the new (October 1997) state-of-the-art Firestone ISO insulation manufacturing plant in Youngwood, PA. A tour of the facility and an

explanation on the formation, curing, storage and shipping of ISO insulation were given. On the bus ride back to the hotel, the attendees expressed their gratitude for the interesting information. The next Region I meeting is scheduled for June 24 in Baltimore, MD, preceding the CSI convention. A trip to the ballpark at Camden Yards is also planned.

—Mike DeFrancesco, RRC

Region VIII Elects Douglas Fishburn

Douglas Fishburn was recently elected Director of Region VIII of RCI, succeeding Albert Duwyn. Doug has played an integral part in the development of RCI in Canada, having served as both Vice President and President of the Canadian Chapter of RCI (now the Ontario Chapter).

A graduate of O.A.C., now known as the University of Guelph, Doug has over 35 years of roof construction experience, 15 of it as a contractor and the last 20 as a consultant. His company, Fishburn Roofing Science Engineers Ltd., founded in 1943, holds a dominant position in the field of infrared and roofing technology in the Toronto, Ontario area. The firm consults on the design, inspection, testing and maintenance of roofing and building systems.

Fishburn has presented technical papers to several international building symposia and has been published in *Plant Engineering*, *The Canadian Architect*, *Interface*, and *Specifications Canada*. He sits on a number of Canadian Standard Board committees (CGSB) and the Canadian Standards Association (CSA), which formalize standards for roofing products. Doug is also a member of the Ontario Building Envelope Council. He has lectured

at universities and provided training seminars for the University of Nova Scotia, Public Works Canada, and the Department of National Defence, as well as Construct Canada.

Doug was retained by the Institute for Research in Construction, National Research Council Canada, to lend his expertise in a national tour on roofing technology. He currently holds several patents on roofing systems and building air seals.

On a personal level, Doug has been involved as a senator in the Canadian Jaycees, a steward in his church, and a Gelwell-trained Scout leader. He likes to work out, go horseback riding, ride bikes and motorcycles, ski, sail, read, and play the guitar. He pilots his own Cessna 210 and is a Scuba diver instructor.



Douglas Fishburn
Director, Region VIII

Region I Meets at Dallas Convention

The members of Region I present at the RCI Convention in Dallas met April 5 and April 7 to discuss pertinent regional and national affairs within the Institute. Outgoing Region I Director Mike DeFrancesco briefed members on the results of the Annual Meeting of the Board of Directors held April 4. These included commitment to education, the unveiling of RCI-Mercury, and changes to the bylaws, chapter organization, and election of region directors.

The most spirited discussions centered around the RRC examination process. Suggestions were made to help the exam better reflect our specialized trade and also to help those weak in some skills to better educate themselves. Outgoing President Robb Smith sat in on part of Sunday's meeting and suggested the members address these issues in a letter to the Board.

Nominees to date for the post of Region I director are: Richard Wagner, RRC, CDT; Peter Monterose, AIA; and Barry Krum, FRCI. They introduced themselves. Afterwards,



Members of Region I recently gathered for a meeting at RCI's Dallas convention. Region I director Mike DeFrancesco is sixth from the left. Brian Stearns, who made a presentation at the Monroeville meeting, is second from the right.

Blanchette stated, "It's been a pleasure and an honor to represent the many fine, dedicated roofing professionals of Region I in such a dynamic organization as RCI."

—Mike DeFrancesco, RRC

Member News

Bill Hale Now With ShenCorp

William F. "Bill" Hale, RRC, RRO, has recently become area manager for all business within the Richmond, VA area for Shencorp, previously Shen-Valley Roofing Inc. As such he is now an industry member of RCI. He will serve Shencorp as quality control coordinator. Hale's former company, RAMCORP, has been sold to its employees and will now operate under the name Roof Cops Inc. Hale recently coordinated the Rising President's Golf Tournament at the RCI convention in Dallas.

Emmett Marshall Speaks to ERSystems

Emmett Marshall, Lance Inspection Services, Streetman, TX, gave a speech, "Roof Restoration From a Roofing Consultant's Viewpoint," at recent sales meetings in Maui, HI, and Minneapolis, MN attended by ERSystems contractors and salespeople.

Wright Albritton Passes Away

Wright L. Albritton, a professional member of RCI since 1989, passed away Saturday, April 4. Albritton was owner of Albritton & Assoc., Inc., St. Petersburg, FL.

Fields Corp. Granted MANA Membership

John Fields, president of Fields Corp., and Matt Fields, vice president, have been named to membership in the Manufacturers' Agents National Association (MANA). Fields was founded in 1976 and is a 100-person firm based in Tacoma, WA specializing in roofing and waterproofing products. In 1991, Fields introduced a meltable, plastic-wrapped asphalt brick that you can place, wrapping intact, into a kettle and melt.

NEW MEMBERS FOR ♦ march 1998 ♦

Name	Company	Classification	Region	Name	Company	Classification	Region
Scott Brookes	Green Roofing & Sheet Metal	Industry	Region VII	Jon Meyer	Roof Spec, Inc.	Professional	Region I
Jonathan Camaya	Israel Berger & Associates	Professional	Region I	Arin A. Nelson	Madsen, Kneppers & Associates	Professional	Region VI
Remo Capolino	Exterior Research & Design	Professional	Region VII	Greg Nunley	Technical Roof Services	Professional	Region IV
Ashok Chetty	DuPont	Industry	Region II	Dennis Parra, III	Parra Building Consultants	Prof. Affiliate	Region VI
Charlie Conner	Conner LeGrand, Inc.	Industry	Region IV	David M. Sanford	Gotham Building Inspection	Quality Assurance	Region I
William P. Cowart	Const. Moisture Consulting	Professional Affil	Region II	Nathan Sargent	MIRO Industries, Inc.	VI	Region I
George M. Criel	Century Roof Consultants	Quality Assurance	Region III	James Sidla	Garlock Equipment Company	Industry	Region III
Bob Harvey	Harvey Associates, Inc.	Professional	Region VIII	Michael R. Sullivan	The Sullivan Group	Industry	Region VI
Phil Hodges	Hodges & Associates	Industry	Region II	Royce D. Taylor	Amtech Roofing Consultants	Quality Assurance	Region IV
Kenneth Johnstone III	Facility Planning, State of LA	Gov't Liaison	Region III	Gregory Thimbeck, RRC	D.C. Taylor Co.	Industry	Region III
Frank Jones, RRO	HDFH Associates	Quality Assurance	Region II	Henry Vitale	SDA Associates	Quality Assurance	Region I
Pete Keener	Keener Consulting	Professional	Region III	Stephen Ward	Stephen Ward & Associates	Professional	Region VI
James D. Leonard	Elastomeric Roof. Systems, Inc.	Industry	Region III	James Wilson	Blount County Schools, AL	Facility Manager	Region II
Gerald W. Lewis	Amtech Roofing Consultants	Quality Assurance	Region IV	David Zowowski	Tech-Cor Applied Research	Associate	Region III
Janice Marquis	Cushman & Wakefield of Oregon	Facility Manager	Region VII				

Adolfo J. Cotilla Jr., Professional Member

By Kris Ammerman, Executive Editor, *Interface*

ADOLFO J. COTILLA, JR., A REGISTERED ARCHITECT, began his roofing experience in 1980 with a half-million-square foot project for the South Florida State Hospital, entailing 12 buildings and spanning three years. This provoked an interest in roofing technology which has continued throughout his career.

"The learning curve in the roofing industry is demanding," Cotilla notes. "The more one learns from a roofing project, the more you seem to need to learn to remain competent in the industry. Roofing technology is a specialty which takes cultivation through practice and standard development, the ingredients which make each roofing project a challenge... Every design must be precise in order to maintain the facility's exterior design and the integrity of the roofing system. Because of this, you must look beyond the plans and view the details of the project, envisioning potential problems. This I find fascinating."

Born in Cuba and previously a resident of Panama, Cotilla graduated from the University of Florida with a Masters of Fine Arts in Architecture. Now President of ACAI Associates, Inc., Adolfo's firm was listed in the "100 Fastest Growing Hispanic Firms" in 1994 and 1995 by *Hispanic Business*.

Adolfo has been a roofing consultant for the Palm Beach County School District and for the county at-large. He has also been the State of Florida roofing consultant for Areas 6 and 7 of Florida, encompassing Palm Beach, St. Lucie, Okeechobee, Martin, Broward, Hendry, Collier, Lee, and Glade counties.

Recent projects include the Tribune's Sun Sentinel Building in downtown Ft. Lauderdale and the Palm Beach County Judicial Center, West Palm Beach. Cotilla has worked with liquid membrane, coal tar pitch, APP & SBS modified bitumen, single-ply rubberized membrane systems, standing seam metal, both pre-manufactured and hand-formed copper, and built-up roofing systems.

In 1989, he became a member of RCI. He was nominated for Director of Region II earlier this year.

Cotilla is a member of the American Institute of Architects, National Roofing Contractors Association, International Facility Management Association, and the National Trust for Historic



Adolfo J. Cotilla Jr., Professional Member

Preservation. He is listed in Baron's *Who's Who in Interior Design*, 1990-91 Edition.

Adolfo and his wife Marisela have two daughters—Cristina Lourdes and Angie Marie, both currently attending college. In his spare time, he enjoys traveling, fishing, scuba diving, sailing, golfing, reading and biking.

RCI salutes Adolfo Cotilla for his dedication to the roofing industry and to the Roof Consultant's Institute.

**Publish A Business Card Ad In *Interface* For Only \$150.
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Albert Duwyn Elected Treasurer of RCI

Albert Duwyn, RRC, was elected Treasurer of RCI at the International Convention in Dallas on April 8.

Raised on a tobacco farm in Southwestern Ontario as the youngest of six boys, Al learned at a young age the importance of teamwork and pulling one's own weight. He was a member of his high school basketball and track and field teams, and established a 100-meter record in 1975 which remains unsurpassed to this day. Out of the 60 individuals who started the Architectural Technology program at Mohawk College, Hamilton, Ontario with him, only 24, including Duwyn, graduated at the conclusion of the three-year program.

Albert's first post-collegiate job was as an estimator for Peerless Enterprises, one of the largest roofing contractors in Canada. His ten-year stint with Peerless provided Duwyn with an excellent vehicle for advancement in the field of roofing and waterproofing.

In 1988, Al became a partner with a roofing contractor firm before seizing the opportunity, in 1991, to purchase Industrial Roof Consultants (IRC) Group, an established roof consulting firm. "Since then, I've never looked back," says Duwyn. In January 1992, the firm had four employees at one location. There are currently 20 employees at three locations operating across Canada. To concentrate on building envelope and waterproofing issues, a second firm, IRC Building Sciences Group Inc., was formed in 1996.

In 1992, Al joined RCI. "It has become the single most professional influence in my business life," he notes. In 1994, he wrote to Sam Huff and Art Sark, now past presidents of RCI, and asked for permission to start a Canadian Chapter with approximately 15 members. The next year he attained the status of RRC, and went to the Richmond convention, where he successfully lobbied for formation of Canada into the eighth region of RCI, with 45 members. He was elected Director of the region in March 1996. Today Region VIII boasts over 100 members and continues to grow.



Al Duwyn and wife Mary Beth at the President's Reception at the Dallas Convention.

Duwyn was also appointed Chairman of the Consultants Committee of Ontario Industrial Contractors Association (OIRCA). During his tenure, a new category of membership, "Consultant Member," was established in OIRCA, requiring professional membership in RCI.

In 1995, Duwyn established a liaison between RCI and the Canadian Roofing Contractors Association. He has been an instructor for RCI educational programs and an exam proctor, and has been author of several articles published in *Interface*.

Duwyn and his wife Mary Beth have two children: Trevor, nine, and Rachel, seven. They reside in Burlington, Ontario, approximately 25 miles west of Toronto on Lake Ontario. The family enjoys travel, water sports, tennis, and golf. Al's favorite motto? "Work hard...Play hard."

Roof Training in Germany

At any given time, there are some 8,800 roof apprentices under training in Germany. The most well-known training center is the German Roof Training School in Mayen. This is the first step on the roofing career ladder which leads to the prestigious Master Craftsman certification from the National Center.

To become a Master Craftsman, an applicant must first pass an initial screening process. He or she then undergoes a full-time, nine-month course in all recognized roofing industry trades, including 1,800 hours of lessons. Seventy-five percent pass the test on their first attempt.

Every roofing contractor contributes five percent of his employee payroll. From this comes the financing for the educational centers. Materials are supplied by manufacturers throughout the industry.

—Excerpted from *Roofing Cladding & Insulation (RCI)*, November/December 1997.

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A name synonymous with rubber entered the roofing scene in 1980 and quickly built a reputation for quality materials, systems and craftsmanship. Firestone Building Products was founded on the premise that not only could superior roofing materials be manufactured but that *complete*

roofing systems could be offered from a single source. Since that time, millions of square feet of roofing systems have been installed worldwide. Firestone manufactures Polyisocyanurate insulation and roofing systems based on EPDM and Modified Bitumen.



INNOVATIVE COVERAGE

The Firestone product line that began with EPDM has grown to include a full line of membranes manufactured in ten facilities throughout North America. Today Firestone is positioned to be your single source of supply for anything from membrane to pipe boots to insulation. Leadership through innovation has developed such products as the QuickSeam Tape System. With millions of lineal feet installed, QuickSeam is fast becoming the preferred method for EPDM roofs. We cover you with complete systems so you'll never have to go anywhere else.



TECHNICAL COVERAGE

We believe no other roofing manufacturer offers you Firestone's commitment to quality. We invest heavily in research and development to produce the finest, high performance roofing products and systems that make your job easier. Every Firestone system provides a durable solution to your design and installation challenges. Our technical expertise is second to none. Whether it's UL, FM or another model building code approval that you require, Firestone has a system that's got you covered.



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IT'S MONDAY, APRIL 13 as I write these remarks, my first day back in the office after eight days in Dallas at RCI's 13th Annual Convention. If you were in Dallas, you know that the Convention was a great success. If you were not, I'm sorry. You missed an excellent meeting, with a great

educational program, a superb trade show (with 140 exhibitors) and generally excellent functions all around. The staff and I repeatedly received kudos from members for the smooth operation of nearly every aspect of the meeting. It wasn't all *our* doing of course. The Convention Committee, headed by Jim Sheahan, did a great job in planning the meeting, and our meetings consultant, Laurie Ybarra of GL Meetings, also served us very well. It was interesting and gratifying, however, to hear so many complimentary remarks about the staff.

And I must say, those remarks were well deserved. I'm alone in the office today. The staff members who traveled to Dallas have taken the day off. They worked for seven straight days, usually from 6 a.m. to 8 or 9 p.m. or even later. I think that seven days of 14 or 15 hours each are enough for anyone. I am very proud of them and of the job they did. I think that sometimes the efforts of staff go unrecognized in the association business. Fortunately, at RCI, that's not the case.

Now we look forward to the 1999 Convention in Charlotte, North Carolina. We're going to make some changes in Charlotte which we hope will make for an even better experience for attendees and exhibitors. The Convention will likely be shorter, and concentrated around the weekend of March 12-14, so our members will be faced with fewer hours away from work. I would also expect that the educational program will be enhanced in response to member needs identified in Dallas. And we are going to have a surprise or two. All in all, it will be another great experience, so put it on your calendars for next year, and plan to join us in Charlotte. As for myself, I'm going to try to relax for another day or so, and reflect on how to do better the things we've done well this year.

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PEOPLE & PLACES

■ Pat Huempfer Promoted at G-P Gypsum

Pat Huempfer has been promoted to the position of National Dens-Deck® Sales and Marketing Manager at G-P Gypsum Corp. Huempfer has been working with Dens products since their inception in 1986.

■ Amend Joins Comfort Foam

William R. Amend has been appointed to sales manager with Comfort Foam, a spray polyurethane insulation system by Foam Enterprises Inc. Amend has 12 years' previous experience with CertainTeed.

PUBLICATIONS

■ CSI and First Source Provide Product Info

Architects' First Source (AFS) and the Construction Specifications Institute (CSI) have created an extensive product information service accessible at no cost to all building professionals via the First Source Online Web Site (www.afsonl.com). The service brings together Architects' First Source for Products® with CSI's Spec-Data® and Manu-Spec®.

■ NRCA Releases Annual Market Survey

NRCA has completed its 1997-98 Annual Market Survey. The report contains roofing industry market statistics and information obtained from roofing contractors throughout the U.S. It may be purchased for \$50. For more information, phone 1-800-323-9545, ext. 260.

PRODUCTS

■ Atlas® Introduces StormMaster® SBS Shingles

Atlas® Roofing Corp. announces the introduction of StormMaster® weather-resistant 30- and 40-year SBS modified shingles for residential, multi-family, and light commercial applications. They are the first and only asphalt-type shingle to achieve the UL-2218 Class 4 rating for high impact resistance. They have also passed UL 997 and ATM D3161 100-mph wind resistance. Because of this, homeowners may qualify for property insurance premium reductions. For more information, phone 770-952-1442.


■ Kwik-Alert Introduced at RCI Trade Show

Kwik Company introduced Kwik-Alert at the April RCI Trade Show in Dallas. When permanently installed, Kwik-Alert displays a blinking red light at the earliest sign of moisture. The company claims Kwik-Alert cannot be fooled by surface moisture and operates under ponding water, eliminating errors in roof surveys. For information, phone 281-399-9334.

PLAUDITS

■ Bill Good Receives Firestone Award

Bill Good, executive vice president of NRCA, is the recipient of Firestone's 1998 Associate Inner Circle of Quality Award. The award is given to an individual whose efforts have been instrumental in the advancement of the roofing industry.



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Calendar of Events

JUNE 1998



- 10-13** WSRCA Convention & Trade Show
 ■ Anaheim, California
 Info: (605) 548-0112
- 11-13** Advanced Roof Consulting Course
- 12-13** Rooftop Quality Assurance Course
- 13** RRO Exam
- 14** RRC Exam
 ■ Philadelphia, Pennsylvania
- 17-20** FRSA Convention
 ■ Orlando, Florida
 Info: (407) 671-3772
- 25-26** Wind Loads for Buildings (ASCE)
 ■ Orlando, Florida
 Info: (800) 548-2723
- 26** Region I Meeting
 ■ Baltimore, Maryland

JULY 1998



- 23** Region IV Meeting
 ■ Albuquerque, New Mexico
- 24-25** Building Envelope Symposium
 ■ Houston, Texas

AUG. 1998



- 16** Region V Meeting
 ■ Denver, Colorado
- 27-29** Advanced Roof Consulting Course
 ■ Cincinnati, Ohio

SEPT. 1998



- 10-11** Wind Loads for Buildings (ASCE)
 ■ New York, NY
 Info: (800) 548-2723
- 11** Region III Meeting
 ■ Minneapolis, Minnesota
- 18** Region IV Meeting
 ■ Austin, Texas
- 18-19** Building Envelope Symposium
 ■ Chicago, Illinois

OCT. 1998



- 9-10** Rooftop Quality Assurance Course
- 10** RRO Exam
 ■ Chicago, Illinois
- 16** Region I Meeting
 ■ Hartford, Connecticut
- 16** Region II Meeting
 ■ Charlotte, North Carolina
- 18-22** SMACNA Convention
 ■ Nashville, Tennessee
 Info: (703) 803-2996
- 23** Region III Meeting
 ■ Chicago, Illinois
- 23-25** Advanced Roof Consulting Course
- 26** RRC Exam
 ■ Canada

NOV. 1998



- 14** Region V Meeting
 ■ Denver, Colorado
- 20-21** Building Envelope Symposium
 ■ Bay Area, California

DEC. 1998



- 2-3** Restoration and Renovation
 ■ Los Angeles, California
 Info: (978) 664-6455, ext. 21
- 3-5** Advanced Roof Consulting Course
- 4-5** Rooftop Quality Assurance Course
- 5** RRO Exam
- 6** RRC Exam
 ■ Atlanta, Georgia

JAN. 1999



- 28-30** Restoration and Renovation
 ■ Washington, DC
 Info: (978) 664-6455, ext. 21

FEB. 1999



- 7-10** NRCA Convention and Exhibit
 ■ Phoenix, Arizona
 Info: (847) 299-9070

MAR. 1999



- 13-18** RCI Convention and Trade Show
 ■ Charlotte, North Carolina


KEY : RRC/RRO Exams Region Meetings

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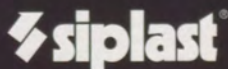
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