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SPECIAL CONVENTION ISSUE

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SITURA WATERPROOF EXPANSION JOINTS

PROJECT/CASE #2

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PROBLEM/CHALLENGE

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SOLUTION/DESIGN

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EXECUTION/INSTALLATION

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SITURA EXPANSION JOINT PERFORMANCE

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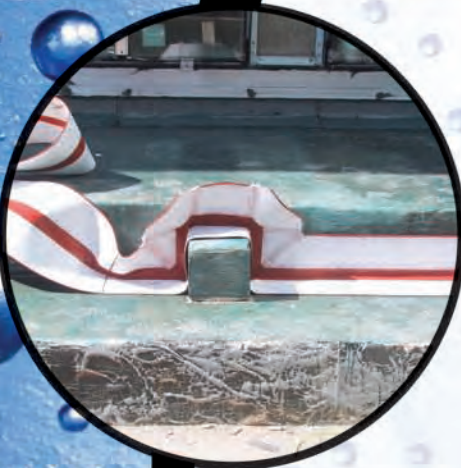
– James N. Stamer, President,
Prospect Waterproofing Company

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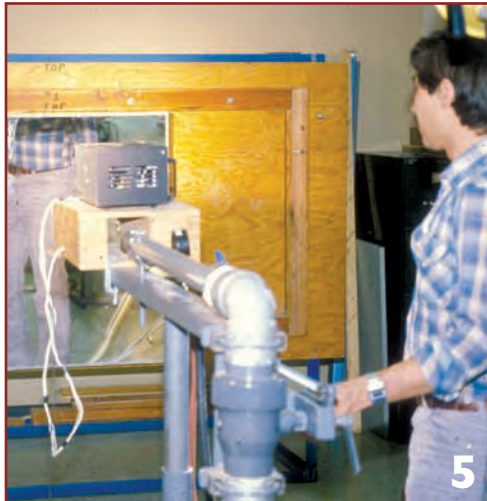
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RCI was chartered, in part, to bridge the gap between the seemingly disparate elements of the roofing profession, and it later expanded to include issues of waterproofing and of the entire building envelope. The goal of *Interface* is to connect these elements, educate and inform about related topics, establish a common ground for discussion, promote Institute programs, and reach out to the industry at large. The articles contained in this publication are intended to provide information that may be useful to readers of *Interface*. 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.



FEATURES

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PE, RRC, RRO

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On The Cover: The 2008 RCI Convention and Trade Show in Phoenix, Arizona, was a huge success.

In This Issue: If you weren't at this year's convention, you missed a great event. If you were, perhaps you'll see yourself. Next year: Dallas!



A handwritten signature in black ink that reads "John L. Willers". The signature is fluid and cursive, with a long horizontal line extending from the end.

John L. Willers, RRC, FRCI, PE
President

RCI'S CONVENTION AND TRADE SHOW

A Great Success

As in the past, our annual convention was a great success. I always enjoy the trade show, where I can obtain a lot of information. Specifically, I can speak with manufacturers' personnel about technical items much more easily than by telephone. Also, I can learn about manufacturers' newest products. I must discipline myself to visit those booths about which I have a preset attitude that they have nothing to offer me. What I discover by visiting these booths is that I am glad that I did, because I invariably learn something new. And that is why I went to the trade show – to learn, not just to snack on the food or to visit with old friends.

Talk about learning something new – the educational sessions were excellent. I only wish I were able to attend all of them. They addressed all of the kinds of services I provide to my customers and then some. Presentations included such topics as energy efficiencies, concrete repair, waterproofing, photovoltaics, building envelope, wind, fluid-applied flashings, air barriers, tapered insulation, roof failures, being an expert witness, and even how to transfer ownership of my business when I retire.

In spite of the busy schedule, I had plenty of time to talk with old friends and to make some new ones. I have learned that these connections are valuable when I need to consult with someone outside of my firm. This is easily done by calling a member who may work two thousand miles away. Friends do not hesitate to share their experiences. Also, during the convention I was able to get an update of what friends' children are doing and, for those who have "been around for a while," I could inquire about their grandchildren, too.

There were events that had nothing to do with work that were simply fun. I played golf with friends and attended the hospitality suites where there was plenty of food, music, games, and Asian dance demonstrations. During our opening ceremony, we were entertained by an artist, and our guest

speaker, Charlie Cook, provided insight into the current political campaigning (old news by now). There was great food and entertainment at our annual banquet, including the presentation of some special gifts to our retiring president, Pat Downey, and flowers for his wife, Donna. Also, it was great to see 200 members participate at our annual meeting of the members.

I would like once more to offer thanks to the many companies that sponsor the convention each year. Special thanks go to this year's platinum sponsors: Carlisle SynTec, Inc.; Chemical Design Corporation; Firestone Building Products; GAF Materials Corporation; Georgia-Pacific Gypsum Corporation; Johns Manville; Sika Sarnafil, a Division of Sika Corporation; Siplast; Thaler Metal Industries; and Tremco, Inc.

Have you attained all of your CEHs for this year? Convention attendees had no trouble in racking these up, and they had fun in the process.

If you missed the convention, you will still be able to benefit by reading the summaries of the sessions that are published on the following pages. For more detailed information, visit the RCI Web site (www.rci-online.org) and order a copy of the proceedings of the convention.

Finally, keep in mind that this convention was also a celebration of 25 years of service to our members. If you were not there, order a copy of the *RCI Silver Anniversary Report* summarizing our history, beginning with the great idea Bob Lyons had that sparked the start of RCI. Bob, wish you were there, and get well soon.

John L. Willers, RRC, FRCI, PE



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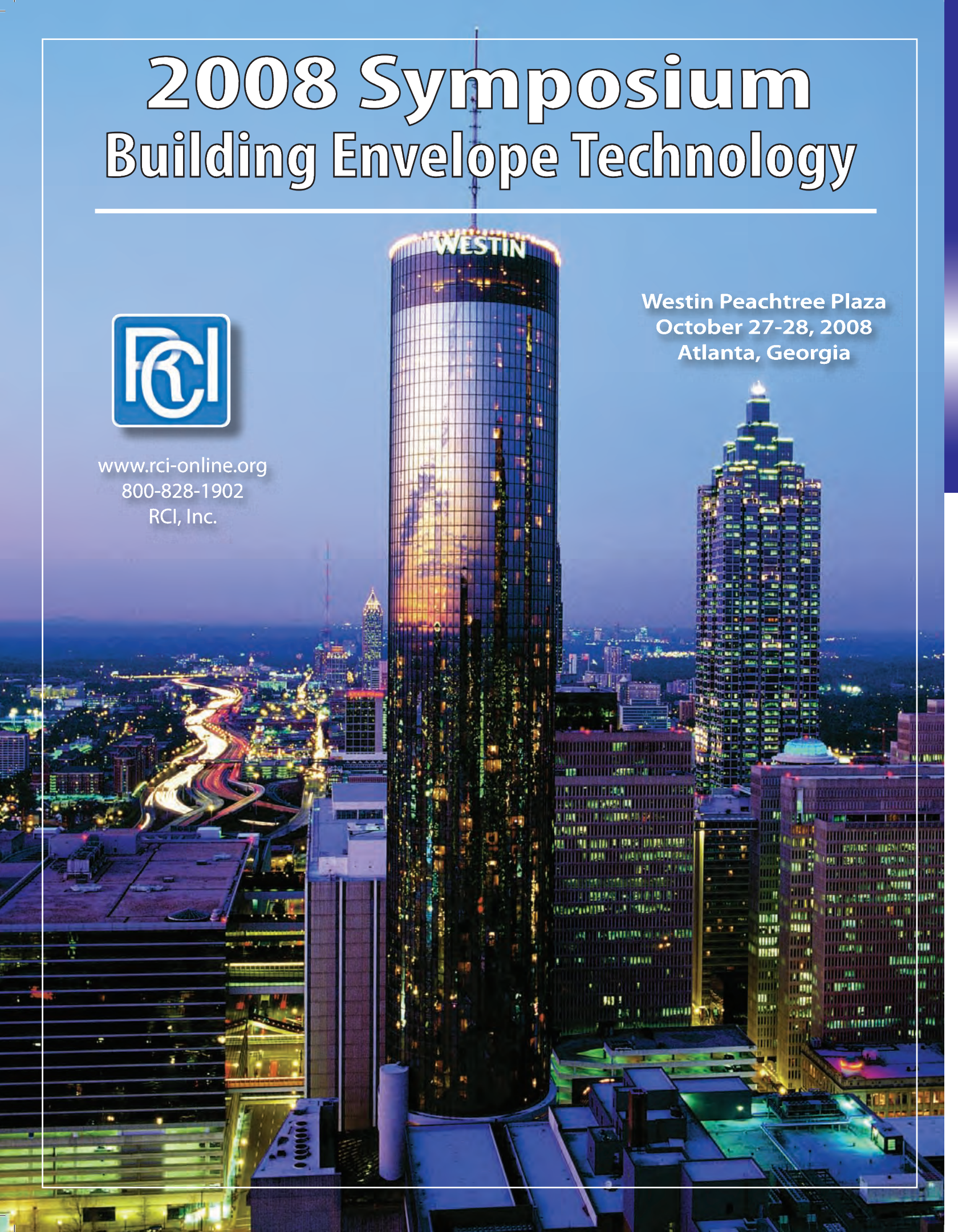
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MAJOR BUILDING CODE REQUIREMENTS FOR IMPACT RESISTANCE OF LOW-SLOPE ROOFING SYSTEMS:

A REVIEW AND COMPARISON OF TEST PROCEDURES

By Vickie Crenshaw, PE, RRC, RRO

INTRODUCTION

Building codes are intended to safeguard the health, safety, and welfare of occupants by regulating construction as well as the building components and materials used.¹

In the United States, the history of building codes dates to the earliest settlers of the first American colonies, who brought with them a number of building safety regulations from Europe. These early regulations, which are incorporated into municipal laws, addressed such issues as the spacing between houses, basic sanitation requirements, construction and maintenance of fireplaces and chimneys, and materials used in roof coverings.¹

Originally, three major model code groups developed and maintained model building codes in the United States. These groups included the Building Officials and Code Administrators International, Inc. (BOCA), the International Conference of Building Officials (ICBO), and the Southern Building Code Congress International, Inc. (SBCCI).

Of these three code groups, two listed “impact resistance” in the roofing-related performance requirements of “Roof Assemblies and Rooftop Structures.” These groups were BOCA and SBCCI. This article discusses the evolution of “impact resistance” in these codes and where the code performance requirement for “impact resistance” sits today. Outlined below is a brief history of code origin and when the performance

requirement for “impact resistance” first appeared in the codes.

Building Officials and Code Administrators International, Inc.

BOCA published its first code edition in 1927.¹ The “impact resistance” requirement first appeared in the 1990 edition.

Southern Building Code Congress International, Inc.

SBCCI published its first code edition in 1940, the same year the organization was established.² Its first mention of the “impact resistance” requirement appeared in the 1999 edition.

International Code Council

Established in 1994 to develop and maintain a single set of national building-related model codes,³ ICC published its first edition in 2000. ICC’s codes replaced the model codes of BOCA, ICBO, and SBCCI, now referred to as “Legacy Codes.”² Subsequent editions of these legacy codes were not released. The last editions were 1997, 1999, and 1999, respectively.

ICC’s first edition in 2000 contained 35 chap-

ters, with Chapter 15, “Roof Assemblies and Rooftop Structures,” containing ten Section Titles (*Figure 1*). Section Title 1504 – Performance Requirements provides specific performance requirements for all roof assemblies, including requirements for physical properties as well as impact and wind resistances.⁴ The “impact resistance” requirement mirrored that of BOCA and SBCCI and reads as follows in the 2000 edition:

- **1504.6 Impact Resistance.** Roof coverings installed on low-slope

SECTION TITLES FROM IBC’S CHAPTER 15, “Roof Assemblies and Rooftop Structures”	
SECTION 1501	General
SECTION 1502	Definitions
SECTION 1503	Weather Protection
SECTION 1504	Performance Requirements
SECTION 1505	Fire Classification
SECTION 1506	Materials
SECTION 1507	Requirements for Roof Coverings
SECTION 1508	Roof Insulation
SECTION 1509	Rooftop Structures
SECTION 1510	Reroofing

Figure 1 — Section titles from the International Building Code’s Chapter 15, “Roof Assemblies and Rooftop Structures.”

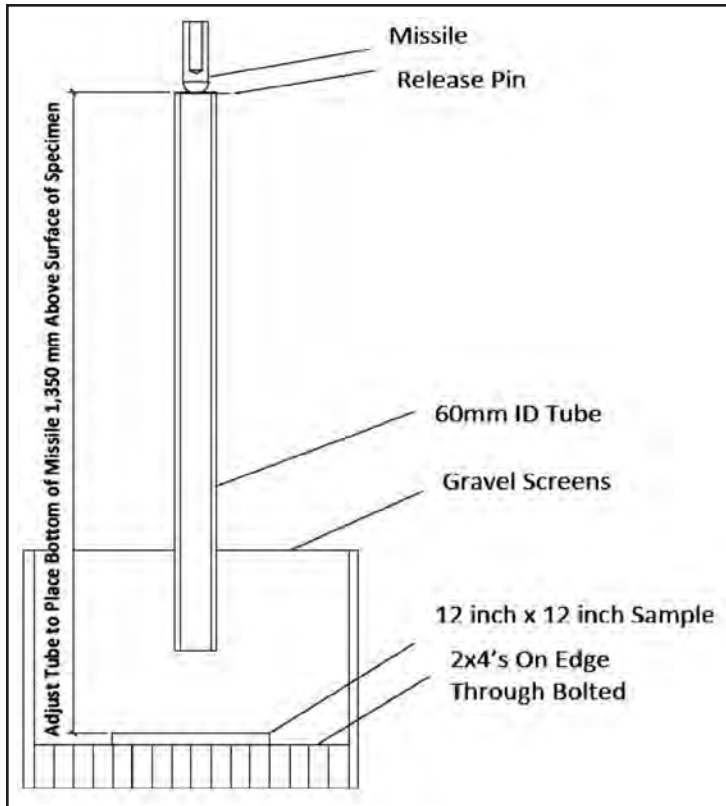


Figure 2 — Guide tube, test table, and centering jig.

roofs (roof slope < 2:12) in accordance with Section 1507 shall resist impact damage based on the results of tests conducted in accordance with ASTM D 3746, ASTM D 4272, CGSB 37-GP-52M, or FM 4470.

Each of the groups listed the same four test methods, shown below, for impact resistance. The ICC 2000 and the SBCCI codes limited the requirement to low-slope roofs (roof slope < 2:12). There were no slope requirements given in the BOCA code.

Standard Test Methods

- ASTM D 3746, “Standard Test Method for Impact Resistance of Bituminous Roofing Systems”⁵
- ASTM D 4272, “Standard Test Method for Total Energy Impact of Plastic Films by Dart Drop”⁶
- CGSB 37-GP-52M, “Standard for Roofing and Waterproofing Membrane, Sheet-Applied, Elastomeric”⁷
- FM 4470, “Test Standard for Class 1 Roof Coverings”⁸

Brief descriptions of the test standards are as follows:

ASTM D 3746, “Standard Test Method for Impact Resistance of Bituminous Roofing Systems”

ASTM first published this standard in 1985, reapproved it in 1996, and again in 2002. The late Carl Cash chaired the committee and oversaw development of the standard. This test method subjects field and laboratory specimens of bituminous roofing systems to a series of four impacts in each quadrant of a 12 in x 12 in sample.

A steel missile guided through a tube from a predetermined height impacts each sample with impact energy of 22 ft·lb (Figure 2). The test procedure allows for testing at different temperatures to study that effect on impact resistance. Following impact, the samples are desaturated and the mats examined for damage. A rating is given to the membrane’s impact damage, if any.

ASTM D 4272, “Standard Test Method for Total Energy Impact of Plastic Films by Dart Drop”

First published in 1983, reapproved in 1999, and again in 2003, this test method describes the determination of the total energy impact of plastic films by measuring the kinetic energy lost by a free-falling dart that passes through the film.⁶

The recommended size of the sample is 6 in x 6 in for a single determination. Specimens are taken from new material only. The test uses the free-falling dart of ASTM D 1709, Test Method A (Figure 3). Depending on the dart weight selected, the impact energies vary from 1.1 to 5.4 ft·lb. Each sample is impacted five times in

different places. The energy to rupture a film sample is based on an average of five energy values for the test specimen.⁶

The standard states, “Evaluation of the impact toughness of film is important in predicting the performance of a material in applications such as packaging, construction, and other uses.”⁶ The author questions the applicability of this standard for impact resistance of most roof coverings.

CGSB 37-GP-52M, “Standard for Roofing and Waterproofing Membrane, Sheet-Applied, Elastomeric”

This Canadian standard was first published in October 1982 and applies to sheet-applied elastomeric membranes for use in roofing and waterproofing.⁷ Among others, the standard addresses requirements for thickness, tensile strength, breaking strength, elongation, and water absorption and weather resistance. The standard states “the membrane shall withstand impact energy of 1.8 ft·lb (2.45 Joule) without indentation to the extent that the membrane will not fail the watertightness test”⁷ listed therein.

The test procedure uses a dynamic puncture device or a Gardner Heavy-Duty Variable Impact Tester (Type PF-1120) with modifications shown in Figure 4. The manufacturer changed the part number from IG-1120 listed in the standard to PF-1120. Three tests are carried out on each sample, with the results rated in accordance with the Puncture Rating Table.

FM 4470, Test Standard for Class 1 Roof Coverings

The FM 4470 Test Standard for Class 1 Roof Coverings was first introduced in April of 1986. A part of this test procedure, “Susceptibility to Hail Damage – Moderate Hail (MH),” was designed to assess the potential for damage to roof covers when they are applied on various roof insulations, lightweight concrete roof

decks, gypsum decks, or fire-retardant-treated wood roof decks. It was developed to determine the potential for puncture from hailstorms when a cover is applied over its tested substrate within a Class 1 assembly.⁸

The MH test apparatus, Figure 5, consists of a tube in which a steel ball drops



Figure 3 — Free-falling dart.



Figure 4 — Heavy-Duty Impact Tester PF-1120. Photo courtesy of BYK – Gardner, a member of the BYK Additives and Instruments Business Unit of Atlanta.

from a predetermined height, dependent on the rating required. The current FM 4470 standard offers two hail ratings, Class 1-SH (Severe Hail) and Class 1-MH (Moderate Hail). The procedure tests both new and artificially aged materials (1,000 hours following ASTM G53).

The procedure drops a steel ball ten times on various sections of a sample. The impact energy for the SH determination is

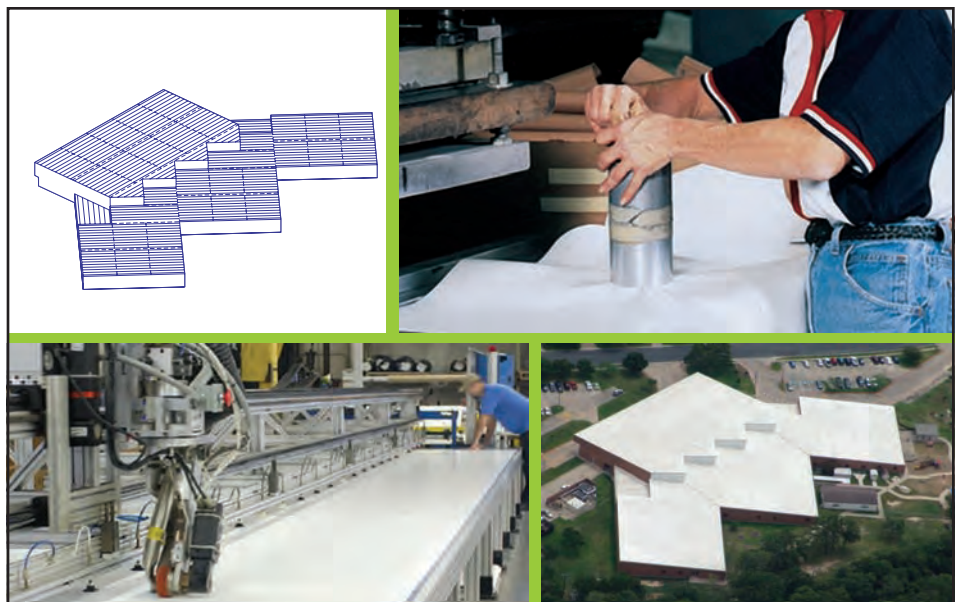
14 ft·lb (19 Joule), and the MH determination impact energy is 8 ft·lb (10.8 Joule). Testing is performed at room temperature.

Another part of this FM 4470 standard is the “Foot Traffic Test.” This test procedure is designed to assess the potential for damage to roof covers at corners of insulation. The test apparatus consists of a square plate with weights added. This is a static load test, whereas the “Hail Resistance Test” is a dynamic test.

This test method was part of the original FM 4470 in 1986, as was the Moderate Hail

(MH) test method. The Severe Hail (SH) test method was later added by a 1987 supplement. BOCA published its first impact-resistance performance requirement in 1990; therefore, the “Susceptibility to Hail Damage” test procedures were available, as was the Foot Traffic test method. *Table 1*, featuring the “Test Method Comparison,” lists only those “dynamic impact” test procedures available to BOCA when it first listed the impact-resistance requirement in 1990.

The code requirement for impact resis-



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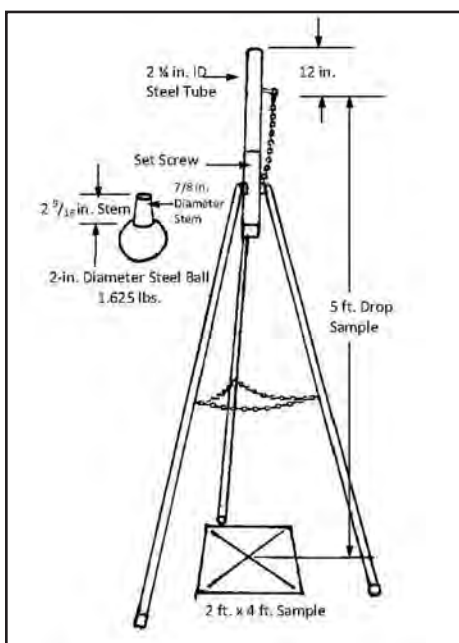


Figure 5 — Simulated Hail Damage Test Apparatus, Moderate Hail (MH).



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TEST METHOD COMPARISON

Test Standard	Impact Diameter, in (mm)	Impactor End Shape	Impactor Type	Missile Mass, lbs (kg)	Drop Distance, ft (cm)	Impact Energy, ft-lbs (Joule)	Impacts, #	Substrate Type	Test Temperature °F (°C)	Sample Conditioning	Damage Evaluation Method
ASTM D 3746	2.0 (50.8)	Hemispherical	Weighted Steel Dart	5.0 (2.27)	4.42 (135.0)	22.0 (30.0)	4	Optional	Optional	8 min.	Visual and after extraction; numerous ratings.
ASTM D 4272	1.5 (38.1)	Hemispherical	Stainless Steel	0.5-2.5 (0.23-1.13)	2.17 (66.0)	1.1-5.4 (1.49-7.32)	5 per specimen	None	73.4 (23)	40 min.	Type of failure to rupture.
CGSB37-GP-52M	0.44 (11.3)	Round & flat, polished to 1 cm ²	Steel Rod	2.2 (1.00)	0.82 (25.0)	1.8 (2.45)	3	Rubber Stopper	73+7 (23+10)	24	Visual examination, puncture rating water test.
FM 4470 Class 1-MH	2.0 (50.8)	Spherical	Steel Ball	1.63 (0.74)	5.0 (152.4)	8.0 (10.8)	10	Optional	Room Temperature	Up to 28 days or weathered	Visual Examination (10X).
FM 4470 Class 1-SH	1.75 (44.5)	Spherical	Steel Ball	0.79 (0.36)	17.79 (542.3)	14.0 (19.0)	10	Optional	Room Temperature	Up to 28 days or weathered	Visual Examination (10X).

Table 1

tance provides a choice between test methods. As summarized in *Table 1*, the inequality of the test methods is clear as stated in earlier research by the author.⁹ The inequalities exist within impact energies, test temperatures, sample age, and damage evaluation methods as discussed below.

Impact Energies

Each of the methods use hemispherical, spherical, or flat-head-shaped steel projectiles of various diameters. The projectiles are dropped from predetermined heights, producing an impact energy, which can be compared to the impact energy produced by different diameters of hail.

Depending on the test method, the impact energy varies from 1.8 ft·lb to 22 ft·lb. With this wide range, one can determine the ineffectiveness of the impact resistance requirement of the IBC and the Legacy (BOCA and SBCCI) codes.

Prior research by Crenshaw and Koontz indicates roof coverings such as slate, concrete tile, or clay tile are fairly hail-resistant when impacted with ice spheres. When impacting these same materials with steel projectiles as outlined in the code, failure

ratings are produced at low-impact energy levels.⁹

Test Temperature

Another variable that can affect test results is test temperature. A review of the test methods indicates two of the four test methods, ASTM D4272 and FM4470, are performed at room temperature. Crenshaw and Koontz's prior simulated hail research indicated some roof covering materials, such as tempered, aged thermoplastics, are temperature-sensitive.⁹

Recall that Nick Lavato's article, presented at the RCI 19th International Convention and Trade Show, focused on a case study of the replacement of an eight-year-old hail-damaged thermoplastic roof at the Denver International Airport as a result of a moderate hailstorm that occurred in June 2001.¹⁰

It is a well-known fact that most thermoplastics are temperature-sensitive when it comes to impact; however, with some materials, such as composition shingles and modified roof materials, impact resistances can actually increase as test temperatures decrease.⁹

Aging

Two of the four test methods also test artificially aged materials or materials from the field in addition to new roof coverings and material. FM 4470 tests new roof coverings and similar materials that have aged for 1,000 hours using ASTM G53. The late Carl Cash also recognized the importance of exposure with the inclusion of testing specimens from actual roofs in ASTM D3746. A paragraph from this standard reads as follows:

- **“Paragraph 8.1 Test Specimens -** Test specimens may be taken directly from an actual roof or cut from a laboratory-prepared sample using a 305 by 305-mm (12 by 12-in.) metal template as described in Practice D2829 and shall include all of the aggregate and insulation in the area of the specimen.”

Great minds thought alike, with the late William Cullen noting the importance of testing aged materials in 1992, stating, “The results of testing new materials may not be valid since the hail-impact resistance of many roofing materials changes upon exposure to weather.”¹¹

Damage Evaluation

The damage evaluation methods used by the four test methods vary. ASTM D3746 requires separation and desaturation of the plies of bituminous roof systems. The standard for plastic films, ASTM D4272, requires visual examination to determine the type of failure. The examples given were holes, tears, shatter, etc. The Canadian standard, CGSB 37-GP-52M, outlines a visual examination and a water-tightness test (if required). The FMRC standard does not require separation, with a visual examination of top and bottom surfaces considered sufficient. Damage to interply, felts, or reinforcements may not be visible without separation and desaturation.

Discussion

Interestingly enough, the wording of the impact-resistance requirement of the IBC 2006 edition changed. It now reads as follows:

“1504.7 Impact Resistance. Roof coverings installed on low-slope roofs (roof slope <2:12) in accordance with Section 1507 shall resist impact damage based on the results of tests conducted in accordance

with ASTM D3746, ASTM D4272, CGSB 37-GP-52M, or the ‘Resistance to Foot Traffic Test’ in Section 5.5 of FM 4470.”

The revision left the three previous test methods – ASTM D3746, ASTM D4272, and CGSB 37-GP-52M – the same and expounded on FM 4470 by inserting the “Resistance to Foot Traffic Test” in Section 5.5 of FM 4470.12. Recall that earlier code versions listed only FM 4470 and did not state a specific test procedure of the standard.

Investigating the reason for this change with the ICC, excerpts from proponent Robert J. Willis, PE, American Iron & Steel Institute, stated, “Currently, the IBC is not specific [about] which of these tests are intend[ed] by this section, leaving the selection of which test is appropriate up to the code user.”¹³ Later, Willis states, “In summary, this proposal would clarify that the Foot Traffic test is appropriate to demonstrate the durability criteria that were intended by the code and not the hail damage test criteria.” The author disagrees with this, since BOCA published the impact-resistance test methods when FM 4470 contained the “Susceptibility to Hail Damage”

Moderate and Severe Hail Test Standard for Class 1 Roof Covers, both dynamic impact tests, as well as the “Resistance to Foot Traffic Test,” a static load-type test. The other three test methods listed – ASTM D3746, ASTM D4272, and CGSB 37-GP-52M – are dynamic impact test methods as well.

Table 2 documents differences in the IBC 2006 edition’s impact-resistance performance requirements.

The most recent editions of IBC 2003 and 2006 still list the same four test standards that appeared in the ICC’s first 2000 edition, which mirrored that of BOCA and SBCCI. The Canadian General Standards Board Web site shows the cancellation of CGS 37-GP-52M as of January 2005.¹⁴ This eliminates one of the four test methods listed in the 2006 IBC edition available for impact resistance, and it also eliminates the FM hail tests by specifically noting the “Foot Traffic Test” of FM 4470.

As the impact-resistance code requirement now stands, bituminous roof membranes are the only roof types subject to impact loads of 22 ft·lb under ASTM D3746, while nonbituminous roof system types fall to FM’s “Foot Traffic Test.”

2006 TEST METHOD COMPARISON											
Dynamic Test Standard	Impact Diameter, in (mm)	Impact or End Shape	Impact Tester Type	Missile Mass, lbs (kg)	Drop Distance, ft (cm)	Impact Energy, ft·lbs (Joule)	Impacts, #	Substrate Type	Test Temperature °F (°C)	Sample Conditioning	Damage Evaluation Method
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Static Test Standard	Plate Size in ²	Plate Shape	Plate Type	Mass, lbs (kg)	-	-	Repetitions, #	Substrate Type	Test Temperature °F (°C)	Sample Conditioning	Damage Evaluation Method
FM 4470 Class 1-FT	3.0 (76)	Flat with rounded corners	Steel Plate	200 (90.7)	-	-	5	Insulation Board	Unspecified	Unspecified	Visual Examination

Table 2

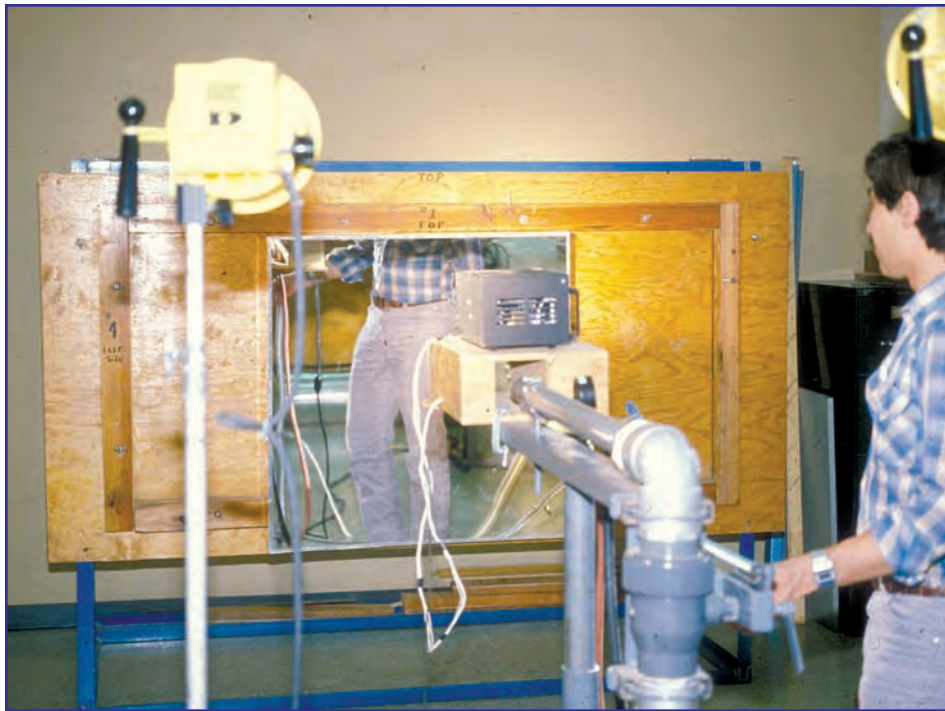


Figure 6: Ice-ball launcher. Photo courtesy of Milton Smith, Texas Tech University.

How is that possible when the code lists four test standards? With the 2005 withdrawal of CGSB 37-GP-52M, ASTM D4272 for film type materials only, the elimination of FM 4470 Hail Resistance tests, and the Foot Traffic test specifically called out, only these two test methods are left. Are results obtained from the two remaining test methods comparable? Koontz authored "A Comparative Study of Dynamic Impact and Static Loading of One-Ply Roofing Assemblies,"¹⁵ which studied common test methods utilized by various organizations, including ASTM, CGSB, and others. This is an area that merits further study.

Hail is a common occurrence "impacting" roofs. Current hail research reviewed by this author typically utilizes test procedures featuring ice, steel, or polyamide

balls. Most researchers employing the ice-ball method use either an air cannon or a slingshot apparatus for ice-ball delivery (Figure 6). Figure 7 depicts molds for the ice balls. FM subjects manufacturers' systems to steel balls for hail ratings. Recall that Peter Flueler presented his hail research on inflatable structures utilizing polyamide balls at RCI's 2006 Convention.¹⁶

Roofing failures related to wind damage or collapse center litigiously around codes and whether the roof system met the minimum requirements outlined in the code regarding uplift resistance or drainage. One would believe the intent of the code is to set minimum performance criteria for wind, drainage, and impact. Impact, however, receives little recognition as a challenged performance characteristic.

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BUILDING ENVELOPE KNOWLEDGE ASSESSMENT

Test your knowledge of building envelope consulting with the following questions developed by Donald E. Bush Sr., RRC, FRCI, PE, chairman of RCI's RRC Examination Development Subcommittee.

1. For commercial buildings, International Energy Conservation Code (IECC) compliance can be shown using a prescriptive approach, a trade-off approach, or a performance approach. What is a prescriptive approach?
2. What is a trade-off approach?
3. What is a performance approach?
4. What is the maximum vertical fenestration-to-wall-area ratio allowed when using the IECC requirements for compliance?
5. What compliance tools and materials are available for these approaches?

Answers on page 12

BUILDING ENVELOPE KNOWLEDGE ASSESSMENT


Answers to questions from page 11:

1. For the building envelope, a prescriptive approach would list the minimum R-value or maximum U-factor requirements for each building component, such as windows, walls, and roofs.
2. A trade-off approach allows a specifier to trade enhanced energy efficiency in one component against decreased energy efficiency in another component.
3. A performance approach allows comparison of a proposed design with a baseline or reference design and demonstrates that the proposed design is at least as energy efficient as the baseline in terms of annual energy use.
4. Anything greater than 40% requires compliance using the ASHRAE 90.1 requirements.
5. Comcheck compliance materials can be downloaded free from the U.S. Department of Energy Web site at www.energy.gov.

Reference: IECC - 2006,
ASHRAE 90.1 - 2004,
DOE Web site



Figure 7: Ice-ball molds. Photo courtesy of Milton Smith, Texas Tech University.

The impact provisions of the current codes are plainly in need of reform. The ICC should clearly define a test procedure for impact resistance applicable to all roof coverings, taking into consideration the effects of temperature, aging, and examination methods. 

References

1. "Introduction to Building Codes: A Guide to Understanding the Codes and How They Work," *Proceedings of the National Conference of States on Building Codes and Standards Inc.*, 1999.
2. *The NRCA Building Codes Manual, First Edition*, National Roofing Contractors Association, October 2001.
3. Graham, Mark S., "New Building Code Offers Unified Standards," *Professional Roofing*, National Roofing Contractors Association, March 2000, Pages 42-49.
4. "New ICC Model Code Completed," *Professional Roofing*, National Roofing Contractors Association, December 1999, Page 22.
5. ASTM D3746, 1985 (2002), "Standard Test Method for Impact Resistance of Bituminous Roofing Systems," ASTM International, West Conshohocken, PA, www.astm.org.
6. ASTM D4272, 1983 (2003), "Standard Test Method for Total Energy Impact of Plastic Films by Dart Drop," ASTM International, West Conshohocken, PA, www.astm.org.
7. "Standard for Roofing and Waterproofing Membrane, Sheet Applied, Elastomeric," CSGB 37-GP-52M, August 1984.
8. "Susceptibility to Hail Damage, Test Standard for Class 1 Roof Covers," Factory Mutual Research Corporation Class 4470, Class 1 Roof Covers, revised August 29, 1992.
9. Crenshaw, Vickie, and Jim D. Koontz, "Simulated Hail Damage and Impact Resistance Test Procedures," *Interface*, Roof Consultants Institute, May 2001, Page 4.
10. Lovato, Nick A., "EPDM - Solution to Airport Roof Problems," *Interface*, Roof Consultants Institute, September 2005, Page 16.
11. Cullen, William C., "Hail Damage to Roofing: Assessment and Classification," *Proceedings of the Fourth International Symposium on Roofing Technology*, NRCS/NIST, 1992.
12. "Resistance to Foot Traffic, Test Standard for Class 1 Roof Covers," Factory Mutual Research Corporation Class 4470, Class 1 Roof Covers, Revised August 29, 1992.
13. ICC Public Hearing, FS144-03/04,

- 1504.7, September 2003.
14. http://www.pwgsc.gc.ca/cgsb/pubs/catalogue/withdrawn/cumulative_06-41-e.html#37.
15. Koontz, J.D., "A Comparative Study of Dynamic Impact and Static Loading of One-Ply Roofing Assemblies," *Roofing Research and Standards Development, ASTM STP 959*. R. A. Critchell, Ed., American Society for Testing and Materials, Philadelphia, 1987, pp. 23-52.
16. Flueler, Peter, "Hail Impact Resistance of Ethylene Tetrafluoro Ethyl-

ene (ETFE) Membrane Structures," *Proceedings of the 22nd International*

Convention and Trade Show, RCI, Inc., 2006.

Vickie Crenshaw, PE, RRC, RRO

Vickie A Crenshaw, PE, RRC, RRO, is president of Crenshaw Consulting Group, LP, a roof consulting firm with offices in Albuquerque, Hobbs, and Las Cruces, NM, as well as Amarillo, TX. She is a registered professional engineer in Texas and a member of the National Roofing Contractors Association, RICOWI, RCI, and SPRI. She earned a bachelor's degree from Northern Arizona University. Crenshaw's company will celebrate its fifth anniversary in 2008 with 24 employees in four locations.



CENTER FOR ENVIRONMENTAL STEWARDSHIP LAUNCHED BY NRCA

With an understanding that the built environment faces long-term, irreversible market trends that demand a focus on environmental stewardship, the National Roofing Contractors Association (NRCA) has established the Center for Environmental Innovation in Roofing (CEIR), a separate 501(c)(6) organization, to promote the development and use of environmentally responsible, high-performance roof systems.

Bill Good, NRCA's executive vice president, believes that as the "green building movement takes hold, the important role of the roofing industry in providing durability, energy efficiencies, and environmental stewardship is not only significant, but potentially transformational."

Headquartered in Washington, D.C., the center's core purpose is to establish a forum that will draw together the entire roofing industry in the common cause of promoting and increasing the knowledge base of environmentally friendly roof systems. Although still in its early stages, the center has received substantial support from across the industry. To date, "Founding Member" financial commitments to the center include: Firestone Building Products, Carlisle SynTec Inc., Tremco, GAF Materials Corp., Sika Sarnafil, D.C. Taylor Co., Nations Roof, Advanced Green Technologies, DRI Cos., Tecta America Corp., and William Wallace Collins, LLC.

The organization's objectives include:

- Serving as a repository for information pertaining to energy, the environment, and roofing
- Coordinating and encouraging objective research

- Serving as a research link between academia and industry and providing a forum for ongoing peer review of such research
- Safeguarding jurisdiction to ensure new roofing products, systems, and services remain within the sphere of the roofing industry
- Expanding market opportunities
- Advocating scientifically on behalf of the industry
- Coordinating standards and codes, both in the U.S. and abroad

Driving the center's philosophy are three beliefs. First, the building industry will increasingly use "green" building materials – those that contribute to energy efficiencies and environmental stewardship. Second, this undertaking will succeed only if the entire industry acts in concert. And finally, the center aims to advance the dialogue of possibility. Rather than succumb to the instincts of command-and-control solutions that emphasize limits in the face of environmental and energy challenges, the center endeavors to advance innovative solutions and proceeds with the belief that the spirit of collaboration is a critical ingredient of innovation.

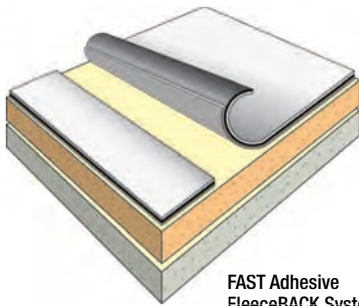
The center commenced operations on March 4. For more information about the center, contact Craig Silvertooth, the center's executive director, at (866) 928-CEIR or info@RoofingCenter.org.

WHEN ALL HAIL BREAKS LOOSE



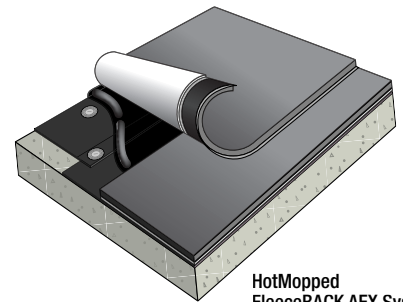
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FROM PAINTING TO POLITICS

BY KRISTEN AMMERMAN

From painting to politics, passion to performance – it was all covered in the opening ceremony of RCI’s 23rd International Convention & Trade Show in Phoenix, Arizona, on March 1, 2008.

In Ballroom B of the new Phoenix Convention Center, hundreds of the record-breaking (1,194) convention registrants gathered for the official kickoff celebration of RCI’s silver anniversary year. The lights dimmed, and a lone figure

announced that it was a gift to the RCI Foundation and would be auctioned off at the RCIF fund-raiser later in the weekend.

Entertain, Educate, and Inform

After shaking the paint-drenched hand of Dan Dunn, RCI Executive Vice President and CEO James R. Birdsong wel-

comed the audience and introduced Convention Committee Chairman David R. Hawn, RRC, CEM. Thanking the committee, staff, and volunteers, Hawn noted his committee’s goal was that the convention and trade show entertain, educate, and inform.



wandered down the long aisle, spied a blank canvas on the stage, and hurried toward it, paintbrushes quivering. Simultaneously using a brush in each hand, he dabbed and splattered, frenetically flung and twirled the canvas mounted on a swiveling stand, as stirring music played. Five minutes later, when he suddenly turned the canvas right side up, the audience broke out in applause as the unmistakable form of Ray Charles was revealed on the 7-foot canvas. The artist “signed” it with his palm print.

Dan Dunn has been performing his “Paintjam” to rave reviews across the world. The previous day, he had returned from engagements in Japan and Australia. The former caricaturist next painted Lady Liberty in 2-1/2 minutes, to the metallic chords of Jimi Hendrix’s rendition of “The Star Spangled Banner.” Afterwards, he

25 Years; 2,500 Members

Jim Birdsong then introduced “a man with passion and vision,” President Patrick Downey, RRC, CCCA. Downey spoke briefly about RCI’s 25 years and the “urban legends” that circulate about its early years. He noted that in a somewhat skewed take on the Biblical loaves-and-

noted that Bob was to have been the speaker at RCI’s Awards Luncheon, but that illness had precluded his attendance at the convention. A copy of the *RCI Silver Anniversary Report*, published to commemorate RCI’s 25 years, was made available for attendees to write messages to Bob, recovering at home.



David Hawn was 2008 Convention Committee chairman.

James Birdsong experiences “first-hand” Dan Dunn’s passion for paint.

FROM PAINTING TO POLITICS *CONTINUED*

President Downey thanked RCI's pioneers.

Downey noted the seamless coordination of convention events by the RCI professional staff and said, "If you want to have some fun, watch (RCI Director of Conventions and Meetings) Karen McElroy...She's like a duck, calm on the surface, but paddling away under the water."

In a preliminary introduction to RCI's keynote political speaker, Downey said, "We had a board meeting last Thursday. I saw one of the directors had on a Barack Obama button, a Hillary Clinton button, and a John McCain button. I thought, 'That's interesting!' Then I realized the guy was Canadian!"

Conventional Politics

Keynote speaker and noted political analyst and commentator Charlie Cook gave an entertaining and engaging analysis of the presidential nominating process as it was on March 1. "This has been the most volatile and turbulent presidential campaign since 1958," he commented. Admitting that he is "not by nature a very humble person," Cook stated that

"this year, every prediction's been wrong. ...For 50 out of 52 weeks last year, I just assumed Hillary would win the Democratic nomination," he said. And he took McCain for "politically dead" in 2007. "Insurgents don't usually win their party's nomination," he said of McCain.

Even so, he proceeded to predict, "I don't think Hillary can win by a big enough margin (in the remaining primaries) to close the gap enough to beat Obama." He further opined, "I expect this fall it's going to be a very close race between McCain and Obama. ...The GOP will have to crawl out of a hole to make it a close race, though. We're not dealing with a level playing field."

Cook noted that a recent Gallup poll showed 79% of Democrats were more enthusiastic than normal about the election and 45% of Republicans were less enthusiastic than normal. He also noted that in February, Obama raised 80% of what all GOP candidates combined had raised for that month. He opined that the Republicans could also lose five or six seats in the House and two or three in the Senate.

Noting the then-current argument between Obama and Clinton over Obama's campaign of "hope" and Clinton's emphasis on her "experience," Cook quoted Samuel Johnson, who once said "second marriages are the triumph of hope over experience." He called Obama's candidacy akin to a "cult of personality...an African-American J.F. Kennedy" who is "above partisanship appeal."

McCain, Cook noted, "is not a natural team player. ...The military put him in a single-seat fighter plane [in Vietnam] for a reason." Politics, like nature, however, abhors a vacuum, and "there was no one else to step in there." McCain can possibly appeal to the middle, however, whereas "conservatives hate Hillary Clinton. They don't hate Obama yet, but they'll get there." Obama is more politically liberal than Clinton is, but he is not currently perceived that way, Cook said. He also noted that running against a woman or an African-American requires the opposition to "be careful of undisciplined messages."

Democrats will have the House, Senate, and presidency if they win. "If I were a Republican," Cook declared, "I'd want to lose the presidency, because when it goes too far in one direction, mistakes will be



Charlie Cook



The rapt audience listened to Cook's analysis.

made," and "the pendulum will swing back....Forests need forest fires for regeneration...to clean out the dead wood."

Cook answered questions of the audience, after which the meeting was adjourned and the trade show declared open.

RCI CELEBRATES SILVER

BY KRISTEN AMMERMAN

RCI recognized its roots in a big way at the 2008 Awards Luncheon March 2 in Phoenix. All attendees received a commemorative silver anniversary paperweight and a copy of the 82-page *RCI Silver Anniversary Report* to mark RCI's 25th year since its charter in 1983. Many of the founding members were present, making the absence of the man who first launched the organization – Bob Lyons – all the more poignant. In his stead, Warren French read a message from Bob, who is recuperating in Florida from a heart attack. Attendees were asked to sign a copy of the *Silver Anniversary Report* to be sent to Bob. A revolving slide show of photographs from RCI's history was projected on screens as attendees enjoyed their meals.

In a fitting tribute to RCI's first executive director on the association's 25th year, the William C. Correll Award was granted for the very first time. Prior to its presentation, Bill Correll Jr. of Raleigh, NC, spoke briefly about his father and what the award meant to him and his mother, Dorothy. "I've seen you and watched you grow and mature over the years," said Correll, "but my mouth dropped when I heard there were almost 2,500 members now." Bill Jr. noted that in

1982, when his father was asked by Bob Lyons to serve as the fledgling association's executive director, the elder Correll had just retired as state architect for North Carolina. You could see "the gleam in Dad's eyes and the wheels turning in his brain" over his excitement about RCI, Correll recalled. "Mother groaned, of course, because she had thought he would finally have more time at home."

William Correll Jr., left, son of the late Bill Correll; and Justin Henshell, right, first recipient of the William C. Correll Award.



Below: John Shepherd receives the Michael DeFrancesco Volunteer of the Year Award.



Justin Henshell was presented with the award by Helene Hardy Pierce, representing the Jury of Fellows. Henshell thanked RCI and expressed his gratitude to the man after whom the award was granted, a "fellow architect." He thanked Dick Fricklas, Walt Rossiter, and Bruce Darling for having written "enough lies about me" to receive the award and his associate, Paul Buccellato, for his constant assistance.

Numerous other awards were presented by President Pat Downey. This year's Michael



Perusing the RCI Silver Anniversary Report.



Tom Hutchinson receives a Volunteer Award.

RCI CELEBRATES SILVER *CONTINUED*



Tim Barrett won a bet with Pat Downey, who had his payback framed.

DeFrancesco Volunteer of the Year Award went to John D. Shepherd for his untiring work in Region IV and his coordination of the Winter Technical Program in Hawaii.

The Horowitz Award was granted for the second time in three years to Joseph "Cris" Crissinger. This time, Crissinger was honored for his three-part series, "Considerations for Coastal Coatings," in the March, June, and July 2007 issues of *Interface*. Crissinger was unable to attend.

Thomas W. Hutchinson was presented with an Outstanding Volunteer Award by President Downey.

Tim Barrett received a framed dollar bill from Downey to cover a bet concerning



Doug Fishburn receives a certificate of appreciation.

tasks given to him as chairman of the Education Committee.

Also awarded certificates of appreciation by Downey were Doug Fishburn, Marc Caputo, and Bill Waterston (the latter was absent when photos were taken).

Don Bush Sr., Rick Craig, and Ed Arnold, respective chairmen of the RRC,

RRO, and RWC Committees, read the names of those who received new RCI registrations since the 2007 convention. There were 17 new RRCs (for a total of 342 active RRCs), 132 new RROs (of 675 total), and 2 new RWCs (27 total). The list and photos of those present at the convention will appear in an upcoming issue of *RCItems*.

Steve Alberico, chairman of the Document Competition Committee, read the list of Document Competition winners for 2008. First-, second-,



Marc Allaire is awarded a certificate of appreciation.

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RCI CELEBRATES SILVER *CONTINUED*



Steve Alberico chairs the Document Competition Committee.



Left to right: President Downey accepts commemorative award from Ontario Chapter President Allen Lyte, center, and Ontario VP Colin Donaldson.

and third-place winners, along with summations of their submitted projects, will appear in an upcoming issue of *Interface*.

Twenty-year pins were awarded to Thomas P. Billish, Michael D. Blanchette, Herbert J. Cannon, Raymond L. Corbin, William B. Early, Steven A. Greiss, Sam Huff, Edward J. Madden, R. James Seffrin, Thomas Lee Smith, Jeffrey L. Spady, Edward K. Takahashi, Terry Thone, Mark Vanderslice, and Thomas F. White.

Outgoing Region Directors Todd D. Spore, Region III; David A. Devine, Region IV; and Jean-Guy Levaque, Region V; were recognized with plaques by President Downey.

Ontario Chapter President Allen Lyte and Vice President Colin Donaldson presented a commemorative award to the association in honor of its 25th anniversary. The beautiful maple-leaf-shaped award was engraved by the chapter and presented to President Downey.

In conclusion, President Downey asked the following groups to stand up and remain standing:

1. Charter members
2. RCI past presidents

3. RCI past board of directors members
4. Committee members
5. Members of chapter boards of directors
6. Chapter committee members
7. The current RCI board of directors
8. Staff members

Downey noted that all of these, as well as those not in attendance or who have died are responsible for the RCI of today and “all

the efforts of the past 25 years.” He asked all those remaining seated to then stand. “Look around you,” he said. “Now you’re looking at the future of RCI.”



Pat Downey thanks outgoing Region IV Director Todd D. Spore, above, and outgoing Region V Director Jean-Guy Levaque, right. Outgoing Region IV Director David Devine was not present when photos were taken.



RCI CELEBRATES SILVER *CONTINUED*



Chicago Chapter, left to right: Presenter Bob Elsdon, VP Richard Koziol, and President Dennis McNeil.



Georgia Chapter President Eric Downey receives chapter award from Bob Elsdon.



RCI Secretary/Treasurer Bob Elsdon congratulates Western Canada Chapter VP Russell Hobbs, center, and Monty Klein, right.



Elsdon congratulates Ohio Chapter President Greg Nichols, center, and Treasurer Christopher Maher, right.

Secretary/Treasurer Robert Elsdon presented RCI Affiliated Chapter Awards for work in 2007. The chapters recognized were the Carolinas Chapter, the Chicago Area Chapter, the Georgia Chapter, the Ohio Valley Chapter, the RCI Ontario Chapter, the Southern California Chapter, and the Western Canada Chapter.



Allen Lyte, center, and Colin Donaldson, right, are president and vice president, respectively, of the Ontario Chapter.



Southern California Chapter, left to right: Carl Brown, 2007 president; Danny Westerfield, 2008 president; Paul Vanni, treasurer; Bob Elsdon; Gary Weaver, 2007 board member and incoming Region IV director; Ron Johnston, board member; and John Shepherd, board member. Not pictured: Moira Howman, golf chair; and Debra VanDerWeide.



Carolinas Chapter, left to right: RCI Secretary/Treasurer Bob Elsdon, 2007 Chapter President Chris Waites, 2008 Chapter President Allan Kidd, 2008 Chapter Vice President Bob Yoder, and 2008 Chapter Treasurer Jason Widener.

You could be published in these pages.

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STRUCTURAL ASSESSMENT AND REPAIR OF CONCRETE STRUCTURES

PRESENTED BY MATTHEW BANVILLE, PE • REPORTED BY BAS A. BASKARAN, PENG



As a professional structural engineer, Matthew Banville brought the wealth of his consulting experience on concrete to the roofing community. His one-hour presentation was well-organized into three major sections:

1. Concrete deterioration – how and why
2. Testing means and ways for field condition assessment of concrete
3. Techniques and methods to repair concrete structures

Not only did he present what worked in the field, but he also highlighted some of the theory/science

Matthew Banville, PE

behind those approaches.

There is no presentation on concrete without discussion of cracks. Banville categorized them, along with delaminations, spalling, water infiltration, corrosion, and freeze/thaw concerns. The audience easily followed his presentation due to the fact his PowerPoint® handout was distributed in addition to his paper in the *Proceedings*. Questions and discussions revolved mostly around the roofing applications of concrete, such as strength vs. peel resistance and bending vs. pullout resistance. There was also interest from the audience in quantifying the deck structural strength for reroofing applications.

BELOW-GRADE WATERPROOFING FAILURES AND SOLUTIONS

PRESENTED BY KARIM P. ALLANA, RRC, RWC, PE • REPORTED BY VICKIE CRENSHAW, RRC, RRO, PE

This well-attended session covered the history, mining process, and historical use of bentonite, centering on two commonly used waterproofing systems in construction applications.

The presenter focused on bentonite laminated to high-density polyethylene (HDPE) utilized in blindside applications. Karim Allana noted that bentonite systems in general are considered the most effective in such situations.

For those attendees with limited waterproofing exposure, the speaker enlightened us with a review of typical terms and language common in waterproofing, including lagging systems, soldier piles, blindside, witches' hats, and high-density polyethylene (HPDE).

Allana briefly discussed the differences between the two types of bentonite available: swelling sodium bentonite and non-swelling calcium bentonite. He explained that the mining of high-grade, commercial sodium bentonite comes mainly from the Black Hills of South Dakota and the Big Horn Basin in Wyoming. The other, calcium bentonite, not used in below-grade waterproofing, is mined from the Great Plains,

central mountains, and southeastern regions of the United States.

A review of various types of lagging systems followed, with an emphasis on the systems' effect for success with current



bentonite panel-based waterproofing systems. Attendees witnessed a review of the presenter's forensic case study involving a failed blindside waterproofing system at the second largest below-grade structure in northern California and its successful solution.

Allana covered the investigative paths taken in determining the cause and subsequent resolution. Pictures documented voids ranging from 1 inch up to 4 inches thick, cementing in the reviewer's mind and the minds of many others the importance of filling all voids and spaces between the lagging and soil.

The presenter closed by stating that the lessons learned during the investigative phase of the case study have resulted in changes in manufacturer application procedures, changes in guidelines for designers, and strengthening of the importance of quality assurance roles for roof observers.

Karim P. Allana, RRC, RWC, PE

ANALYSIS OF A ROOF FAILURE

PRESENTED BY JOHN WELLS, RRO • REPORTED BY MICHAEL L. WILLIAMS, RRC, RWC, RRO

John Wells provided an entertaining look into the investigation of a million-dollar roof failure on a new, high-end, high-rise condominium in Victoria, BC. The session began with a geography lesson as to the location of Victoria, BC, and why it is a windy place.

The presentation was in *Dragnet* format, with the names of the parties changed (or unnamed) "to protect the innocent." Also to protect the innocent, the investigator clearly stated that his company was not involved in the design or quality assurance of the original roof installation and did not have a working relationship with this roofer.

After "profiling" the roof, the preliminary assumptions were that its failure was caused by high winds, poor workmanship, and inadequate design to resist the uplift pressures experienced on the airfoil-shaped roof. The roof design documents indicated a TPO membrane fully adhered to a 1/2-in gypsum coverboard adhered to polyisocyanurate insulation on structural concrete deck.

"Just the facts, Ma'am." The investigation revealed key facts in the case:

- The roof experienced a major failure within the first six months and had to be stabilized with steel cables and 480 concrete pavers until it could be replaced in better weather. No leaks

recurred after steps were taken to secure the membrane.

- The gypsum coverboard was installed under a portion of the insulation but eventually "value engineered" out of the project.
- The insulation facer was saturated and partially delaminated throughout the roof.
- The drains did not have clamps below the deck to prevent lifting.
- The concrete deck was excessively rough, and the 4 x 8 sheets of insulation were poorly bonded to the deck.
- No vapor retarder was installed on the roof.
- Further investigation revealed that the failure occurred prior to a significant wind event and that the wind simply confirmed the membrane failure.

The investigation concluded that the roof was a total system failure due to inadequate design (combined with value engineering), poor workmanship, improper drain attachment, and the lack of a vapor

John Wells, RRO

retarder on the roof. The key clue in the case was the wet facer at locations away from the roof water infiltration. The building envelope played a part in the failure. The lack of a vapor retarder, combined with the large drain holes in the deck, allowed warm air from the interior to condense under the cold membrane, thus causing the wet, delaminated facer and resulting failure.

The question remains: Did the roof fail the building, or did the building fail the roof?



BUILDING ENVELOPE CONDITION ASSESSMENT AND COMMISSIONING

PRESENTED BY WILLIAM HICKS

REPORTED BY RICHARD COOK, RRC, RRO, RWC, CCCA, CDT, LEED®AP

With the latest requirements in retro commissioning and several major cities adopting façade ordinances to ensure structures are safe, monitored on a regular basis, and properly maintained, large-format, high-resolution digital images of the building envelope can be valuable tools.

These large-format digital images are then cross-referenced and indexed to provide a complete picture of the building façade. This tool, in the hands of a knowledgeable, experienced operator, can provide benefits in accessing, documenting, quantifying, and positioning the various conditions of a building.

This permits more accurate assessments, cost estimating, and conclusions, as well as providing an excellent foundation for maintenance and repairs.

This was an excellent presentation on using leading-edge technology to assist in addressing the building envelope.

William Hicks



INTEGRATING THIN-FILM PHOTOVOLTAICS ONTO BUILDING ENVELOPE SURFACES

PRESENTED BY MICHAEL GUMM • REPORTED BY CURTIS LISCUM, RRC, RRO



Michael Gumm spoke to a full house on the topic of Building Integrated Photovoltaics (BIPV). Timely and concise, the presentation included an overview of the current state of the art and material being used in BIPV. Topics included a discussion about the advantages and disadvantages of crystalline silicon, rack-mounted panels and thin-film laminated materials. The presentation covered the design

Michael Gumm

and installation of BIPV using thin-film technology over various building surfaces, including single-ply, modified bitumen, metal roofs, EIFS, concrete and masonry wall surfaces, and concrete surfaces such as parking lots and architectural elements. The presentation included a basic understanding of various financial options and the analysis and design of a BIPV system.

Mr. Gumm concluded by stating that the solar industry grew up largely independent of the traditional building-construction industry. New solar companies are just starting to explore the application possibilities. Today is a good time for our industry to start learning more about solar technologies and how these new technologies will affect the design and installation of the building systems with which we are familiar.

WIND-ROOF CALCULATOR ON INTERNET (WIND-RCI): FEEL THE WIND ON YOUR LAPTOP

PRESENTATION BY BAS BASKARAN, PHD, PENG • REPORTED BY ROBERT D. CARD, RRC, RWC

Wind-uplift forces are major contributors to many roof failures. To incorporate appropriate uplift resistance in roofs, designers using wind-load standards such as ASCE 7-05 and/or building codes such as NBC 2005 may derive anticipated load values by calculating a number of variables based on accumulated data and known factors. Appropriate securement of the roof system to resist anticipated uplift forces can be determined in this way. However, evaluating multiple design variations to determine optimal configurations may be difficult and/or time consuming. The typical process for determining anticipated wind loads comprises a multi step calculation involving several parameters.

A Web-based roof wind-load design calculator, Wind-RCI, is under development by the National Research Council of Canada in conjunction with the Special Interest Group for Dynamic Evaluation of Roofing Systems (SIGDERS), a consortium of industry partners (including the RCI Foundation) interested in roofing design. Wind-RCI combines the various calculation steps into a simple and intuitive Web-based format in which

data are selected from drop-down menus or entered into the provided spaces. The application assembles the appropriate data and performs the necessary calculations to determine anticipated wind uplift forces for the combination of variables presented by the user. Results are presented in a simple format, suitable for exporting or printing.

Wind-RCI provides a simplified and relatively intuitive process by which wind uplift values can quickly be determined for a given set of variables. However, Wind-RCI has certain limitations, and it remains incumbent upon the designer to utilize his or her experience and judgment in assessing factors not addressed by Wind-RCI and evaluating the data against available options in order to determine the prudent choice for a roof design.



Bas Baskaran, PhD, PEng

ENERGY-EFFICIENT ROOF DESIGNS WITH SINGLE-PLY MEMBRANES

PRESENTED BY MIKE ENNIS AND ANDRÉ DESJARLAIS
 REPORTED BY WILLIAM A. KIRN, RRC

Fundamental research was conducted at Oak Ridge National Laboratory (ORNL) to understand the effect of design factors of single-ply membranes on energy efficiency. The experimental design employed the Envelope Systems Research Apparatus at ORNL. The objective was to evaluate roof assemblies using a controlled internal environment while varying key roof assembly variables. Fourteen single-ply roof systems were evaluated with reflectivity varying from .865 to .075. Heat-flux transducers and thermocouples were outfitted in the system.

The results of the reflective single-ply systems showed there was some loss of solar reflectance as a function of aging and dirt pickup. ORNL reflectivity loss was 25-40% of initial reflectance, mostly due to organic growth. It was demonstrated that energy cost savings in warm climates can offset higher R-value insulation. A useful calculator for generating energy costs estimates can be found at www.ornl.gov/sci/roofs+walls/facts/CoolCalcEnergy.html.

Ballasted single-ply systems were compared to reflective membranes, where loading weights are above 10 psf of ballast and pavers. Conclusions were that the peak demand of ballasted systems is shifted to later in the day. After aging, highly ballasted systems had roughly equal reflectance to the white, single-ply control. Ballasted systems function via increased thermal mass. As thermal mass



Mike Ennis

increases, so do energy savings.

Conclusions from the insulated single-ply roofing systems study are to optimize insulation based on life cycle and energy costs. As energy costs increase, so do the benefits of increased insulation. Designers should design for today's requirements and the future needs of the client. Reflective roofing systems can meet owners' needs and building standards for such requirements as CA Title 24, LEED, ASHRAE, and EPA EnergyStar®.

Recommendations from the study are to use highly reflective or ballasted roof systems to enhance thermal efficiency of the building, to consider cleaning in high cooling climates to maintain high solar reflectance, and to use minimum levels required by ASHRAE 90.1.

André Desjarlais



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UNDERSTANDING INSURANCE EXPOSURE AND RISKS

PRESENTED BY DONALD STROUD AND LORIE BORRELLI • REPORTED BY COLIN R. DONALDSON, RRO

Don Stroud and Lorie Borrelli of Hartsfield and Nash Insurance Agency presented an educational program with an overview of insurance issues faced by consultants and engineers. The program started with a discussion regarding the different types of package policies available to RCI members. The discussion focused on the difference between the Business Owner's Policy (BOP) and the Commercial Package Policy (CPP). It was pointed out that there are significant variations between the BOP and the CPP. It was stressed that everyone should make certain that his or her policies do not contain "designated premises endorsements."

Next, a lengthy discussion ensued regarding the liability exposures created when owned, nonowned, or rented vehicles are used to conduct business on behalf of a business entity. One can create significant liability for oneself by having knowledge of poor Motor Vehicle Records (MVRs) and choosing to continue to let those individuals drive on company business. That same type of liability can be created when one simply chooses not to review Motor Vehicle Records. This "doctrine of negligent entrustment" cannot be avoided by any means other than reviewing MVRs and having a clearly written plan for not allowing employees with poor MVRs to operate vehicles on behalf of the company.

The discussion then moved to the use of rented vehicles and the gaps in coverage that may be on both commercial and personal automobile policies. It was suggested that the only way to properly cover all the rental car exposure was through the purchase of Collision Damage or Loss Damage waivers from rental car companies. The need for "drive-other-car" and "extended-nonowned-auto" endorsements was introduced. These two endorsements are very important in making certain there is no gap in coverage on a personal auto policy.

The next major discussion topic was commercial umbrella and commercial excess coverage. It was pointed out that in years past, a majority of companies purchased the commercial umbrella policies to meet contractual requirements, but it has now become more of an attempt to protect the assets of one's company. It was suggested at several points during the presen-

tation that companies consider taking higher deductibles on property coverage (business and personal property, automobile comprehensive and collision) and use the premium savings to purchase higher limits of liability or umbrella coverage. The commercial umbrella offers higher liability limits over general liability, auto liability, and employers' liability primary limits. Professional liability is specifically excluded from coverage under most commercial umbrella policies.

Discussion then moved to addressing the review of contracts, standard of care, and differences between the miscellaneous professional liability (MPL) and architects' and engineers' (A&E) professional liability forms. It was stressed that members should always consult insurance professionals with regard to the insurance provisions in contracts. Always engage in this consultation prior to signing the contract. This should be communicated to field personnel or anyone with authority to sign contracts for the organization. The insurance language contained in contracts is becoming more cumbersome every day, and without proper insurance coverage, one can find oneself in breach of contract before even beginning a job. The standard-of-care discussion spoke to the fact that even though we may differentiate between consultants and engineers with respect to standards, courts are going to hold all professionals to a standard of care as they see fit. We all provide professional services to clients and set a level of expectation for those clients based on our Web sites, proposals, and promises to deliver

professional advice. When those client expectations are not met (in reality or in perception), that client may choose to litigate against us. At that point, the only thing that matters is how the courts interpret our standard of care.

As the discussion moved to professional liability, a number of differences between the MPL and A&E forms were highlighted. It was pointed out that an unendorsed MPL does not include coverage for bodily injury or property damage, but it can be endorsed back on the policy, subject to certain restrictions. It was also noted that the MPL excludes coverage for construction management, mold and fungi, and engineering services (direct or subcontracted). The A&E

form automatically includes all of those coverages without limitation. The A&E form can be purchased by either engineers or consultants, and there is very little difference in premium when the additional A&E coverages are taken into account.

The presentation then focused on how "pay-on-behalf-of" or "indemnifying" language impacts one, as well as whether defense costs are

"inside" or "outside" the limits of insurance. There was a lively question-and-answer exchange throughout the entire presentation. The speakers then offered to travel anywhere in the country to present the seminar to chapters and to tailor their talk to local laws and regulations.



Donald Stroud

RCI: ROOFING AND ROOF CONSULTING FOR 25 YEARS

PRESENTERS: RICHARD M. FRICKLAS AND RICHARD P. CANON, FRCI, RRC, PE • REPORTED BY HELENE HARDY PIERCE, FRCI

With humor, wisdom, and candor, Dick Fricklas and Dick Canon treated attendees with glimpses of where we've been and what we've seen in the roofing industry over the past 25 years. Mr. Fricklas shared an historical perspective on the products and systems, their successes and failures, and how we as an industry have responded to many of the developments in the arena of product and system offerings. His insights brought to the forefront how the "lemons" of one era have ushered in the "lemonades" of the next and how far the products and systems being used today have evolved over several decades.

Dick Canon, one of the charter members of RCI, then related how a very small group of roofing consultants started with N.A.R.C.S. (the National Association of Roof Consultants and Surveyors) as an association to represent their profession and then evolved into the fledgling group called the Roof Consultants Institute, established in 1983. It was the dedication of these early visionaries to define an organization that represented the professional roof consultant, and Mr. Canon shared the history and development of RCI from its early years to an organization that today has approximately 2,500 members. Canon also highlighted the other industry associations and representatives that influence the roofing, waterproofing, and building envelope industries and whose interactions with RCI and its members have influenced the professional building envelope consultant.

Not content to rest on the accomplishments of the past 25 years, this session concluded with Fricklas and Canon providing their forward-looking perspectives - what might be the products and systems and who might we be interacting with in the next 25 years. As our industry refines its ability to define sustainability and performance, the insights shared provided advice and a pragmatism that were appreciated by all in attendance.



Dick Canon, FRCI, RRC, PE



Dick Fricklas



A packed house was amused and enlightened by the analysis of the past 25 years of roof consulting and roofing by two industry experts.

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LIFE-CYCLE ASSESSMENT AND THE LEED® GREEN BUILDING RATING SYSTEM

PRESENTATION BY JAMES HOFF, DBA • REPORTED BY BRIAN GARDINER, RRC, CCS



James Hoff, DBA

RCI convention attendees were taken back to the '70s by Dr. James ("Jim") Hoff. He related how the recent rush to develop new green building technology may result in a similar learning curve experienced during

the oil embargo of the 1970s. He identified Life Cycle Assessment (LCA) as a possible way to avoid the same type of building construction product mistakes made during that tumultuous period.

Dr. Hoff described how LCA is a better measure of a product's "cradle-to-cradle" and true long-term economic and environmental value than traditional Life Cycle Costing (LCC). Giving credit to durability along with its environmental impact, he

related that LCA could result in a better appreciation of products initially considered not as environmentally friendly as other choices that are perceived as "green." Discovering truly "green" products through

LCA would ultimately be in building owners' and public's best interests.

USGBC's (U.S. Green Building Council) current LEED rating program appears to give inadequate value to long-term performance of building products vs. apparent environmental benefits. Dr. Hoff stated that this is a similar approach to that of the 1970s, when a rush to adopt new, unproven technologies resulted in some product failures. He did indicate that USGBC is responding to industry concerns by incorporating LCA into the LEED program. He urged the building envelope industry to participate in the process, including environmental product certification programs, to discover truly sustainable products. Dr. Hoff stated that if the building envelope industry does not step forward, the consequences could seriously affect our industry, and ultimately, the performance of our buildings.

FLUID-APPLIED FLASHINGS FOR BITUMINOUS ROOF SYSTEMS

PRESENTED BY DOUGLAS STIEVE, RRC, AIA • REPORTED BY HELENE HARDY PIERCE, FRCI

Cold, fluid-applied waterproofing membrane systems have evolved for use as flashing options for difficult and irregular penetrations through roofing systems, and Douglas Stieve presented a thorough discussion of the materials and methods for this emerging product offering. Stieve first explained the history of fluid-applied waterproofing membranes and their performance track record and he then described how this technology is finding purchase as a solution for flashing difficult details commonly found on rooftops.

Most cold, fluid-applied flashing systems available in the U.S. utilize a polyester fabric for reinforcement and either a polymethylmethacrylate, polyurethane resin, or an aliphatic polyurethane for the waterproofing component. These systems are seamless and self-terminating, resist hydrostatic pressure, and often do not require the use of a counterflashing such as a rain hood. While their attributes may make them desirable, Mr. Stieve cautioned that they do have limitations and application requirements that must be met in order to perform

as expected.

Mr. Stieve provided straightforward guidelines for the installation of these types of flashings, complete with cautions of mistakes to avoid. Surface preparation is vital to providing a watertight flashing system that will perform, and there are published guidelines available that provide excellent resources for the roofing consultant and roofing contractor. In addition, training of the applicator presents its own requirements, since this type of application requires a skill set possessed more often by painters or those used to working with coatings.

Due to the availability of many different chemical formulations and differences in their application specifications, Stieve cautioned that the best way to mitigate installation problems is to adhere to the specific manufacturer's installation instructions. That being said, a review of typical installation steps and recommendations was provided with tactical advice on each key step. In

summary, these flashing membrane options can provide superior performance for difficult flashing details when the proper material is used over a properly prepared substrate and is installed correctly.



Douglas Stieve, RRC, AIA

ROOFTOP TAPERED DESIGN TO OPTIMIZE DRAINAGE POTENTIAL AND MEET BUILDING CODE REQUIREMENTS

PRESENTED BY THOMAS J. STOCK, RRO, CDT • REPORTED BY DENNIS McNEIL, RRC, CCS, RRO

Thomas J. ("T.J.") Stock heads Johns Manville's Design Engineering Group, which, among other responsibilities, includes designing tapered roof insulation, assisting in design layouts, and customizing details.

Before discussing some of the practical aspects of designing and installing tapered roof insulation, T.J. provided a general background of the code issues – primarily the 2006 IBC, which includes by reference FM standards – and those drivers that establish the minimum performance standards for wind uplift, fire resistance, positive drainage, and energy efficiency. Not surprisingly, in some instances it may be difficult to achieve positive roof slope for good drainage without running afoul of code and/or test standards relating to thickness, type of material, and method of installation. T.J. noted that in situations in which concerns exist for minimum versus average "R" value, as an example, an accommodation might be reachable under California Title 24 or directly with an FM engineer for an insured facility, in contrast to a strict IBC code interpretation.

Typically, manufacturers test their insulation components for rated assemblies with a minimum thickness on the deck of 1.5 inches (as in a mechanically fastened polyisocyanurate on steel deck). The use of tapered sumps of less thickness at interior roof drains is a reality; however, some jurisdictions might view this as a code infraction.

The quarter-inch-per-foot roof slope mandated by IBC for new construction will normally require some type of tapered insulation in valleys and behind curbs to provide adequate slope-to-drain ratio. While a four-way taper is the most efficient method to induce slope, it is costly, labor-intensive, and results in material waste. Flashing heights and other building features may also limit the available working dimension for tapered insulation buildup. A workable alternative is a two-way slope with saddles in the valleys. This results in a lower overall costs for both labor and material, and less material waste.

The most critical factor in optimizing positive slope in the valleys formed by the

intersection of the field of the roof with saddles is determined by the width of the saddles, which in turn results in the slope (rise over run) of the valley. The optimum saddle is square, with a length-to-width ratio of 1:1 in order to produce the greatest slope within the valley (for a 1/4-in deck slope, the slope within the valley of a 1:1 saddle is .117 in, whereas a 1:4 saddle would result in a slope-only .061 in). However, the geometry (as well as cost) of the slope situation may require a more narrow saddle width, such as 1:3 or 1:4. These may generally effect reasonably good drainage on the field of the roof and saddle surface but may not totally eliminate localized "birdbaths" in the valleys themselves. The use of a larger sump area surrounding the drains might help mitigate localized ponding when the more narrow saddles need to be used.

In summation, T.J. suggested working with a knowledgeable tapered insulation fabricator or supplier during the development of the working drawings in order to properly specify and design the necessary tapered insulation to meet the requirements of the owner, the applicable code, and the performance parameters of wind and fire resistance, energy conservation, and positive drainage.



Thomas J. Stock, RRO, CDT

THE ROOF AS AN AIR BARRIER

PRESENTED BY PETER KALINGER • REPORTED BY JASON BELLIS, RRO

In choosing a proper roof system, the designer must carefully consider many factors that influence the thermal and pressure gradients encountered in various roof systems.

Peter Kalinger has been the technical director of the Canadian Roofing Contractors Association (CRCA) and has over 35 years of experience in the roofing industry. He noted that careful consideration of where the plane of airtightness is to be located, physical properties of the roof membrane, all other assembly components, the anticipated interior conditions, and the exterior environment will help in deciding a proper roof system for any particular project.

Kalinger explained why air barriers are key components in the proper functioning of the building envelope and that the need to build an airtight as well as vaportight barrier above humid spaces is necessary to prevent moisture from accumulating within the roof assembly. Although most early work on air barriers focused on preventing deterioration of building components from condensation and moisture accumulation, recent interest by building professionals has been on the effectiveness of air barriers in reducing heat loss during the heating season and heat gain during the cooling season, resulting in significantly reduced heating and cooling energy consumption and costs. The principal function of an air barrier is to prevent both the infiltration of outdoor air into the building and the exfiltration of indoor air to the outside.

Although current air barrier standards do not distinguish between various elements of the building envelope, the primary focus is on the wall assemblies. For example, ASTM E 2357 contains three references to roofs, two of which address roof-to-wall tie-ins, while the other deals with the roof-to-wall interface. In contrast, there are 45

references directly associated with walls, with most discussions on whether roofs are just horizontal walls.

The risk of condensation resulting from exfiltration can be greatly reduced by positioning the air barrier on the warm side of the assembly. Even so, many roofs are still installed in which the exposed roof membrane functions satisfactorily as the air barrier, even though it is located on the cold side of the assembly.

Even if a roof membrane has the ideal properties of an air barrier, it does not nec-



Peter Kalinger

essarily mean that it will *work* as an air barrier. Depending on the configuration of the roof and the material properties, the membrane may be effective as an air barrier, preventing air from leaving or entering the building through the roof, but it may not inhibit the unwanted accumulation of moisture within the assembly due to air leakage, whether it be through large cavities in the roof space or in the pores of open-cell insulation.

To avoid building a vapor trap between a vapor-impermeable membrane on the warm side and an air- and vapor-impermeable layer on the cold side, one should install a Protected Membrane Roof (PMR). The roof would serve as both the vapor bar-

rier and the plane of airtightness. With the membrane being located on the warm side of the assembly, the risk of condensation is virtually eliminated.

Though PMR assemblies may be ideal with respect to the function of the air barrier, many other roof systems have been constructed without any condensation problems. Built-up roofing and modified bituminous membranes, for example, are built with components assembled tightly together, virtually eliminating any channel airflow, with the majority of moisture-related problems occurring during interply blistering or blistering between the membrane and the substrate. Testing on all roof systems is currently ongoing to quantify the actual air leakage rates of roof assemblies. NRC tests reveal that the air leakage rates of both assemblies that incorporated a vapor retarder fell below the maximum air leakage allowed.

At the conclusion of the seminar, Kalinger stated that when selecting the appropriate roofing system for a particular project, all of the performance requirements must be considered, including the system's role as an air barrier in the building envelope. The designer must carefully consider where the plane of airtightness is to be located, based on factors that will influence the thermal and pressure gradients encountered in service. Most roofing membranes, although located on the cold side of the insulation, will perform as effective air barriers, provided that all penetrations and openings are sealed; continuity is provided by tying in the roof membrane to other air barrier elements; vapor barriers are installed in mechanically fastened, flexible-membrane systems; and vapor barriers are installed in loose-laid and ballasted roofs.

WIND DESIGN – NOT JUST ANOTHER SPRI WIND/ES PRESENTATION

PRESENTED BY MIKE ENNIS, RRC, CDT AND ROBERT LECLARE • REPORTED BY HELENE HARDY PIERCE, FRCI

Since Hurricane Andrew in the early 1990s, there has been increasing attention focused on the performance of roofing systems during wind events and the importance of proper design to resist anticipated wind loads. During this same period, SPRI, the association representing flexible sheet roofing membranes and component suppliers, has worked to draft and canvass several consensus standards to assist designers with designing systems that will be code-compliant and will resist these anticipated wind loads. This session provided a practical discussion for each of the three ANSI/SPRI design standards.

After setting the stage about how roofs have shown less-than-stellar track records during wind events, Mike Ennis provided an overview of the ANSI/SPRI RP4 Wind Design Standard for Ballasted Single-Ply Roofing Systems and explained how use of this standard provides great assistance for the designer/consultant when specifying a ballasted system. He also discussed specifics of the standard that need to be considered and provided practical examples of putting the standard into practice.

Following the ANSI/SPRI RP4 discussion, Ennis provided information on the development and application of the ANSI/SPRI WD-1 Wind Design Standard for Low-Slope Roofing Systems, which is a practical application of wind design covering three main topics: general design considerations, calculating wind loads, and selecting the appropriate assembly.

Bob LeClare then presented information on the development and application of ANSI/SPRI ES-1 Wind Design Standard for Edge Systems Used with Low-Slope Roofing Systems. LeClare provided information on the latest revisions to this standard. Of great interest to attendees was LeClare's review of practical applications of this standard in use and how the application of the edge standard is being interpreted by building code officials.

This session certainly provided attendees with more than just a review of the ANSI/SPRI documents by being a thorough

review of the reasons for their development and the methods of their application.



Mike Ennis, RRC, CDT

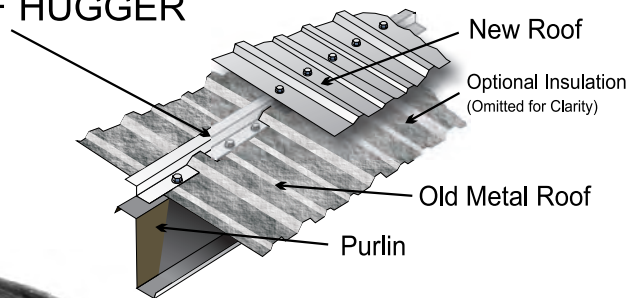


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AFTER YOU, WHO? PREPARING YOUR SUCCESSOR TO BE BOSS

PRESENTED BY ROGER S. ROBINSON, PHD • REPORTED BY JOHANN "JOHN" WILLERS, RRC, FRCI, PE

Professor Roger S. Robinson, PhD, provided some very common-sense ideas on how to transfer ownership of a business to its successor. His talk was based on succession of a family business; however, the principles apply to any business: one must plan.

Robinson has the credentials to speak on this topic, based on his education, teaching experience, and ownership of a business. In addition to teaching at the University of Phoenix, he volunteers to speak on succession and other business topics through an organization called SCORE (Service Corps of Retired Executives). SCORE has chapters in many cities and will consult for free on many topics.

Robinson explained that a business owner has four options: 1) live forever, 2) sell the business, 3) close the business, or 4) plan for succession. Statistics indicate that 50% of all businesses continue into the second generation, 13% into the third generation, and only 1% into the fourth generation.

Families are systems. They have a culture with rules, roles, and expectations. Businesses are systems. They also have rules, roles, and expectations.

Parental concerns in passing the business on include:

1. Does my child possess the temperament and ability necessary for business leadership?
2. How can I motivate my child to take an interest in the business?
3. What type of education and expertise will be most helpful in preparing my child for leadership?
4. What timetable should I follow in employing and promoting my child?

5. How can I avoid favoritism in managing and developing my child?
6. How can I prevent the business relationship from damaging/destroying the parent-child relationship?

Family and business overlap (see Table).

An owner must communicate that a son or daughter must earn his or her place in the business. The family member should be offered a position and not pressured or expected to join. The job must be a real position. The family member should meet the same standards of performance as others. The family member must earn credentials and should not expect that succeeding the owner is automatic.

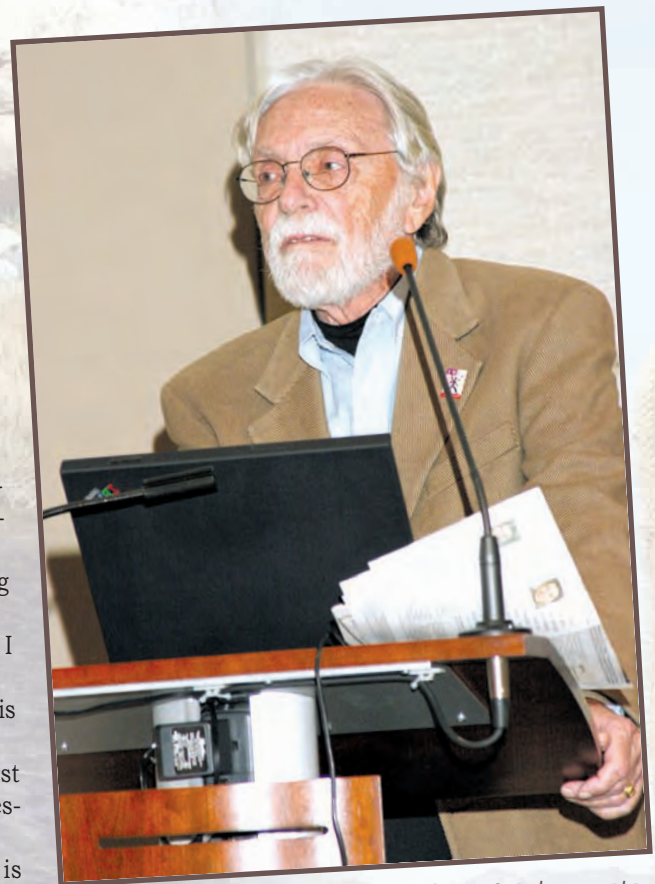
Before accepting the job offer, the successor should consider the following:

1. Can I work with my family?
2. Will my parent(s) relinquish control?
3. Can I deal with family conflicts in a professional manner?
4. Can I rise above being their child?
5. Is this the career I want?
6. Am I interested in this business?
7. Am I willing to invest the long hours necessary for leadership?

Outside experience is

valuable before joining the family business.

- Consider that August Busch IV worked in the warehouse driving a lift truck, shoveled wood chips out of beer tanks, worked as an assistant brewmaster, assisted the marketing manager, was in charge of the development of a new product, and was a product manager for Budweiser.
- Arthur Sulzberger, Jr., worked outside of the *New York Times* before joining, and he had nine jobs before



Roger S. Robinson, PhD

Family rules, roles, and expectations	Business rules, roles, and expectations
Emotion-based	Unemotional
Caring/nurturing	Task-based
Sharing	Reward performance
Lifetime membership	Perform or leave
Loyalty	Need for professional management

Table

succeeding his father, including reporter, advertising salesperson, night production manager, and corporate planner.

As the business owner, you must shift your focus from you as the builder of the business to you as the developer and coach for your potential successors. Developing successors is most effectively accomplished through a well-thought-out strategy that relates to the company's strategic plan.

Developing successors should include identifying competencies necessary to run the business, on-the-job training, key job assignments, training seminars, university courses, coaching and mentoring, contact with outside boards, and contact with other CEOs. Spend time talking about the history of the company, discuss the culture you have tried to create, route notes of business meetings to the successor, and involve the successor in key business events and family business meetings. Serve as a mentor, not as a parent. Delegate tasks to the successor, resisting the temptation to do everything yourself. Bring in outside mentoring if you are not good at mentoring, or select another key person to be a mentor.

Allowing only qualified, competent family members to assume leadership roles in the firm increases the value of the firm for all who have an ownership interest.

The process of succession usually takes about five years. Give the successor increasingly responsible assignments in different functions of the organization. The successor must prove himself or herself by genuine accomplishments and be given authority to make some key decisions.

What if there are multiple individuals who are potential successors? A team approach can be emphasized to ensure that they learn to work together. Consider that your successor may not be a family member. Develop alternate ways to the top. Create additional businesses. The worst case is that siblings will compete as rivals.

Consider a strategic planning retreat where you can identify strengths and weaknesses, review future market directions, review major issues facing the firm, look at teamwork and organizational effectiveness, consider the roles and skills needed for the future, and develop plans for successful candidates.

You must let go and move on. Plan for your financial security, set a date for retirement, realize that your lifestyle will change when you leave, don't plan on part-time retirement, identify competencies needed in order to trust a successor, vacation more, develop friends outside of business, and find outside interests. The lack of confidence in the ability or willingness of the successors to generate new business is often one of the primary reasons leaders will not consider retirement.

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ARE BALLASTED ROOF SYSTEMS COOL?

PRESENTED BY ANDRÉ DESJARLAIS • REPORTED BY WILLIAM WOODRING

André Desjarlais reported on the results of a three-year study to determine if ballasted roofs perform as well as white membranes with regard to energy savings. The study, which was cosponsored by SPRI, was conducted on the Roof Thermal Research Apparatus at Oak Ridge National Laboratory in East Tennessee.

Three different weightings of stone-ballasted roofs (10, 17, and 24 lbs/ft²) were installed next to a 24 lbs/ft² paver system, a black EPDM membrane, and a white TPO membrane. Data collection included continuous monitoring of temperatures, heat flows, and weather conditions, as well as periodic verification of solar reflectance and infrared emittance.

The white membrane gradually lost some of its reflectivity due to weathering, basically stabilizing by the start of the second year. All the

other systems did not show significant effects of weathering during the three-year period.

The cooling loads for the 24 lbs/ft² stone-ballasted and the 24 lbs/ft²

paver systems were approximately the same as the white membrane. The cooling loads for 10 and 17 lbs/ft² stone-ballasted systems were slightly larger than those for the white membrane. All the ballasted and paver systems performed significantly better than the black membrane in reducing cooling loads, and because of their thermal mass, they shifted the peak energy demand for cooling to later in the day.

The initial attempts to use the data collected to validate numeric models so that the performance of the ballasted and paver systems could be extended to other climates and roofing configurations were not successful, and further work in this area is planned.

Desjarlais also indicated that a reflective ballasted roof section was added 1-1/2 years after the study was started. A report on this may be available at the 2009 RCI convention.



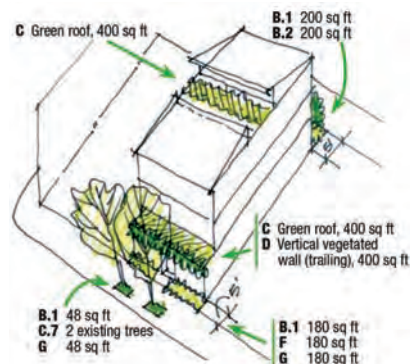
André Desjarlais

Seattle Adopts New Green-Factor Initiative

Seattle, Washington, has become the first U.S. city to adopt a “green area ratio” requiring developers and designers to incorporate green elements into their site designs. The Seattle Green Factor is modeled after similar programs in Berlin, Germany, and Malmö, Sweden. The initiative provides designers and developers with a “buffet” of landscaping options to use on their sites to reach a target set by the city. Options include such elements as vegetative walls, permeable paving, green roofs, and rain-collection systems.

The rules apply to residential buildings with more than four units and commercial structures of more than 4,000 square feet. Developers seeking permits must demonstrate that they will reach landscaping targets using the menu of “green” options before receiving their permits. A worksheet provided by the city calculates the value of each option.

The program is meant to “encourage builders to construct green roofs, vegetative walls, and other features that clean the air, insulate buildings, and ease the burden of Seattle’s wet climate on the city’s drains and creek beds,” a city official announced.



– seattlepi.com, *ENR*, and other sources

How do you plan on impressing your next roofing client?



and a hand held




Roof Express

COMMERCIAL WATERPROOFING SYSTEMS EXPOSED

PRESENTED BY BRENT ANDERSON, PE • REPORTED BY WILLIAM B. EARLY, RRC, CCS

Those who have never attended an auxiliary seminar at an RCI convention are missing what many consider a highlight of our annual get-together. Because of their placement outside of the regular schedule's limit of 90 minutes, these seminars' topics tend to be broader in nature and often focus on each presenter's experience in his area of practice. Such was certainly true of this session.

The presenter, Brent Anderson, has his "bona fides." He has a B.S. and an M.S. in civil engineering and is a registered professional engineer. He writes articles for professional journals and makes presentations at professional meetings. He consults on roofing and waterproofing. He writes specifications and inspects projects. On paper, he looks like an almost typical RCI member. What distinguishes him and made my Tuesday-after-the-convention worthwhile is his 25 years of contracting experience with concrete walls, concrete decks, and almost every imaginable type of waterproof-

ing system.

Mr. Anderson started by explaining the waterproofing professional's need to understand concrete, the



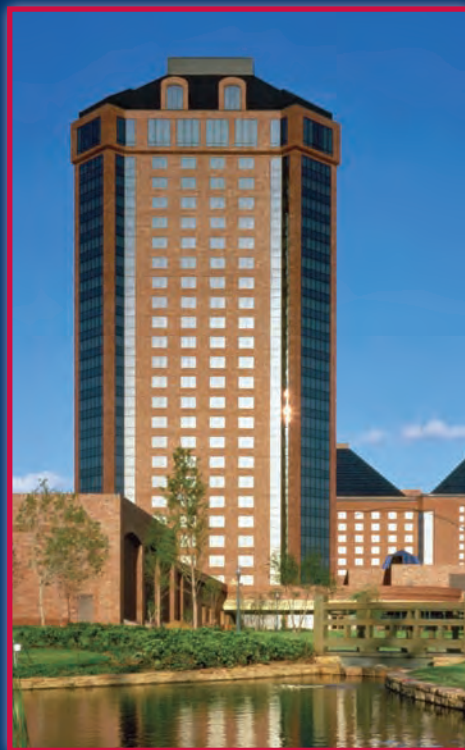
substrate over which most waterproofing is placed. He spent the majority of the morning walking the class through the jungle of waterproofing materials, discussing the history of many products, candidly identifying individual systems' strengths and limitations, and defining key terms along the way. Discussed waterproofing included:

- Cementitious systems
- Liquid-applied solvent systems
- Preheated liquid-applied systems
- Fully adhered sheet systems
- Loose-laid sheet systems
- Bentonite clay-based systems

The second part of the session focused on site evaluation, proper detailing, and appropriate specifying of various waterproofing systems. Mr. Anderson's extensive slide collection provided attendees with hundreds of examples of good practice as well as Murphy's Law at work.

Brent Anderson, PE

24th International Convention & Trade Show



March 12-17, 2009 • Hilton Anatole Hotel • Dallas, Texas

CONSTRUCTION DEFECT LITIGATION SUPPORT: BECOMING AN EXPERT WITNESS

PRESENTED BY MARK C. VANDERSLICE, RRC; MARK H. SAVEL, AIA, NCARB; AND RICHARD L. RIGHI

REPORTED BY WILLIAM A. KIRN, RRC

The presenters of this auxiliary session described the history of residential construction defect litigation.

Strict liability defines the defective product manufactured or installed.

The role of experts in the construction litigation process was reviewed. Rules of evidence for construction litigation provide definitions for experts as qualified by knowledge, skill, training, or education.

General classifications of construction defects were reviewed, which include their categories and influences, design, material construction, and geotechnical attributes. The number one construction defect is roofing, followed by flashings, foundations, walls, waterproofing, carpentry, fenestration, lath and plaster, painting, plumbing, and geotechnical.

Building subsystem defects by percentage were discussed. Roofs represent 12% of construction litigation. Flashing, underlayment, improper use of materials, improper slope for drainage, and improper installation of gutters and drainage are subcategories of roofing claims.

The litigation arena and participants were reviewed. Alternative dispute resolution (ADR) options, such as binding and non-binding arbitration and mediation, were described and compared. Litigation participants include plaintiff, defendant, and cross-defendants. Duties and responsibilities of each were reviewed. An overview of construction defect litigation begins with the attorney-expert relationship. The expert must be able to communicate effectively with the attorney, other experts, and the jury. All conflicts of interest must be identified and limitations of knowledge should be revealed.

Necessary skills of a construction defect expert were explored. The role of the expert in construction defects is to educate and teach. Training could be trade school or industry organization seminars; experience might be contracting, working in the trade, or as an engineer or manufacturer's representative. Core skills include testing and

investigating abilities, analytical skills, understanding the problem or complaint, identifying the mechanism of failure, determining the responsible parties, allocating responsibility, determining the extent of the problem, and establishing appropriate solutions. Communication skills include verbal, written, and presentation. Sources of documents include plans and specifications, manufacturers' requirements, building codes, industry requirements, and knowledge of construction sequencing.



Mark H. Savel, AIA, NCARB



Mark C. Vanderslice, RRC



Richard L. Righi

DOWNEY DEFERS TO WILLERS; COOK LEADS LISCUM

BY KRISTEN AMMERMAN

At the Annual Meeting of the Members of RCI, Inc., leadership passed from outgoing President Patrick Downey, RRC, FRCI, CCCA, to Johann "John" Willers, FRCI, RRC, PE. As Immediate Past President Gary Cattel rotated off the Executive Committee and its other officers moved up in the pecking order, Richard L. Cook Jr., RRC, RWC, RRO, CCCA, LEED AP, won out over candidate Curtis Liscum, RRC, RRO, "by a few letters." On taking office, Cook remarked, "I told Curt Liscum, 'Let the best man win.' Even so, I'm happy that he didn't."

President's Report

Prior to the passing of the gavel, Downey gave his report on the past year, noting the following:

- All RCI educational programs have been reviewed and Canadian comment has been recommended by a task force chaired by Graydon Hexham, RRO.
- Bob Elsdon, RRO, TQ, and Jean-Guy Levaque, RRO, made recommendations to the board that have resulted in policy changes for committees. All committees will have a staff liaison who is responsible for filing a Committee/Task Force Meeting Report with the executive vp and CEO within five working days of a meeting or conference call.
- The RCI *Manual of Practice* Committee has been revived with Don Bush Sr., FRCI, RRC, as its chairman. Members (who include Warren French, Rick Craig, and Ed Arnold) will build the long-awaited publication around the role delineations created by the examination committees. Staff liaison is Walt Rossiter.
- Downey expressed pleasure at the loss of his bet with Education

Chip Ward and Art Sark take their turns at the mic.



Above: Incoming President John Willers practices his left-handed, backwards signature in anticipation of monthly Interface Presidents' Messages.



Curt Liscum, left, congratulates Rick Cook on election as Executive Committee secretary/treasurer.

Chairman Tim Barrett, RRC, CDT, that the committee would be unable to complete its goals this year. He noted that the Green Roofing Module is "substantially completed."

- A Planning for Growth Task Force, chaired by John Willers, has been mapping out the next 10-year

plan.

- A New England Chapter is being developed and will be the first RCI chapter to emerge as a "building-envelope-focused" chapter.
- Leadership development efforts will continue with Web-based informa-



DOWNY DEFERS TO WILLERS; COOK LEADS LISCUM *CONTINUED*

tion sharing for the association's 15 chapters.

First Vice President's Report

John Willers briefly reported that region and chapter activity and growth are "healthy," and credited Region I Director Peter Monterose with having spearheaded the development of the New England Chapter.

Second Vice President's Report

David Hawn, RRC, CEM, Convention Committee chairman, thanked his committee and the staff, particularly Karen McElroy, for their excellent work. As of his report, there were a record 1,194 registrations, representing 511 consultant members. The trade show attracted a record number of exhibitors, and all sponsorships were sold. The golf tournament, chaired by Arthur "Chip" Ward, RRC, was completely sold out as well.

Secretary/Treasurer's Report

Bob Elsdon, RRO, announced, "We have money." After considerable applause, he added, "A few short years ago, we were facing a deficit....It's a great time for RCI."

RCI Foundation Report

RCI Foundation Chairman Joe Hale, FRCI, reported that the Foundation is "healthy." He thanked members for "putting up the first \$150,000" raised by the RCIF; since then, the "industry and volunteers" have brought the total of pledges and donations close to \$1,000,000. The board, he noted, is "one of the finest boards I've worked with" and has a "great cross-section of members including three Canadians. They always sit together and that bothers me," he joked. "We owe a great deal to [FRCI Secretary/Treasurer] Helene Hardy Pierce and her employer (GAF, sponsor of the previous evening's fundraiser) for supporting us," he added, "and to CJ Walters, foundation developmental officer."

Elections

Nominating Committee Chairman Art Sark introduced the two candidates for secretary/Treasurer, and both Rick Cook and Curt Liscum gave short summations of their positions. Following tabulation of the votes and announcement of the winner, Cook



"We have money," Bob Elsdon said.

shook hands with his opponent. Sark noted that there were a record number of votes cast: 407.

Member Issues

An open forum was granted, and sever-

al members took the microphone to express themselves.

Carl Brown, RRO, announcing himself as from the "People's Republic of California," informed the membership that SB-355 is a bill now in committee in California that would require anyone providing "consulting" or "project management" services to obtain and keep a California Contractor's License. This would cost considerable money, time, experience, and retraining for those consultants who do not now have a license, and would put many out of business. He asked for the support of the organization as a whole, noting that California's laws often "flow downhill" to the East. The SoCal Chapter has hired a lobbyist at \$30,000 to fight the bill, Brown reported. Joe Hale called the California issue "serious" and asked that contributions be made to help in the fight against such a bill.

Tim Ford, RRO, said he would like to see *Interface* issues made available and searchable online. "We use these articles in educating our clients," he noted. Pat Downey stated that there have been lengthy discussions by the Executive Committee concerning the current status of RCI-



Attendees and the board listen to a member's comments.

DOWNEY DEFERS TO WILLERS; COOK LEADS LISCUM *CONTINUED*



James Birdsong gives his State of the Association report.

Mercury, where such articles were to be available, and the future of the Web site is being carefully examined. Richard Norris expressed the expectation that members will be asked for input on the Web site.

Bob Martin, FRCI, RRC, asked that members consider leaving endowments to FRCI in their wills. "Joe has done a great job getting money out of every living person. I think it's time for you to go after dead people," he joked.

One member asked why nonmembers can earn the RRO, RWC, and RRC credentials. Registration Committee Chairman Warren French replied that RCI is a "big tent" organization that believes it cannot deny people who meet the requirements of the credentials if they abide by RCI's Code of Ethics. To do so, he noted, could also be a restraint-of-trade issue.

Art Sark expressed the belief that when local chapters give RCI-sanctioned and course-specific seminars, they should receive 70% of the money received and the international orga-

nization should get 30%, not the other way around, as was then the case. (The board ruled at convention that the split forthwith will be 50/50.)

Sark also announced that a new venture spearheaded by Chip Ward and the Georgia Chapter will be the presentation (with the help of Director of Educational Services Jerry Teitsma, RRC, CCCA) of a steep-slope and a low-slope roofing class at Southern Polytechnic State University. There are four educational units, Sark noted, that can be taught anywhere. "They are available for construction management curricula at all universities. That takes RCI out into the field, planting seeds for RCI."

Sark also suggested that chapters be given the chance to host conventions.

Executive VP & CEO Remarks

Executive VP and CEO James R. Birdsong gave his annual report, noting a 9.2% growth of membership in 2007, to a total of 2,404 members. The annual budget for FY 2007 was \$2,508,357. In 2007, the association hosted ten different educational offerings at 14 locations with just under 1,000 students and provided 13,500 hours of continuing education. The 200 barrier for attendance was broken at RCI's building envelope symposium in 2007, and there

were 1,128 attendees at the 2007 convention and 1,192 at the 2008 convention. Birdsong lauded the "excellent board, backed up by an equally excellent professional staff" and asked the latter to come to the front of the room for recognition.

Pat Downey then introduced the incoming president, pinning him with the president's pin. Downey, in turn, was pinned by David Hawn with a past president's pin, and the gavel was surrendered to John Willers.

Incoming President's Remarks

John Willers' first comments were, "Eight percent of our total membership is here today. See what a free lunch will bring!" He then gave a few facts about himself, including that he is the youngest of five children born to German immigrants, grew up in Iowa, and knows how to milk cows by hand. He said he is right-handed, and then claimed he could write his signature backwards with his left hand. He proceeded to prove such a fact by demonstrating it on a large piece of glass held up by Pat Downey and Bob Elsdon.

He quoted Max de Pree, a businessman recognized for his people-centered management, who said, "The first responsibility of a leader is to define reality. The last thing is to say thank you. In between, the leader is a servant."

Willers defined reality as it relates to



The RCI staff was recognized. Left to right: Walt Rossiter, Kristen Ammerman, Catherine Moon, Richard Arriola, Micki Kamszik, William Myers, Karen McElroy, and Jerry Teitsma. Absent when the photo was taken: CJ Walters. Latrelle Dechene and temps Maggie Lockemer and Eugene Landsman were holding down the fort back in Raleigh.

DOWNNEY DEFERS TO WILLERS; COOK LEADS LISCUM *CONTINUED*



The 2008-2009 RCI, Inc. Board of Directors. Seated, left to right: Executive Vice President and CEO James R. Birdsong; First Vice President David Hawn, RRC, CEM; President John Willers, FRCI, RRC, PE; Second Vice President Robert Elsdon, RRO; Immediate Past President Patrick Downey, RRC, FRCI, CCA. Standing, same order: Region I Director Peter J. Monterose; Region V Director Brandon Hexham, RRO; Region IV Director Gary Weaver, RRO; Secretary/Treasurer Richard Cook Jr., RRC, RWC, CCS, LEED AP; Region II Director Jon-Eric Macias, RRC, RRO; Region III Director Thomas Gernetzke, RRC, RWC, RRO.

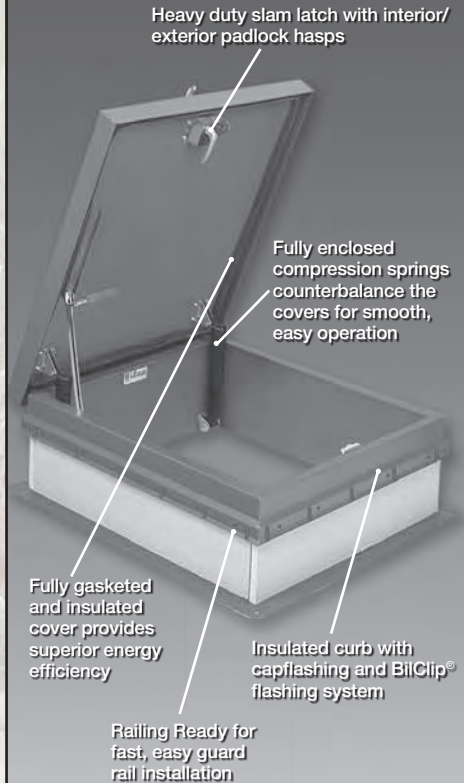
RCI, noting RCI's expansion from its roots in roof consulting to a broader encompassing of the entire building envelope. He noted the expansion of chapters and increased use of Internet technologies to disseminate RCI's goals.

Willers said RCI members should agree on what "the building envelope" means. He spoke of the Growth Task Force made up of 14 members, four staff, and one "outsider" that has been created to plan for RCI's next ten years. He noted that the association is

growing, financially healthy, and that the staff is available to assist with serving the membership, though the "lifeblood of your volunteer efforts" is still required. "Max de Pree also stated, 'We cannot become what we need to be by remaining what we are.'"

In conclusion, Willers reiterated, "Reality has been defined, and at next year's convention in Dallas, Texas, it will be time for me to say thank you. In the meantime, I look forward to serving each of you during the next twelve months."

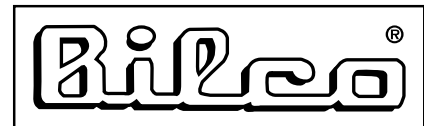
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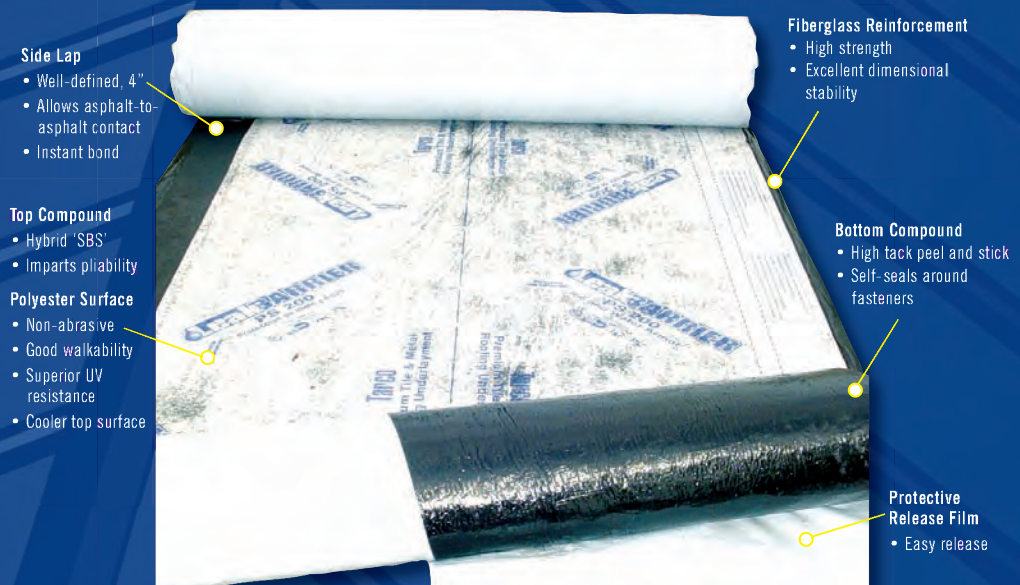
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DOWNEY HOSTS FESTIVITIES

BY KRISTEN AMMERMAN

Outgoing President Patrick Downey was feted and gifted by colleagues, and revelers laughed, feasted, and danced away the evening at the President's Reception and Banquet on March 3 in Phoenix.

Beginning with a cocktail reception complete with a mariachi band, the attendees socialized prior to being seated for dinner.

After the meal, James Birdsong thanked sponsor Firestone Building Products and then called forward Gary Cattel, David Hawn, John Willers, Mark Caputo, Eric Downey, Albert Duwyn, Todd Spore, and President Downey.

Past President Gary Cattel said, "I'd like to share a story on how well Patrick runs the Executive Board meeting. ...But I don't have any." He then presented Downey with a plaque with a gavel on it in honor of his service. Second Vice President David Hawn presented Downey with a gift from the board covered in a brightly-wrapped box. Downey playfully swung the box like it was a golf club before opening it and revealing a driver.

First Vice President John Willers noted, "Pat tells me that when he gets home from work, he likes to have a drink of Jamison whiskey, light up a cigar, then grab a few tennis balls and throw them for his border collie." Willers then presented Downey with an "emergency kit" he had prepared himself. It was a shadowbox with a bottle of Jamison, a cigar, and a package of tennis balls behind glass.

Next, Mark Caputo, a 30-year friend, said that when he was asked by staff members if he could think of a good gift for Pat, he thought of their favorite book. "But there's a catch to it," he noted, handing a box to Downey. Downey opened the box and displayed a first edition of *Catch 22*.

Eric Downey, Pat's son and current president of the Georgia Chapter, read a long commendation letter from Mike Clark, immediate past president of the chapter, to Pat, the



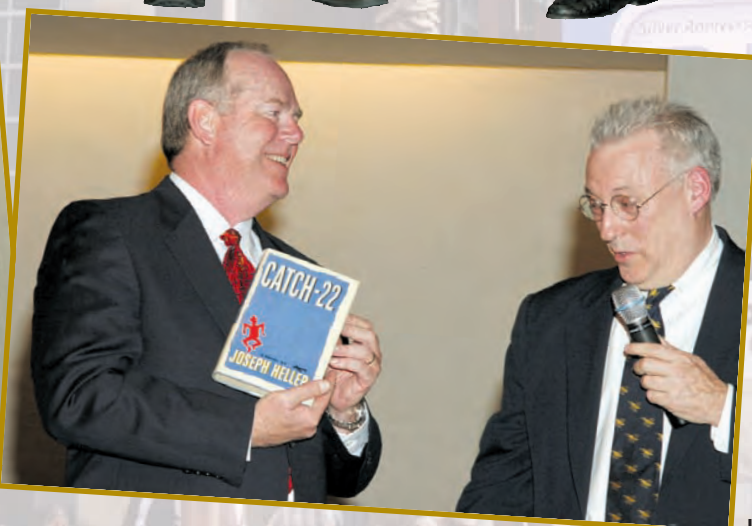
A mariachi band played at the reception.



Above: Gary Cattel presents Downey with a gavel plaque.

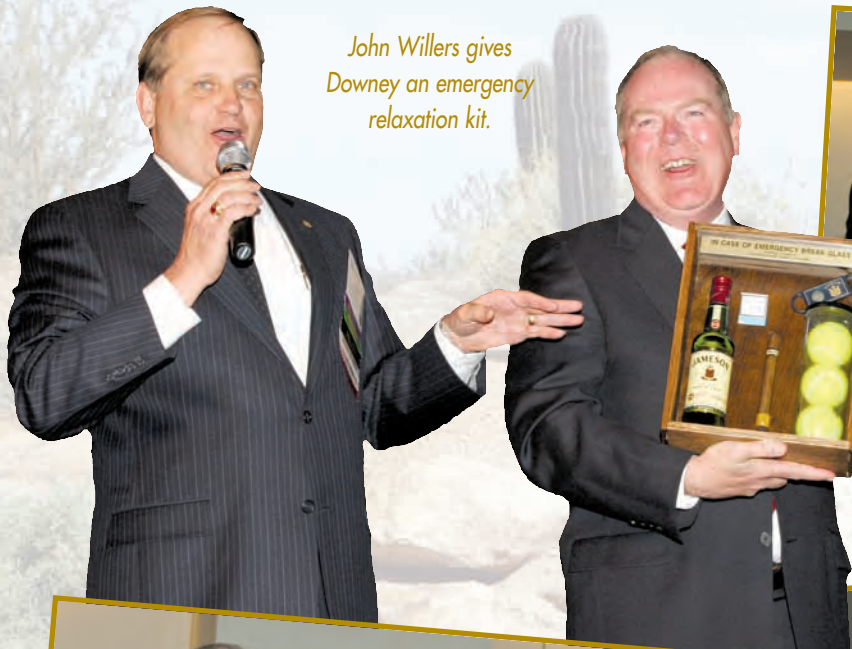


Downey takes a swing with gift presented by David Hawn.



Far Left: Could it be? Left: It's a first edition of Pat's favorite book, Catch 22.

DOWNEY HOSTS FESTIVITIES *CONTINUED*



John Willers gives Downey an emergency relaxation kit.



Eric Downey reads a lengthy commendation from the Georgia Chapter.



Albert Duwyn presents Pat Downey with the Jury of Fellows member plaque.



The audience appreciated the comics.

founding president of the chapter.

Lastly, Jury of Fellows Chairman Albert Duwyn presented Pat with a plaque naming him as the newest member of the RCI Jury of Fellows.

Todd Spore presented First Lady Donna Downey with a bouquet of roses.

Pat thanked everyone and noted that for the past year he had been writing lots of President's Messages that had to do with how volunteers can receive from giving. He concluded, "I can't say how much I've

received. Thank you." Following the tributes to Downey, the comedy group LaughingStock performed several well-researched creative skits germane to the roofing and building envelope industry, concluding with a participatory skit in which members pretended to be buzzers, prizes, and the orchestra

during a make-believe, Jeopardy-type gameshow on RCI-related topics.

Sample questions were:



"I'm an RRO. I don't fix it, I just notice it!"



Donna Downey and Jon-Eric Macias anticipate being live buzzers as comedians Brendan Murphy and Lesley Abrams anticipate the question. Macias's buzzer squawked, "Arriba!"

DOWNEY HOSTS FESTIVITIES *CONTINUED*



David Armstrong, Carol Hawn, and Warren French become the "orchestra," playing air guitars for the gameshow.

Dancers cut the rug.



- Question: What is the difference between a water-resistant and a waterproof roof?
Answer: About half a million dollars.
- Question: What's the major requirement for a local building inspector?
Answer: A pulse.
- Question: What color is a "green roof?"
Answer: White? Blue? Yellow? Red?

Following much laughter, the band Connection struck up the music and partiers began to dance into the night.

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TRADE SHOW WELCOMES RECORD NUMBER OF VENDORS; 70% OF 2009 BOOTHS SOLD

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RCI broke another record for number of trade show

vendors this year with 130. The show was open for two days and included a reception on Saturday and free continental breakfast on Sunday. Attendees earned CEHs for attending and also had a chance to win cash from RCI and valuable prizes from various vendors. Seventy percent of the trade booth slots for 2009 are already sold.

CONVENTION PLATINUM SPONSORS

GAF Materials Corp. Left to right: John Willers, Gary Cattell, Bob Elsdon, David Hawn, Pat Downey, Helene Hardy Pierce, Joseph Strickland, Bill Woodring, John Pohorsky, Alan Minker, and Phillip David.



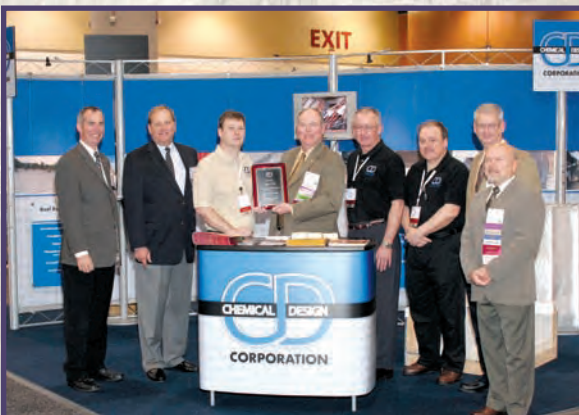
Tremco, Inc. Left to right: Gary Cattell, John Willers, Paul Mitchell, Pat Downey, David Hawn, and Bob Elsdon.

Thaler Metal Industries, Ltd. Left to right: Gary Cattell, John Willers, Frank Vance, Gena Norris, Joe Magistrale, Pat Downey, David Hawn, and Bob Elsdon.



Georgia-Pacific Gypsum. Left to right: Bob Elsdon, John Willers, Reinhard Schneider, Dan Caruth (back), Pat Downey, Jeff Herrmman (back), David Hawn, Gary Cattell, John Hurst, and Chris Davidson.

Firestone Building Products. Left to right: Riaz Hasan, John Willers, Pat Downey, Phil LaDuke, Michael Zunk, Pat Marcouiller, David Hawn, Marco Sieber, Gary Cattell, Terrance O'Connor (back), Bob Elsdon, and Rick Kruger.



Chemical Design Corp. Left to right: Gary Cattell, John Willers, Kevin Sosebee, Pat Downey, Tom Shackelford, Randy Harris, David Hawn, and Bob Elsdon.

CONVENTION PLATINUM SPONSORS

Johns Manville. Left to right: Sue Baumberger, Bob Elsdon, John Willers, Katherine Uglow, Sarah Tholen, Charlie Williams, T.J. Stock, Gary Cattel, Pat Downey, David Hawn, Brian Dembowski, Steve Crone, and Jim Arnold.



Siplast. Left to right: Peter Hicks, John Thomas, Sheila Cockrell, Tim Kersey, Pat Downey, Jim Mullenhoff, Randy Froelich, Gary Cattel, Ken Wolford, John Willers, David Hawn, Wes Burton, and Bob Elsdon.



Sika Sarnafil, a division of Sika Corporation. Left to right: John Willers, Mark Stoff, Paul Phillips, John Skinner (back), Stanley Graveline, Glenn Szalay (back), Pat Downey, Don Moore, Scott Krug, Gary Cattel, Bob Elsdon, and David Hawn.



Carlisle SynTec, Inc. Left to right: John Willers, Pat Downey, Gary Cattel (back), Janal Mack, Brian Chamberlain, Jared King, David Hawn, and Bob Elsdon.



CONVENTION GOLD SPONSOR

Liquid Plastics, Inc. Back, left to right: Tim Harthung, Sarah Caton, John Willers, David Hawn, Gary Cattel, and Terry Ping. Front, left to right: Pat Downey, Frank Dippolito, and Bob Elsdon.



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A d d i n g V a l u e t o F a c i l i t y M a n a g e m e n t

REGION I

PETER J. MONTEROSE • REGION I DIRECTOR

Region I held its meeting Saturday, March 1, with 16 members in attendance.

Curt Liscum, candidate for RCI secretary/treasurer, spoke on his goals for RCI and requested the support of the region during the upcoming elections.

There were discussions, led by Tim Barrett, regarding RCI's educational programs. Tim reinforced the role of education to RCI members and how the programs improve each member by keeping him or her current with roofing and building envelope issues.

Pete Monterose requested that each attendee send him names of state agency officials who would be interested in being liaison members between their state agencies and RCI. The purpose of the liaison is to make government agencies aware and informed about RCI and its role in building envelope and roofing issues. The liaison would be a non-

voting member and would receive *Interface* and information about RCI programs and educational seminars.

The next Region I meeting will be in Revere, Massachusetts, on April 25, 2008.



Region I Director Pete Monterose

Pete Monterose informed the attendees that he is in his final year as Region I director. If anyone is interested or knows someone who would like to run for the position, let him know. The new region director will assume directorship at the end of the 2009 convention in Dallas.

It has been a pleasure and honor for him to serve as Region I director.



Region I attendees

REGION II

JON-ERIC MACIAS, RRC, RRO • REGION II DIRECTOR



Charter member Art Sark speaks at the Region II meeting as Region II Director Jon-Eric Macias looks on.

There were 32 attendees at the RCI Region II meeting. Director Jon Macias gave a short summary of the positive position of RCI at its 25th anniversary mark. The need to establish a government liaison within each chapter to ensure RCI is recognized within governmental bodies, building code bodies, and their respective officials, was noted. All attendees were reminded

to attend the July 31, 2008, Region II meeting in Charlotte, NC. In addition to the above, chapter presidents were asked to briefly outline last year's successes as well as their 2008 meetings/events calendars, which included the following:

Carolinas Chapter

Chapter President Allan Kidd's 2007 summary included three chapter meetings and a golf tournament, which enabled the chapter to donate funds to several meaningful causes. Meetings and a golf tournament in September are being scheduled for 2008. Kidd expressed the chapter's desire for additional building envelope educational opportunities as well as continued educational sessions on roofing.

Region II continued on next page

REGION II CONTINUED

JON-ERIC MACIAS • REGION II DIRECTOR

Florida Chapter

Chapter President Wayne Heironimus's 2007 summary mentioned the formation of the chapter's first branch in the Florida Panhandle, led by Pensacola Chapter Liaison Dale Purvis. The branch has had early success, as exemplified by 24 attendees at its first meeting and 30 at its second. Heironimus also outlined the Florida Chapter's vision to form five strategically located branches throughout the state, thus providing more opportunities for member participation statewide. Additionally, the Florida Chapter's current board of directors is comprised of a diverse group that includes a manufacturer's representative, an architect, contractors, and two consultants.

Georgia Chapter

Chapter President Eric Downey's 2007 summary included mention that 10% of all chapter profits are being forwarded to the RCI Foundation and that the chapter's Web site is up and running. Additionally, 2008 chapter meetings with educational opportunities and a golf tournament have been scheduled. Downey encouraged all chapter

presidents to attend the RCI Leadership Program, as it provides useful insights for all chapter board members.

Mid-Atlantic Chapter

Chapter President Frank Painter's 2007 summary included mentioning that the chapter's Web site is up and running and that members intend to produce a newsletter. Painter outlined upcoming chapter meetings, including educational opportunities and a golf tournament. Painter expressed the chapter's desire to include additional water-proofing educational sessions at chapter meetings.

Special thanks to all past chapter presidents and their boards of directors, as well as RCI charter members in attendance: Arthur Sark, RRC, FRCI, and Roger Staley, RRC.



Members of Region II listen to chapter reports.

REGION III

TOM GERNETZKE, RRC, RWC, RRO • REGION III DIRECTOR

Region III members met at the beginning of the 23rd International RCI Convention and Trade Show. Todd Spore, outgoing Region III director, began the meeting by introducing Curt Liscum, RRC, RRO, candidate for RCI secretary/treasurer. Curt challenged members to become more active with

code bodies and associations outside RCI and to "stand up and speak our mind" in order to have our interests in the industry heard.

Next, Todd introduced Tom Gernetzke, RRC, RWC, RRO, the incoming Region

III director. Todd emphasized the need for volunteers in Region III, given the geographical size and number of members. Todd further emphasized the importance of chapter development and par-



Members of Region III



Tom Gernetzke, Region III director

Region III continued on next page

REGION III *CONTINUED*

TOM GERNETZKE, RRC, RWC, RRO • REGION III DIRECTOR

Participation. Chapters will be the future of RCI by providing education, marketing, and representation to members on a local and regional basis.

Tom and Todd began and led a discussion about RCI-Mercury. Region III members generally agreed it is difficult to find any information on the Web site and the site is difficult to use. They also agreed it could be a valuable tool, especially as an information archive. It was suggested that RCI consider partnering with other organizations, such as NRCA, SPRI, etc., to improve the site.

The next Region III meeting will be held November 11-12, 2008, in Grapevine, TX, in conjunction with the MRCA convention. The theme for presentations will be Case Studies of Roofing, Waterproofing, and Exterior Wall

Defects and Rehabilitation.” Any member interested in presenting a 30- or 60-minute case study presentation should contact Tom Gernetzke at 608-240-9110 or e-mail him at tom@facilityengineeringinc.com.

The development of an RCI-affiliated chapter in Dallas will be discussed during the Region III portion of the meeting. In addition to the technical program on the 12th, members are encouraged to participate in a junior consultant program the evening of November 11. This will include a reception, dinner, and speaker on a non-technical topic. Possible speaker topics may include business development, insurance, sales and marketing, project management, or others.

Members discussed the development of a Region III Web site and/or blog for infor-

mation and calendar dissemination, as well as to post technical questions to other members. Most members agreed a blog would be an excellent opportunity for information dissemination and technical problem solving.

Finally, members discussed the possibility of a sporting clays tournament at the next convention. Most agreed it was a good idea. Anyone interested in a sporting clays tournament, please contact Tom Gernetzke.

On a personal note, I look forward to being your Region III director and am excited about beginning my term. Please do not hesitate to contact me with any questions or comments you have regarding RCI, Inc. My e-mail address is tom@facilityengineeringinc.com; my office phone number is 608-240-9110.

REGION IV

DAVID DEVINE AND GARY WEAVER • REGION IV OUTGOING AND INCOMING DIRECTORS

Twenty-three Region IV members were in attendance at the annual convention. Most were from California and Washington, with one member attending from Arizona. Washington’s Puget Sound Chapter was well represented, accounting for approximately half of the attendees. They are supporting growth, with plans for a Web site and a number of educational events scheduled for the area. The convention culminated in the organization of a new RCI Arizona Chapter. This group should be a strong addition to Region IV.

Outgoing Director David Devine asked for support in forming a Northern California Chapter and discussed the role of the new director to help promote chapters and sub-chapters in Region IV. Gary Weaver, who had also attended the national board of directors meeting the day prior, answered questions and presented his objectives for the next two



Outgoing Region IV Director David Devine, right, speaks as incoming Director Gary Weaver listens.

years to the members.

Devine also gave a briefing on the current and forward path to the Mercury program for RCI.

Carl Brown explained the need for support of the California members against legislation in committee that would require “consultants” to be licensed contractors.

Approximately 30 convention goers and Region IV members took full advantage of the convention and educational programs, as well as a plant tour of Atlas Roofing Corporation’s high-tech polyisocyanurate plant in Phoenix. Incoming President John Willers and First Vice President Dave Hawn were present to meet members. At the conclusion of the tour, Atlas offered tours to RCI members who might be in Phoenix for business or pleasure.



Members of Region IV

Region IV continued on next page

REGION IV CONTINUED

DAVID DEVINE AND GARY WEAVER • REGION IV OUTGOING AND INCOMING DIRECTORS

At the annual awards luncheon, John Shepherd received the Michael DeFrancesco Volunteer award as special recognition of his contributions to RCI. More than 70 individuals attended the January two-day workshop in Hawaii that was spearheaded by John. Dates have been set for next January, and members should plan to

attend. Contact John Shepherd at jds@shepherdconsulting.com for additional information and periodic updates.

Region IV will host a full day of education on June 11, 2008, at the conclusion of the WSRCA convention at the Paris Hotel and Casino in Las Vegas, Nevada. Topics will include 2008 code change updates,

polycarbon/polycarbonate waterproofing technology, energy-efficient roof designs with single-ply roofing membranes, incorporating thin-film photovoltaics onto building surfaces, and roof failure analysis.

A Region IV meeting is also scheduled for October 3, 2008, in Monterey, California.

REGION V

BRANDON HEXHAM • REGION V DIRECTOR



Outgoing Region V Director Jean-Guy Levaque, left, and incoming Region V Director Brandon Hexham, right

sent, seven modules have been completed, and the task force is awaiting a digital copy of the modules in order to proceed with adding Canadian content to them.

Doug Fishburn

asked about the status of the Eastern Canada Chapter of RCI. A discussion was held, and the membership agreed that starting chapter

branches in Ottawa, Montreal, and the Maritimes, instead of starting up full-fledged chapters, may be the way to spearhead chapter formation in this part of the country.

Brandon Hexham, the incoming Region V director, stated that two of his main goals would be to attempt to start branches and/or a chapter in eastern Canada, as well as to hold the first-ever Region V meeting. Details to follow.

The entire membership thanked Jean-Guy for all of his hard work and dedication as the Region V director over the past three years. He has done a marvelous job for Canada, and the membership sincerely appreciates his efforts.

There were approximately 20 members present at the Region V meeting. Jean-Guy Levaque called the meeting to order and started by giving the members a review of the most recent board of directors' meeting.

Russell Hobbs, RRO, vice president of the RCI Western Canada Chapter, gave a report on the current status of the chapter. Allen Lyte, RRO, president of the Ontario Chapter, updated the membership on the status of that group.

A discussion was held regarding the Region V director's position and how to ensure that the membership is well represented from across the country. More discussion and further review are needed to determine how best to proceed with this matter.

Graydon Hexham, chair of the RCI Canadian Content Education Review Task Force, spoke on the current status of updates to the educational modules. At pre-



Region V members

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GALA NETS \$30,000 FOR RCIF FOUNDATION

BY CJ WALTERS • FOUNDATION DEVELOPMENTAL OFFICER



Auction volunteers Sharon Birdsong, Gina Genin, and RCIF Developmental Officer CJ Walters pull "Tricky Tray" winners.

The annual RCI Foundation fund-raising gala was a huge hit this year in Phoenix! More than 250 people attended the event, which was held March 2 at the Hyatt Regency and raised more than \$30,000 for the foundation. The seventh annual fundraiser, which was sponsored by GAF Materials Corp., featured live and silent auctions, as well as raffle giveaways. Major prizes included exotic vacations, airfare, a basketball autographed by Michael Jordan, a guitar autographed by Mick Jagger, Patsy Hale's famous hand-crafted Raggedy Ann and Andy dolls, jewelry, a Wii™ entertainment system, a hunting knife set, a brass buffalo pistol, a spa retreat, fine Scotch whiskies, and imported cigars.

Gina Genin's distinctive voice rose above the fray as she acted as auctioneer, bringing in bids with grace and ease. Robert Hinojosa was the big winner of the evening, taking home the Michael Jordan basketball, the Mick Jagger guitar, and one half of the trip to St. Martin. Charlie Mills was the most enthusiastic, as he outmaneuvered all other silent auction

Foundation Board member Bob Elsdon, right, thanks Allen Lyte, president of the Ontario Chapter, for its contribution of \$2,500 to the Foundation.



bidders to take home the 25-in Raggedy Ann and Andy dolls for his very first granddaughter. The surprise gift of the evening



Be careful – raising a glass can have multiple meanings at this event.



Nancy Blanchette, RCI Associate Director Micki Kamszik, and Foundation Secretary/Treasurer Helene Hardy Pierce sell "Tricky Tray" tickets to Phil LaDuke.

GALA NETS \$30,000 FOR RCI FOUNDATION *CONTINUED*

was a 6 ft x 6 ft Lady Liberty painting that was created during the convention's opening ceremony by artist Dan Dunn.

The fund-raiser was assembled and managed by nearly two dozen volunteers and RCI staff members. The foundation offers its thanks to GAF, the prize donors, and the contributors who made this event such a great success.



Gina Genin auctions Dan Dunn's donated painting of Lady Liberty.

Onlookers enjoy the lively bidding.



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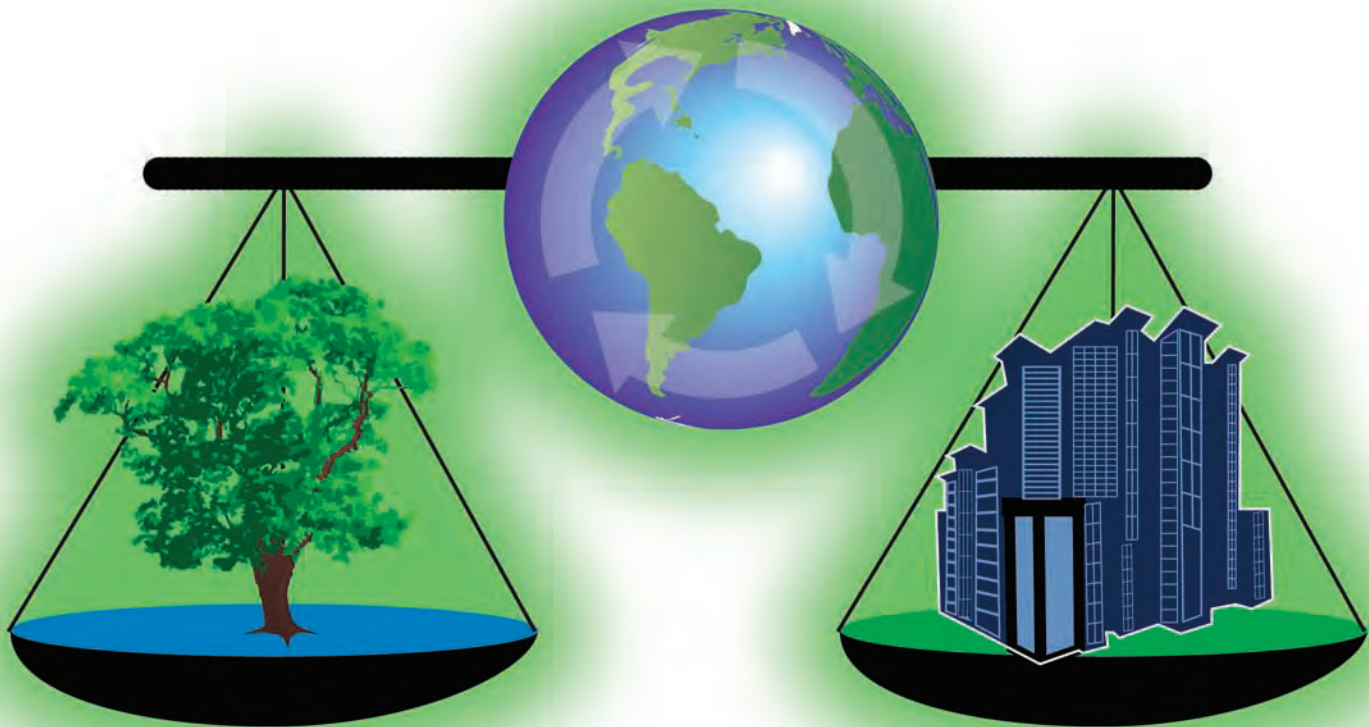
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MARKETING COMMITTEE

CURTIS LISCUM • CHAIRMAN

The Marketing Committee met on Thursday, February 29, to discuss its current charge and course of action for 2008. The following persons were in attendance:

- Bill Tipton
- Sidney Hankins – Advocacy Subcommittee chairman
- William Myers – Staff liaison
- Curt Liscum – Chairman

Sidney Hankins discussed that the Advocacy Subcommittee's charge for 2008 will include the development of RFP templates for obtaining various consulting services. After some interesting discussion, the committee concluded that it should develop a short pre-

sentation discussing the Benefits of Using an RCI Consultant and a follow-up presentation discussing How to Write an RFP for Consulting Services. Both presentations,

along with the template RFPs being authored by the Advocacy Subcommittee, would then be made available on the Web site for download and for presentation by the membership to various owner

organizations. The committee left the meeting recharged and focused for its task at hand. It is an exciting time to be in the Marketing Committee. If you would like to help, please contact Curt Liscum at cliscum@benchmark-inc.com.



Marketing Committee members, left to right: Sidney Hankins, Bill Tipton, Staff Liaison William Myers, and Chairman Curtis Liscum.

INTERFACE PEER REVIEW COMMITTEE

KRISTEN AMMERMAN • STAFF LIAISON

When Fearless Leader and Senior Editor Lyle Hogan is in residence, the *Interface* Peer Review Committee normally meets somewhere near a pool (table). Thus, the somewhat diminished group, composed of diehards Rick Wagner, Allan Kidd, and Executive Editor Kris Ammerman, was forced to compromise on the "pool" theme in Phoenix by meeting atop the third floor plaza deck next to the "pool" harboring bizarrely-shaped sculptures of weird creatures fishing for even weirder creatures (see photo). As a consequence, their choices for upcoming *Interface* themes and target authors may have been affected. Even so, they came up with the following themes through 2009:

- June 2008: D
- July 2008: Floors/Water vapor invasion
- August 2008: Adhesives and fasteners
- September 2008: Walls and flashings
- October 2008: Steep roofs
- November 2008: Legal and business issues
- December 2008: Ener-

gy/Photovoltaics

- January 2009: Extraordinary and unusual roofs
- February 2009: Metal roofing
- March 2009: Single-ply roofing
- April/May 2009: Convention issue
- June 2009: Historic and restorative projects
- July 2009: Building envelope accessories
- August 2009: Green building

- September 2009: Bituminous roofing
- October 2009: Balconies, terraces, & plaza decks
- November 2009: Air/Vapor barriers and retarders
- December 2009: Coatings

Seated, left to right: Interface Executive Editor Kristen Ammerman; Allan Kidd, RRC, EIT; Richard Wagner, RRC, CCS. Notably absent due to various "excuses": Lyle Hogan (court deposition), Bill Rubel (heart attack), Remo Capolino (wife giving birth to twins), Rick Harris (vague "family" excuse), Don Kilpatrick (something about sending the "younger guys...").



EDUCATION COMMITTEE

TIM BARRETT, RRC • OUTGOING COMMITTEE CHAIR

The Education Committee convened its annual meeting on Friday afternoon, Feb. 29. In attendance were 10 members and subject matter experts (SME), Director of Educational Services Jerry Teitsma, RCI Vice President David Hawn, and Director of Local Market Development for Green Roofs for Healthy Cities (GRHC) Jennifer Sprout.

As usual, discussions were spirited and wide-ranging, covering a multitude of subjects, including the education budget and finances from 2007, building envelope curriculum development, Internet and distance-learning development, chapter-driven course experiences, resource development, updating of existing courses, the Train the Trainer program, the new green roof program, and alliance building with colleges and universities.

David Hawn presented the financial results of the educational programs, which were positive and appreciated.

Jennifer Sprout addressed the committee to explore possible cooperative educational endeavors.

The Education Committee's consensus was that at this point in time, a strategic alliance between RCI and GRHC would be desirable and profitable for the RCI educational program. Our membership would be

exposed to GRHC horticultural programs, and the relationship would beneficially raise RCI's profile with the GRHC's database of 4,000-plus architects, engineers, landscapers, and public officials. Additionally, it was the Education Committee's consensus that such an alliance was more in the purview of the Marketing Committee and the Executive Committee than the Education Committee, who accordingly passed the information on

to the Executive Committee for due consideration.

The meeting was concluded with the outgoing chairman, Tim Barrett, introducing the new incoming chairman, Kami Farahmandpour, RRC, RWC, PE, CCS, and thanking the committee for its participation and efforts.



Left to right:

Marc Allaire, Charles Mills, incoming Chairman Kami Farahmandpour, outgoing Chairman Tim Barrett, Doug Fishburn, Rick Cook, and Ray Wetherholt. Also present but not pictured: Paul Buccellato, Richard Norris, Dennis Spina, Jerry Teitsma, David Hawn, and Jennifer Sprout.

RWC® EXAM DEVELOPMENT

MICKI KAMSIK • STAFF LIAISON



Left to right: Staff liaison Micki Kamszik; Rick Cook Jr., RRC, RWC, CCS, LEED AP; Chairman Edward Arnold, RRC, RWC (foreground); and Robert Kuhn, RRC, RRO, CCS, CCCA. Absent when photo was taken: Paul Buccellato, Bruce Darling, and Karim Allana.

Four Registered Waterproofing Consultant exams were graded by the committee on Friday, February 29, 2008. The RWC exam was held earlier that day, and the tests were scored by an electronic grading machine. Two individuals passed and were honored at the awards luncheon on Sunday, March 2, 2008.

The committee also briefly discussed options to increase the number of RWC examinees as well as the number of questions in the exam database.

MANUAL OF PRACTICE TASK FORCE

WALT ROSSITER • STAFF LIAISON

The *RCI Manual of Practice* (MOP) Task Force met on Friday, February 29, in conjunction with the RCI Convention in Phoenix with five members in attendance. The task force is chaired by Don Bush, Sr. Other members present at the Phoenix meeting were Ed Arnold, Rick Craig, Pat Downey, and Michael Henson. The task force's goal is to complete development of the *RCI Manual of Practice*. The task force held a successful planning meeting in mid-January in Raleigh to develop a preliminary outline for the content of the RCI MOP, set a tentative time schedule for future MOP Task Force activities and actions, and identified needed resources to assist in accomplishing the MOP Task Force goal.

One identified need was the retention of a technical writer to facilitate the formatting and writing of the manual. As a result, the board of directors approved RCI's contracting with

EEI Communications of Alexandria, VA, to assist the MOP Task Force. EEI provides professional writing and publishing services to business and government organizations. As a notable example, EEI assisted with the development of the Construction Specification Institute's project resource manual, *CSI Manual of Practice*, a document familiar to many RCI members.

The focus of the Phoenix meeting was on pending affiliation with EEI and preparation

for the first face-to-face meeting with EEI staff. Consequently, considerable discussion was held regarding the purpose of the *RCI MOP*. In the end, all task force members were asked to prepare a short summary of their thoughts on the purpose of the MOP and its benefits to RCI, its members, and its clients. Colloquially, the task force members summed up the manual's purpose as a description of "what RCI is, what RCI does, and how RCI does it." The summaries stemming from the Phoenix meeting are thus to

be expansions of this maxim and will be given to EEI for use in developing the *Introduction* for the *RCI MOP*. In addition to this activity, the task force developed a list of resource documents that are to be made available to EEI. The initial meeting with EEI has been set tentatively for April 26 and 27. It will be held at EEI headquarters in Alexandria, VA.



Left to right: Pat Downey, staff liaison Walt Rossiter, Chairman Don Bush Sr., Ed Arnold, and Brian Rick Craig. Present but not pictured: Michael Henson.

RRO® EXAM DEVELOPMENT

MICKI KAMSZIK • STAFF LIAISON

On Friday, February 29, 2008, Chairman Rick Craig, Gary Mitchell, Tony Poletto, and Micki Kamszik cross checked 32 tests from the RRO exam held earlier that day. The tests were also scanned by an elec-

tronic grading machine, and it was verified that 21 examinees passed. These individuals, along with 111 other recently designated Registered Roof Observers, were recognized at the awards luncheon on Sunday,

March 2.

The committee also discussed the future development of designations for waterproofing and building envelope quality assurance observers.

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RRC® EXAM DEVELOPMENT

MICKI KAMSIK • STAFF LIAISON



Left to right: David A. Rash, RRC; Robert J. Boessen, RRC, CDT; Micki Kamszik, staff liaison; Donald E. Bush Sr., FRCI, RRC, chairman; and Blair Baxter, RRC, BSc.

The committee met on Friday, February 29, 2008, to cross check eight Registered Roof Consultant examinations administered that day. The exams were also scanned by

an electronic grading machine. Three examinees passed and were recognized by their peers at the awards luncheon, along with 14 others who earned the designation dur-

ing the past year.

Topics of discussion at the meeting included application processing issues and the procedure regarding expired registrations. Currently, if renewal requirements are not satisfied within one year of expiration, reapplication and retesting are necessary to earn the designation(s) again.

The RRC exam will be updated during 2008. The first workshop, scheduled in April 2008, will be directed by test consultant Robert Pixton and attended by 12 subject matter experts. Two additional workshops will be held this year in June and October. The revision will be conducted in compliance with the "Standard for the Accreditation of Certification Programs" as published by the National Organization for Competency Assurance (NOCA).

DOCUMENT COMPETITION COMMITTEE

CATHERINE MOON • STAFF LIAISON

The RCI Document Competition Subcommittee met on Friday, February 29, 2008, in Phoenix, AZ, at the RCI 23rd International Convention and Trade Show. Chairman Steve Alberico led members Lou Newlan, Dennis McNeil, Bill Waterston, and staff liaison Catherine Moon in discussion of the 2008 document competition and future competitions.

The group brainstormed on how to increase participation in the competition. Improving advertising, encouraging chapter and region participation, and working with the Building Envelope Committee to increase the number of building envelope project entries were among the topics targeted by the subcommittee. In par-

ticular, promoting the multiple uses of the new credit vouchers awarded to first-, second-, and third-place winners was discussed. The group also talked about choosing a catchier name for the vouchers.

The credit vouchers, which were distributed to winners for the first time during the

2008 awards luncheon, can be used for any RCI or RCI Foundation products, such as class, convention, and symposium registration, book purchases, membership renewal, etc.

The judging process was also assessed. It was decided that the competition rules should be revised to ask entrants for a CD containing one PDF file of the member's work product and one document in the complete original format, as delivered to the client, for display at the trade show.

Mark your calendars! Entries for the 2009 RCI Document Competition are due on November 30, 2008.



Left to right: Catherine Moon, staff liaison; Steve Alberico, chairman; Bill Waterston, Dennis McNeil, and Lou Newlan. Absent when the photo was taken: Albert Duwyn and Karl Schaack.

BUILDING ENVELOPE COMMITTEE

THOMAS HUTCHINSON, RRC, FRCI, AIA • COMMITTEE CHAIR

Five individuals were present at the Building Envelope Committee meeting: Karim Allana, Bill Waterston, Judy Holleran, Walt Rossiter (staff liaison), and Tom Hutchinson. Committee Chairman Tom Hutchinson reviewed the accomplishments of the past year and thanked everyone for their time and contributions. A summary of accomplishments was forwarded to the board.

ASHRAE 90.1: Tom Hutchinson reviewed his attendance at the ASHRAE 90.1 winter meetings in New York City and indicated that the roofing industry has been remiss in participating in standards that would affect our membership and clients. After discussion, the committee agreed that RCI should have representation at all four of the 90.1 and 90.1 Building Envelope Committee meetings. The meetings will last approximately four days. It was suggested that Walt Rossiter be sent by the board.

Building Envelope Symposium: Tom Hutchinson congratulated and thanked Bill Waterston on the record-breaking success of the 2007 event. Waterston expressed his thanks for Karen McElroy's support. It is hoped that the success of 2007 can be maintained for the 2008 Atlanta event.

Waterston expressed concern that the RCI Foundation was proceeding with a symposium involving the building envelope and had not consulted the committee. He is worried that this event may dilute the BES effort in 2009. Karim Allana added that this was the first that he had heard of this event and was disappointed that the call for abstracts was over. Walt indicated that he would pass on these concerns to the RCIF.

RCI Convention: Waterston indicated that there were 17 document competition entries this year, down from 22 the previous year. He expressed concern for the drop, noting the low number of applications precludes having separate competitions for roofing, waterproofing, and the building envelope.

Bill assured the committee that building envelope issues will be well represented in the 2009 convention sessions.

Marketing: Judy Holleran asked how many of the manufacturers recommended to be contacted for the 2007 convention were actually contacted and the result.

Education: The following is a summary of items discussed, often at length.

- After the development of the masonry restoration course, the following education classes should be considered:
 1. Air barriers: Type, purpose, integration (the codes will soon require air barriers)
 2. Concrete restoration
 3. Cement plaster (EIFS): The board should consider purchasing an agreement with the developers of the plaster class being presented on the west coast.
 4. Rain-screen wall design
- Sealants: The installation of sealants is performed by a variety of trades. Thus, the proper design of sealant joints needs to be included in the waterproofing courses.

Building envelope industry activities:

- June 10-12, 2008, Minneapolis, MN – International Conference on Building Enclosure Science and Technology
- May 6-8, 2009 – 12th Canadian Conference on Building Science and Technology. Call for abstracts until May 8, 2008.
- May 10-14, 2008, Istanbul Turkey – 10th DBMC



Left to right: Judy Holleran, Bill Waterston, Chairman Tom Hutchinson, Karim Allana. Absent from the photo, but present at the meeting: Walt Rossiter, staff liaison.

- Educational class instructors: The committee felt very strongly that there should be "staff," not volunteer instructors, of not only the waterproofing and building envelope classes, but also of the roofing courses. Per diem compensation was suggested for perhaps four individuals who could divide the duties amongst themselves.
- Sustainability: Educational classes should be reviewed to include sustainability issues (long-term performance).

ETHICS COMMITTEE

WILLIAM B. EARLY RRC, CCS • COMMITTEE CHAIR



Left to right: Chairman William B. Early, RRC, CCS; Richard Dial; Robert L. Pfarr, PE; Neal Johnson, AIA; and Michael W. Wilkinson, RRC

The Ethics Committee met in Phoenix. In attendance were Chairman William B. Early, RRC, CCS, Robert Martin, Robert Pfarr, Mike Wilkinson, Rick Dial, Neal Johnson, and Ed Arnold. Guests Bob Pfarr and Neal Johnson were introduced to the group.

There are no active cases before the committee at this time. By way of orientation for the guests, two dormant ethics cases were discussed as they relate to the RCI Code Of Ethics. Most discussion focused on the committee's role within RCI and on the administrative procedures by which RCI ethics cases are assessed.

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RCI FOUNDATION

BY HELENE HARDY PIERCE • FOUNDATION BOARD SECRETARY



The Board of Directors of the RCI Foundation met on March 1, 2008, for its annual spring meeting. Present were Chairman Joe Hale; directors Mike Blanchette, André Desjarlais, Albert Duwyn, Bob Elsdon, Helene Hardy Pierce, Jim Hoff, George Kanz, Ralph Paroli, and Walt Rossiter; staff members Jim Birdsong and CJ Walters; and guest Gina Genin. The Foundation addressed several items of business, holding lively discussions around new research initiatives for the roofing industry and the upcoming Foundation convention fundraiser that was held on March 2.

Eight years since its inception, the Foundation is on the cusp of breaking the \$1 million mark in fund-raising, and there were great expectations of reaching this milestone. This is a tribute to the commitment of the professional and industry members and other supporters that have recognized the value of the Foundation's mission to support research, education, and the dissemination of information for issues important to our industry.

The board also nominated and elected directors Mike Blanchette, Bob Elsdon, and George Kanz to three-year terms and nomi-

nated and elected the slate of officers for the 2008 year: Joe Hale as chair, Mike Blanchette as treasurer, and Helene Hardy Pierce as secretary. Disappointing was the upcoming loss of CJ Walters who resigned as the Foundation's developmental officer. The board expressed its heartfelt thanks for her hard work on behalf of the Foundation.

At the conclusion of the Foundation board meeting, the Foundation's Symposium Planning Committee met to work on the planning for the Symposium on Building Envelope Sustainability scheduled for April 30-May 1, 2009, in Washington D.C. "Save the Date" announcements have been developed, and marketing and PR strategy to get the word out for this important event were addressed by the committee. The sustainability symposium is just one example of the Foundation's living up to its mission to support dissemination of information important to our industry. Its ability to work on such an offering with ORNL, NRC, NIBS, and BETEC should result in the presentation of research that attendees will find informative and useful.

Foundation board meeting participants, clockwise, starting bottom left: Chairman Joe Hale, Walt Rossiter, Bob Elsdon, Albert Duwyn, Ralph Paroli, CJ Walters, Jim Birdsong, Jim Hoff, André Desjarlais, Helene Hardy Pierce, George Kanz, Mike Blanchette.

JURY OF FELLOWS

Members of the Jury of Fellows met on Friday, February 29 at the convention. Seated, left to right: Helene Hardy Pierce, Phil Dregger, Tom Hutchinson, and George Kanz. Middle row, same order: Joe Hale, Albert Duwyn, Art Sark, and Bob Martin. Back row, same order: Gary Cattel, John Willers, Luther Mock, Nelson Hall, and Bill Cypher. This year, the Jury of Fellows awarded the newly created William C. Correll Award for the first time. The award went to Justin Henshell. Outgoing President Patrick Downey was also named as a member of the Jury of Fellows at the convention.



TRAIN THE TRAINER - 2008

JERRY TEITSMAN • RCI DIRECTOR OF EDUCATIONAL SERVICES



Jerry Teitsma, RCI director of educational services, presents a "Train the Trainer" seminar to 17 individuals.

As has been the practice at the last three RCI Annual International Conventions, the Train the Trainer program was presented on Friday afternoon. This year, 17 individuals participated in the training. It was great to see potential instructors in the vertical wall and waterproofing areas, in addition to that of roofing.

The purpose of the Train the Trainer program is to provide instruction and information concerning presenting RCI courses, either as assistants to staff or as facilitators or instructors at RCI chapter-delivered courses. Including this year, 119 individuals have taken the training. Many of these have been presenters in our classes, while some are awaiting the right opportunity. Additionally, there are others on the list who have indicated a willingness to teach but have not found a good time to take part in the Train the Trainer program.

There are two halves to the Train the Trainer program. The first half deals with principles associated with teaching adult learners. The second half covers experiences in the RCI course environment as well as general information on the Approved Instructor program and on the facilitator function.

Attending the Train the Trainer program does not require a commitment to be an RCI instructor, although most attendees have an interest in doing so. It is useful training for all the presentations that we do as consultants or industry members. Hope to see more of you in 2009.

GOLF TOURNAMENT SOLD OUT

The Annual President-Elect's Golf Tournament on Friday, February 29, at the Raven Golf Club at South Mountain, was sold out with 144 participants. The beautiful spring day was perfect for the tournament, held on a course featuring rolling fairways framed with mature pine trees, rugged desert mountains, and the Phoenix skyline. Organized as a shotgun, four-person scramble, various prizes were awarded, and the participants enjoyed continental breakfast and a buffet lunch. Chip Ward organized the event and assisted John Willers in presenting awards.



Above: The gently rolling fairways were framed by the mountains surrounding Phoenix.



Left: Okay, so his form's not so good...



Trying to stay clear of the water.



First-place winners, with a 58, were, left to right: Ed Stewart, (President-Elect Willers), Gaylon Gregg, Frank Cortazzo, and Art Valenz.

Winners were:

- First place, men (58): Art Valenz, Gaylon Gregg, Ed Stewart, and Frank Cortazzo.
- First place, women (74): Mary Beth Duwyn, Lynn Millaire, Cheryl Cattel, and Kathy Coskey.
- First place, mixed (63): Robert Yoder, Allen Kidd, John Kataila, and Carol Kataila.
- Closest to the pin, #2 (women): Connie Frost
- Closest to the pin, #14 (women): Kathy Schoch
- Closest to the pin, #7 (men): Art Valenz
- Closest to the pin, #11 (men): Harry Mitchell
- Longest drive, #3 (women): Connie Frost
- Longest drive, #12 (women): Lorrie Borelli
- Longest drive, #9 (men): John Alling
- Longest drive, #17 (men): Sid Hankins



First-place winners, mixed, with a 63, were, left to right: Carol Kataila, John Kataila, (John Willers), Allen Kidd, and Robert Yoder.



First-place winners in the women's category, with a 74, were, left to right: Kathy Coskey, Lynn Millaire, Mary Beth Duwyn, (John Willers), and Cheryl Cattel.



CONSTRUCTION AND THE ECONOMY

UNEVEN GROWTH

Looms for Construction Spending, Costs, and Labor

By Ken Simonson

Nonresidential construction is entering a period of divergent trends for activity, materials costs, and labor. In 2007, the industry experienced high levels of demand in nearly every segment and region. For most of the year, materials costs rose less than they

had in 2004-2006, and labor supplies were adequate. In 2008, some nonresidential segments, including power and energy, will continue to grow, but others, such as lodging, will slow or decline. Diesel, copper, and steel are among materials whose costs are likely to accelerate, while others remain benign. Labor shortages will worsen for a

few crafts, pulling average wage rates higher, but in other segments, such as residential specialty trades, the supply of some crafts will be plentiful. Investment in such structures jumped 15 percent in the fourth quarter. For 2007 as a whole, real nonresidential investment climbed 13 percent, following gains of 8.4 percent in 2006 and just 0.5 percent in 2005.

Five types of projects appear poised for another year of strong spending growth: power, energy, communication, hospitals, and higher education. Such activity will affect demand for materials and labor used in other construction segments as well.

Diesel, copper, and steel prices are likely to keep rising relatively quickly, more than offsetting any savings from falling gypsum prices or slow concrete price escalation.

The ongoing

growth in some nonresidential categories shows that nonresidential construction does not necessarily follow residential, as many observers assume. Indeed, the Bureau of Economic Analysis (BEA) reported on February 28 that the growth rate for real (net of inflation) investment in private nonresidential structures exceeded that of real gross domestic product for a record-setting ninth straight quarter in the fourth quarter of 2007 (www.bea.gov).



Ken Simonson

This series on the economy and its impact on the construction industry is published monthly in Interface. This month's column was prepared by Kenneth D.

Simonson, chief economist for the

Associated General Contractors of America (AGC). Before joining AGC, Simonson spent three years as senior economic advisor in the Office of Advocacy of the U.S. Small Business Administration and 13 years as vice president and chief economist of the American Trucking Association. Simonson may be reached at simonsonk@agc.org.

Construction Spending by Category, 2007-2008

Category	2007 total (billion \$)	Change from 2006 (percent)	2008 projected change (percent)
Total	1161	-3	-6 to -2
Residential	531	-18	-20 to -15
Nonresidential	630	16	4 to 8
Educational	98	14	3 to 6
Commercial	85	13	1 to 4
Highway & street	77	7	3 to 7
Office	65	20	0 to 5
Power	50	27	15 to 25
Healthcare	45	14	10 to 15
Manufacturing	38	9	2 to 5
Transportation	31	16	5 to 10
Lodging	30	66	-5 to 5
Communication	26	21	10 to 15
Sewage & waste disposal	25	7	1 to 5
Other*	59	10	-5 to 5

*Other: amusement and recreation, water supply, public safety, conservation and development, and religious.

Source: 2007 total and percent change from U.S. Census Bureau news release, "Value of Construction Put in Place," February 1, 2008. Projected change from AGC.



INDUSTRY NEWS

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CHEM LINK NAMES NEW STAFF



Jim Larke

Jim Larke has become a part of Chem Link's research and development team as a technical data manager. His responsibilities include standardizing and archiving technical data used and produced by the research and development department, including testing procedures and matters relating to intellectual property.

Jeff Schuette (pronounced Shootey) is proving useful to contractors and specifiers who call

Chem Link for information on product attributes and application details about Chem Link's sealants and adhesives.

THERRIEN NOW NRCA PRESIDENT

The following were named to the National Roofing Contractors Association (NRCA's) executive committee and will begin their terms June 1. President, one year: Robert W. Therrien Jr., president of The Melanson Co. Inc., Keene, N.H.; senior vice president, one year: Robert McNamara, president of F.J.A. Christensen Roofing Co. Inc., a Tecta America company, Milwaukee; vice presidents, two years: Nelson Braddy Jr., and James Eckstein; vice president, one year: Will Fort III.

NRCA's new directors, who will serve three-year terms: Scott Baxter, Kevin (Casey) Bechtel, Tim Black, Mike Breslin, Chad Collins, Bruce Fryer, Will Hamlin, Bruce McCrory, Mark Moran, Jeffery D. Orndorff, Calandria R. Palmer, David P. Pastore, David G. Taylor, Jeffery N. Thomas, David J. Tilsen, and Kent Tolley.

GODLEWSKI SUCCEEDS GRINER AT RMAX

Rmax, a Dallas-based manufacturer of polyisocyanurate insulation products, announced that its president, Richard Griner, will retire and be succeeded by former Executive Vice President Ed Godlewski. Griner joined Rmax in 1981 as vice president of production and subsequently served as VP of operations in charge of manufacturing and sales before accepting an appointment as president in 1984. During his tenure, he spearheaded Rmax's growth. He helped found the Polyisocyanurate Insulation Manufacturers Association and served on its board for 20 years, six as chairman. Godlewski joined Rmax in 1983 as production manager of the company's Fernley, Nevada plant. He also served as plant manager in Dallas and Greer, South Carolina, overseeing upgrades at these facilities. In 2006, Mr. Godlewski was promoted to executive vice president. In 2008, Rmax is celebrating its 30th anniversary.

SOPREMA OPENS GULFPORT FACTORY

Soprema, Inc. (USA) produced the first roll of SBS modified bitumen in its second U.S. manufacturing facility, located in Gulfport, Mississippi, in February. Construction for the new facility began in August 2006. Soprema was reaching capacity in its first production facility, at its U.S. home office in Wadsworth, Ohio. Gulfport is the fourth Soprema production facility in North America. This year, Soprema turns 100 years old.

ABC SUPPLY Co. Inc. NAMES DAVID A. LUCK CEO

ABC Supply Co. Inc. has appointed David A. Luck as chief executive officer. He also will continue in his current role as company president. Luck joined ABC Supply as president and chief operating officer in July 1998. Founded in 1982 and headquartered in Beloit, Wis., ABC Supply is the largest wholesale distributor of roofing in the United States and is one of the nation's largest distributors of siding, windows, and other select exterior building products. The company operates nearly 380 branches in 46 states and the District of Columbia.

ABC TO DISTRIBUTE FLIR

FLIR Systems, Inc., manufacturer of infrared cameras, announces that ABC Supply Co. Inc., America's largest wholesale distributor of roofing, siding, and windows, will become the primary distributor of FLIR infrared (IR) cameras to the professional roofing industry in the U.S.

W.P. HICKMAN RECEIVES ENVIRONMENTAL CERTIFICATION

W.P. Hickman Systems recently received its ISO 14001:2004 Environmental Management Systems certification following a comprehensive registration audit conducted by Chamber Certification Assessment Services of Cincinnati. This certification underscores W.P. Hickman Systems' dedication to reducing the environmental impact of its operations and activities and to enhancing its environmental performance. The company has also been certified as an ISO 9001:2000 Quality Management System company since April 1998.

BURKETT RETURNS TO GENFLEX



Jim Burkett

Jim Burkett has returned to GenFlex Roofing Systems, LLC, as its dedicated product development manager, charged with improving and expanding the GenFlex product line. Burkett, who spent the past

year with Bridgestone Firestone, was previously employed with GenFlex as manager of product development when the company was headquartered in Maumee, Ohio. He also worked as GenFlex's national product and marketing manager. Burkett holds patents in the United States and Europe and has been instrumental in the development of numerous patented products, including the industry's first Peel & Stick™ TPO roofing membrane system.



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OBANDO WINS PRESERVATION AWARD

Marty Obando, owner of Cedar Shingle Consultants, has been awarded the 2007 Historic Preservation Award from the State of New Jersey for his rehabilitation of the Woodrow Wilson House on the Princeton University campus in Princeton, N.J. Baxter Construction of Princeton, N.J. was the contractor.

HARRIS JOINS HOWARD R. GREEN



Ross Harris

Ross Harris has joined Howard R. Green Company as a NEPA project manager. With over 20 years of experience preparing Environmental Assessments and Environmental Impact Statement documents for state

and local government transportation projects throughout the Midwest, Harris has extensive knowledge of NEPA laws, regulations, and compliance requirements as interpreted by FHWA and FAA.

CERTAINTEED OFFERS LOW-SLOPE COURSES

CertainTeed Corporation offers two new low-slope continuing education courses designed to help specifiers, architects, and other roofing professionals specify and install better roof systems. Titled "Procedures for Successful Modified Asphalt Roofing and Repairs," and "Procedures for Successful Built-Up Asphalt Roofing and Repairs," the courses are free and available online at www.certainteed.com/continuing. In total, CertainTeed offers five low-slope roofing continuing education unit (CEU) courses. Written by Gene Saxton, national account manager for CertainTeed's commercial roofing business, the courses are accredited by the AIA and RCI. Architects and consultants receive 1.5 credits from AIA and/or RCI when they pass the online course.

ERA INTRODUCES KATHY PRUNTY

Kathy Prunty is now serving as associate executive director of ERA. Kathy is responsible for the day-to-day operations of the association, the logistics of committee meetings, as well as financial and administrative oversight. She formerly served as director of member services for the Polyisocyanurate Insulation Manufacturers Association (PIMA) from 2002-2004. Following that, she worked for Kellen Company as an account executive where she served as executive director for two trade associations and one professional association. In total, she has more than 10 years of association experience.

ROWE NAMED PIMA CHAIRMAN

At the annual meeting of the Polyisocyanurate Insulation Manufacturers Association (PIMA), Tom Rowe, vice president of sales and marketing for Atlas Roofing Company, assumed the chairmanship of the organization. He replaces Alma Garnett, vice president of Hunter Panels, who has served as PIMA chairman for the last four years. Tom started his career at Armstrong World Industries. He also worked for Celotex and Koppers prior to joining the Atlas Roofing Company in 1988. While at Atlas, Tom has also been an independent sales agent and director of sales.

LIVEROOF, LLC TEAMS WITH FIRESTONE

LiveRoof, LLC is teaming up with Firestone Building Products to distribute its roofing membranes and roof accessory products. LiveRoof® is a modular green roof system with the look and function of a conventional "continuous membrane" green roof.

CERTAINTEED PARTNERS WITH SRS ENERGY

CertainTeed Corporation announced it has entered into a partnership with SRS Energy of Philadelphia to advance the development of photovoltaic roofing products. Both companies will collaborate on the development of a polymeric-based photovoltaic roof tile that generates energy without compromising the look of the home.

KESSER NAMED PRESIDENT OF STEVENS



Peter Kesser

Peter Kesser has been named as president of Stevens Roofing and Geomembrane Systems. Most recently, he was vice president of sales and marketing for Stevens Roofing Systems. Kesser is a native of

Wisconsin and holds an MBA from Butler University, as well as a bachelor's degree from Minnesota State University. His primary office will be at the company's facility in Westfield, North Carolina.

ISANTA ELECTS BOARD

The International Staple, Nail and Tool Association's (ISANTA) members reelected Ed Sutt as chairman of its board of directors and Steve Karaga as vice chairman for 2008. Sutt is the engineering manager of fastener technology at Stanley Bostitch in East Greenwich, R.I. Mark Kania was reelected secretary/treasurer. Mark Hickok was appointed chair of ISANTA's Legislative and Legal Advisory Committee. Chuck Hotze was appointed chair of its Public Relations Committee. Chuck Iker was appointed chair of the Technology Committee.

ATAS FOUNDER DIES

Jacobus "Jack" P. Bus, 80, founder of ATAS International, Inc., died January 27. He founded Aluminum Trim and Shapes in Rochester, NY, in the 1960s. In 1984, the company became ATAS International and moved to Allentown, PA. The company now employs 110 people at four manufacturing plants.

**More
INDUSTRY NEWS
on page 74**



INDUSTRY NEWS

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VELCHECK & FINGER ADDS PERSONNEL



Heather Nasca

Heather Nasca has joined Velcheck & Finger Roof Consulting and Service, Inc. in Pewaukee, Wisconsin, as office manager. She has over 16 years of office administration experience. Kurtis Werowski has joined the firm as a senior project manager. He has been in the industry for 19 years, specializing in roof replacement projects and roof maintenance programs on a nationwide basis. Velcheck & Finger Roof Consulting and Service, Inc.

is a roof consulting and service firm specializing in preventive and reactive service repairs, roof asset management, and the implementation of roof management programs.



Kurt Werowski

ENGLERT AND SOPREMA FORM ALLIANCE

Englert, Inc. and Soprema, Inc. (USA) have announced a strategic alliance to cross sell each other's product lines and to offer a single-source warranty. Englert provides onsite metal roofing and gutter systems, and Soprema is one of the world's largest producers of roofing and waterproofing products, including SBS modified and liquid roof membranes. The alliance will be supported by a single-source weather-tightness warranty backed by both companies that will protect both metal and membrane systems for up to 20 years.

HUSK JOINS MET-TILE, INC.

Met-Tile, Inc., a manufacturer of metal tile panel roofing, has appointed Robert Husk to the position of national sales/technical manager. Husk has worked extensively with architects and contractors in the metal construction industry for more than 15 years. In his new position at Met-Tile, Husk will be the main liaison with the company's national network of representatives and distributors, overseeing the full range of sales and technical support activities. For further information, visit www.met-tile.com.

EPDM REMAINS LEADER IN NRCA MARKET SURVEY

EPDM roofing membrane remained the leader in industry market share, according to the results of the National Roofing Contractors Association (NRCA) 2006-07 Annual Market Survey. The association's survey found that EPDM claimed 27% of new construction and 25% of reroofing work, in terms of 2006 low-slope roofing sales. The survey also projected 2007 sales of EPDM in first place, with 26.9% of new construction and 24.3% of reroofing work.

The NRCA survey was based on responses from nearly 400 roofing contractor members. The association described the survey as a "general view of the market" and a "summary of feedback provided by contractors with respect to trends in sales volumes and the types of roof systems installed."

RCI CLASSIFIEDS

BUILDING TECHNOLOGY CONSULTANTS, PC (BTC) is a Chicago-area-based forensic engineering and architectural firm specializing in the evaluation and repair of building envelopes.

We are continuously searching for talented individuals to join our team. Below is a list of current openings at BTC. If you have an interest to learn about the current openings or other employment opportunities at BTC, please send a résumé to info@btcc.com.

Senior Building Envelope Consultant

Responsible for project management duties related to investigation, repair design, and repair implementation for building envelope components.

Ideal candidate will have the following qualifications:

- BS or MS degree in engineering, architectural engineering, or architecture.
- Licensed in respective discipline, or ability to obtain license within 3 years. One or more of the following desirable:
 - RWC
 - RRC
 - LEED AP
 - CDT
 - CCS
- 5 to 7 years of experience in evaluation of building envelope deficiencies, including field testing, design of repairs, and construction contract administration.
- Excellent written and verbal communication skills.

Project Specialist

Responsible for assisting project managers in field investigations, preparation of repair drawings and specifications, and construction phase services for building envelope components.

Ideal candidate will have the following qualifications:

- BA or BS degree in engineering, architectural engineering, or architecture.
- RRO and CDT desirable
- 2 to 5 years experience in evaluation of building envelope deficiencies, including field testing, design of repairs, and construction contract administration.
- Excellent written communication skills.

Find more classified ads online at:

www.rci-online.org/mem-rcitems.htm



CALENDAR OF EVENTS

Red print: RCI Educational or Registration Opportunity
 Blue print: RCI Leadership Event
 Green print: RCI Region or Chapter Meeting
 Black print: Industry Event

Calendar subject to change without prior notice.
 Visit www.rci-online.org for schedule updates.

APRIL 2008

- 2 *Applications due for 5/17/08 RRO exam*
- 2 Delaware Valley Chapter Meeting
- 10-11 Professional Roof Consulting
Delivered by RCI Georgia Chapter
Atlanta, GA
Info: Mike Clark, 478-471-6661
- 10-11 Rooftop Quality Assurance
Delivered by RCI Florida Chapter
Ft. Lauderdale, FL
Info: Ed Williams, 772-335-5832
- 14-15 Roof Technology & Science I
Downey, CA
Delivered by RCI SoCal Chapter
Info: www.rcisocalchapter.org
- 16 Roof Asset Management
Seattle, WA
- 17-18 Exterior Walls Technology & Science
Seattle, WA
- 17 Great Lakes Chapter Meeting
- 17 Ohio Valley Chapter Meeting
Indianapolis, IN
- 21 SoCal Chapter Golf Tournament
Irvine, CA
- 24-25 Roof Technology & Science I
Humber College, Etobicoke, ON
- 25 Region I Meeting
Revere, MA

MAY 2008

- 7 *Applications due for 6/21/08 RRO exam*
- 14 Advanced Thermal & Moisture
Columbus, OH
- 15-16 Professional Roof Consulting
Columbus, OH
- 15-16 Roof Technology & Science II
Humber College, Etobicoke, ON
- 15-17 AIA National Convention & Design
Expo
Boston, MA
- 16 Chicago Area Chapter Meeting
TBA
- 17 RRC Exam (*applications due 2/18/08*)
Columbus, OH
- 17 RRO Exam (*applications due 4/2/08*)
Humber College, Etobicoke, ON
- 19 SoCal Chapter Waterproofing
Seminar
Long Beach, CA

23 *Applications due for 8/23/08 RRC exam*

JUNE 2008

- 3-6 Construct 2008 (CSI and Hanley-Wood)
Las Vegas, NV
Info: www.csinet.org
- 8-11 WSRCA Convention
Las Vegas, NV
Info: 800-725-0333
- 11 Region IV Meeting
Las Vegas, NV
- 13 *Applications due for 9/13/08 RRC exam*
- 18 Roof Asset Management
Chicago, IL
- 19-20 Rooftop Quality Assurance
Chicago, IL
- 21 RRO Exam (*applications due 5/7/08*)
Chicago, IL
- 30-1 Roof Technology & Science II
Downey, CA
Delivered by RCI SoCal Chapter
Info: www.rcisocalchapter.org

JULY 2008

- TBA Executive Committee Summer Meeting
- 31 Region II Meeting
TBA

AUGUST 2008

- 5-6 Roof Technology & Science I
Minneapolis, MN
- 7-8 Roof Technology & Science II
Minneapolis, MN
- 8 Region I Meeting
Beechwood, OH
- 11 SoCal Chapter Legal Issues Seminar
Long Beach, CA
- 20 RRC Review & Update
Chicago, IL
- 21-22 Advanced Waterproofing
Chicago, IL
- 23 RWC Exam
(*applications due May 23*)
Chicago, IL

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Tarco	(800) 365-4506	www.tarcoroofing.com	44
United Coatings	(801) 541-4383	www.unitedcoatings.com	47

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