

Announcing a short course on

# Liability Issues, Design Data, and Inspection Techniques

for Wood Decks, Balconies and Porches

April 28-30, 2004



Donaldson Brown Hotel & Conference Center  
on the campus of Virginia Tech  
Blacksburg, Virginia

[www.conted.vt.edu/sdww/](http://www.conted.vt.edu/sdww/)

Sponsored by  
Continuing and Professional Education, Virginia Tech  
DeckExpo ([www.DeckExpo.com](http://www.DeckExpo.com))  
Professional Deck Builder Magazine ([www.DeckMagazine.com](http://www.DeckMagazine.com))



VIRGINIA POLYTECHNIC INSTITUTE  
AND STATE UNIVERSITY

## Who Should Attend

This course is designed for local building officials, design professionals, contractors, home inspectors, and manufacturers and suppliers of related construction materials. Plan reviewers and building inspectors are encouraged to attend as their participation in the course, as well as the information obtained at the course, could be used to have a broad-based impact in their locality.

## What You Will Learn

The course objectives are to:

- Review several cases of deck, balcony, and railing failures to bring focus to some of the primary problem areas in the design and construction of exterior building appendages,
- Review legal case histories and descriptions of the liabilities and immunities of design professionals, contractors, and local building officials,
- Review the requirements for designing and constructing a code conforming deck or balcony per the International Residential Code (2000),
- Review the elements and procedures for inspecting an *existing* deck or balcony based on current building codes and engineering standards,
- Select structural elements (joists, beams, posts) based on published design data,
- Present load test data on four ledger-band connection details using bolts and lag screws,
- Discuss design and performance issues related to the transition from CCA to other treated lumber products, and
- Learn how to select code conforming wood plastic composite decking and railing systems.

The course also includes structural testing demonstrations of several ledger-to-band joist connection details, and tests of rail posts to demonstrate adequate post strength and connection strength of post to substructure per the code specified lateral loading.

Each participant successfully completing the course receives a certificate for 1.5 Continuing Education Units (CEUs), equivalent to 15 hours of instruction.

## Cost

The registration fee is **\$395** per person and includes the new *Manual for the Inspection of Residential Wood Decks and Balconies*, published by the Forest Products Society. The fee also includes lunch on Thursday and refreshment breaks each day.

## Course Outline and Schedule

### Wednesday, April 28

12:00–1:00 p.m.	On-site check-in and registration
1:00–1:10 p.m.	Introductions
1:10–2:45 p.m.	Deck, Balcony, Porch, and Stair Failures ( <i>John Conrad and Joe Loferski</i> )
2:45–3:00 p.m.	Break
3:00–4:00 p.m.	Liability Issues for Design Professionals, Contractors, and Local Building Officials ( <i>John Conrad</i> )
4:00–4:10 p.m.	Break
4:10–4:30 p.m.	Optimal Local Permitting and Inspection Procedures ( <i>Frank Woeste</i> )
4:30–5:05 p.m.	Open Discussion and Questions

### Thursday, April 29

8:00–8:30 a.m.	Code Requirements for Decks and Balconies ( <i>Frank Woeste</i> )
8:30–9:05 a.m.	Joist Design Example ( <i>Frank Woeste</i> )
9:05–10:05 a.m.	Ledger-Band Connection Testing and Design ( <i>Joe Loferski</i> )
10:05–10:20 a.m.	Break
10:20–11:00 a.m.	Post Design and Footers ( <i>Frank Woeste</i> )
11:00–11:15 a.m.	Multiply Girders ( <i>Frank Woeste</i> )
11:15 a.m.–12:00 p.m.	Rail Posts, Top and Bottom Rails, and Infill ( <i>Joe Loferski</i> )
12:00–1:00 p.m.	Lunch
1:00–5:00 p.m.	Ledger and Railing Testing Demonstrations at the <i>Brooks Forest Products Center</i> ( <i>Joe Loferski</i> )

### Friday, April 30

8:00–8:35 a.m.	PPT and Corrosion Issues ( <i>Joe Loferski</i> )
8:35–9:00 a.m.	Wood Plastic and Plastic Railing Systems ( <i>Frank Woeste</i> )
9:00–9:15 a.m.	Break
9:15–11:15 a.m.	<b>Inspection of Existing Decks</b> Elements of the Decay Process, Pressure Treatments, and Decay Detection ( <i>Joe Loferski</i> )
10:00–10:30 a.m.	Ledgers, Joists, and Posts ( <i>Frank Woeste</i> )
10:30–10:45 a.m.	Break
10:45–11:15 a.m.	Railings and Stairs ( <i>Joe Loferski</i> )
11:15 a.m.–12:00 p.m.	Open Discussion, Course Evaluation, and CEU Certificates



## ► Lodging and Travel Information

The course is held at the Donaldson Brown Hotel and Conference Center ([www.dbhcc.vt.edu](http://www.dbhcc.vt.edu)) on the Virginia Tech Campus in Blacksburg, Virginia. The hotel is conveniently located at the corner of Otey Street and College Avenue, one block from the downtown area.

A block of lodging rooms is being held at the Donaldson Brown Hotel and Conference Center until **March 28**. To reserve a room, call the hotel toll-free at 1 (877) 200-3360 or (540) 231-8000, and mention the name of this short course. A special group rate of \$76 plus tax per room has been arranged, single or double occupancy. Please make your reservations early. After March 28, the room block will be dropped and the group rate can no longer be guaranteed.

### Travel by Auto

Blacksburg is located in Southwest Virginia on U.S. Route 460, off Interstate 81. From I-81, take Exit 118 which serves all exit ramps A, B, and C. Take 118B and follow signs to Virginia Tech and 460 West Bypass. Follow U.S. 460 West Bypass to the Downtown Exit of the *Prices Fork/Downtown* interchange (about 9 miles). Take Prices Fork Road to the traffic light at the junction with Main Street and then turn right. Continue on Main Street to the second traffic light and turn right onto College Avenue. Take the second street to the left which becomes Otey Street. The hotel is immediately on the right.

### Travel by Air

The Roanoke Regional Airport (ROA) serves Blacksburg, Virginia. The available airlines are: USAirways, Delta Connection (ASA and Comair), United Express and Northwest AirlinK. Blacksburg is located 40 miles southwest of the airport. Most rental car companies are located at the airport. Greensboro (GSO) is about two and a half hours away, and Charlotte (CLT) is about three hours away. Both of these airports offer alternative flight options and rates.

## ► How to Register

Your registration with \$395 payment must be received by **April 16**. Enrollment is limited to 52. Past programs have been oversubscribed, so please register early. Payment is required to secure your space. To register, follow one of these options:

- Register on the web at [www.conted.vt.edu/sdww/](http://www.conted.vt.edu/sdww/) (requires payment by credit card—this is a secure server).
- Mail the registration form with credit card information or payment by check.
- Fax the attached form to (540) 231-3306. Or, you may phone your credit card information to (540) 231-5183.

After April 16, please call the conference registrar to check availability of class space.

**REFUND and CANCELLATION POLICY:** Requests for refunds will be honored when received seven calendar days prior to the program. However, another person may be substituted at any time for this program. A \$25 administrative fee will be deducted for cancellations. In the unlikely event that this program is cancelled or postponed due to insufficient enrollments or unforeseen circumstances, the university will fully refund registration fees but cannot be held responsible for any other expenses, including cancellation or change charges assessed by airlines, hotels, travel agencies, or other organizations.

## ► Register Today!

### Liability Issues, Design Data, and Inspection Techniques • April 28-30, 2004

Please print or type—complete a separate form for each participant.

Name \_\_\_\_\_

Social Security No. \_\_\_\_\_

Title \_\_\_\_\_

Organization \_\_\_\_\_

\*Organization's FID# \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Daytime Phone No. \_\_\_\_\_

Fax No. \_\_\_\_\_

Email Address \_\_\_\_\_

Signature \_\_\_\_\_

Registration Fee: \$395

Method of Payment:

(Registration will be processed when payment is received.)

Check enclosed. Make payable to:

Treasurer, Virginia Tech, CE

Credit card:  MasterCard  VISA  AmEx

Card No. \_\_\_\_\_ Exp. Date \_\_\_\_\_

Name of Cardholder \_\_\_\_\_

Register online by **April 16** at:

[www.conted.vt.edu/sdww/](http://www.conted.vt.edu/sdww/)

OR return with payment by **April 16** (no staples, tape, or paper clips, please) to: Conference Registrar, Continuing and Professional Education, 810 University City Boulevard, Suite D, Mail Code 0272, Virginia Tech, Blacksburg, VA 24061

OR fax the completed form by **April 16** to (540) 231-3306. Or, phone (540) 231-5183 with credit card info.

\*FID number necessary to process a refund payable to a company, agency, or government.

FOR OFFICE USE ONLY

RECEIVED

AMNT: \_\_\_\_\_

CHK#: \_\_\_\_\_

DPST: \_\_\_\_\_

DATE: \_\_\_\_\_

Virginia Tech does not discriminate against employees, students, or applicants for admission or employment on the basis of race, gender, disability, age, veteran status, national origin, religion, sexual orientation, or political affiliation. Anyone having questions concerning discrimination should contact the Office for Equal Opportunity. If you are a person with a disability and require any auxiliary aids, services, or other accommodations for this program, please discuss your accommodation needs with Wanda McAlexander at (540) 231-5242 or TDD 1-800-828-1120 by two weeks prior to the course.

## ► About the Instructors

**John Conrad** received his B.A. degree from Washington and Lee University in 1973 and his J.D. degree from the University of Richmond in 1977. He is the former Vice-Mayor of the City of Richmond and an attorney who specializes in defending design professionals, contractors, local governments and their employees. Additional information about John's practice and experience can be viewed at [www.TheConradFirm.com](http://www.TheConradFirm.com).



**Joe Loferski**, Ph. D., is professor of Wood Science and Forest Products ([www.woodscience.vt.edu](http://www.woodscience.vt.edu)) at Virginia Tech. Joe has international reputation and experience in the areas of performance of wood and wood composites in buildings and preservation of historic wood buildings. He has consulted on the restoration and preservation of many historic buildings in the U.S. including the Library of Congress and Washington's Mount Vernon, and recently the preservation an Erie Canal Aqueduct. He also has experience in diagnosing problems with wood building components including flooring, siding, and problems stemming from insects, moisture, and improper flashing details. He recently published test



results of various deck ledger connection details in the Journal of Light Construction ([www.jlconline.com](http://www.jlconline.com)). He has taught courses on the performance of wood in buildings for more than 18 years at Virginia Tech.

**Frank Woeste**, P.E., Ph.D., is Professor Emeritus at Virginia Tech and a wood construction and engineering consultant. Frank conducted wood engineering research and taught wood design courses throughout his 26-year tenure at Virginia Tech. His most recent research focused on design procedures for permanent wood truss bracing, practical design rules to prevent annoying residential floor vibrations, design of joists and sheathing supporting ceramic tile, and design and inspection of residential wood decks and balconies. Frank is responsible for *Wood Bits*, a column on practical design information for wood construction that appears in the ICC magazine (*Building Safety*). A list of his publications can be viewed at: [www.woodscience.vt.edu/resumes/woeste1101.pdf](http://www.woodscience.vt.edu/resumes/woeste1101.pdf)



## ► For More Information

For more specific information on course content, please contact Dr. Frank Woeste at (540) 951-0469, or e-mail: [fwoeste@vt.edu](mailto:fwoeste@vt.edu).

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