



# MATERIALS AND THE MARITIME ENVIRONMENT

APT NORTHWEST

March 26, 2011

[Fort Worden State Park and Conference Center](#)

Fort Worden Chapel (Building 24)

200 Battery Way

Port Townsend, WA 98368

## WORKSHOP SCHEDULE

- 9:00 am Sign IN and COFFEE BREAK
- 9:15 am Welcome and Introduction to Workshop (Rhoda Lawrence, APT NW)
- 9:20 am Brief Port Townsend History (local architect and historian)
- 9:45 am Distress, Evaluation and Repair of Historic Concrete (Jarkko Simonen, WJE)
- 10:30 am Stone and Brick Masonry Repairs and Best Practices (Mark Liebman, Golder Associates)
- 11:15 am Windows and Wood Repairs (Kevin Palo, Ten Mile Planing Mill)
- 12:00 pm LUNCH BREAK
- 1:00 pm Decay of Wood in Maritime Environments (Jeff Morrell, Professor, OSU)
- 1:45 pm Paint and Corrosion Resistance (Mike Murphy, Parker Paint)
- 2:30 pm Documentation and Annotation Techniques for Conservation Projects (Battle Brown, Manassas Consulting)
- 3:15 pm COFFEE AND SNACK BREAK
- 3:30 pm WALKING TOUR of Port Townsend Downtown (Gee Heckscher and Jan Hopfenbeck)
- 5:00 pm OPTIONAL DINNER on your own or with group

## RSVP

Please get your registration on line through [Brown Paper Tickets](#) no later than March 25, 2011. For more information contact Rhoda Lawrence, APTNW [rlawrence@bolarch.com](mailto:rlawrence@bolarch.com) or 206.447.4749. Lunch and snacks will be provided. The Workshop is \$50 (\$15 for students), and is limited to 50 people; please RSVP as soon as possible to secure your seat. Preregistration is required.

Please let us know if your company would like to help us sponsor this event!!

## PORT TOWNSEND

Port Townsend is a wonderful town, on the northeast tip of the Olympic Peninsula. It is known for its many Victorian era buildings, its maritime center for boatbuilding, its cultural events, and the surrounding natural beauty. In 1977, the Port Townsend Historic District was declared a National Historic Landmark. It's worth considering spending a weekend there. [Click here](#) for links to lodging in the area. [Fort Worden](#), too, offers unique overnight accommodations within the park grounds.



## WORKSHOP ABSTRACTS

### *Jarkko Simonen* **Distress, Evaluation and Repair of Historic Concrete**

Durability of concrete in the northwest is primarily affected by the environment as well as the concrete materials used. This presentation will explore typical distress mechanisms such as freeze-thaw, corrosion, alkali silica reaction, and carbonation and will provide suitable techniques to evaluate concrete exhibiting distress. Evaluation techniques that will be discussed include crack mapping, delamination surveys, corrosion surveys (half cells, carbonation), petrography, and laboratory testing. These techniques can provide valuable information regarding the extent of the distress as well as selecting appropriate repair schemes, some of which will be also discussed briefly.

### *Mark Liebman* **Stone and Brick Masonry Repairs and Best Practices**

Best practice in historic masonry preservation is an evolving concept. Many of the techniques employed in the past have not stood the test of time and have either failed or exacerbated the problems they were supposed to solve. This is proving to be true of many current approaches and treatments. One of the principle issues appears to be an ongoing focus on developing new products based on modern chemistry, rather than attempting to better understand why historic masonry structures have naturally long life-spans. This session will focus on preservation techniques aimed at providing extended service life in the Maritime Environment including; redressing of stone, Dutchman repairs, resetting of damaged brick, installation of lead came in skyfacing joints, repointing with appropriate mortars, and cleaning of masonry; and will include videos demonstrating some of these techniques.

### *Kevin Palo* **Windows and Wood Repairs**

Windows in buildings in maritime communities take a pounding - salt laden air, rain, high humidity, strong winds and harsh sunlight all take their toll. Kevin will address both preventative maintenance and the proper restoration techniques for wood windows in the North West Coastal zone. Several case studies will be presented.

### *Jeff Morrell* **Decay of Wood in Maritime Environments**

Wood used in coastal environments tends to be under a higher risk of deterioration owing to the higher relative humidities and the increased risk of wind-driven rain. However, wood can be successfully used under these conditions when the users consider how to limit one or more of the requirements for decay development. In this presentation, we will review the requirements for deterioration, briefly overview the various agents of deterioration and then discuss the methods that can be used for preventing decay. We will finish up with a discussion about what to do if all goes wrong and wood decay needed to be arrested.

### *Mike Murphy* **Paint and Corrosion Resistance**

This session will discuss paints and resin technology, corrosion of various materials and corrosive environments, surface preparation, and the common reasons for coating failure.

### *Battle Brown* **Project Control and Reduced Costs through 21<sup>st</sup> Century Documentation**

We will demonstrate documentation tools to show you every mortar joint on a scaled rendering, display "on-image" forensic data e.g. half cell corrosion, impulse radar (GPR) scans, a 73 year façade comparison, time based NDT data hot linked, and before and after restoration comparisons. Making scope and forensic data retrievable, accessible, and understandable to the field user will be shown. PhotoDrawing™ scaled rendering, and PhotoSurvey™ inspection tool will be demonstrated to show how you can bring greater control to projects, reduce pre construction equipment and manpower on site to validation rather than discovery, and reduce bidder uncertainty on your next project. Benefits include more control, tighter cost estimates, and reduced potential for change orders.

## WORKSHOP SPEAKERS 2011

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## SPEAKER BIOS

### Jarkko Simonen

Mr. Simonen has extensive experience mitigating corrosion in reinforced concrete as well as evaluating concrete material properties associated with strength deficiencies, environmental and chemical deterioration, and serviceability, utilizing petrographic, chemical, and analytical diagnostic methods. Since joining WJE in 2005, Mr. Simonen has been involved with evaluation of existing structures, troubleshooting construction and materials problems, and developing repair and rehabilitation programs. These investigations have involved masonry, pre-cast and cast in place concrete, steel and other metals, floor coverings, coatings, and timber.

### Mark Liebman

Mark Liebman is a preservation consultant who combines extensive knowledge of traditional masonry construction with a background in material science. He is a recognized expert on stone, brick and mortar, and has written articles, participated on ASTM committees and written numerous repair specifications. Mark consults on historic masonry around the United States and currently is involved in the restoration of the original campus buildings at MIT, the Church of the Ascension in Pittsburgh, PA, the historic Fulton Street Cemetery in Grand Rapids, MI, the O'Brien and Legislative Buildings at the Washington State Capitol campus, and has consulted on a dozen historic buildings in Port Townsend. He has been a speaker on masonry preservation at the National Preservation Institute in Washington, DC and the Kansas State Preservation Conference, and led the U.S. historic construction materials working group at a National Science Foundation sponsored international preservation conference in Venice, Italy.

### **Kevin Palo**

Kevin Palo is a nationally recognized expert of the restoration and rehabilitation of historic buildings. Kevin is the owner of the Ten Mile Planing Mill in Ilwaco, Washington. Kevin has taught Historic Preservation classes at the Port Townsend School of Woodworking and Preservation Trades School, based at Fort Worden, in 2009 and 2010.

### **Mike Murphy**

Mike Murphy has been in the paint and coatings industry since 1974, and is a NACE Coatings Inspector Level 1. He is an experienced specification writer and is a reviewer for architectural and industrial projects.

### **Jeff Morrell**

Jeff Morrell is a Professor in bio-deterioration of wood and its prevention at Oregon State University. He has almost 30 years of experience working with wood in a variety of exterior applications. He has a background in forest pathology and mycology. His research includes developing new treatments for remediating decay in service, assessing the potential for natural products for wood protection, developing new methods for wood treatment and assessing the behavior of preservative treated wood in aquatic environments.

### **Battle Brown**

Battle Brown created the PhotoDrawing™ image rendering and PhotoSurvey inspection tool process to provide detailed high surface texture scaled drawings to the architecture, engineering, and construction industry for existing buildings, structures, and objects. He has over 35 years experience in imaging, graphics, and communications, software and has been involved in the AEC industry for over a decade as owner, contractor, and consultant. His own experiences as an owner of a historic landmark needing to clarify, document, and communicate scope of work on a restoration project, and to provide the next generation of owners with usable records for guidance provided the impetus for the development of the company's PhotoDrawing™ and PhotoSurvey™ product offerings.

## **APT NORTHWEST CHAPTER BOARD**

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**Thank you for attending our Materials and the Maritime Environment Workshop!**