

PRESERVATION BULLETIN

A SPECIAL "THANK YOU" REPORT
TO OUR PHASE I ROOF AND WINDOWS PROJECT FUNDERS

FEBRUARY 2005

WINDOWS RESTORATION UNDERWAY

Windows restoration specialist Jim Hunt, The Rift Cut, Middlebury VT, started work on his contract to restore 70 of the American Precision Museum's 166 historic wood windows. In November, he removed 17 sets of sash to his workshop in Middlebury. The museum's supervising architect, Tom Keefe, of Keefe and Wesner Architects, P.C, reported favorably about Jim's work, "Jim has spent some time figuring out how to do this right, and to get the best result. He has fabricated several items for his shop to make the process go smoothly. The results are excellent", says Keefe. "He had several custom dip-tanks made of sheet metal, which he is using to strip the sash to bare wood. Then he fits them to a jig he made, allowing him to rebuild the deteriorated or missing areas with epoxy (he is a former boat-builder, with lots



In the shop—window sash with glass carefully removed, paint dipped away, ready for wood and epoxy repairs.

of experience molding and shaping odd parts). He has fitted pieces of wood where muntins need an armature for epoxy, and tightened the pegged stiles and rails in true alignment. He is applying a thinned 4-coat paint finish that is smooth and has full coverage of all parts. He also dips the glass, all of which is removed using copper heat diffusion plates to avoid breakage while effectively softening the old putty to allow complete removal. All old putty is

removed from the glass, and it can then be re-installed. The result is a "like-new" sash with all the original muntin profiles and pegged frame details. I'm very pleased with his approach and the quality of the work."

"It doesn't look like a new window (i.e. "perfect"), but is completely sound, true, tight and firm. Real, high quality work!" *Tom Keefe, the museum's architect.*

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Jim Hunt returned to the museum in early February to remove the second batch of sash. Here he is protecting the window openings with plywood.

BIDS FOR PHASE I Because of the project's exacting preservation standards, we contracted with our architect to oversee a competitive bid process. All bidders were pre-qualified. In August 2004, three bids were received for the roof and two for the windows projects. Contracts were signed for the windows with The Rift Cut, Middlebury VT in September and the Melanson Co., Inc, Keene NH, for the roof in August. The roof work will begin in spring due to scheduling and to avoid winter

UNEXPECTED CONTINGENCIES

Nothing worthwhile is ever as simple as one could wish, including the American Precision Museum's roof project. Restoration plans call for a new slate roof to replace the deteriorated original on the 1846 Robbins and Lawrence Armory building that is our home.

Staff and building committee trustees worked closely with preservation architect Tom Keefe, as he wrote the project specifications and oversaw the bidding process.

Best Use of Limited Resources

Slate is a very heavy material which requires great care to remove and install. Workmen will need to erect scaffolding around the entire building—including along the four story high side of the building adjacent to Mill Brook to accomplish the repairs.

Windows contractor, Jim Hunt, will also need to use the scaffolding. Although much of his work takes place away from the museum, he needs to complete repairs to the jambs and sills on-site, working

from inside and outside the building. We built coordination of scaffold use between the roof and window projects into our bid documents to ensure that our limited resources will be used in the most effective way.

Getting our Wires Straight

Loaded electric wires from the Central Vermont Public Service substation located behind the building pass extremely close to the northwest corner—too close, in fact, for the safety of people working on the scaffold. CVPS will move the wires before the scaffolding is positioned, and will move the wires back after, adding \$6,500 to the project.

Director Ann Lawless discussed the issue with CVPS officials in the hope that the utility could do the work pro-bono. Although CVPS was supportive of the museum's project in principle, government regulations prohibit CVPS to underwrite the project cost, because it benefits only a portion of the utility's ratepayers. However, they encour-



Wires from the CVPS substation behind the Armory that pass too close to the building must be moved to make it safe for the roof and windows project.



In July 04, CVPS brought a lift truck to examine the wire situation up close, with museum trustees, staff, architect Keefe and representatives from the Melanson Co., who have been awarded the roofing contract.

aged us to apply to the CVPS community giving program for a grant to help with other aspects of the project, and we will follow up on the suggestion. Participation of CVPS employees in the applicant's activities is a requirement for all grant requests.

NEXT STEPS —PHASE II— MORE WINDOWS, STRUCTURAL ISSUES & CUPOLA



Cupola framing and trim repairs and a new bell deck are needed.



Phase I

Phase I, the new slate roof and restoration of 70 of the building's 166 historic wood frame windows - will be completed by July 2005. All the funding, \$400,000, is in hand or has been pledged. *Save America's Treasures*, Vermont Housing and Conservation Board, the Preservation Trust of Vermont in partnership with the Freeman Foundation, the Timken Foundation of Canton Ohio, the Gleason Foundation, private foundations and many generous individual do-

nors are making this important work possible.

Phase II

Careful planning is essential to a multi year restoration, especially one with the potential for what is euphemistically called "discovered conditions". Phase II will include interior structural work to address framing on the upper floors and the cupola, and the remaining 90 windows. We have already started planning.

Architect Keefe is under contract to develop a scope of work and

budget to address the structural issues and the needed cupola repairs. His analytical process will be made easier by the scaffolding that will soon be in place for the roof work. Window specifications already developed in 2004 for Phase I will be useful in planning the budget for the remaining 90 windows.

The next step will be for Mr. Keefe to prepare drawings and specifications sufficient to put these projects out to bid this summer. We continue to raise funds for the project.

PHASE III— MASONRY—WHAT'S NEEDED?



The west wall shows deteriorated mortar, poorly matched brick infill and areas of missing brick.

The Armory was built in 1846. Many repairs to the brick and its original, soft, mortar were made over the years.

Beginning in the 1930's

Portland cement mortars, harder than the old hand-made brick, were used extensively on all areas of the building exterior. This mortar is too hard to act as a cushion for

the brick. This inappropriate infill needs to be removed and replaced with a softer mortar compatible with the old brick. Professional cold-weather masonry restoration specialists helped us develop a competitive budget for the masonry planning project. The outcome will be a budget and scope of work for the restoration. The planning will entail on-site investigations and lab analysis.

We are continuing to seek the planning funds.



American Precision Museum was founded in 1964 and designated a National Historic Landmark in 1972. In 1987, by virtue of the importance of its collections, reflecting major landmarks in machine tool development and innovation, the American Society of Mechanical Engineers designated it the first International Mechanical Engineering Heritage Site, housing an International Mechanical Engineering Heritage Collection. The Museum celebrates the birthplace of America's Industrial Revolution, where the concept of interchangeable parts was brought to practical perfection.

THANK YOU, PHASE I DONORS

<i>Save America's Treasures</i>	\$200,000
Vermont Housing and Conservation Board	100,000
Preservation Trust of Vermont - Freeman Foundation	50,000
Timken Foundation	40,000
Gleason Foundation	5,000
Private Foundations	50,000
<u>Many generous individual donors</u>	<u>13,624</u>
PHASE I TOTAL (Dec 31, 2004)	\$458,624

BUDGET OUTLINE *VERY PRELIMINARY*

<u>Phase II</u>	
Structural & cupola repairs – design	\$ 17,200
Construction (estimate)	60,000
Remaining 95 windows (estimate)	95,000
Architectural services (estimate)	
bid s, administration, construction oversight	50,000
<u>Phase III—Masonry</u>	
Planning	50,000
<u>Construction (very rough estimate)</u>	<u>1,000,000</u>
Total Exterior	\$1,272,200

Can you help with Phase II now?

Individual gifts, large and small, show support and help leverage grant funds.

____ **Yes**, I want to support the Building Preservation Fund with a gift of \$ _____. Please make checks payable to *American Precision Museum*, or fill in your credit card information below. Please write your name as you would like it printed in our Annual Report:

Name: _____

Address: _____

City State Zip: _____

Credit Card: ____ *Visa* ____ *Mastercard*

Number _____

Expiration Date _____

Your signature is required for credit card payments _____

Mail this form to American Precision Museum, PO Box 679, Windsor VT, 05089.

Thank You!