Shenandoah-Dives Mill HAER, HSA & NDT Workshop

San Juan County Historical Society
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San Juan County Historical Society

Silverton Restoration Consulting

Final Report

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Executive Summary:

The goal of this project was to disseminate advanced information on historic preservation documentation and assessment utilizing the most "cutting edge" technology available. This information was demonstrated in a practical, real-life venue. This project provided a hands-on-learning experience for professionals, students, and advocates in the field of historic preservation. The Shenandoah-Dives Mill was the "classroom" for our preservation workshop which covered all aspects of Historic American Engineering Record (HAER) documentation and Historic Structure Assessment including understanding the different levels of HAER documentation, creating measured drawings, photographic standards, historic research, principals of stabilization and preservation, and developing a Historic Structure Assessment. The workshop provided demonstrations of new laser mapping technology and the use of x-rays in determining condition of the structure. The workshop also included seminars on the development of the milling process specific to the Shenandoah-Dives Mill, defining the history of the hard rock milling process within a regional and national context. Understanding this technology was crucial to the HAER documentation of the engineered mill process. The NPS HAER Team was nearing completion of their documentation during the week of the workshop. This provided an opportunity for discussion of the various problems and solutions, which were encountered during the project. This workshop was an integral part of the initial step toward the overall objective of stabilizing and preserving the Shenandoah-Dives Mill as it brought the project consultants together in an educational forum.

Shenandoah-Dives Mill Complex, Silverton, Colorado. The National Park Service performed a Level 3 HAER documentation of the Mill during the summer of 2005.

Lunch on-site at the mill.

The weeklong 2005 workshop hosted 15 participants and 8 presenters and consultants. The broad range of topics covered during the week allowed for a comprehensive understanding of the initial planning, documentation and assessment tasks associated with a project of this size, and significance. There was a general consensus from participants and presenters that the workshop was a tremendous success in its dissemination of the information presented in a community based educational experience offered through sharing the entire week in a team-building environment.

The success of the 2004 workshop gave the Historical Society greater insight into the budget and logistics for hosting this year's 2005 workshop. The result was a project that fell within budget and provided a complimentary experience of both seminar and on-site training.

Introduction:

BY: D. Singer
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The Shenandoah-Dives Mill, (the Mill), also known as the Mayflower Mill, is listed as a National Historic Landmark. The San Juan County Historical Society owns and operates the mill as part of their interpretive mission. The workshop was devised to take advantage of the monumental effort that the Society is embarking on with the preservation of the complex. The Society feels that by sharing this experience with participants and their contracted consultants, they will be able to fulfill their educational mission in a unique opportunity for mid-career professionals and student of historic preservation.

The Mill provides an extraordinary vision of the development of ore processing mills in the first half of this century. The Mill's buildings, technology, and collection of equipment have scarcely changed since the turn of the century, presenting a striking and rare case of an early twentieth century flotation mill. Constructed in 1929, the Shenandoah-Dives Mill was designed for milling metals from low-grade gold ore. At the time of construction the Mill was considered state-of-the-art, with the most modern mining and milling equipment available. The type of floatation technology used in the mill is nationally significant due to its role in diverting a crisis in the mining industry at the turn of the century. The new flotation technology allowed for the extraction of base metals and low-grade precious metals, which was what most mines by this time were mining. In operation until 1992, the Mill contains virtually all of its working components. According to a National Park Service (NPS) survey, the Shenandoah-Dives Mill is one of only five such mills still in existence in the Untied States. Of these five mills, the Shenandoah-Dives Mill is the only one described by the NPS as having "excellent integrity."

Reviewing the archival documents associated with the construction of the mill complex. Pictured: Dana Lockett and Richard O'Connor-NPS, Carl Barna-BLM, John Evaskovich and David Singer-Silverton Restoration.

Despite its excellent integrity, the Shenandoah Dives Mill is in urgent need of numerous repairs to preserve the structure and keep it safe for visitors. Given the sites significance and complexity, the first crucial steps in preserving the building was to fully document the structure and prepare a conservation plan. Because of the national significance of the Mill and its contents, the NPS has recommended full HAER documentation of the Mill, as it will produce the highest level of documentation currently available. This workshop was planned to take advantage of the documentation and assessment professionals who would be able to share their knowledge and expertise within the context of the project.

The workshop was divided into five sections or components including:

- HAER Documentation and Historic Research techniques
- Methods and practices of Historic Structures Assessments
- Industrial Archeology Fieldwork at Silver lake
- GIS and GPS methodology and technology
- Non-Destructive Testing

Methods and Materials:

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A complete set of HAER documentation, consisting of measured drawings, large-format photographs, and written history, played a key role in accomplishing the mission of "preservation through documentation" at the Shenandoah Dives Mill. The workshop endeavored to bring in various experts and their specialized equipment, who are working on the documentation of the mill complex. The presenters included historian and floatation technology expert Dawn Bunyak, NPS historic architect Dana Lockett, mining historian and Chief of HAER, Richard O'Connor and Large Format Photography professional Jet Lowe. GIS and GPS professionals Cari Goetchaus and Deirdre McCarthy were brought in to present the documentation of the contextual landscape within which the mill is sited. The hands-on, in-the-field demonstrations of the GPS equipment and GIS software applications associated with gathering and interpreting this type of contextual information was as perfect fit to the high-tech delineation of the mill structure. Archaeologists Eric Twitty, Jon Horn and Julie Coleman made presented a seminar on industrial artifacts associated with hard rock mining camps and led field trip to the Silver Lake Mining District mid-way through the week of the workshop. As a compliment to the documentation practices and standards presented in the first half of the workshop, non-destructive testing equipment and methodology was discussed and demonstrated at the mill site. Dave Woodham, engineer and materials expert, Ron Anthony, wood scientist, and Chris Koziol, Director of the Architectural Preservation Institute in Denver, gave both seminar presentations and on-site demonstrations of various testing technology including X-ray technologies, resistance drilling, metal detection, hardness and rebound testing. All the information presented during the week was compiled into a workshop notebook and distributed to all participants and presenters. These notebooks became living documents of the workshop as participants were continually referred to sections of the book throughout the week, and many careful notes and documents downloaded from the web at the workshop headquarters in the Historic Avon Hotel to add to the book (a copy of the basic workshop notebook is included as a deliverable with this grant).

Jet Lowe-NPS and David Singer-SRC, preparing for aerial photography of the mill within the context of Arrastra Gulch to be presented in workshop discussions related to Historic American Landscape Survey.

NPS HAER Architect Dana Locket, demonstrating the Lieca total station survey equipment used document historic structures at the mill site. This digitally mapped information is downloaded in to Auto Cad software to create measured drawings. Mr. Lockett gave a seminar presentation explaining this process and the HAER standards associated with the production of these drawings in a morning lecture venue.

Finally, one of the most successful methods of sharing the expertise l
shared meals and evening lecture series offered throughout the weel
the public and many local citizens and heritage tourism visitors to
presentations ranging from the geology of the San Juan Mounta
Silverton.

Results and Decisions:

The workshop was attended by historic preservation planners, preservation professionals, agency archaeologists, architects, historians and several members of regional historical societies actively

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involved in preservation, and preservation students. By exposing the project to an audience like this, the Historical Society has been able to communicate their mission to an ever-expanding audience. The HAER project and workshop made the cover page of the 2006 Spring Issue of the National Park Service Magazine, Common Ground, and received a 12 page spread which has given the San Juan County Historical Society visibility and notoriety at a national level. Their description of the workshop focused on the successful partnering of the NPS, and Historical Society and the Consultants involved in the assessment and documentation of the Shenandoah-Dives Mill. However, I believe that the use of the project as an opportunity for education in the form of hosting a workshop is one of the most inspiring aspects of the process. Usually the sharing of professional expertise is limited to the various consultants involved with a project and sometimes the client too if they are so inclined. Here however, we took the opportunity to provide access to the professionals involved in the project with a professional audience and created and educational forum. I personally believe this was our greatest success, and a path that preservationist should pursue where ever possible. Currently, the Society has made an Appropriations request to Congress and submitted a competitive grant request for Save America's Treasures funding for the next "bricks and Mortar" phase of the rehabilitation of the mill. We know that the national exposure will strengthen our applications to Congress and the NPS and that our ability to bring in a larger and broader national group of participants for our next workshop will be strongly enhanced. We are working on a proposal for a Large Format photography workshop, highlighting the newest developments in digital technology and we look forward to working with the NCTPP in the future.

Conclusions

From the outset of this project we had two very important clients. The first client is the mill itself and the spirit of those people who constructed and worked at the mill and the mines associated with the ore that was processed here. This project was aimed at honoring their memories and industrious legacy through the preservation and interpretation of the mill. The second client group are the people who are currently involved in the preservation effort. Through the evolution of our workshop we were able to reach out to multiple partners, agencies, students and professionals and share the knowledge and experience of the team of expert consultants we had assembled. New relationships were formed between participants and the presenters, and existing partnerships with agencies like the BLM and National Park Service were strengthened, bringing new people like Cari Goetchaus and Deirdre McCarthy on-board. The public benefit of this project was the hands-on learning of advanced preservation information and techniques by professionals, students and preservation advocates. The information presented in the workshop was designed to meet the goals and objectives of Colorado State Historical Society which San Juan County Historical Society has adopted including, "developing preservation materials, workshops and classes for professional and grassroots partners" including the continued development of advanced programs to broaden the awareness of preservation issues among professionals in the field, "supporting the exchange of state-of-the-art preservation information" (Goals and Objectives of the State Historical Fund 2001-2005). We believe that we accomplished these goals, and have established a strong local and regional interest in this type of educational experience. We hope to continue to offer this type of educational venue again in the near future.

Acknowledgements:

The San Juan County Historical Society would like to acknowledge the funding agencies that supported this year's workshop. San Juan County is a small community of 350 people, located in a very remote region of Colorado, and as such, we have limited resources. However, with the financial

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assistance from agencies like the National Center for Preservation Training and Technology and world-class institutions like the Getty Foundation, we have been able to capitalize on the spirit and motivation of our small group and the incredible heritage education opportunities that San Juan County has to offer. The National Park Service HAER Team provided state-of-the-art training and I would like to acknowledge Richard O'Connor, Dan Lockett and Jet Lowe for their expertise and friendship. Special thanks goes to Gheda Gayou and James Stratis, who joined us from their offices at the Colorado State Historical Society's State Historical Fund in Denver for an evening presentation on the their standards for Historic Structures Assessments. The Mountain Studies Institute's mission of education and research in the Alpine environment surrounding Silverton, dovetailed well with our focus on cultural resources and we would like to thank them for their cooperative spirit and welcome atmosphere offered at their field station headquarters in the Avon Hotel. Several of the venues for the evening lecture series were offered in the recently restored San Juan County Courthouse and the Nationally recognized Silverton Town Hall, and we would like to thank the City of Silverton and the Board of County Commissioners for their generous support through the use of these facilities. A special thanks goes to Melissa Childs and Elevated Catering for the gourmet meals throughout the week and her special attention to the dietary needs of several of the workshop attendees. Several members of the Historical Society offered their time and expertise during several tours held at the County Archive and the Mill, and we would like to thank Bill Jones and Freda Peterson for their spirited presentations. Thanks to all the presenters and participants for and energetic week of exchanging ideas and knowledge. Finally, I would like to personally thank Beverly Rich, and Julie Coleman-Singer for their unerring support of this idea to host a world-class workshop here in Silverton. Julie's combination of experience as an archaeologist, geologist, preservationist and talented bureaucrat truly helped to guide the diverse goals of the workshop into a cohesive package from planning through implementation. Her past and future accomplishments in preservation and interpretation of the cultural heritage within San Juan County as the Heritage Team Lead archaeologist for the Bureau of Land Management and the National Forest Service will leave an enduring legacy. Beverly's leadership of the Historical Society over the past 25 years has guided the County and the City toward a bright economic future though the celebration of the past and the reverence for the miners who carved out a special place here in the mountains, which we call home. Her recent acceptance of the National Honor Award from the National Trust for Historic Preservation is a testament to her success and ability to inspire good works. Silverton Restoration Consulting was proud to be involved with all these people for an inspiring week, joining together in one of the best community educational experiences I've ever encountered.

Sincerely,

David A Singer
Principle Investigator

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