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It Will Be a Fine Place, But There Has To Be an Easier Way

by Mona Nelson-Balcer

Editor's Note: On Monday, Dec. 30, 1996, the roof over the public meeting room of the Kandiyohi County Historical Society (KCHS) collapsed suddenly under the weight of ice and snow. The disaster and its effects on KCHS activities were described in the February 1997 Interpreter. Here, KCHS director Mona Nelson-Balcer reports on the recovery.

Nine months and three days after the roof collapsed into a portion of the Kandiyohi County Historical Society, building bids were opened for replacing and adding to the room that was lost. The same contractor who answered the call to "shore up" the room before it collapsed last December—Nelson Construction Co.—was awarded the bid. An official groundbreaking was part of the society's 100th anniversary celebration at its October annual meeting.

Since the collapse, much of the work at KCHS has been related to the recovery and planning for the room's replacement. Furniture, equipment and many items in the collections were rearranged or relocated to make room for objects taken out of the collapsed area. The value of the losses was determined and the insurance claim settled. Special board meetings were held, professional advice gathered from the Minnesota Historical Society and other societies, and committees were formed to determine how best to meet the society's needs through a building program.

"Building for the Future—Preserving the Past," a building plan and fund drive, was launched late in the spring. The

\$390,000 project requires about \$250,000 from private donations and grants, with the rest coming from KCHS investment and insurance funds. Phases of the project—rebuilding and adding to the room that was lost, renovating and replacing the roof of the 28-year-old museum building, and adding a new multi-purpose room—will be completed when funds are in hand for each stage.

When completed, this first phase of building in the area that collapsed will feature a public research room with an island work center, work room, office, and archives storage area, plus ADA-standard restrooms. The turn-of-the-century railroad depot that serves as the entrance and lobby also will be renovated when the new rooms are attached.

The KCHS museum will be open through the construction period, which will be completed in early 1998. Although everyone involved would have preferred that it happened for different reasons, the final effect of last winter's catastrophe will be a better facility for the Kandiyohi County Historical Society. As one member said, "Let's make lemonade out of the lemons."

For more information, contact KCHS at (320) 235-1881, or write to KCHS, 610 N.E. Hwy. 71, Willmar, MN 56201.

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This photo, taken Nov. 20 from inside the former meeting room, shows the new north wall (right) and the first new rafter. The men are from Nelson Construction Co.

Photo courtesy of Kandiyohi County Historical Society



Transportation History The Return of the Streetcar

At the peak of the trolley era, before automobiles became ubiquitous, streetcars operated in nine Minnesota cities outside the Metro Area: Brainerd, Breckenridge, Duluth, East Grand Forks, International Falls, Mankato, Moorhead, St. Cloud and Winona. By 1939, the lines in these cities were

abandoned in favor of buses; Duluth's was the last one of these to go. Streetcars continued in use in the Twin Cities until 1954.

One of the last shots the streetcar industry took at the automobile was the

Presidents' Conference Committee streetcar. The

"PCC" car was sleek and modern in its own right, pleasing to the eye, fast and comfortable. Twin City Rapid Transit Company bought 140 PCCs from 1946 to 1949 and was making plans for a 700-car PCC fleet, but management changed in 1949; the company declined, and the streetcar system was abandoned in 1954.

One of the transit company's PCC cars, No. 322, built in 1946, is now at the Minnesota Transportation Museum (MTM). When the museum opens on May 2, 1998, No. 322 can be seen, but not ridden, for restoration work is still going on. The museum has three other vintage streetcars that can be ridden, however. They are the Twin City Lines car No. 1300 (1908), Duluth Street Railway Company car No. 265 (1915), and Duluth No. 78, which was built in 1893 and is one of the oldest electric streetcars in service in the world. PCC No. 322 is planned to enter service on the Como-Harriet line in the 1999 season.

For more information about MTM and the Como-Harriet Streetcar Line, contact the museum at P.O. Box 17240, Nokomis Station, Minneapolis, MN 55417-0240; (612) 228-0263.



Photo courtesy of Minnesota Transportation Museum

This photograph, taken in August 1997, shows Duluth Street Railway cars Nos. 78 and 265 (left) and the newly arrived Twin City Lines No. 322 on the right.

1998 MHO Workshops & Public Meetings: Mark Your Calendar!

Three public meetings about historic preservation and field program workshops will be held on consecutive Thursday evenings and Fridays in 1998, as follows:

- Thursday, March 26** • Public meeting, 6–8 p.m. • *Morton, Lower Sioux Agency Interpretive Center*
- Friday, March 27** • MHO Field Program workshops, 8:30 a.m.–2:45 p.m. • *Morton: Lower Sioux Agency*

- Thursday, April 23** • Public meeting, 6–8 p.m. • *Little Falls: Cass Gilbert Depot*
- Friday, April 24** • MHO Field Program workshops, 8:30 a.m.–2:45 p.m. • *Little Falls: City Hall and Musser House*

- Thursday, May 7** • Public meeting, 6–8 p.m. • *Virginia: Coates Plaza Hotel*
- Friday, May 8** • MHO Field Program workshops, 8:30 a.m.–2:45 p.m. • *Chisholm: Iron World*

After the workshop sessions conclude, participants can take a tour of a local site or area of historical interest.

The public meetings about historic preservation are free; there is a fee of \$20.00 for the workshops, which covers the cost of lunch and the tour.

A full description of the programs will be published with the February *Interpreter*.



TECH TALK

This issue: Building Materials • Part II



Treatment and Maintenance of Masonry by Charles W. Nelson

In the previous “Tech Talk” (November 1997), the principal categories of masonry were introduced. These include stone, brick, concrete, terra cotta (or clay tile), and stucco. With the exception of poured concrete, masonry construction is comprised of individual units, held in place with mortar. (Historically, mortar is a mixture of lime, sand, and water; modern mortars are strengthened by the addition of Portland cement to the mix.) As with any building material, masonry is vulnerable to the effects of weathering. A proper program for periodic inspection and maintenance is critical to the preservation of masonry structures. Neglecting to have such a program could eventually mean the loss of the structure itself. This “Tech Talk” will address the identification of problems and selection of remedial treatments.

Water: Masonry’s Enemy

Water, or moisture generally, is directly or indirectly responsible for the majority of problems in masonry, and in virtually every type of construction. Water may enter a building from the ground or through walls and roofs. In the form of water vapor, it may be trapped within the structure and wreak havoc before the full consequences are discovered. Saturated masonry is especially prone to lose its structural properties, causing it to break down to the point at which the units essentially collapse. In Minnesota, this problem is greatly increased by wide fluctuations in temperature and humidity, which retard or temporarily halt the natural drying process that is so essential to preservation.

Editor’s note: TECH TALK is a bimonthly column for offering technical assistance on management, preservation, and conservation matters that affect historical societies and museums of all sizes and interests.

The most common point of entry for water is the mortar joint. Mortar bonds the units together; it must be strong enough to maintain this bond, but it also must be flexible enough to allow the structure to “breathe” in response to natural temperature fluctuation. Wind and rain cause erosion of the mortar, exposing sand aggregate. Continual erosion results in the receding of the mortar, resulting in open penetrations into the wall. When water enters these openings, it may saturate the interior and may freeze. When water freezes, it expands, driving the joint



SHPO, MHS; photograph by Charles Nelson

The author points out water-caused deterioration of these mortar joints, and the inappropriate use of Portland cement patching mortar.

open, forcing the masonry units apart, and eventually breaking the bond. For this reason, it is critical that mortar joints be inspected and maintained in sound condition. The accepted treatment is to replenish lost mortar by *repointing*.

Charles Nelson is Historical Architect in the Historic Preservation, Field Services and Grants department of the Minnesota Historical Society. Known around the state as Charlie, he has been with the Society since 1971, and has worked on numerous preservation projects and given many workshops and talks throughout Minnesota and the upper Midwest.





TECH TALK

This issue: Building Materials • Part II



Repointing

When repointing masonry, it is important to remember a simple rule: *The mortar should be softer than the material it bonds and should match the original in composition and application.* The most common mistake is using a mortar that is too hard, a characteristic found in mortars high in Portland cement. Such mortars do not expand and contract in proportion to the units. Two situations arise: cracks form between the mortar and the unit, allowing water to enter the wall; or the unit itself fractures, and the mortar prevents the unit from expanding with heat. An unfortunate consequence is loss and inevitable replacement of the unit.

Selection of repointing mortar should be based on a familiarity with the structural properties of the masonry units in the wall. It should also take into account the color of the original mortar and the profile, or striking, of the joint. Another rule to remember is, *Mortar requires approximately 21 days to cure to final strength and appearance.* Pigments added to repointing mortars require time to cure if they are to match. For



SHPO, MHS; photograph by Charles Nelson

This photograph shows damage to mortar and masonry caused by a leaking gutter.

this reason, test areas should be required about a month prior to the actual repointing project. In Minnesota's climate, repointing should be done before October 15th to allow adequate curing time before a hard freeze (unless the area is heated).

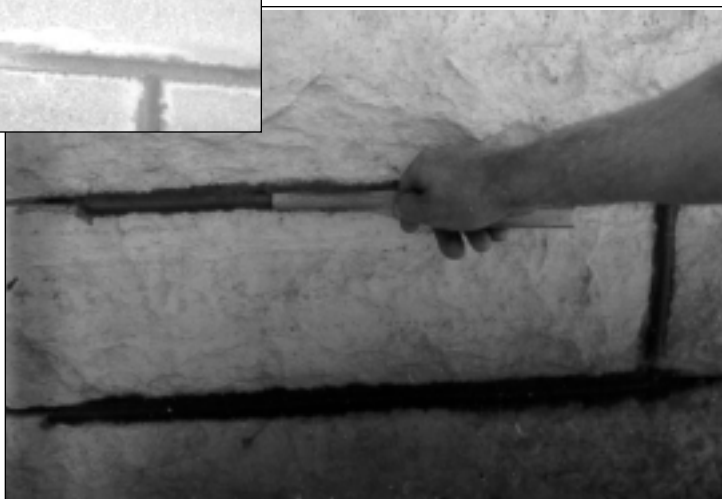
To reduce the potential of damage to historic masonry units, it is advisable to avoid use of pneumatic tools and saws; hand chisels are preferable. In cases where the wall is comprised of modular units, such as brick or block, saws may be used, but

only on horizontal joints. You have to be extremely careful not to widen the joint, however, for this damages the units irreparably and alters the appearance of the wall. To achieve the final profile, the joint can be struck to various depths and profiles; striking the joint gives it a final finish which aids in resisting weathering. Or, you can apply a "finger joint," which has a concave profile as if the final finish was the result of dragging a finger on the surface. (*Preservation Brief #2: Repointing Mortar Joints in Historic Buildings* will provide additional guidance on this issue.)



SHPO, MHS; photograph by Charles Nelson

Above: A sample of mortar is being matched with the historic mortar; just below it are profiles of "finger joints" made by striking the mortar with the finger.



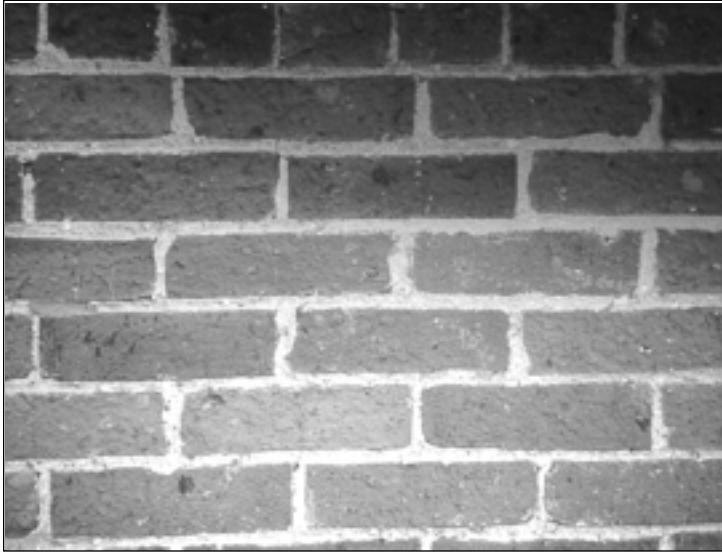
SHPO, MHS; photograph by Charles Nelson

A special tool is used to strike the joint into a raised convex "bead."



Cleaning Masonry Surfaces

The Secretary of the Interior's Standards for the Treatment of Historic Properties specifically states: "Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible.



SHPQ, MHS; photograph by Charles Nelson

A sandblasted wall, showing irreparable damage to the bricks; the outer surface has been abraded away, leaving the softer interior open to the weather.

Treatments that cause damage to historic materials will not be used." Carrying this standard a bit further, I would suggest an eleventh commandment: *Thou shalt not sandblast!* The abrasive impact of sandblasting effectively increases the material's vulnerability to erosion, and significantly shortens the life expectancy of the structure. With sedimentary stone like limestone, softer areas are easily abraded and destroyed. In the case of brick, the "crust" resulting from its kiln manufacturing process is removed or penetrated, allowing water to be absorbed into the soft interior. (For additional information, refer to *Preservation Brief #6: Dangers of Abrasive Cleaning to Historic Buildings.*)

A variety of chemical cleaning products has been developed and introduced on the market. These products include spray-on applications as well as poultices that draw out embedded dirt and pollutants. It is important that each product be tested on-site to assess its effectiveness. Many chemicals have adverse residual effects if not applied in strict accordance with manufacturer's specifications, so any such application must be undertaken by a professional contractor familiar with the product and its technical properties. It is not a job for amateurs.

Remember, too, that the best cleaning agent is the most gentle; it will remove only what may be detrimental to the material while retaining its natural patina of age. For example, a caustic chemical can remove the protective surface-glazing from terra cotta. Applications of acidic cleaners can cause lime mortars to effloresce, resulting in white staining of the surface and potential weakening of the strength of the mortar. Care must be taken when removing paint from masonry surfaces if such paint contains lead. Some dirt is easily removed by simply wetting the building surface with a biodegradable detergent, letting it soak in, and then rinsing it away with a garden hose. Stubborn residue may be dislodged with a stiff bristle brush. (For additional information, refer to *Preservation Brief #1: The Cleaning and Waterproof Coating of Masonry Buildings*, and *Preservation Brief #38: Removing Graffiti from Historic Masonry.*)

Coatings: Concrete and Cement-like

Much attention has been given recently to the use of chemicals known as *consolidants*. Like many of the repellent coatings mentioned previously, consolidants form a molecular bond within the material to strengthen it against erosion. Consolidants are also said to allow the masonry to "breathe," thus eliminating the threat of trapped water vapor. (See sidebar.) The result has been considered successful in some recent tests, the majority of which have been conducted in temperate climates or controlled environments. Unfortunately, not enough is known of the long term impact of continued application of consolidants to recommend use in Minnesota's climate.

A Word of Caution: Water-Repellent Coatings

Though water-repellent coatings retard the penetration of water from exterior sources, they also inhibit the escape of trapped moisture from within. Many coatings form a shell through a molecular bond within the masonry. For the most part, the chemicals applied are inert, but they are also irreversible. The consequences, therefore, are long-range and in many cases disastrous. Allowed to freeze, the saturated masonry unit expands, forcing the outer surface to spall, or fracture, resulting in irreparable damage.



TECH TALK

This issue: Building Materials • Part II



Unlike stone or brick, concrete is a composite mix of sand or gravel (aggregate) bound together with cement. When water is added, the mix undergoes a chemical reaction and hardens. Concrete is especially vulnerable to freezing and thawing, as it readily absorbs moisture. Resulting problems include spalling of the surface, structural cracks from uneven settling or expansion, efflorescence or staining, and corrosion of structural reinforcing members.

It's Okay to Ask for Help

Once a problem is identified, remedial work usually requires a professional, not a “do-it-yourselfer.” Patching repairs require the total removal of deteriorated materials down to a sound substrate. For narrow cracks, a slurry of water and cement can be applied as filler. However, if the cracks are the result of settling, an elastic sealant must be used. Large areas require a patch of cement and sand to allow adequate compacting and bonding. If the patch is deep, several layers may be required. Care must be taken to assure that exposed reinforcing members are totally covered. It is highly likely that the concrete patch will not match the historic material; if repairs are extensive, it may be necessary to paint the surfaces with a special masonry paint for aesthetic reasons. (For further information, refer to *Preservation Brief #15: Preservation of Historic Concrete: Problems and General Approaches*.)

Stucco

Many concrete and tile buildings have stucco applied to their exteriors. Stucco is a two-or-three-part, plaster-like coating that is applied directly onto masonry or over wood or metal lath in frame construction. Though it is considered a *protective*



SHPO, MHS; photograph by Charles Nelson

Stucco applied to limestone has trapped moisture in the wall. Freezing caused the stucco to loosen and break away, taking bits of the stone with it.

coating, it is particularly susceptible to water damage. Successful repair requires an experienced professional plasterer. Stucco finishes are found in a variety of textures, ranging from smooth (like plaster) to heavily textured, “pebble-dash,” exposed aggregate (i.e., it looks like pebbles imbedded in cement). Areas to be repaired must be well-prepared by removing deteriorated stucco down to the substrate or lath, then layering the new stucco back to the required thickness and finishing its surface to match. In some cases where there has been extensive surface damage or deterioration, but the substrate remains sound, it may be desirable simply to apply a new finish coat to the entire building. (For further information, refer to *Preservation Brief #22: The Preservation and Repair of Historic Stucco*.)

Finally, a word of caution regarding improper use of cement-like coatings such as *dryvit* and *gunnite*. These coatings are commonly applied over deteriorated masonry in an effort to reestablish a sound exterior surface. Unfortunately, they are high in Portland cement content, and so do not have the same expansion properties as the masonry beneath. They form strong bonds to the masonry; if removed, they often cause damage to it, and also retard escape of trapped moisture in the wall. For these reasons, using these products on historic masonry buildings is strongly discouraged.



SHPO, MHS; photograph by Charles Nelson

Surface coating that traps moisture can cause extensive damage to masonry.





AASLH Awards Program

The American Association of State and Local History (AASLH) has announced its 53rd annual awards program. The awards recognize groups and individuals who attain standards of excellence in the collection, preservation, and interpretation of state, provincial, and local history throughout North America. Last year the Minnesota Lake Area Historical Society received a Certificate of Commendation, and the Minnesota Historical Society received an Award of Merit.

Nominations are to be sent to the state or regional chair of the awards program by **March 1, 1998**. The awards will be announced on **July 15, 1998**.

Awards are made in four categories.

Award of Merit, for a performance deemed excellent compared with similar activities in North America.

Certificate of Commendation, for excellence within the context of available means and regional standards.

NOTE: The two awards listed below are made only through regional chairs of the awards program; do not gather documentation before contacting the regional chair (see below).

Albert B. Corey Award, for primarily volunteer-operated historical organizations that best display the qualities of vigor, scholarship and imagination in their work. Named in honor of a founder and former president of AASLH.

Award of Distinction, in recognition of long and very distinguished service. This award recognizes recipients for their contributions to the field of state, provincial and local history, who are acknowledged nationally as leaders in the profession, and who have demonstrated the highest standards of performance and professional ethics.

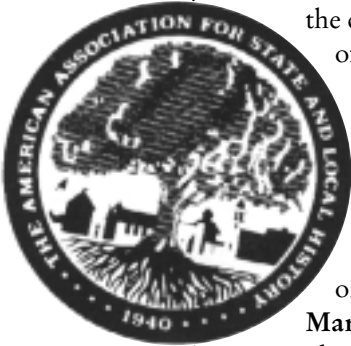
For further information, contact the the state or regional chair of the awards program. The Minnesota chair is Tim Glines, Minnesota Historical Society, 345 Kellogg Blvd. W., St. Paul, MN 55102-1906; (612) 297-7913; e-mail: timothy.glines@mnhs.org. The regional chair is Lynn Wolf Gentzler, State Historical Society of Missouri, 1020 Lowry St., Columbia, MO 65201-7298; (573) 882-9366; e-mail: gentzlel@ext.missouri.edu.

Grants to Historical Organizations from the Minnesota Humanities Commission

The nine Minnesota Humanities Commission (MHC) grants listed below illustrate both the variety of programs being produced by Minnesota historical organizations, and the variety of levels of program support from the commission. Many of the educational and cultural projects supported by MHC are in some way historical.

- **Chisago County Historical Society, Lindstrom:** \$300 for *Messengers of the Wind: Native American Women Tell Their Stories*, a lecture/discussion program on the experiences of Native American women.
- **Cokato Historical Society and Museum:** \$500 for a lecture/discussion program on Scandinavian history and culture at the society's annual meeting.
- **Farmamerica/Minnesota Agricultural Interpretive Center, Waseca:** \$3,000 for developing living history programs—*Living Yesterday's History*—at the center.
- **Murphy's Landing, Shakopee:** \$2,000 for research and implementation of its living history program, *Town Hall Players*.
- **Ramsey County Historical Society, St. Paul:** \$2,000 to produce a traveling exhibit—*Roseville, Minnesota: The Story of Its Growth*—about Roseville from the mid-19th century to the present.
- **Sisu Heritage, Inc., Embarrass:** support for producing a video—*Weathered Secrets*—on the history of barns in the Midwest.
- **Virginia Area Historical Society, Virginia:** \$200 for a lecture/discussion program about the experiences of female soldiers and veterans.
- **Wadena County Historical Society, Wadena:** \$827 for an archaeological workshop at the Old Wadena historic site.
- **Wright County Historical Society, Buffalo:** \$589 for a lecture/discussion program—*Minnesota's Magnificent Mosaic: Historic Religious Architecture in Minnesota*—on the history and significance of Minnesota's places of worship.

For further information, including the newsletter and grant guidelines, contact MHC: 987 E. Ivy Ave., St. Paul, MN 55106-2046; (612) 774-0105.





Grants for Sesquicentennial & Millennium Projects

The Minnesota Legislature made a special appropriation to the Minnesota Historical Society in the 1997 session for activities associated with the Minnesota Territory Sesquicentennial and the millennium. A total of \$75,000 is available this year for a grants program to assist organizations around the state in activities commemorating these events. The maximum amount available for a single grant is \$7,500; all grant funds must be matched. All projects must be completed in time to mark the sesquicentennial (1999) or the millennium (Jan. 1, 2001).

Guidelines will be available in January 1998. The pre-application deadline is April 1998, and the final application deadline is May 1998. The Grants Review Committee will hold a special meeting in June 1998, and in July 1998 the MHS governing board will meet to approve recommendations. The grant agreements will be completed and project work can begin in August 1998.

For further information or to receive a copy of the guideline materials, call Mandy Skypala, Grants Associate, (612) 296-5478.

Reminder: Directory of Minnesota Historical Organizations

The directory, published by the Historic Preservation, Field Services & Grants Department of the Minnesota Historical Society, is now available only through the MHS web page: www.mnhs.org.

Its contents are:

- County Historical Societies, Chapters, and Local Organizations
- Web Site Links for County Historical Societies
- Heritage Preservation Commissions
- Regional Research Centers
- Miscellaneous Organizations

The complete directory is also available in three compressed formats: MSWord, WP5.1, and ASCII Text.

NOTE: The directory is not intended for commercial purposes, but as a guide to historical organizations in Minnesota. An assiduous attempt is made to assure the information is accurate. Please send changes to: David W. Nystuen, Field Programs, Minnesota Historical Society, 345 Kellogg Blvd. W., St. Paul, MN 55102-1906; fax: (612) 282-2374; e-mail: david.nystuen@mnhs.org

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Readers are invited to submit information for publication. To be considered, items must reach the editor by the 25th of the month, two months before publication (example: the deadline for the October issue is August 25). Send to: **Interpreter** Editor, Minnesota Historical Society, 345 Kellogg Blvd. W., St. Paul, MN 55102-1906. For more information call (612) 296-5434 or (612) 296-8196.

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