

# The DRY Stone Age — The Dry Stone Conservancy Promotes an Ancient Craft

**T**he United States has a magnificent dry stone tradition. Richer and more diverse than most people realize, it is a heritage forged from labor, ingenuity, and sheer necessity. Dry stone masonry is the assembly of stone structures without mortar, relying on the forces of gravity and frictional resistance to construct buildings that can last hundreds, sometimes thousands, of years.

Archeologists have determined that the Chinese built dry stone terraces at least 10,000 years ago. In Britain, ancient tribes built dry stone shelters just after the last ice age, 8,000 years ago. High quality stone tools recently found in Europe are 2.2 million years old. Here in the United States, dry stone work represents but the latest in the series of migrations of peoples and skills—the continuation of movements whose origins are far back in pre-history.

During the 18th and 19th centuries, Americans utilized dry stone masonry on a vast scale. Most of us are familiar with the dry stone walls and buildings that characterize many regions of colonial agriculture. Less well recognized are our dry-stone industrial structures, some of which represent major engineering feats on any international scale. The Chesapeake and Ohio canal consumed 1% of the United States' entire gross national product during its construction in the

early part of the 19th century. In other countries, such important dry stone structures are World Heritage Sites.

Many of these important resources are in serious disrepair. As with any building form, dry stone walls need a certain minimum maintenance, and for various reasons, routine upkeep has not taken place. In areas where land fertility diminished, stone walls were abandoned and the pastures allowed to revert to woodland. Larger structures—mills, dams, furnaces, kilns, and canals—lapsed into poor condition or were entirely demolished. Through misguided advice to farmers, thousands of miles of rock fences were put through rock crushers and used as road base or spread on the fields as limestone fertilizer. In some regions, only 5% to 10% of the original rock fences and stone walls remain.

In addition to the neglect and destruction of historic structures, the craft is handicapped by lack of technical information and lack of skilled preservation personnel. Construction and engineering data that professionals need are scarce and, if recorded at all, are difficult to locate. Drystone masons are few in number and much in demand. Furthermore, suitable stone is expensive because quarrying practices have changed. The craft is endangered both regionally and nationwide.

Despite all these problems, many states still contain large numbers of dry-laid structures that add an invaluable perspective to the evolution of our historic landscapes. Some of these are much appreciated and cared for. Other masterpieces of the craft are hidden and unknown to all but a few back-packers or residents in the immediate vicinity. All of these structures and sites are critical to our understanding of American history and prehistory.

The current state of masonry skills is a major problem in conserving dry stone structures. It is unfortunate that the appeal and romance of the craft, particularly to the media, means that dry stone masons are often uncritically lauded for what is very poor workmanship. Repairs that last but a year or two are depressingly common. Very few American masons today have anything like the knowledge and skills of their European counter-

*The fence top is leveled to string height, forming a crisp line.*



The "batter frame" outlines the inward slope of the side walls, here placed at the wallhead.

parts. Misguided restoration techniques such as concrete repairs and the use of semi-skilled labor yields unauthentic results and a considerable waste of resources. Worse still, such efforts often damage the integrity of the structures. This means that the various organizations responsible for caring for and restoring America's dry stone heritage require a source of advice and expertise. The Dry Stone Conservancy (DSC) was organized to respond to these needs

In 1995, the Kentucky Transportation Cabinet engaged Richard Tufnell, International Coordinator for the Dry Stone Walling Association of Great Britain, to teach a series of courses in connection with the relocation of traditional rock fences bordering the historic Lexington to Paris Turnpike. Television documentaries, news articles, and public lectures increasingly brought dry stone buildings and techniques to the public's attention. Widespread interest made clear that a nonprofit organization dedicated to all aspects of dry-laid stone and stone-and-earth masonry would be a valuable and overdue element in the preservation of this important building tradition. The DSC was formally organized in 1995 with the overall purpose to preserve the structures and promote the craft. We record, collect, and disseminate material useful to archeologists, preservationists, architects, landscape architects, geographers, conservationists, engineers, masons, contractors, and landowners.

The DSC has a unique blend of in-house expertise, with Richard Tufnell as Executive Director; Carolyn Murray-Wooley, architectural historian, as Director of Administration; and Jane M. Wooley, registered Landscape Architect, as Programs Coordinator. Board members are professionals in the fields of geography, archeology, landscape architecture, environmental conservation, and historic preservation. The DSC is a not-

This dry-stone road-retaining wall bordering Olmsted-designed Cherokee Park in Louisville failed after 130 years because of improper use of clay backfill.



for-profit corporation whose goal is to revive dry stone skills in the United States and to become a national and international center for the craft. Our program, operating expenses, and various projects are funded by grants, product sales, and workshop, training, and consulting fees. We have had an extremely successful period since formation—conducting training, setting up a Master Craftsman's Program, advising numerous state and national bodies, and undertaking project management for specialist construction situations, receiving four environmental awards in the process.

As part of the program to produce a comprehensive range of high quality training aids, the DSC has published a handbook on how to build and repair rock fences, already in its third printing. We have produced a training video for the NPS National Center for Preservation Technology and Training entitled *Walls of Stone*. We are building a slide and reference library and are collecting and translating widely-dispersed technical data that specialists need.

The DSC conducts training programs to answer the need for skilled masons and provides a registry of Qualified Dry Stone Masons that government agencies, contractors, and the general public use to obtain skilled craftsmen. The Kentucky Department of Parks has retained the Conservancy to provide consultation and continuing training for state park employees. We will continue to teach and assist people in economically-struggling regions of the world and plan to extend this aid to poor areas of the United States.

Completed consultation projects include the reconstruction of a road retaining wall bordering a Louisville park designed by America's renowned landscape architect, Frederick Law Olmsted, which was the subject of television programs in Louisville and Cincinnati. We recorded each stage of the work for use in a future instructional video. It is of note that this project, using authentic dry stone methods, cost \$100,000 less than the price quoted for a conventional concrete replacement wall. Conservation and training activities include a



The park wall was completely dismantled and authentically rebuilt at a savings of \$100,000 over the bid for a concrete replacement.

project for clean water restoration and water runoff management in a nature preserve for the Scott County Soil Conservation Agency. We are also working with natural resource management agencies to obtain affordable stone sources for landowners and masons.

Initial success has brought more opportunities, and we receive increasing requests from enthusiastic governmental agencies, professional and non-profit groups, and the general public. We are developing a prototype for preservation that can be followed in other states and countries. Additional plans and projects include:

- Producing a series of technical books covering both dry stone and stone and earth building methods and a catalog of regional dry-stone construction styles and locations throughout the country.
- Obtaining grants for property owners for repair of existing dry stone structures.
- Collecting additional data and information, including recording of lost or dying techniques, conducting field experiments with archeologists to determine labor needed to transport stone, and translating from foreign languages obscure texts regarding dry stone construction.

The craft comes to life during public demonstrations at fairs and museums. Kentucky Education Television filmed a documentary at the Kentucky State Fair while visitors watched in fascination as one hundred feet of high-quality rock fence rose from the floor of the exhibition hall. Last year, the DSC built a full-scale stone wall indoors at the National Building Museum in Washington, DC, for the exhibit on American fences, at which the public had the opportunity to try their hands at this ancient craft.

*Carolyn Murray-Wooley is Director of Administration for the Dry Stone Conservancy, Lexington, Kentucky. Richard Tuffnell is the Conservancy's Executive Director.*

## ANNOUNCEMENT

### The International Preservation Trades Workshop

Hosted by the Historic Preservation Training Center of the National Park Service, in partnership with the Preservation Trades Network, a task force of the Association for Preservation Technology International.

**Wednesday through Friday, November 5-7, 1997.** Two and one-half days of preservation trades demonstrations: Brick and stone masonry conservation—Traditional timber framing techniques—Dry laid stone wall construction methods—Use of historic woodworking tools—Concrete repairs—Epoxy repair methods—Historic plaster restoration—Copper flashing skills—Slate roofing repairs and restoration—Shake and shingle repairs—Rigging and scaffolding safety—Lead paint removal techniques—Lime mortar preparation and application—Window and door restoration—Fabricating historic millwork—and much more....

**Registration** for the 2 1/2 day event is \$295.00 per person. To register, or for further information—please contact: Laurie Hempton, Event Coordinator, National Park Service, Historic Preservation Training Center, 4801-A Urbana Pike, Frederick, MD 21704; phone: 301-663-8206; email: <laurie\_hempton@nps.gov>. We're on the internet too...for the latest preservation trades network workshop schedule and registration materials, check in at <www.prginc.com/ptn-index/index.html>, the "PRG Website" and select the International Preservation Trades Workshop or Preservation Trades Network button.

**Co-Sponsors:** Drystone Masonry Conservancy; Eastfield Village; Frederick County Dept. of Public Works, Bureau of Parks and Recreation; Frederick Historic Sites Consortium; Guild Institute of Stone and Restoration Masonry; THE GUILD of Fine Craftsmen and Artisans; Historic Medley District, Inc.; Institute for Preservation Training, Intermountain Cultural Resources Center of the National Park Service, International Masonry Institute, Jefferson's Poplar Forest; Maryland-National Capital Park and Planning Commission, Historic Preservation Section; Northeast Cultural Resources Center of the National Park Service; *Old House Journal*; Preservation Industry Network/New York; Preservation Institute for the Building Crafts; Preservation Resource Group; RESTORE; This Old House; Timber Framers Guild of North America; and Traditional Building.