

Proposal for Creating a Teaching and Research Branch of London Town Foundation: *The Building Research Institute at London Town*

Introduction

The London Town Foundation is in a position to take a leading role in architectural preservation research. This is a proposal to create a Buildings Research Institute at London Town that would continue the conservation of the William Brown House and use this work to educate through publications, exhibits, the London Town website, lectures by visiting experts, hands-on workshops and demonstrations. The William Brown House requires long-term conservation treatment and investigation for its problems including chronic water infiltration, extensive masonry damage, deteriorating materials, and aging mechanical systems. (In-depth explanations of these problems and the suggested course of action are found in the ***Conditions*** and ***Recommendations*** chapters of this report.) The study and treatments that **must** take place create an opportunity to aid and inform the preservation of other historic sites. The Building Research Institute at London Town would provide a place for professionals and students of conservation and preservation studies, craftsmen, historic house administrators, and the public at large to learn about the best techniques for preserving historic buildings. This would be a local effort at first, serving the historic sites in Anne Arundel County and the City of Annapolis. However, if the Institute is successful, its efforts could eventually benefit regional and finally national historic sites.

The mission of the Building Research Institute at London Town will be research, education and training. The Institute's educational programs would be informed by the following on-going activities:

- Conservation of the original portions of the building, stabilization and protection of these elements – as is reasonable – from further deterioration.
- The investigation of the building's problems of chronic water infiltration, extensive masonry damage, and other deteriorating original materials and the development, whenever possible, of practical low-technology solutions.
- Research into traditional materials and construction techniques and their reintroduction to modern conservation programs.
- Investigation of the building as an artifact and the study of its construction evolution.

Is There a Need?

Problems caused by moisture and deterioration of building materials are experienced to some degree by most houses built in the United States before the turn of the 20th century. A facility such as the Building Research Institute at London Towns (BRIL) is needed because of the changes in materials and methods in this century. Knowledge of earlier materials and methods and the use of sophisticated analysis are crucial in understanding the problems of historic structures. Many of these problems require solutions that are right on the edge or beyond the current state-of-the-art in applied conservation techniques. Our work on the William Brown House will be of great interest to most owners of other historic buildings.

We have already received positive reactions to this proposed Institute from local preservation professionals and organizations in the country and in the city of Annapolis. Anne Arundel County has an abundance of historically significant buildings. Of the County's twenty-five or so park sites, five have historic houses and several more have nineteenth century farmhouses. There are many other privately owned historic buildings and therefore a real need for a resource of this kind. Presently the County contracts out for services. The Buildings Research Institute at London Town would give the County control over the conservation of its buildings and allow for a uniform high standard to be maintained on all of its properties.

The rescue of the William Brown House has to continue. London Town can either go the usual route, which would mean hiring outside contractors. They would bring their expensive equipment with them, do tests and leave a report. The alternative is to buy the equipment, so that the work can be done in-house, in which case, all the technology as well as the discoveries and knowledge would be put to long-term use for the museum and be shared with the County. London Town can further benefit by eventually contracting out BRIL's services to other historic sites.

"The architectural world has not made the leap to conservation in most cases."
Marigene Butler, retired head of conservation, Philadelphia Museum of Art

There is a great need for a resource to turn to when historic buildings come across conservation problems. Every aspect of a conservation project is different from the usual construction project. The treatments required planning, budgeting, analysis, documentation and techniques involved in a preservation project are very different from what is commonly practiced. For this reason alone a source for guidance is needed.

Presently there is confusion between renovation and architectural conservation – even on the museum level. Though there is a great difference in these practices, too little is understood about the distinctions. The fact is that the modern construction and renovation industry and even most architectural firms do not understand the distinction. This lack of awareness means they are not capable of providing safe and appropriate solutions for historic museum buildings. **Though both restoration and conservation professionals work on historic structures, and the end result may even look similar, there is an underlying ethic in architectural conservation that is lacking in restoration.** This ethic states that every attempt should be made to save period material. Renovations create charming replicas whose appeal is derived from looking new and pristine, but what must be recognized is that, in many cases, this pristine look is arrived at by ripping out original material. Original material is a valuable record of what has happened to a building: how and when it was built and what it has experienced over time. Remove this original material and a readable piece of history is effectively erased. Architectural conservation preserves the original and makes every attempt to save even badly damaged materials.

BRIL's usefulness will not only be in guiding historic sites toward appropriate conservation practices; it could also serve same community by educating and training the local building trades. Little is understood about conservation in the construction industry. Techniques of construction and even the most basic materials used a century or more ago are unfamiliar to modern contractors and suppliers. It is not understood that new materials can actually

accelerate damage when placed alongside earlier ones. Through its programs BRIL could provide an ever-widening pool of educated contractors and suppliers to choose from. One way to accomplish this would be through a certificate program that would train local contractors. Contractors who had completed the certificate program would be able to work knowledgeably on older properties.

The question remains: Why is this not being done at other historic sites? In other words, why London Town? The William Brown House has been worked over to a degree greater than many other historic buildings. This can be seen either as a sad tragedy or recognized as an unusual advantage. So much has been done to and endured by this building that the destructive forces of the environment and age can be studied more thoroughly than would be possible in other historic structures.

The Buildings Research Institute at London Town

The Buildings Research Institute at London Town will focus on practical building problems common to most historic buildings. These would include: moisture monitoring in materials; presence and type of salts; relative humidity and temperature; site conditions; finish analysis and protection; and mortar analysis. BRIL would develop expertise in problems specific to 17th, 18th and 19th century buildings along the East Coast of the United States.

BRIL would have two main functions:

1. Laboratory for conducting research into conservation techniques, traditional methods and methods; perform analysis of buildings and building materials for local and regional historic sites; and
2. Institute to teach and inform the preservation community.

Its research, publications and programs will be informed by the on-going conservation of the William Brown House. A two-year plan can be found later in this chapter. What follows is a description of the vision of what the Institute can become.

Based at London Town, the BRIL laboratory would investigate and develop techniques and resources for practical building conservation. Once fully equipped and staffed, the lab would perform condition analysis for other sites and provide a range of services that would generate revenue.

The lab would continue to develop more efficient ways to analyze mortar and develop repair mortars. This would start with attempting to recreate or replicate the best of the original mortar at the William Brown House. By analyzing mortar samples, we could understand the ingredients and their relative proportions. Developing and using new methods might shed some light on the processes by which it was made. For instance, we need to know if the lime was prepared by burning it in a clamp (alternating layers of fuel and oyster shells) or if it was calcined or burnt in some sort of updraft kiln. Analysis could tell us about the temperature of the process used in making London Town's lime and whether it contained wood ash or not. Also we could learn if the lime was slaked with the sand or slaked in a pit, allowing it to mature and then mixed with the sand later.

The lab will be able to use geologic analysis methods to determine if the sand came from pits around the site or was washed beach sand. Once this process was developed for London Town, reproduction mortars could be made for other sites; in many cases using the sands from the same deposits as the original. Masons and preservation craftsmen could come to our training programs and learn to use these traditional materials and techniques.

Educational and training programs would be presented on several levels: for administrators of historic properties, physical plant managers, artisans, architects and conservators. The primary focus of these programs would be preservation of historic houses. Outside experts would regularly visit the conservation project (as they have been for the past three years) and hold sessions either as stand-alone presentations or part of BRIL's lecture series. Some programs would purposefully steer away from specialization to encourage interaction of disciplines. Hands-on workshops could group architects and artisans together.

The Institute would be closely associated with nearby colleges and universities like the University of Maryland, Goucher College, and Anne Arundel County Community College, establishing close relationships with their preservation, chemistry, geological sciences, architecture, and engineering departments. BRIL would participate in their historic preservation programs and provide internships.

London Town's site and facilities lend themselves to much of what is being proposed. During the first few years BRIL would only require a staff of three or four. Temporary office space could be set up in the William Brown House. The conferences and hands-on workshops proposed are much like programs already held at London Town. The proposed lime and brick projects are compatible with plans underway to reconstruct the original village. These materials were very likely originally manufactured at London Town. The lab has a possibility of eventually being part of the archaeological research and museum facility being planned for the former sewage treatment plant. Ideally an agreement would be reached where BRIL could share some of the more expensive equipment (thereby cutting costs for both) with the archaeological laboratory.

London Town will be producing a product regardless of whether it is being packaged or not. The difference is that right now we are not fully documenting and developing what is being produced. We could squeeze the maximum educational potential out of each activity, i.e. photo, video, workshop, articles and books. The entire process can be used to provide information and education through publications, exhibits, website, lectures, demonstrations and to visitors. It can be made accessible in a practical way. This is really a remarkable time in history for the ease of access to information. At the London Town website, this processing of information would become so streamlined that anyone could log on the first day of every month and find out about new developments in the building.

Through BRIL, the London Town Foundation may well set standards for the way people care for and think about historic buildings. London Town would be providing a service that is presently lacking in the preservation community, i.e. accessible information and training in practical and (whenever possible) low-tech solutions for the most common problems affecting buildings constructed before 1900. People in search of answers would find them on our website and in our publications. They would have access to our materials library and when more in-depth knowledge was needed, they could visit London Town to attend demonstrations, hands-on workshops, and lectures.

Two or Three Years Worth of Ideas for Workshops for Historic House Administrators

- Moisture Problems in Historic Buildings: How They Occur, Treatments that Cause Them, and Treatments that Don't Work
- Thinking About Your Building: Ten of the Most Common Moisture Problems and Their Causes.
- Designing a System to Study a System: Monitoring Your Building Environment
- Buildings in Crisis: Will Your Building Be Here in 100 Years?
- A Review of Historic Masonry Buildings. How They Work. What Has Happened in the Twentieth Century. How to Plan and Begin Reversing Damage. How to Care for Them into the Future.
- Roofing Systems: Slate, Wood and Metal. How They Work. How They Should Be Installed and Repaired. Assessing the Condition of Your Roof. What to Consider Along With Your Roof Repair.
- Heating and Cooling Systems: What Do You Really Need to Know? What Does Your Building Need? How to Plan.
- Window Restoration Workshop.
- Setting Up an Historic Structures File and Making it Work for Your Site.
- General Building Maintenance.
- Making and Using Historic Repair Mortars.
- Techniques for Removal of Portland Cement Pointing.
- Woodwork Repair and Consolidation.

How We Get There: A Three-Year Plan, 1998-2000

BRIL will grow gradually. 1998 will be a planning year with the Research Institute not officially opening until the following January. In 1998 BRIL's staff would consist of two people: BRIL's director, John Lee, and a part-time office assistant. A project planner would be hired as a consultant to plan the Institute's development. The office assistant would be hired in late spring to prepare for BRIL's official start-up in 1999. Ideally, this assistant would also work part-time for the director of educational programming at London Town, working at least 20 hours a week for BRIL and an additional 15-20 hours for London Town.

The assistant's activities in 1998 would consist of:

- Collecting and reviewing all existing documentation pertaining to the William Brown.
- Laying the groundwork for BRIL's archives.
- Conducting the necessary background research to prepare reprints, exhibits and links to the London Town website.
- Setting up the inner workings of the organization, i.e. record-keeping, computer databases.
- Researching grant funding possibilities and writing grant applications.
- Preparing the first published articles and website information.
- Planning an exhibit for years' end that explains the investigations of the William Brown House from 1995 through 1998.

For the first two years, BRIL would operate out of an office space in the William Brown House, with plans to eventually move when the County Archaeology Laboratory and Museum is completed. John Lee would carry out the activities outlined in the *Recommendations* chapter of this report, including conservation of woodwork, emergency mortar repairs, development of replica mortar, building a lime kiln for firing oyster shells, and test firing bricks. The moisture-monitoring program would begin.

The present system of peer review is economical and would continue. The combination of the oversight board at London Town combined with regular visits of historical architects, paint analysts, conservation scientists, etc. has worked well. They have had the opportunity to review our work and propose new and different approaches. We want to be a leader in preservation science and need this regular influx of cutting-edge expertise guiding and informing our efforts.

An exhibit would be planned for the house dealing with our investigation of bricks and mortar, and deterioration in buildings. The Weaving Room would be displayed in its deconstructed state. An exhibit case outside the Weaving Room would begin the presentation. The room itself would actually have labels placed on its walls, pointing out bands of deterioration and water infiltration, and the evidence of the many repairs that have been done. There would also be storyboards, signage, and photographs in the room explaining the building's construction history, as it is understood so far.

BRIL would officially open in 1999. Though it would still be working out of an office in London Town, the construction may have begun for the archaeology facility. The conservation and investigation of the William Brown House would continue and we would begin setting up the lab. By this time, it would be necessary to hire a full-time executive assistant and a conservation assistant. Our connection on the London Town website would be opened. The publishing part of BRIL would be up and running, including making monthly installments on the website. We could begin to develop the educational components, starting with a hands-on workshop and a presentation for historic house administrators.

We would have two workshops:

1. Understanding Moisture in Your Historic Building.
2. Historic Mortars and Portland Cement.

If we get far enough with moisture monitoring, we might have a presentation for local historic house administrators to tell them what BRIL will be able to do for them and how we plan to use the work on our buildings to solve a lot of the problems they are having with their buildings. We would introduce them to our website and demonstrate how it will be updated on a monthly basis.

By the end of the second year, BRIL would start an apprenticeship program for one junior mason to work part-time for Bill Forsythe and London Town. Funding would be divided between Bill Forsythe, the Maryland Historical Trust, and London Town.

In the year 2000, we would move into the new facilities.

Research

BRIL will be doing analysis for other buildings. It is therefore necessary to be able to recommend treatment, which means that existing treatments need to be tested and proved, and new ones need to be developed where none currently exist.

My research work is presently spread over a number of projects around the United States. They involve many different aspects of architectural conservation. Many like the Anne Arundel sand types library are being developed here at London Town and others are being developed at other projects. Still others – like thermal-initiated monomer stabilization, which would allow certain parts of buildings to be preserved that we've never been able to preserve before, and the conservation field kits – I have been working to improve on my own time and are gifts to all projects.

What follows is a list of techniques and resources I have been investigating and developing for practical building conservation. They are in one stage or another of development, as I can only work on them sporadically, as time and money permit. These are the activities that I would initially be working on at the BRIL lab. Some may lead to technical advances in conservation.

Research projects I am presently able to bring to BRIL are:

1. A library of sand types and sources from deposits in Anne Arundel County.
2. Replicating and weather-testing the best of original London Town lime putty mortar.
3. Brick-making.
4. Improved, less destructive sampling methods for dendrochronology.
5. Thermal-initiated monomer stabilization of fragile building elements.
6. Methods for cleaning painted architectural finishes and stabilizing and protective coating with reversible film.
7. Improved field photography of small artifacts and mortar aggregate.
8. Field analysis kit for architectural conservators.
9. Efficient ways to analyze mortar.
10. Test to detect the presence of silicone in the bricks at London Town.

Eventually, the lab will do microscopy and digital imaging for mortar analysis and possibly paint analysis. Materials would be scanned in and digitized into analysis programs to create a digital database for materials analysis. It may be that BRIL would act as a gatekeeper capable of doing 80% of the work and deciding when work needs to be sent on to other places.