

## PRESERVING THE RICH CULTURAL HERITAGE OF FALMOUTH, JAMAICA: A CASE STUDY

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*Falmouth, located on Jamaica's north coast near Montego Bay, is noted for being one of the Caribbean's best-preserved historic towns. It was declared a National Monument by the Jamaican Government in 1966 and is listed as one of the 100 Most Endangered Sites by the World Monument Fund. Dr James Parrent, Executive Director of the Falmouth Heritage Renewal, outlines below the work that has been undertaken to preserve the town's rich heritage.*

Falmouth was established in the late eighteenth century by Thomas Reed and Edward Barrett, great-grandfather of Elizabeth Barrett-Browning, and flourished as a governmental and market centre for the Parish of Trelawny for more than 40 years. During the late eighteenth and early nineteenth centuries, Falmouth was one of the busiest ports in Jamaica. As many as 30 tall-ships could be seen in the harbor on any given day delivering goods and loading their holds with rum and sugar. However, from about 1840, the town fell into a steady decline that has persisted until recently. This decline, together with lack of support for development has left many of its early buildings standing. Within the regular grid pattern of streets there exist many small houses, major merchant and planter complexes, and commercial buildings, most dating from about 1790 to 1840.

While the town saw little commercial advancement after the 1840s, houses continued to be built. Most neighborhoods have an agreeable variety of houses dating from about 1800 through the early 1900s. The town's buildings, the old and the not so old, makeup the historic townscape of Falmouth.

Falmouth's varied building styles have shared characteristics that can be woven into a distinctive pattern of early Jamaican architecture – a critical mass of each variety makes the town an unusually distinctive place. Market Street is lined with the largest coherent group of colonnaded commercial buildings in Jamaica. This contrasts dramatically with the residential streets, where rich and poor lived close to one another in a common pre-industrial manner. As a result, small wooden houses and brick Georgian mansions are scattered throughout what is now officially designated as the Falmouth Historic District.

Virtually all the surviving early houses were well constructed, although most of them are deteriorating and some are disappearing due to lack of care and maintenance. The majority of the small early houses that remain were built with two rooms, but many of these were subsequently enlarged and the additions have sometimes deteriorated more than their well-built cores. In an effort to save the historic fabric of the town, a project was undertaken to find funds to assist owners of deteriorating small historic houses. Partial funding for the project was provided by the Environmental Foundation of Jamaica (EFJ) through a J\$1,979,000.00 grant (USD55,000.00) in 1996 and a second grant of J\$6,000,000.00 (USD100,000.00) in 2004. The remainder of the funding came from the Ohrstrom Foundation (USA), American Friends of Jamaica, Friends of the Georgian Society of Jamaica (London), American Express, in-kind assistance, donations of materials from local merchants and volunteer labour.

At the start of the project, the criteria for house selection were determined. A survey of the historic district was then undertaken to identify the houses that qualified. In 1996, Dr. Edward Chappell, Director of Architectural Research for Colonial Williamsburg in Virginia, USA, came to Falmouth to help with the development of the selection criteria and with the evaluation of each house in the Historic District. He also assisted in the preparation of a priority restoration list for the project. His participation was crucial to the project's success.

Following the survey, houses were ranked in descending order of priority, based on several factors: does the house have an historic quality and is it distinctive? if repaired, is its character likely to survive intact and will it continue to provide secure housing or a small commercial space?; given the resources available, is the work required of a scale that is manageable? Recognizing that historical importance and architectural value are not confined to the town's earliest years, the choices included a number of late nineteenth and early twentieth-century buildings.

A fundamental question has been whether all the efforts should be focused on a single enclave or spread through the historic district. A search was conducted for appropriate enclaves but none that fulfilled the requirements of historic importance, manageability of scale, and sustainability were

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found. Confining all the repair efforts to a single neighborhood would require working on buildings that contributed little historical or visual importance, and would rob deserving sites of needed aid. On each house selected for consideration, the most pressing restoration needs were determined.

In each case, we tried to aid the housing needs of the residents as well as secure the architecture, since the fate of both is inextricably linked. Old window sashes have often been boarded over, had the glass painted, or have been replaced with smaller metal louver windows. Each of these actions makes the rooms and the streets less agreeable to occupy. In some cases, we have recommended removal of modern jalousie windows and the addition or cleaning of sash windows. Existing historic colour combinations were retained and occupants were actively involved in the colour selection.

A principal purpose of the effort is to save historic building fabric, so the need to be gentle with repairs could not be overlooked. Much of the character of the individual buildings and the town is the result of the remarkable survival of the antique materials, not just the shapes of the buildings. As the project proceeded, both the supervisors and workers were directed by a strong sense that early sides, trim, framing, masonry, glass, and so on, are worth preserving in place. Following international preservation principles, window sashes and doors were patched rather than replaced, and irregular but stable weatherboards were left in place, not regularized unnecessarily with wholesale replacement.

While wood shingles look much better than galvanized sheet metal on roofs, metal has come to be used on almost all small Falmouth buildings that have survived. However unsightly, metal roofing has saved more historic buildings by making them water tight than any preservation organization in the USA or Jamaica. Restored shingle roofs can be essential elements of important restorations – such as those of the Baptist Manse in Falmouth and Good Hope Great House in Trelawny Parish – but they are not feasible for the small buildings selected for restoration. We have, then, cited repair or replacement of metal roofs as a priority for many of the buildings that are now deteriorating rapidly.

Galvanized metal seems less useful as fencing. It has become a common, although far from universal, choice for the enclosure of Falmouth yards. Its use is often unsightly without necessarily providing security, and its size results in high, irregular walls that visually separate houses from the streets, to the aesthetic and social detriment of both. While not universally calling for its removal, we have recommended, in relevant cases, that metal barriers be

replaced with secure, better-built, and more sympathetic wooden fences. There is now a remarkable variety of wooden fences in Falmouth, comparable to those re-created in American museums such as Colonial Williamsburg. These are well worth preserving and using as inspiration for relatively inexpensive new Falmouth fences.

#### **Getting Started**

After the survey described above was completed, a list of suggested buildings for restoration was presented to the Falmouth Restoration Company's Board of Directors. The board approved twenty-four buildings. This is more than the expected number that could be completed but it was anticipated that some owners might not agree to have their houses worked on or some of the buildings might be in such bad condition that they could not be restored under the programme.

The first few attempts to obtain permission to work on buildings were met with suspicion by the owners and occupiers. Even though efforts were made to explain the project, many people could not believe that they would get something for nothing or, at least, for very little. There was one rumor going around that we would work on the house then present the owners with a large bill that they could not pay and then we would take their home from them. However, through perseverance and the intervention of Custos Roylan Barrett on at least one occasion, the project finally started. First one owner then two more agreed to have their houses restored. As we completed the buildings, it was easier to obtain the required permission from other owners.

#### **Training Program**

As the restoration project progressed it became evident that there were few if any tradesmen familiar with historic restoration and preservation living in and around Falmouth. Our goals shifted somewhat to include a training component. Eventually the training program became the driving force behind our efforts when we realized that throughout Jamaica, and in the Parish of Trelawny in particular, there are a number of young men who, for a variety of reasons, do not have the educational or practical skills that will enable them to become gainfully employed. While there are vocational training opportunities available in Jamaica through HEART National Training Agency (NTA) ([www.heart-nta.org](http://www.heart-nta.org)), persons who are deemed illiterate do not meet the requisite entrance requirements. Again, government has provided avenues for persons to become literate through programs such as the Jamaica Movement for the Advancement of Literacy (JAMAL) and the High School Equivalency

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Program but many young persons see all of this as insurmountable obstacles and fail to try. Falmouth Heritage Renewal, through our training program, reach out to these youngsters and provide them with training in basic carpentry and masonry skills and, perhaps most important and hardest for them to comprehend, we teach them basic workplace survival skills, i.e., how to relate to supervisors, customers and co-workers. If they learn nothing but the latter they are on their way to finding self-sustaining employment. We work with the young men by applying a “tough love policy” where we demand that they be on time, work consistently, learn at every opportunity and demonstrate that they are interested by their actions and deeds. If they do not satisfy these conditions they are sent home for a rest period. Some return with a better attitude while others do not bother to return.

In addition to the young persons discussed above, we cooperate with HEART NTA by accepting students through their Work Experience Program. Here students that have completed their formal studies at HEART NTA work with established businesses to gain hands on experience in their chosen field. We accept students who have studied to become either carpenters or masons. HEART students work along side our trainees and each learns from the other. All gain valuable experience and, as they learn, become more confident in their abilities.

Besides teaching basic carpentry and masonry skills we provide training in historic preservation and restoration techniques. Trainees become proficient in repairing and replicating historic sash windows, doors, moldings and other elements found in historic buildings. They are taught how to use hand planes, make, mix and use historic grade lime based-putty and repoint historic buildings and walls. The idea was not just to teach trainees the technical aspects of accomplishing the task, but also to give them a true sense of why they were doing the work in a particular and careful way – for example, why it was important that they should carefully remove a siding plank from a house, cut off the damaged section and then re-use the piece on the house, instead of replacing the board with a ‘nice new one’ (which, of course, would be easier and more cost effective). We wanted to change the way they viewed old weatherboards, half-rotten wooden sash windows and dilapidated doors.

During training students learn to appreciate historic buildings and the skills of the craftsman who originally built these structures. Often trainers and trainees alike are awed by the workmanship and longevity of buildings that are more than 200 years old. To date, we have trained 34 young men – some learned more than others, but all have been

exposed to the philosophy of historic restoration and its importance in preserving their heritage and culture.

Early in the project, the HEART NTA Vocational Training Centre in Falmouth was approached for assistance with the Small House Project and they provided five carpenter-instructors for three weeks and six carpenter-trainees for six weeks. This gave the project a tremendous boost.

It was amazing to see the VTC instructors and students tackle a job. In one instance, they started on a small two-room house on Monday and finished it on Friday. In the space of five days they converted a rundown two-room historic house, with a rusted galvanized metal fence, into a well-preserved home with a beautiful wooden picket fence that people now travel to see. What is even more remarkable, is that all this was done while the owner, a 70 year-old lady, lived in the house. After VTC ended its official assistance program, several VTC trainees remained with the project to gain additional skills.

In 1997 the directors of Heart/NTA enthusiastically endorsed the need for Restoration Training as a prerequisite to any large-scale restoration of Jamaica’s built heritage. The increasing importance of Heritage Tourism as well as the need to conserve the older housing stock was both reasons for preparing the skill base that will be needed when the work must be done. With this in mind, thirteen HEART instructors from across Jamaica participated in workshops conducted by staff of Falmouth Heritage Renewal. The participants were introduced to elements of historic masonry, i.e., manufacture and use of lime mortar, nog construction, repointing stone and brick using lime mortar and plastering with lime mortar. They were also taught elements of historic building restoration, i.e., timber framing, sash window construction, repair of historic doors and molding replication. The VTC is currently developing a pilot project to train students in historic restoration. They plan on adding the restoration of historic houses to their course curriculum island-wide.

Most of the young men involved in the program have moved on to better jobs – one of the prime objectives of the training scheme. One trainee who took an interest in working with concrete is now employed as a skilled-mason – his first real job. Another works for a major contractor in the hotel industry. Interestingly, one of our former students is training to become a police officer. No matter what the future holds for past students we are confident that they all have a greater appreciation for Jamaica’s built cultural heritage.

## **The Deterioration of Historic Masonry in Falmouth: the destructive nature of using Portland cement**

As mentioned above, most of the buildings within the historic district were examined as part of the restoration project. Assessments were made as to what type of intervention was required to stabilize the historic buildings and what was required for their restoration/preservation. During the assessment process it was noted that bricks on some building were deteriorating while on other buildings, that may even be older, the bricks were sound and well preserved. Further investigation revealed that the most severely eroded bricks were those that had been lain with or had been repointed with Portland cement mortar.

Within the preservation community it is well known that using cement mortar to lay or repoint brick and stone structures can cause damage to the structural integrity of the building. However, local builders and handyman use cement mortar quite freely when laying bricks and stone and when repairing or repointing stone and brick. In some cases the use of cement mortar has led to severe cases of masonry deterioration.

### **Portland Cement**

Cement has been used as a building material from as early as 27 BC when the Romans developed a mortar using lime and volcanic ash. Joseph Aspdin, a British stonemason, developed and patented a hydraulic-cement (one that would harden when water was added) during the first quarter of the nineteenth century. He named his new invention ‘Portland cement’ not only to distinguish it from Roman cement but also as marketing tool. Concrete made from his new cement looked similar to a highly prized building stone found on the Isle of Portland off the British coast. Over time the term Portland cement has become synonymous with most cements produced today.

### **Lime Mortar**

Lime, the main ingredient in lime mortar, is made from limestone. Limestone (calcium carbonate CaCO<sub>3</sub>) is readily available in Jamaica. Almost two-thirds of the

Island is made up of the Tertiary White Limestone Group with outcrops of other types of limestone scattered throughout (Potter, A.R.D. 1990:32). Limestone containing about 15% clay is called marl while those containing dolomite are called dolomitic limestone and those containing

quartz are called quartzose limestone. In Jamaica however the term marl refers to soft powdery limestone with little or no clay that can be quarried by pick and shovel (Porter A.R.D., Jackson, T.A. and Robinson, E. 1982:114). In Jamaica marl is used extensively in road repairs but this is at best a temporary measure since marl dissolves readily in water.

The process of producing lime is quite simple. Limestone is broken into suitable pieces varying from fist size pieces for traditional ground kilns to football size pieces for large cut-stone kilns like the one found at Good Hope in the Parish of Trelawny near Falmouth. These pieces are placed in the kiln. Most historic sugar estates had kilns for producing quick lime that was used in processing sugar cane and for the construction of buildings. In the kiln the limestone is heated to about 900 degrees centigrade (Porter A.R.D., Jackson, T.A. and Robinson, E. 1982:116). Heating drives carbon dioxide and all moisture out of the limestone producing quicklime stones (calcium oxide CaO).

Fresh quicklime is extremely dry and when mixed with water reacts violently and boils as water is absorbed and the quicklime stones dissolve into a slurry type mixture. This process is called slaking and must be done with caution and should be done by persons familiar with the volatility of the process. Slaking is best done when the quicklime is fresh. The slaking process produces lime putty that is then stored in a sealed moist environment until ready for use. Small grain size pieces of stone left in the slaked lime putty continue to dissolve during the storage period. The longer the lime putty is allowed to mature the better it becomes. Lime putty can be used after a minimum storage period of about six weeks but is best after six months to a year or longer. When ready for use the lime putty is mixed with sand at a ratio of one part putty to three parts sand for pointing and one part putty to four parts sand for mortar. When used for repointing, soil may be added to the mixture to match the colour of the existing mortar. Once the lime putty based mortar is exposed to air it starts reabsorbing carbon dioxide, which was driven out of the limestone when it was heated. Over time the mortar sets or hardens and takes on the characteristics of the original limestone that it was made from.

### **Portland Cement Mortar Versus Lime Mortar**

Once water is added to Portland cement it sets (hardens) and becomes impervious to water. When cured cement becomes harder than bricks and most stones. What this means in practical terms is that if stress from vibrations, settlement or temperature changes occurs to a masonry structure that has been lain or pointed with cement, the stress

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will fracture the bricks or stone before it damages the cement mortar. In the case of lime mortars that are softer than stone and brick, stress breaks will occur along the joints leaving the masonry intact.

Falmouth is a seaport town and the prevailing sea breeze carries with it salt that is deposited on all exposed surfaces. Falmouth also receives about 190 cm of rainfall per year and in some areas ground water can be found at 45 cm below the surface. This means that water wicked up through masonry walls and water absorbed by masonry structures when it rains will contain salt. Since cement is waterproof, water accumulated in a masonry structure can only be expelled through the exposed face of the masonry and not along the joints as would happen with lime mortar. In the case of bricks, the continuing cycle of drying, wetting and drying will cause the bricks to exfoliate. Exfoliation is the process where thin layers of material break away by the mechanical action of salt crystallization. Exfoliation is greatest when salt is present in the water that penetrates the bricks as is the case in Falmouth. As water evaporates from the bricks the salt that is left behind crystallizes just within the outer layer of the brick. The salt crystals act like tiny chisels that break the brick apart at the microscopic level. Over time the bricks are reduced to dust and quite often the cement mortar pointing is the only surviving remnant, standing out as a skeleton of a once historic wall. On the other hand, when lime mortar is used, most of the moisture is readily expelled along the joints and if deterioration occurs it is to the lime mortar not the stone or brick.

As mentioned above, cement mortar is much harder than brick and soft stone. When movement caused by structural settling, vibration or changes in temperature occurs the hard cement mortar grinds against the softer brick or stone causing the portions of the stone or brick that are in contact with the cement to chip and break. This destructive action is called spalling. Also, cracks develop along the mortar and masonry joint allowing water and salt to seep into the structure and further adding to the problem of exfoliation. Of course both exfoliation and spalling are exacerbated if poorly fired or substandard bricks are used. Lime mortars readily accommodate structural movement and the mortar joints, being softer than the masonry, will deteriorate instead of the masonry.

For the reasons described above, cement should never be used to repoint masonry nor should it be used to lay stone or brick. If cement has been used it should be removed very carefully to prevent damage to the masonry structure and replace with lime putty mortar.

Many other persons have assisted with the restoration project. As mentioned, Ed Chappell from Colonial Williamsburg is playing a pivotal role. Chris Ohrstrom through the Ohrstrom Foundation has provided significant financial, organizational and technical support. In 1999, Jimmy Price, of Price Masonry in Virginia, a renowned historic preservation expert, conducted a weeklong workshop in Falmouth teaching techniques of making and using lime putty to re-point historic stonewalls.

Students were taught how to fire the historic limekiln at Good Hope, burn the limestone and slack the stones to produce lime putty. Over 400 gallons of lime-putty were made and used in the restoration of the Baptist Manse. One participant, 68 year old

Mr. A. Brown of Trelawny, taught everyone how to make and fire a traditional lime kiln. He recalled how, as a young boy, he was taught how to do this and that it was common to see limekilns burning all over Trelawny. Don Carpenter, a restoration specialist and founder of Eastfield Village in New York, Doug Vickers from Canada, and Russell Buskirk of Virginia came to Falmouth to work with and train local craftsman in the art of restoring the historic staircase in the Baptist Manse. The staircase was finished by local workmen and is now the showpiece of the Manse.

Thus far, twenty small and two large residential buildings and one large two-story cut-stone building have been restored by the project while six local homeowners have restored their houses and several more have made substantial improvements. Each building was documented with ‘before’ and ‘after’ photographs, and was also photographed during the restoration process.

Old buildings, such as those in Falmouth and the parish of Trelawny, are integral parts of Jamaica’s cultural heritage. Such buildings, designed for different types of human activity at different periods of history, and built by persons of varying socioeconomic circumstances, from emancipated slaves to slave owners, serve as reminders of how people of the period lived and worked. They are monuments to people’s successes, hopes, inspirations and failures. Some of them are still being used for a purpose identical or similar to that for which they were originally constructed, while in other cases, the function has changed. A common feature of most of the buildings is that they illustrate the conditions under which they came into being and serve that purpose more clearly than any written material, painting or photograph. Buildings are a physical link with the past that enriches our everyday environment.

## **Project Support**

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But that is not all. Contact with the past is essential to what we term culture, in that the characteristic thing about culture is that it is built up gradually over generations. A clear and concise understanding of one's history provides a sense of ancestral continuity. Such a feeling often contributes to a person's sense of identity, security, community and national pride. This is especially true for children and young adults. Perhaps the most important aspect of the project is the educational benefit provided to Jamaicans of all ages through the preservation and restoration of the built historic environment of Falmouth.

### **Project Management**

The project is managed by Dr. James Parrent and the board of directors of Falmouth Heritage Renewal, Inc., a not for profit group founded in the U.S. to support the restoration of Historic Falmouth and the board of directors of Falmouth Restoration Company, a Jamaican not for profit organization founded in 1990 to lead efforts to preserve and develop Falmouth's Historic District.

### **Abstract**

Falmouth, located on Jamaica's north coast near Montego Bay, is noted for being one of the Caribbean's best-preserved Georgian Period historic towns. It was declared a National Monument by the Jamaican Government in 1996 and is listed as one of the 100 Most Endangered Sites by the World Monument Fund.

Restoration efforts led by Dr. James Parrent Executive Director of Falmouth Heritage renewal are ongoing. To date 20 small houses and two large buildings have been restored.

Most of the buildings within the historic district have been examined as part of the restoration project. Assessments have been made as to what type of intervention is required to stabilize the historic buildings and what is required for their restoration. During the assessment process it was noted that bricks on some historic buildings were severely deteriorate while on other buildings of the same period or older they were sound and well preserved. Further investigation revealed that the most severely eroded bricks were those that had been lain with or had been repointed with Portland cement mortar.

This paper discusses the problems with and the destruction cause by using Portland cement to repair or repoint historic brick and stone structures and offers the obvious solution of manufacturing and using traditional lime based mortar.

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