

# Introduction

*Buildings, too, are children of Earth and Sun.*

— Frank Lloyd Wright, architect

*I bought an old house. I want to restore it in a green way.*

As a restoration contractor with an overwhelmingly academic clientele, I hear that a lot. The historic districts of my hometown are chock-full of homeowners who want to restore their houses employing values that honour both preservation and green principles.

I wrote this book to offer practical suggestions to both homeowners and their contractors. Whereas the balance of green building books focus on seldom-used methods like straw bale and rammed earth construction and others are little more than encyclopedias of every single green option (practical or not), I aim to emphasize core techniques and address questions consistently seen in practice today:

- Is sealing my old crawl space a good idea?
- My heating bills are massive, what should I do?
- Should I replace or restore my windows?

These decisions must be looked at from the green side and the preservation side, addressing the cultural, environmental and financial implications of each. With windows, for example, the energy efficiency comparison of historic windows versus modern, Low-e, double pane alternatives must be weighed against the embodied energy of replacements and general rehabilitation cost benefit. Since windows are so crucial to the preservation equation, there are specific solutions where original single pane glass can be retained for its character and historic value while the greater window assembly is upgraded to meet modern efficiency expectations. Other home features don't have an historic value per se, but are justifiable expenses in an old home rehabilitation and open the door to use *historic* incentives for *green* technology.

- Did you know that a high-end \$6,000 solar hot water system is a qualifying historic rehabilitation expense that can almost immediately pay for itself through the use

of tax credits, and the only stipulation is that the roof panels must be out of view from the streetscape façade?

With historic tax credits there are specific guidelines and incentives that encourage window rehabilitation. And there may be local historic district restrictions or protective covenants that specifically exclude certain techniques, such as window and siding replacement. I have framed these debates in layperson's terms so homeowners who are looking to add only a few green features to their homes can make educated decisions with respect to each. We'll cover issues room by room, system by system. Given such organization, the hope is that the book will be useful for those considering a total restoration, or those little by little upgrading a kitchen or electrical system.

#### *Green Restorations*

- is the first guide for historic homeowners looking to undertake sustainable restorations.
- explains the massive financial incentive of historic tax credits.
- explains how to use historic financial incentives to pay for cutting edge green building systems and finishes.

In green building today, there is an extraordinary movement towards the mainstream. Where ten years ago green building might have been reserved for off-the-grid earth houses, today even publicly owned builders are promoting green features.

Preservation is also moving towards the mainstream, partly because of the expansion of tax credits in 1987 (and state expansions that followed) and partly because of the synergy and snowball effect created by the rebirth of urban corridors. As people move into the cities and restore old houses, more people feel comfortable moving back to the city to restore more houses. The real estate version of the *tipping point*, which accelerated flight from US cities to the suburbs in the 1960s and 1970s, now runs in reverse. As the flood gates open, neighborhoods are going from rough to desirable in an exceptionally short period of time. And governments in the US are fueling this movement by expanding local, state and national incentives.

Unfortunately, sometimes green building and preservation prescriptions are in conflict with each other, and where such conflicting information exist this book is structured to help readers make these tough judgment calls. Preservationists tend to view new techniques with skepticism, and green building (in practice and print) is entirely dominated by new construction. Green builders focus on new, high quality windows; preservationists require that you restore existing windows. Green builders love foam insulation because of its air sealing qualities; preservationists are skeptical because of its permanence. There's a natural suspicion between the leaders of the two movements. The suspicion is largely superfluous, because at the end of the day both movements have the common goal: *conservation*.

The book targets, metaphorically, my past, current and future clients. The book was largely written because of publication gaps indicated by former clients (one actually did a Google search on “Green + Restorations” and noted depressingly few hits). Remarkably few building professionals have taken the effort to understand,

simultaneously, the green/preservation concepts at hand. On a publishing scale, similarly, there are books on green building as there are books on preservation, but there are no books that address both in chorus. For those undertaking a green restoration, this book aims to fill that void.