



Advocating sustainability

I LISTENED to King Kool and his Royal Blues while reading *Scantlings* 110. This newest compilation of heart-felt stories stimulated my thoughts as the late Mark Witter's music touched my soul. Though I've been a member of the Guild for just over a decade, I wondered anew how the TFG might be an inspiration to its members and the larger building community for sustainable architecture. In *Scantlings* 110, Tedd Benson's keynote speech at the Eastern Conference and Rick and Laura Collins' article on sustainability further stirred me.

I believe the Guild's members possess the potential for real leadership in sustainable design-build. Such leadership is worthy of our time and efforts, and it directly supports our stakeholders. The pursuit of sustainable architecture is not only a core TFG value; it is a worthy cause with immense impact.

Our members are ever more sophisticated and demanding. The Internet has changed how people find us and what they expect from us: with our strong presence at www.tfguild.org, we are found at once, researched, studied, visited, donated to, and joined. I suspect a high percentage of these newer members are not timber framers but rather future clients or potential partners, and this

is borne out by Guild membership studies. (At the Eastern conference, I met at least eight new members who were in the process of building a home and thought timber frames were cool.)

The new members, appropriately, trust the Business Council to refer them to a qualified company or the Guild to teach them joinery. Many were looking at *mainstream methods for sustainable architecture* integrated with the frame. (For some bizarre reason, they think people who recycle old timber or harvest sustainable trees might value the planet.) For example, Vicco von Voss and others I spoke with at the Eastern conference expressed a strong desire to understand which technology and material systems are truly sustainable in the frames they design and build. These intelligent individuals left with lots of information about grass-roots sustainability. Left unanswered, however, were their legitimate questions about readily available sustainable materials such as insulated form foundations or methods for heating and cooling a frame with minimal environmental impact. While this information is innovative to American builders, it is commonplace with our European brethren.

As a respected international educational trade organization, the Guild builds communities and improves the quality of life through education and increasing awareness of healthier building environments. We do this with limited resources. So why broaden our focus? In a recent discussion I had with Will Beemer about the sustainability agenda at the upcoming Western Conference, he provided some excellent direction: since our conferences are already crammed with knowledge presentations, we should offer more hands-on sessions. If information is available elsewhere, the Guild should refer its members to it.

I wholeheartedly agree. Unfortunately, I have been unable to find this information specific to timber frames despite membership in the Department of Energy's E*Star program, the Energy and Environmental Building Association, National Association of Home Builders/Green Building Certification, American Society of Landscape Architects, Leadership in Energy and Environmental Design (U.S. Green Building Council), and so on. These organizations do not understand timber frames. I have found that timber framers more readily accept green technology than the converse: ironically, many green organizations hold that building with wood is not sustainable.

My perspective comes from a fairly intimate knowledge of the architecture, engineering, and general contracting communities, as they struggle (some more than others) with the balance between economics and the environment. Many of these professionals, just as they consider timber frames high-cost, high-risk, and unpredictable, argue that economic considerations limit the application of sustainable best building practices.

I firmly disagree. We must weigh the merits of short-term profitability against the long term environmental impact. Sustainability is an "economic state where the demands placed on the environment by people and commerce can be met without reducing the capacity of the environment to provide for future generations." (Paul Hawken, *The Ecology of Commerce*, 1994)

For most of us, change creates consternation. After reading Tedd Benson's two books a decade ago, I was sickened to see metal joinery on timber structures in downtown Denver. Similarly, when working on the design for a single-bent warehouse with Benson Woodworking's Ben Brungraber, P.E., I was appalled that he proposed cantilevered beams suspended by steel cables. In retrospect, the solution was brilliant, but I wasn't ready for it. A couple of years later, I recall Guild members chastising Benson Woodworking for purchasing a Hundegger. Many ignored that (1) the machine improves the competitiveness of a timber frame company in the general building market, and (2) the software reduces waste products.

We can apply these lessons about hybrid construction and tooling evolution to the scope of the Guild's involvement in sustainable architecture. If you accept Hawken's

definition of sustainability, we have two responsibilities. In order to promote sustainable building practices, the Guild must both advocate for the economic health of our sustainability-focused members and promote environmental stewardship.

We have the ability to understand a little, yet leverage a lot: there is a limited number of best-practices products and processes that create sustainable architecture. Without reinventing the wheel, timber framers can easily comprehend approved solutions for integration with frames. I come to this conclusion based on my own personal experiences, listening to industry-leading professionals, observing European building practices, and discussing these issues with Guild members. For the past five years, I have studied sustainable building processes and materials that integrate into timber frames. I have researched best practices and installed alternative energy systems, radiant floor heating, structural insulated panel systems, moisture barriers, gray water systems, and insulated concrete form foundations. Joe Lstiburek (a building forensic scientist and principal of Building Science, Inc., in Westford, Mass.) has documented similar successes regarding best practices implementation for competitive advantage. (He's also collected the worst practices; search Google for his name and enjoy the ten dumbest . . .)

Zimmermeister courses in Germany teach best practices as part of their core curriculum. (I attended a course there, and I recommend it highly.) While trained in timber framing, master builders build with sustainable materials: insulated form foundations, SIPs, suspended floor systems below the sill plate, and environmentally-friendly, commercially-available straw panels assembled with rice glue or something other than formaldehyde-based adhesives. Their building process includes performance-testing the building envelope, with calibrated blower door fans, and pressure-assisted air sealing with water-based caulk. Technology that we view as exotic in the U.S. is standard practice in Europe.

Other than seeing green as a marketing ploy, I find little inclination within the U.S. mainstream building market and its associated trade organizations to really promote sustainable architecture. Given the division of roles among developers, general contractors, architects, engineers, subcontractors, and timber framers, the TFG may be the only international *educational trade organization* whose members as subcontractors are in a position to significantly influence the design of the foundation, space, skin, and systems in a building.

Timber framers are well positioned to impact the sustainable design and building process and take it into the mainstream. All we really need is resource documentation, a little guidance, and hands-on exercises.

—Al Wallace