B ack before I had small children, I dabbled a bit with stained glass. For me, one of the toughest parts was the precise scoring required with an awkwardly held glasscutter. I contemplated this for a bit and came up with what I (humbly) thought was a pretty good solution (Charlie Carter, AISC’s Chief Structural Engineer, built a mock-up and it really worked!). Essentially, it consisted of a stiff—but flexible—wooden arm attached to a board. The glasscutter was mounted to the arm at such a distance that a piece of glass could be slid under it, though enough pressure was left that the glasscutter scored the glass as the glass was moved. The beauty of the system was that instead of moving the glasscutter, you moved the piece of glass, which allowed much greater precision.

At the time, we thought about marketing it, but never found the right venue.

I’m sure I’m not alone at envisioning innovative solutions. For years, AISC has thought about how to institutionalize innovation. We’ve used the usual suspects—brainstorming, faculty fellowships, etc. Now Tom Schlafly, AISC’s Director of Research, is trying a new approach: a competition.

One of the fastest growing segments of the construction industry is the development of multistory residential buildings (including apartments, condominiums, hotels, dormitories, and senior housing). Traditionally, much of this construction has utilized pre-cast concrete, in large part due to the desire of developers to minimize floor-to-floor heights. Recently, several steel systems have been gaining acceptance, including Girder-Slab™, staggered truss, stub girder, and precast plank construction. However, additional innovative systems still are needed.

AISC is sponsoring a contest to develop new and innovative solutions to designing multistory residential steel structural and floor-framing systems. Two cash prizes will be awarded: $10,000 to the proposal deemed to have the most potential for development and $5,000 to the runner-up proposal. All proposals will be reviewed and judged by a panel of designers and contractors chosen by AISC. While the proposed floor systems need not involve structural steel, it needs to be compatible with structural steel framing. Attractive features of an innovative system would include lightness, a pre-finished top/bottom, and the ability to readily accommodate M/E/P conduits.

More details on the contest are available on AISC’s website at www.aisc.org/contest. Essentially, though, submissions will be evaluated based on:

- Design and construction costs: Is the system less expensive than existing systems?
- Span length: a minimum 40’ span capability under residential floor loads is required
- Assembly depth: Will the system help to minimize floor-to-floor heights?
- Constructability: Can the system be easily fabricated and erected?
- Serviceability: vibration and live-deck deflections are critical concerns
- Durability: Will the system hold up well under the conditions typically present in residential construction?
- Load transfers: Can the system adequately transfer diagphram loads?
- Sound transmission
- Fire resistance: What type of fire protection is needed?
- Compatibility with steel-frame construction: Does the floor framing work well with a steel frame?
- Required finishing systems: Does the system require a concrete topping or suspended ceiling?
- Sensitivity to field modifications: Can the system readily accommodate revisions and unplanned construction conditions?
- Sustainability

All entries must be received no later than Jan. 31, 2004 (send entries to Tom Schlafly, AISC, One East Wacker Dr., Suite 3100, Chicago, IL 60601 or email schlafly@aisc.org). Winners will be announced at the North American Steel Construction Conference, March 24–27, in Long Beach, CA (for more information on the conference, visit www.aisc.org/nascc).