

Professional Design Winners: Shaping Our World and Changing Lives



The 2004 International Aluminum Extrusion Design Competition Professional winning entries seem to have shattered the status quo, championing applications that change our world for the better.



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In the architectural category, this year's winner FrameWork, of Houston, Texas, zeroed in on the growing need for low-cost housing. They created affordable, mass-producible quality housing, with Smartframe: a multi-cellular extruded aluminum assembly, which carries cold air, hot and cold water, electrical, and data utilities all within its profiles.

A radical departure from traditional home building, they've modeled the "kit-system" product after the highly-successful Habitat for Humanity low-cost housing program. This poses a challenging goal, demanding an innovative design approach to lowering costs, increasing aesthetic value, and simplifying the construction process. Like Habitat, Smartframe enables community volunteers to rapidly assemble an attractive, quality home by minimizing the need for power tools and eliminating heavy equipment.

What's most exciting is that FrameWork architectural designers Adam Janusz, Joe Meppelink, Onezieme Mouton, and Wyatt Frantom's vision goes far beyond the scope of traditional building and construction uses for extruded aluminum windows and accessories. Extruded aluminum framed canopy systems and structural systems for sunrooms inspired them to say, "Why not an entire house?"

The Smartframe system does indeed push the boundaries of traditional home building, combining a lumber floor, roof framing, structural insulating panel (SIP) sub-floor and walls, and a Rainpanel roof system. The Smartframe home "kit" system is a modern-day erector set, featuring five continuous extruded aluminum cross sections: Sill Plate, SIP Stop, Deck Stop, Pipe Chase and Clip Lock, combine with rectangular tube sections to create a flexible and easily assembled frame. The tube sections give necessary strength and

structural stability. Solid profile 6xxx aluminum alloys lower cost and maximize performance. Factory anodized finishes provide dozens of quality choices to a low-cost housing market in great need.

The Smartframe home design integrates into a neighborhood with infinite flexibility in the plan and exterior appearance, allowing self-expression and community identity to emerge. The Smartframe concept could also be used as emergency shelter, disaster relief or military operations housing, due to its lightweight, reusable components. The modular layout offers more than 40 floor plans, with a typical three-bedroom home of approximately 1,440 square feet costing an estimated \$40 per square foot, after start up and initial tooling costs are amortized by mass production.



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Mobility Equals Freedom For Disabled of All Ages

Disabled persons now have the freedom to move comfortably from bed or couch to wheelchair and back again, whether home or away, thanks to first-place Co-winners in the residential category: Almag Aluminum, Inc., of Brampton, and Waverly Glen System, Ltd., of Concord, Ontario, Canada. This is much more than a helping hand. It's a freestanding extruded aluminum lift system for home health care.

The Sequoia 2-Post System vastly improves mobility for physically disabled children and adults. The lightweight, portable and adjustable freestanding lift and transfer system for home use is strong enough to lift 400 pounds, yet small enough to be carried by one person and fit inside the average car. Sequoia's strength and versatility enables physically challenged people to travel, camp and vacation at will. Importantly, Sequoia also saves the prohibitive expense of purchasing and installing a permanently mounted lift system in one's home.

Sequoia's designers devised this system using 13 different aluminum extruded profiles, totaling 31 parts. Designers pushed the extrusion envelope by addressing more than 40 points of contact over two key profiles: the system's top and bottom tracks. The strong, lightweight tracks are manufactured to tight tolerances to allow the trolley to run seamlessly between each profile and maximize system



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