

Right-Sized, Customized Prefab

New, Efficient, Old-Town Louisville Home

by Paul Andrews



The Lawrence/Andrews family



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Year Built: Modular home delivered July 23, 2010

Home Size: 3,586 sq. ft.

Contractors:

- Kotan/Eco-Infill (General Contractor)
- Bar Vista Building Systems (Fabricator)
- DAJ Design (Designer)
- Namaste Solar (PV system)
- Ascent Engineering (Engineering)
- Populus Consulting (Consulting)

Energy Features:

- HERS Rating: 26
- Passive solar design
- 4.2 kW grid-tied PV system
- High-efficiency furnace with ERV
- Tankless water heating
- High-efficiency boiler
- High-efficiency insulation
- SIPS Construction
- Tuned Pella aluminum-clad windows
- Zoned heating: 3 zones
- All fixtures pin-based or CFLs
- ENERGY STAR appliances

Green Features:

- Prefabricated construction
- Green construction materials
- Recycled and reclaimed lumber
- Sustainable flooring
- Sustainable finishes
- Low-VOC paint
- Air purifier/filter on duct system

Water Features:

- High-efficiency/dual-flush toilets
- Water efficient appliances
- Xeriscape
- Drip irrigation
- Pervious pavement

Re-Use/Salvage Features:

- Deconstructed original structure
- Construction and demolition waste recycling
- Utilized salvaged and recycled materials

We like to think of the site of our new home in Louisville as a great lot in the coolest town in the most beautiful state in the US. The location is matched only by the challenge we went through to acquire it, which involved scouring neighborhoods, searching court house records, mailing hundreds of letters, months of negotiations with the prior owner, and a near street brawl with the local realtor. After all that we thought we had earned the right to build our dream home!

In tune with our love and respect for the natural world, and recognition of a planet in peril, our priority was to create a home that took full advantage of Colorado's climate, was energy efficient and earth gentle. We were fortunate to find Andy Johnson, Principal of DAJ Design. While he bears only a passing resemblance to Yoda or Gandalf, he has been our guide and mentor on the quest for a single digit HERS rating. Andy led us through the new vocabulary of PV, SIPS, Geo-thermal, Xeriscape, HRV, ERV and Net-Zero.

The most important decision we made was to plan our home around the right amount of the space we needed for everyday living. Taking out separate dining rooms, formal living rooms and oversized everything, we downsized our current house into a mindful home with half the square footage. With great insulation, plus careful design and orientation to take full advantage of passive solar gain and natural cooling, we were well on our way to Low Energy Living. Our home also includes high performance windows, a biomass fireplace incorporated into the duct system, a 4.2kW photovoltaic system, tankless water heating, three-

zone climate control, a whole house fan, water filter system and ENERGY STAR appliances. It has been finished with sustainable, no VOC wall and floor finishes, minimal carpet, eco-friendly countertops, local stone and native plants.

We used ReSource to deconstruct the previous home on our lot. After reusing much of the wood from a 120 year old miner's cottage, and seeing passing great materials on to others, we glowed with good karma. Andy steered us to modular construction, which reduced waste, shortened our timetable and reduced our construction costs by 20%. However, our greatest challenge was blending prefab construction with higher end finishes and a custom design. We explored a number of dead ends with modular construction companies whose idea of custom was two choices of paint color and an alternate faucet supplier. We spoke to a number of builders who thought our home would be a good place for them to learn about modular construction, and also naively thought we could manage the project ourselves, but custom modular really requires expertise. Enter John Cianci of Eco-Infill. Although John only thinks he looks like Aragon or Han Solo, he arrived at our moment of need. Since then he has managed our project with great expertise and lots of enthusiasm, wonderful knowledge and fists of steel. While Bar Vista constructed our home in their factory, we were able to complete the excavation and build our foundations.

At the time of writing this article our home is about to arrive in Louisville, via truck and crane. By the time you visit, we hope it has been completed in the way we see it in our imagination today. •