

Mastro Properties: Lakeside Avenue Home

Case Study



Vital Stats	
Location: Seattle, Leschi	
Star Level: 5-Star	
Checklist: Single Family / Townhome	
Square Feet: 5418	
Section	Points
Site and Water	174
Energy Efficiency	184
Indoor Air Quality	185
Material Efficiency	144
Innovation	10
House Size Multiplier	1.0
Home Total Score	697

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This month's featured project is the Mastro Residence in Seattle. This 5-Star project achieved 697 points on the Built Green Checklist, making it the highest point-scoring project to date in Built Green. The home was also certified as LEED for Homes Platinum

and Energy Star. The home boasts a 4.2 Kw solar array, a geothermal system, high efficiency hydronic heating, and a unique passive solar chimney design all of which contribute to modeling the home at 52% more efficient than 2004 International Energy Code. The home also achieved a 90+% recycling rate, used FSC certified wood products extensively, including certified cedar shingles, framing and sheathing, and FSC Floors from EcoTimber™. They took great care in addressing indoor air quality issues through using no forced air, no carpet, and low toxic sealers adhesives and paints throughout. Finally, they used Vastu design principles to create a balanced space and to promote a sense of harmony and calm. To see a more complete inventory on the strategies utilized in the project, please see below.

Some of the many green features of the project include:

Site and Water Protection

- Built on an infill site to utilize existing infrastructure
- Constructed no impervious surfaces outside of the house footprint including walkways, driveway and patios.
- Landscaped with native drought tolerant plants and used no turf grass
- Rainwater collection tank under entry steps
- Provision of a basement level accessory dwelling unit (ADU)
- Dual Flush toilets used throughout

Energy-Efficiency

- Home's overall energy performance modeled to be 52% more efficient than 2004 International Energy Code (IECC)

- Homes envelope performance modeled to be 32% more efficient than 2004 IECC
- Installed 4.2 Kw Photovoltaic array
- Installed ground source geothermal heating system
- Blower door test showed air changes at less than 0.25 ACH
- High efficiency hydronic systems used throughout, with no use of ducted heating
- All Energy Star appliances
- Installed tankless water heater
- Enrolled the residences in a utility based renewable electricity sources program
- Installed heating systems with separate zones and controls

Material Use

- Achieved 90+% recycling rate for construction waste
- Used FSC Certified framing, sheathing, flooring, cabinets, trim, and cedar shingles
- Used fly-ash or blast furnace slag to replace at least 25% of concrete
- No vinyl flooring, window casings, or plumbing
- Used a minimum of 40% recycled content insulation
- Provided built-in recycling center

Indoor Air Quality

- No use of carpet in home
- Used Vastu Design concept to create balance and harmony in home
- Garage air sealed from house with automatic exhaust fan
- Installed a drainage plane behind siding
- Installed a high efficiency whole home Sunpure air filter

- Used low toxic adhesives and sealers extensively
- Installed all shelving, molding, cabinetry and trim that contained no added urea-formaldehyde
- Installed whole house radiant heating system, no forced air
- Used no fiberglass insulation
- Designed in a shoe removal vestibule and storage area at main entrance



Photos by Michael Mastro

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