

Autoclaved Aerated Concrete (AAC) is a new - to the United States - material that has great potential for sustainable design and construction. A recent residential project undertaken in Boulder, Colorado, represents a synergy between material technology and architectural study, resulting in a thick-wall modern home.

AAC as a material has a distinct personality. Thick walls foster emotions of permanence, safety, and "home" embedded in our psyches...history, stories, and love will all reassuringly flow within spaces protected by these walls. Sound is captured and absorbed into the solid walls. Coolness pervades in the summer months, while warmth radiates in the wintertime.

But how is this vision & unique expression of material realized? This is a story of a system, a team, and a solution.



the system

Composed of an inert mixture of primarily natural materials, AAC is baked to cause an expansive air bubble reaction. After curing, blocks are cut which can be channeled for conduit, shaped using typical woodworking tools, and stack like masonry, but with a twist!

- excellent fire resistance
- excellent acoustic barrier
- excellent rot, mold, and pest protection
- excellent wind resistance
- excellent thermal efficiency, even as single wythe exposed inside & out - reduced temperature fluctuation
- lightweight - ease of transportation & construction
- low embodied energy



the solution

The home's design is inspired both by the modular attributes of AAC and by modern Mexican architecture, Barragan in particular.

the team

clients



THE FIREFIGHTER *Rod Moraga - Anchor Point Group*

As a fire behavior analyst and management expert, Rod finds AAC appealing for its unparalleled fire resistance. Building his own home from AAC means investing in an idea and a system that can make rural and urban interface areas safer.



THE PAINTER OF WALLS *Shari Moraga - Artist*

Through history, telling stories of time through painting on walls has been a powerful tradition. As an artists, Shari is drawn to AAC as a canvas for the rich textures and colors of her decorative painting expressions.



THE ARCHITECT *David Barrett - Barrett Studio architects*

Working with new materials and systems means rigorous research to ensure that we are realizing them with integrity. The thick wall potential of AAC pairs with sustainable buildings practice and modularized efficiencies to create a beautiful home that is an honest expression of this system.



THE BUILDER *Arn Rasker - Renové*

The simplification of systems that AAC allows (the wall itself acting as insulation) offers ease of construction - once specialized techniques are learned. For Arn, an experienced Boulder builder, this challenge is a welcome departure from standard projects.



THE STRUCTURAL ENGINEER *Greg Kingsley & Rebecca Faverty - KL&A*

AAC is only 1/5 to 1/3 as strong as conventional concrete block, begging special structural considerations. Detailing and design tends towards numerous walls for distribution, and an expression of ductility and resilience.



THE MANUFACTURER *Michael Baron - Aerblock Enterprises*

The manufacturer / supplier is uncharacteristically interested in the localization movement - local company, jobs, and economy. Their extensive involvement throughout the design & construction process ensures a proper use of this innovative material.



Casa Moraga is currently under construction. We're excited to learn more AAC lessons during construction and look forward to the finished home in late 2010. Material Technology is important in any practice, and we strive to continue discovering new systems and materials that further our dedication to sustainable design and living.