

EAST COAST HOME+DESIGN

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What is the subject of your complexity?
The design of a very large walk-in fireplace in a new home.

Please explain what is so complex in this project?

The central Great Room in this new residence was designed as a 35 foot square space with a 30 foot high ceiling. The room's volume required a massive fireplace that fit into its oversized character. The resulting design was a carved-stone fireplace with a 9 foot wide by 22 foot tall interior and an 8 foot wide by 6 foot tall walk-in hearth. The firebox size required a 26 inch diameter chimney flue. (One Santa could actually come down.) Both the function and the aesthetics were particularly challenging aspects of the project.

Project parameters that affected the fireplace design included a truncated chimney, a highly insulated and efficient house, and infrequent use. Centuries ago, chimneys of this scale would have been many stories tall, in drafty houses, and in constant use for heating and cooking needs. In a traditional chimney, the open flue allowed heavy, cold air to pile down the chimney pushing smoke back into the room until the fire was hot enough to support natural convection from the inside out. Three solutions were implemented to promote natural convection in this chimney: a top damper, metal flue, and preheating coils. The top damper, rather than one located in the smoke chamber, allowed the flue to stay at or around room temperature rather than dropping all the way to outside temperature. The metal flue heats up more quickly than traditional masonry, and the preheat coils in the custom metal smoke chamber can be turned on a few minutes before the fire is lit to heat the flue and begin the natural convection process. The tight, modern insulation of the house starves the fire of generous make-up air required to replace that going up the chimney. Make-up air ducting was integrated at the face of the firebox, and a make-up

air system was specified in addition to the central HVAC system. The result was a magnificent, walk-in fireplace that functions just as a traditional fireplace would.

The aesthetic of such a large scale fireplace presented its own set of challenges. The goal was a rustic, yet refined, authentic French limestone fireplace. This design required the coordination of an architectural team located in the U.S. and a quarry team located in France. A French Camargue limestone was selected for its color, malleability, and available surface texture. The team's architectural drawings were used to cut, carve, and antique the surface texture of the limestone pieces at the quarry in France before they were shipped to the U.S. for installation. This process required the dedication and clear communication from both teams, and the results speak for themselves.

What was the most difficult part of this project?

Getting the right partners to design and fabricate the fireplace. Coordination of the concrete shell, manufactured components, and finished veneers was also very challenging.

How did you go about finding the solutions to tackle the complexity to this project?

Finding good partners and consultants: Walter Moberg, a prominent fireplace expert was critical in designing the functioning components of the fireplace. Marble Crafters helped us source and fabricate the interior stone veneer. Our mason, Mauro Fidaleo, was also instrumental in the successful construction of the fireplace.

If applicable what special materials were used in this project?

French Camargue limestone veneer inside, Connecticut granite on the exterior, custom made stainless steel interior components from Moberg Fireplaces.



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