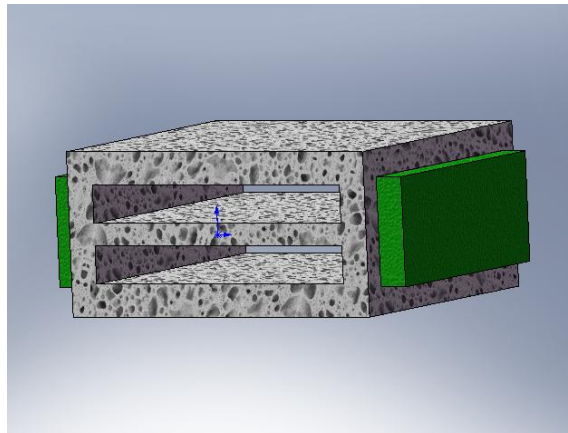


### Active Air Heater Without Boiler

***Impact:*** The proposed innovative air heater is an active air heater without a boiler. It performs two functionalities simultaneously—heat production and heat transference to air inside a building. This proposed product will be attached to the air handler and operated by building system controls for a specific building zone. It will be scalable to large buildings, especially those in major commercial complexes. Proposed benefits include lower initial capital and installation costs, lower utility and maintenance costs over the life cycle of the air heater, energy savings of up to 15%, and truly local, controllable heating for building occupants.

***Project Overview:*** The goal of this project is to build a working prototype system that will demonstrate the efficiency and comparative costs to existing boilers. The active heater could potentially replace a building's boiler system. It will have a simple structure and high-energy transfer efficiency, allowing it to possibly be integrated with air handlers. An innovative material that will be included in the heater is a byproduct from local coke processing, carbon foam, which will be used to create fin plates. An air duct and fan system for testing the heater will also be produced. The final air heater prototype will be attached to thermal couples and flow meters to fully analyze its performance.



***GBA Product Innovation Grant Amount:*** \$20,000

***Leadership Team:*** The Project team is led by Susan Chang, *Principal Engineer* with Technical Analysis & Services International, Inc. (TASI); other TASI team members include consultants Dr. Charles Hwang and Dr. Songhao Wang.

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