



Customer: John Smith Architectural Inc.

Project Name: Atlanta Building

Project Location: Atlanta, GA

Weather Data Location: Atlanta, GA

Date: 2/27/2015



## Energy Consumption Report

### Building Specifications



## Dryvit EIF System Vs Brick



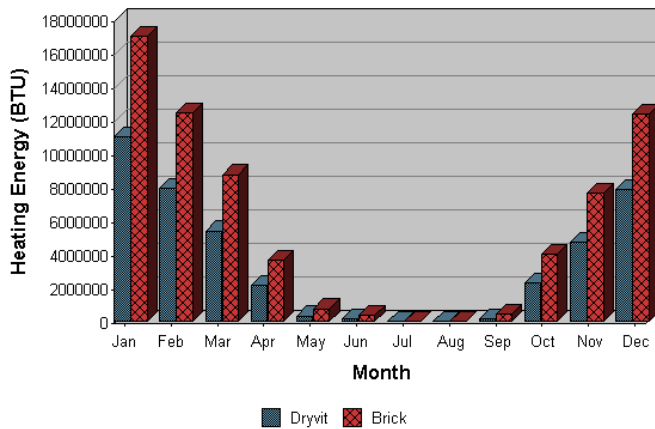
1. Interior Drywall
2. 3 5/8" Metal Studs @ 16 inch O.C.
3. R-11 Fiberglass Batts
4. DensGlass Gold Sheathing
5. Backstop® NT Air/Water-Resistive Barrier
6. 2 inch EPS Insulation Board
7. Dryvit Reinforced Base Coat
8. Dryvit Finish



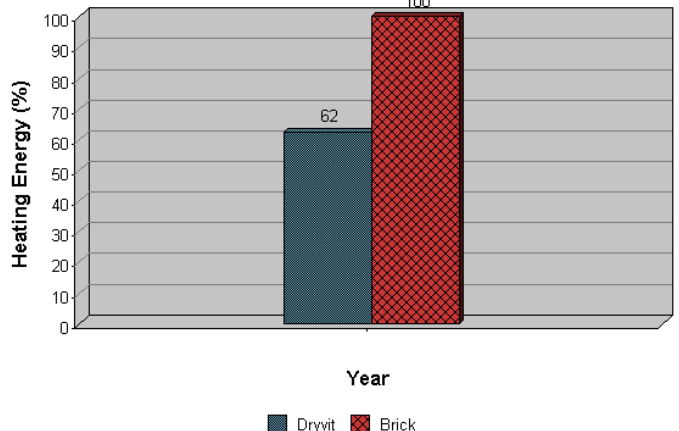
1. Interior Drywall
2. 3 5/8" Metal Studs @ 16 inch O.C.
3. R-11 Fiberglass Batts
4. DensGlass Gold Sheathing
5. #15 Felt
6. 4 inch Brick

# Heating Consumption

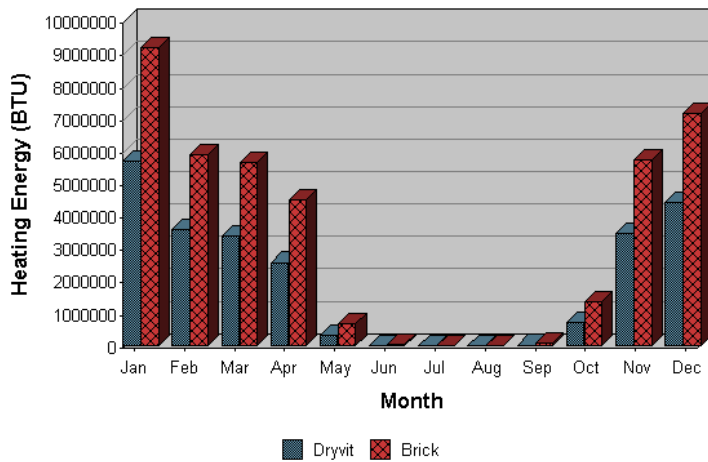
Atlanta Georgia - Heating Energy Consumption  
Dryvit vs Brick (Cold Year)



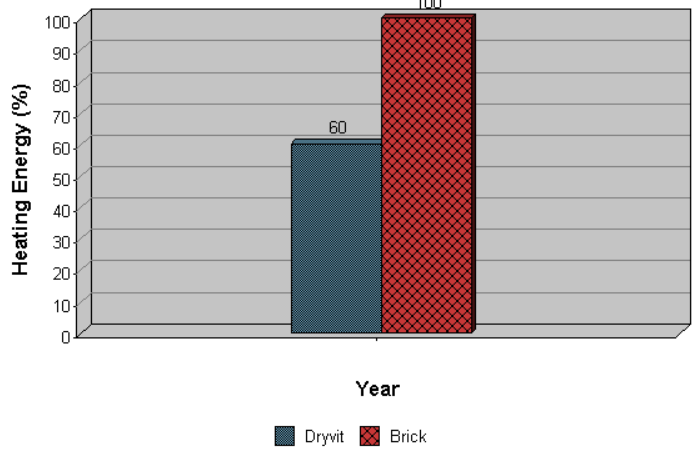
Atlanta Georgia - Heating Energy Consumption  
Dryvit vs Brick (Cold Year)



Atlanta Georgia - Heating Energy Consumption  
Dryvit vs Brick (Hot Year)

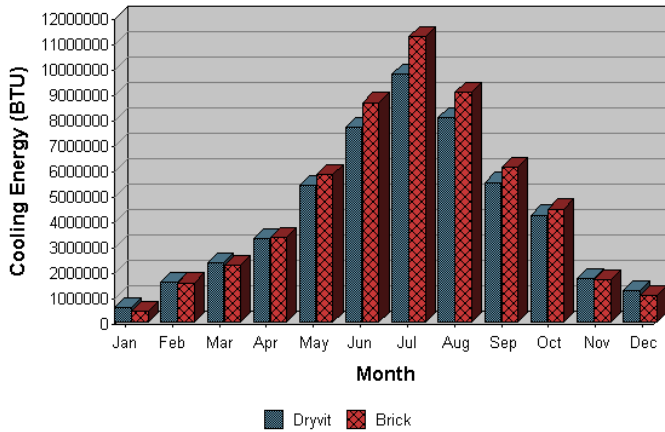


Atlanta Georgia - Heating Energy Consumption  
Dryvit vs Brick (Hot Year)

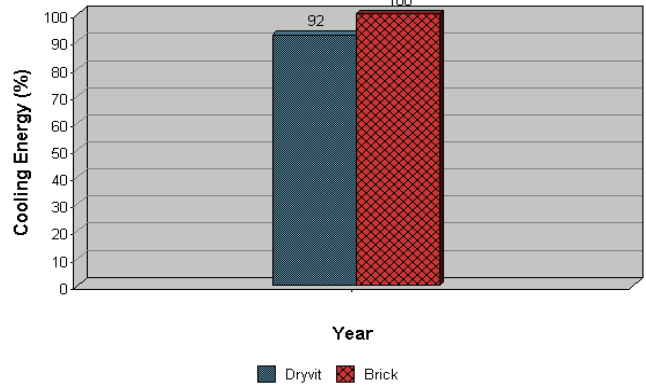


## Cooling Consumption

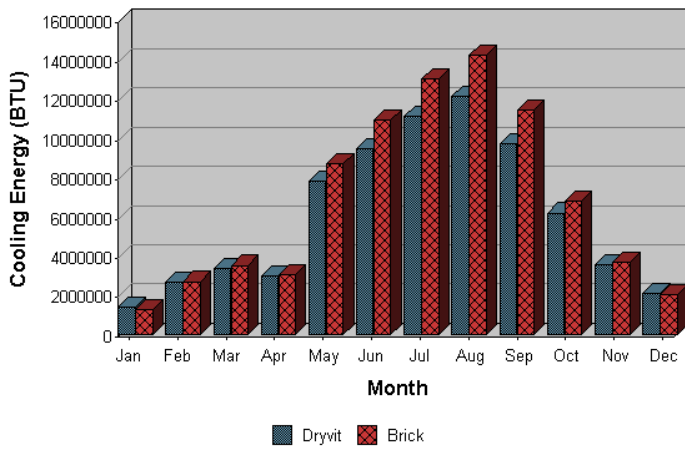
Atlanta Georgia - Cooling Energy Consumption  
Dryvit vs Brick (Cold Year)



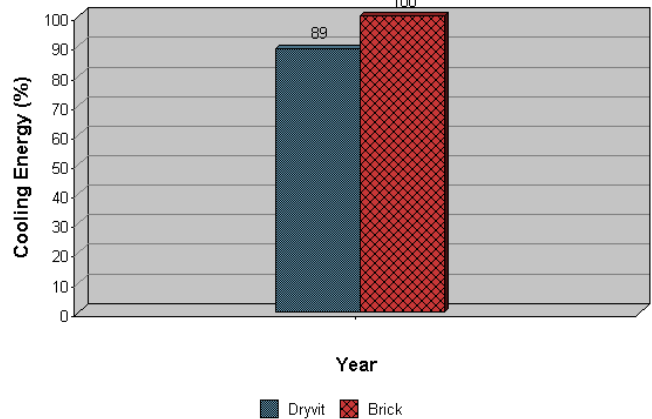
Atlanta Georgia - Cooling Energy Consumption  
Dryvit vs Brick (Cold Year)



Atlanta Georgia - Cooling Energy Consumption  
Dryvit vs Brick (Hot Year)



Atlanta Georgia - Cooling Energy Consumption  
Dryvit vs Brick (Hot Year)



## Research Methodology

The DRYVIT Wall Wizard™ employs the current state-of-the-art assessment tools for building envelope systems. In Figure [1], the complex interaction between materials, exterior and interior environments, transport mechanisms and building envelope systems are displayed. Exact description of the building system and sub-systems were obtained by performing a series of laboratory tests. Most of these tests at both material and system level were performed at ORNL, and some sub-contracted out (U of Waterloo).

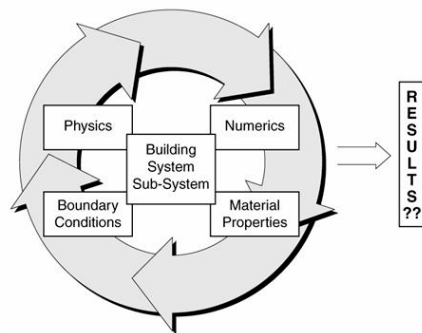
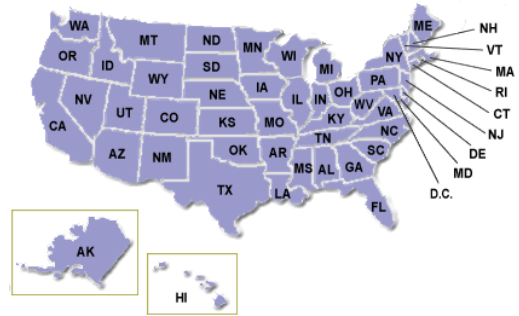


Figure 1



Figure 2

Recent developments in moisture engineering have allowed the Oak Ridge National Laboratory, and specifically, Dr. Karagiozis to undertake the research and development of a user friendly tool to evaluate the various individual performances of walls in different climate settings. DRYVIT Inc. contracted the Oak Ridge National Laboratory, Buildings Technology Section, to develop a wall selection procedure to assist architects and building engineers. Based on a series of simulations the DRYVIT Wall Wizard™ tool was developed. Guarded Hot-Box tests (Figure 2) were performed on DRYVIT full scale walls at ORNL to evaluate the thermal performance of the wall. This was then later introduced into the ORNL energy simulation model as an input. These inputs were used to generate simulations for a prototype building comparing the energy use of a building clad with 2 inches of a Dryvit Exterior Insulation and Finish System, with the same building faced with 4 inch brick. ASHRAE SPC 160P criteria was used in conjunction with actual weather data for each named city. 30 years of weather history was analyzed for each city and the 10% coldest and 10% hottest years used for the simulations. Analyses were performed for over 200 cities in North America (USA and Canada).



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