

9.4.4 Case Study, The Philip Merrill Environmental Center, Annapolis, Maryland (Office)

Building Design

Floor Area: 31,000 SF Floors: 2 Footprint: 220 ft. x (1)

2 Floors of open office space

Attached pavilion containing: Meeting space Kitchen Staff dining Conference room

Shell

Windows

Type:		<u>U-Factor</u>	<u>SHGC (2)</u>
Double Pane, Low-e, Argon Filled Insulating Glass		0.244	0.41

Wall/Roof

	<u>Material</u>	<u>Effective R-Value</u>
Interior Wall	plywood, gypsum, SIP foam, and sheathing	28.0
Exterior Wall	gypsum and insulated metal framing	9.3
Roof	plywood, gypsum, SIP foam, and sheathing	38.0

HVAC

18 ground source heat pumps

fin and tube radiators connected to a propane boiler

1 air conditioning unit

Lighting Power Densities (W/SF)

First Floor:	1.2
Second Floor:	1.6
Conference Room:	1.4

Energy/Power

PV System: 4.2 kW thin-film system

Net Annual Energy Usage (thousand Btu/SF*year): 39.9

Note(s): 1) Width varies from about 74 ft. to 59 ft. along different sections of the length. 2) Solar heat gain coefficient.

Source(s): NREL, Analysis of the Energy Performance of the Chesapeake Bay Foundation's Philip Merrill Environmental Center, April 2005, p. 6-24; NREL, Lessons Learned from Case Studies of Six High-Performance Buildings, June 2006, p. 5 Table A-2 p. 130.