Tax Deduction Qualified Software
DesignBuilder version 4.2.0.054

On this page you'll find information about the DesignBuilder version 4.2.0.054 qualified computer software (www.buildings.energy.gov/qualified_software.html), which calculates energy and power cost savings that meet federal tax incentive requirements for commercial buildings.

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Statements in quotes are from the software developer.

Internal Revenue Code §179D (c)(1) and (d) Regulations Notice 2006-52, Section 6 requirements as amplified by Notice 2008-40, Section 4 requirements.	
(1) The name, address, and (if applicable) web site of the software developer;	DesignBuilder Software Ltd, Clarendon Court, 1st Floor 54/56, London Rd, Stroud, GL5 2AD, UK http://www.designbuilder.co.uk/
(2) The name, email address, and telephone number of the person to contact for further information regarding the software;	Dr. Andy Tindale andy.tindale@designbuilder.co.uk +44(0)1453 755500
(3) The name, version, or other identifier of the software as it will appear on the list;	DesignBuilder v4.2.0.054
(4) All test results, input files, output files, weather data, modeler reports, and the executable version of the software with which the tests were conducted; and	Provided to DOE
(5) A declaration by the developer of the software, made under penalties of perjury, that—	"On behalf of the DesignBuilder Software Ltd development team I certify the following:"
(a) The software has been tested according to ANSI/ASHRAE Standard 140-2007 Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs;	"The software has been tested according to ANSI/ASHRAE Standard 140-2011 Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs."
(b) The software can model explicitly—	"The DesignBuilder software is fully compliant with ASHRAE 90.1-2001 and meets all of the below requirements."
(i) 8,760 hours per year;	"The DesignBuilder software complies."
(ii) Calculation methodologies for the building components being modeled;	"The DesignBuilder software complies."
(iii) Hourly variations in occupancy,	"The DesignBuilder software complies."

lighting power, miscellaneous equipment power, thermostat setpoints, and HVAC system operation, defined separately for each day of the week and holidays;	
(iv) Thermal mass effects;	"The DesignBuilder software complies."
(v) Ten or more thermal zones;	"The DesignBuilder software complies."
(vi) Part-load performance curves for mechanical equipment;	"The DesignBuilder software complies."
(vii) Capacity and efficiency correction curves for mechanical heating and cooling equipment; and	"The DesignBuilder software complies."
(viii) Air-side and water-side economizers with integrated control.	"The DesignBuilder software can model air-side economizers but v4.2 cannot model water-side economizers."
(c) The software can explicitly model each of the following HVAC systems listed in Appendix G of Standard 90.1-2004:	
(i) Packaged Terminal Air Conditioner (PTAC) (air source), single-zone package (through the wall), multi-zone hydronic loop, air-to-air DX coil cooling, central boiler, hot water coil.	"The DesignBuilder software models this system."
(ii) Packaged Terminal Heat Pump (PTHP) (air source), single-zone package (through the wall), air-to-air DX coil heat/cool.	"The DesignBuilder software models this system."
(iii) Packaged Single Zone Air Conditioner (PSZ-AC), single-zone air, air-to-air DX coil cool, gas coil, constant-speed fan.	"The DesignBuilder software models this system."
(iv) Packaged Single Zone Heat Pump (PSZ-HP), single-zone air, air-to-air DX coil cool/heat, constant-speed fan.	"The DesignBuilder software models this system."
(v) Packaged Variable-Air-Volume (PVAV) with reheat, multi-zone hydronic loop, air-to-air DX coil, VAV fan, boiler, hot water VAV terminal boxes.	"The DesignBuilder software models this system."
(vi) Packaged Variable-Air-Volume with parallel fan powered boxes (PVAV with PFP boxes), multi-zone	"The DesignBuilder software models this system."

air, DX coil, VAV fan, fan-powered induction boxes, electric reheat.	
(vii) Variable-Air-Volume (VAV) with reheat, multi-zone air; multi-zone hydronic loop, air-handling unit, chilled water coil, hot water coil, VAV fan, chiller, boiler, hot water VAV boxes.	"The DesignBuilder software models this system."
(viii) Variable-Air-Volume with parallel fan powered boxes (VAV with PFP boxes), multi-zone air, air-handling unit, chilled water coil, hot water coil, VAV fan, chiller, fan-powered induction boxes, electric reheat.	"The DesignBuilder software models this system."
(d) The software can—	
(i) Either directly determine energy and power costs or produce hourly reports of energy use by energy source suitable for determining energy and power costs separately; and	"The DesignBuilder software complies."
(ii) Design load calculations to determine required HVAC equipment capacities and air and water flow rates.	"The DesignBuilder software complies."
(e) The software can explicitly model:	
(i) Natural ventilation.	"The software can explicitly model natural ventilation."
(ii) Mixed mode (natural and mechanical) ventilation.	"The software can explicitly model mixed mode (natural and mechanical) ventilation."
(iii) Earth tempering of outdoor air.	"The software can explicitly model earth tempering of outdoor air."
(iv) Displacement ventilation.	"The software can explicitly model displacement ventilation."
(v) Evaporative cooling.	"The software can explicitly model evaporative cooling."
(vi) Water use by occupants for cooking, cleaning or other domestic uses.	"The software can explicitly model water use by occupants for cooking, cleaning, or other domestic uses."
(vii) Water use by heating, cooling, or other equipment, or for on-site landscaping.	"The software can explicitly model water use by heating, cooling, and other equipment or for on-site landscaping."
(viii) Automatic interior or exterior	"The software can explicitly model automatic interior or exterior

lighting controls (such as occupancy, photocells, or time-clocks).	lighting controls (such as occupancy, photocells, or time-clocks)."
(ix) Daylighting (sidelighting, skylights, or tubular daylight devices).	"The software can explicitly model daylighting (sidelighting, skylights, but not tubular daylighting devices)."
(x) Improved fan system efficiency through static pressure reset.	"The software can model improved fan system efficiency through static pressure reset by using the fan efficiency curves provided in the Advanced Variable Air Volume VAV System Design Guide. For explicit modeling of static pressure reset the model should be exported to EnergyPlus where the Component Fan Model should be used."
(xi) Radiant heating or cooling (low or high temperature).	"The software can explicitly model radiant heating or cooling (low or high temperature)."
(xii) Multiple or variable-speed control for fans, cooling equipment, or cooling towers.	"The software can explicitly model multiple or variable speed control for fans, cooling equipment, or cooling towers."
(xiii) On-site energy systems (such as combined heat and power systems, fuel cells, solar photovoltaic, solar thermal, or wind).	"The software can explicitly model on-site energy systems (solar photovoltaic, solar thermal, or wind) but for combined heat and power systems, fuel cells the model must be exported to EnergyPlus"

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