BUILDING ENERGY AUDIT DATA REPORT

OVERVIEW

BUILDING INFORMATION

Example Building
123 Main Street
Washington, DC 20037

Report Type:	**Alternate City Report**	Report Date:	**October 31, 2016**
Gross Floor Area:	**418,000 ft²**	Building ID #:	**979**
Year Built:	**1975**	Software Release:	**2.1.0**

AUDIT TEAM

Energy Services, Inc.
123 Park Street
Washington, DC 20037
(202) 123-4567

DATA SUMMARY

This report was generated from data entered into the Building Energy Asset Score (Asset Score) tool, developed by the Pacific Northwest National Laboratory (PNNL) for the U.S. Department of Energy (DOE). Asset Score is a national standardized tool for assessing the physical and structural energy efficiency of commercial and multifamily residential buildings. It also facilitates building energy audit data collection and reporting.

This report follows the ASHRAE/ACCA Standard 211P, Standard for Commercial Building Energy Audits. It also includes additional data fields required by specific cities, where applicable. The icons below identify data categories.

- ASHRAE Level 2 inputs
- City specific inputs

If this report is used to comply with a local energy audit ordinance, the fields marked with "*" indicate the minimum data to be reported. The audit team listed above is responsible for any information entered and reported through Asset Score. DOE and PNNL do not warranty data accuracy, completeness, legality, and reliability.

BUILDING ENERGY AUDIT DATA REPORT

Contact Information and Audit Details

Building Name: **Example Building**

Energy Efficiency Report (EER) Submission Information – *New York City Report only*

Submitted By	Steve Smith
Company Name or Organization	Example Energy Services, Inc.
Phone Number	(206) 123-4567
Email	steve.smith@example.org

Audit Details

Date of Site Visit(s)*	06/01/2015		
Date of Completion for Level 1 Audit*	12/01/2015	☐	N/A
Date of Completion for Level 2 Audit*		☑	N/A
Date of Completion for Level 3 Audit*		☑	N/A
Year of Last Renovation*	2010	☐	N/A
Year of Prior Energy Audit*	2012	☐	N/A
Year Last Commissioned*	2014	☐	N/A
Atlanta Building ID*	123456		
Early Compliance*	☐ Yes	☑	No
Year Audit Required*	2012		
Additional Details			

Audit Team Information

Organization Name*	Example Energy Services, Inc.
Street Address*	123 Park Street, Washington, DC 20037
Phone Number*	(206) 123-4567
Name of Qualified Energy Auditor*	Steve Smith
Type of Certification*	Certified Energy Manager (CEM)
Other Certification	
Certification Number*	12-3456
Certification Expiration Date*	12/31/17
Auditor's Years of Experience*	3
Additional Comments	

Contact Information and Audit Details

Building Name: **Example Building**

Building Staff

Building Owner*	City of Seattle.
Building Owner Representative*	Department of Planning and Development
Building Owner's State of Licensure*	Washington
Property Management Company*	N/A
Property Management Contact*	N/A
Street Address*	N/A
Phone Number*	N/A
Building Operator	Tim Allen
Operator’s Certification	Certified Energy Auditor (CEA)
Other Certification	
License # (If Applicable)	#123456

Facility Description

Building Name: **Example Building**

Building Characteristics

Gross Floor Area*	20000
Spaces Excluded from Gross Floor Area*	N/A
Conditioned Floor Area, Heated Only*	4000
Conditioned Floor Area, Cooled Only*	6000
Conditioned Floor Area, Heated and Cooled*	10000
Number of Floors Above-Grade, Conditioned*	3
Number of Floors Below-Grade, Conditioned*	1
Number of Floors Above-Grade, Unconditioned*	0
Number of Floors Below-Grade, Unconditioned*	0
General Building Shape*	Rectangle
Number of Buildings on Lot*	
Building Automation System?*	☐ Yes ☑ No
Historical Landmark Status?*	☑ Yes ☐ No

Building Location Specifications

Heating Degree Days (HDD)	250
Cooling Degree Days (CDD)	100
Base for HDD	300
Base for CDD	50
Year of HDD/CDD Data	2010

Use Types

Use Type / Space Function / Building Area Type*	Office
Original Intended Use*	Office
Gross Floor Area (ft^2)*	20000
Percentage of Space Conditioned (%)*	100
Number of Occupants*	50
Number of PCs and/or Laptops*	50
Use (hours/week)*	40
Use (weeks/year)*	51
Principal HVAC Type*	Warm Air Furnace
Principal Lighting Type*	Surface Fluorescent T5

Facility Description

Building Name: **Example Building**

Construction

Roofs

Roof Construction	Built-Up with Concrete Deck		
Roof R Value	30		
Roof Condition	Fair		
Cool Roof	☐ Yes	☑ No	☐ N/A
Green Roof	☑ Yes	☐ No	☐ N/A
Pitch (degrees)	20		
Roof Area (ft^2)	20000		
Percent of Roof which is Terraces/Setbacks (%)	5		
Terrace / Setback R Value			☑ N/A
Alternative Roof System	☐ Yes	☑ No	☐ N/A

Skylights

Skylight Construction Type	Glass
U-Value	1.22
SHGC	0.817
VT	0.893
Skylight Percentage of Roof Area (%)	2

Walls

Wall Construction	Metal panel/Curtain Wall	
Above Grade Wall Insulation R Value	13	
Below Grade Wall Insulation R Value	8	☐ N/A
Total Exposed Above Grade Wall Area	14000	
Below Grade Wall Area	2000	
Above Grade Demising Wall Area	0	

Windows

Framing Material	Metal	
Window Glass Type	Double Pane	
Gas Fill	Yes	
Operable	☐ Yes	☑ No
U-Value	1.22	
SHGC	0.817	
VT	0.893	
Window Wall Ratio	0.6	

Building Name: **Example Building**

Construction

Foundation Types

Floor Construction Type	Slab-On-Grade	
Slab Insulation	☑ Yes	☐ No
Foundation R Value	19	

Exterior Floors

Exterior Floor Construction Type	Wood Framed Floors
Exterior Floor R Value	25

Lighting

Fixture Type	Fluorescent T8	
Ballast Type	Electronic	
Mounting Type	Recessed	

Lighting Controls

Manual	☑ Yes	☐ No
Occupancy Sensor	☑ Yes	☐ No
Photocell	☐ Yes	☑ No
Timer	☐ Yes	☑ No
Building Automation System (BAS)	☐ Yes	☑ No
Advanced	☐ Yes	☑ No
Other	☐ Yes	☑ No
None	☐ Yes	☑ No

Space Function Served	Office	
Uses Total Area (ft^2)	☐ Yes	☑ No
Area Served by this Lighting (ft^2 or %)	100	

Facility Description

Building Name: **Example Building**

HVAC

Heating Plants

Heating Plant Type*	Hot Water Boiler			
Fuel Type*	Fuel Oil #1			
Venting Type*	Mechanical Draft			☐ N/A
Location of Equipment*	Above Ground			☐ N/A
Approximate Year Installed*	2000			☐ N/A
Condition*	Good			☐ N/A
Number of Pieces of Equipment*	1			☐ N/A
Input Capacity (MBH)				☑ N/A
Output Capacity (MBH)*	75			☐ N/A
Efficiency Units*	AFUE			☐ N/A
Rated Efficiency (%)*	80			☐ N/A
Burner Type				☑ N/A
Burner Quantity				☑ N/A
Year Burner Installed				☑ N/A
Controls				
Building Automation System (BAS)	☑ Yes	☐ No		
Direct Digital (DDC)	☐ Yes	☑ No		
Pneumatic Controls	☐ Yes	☑ No		

Cooling Plants

Cooling Plant Type*	Absorption Chiller – 1 Stage			
Fuel Type*	Electricity			
Chiller Compressor Type*	Scroll/Screw			☐ N/A
Chiller Condenser Type*	Water Cooled			
Linked Condenser Plant*	Cooling Tower			
Chilled Water Reset*	☐ Yes	☑ No		☐ N/A
Chiller Pump Control*	Constant Primary: Variable Secondary			
Location of Equipment	Above Ground			☐ N/A
Approximate Year Installed*	2001			☐ N/A
Condition*	Good			☐ N/A
Number of Pieces of Equipment	2			☐
Output Capacity (MBH)	70			☐ N/A
Efficiency Units	COP			☐ N/A
Rated Efficiency	4			☐ N/A
Controls				
Building Automation System (BAS)	☑ Yes	☐ No		
Direct Digital (DDC)	☐ Yes	☑ No		
Pneumatic Controls	☐ Yes	☑ No		

Facility Description

Building Name: **Example Building**

HVAC

Condenser Plants

Condenser Plant Type*	Cooling Tower
Cooling Tower Fan Control Type	Single Speed
Condenser Pump Control Type	Variable Speed

HVAC Systems

System Type	VAV with Hot-Water Reheat

Heating

Heating Source*	Heat Pump
Fuel Type	Electricity
Sink/Source Type*	Air
Location of Equipment*	Above Ground
Approximate Year Installed*	2002
Condition*	Excellent
Number of Pieces of Equipment*	1
Output Capacity (MBH)*	90
Efficiency Units*	COP
Rated Efficiency*	8
Burner Type	
Burner Quantity	
Year Burner Installed	

Cooling

Cooling Source*	DX
Fuel Source*	Electricity
Location of Equipment*	Above Ground
Approximate Year Installed*	2002
Condition*	Excellent
Number of Pieces of Equipment*	1
Output Capacity (MBH)*	90
Efficiency Units*	COP
Rated Efficiency*	8

Facility Description

Building Name: **Example Building**

HVAC

Distribution Equipment

	Thermal Zoning*	Multi Zone with Reheat
☑	Distribution Equipment Type*	Air Handling Unit
☑	Fan Control*	Variable Volume
	Terminal Unit Type	VAV with Reheat
	Minimum Airflow Fraction	0.3
	Fan Efficiency	80
	Motor Efficiency	90
	Fan Static Pressure Reset Control	☑ Yes ☐ No
	Supply Air Temperature Control	☐ Yes ☑ No
☑	Energy Recovery Ventilation*	Sensible and Latent
	Demand Control Ventilation*	☑ Yes ☐ No
☑	Outdoor Air Control*	Temperature Economizer

Zone Controls

☑	Direct Digital (DDC)*	☑ Yes	☐ No
☑	Pneumatic Controls*	☑ Yes	☐ No
☑	Manual Thermostat*	☐ Yes	☑ No
☑	Programmable Thermostat*	☑ Yes	☐ No
☑	None*	☐ Yes	☑ No

Space Functions Served

☑	Space Function Served	Office
☑	Percentage of Area Served by this Equipment	100

Facility Description

Building Name: **Example Building**

Service Hot Water System

Thermal Zoning	Direct Fired- Storage
Location of Equipment	Above Ground
Approximate Year Installed	2001
Fuel Source	Electricity
Efficiency Units	AFUE
Rated Efficiency	80
Distribution Type	Distributed
Tank Volume	90
Tank Insulation Thickness	2
Tank Insulation R-Value	25

Space Functions Served

Space Function Served	Office
Percentage of Area Served by this Equipment	100

Building Name: **Example Building**

Ownership Details

Percent Owned	100	
Percent Leased	0	
Multi-Tenant	☐ Yes	☑ No

Metering Configuration – *New York City Report only*

Residential Tenants

Tenants Directly Metered: Electric	☐ Yes	☑ No	☐ N/A
Tenants Directly Metered: Gas	☑ Yes	☐ No	☐ N/A
Tenants Sub-Metered by Building Owners: Electric	☐ Yes	☑ No	☐ N/A
Tenants Sub-Metered by Building Owners: Gas	☑ Yes	☐ No	☐ N/A
Tenants Not Directly Metered or Sub-Metered: Electric	☐ Yes	☑ No	☐ N/A
Tenants Not Directly Metered by Sub-Metered: Gas	☑ Yes	☐ No	☐ N/A

Commercial Tenants

Tenants Directly Metered: Electric	☐ Yes	☑ No	☐ N/A
Tenants Directly Metered: Gas	☑ Yes	☐ No	☐ N/A
Tenants Sub-Metered by Building Owners: Electric	☐ Yes	☑ No	☐ N/A
Tenants Sub-Metered by Building Owners: Gas	☑ Yes	☐ No	☐ N/A
Tenants Not Directly Metered or Sub-Metered: Electric	☐ Yes	☑ No	☐ N/A
Tenants Not Directly Metered by Sub-Metered: Gas	☑ Yes	☐ No	☐ N/A

Energy Systems Configurations – *New York City Report only*

Shared Energy Systems or Meters for Multiple Buildings on a Single Lot	☐ Yes	☑ No
Shared Energy Systems or Meters for Multiple Buildings on Multiple Lots	☑ Yes	☐ No
Shared Electric Meter	☐ Yes	☑ No
Shared Gas Meter	☑ Yes	☐ No
Shared Oil	☐ Yes	☑ No
Shared Chilled Water	☑ Yes	☐ No
Shared Heat	☐ Yes	☑ No
Shared Utility Steam Meter	☑ Yes	☐ No

Building Name: **Example Building**

Energy Supply Sources

Energy Supply Source	Account #	Metering Type	Rate Schedule
Electricity	101-987654	Direct Metering	Single phase
Natural Gas	202-987654	Master Metering with Sub-Metering	Three phase

Energy Reporting Years

Start Date	End Date	Metering entries	Delivery entries
2010-01-01	2010-12-31	12	2
2011-01-01	2011-12-31	0	0
2012-01-01	2012-12-31	0	0

Metered Energy

Energy Type: Electricity

Start Date	End Date	Days	Use (kWh)	Cost ($)	Peak (kW)	Load Factor	kWh/day	kBtu/day
01/01/2010	1/31/2010	31	83333.3	8333.0	200.0	56	2688	9172
02/01/2010	2/38/2010	28	83333.3	8333.0	225.0	55	2976	10154
03/01/2010	3/31/2010	31	83333.3	8333.0	240.0	46	2688	9172
04/01/2010	4/30/2010	30	83333.3	8333.0	280.0	41	2777	9477
05/01/2010	5/31/2010	31	83333.3	8333.0	300.0	37	2688	9172
06/01/2010	6/30/2010	30	83333.3	8333.0	350.0	33	2777	9477
07/01/2010	7/31/2010	31	83333.3	8333.0	325.0	34	2688	9172
08/01/2010	8/31/2010	31	83333.3	8333.0	400.0	28	2688	9172
09/01/2010	9/30/2010	30	83333.3	8333.0	375.0	30	2777	9477
10/01/2010	10/31/2010	31	83333.3	8333.0	300.0	37	2688	9172
11/01/2010	11/30/2010	30	83333.3	8333.0	325.0	35	2777	9477
12/01/2010	12/31/2010	31	83333.3	8333.0	250.0	44	2688	9172
	Average Annual Total		**1000000**	**99996**	**400**	**28%**		

*Note: fields displayed in **green** indicate values calculated by the tool and not directly entered by the user.*

Building Name: **Example Building**

Delivered Energy

Energy Type: Fuel Oil #1

Delivery Date	Fuel Oil #1 Qty (Gallons)	Fuel Oil #1 Cost ($)	Fuel Oil #1 kBtu
05/01/2010	500.0	250.0	69500
06/01/2010	250.0	150.0	34750

Annual Summary

Energy Type	Average Annual Use	Units	Conversion Multiplier	Thousands BTU	Average Annual Cost ($)
Electricity	1000000	kWh	3.412	3412000	99996
Natural Gas	25740	Therms	100.0	2574000	19308
Chilled Water	148500	ton-hours	12.0	1782000	35640
Fuel Oil #1	750	Gallons	139.0	104250	400
			Total	**7872250**	**155344**

*Note: fields displayed in **green** indicate values calculated by the tool and not directly entered by the user.*

Building Name: **Example Building**

Energy Use by End Use

Energy Supply Source: Electricity

End Use	Electricity (kWh)	Electricity (kBtu)
Space Heating	50000.0	170599
Lighting	50000.0	170599
Domestic Water Heating	1500.0	5117
Process Loads	500000	1705999
Other	0.0	0
Total	**601500**	**2052317**
Total (from annual summary)	**1000000**	**3412000**
Difference	**-398500**	**-1359682**
% Difference	**-39%**	**-39%**

Energy Supply Source: Natural Gas

End Use	Natural Gas (Therms)	Natural Gas (kBtu)
Space Heating	15000.0	1500000
Domestic Water Heating	5000.0	500000
Total	**20000**	**2000000**
Total (from annual summary)	**25740**	**2574000**
Difference	**-5740**	**-574000**
% Difference	**-22%**	**-22%**

Energy Supply Source: Chilled Water

End Use	Chilled Water (ton-hours)	Chiled Water (kBtu)
Space Heating	140000.0	1680000
Domestic Water Heating	2500.0	30000
Total	**142500**	**1710000**
Total (from annual summary)	**148500**	**1782000**
Difference	**-6000**	**-72000**
% Difference	**-4%**	**-4%**

*Note: fields displayed in **green** indicate values calculated by the tool and not directly entered by the user.*

Building Name: **Example Building**

End Use Summary

End Use	Total Energy Use (kBtu)	% of Total Energy Use (kBtu)
Space Heating	3350599	58
Lighting	170599	3
Domestic Water Heating	535117	9
Process Loads	1705999	30
Total	**5762317**	**100**
Total (from annual summary	**7872250**	
Difference	**-2109932**	
% Difference	**-26%**	

*Note: fields displayed in **green** indicate values calculated by the tool and not directly entered by the user.*

Energy Savings Opportunities

Building Name: **Example Building**

Energy Savings Opportunities

Package: Measure; Status (^); Modeling/ Calculation Approach (^^)*	Annual Energy & Cost Savings: Total Cost Savings	Peak Demand Savings (kW)	Electricity savings (kWh)	Gas/Fuel savings (therms)	Payback with incentives: Measure cost	Potential incentives	Measure life (years)	Net measure cost	Simple ROI (%)	Simple Payback (w/o incentives - years)	Simple Paypack (w/ incentives - years)
Low Cost and No Cost Recommendations											
Package 1: Lighting Retrofits	3,000	1.0	50.0					1,700	176	1.0	0.6
Retrofit with T-8; ^2; ^^1					2,500	1,000	4.0				
Retrofit with T-5; ^1; ^^2					400	200	2.0				
Package 2: Hot Water Heating	2,000	2.0	40.0					650	307	0.5	0.3
Install DHW Controls; T-8; ^2; ^^1					500	200	5.0				
Install low-faucet aerators; ^1; ^^2					500	150	6.0				
Potential Capital Recommendations											
Package 1: Appliances	1,500	3.0						800	187	0.9	0.5
Replace with Energy Star rated; ^1; ^^1					1,400	600	3.0				
Package 2: HVAC	1,800	4.0						900	200	0.8	0.5
Convert CAV system to VAV system; ^3; ^^1					900	300	4				
Insulate ducts; ^1; ^^1					300	100	4				
Replace chiller; ^2; ^^2					200	100	4				
Totals (recommended measures)	**8,300**	**10.0**	**90.0**	**0**	**6,700**	**2,650**		**4,050**			

*Measure key

^ *Status:*
1. Recommended
2. Further Study Recommended
3. Not Recommended
4. Implemented

^^ *Modeling/Calculation Approach:*
1. Spreadsheet Calculations
2. Energy Modeling Software

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