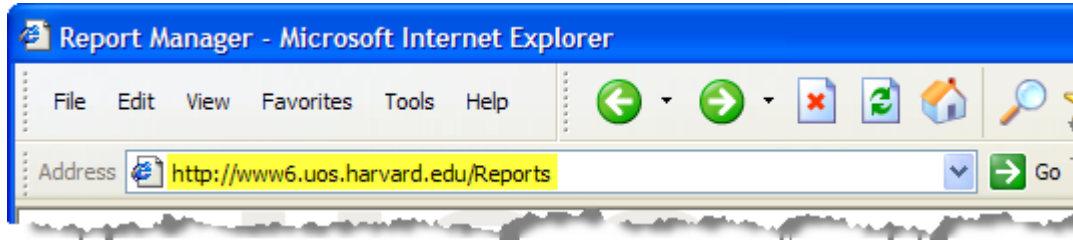




New UOS Utility Reports Overview



Connecting



www6.uos.harvard.edu/reports



Harvard University
PINSYSTEM

Login to:
UOS EnergyWitness Reports

- FAQ
- HELP
- DISABLE AUTO-LOGIN

Login type: Harvard University ID (HUID) What is a login type?

Login ID: What is a login ID?

PIN / Password: What is a PIN / Password?

Login New user? Forgot your PIN / Password?



A. My UOS Invoices

Quick access to all of your utility bill for a selected building. You'll see a summary listing and can then page through detailed invoices. You can view invoices covering a selected usage month or accounting month.

B. Building Summary Report

This analysis tool provides a broad range of building operational information. It shows up-to-date and historical energy consumption and costs, the building's energy baseline (based upon regression analysis), and tracking for both energy usage and Greenhouse Gas so facilities operators can verify operational improvements.

C. Energy Usage

This provides a total energy picture, measured in kBtus, for Tub(s) and buildings across multiple years.

D. Greenhouse Gas

Review your Greenhouse Gas emissions by Tub(s) with drill down to individual buildings and/or monthly emissions. Reports provide a breakdown by energy type. Also included is a report to show performance against reduction goals.

E. Facility Utility Usage and Cost

Tub-based reports to review utility usage, cost, and rates. This report is optimized for Web-based reviewing of information.

F. Chilled Water and Delta T

This report shows chilled water consumption and delta T performance, along with its effect on rate, shown graphically and in tabular form.

G. Electric Meter Demand

This report shows the selected year and two prior fiscal years of consumption and demand data for meters on the selected buildings.

H. Weather Tracking

This updated version of the previous Degree Day Tracking Report shows degree day information, and also the high, low, and average temperature for the day. Data is presented in graphical and tabular format. Note: Weather data is currently only available through September 2008.

I. Designed for Download

This section of the site has been designed for users requiring significant amounts of data to be used in Excel. Users who perform analysis in Excel using utility cost, consumption, rate, historical information etc. will find the reports an ideal tool to set up data for downloading into Excel.

J. Interval Data Reports




Reports show current or historical meter values.



Reports Roadmap

A. My UOS Invoices



B. Building Summary Report

-  Energy Consumption
-  Baseline Energy Tracking
-  Baseline Energy Model





Utility Cost & Consumption

Greenhouse Gas




C. Energy Usage

-  Energy by Tub
-  Energy by Tub by Building

D. Greenhouse Gas

-  Greenhouse Gas by Tub
-  Greenhouse Gas by Tub by Building
-  Greenhouse Gas Conversion Factors
-  Greenhouse Gas Target

E. Facility Utility Usage and Cost

-  Facility Utility Summary
-  Utility Cost by Tub
-  Utility Usage

F. Chilled Water and Delta T

G. Electric Meter Demand

H. Weather Tracking



I. Designed for Download

Utility Data Download Report




J. Interval Data Reports

Alarm Report

Interval Data Charts

-  Interval Data Chart - Custom
-  Interval Data Chart - Predefined

Summary Reports

-  Building Summary Report
-  Current Value Report
-  Meter Summary Report

Financial
Greenhouse Gas
Energy
Engineering
Weather



Selection Criteria

The screenshot shows the 'New Subscription' form with the following fields and callouts:

- Report By:** Payer (dropdown) - Callout: Owner Payer (default) Org
- Tubs (- Org):** All Tubs (dropdown) - Callout: ALL (default) List of Tubs (or Tub-Orgs)
- Building Groups:** N/A (dropdown) - Callout: N/A (default) List of predefined groups
- Buildings:** (dropdown) - Callout: List of Buildings (alphabetical)
- Utility Type:** Chilled Water, Electric, Fuel Oil (dropdown) - Callout: Chilled Water, Electric, Fuel Oil #2/4/6, Natural Gas, Steam, Water & Sewer
- Fiscal Year:** (dropdown) - Callout: List of Fiscal Years
- Report Period:** Usage Month (dropdown menu open showing: Usage Month, Accounting Month, Usage Month, Calendar Month)

Owner Payer (default) Org

ALL (default) List of Tubs (or Tub-Orgs)

List of Buildings (alphabetical)

N/A (default) List of predefined groups

Chilled Water
Electric
Fuel Oil #2/4/6
Natural Gas
Steam
Water & Sewer

List of Fiscal Years



Report Controls



View

New Subscription

Report By:

Building:

Fiscal Year:

Report Period:

Month:

Collapse/Expand

of 9 100% Find | Next

MY UOS INVOICES - SUMMARY

Usage Month: April 2009

Page Controls

Size

Text Search

Export

Refresh

Print

PSV JPEG

PDF Excel

XML data file

Web archive file



My UOS Invoice

Service Provided To:

Austin Hall (02510; B-575)
 1515 MASSACHUSETTS AVENUE
 CAMBRIDGE, MA 02138

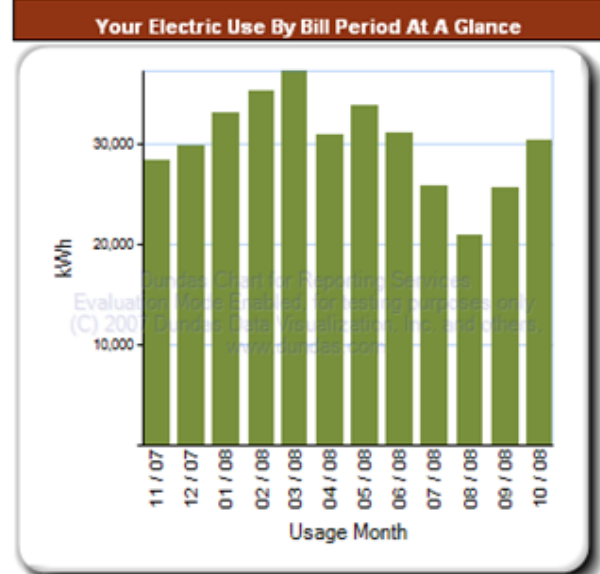
Electric Bill Comparison			
Meter: CE1 415B - Austin Hall			
Service From: 9/16/2008			
To: 10/16/2008			
Read Type: Actual			
	<u>Current Month</u>	<u>Last Month</u>	<u>Last Year</u>
Electric Charges:	\$4,067.28	\$3,419.68	\$5,529.31
Total Electric Use (kWh)	30,240	25,520	42,080
Delivery Charges (per kWh) cost to deliver Electricity	\$0.0295	\$0.0290	\$0.0324
Delivery Charges Total:	\$892.08	\$740.08	\$1,363.39
Generation Charges (per kWh) cost to purchase Electricity	\$0.1050	\$0.1050	\$0.0990
Generation Total:	\$3,175.20	\$2,679.60	\$4,165.92

Bill Analysis			
	<u>Current Month</u>	<u>Last Month</u>	<u>Last Year</u>
Billing Days:	30	32	32
Avg. Daily Electric Use (kWh)	1,008	798	1,315
Avg. Daily Temp (degrees)	59.0	70.0	63.0

Electric Summary

Accounting Month	October 2008
Usage Month	October 2008
Current Bill Amount	\$4,663.00

Highlights From This Month's Billing Period	
<i>For 9/16/2008 to 10/16/2008</i>	
Amount of Last Bill	\$3,922.42
Delivery Charge	\$892.08
Generation Charge	\$3,175.20
Delivery & Generation Total	<u>\$4,067.28</u>
Distribution Charge	\$595.72
Current Amount Due	\$4,663.00



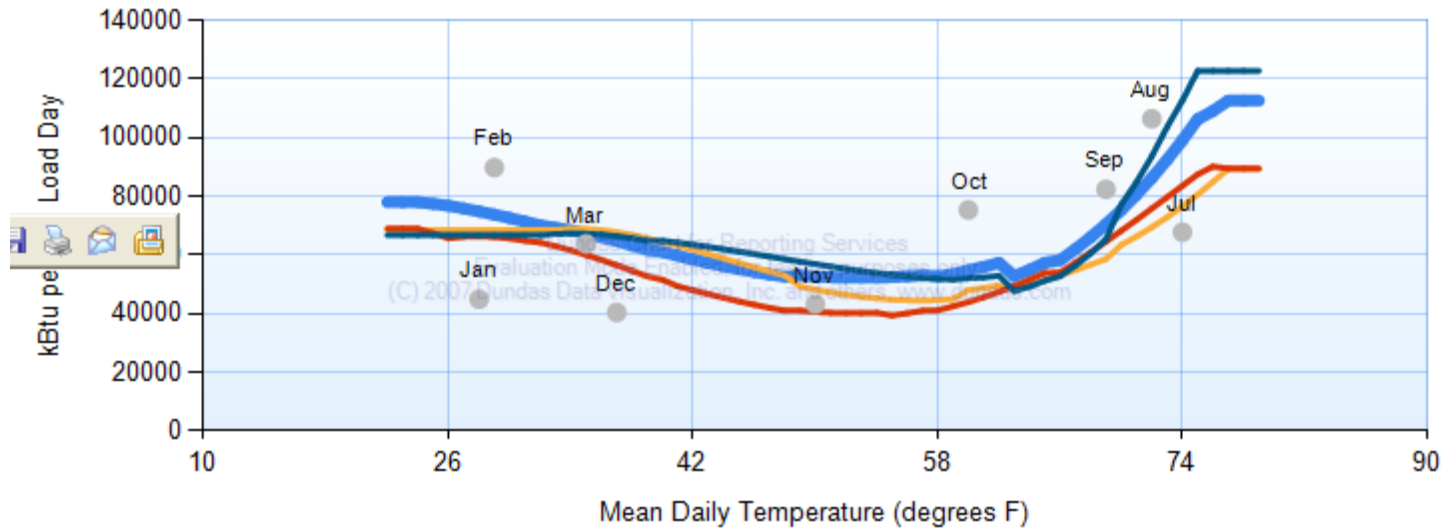


My UOS Invoice

- Please define the charges on my utility invoice?
 - ✓ Distribution – The charge for Care & Operations
 - ✓ Generation – The charge to procure energy from our suppliers
 - ✓ Delivery – The charge from the Local Distribution Company (LDC) to deliver the energy.
 - ✓ Steam fuel charge is the cost of fuel to generate steam
 - ✓ Steam non-fuel charge is the cost of generate steam
- Why do I see two invoices per month for Steam?
 - ✓ The second invoice is a true-up adjustment which reconciles estimates for fuel costs to generate steam. This true-up is not factored into this month or the prior month's rate.



Building Baselines



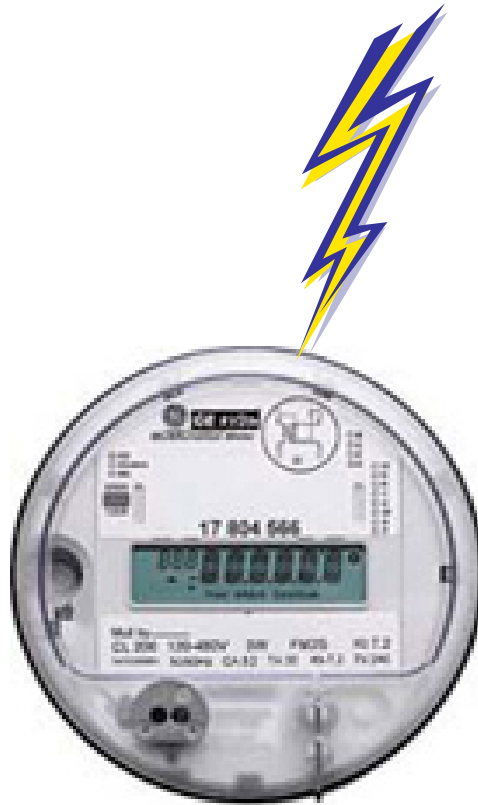


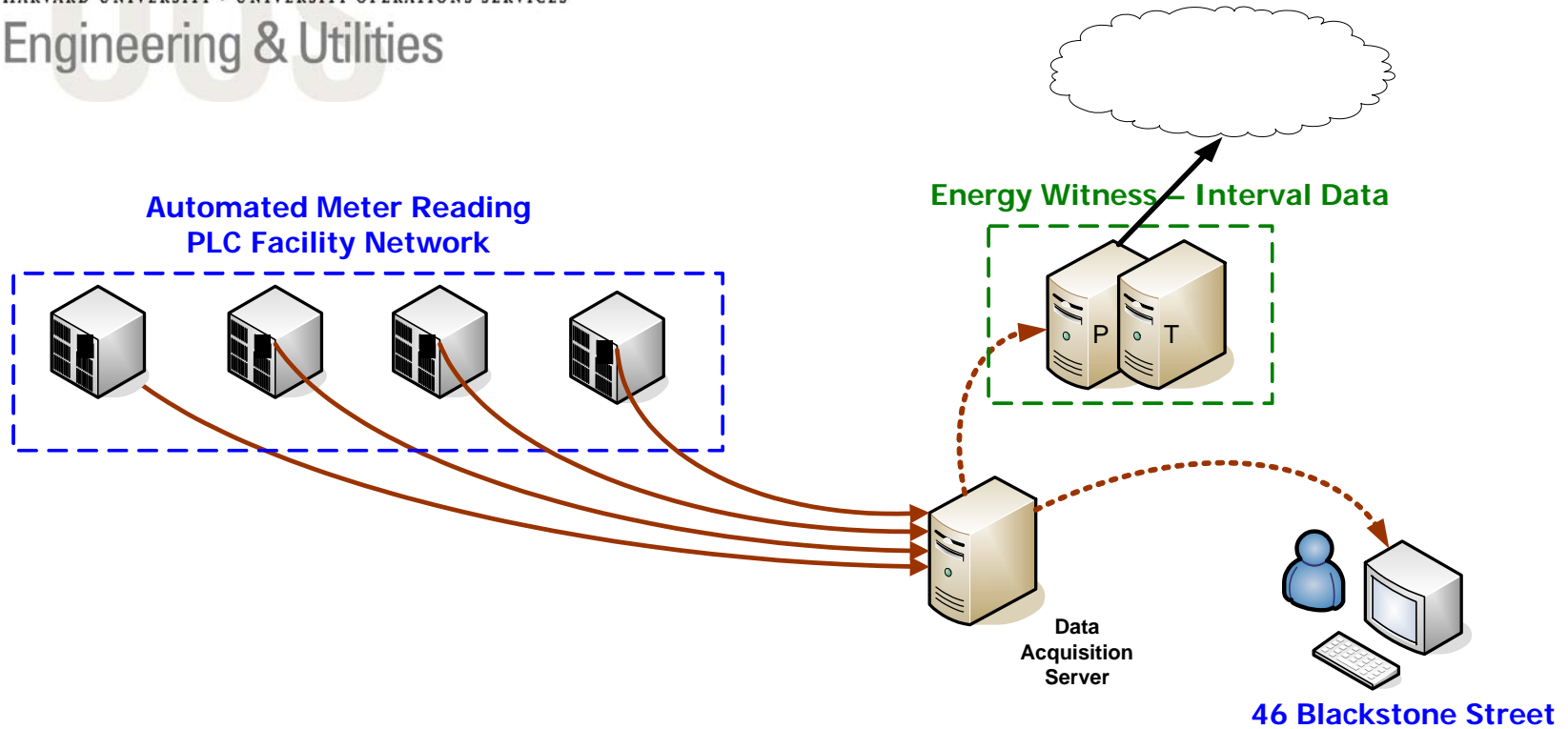
What is the Baseline Energy Model?

- A mathematical **model** of how buildings consume energy based on variations in **weather and schedule**
 - Regression-based
 - Based on actual measured building performance, not engineering models
 - Patent #5,566,084
- Basis for weather- and schedule-normalized energy tracking
- Built on combined FY06/07/08 data
 - Within validity and consistency parameters



Automated Meter Reading System Overview





- Engineering & Utilities (E&U) is installing equipment that collects utility meter data in real time via a distributed network of communication panels located throughout the Harvard campus.
- Currently, the system communicates to “smart meters” for those utilities procured or produced by E&U, which may include steam, condensate, chilled water and electric, depending on the level of metering present.
- As of 5/5/09 there are approximately 20 buildings on the network with future projects identified to connect an additional 80 buildings.



Collected Points

Tag Name Definition

1	2	3	4	5	6
Location	Utility	Device Name	Parameter	PLC #	Meter Number

Tag Name Example – 10 Akron Street Steam Meter

10Akron	STM	Main	FlowRate	008	CS1-R25
10Akron	STM	Main	Press	008	CS1-R25
10Akron	STM	Main	Temp	008	CS1-R25

- The interval data collected by the communications panels is fed over the Harvard University network to a central database owned and maintained by E&U.
- The system collects a wide array of information and stores it in real time. Each piece of information is identified by a unique tag name, which incorporates the facility's name, the commodity type, the actual quantity being recorded and the E&U meter number.
- EnergyWitness, through the Interval Data screen, can pull information directly from the E&U database and display it on the screen in a variety of user selected queries.



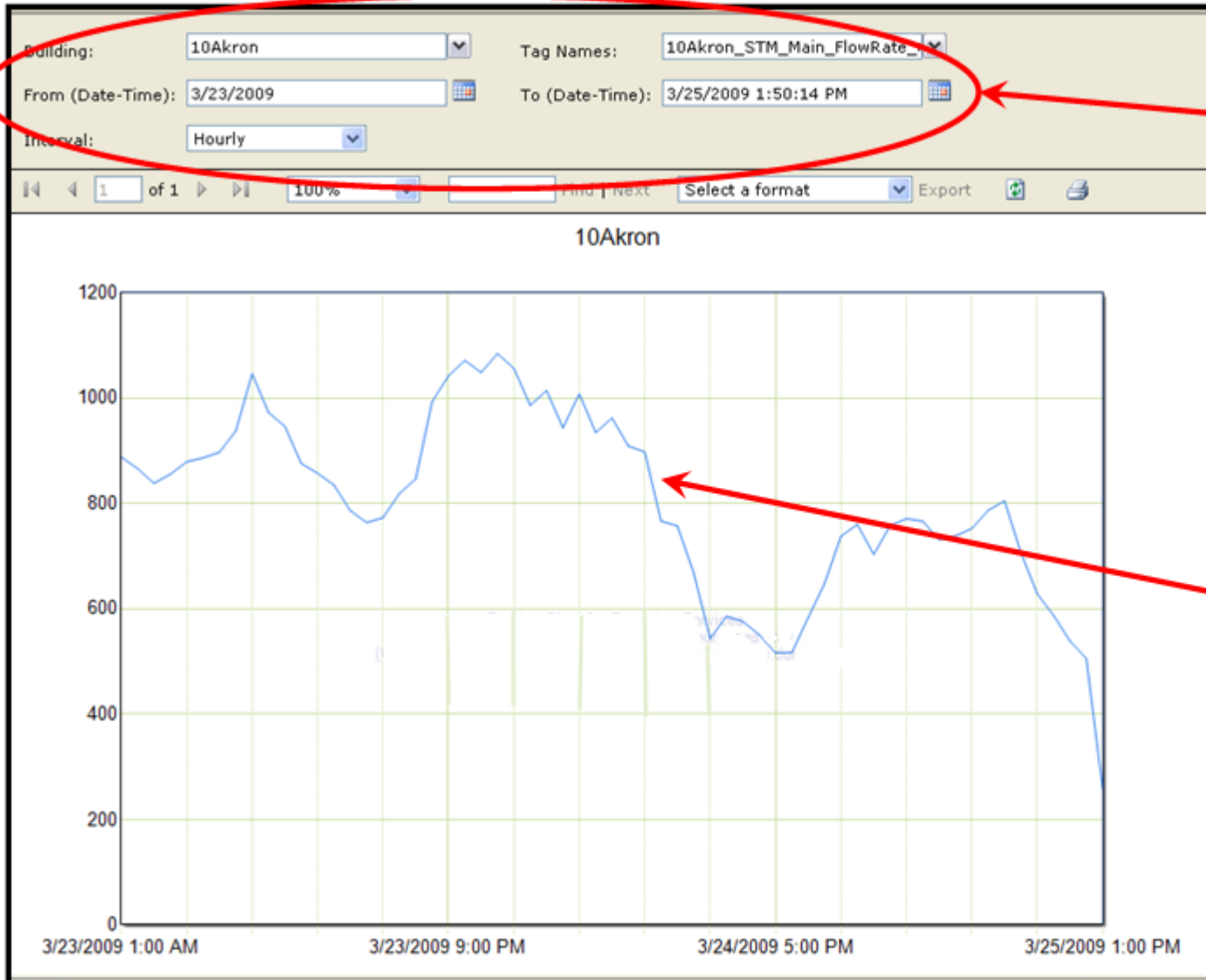
Sample Query – Current Value

HARVARD UNIVERSITY • UNIVERSITY OPERATIONS SERVICES Engineering & Utilities		CURRENT VALUE REPORT	
		Selection Mask: 10akron%	
		Created: 5/5/2009 1:11:02 PM	
Tag	Last Report	Current Value	
10Akron_PLC_CPU_Heartbeat_008_008	5/5/2009 1:09:55 PM	-589824	
10Akron_PLC_PowerLoss_Comms_008_008	5/5/2009 1:00:44 PM	-524288	
10Akron_STM_Condensate_FlowTotal_008_CS1-981	5/5/2009 1:06:00 PM	3209115	
10Akron_STM_Condensate_Pulses-A_008_CS1-981	5/5/2009 1:05:44 PM	3209114.0256771701	
10Akron_STM_Condensate_Pulses_008_CS1-981	5/5/2009 1:05:44 PM	49371	
10Akron_STM_Main_Comms_008_CS1-R25	5/5/2009 1:00:44 PM	-524288	
10Akron_STM_Main_EnergyMass_008_CS1-R25	5/5/2009 1:02:57 PM	5248417	
10Akron_STM_Main_FlowRate_008_CS1-R25	5/5/2009 1:09:44 PM	0	
10Akron_STM_Main_Press_008_CS1-R25	5/5/2009 1:08:47 PM	96.396011	
10Akron_STM_Main_Temp_008_CS1-R25	5/5/2009 1:08:47 PM	334.01901	

- This is an example of the current value report, which is the instantaneous snapshot of the building’s utility system and its associated parameters.
- The above shows all of the points available for 10 Akron Street housing. Note, there is no chilled water service and the electric service is purchased directly through the local utility, so neither is included in the database.



Sample Query – Interval Data



Search criteria

steam meter flow rate data