

Hamilton County 2006 Energy Management and Utility Usage Report



DEPARTMENT OF COUNTY FACILITIES

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Commissioned by:
Hamilton County Department of Facilities
May 2007
in conjunction with
ThermalTech Engineering, Cincinnati, OH



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MISSION STATEMENT

The Hamilton County Facility Department is committed to providing strategies, equipment, guidelines and methodologies to achieve tenant comfort in all buildings managed by the Facility Department while aggressively minimizing taxpayer costs in the process.











VISION STATEMENT

The Hamilton County Facility Department envisions a continued aggressive energy savings plan by utilizing the following strategies:

- Have Hamilton County Commissioners formally adopt an energy and LEED policy giving direction to the Facilities department as to the goals the County would like to see implemented over the next five years.
- Secure a full time energy manager where the salary would be offset by savings from the energy program (e.g. IT gas savings, utility bill reconciliation, energy efficient methods). The position is currently open.
- Continue a monthly review of electric, gas and water usage and cost with reconciliation software and human review of trend data.
- Continue to purchase major mechanical equipment (boilers, chillers, cooling towers) per County Life Cycle Cost Analysis Resolution
- Continue to purchase deregulated natural gas through a gas block managed by an outside firm through the County Commissioner's Association of Ohio (CCAO) provided it continues to be the best option for the County.
- Continue to track electric pulse data, heating and cooling degree-days, and utility cost for all large buildings.
- Continue to monitor each building's energy usage and cost, compare to each previous year in the plan, and eliminate inefficient use of energy systems wherever possible.
- Continue to attend annual energy conferences or webinars to stay on the leading edge of energy saving techniques and implementable solutions for municipalities.
- Continue to enforce a policy of no personal electric space heaters, refrigerators, microwaves, etc. in office cubicles.
- Continue to schedule night and weekend setback in all buildings where tenants are not using the spaces.
- Develop additional tracking criteria (usage per demand day) for downtown building campus (this is included in this report).
- Investigate using an energy watchdog website to provide better and quicker reporting of energy usage on a monthly basis.
- Entertain new bids for deregulated electricity for downtown building campus and aggressively seek alternate suppliers to offset rising utility cost.

2006 SUMMARY AND RESULTS

Below we will highlight the successes from 2006 in the area of energy and utility usage.

-  Electric usage for all downtown buildings was at a 10 year low in 2006. The 230, 237, 800, Administration, Courthouse and Justice Center buildings combined for a total kwh (kilowatt-hour) usage of 34,272,267 kwh's which is nearly 1,000,000 kwh less than 1997 (the baseline year).
-  Gas usage was at a three year low and only slightly higher than many previous years.
-  The new usage per square foot graphs included in this years report show a very consistent trend for all buildings and many instances where the buildings are using less energy/sf as the years compile.
-  The Courthouse after being asked to provide all steam to the Justice Center nearly three years ago has rebounded quite nicely to the additional load by reducing its gas usage steadily over the last two heating season. New projects such as the condensate receiver tank upgrade and new boiler blowdown controls are aiding nicely in proper control of the boiler plant.
-  Courthouse and Justice Center Interruptible Gas Savings Tariff from Duke Energy again yields taxpayer savings in the \$84,000 range. This is a savings that can be expected annually and over the last three years has saved nearly \$250,000.
-  Normalized Energy Data Spreadsheet, where ThermalTech applies an "all things being equal" equation to factor out rising utility cost and weather usage, yields the best results in the past ten years (since plan inception in 1997).
-  Almost all buildings are effectively using "night setback" to shutdown equipment overnight for as much of the year as possible. Building operators are trying to run only essential equipment when the building is unoccupied.
-  Administration building has added a new air cooled chiller with low ambient controls so that in the future the various computer rooms and computer room equipment can be put on the building chilled water system. This will run more efficiently than the water cooled units that are currently placed at various locations throughout the building to provide this 24/7 cooling demand.



2007 OBJECTIVES

1. Our major objective is to continue to take all necessary steps to keep the program running because the County has saved significant taxpayer money annually on this plan. By being proactive in the energy management arena, many of the buildings analyzed are doing quite well at this point but will require continued work to stay energy efficient. A perfect example of this is the 800 Broadway Building and Courthouse where most of the upgrade money has been spent and now its electric profile is an excellent example of what we like to see at the end of the year - low overnight KW usage, lower peak KW than the base year and lower KWH usage throughout the calendar year.
2. We will submit all major buildings to the EPA Energy Star program. If any of these buildings exceed the 75% passing criteria we will be eligible and will submit for the award. For the buildings that do not qualify in this calendar year, we will evaluate the cost advantages to making these buildings meet the EPA Energy Star minimum guidelines.
3. We want to get an existing building LEED-EB certified in the next two years.
4. In our budget request for 2008 we are requesting funds to perform complete energy audits on two buildings; 2020 Auburn and 237 William Howard Taft.
5. We want to continue to monitor electric, gas and water usage in the buildings monthly to ensure anomalies do not occur. This is done monthly and is essential in ensuring that Duke Energy reconciles billing errors expediently.
6. We plan on developing energy reports for each of the buildings managed by this department and inputting this data into either a County provided database (Archibus) or a third party website (Energy Watchdog) and check the usability of the data for the Facility department and end users.
7. We will submit a project for consideration to the 2007 Governor's Award for Energy Excellence.
8. We plan to attend the 2008 annual Ohio Energy Conference in Columbus, OH as a means of improving our energy savings strategies, understandings and techniques.
9. The County is committed to the CCAO natural gas program until 2009. Before this contract expires we will review our options and decide at that time how to proceed with natural gas purchases.



CHALLENGES

The County faces many energy challenges at the present time and although Hamilton County Facilities has been proactive in strategically placing the County in a position to benefit from deregulation, lower utility rates tariffs, building scheduling, night setback, and energy usage there still remains more to be done. Our current challenges include:

- Futures market predict volatility and higher gas prices *From the Energy Information Website (www.eia.doe.gov) April 10, 2007*
 - *Recent and continuing international tensions amplify the effects of already tight international petroleum markets as the summer season (April through September) begins. At the same time, unanticipated refinery problems in February and March, both in the United States and abroad, reduced the supply of gasoline resulting in seasonal price increases about a month earlier than usual.*
 - *As a result of tight oil markets and continued international uncertainty, the price of West Texas Intermediate (WTI) crude oil is expected to average over \$65 per barrel this summer (compared with \$70 per barrel last summer) and average close to \$64 per barrel annually for both 2007 and 2008. However, as we have seen in the recent past, petroleum prices are subject to significant volatility, particularly when markets are tight and tensions in oil exporting nations deepen.*
 - *U.S. retail motor gasoline prices surged over the last 2 months, rising by more than 60 cents per gallon due to higher crude oil prices, unplanned refinery outages, increased demand for gasoline, and low levels of gasoline imports from Europe. Although gasoline prices began their seasonal increase about a month earlier than usual, the rapid rate of price increase is projected to slow over the next few months.*
 - *During the summer season the average monthly gasoline pump price is projected to peak at an average of \$2.87 per gallon in May, compared with \$2.98 per gallon last July. Retail regular grade motor gasoline prices are projected to average \$2.81 per gallon this summer compared with \$2.84 per gallon last summer.*
 - *Concerns about extreme weather conditions and rising prices in the oil market will keep upward pressure on the Henry Hub natural gas spot price during much of the forecast period. On an annual basis, the Henry Hub spot price is expected to average \$7.83 per thousand cubic feet (mcf) in 2007, an 89-cent increase from the 2006 average, and \$8.11 per mcf in 2008.*
 - *Following large increases in residential electricity prices during 2006, prices are projected to grow at a slower rate of 3.0 percent during 2007. Electricity prices are expected to continue to grow at 3.1 percent during 2008 as higher fuel costs are passed through to retail customers. Some regions with States in the midst of electric power restructuring, such as New England and the West South Central, could face highly volatile prices in 2007 and 2008.*
- Computer rooms and equipment that are required to be operated 24 hours a day and 7 days a week are being introduced in our buildings creating areas where either existing equipment must be operated during normal off-times or new equipment must be added to provide equipment and tenant heating and cooling requirements where no equipment was used before thus driving up the cost to operate our buildings.

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- Funding for Energy Management does not have a separate line item on the annual budget and therefore must be funded from either capital projects or during equipment replacement projects. Energy audits, supplies and miscellaneous expenses are subject to the availability of funds from the facility budget and that money is usually pre-targeted for other projects. There is no County financial vehicle in place to allow for continued funding of energy savings projects aside from the Facility Department access to the General Fund. In many cases where Facilities has funded energy savings projects, the savings is removed from the future budgets thus making it difficult to continue to fund and operate an energy savings master plan. A "rollover" or "energy chest" to keep savings for future projects would be a great way to pre-fund future energy savings projects.
- Duke Energy continues to be an excellent utility provider with extremely competitive rates making deregulation difficult to pursue, implement and save money.
- Hamilton County contracting procedures typically prohibit aggressive bidding strategies. When energy marketers require contracts to be signed within hours of the bid opening, the County's current month long review process prevents quick decisions to be made and implemented. We understand that review is essential to protect the County government and we are currently working on a way to organize a deregulated bid packet and circumvent these problems but to date we have not had a successful electric bid.

ANNUAL ENERGY USAGE SPREADSHEETS


The graph below represents actual data collected for the buildings listed. This data is tabulated from actual Duke Energy and Broker bills collected by Hamilton County Facilities and ThermalTech Engineering. As stated earlier the base year for all comparison is 1997 and the ECM project began in 1998.

Yearly Comparison of Utilities (Usage and Cost) (ACTUAL)

1997 (BASE YEAR)								
	Electric		Gas		Water & Sewer		Bldg Cost/SF	Avg Electric Cost (\$/KWH)
	KWH	Cost	MCF	Cost	CCF	Cost		
230 E9th	2,534,892	\$ 189,390	7795	\$ 44,303	N/A	N/A	\$ 1.19	\$ 0.056
800 Broadway	6,035,141	\$ 320,982	15406	\$ 90,259	N/A	N/A	\$ 1.64	Avg Gas Cost
Administration	5,202,636	\$ 303,122	4182	\$ 25,061	N/A	N/A	\$ 1.76	(\$/MCF)
Alms & Doepke	5,633,812	\$ 302,832	9042	\$ 53,826	N/A	N/A	\$ 1.30	\$ 5.86
Courthouse	5,006,743	\$ 335,393	42844	\$ 252,436	N/A	N/A	\$ 1.34	Total Utility
Justice Center	10,897,246	\$ 519,946	28928	\$ 168,121	N/A	N/A	\$ 1.31	Cost (year)
	35,310,470	\$ 1,971,666	108198	\$ 634,006	N/A	N/A	\$ 1.42	\$ 2,605,671
1998								
	Electric		Gas		Water & Sewer		Bldg Cost/SF	Avg Electric Cost (\$/KWH)
	KWH	Cost	MCF	Cost	CCF	Cost		
230 E9th	2,646,177	\$ 197,796	7155	\$ 41,504	N/A	N/A	\$ 1.22	\$ 0.056
800 Broadway	6,254,463	\$ 340,546	11926	\$ 68,701	N/A	N/A	\$ 1.64	Avg Gas Cost
Administration	5,477,534	\$ 314,558	4049	\$ 23,231	N/A	N/A	\$ 1.82	(\$/MCF)
A&D	6,015,833	\$ 332,996	6897	\$ 39,662	N/A	N/A	\$ 1.36	\$ 5.75
Courthouse	4,901,566	\$ 318,143	32695	\$ 187,115	N/A	N/A	\$ 1.15	Total Utility
Justice Center	11,444,466	\$ 540,793	22797	\$ 131,654	N/A	N/A	\$ 1.28	Cost (year)
	36,740,019	\$ 2,044,832	85517	\$ 491,866	N/A	N/A	\$ 1.41	\$ 2,536,699
1999								
	Electric		Gas		Water & Sewer		Bldg Cost/SF	Avg Electric Cost (\$/KWH)
	KWH	Cost	MCF	Cost	CCF	Cost		
230 E9th	2,896,569	\$ 214,195	8467	\$ 44,160	N/A	N/A	\$ 1.32	\$ 0.057
800 Broadway	5,377,051	\$ 301,888	10685	\$ 55,564	N/A	N/A	\$ 1.43	Avg Gas Cost
Administration	5,362,660	\$ 309,824	3243	\$ 16,897	N/A	N/A	\$ 1.76	(\$/MCF)
A&D	6,035,575	\$ 329,503	7600	\$ 40,242	N/A	N/A	\$ 1.34	\$ 5.23
Courthouse	5,237,013	\$ 350,976	41994	\$ 221,950	N/A	N/A	\$ 1.30	Total Utility
Justice Center	11,601,371	\$ 559,854	25964	\$ 133,602	N/A	N/A	\$ 1.32	Cost (year)
	36,510,239	\$ 2,066,240	97953	\$ 512,415	N/A	N/A	\$ 1.41	\$ 2,578,655
2000								
	Electric		Gas		Water & Sewer		Bldg Cost/SF	Avg Electric Cost (\$/KWH)
	KWH	Cost	MCF	Cost	CCF	Cost		
230 E9th	3,353,365	\$ 218,605	12316	\$ 75,113	N/A	N/A	\$ 1.50	\$ 0.055
800 Broadway	5,229,786	\$ 299,639	9518	\$ 63,110	N/A	N/A	\$ 1.45	Avg Gas Cost
Administration	5,525,696	\$ 309,865	3854	\$ 27,051	N/A	N/A	\$ 1.81	(\$/MCF)
237 WHT	6,090,107	\$ 307,240	6769	\$ 44,838	N/A	N/A	\$ 1.98	\$ 6.33
Courthouse	5,658,907	\$ 361,228	52901	\$ 339,225	N/A	N/A	\$ 1.59	Total Utility
Justice Center	11,491,585	\$ 561,592	19470	\$ 113,954	N/A	N/A	\$ 1.29	Cost (year)
	37,349,446	\$ 2,058,167	104828	\$ 663,291	N/A	N/A	\$ 1.60	\$ 2,721,468
2001								
	Electric		Gas		Water & Sewer		Bldg Cost/SF	Avg Electric Cost (\$/KWH)
	KWH	Cost	MCF	Cost	CCF	Cost		
230 E9th	3,089,181	\$ 218,213	9733	\$ 75,233	N/A	N/A	\$ 1.50	\$ 0.057
800 Broadway	5,027,254	\$ 351,142	8432	\$ 73,317	N/A	N/A	\$ 1.70	Avg Gas Cost
Administration	5,575,777	\$ 313,994	3817	\$ 32,821	N/A	N/A	\$ 1.86	(\$/MCF)
237 WHT	5,915,732	\$ 300,182	7155	\$ 55,595	N/A	N/A	\$ 2.00	\$ 7.84
Courthouse	5,797,527	\$ 371,552	67268	\$ 514,886	N/A	N/A	\$ 2.01	Total Utility
Justice Center	11,831,691	\$ 577,352	7138	\$ 59,876	N/A	N/A	\$ 1.21	Cost (year)
	37,237,163	\$ 2,132,435	103533	\$ 811,729	N/A	N/A	\$ 1.72	\$ 2,944,163

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2002								
	Electric		Gas		Water & Sewer		Bldg	Avg Electric Cost
	KWH	Cost	MCF	Cost	CCF	Cost	Cost/SF	(\$/KWH)
230 E9th	3,322,104	\$ 230,119	11051	\$ 67,757	N/A	N/A	\$ 1.52	\$ 0.056
800 Broadway	5,213,993	\$ 310,930	8674	\$ 53,012	N/A	N/A	\$ 1.46	Avg Gas Cost
Administration	5,376,926	\$ 308,864	4029	\$ 24,651	N/A	N/A	\$ 1.79	(\$/MCF)
237 WHT	5,141,113	\$ 268,979	8394	\$ 51,192	N/A	N/A	\$ 1.80	\$ 6.03
Courthouse	5,629,119	\$ 369,980	74734	\$ 447,498	N/A	N/A	\$ 1.86	Total Utility
Justice Center	11,919,729	\$ 579,042	5634	\$ 34,083	N/A	N/A	\$ 1.17	Cost (year)
	36,602,984	\$ 2,067,913	112516	\$ 678,194	N/A	N/A	\$ 1.60	\$ 2,746,107
2003								
	Electric		Gas		Water & Sewer		Bldg	Avg Electric Cost
	KWH	Cost	MCF	Cost	CCF	Cost	Cost/SF	(\$/KWH)
230 E9th	3,060,082	\$ 220,023	10225	\$ 81,734	N/A	N/A	\$ 1.54	\$ 0.057
800 Broadway	5,003,235	\$ 279,227	8535	\$ 69,754	N/A	N/A	\$ 1.40	Avg Gas Cost
Administration	5,251,048	\$ 297,960	4381	\$ 35,966	N/A	N/A	\$ 1.80	(\$/MCF)
237 WHT	4,436,594	\$ 251,410	7035	\$ 56,917	N/A	N/A	\$ 1.74	\$ 7.93
Courthouse	5,664,195	\$ 371,758	75666	\$ 595,176	N/A	N/A	\$ 2.20	Total Utility
Justice Center	11,755,920	\$ 572,366	3733	\$ 29,362	N/A	N/A	\$ 1.15	Cost (year)
	35,171,074	\$ 1,992,733	109565	\$ 868,908	N/A	N/A	\$ 1.64	\$ 2,861,642
2004								
	Electric		Gas		Water & Sewer		Bldg	Avg Electric Cost
	KWH	Cost	MCF	Cost	CCF	Cost	Cost/SF	(\$/KWH)
230 E9th	3,486,284	\$ 237,667	10789	\$ 92,538	N/A	N/A	\$ 1.68	\$ 0.057
800 Broadway	4,861,647	\$ 286,570	7432	\$ 66,680	N/A	N/A	\$ 1.41	Avg Gas Cost
Administration	5,050,202	\$ 294,856	3491	\$ 31,644	N/A	N/A	\$ 1.70	(\$/MCF)
237 WHT	3,823,891	\$ 229,110	6824	\$ 61,674	N/A	N/A	\$ 1.64	\$ 7.87
Courthouse	5,785,309	\$ 369,013	95723	\$ 723,847	N/A	N/A	\$ 2.48	Total Utility
Justice Center	11,953,018	\$ 582,268	3058	\$ 25,849	N/A	N/A	\$ 1.16	Cost (year)
	34,960,351	\$ 1,989,485	127317	\$ 1,002,132	N/A	N/A	\$ 1.68	\$ 2,991,517
2005 * includes water in all buildings								
	Electric		Gas		Water & Sewer		Bldg	Avg Elec Cost/KWH
	KWH	Cost	MCF	Cost	CCF	Cost	Cost/SF	(\$/KWH)
230 E9th	3,349,484	\$ 282,218	10769	\$ 84,278	4,598	\$ 19,840	\$ 1.97	\$ 0.0702
800 Broadway	4,936,669	\$ 350,206	8777	\$ 63,827	8,427	\$ 40,997	\$ 2.32	Avg Gas Cost/MCF
Administration	5,340,852	\$ 371,560	4376	\$ 32,081	11,165	\$ 41,957	\$ 2.27	\$ 6.10
237 WHT	3,551,635	\$ 270,897	6074	\$ 52,289	3,630	\$ 21,242	\$ 1.76	Avg Water Cost/CCF
Courthouse	5,760,760	\$ 446,821	93808	\$ 511,379	24,128	\$ 84,934	\$ 5.32	\$ 3.60
Justice Center	12,003,802	\$ 732,428	3072	\$ 30,173	77,000	\$ 255,413	\$ 5.19	Total Utility Cost
	34,943,202	\$ 2,454,131	126876	\$ 774,037	128,943	\$ 464,383	\$ 3.14	\$ 3,692,551
2006 * includes water in all buildings								
	Electric		Gas		Water & Sewer		Bldg	Avg Elec Cost/KWH
	KWH	Cost	MCF	Cost	CCF	Cost	Cost/SF	(\$/KWH)
230 E9th	2,880,850	\$ 281,065	8300	\$ 79,017	4,662	\$ 19,427	\$ 1.94	\$ 0.0752
800 Broadway	5,034,899	\$ 381,457	7690	\$ 76,788	8,180	\$ 45,017	\$ 2.57	Avg Gas Cost/MCF
Administration	5,140,593	\$ 387,150	2727	\$ 26,668	10,100	\$ 42,147	\$ 2.33	\$ 8.77
237 WHT	3,901,638	\$ 294,554	7023	\$ 69,401	3,824	\$ 23,829	\$ 1.98	Avg Water Cost/CCF
Courthouse	5,584,574	\$ 472,102	82619	\$ 695,805	22,353	\$ 87,770	\$ 6.41	\$ 3.90
Justice Center	11,729,713	\$ 759,543	2716	\$ 25,923	81,685	\$ 292,559	\$ 5.50	Total Utility Cost
	34,272,257	\$ 2,575,871	111074	\$ 973,603	130,794	\$ 510,749	\$ 3.45	\$ 4,060,222

 The final tabulations from 2006 show that the same six buildings actually used less electricity and gas compared to 2005. However with the rising cost of oil and utilities, the cost for less usage is higher. This unfortunately is a trend that many energy companies are predicting to continue. Natural gas prices in particular are subject to wide fluctuations and increases as evidenced by the nearly \$200,000 increase in cost for 15,000 less MCF usage in 2006. The 2006 electric and gas usage numbers are at a three year low for Hamilton County.

NORMALIZED MASTER SPREADSHEET: The following spreadsheet represents what we consider our normalized energy utility tracking data. In this spreadsheet we have attempted to factor out the effects of weather, the timing of meter reading, and changes in utility cost.

**Yearly Comparison of Utilities (Usage and Cost)
(NORMALIZED TO BASE YEAR PRICES AND DEGREE DAYS)**

		1997 (BASE YEAR)								
		Electric		Gas		Base Elec	Base Gas	Bdg		
		KWH	Cost	MCF	Cost	Cost	Cost	Cost/SF		
230 E9th		2,534,892	\$ 189,390	7795	\$ 44,303	\$ 0.0747	\$ 5.68	\$ 1.19	5%	see note below for % explanation
800 Broadway		6,035,141	\$ 320,982	15406	\$ 90,259	\$ 0.0532	\$ 5.86	\$ 1.64		842 cooling degree days
Administration		5,202,636	\$ 303,122	4182	\$ 25,061	\$ 0.0583	\$ 5.99	\$ 1.76	\$ 0.0558	5330 heating degree days
A&D		5,633,812	\$ 302,832	9042	\$ 53,826	\$ 0.0538	\$ 5.95	\$ 1.30	\$ 5.86	\$ 0.0558 aug electric cost /kwh
Courthouse		5,006,743	\$ 335,393	42844	\$ 252,436	\$ 0.0670	\$ 5.89	\$ 1.34		\$ 5.86 aug gas cost/mcf
Justice Center		10,897,246	\$ 519,945	28928	\$ 168,121	\$ 0.0477	\$ 5.81	\$ 1.31		YEARLY COST
		35,310,470	\$ 1,971,665	108,198	\$ 634,006					\$ 2,605,671
		1998								
		Adjusted Electric		Adjusted Gas		Actual	Actual	Bdg		
		KWH	Cost	MCF	Cost	Elec Cost	Gas Cost	Cost/SF		
230 E9th		2,556,205	\$ 190,983	6,697	\$ 38,065	\$ 0.0747	\$ 5.80	\$ 1.17	1238	cooling degree days
800 Broadway		6,041,797	\$ 321,336	11,163	\$ 65,400	\$ 0.0544	\$ 5.76	\$ 1.55	4168	heating degree days
Administration		5,291,294	\$ 308,288	3,790	\$ 22,709	\$ 0.0574	\$ 5.74	\$ 1.78	\$ 0.0557	\$ 0.0557 aug electric cost /kwh
A&D		5,811,290	\$ 312,372	6,456	\$ 38,429	\$ 0.0564	\$ 5.75	\$ 1.28	\$ 5.75	\$ 5.75 aug gas cost/mcf
Courthouse		4,734,908	\$ 317,183	30,604	\$ 180,318	\$ 0.0649	\$ 5.72	\$ 1.13		
Justice Center		11,055,336	\$ 527,488	21,338	\$ 124,016	\$ 0.0473	\$ 5.78	\$ 1.24		YEARLY COST
		35,490,831	\$ 1,977,650	80,049	\$ 468,937					\$ 2,446,587
		1999								
		Electric		Gas		Actual	Actual	Bdg		
		KWH	Cost	MCF	Cost	Elec Cost	Gas Cost	Cost/SF		
230 E9th		2,799,253	\$ 209,141	7,984	\$ 45,380	\$ 0.0739	\$ 5.22	\$ 1.30	1253	cooling degree days
800 Broadway		5,196,398	\$ 276,373	10,076	\$ 59,030	\$ 0.0561	\$ 5.20	\$ 1.34	4675	heating degree days
Administration		5,182,490	\$ 301,948	3,058	\$ 18,325	\$ 0.0578	\$ 5.21	\$ 1.72	\$ 0.0566	\$ 0.0566 aug electric cost /kwh
A&D		5,832,797	\$ 313,528	7,167	\$ 42,663	\$ 0.0546	\$ 5.30	\$ 1.30	\$ 5.23	\$ 5.23 aug gas cost/mcf
Courthouse		5,061,064	\$ 339,032	39,600	\$ 233,321	\$ 0.0670	\$ 5.29	\$ 1.30		
Justice Center		11,211,598	\$ 534,944	24,484	\$ 142,292	\$ 0.0483	\$ 5.15	\$ 1.29		YEARLY COST
		35,283,600	\$ 1,974,967	92,369	\$ 541,012					\$ 2,515,979
		2000								
		Electric		Gas		Actual	Actual	Bdg		
		KWH	Cost	MCF	Cost	Elec Cost	Gas Cost	Cost/SF	Degree Days	
230 E9th		3,198,905	\$ 239,001	11,683	\$ 66,403	\$ 0.0652	\$ 6.10	\$ 1.56	914	cooling degree days
800 Broadway		4,988,896	\$ 265,337	9,029	\$ 52,897	\$ 0.0573	\$ 6.63	\$ 1.27	5187	heating degree days
Administration		5,271,175	\$ 307,115	3,656	\$ 21,907	\$ 0.0561	\$ 7.02	\$ 1.77	\$ 0.0551	\$ 0.0551 aug electric cost /kwh
237 WHT		5,809,588	\$ 312,281	6,421	\$ 38,225	\$ 0.0504	\$ 6.62	\$ 1.97	\$ 6.33	\$ 6.33 aug gas cost/mcf
Courthouse		5,398,251	\$ 361,619	50,183	\$ 295,676	\$ 0.0638	\$ 6.41	\$ 1.49		
Justice Center		10,962,268	\$ 523,048	18,470	\$ 107,340	\$ 0.0489	\$ 5.85	\$ 1.20		YEARLY COST
		35,629,083	\$ 2,008,401	99,442	\$ 582,448					\$ 2,590,849
		2001								
		Electric		Gas		Actual	Actual	Bdg		
		KWH	Cost	MCF	Cost	Elec Cost	Gas Cost	Cost/SF		
230 E9th		2,963,282	\$ 221,397	9,178	\$ 52,162	\$ 0.0706	\$ 7.73	\$ 1.40	1033	cooling degree days
800 Broadway		4,822,368	\$ 256,480	7,951	\$ 46,583	\$ 0.0698	\$ 8.69	\$ 1.21	4672	heating degree days
Administration		5,348,536	\$ 311,623	3,600	\$ 21,570	\$ 0.0563	\$ 8.60	\$ 1.79	\$ 0.0573	\$ 0.0573 aug electric cost /kwh
237 WHT		5,674,638	\$ 305,027	6,747	\$ 40,185	\$ 0.0507	\$ 7.77	\$ 1.94	\$ 7.84	\$ 7.84 aug gas cost/mcf
Courthouse		5,561,248	\$ 372,538	63,421	\$ 373,674	\$ 0.0641	\$ 7.66	\$ 1.70		
Justice Center		11,349,490	\$ 541,523	6,730	\$ 39,115	\$ 0.0488	\$ 8.39	\$ 1.11		YEARLY COST
		35,719,560	\$ 2,008,588	97,627	\$ 573,269					\$ 2,581,857
		2002								
		Electric		Gas		Actual	Actual	Bdg		
		KWH	Cost	MCF	Cost	Elec Cost	Gas Cost	Cost/SF		
230 E9th		3,223,402	\$ 240,831	10,455	\$ 60,645	\$ 0.0693	\$ 6.13	\$ 1.54	1417	cooling degree days
800 Broadway		5,059,082	\$ 269,070	8,206	\$ 47,272	\$ 0.0596	\$ 6.11	\$ 1.27	4938	heating degree days
Administration		5,217,174	\$ 303,969	3,812	\$ 21,871	\$ 0.0574	\$ 6.12	\$ 1.75	\$ 0.0565	\$ 0.0565 aug electric cost /kwh
237 WHT		4,988,367	\$ 268,138	7,941	\$ 45,669	\$ 0.0523	\$ 6.10	\$ 1.77	\$ 6.03	\$ 6.03 aug gas cost/mcf
Courthouse		5,461,874	\$ 385,881	70,701	\$ 404,629	\$ 0.0657	\$ 5.99	\$ 1.75		
Justice Center		11,565,586	\$ 551,834	5,330	\$ 30,781	\$ 0.0486	\$ 6.05	\$ 1.11		YEARLY COST
		35,515,485	\$ 1,999,723	106,444	\$ 610,866					\$ 2,610,590
		2003								
		Electric		Gas		Actual	Actual	Bdg		
		KWH	Cost	MCF	Cost	Elec Cost	Gas Cost	Cost/SF		
230 E9th		2,908,339	\$ 217,292	9,699	\$ 50,585	\$ 0.0719	\$ 7.99	\$ 1.37	849	cooling degree days
800 Broadway		4,755,136	\$ 252,904	8,096	\$ 42,100	\$ 0.0558	\$ 8.17	\$ 1.18	5180	heating degree days
Administration		4,990,660	\$ 290,772	4,156	\$ 21,651	\$ 0.0567	\$ 8.21	\$ 1.68	\$ 0.0567	\$ 0.0567 aug electric cost /kwh
237 WHT		4,216,593	\$ 226,653	6,673	\$ 35,334	\$ 0.0567	\$ 8.09	\$ 1.48	\$ 7.93	\$ 7.93 aug gas cost/mcf
Courthouse		5,383,320	\$ 360,619	71,764	\$ 379,291	\$ 0.0656	\$ 7.87	\$ 1.68		
Justice Center		11,172,970	\$ 533,101	3,541	\$ 18,221	\$ 0.0487	\$ 7.87	\$ 1.05		YEARLY COST
		33,427,020	\$ 1,881,341	103,928	\$ 547,181					\$ 2,428,522

Hamilton County

2004										
	Electric		Gas		Actual	Actual	Bldg			
	KWH	Cost	MCF	Cost	Elec Cost	Gas Cost	Cost/SF			
230 E9th	3,330,309	\$ 248,818	10,196	\$ 62,182	\$ 0.0682	\$ 8.58	\$ 1.59	941	cooling degree days	
800 Broadway	4,644,139	\$ 247,001	7,023	\$ 46,569	\$ 0.0569	\$ 8.96	\$ 1.17	4847	heating degree days	
Administration	4,824,258	\$ 281,077	3,299	\$ 23,156	\$ 0.0564	\$ 9.06	\$ 1.64	\$ 0.0569	avg electric cost/kwh	
237 WHT	3,652,811	\$ 196,348	6,449	\$ 42,717	\$ 0.0599	\$ 9.04	\$ 1.35	7.871	avg gas cost/mcf	
Courthouse	5,526,477	\$ 370,209	90,460	\$ 580,069	\$ 0.0638	\$ 7.56	\$ 2.16			
Justice Center	11,418,244	\$ 544,804	2,890	\$ 18,914	\$ 0.0487	\$ 8.45	\$ 1.07		YEARLY COST	
	33,396,238	\$ 1,888,257	120317	\$ 771,607						\$ 2,859,864
2005										
	Electric		Gas		Actual	Actual	Bldg			
	KWH	Cost	MCF	Cost	Elec Cost	Gas Cost	Cost/SF			
230 E9th	3,245,874	\$ 242,510	10,189	\$ 78,757	\$ 0.0843	\$ 7.83	\$ 1.64	1361	cooling degree days	
800 Broadway	4,783,962	\$ 254,437	8,304	\$ 72,201	\$ 0.0709	\$ 7.27	\$ 1.31	4945	heating degree days	
Administration	5,175,643	\$ 301,549	4,140	\$ 35,596	\$ 0.0696	\$ 7.33	\$ 1.81	\$ 0.0702	avg electric cost/kwh	
237 WHT	3,441,772	\$ 185,004	5,747	\$ 44,650	\$ 0.0763	\$ 8.61	\$ 1.29	6.10	avg gas cost/mcf	
Courthouse	5,582,562	\$ 373,966	88,752	\$ 679,440	\$ 0.0776	\$ 5.46	\$ 2.39			
Justice Center	11,632,487	\$ 555,026	2,906	\$ 24,382	\$ 0.0610	\$ 9.82	\$ 1.10		YEARLY COST	
	33,862,299	\$ 1,912,493	120038	\$ 935,026						\$ 2,847,519
2006										
	Electric		Gas		Actual	Actual	Bldg			
	KWH	Cost	MCF	Cost	Elec Cost	Gas Cost	Cost/SF			
230 E9th	2,771,091	\$ 207,037	7,800	\$ 47,822	\$ 0.0976	\$ 9.52	\$ 1.30	1105	cooling degree days	
800 Broadway	4,843,072	\$ 257,581	7,226	\$ 44,168	\$ 0.0758	\$ 9.99	\$ 1.21	4425	heating degree days	
Administration	4,944,739	\$ 288,096	2,563	\$ 15,681	\$ 0.0753	\$ 9.78	\$ 1.63	\$ 0.0752	avg electric cost/kwh	
237 WHT	3,752,987	\$ 201,733	6,600	\$ 40,254	\$ 0.0755	\$ 9.88	\$ 1.36	8.77	avg gas cost/mcf	
Courthouse	5,371,804	\$ 359,848	77,643	\$ 464,919	\$ 0.0845	\$ 8.42	\$ 1.87			
Justice Center	11,282,816	\$ 538,342	2,552	\$ 15,438	\$ 0.0648	\$ 9.55	\$ 1.05		YEARLY COST	
	32,966,509	\$ 1,852,638	104385	\$ 628,279						\$ 2,480,917

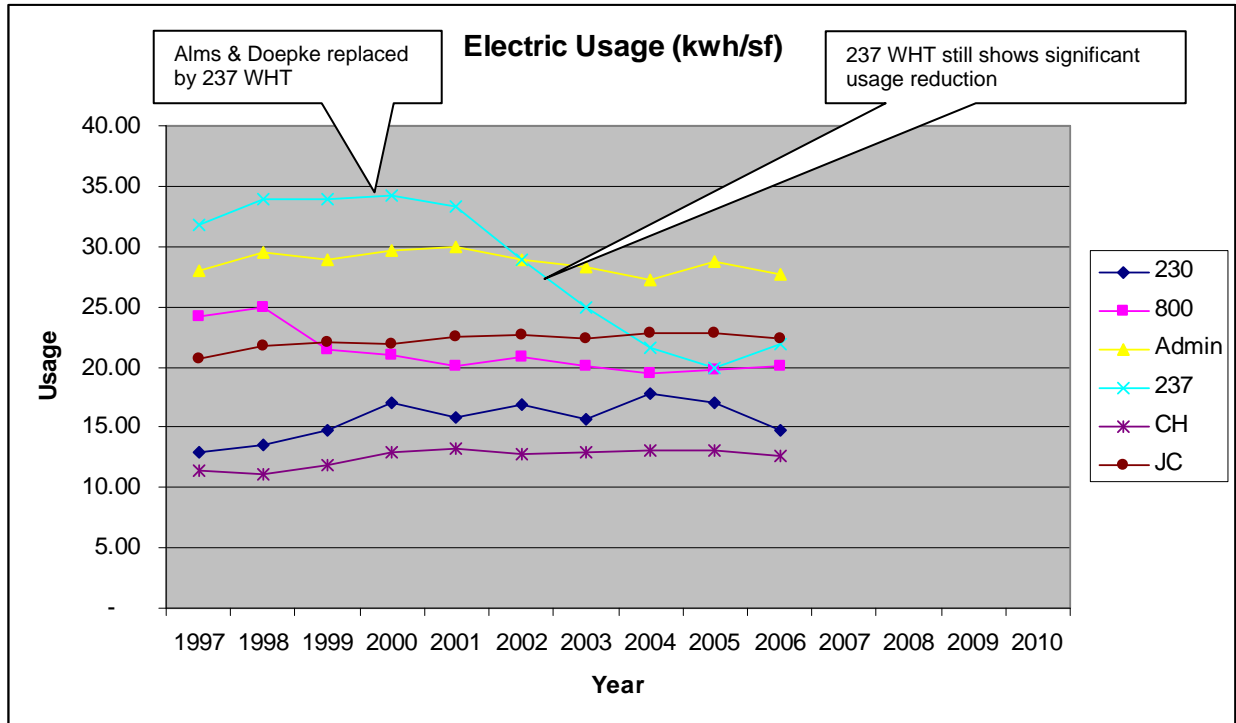


This normalized chart tries to remove the influences of higher commodity cost for gas and electric and compare annual usage and cost back to the base year of 1997 when the program began. With "all things being equal" 2006 was a fantastic year for Hamilton County. The normalized usage was at an all time low in the buildings. Given 1997 prices this would have been the lowest utility cost year in the last 10 years. It is sometimes hard to see the positive effects of well managed buildings when the utility market is so volatile and expensive.

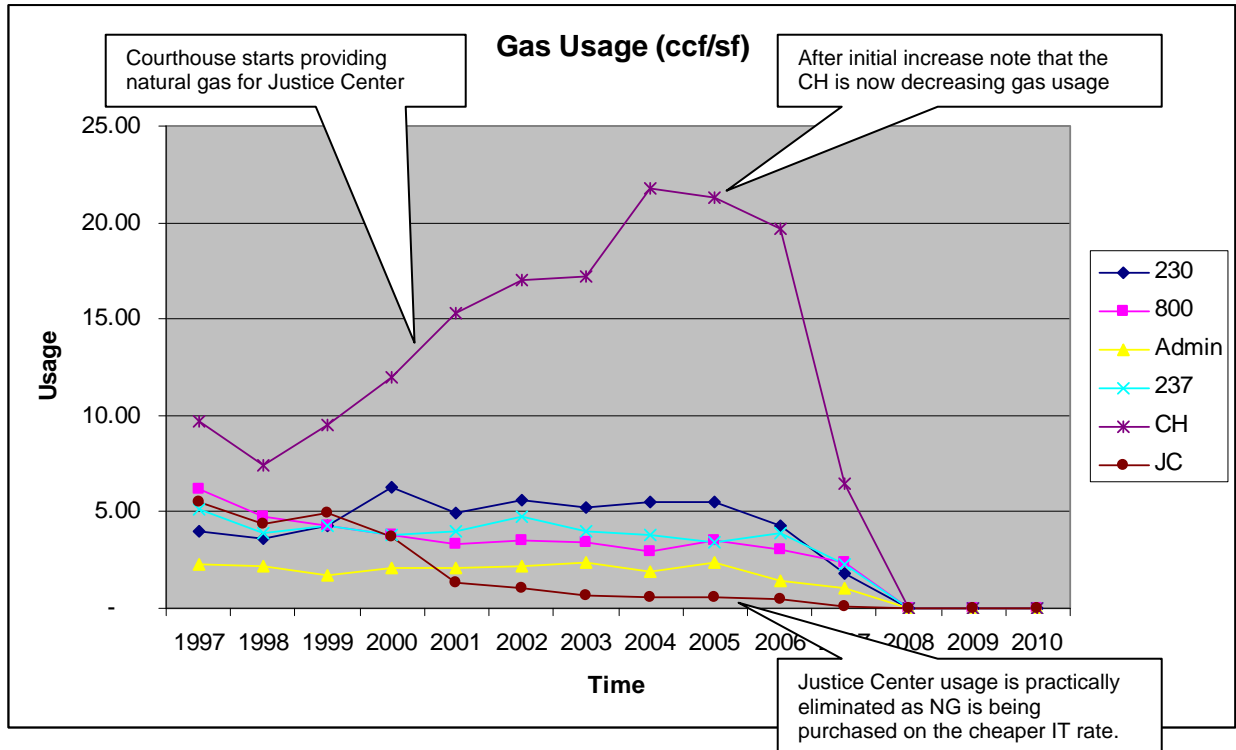
The County is doing a great job managing energy usage in their buildings on a daily, weekly and annual term based on these numbers.

AGGREGATE ENERGY USAGE GRAPHS

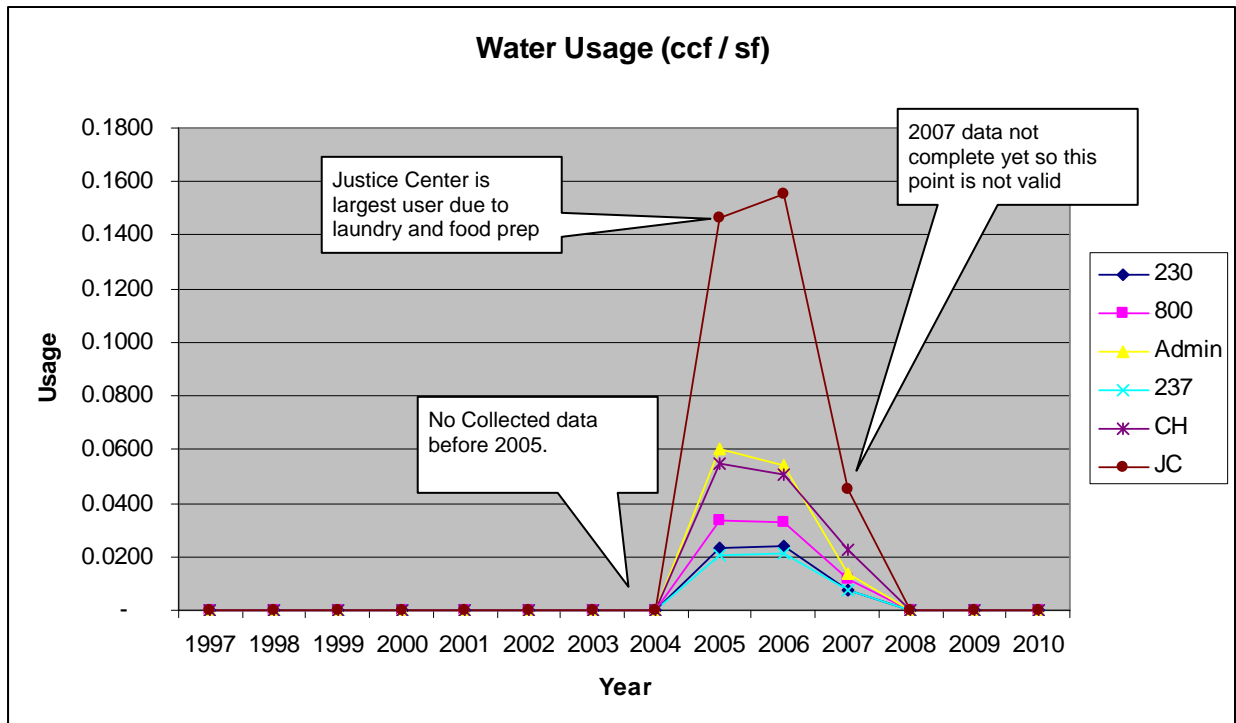
The following graphs demonstrate various methods that we used to trend and analyze building usage and cost (electric usage per square foot, gas usage per square foot, water usage/sf and cost to operate each building in regards to the whole). We try to ensure that usage graphs are flat or downward while usages per square foot do not rise disproportionately to occupancy and weather demand.



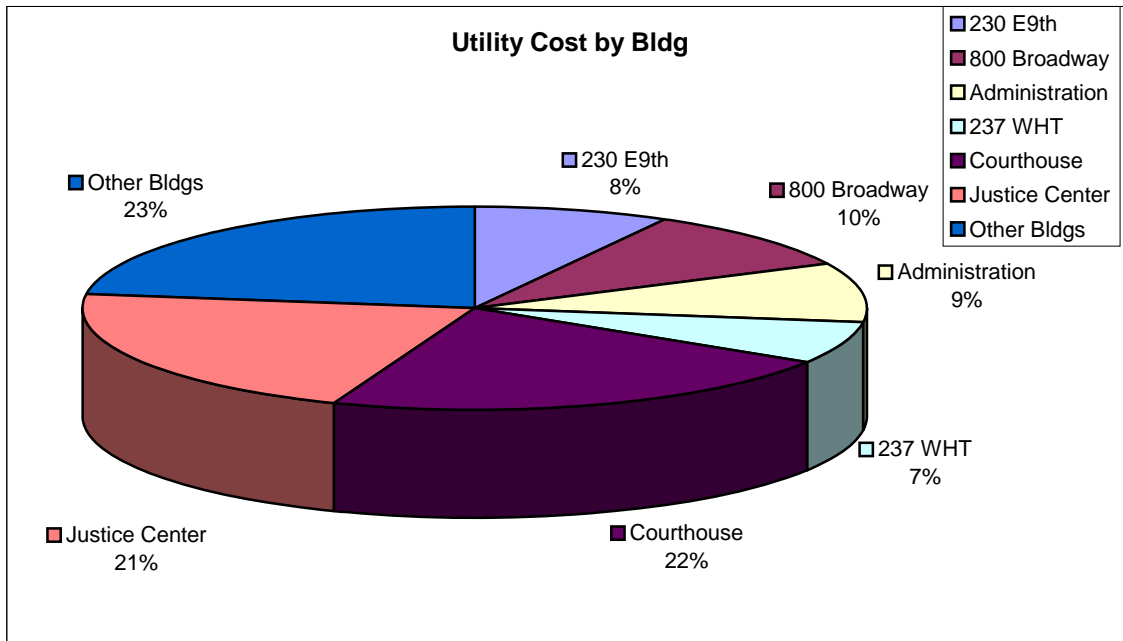
In reviewing this chart we can see that all the building graphs are relatively flat or on a downward slope demonstrating an excellent use of building electric on a consistent annual basis. From this data it can be inferred that the County buildings are continuing to use electric at thrifty rate and that attention has been paid to use as little as possible to maintain tenant comfort. The 237 William Howard Taft building shows the most improvement but has a slight increase in 2006 reflecting the new air handlers being installed. It will be interesting to see how the 237 WHT performs in 2007 when the building has a new chiller and new air handler providing cooling to the building space.



In reviewing this chart we can see that the gas usage over the years is remaining the same or slight decreasing as a general rule. From this chart we can also see where the Courthouse started providing natural gas to the Justice Center (large spike) so we could buy gas from Duke Energy on the cheaper IT (interruptible gas tariff) rate for both buildings (see Courthouse IT savings later in report). All buildings receive a nice report card from the continued savings.



All buildings (see above chart) except for the Justice Center show a decrease in water usage after the first year of tracking water usage. The Justice Center is obviously the largest user and that is to be expected because of the large laundry and kitchen work provided in the Justice Center for the inmate population.



In reviewing the overall utility and energy usage (see above chart) it is interesting to note that the Courthouse and the Justice Center are the two largest users of energy which corresponds to them also having the most square footage and largest hour operation. The numbers on the 2006 chart are within 1% of the 2005 numbers where the 800 Broadway and Administration building increased by 1% while the Justice Center and 800 Broadway decreased by 1% thus showing overall that the buildings are continuing to operate in an understandable and efficient manner and that the County did not encounter any unforeseen anomalies in 2006.

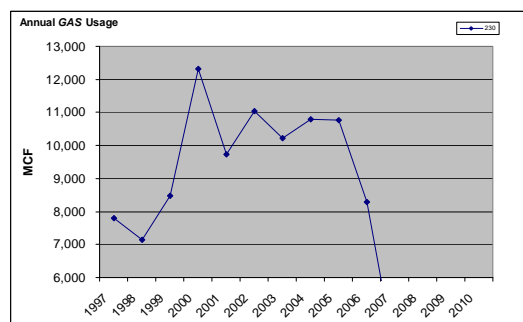
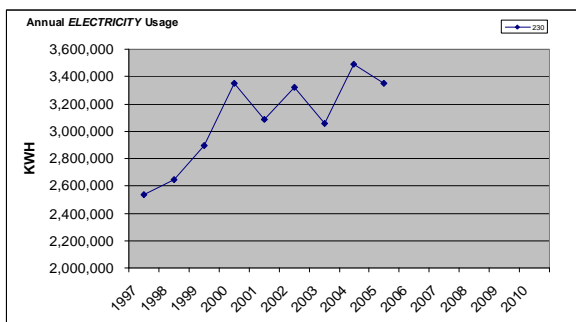
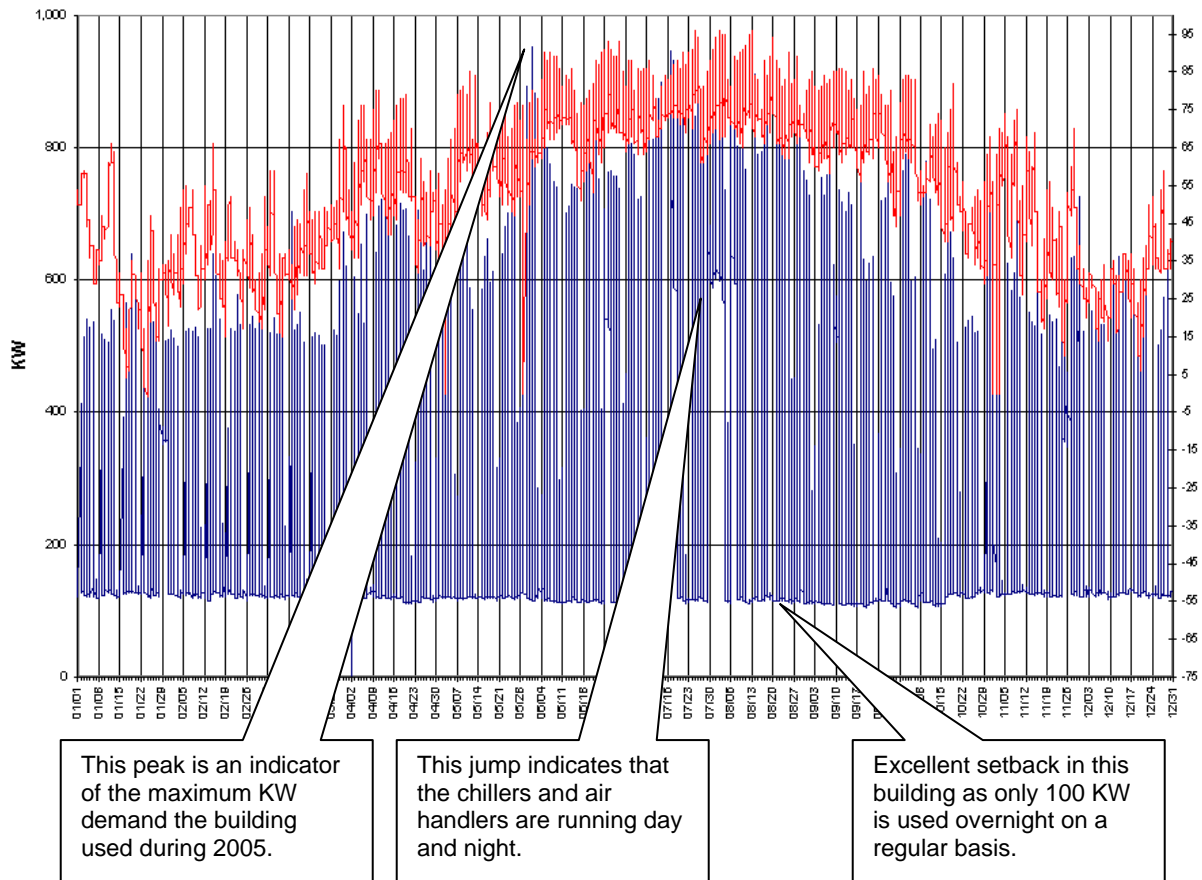
Note that the "Other Building" cost is 23%. At the onset of the Energy Program in 1997 it was believed that the large downtown buildings are contributing an overwhelming amount of usage and cost to County's General Fund. As has been seen and proved over the last two years of reporting, these buildings account for nearly 75% of the total cost. Although the smaller buildings don't have electric "pulse" data to analyze, it may be worth providing an energy review on some of the buildings to capture easy utility savings.



BUILDING ELECTRIC USAGE

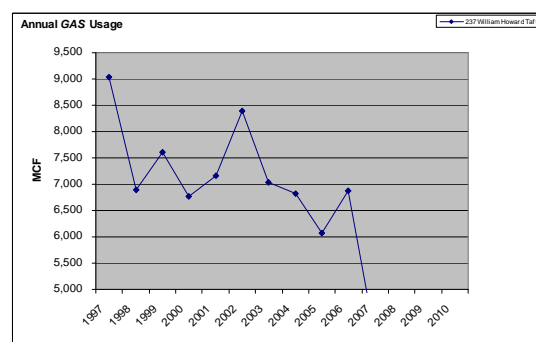
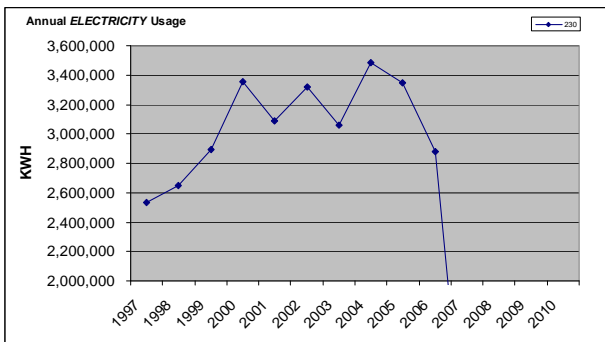
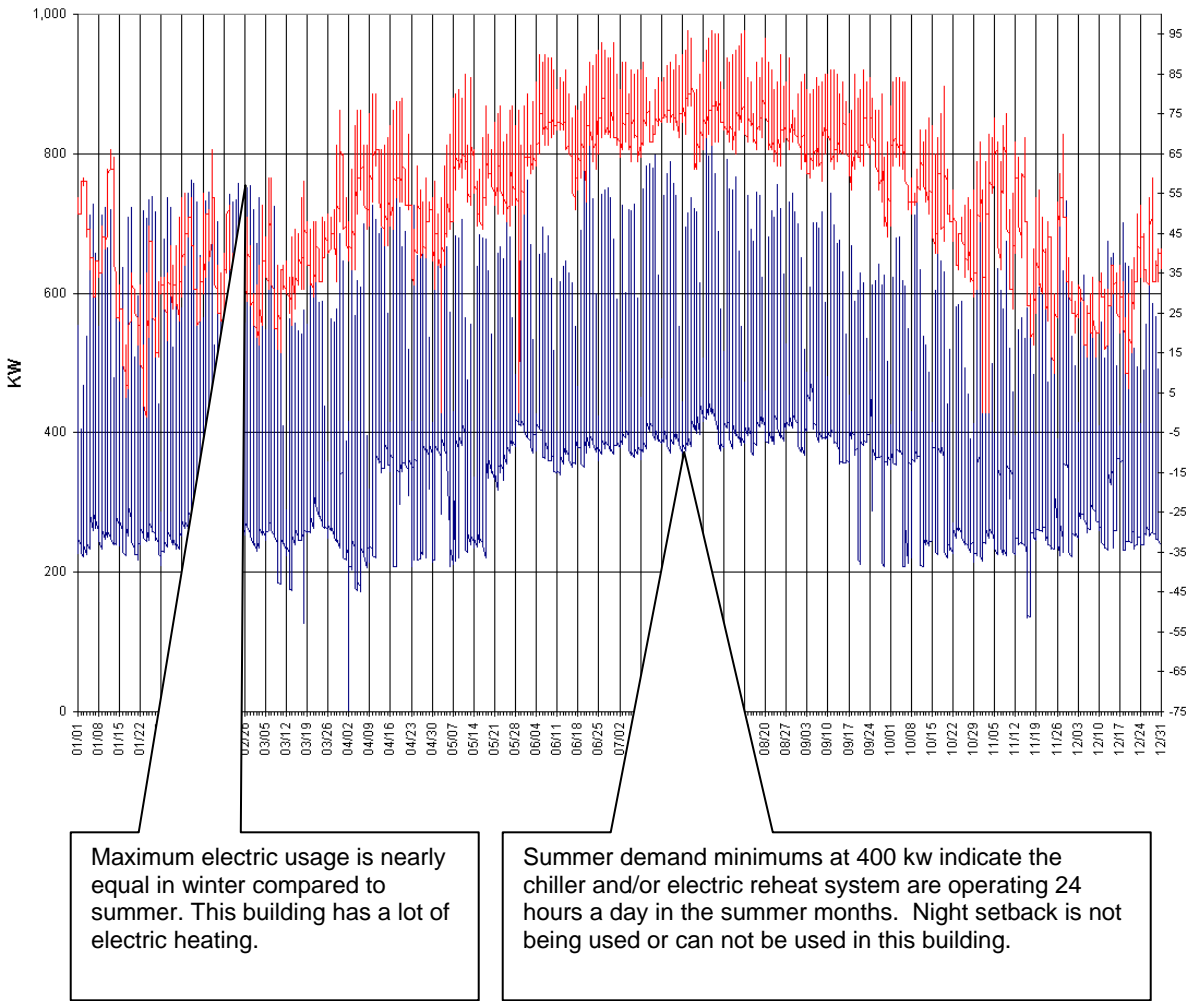
What the following charts represent is the actual electric usage at each hour of each day for each building. We use these graphs to assist in reconciling energy bills and to watch for billing errors. With these graphs we were able to find a \$54,000 Cinergy billing error at the 800 building. We can also tell such things as when the building is running chillers 24/7.

230 EAST NINTH - 2006



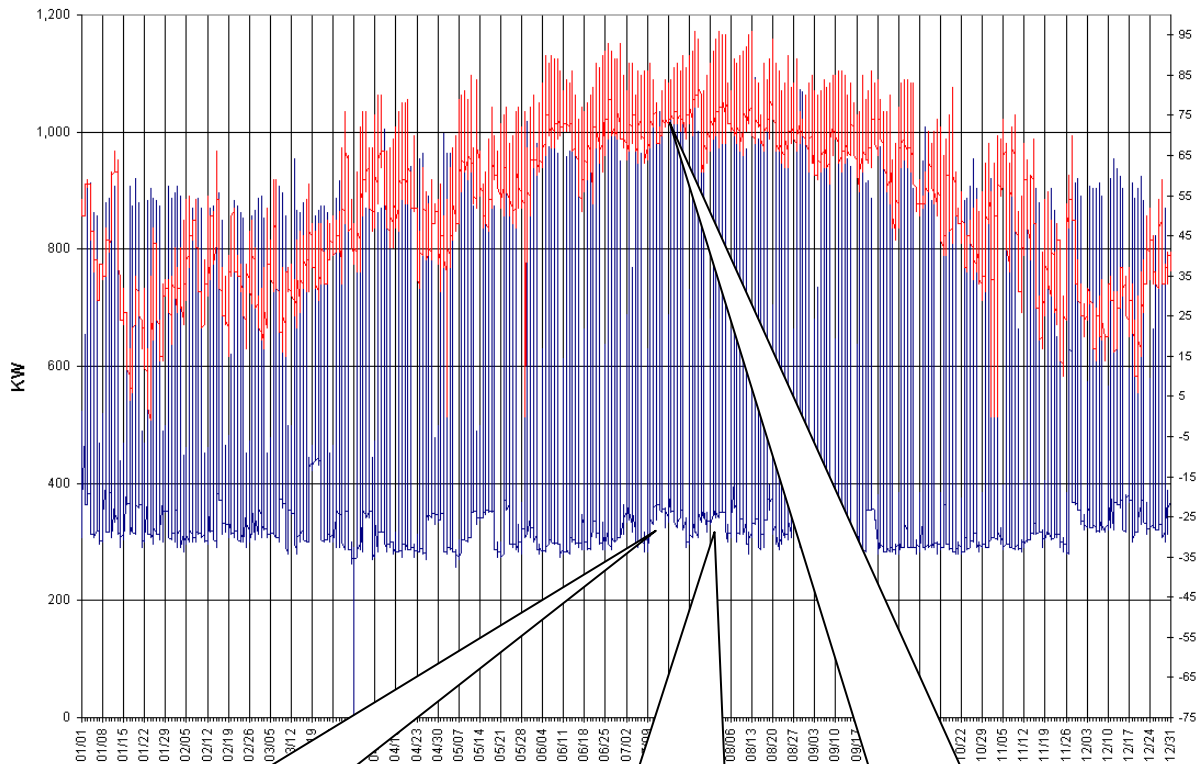
Both of these charts are showing annual fluctuations in usage. This could be an indication that much of this building usage is highly dependent on the weather. The large increase in usage in the late 1990's is an indication of additional fourth floor personnel. In general the usage is beginning to stabilize and level off. This is a very good indicator of proper building control.

237 WILLIAM HOWARD TAFT - 2006



The electric chart shows wide fluctuations in electric usage because of recent air handler and chiller replacements. Usage is back on the decline in 2006. The gas chart also shows excellent trending as it has a general downward slope (new boilers in 2003). This building can address the night setback issue as further energy savings and continue the day-to-day operations that are in place to keep this excellent trend continuing.

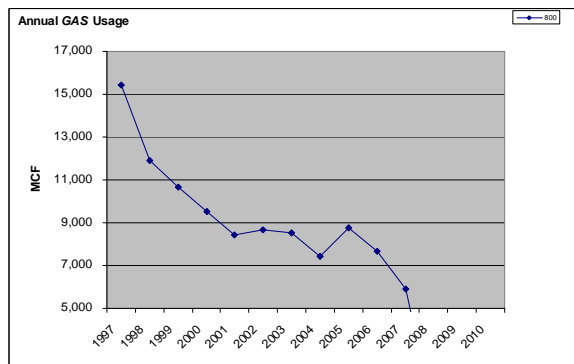
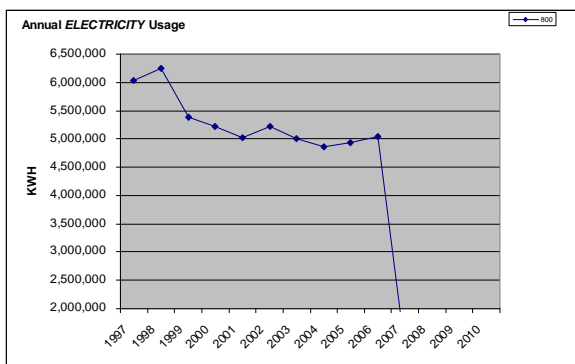
800 BROADWAY BUILDING - 2006



Chiller was run more often overnight in 2006 than 2005 as seen by the up and down activity of the minimum kw demand.

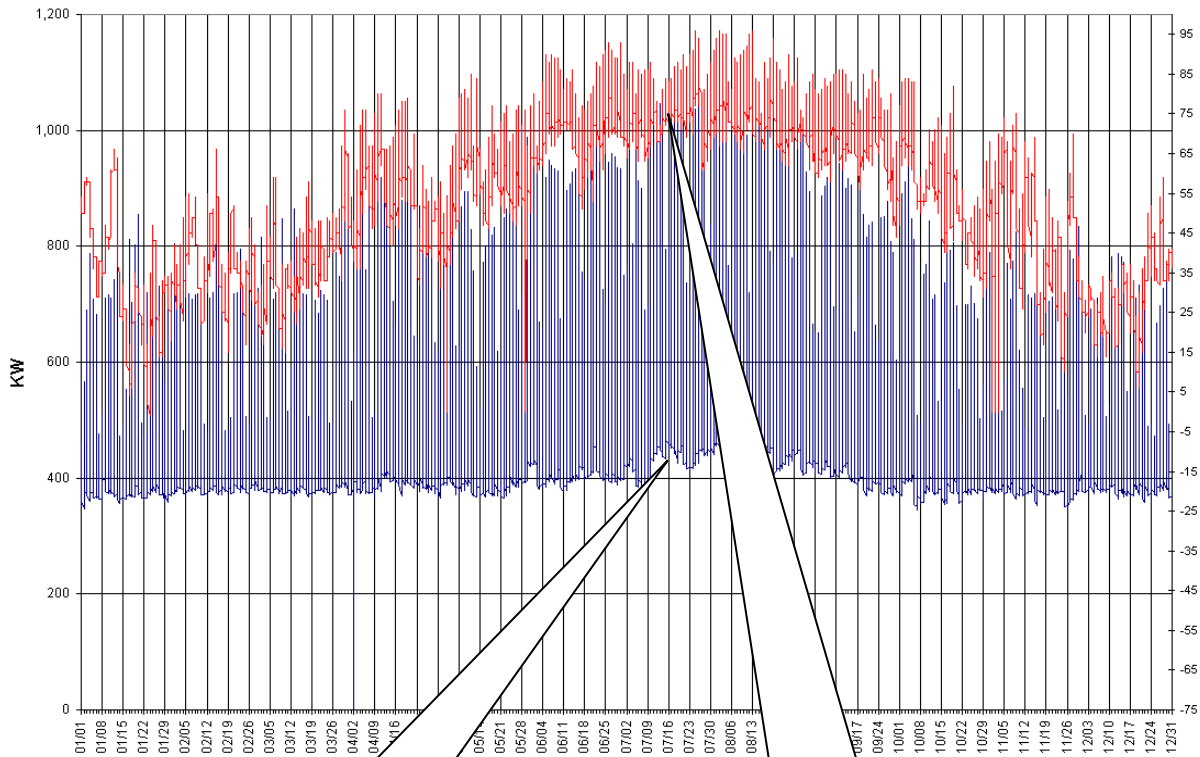
KW minimum not consistently at 300 kw as in previous year.

Maximum KW usage slightly up from 2005 but nothing to worry about.



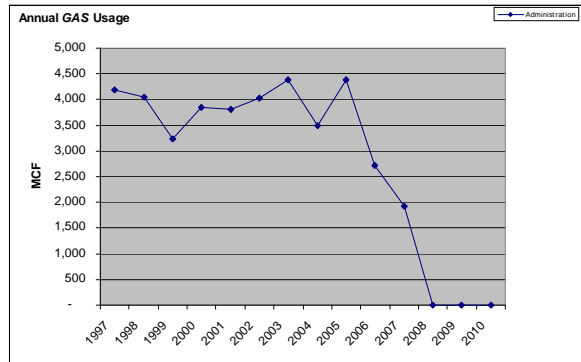
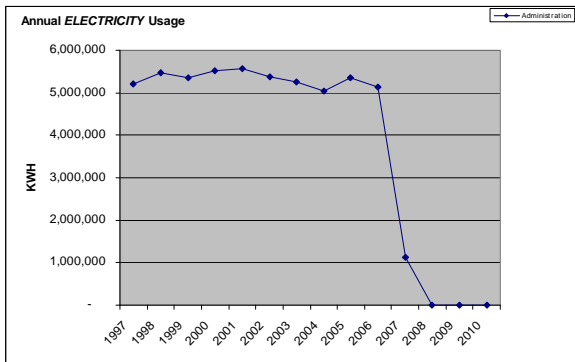
Both utility charts exhibit the same ideal behavior. Through the years of energy conservation awareness the charts are demonstrating a downward trend and leveling off. The gas usage at 800 shows a slight jump in 2006 but we are also working on replacing the Duke Energy regulator at the street due to erratic behavior. These charts show this building is performing very well from year to year and that many of the early utility savings procedures are still working.

COUNTY ADMINISTRATION BUILDING - 2006



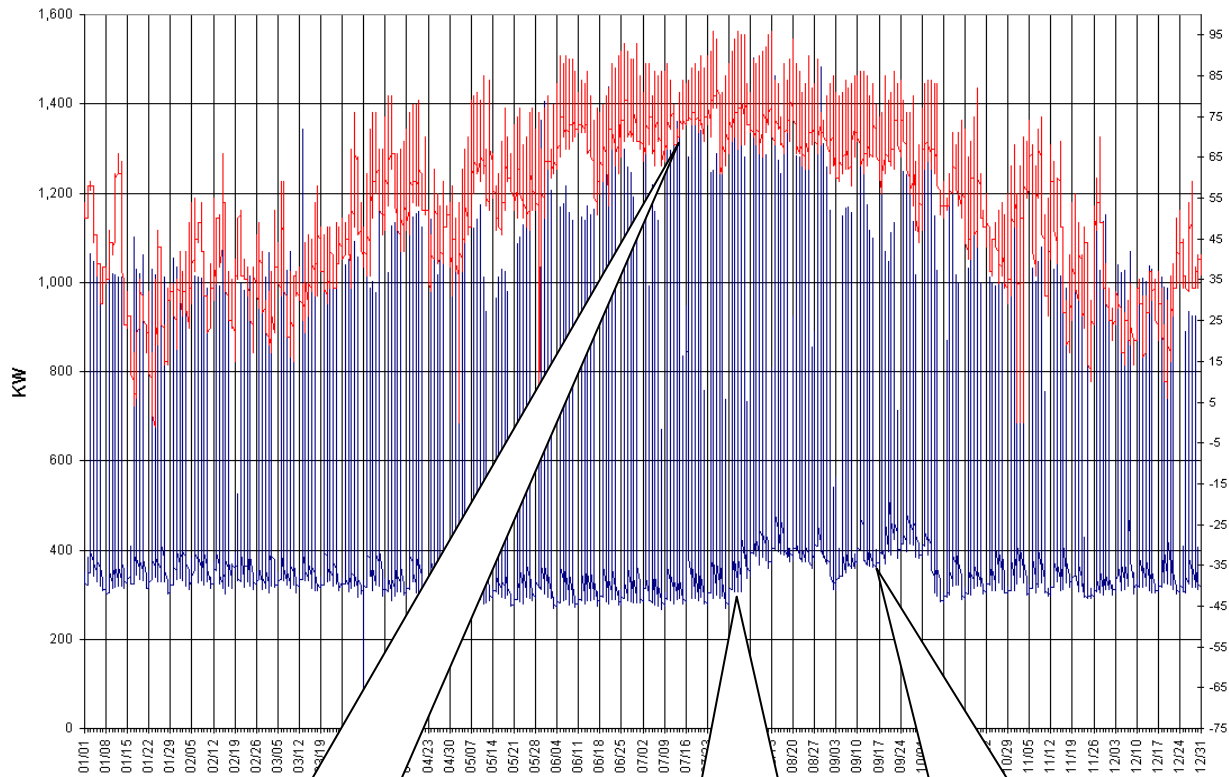
Indicates running centrifugal chiller in the summertime and keeping them on 24/7. This happened much less in 2006 than 2005 - Excellent!

This bell curve on top and bottom is the most prototypical office building energy graph. No anomalies in this building. Peak usage was down in 2006!



The electric data since 1997 shows a nice level usage trend with slight increases and depressions based on weather (degree days). The building has electric chillers as evidenced by the KW chart above. The electric usage and peaks have no anomalies to report this year. The gas chart is slightly more erratic reflecting mostly how cold Cincinnati winters have been or not been. In 2005 and 2006 it can be seen that the building is using less gas than in any previous years. That is FANTASTIC!

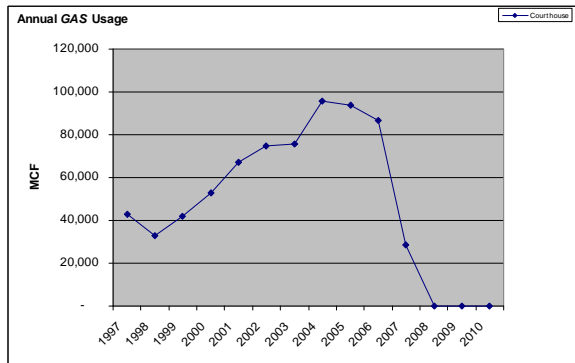
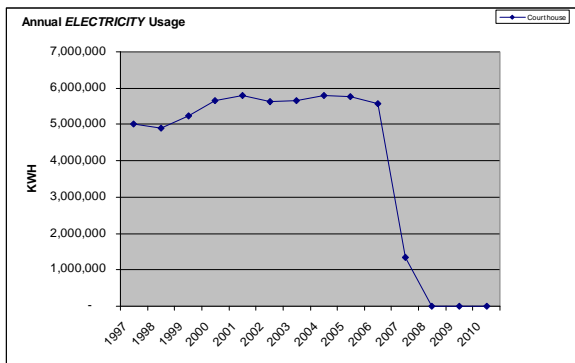
COUNTY COURTHOUSE - 2006



Indicates summertime usage of chillers and air handlers in the building.

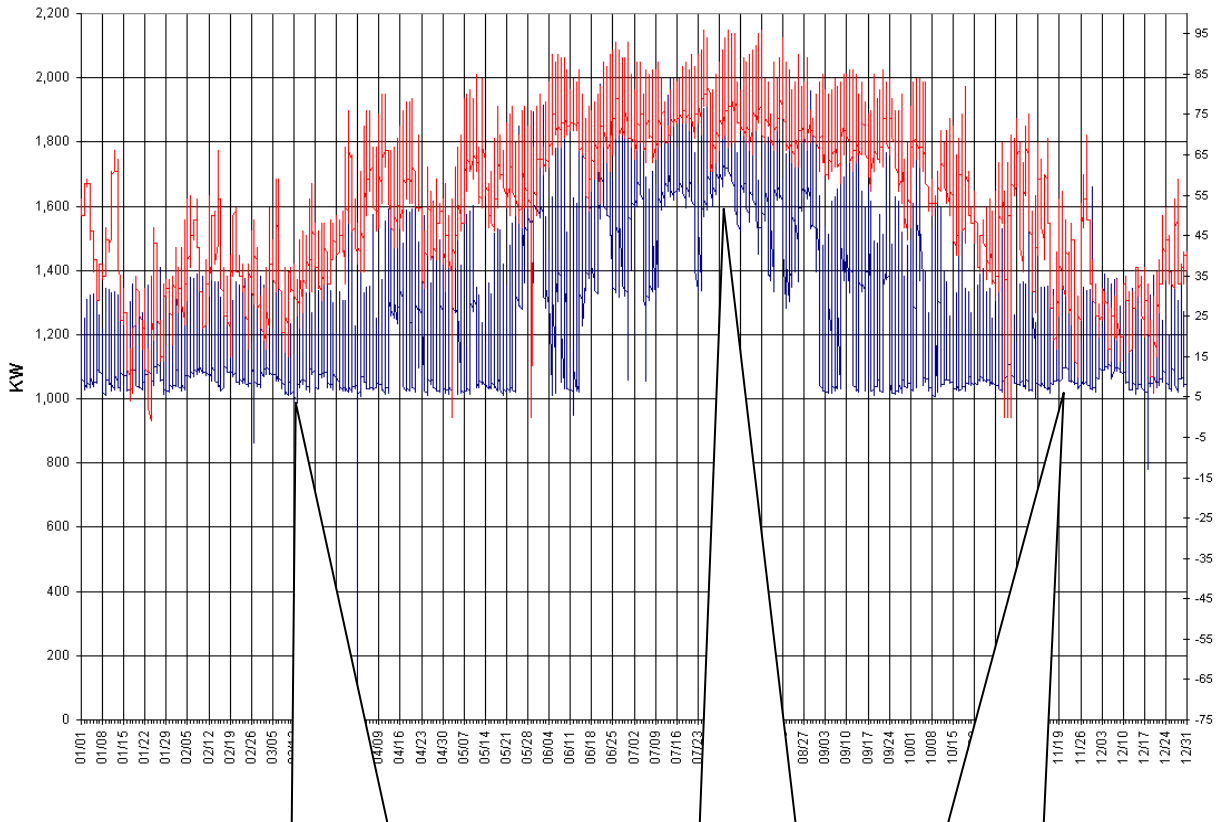
Minimal peaks in minimum demand shows that chiller and air handlers are effectively on a night setback program.

In 2006 the chiller were left on 24/7 during some periods for building cooling. In 2005 this chart did not show this trend.



The electric chart shows a very flat profile of usage over the last five years. This is very good and quite acceptable to building operation. The gas chart shows a sharp increase in usage when the Courthouse began providing gas to the Justice Center. Notice how well the Courthouse has rebounded and the gas usage has dropped for two straight years. The building staff at the Courthouse deserves kudos. Recent projects have made the boilers more reliable and excess usage has declined. This proactive approach to building control is exemplary.

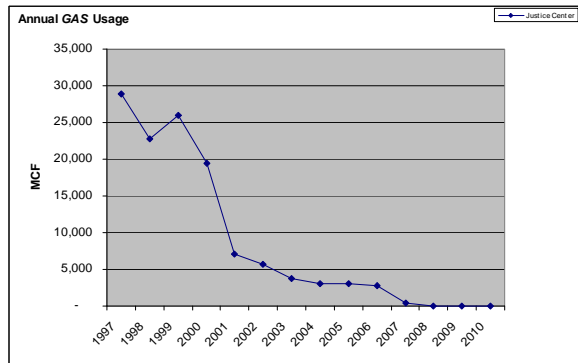
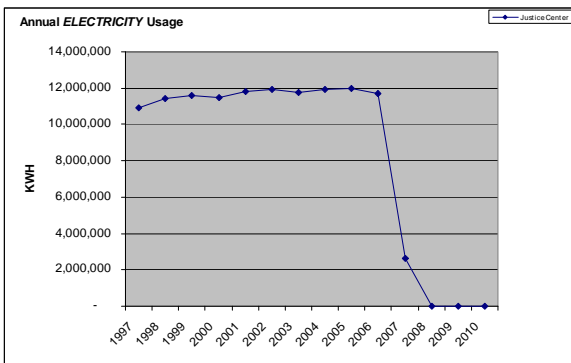
JUSTICE CENTER - 2006



Denotes a high use electric building, typical of a 24/7 jail facility. This has remained constant since 1997.

Shows a large use of chillers and air handlers in the summertime for cooling 24/7 facility. The 24/7 operation in 2006 is much less than 2005!

Shows that during night mode the building is turning off 400 KW in lights and equipment but over 1000 KW remain on all the time.



The electric usage for the Justice Center is high but that is to be expected for a penal building. The relatively flat chart shows the building usage is consistent. That slight downward drop in 2006 could be a representation of the retro commissioned control system upgrade implemented in 2005. The gas chart as expected has reduced significantly due to the Courthouse providing the steam for the Justice Center. The minimal amount of gas being used now is an excellent indicator that our energy savings strategies are working. There are no anomalies to report in this building.

COURTHOUSE IT (INTERRUPTIBLE GAS TARIFF) SAVINGS

This program was put in place in 2003 and ready for 2004 usage. An agreement exists between the County and Duke Energy that has stipulations that gas can be stopped to the Courthouse with advance notice from Duke and that the Courthouse uses at least 1000 MCF during the summer months.

CourtHouse IT vs FT Rate Comparison

2004										
Month	Gas Usage CCF	FT Rate 1 \$/ CCF	FT Rate 2 \$/ CCF	FT Rate 3 \$/ CCF	FT Admin Cost	IT Rate \$/ CCF	IT Admin Cost	Firm Cost	Interruptible Cost	Monthly Savings
1	149,531	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$23,070	\$7,947	\$15,123
2	126,896	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$19,584	\$6,834	\$12,750
3	119,056	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$18,377	\$6,449	\$11,928
4	79,685	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$12,313	\$4,513	\$7,800
5	49,708	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$7,697	\$3,040	\$4,658
6	42,271	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$6,552	\$2,674	\$3,878
7	43,295	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$6,709	\$2,724	\$3,985
8	30,674	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$4,766	\$2,104	\$2,662
9	20,278	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$3,165	\$1,593	\$1,572
10	63,553	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$9,829	\$3,720	\$6,109
11	94,975	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$14,668	\$5,265	\$9,403
12	137,310	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$21,188	\$7,346	\$13,842
Total	957,232							\$147,918	\$54,208	\$93,710

2005										
Month	Gas Usage CCF	FT Rate 1 \$/ CCF	FT Rate 2 \$/ CCF	FT Rate 3 \$/ CCF	FT Admin Cost	IT Rate \$/ CCF	IT Admin Cost	Firm Cost	Interruptible Cost	Monthly Savings
1	144,994	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.05370	\$ 658.00	\$22,371	\$8,444	\$13,927
2	126,518	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.05370	\$ 658.00	\$19,526	\$7,452	\$12,074
3	123,636	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.05370	\$ 658.00	\$19,082	\$7,297	\$11,785
4	65,432	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.05370	\$ 658.00	\$10,119	\$4,172	\$5,947
5	48,928	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.05370	\$ 658.00	\$7,577	\$3,285	\$4,291
6	36,065	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.05370	\$ 658.00	\$5,596	\$2,595	\$3,001
7	32,124	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.05370	\$ 658.00	\$4,989	\$2,383	\$2,606
8	30,863	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.05370	\$ 658.00	\$4,795	\$2,315	\$2,480
9	32,226	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.05370	\$ 658.00	\$5,005	\$2,389	\$2,616
10	59,698	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.05370	\$ 658.00	\$9,235	\$3,864	\$5,372
11	99,982	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.05370	\$ 658.00	\$15,439	\$6,027	\$9,412
12	137,620	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.05370	\$ 658.00	\$21,235	\$8,048	\$13,187
Total	938,086							\$144,969	\$58,271	\$86,698

2006										
Month	Gas Usage CCF	FT Rate 1 \$/ CCF	FT Rate 2 \$/ CCF	FT Rate 3 \$/ CCF	FT Admin Cost	IT Rate \$/ CCF	IT Admin Cost	Firm Cost	Interruptible Cost	Monthly Savings
1	123,265	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$19,025	\$6,656	\$12,369
2	125,464	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$19,363	\$6,764	\$12,600
3	117,582	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$18,150	\$6,376	\$11,773
4	55,005	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$8,513	\$3,300	\$5,213
5	49,175	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$7,615	\$3,013	\$4,602
6	36,556	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$5,672	\$2,393	\$3,279
7	26,520	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$4,126	\$1,900	\$2,226
8	22,255	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$3,469	\$1,690	\$1,779
9	33,509	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$5,202	\$2,243	\$2,959
10	72,748	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$11,245	\$4,172	\$7,073
11	91,364	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$14,112	\$5,087	\$9,025
12	113,127	\$0.16300	\$0.15700	\$0.15400	\$ 21.00	\$0.04916	\$ 595.86	\$17,464	\$6,157	\$11,306
Total	866,570							\$133,956	\$49,751	\$84,205

Accumulated Savings \$264,613

This comparison shows that we are estimating savings of \$93,000 (2004), \$86,000 (2005) and \$84,000 (2006) by having the Courthouse on the Duke Energy IT (Interruptible Gas Service Plan). This is a savings that can be expected annually. This comparison is based on paying for Duke Energy Firm Transportation General Service vs Interruptible Transportation Tariff.

HAMILTON COUNTY NATURAL GAS BROKER AGREEMENT (CCAO)

This program was put in place in 2001 and an agreement exists between the County and County Commissioners Association of Ohio (CCAO). The CCAO manages a third party gas marketer who aggressively tries to buy natural gas on the open market with strategies that provide the best gas prices possible to the group with a manageable risk. It is always a risky and sometimes we save a lot of money and sometimes we lose a little money. To date the program is still in the black.

2001 Natural Gas Comparison CCAO Gas vs. Cinergy

Month	230 E9th Gas MCF	800 Broadway Gas MCF	Admin Gas MCF	237 WHT Gas MCF	Courthouse Gas MCF	Justice Center Gas MCF	Total Gas MCF	Cinergy \$/ MCF	Strategic \$/ MCF	Cinergy All Year	Strategic All Year
1	2,391	2,793	1,161	1,215	15,272	227	23,059	7.666	7.666	\$176,772	\$176,772
2	1,352	1,647	801	1,183	9,805	1,119	15,906	7.666	7.666	\$121,935	\$121,935
3	1,069	1,346	695	1,026	7,081	2,674	13,890	8.099	8.099	\$112,496	\$112,496
4	729	637	333	580	5,760	1,159	9,198	8.099	6.118	\$74,495	\$56,273
5	278	109	16	386	2,546	441	3,776	8.099	5.962	\$30,579	\$22,510
6	437	17	-	196	3,203	241	4,093	6.887	4.586	\$28,186	\$18,769
7	299	14	-	134	2,515	331	3,293	6.887	3.189	\$22,678	\$10,501
8	354	14	-	126	2,560	134	3,187	6.887	3.648	\$21,946	\$11,625
9	364	17	1	191	2,032	236	2,840	5.096	2.724	\$14,473	\$7,736
10	468	361	102	517	3,948	304	5,699	5.096	3.574	\$29,040	\$20,367
11	932	530	262	576	5,970	127	8,397	5.096	3.8446	\$42,793	\$32,285
12	1,063	948	447	1,026	6,567	145	10,196	4.8	3.7188	\$48,940	\$37,916
Total	9,733	8,432	3,817	7,155	67,258	7,138	103,533			\$724,333	\$629,185

2001 Savings => \$95,148

2002 Natural Gas Comparison

Month	230 E9th Gas MCF	800 Broadway Gas MCF	Admin Gas MCF	237 WHT Gas MCF	Courthouse Gas MCF	Justice Center Gas MCF	Total Gas MCF	Cinergy \$/ MCF	Strategic \$/ MCF	Cinergy All Year	Strategic All Year
1	1,958	2,245	981	1,017	12,485	1,207	19,893	4.8	4.1058	\$95,484	\$81,675
2	1,219	1,292	524	1,016	6,976	752	11,779	4.8	3.9259	\$56,539	\$46,243
3	1,244	1,231	535	1,497	8,692	767	13,964	3.118	3.9692	\$43,541	\$55,427
4	864	735	342	455	7,567	594	10,556	3.118	4.0532	\$32,914	\$42,786
5	489	303	155	369	5,043	345	6,704	3.118	3.9495	\$20,904	\$26,479
6		26	87	316	2,877	185	3,490	3.437	3.885	\$11,995	\$13,559
7	414	18	-	249	2,980	158	3,819	3.437	3.885	\$13,127	\$14,838
8	401	17	-	123	2,910	43	3,494	3.437	3.5738	\$12,010	\$12,488
9	401	18	-	258	2,710	214	3,601	4.188	4.2003	\$15,081	\$15,126
10	610	205	59	717	3,061	794	5,445	4.188	5.1384	\$22,804	\$27,979
11	1,311	940	74	967	7,633	299	11,224	4.188	5.9525	\$47,007	\$66,813
12	1,780	1,646	1,273	962	11,802	277	17,739	4.783	4.9536	\$84,848	\$87,874
Total	10,692	8,675	4,029	7,945	74,734	5,634	111,710			\$456,254	\$491,285

2002 Losses => -\$35,031

2003 Natural Gas Comparison

Month	230 E9th Gas MCF	800 Broadway Gas MCF	Admin Gas MCF	237 WHT Gas MCF	Courthouse Gas MCF	Justice Center Gas MCF	Total Gas MCF	Cinergy \$/ MCF	Strategic \$/ MCF	Cinergy All Year	Strategic All Year
1	2,375	2,233	1,106	1,060	15,502	217	22,493	4.783	6.4456	\$107,584	\$144,981
2	1,918	2,195	1,029	1,000	16,528	93	22,763	4.783	6.3472	\$108,875	\$144,481
3	1,002	1,417	633	652	8,307	113	12,124	6.28	7.2491	\$76,139	\$87,888
4	610	376	295	655	5,476	100	7,512	6.927	6.0505	\$52,036	\$45,451
5	461	32	180	496	3,038	211	4,418	6.927	6.0683	\$30,603	\$26,810
6	389	19	7	230	3,245	230	4,120	8.542	6.3087	\$35,193	\$25,992
7	295	16	-	145	3,379	113	3,948	8.542	4.85	\$33,724	\$19,148
8	325	16	-	110	3,205	102	3,758	8.542	5.6199	\$32,101	\$21,120
9	327	19	-	126	2,894	333	3,699	7.739	5.552	\$28,627	\$20,537
10	546	145	45	666	3,831	395	5,628	7.213	5.2971	\$40,595	\$29,812
11	689	584	270	788	6,323	667	9,321	7.371	5.8209	\$68,705	\$54,257
12	1,284	1,478	813	1,102	3,924	1,155	9,756	7.249	6.0917	\$70,721	\$59,431
Total	10,221	8,530	4,378	7,030	75,652	3,729	109,540			\$684,903	\$679,907

2003 Savings => \$4,996

Hamilton County

2004 Natural Gas Comparison

Month	230 E9th Gas MCF	800 Broadway Gas MCF	Admin Gas MCF	237 WHT Gas MCF	Courthouse Gas MCF	Justice Center Gas MCF	Total Gas MCF	Cinergy \$ / MCF	Strategic \$ / MCF	Cinergy All Year	Strategic All Year
1	2,375	2,233	1,106	1,060	15,502	217	22,493	8.184	6.390652	\$184,083	\$143,745
2	1,918	2,195	1,029	1,000	16,528	93	22,763	7.989	6.050988	\$181,854	\$137,739
3	1,002	1,417	633	652	8,307	113	12,124	7.373	6.424203	\$89,390	\$77,887
4	610	376	295	655	5,476	100	7,512	7.505	5.997061	\$56,378	\$45,050
5	461	32	180	496	3,038	211	4,418	7.957	6.694224	\$35,154	\$29,575
6	389	19	7	230	3,245	230	4,120	8.098	7.502146	\$33,364	\$30,909
7	295	16	-	145	3,379	113	3,948	7.632	6.919506	\$30,131	\$27,318
8	325	16	-	110	3,205	102	3,758	7.552	6.861196	\$28,380	\$25,784
9	327	19	-	126	2,894	333	3,699	6.923	7.4063	\$25,608	\$27,396
10	546	145	45	666	3,831	395	5,628	6.631	6.9452	\$37,319	\$39,088
11	689	584	270	788	6,323	667	9,321	8.702	7.9862	\$81,111	\$74,439
12	1,284	1,478	813	1,102	3,924	1,155	9,756	8.949	8.9639	\$87,306	\$87,452
Total	10,221	8,530	4,378	7,030	75,652	3,729	109,540			\$870,079	\$746,382

2004 Savings => \$123,697

2005 Natural Gas Comparison

Month	230 E9th Gas MCF	800 Broadway Gas MCF	Admin Gas MCF	237 WHT Gas MCF	Courthouse Gas MCF	Justice Center Gas MCF	Total Gas MCF	Cinergy \$ / MCF	Strategic \$ / MCF	Cinergy All Year	Strategic All Year
1	1,621	2,154	215	1,137	14,499	788	20,415	\$ 8.1960	7.6225	\$167,318	\$155,610
2	1,384	1,723	172	977	12,652	270	17,178	\$ 7.9290	7.8097	\$136,208	\$134,158
3	1,450	1,631	163	939	12,364	167	16,714	\$ 7.8380	8.0709	\$131,001	\$134,894
4	794	443	44	900	6,543	123	8,846	\$ 8.4850	8.5923	\$75,062	\$76,011
5	833	160	16	321	4,893	152	6,374	\$ 8.7160	8.149	\$55,558	\$51,943
6	452	29	3	169	3,607	112	4,371	\$ 8.3620	7.6177	\$36,551	\$33,298
7	353	25	3	152	3,212	192	3,936	\$ 8.6180	7.9757	\$33,924	\$31,396
8	490	26	3	182	3,086	121	3,908	\$ 8.9740	7.4565	\$35,067	\$29,137
9	310	26	3	170	3,223	381	4,112	\$ 9.7960	12.0566	\$40,279	\$49,574
10	388	43	4	172	5,970	420	6,996	\$ 11.9520	12.6952	\$83,616	\$88,816
11	950	383	38	361	9,998	132	11,863	\$ 12.7740	15.2431	\$151,537	\$180,827
12	1,746	2,131	213	595	13,762	215	18,663	\$ 12.2570	12.7802	\$228,749	\$238,513
Total	10,769	8,774	877	6,075	93,809	3,072	123,376			\$1,174,869	\$1,204,177

2005 Losses => -\$29,309

2006 Natural Gas Comparison

GS Month	230 E9th Gas MCF	800 Broadway Gas MCF	Admin Gas MCF	237 WHT Gas MCF	Courthouse Gas MCF	Justice Center Gas MCF	Total Gas MCF	Cinergy \$ / MCF	Strategic \$ / MCF	Cinergy All Year	Strategic All Year
1	1,152	1,890	647	838	12,327	171	17,025	\$ 11.6100	14.1484	\$197,663	\$240,879
2	1,223	1,681	565	1,026	12,546	198	17,239	\$ 10.0470	10.604	\$173,197	\$182,799
3	1,054	1,406	449	755	11,758	130	15,553	\$ 9.4010	10.106	\$146,214	\$157,179
4	638	365	179	657	5,501	361	7,700	\$ 8.8840	11.7843	\$68,406	\$90,738
5	481	38	23	535	4,918	184	6,177	\$ 9.5110	10.6985	\$58,753	\$66,089
6	345	24	-	520	3,656	117	4,661	\$ 9.1330	10.0915	\$42,566	\$47,033
7	334	22	-	399	2,652	141	3,547	\$ 8.6150	9.0552	\$30,561	\$32,122
8	331	22	-	358	2,226	535	3,471	\$ 8.5360	9.625	\$29,627	\$33,406
9	359	23	0	202	3,351	181	4,117	\$ 9.4520	9.3757	\$38,911	\$38,597
10	425	64	17	237	7,275	369	8,387	\$ 8.6420	6.1528	\$72,476	\$51,600
11	794	793	349	653	9,136	187	11,912	\$ 8.4240	7.7787	\$100,344	\$92,658
12	1,164	1,363	498	702	11,313	143	15,182	\$ 9.5710	9.233	\$145,311	\$140,179
Total	8,300	7,690	2,727	6,882	86,657	2,716	114,970			\$1,104,029	\$1,173,280

2006 Losses => -\$69,252

Total Cumm. Savings => \$90,249

As can be seen above in the spreadsheet the County has saved an approximate \$90,000 in the last six years by continuing to buy deregulated natural gas through the County Commissioners Association of Ohio (CCAO). As with any open market commodity purchase plan there is always risk and over the last two years gas prices have been slightly better from the local utility. This is understandable as we live in a service area where the local utility has historically provided excellent service and pricing. One goal for next year is to evaluate the existing contract and see if it is time to make changes to the gas purchase buying plan.

APPENDIX "A" - GLOSSARY OF TERMS

BASELINE OR BASEYEAR - is the reference to the year in which the County began its Energy Conservation Project and for the purposes of this report it is the calendar year 1997.

BROKER OR MARKETER - Natural gas marketers, or brokers, are independent companies that arrange alternate rates and terms of service for Primary Gas or Electric supply. Marketers offer the option of different terms of pricing than that offered by Duke Energy, such as a fixed rate for a fixed period of time. Marketers only arrange a customer's gas or electric supply—they do not deliver the natural gas or provide utility services.

BTU - A British thermal unit (BTU) is a standard unit of energy that is used in the United States. A 5-ton air conditioner that conditions a typical home is equivalent to 60,000 BTU/hour. A 100 watt light bulb dissipates 341 BTU/hour. The BTU is often used as a quantitative specification for the energy-producing or energy-transferring capability of heating and cooling systems such as furnaces, ovens, refrigerators, and air conditioners.

CCAO - County Commissioner's Association of Ohio. For the purposes of this report this refers to the organization in which Hamilton County Facilities is partnered with to provide all natural gas commodity for Hamilton County owned buildings. The CCAO manages the contract through Exelon Energy for all the Counties in the current buying block.

DDC - Direct Digital Control is a name given to computer systems used to monitor, trend, adjust and control building HVAC (Heating, Ventilating and Air Conditioning) Systems.

DEGREE-DAY - A rough measure used to estimate the amount of heating or cooling required in a given area; defined as the difference between the mean daily temperature and 65 degrees Fahrenheit. Cincinnati typically experiences about 4,500 heating degree-days per year.

ECM - Energy Conservation Measure, reference to any activity (project, scheduling, replacement, task) that is taken to save or use energy more wisely.

FT RATE - See IT Rate

ENGINEERING ENERGY PARTNER - An energy service company or registered professionals, such as architectural and engineering firms, that provide the expertise, services, equipment, and financing without performance contracting guarantees (e.g. ThermalTech Engineering in this report).

GS RATE - See IT Rate

HVAC - this is an acronym for Heating, Ventilating and Air Conditioning.

IT RATE - Interruptible Rate Tariff. An optional rate schedule offered by Duke Energy that charges the customer lower transportation prices on natural gas in exchange for Duke Energy's ability to curtail the gas supply to building during high demand periods. The gas can be purchased on the open market from companies other than Duke Energy. GS stands for General Service (the default residential and commercial rate schedule) and FT stands for Firm Transportation (similar to IT but it can't be curtailed).

KW - The kilowatt (symbolized kW) is a unit of power measurement. Used by the utility industry to measure the peak power consumption of buildings. A peak kW of usage costs about \$10-15/month.

KWH - The kilowatt-hour (symbolized kWh) is a unit of energy equivalent to one kilowatt (1 kW) of power expended for one hour (1 h) of time. It is commonly used in electrical measurement applications. A 100 watt light bulb operated for 10 hours consumes 1,000 watt-hours or 1 kWh. A kWh costs about \$0.03-0.05.

LEED® - Leadership in Energy and Environmental Design. A rating system created by the U.S. Green Building Council to allow the sustainability and energy efficiency of buildings to be compared. Points can be earned for energy and water savings strategies, indoor environmental quality, materials recycling. The rating system has reward levels of certified, bronze, silver and gold.

LIFE CYCLE COST (LCC) - Is a financial decision-making calculation for building owners and designers. It provides a means of comparing the net present value or rate-of-return of two or more design alternatives. For each alternative, first costs and annual maintenance and energy costs are combined with financial factors input to a LCC spreadsheet. The final result is a number that shows the total cost of ownership over an economic period (20 years typically for mechanical equipment) and allows the owner to select the piece of equipment that provides the best financial return.

MCF – A unit of measurement used for natural gas equal to 1,000 cubic feet of gas or about 1 mmBTU. An MCF costs about \$5-10.

NIGHT SETBACK - is a terminology used when HVAC control systems are schedule off when the building is unoccupied. Normally these setbacks will allow the building to rise to 80 degrees in the summertime and drop to 65 degrees in the wintertime before bringing the building system back on to maintain the building temperature.

NORMALIZED - for the purposes of this report there are two cases of normalization. The first is the way in which Duke Energy bills it customers. Since meter read dates often occur in the middle of the month the bills often range from dates like the 21st of one month to the 21st the next month. When this happens we have elected to put the usage and cost in the month with the most days represented (e.g., if a bill arrive on March 1st for the dates of Jan 21 through Feb 21, we are going to call that the February bill and list the usage and cost as occurring from Feb 1 through Feb 28). The second occurrence of normalization occurs when we compare successive calendar years to the baseline year of this report. To accurately decide if energy usage and cost have increased or decrease we must factor out the rising or falling cost of gas and electric. We must also factor out the added or deducted cost associated with hotter summers and colder winters. This is accomplished by acquiring the degree-days for each year and building a ratio from each year to the base year. Lastly, we must decide what the minimum utility usage of a building is independent of external stimuli (e.g. computers, lights, elevators, etc). After we have that we create what this report refers to as a "Normalized" Utility Usage Master Spreadsheet.

PAYBACK PERIOD - The amount of time required for an asset to generate enough savings to offset the initial outlay for the asset.


PROJECTED SAVINGS - (In a savings-based financing agreement) - Refers to the expected annual dollar value of the reduced energy consumption due to implementing conservation measures.


SAVINGS-BASED FORMULA - The formula (calculation of savings procedure) specified in the contract, which is used to determine savings. Usually involves four steps:

1. Determine actual historical usage and contributing operating conditions to form a base year;
2. Adjust base year (usually annually) actual usage for variations (temperature, occupancy, etc.) to form a baseline;
3. Subtract actual usage from adjusted baseline consumption and, Calculate savings by multiplying the units of energy saved by the current cost per unit.
4. Calculations for electrical demand savings are considered part of the formula but computed separately.

APPENDIX "B" - ACCOMPLISHMENTS

Since the implementation of the Energy Conservation Master Plan in 1998, County Facilities has implemented the following ECM's and continues to look for similar improvements in our buildings:

- **All Buildings:** Life Cycle Cost and Total Cost of Ownership to purchase large mechanical equipment (boilers, chillers, air handlers and cooling towers).
- **All Buildings:** Hamilton County Facilities uses an outside firm, ThermalTech Engineering, to assist in monitoring energy usage monthly. To date this alliance has discovered a \$50,000 billing error at the 800 Broadway building and a \$16,000 electric tariff billing error at an MRDD facility. The alliance also achieved over \$150,000 in IT (Interruptible Tariff) gas savings at the County Courthouse.
- **All Buildings:** Facilities began purchasing deregulated natural gas with the CCAO in October 2003.
- **All Buildings:** County Facilities has accepted deregulated electricity bids twice to try to beat Duke Energy prices (currently no bidders have ever been able to meet County bid requirements and Duke Energy prices).
- **All Buildings:** Implement FT gas rate for all buildings (Duke Energy Resources won bid and later went defunct).
- **230 East Ninth:** Complete building upgrade of all HVAC and electrical systems. Upgrade included new DDC building automation system complete with night setback and 2 hour overrides that turn off unscheduled starts of the heating and cooling system automatically after 2 hours of unoccupied use. Power Logic electrical panels also allow for 2 hour unscheduled use of lighting system before it automatically places the lights back into unoccupied mode. Complete variable-flow air handling system with similar zones for better space control. Varicone air handlers on roof to handle part load conditions within the building
- **237 William Howard Taft:** Bought two new boilers using the Life Cycle Cost procedure.
- **237 William Howard Taft:** Upgraded DDC system with night setback programming.
-  **237 William Howard Taft:** Bought new 400-ton Chiller using the Life Cycle Cost procedure. Interlocked with Building Automation System to provide optimal start/stop and night setback wherever possible in building. Added VFD to primary chilled water pump for better flow control through chiller. Controls contractor added additional programming for better backup control of building while in setback over weekends.
- **800 Broadway:** Turn off Waiting Room AHU fans with timeclocks during unoccupied periods.
- **800 Broadway:** Use night setback to eliminate unnecessary space heating and cooling during unoccupied periods.
- **800 Broadway:** Eliminate unnecessary space cooling during unoccupied periods in the cooling season.
- **800 Broadway:** Use small compressors in the computer room cooling units in lieu of the large building chiller during the heating season.
- **800 Broadway:** Add sewer deduction water meter for cooling tower and boiler make-up water.
- **800 Broadway:** Insulate bare steam and condensate piping and related equipment in various parts of the building.
- **800 Broadway:** Install fluorescent lighting fixtures in place of incandescent units.
- **800 Broadway:** Upgrade secondary CHW pump VFD controls to allow variable speed operation of pump; block all bypass ports of 3-way valves to promote variable flow.
- **800 Broadway:** Install 2 high-efficiency power burner gas water heaters and shutdown large steam boilers all summer long.
- **800 Broadway:** Combine cooling tower operation to take advantage of low speed fan operation.
- **800 Broadway:** Replace the 600-ton Trane chiller with a high efficiency chiller; modify the cooling tower piping and fan controls to allow both towers to serve one chiller at lower fan speed.
- **800:** Upgrade building automation to full DDC system. Utilize scheduling and setbacks. IPAC Phase I. 2000

- **800 Broadway:** Upgrade building automation to full DDC system. Utilize scheduling and setbacks. IPAC Phase II. 2001
- **800 Broadway:** Upgrade building automation to Full DDC system. Utilize scheduling and setbacks. IPAC Phase III. 2002
- **800 Broadway:** Program "Near optimized control of Chiller Plants" into DDC system.
- **800 Broadway:** Replace outdated cooling towers utilized two speed motors with new counterflow cooling towers equipped with VFD's
- **800 Broadway:** Replace old boilers with new higher efficiency boilers
- **Alms & Doepke Building:** Insulate domestic hot water storage tank in penthouse.
- **Alms & Doepke Building:** Insulate bare steam and condensate piping and related equipment in various parts of the building.
- **Alms & Doepke Building:** High efficiency lighting - among the best available at the time
- **Alms & Doepke Building:** Upgraded insulation values in building
- **Alms & Doepke Building:** Reused/recycled content materials - flooring (primarily carpeting), systems furniture, ceiling tile
- **Alms & Doepke Building:** Low VOC materials - paint, furniture, carpet
- **Alms & Doepke Building:** Meets LEED criteria for daylighting/view access to staff
- **Alms & Doepke Building:** High efficiency charcoal filtration system with 100% OA
- **Alms & Doepke Building:** Mechanical system flushout - ran one week at high temperatures to encourage early off-gassing
- **Alms & Doepke Building:** Mechanical system monitored offsite - to see that the building systems continue to operate at best levels
- **Alms & Doepke Building:** Mechanical system computer controls - defaults to appropriate setting when changed manually to inappropriate settings
- **Alms & Doepke Building:** Insulate bare steam and condensate piping and related equipment in various parts of the building.
- **Alms & Doepke Building:** Insulate bare steam and condensate piping and related equipment in various parts of the building.
-  **County Administration Building:** Replace old evaporative tenth floor chiller with a high efficiency air cooled chiller purchased through life cycle cost analysis.
- **County Administration Building:** Insulate bare steam and condensate piping and related equipment in various parts of the building.
- **County Courthouse:** Replace constant volume air handlers with energy efficient VAV units under DDC control.
- **County Courthouse:** Convert to IT Rate transport gas supply from Duke Energy (Commodity purchased through CCAO). \$151,000 Accumulated Savings to date.
- **County Courthouse:** Modify Boiler DDC system to fire boilers more efficiency and prevent moisture carryover during steam production.
- **County Courthouse:** Upgrade boiler plant to utilize separate condensate receiver and deaerator so that boiler stack economizers can be utilized to preheat feedwater for better efficiency at steam production.
- **Justice Center:** Replace cooling towers with new cooling towers equipped with VFD's.
- **Justice Center:** Recommission DDC system to eliminate many obsolete and broken control components. Take better control of schedules and outdoor air control. Repair system back to original specifications.
- **Justice Center:** Install VFD drives on stairwell pressurization fans to reduce amount of conditioned air being exhausted from building.
- **Justice Center:** Replace dual duct boxes in Sheriff's Offices to improve comfort and energy usages.
- **Winton Road Records Center:** Installed Air Handling Unit with no economizers to reduce the humidification costs for archive storage facilities. Calculations showed the use of outdoor air for free cooling would use more energy. Acquired variance from Building Department for installation

APPENDIX "C" - HISTORY

In 1998 County Facilities began a Energy Conservation Master Plan study with a local engineering firm called ThermalTech Engineering. We selected ThermalTech Engineering because of their long-standing tradition of engineering energy management (they have performed over 100 Federal Title III energy audits, have a full understanding of Duke Energy's rate tariff's and engineering design experience to assist with installations).

The first phase of the ECM project identified 24 cost savings opportunities in six separate buildings including ECM's that cost nothing to implement up to a chiller replacement that cost over \$100,000 to install. At the end of the first year the County had invested approximately \$140,000 with a \$48,000 annual energy savings. In particular at the 800 Broadway Building the Cost per Square Foot dropped from \$1.64 to a \$1.43 in 2 years - an amazing accomplishment for the County.

As the project continued, we saw opportunities to acquire natural gas supplies through deregulation. Facilities and ThermalTech prepared bid documents and secured a brokered supplied natural gas commodity from Duke Energy Resources in 1999 but shortly after the program started, Cinergy Resources went defunct and the County was forced back onto CG&E natural gas until the County joined the County Commissioners Association of Ohio (CCAO) program for natural gas. In 1999 the CCAO Service Corporation (CCAOSC) Board of Trustees authorized the establishment of a Natural Gas Program for CCAO members. The 30 counties that signed up for the program save money in two ways: Pre-payment (1 Bcf of gas was purchased from CMS, a Michigan corporation, for the next ten years. Members save \$.07 per Mcf below the FERC index.) Aggregation (buying as a group) CCAOSC Natural Gas Program member counties enrolled in the program include: Ashland, Ashtabula, Athens, Carroll, Champaign, Columbiana, Cuyahoga, Delaware, Erie, Franklin, Hamilton, Hancock, Huron, Knox, Lake, Lawrence, Lorain, Lucas, Marion, Medina, Montgomery, Morrow, Portage, Putnam, Ross, Sandusky, Seneca, Union, Van Wert, and Wyandot. Seasongood & Mayer designed the program. Taxable bonds were issued by Hamilton County on October 31, 2000 to assist the CCAO Service Corporation and 30 CCAOSC Natural Gas Program member counties. The bonds totaled \$29,890,000. The program began November 1, 2000. The Huntington Bank is the trustee for the program. Exelon Energy manages the gas portion of the program. CCAOSC Natural Gas Program member counties saved \$3.4 million over the past four program years.

County Facilities has also attempted to buy electricity on the deregulated market and has twice produced bid packages for this purpose. Jim Clarkson of Resource Management, Inc along with ThermalTech Engineering prepared the bid packets. Bids were opened on two occasions but in one case the prices were not low enough to project any savings to the County and ThermalTech recommended not accepting any bid. The second bid was not executable due to contract and pricing restrictions by the marketers - basically a contract could not be agreed upon fast enough to keep the bid prices on bid day intact (the market is very volatile).


County Facilities has attempted to hire a full time energy manager on three occasions but has not been able to come to terms with a qualified applicant to date. In lieu of a full time employee, ThermalTech Engineering has provided monthly review and reconciliation of utility bills and assisted in preparing the data presented in this report. The current program analyzes trends and reports monthly on County utility usage.

Since the large portion of utility usage is directly attributable to the major downtown buildings and the 237 William Howard Taft building, the charts in this report reflect their usage. In

Hamilton County

actually, Facilities manages over 3.2 million square feet of building space and includes the following facilities within the County jurisdiction: 2020 Juvenile, 230 East Ninth, 237 William Howard Taft, 250 William Howard Taft, 630 Main Street, 800 Broadway, Communication Center, County Courthouse, Administration Building, Coroner's Office, Engineer's Garages, Fairgrounds, Hillcrest Training School, Jobs & Family Services, Justice Center, Memorial Hall, Millcreek, MRDD, Queensgate, River City, Sheriff Patrol Headquarters, and Winton Road Records Center. We do not provide all services in all of these buildings as some of them have their own management, pay their own utility bills, or perform their own maintenance but for the most part we have something invested in each of these facilities.

Over the years in this program, we have applied for numerous awards and have won a few significant awards that honor our efforts. Here is a list of what we have accomplished to date:

- 2004 Governor's Award of Energy Excellence - First Place Finisher
- 2005 Governor's Award for Energy Excellence - Second Place Finisher
-  2006 Governor's Award for Energy Excellence - Honorable Mention
- 2004 Alliance to Save Energy - Participant
- 2001 NACO Award for Life Cycle Cost Purchasing - Winner
- 2002 Rebuild America Energy Grant Recipient - Winner
- TOBY (The Office Building of the Year) Awards - 230 East Ninth, Courthouse, 800 Broadway - Winner
- County IPAC Grant Recipient - Winner