

EQUIPMENT ENERGY CONSUMPTION

By HED

Alternative: 1 UIUC Chem Annex Renovation

----- Monthly Consumption -----

Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Lights													
Electric (kWh)	33,028.4	29,832.1	33,028.4	31,962.9	33,028.4	31,962.9	33,028.4	33,028.4	31,962.9	33,028.4	31,962.9	33,028.4	388,882.5
Peak (kW)	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4
Misc. Ld													
Electric (kWh)	38,693.8	34,949.3	38,693.8	37,445.6	38,693.8	37,445.6	38,693.8	38,693.8	37,445.6	38,693.8	37,445.6	38,693.8	455,588.5
Peak (kW)	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0
Cooling Coil Condensate													
Recoverable Water (1000gal)	0.5	1.2	0.6	10.1	16.7	64.0	72.5	77.8	34.8	8.4	2.4	0.1	289.2
Peak (1000gal/Hr)	0.0	0.1	0.0	0.1	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.0	0.3
Bsu 1: Elevators													
Electric (kWh)	4,404.5	3,978.2	4,404.5	4,262.4	4,404.5	4,262.4	4,404.5	4,404.5	4,262.4	4,404.5	4,262.4	4,404.5	51,859.2
Peak (kW)	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
Bsu 2: Process Loads													
Electric (kWh)	51,227.8	46,270.2	51,227.8	49,575.2	51,227.8	49,575.2	51,227.8	51,227.8	49,575.2	51,227.8	49,575.2	51,227.8	603,165.5
Peak (kW)	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9
Bsu 3: Domestic Water Circ Pump													
Electric (kWh)	68.5	61.8	68.5	66.2	68.5	66.2	68.5	68.5	66.2	68.5	66.2	68.5	805.9
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bsu 4: Domestic Hot Water Load													
Proc. Hot Water (therms)	652.3	590.2	714.4	621.3	683.4	231.0	210.0	241.5	621.3	683.4	652.3	621.3	6,522.3
Peak (therms/Hr)	4.4	4.4	4.4	4.4	4.4	1.3	1.3	1.3	4.4	4.4	4.4	4.4	4.4
Cpl 1: Purchased Chilled Water [Sum of dsn coil capacities=300.1 tons]													
PCW [Cig Nominal Capacity/F.L.Rate=300.1 tons / 36.01 Therms] (Cooling Equipment)													
Purc. Chill Water (therms)	102.3	342.0	875.1	2,725.0	4,835.4	12,061.5	14,133.0	13,703.2	7,645.8	2,622.7	645.8	83.9	59,775.5
Peak (therms/Hr)	8.6	11.9	11.2	20.7	24.6	32.9	35.4	33.9	32.2	20.5	14.8	5.5	35.4
Hpl 1: Purchased Steam [Sum of dsn coil capacities=2,376 mbh]													
Purchased STM [Nominal Capacity/F.L.Rate=2,376 mbh / 23.76 Therms] (Heating Equipment)													
Purchased Steam (therms)	4,251.0	3,307.3	2,335.5	1,659.3	1,626.6	1,033.4	950.8	1,036.9	1,504.5	1,827.8	1,965.5	3,632.3	25,130.8
Peak (therms/Hr)	17.8	19.1	11.1	6.5	6.4	3.3	3.3	3.1	6.4	6.8	7.1	12.8	19.1

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Equipment - Utility	----- Monthly Consumption -----												Total
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Hpl 1: Purchased Steam [Sum of dsn coil capacities=2,376 mbh]													
Heating water circ pump (Misc Accessory Equipment)													
Electric (kWh)	5,548.0	5,011.1	5,548.0	5,369.1	5,548.0	5,369.1	5,518.2	5,548.0	5,369.1	5,548.0	5,369.1	5,548.0	65,293.8
Peak (kW)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Eq5061 - Condensate return pump (Misc Accessory Equipment)													
Recoverable Water (1000gal)	83.1	75.1	83.1	80.4	83.1	80.4	82.7	83.1	80.4	83.1	80.4	83.1	978.0
Peak (1000gal/Hr)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sys 1: AHU-1 Lab Classrooms													
AF Centrifugal var freq drv [DsnAirflow/F.L.Rate=35,000 cfm / 40.57 kW] (Main Clg Fan)													
Electric (kWh)	8,683.8	7,904.8	8,958.0	8,661.1	9,214.5	9,356.7	9,955.7	9,743.4	8,941.3	8,992.0	8,586.3	8,646.8	107,644.3
Peak (kW)	16.5	16.5	16.5	16.5	16.5	16.8	21.0	20.2	16.7	16.5	16.5	16.5	21.0
AF Centrifugal var freq drv [DsnAirflow/F.L.Rate=35,000 cfm / 24.38 kW] (System Exhaust Fan)													
Electric (kWh)	12.2	20.0	35.9	48.7	57.2	89.1	135.7	96.5	59.7	45.0	37.9	14.9	652.7
Peak (kW)	0.2	0.2	0.2	0.3	0.4	0.4	0.9	1.1	0.4	0.2	0.2	0.2	1.1
Sys 2: AHU-2 Support Space													
AF Centrifugal var freq drv [DsnAirflow/F.L.Rate=10,000 cfm / 9.92 kW] (Main Clg Fan)													
Electric (kWh)	3,649.5	3,413.7	4,164.0	4,283.1	4,833.4	5,382.1	5,940.0	5,542.3	4,904.8	4,386.1	3,957.7	3,717.0	54,173.6
Peak (kW)	5.8	6.5	7.4	7.2	8.0	9.6	10.0	9.3	9.4	8.0	6.4	6.1	10.0
AF Centrifugal var freq drv [DsnAirflow/F.L.Rate=10,000 cfm / 2.61 kW] (Main Return Fan)													
Electric (kWh)	637.5	593.5	716.0	730.3	855.1	1,002.0	1,118.2	1,036.9	880.2	758.7	665.2	650.0	9,643.7
Peak (kW)	1.1	1.2	1.4	1.3	1.5	1.8	2.0	1.8	1.8	1.5	1.2	1.1	2.0
Sys 3: AHU-3 Majors													
AF Centrifugal var freq drv [DsnAirflow/F.L.Rate=8,460 cfm / 9.47 kW] (Main Clg Fan)													
Electric (kWh)	3,375.3	3,049.7	3,439.0	3,256.2	3,407.2	3,319.8	3,348.6	3,439.0	3,256.2	3,407.1	3,288.0	3,343.5	39,929.5
Peak (kW)	7.3	7.3	7.3	7.3	7.3	7.3	7.5	7.3	7.3	7.3	7.3	7.3	7.5
AF Centrifugal var freq drv [DsnAirflow/F.L.Rate=6,000 cfm / 5.00 kW] (System Exhaust Fan)													
Electric (kWh)	201.7	182.4	215.3	193.0	208.5	206.6	195.7	215.3	193.0	208.5	199.8	194.9	2,414.9
Peak (kW)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Sys 4: AHU-4 Lecture Hall													

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Sys 4: AHU-4 Lecture Hall													
AF Centrifugal var freq drv [DsnAirflow/F.L.Rate=2,300 cfm / 1.94 kW] (Main Clg Fan)													
Electric (kWh)	387.0	389.5	527.4	581.8	683.2	802.1	909.0	838.5	721.8	590.9	500.9	403.2	7,335.2
Peak (kW)	0.8	0.9	1.0	1.0	1.1	1.4	1.5	1.4	1.4	1.0	0.9	0.7	1.5
AF Centrifugal var freq drv [DsnAirflow/F.L.Rate=2,300 cfm / 0.60 kW] (Main Return Fan)													
Electric (kWh)	119.1	119.8	162.3	179.0	210.2	246.8	279.7	258.0	222.1	181.8	154.1	124.1	2,257.0
Peak (kW)	0.2	0.3	0.3	0.3	0.3	0.4	0.5	0.4	0.4	0.3	0.3	0.2	0.5
Sys 5: AHU-5 Expansion													
AF Centrifugal var freq drv [DsnAirflow/F.L.Rate=7,000 cfm / 5.74 kW] (Main Clg Fan)													
Electric (kWh)	1,647.5	1,550.1	1,986.2	2,083.5	2,422.7	2,851.6	3,245.2	2,936.0	2,563.4	2,123.7	1,800.9	1,689.6	26,900.3
Peak (kW)	2.8	3.7	5.0	4.8	5.1	5.8	5.8	5.8	5.8	5.3	3.9	3.6	5.8
AF Centrifugal var freq drv [DsnAirflow/F.L.Rate=7,000 cfm / 4.18 kW] (Main Return Fan)													
Electric (kWh)	1,198.2	1,127.4	1,444.5	1,515.3	1,761.9	2,073.9	2,360.2	2,135.3	1,864.3	1,544.5	1,309.7	1,228.8	19,563.9
Peak (kW)	2.0	2.7	3.6	3.5	3.7	4.2	4.2	4.2	4.2	3.9	2.8	2.6	4.2
Sys 6: CUH-1													
AF Centrifugal const vol [DsnAirflow/F.L.Rate=61.41 cfm / 0.05 kW] (Main Htg Fan)													
Electric (kWh)	38.8	35.1	38.8	37.6	38.8	37.6	38.8	38.8	37.6	38.8	37.6	38.8	457.3
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sys 7: CUH-3													
AF Centrifugal const vol [DsnAirflow/F.L.Rate=106.6 cfm / 0.05 kW] (Main Htg Fan)													
Electric (kWh)	38.8	35.1	38.8	37.6	38.8	37.6	38.8	38.8	37.6	38.8	37.6	38.8	457.3
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sys 8: CUH-2													
AF Centrifugal const vol [DsnAirflow/F.L.Rate=80.19 cfm / 0.05 kW] (Main Htg Fan)													
Electric (kWh)	38.8	35.1	38.8	37.6	38.8	37.6	38.8	38.8	37.6	38.8	37.6	38.8	457.3
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

EQUIPMENT ENERGY CONSUMPTION

By HED

Alternative: 2

Equipment - Utility	----- Monthly Consumption -----												Total
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
Lights													
Electric (kWh)	33,978.5	30,690.2	33,978.5	32,882.4	33,978.5	32,882.4	33,978.5	33,978.5	32,882.4	33,978.5	32,882.4	33,978.5	400,069.1
Peak (kW)	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7
Misc. Ld													
Electric (kWh)	41,622.2	37,594.1	41,622.2	40,279.5	41,622.2	40,279.5	41,622.2	41,622.2	40,279.5	41,622.2	40,279.5	41,622.2	490,067.3
Peak (kW)	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9
Cooling Coil Condensate													
Recoverable Water (1000gal)	0.6	1.4	0.4	12.1	19.7	82.0	93.7	101.0	44.8	9.4	2.5	0.1	367.6
Peak (1000gal/Hr)	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.3	0.2	0.1	0.0	0.4
Bsu 1: Elevators													
Electric (kWh)	4,404.5	3,978.2	4,404.5	4,262.4	4,404.5	4,262.4	4,404.5	4,404.5	4,262.4	4,404.5	4,262.4	4,404.5	51,859.2
Peak (kW)	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
Bsu 2: Process Loads													
Electric (kWh)	51,227.8	46,270.2	51,227.8	49,575.2	51,227.8	49,575.2	51,227.8	51,227.8	49,575.2	51,227.8	49,575.2	51,227.8	603,165.5
Peak (kW)	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9
Bsu 3: Domestic Water Circ Pump													
Electric (kWh)	68.5	61.8	68.5	66.2	68.5	66.2	68.5	68.5	66.2	68.5	66.2	68.5	805.9
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bsu 4: Domestic Hot Water Load													
Proc. Hot Water (therms)	652.3	590.2	714.4	621.3	683.4	231.0	210.0	241.5	621.3	683.4	652.3	621.3	6,522.3
Peak (therms/Hr)	4.4	4.4	4.4	4.4	4.4	1.3	1.3	1.3	4.4	4.4	4.4	4.4	4.4
Cpl 1: Purchased Chilled Water [Sum of dsn coil capacities=370.3 tons]													
PCW [Clg Nominal Capacity/F.L.Rate=370.3 tons / 44.43 Therms] (Cooling Equipment)													
Purc. Chill Water (therms)	121.8	385.9	994.0	3,164.5	5,637.5	15,175.9	18,133.5	17,273.4	9,645.7	2,978.8	657.6	79.5	74,248.1
Peak (therms/Hr)	11.0	16.0	14.3	25.9	31.3	44.3	44.4	44.4	44.4	25.4	17.8	6.1	44.4
Hpl 1: Purchased Steam [Sum of dsn coil capacities=5,066 mbh]													
Purchased STM [Nominal Capacity/F.L.Rate=5,066 mbh / 50.67 Therms] (Heating Equipment)													
Purchased Steam (therms)	12,253.4	9,208.5	5,997.0	3,095.7	2,457.0	1,547.1	1,410.3	1,584.6	2,314.3	3,674.3	4,964.3	10,784.3	59,290.8
Peak (therms/Hr)	41.8	45.8	26.5	13.2	10.5	4.7	4.4	4.6	10.6	16.5	18.6	33.4	45.8

EQUIPMENT ENERGY CONSUMPTION

By HED

Alternative: 2

Equipment - Utility	----- Monthly Consumption -----												Total
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
Hpl 1: Purchased Steam [Sum of dsn coil capacities=5,066 mbh]													
Heating water circ pump (Misc Accessory Equipment)													
Electric (kWh)	7,162.6	6,469.4	7,162.6	6,931.5	7,162.6	6,931.5	7,162.6	7,162.6	6,931.5	7,162.6	6,931.5	7,162.6	84,333.3
Peak (kW)	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
Eq5061 - Condensate return pump (Misc Accessory Equipment)													
Recoverable Water (1000gal)	177.2	160.0	177.2	171.5	177.2	171.5	177.2	177.2	171.5	177.2	171.5	177.2	2,086.1
Peak (1000gal/Hr)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Sys 1: AHU-1_Lab Classrooms													
90.1-04 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=33,312 cfm / 23.36 kW (**Orig F.L.Rate=32.58 kW)] (Main Clg Fan)													
Electric (kWh)	11,985.3	10,826.5	12,050.7	11,588.1	12,024.9	11,741.3	12,100.4	12,120.3	11,612.4	12,018.0	11,620.9	11,952.6	141,641.5
Peak (kW)	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4
90.1-04 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=33,312 cfm / 23.36 kW (**Orig F.L.Rate=32.58 kW)] (System Exhaust Fan)													
Electric (kWh)	1.9	1.7	1.9	1.9	1.9	1.9	2.2	2.0	1.9	1.9	1.9	1.9	22.9
Peak (kW)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sys 2: AHU-2_Support Space													
90.1-04 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=10,215 cfm / 14.74 kW (**Orig F.L.Rate=9.99 kW)] (Main Clg Fan)													
Electric (kWh)	5,865.9	5,358.2	6,165.5	6,163.3	6,901.7	7,778.4	8,587.2	7,960.6	7,015.5	6,325.4	5,872.0	5,898.5	79,892.1
Peak (kW)	8.2	9.6	11.2	11.0	13.1	14.7	14.7	14.6	14.7	12.5	9.3	8.3	14.7
Sys 3: AHU-3_Majors													
90.1-04 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=9,400 cfm / 6.78 kW (**Orig F.L.Rate=9.19 kW)] (Main Clg Fan)													
Electric (kWh)	3,478.6	3,142.3	3,497.6	3,363.4	3,488.1	3,382.3	3,469.1	3,497.6	3,363.4	3,488.1	3,372.9	3,469.1	41,012.6
Peak (kW)	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
Sys 4: AHU-4_Lecture Hall													
90.1-04 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=2,072 cfm / 3.11 kW (**Orig F.L.Rate=2.03 kW)] (Main Clg Fan)													
Electric (kWh)	823.8	866.6	1,247.3	1,404.0	1,649.7	1,900.0	2,110.9	1,986.4	1,726.3	1,421.5	1,189.7	886.4	17,212.5
Peak (kW)	1.9	2.2	2.5	2.4	2.6	3.1	3.1	3.1	3.1	2.5	2.1	1.8	3.1
Sys 5: AHU-5_Expansion													

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By HED

Alternative: 2

Equipment - Utility	----- Monthly Consumption -----												Total
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Sys 5: AHU-5 Expansion													
90.1-04 Min VAV AF Centrifugal [DsnAirflow/F.L.Rate=6,063 cfm / 8.75 kW (**Orig F.L.Rate=5.93 kW)] (Main Clg Fan)													
Electric (kWh)	2,651.3	2,452.1	3,005.4	3,027.7	3,411.2	3,918.7	4,410.7	4,046.4	3,613.8	3,126.9	2,763.5	2,688.0	39,115.9
Peak (kW)	4.3	4.9	7.6	7.3	7.7	8.8	8.8	8.6	8.8	8.4	6.5	4.7	8.8
Sys 6: CUH-1													
Sys 7: CUH-3													
Sys 8: CUH-2													