

**DATA VISUALIZATION FOR QUALITY-CHECK PURPOSES  
OF MONITORED ELECTRICITY CONSUMPTION  
IN ALL OFFICE BUILDINGS IN THE ESL DATABASE**

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**March 2000**

## EXECUTIVE SUMMARY

This report comprises an effort to visualize the monitored electricity consumption in all office buildings (not including the office buildings comprising other functions as classrooms and laboratories, for instance) in the ESL database. This data visualization, basically long-term and short-term time series plots serves as a preliminary quality check of the data available.

We identified 44 Office buildings in the database at the Energy Systems Laboratory. Other office buildings comprising classrooms and laboratories - typical case of educational buildings, for instance the University of Texas - Austin, and TAMU buildings) - are not included in this report. The report is organized in a specific format; for each site, we included:

1. the contact name for the site, the facility's name, square footage, and starting date of the monitoring (information obtained with the "listsite" commend in the database
2. the site description that is typically included in the Annual Energy Consumption Reports (AECR) and the Monthly Energy Consumption Reports (MECR).
3. the cover page of each site in the MECR showing savings and comments
4. a sample of the monthly energy consumption for each site (from the MECR), including time series, scatter plots, and 3-D plots of the energy use, which give a preliminary insight into the energy performance of each building
5. long-term time series (the whole available data) of the Whole Building Electricity (WBE) consumption, and the Motor Control Center (MCC) consumption whenever available
6. short-term time series (one year) of the Whole Building Electricity (WBE) consumption, and the Motor Control Center (MCC) consumption whenever available. The one-year hourly time series, is usually sufficient for most of the application (baselining, saving calculation, establishment of EUI's, development of Typical Load Shapes, etc.).

Moreover, most of the buildings monitored by the ESL include both the whole-building electricity (WBE) consumption, and the motor control center (MCC) consumption. A common practice followed to obtain the "Lighting + Equipment" consumption, is simply subtracting the MCC from the WBE consumption. However, in some buildings the "Lighting" is monitored separately (John H. Reagan Bldg., Austin, for instance).

Finally, all buildings (offices, classrooms, dormitories, hospitals, schools, etc..) monitored at the ESL are summarized in a table included in the appendix.



## **ACKNOWLEDGMENT**

This work was performed as a step in the ASHRAE RP-1093 research project "Compilation of Diversity Factors and Schedules for Energy and Cooling Load Calculations" currently in progress at the Energy Systems Laboratory (ESL), and funded by American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE).

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## 1. INTRODUCTION

This report comprises an effort to visualize the monitored electricity consumption in all office buildings (not including the office buildings comprising other functions as classrooms and laboratories, for instance) in the ESL database. This data visualization, basically long-term and short-term time series plots serves as a preliminary quality check of the data available. A preliminary inspection of the data was performed, by viewing the channels to provide a clear identification of creep, missing data gaps, turned-off periods, and sudden big changes that suggest changes in the building operation or an addition to the building.

A total of 44 "pure" Office buildings in the database at the Energy Systems Laboratory, was identified. Other office buildings comprising classrooms and laboratories - typical case of educational buildings, for instance the University of Texas - Austin, and TAMU buildings) - are not included in this report. The report is organized in a specific format; for each site, we included: (1) the contact name for the site, the facility's name, square footage, the starting date of the monitoring (information obtained with the "listsite" commend in the database, (2) the site description that is typically included in the Annual Energy Consumption Reports (AECR) and the Monthly Energy Consumption Reports (MECR), (3) the cover page of each site in the MECR showing savings and comments, (4) a sample of the monthly energy consumption for each site (from the MECR), including time series, scatter plots, and 3-D plots of the energy use, which give a preliminary insight into the energy performance of each building, (5) long-term time series (the whole available data) of the Whole Building Electricity (WBE) consumption, and the Motor Control Center (MCC) consumption whenever available, and (6) short-term time series (one year) of the Whole Building Electricity (WBE) consumption, and the Motor Control Center (MCC) consumption whenever available. The one-year hourly time series, is usually sufficient for most of the application (baselining, saving calculation, establishment of EUI's, development of Typical Load Shapes, etc.).

Most of the buildings monitored by the ESL include both the whole-building electricity (WBE) consumption, and the motor control center (MCC) consumption. A common practice followed to obtain the "Lighting + Equipment" consumption, is simply subtracting the MCC from the WBE consumption. However, in some buildings the "Lighting" is monitored separately (John H. Reagan Bldg., Austin, for instance).

This preliminary effort showed the following:

1. more than half the monitored office buildings are located in Texas (mainly Dallas, and Austin); some are in Minnesota
2. most of the data is of hourly format, and few have a 15-minute format
3. 25% of these buildings have the MCC (or Lighting) monitored; all of these buildings have the WBE monitored.
4. All of these buildings have a pre-retrofit, retrofit construction, and post-retrofit periods of monitored data
5. all of these buildings fall within the Large and Medium Office Building category (based on the CBECS classification: Large >100,000ft<sup>2</sup>, and Medium >10,000 and <100,000ft<sup>2</sup>)

6. the WBE consumption in 50% percent of the cases is weather-dependent (the building has its own chiller contributing in its total electricity consumption). In these buildings, whenever the MCC is not monitored, the lighting and equipment consumption cannot be deducted easily. It can be only estimated from the installed capacity multiplied by the diversity factors from the building operation schedules.
7. the majority of the buildings (77%) have a good data quality.

## 2. TABLE SUMMARIZING THE OFFICE BUILDINGS IN THE ESL DATABASE

Table 1, below, summarizes the office buildings monitored at ESL, in terms of Logger ID Number, Building Name, Location, Start Date and End Date of the displayed Short-term electricity consumption time series, Retrofit period, square footage, Whole Building Electricity and lighting and receptacles consumption, data source, data format, and data quality.

No.	Category	Logger ID	Building	Location	Start Date	End Date	Retrofit Date	Building Area (sqft)	WBE	L&R	Source	Data Format	Cost	Data Quality
1		146	Government Center	Dallas, TX	1/1/95	12/31/95	6/30/92 - N/A	473,800	WD	MCC	LoanSTAR			Good
2		200	Capitol Building	AUSTIN	7/1/97	7/1/98	N/A	282,499	NWD					OK
3		201	Sam Houston Building	AUSTIN	1/1/93	1/1/94	2/1/94 - N/A	182,961	NWD					OK
4		203	John H. Reagan	AUSTIN	1/1/97	12/31/97	4/1/92 - 8/1/92	169,746	WD	LIGHT				Good
5		205	James E. Rudder	AUSTIN	1/1/94	12/31/94	4/1/92 - 8/1/92	80,000	WD	LITEQ				OK
6		206	Insurance Building	AUSTIN	1/1/96	12/31/96	4/1/92 - 9/1/92	102,000	NWD	LITEQ				Good
7		207	Insurance Annex	AUSTIN	1/1/93	12/31/93	4/1/94 - N/A	62,000	WD	MCC				Good
8		208	Archives Building	AUSTIN	1/1/97	12/31/97	4/1/92 - 8/1/92	120,000	NWD	LITEQ				Good
9		209	W.B. Travis	AUSTIN	1/1/97	12/31/97	6/1/92 - 8/1/93	491,000	NWD	LITEQ				Good
10		210	L.B. Johnson	AUSTIN	1/1/97	12/31/97	1/1/94 - 5/1/94	308,080	NWD	LIGHT, LITEQ				Good
11		211	J.H. Winters	AUSTIN	1/1/94	12/31/94	6/1/91 - 9/1/91	503,000	WD					Good
12		220	Treasury Building	AUSTIN	1/1/96	12/31/96	8/14/95 - N/A	203,672	WD					Good
13		221	William P. Hobby Building	AUSTIN	1/1/96	12/31/96	9/8/95 - N/A	546,749	WD		LoanStar			Good
14		226	Central Services Building	AUSTIN	1/1/96	12/31/96	2/1/94 - N/A	97,030	NWD		LoanStar			Good
15		227	Supreme Court Building	AUSTIN	1/1/98	12/31/98	2/1/94 - N/A	72,737	NWD		LoanStar			Good
16		228	Price Daniels Building	AUSTIN	1/1/98	12/31/98	2/1/94 - N/A	151,620	NWD		LoanStar			Good
17		229	Tom C. Clark Building	AUSTIN	1/1/98	12/31/98	2/1/94 - N/A	121,654	NWD		LoanStar			Good
18		236	Brown Heatly Building	AUSTIN	1/1/98	12/31/98	2/1/94 - N/A	262,905	WD		LoanStar			Good
19		237	W. P. Clements Building	AUSTIN	1/1/96	12/31/96	2/1/94 - N/A	484,077	WD		LoanStar			Good
20		241	Municipal Court Building	AUSTIN	1/1/98	12/31/98	N/A	44,155	WD		LoanStar			Good
21		529	State Headquarters	TAMU, CS, TX	1/1/97	12/31/97	4/26/96 - N/A	123,961	WD		TAMU Campus	15min		Good
22		703	Administration Bldg.	Capitol Complex	1/1/98	12/31/98	9/8/93 - 6/16/94	80,000	WD		Minnesota	15min		Good
23		704	Judicial Building	Capitol Complex	1/1/98	12/31/98	7/22/94 - 6/23/95	200,829	NWD		Minnesota	15min		Good
24		705	Health Building	Capitol Complex	1/1/97	12/31/97	7/22/94 - 6/23/95	197,260	WD		Minnesota	15min		Good
25		706	Ford Building	Capitol Complex	1/1/98	12/31/98	9/2/94 - 4/5/95	57,047	NWD		Minnesota	15min		Good
26		707	State Office Bldg.	Capitol Complex	1/1/98	12/31/98	6/13/94 - 12/28/94	281,850	NWD		Minnesota	15min		Good
27		708	Dept. of Transportation Bldg.	Capitol Complex	-	-	6/13/94 - 12/28/94	378,100	NWD		Minnesota	15min		Bad
28		709	Veterans Building	Capitol Complex	3/1/96	3/1/97	9/24/94 - 4/5/95	87,664	NWD		Minnesota	15min		Good
29		710	Capitol Building	Capitol Complex	1/1/98	12/31/98	7/1/94 - 12/28/94	366,805	NWD		Minnesota	15min		Good
30		711	Centennial Building	Capitol Complex	1/1/98	12/31/98	5/6/94 - 9/9/94	317,286	NWD		Minnesota	15min		Good
31		712	Criminal Apprehension Bldg.	Capitol Complex	1/1/98	12/31/98	7/1/94 - 6/23/95	77,630	NWD		Minnesota	15min		Good
32		713	Capitol Square Building	Capitol Complex	1/1/97	12/31/97	10/7/94 - 6/23/95	225,479	WD		Minnesota	15min		Good
33		904	USDOE Forrestal Building	Washington D.C	1/1/94	12/31/94	N/A	1,200,000	NWD					Good
34		951	Administration (and JFK)	Dallas County	1/1/98	12/31/98	N/A	42,385			ESL			OK
35		952	Records Complex	Dallas County	1/1/98	12/31/98	N/A	323,232			ESL			OK
36		963	Butte Courthouse Complex	Butte, MT	7/1/98	7/1/99	N/A	100,000			ESL			OK
37		974	Brazos County Courthouse Annex	Bryan, TX	7/1/98	7/1/99	N/A	20,288	WD		Rebuild America			Good
38		975	Brazos County Courthouse	Bryan, TX	7/1/98	7/1/99	N/A	100,000	WD	MCC	Rebuild America			Good
39		980	St Paul Place	Dallas, TX	1/1/98	12/31/98	N/A	100,000	WD		EnerShop			Good
40		981	Harwood Center	Dallas, TX	1/1/98	12/31/98	N/A	750,000	WD		EnerShop			Good
41		982	9700 Richmond	Dallas, TX	3/1/98	3/1/99	N/A	89,000	WD		EnerShop			Good
42		983	3300 Gessner	Dallas, TX	-	-	N/A	65,500	WD		EnerShop			Bad
43		984	McKinney Place	Dallas, TX	1/1/98	12/31/98	N/A	100,000		MCC	EnerShop			Bad (MCC)
44		985	Pittman Atrium	Dallas, TX	10/1/98	10/1/99	N/A	100,000	WD	MCC	EnerShop			OK

**Table 1. All Office Buildings monitored at ESL - not including the office buildings housing other functions such as laboratories and classrooms.**

lstarxp% listsite 146

**Site: 146            Government Center (George Allen Bldg.) (DCG)**

---

Mecr id:

Start date:        06/30/1992

Energy Type:      default

Construction

    begin:        06/30/1992            end: 06/30/1992

Area:             473800.00

Facility:         Dallas County

Contact Info:    Mr. John Nolan  
                  Energy Manager  
                  Dallas County  
                  411 Elm Street  
                  Dallas TX 75202  
                  (214) 653--6724

## DALLAS COUNTY GOVERNMENT CENTER

**Building Envelope:**

- 473,800 sq.ft.
- fourteen story structure constructed in 1966 with two stories below grade
- steel and concrete structure with marble fascia
- windows: N/A
- roof: built-up flat

**Building Schedule:**

- the building houses County Clerk offices, District Courts, District Attorney Staff offices and County jails
- jail (top seven floors): 24 hours per day, 7 days a week
- rest of the facility: 7:00 am to 6:00 pm Monday through Friday

**Building HVAC and Equipment:**

- 2 electric centrifugal chillers (750 ton each)
- 3 boilers (2 - 21,000 MMBTU/hr, 500 hp and 1 - 4200 MMBTU/hr, 100 hp)
- 1 condenser water pump (75 hp)
- 3 chilled water pumps (75 hp each)
- 1 secondary chilled water pump (75 hp)
- 2 drinking water chiller (20 hp each)
- 2 water chiller circulating pump (0.75 hp each)
- 16 double duct and single zone constant volume AHUs (AHU 1 to AHU 162, 15 hp, 10 hp, 50 hp, 40 hp, 75 hp, 40 hp, 75 hp, 40 hp, 60 hp, 15 hp, 60 hp, 15 hp, 40 hp, 40 hp, 75 hp, and 75 hp)
- 5 return air fans (2-15 hp, 1-75 hp, 1-5 hp and 1-2 hp)
- the boiler provides the steam for the heating units, as all of the domestic hot water. Steam is also provided to kitchens
- double duct units serve the lower floor, and are turned off on nights and weekends
- single zone units with terminal reheat which serve the jail area are in operation at all times

**HVAC Schedule:**

- double duct units - 14 hrs/day (6:00 am to 8:00 pm), 5 days/week
- single zone units - 24 hrs/day, 7 days/week

**Lighting:**

- mixture of 34-W fluorescent (5422 lamps) and incandescent lamps

**Proposed Maintenance and Operation Measures:**

- none

**Proposed Retrofits:**

- install reflectors and delamp fixtures
- install motion sensors to control lighting
- chiller replacement
- Energy Management System upgrade
- install VFDs on chilled water pump
- replace/rebuild faulty steam traps
- steam generation modification
- time clock control of chilled drinking
- replace fluorescent fixture at the plaza
- VAV conversion
- total loan amount for the county was \$1,050,050 with an estimated annual savings of \$237,989

Government Center (George Allen Bldg.) - Dallas County



**Status of Retrofits:**

- steam trap replacement completed in December 1991
- steam generation modification which included installation of a turn-down boiler in one of the 500 hp boiler was completed in December 1992
- chiller replacement. Installation of VFDs on chilled water pumps was completed in May 1994. Fluorescent fixture replacement is in construction stage
- all the other retrofits (energy management upgrade and VAV conversion) were cancelled

**Other Information & Comments:**

- electricity is supplied by Texas Utilities Electric Company and natural gas by Lone Star Gas
- electric meter is located in the basement of the building and the natural gas meter is in the basement parking lot
- the W/ft<sup>2</sup> scale on the electricity consumption graph (fourth page) is only valid for the total electricity consumption

Government Center (George Allen Bldg.)  
 Dallas County  
 473,800 square feet

Site Contact  
 Mr. John Nolan  
 Energy Manager  
 Dallas County  
 411 Elm Street  
 Dallas TX 75202  
 (214) 653-6724

ESL Metering Contact  
 Sam Farouz  
 053 WERC  
 Texas A&M University  
 College Station, TX 77843-3123  
 (409) 845-9213

Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	990898 kWh	100	\$0.02854	\$28280
Peak 60 Minute Demand	2029 kW	100	\$10.78	\$21869
Chilled Water	427.9 MMBtu	100	\$3.360	\$1438
Natural Gas	2156.2 MMBtu	100	\$4.090	\$8819

Peak 60 minute demand was recorded at 1600 Friday 04/02/99.  
 There were 720 hours in this month.

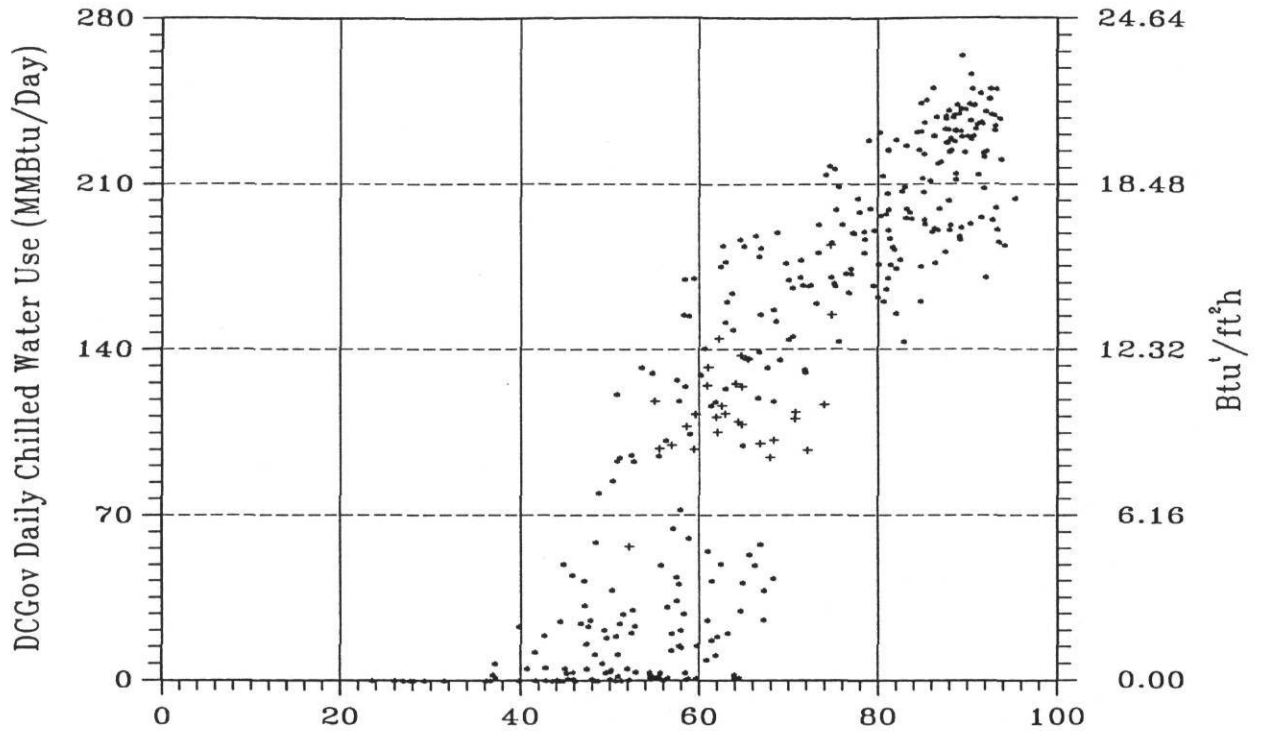
Monthly Retrofit Savings

	Measured Savings		Audit Estimated Savings	
Electricity (kWh)	-24798	\$-708	134947	\$3851
Cond./H.W./N.G. (MMBtu)	425	\$1738	830	\$3395
Monthly Total		\$1030		\$7246
Total to Date*	(82 months)	\$201068	(82 months)	\$502137

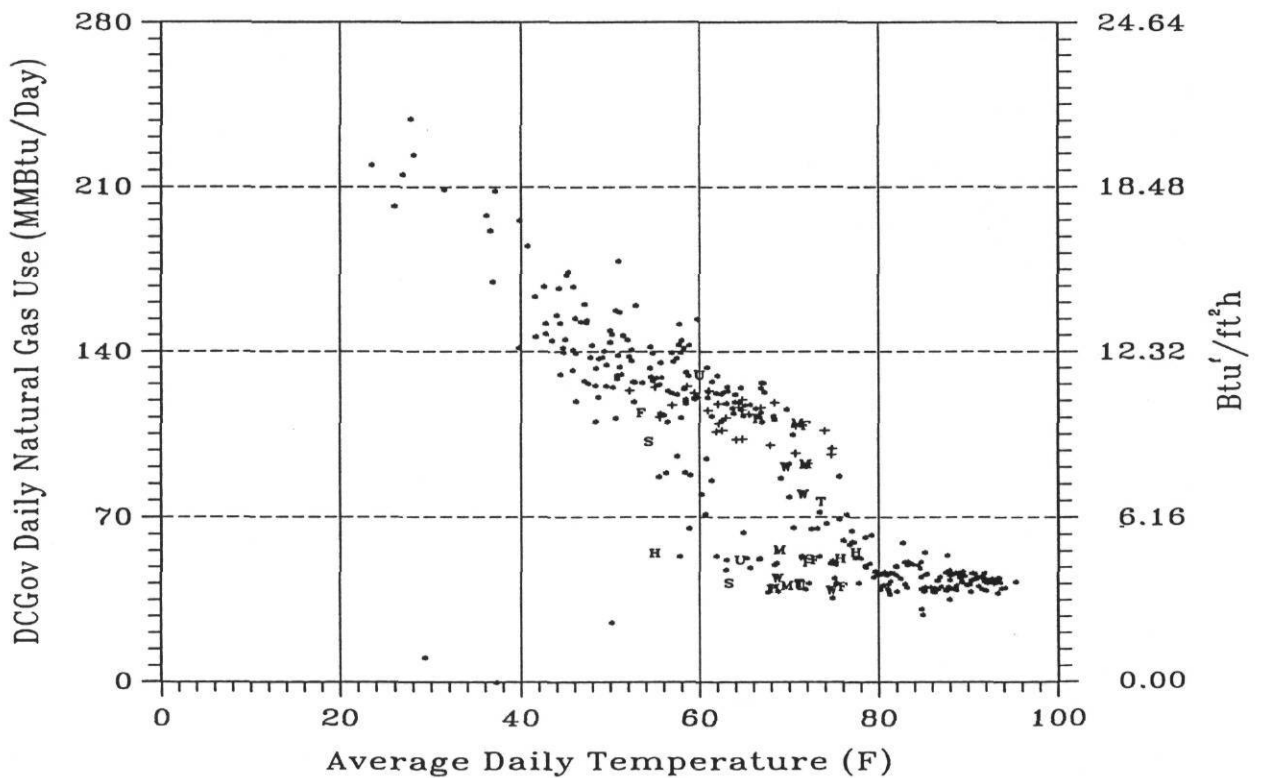
\*Measured savings include construction period. Audit estimated savings do not.

Comments

**★ Chilled water data are missing from 4/1/99 to 4/30/99 due to monitoring problems.**



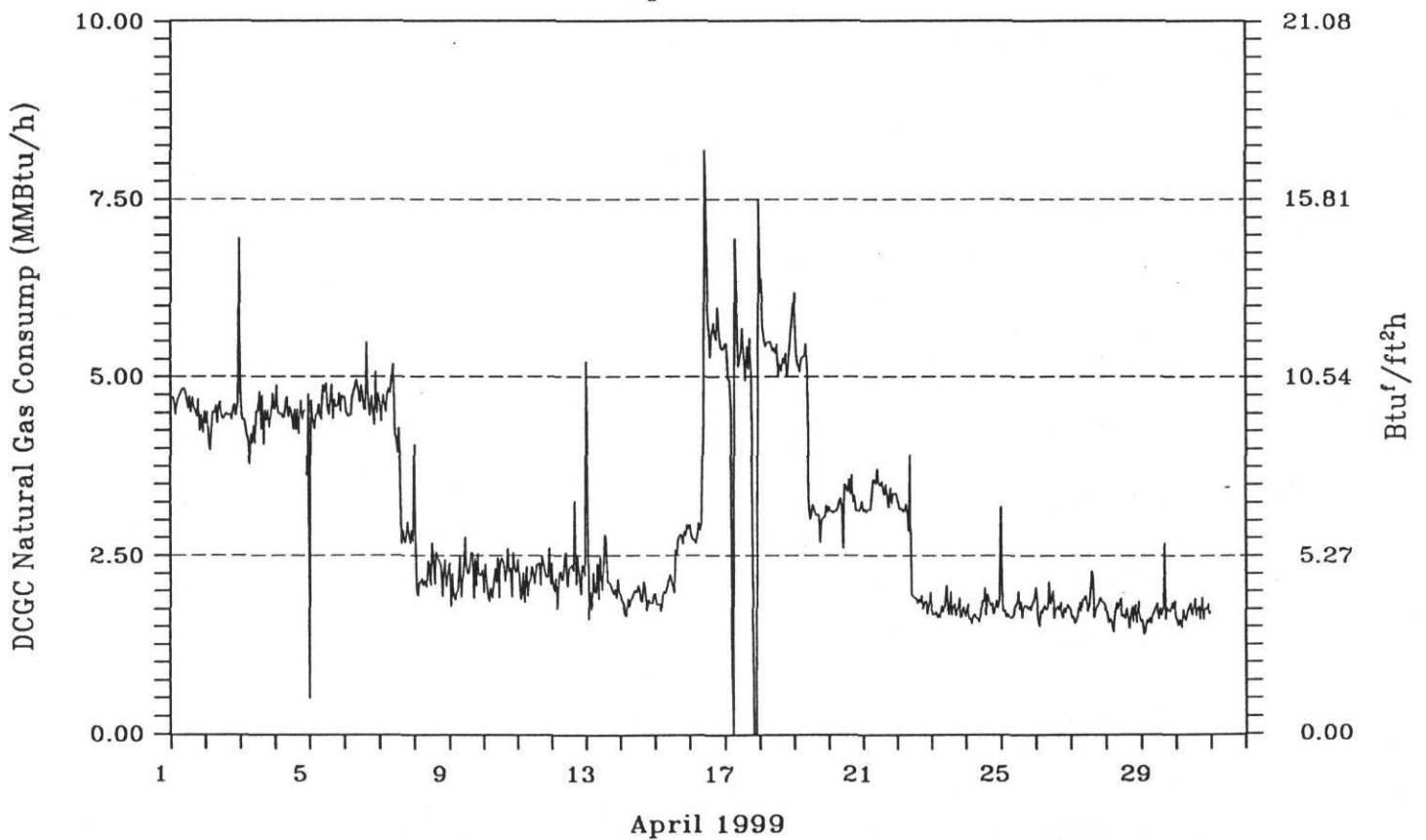
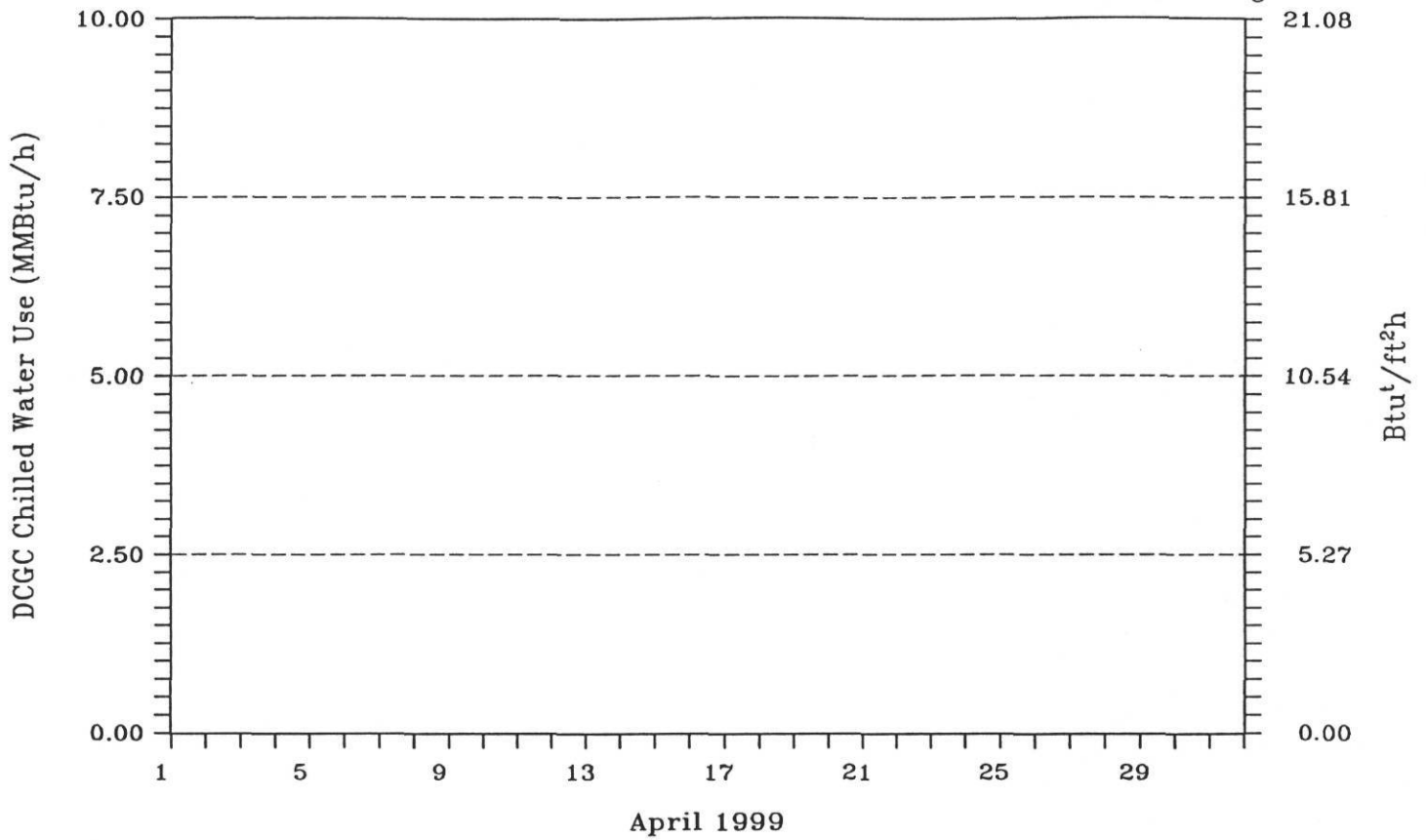
Apr 01 1998 - Apr 30 1999



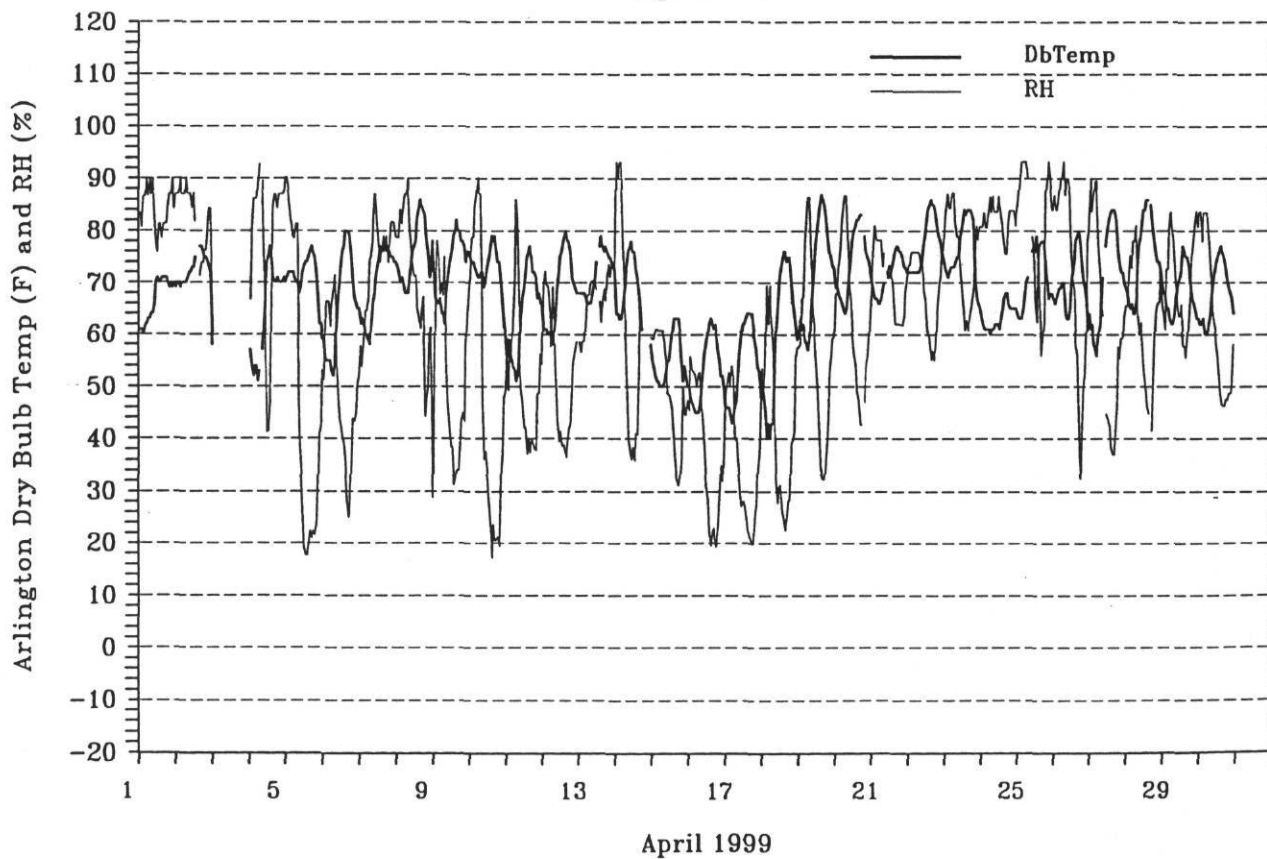
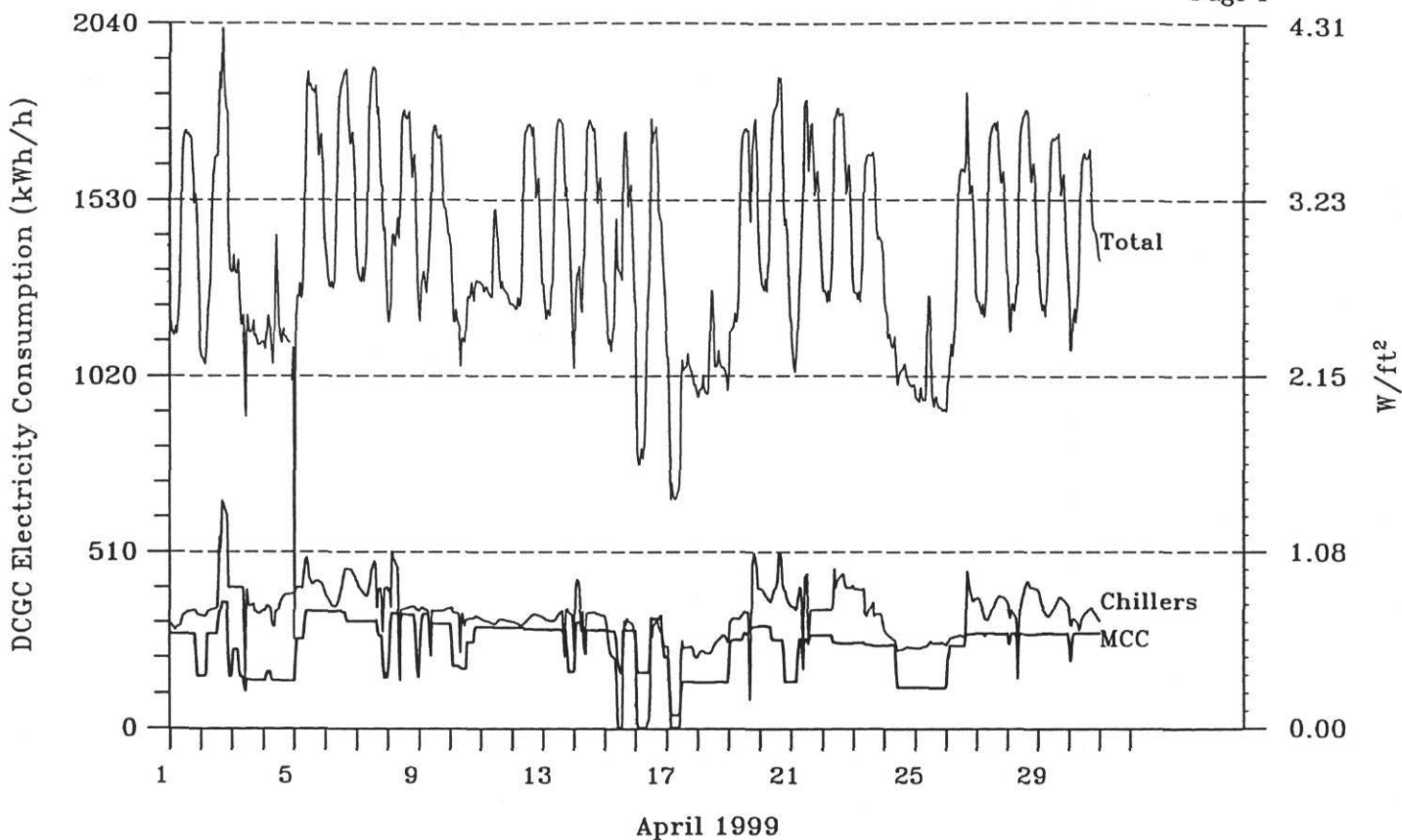
Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

Points from this month last year are shown as +.  
All other points are shown as \*.

Government Center (George Allen Bldg.) - Dallas County - April 1999

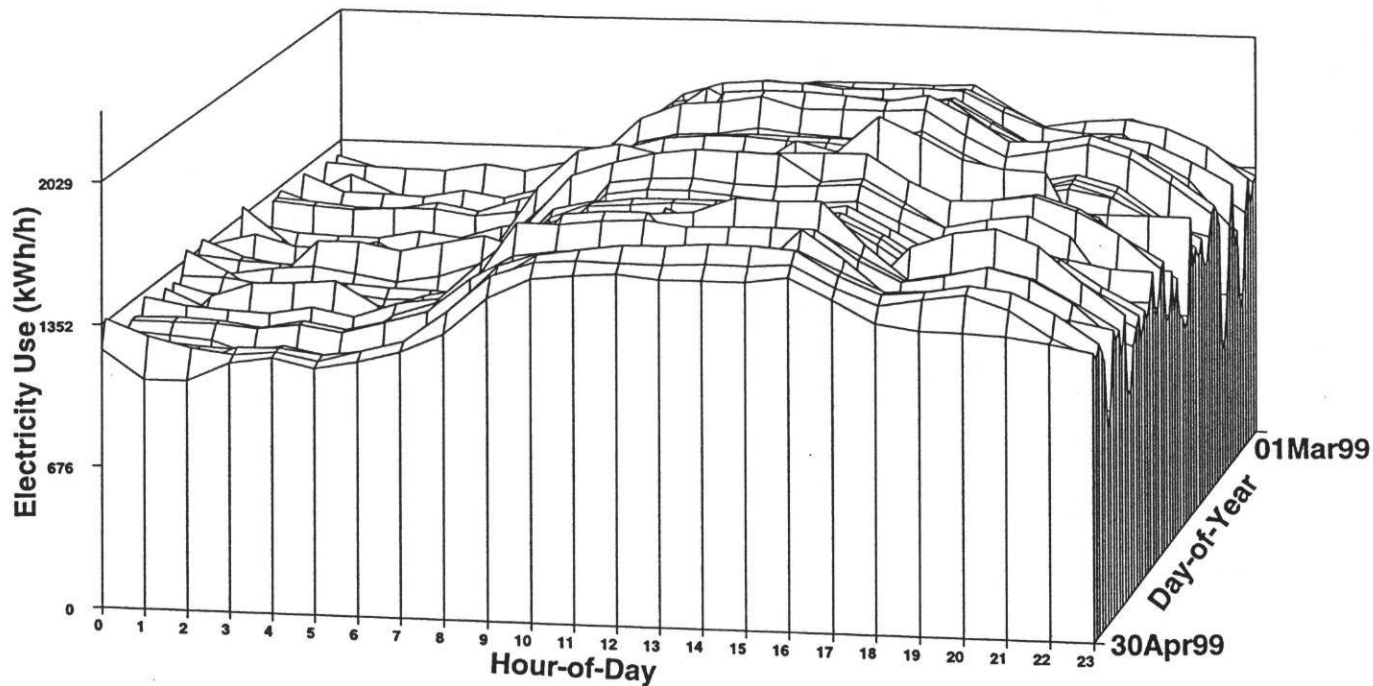


Government Center (George Allen Bldg.) - Dallas County - April 1999

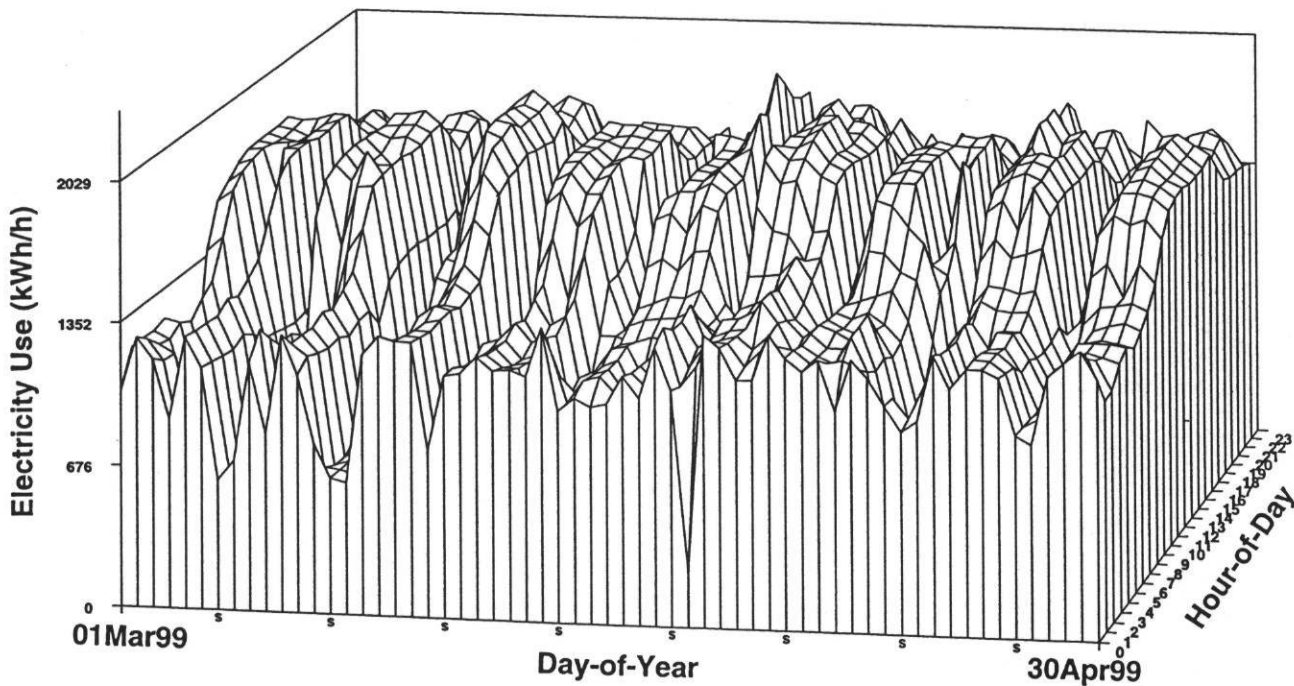


Government Center (George Allen Bldg.) - Dallas County - April 1999

### Whole-Building Electric



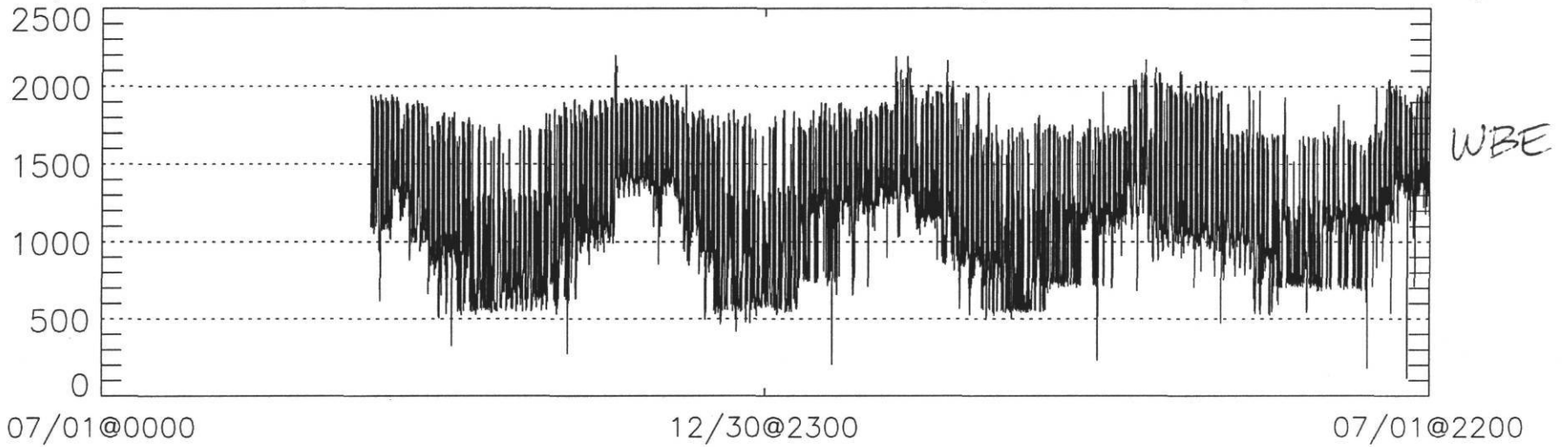
### Whole-Building Electric



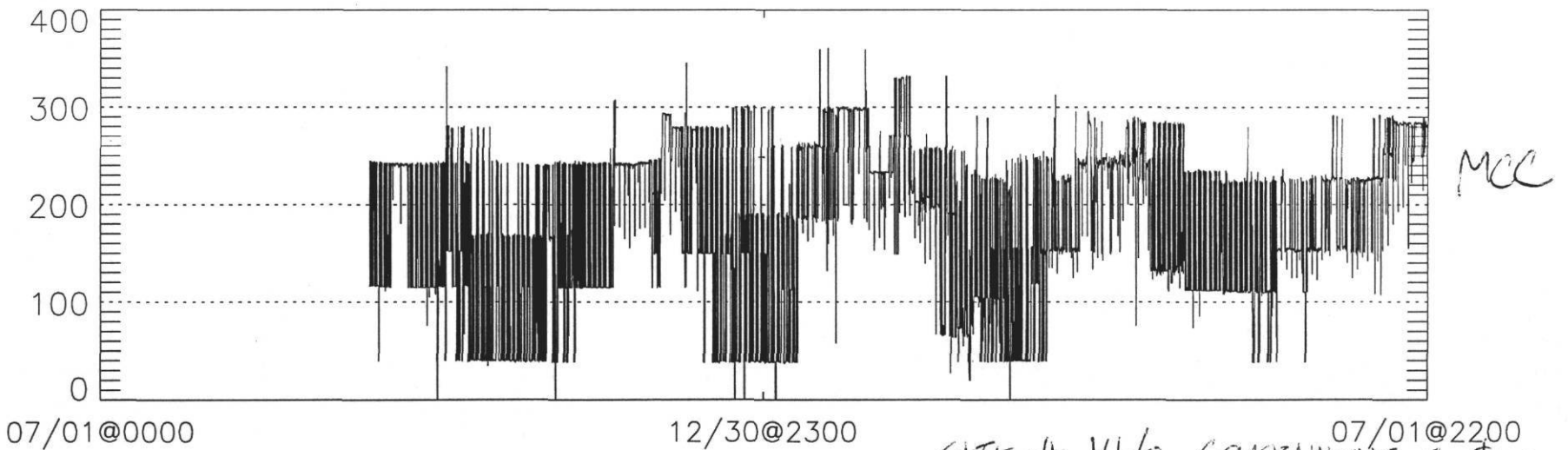
Sundays are marked with an "S"

Government Center (George Allen Bldg.) - Dallas County - April 1999

(timestamp>"1997-10-22 15:59"?(ch1016\*2):ch1016)

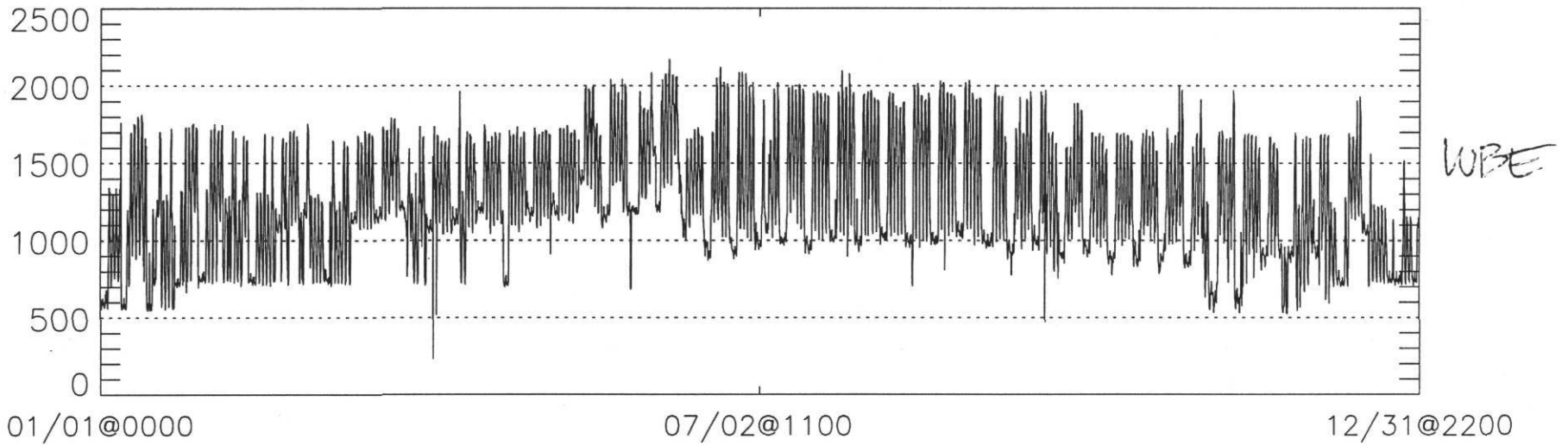


ch1002+ch1004+ch1005+ch1006+ch1007+ch1008+ch1009+ch101

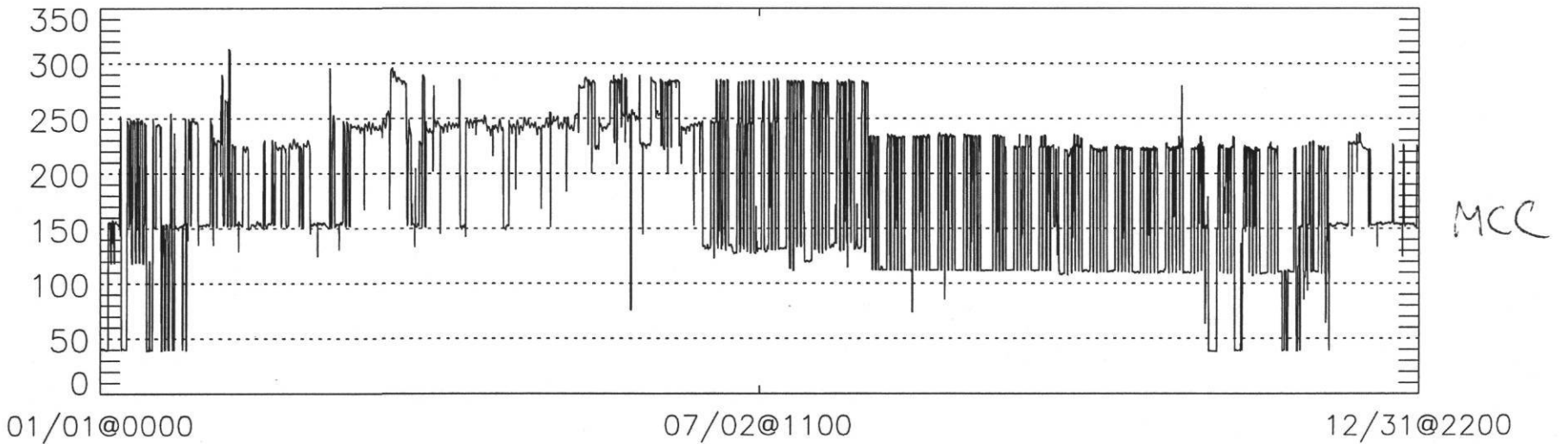


SITE # 146 GOVERNMENT Center  
07/91 - 07/96

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ch1002+ch1004+ch1005+ch1006+ch1007+ch1008+ch1009+ch101



SITE # 146

01/95 - 12/95



lstarxp% listsite 200

**Site: 200                      Capitol Building (Cap)**

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Mecr id:

Start date:        09/17/1991

Energy Type:    default

Construction

    begin:            N/A                      end:        N/A

Area:              282499.00

Facility:           Texas Capitol Complex

Contact Info:    Denis Feary  
                  State Purchasing \& General Services Com  
                  Building Maintenance Department  
                  P.O. Box 13047  
                  Austin, TX 78711  
                  (512) 475--2455

**Capitol Building**  
Texas Capitol Complex  
282,499 square feet

Site Contact

Denis Feary  
State Purchasing and General Services Commission  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512)-475-2455

LoanSTAR Metering Contact

Aamer Athar  
053D WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409)-845-9213

**Summary of Energy Consumption**

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	552600 kWh	100	\$0.03483	\$19247
Peak 60 Minute Demand	966 kW	100	\$10.32	\$9969
Chilled Water	6034.8 MMBtu	100	\$3.250	\$19613
Hot Water	156.8 MMBtu	100	\$3.840	\$602

Peak 60 minute demand was recorded at 1500 Wednesday 8/2/95.  
There were 744 hours in this month.

**Monthly Retrofit Savings**

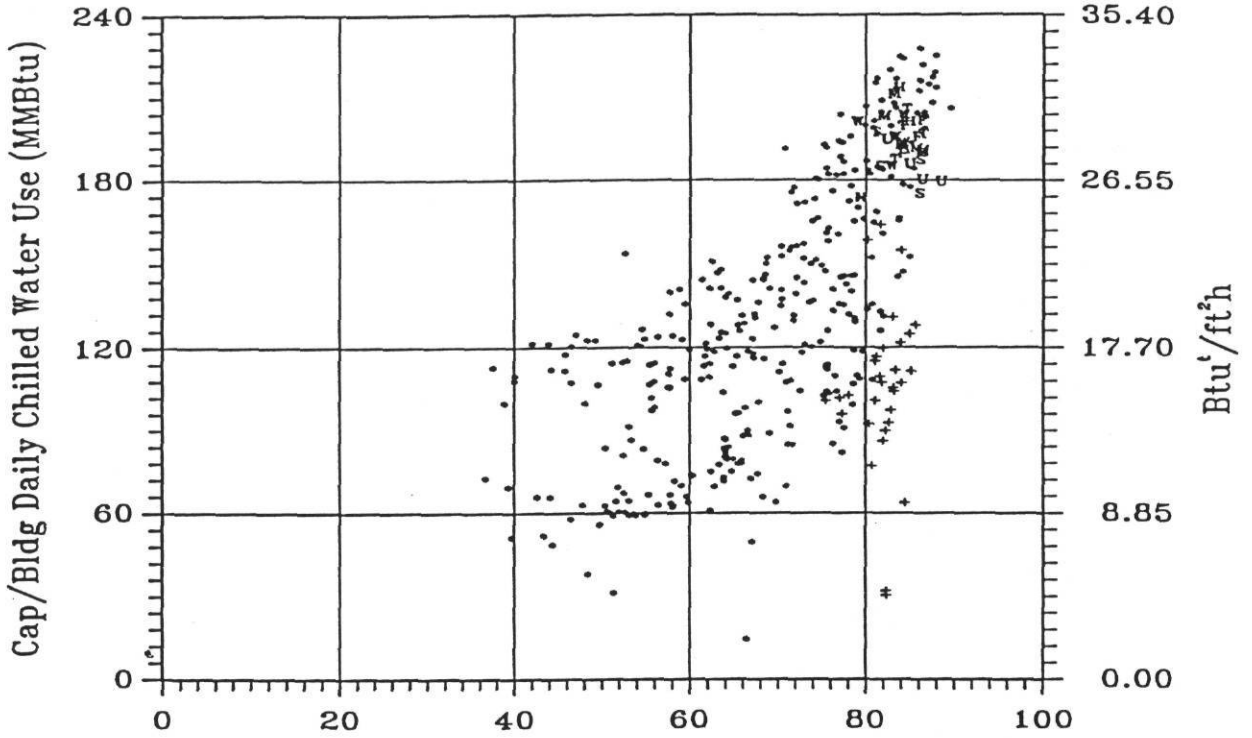
	Measured Savings	Audit Estimated Savings
Monthly Total		
Total to Date*		

\*Measured savings include construction period. Audit estimated savings do not.

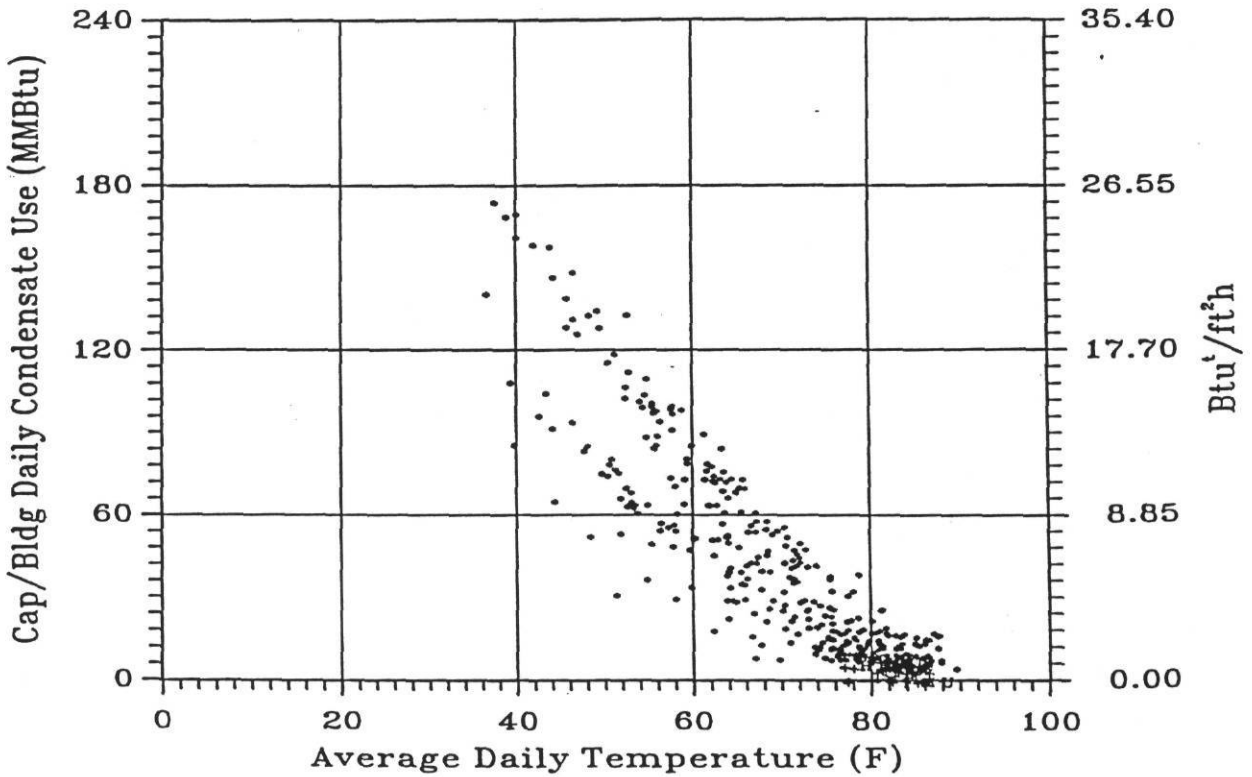
**Comments**

★ Energy use at the capitol has increased significantly when compared to August 1994. Since last August, construction has been completed and the building's use has returned to normal.

Capitol Building - Texas Capitol Complex - August 1995

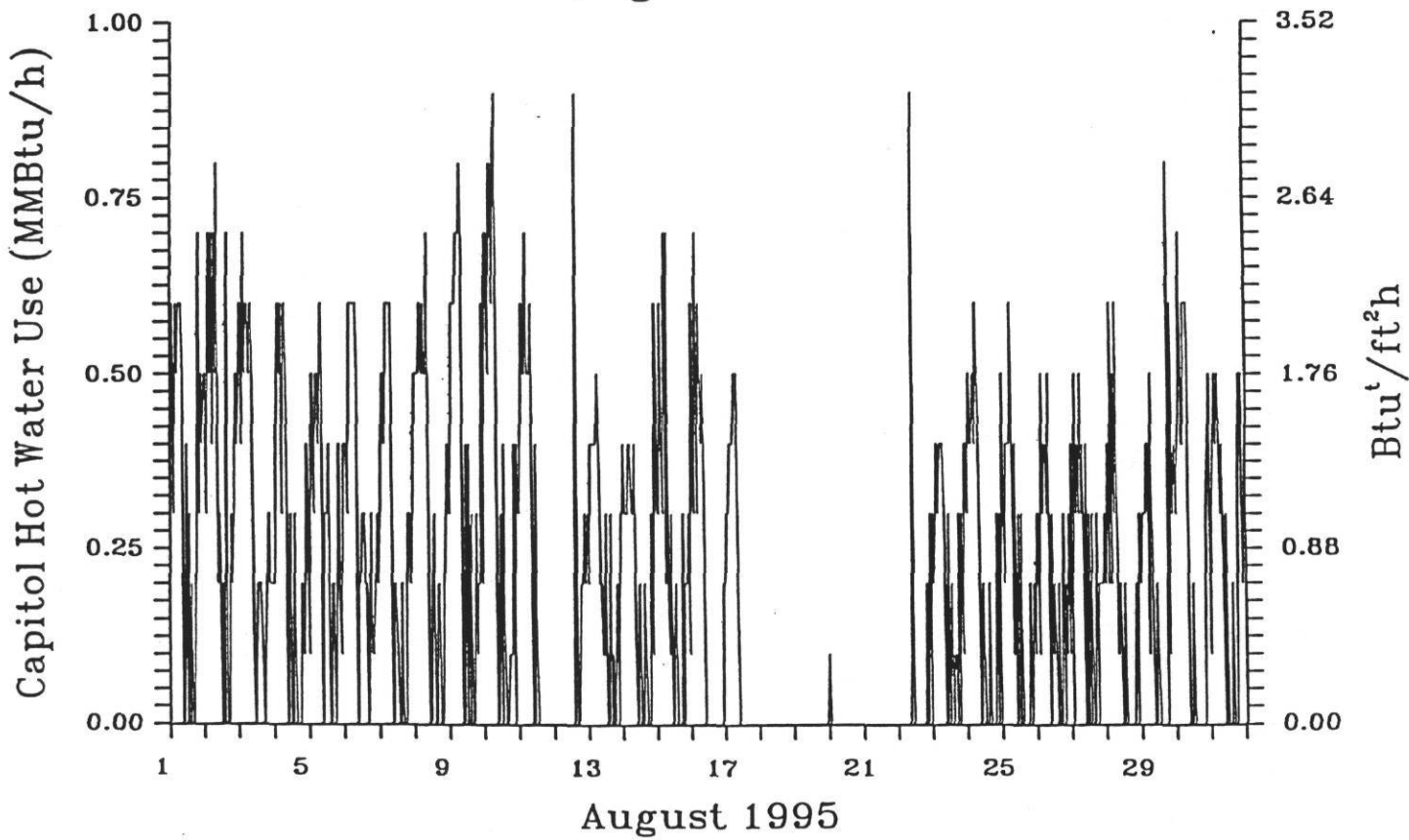
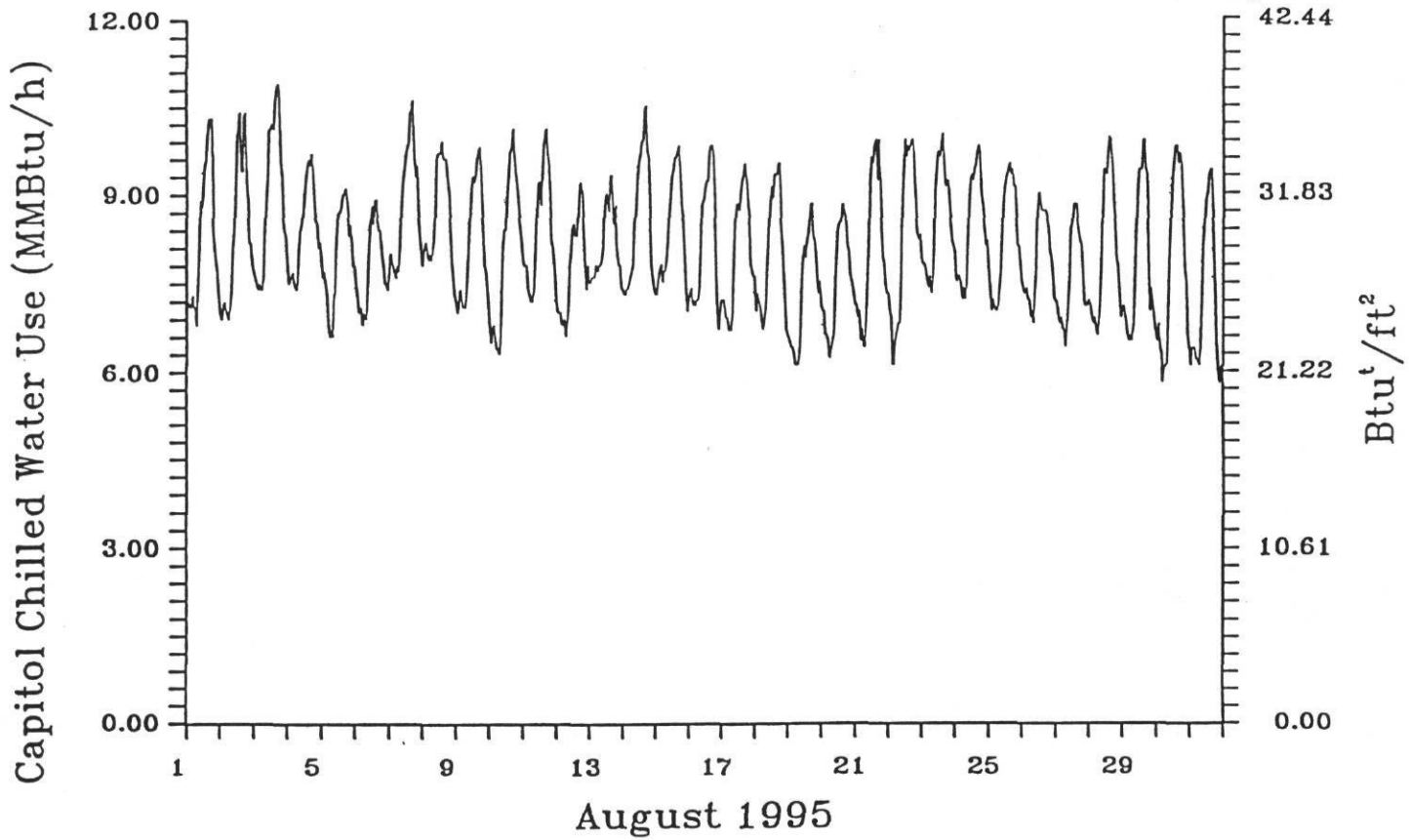


Aug 01 1994 - Aug 31 1995

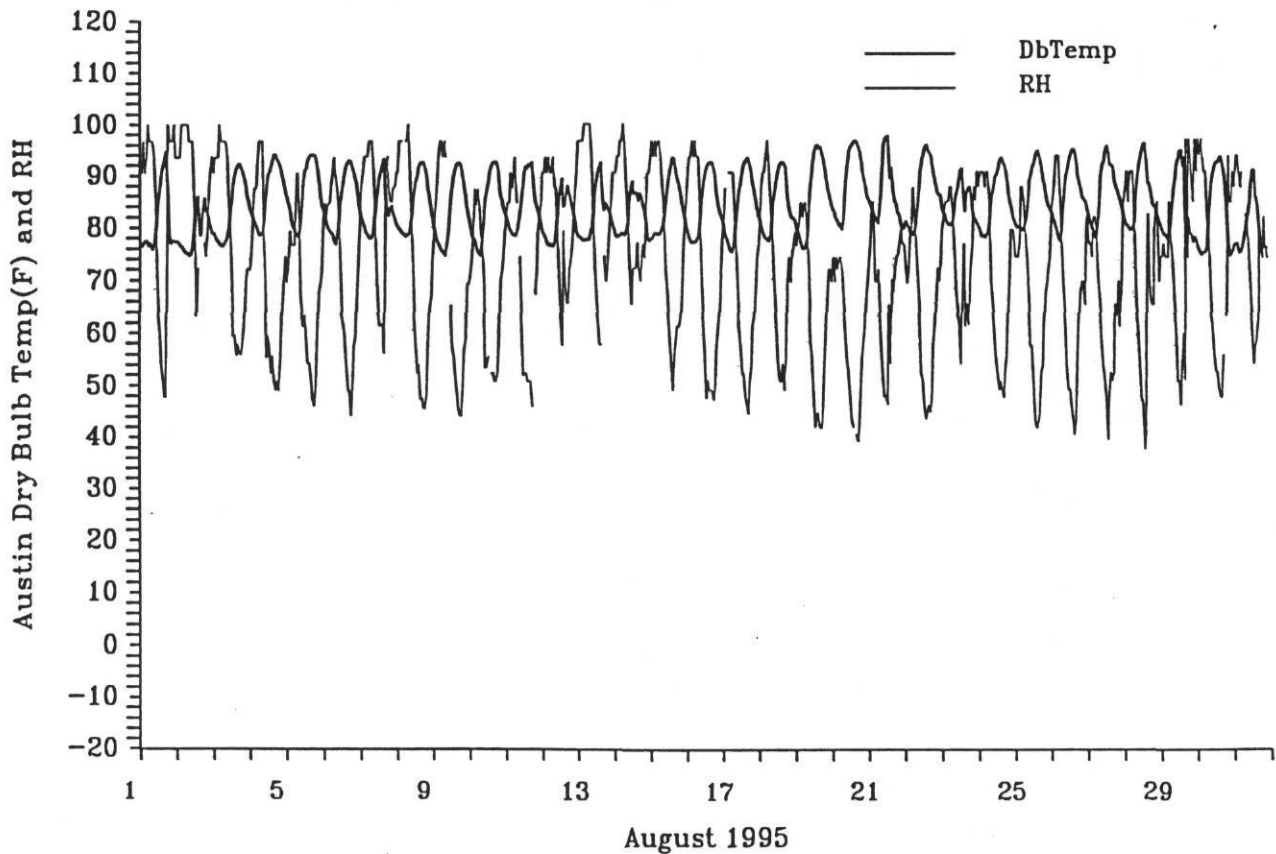
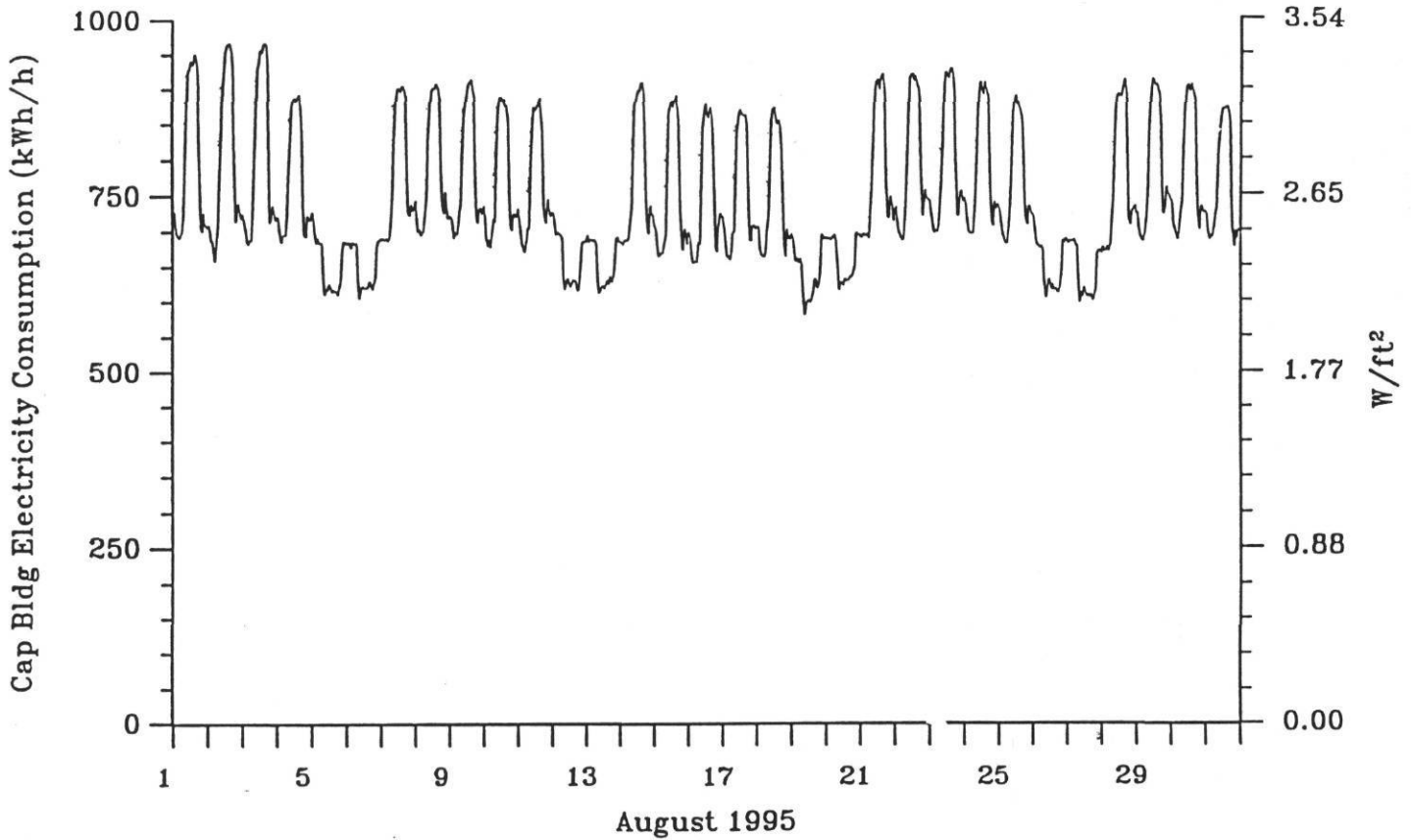


Data points for the current month are shown as letters. Points from this month last year are shown as +.  
 Monday through Sunday are represented as M,T,W,H,F,S,U. All other points are shown as \*.

Capitol Building - Texas Capitol Complex - August 1995

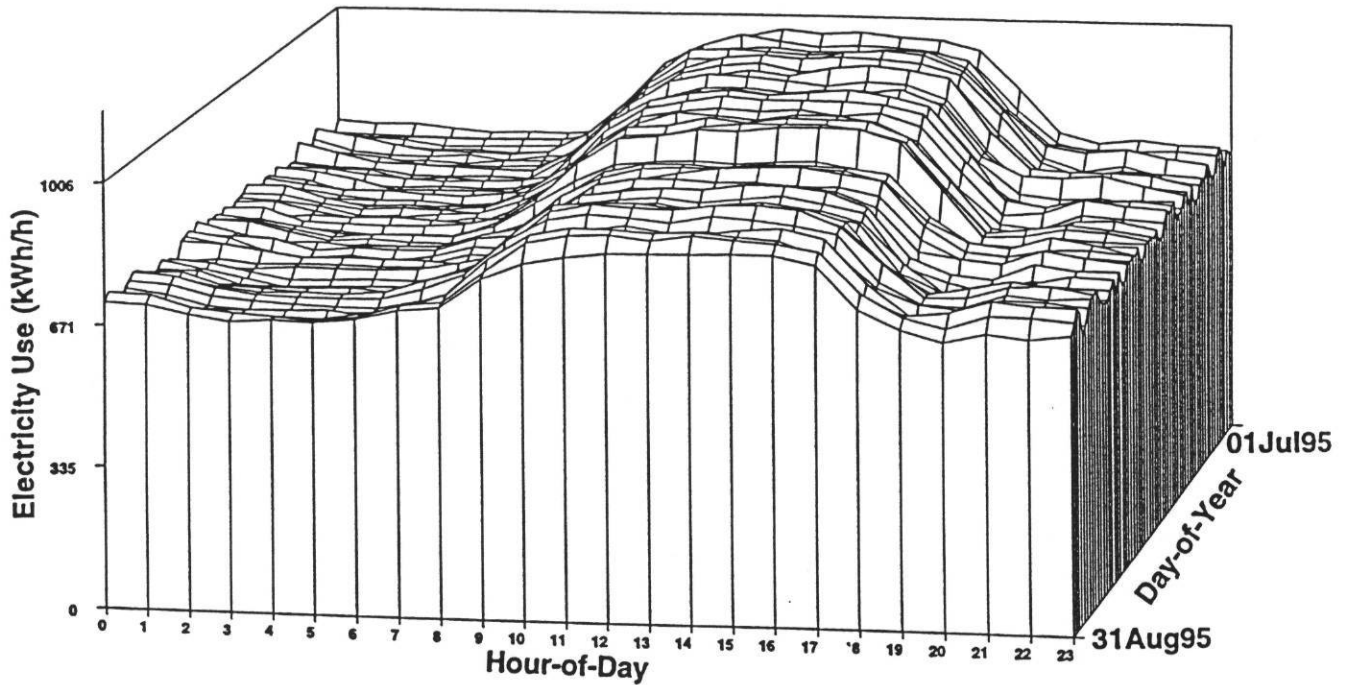


Capitol Building - Texas Capitol Complex - August 1995

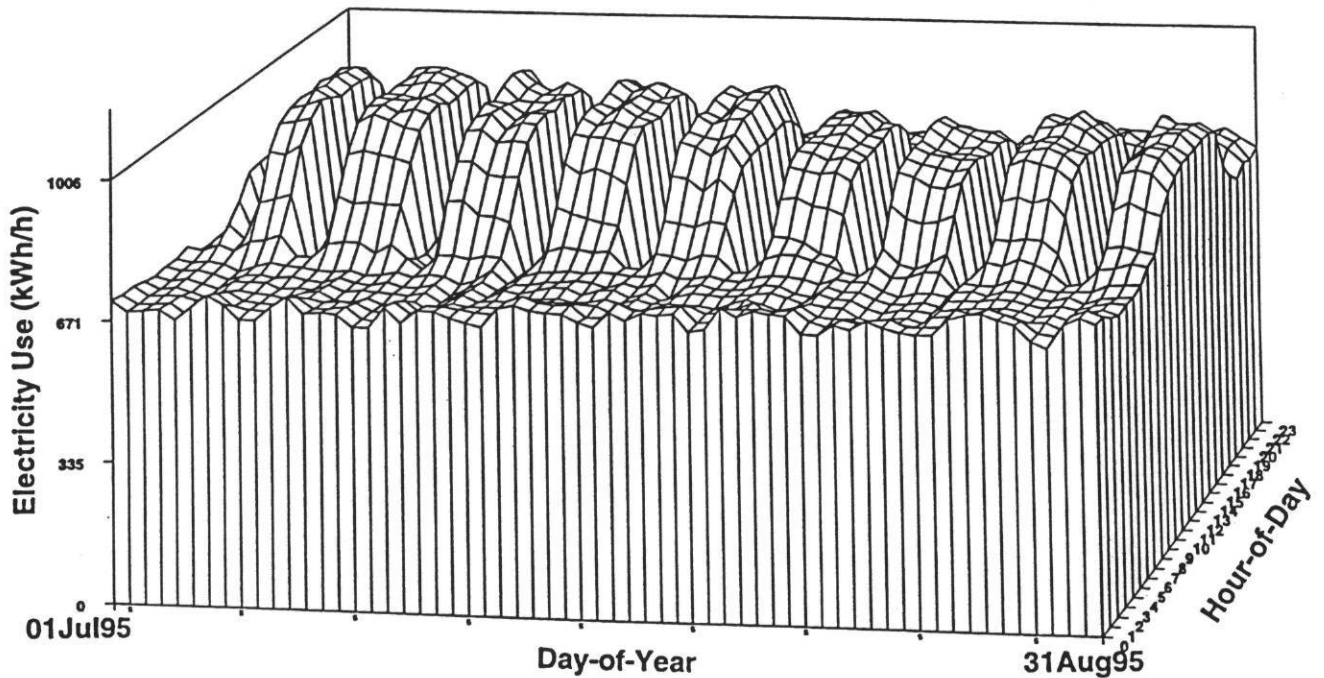


Capitol Building - Texas Capitol Complex - August 1995

### Whole-Building Electric



### Whole-Building Electric



Sundays are marked with an "S"

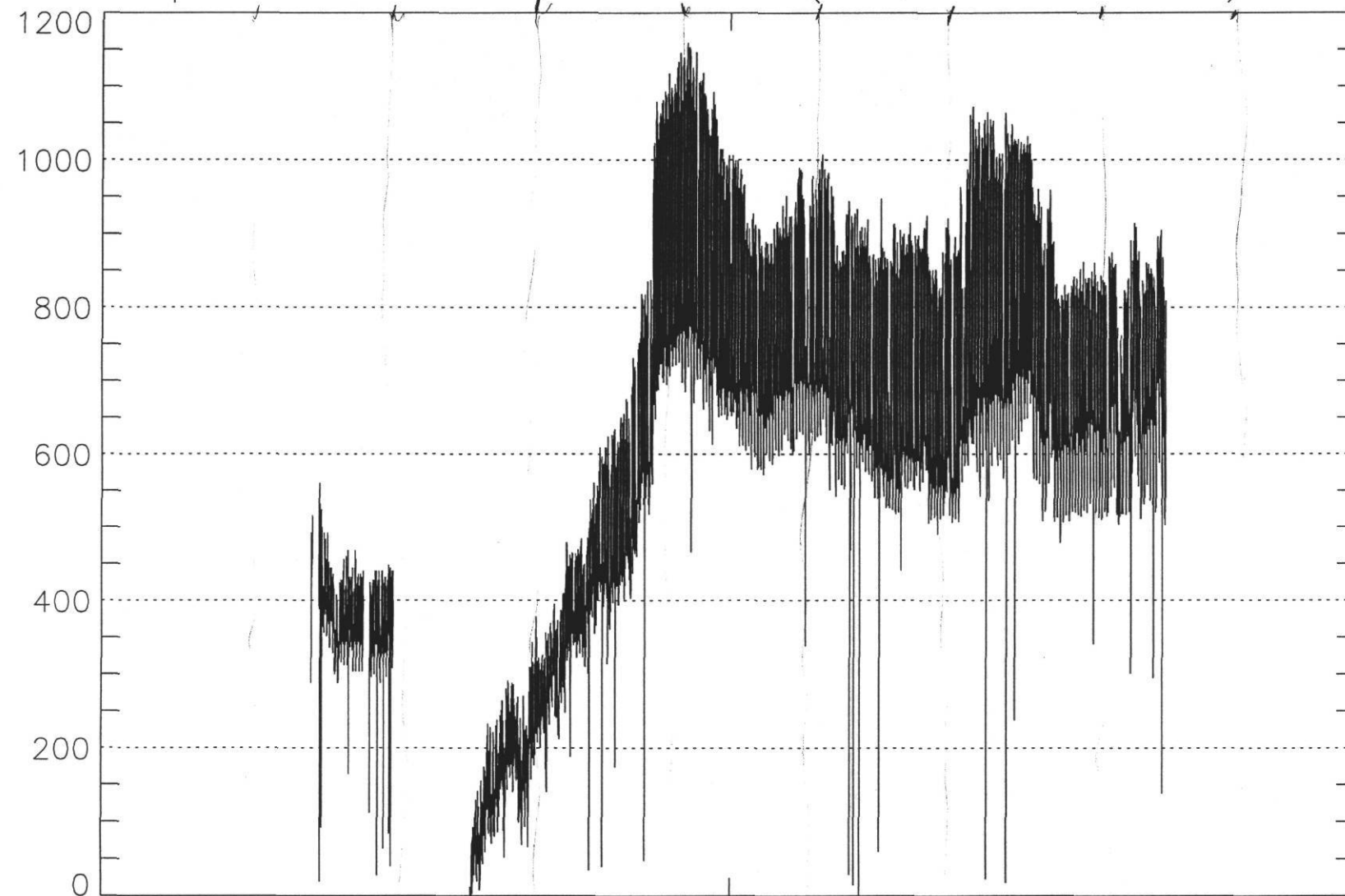
Capitol Building - Texas Capitol Complex - August 1995

" CAPITOL BUILDING "

SITE 2001  
07/91 - 07/99

WBE.

( timestamp>"1993-10-25 23:59"?(ch1389+ch1390): ch1492)



07/01@0000

07/01@1100

07/01@2200

91

92

93

94

95

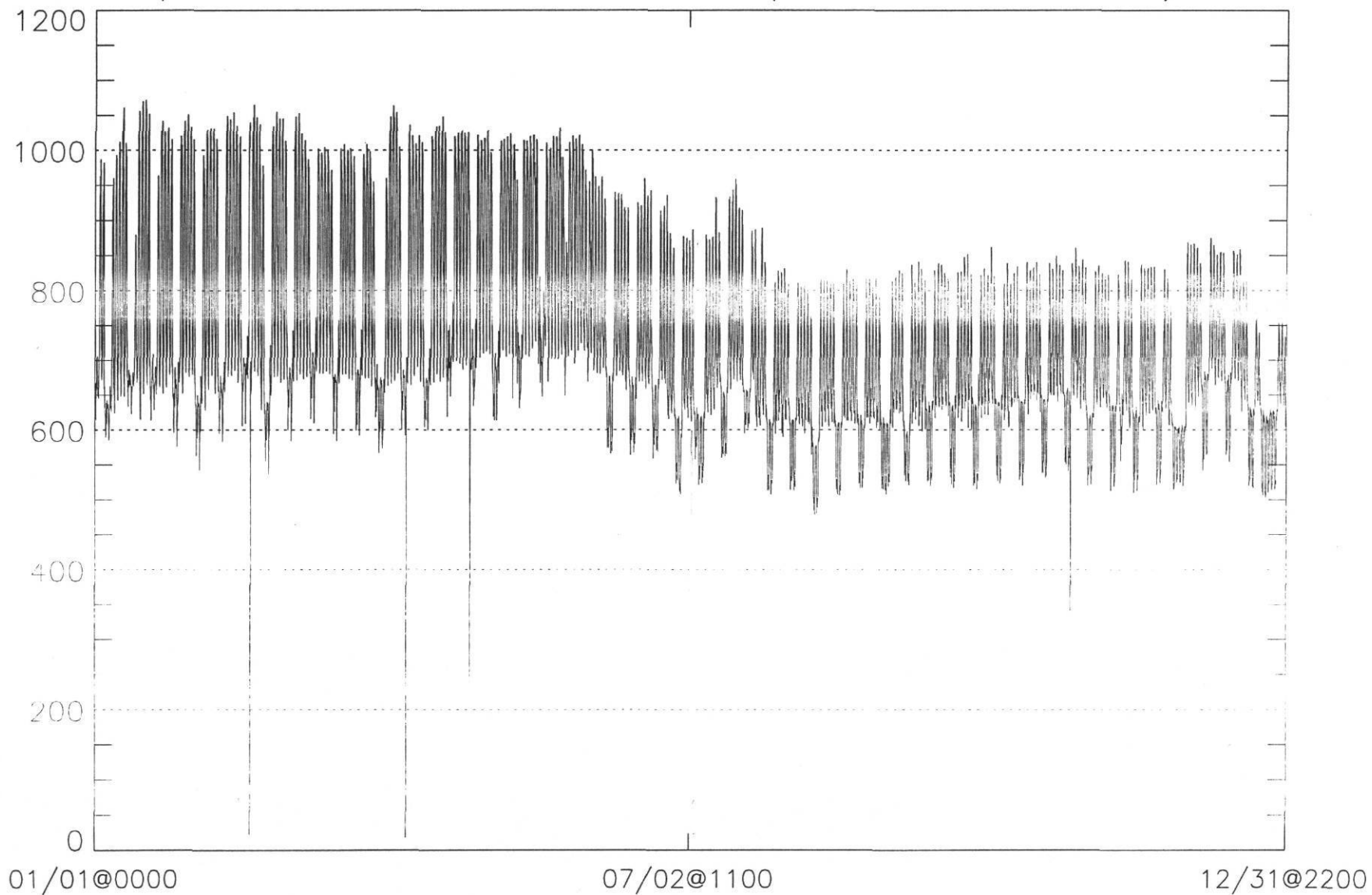
96

97

98

99

( timestamp>"1993-10-25 23:59"?(ch1389+ch1390):<sup>WBE</sup> ch1492)

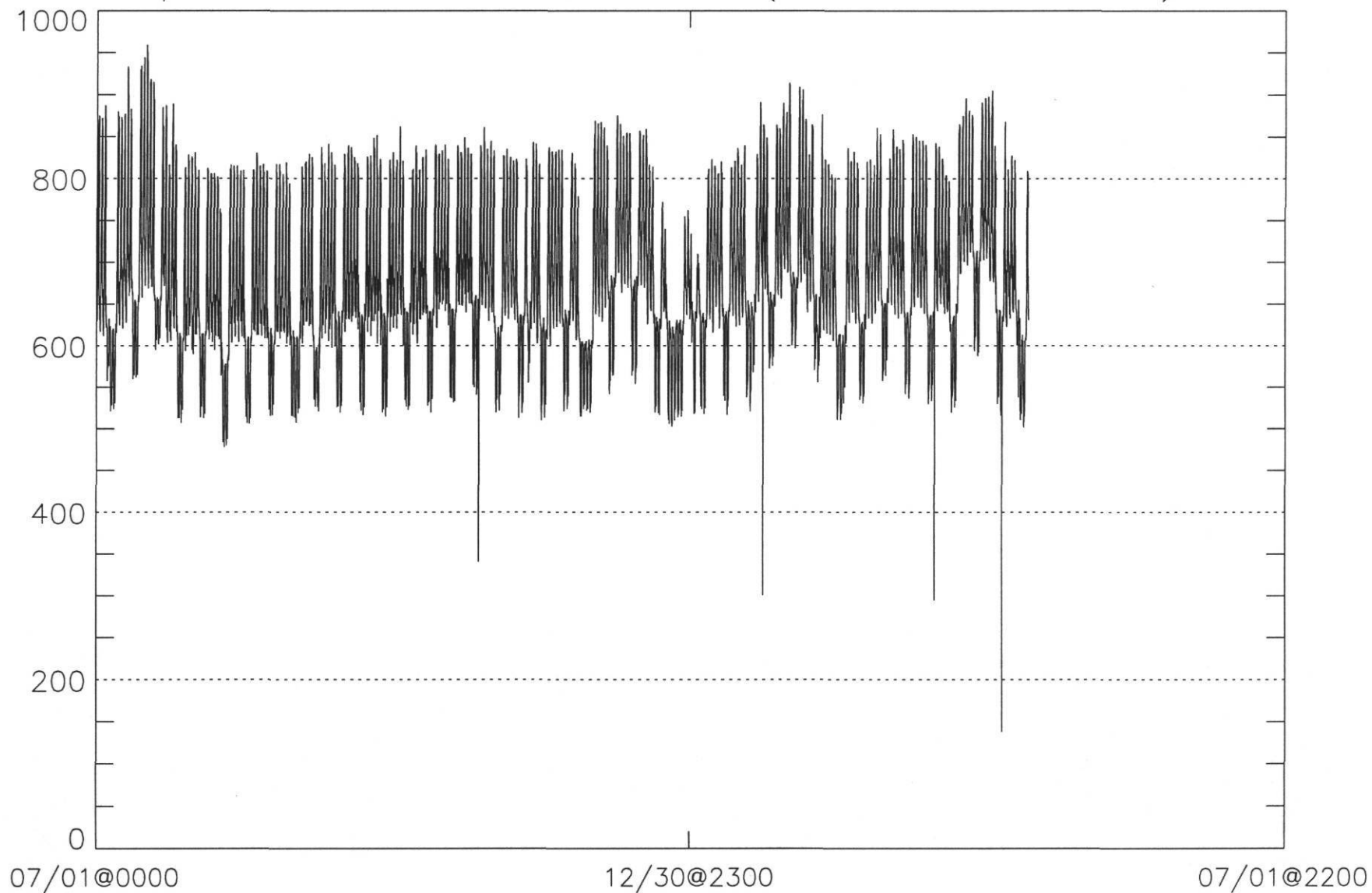


01/97 - 12/97

SITE # 200



( timestamp>"1993-10-25 23:59"?(ch1389+ch1390): ch1492)



SITE # 200  
07/01/97 - 07/01/98

lstarxp% listsite 201

**Site: 201                    Sam Houston Building (SHB)**

Mecr id:

Start date:     09/17/1991

Energy Type: default

Construction

begin:     02/01/1994                    end:     N/A

Area:             182961.00

Facility:         Texas Capitol Complex

Contact Info:    Denis Feary  
                  State Purchasing \& General Services Com  
                  Building Maintenance Department  
                  P.O. Box 13047  
                  Austin, TX 78711  
                  (512) 475--2455

## CAPITOL COMPLEX

### Sam Houston Building

#### Building Envelope

- 182,961 sq. ft.
- Ten story building constructed in 1958
- Contains offices as well as the central power plant which provides chilled water, steam, and electricity to several of the capitol complex buildings
- Walls: Texas granite, Roof: n/a
- Windows: single pane, but sealed to minimize infiltration

#### Building Schedule

- 7:30 am to 6:00 pm during the week

#### Building HVAC and Equipment

- 2-75 AHUs, 2-50 hp AHUs, 1-10 hp AHU, 1-5 hp AHU, 2-1.5 hp AHUs, 1-2 hp AHU, 3-3 hp AHUs

#### HVAC Schedule

- 8760 annual hours of operation

#### Lighting

- 2 and 4-lamp high efficiency 2x4 fluorescent fixtures
- 50-170 watt incandescent lamps

#### Proposed Maintenance and Operation Measures

- No quantifiable O&Ms identified. However, a quantifiable O&M for utilization of the existing Honeywell 1000 EMS was identified

#### Proposed Retrofits

- Install motion sensors to control bathroom lighting
- Retrofit incandescent lamps with compact fluorescents
- Provide timed control for domestic hot water pump
- Reduce lighting levels in corridors
- Replace existing inlet vanes in AHUs for AC1 and AC2 with variable frequency drives. Shut off AHUs during unoccupied periods
- Replace incandescent exit signs with electroluminescent exit signs

#### Status of Retrofits

- Installed motion sensors-cancelled
- Provide timed control for domestic hot water pump-completed Sep. 1994
- Reduce lighting levels in corridors-completed May 1993
- Installation of variable frequency drives-started Feb. 1994, completed Sep. 1994
- Replaced incandescent exit signs with electroluminescent exit signs-completed May 1993
- Incandescent lamps retrofitted with compact fluorescents-completed May 1993

Sam Houston Building - Texas Capitol Complex - August 1995

**Other Information**

- Electricity is supplied by the City of Austin

---

Sam Houston Building - Texas Capitol Complex - August 1995

# Sam Houston Building

Texas Capitol Complex  
182,961 square feet

## Site Contact

Denis Feary  
State Purchasing and General Services Commission  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512)-475-2455

## LoanSTAR Metering Contact

Aamer Athar  
053D WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409)-845-9213

## Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	180699 kWh	43	\$0.03483	\$6294
Peak 60 Minute Demand	726 kW	43	\$10.32	\$7484
Chilled Water	- MMBtu	-	-	-

Peak 60 minute demand was recorded at 1200 Thursday 8/3/95.  
There were 744 hours in this month.

## Monthly Retrofit Savings

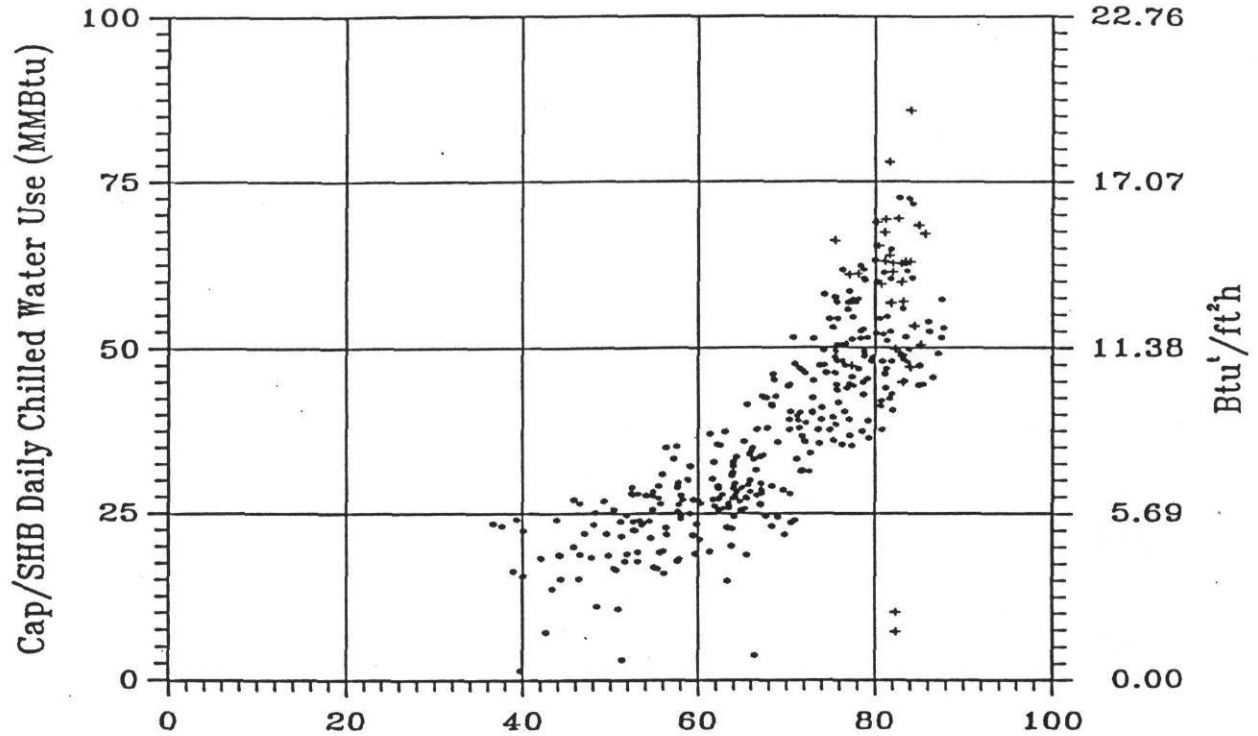
	Measured Savings	Audit Estimated Savings
Monthly Total		
Total to Date*		

\*Measured savings include construction period. Audit estimated savings do not.

## Comments

- ★ Chilled water data are missing from 8/1 to 8/31/95.
- ★ Electricity consumption data are missing from 8/9 to 8/23/95 due to a monitoring hardware problem.

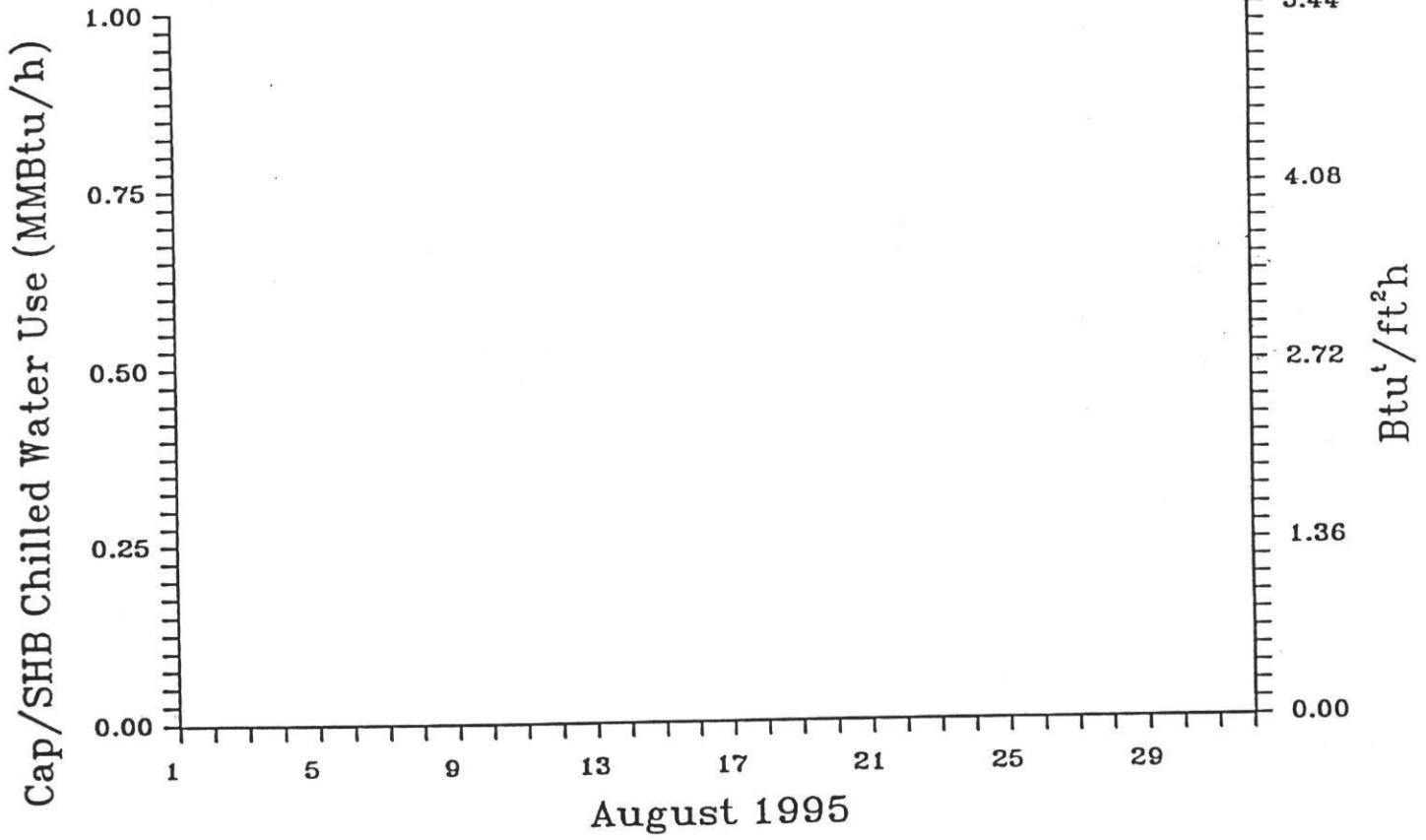
Sam Houston Building - Texas Capitol Complex - August 1995



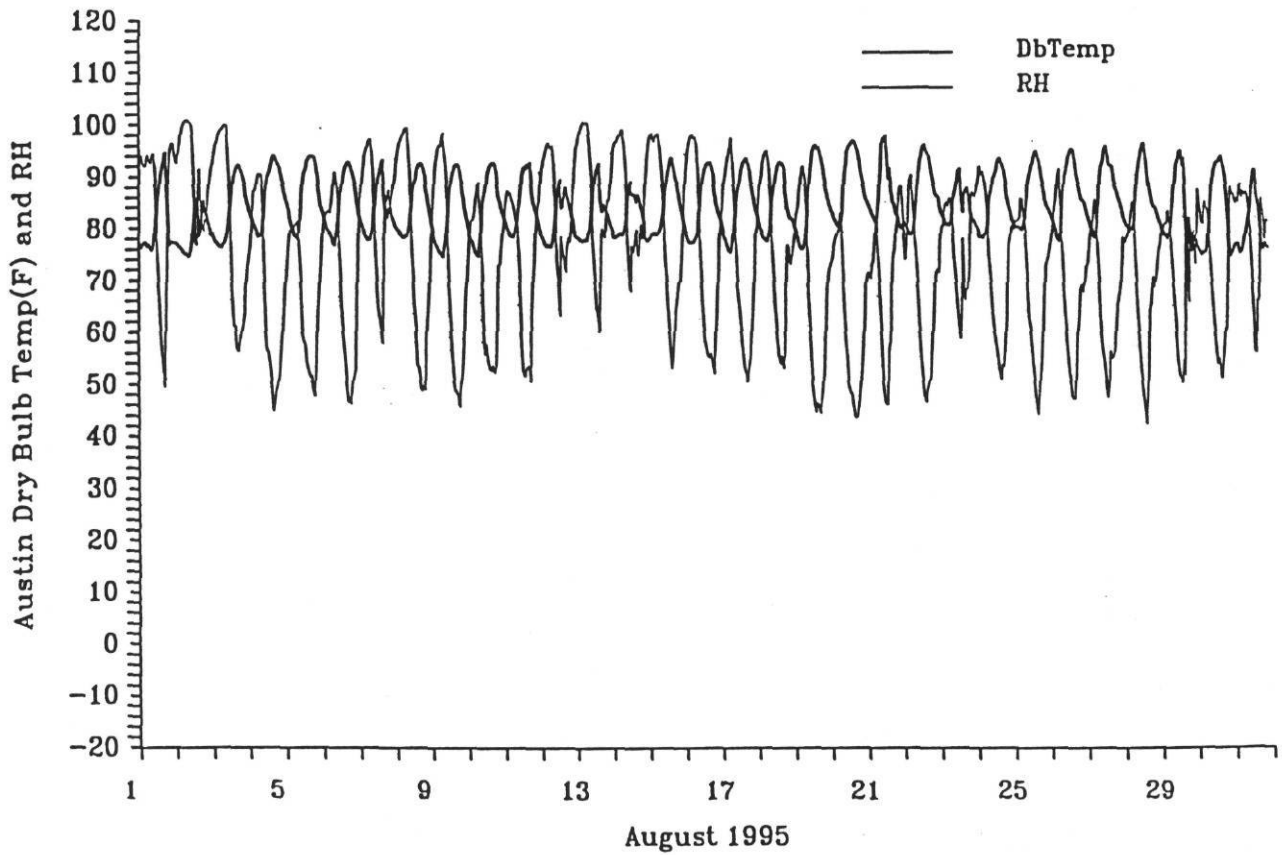
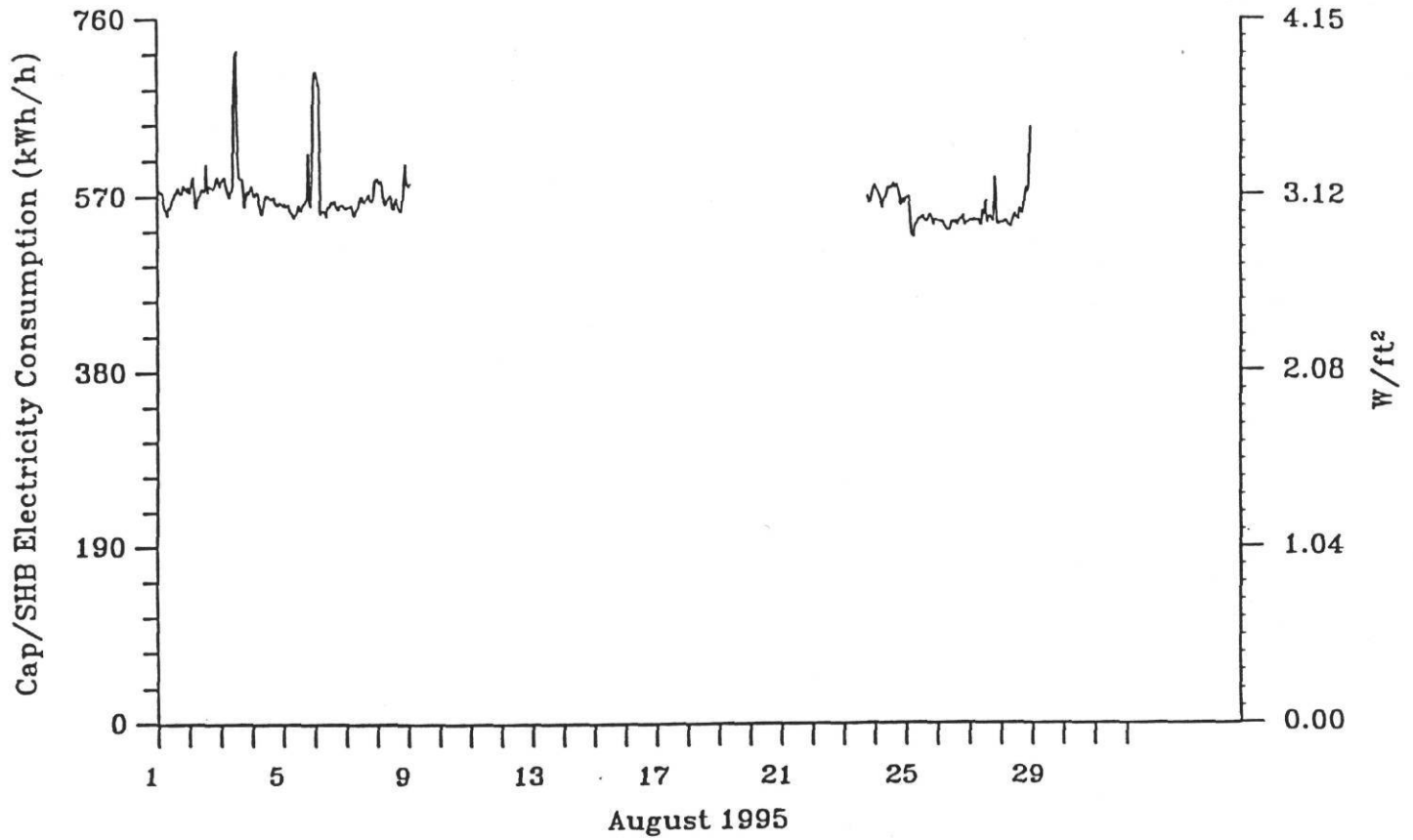
Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

Points from this month last year are shown as +.  
All other points are shown as \*.

Sam Houston Building - Texas Capitol Complex - August 1995



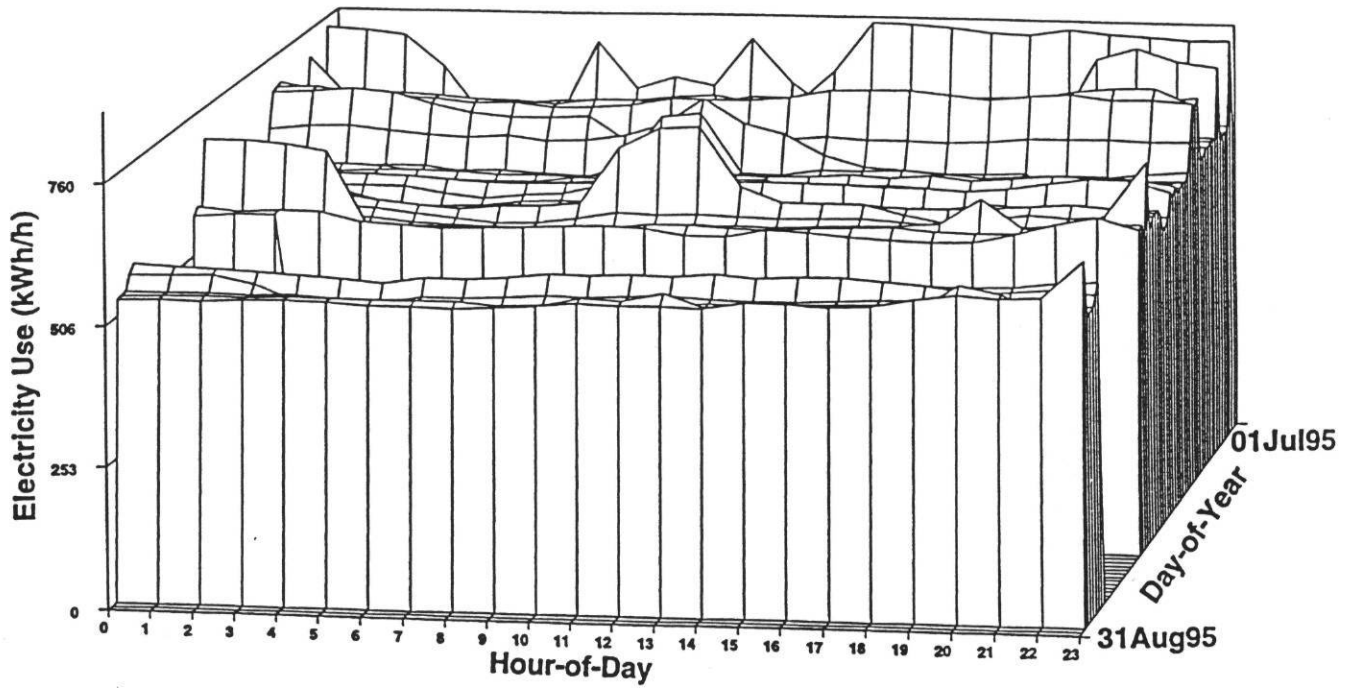
Sam Houston Building - Texas Capitol Complex - August 1995



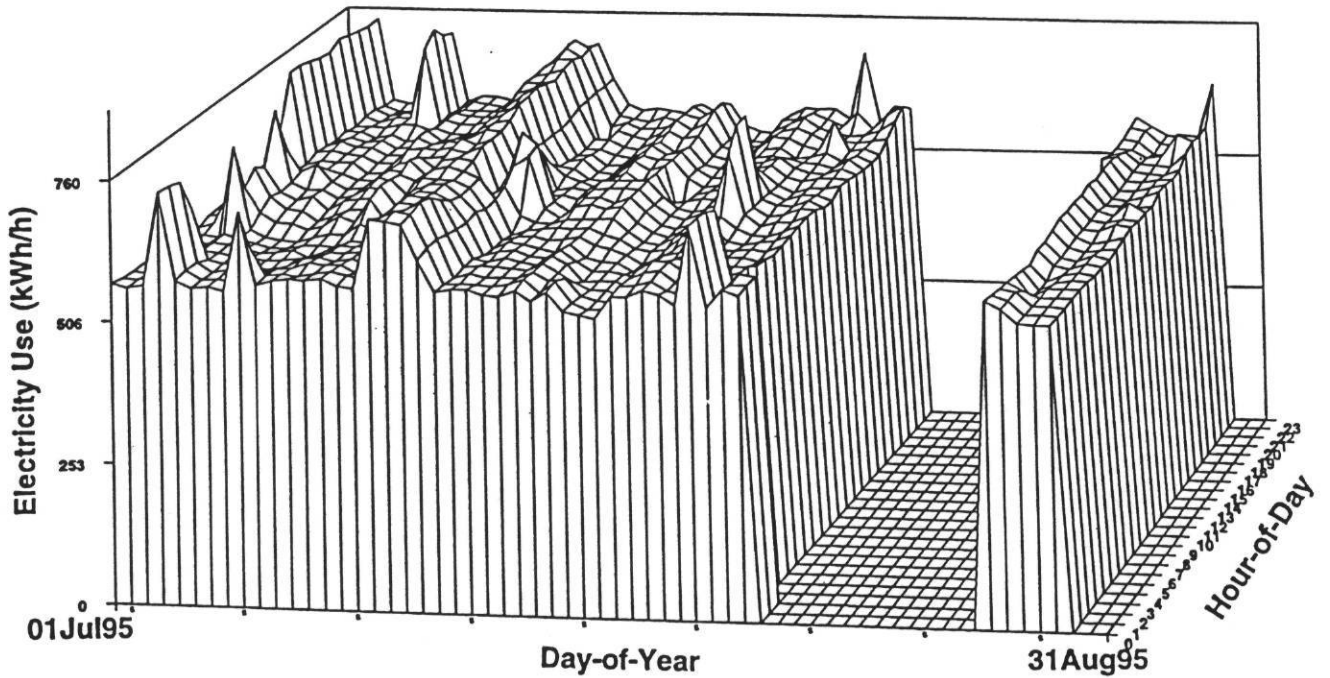
Sam Houston Building - Texas Capitol Complex - August 1995



### Whole-Building Electric



### Whole-Building Electric



Sundays are marked with an "S"

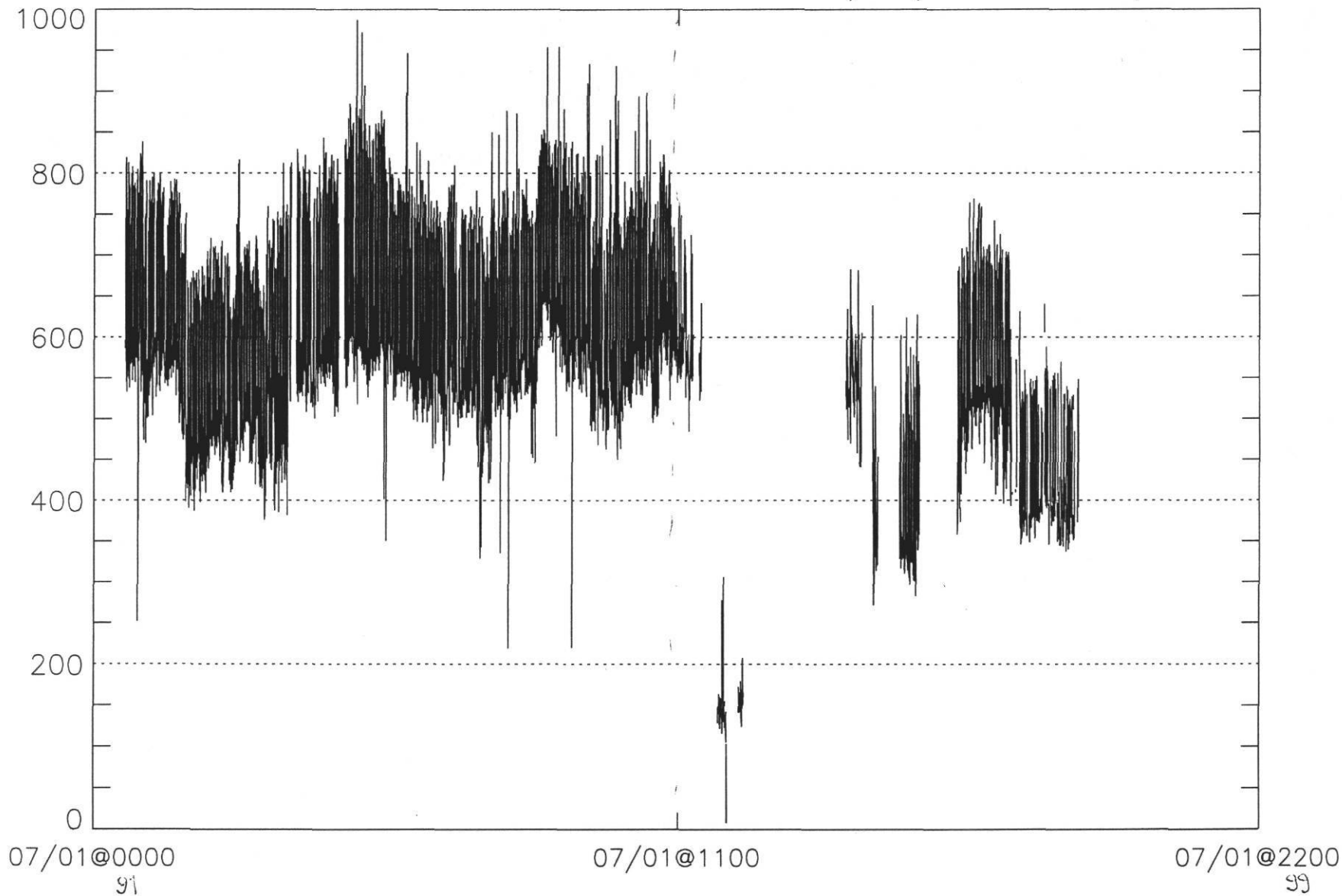
Sam Houston Building - Texas Capitol Complex - August 1995

" Sam Houston Bldg "

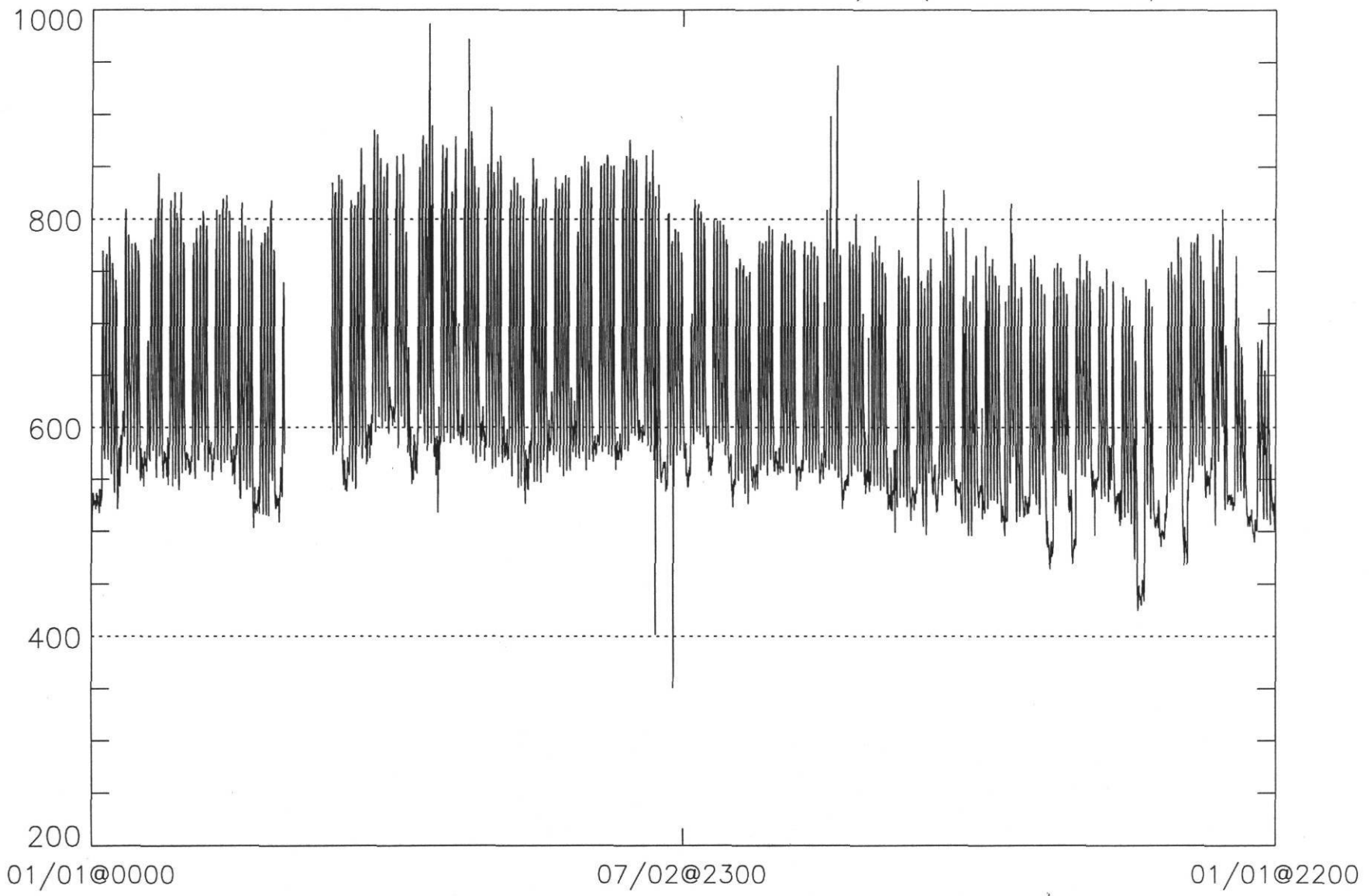
210 201  
07/01-07/99

WBE

i0574+ch0571+ch0572+ch0577+ch0578)-(timestamp>"1996-08-



10574+ch0571+ch0572+ch0577+ch0578)-(timestamp>"1996-08-



SITE # 201  
01/93 - 01/94

lstarxp% listsite 203

**Site: 203                      John H. Reagan (JHR)**

---

Mecr id:

Start date:     01/01/1991

Energy Type: default

Construction

begin:     04/01/1992                      end: 08/01/1992

Area:             169746.00

Facility:         Texas Capitol Complex

Contact Info:    Denis Feary  
State Purchasing \& General Services Com  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512) 475--2455

## CAPITOL COMPLEX

## John H. Reagan Building

**Building Envelope:**

- 5 floors, offices, erected in 1961
- walls: Texas granite
- windows: single glazed on all the sides
- roof: flat

**Building Schedule:**

- Offices: 7:30 am to 6:00 pm (M-F)

**Building HVAC:**

- 5 dual duct AHUs (2-75hp, 1-50hp, 1-25hp, 1-5hp)
- 1 chiller 25 tons (1-20 hp)
- 1 constant volume condensate pump (0.75hp)
- 5 chilled water pumps (1-50hp, 2-5hp, 1-1.5hp, 1-3hp)

**HVAC Schedule:**

- 24 hrs/day

**Lighting:**

- 100% fluorescent 34-W

**Installed Retrofits:**

- Reduce lighting level- started Apr. 1993, completed Aug. 1993
- Replace exit signs - started Apr. 1993, completed May 1993
- Night set back for AHUs - started May 1994, completed Sep. 1994
- Motion detectors - completed Dec. 1993
- Domestic hot water pump shut down - started May 1994, completed Sep. 1994
- Upgrade economizer - started May 1994, completed Sep. 1994

**Other Information:**

- steam & chilled water is supplied by the main physical plant located at Sam Houston building

**John H. Reagan**  
Texas Capitol Complex  
169,746 square feet

Site Contact

Denis Feary  
State Purchasing and General Services Commission  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512)-475-2455

LoanSTAR Metering Contact

Aamer Athar  
053D WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409)-845-9213

**Summary of Energy Consumption**

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	542730 kWh	100	\$0.03470	\$18833
Peak 60 Minute Demand	963 kW	100	\$10.32	\$9938
Chilled Water	2046.2 MMBtu	100	\$3.250	\$6650

Peak 60 minute demand was recorded at 1500 Thursday 8/24/95.  
There were 744 hours in this month.

**Monthly Retrofit Savings**

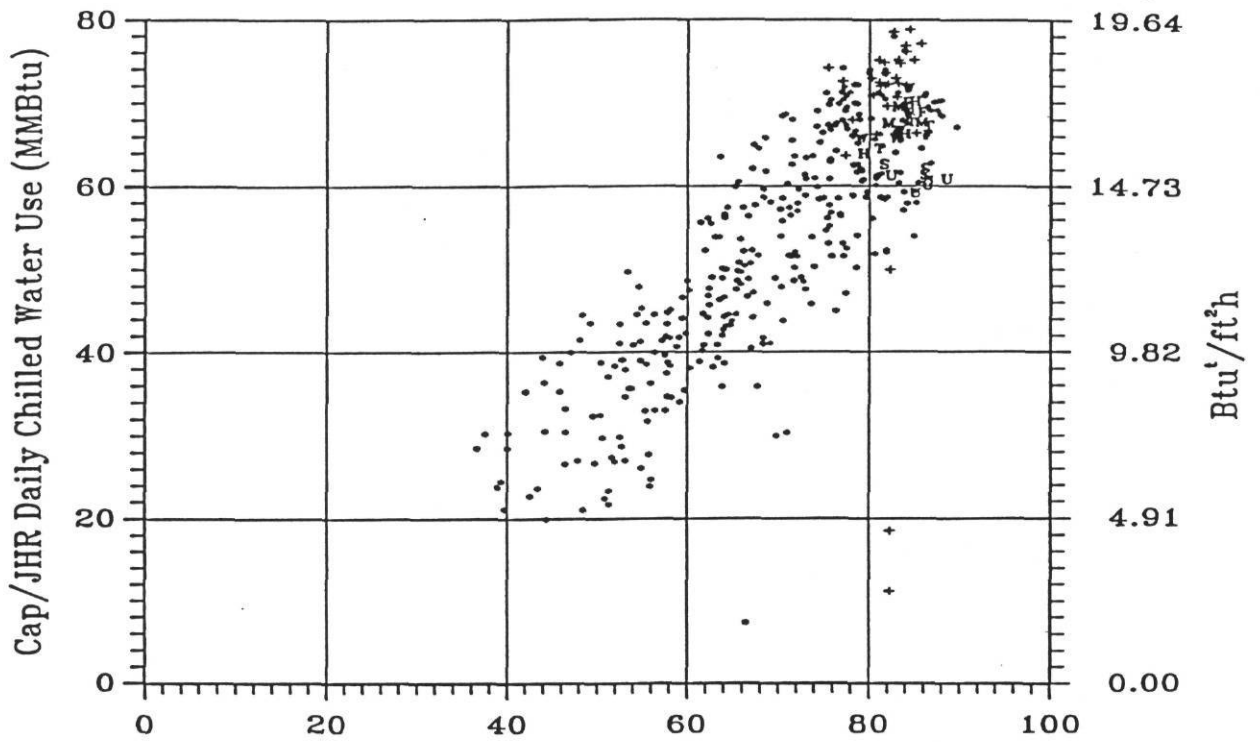
	Measured Savings		Audit Estimated Savings	
Electricity (kWh)	8172	\$284	75420	\$2625
Cond./H.W./N.G. (MMBtu)	N/A	N/A	97	\$335
Monthly Total		\$284		\$2980
Total to Date*	(29 months)	\$22186	(27 months)	\$38258

\*Measured savings include construction period. Audit estimated savings do not.

**Comments**

- ★ Chilled water use decreased slightly when compared to August 1994.
- ★ Measured savings do not include heating and electrical demand savings.

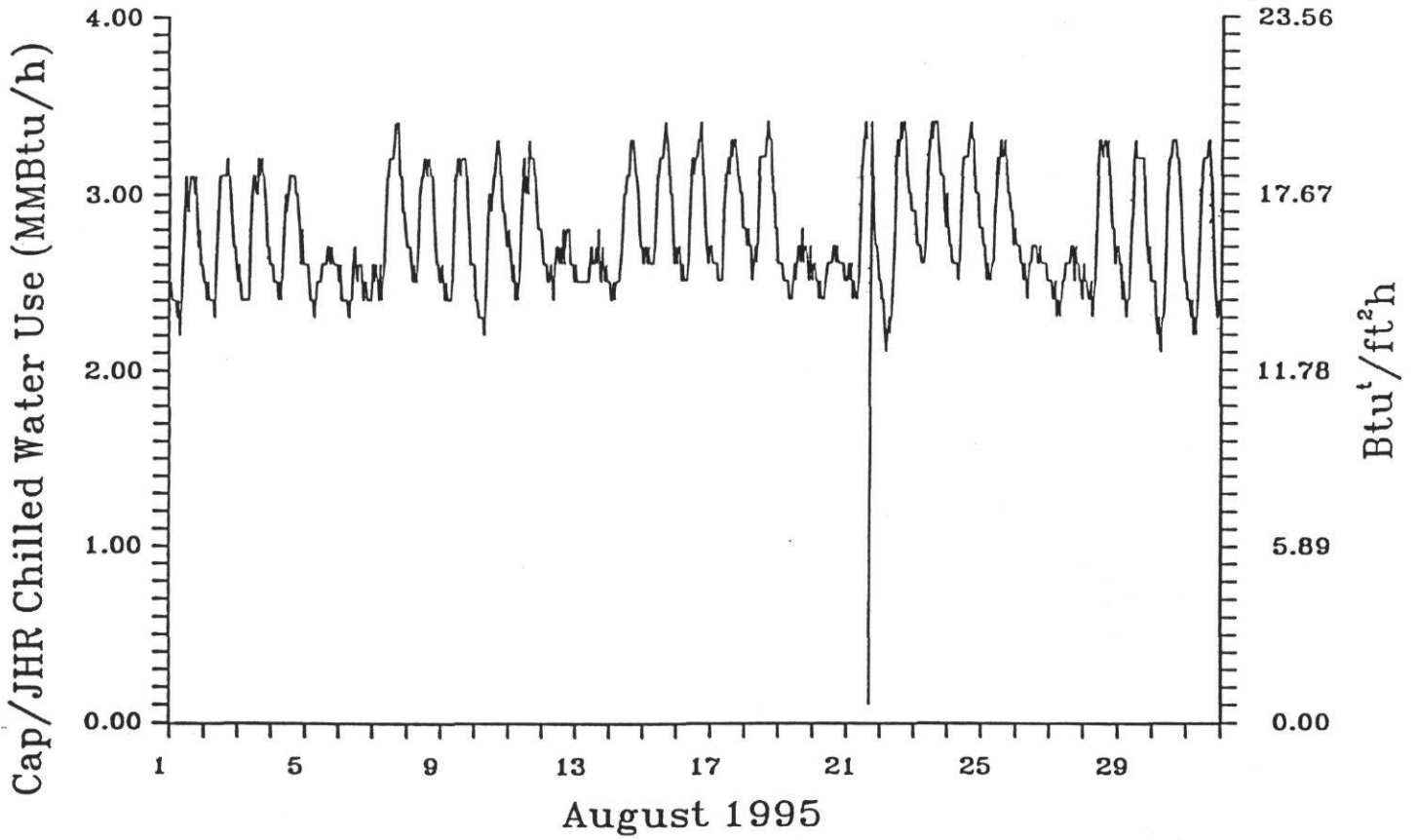
John H. Reagan - Texas Capitol Complex - August 1995



Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

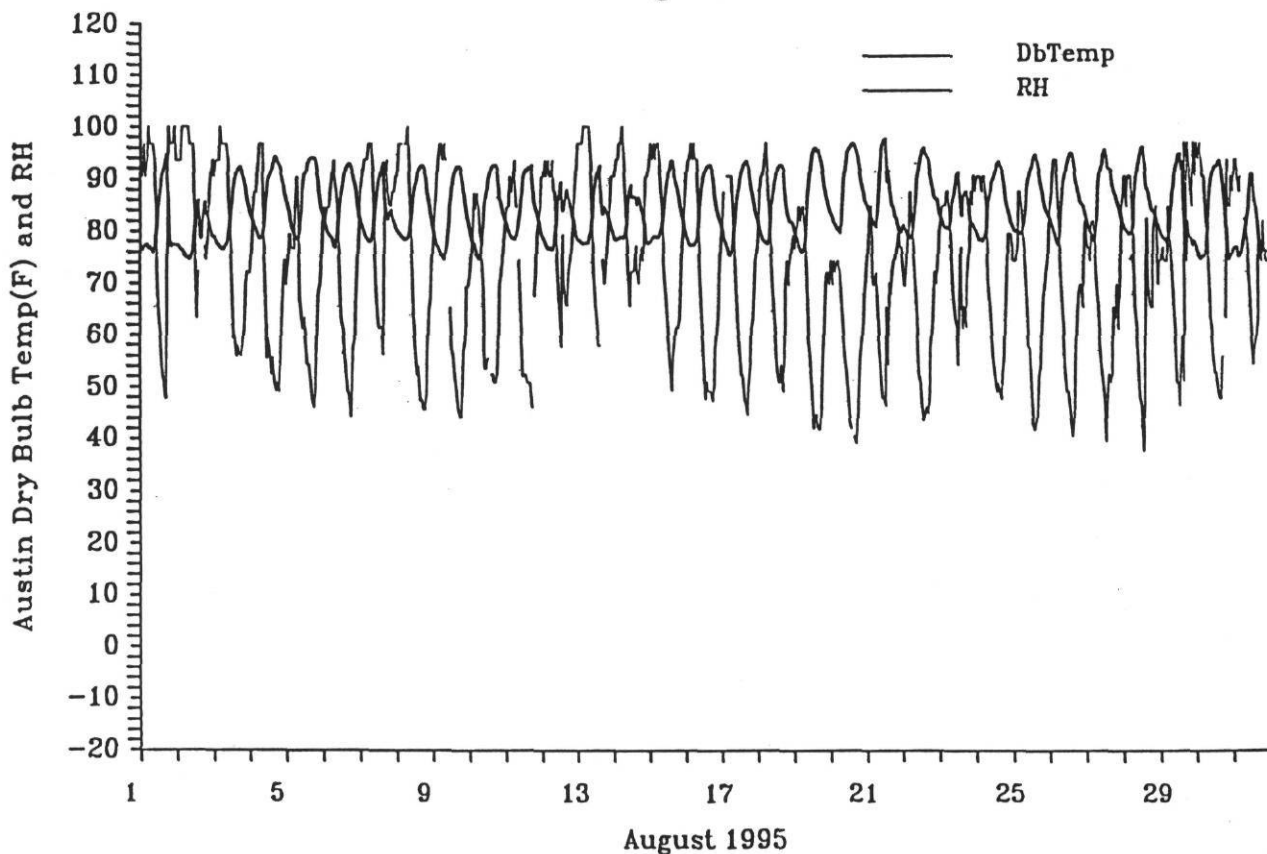
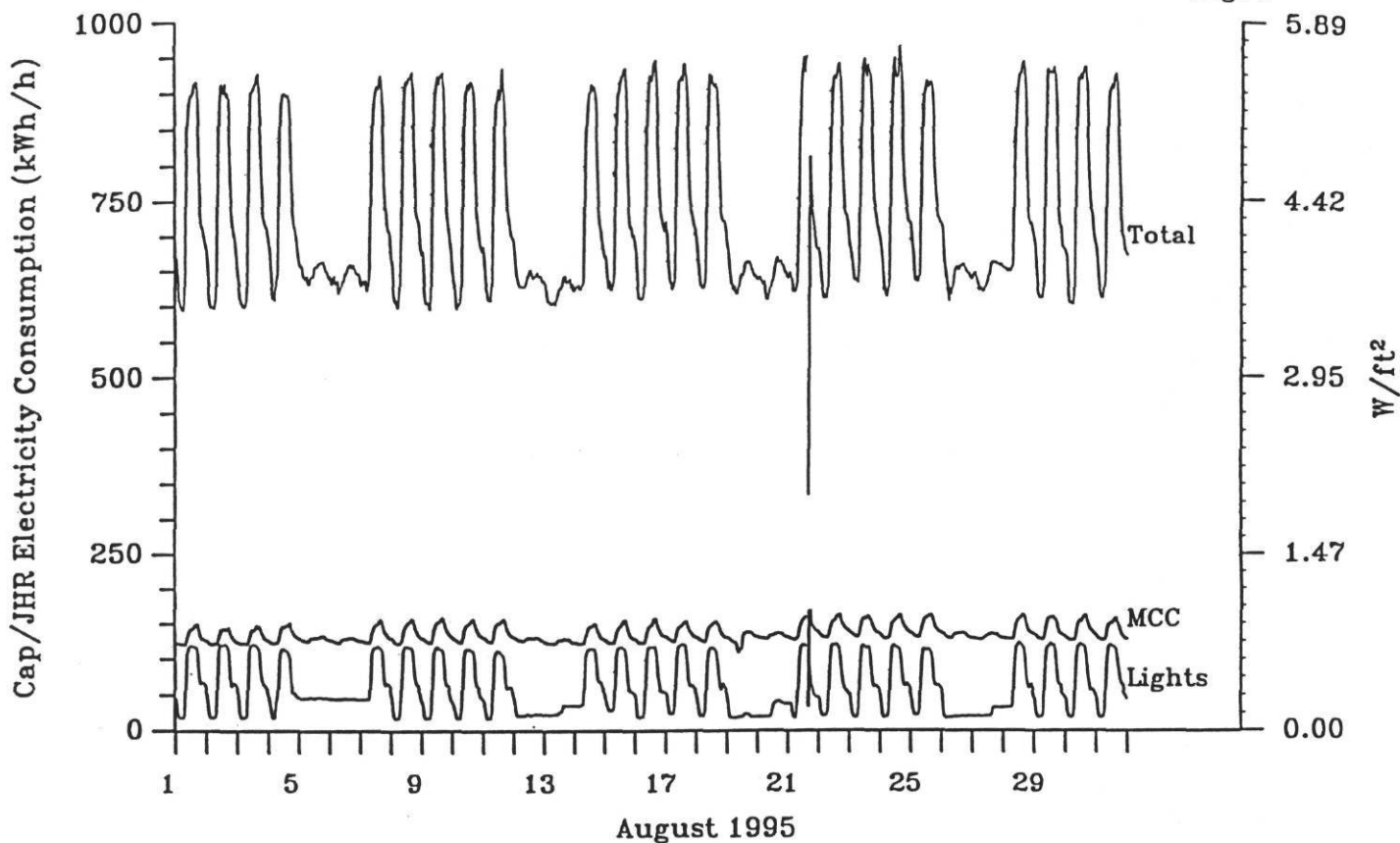
Points from this month last year are shown as +.  
All other points are shown as \*.

John H. Reagan - Texas Capitol Complex - August 1995



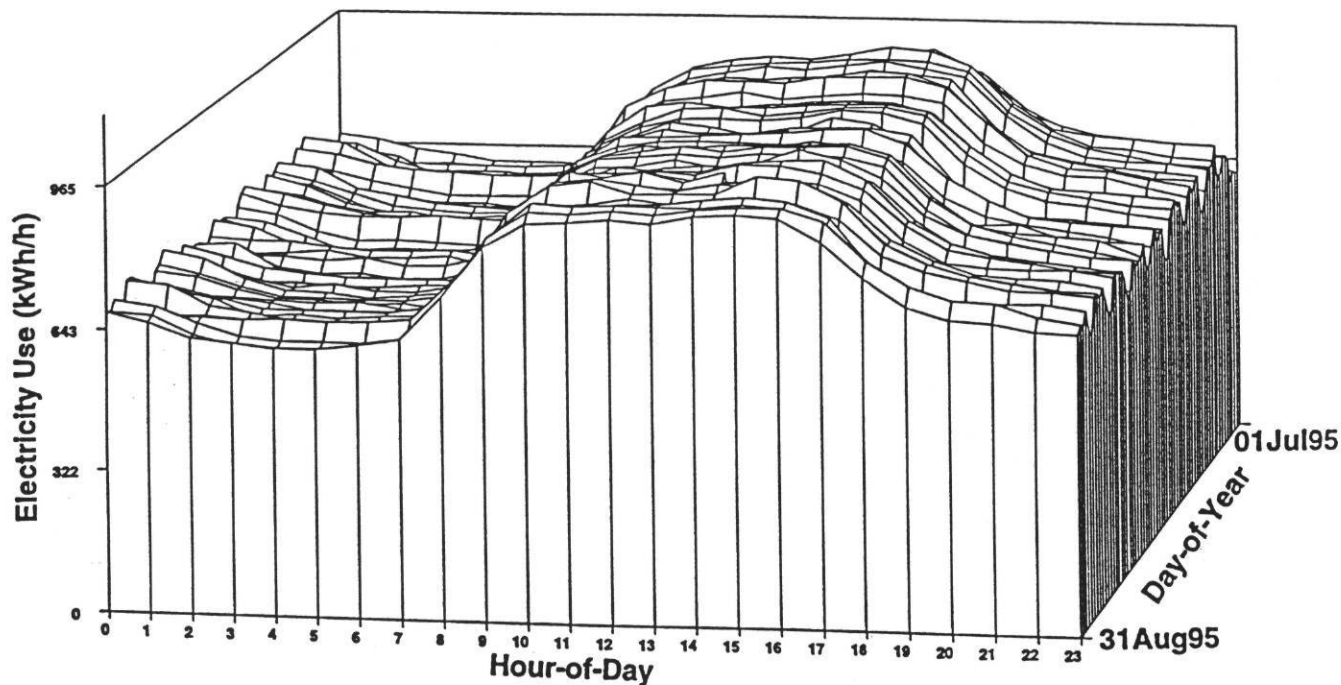
John H. Reagan - Texas Capitol Complex - August 1995



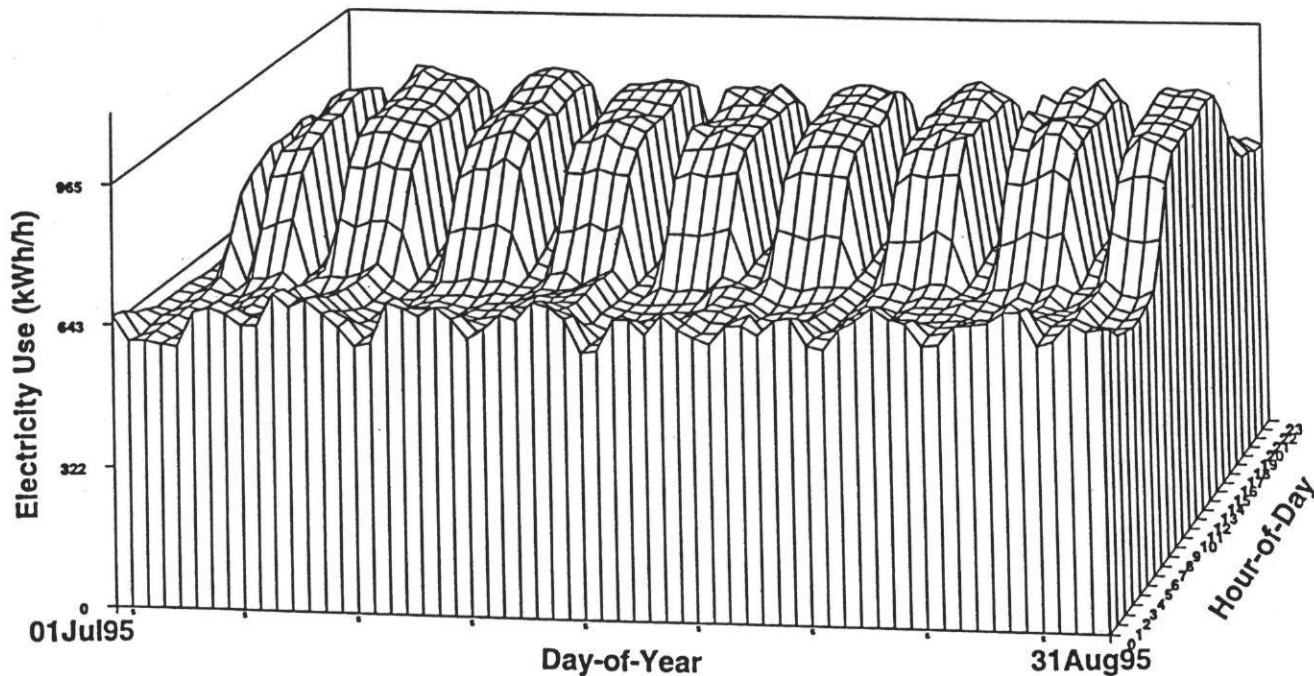


John H. Reagan - Texas Capitol Complex - August 1995

### Whole-Building Electric



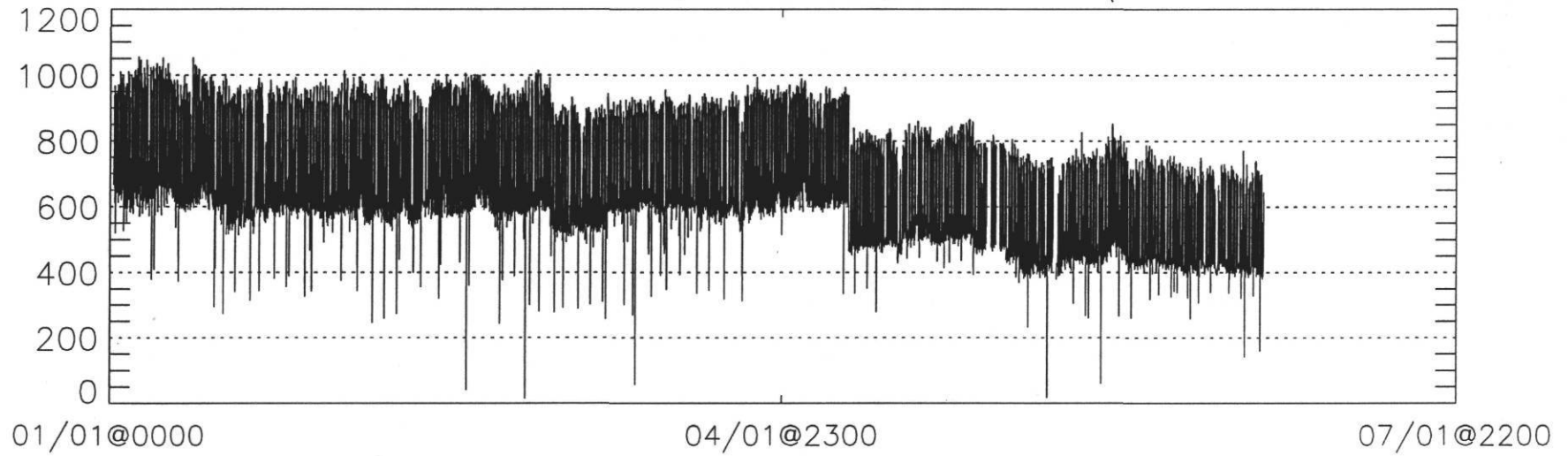
### Whole-Building Electric



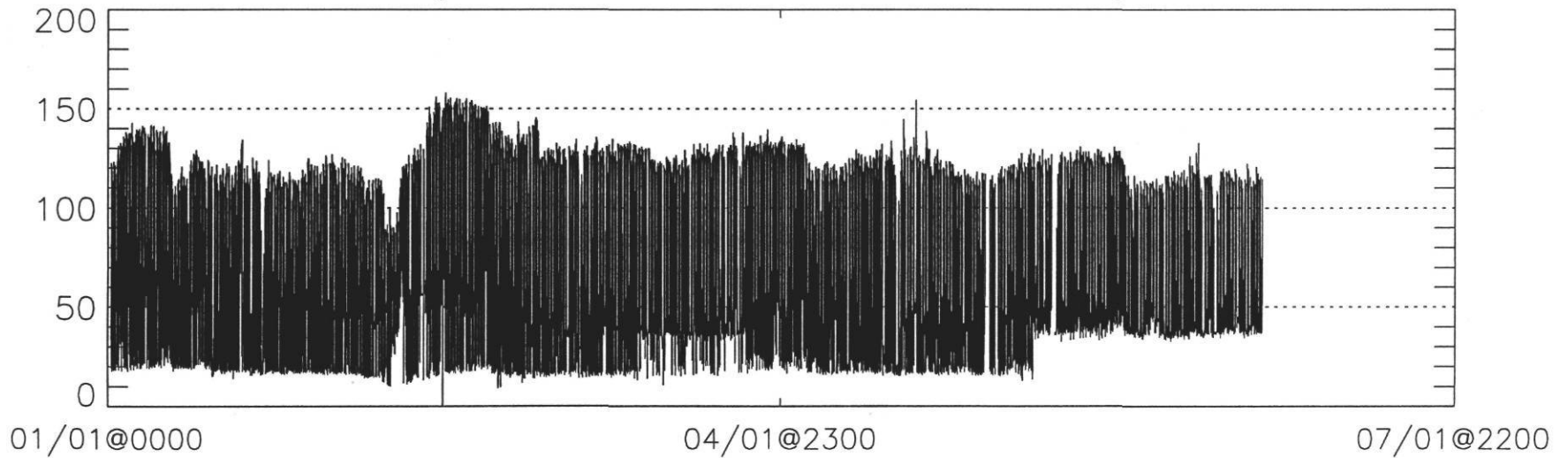
Sundays are marked with an "S"

John H. Reagan - Texas Capitol Complex - August 1995

(ch0211) WBE

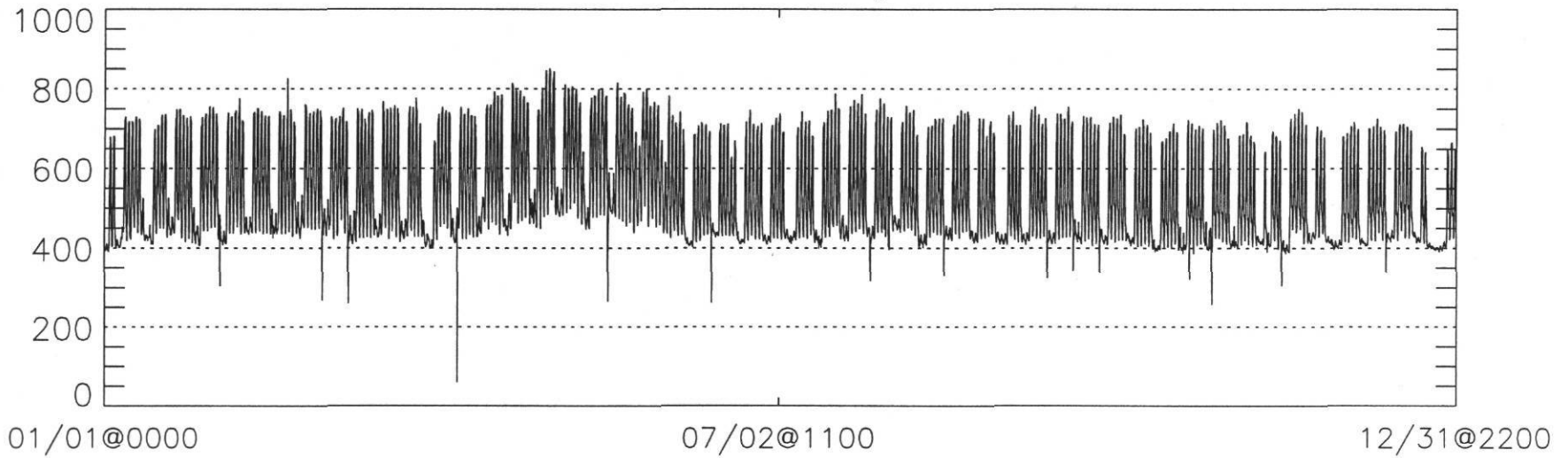


LIGHT  
(ch0203+ch0204+ch0205)

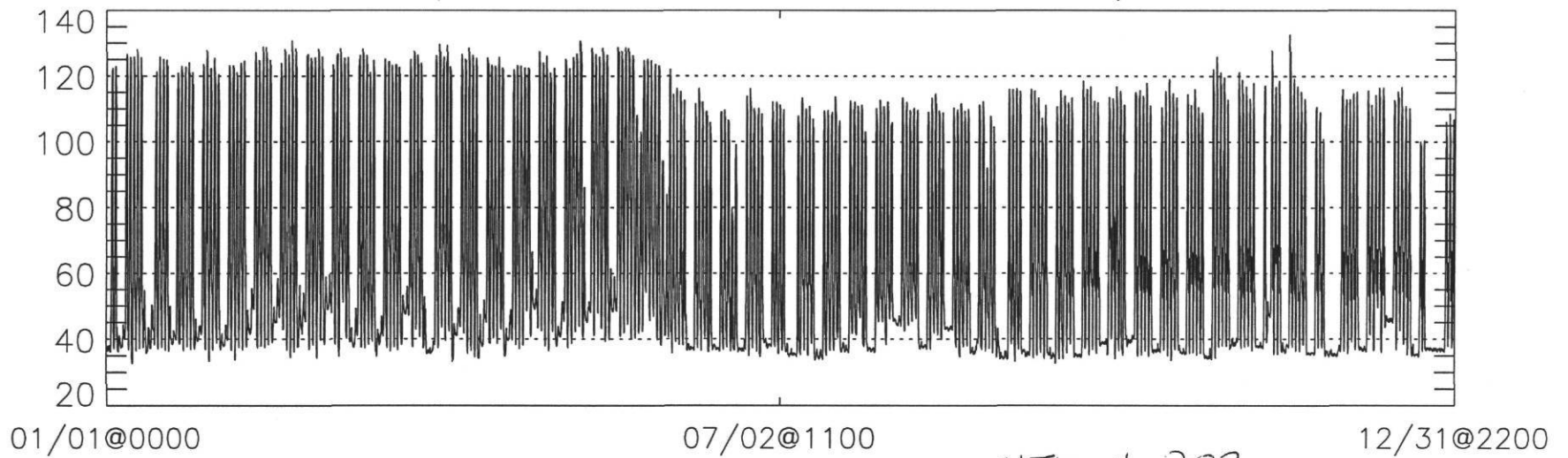


SITE 203 - JOHN. H. REAGAN  
01/91 - 07/99

(ch0211) WBE



(ch0203+ch0204+ch0205) LIGHT.



SITE # 203  
01/01/97 - 12/31/97  
JAM H. BEAGAN

lstarxp% listsite 205

**Site: 205**                      **James E. Rudder (JER)**

---

Mecr id:

Start date:     12/11/1991

Energy Type:    default

Construction

    begin:        04/01/1992                      end: 08/01/1992

Area:            80000.00

Facility:        Texas Capitol Complex

Contact Info:    Denis Feary  
                  State Purchasing \& General Services Com  
                  Building Maintenance Department  
                  P.O. Box 13047  
                  Austin, TX 78711  
                  (512) 475--2455

## CAPITOL COMPLEX

## James E. Rudder Building

**Building Envelope:**

- 80,000 sq.ft
- 6 floors, offices, data processing and computer facility.
- major remodeling and renovation in 1988
- walls: masonry, with a cast stone on north face and a brick-veneer facing on the remaining.
- windows: single glazed with interior blinds
- roof: flat

**Building Schedule:**

- offices: 7:30 am to 6:00 pm (M-F)

**Building HVAC:**

- 6 constant volume multi-zone AHUs (2-20hp, 2-15hp, 2-7.5hp)
- 2 constant volume dual duct AHUs (2-65hp)
- 2 chillers (1-110 hp, 1-15hp)
- 2 cooling tower (1-6hp, 1-2hp)
- 1 constant volume condensate pump
- 6 chilled water pumps (3-5hp, 1-20hp, 1-7.5hp, 1-15hp)
- 3 computer room AC (3-40hp)
- 3 hot water heaters (small hp)
- 14 return fans (28 hp total)

**HVAC Schedule:**

- 24 hrs/day

**Lighting:**

- 100% fluorescent 34-W

**Installed Retrofits:**

- Replace exit signs - started Apr. 1993, completed Dec. 1993
- Chiller lead lag modification - canceled

**Other Information:**

- steam is supplied by the main physical plant located at Sam Houston building

**James E. Rudder**  
Texas Capitol Complex  
80,000 square feet

Site Contact

Denis Feary  
State Purchasing and General Services Commission  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512)-475-2455

LoanSTAR Metering Contact

Aamer Athar  
053D WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409)-845-9213

**Summary of Energy Consumption**

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	324123 kWh	100	\$0.03740	\$12122
Peak 60 Minute Demand	546 kW	100	\$10.10	\$5509

Peak 60 minute demand was recorded at 1000 Wednesday 8/2/95.  
There were 744 hours in this month.

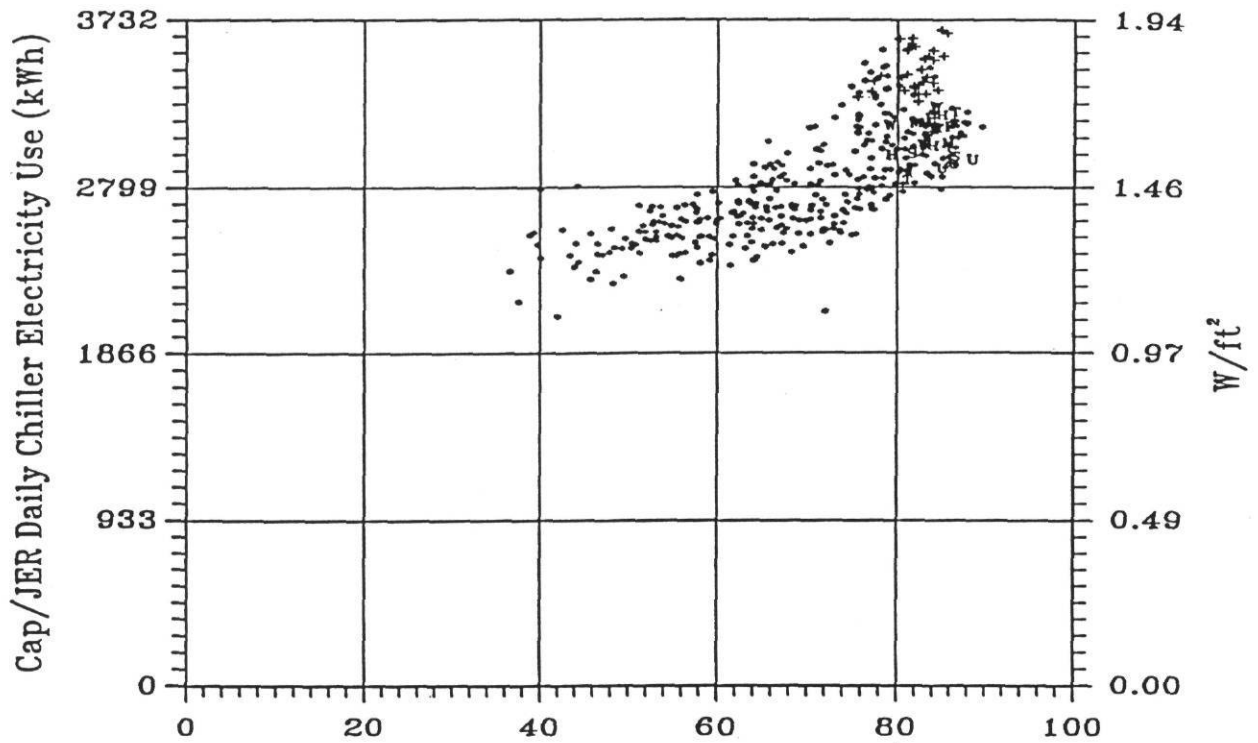
**Monthly Retrofit Savings**

	Measured Savings		Audit Estimated Savings	
	kWh	\$	kWh	\$
Electricity (kWh)	8811	\$330	2300	\$86
Monthly Total		\$330		\$110
Total to Date*	(20 months)	\$5137	(20 months)	\$2193

\*Measured savings include construction period. Audit estimated savings do not.

**Comments**

- ★ Chilled water use is significantly less than in August 1994.
- ★ Measured savings do not include electrical demand savings.

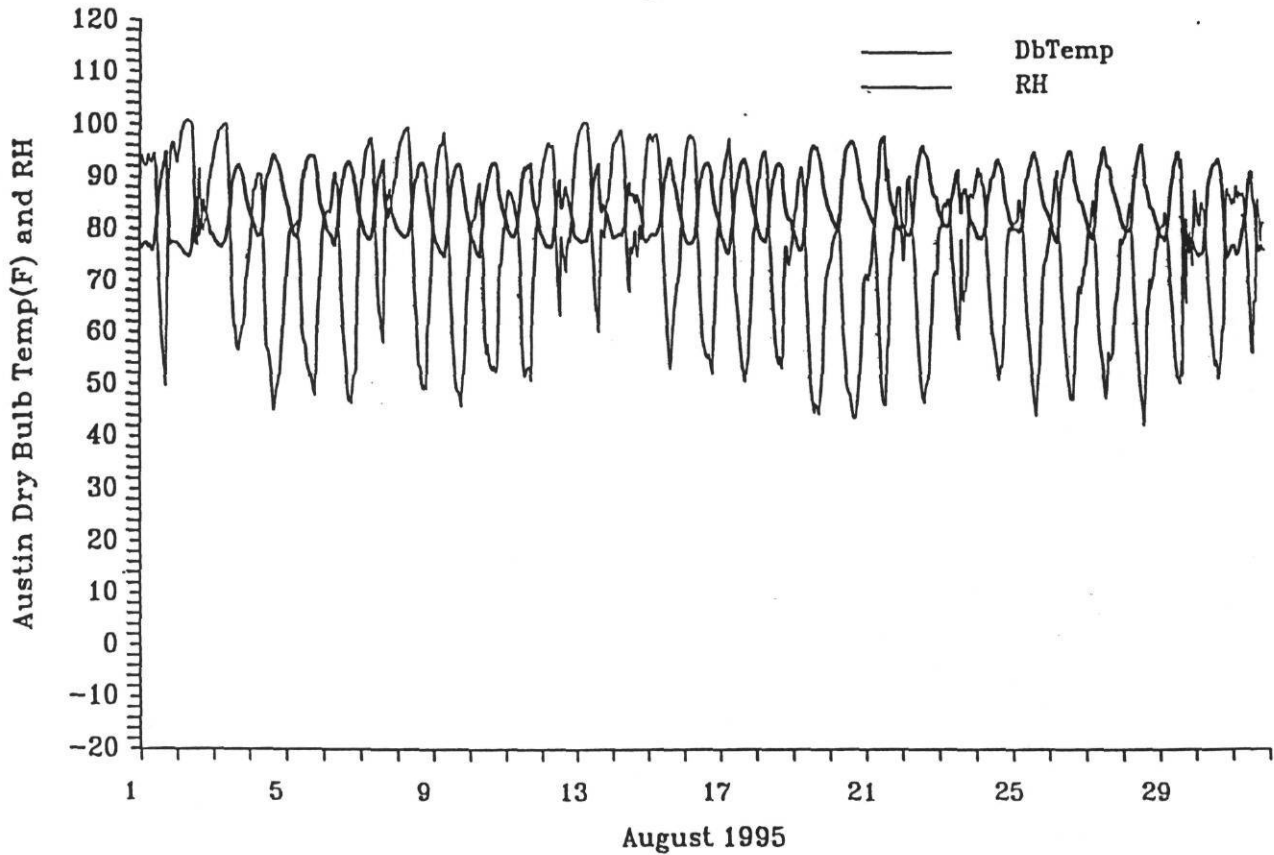
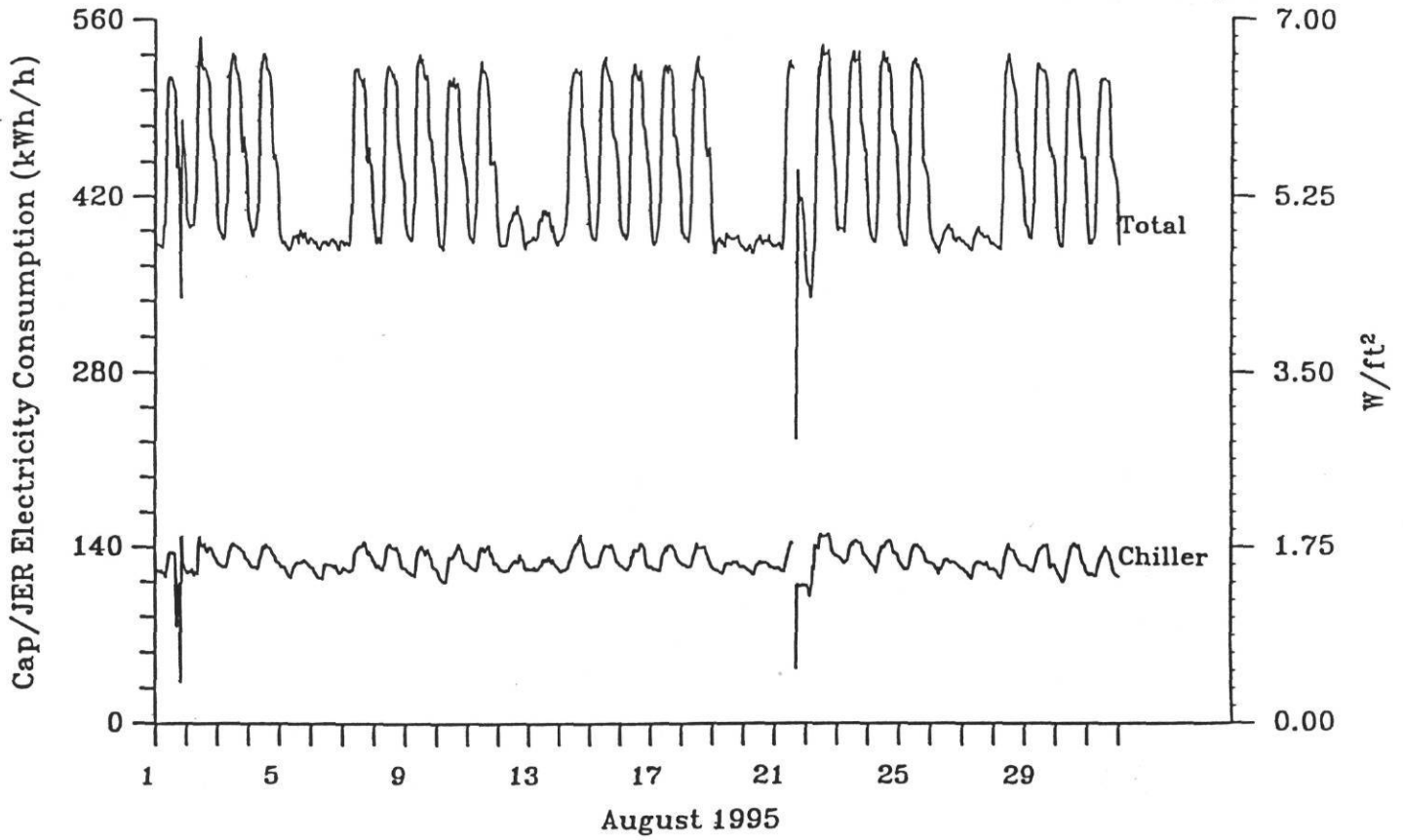


Data points for the current month are shown as letters.  
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Points from this month last year are shown as +.  
All other points are shown as \*.

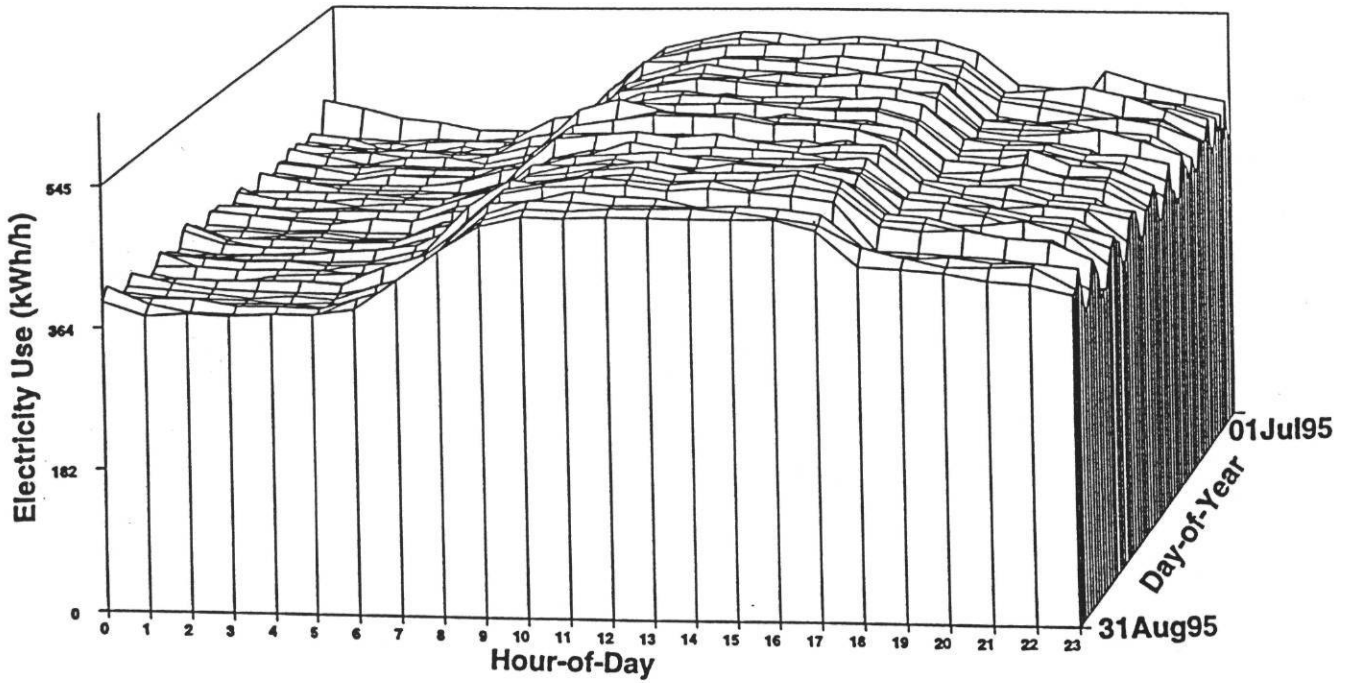
James E. Rudder - Texas Capitol Complex - August 1995



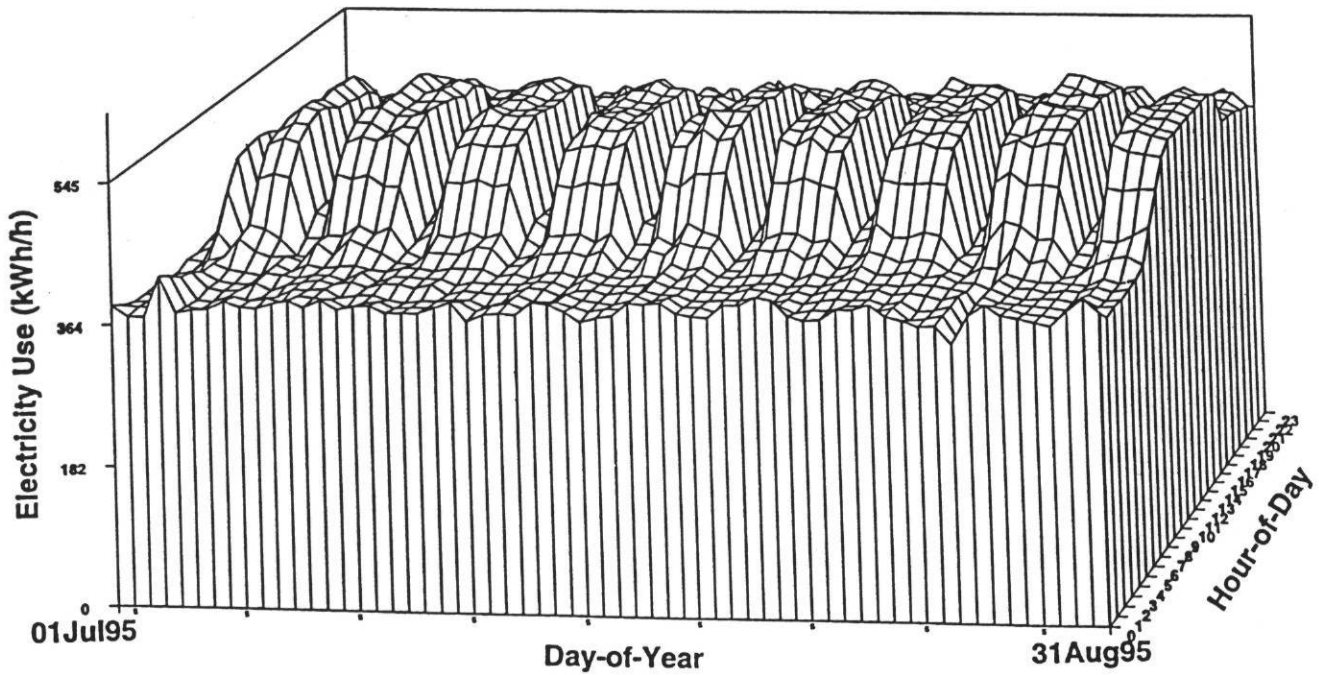


James E. Rudder - Texas Capitol Complex - August 1995

### Whole-Building Electric



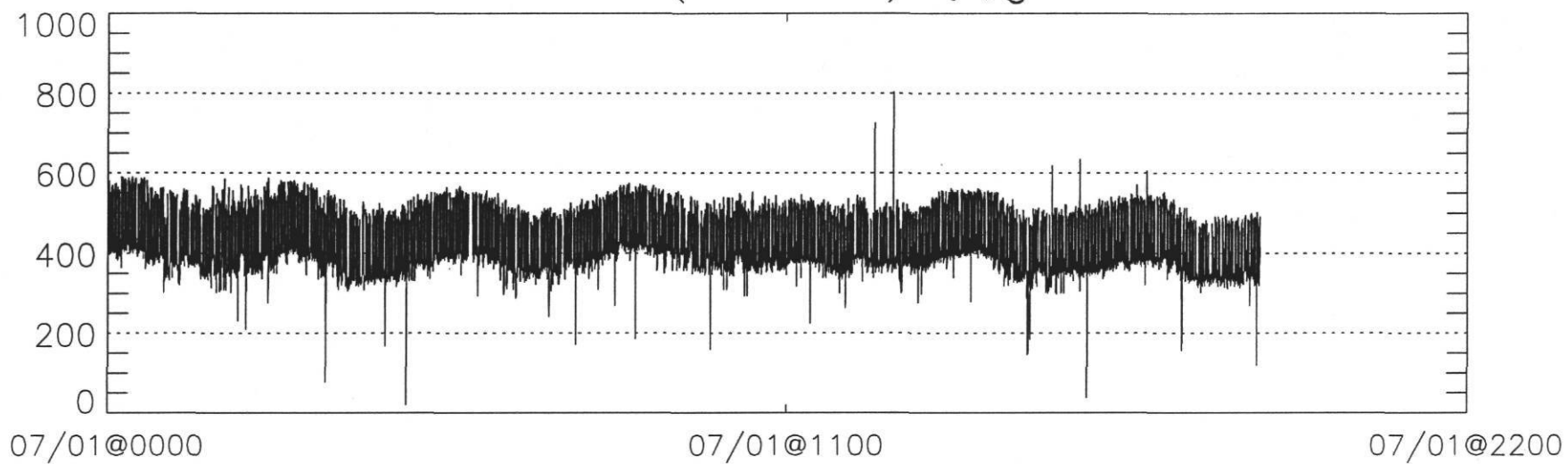
### Whole-Building Electric



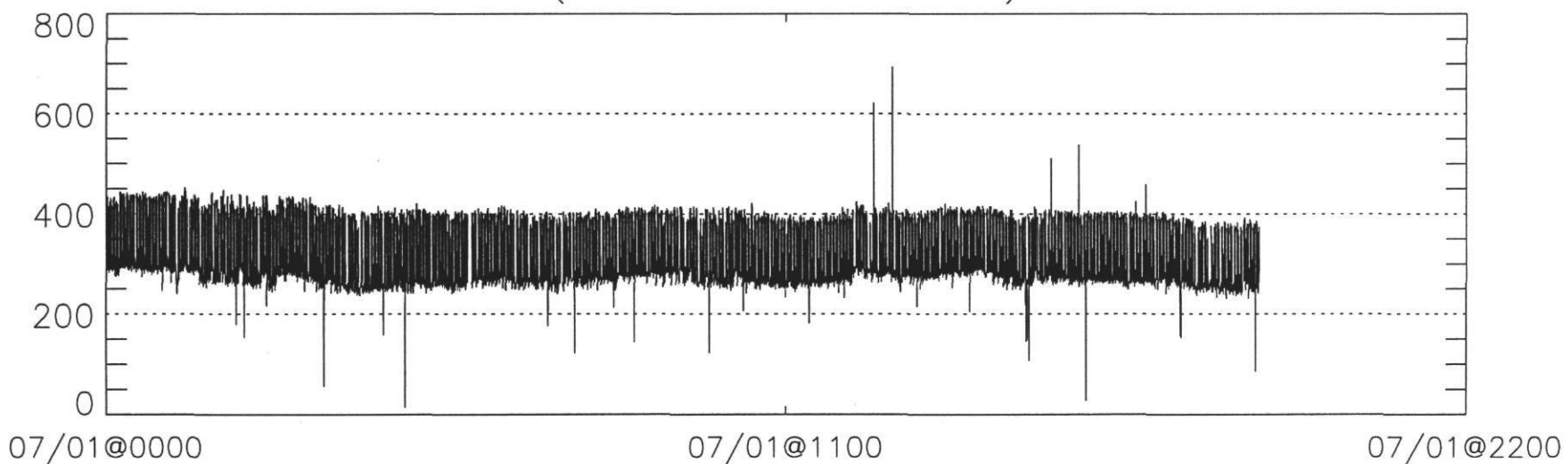
Sundays are marked with an "S"

James E. Rudder - Texas Capitol Complex - August 1995

(ch0213) WBE

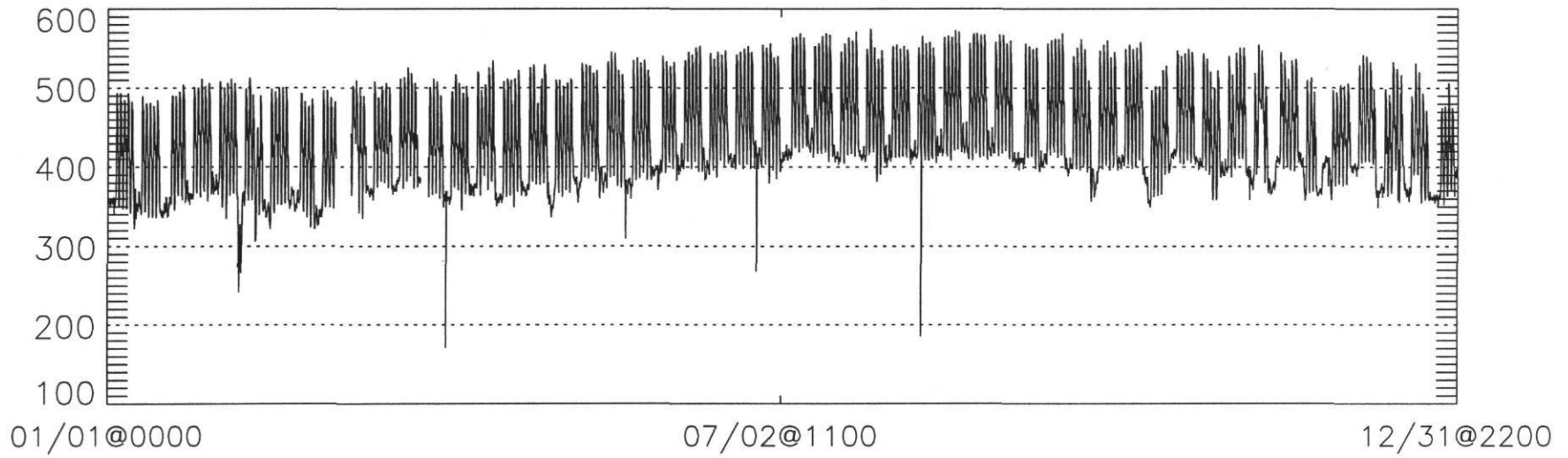


(ch0213-ch0212) LIGHT + EQUIPMENT

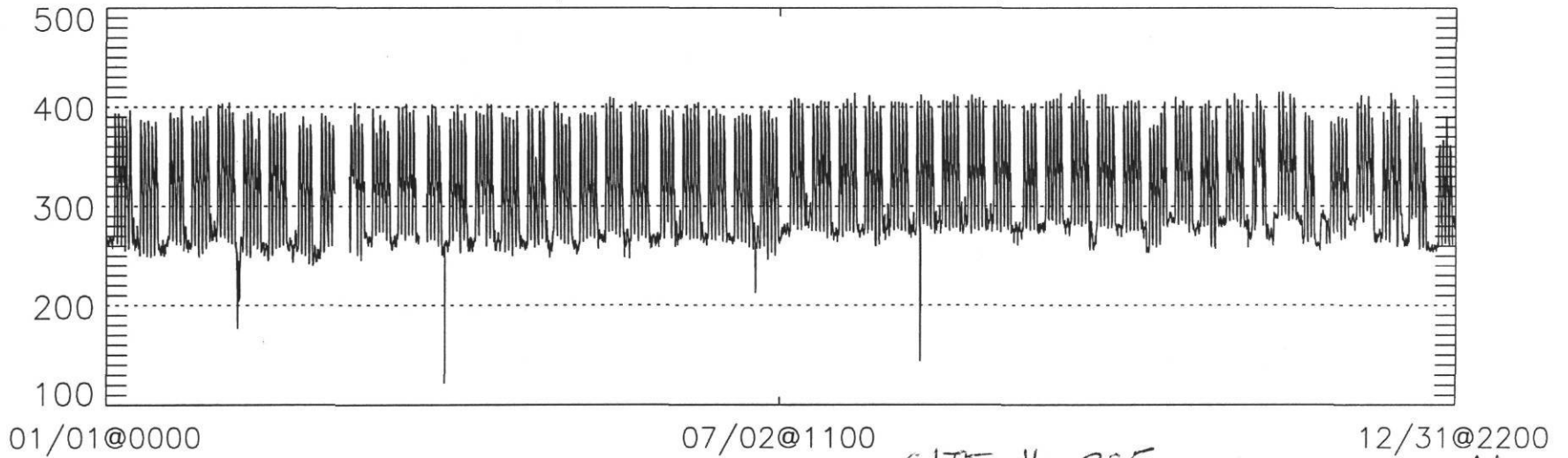


SITE 205 James E. Rudder  
07/91 - 07/95

(ch0213) WBE



(ch0213-ch0212) LIGHT + EQUIPMENT



SITE # 205 Jame E. Yudder.  
01/94 - 12/94

**Site: 206 Insurance Building (INS)**

---

Mecr id:

Start date: 12/11/1991

Energy Type: default

Construction

begin: 04/01/1992 end: 09/01/1992

Area: 102000.00

Facility: Texas Capitol Complex

Contact Info: Denis Feary  
State Purchasing \& General Services Com  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512) 475--2455

## CAPITOL COMPLEX

## State Insurance Building

**Building Envelope:**

- 102,000 sq.ft
- 4 floors, erected 1961, offices
- walls: Texas granite
- windows: Single pane with aluminum solar screen (many large windows)
- roof: flat

**Building Schedule:**

- Offices: 7:30 am to 6:00 pm (M-F)

**Building HVAC:**

- 1 variable speed drive dual duct AHU (2-50 hp). 2, 50-hp motors replaced 1-100 hp motor for separate hot & cold decks
- 1 constant volume hot water pump (1/6hp)
- 1 chilled water pump (1-40hp)

**HVAC Schedule:**

- 24 hrs/day

**Lighting:**

- 100% fluorescent

**Installed Retrofits:**

- Domestic HW pump shut down - started May 1994, completed Aug. 1994
- Night set back for AHUs - started May 1994, completed Aug. 1994
- Install motion (occupancy) detectors for the restrooms - started Apr. 1993, completed Jun. 1993
- Reduce outside air - completed Sep. 1994
- Replace exit signs - completed Dec. 1993
- Reduce corridor lighting levels - started Apr. 1992, completed Oct. 1992

**Other Information:**

- steam and chilled water is supplied by the main physical plant located at Sam Houston building

# Insurance Building

Texas Capitol Complex  
102,000 square feet

## Site Contact

Denis Feary  
State Purchasing and General Services Commission  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512)-475-2455

## LoanSTAR Metering Contact

Aamer Athar  
053D WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409)-845-9213

## Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	222176 kWh	100	\$0.03480	\$7732
Peak 60 Minute Demand	416 kW	100	\$10.32	\$4291
Chilled Water	1963.4 MMBtu	100	\$3.250	\$6381

Peak 60 minute demand was recorded at 1200 Monday 8/28/95.  
There were 744 hours in this month.

## Monthly Retrofit Savings

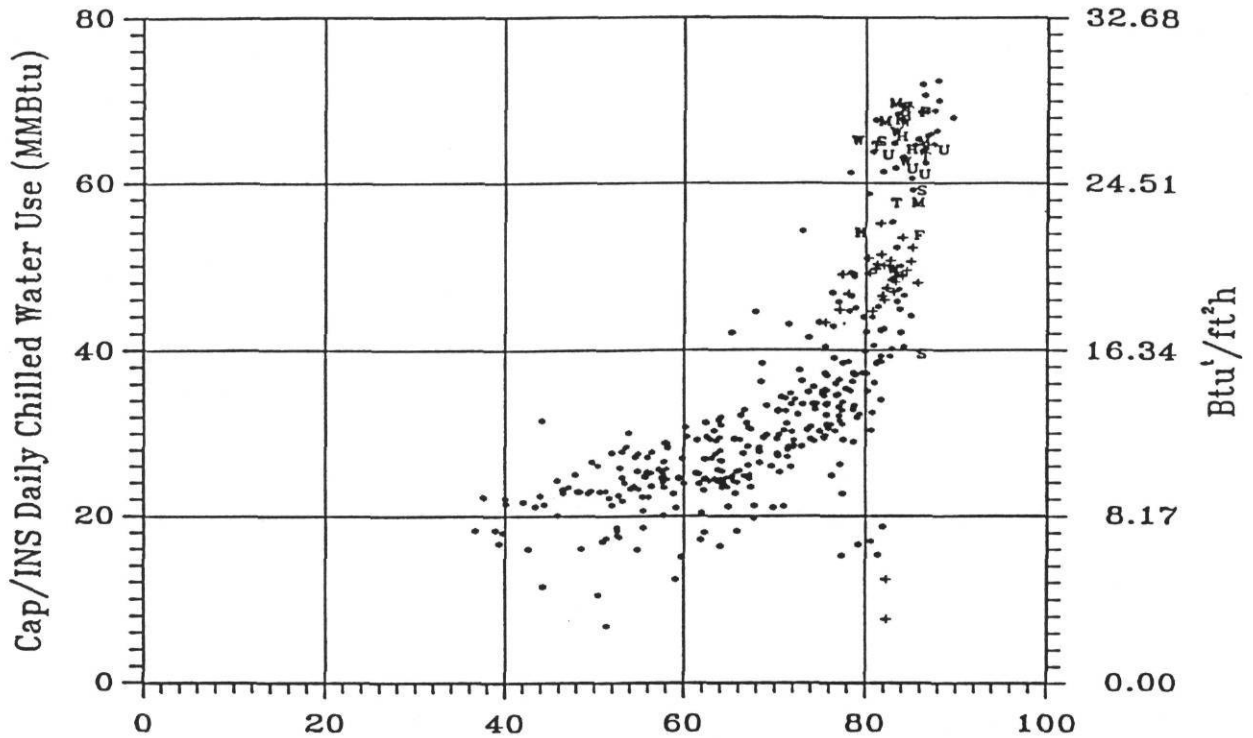
	Measured Savings		Audit Estimated Savings	
Electricity (kWh)	12191	\$424	64378	\$2240
Cond./H.W./N.G. (MMBtu)	N/A	N/A	195	\$673
Monthly Total		\$424		\$2998
Total to Date*	(37 months)	\$45774	(35 months)	\$36860

\*Measured savings include construction period. Audit estimated savings do not.

## Comments

- ★ Measured savings do not include heating savings.
- ★ Increased energy consumption has been noticed this month. Conversation with facility personnel has revealed that the building is now occupied.
- ★ Chilled water use is significantly higher than August 1994.

Insurance Building - Texas Capitol Complex - August 1995

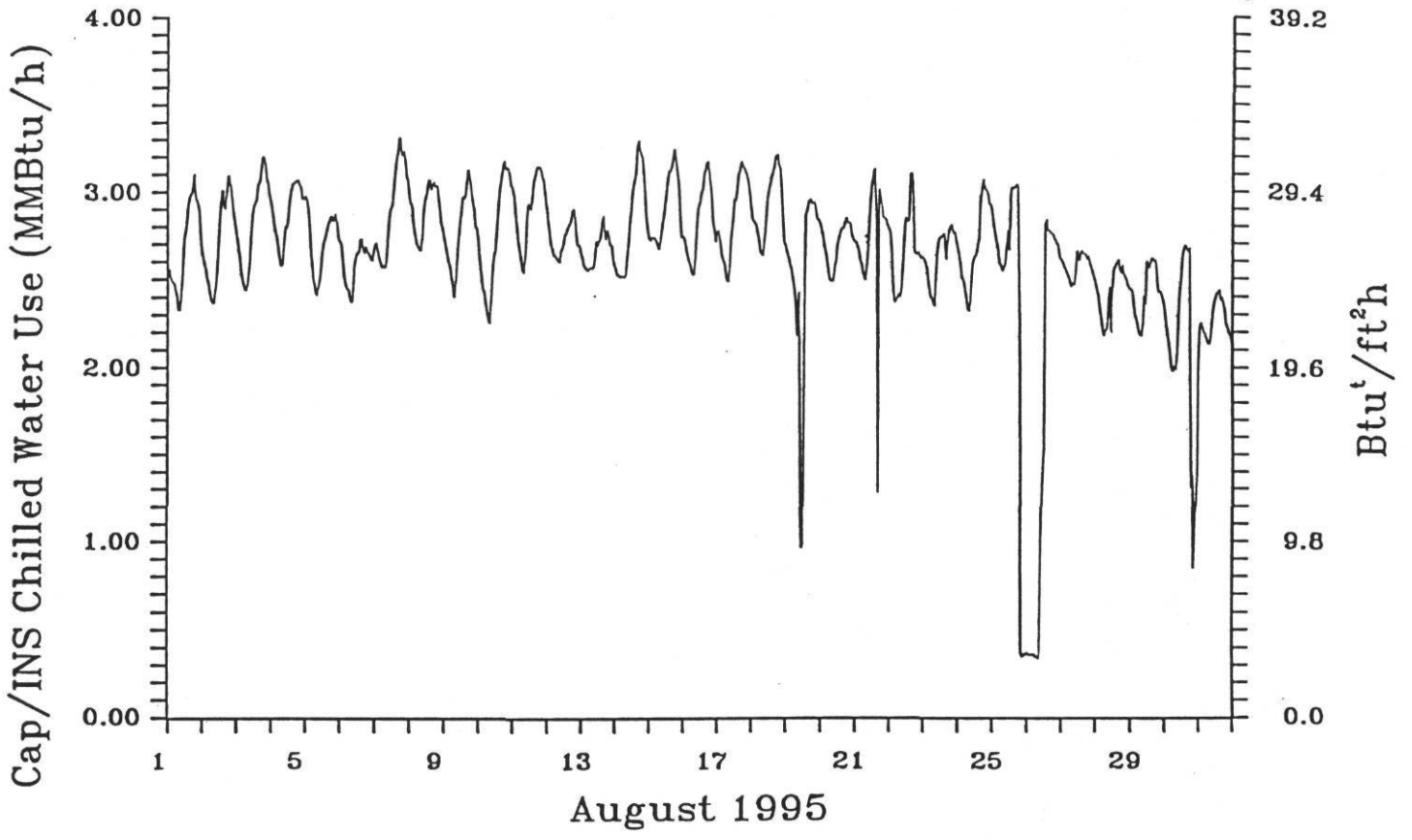


Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

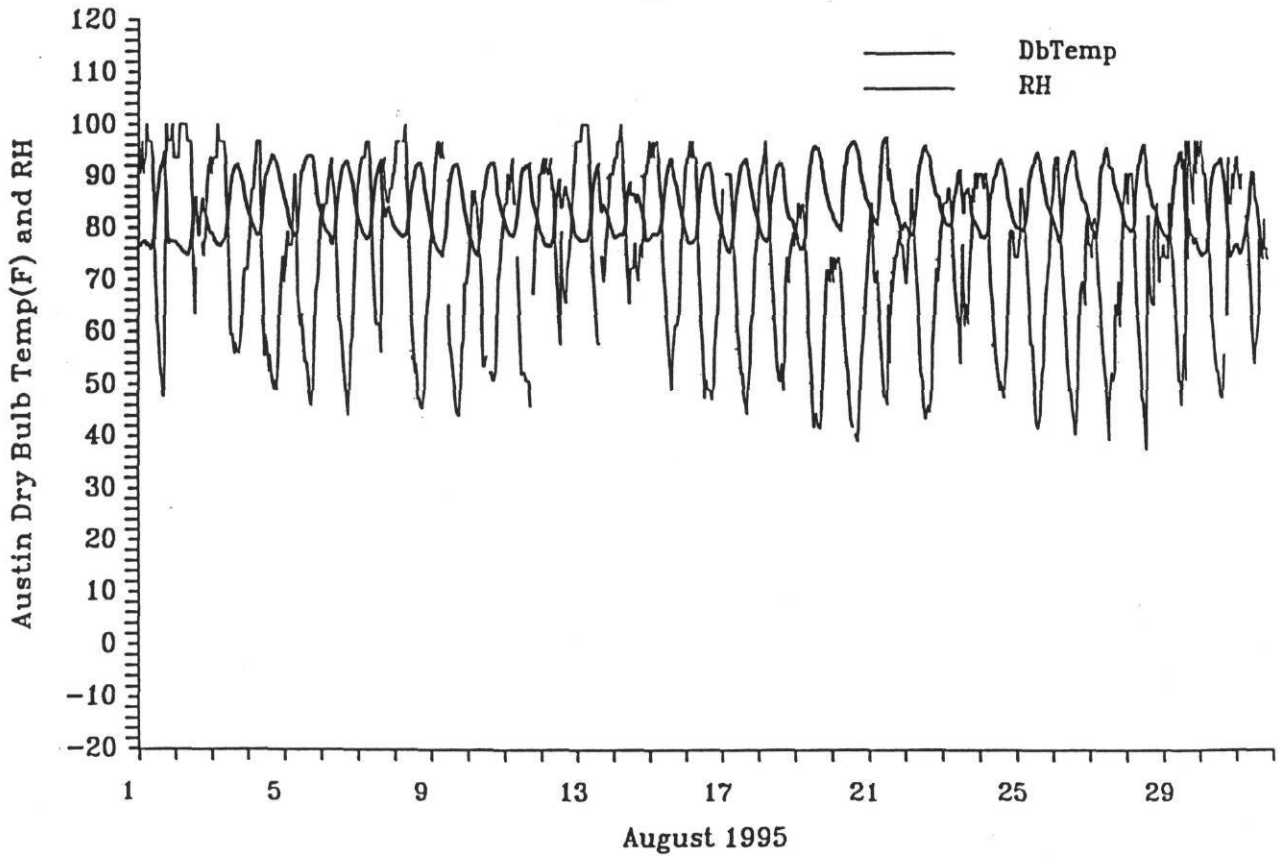
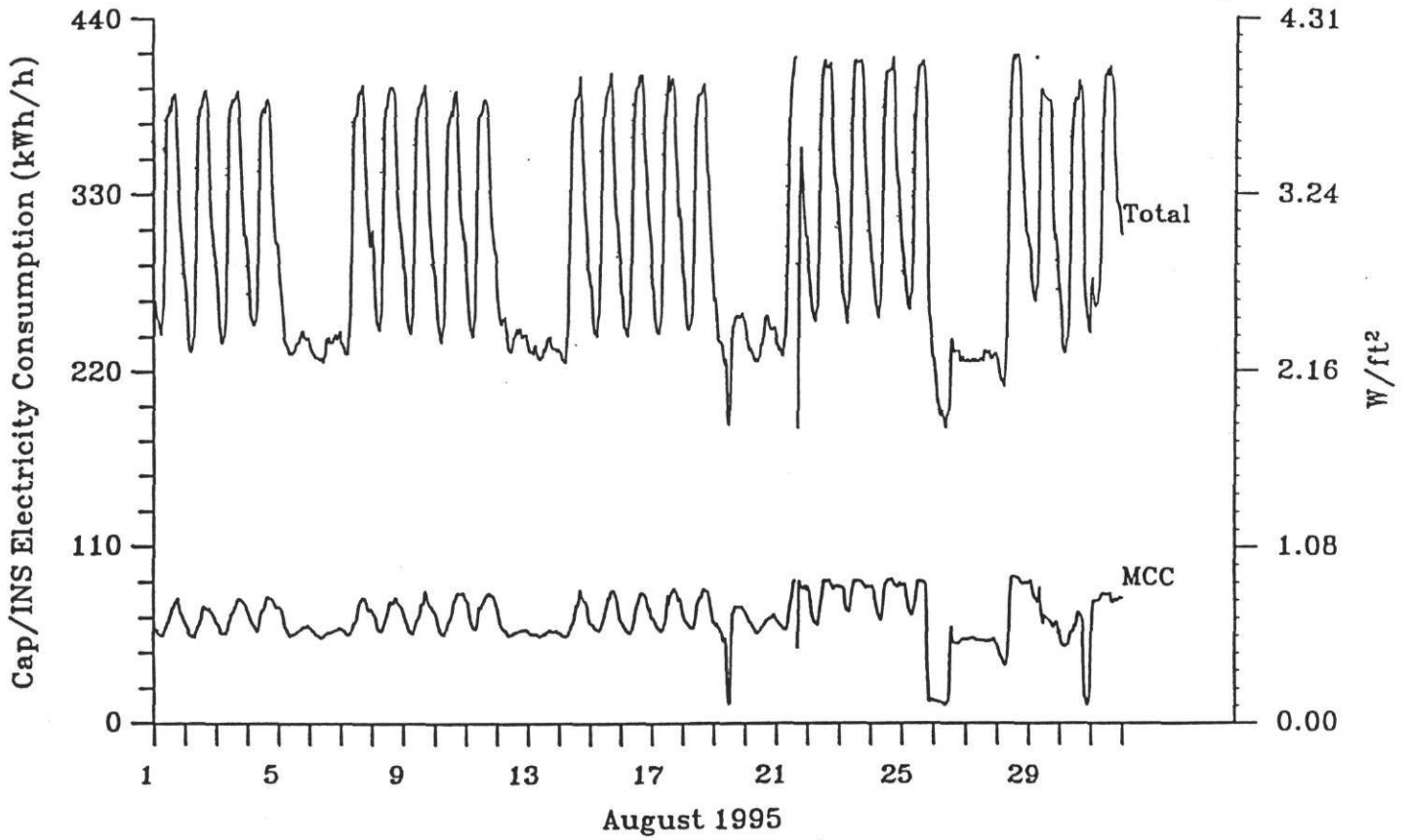
Points from this month last year are shown as +.  
All other points are shown as \*.

Insurance Building - Texas Capitol Complex - August 1995



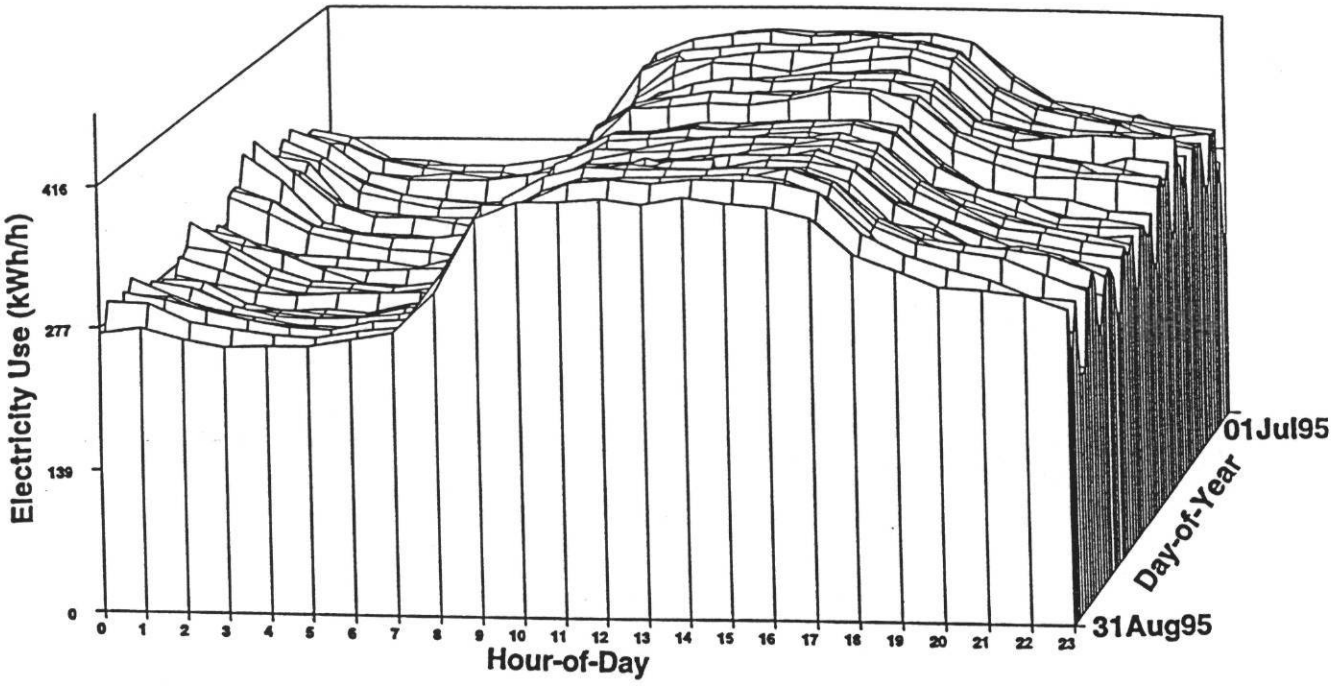


Insurance Building - Texas Capitol Complex - August 1995

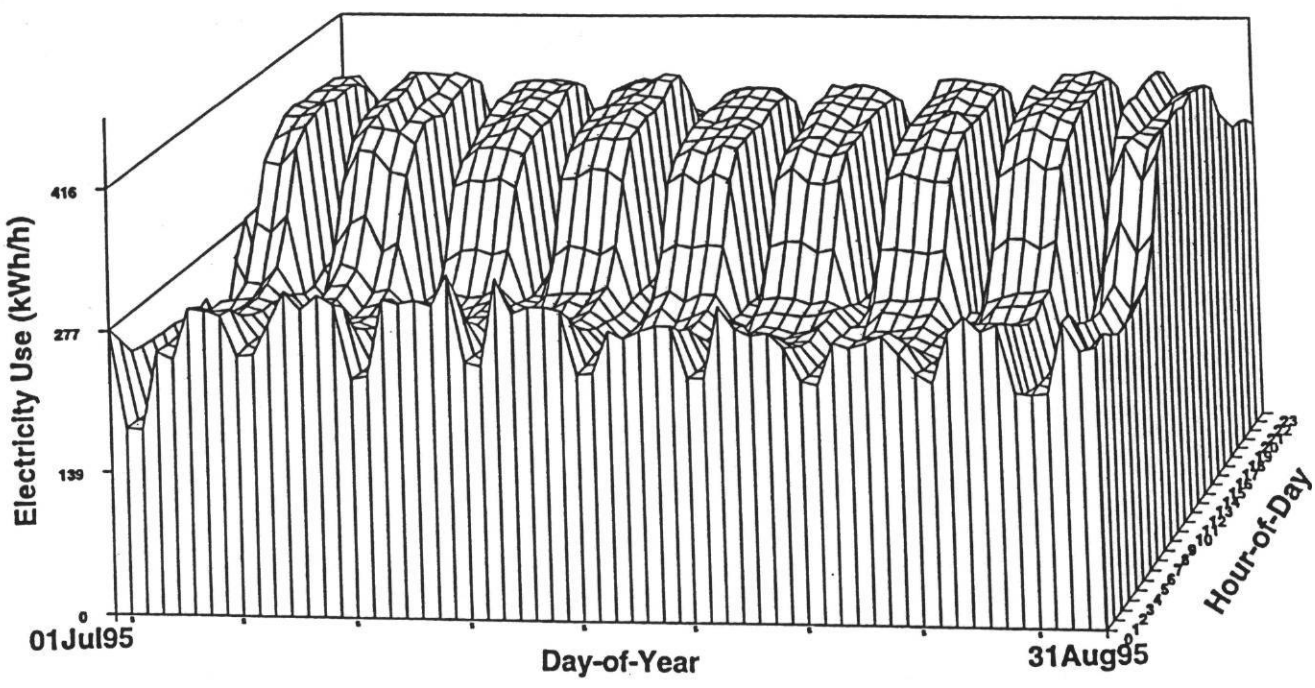


Insurance Building - Texas Capitol Complex - August 1995

### Whole-Building Electric



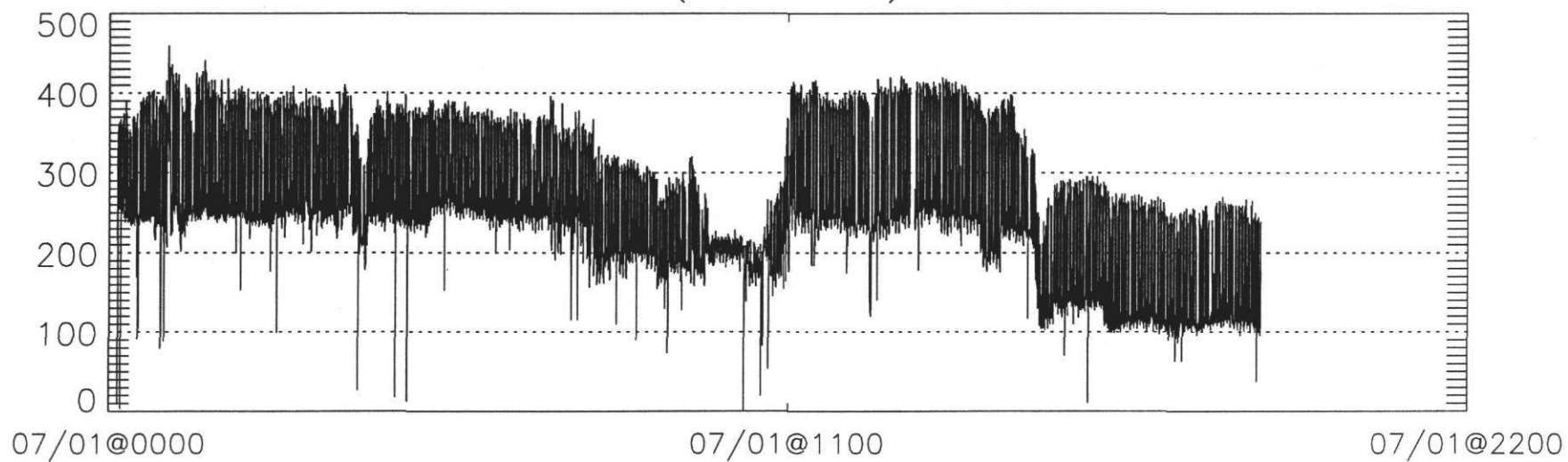
### Whole-Building Electric



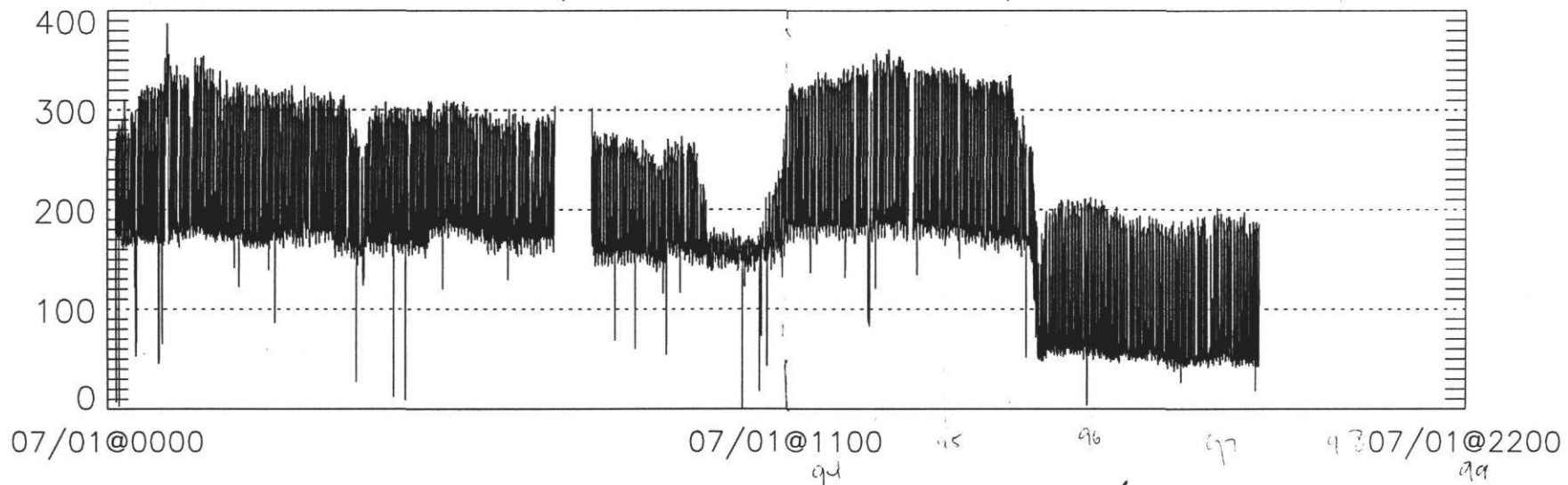
Sundays are marked with an "S"

Insurance Building - Texas Capitol Complex - August 1995

(ch0215) WBE



(ch0215-ch0214) LIGHTS + EQUIPMENT

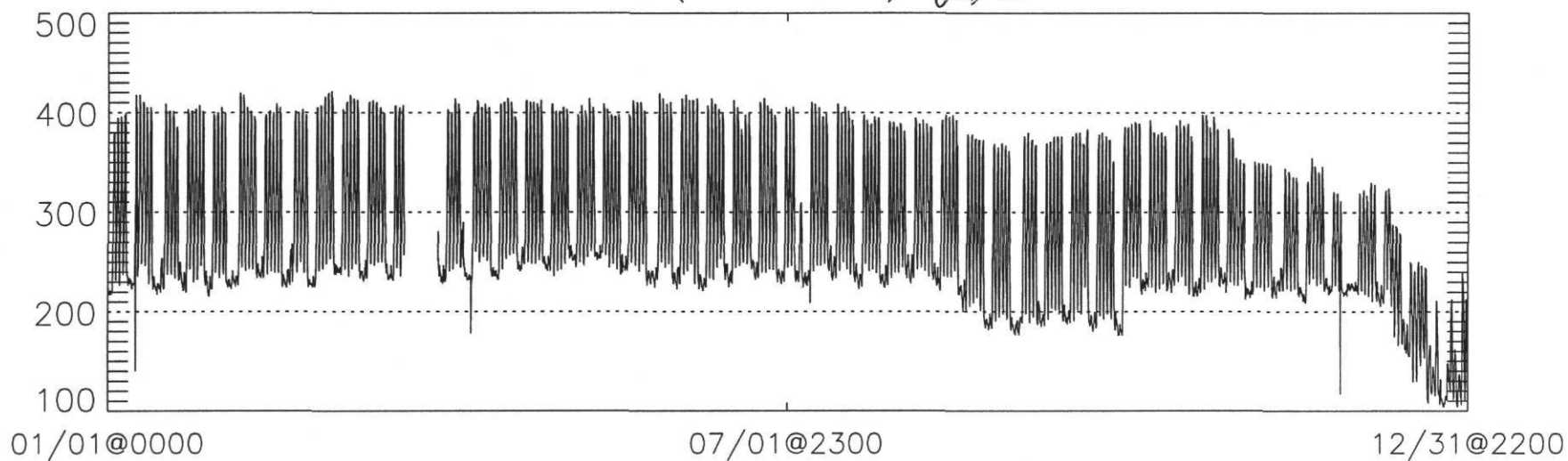


SITE 206

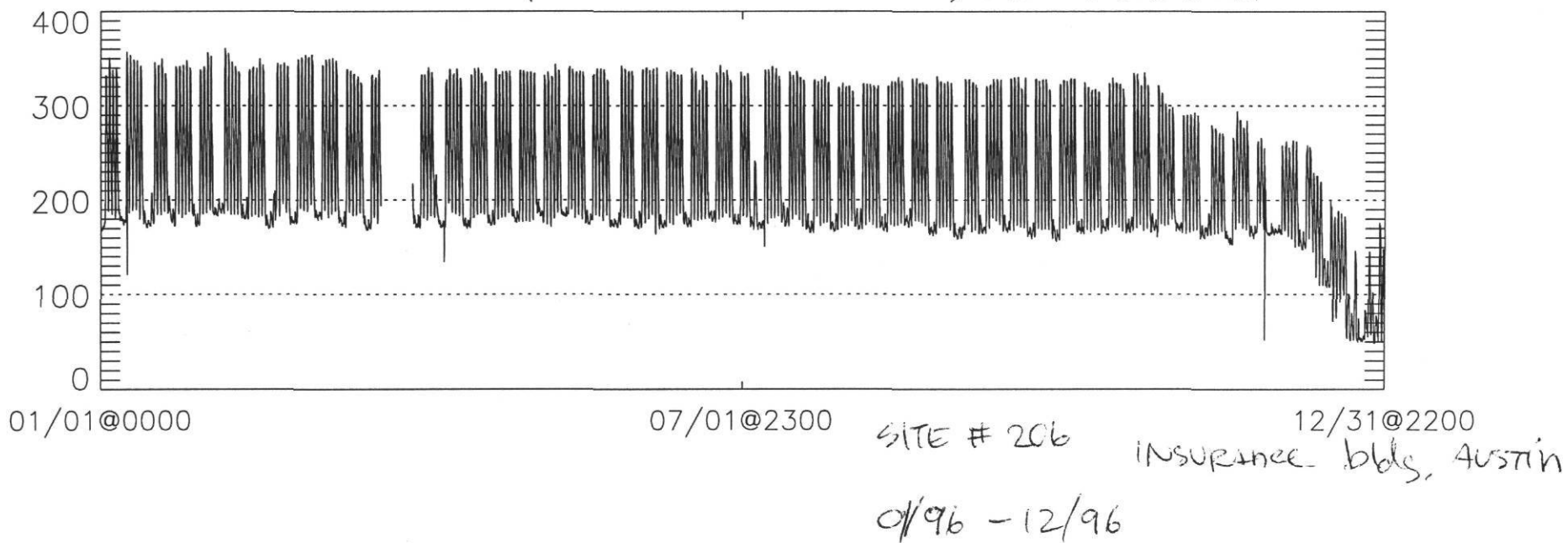
INSURANCE Bldg, AUSTIN.

07/91 - 07/99

(ch0215) WBE



(ch0215-ch0214) LIGHTS + EQUIPMENT



lstarxp% listsite 207

**Site: 207 Insurance Annex (INX)**

Mecr id:

Start date: 12/11/1991

Energy Type: default

Construction

begin: 04/01/1994 end: N/A

Area: 62000.00

Facility: Texas Capitol Complex

Contact Info: Denis Feary  
State Purchasing \& General Services Com  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512) 475--2455

## CAPITOL COMPLEX

## State Insurance Annex Building

**Building Envelope:**

- 62,000 sq.ft
- 4 floors, erected 1958, offices
- walls: concrete and bricks
- windows: solar screen , tint and solar shade on north and south windows, east and west windows are unprotected.
- roof: flat

**Building Schedule:**

- offices: 7:30 am to 6:00 pm (M-F)

**Building HVAC:**

- 5 multi-zone AHUs (3-5hp, 1-3hp, 1-7.5hp)
- 3 single-zone AHUs
- 1 constant volume condensate pump (1-7 1/2hp)
- 1 cooling tower (1-5hp)
- 1 chiller 100 tons (1-110hp)
- 1 constant volume hot water pump (1-5hp)
- 1 chilled water pump (1-10hp)

**HVAC Schedule:**

- 24 hrs/day

**Lighting:**

- 100% fluorescent

**Installed Retrofits:**

- Domestic HW pump shut down - started May 1994, completed Sep. 1994
- Hot/cold deck reset - started May 1994, completed Sep. 1994
- Motion (occupancy) detectors for the restrooms - completed Dec. 1993
- Replace exit signs - started Apr. 1992, completed Oct. 1992

**Other Information:**

- steam is supplied by the main physical plant located at Sam Houston building

## Insurance Annex

Texas Capitol Complex  
62,000 square feet

### Site Contact

Denis Feary  
State Purchasing and General Services Commission  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512)-475-2455

### LoanSTAR Metering Contact

Aamer Athar  
053D WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409)-845-9213

## Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	128687 kWh	100	\$0.03490	\$4491
Peak 60 Minute Demand	258 kW	100	\$10.32	\$2653

Peak 60 minute demand was recorded at 1200 Tuesday 8/8/95.  
There were 744 hours in this month.

## Monthly Retrofit Savings

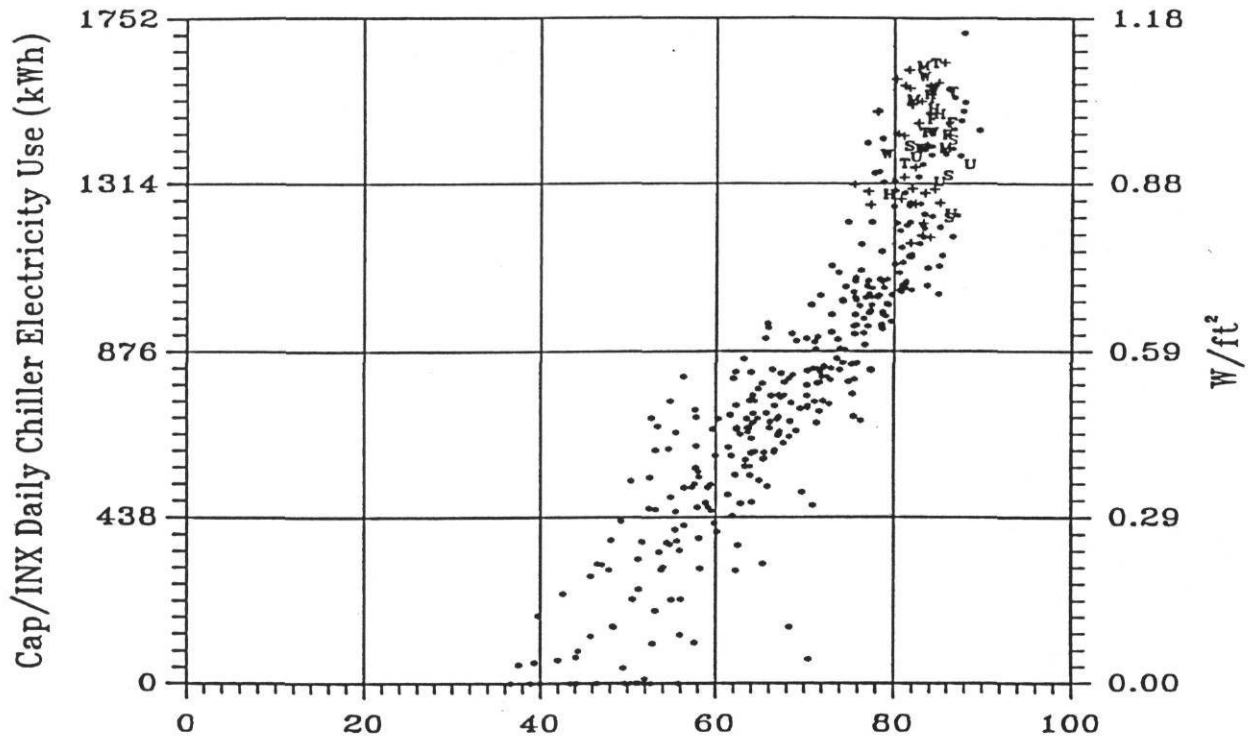
	Measured Savings		Audit Estimated Savings	
Electricity (kWh)	-46502	\$-1618	33706	\$1173
Cond./H.W./N.G. (MMBtu)	N/A	N/A	371	\$1176
Monthly Total		\$-1618		\$2349
Total to Date*	(34 months)	\$-11946	(34 months)	\$26843

\*Measured savings include construction period. Audit estimated savings do not.

## Comments

- ★ Measured savings do not include heating savings.
- ★ Mid-day spikes in the whole-building electricity use seem to be related to the chiller electricity use.

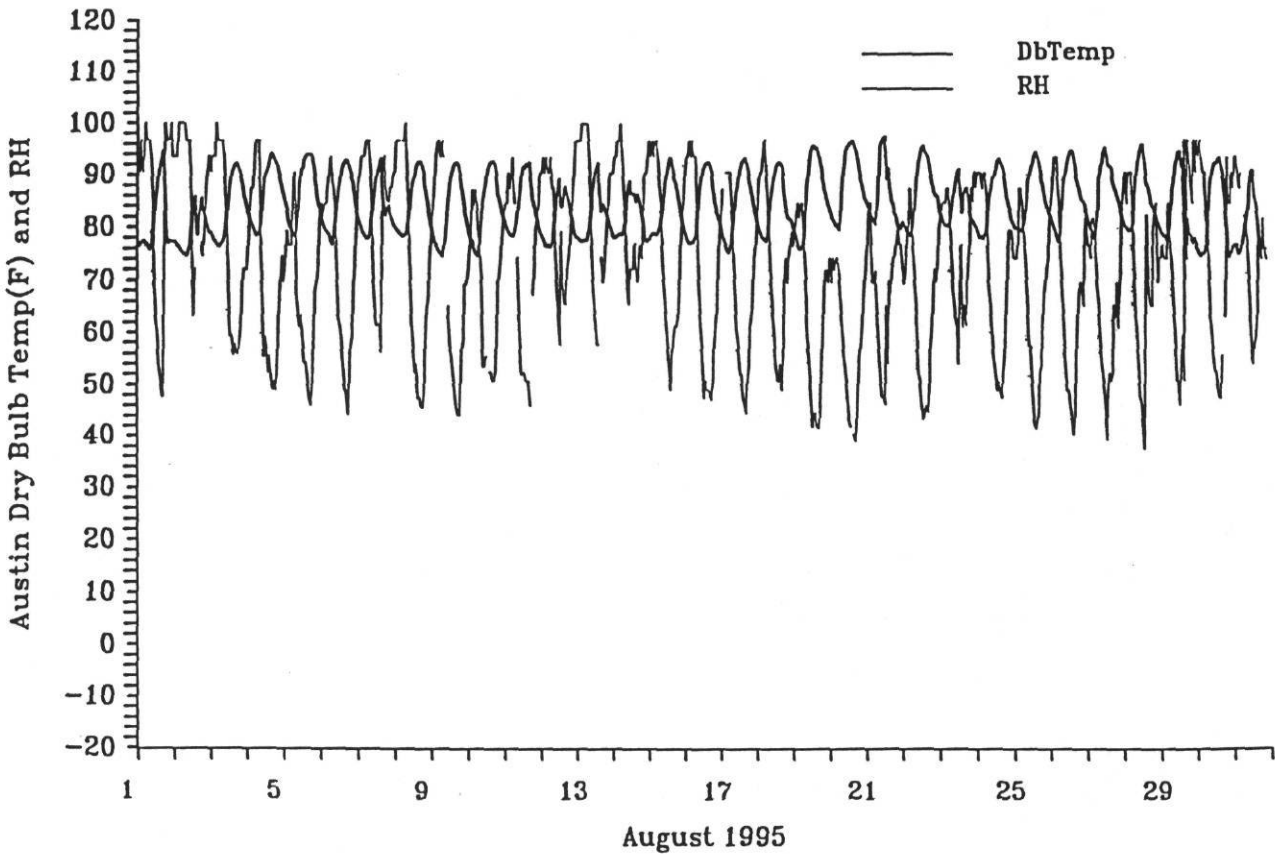
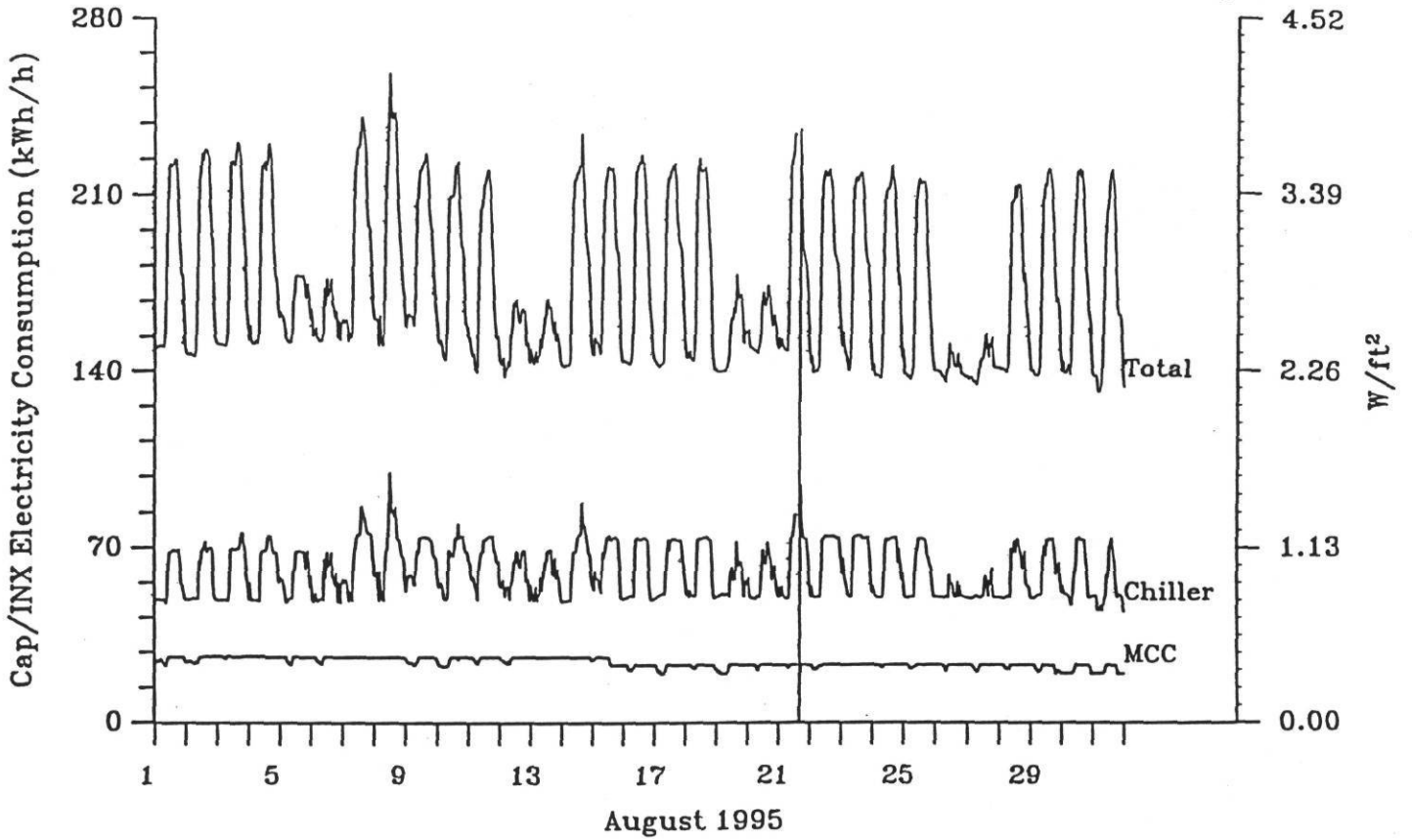




Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

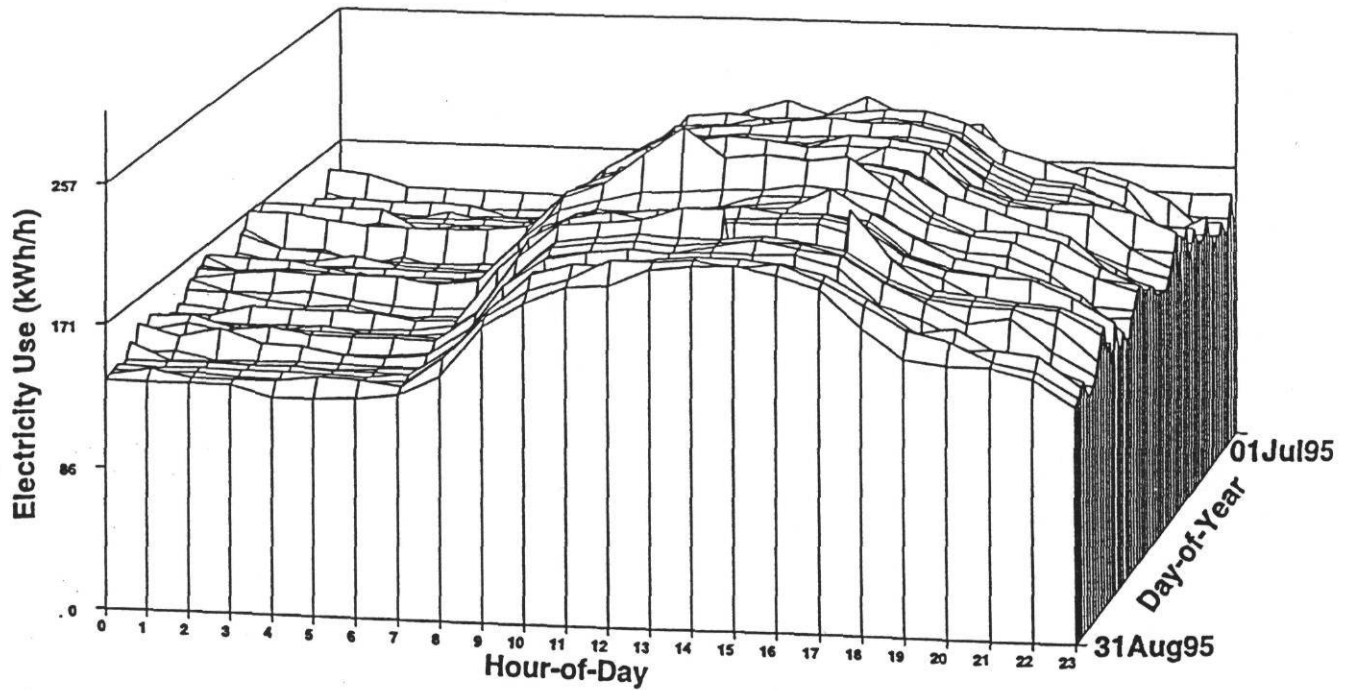
Points from this month last year are shown as +.  
All other points are shown as \*.

Insurance Annex - Texas Capitol Complex - August 1995

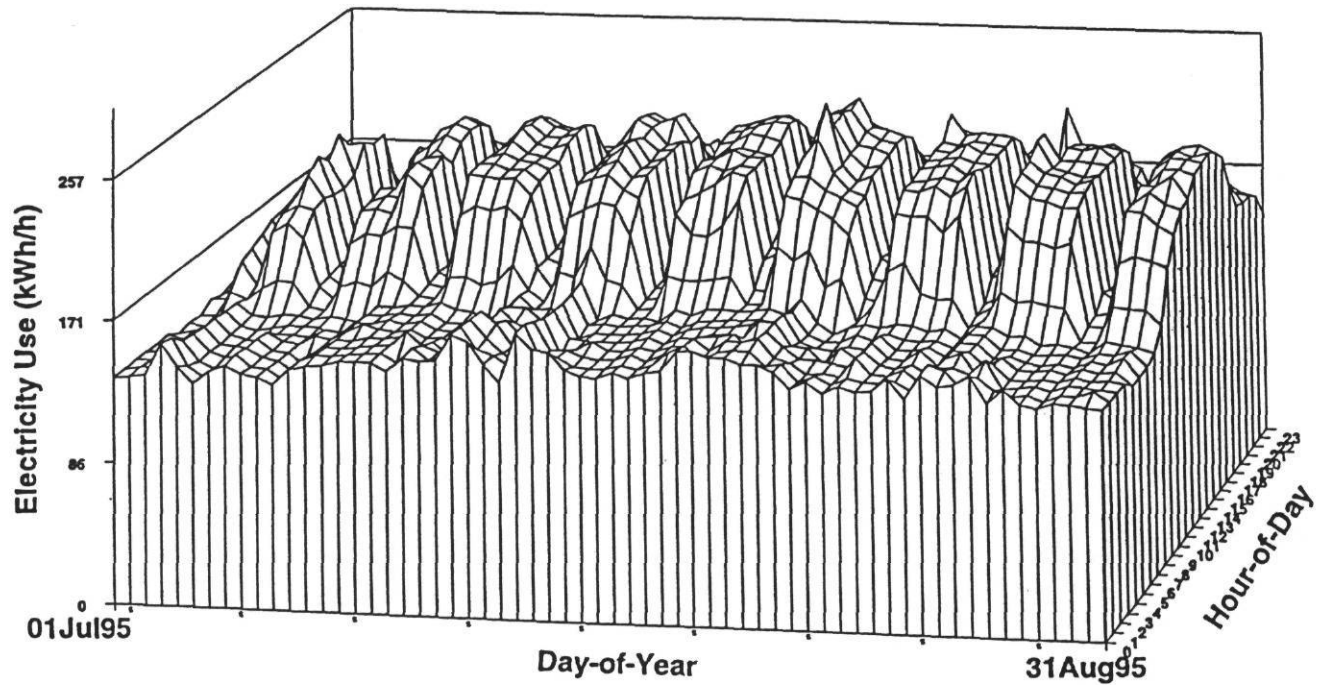


Insurance Annex - Texas Capitol Complex - August 1995

### Whole-Building Electric



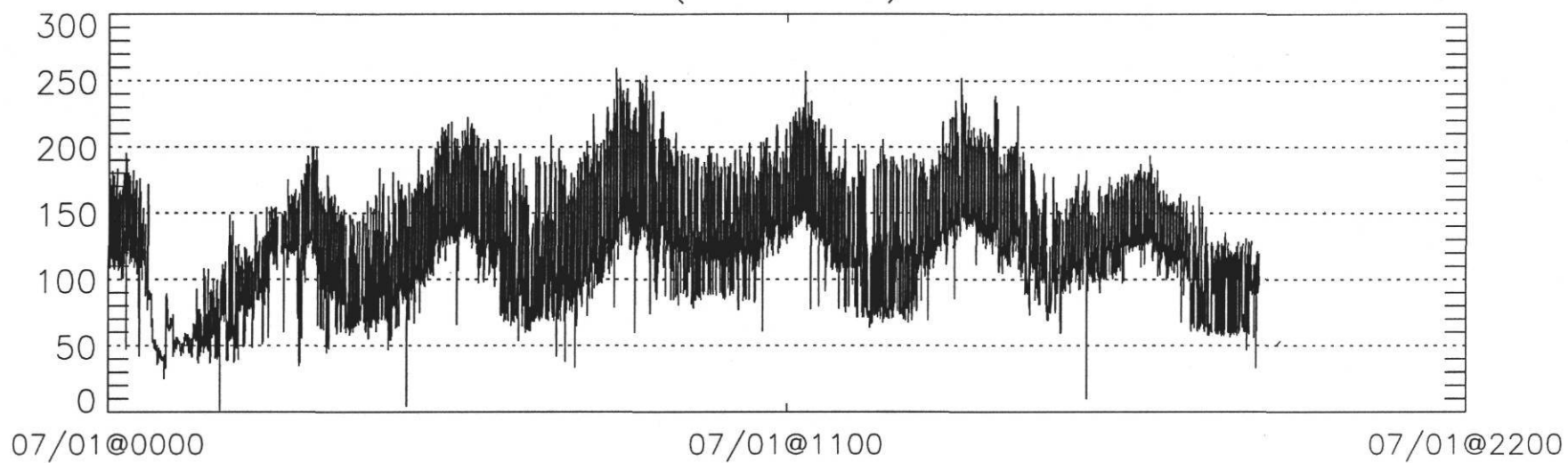
### Whole-Building Electric



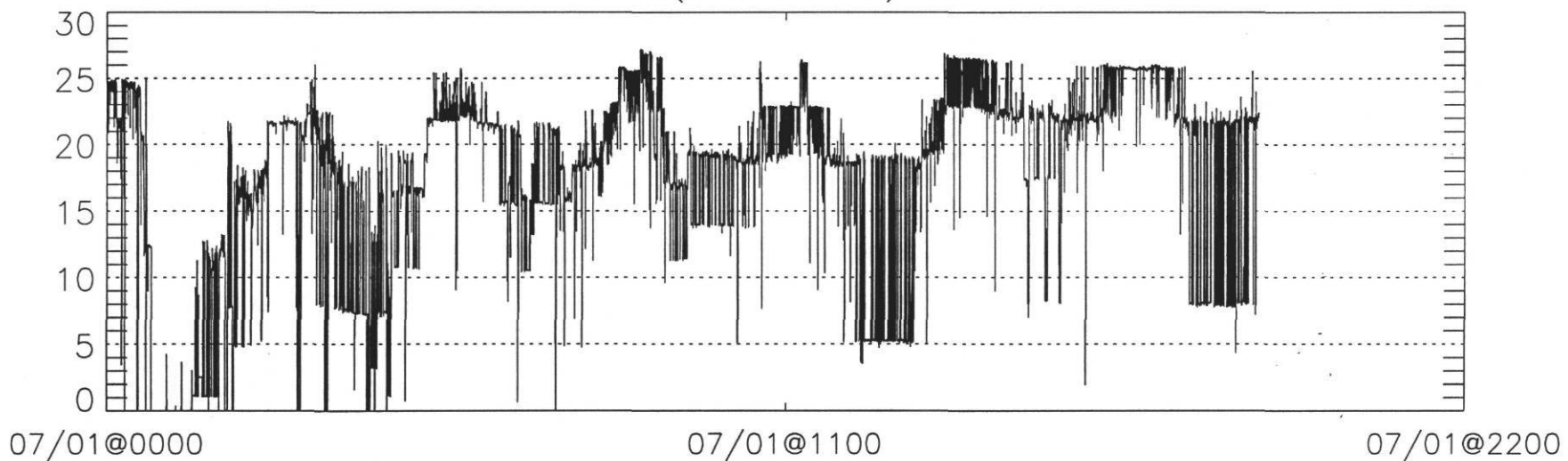
Sundays are marked with an "S"

Insurance Annex - Texas Capitol Complex - August 1995

(ch0218) WBE

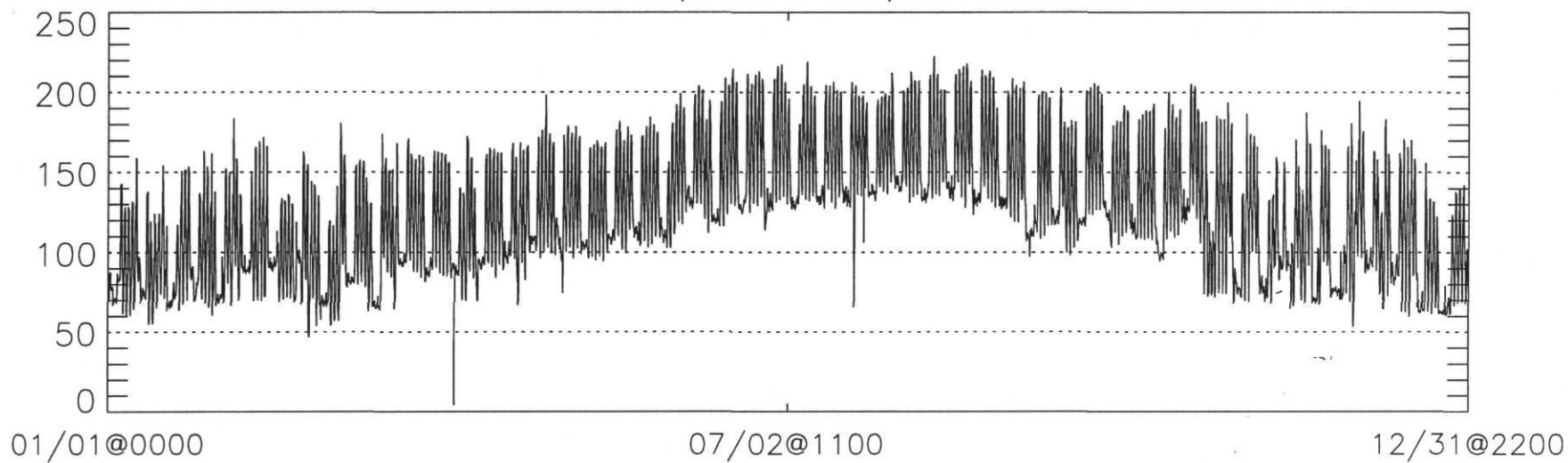


(ch0217) MCC

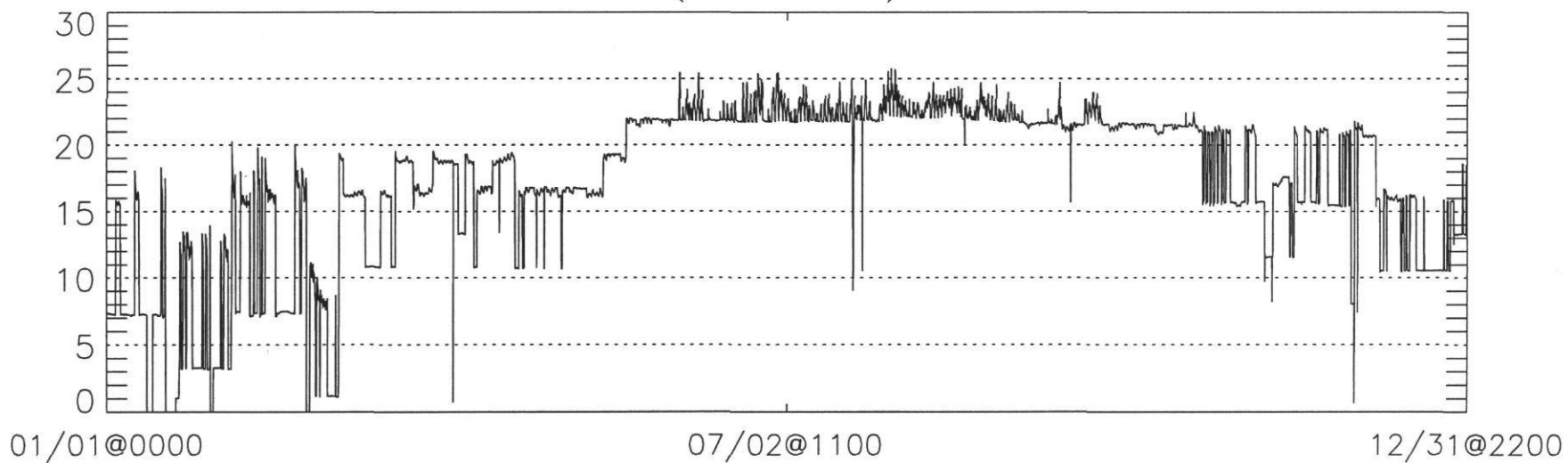


SITE # 207  
INSURANCE ANNEX, AUSTIN  
07/98 - 07/99

(ch0218) WBE



(ch0217) MCC



SITE # 207  
INSURANCE ANNEX.  
01/93 - 12/93

lstaraxp% listsite 208

**Site: 208                      Archives Building (ARC)**

---

Mecr id:

Start date:     12/11/1991

Energy Type:   default

Construction

    begin:       04/01/1992           end: 08/01/1992

Area:           120000.00

Facility:       Texas Capitol Complex

Contact Info:   Denis Feary  
                  State Purchasing \& General Services Com  
                  Building Maintenance Department  
                  P.O. Box 13047  
                  Austin, TX 78711  
                  (512) 475--2455

## CAPITOL COMPLEX

## Lorenzo De Zavala Archives &amp; Library Building

**Building Envelope:**

- 120,000 sq.ft
- 5 floors, erected 1960, Texas State Library and Archives and some offices
- walls: Texas granite
- windows: single, clear, operable, 6% of the total wall area.
- roof: flat

**Building Schedule:**

- Offices: 7:30 am to 6:00 pm (M-F)

**Building HVAC:**

- 1 constant volume multi-zone AHU (1-15hp)
- 2 constant volume dual duct AHUs (2-65hp)
- 1 constant volume single-zone AHU (1-15hp)
- 3 return fans (2-15hp, 1-5hp)
- 1 constant volume hot water pump (1-20hp)
- 1 chilled water pump (1-10hp)

**HVAC Schedule:**

- 24 hrs/day

**Lighting:**

- 100% fluorescent 34-W

**Installed Retrofits:**

- Domestic HW pump shut down - started May 1994, completed Sep. 1994
- Install variable frequency drives - canceled
- Replace exit signs - started May 1993, completed Jun. 1993
- Night set back for AHUs - started May 1994, completed Sep. 1994
- Motion (occupancy) detectors for the restrooms - started Apr. 1993, completed Jun. 1993

**Other Information:**

- steam & chilled water is supplied by the central plant located at Sam Houston Building

# Archives Building

Texas Capitol Complex  
120,000 square feet

## Site Contact

Denis Feary  
State Purchasing and General Services Commission  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512)-475-2455

## LoanSTAR Metering Contact

Aamer Athar  
053D WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409)-845-9213

## Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	134103 kWh	100	\$0.02540	\$3406
Peak 60 Minute Demand	306 kW	100	\$10.00	\$3050
Chilled Water	1205.9 MMBtu	100	\$3.250	\$3919

Peak 60 minute demand was recorded at 1400 Wednesday 8/16/95.  
There were 744 hours in this month.

## Monthly Retrofit Savings

	Measured Savings		Audit Estimated Savings	
Electricity (kWh)	16229	\$412	54626	\$1388
Cond./H.W./N.G. (MMBtu)	N/A	N/A	71	\$245
Monthly Total		\$412		\$1642
Total to Date*	(41 months)	\$763	(37 months)	\$19331

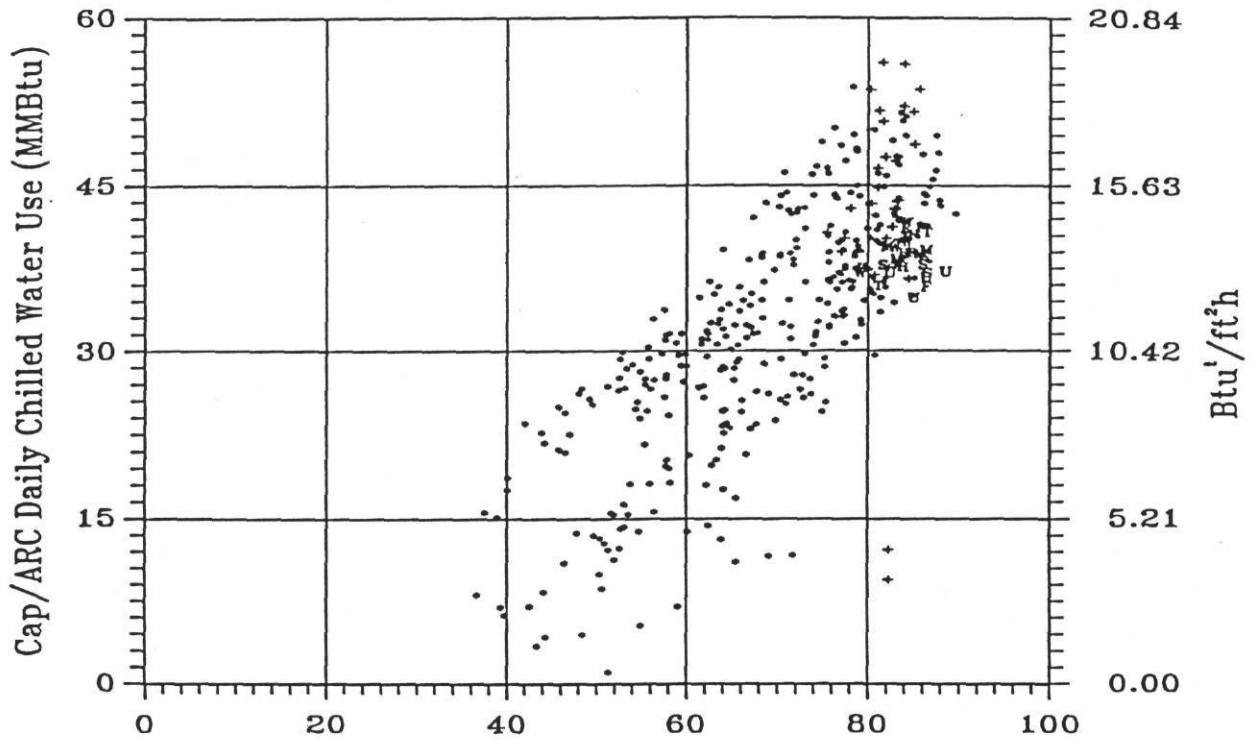
\*Measured savings include construction period. Audit estimated savings do not.

## Comments

- ★ Measured savings do not include heating savings from the completed retrofits.
- ★ Chilled water use dropped significantly when compared to August 1994.

Archives Building - Texas Capitol Complex - August 1995

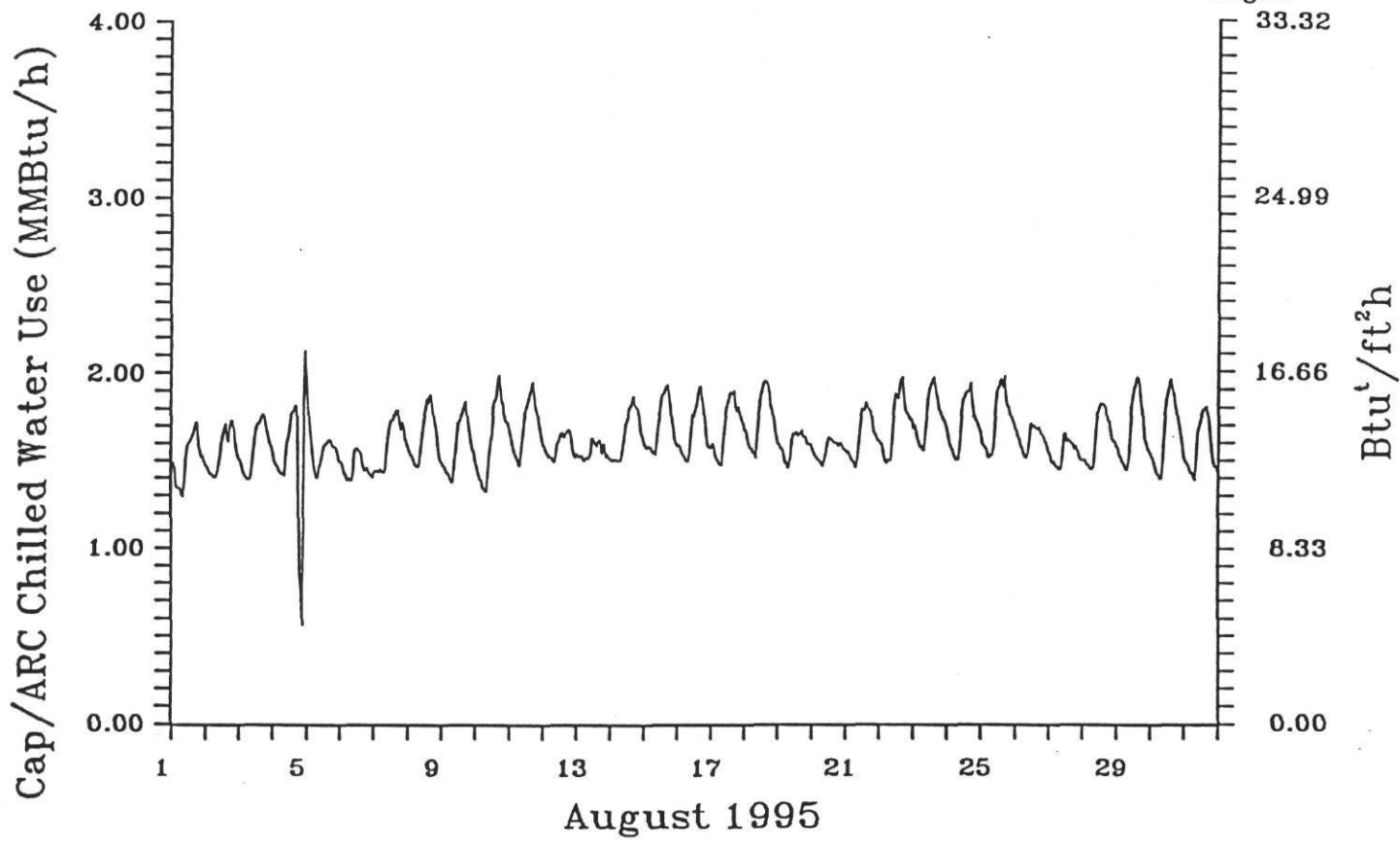




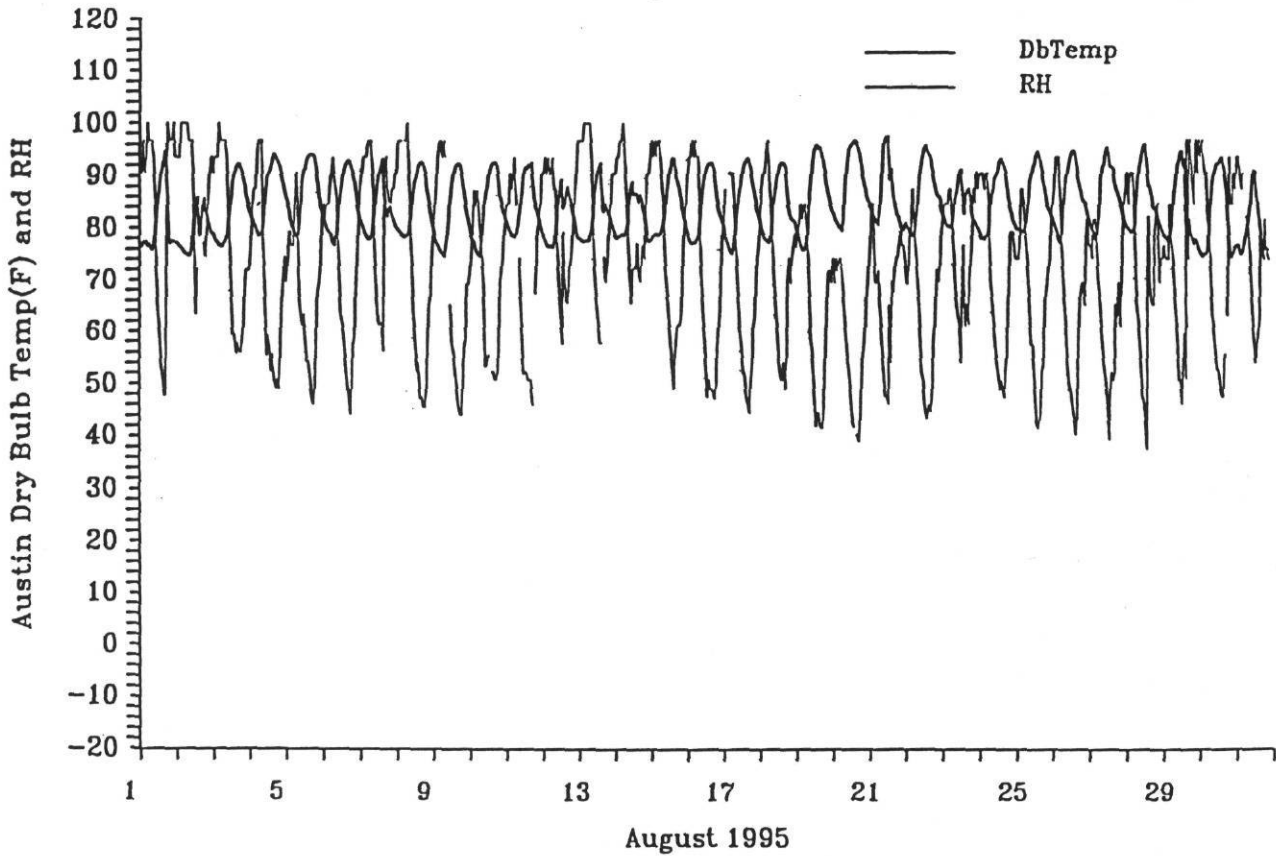
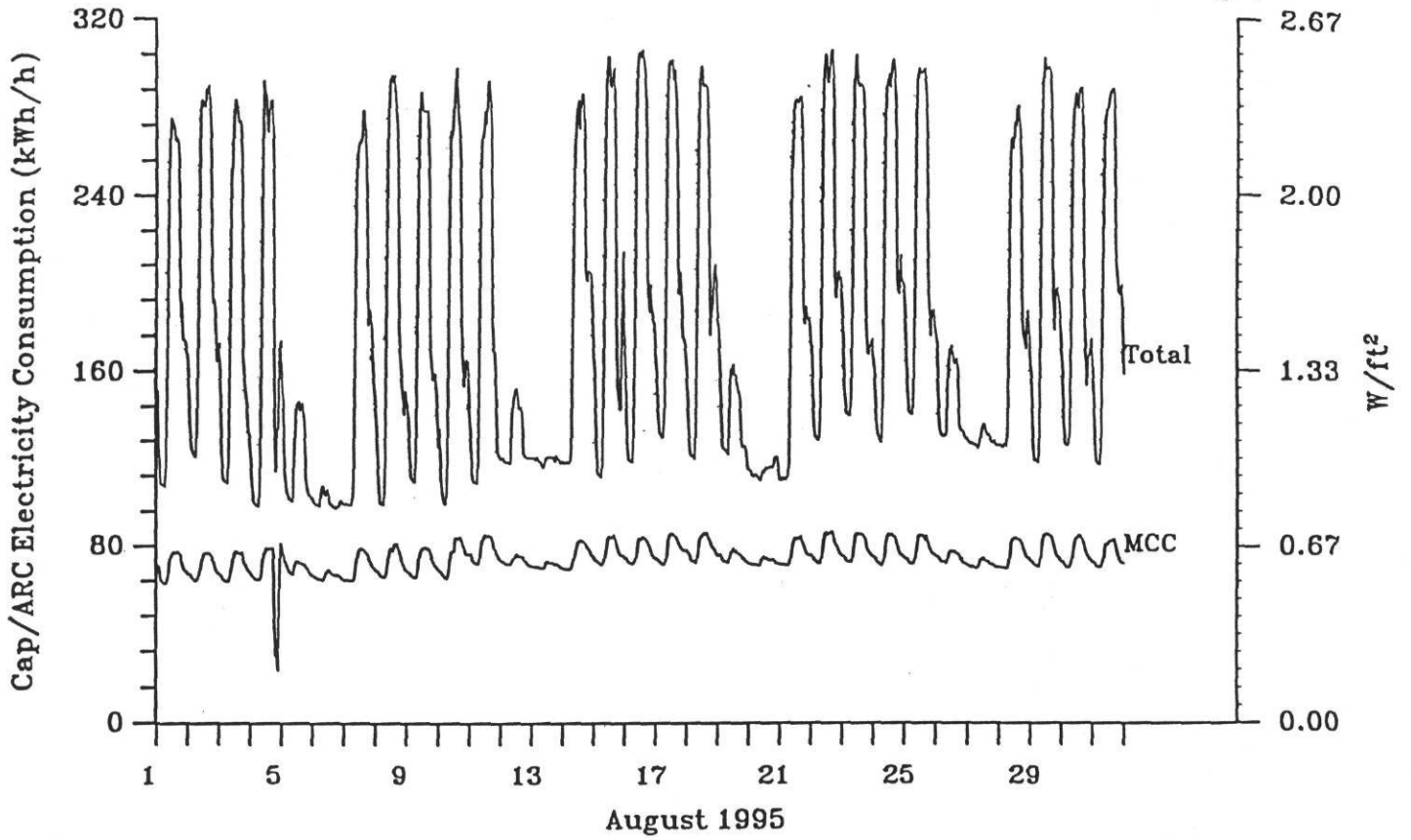
Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

Points from this month last year are shown as +.  
All other points are shown as \*.

Archives Building - Texas Capitol Complex - August 1995

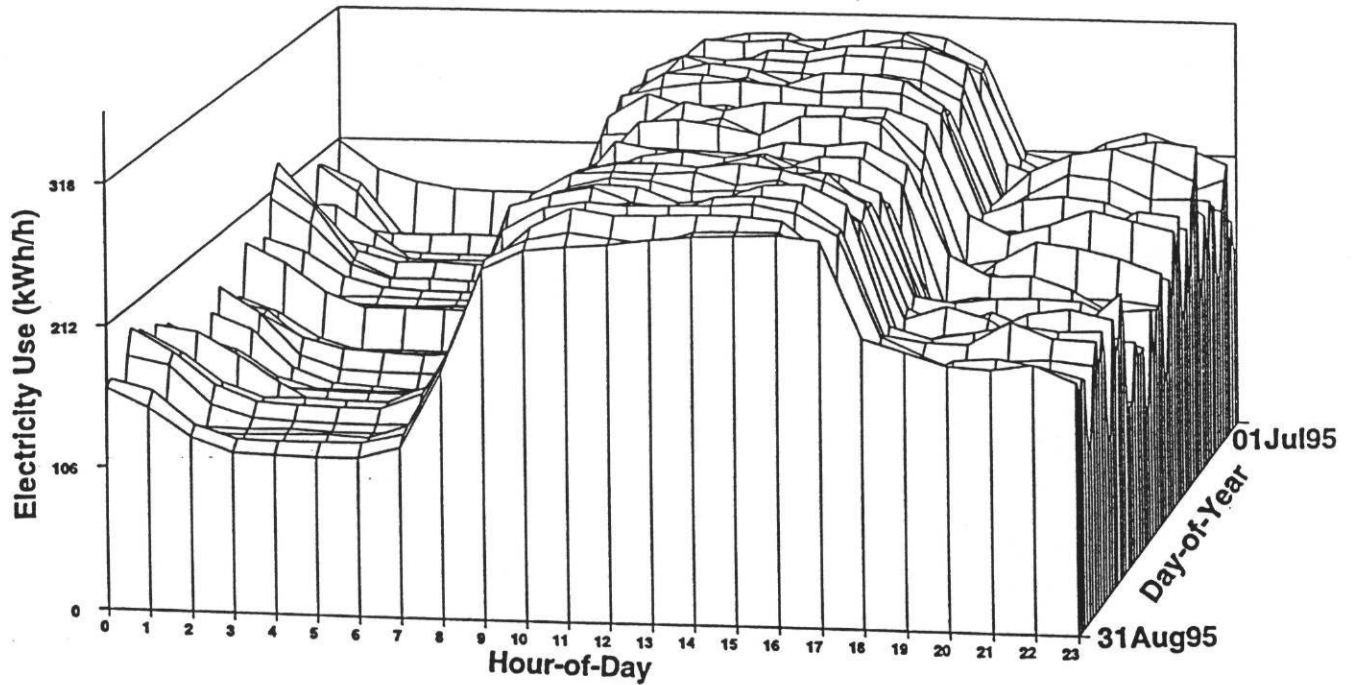


Archives Building - Texas Capitol Complex - August 1995

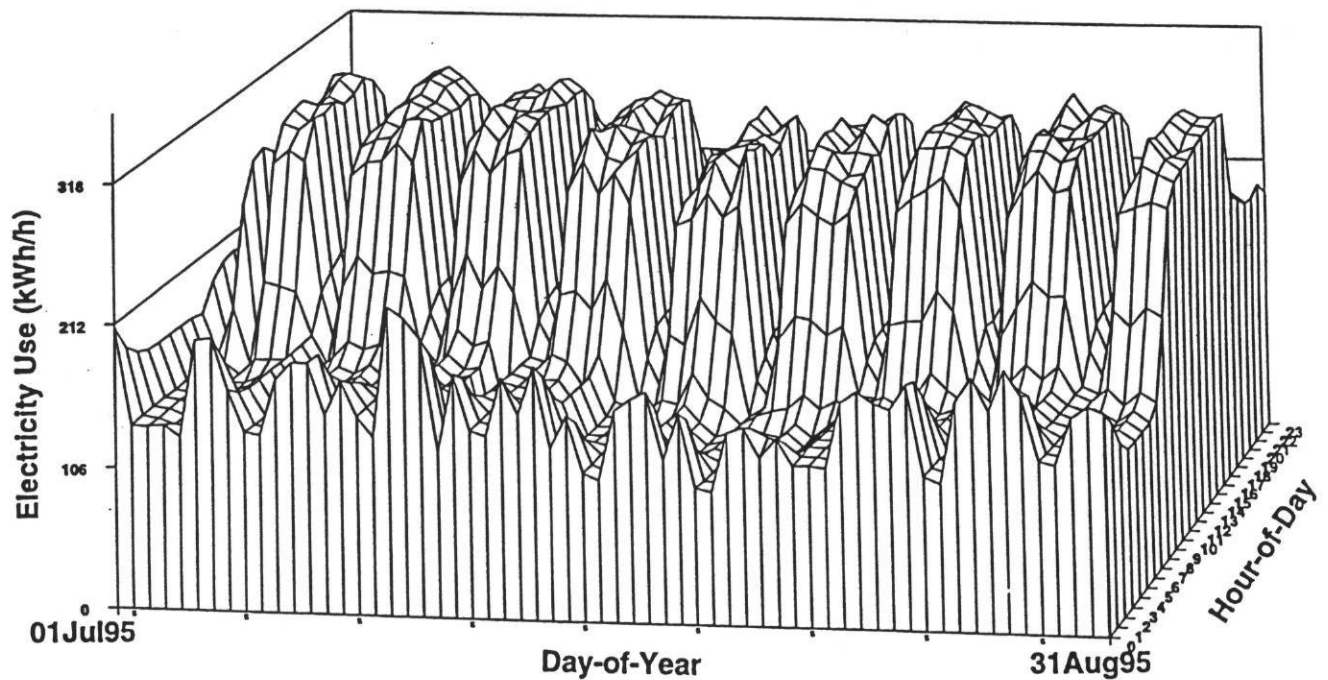


Archives Building - Texas Capitol Complex - August 1995

### Whole-Building Electric



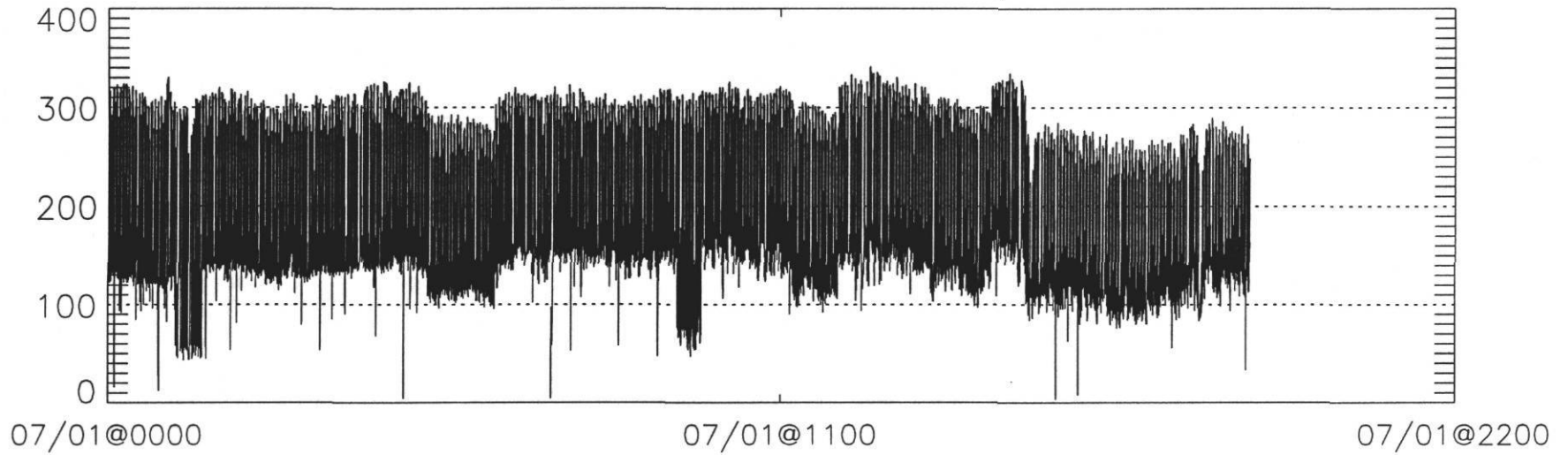
### Whole-Building Electric



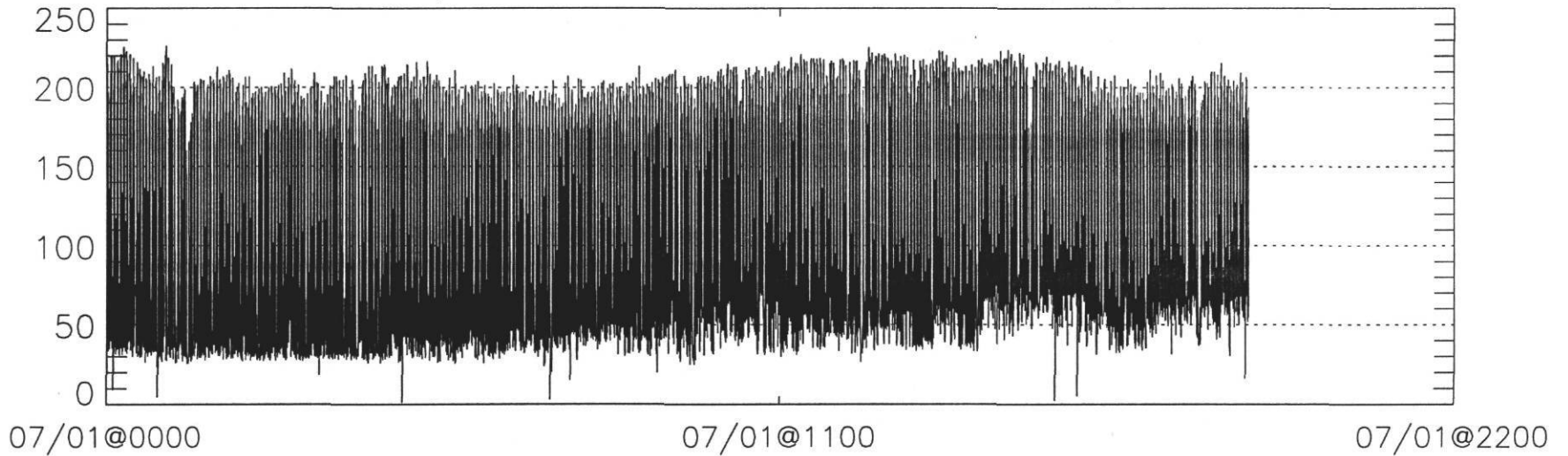
Sundays are marked with an "S"

Archives Building - Texas Capitol Complex - August 1995

(ch0221+ch0222) WBE



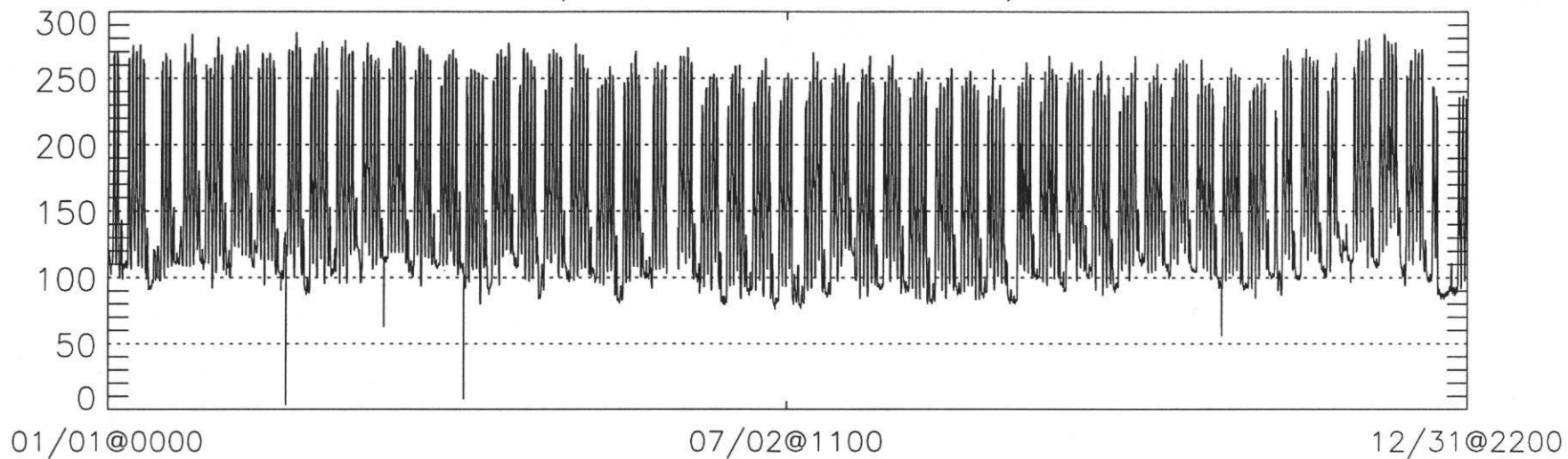
(ch0221+ch0222-ch0220) LIGHT + EQUIPMENT



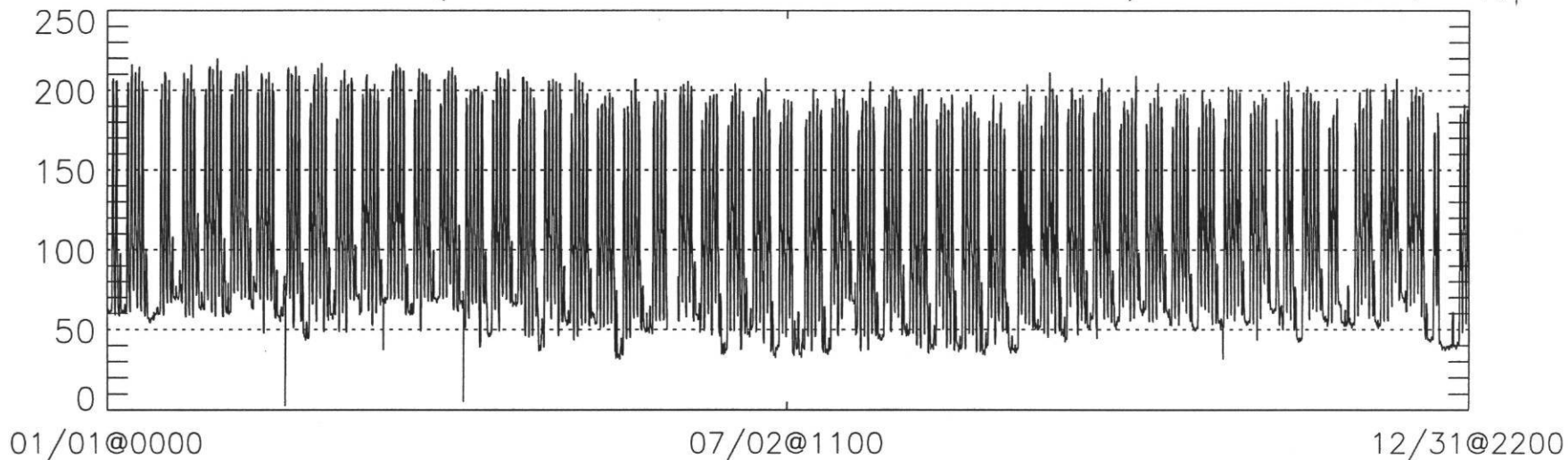
SITE 208 ARCHIVES BLDG., AUSTIN

07/91 - 07/99

(ch0221+ch0222) WBE



(ch0221+ch0222-ch0220) LIGHTS + EQUIPMENT



SITE 208 ARCHIVE Bldg.

01/97 - 12/97

lstarxp% listsite 209

**Site: 209            W.B. Travis (WBT)**

Mecr id:

Start date:     12/20/1990

Energy Type:    default

Construction

    begin:        06/01/1992            end: 08/01/1993

Area:            491000.00

Facility:        Texas Capitol Complex

Contact Info:    Denis Feary  
                  State Purchasing \& General Services Com  
                  Building Maintenance Department  
                  P.O. Box 13047  
                  Austin, TX 78711  
                  (512) 475--2455

## CAPITOL COMPLEX

## Lyndon B. Johnson Building

**Building Envelope:**

- 308,080 sq.ft
- 12 floors; offices; constructed in 1969
- walls: 3"-4" red granite slab
- windows: single pane
- roof: Flat with vermiculite all-weather Crete

**Building Schedule:**

- offices: 8:00 am to 5:00 pm (M-F)

**Building HVAC:**

- 27 dual duct AHUs (21-40hp, 3-10hp, 1-15hp, 2-50hp)
- 2 chillers (2-460 ton, 525 hp)
- 2 boilers (hot water units, forced draft, 150 hp, 5.02 MMBtu/h, 7.5 hp blower motors/each)
- 2 cooling towers (2-40hp)
- 2 outside air AHUs (1-10hp, 1-20hp)
- 18 dual duct AHUs (15-40hp, 1-20hp, 2-3hp)
- 12 constant volume condensate pumps (4-100hp, 4-60hp, 2-40hp, 2-75hp)
- 11 chilled water pumps (2-125hp, 2-5hp, 2-7.5hp, 3-1.5hp, 2-2hp)
- 3 hot water pumps (2-50hp, 1-3hp)
- 2 domestic HW (2-20hp) and 2 condensate pumps (2-25hp)
- 11 exhaust fans (4-5hp, 3-7.5hp, 6-3hp)

**HVAC Schedule:**

- 24 hrs/day

**Lighting:**

- fluorescent and some incand; total installed lighting 826 kW

**Installed Retrofits & completion dates:**

- Interior lighting controls - started Sep. 1993, completed Dec. 1993
- Variable speed motors - cancelled
- Replace incand. lights - started Jan. 1993, completed May 1993
- New DDC controls - started Jan. 1994, completed Sep. 1994

**Other Information:**

- steam & chilled water is supplied by the main boiler room located at S.F. Austin building



**L.B. Johnson**  
Texas Capitol Complex  
308,080 square feet

Site Contact

Denis Feary  
State Purchasing and General Services Commission  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512)-475-2455

LoanSTAR Metering Contact

Aamer Athar  
053D WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409)-845-9213

**Summary of Energy Consumption**

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	1056862 kWh	100	\$0.03483	\$36810
Peak 60 Minute Demand	1743 kW	100	\$10.32	\$17982
Chilled Water	5013.6 MMBtu	100	\$3.250	\$16294

Peak 60 minute demand was recorded at 1100 Wednesday 8/9/95.  
There were 744 hours in this month.

**Monthly Retrofit Savings**

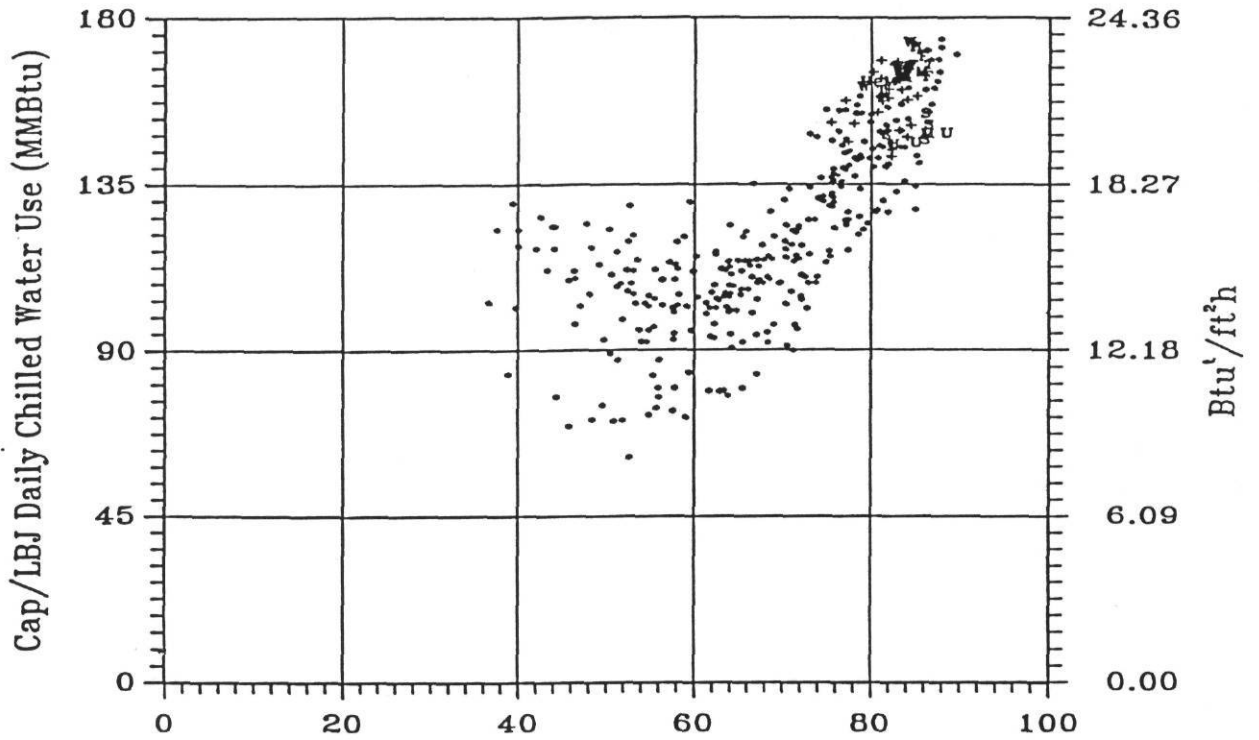
	Measured Savings		Audit Estimated Savings	
	kWh	\$	kWh	\$
Electricity (kWh)	230493	\$8028	165150	\$5752
Monthly Total		\$8028		\$7200
Total to Date*	(27 months)	\$283069	(27 months)	\$123467

\*Measured savings include construction period. Audit estimated savings do not.

**Comments**

- ★ Measured savings do not include electrical demand savings for the completed retrofits.
- ★ Electricity use decreased by 10% when compared to August 1994.

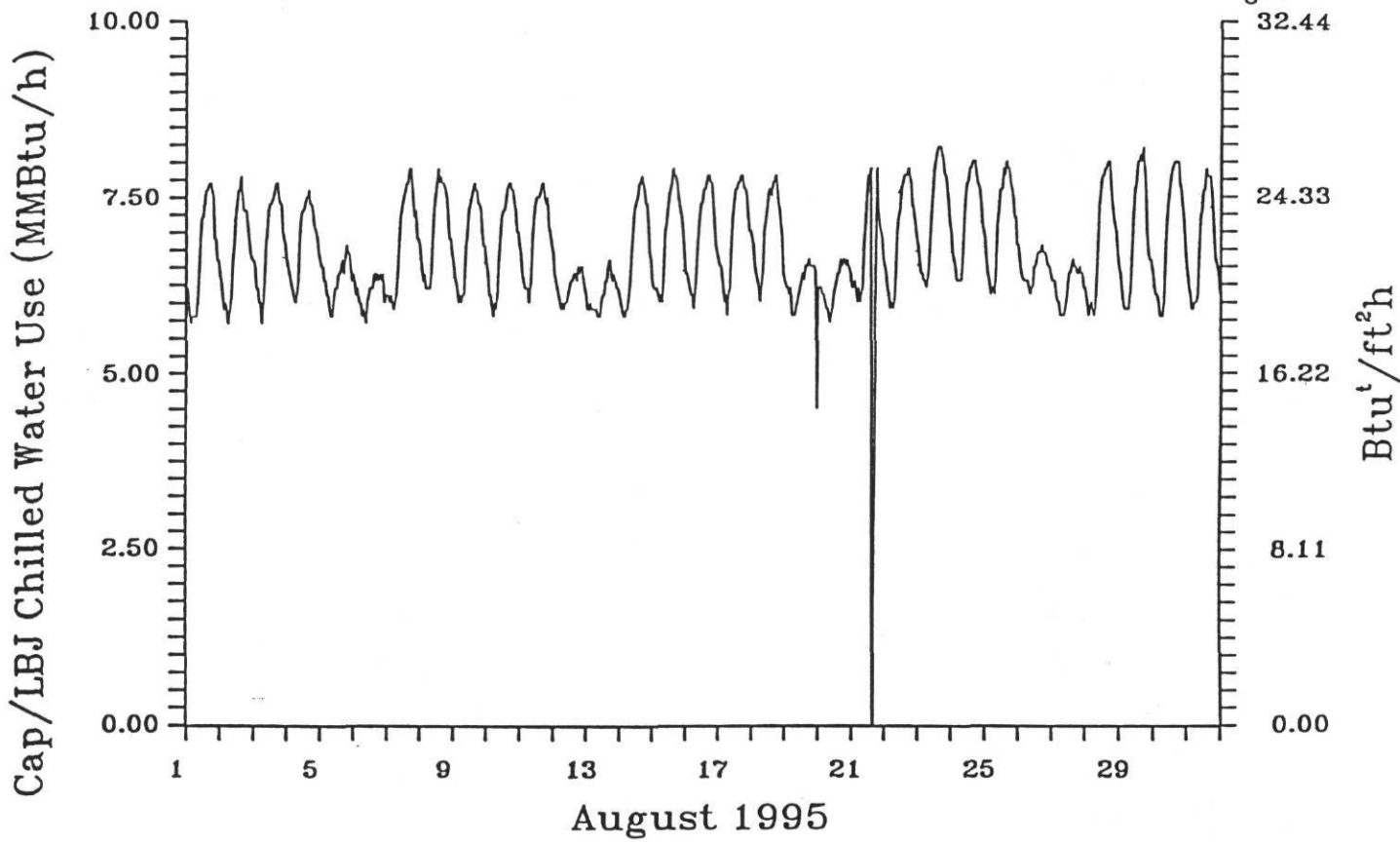
L.B. Johnson - Texas Capitol Complex - August 1995



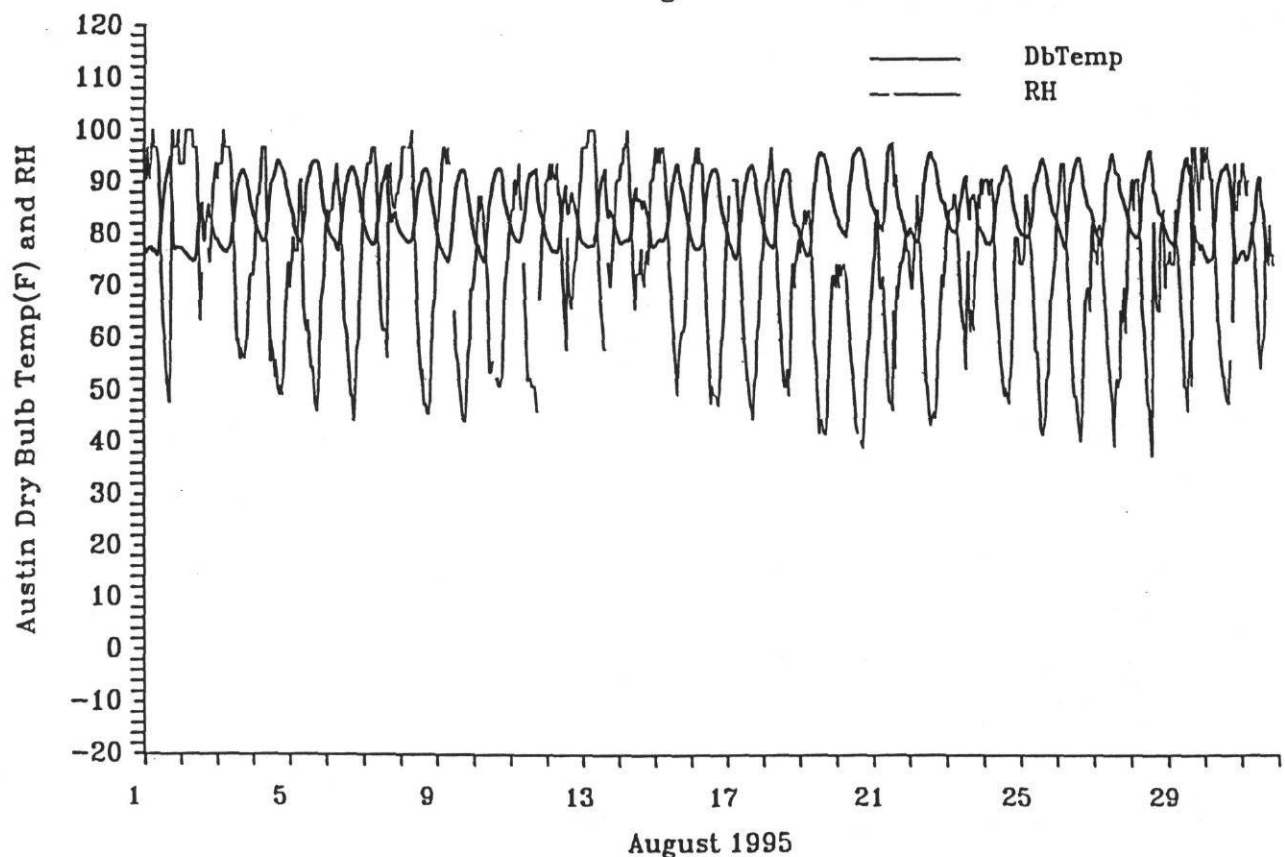
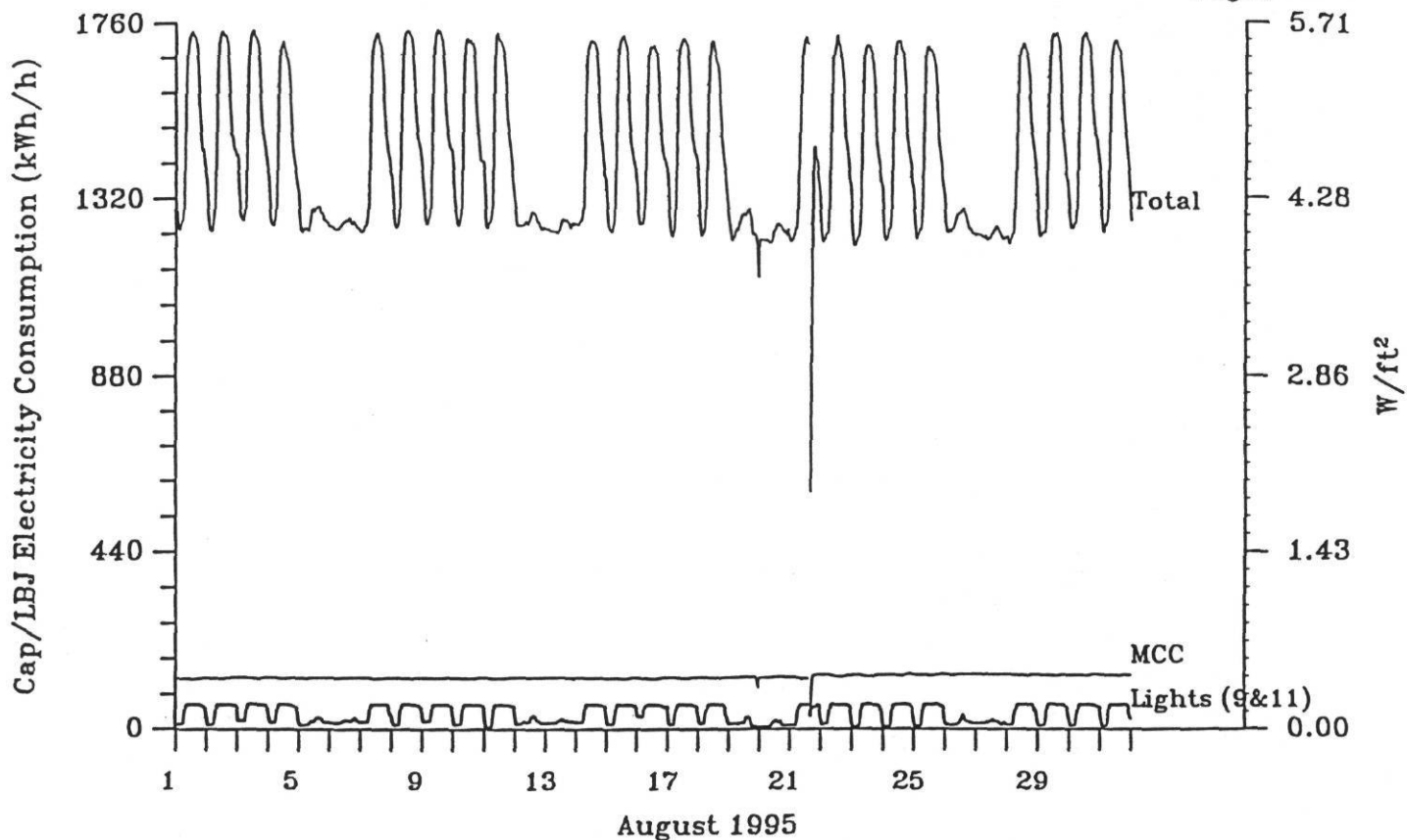
Data points for the current month are shown as letters.  
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Points from this month last year are shown as +.  
All other points are shown as \*.

L.B. Johnson - Texas Capitol Complex - August 1995

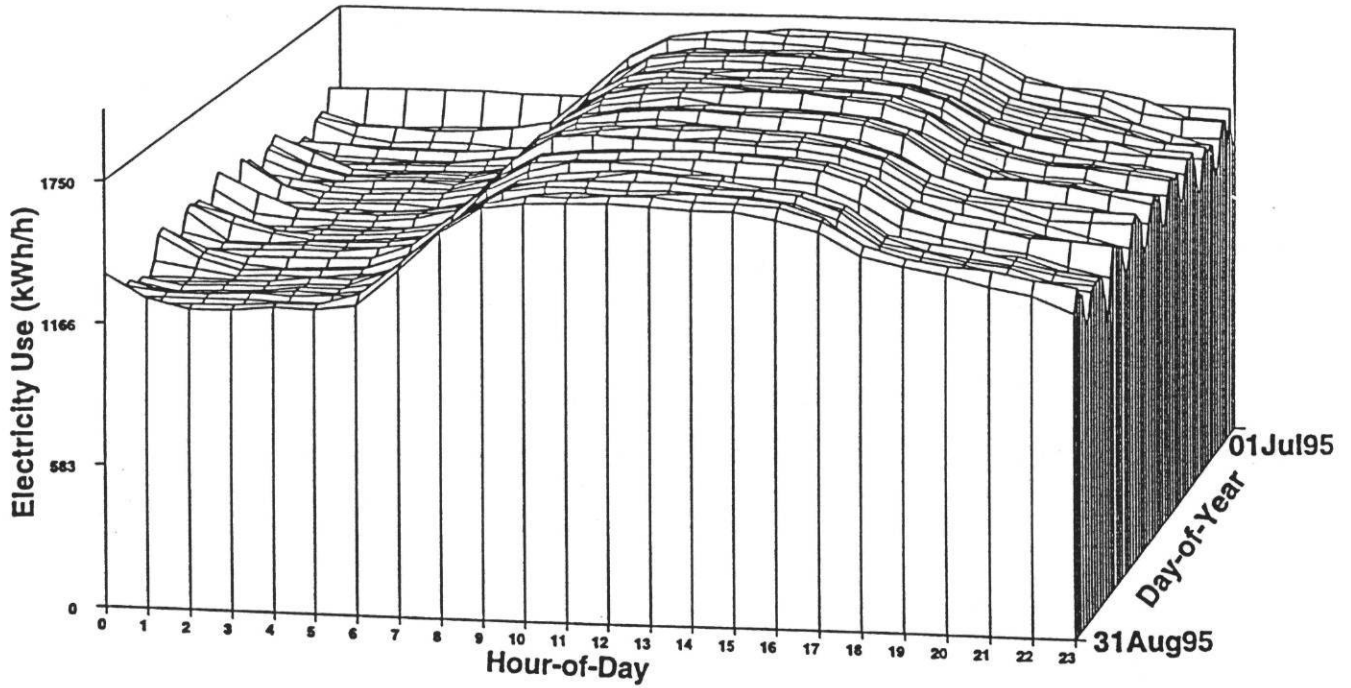


L.B. Johnson - Texas Capitol Complex - August 1995

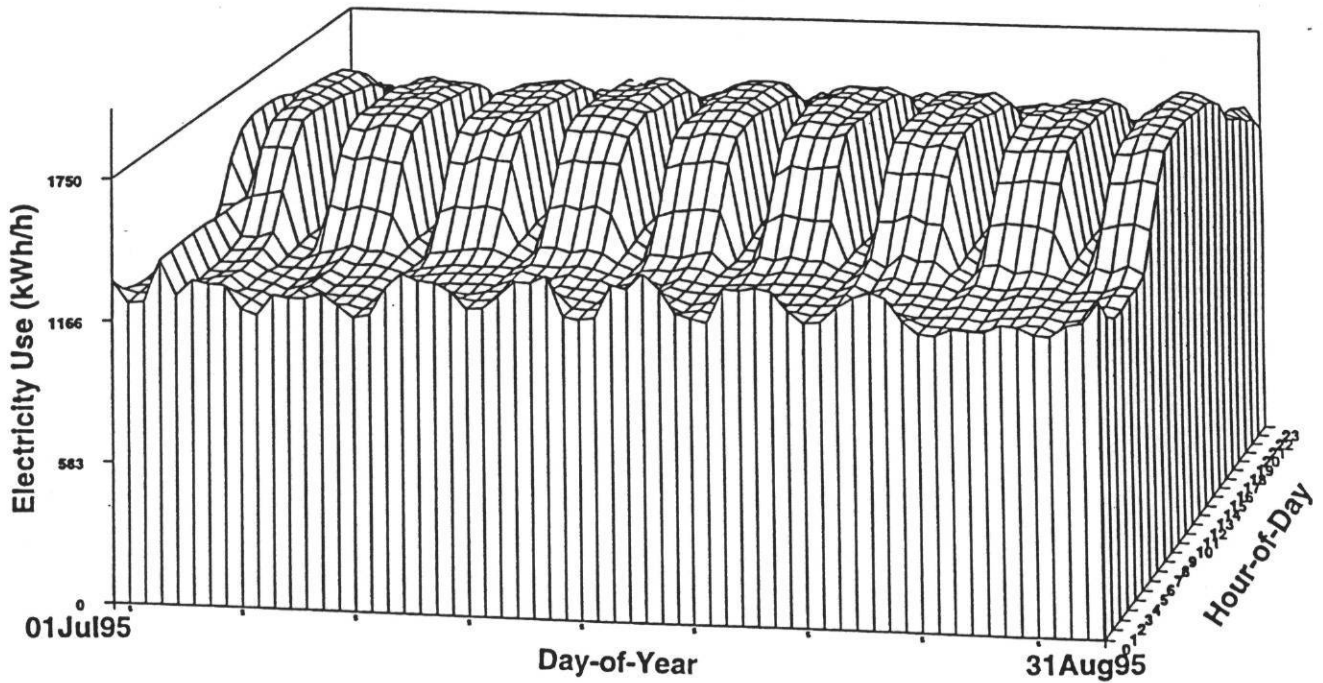


L.B. Johnson - Texas Capitol Complex - August 1995

### Whole-Building Electric



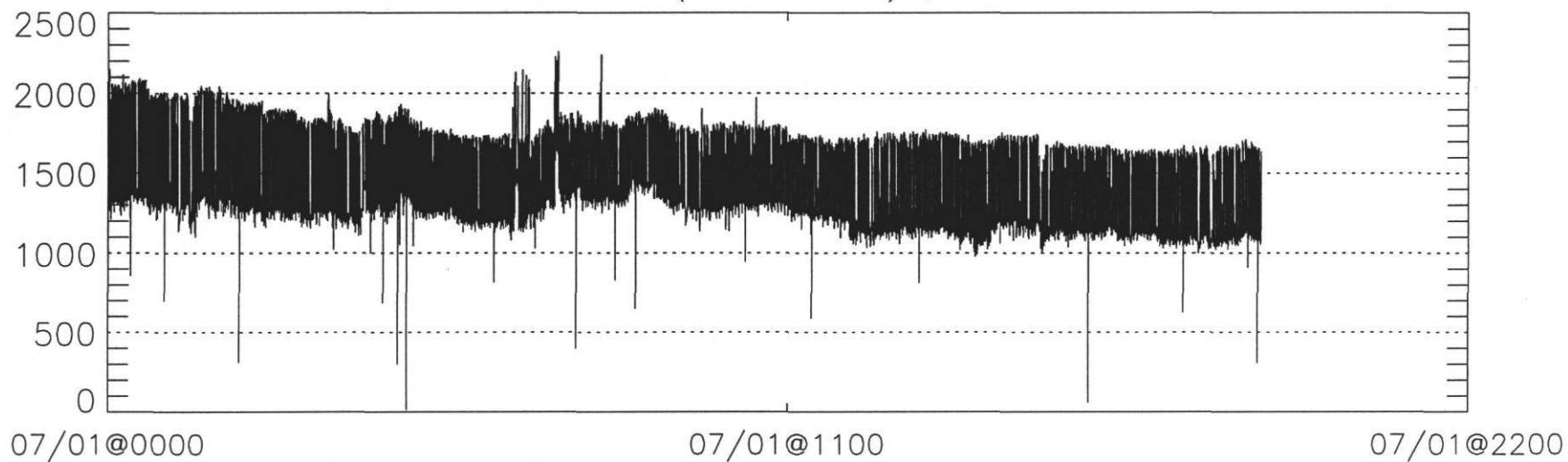
### Whole-Building Electric



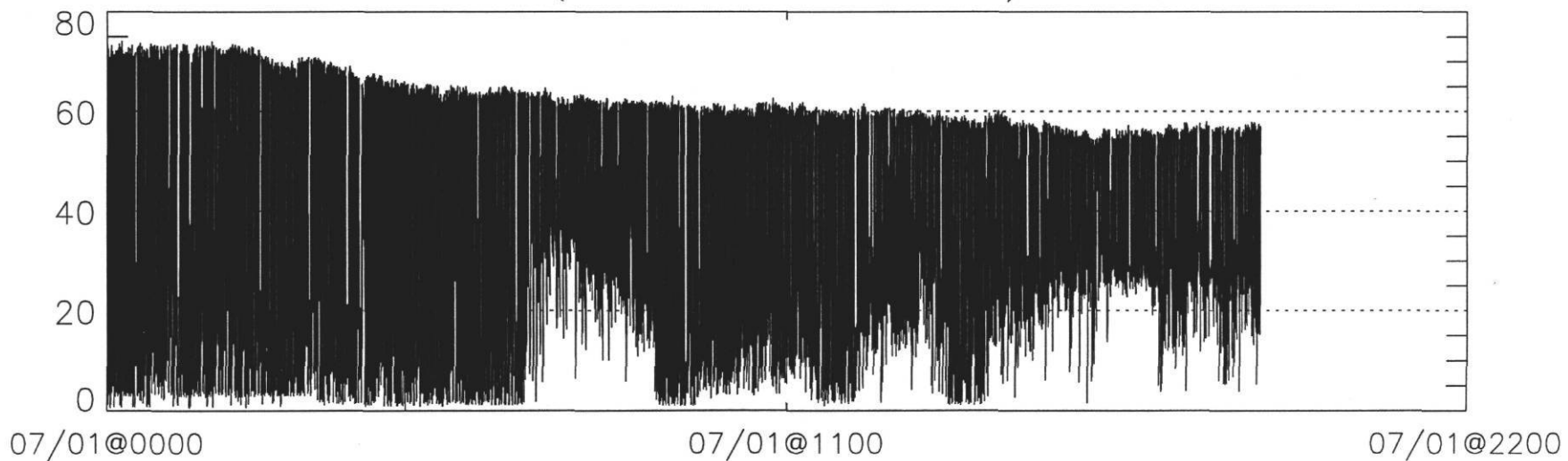
Sundays are marked with an "S"

L.B. Johnson - Texas Capitol Complex - August 1995

(ch0227) WBE

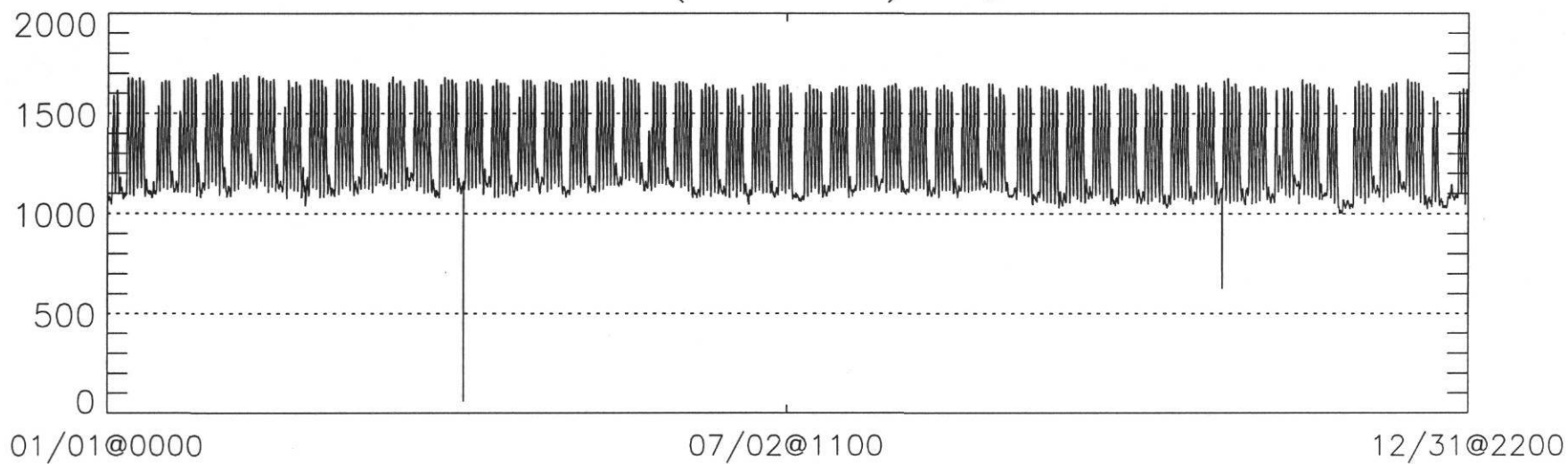


(ch0228+ch0229) LIGHT

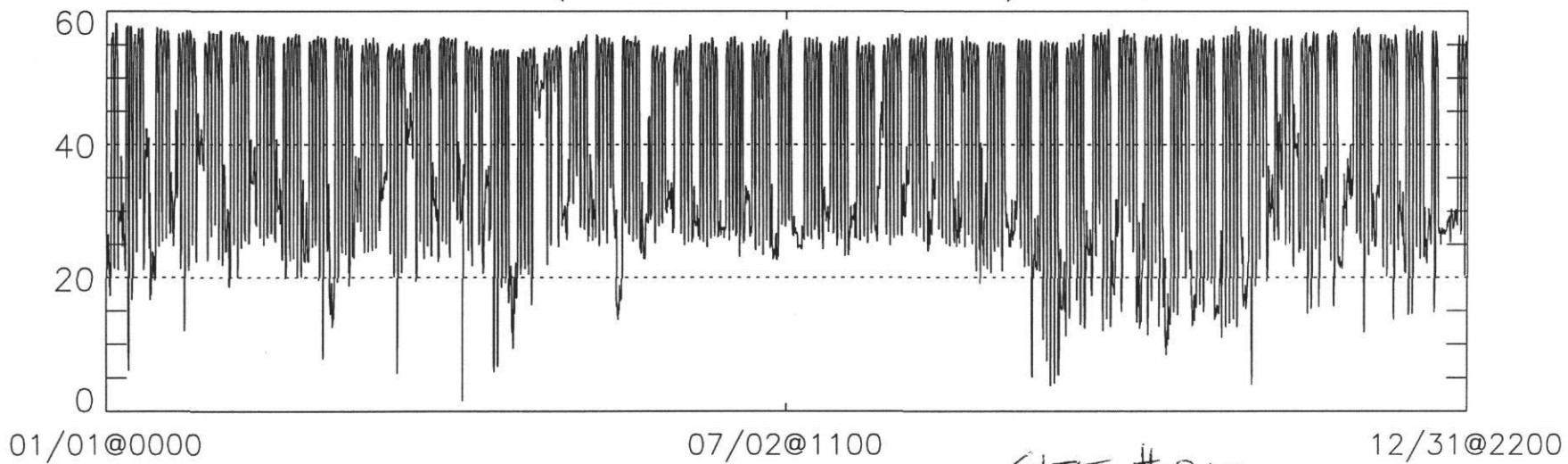


SITE # 210 L.B. JOHNSON, AUSTIN  
07/91 - 07/99

(ch0227) WBE



(ch0228+ch0229) LIGHT



SITE # 210 LB. JOHNSON  
01/97 - 12/97

lstarxp% listsite 210

**Site: 210                    L.B. Johnson (LBJ)**

---

Mecr id:

Start date:    12/11/1991

Energy Type:  default

Construction

    begin:     01/01/1994            end: 05/01/1994

Area:            308080.00

Facility:        Texas Capitol Complex

Contact Info:    Denis Feary

                 State Purchasing \& General Services Com

                 Building Maintenance Department

                 P.O. Box 13047

                 Austin, TX 78711

                 (512) 475--2455



## CAPITOL COMPLEX

## William B. Travis Building

**Building Envelope:**

- 491,000 sq.ft
- 12 floors and a basement; offices; constructed in 1985
- walls: 3"-4" red granite slab and 1" expanded polystyrene
- windows: double pane
- roof: flat with 2" rigid board

**Building Schedule:**

- offices: 8:00 am to 5:00 pm (M-F)

**Building HVAC:**

- 29 VAV AHUs (22-15hp, 3-10hp, 2-7.5hp, 1-2hp, 1-3hp)
- 2 outside fans (1-15hp, 1-10hp)
- 2 domestic HW (2-7.5hp)
- 7 exhaust fans (7-7.5hp)

**HVAC Schedule:**

- 24 hrs/day

**Lighting:**

- 6' fluorescent lamps (34W each); total installed lighting 690 kW.

**Installed Retrofits & completion dates:**

- Interior lighting controls - started Jun. 1993, completed Dec. 1993
- HVAC operational modifications - cancelled
- Photocell lighting control - started Jun. 1993, completed Dec. 1993

**Other Information:**

- steam and chilled water is supplied by the main boiler room located in S.F. Austin building

**W.B. Travis**  
Texas Capitol Complex  
491,000 square feet

Site Contact

Denis Feary  
State Purchasing and General Services Commission  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512)-475-2455

LoanSTAR Metering Contact

Aamer Athar  
053D WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409)-845-9213

**Summary of Energy Consumption**

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	721488 kWh	100	\$0.03483	\$25129
Peak 60 Minute Demand	1383 kW	100	\$10.32	\$14266
Chilled Water	4036.6 MMBtu	100	\$3.250	\$13119

Peak 60 minute demand was recorded at 1100 Wednesday 8/30/95.  
There were 744 hours in this month.

**Monthly Retrofit Savings**

	Measured Savings		Audit Estimated Savings	
Electricity (kWh)	-2203	\$-77	38100	\$1327
Monthly Total		\$-77		\$2169
Total to Date*	(20 months)	\$-4563	(20 months)	\$43379

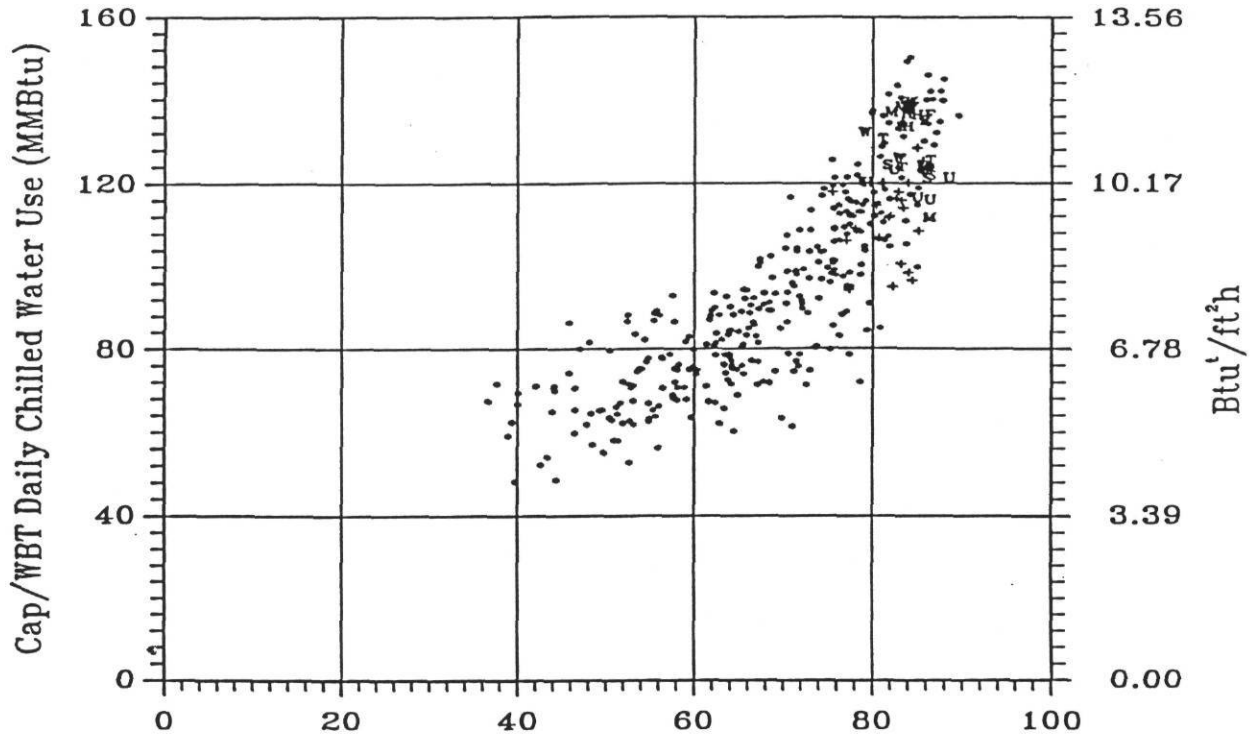
\*Measured savings include construction period. Audit estimated savings do not.

**Comments**

★ Measured savings are negative. Preliminary analysis shows that these negative savings are due to an increase in the building's electrical loads. Audit estimated savings include demand savings, while measured savings do not.

★ Chilled water use increased slightly when compared to August 1994.

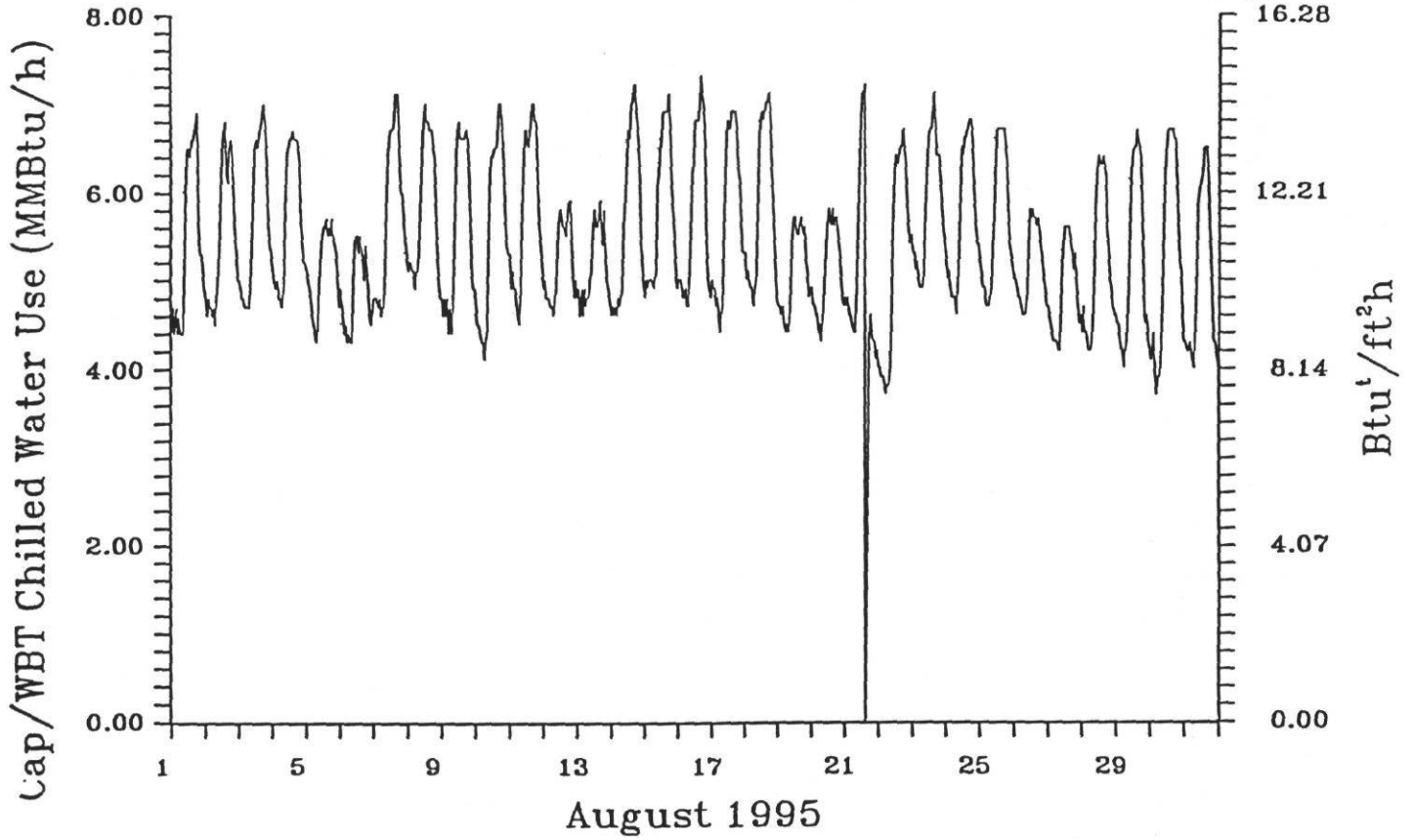
W.B. Travis - Texas Capitol Complex - August 1995



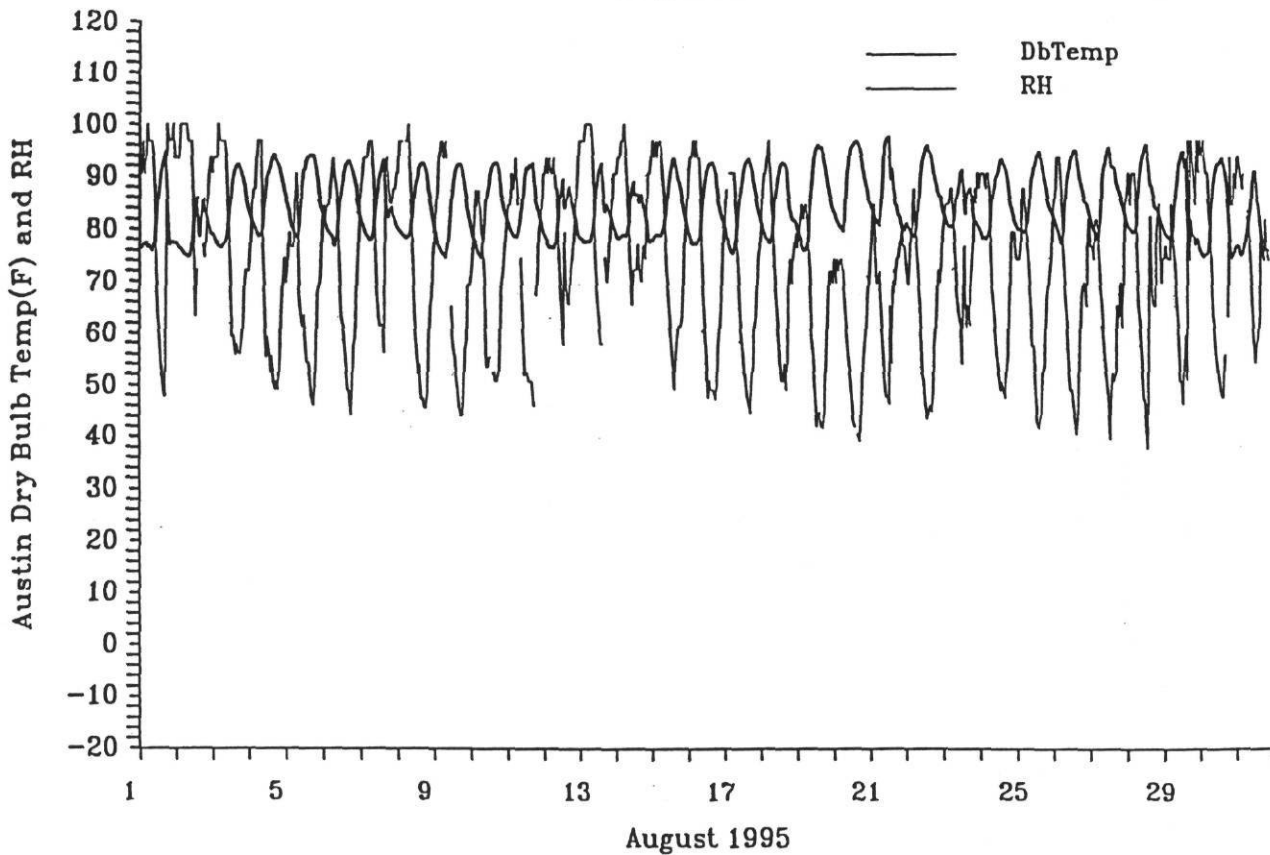
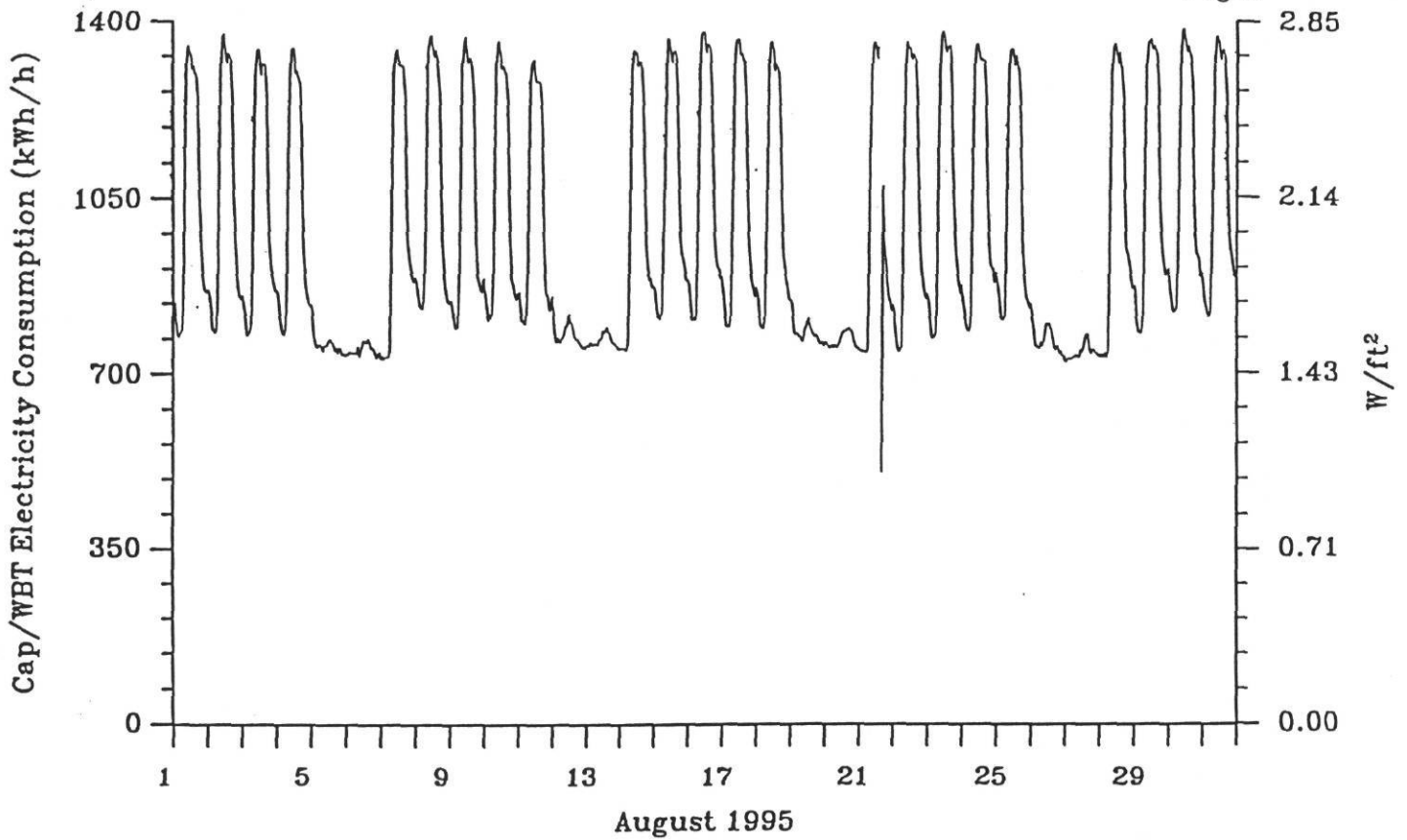
Data points for the current month are shown as letters.  
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Points from this month last year are shown as +.  
All other points are shown as \*.

W.B. Travis - Texas Capitol Complex - August 1995

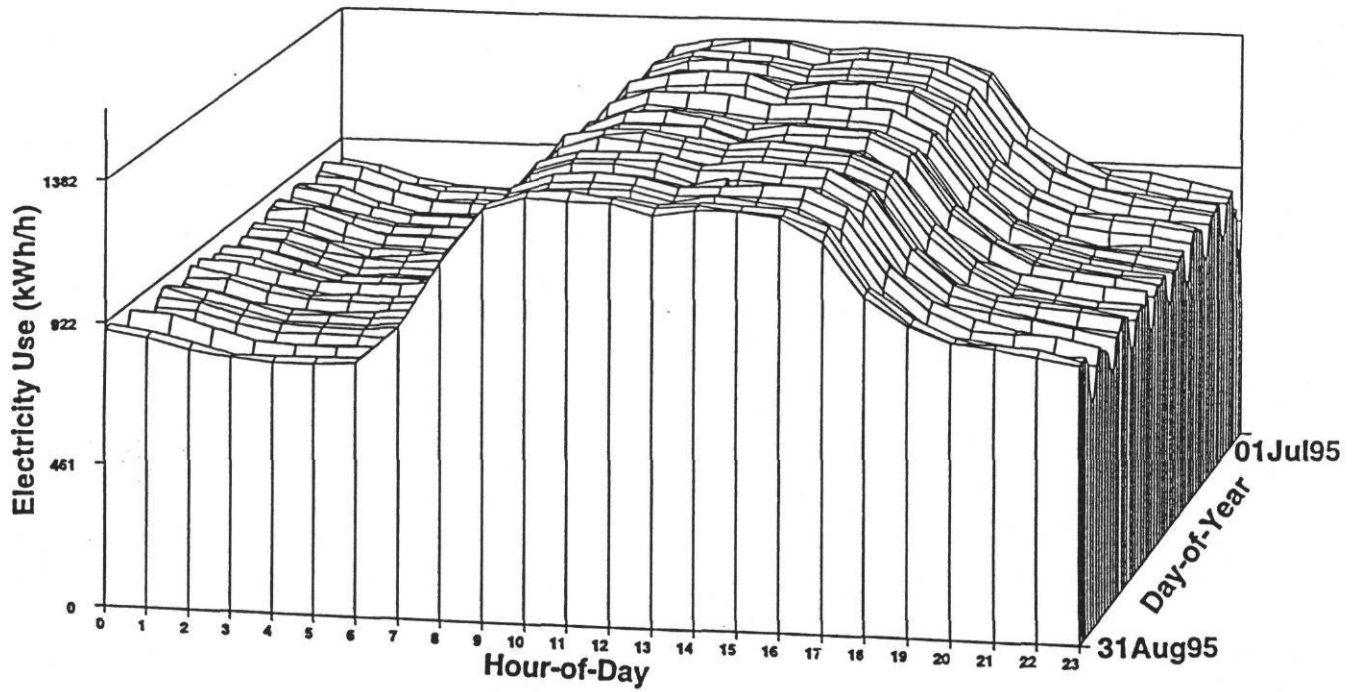


W.B. Travis - Texas Capitol Complex - August 1995

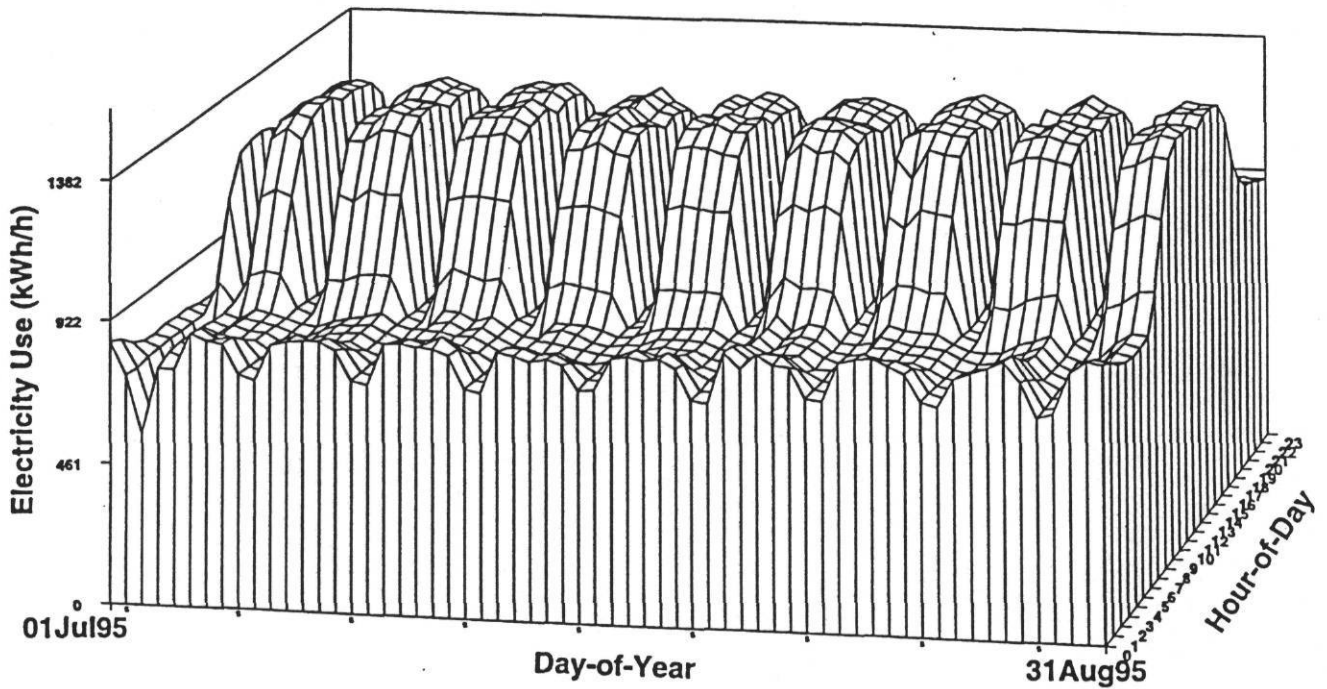


W.B. Travis - Texas Capitol Complex - August 1995

### Whole-Building Electric



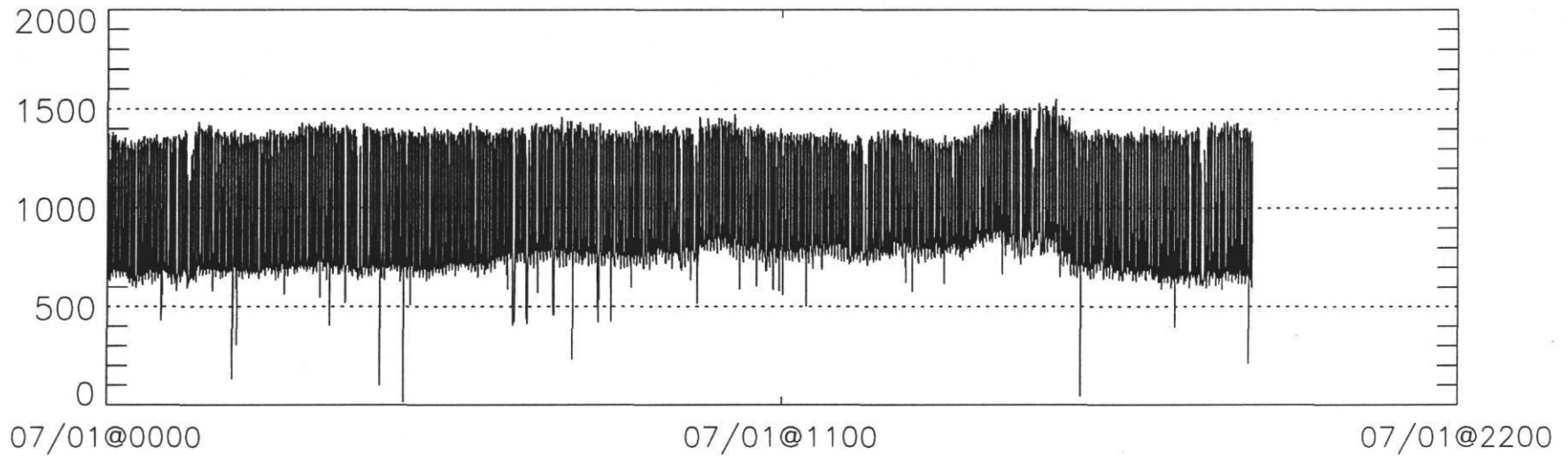
### Whole-Building Electric



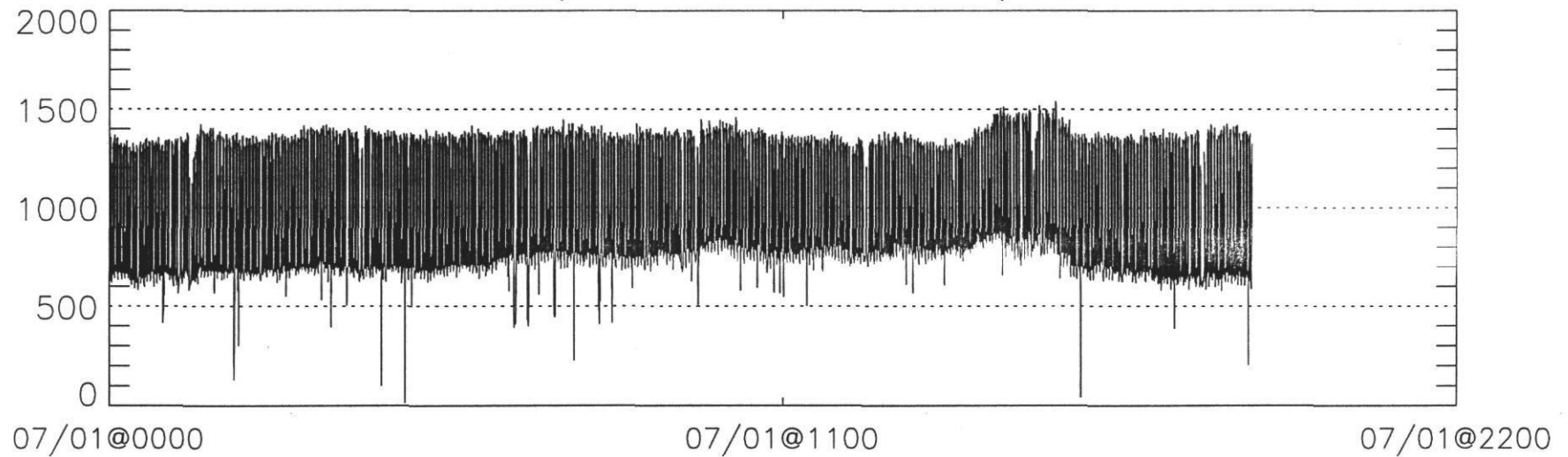
Sundays are marked with an "S"

W.B. Travis - Texas Capitol Complex - August 1995

(ch0224) WBE



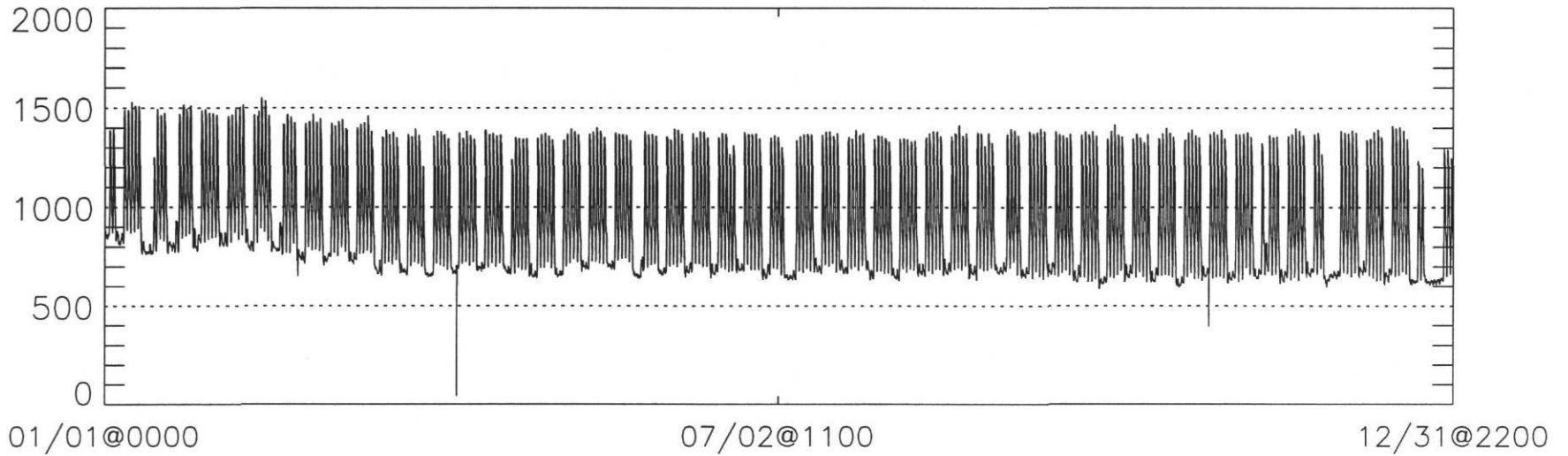
(ch0224-ch0225) LIGHT.



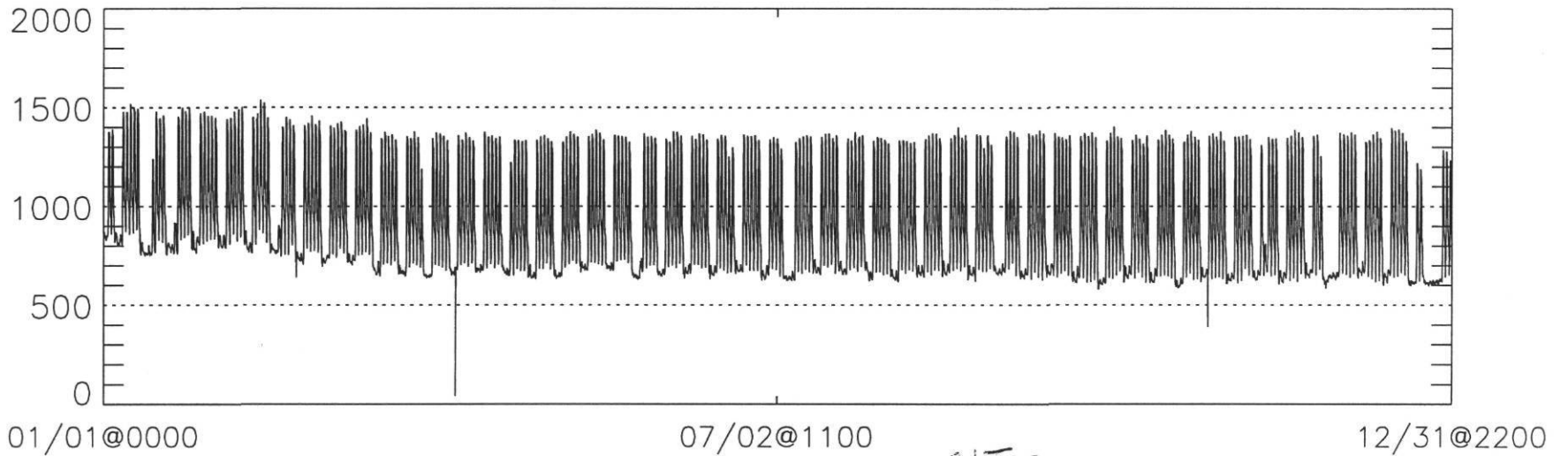
SITE # 209 WB. TRAVIS

07/91 - 07/99

(ch0224) WBE



(ch0224-ch0225) LIGHT + EQUIP ~~WBE~~



SITE # 209

01/97 - 12/97



lstaraxp% listsite 211

**Site: 211                    J.H. Winters (JHW)**

---

Mecr id:

Start date:        03/12/1990

Energy Type:    default

Construction

    begin:        06/01/1991            end: 09/01/1991

Area:            503000.00

Facility:        Texas Capitol Complex

Contact Info:    Denis Feary  
                  State Purchasing \& General Services Com  
                  Building Maintenance Department  
                  P.O. Box 13047  
                  Austin, TX 78711  
                  (512) 475--2455

## JOHN H. WINTERS

**Building Envelope:**

- 503,000 sq.ft.
- three separate buildings served by a common central chilling plant. One three story and two six story buildings. Constructed in 1984 and houses the State headquarters for the Texas Department of Human Services.
- walls: standard brick walls.
- windows: single, tinted, & fixed.
- roof: flat with elastomeric rock on top.

**Building Schedule:**

- computer facilities : 24 hrs/day, 7 days/week, year round.
- office hours: 8:00am to 5:00pm weekdays

**Building HVAC:**

- three (3) variable volume AHU's with electric heat (1-50 hp, 1-100 hp, & 1-75 hp)
- forty - four (44) Leibert units serve the three computer areas (5 hp each)
- nine (9) chilled water pumps (4-30 hp, 2-40 hp, 1-25 hp, 2-20hp)
- four (4) condenser water pumps (4-40 hp)
- three (3) centrifugal chillers (607 tons)
- one (1) cooling tower (3-30 hp 2-speed motors)

**HVAC Schedule:**

- 24 hrs/day

**Lighting:**

- Predominantly by three tube 34-watt fluorescent fixtures, screw-in fluorescent lamps in the ground floor lobby area.

**Installed Retrofits:**

- Upgrade energy management system - started May 1994, completed Sep. 1994
- Lighting modifications - completed May 1993

**J.H. Winters**  
Texas Capitol Complex  
503,000 square feet

Site Contact

Denis Feary  
State Purchasing and General Services Commission  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512)-475-2455

LoanSTAR Metering Contact

Aamer Athar  
053D WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409)-845-9213

**Summary of Energy Consumption**

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	1488179 kWh	89	\$0.03480	\$51789
Peak 60 Minute Demand	2844 kW	89	\$9.48	\$26961
Chilled Water	5755.0 MMBtu	89	\$3.250	\$18704

Peak 60 minute demand was recorded at 1600 Monday 8/7/95.  
There were 744 hours in this month.

**Monthly Retrofit Savings**

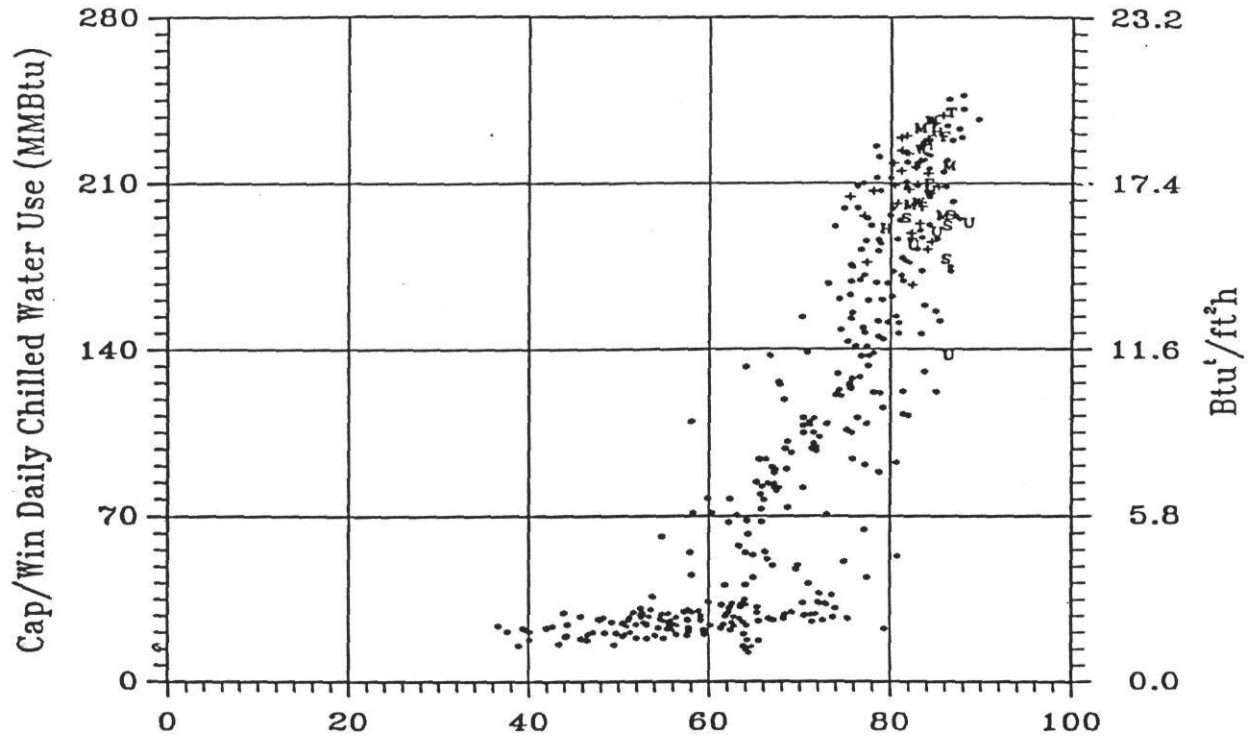
	Measured Savings		Audit Estimated Savings	
	kWh	\$	kWh	\$
Electricity (kWh)	139636	\$4859	194017	\$6752
Monthly Total		\$4859		\$6950
Total to Date*	(51 months)	\$137049	(48 months)	\$90047

\*Measured savings include construction period. Audit estimated savings do not.

**Comments**

- ★ Evening shutdown of chillers has been discontinued since 7/3/95 due to the hot weather. This shutdown operation will restart in October 1995.
- ★ Electricity and chilled water data are missing from 8/1/95 to 8/4/95 due to a monitoring hardware problem.

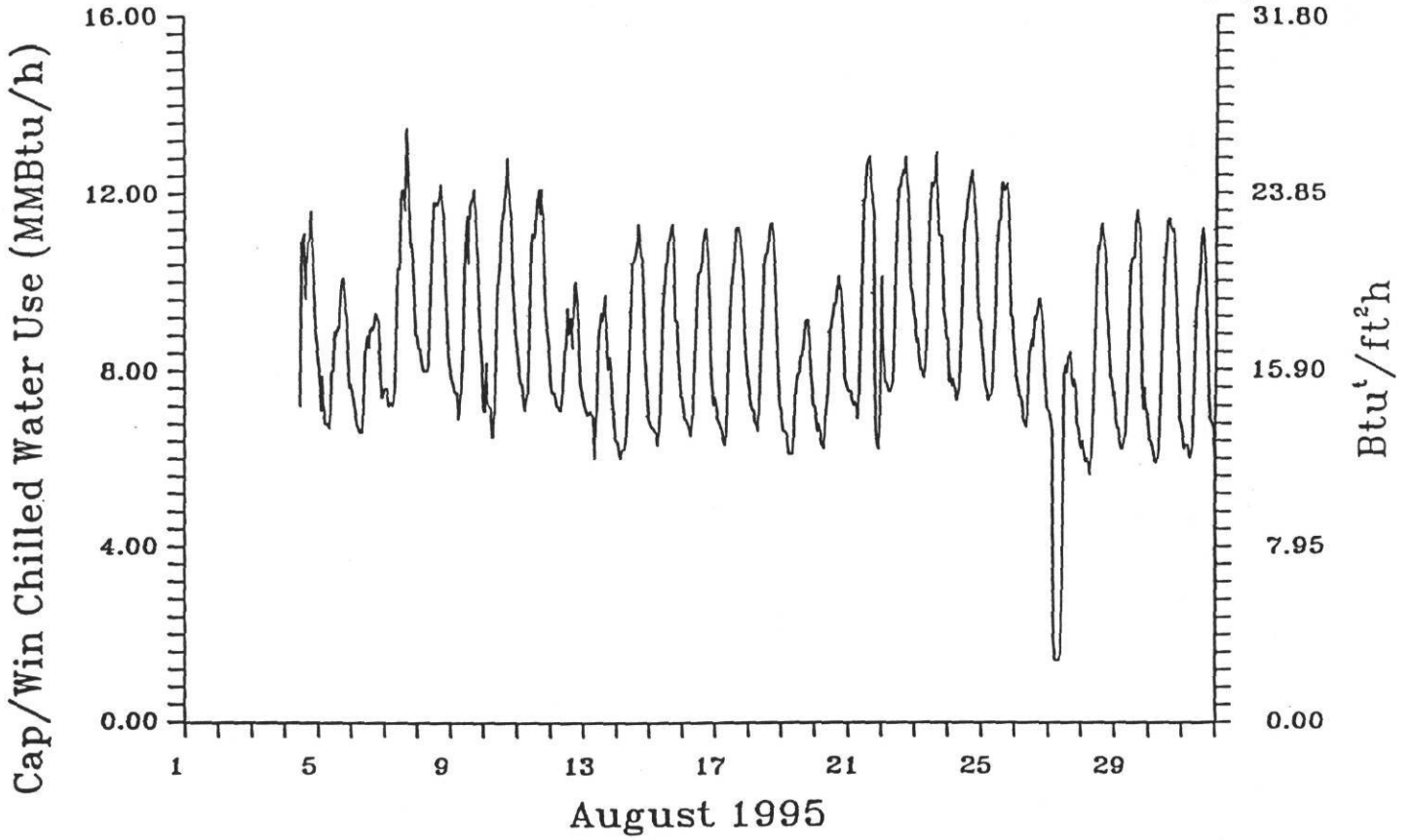
J.H. Winters - Texas Capitol Complex - August 1995



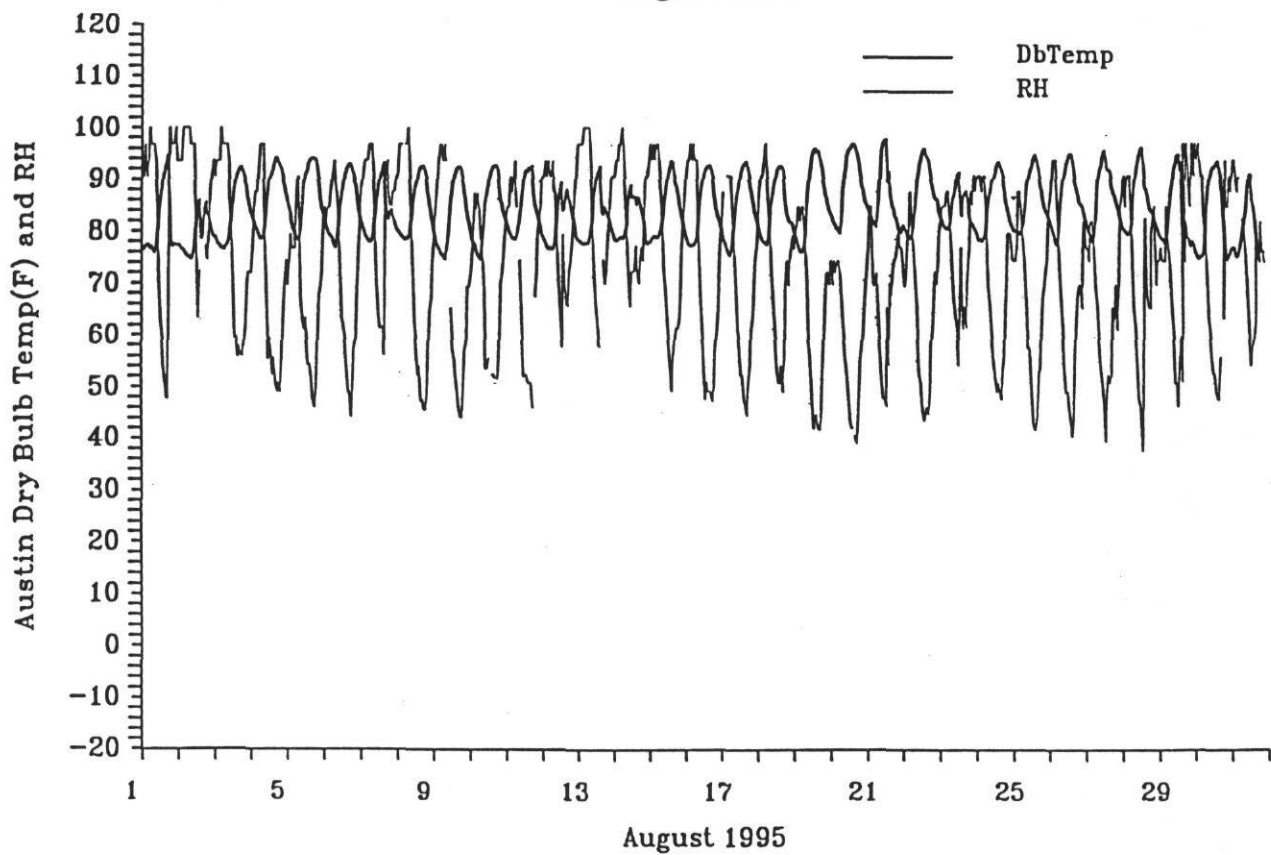
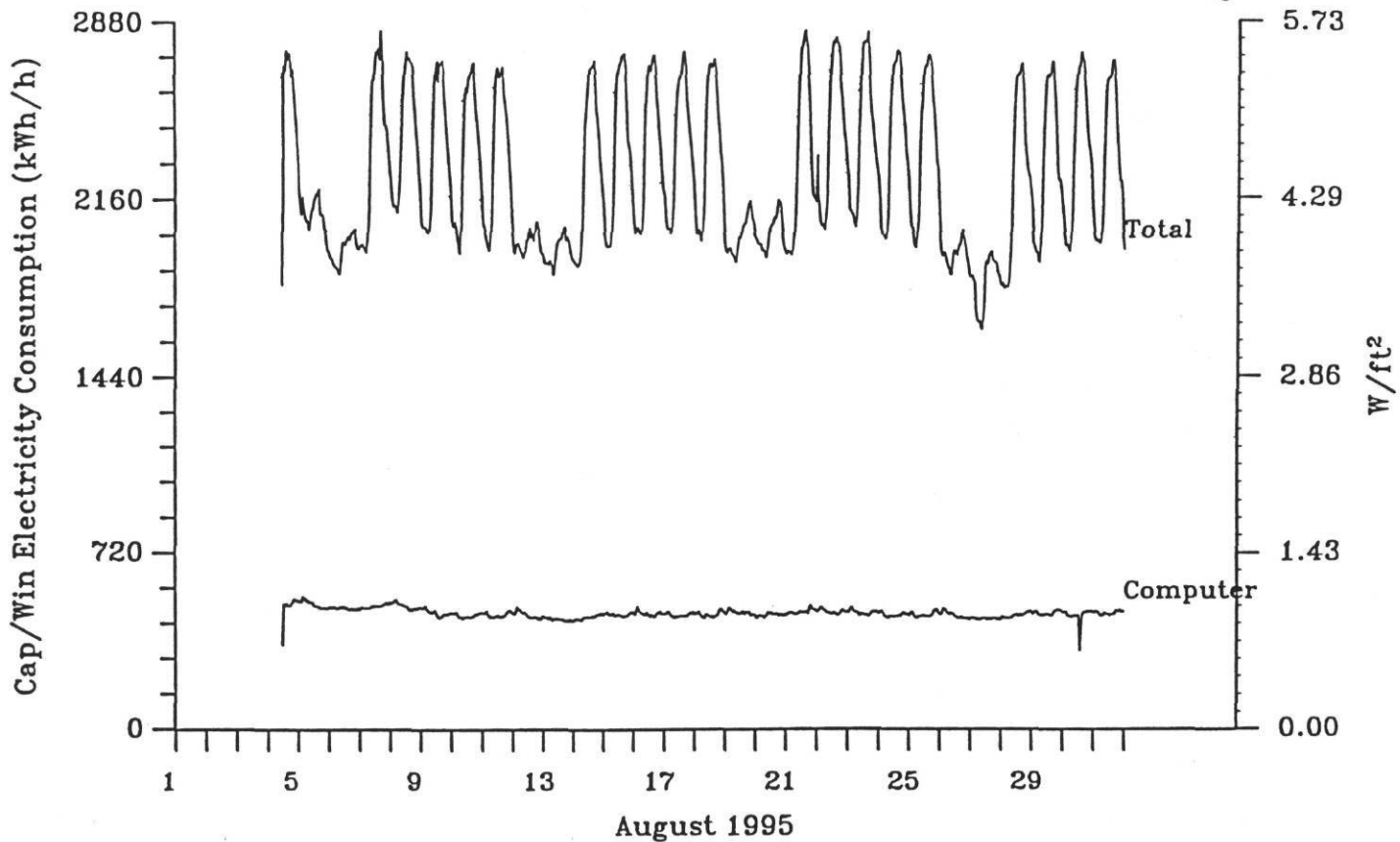
Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

Points from this month last year are shown as +.  
All other points are shown as \*.

J.H. Winters - Texas Capitol Complex - August 1995

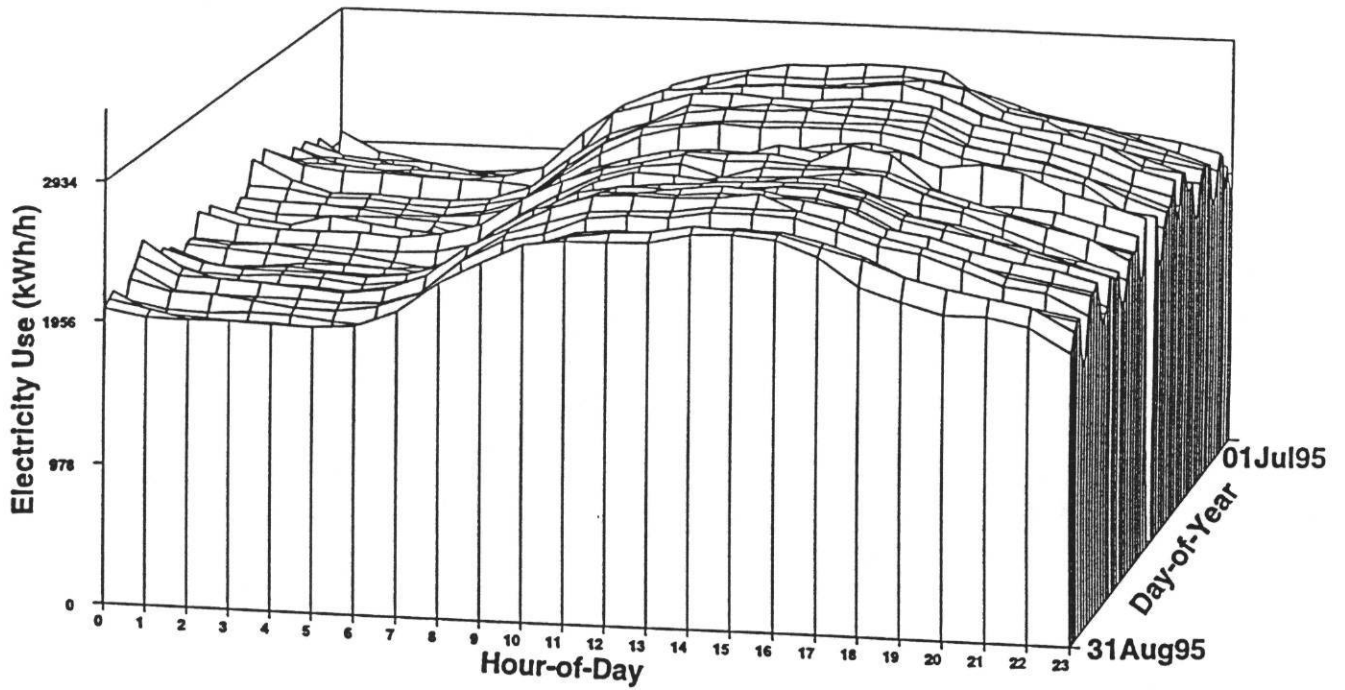


J.H. Winters - Texas Capitol Complex - August 1995

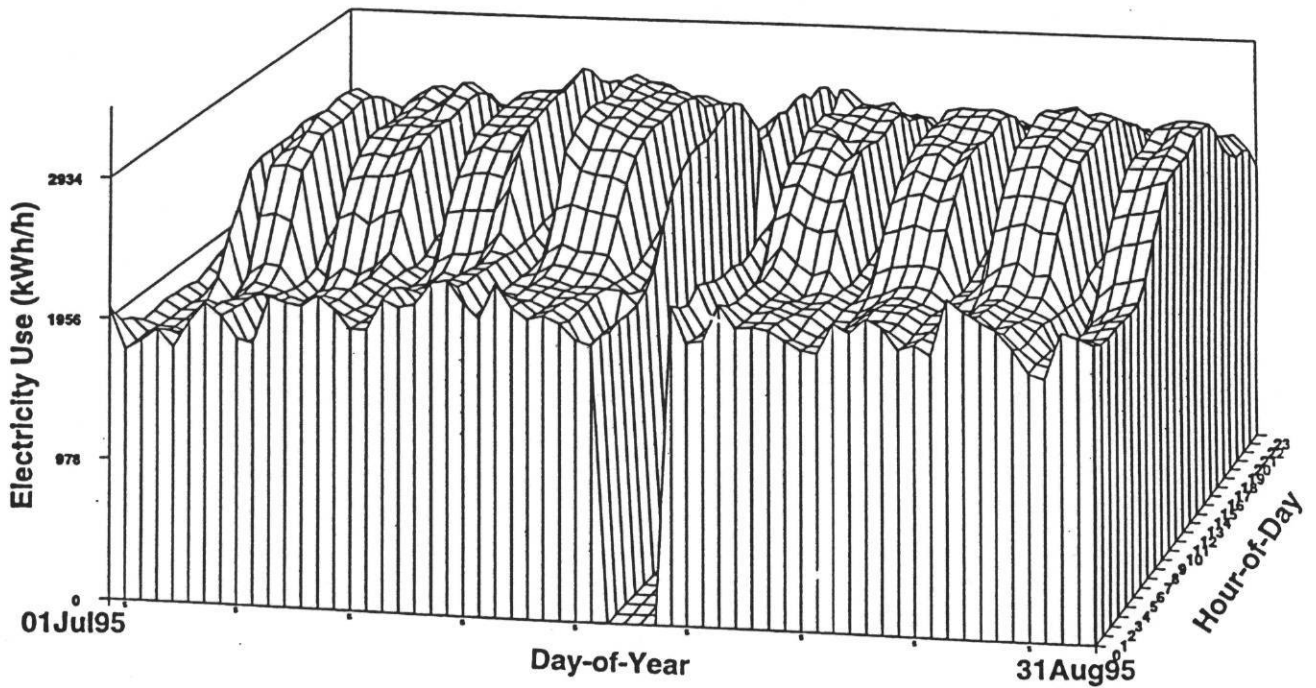


J.H. Winters - Texas Capitol Complex - August 1995

### Whole-Building Electric



### Whole-Building Electric

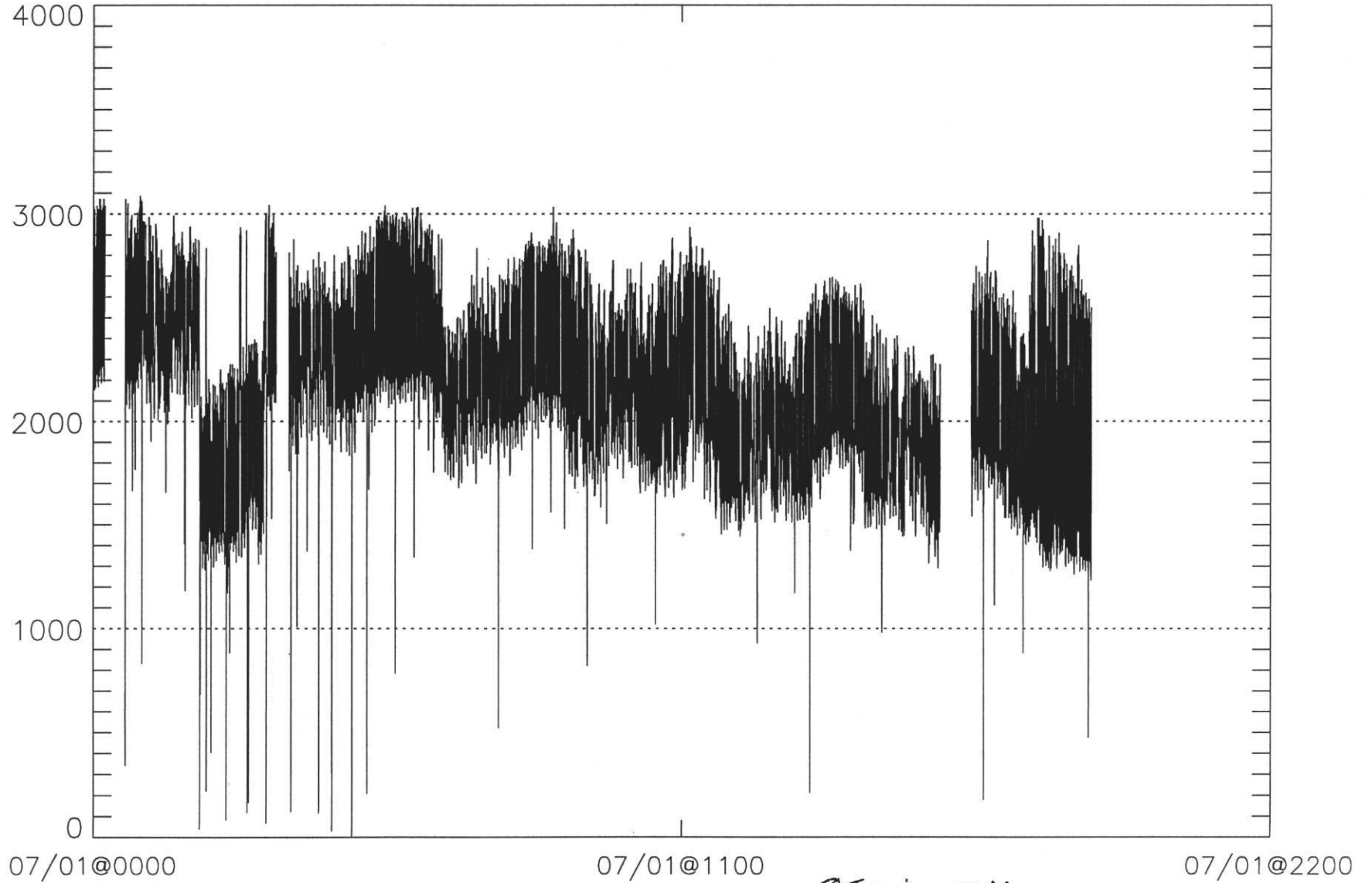


Sundays are marked with an "S"

J.H. Winters - Texas Capitol Complex - August 1995

WBE

(timestamp>"1993-01-16 23:59"?(ch1025+ch0232): ch0232)



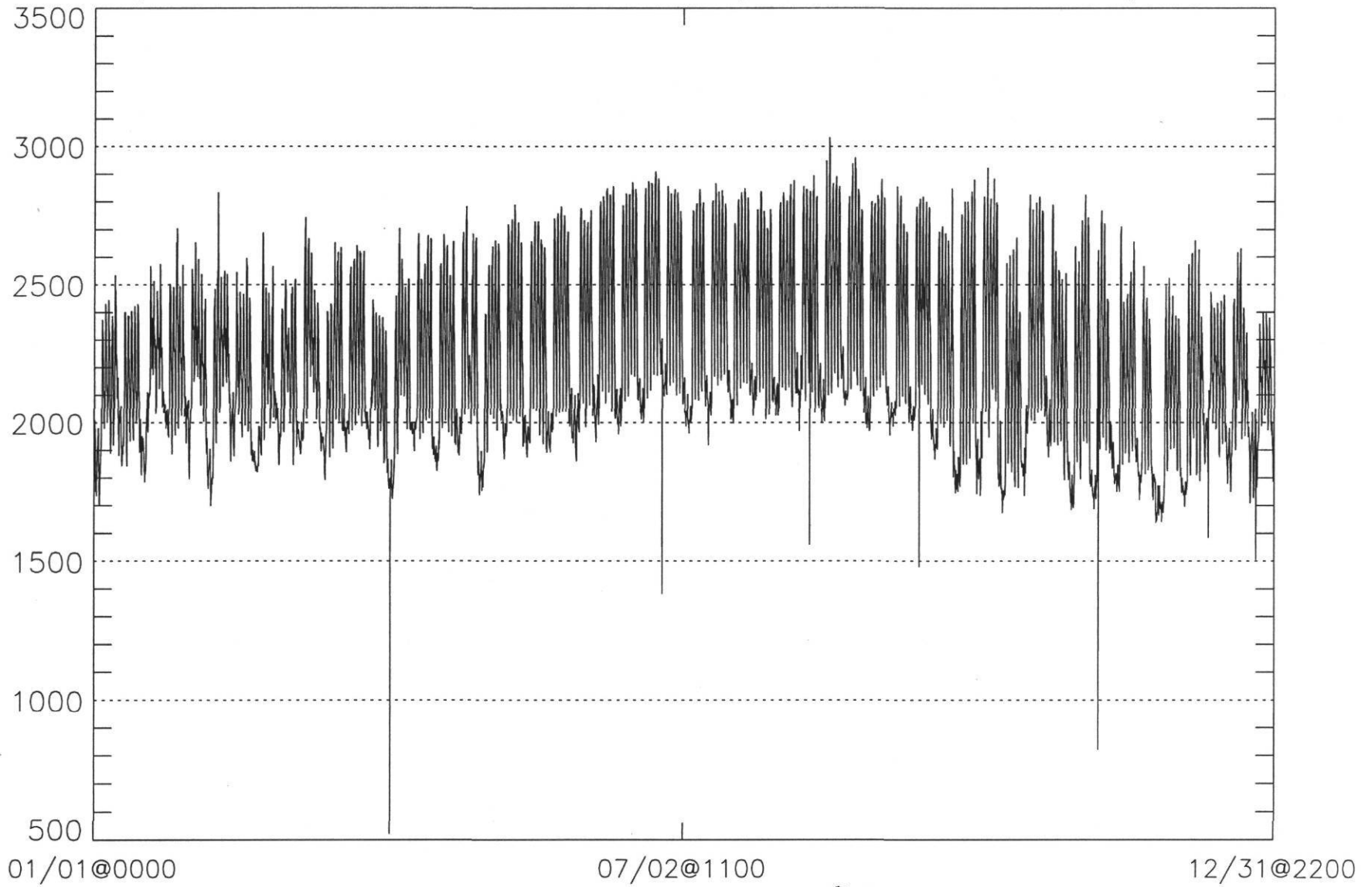
SITE # 211 J.H. WINTERS

07/91 - 07/99



WBE

(timestamp>"1993-01-16 23:59"?(ch1025+ch0232): ch0232)



SITE #211 JH. winters,  
01/94 -12/94

**Site: 220                    Treasury Building (Tre)**

---

Mecr id:

Start date:     08/14/1995

Energy Type:   default

Construction

    begin:     08/14/1995            end:     N/A

Area:           203672.00

Facility:       Texas Capitol Complex

Contact Info:   Denis Feary  
                 State Purchasing \& General Services Com  
                 Building Maintenance Department  
                 P.O. Box 13047  
                 Austin, TX 78711  
                 (512) 475--2455

## CAPITOL COMPLEX

## Treasury Building

**Building Envelope:**

- 203,672 gross sq.ft.
- six floors, occupied by various divisions of the Treasurer's office
- first floor: elevator lobby on the first floor has a brick floor, a 2'x2' lay-in ceiling and white painted, sheet rock walls. The corridors and office areas have 2'x4' lay-in ceiling
- second floor: elevator lobby has a brick floor, 2'x2' lay-in ceiling and bare cement walls. The offices and corridors have either 2'x2' or 2'x4' lay-in ceiling and white painted sheet rock walls
- third floor: elevator lobby has 2'x2' lay-in ceiling and dark blue painted sheetrock walls. The corridors and offices have 2'x4' lay-in ceiling
- fourth floor: elevator lobby has 2'x2' lay-in ceiling, sheetrock walls and blue/gray carpet. The office area has blue/gray carpet and 2'x4' lay-in ceiling
- fifth floor: elevator lobby has blue/gray carpet, sheetrock walls and 2'x2' lay-in ceiling. The corridors and offices have same floor and wall type, but have 2'x4' lay-in ceiling
- sixth floor: elevator lobby has 2'x2' lay-in ceiling, blue/gray carpet and maroon painted sheetrock walls. The corridors and office areas have 2'x4' lay-in ceiling, blue/gray carpet and sheetrock walls

**Building Schedule:**

- operational hours are 7:00 am to 6:00 pm weekdays

**Lighting:**

- virtually all of the office areas in the Treasury building are illuminated by 2'x4' lensed recessed florescent fixtures. Corridors, stairwells, restrooms and elevator lobbies use several different light fixtures, including 3 or 4 lamp parabolic fixtures and fluorescent lensed fixtures

**Proposed Retrofits:**

- retrofit the existing 2'x4', 4 lamp lensed fixture with two (2) T8-32W lamps, one electronic ballast and specular reflector
- retrofit the existing 2'x4' parabolic 4-T12 lamp with (2) T8-32W lamp, electronic ballast and specular reflector
- retrofit the existing 2'x2' 2-T12-U-40W lamp fixture with (2) T8-18W lamps, one electronic ballast and specular reflector
- retrofit the existing 4'-2 lamp lensed fixture in parking garages to one (1) T8-32W lamp, one electronic ballast and specular reflector

**Status of Retrofits:**

- Retrofit status is unknown at this time

**Other Information:**

- electricity is supplied by City of Austin

**Treasury Building**  
 Texas Capitol Complex  
 203,672 square feet

Site Contact

Denis Feary  
 State Purchasing & General Services Com  
 Building Maintenance Department  
 P.O. Box 13047  
 Austin, TX 78711  
 (512) 475-2455

LoanSTAR Metering Contact

Sam Farouz  
 053 WERC  
 Texas A&M University  
 College Station, TX 77843-3123  
 (409) 845-9213

**Summary of Energy Consumption**

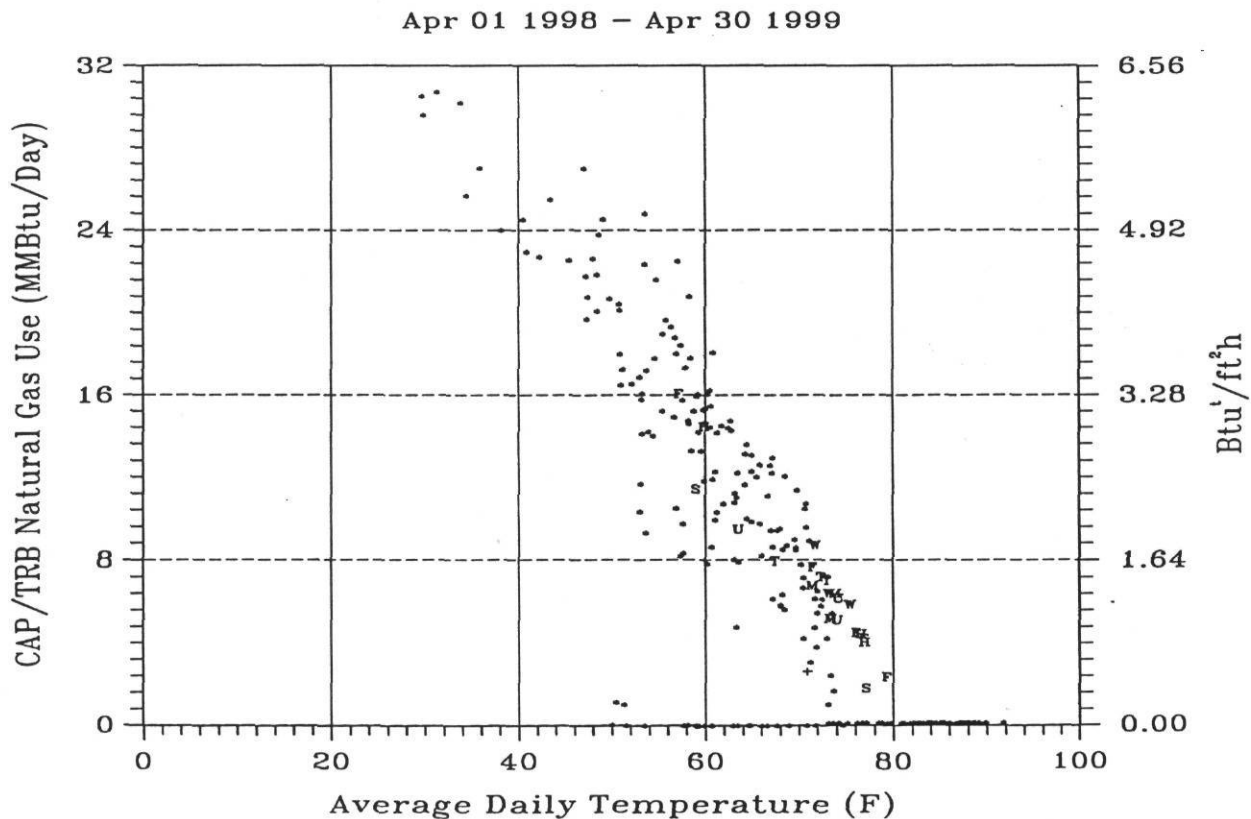
	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	223235 kWh	86	\$0.03480	\$7769
Peak 60 Minute Demand	614 kW	86	\$9.48	\$5819
Natural Gas	195.3 MMBtu	86	\$3.200	\$625

Peak 60 minute demand was recorded at 1500 Friday 04/23/99.  
 There were 720 hours in this month.

**Monthly Retrofit Savings**

\* All the proposed retrofits have been recommended for cancellation.

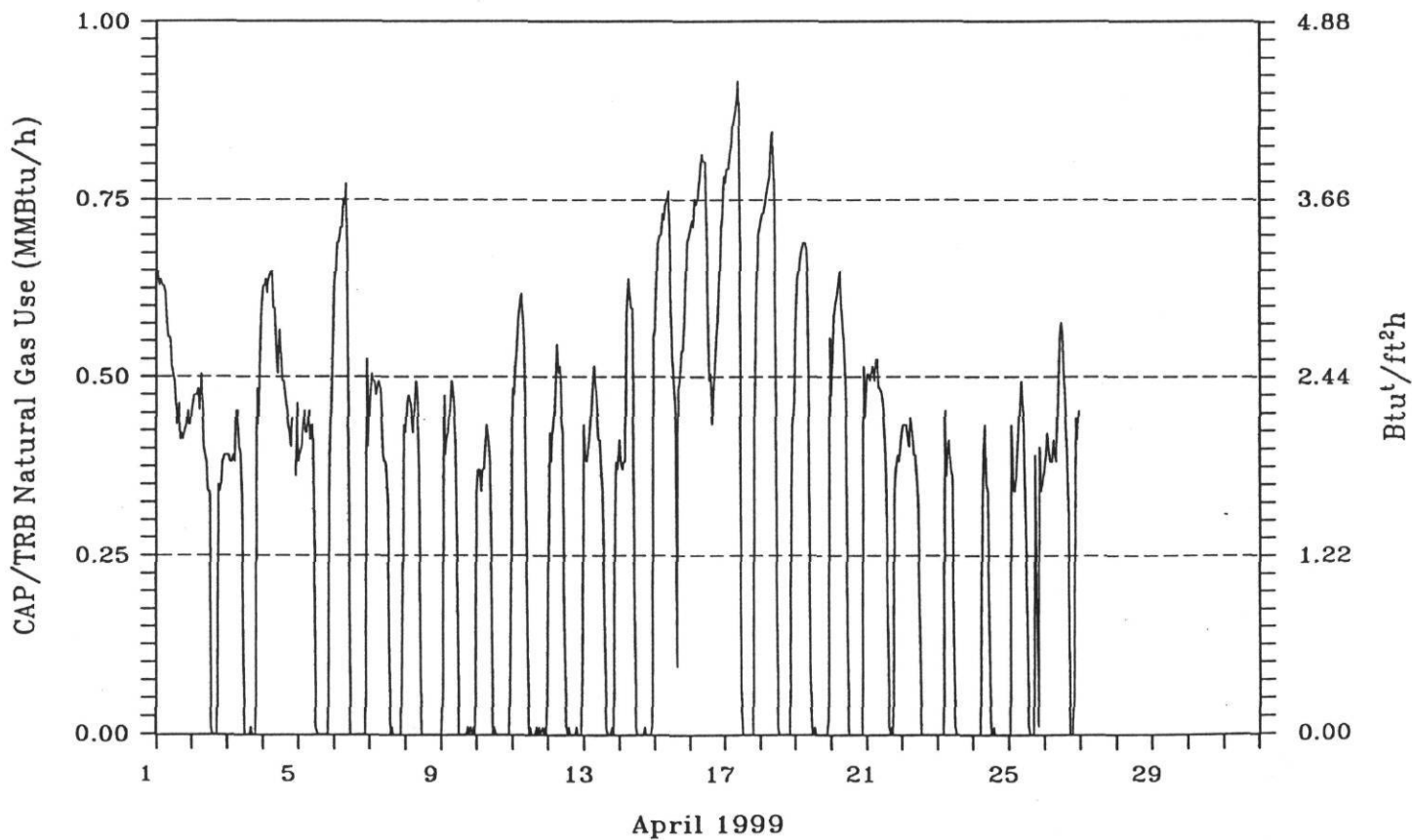
Comments



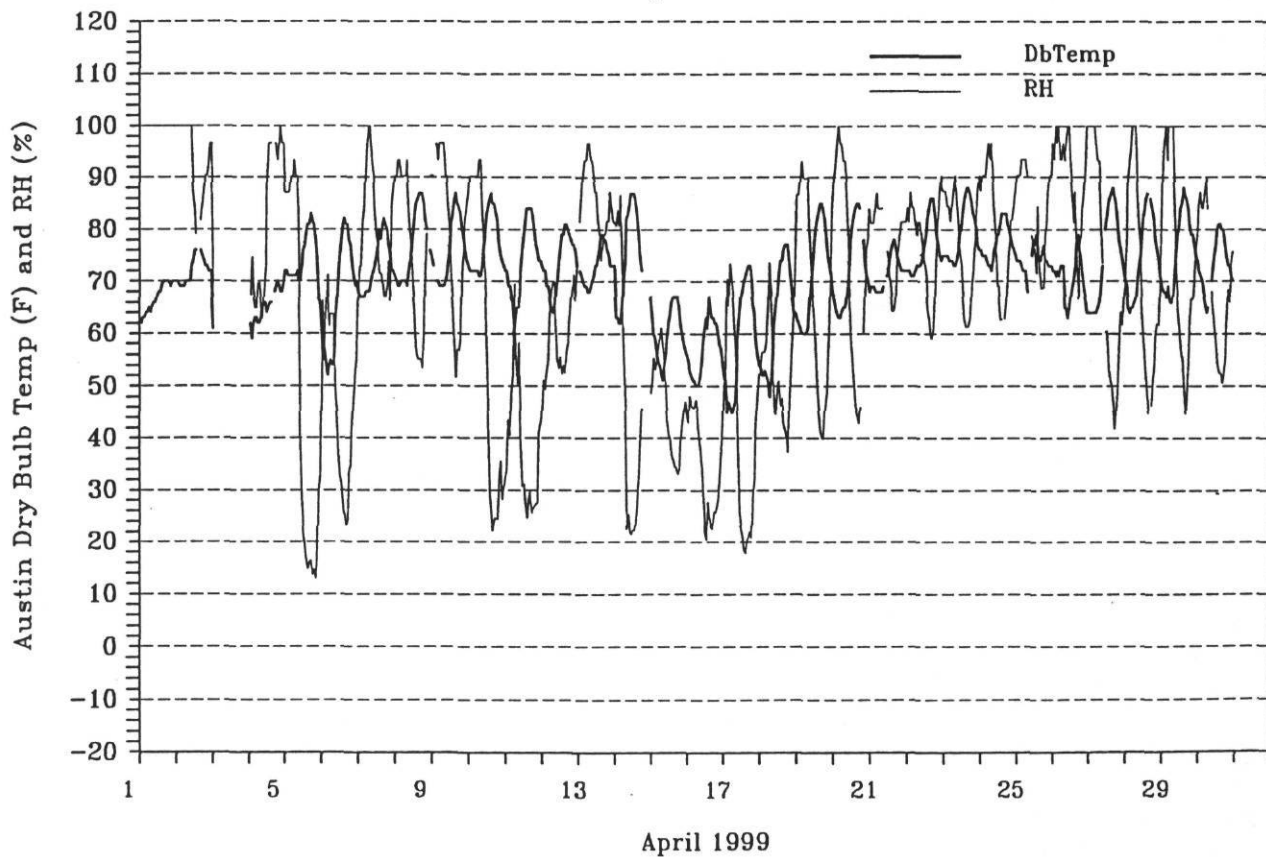
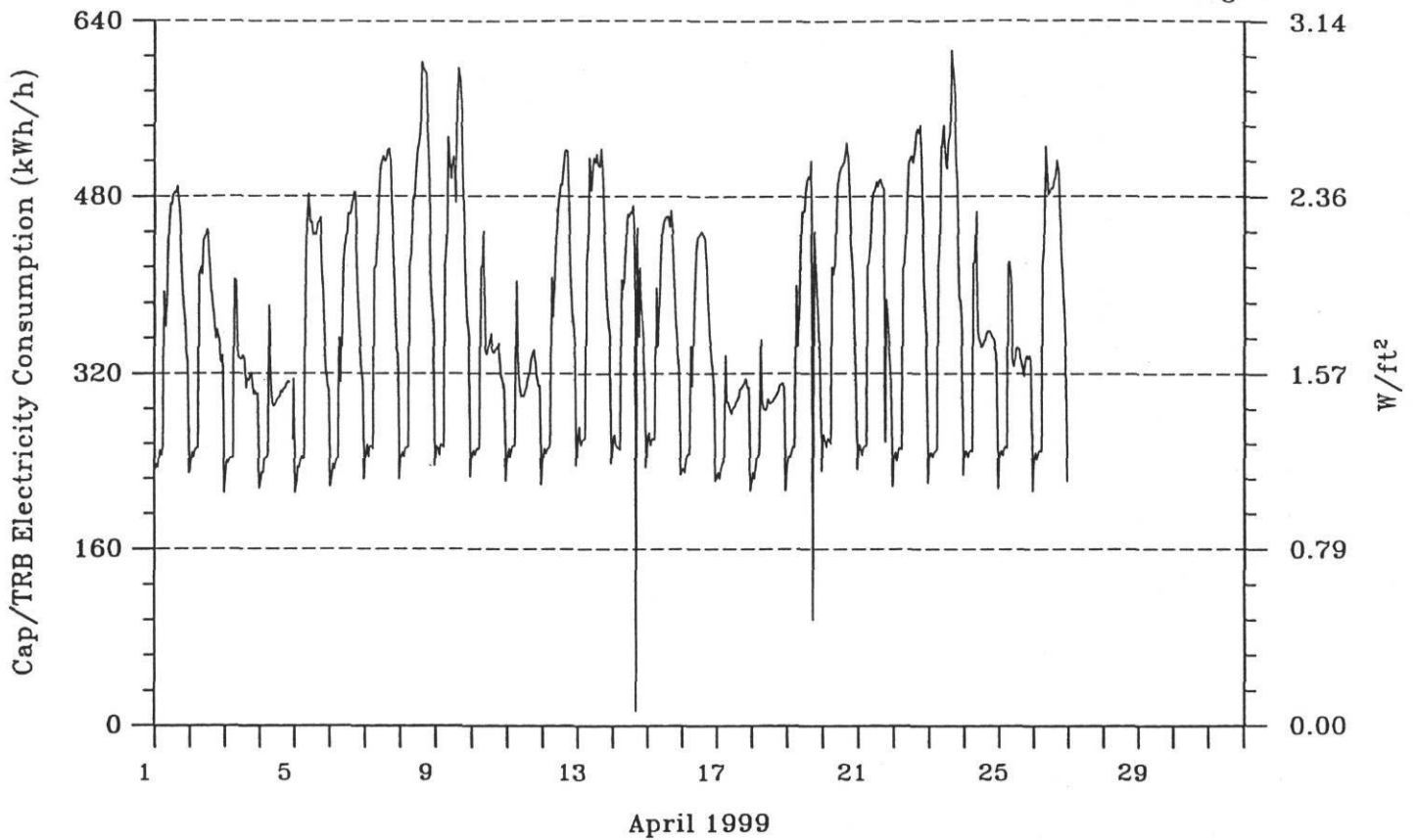
Data points for the current month are shown as letters.  
 Monday through Sunday are represented as M,T,W,H,F,S,U.

Points from this month last year are shown as +.  
 All other points are shown as \*.

Treasury Building - Texas Capitol Complex - April 1999

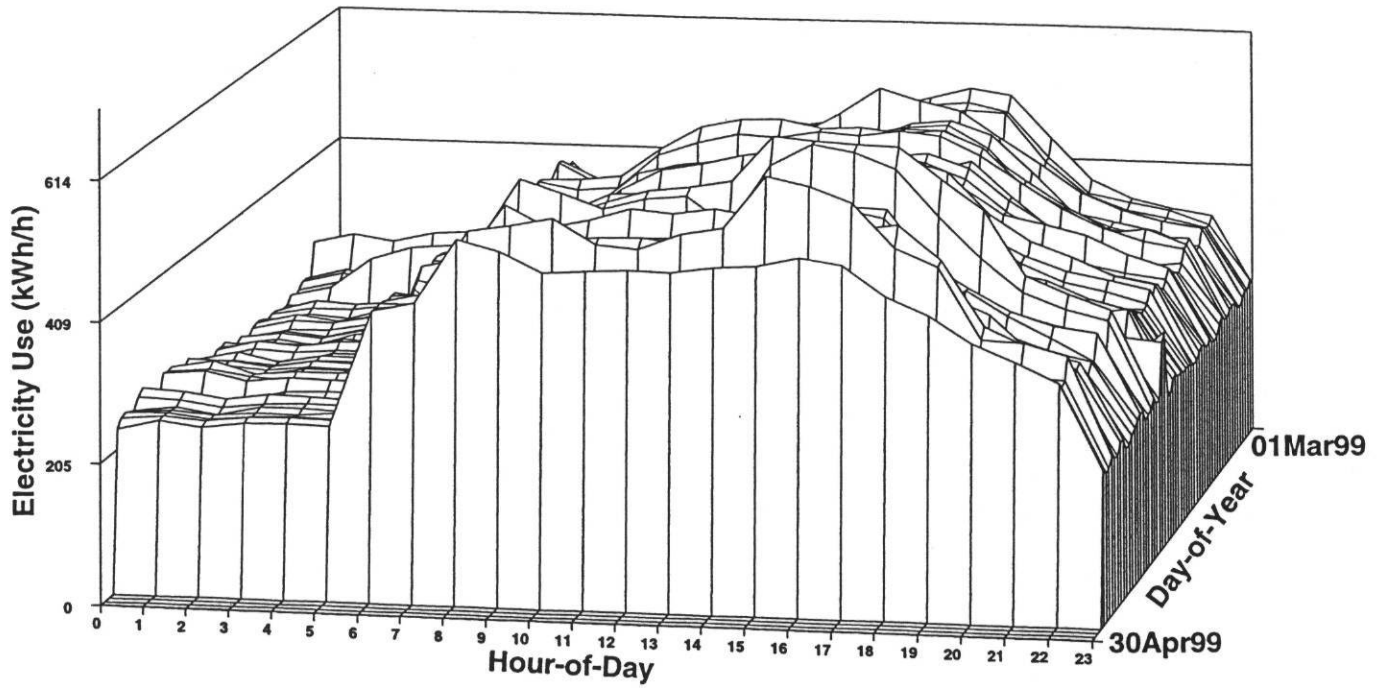


Treasury Building - Texas Capitol Complex - April 1999

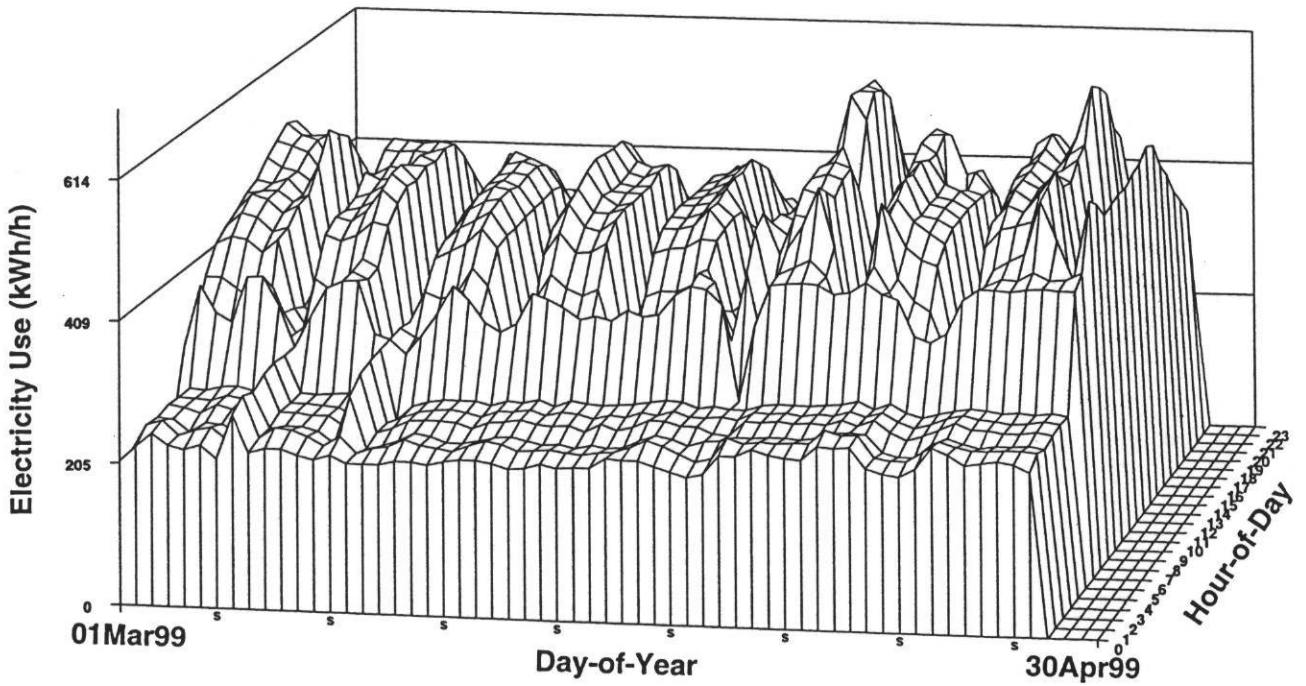


Treasury Building - Texas Capitol Complex - April 1999

### Whole-Building Electric



### Whole-Building Electric



Sundays are marked with an "S"

Treasury Building - Texas Capitol Complex - April 1999

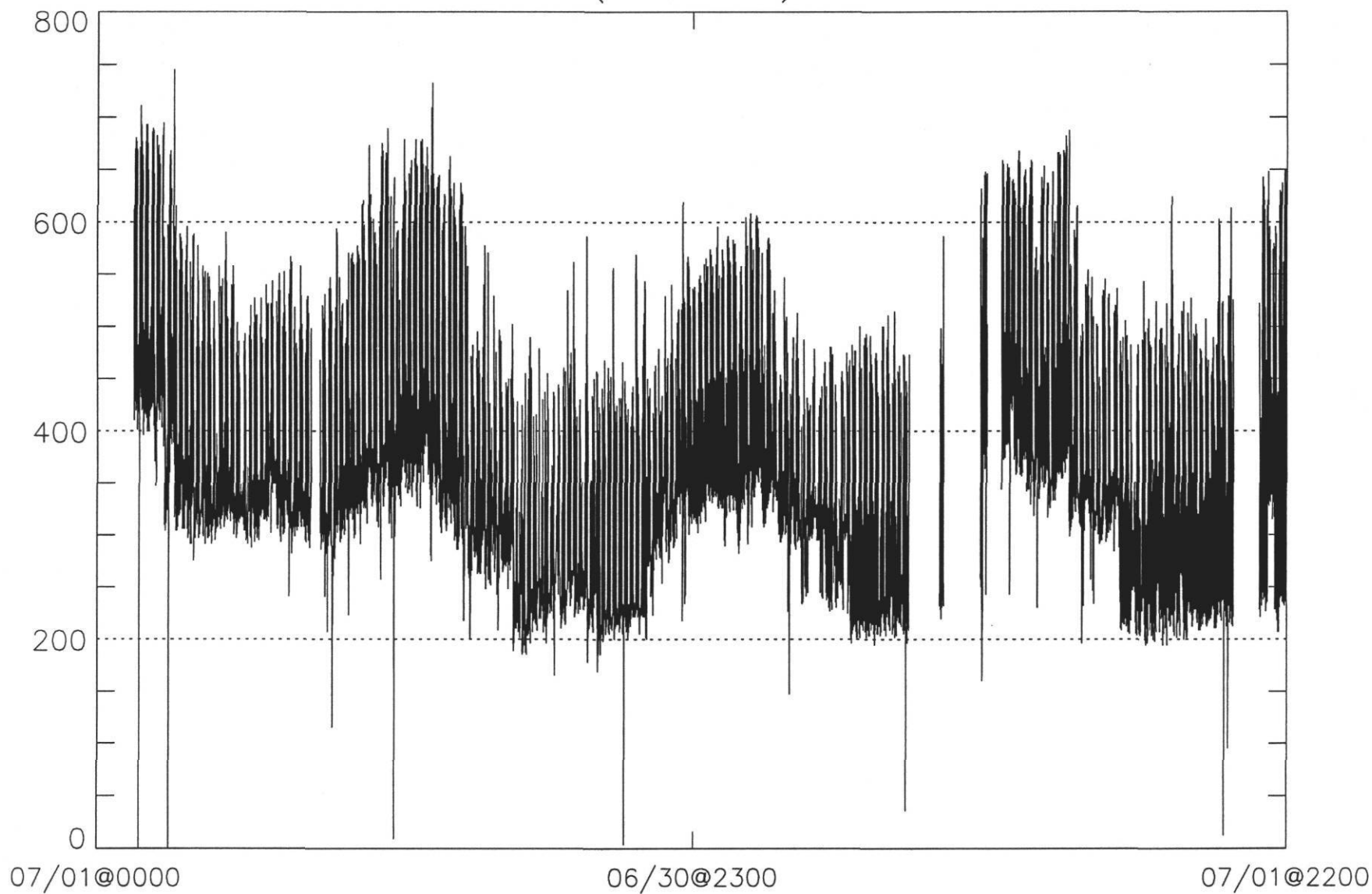


TREASURY BUILDING, AUSTIN

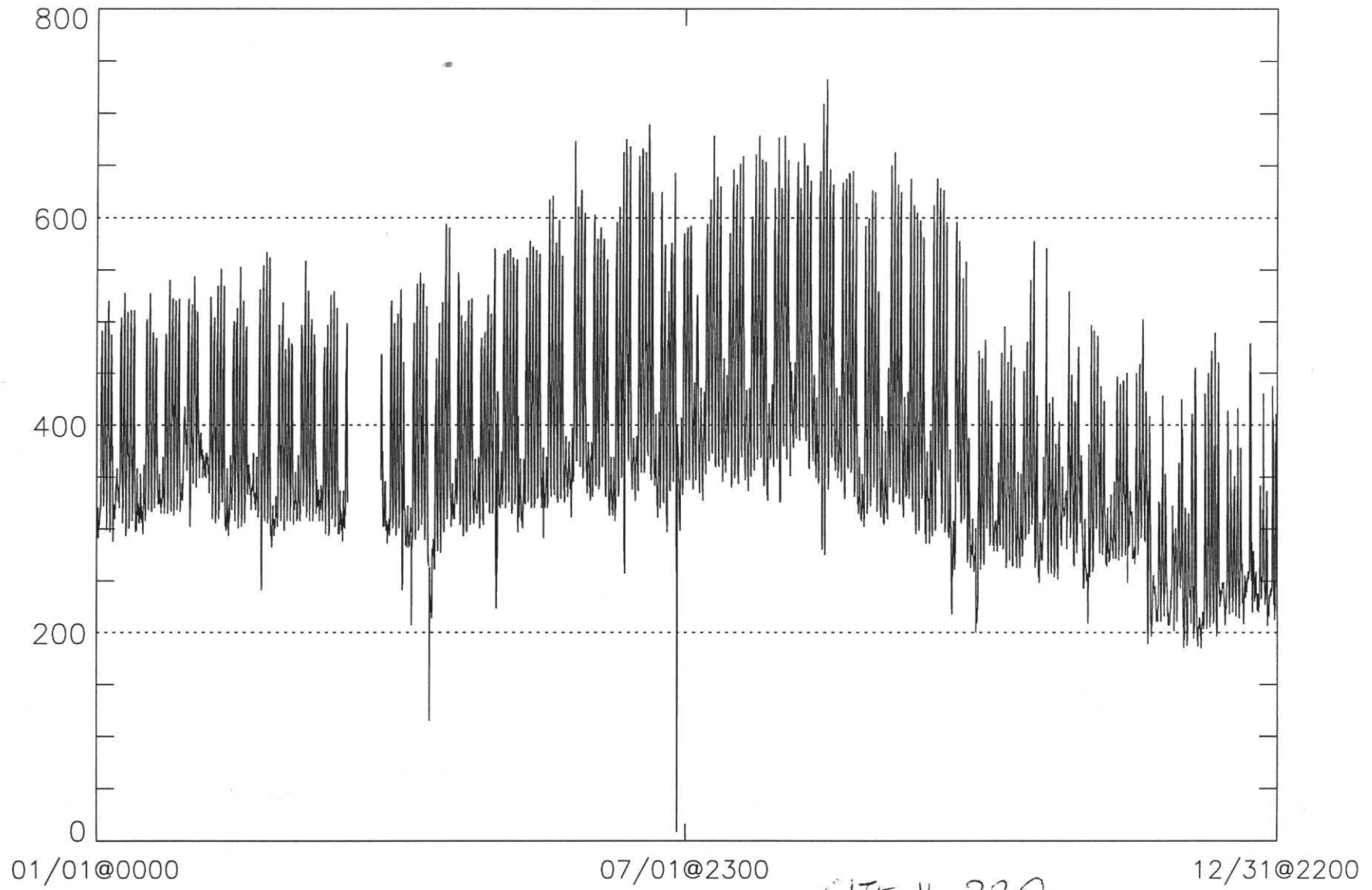
SITE # 220

07/95 - 07/99

(ch1979) WBE



(ch1979) WBE



SITE # 220

01/96 - 12/96

lstarxp% listsite 221

**Site: 221            William P. Hobby Building (Wil)**

Mecr id:

Start date:     09/08/1995

Energy Type:   default

Construction

    begin:       09/08/1995            end:     N/A

Area:            546749.00

Facility:        Texas Capitol Complex

Contact Info:   Denis Feary  
                  State Purchasing \& General Services Com  
                  Building Maintenance Department  
                  P.O. Box 13047  
                  Austin, TX 78711  
                  (512) 475--2455

## CAPITOL COMPLEX

## William P. Hobby Building Complex

**Building Envelope:**

- 546,749 sq.ft.
- three separate towers with a common lobby area
- tower 1 has 13 levels; tower 2 has 5 levels; tower 3 has 9 levels; all occupied by several state agencies
- windows: tinted, double pane glass
- year of construction: 1985

**Lighting:**

- nearly all the space lighting for office areas is provided by either 2'x4', parabolic, louvered fixtures equipped with (3) T12-34W fluorescent lamps, or 2'x4', lensed, fixtures with (3) T12-34W lamps.

**Proposed Retrofits:**

- Scheduled start/stop of HVAC equipment - Design (15)
- Refrigeration evaluation and optimization - Recommended cancelation
- Air Handling Unit evaluation and optimization - Recommended cancelation
- Lighting control - Hold, team selection in progress
- retrofit existing 2'x4', 3T12-34 lamp fixture with 2-T8-32 lamps, electronic ballast and specular reflector - Hold, team selection in progress
- retrofit the existing 2'x2', 2T12-40W U lamp fixture with 2-T8-18W lamps, one electronic ballast and specular reflector - Hold, team selection in progress
- retrofit the existing incandescent down-lights with 13W PL lamps - Hold, team selection in progress
- retrofit existing 4' fixture with T12-34W lamp with one T8-32W lamp, one electronic ballast and specular reflector - Hold, team selection in progress
- retrofit the existing 1'x4' fixture with 2-T12-34W lamp to 1-T8-32W, one electronic ballast and specular reflector - Hold, team selection in progress
- retrofit existing 4-T12-34W lamp fixture with 2-T8-32W, one electronic ballast and specular reflector - Hold, team selection in progress

**Other Information:**

- electricity is supplied by City of Austin

**William P. Hobby Building**  
 Texas Capitol Complex  
 546,749 square feet

Site Contact

Denis Feary  
 State Purchasing & General Services Com  
 Building Maintenance Department  
 P.O. Box 13047  
 Austin, TX 78711  
 (512) 475-2455

LoanSTAR Metering Contact

Sam Farouz  
 053 WERC  
 Texas A&M University  
 College Station, TX 77843-3123  
 (409) 845-9213

**Summary of Energy Consumption**

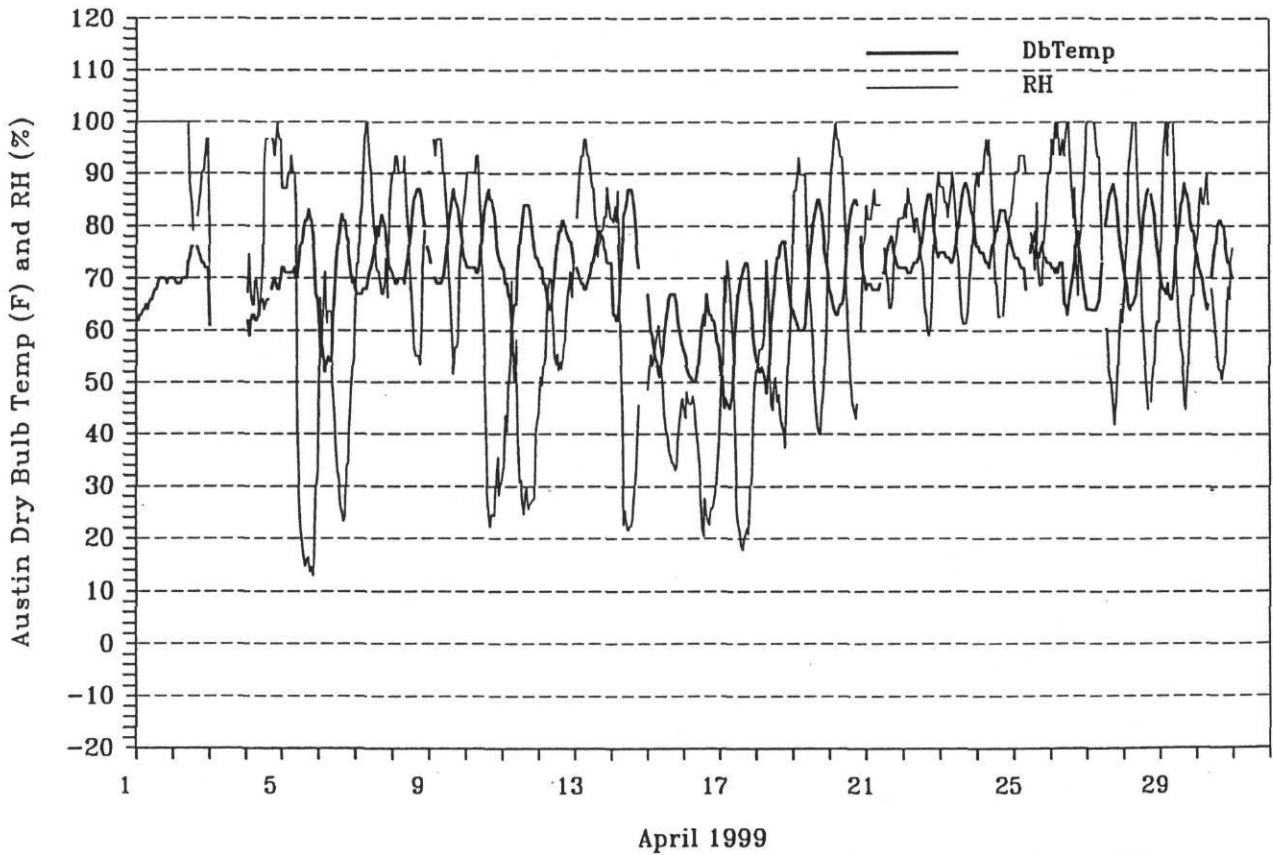
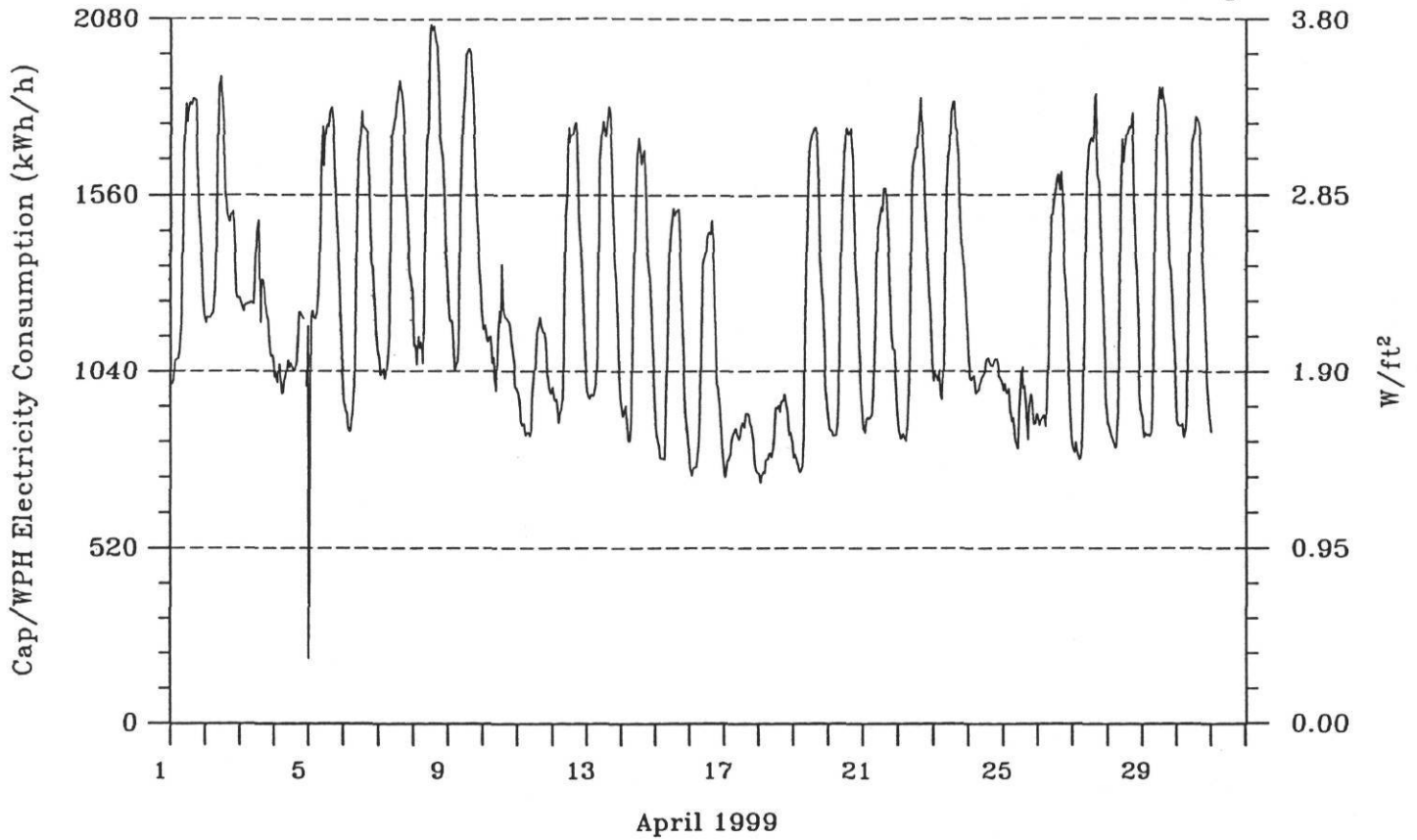
	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	889632 kWh	100	\$0.03480	\$30959
Peak 60 Minute Demand	2067 kW	100	\$9.48	\$19589

Peak 60 minute demand was recorded at 1200 Thursday 04/08/99.  
 There were 720 hours in this month.

**Monthly Retrofit Savings**

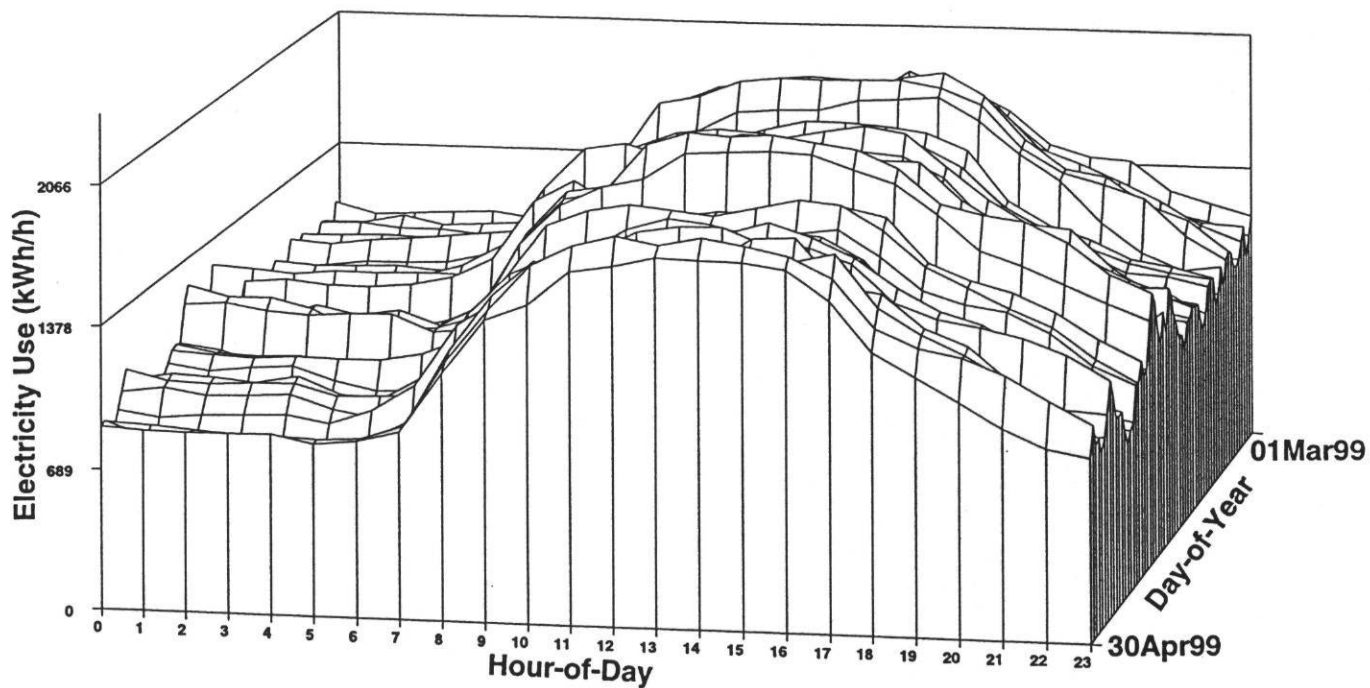
\* Please see last page for the status of all the completed retrofits.

**Comments**

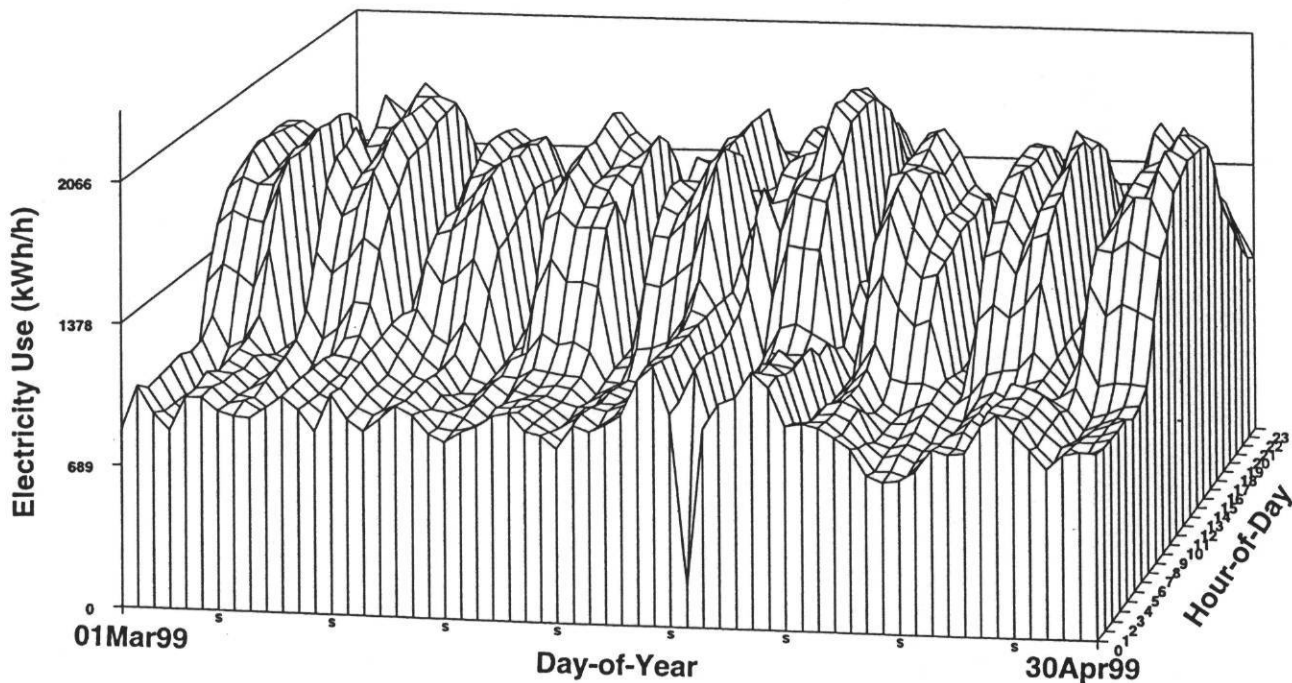


William P. Hobby Building - Texas Capitol Complex - April 1999

### Whole-Building Electric



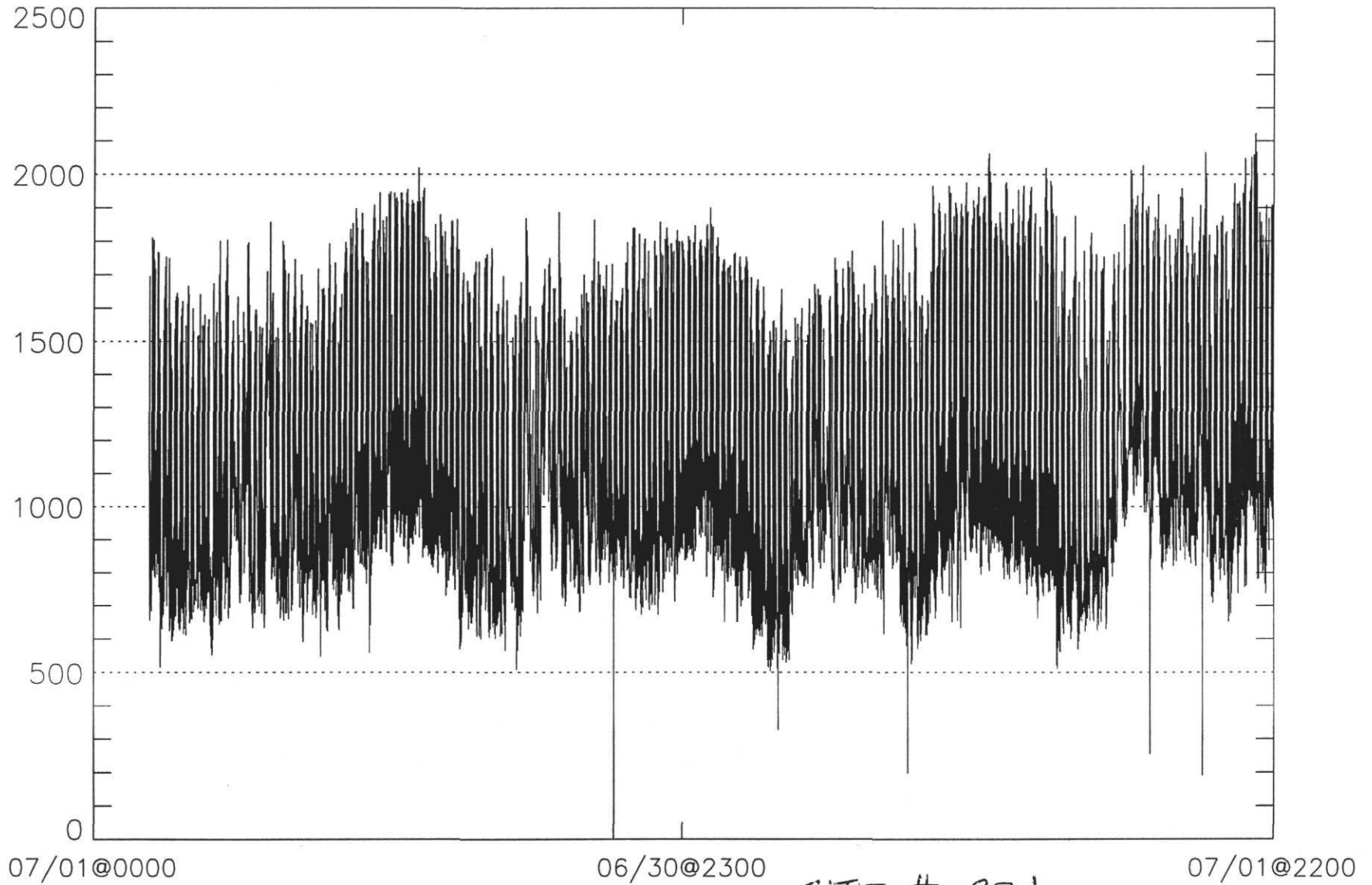
### Whole-Building Electric



Sundays are marked with an "S"

William P. Hobby Building - Texas Capitol Complex - April 1999

(ch1981) WBE



07/01@0000

06/30@2300

07/01@2200

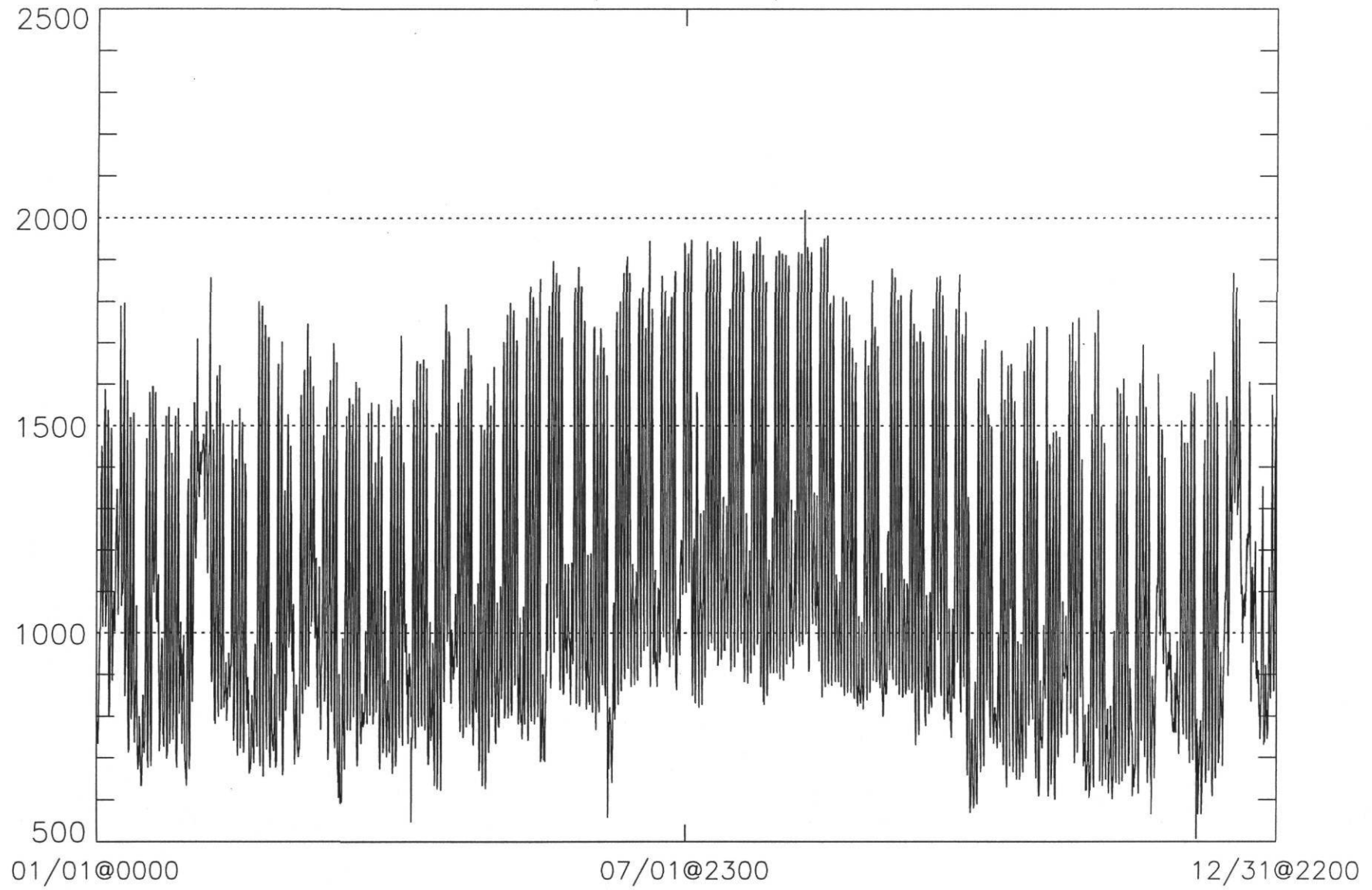
SITE # 221

07/95-07/99

W.P. HOBBY Bldg.



(ch1981) WBE



SITE # 221  
01/96 - 12/96

lstarxp% listsite 222

**Site: 222            William P. Hobby Building (WPH)**

Mecr id:

Start date:     09/08/1995

      No Construction date or area default information

Facility:        Texas Capitol Complex

Contact Info:   Denis Feary  
                  State Purchasing \& General Services Com  
                  Building Maintenance Department  
                  P.O. Box 13047  
                  Austin, TX 78711  
                  (512) 475--2455

lstarxp% listsite 223

**Site: 223            William P. Hobby Building (WPH)**

Mecr id:

Start date:     07/20/1995

      No Construction date or area default information

Facility:        Texas Capitol Complex

Contact Info:   Denis Feary  
                  State Purchasing \& General Services Com  
                  Building Maintenance Department  
                  P.O. Box 13047  
                  Austin, TX 78711  
                  (512) 475--2455

lstarxp% listsite 224

**Site: 224                      William P. Hobby Building (WPH)**

Mecr id:

Start date:     08/10/1995

      No Construction date or area default information

Facility:        Texas Capitol Complex

Contact Info:   Denis Feary  
                  State Purchasing \& General Services Com  
                  Building Maintenance Department  
                  P.O. Box 13047  
                  Austin, TX 78711  
                  (512) 475--2455

lstarxp% listsite 226

**Site: 226                      Central Services Building (Cen)**

---

Mecr id:

Start date:     11/16/1995

Energy Type:    default

Construction

    begin:        02/01/1994            end:     N/A

Area:            97030.00

Facility:        Texas Capitol Complex

Contact Info:    Denis Feary  
                  State Purchasing \& General Services Com  
                  Building Maintenance Department  
                  P.O. Box 13047  
                  Austin, TX 78711  
                  (512) 475--2455

## CAPITOL COMPLEX

### Central Services Building

#### Building Envelope:

- 97,030 sq.ft.
- four floors, occupied by General Services Commission and Comptroller of Public Accounts
- walls: brick exterior, windows: fixed windows
- year of construction: 1980

#### First Floor:

- single offices and open offices have three T12-34W lamps with baked paint finish and parabolic 18 cell louvers. Open area office furniture is equipped with task lights. The luminaries are controlled by switches. Two level switching is typical

#### Second Floor:

- single offices and open offices have three T12-34W lamps with baked paint finish and parabolic 18 cell louvers. Open area office furniture is equipped with task lights. The luminaries are controlled by switches. Two level switching is typical

#### Third Floor:

- single offices and open offices have three T12-34W lamps with baked paint finish and parabolic 18 cell louvers. Open area office furniture is equipped with task lights. The luminaries are controlled by switches. Two level switching is typical

#### Fourth Floor:

- this floor is mainly open office area with few single offices. The lighting fixtures have three T12-34W lamps with baked paint finish and parabolic 18 cell louvers. Open area office furniture is equipped with task lights. The luminaries are controlled by switches. Two level switching is typical

#### Proposed Retrofits:

- Convert Double and single duct constant volume AHUs to VAV AHUs - Design phase, 15 % completed as of May 1997.
- Scheduled start/stop of HVAC equipment - Design phase, 15
- Install lighting control
- retrofit the existing 2'x4' 3-T12, 34W lamps fixture with 2-T8, 32W lamps, electronic ballast and specular reflector
- retrofit existing 2'x2' 2-T12-U-40W lamps with 2-T8-18W lamps, electronic ballast and specular reflector
- retrofit existing 1'x4', lensed fixture with 2-T12-34W lamps to 1-T8, 32W lamp, electronic ballast and specular reflector
- retrofit existing 4' strip fixture with 2-T12-34W lamps to 1-T8-32W lamp, electronic ballast and specular reflector
- retrofit existing 4' strip fixture with 2-T12-34W lamps to 1-T8-32W lamp, electronic ballast and specular reflector
- retrofit existing 1'x4' parabolic louvered fixture with 2-T12-34W lamps to 1-T8-32W lamp, electronic ballast and specular reflector
- retrofit existing nominal 1'x4', plastic wrap-around lensed fixture (located in stairwell) with 2-T12-34W lamps to 1-T8-32W lamp, electronic ballast and specular reflector
- retrofit existing incandescent exit fixture, battery and 2-T6-1/2, 25W lamps to LED exit fixture, battery with 1W of lamps

#### Status of Retrofits:

Central Services Building - Texas Capitol Complex - April 1999

- All the lighting projects are on hold. VAV conversion is in design phase

**Other Information:**

- electricity is supplied by City of Austin

## Central Services Building

Texas Capitol Complex  
97,030 square feet

### Site Contact

Denis Feary  
State Purchasing & General Services Com  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512) 475-2455

### LoanSTAR Metering Contact

Sam Farouz  
053 WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409) 845-9213

## Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	197458 kWh	100	\$0.03360	\$6635
Peak 60 Minute Demand	441 kW	100	\$11.40	\$5021
Chilled Water	726.3 MMBtu	100	\$3.250	\$2360

Peak 60 minute demand was recorded at 1500 Thursday 04/08/99.  
There were 720 hours in this month.

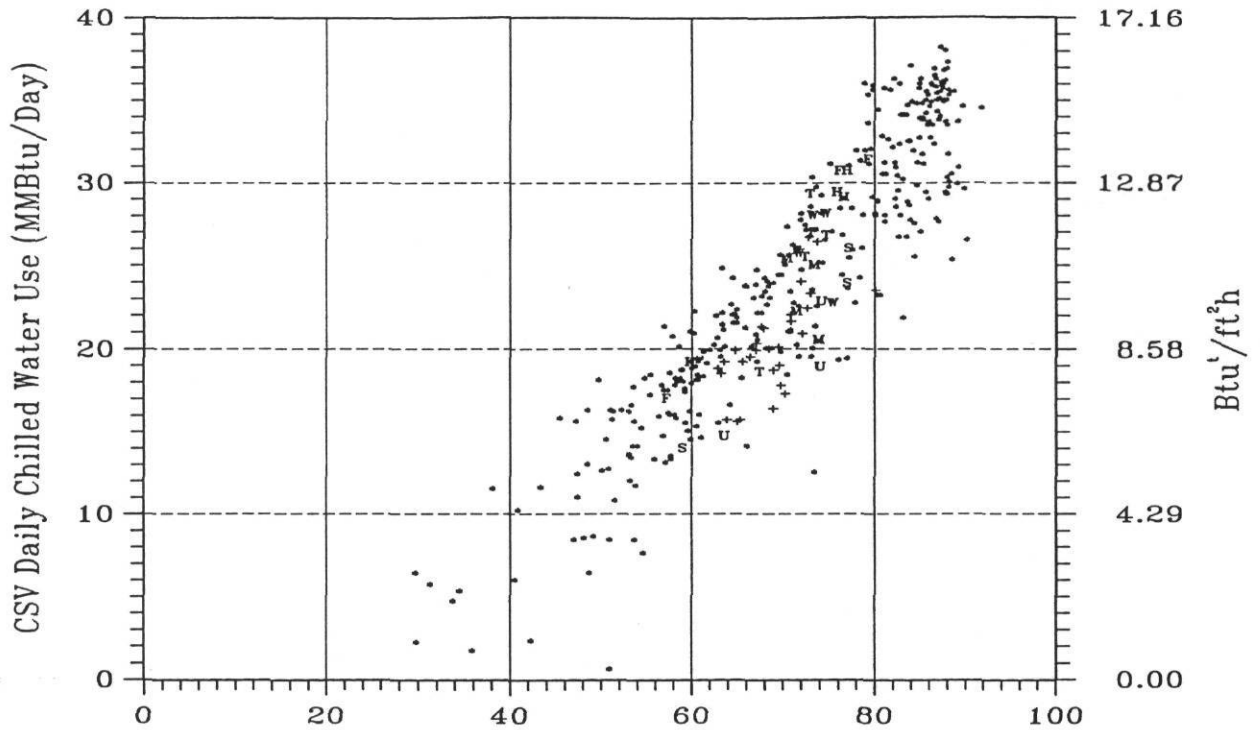
## Monthly Retrofit Savings

\* Please see the last page for savings/retrofit status.

## Comments

**★ Facility personnel implemented several Continuous Commissioning measures in July 1996. Measured CC savings for April 1999 are \$-201. Total savings to date are \$7,738.**

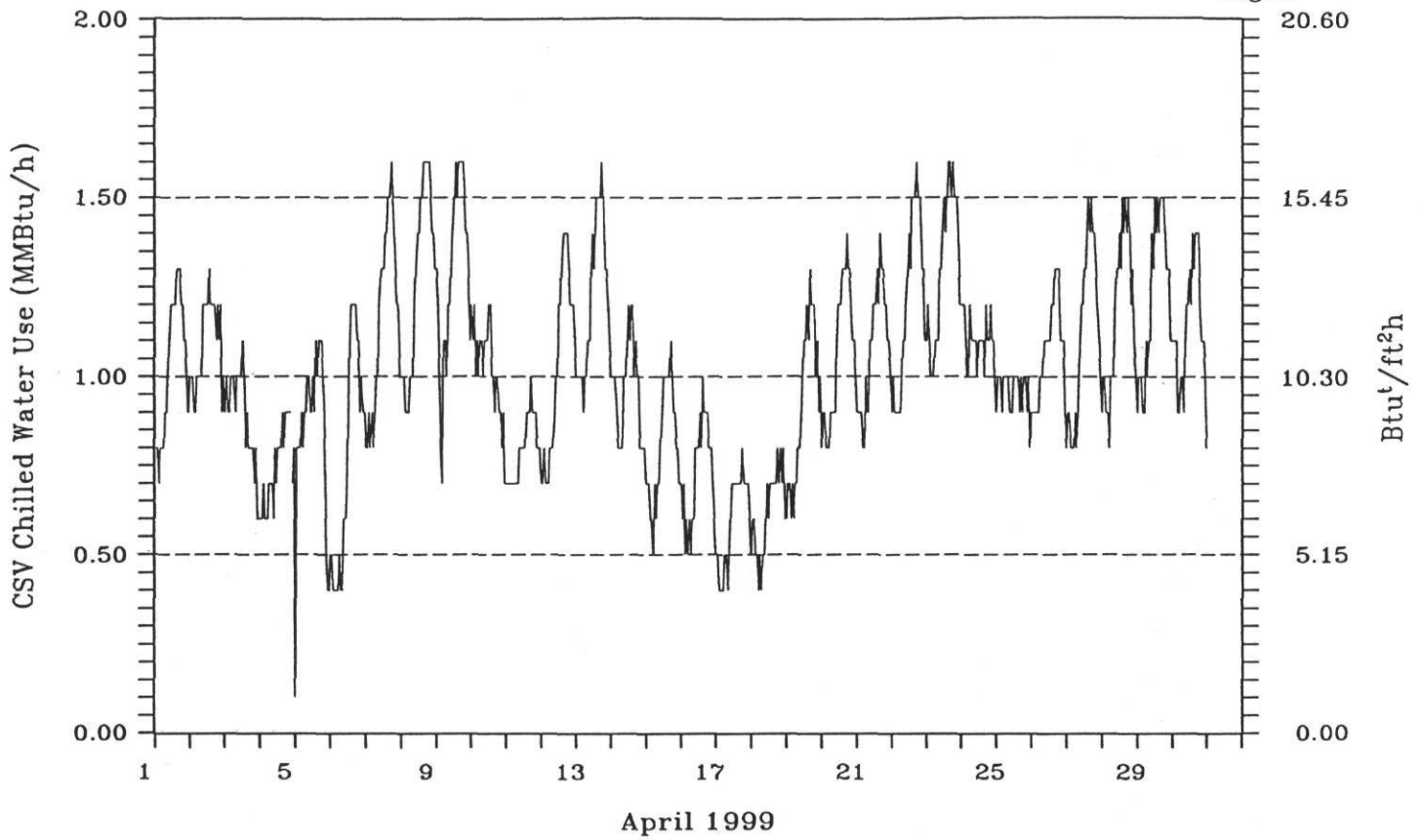




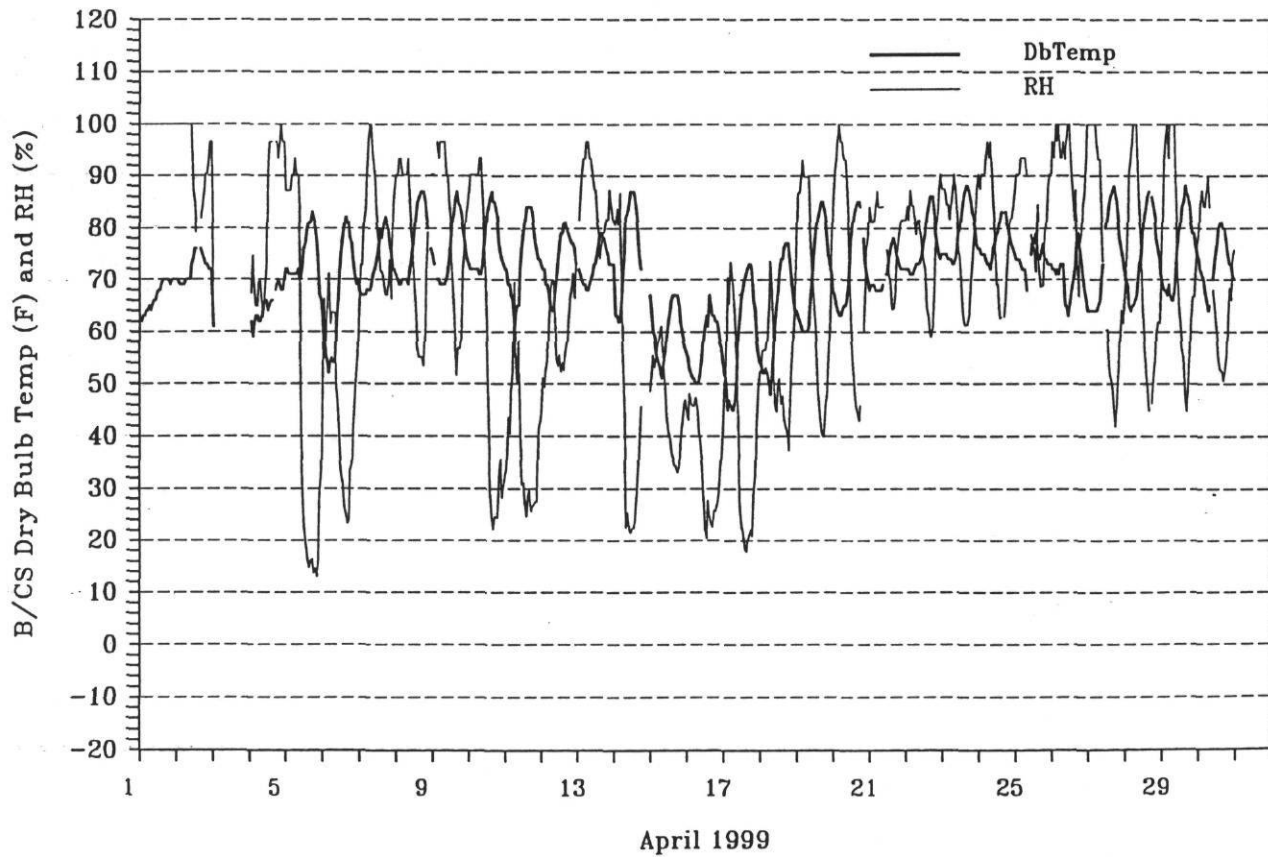
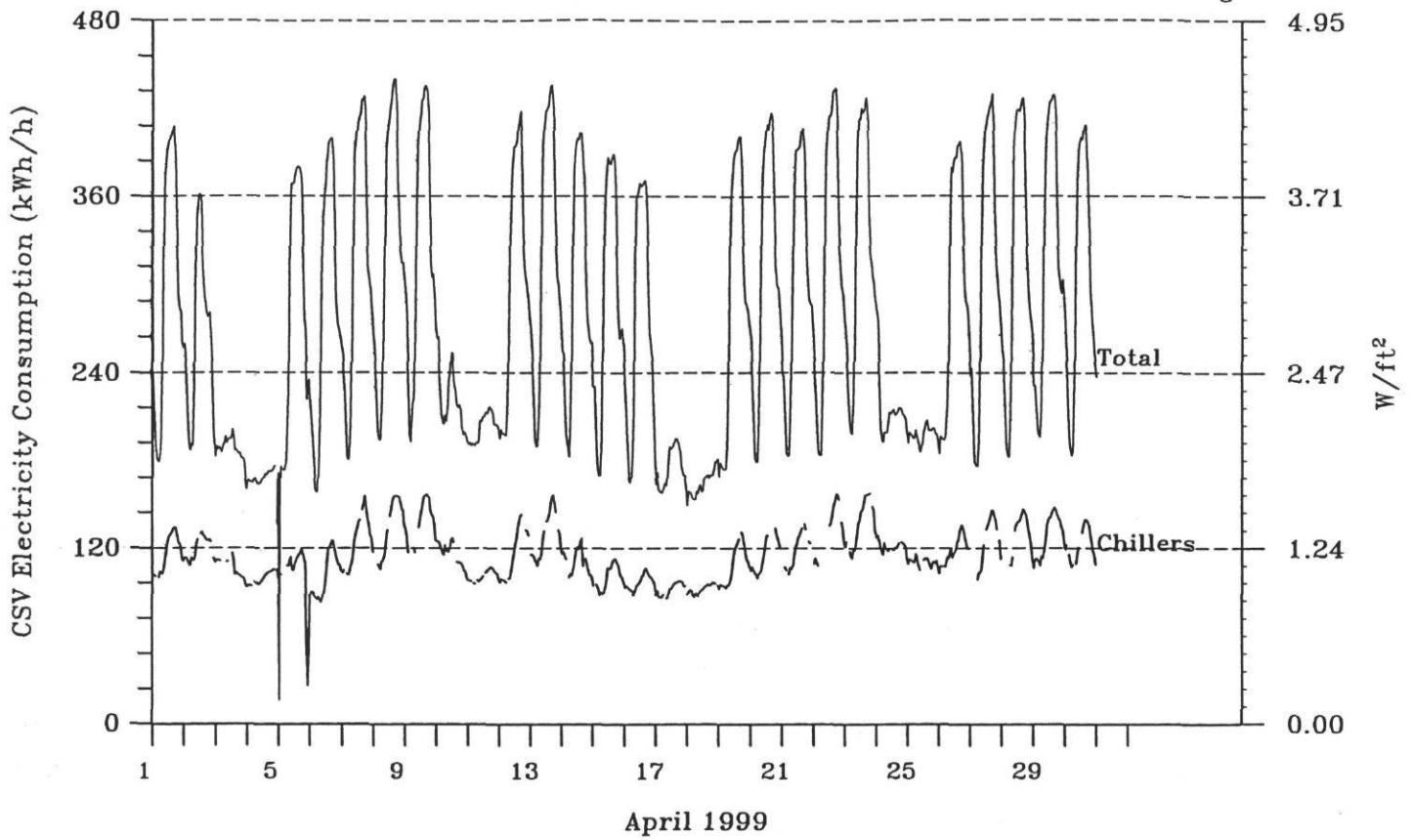
Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

Points from this month last year are shown as +.  
All other points are shown as \*.

Central Services Building - Texas Capitol Complex - April 1999

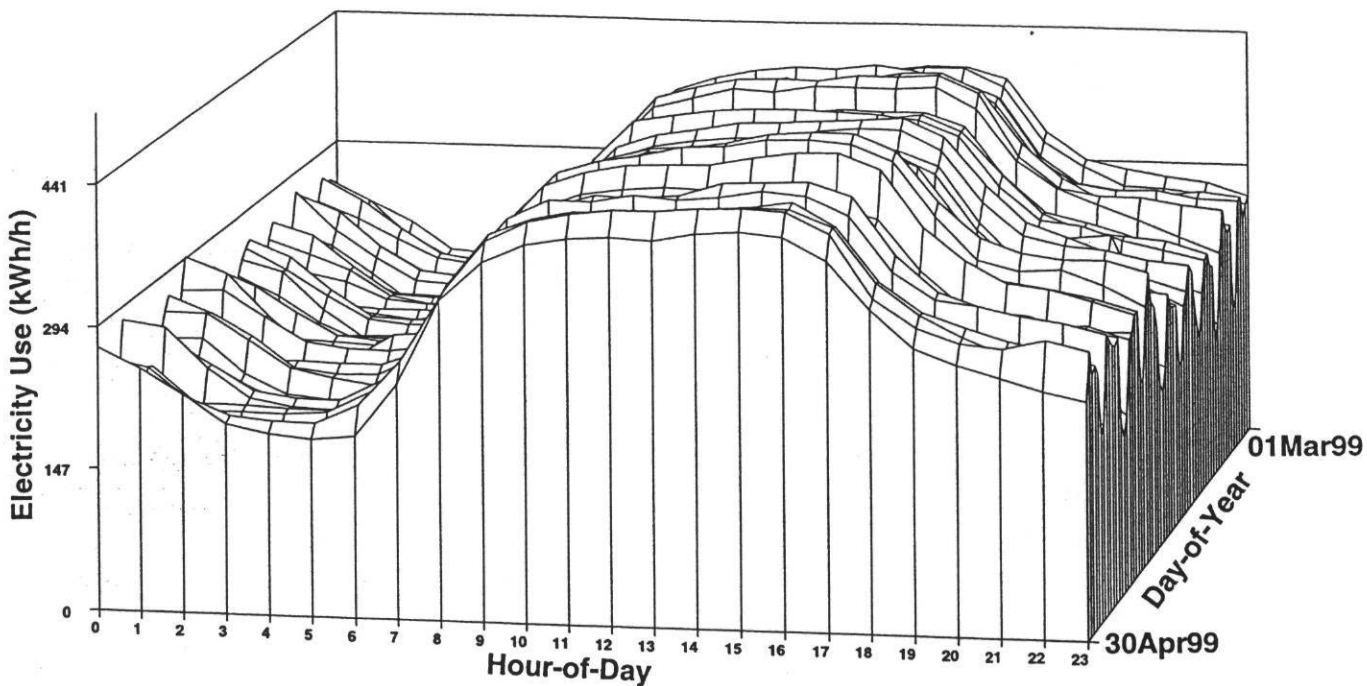


Central Services Building - Texas Capitol Complex - April 1999

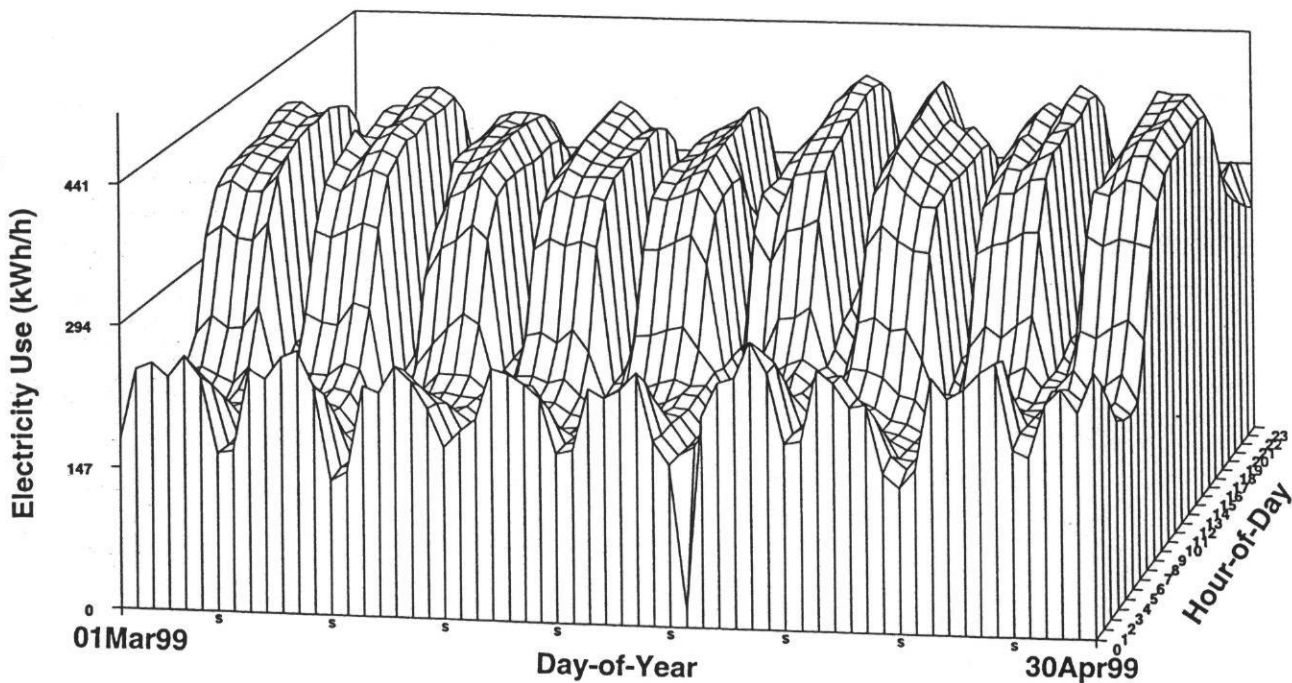


Central Services Building - Texas Capitol Complex - April 1999

### Whole-Building Electric



### Whole-Building Electric



Sundays are marked with an "S"

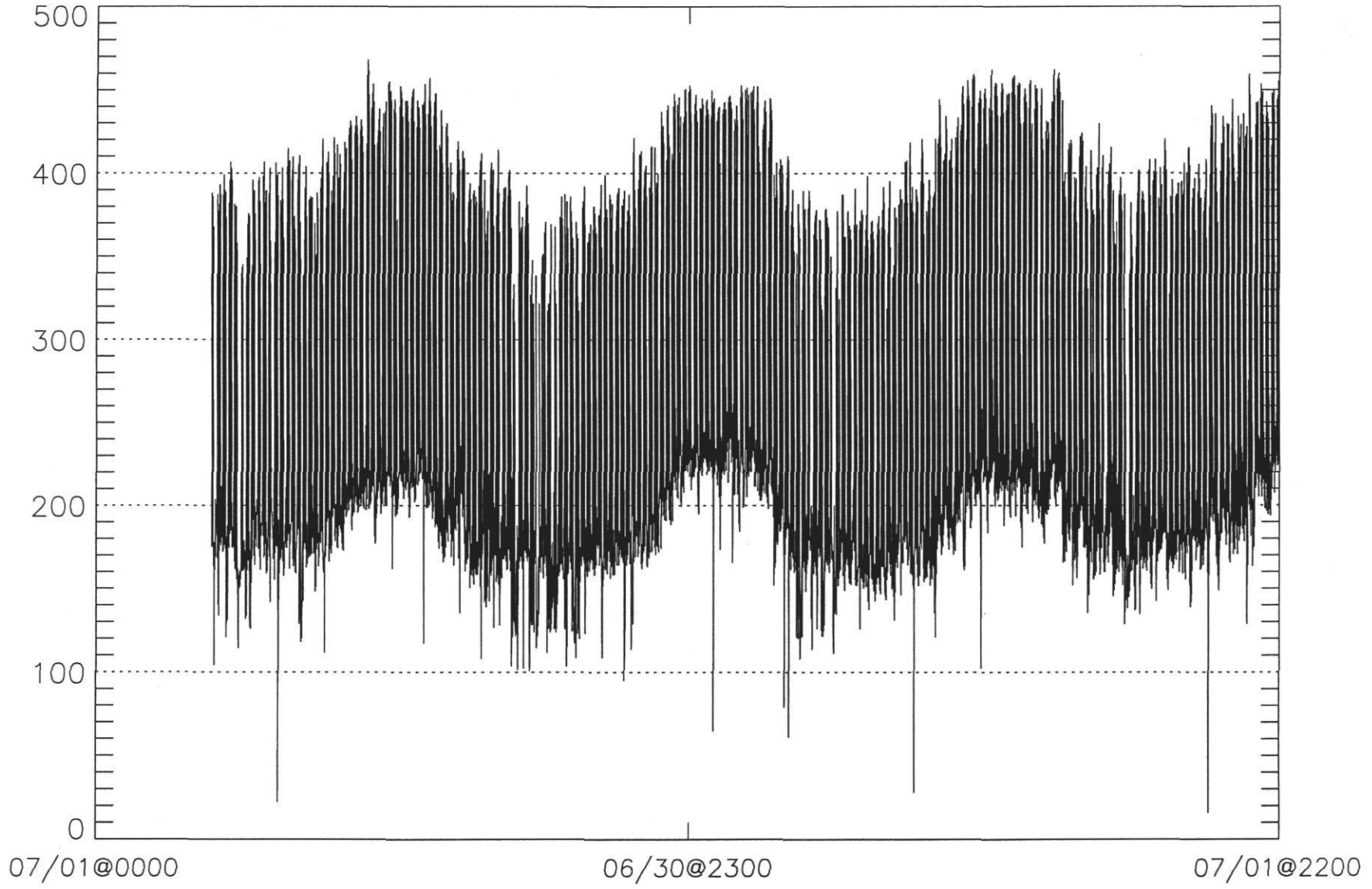
Central Services Building - Texas Capitol Complex - April 1999

CENTRAL SERVICES BUILDING

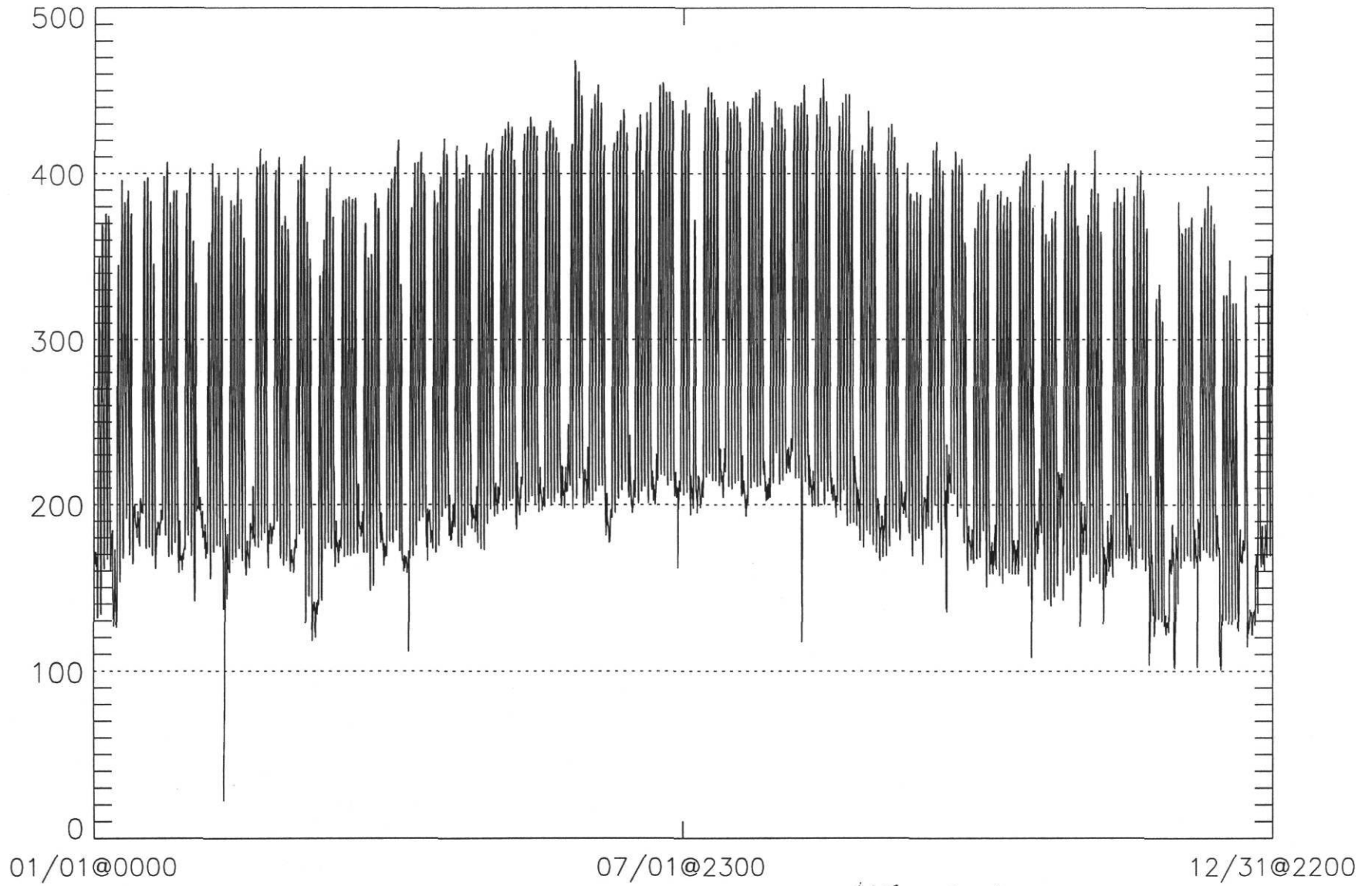
SITE # 228

07/95 - 07/99

(ch2209) WBE



(ch2209) WBE



SITE # 226

01/96 - 12/96

lstarxp% listsite 227

**Site: 227**      **Supreme Court Building (Sup)**

Mecr id:

Start date:      11/16/1995

Energy Type: default

Construction

begin:      02/01/1994      end:      N/A

Area:      72737.00

Facility:      Texas Capitol Complex

Contact Info: Denis Feary  
State Purchasing \& General Services Com  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512) 475--2455

**CAPITOL COMPLEX****Supreme Court Building****Building Envelope:**

- 72,737 gross sq.ft.
- five levels consisting of a basement; occupied by Supreme Court, Court of Criminal Appeals, State Law Library and Office of the Attorney General
- walls: exterior granite stone
- roof: built-up, flat
- windows: single pane window glazing
- year of construction: 1957 and renovated in 1992

**Building Schedule:**

- occupied between 8:00 am till 5:00 pm

**Building HVAC and Equipment:**

- local steam to hot water converter
- chilled water pumps
- hot water pumps
- air distribution system is a double duct VAV with vaneaxial fan

**HVAC Schedule:**

- all HVAC equipment operates on a 24 hour/day schedule

**Lighting:**

- 492 2'x4' 3-T12 lamp louvered
- 163 150 watt incandescent down lights
- 85 1'x4' 2-T12 lamp strip
- 94 4' 1-T12 lamp strip

**Proposed Maintenance and Operations Measures:**

- none

**Proposed Retrofits:**

- retrofit 150W with 26W and electronic ballast
- retrofit 2-T12-34W with 1-T8-32W, electronic ballast, reflector
- retrofit existing 3-T12-34W with 2-T8-32W, electronic ballast, reflector

**Status of Retrofits:**

- All the lighting projects are on hold

**Other Information:**

- electricity is supplied by City of Austin
- the Supreme Court building is served by the central plant located at the Sam Houston building



**Supreme Court Building**  
 Texas Capitol Complex  
 72,737 square feet

Site Contact

Denis Feary  
 State Purchasing & General Services Com  
 Building Maintenance Department  
 P.O. Box 13047  
 Austin, TX 78711  
 (512) 475-2455

LoanSTAR Metering Contact

Sam Farouz  
 053 WERC  
 Texas A&M University  
 College Station, TX 77843-3123  
 (409) 845-9213

**Summary of Energy Consumption**

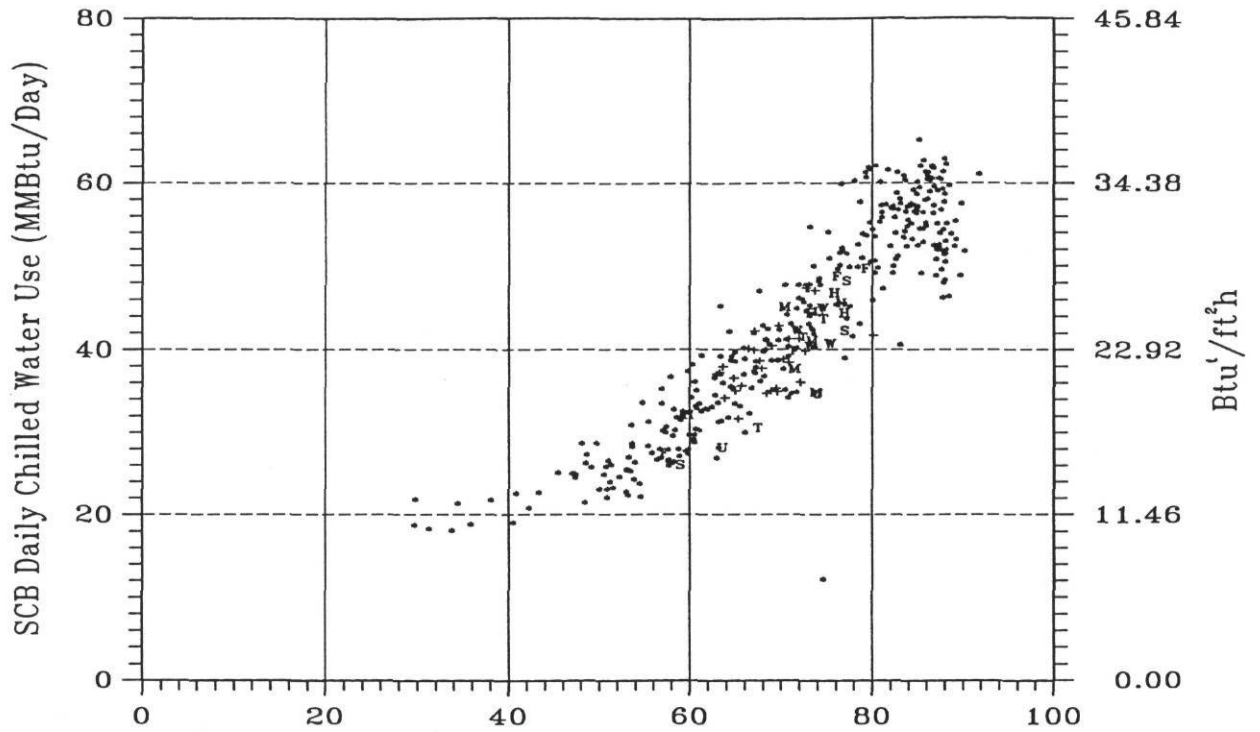
	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	67731 kWh	100	\$0.03360	\$2276
Peak 60 Minute Demand	153 kW	100	\$11.40	\$1733
Chilled Water	1206.9 MMBtu	100	\$3.250	\$3922

Peak 60 minute demand was recorded at 1600 Tuesday 04/06/99.  
 There were 720 hours in this month.

**Monthly Retrofit Savings**

\* Please see last page for savings/retrofit status.

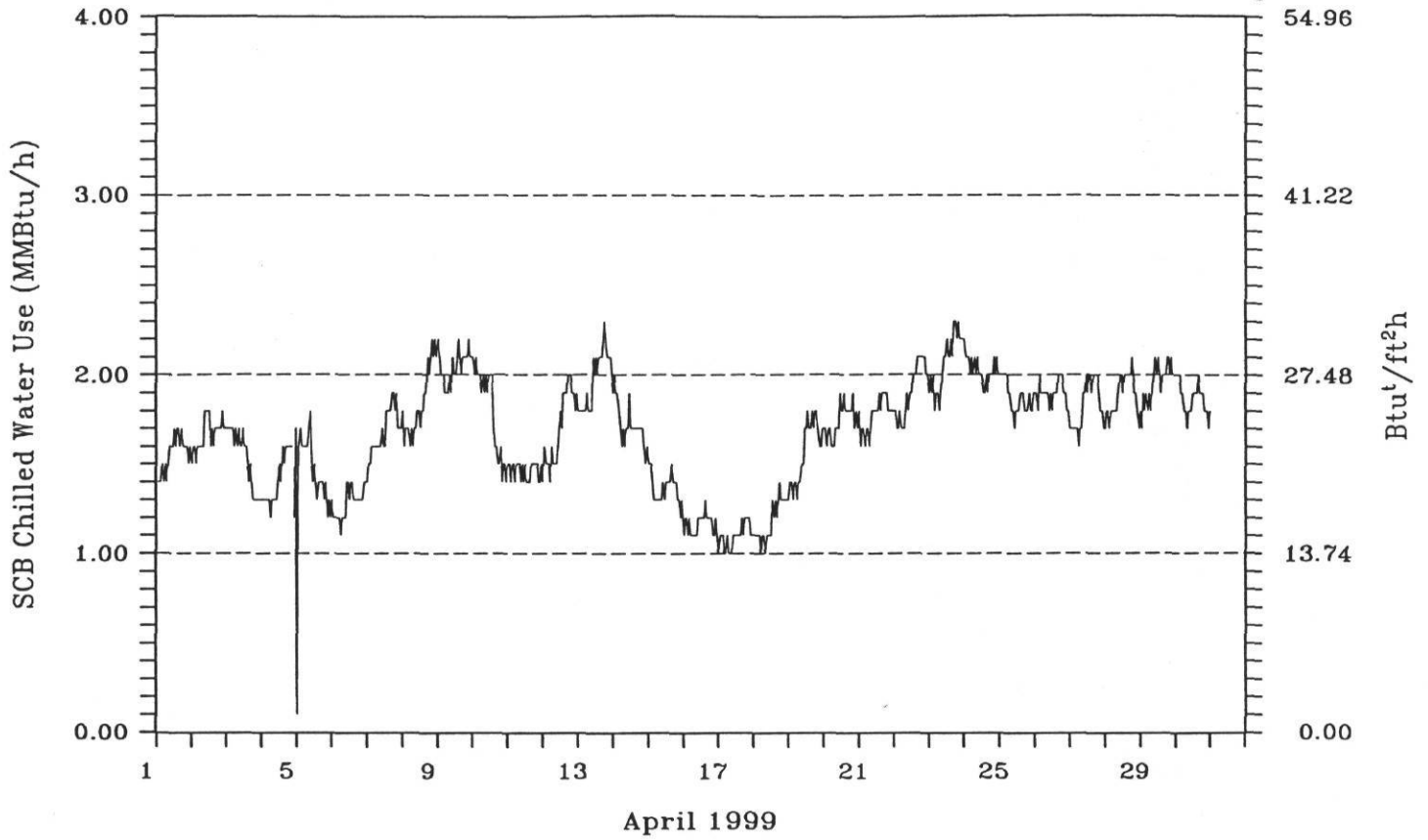
Comments



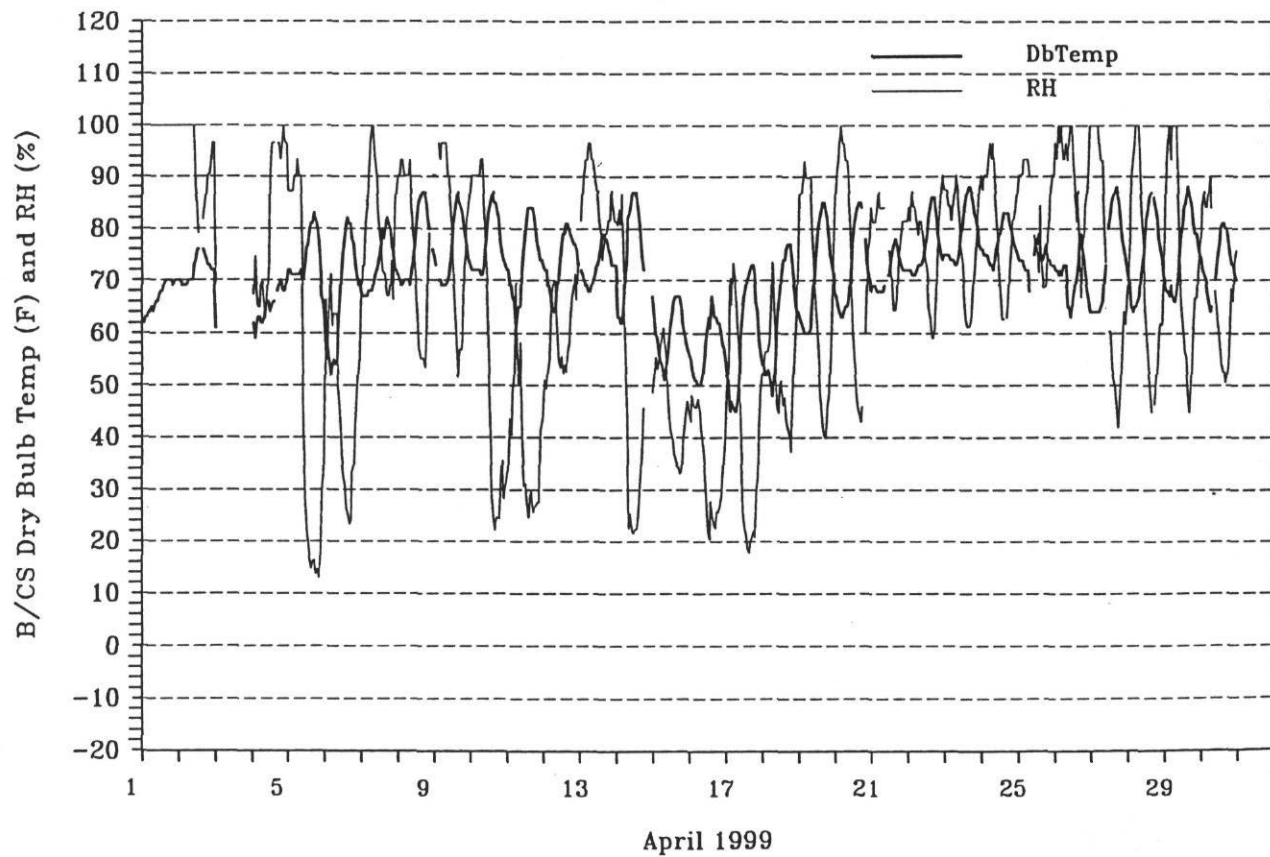
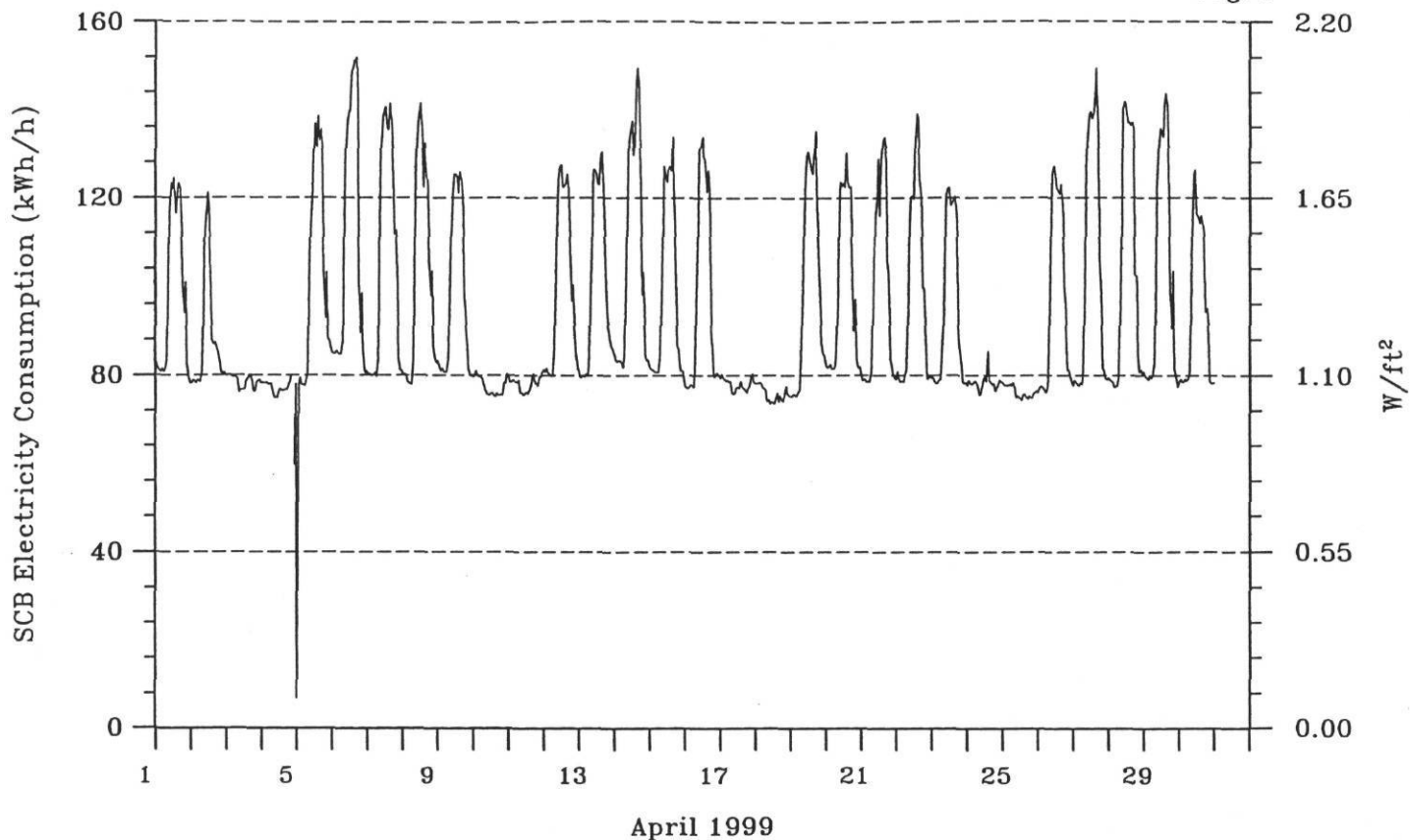
Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

Points from this month last year are shown as +.  
All other points are shown as \*.

Supreme Court Building - Texas Capitol Complex - April 1999

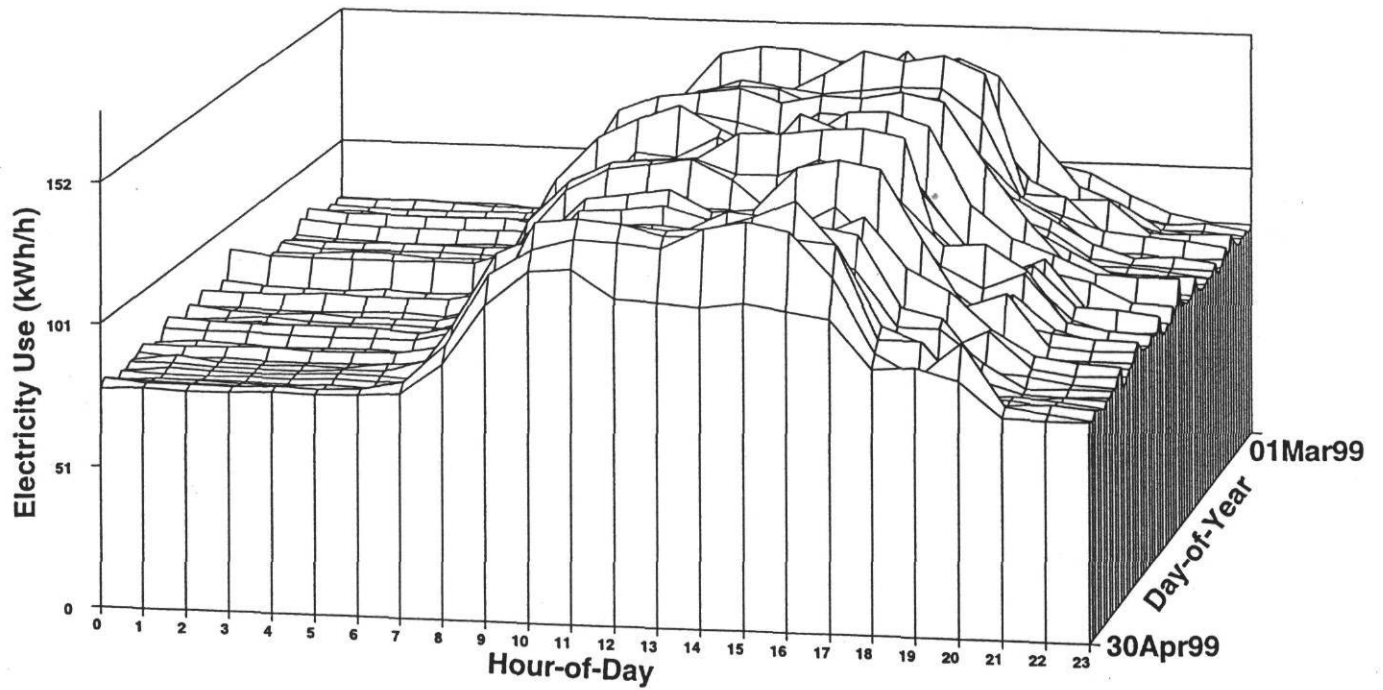


Supreme Court Building - Texas Capitol Complex - April 1999

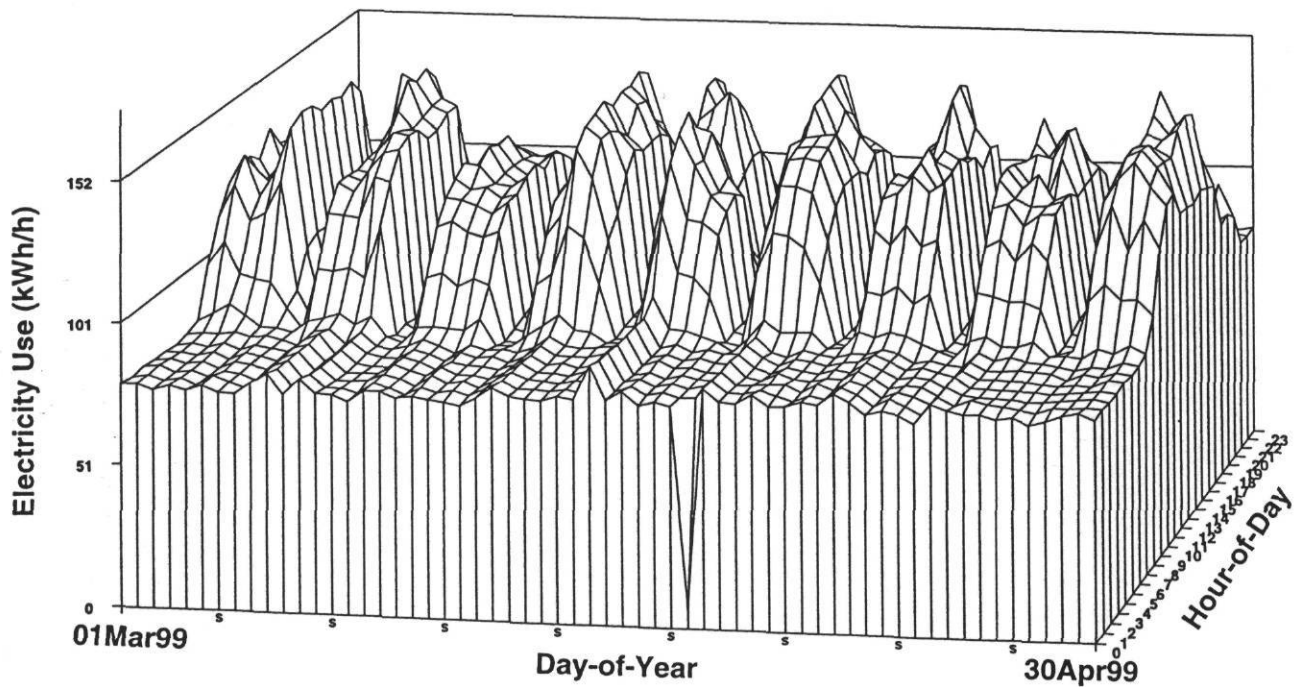


Supreme Court Building - Texas Capitol Complex - April 1999

### Whole-Building Electric



### Whole-Building Electric



Sundays are marked with an "S"

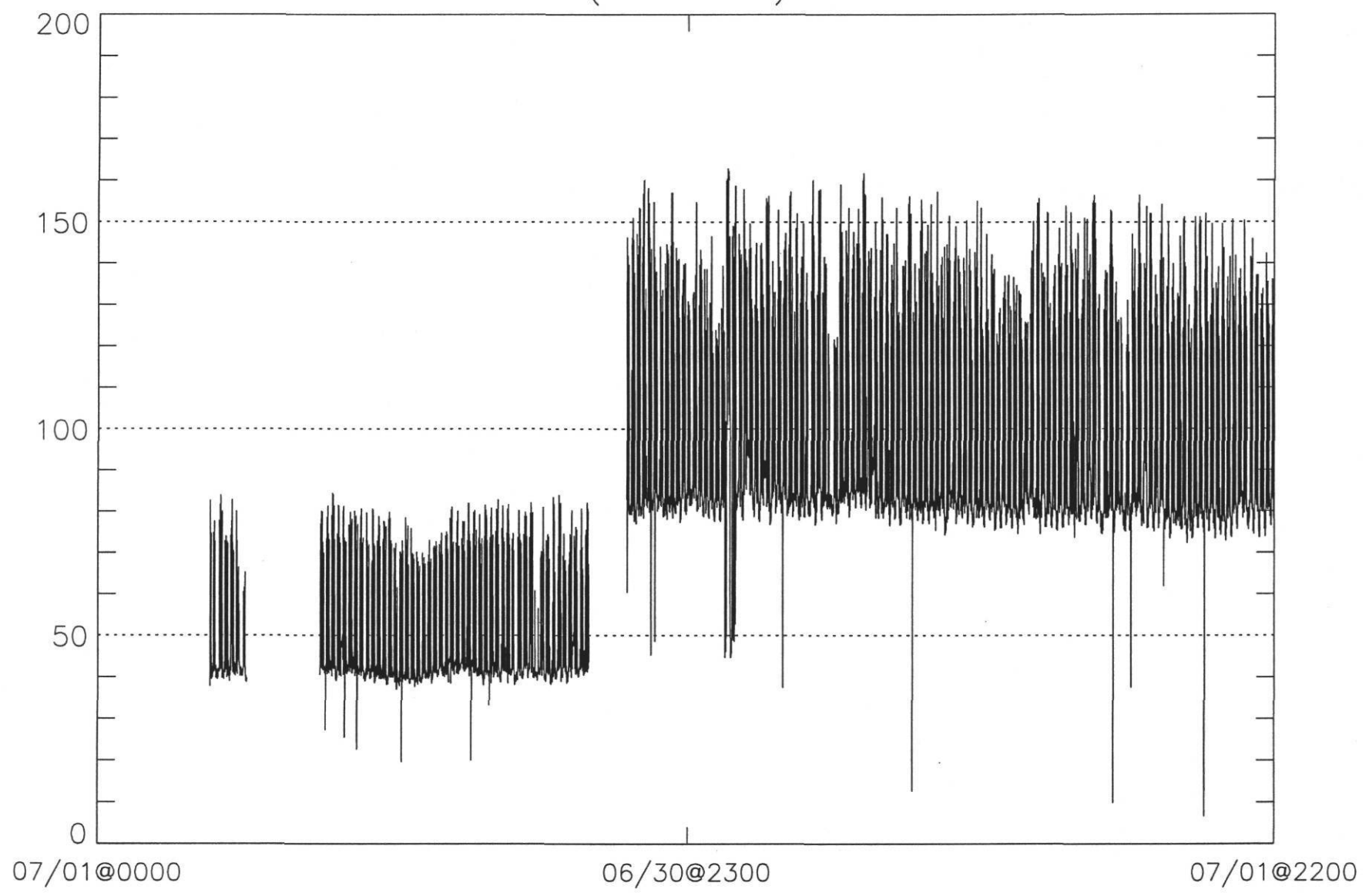
Supreme Court Building - Texas Capitol Complex - April 1999

" SUPREME COURT BLDG. "

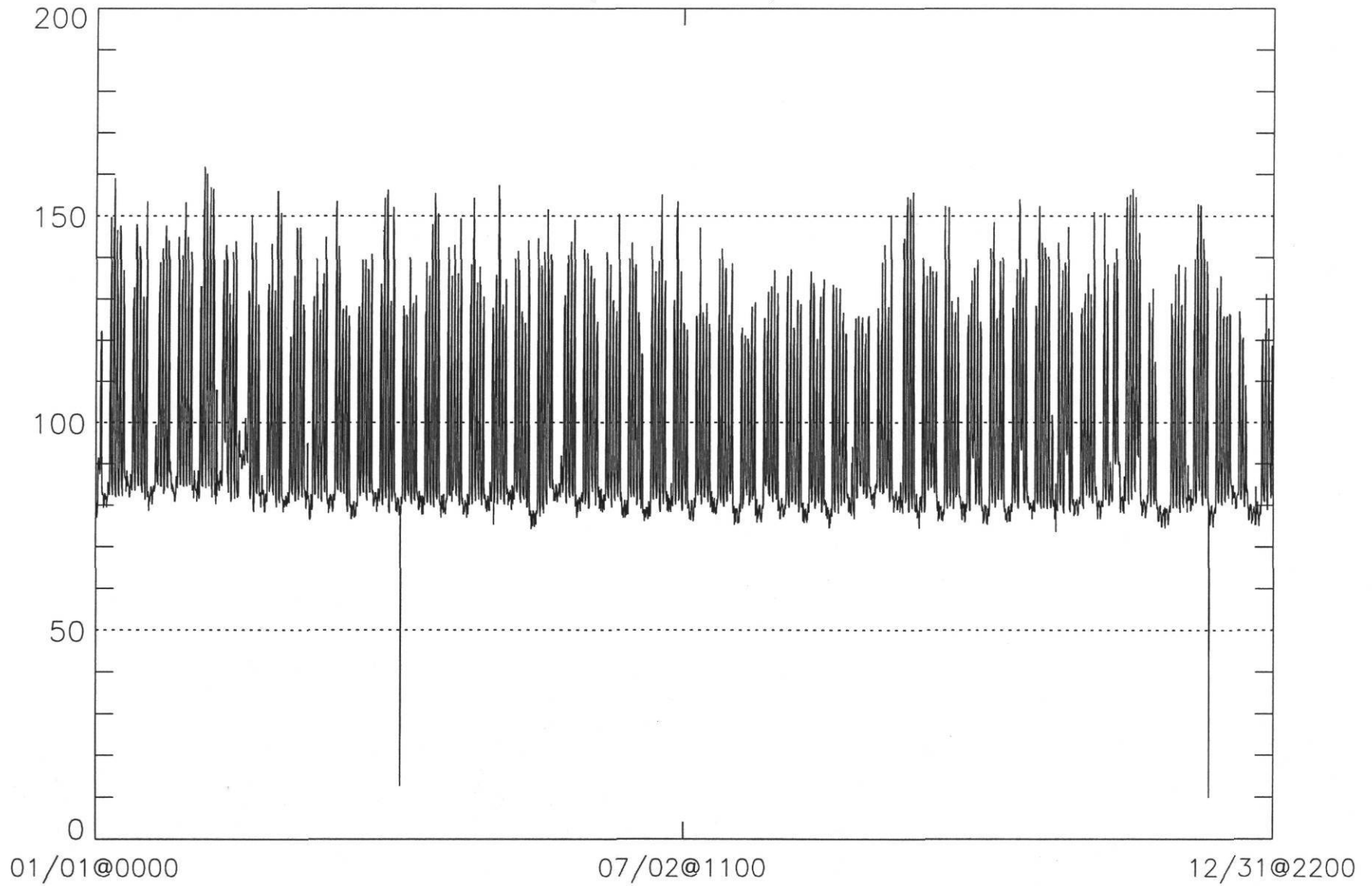
| SITE # 227 |

07/95 - 07/99

(ch2257)



(ch2257) WBE



SITE # 227

01/93 - 12/98

lstaraxp% listsite 228

**Site: 228 Price Daniels Building (Pri)**

Mecr id:

Start date: 11/16/1995

Energy Type: default

Construction

begin: 02/01/1994 end: N/A

Area: 151620.00

Facility: Texas Capitol Complex

Contact Info: Denis Feary

State Purchasing \& General Services Com

Building Maintenance Department

P.O. Box 13047

Austin, TX 78711

(512) 475--2455



## CAPITOL COMPLEX

## Price Daniels, Sr. Building

**Building Envelope:**

- 151,620 gross sq.ft.
- 8 floors, a ground floor and a basement; occupied by Texas Department of Criminal Justice, Attorney General, Third Court of Appeals, Office of the Governor
- walls: granite and marble clad exterior facade
- windows: double pane exterior windows

**Building Schedule:**

- occupied from 7 am to 6 pm Monday through Friday; certain areas are utilized after hours and over the weekends

**Building HVAC and Equipment:**

- one steam to hot water converter
- air side system consists of double duct VAV system
- 15 hp chilled water pump
- hot water pump
- AHU's are located on each floor level
- main revenue meter

**HVAC Schedule:**

- 24 hours a day

**Lighting:**

- 1185 2'x4' 3-T12-34 lamp
- 240 150W incandescent
- 18 4' wrap-around 2 lamp fixture
- 21 4' 2-T12 lamp fixture
- 240 1-T12 lamp indirect
- 4 2'x2' 2-U lamp fixture

**Proposed Retrofits:**

- retrofit the existing 2'x4' parabolic fixture with 3-T12 34W lamps to 2-T8-32W lamps, electronic ballast and specular reflector
- replace the existing fixture with 2-T12-34W lamps to 1-T8-32W lamp, new electronic ballast and specular reflector
- replace the existing downlight with incandescent lamp to PL lamp
- retrofit existing 2'x2' fixture with 2-T12 Ulamp to 2-T8-18W lamp, electronic ballast and specular reflector
- add new VSD for chilled water pump

**Status of Retrofits:**

- All the lighting projects are on hold

**Other Information:**

- electricity is supplied by City of Austin
- chilled water and steam from the central plant is fed to the building. Building air conditioning system is currently connected to the central chiller plant located in Sam Houston building

## Price Daniels Building

Texas Capitol Complex  
151,620 square feet

Site Contact

Denis Feary  
State Purchasing & General Services Com  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512) 475-2455

LoanSTAR Metering Contact

Sam Farouz  
053 WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409) 845-9213

### Summary of Energy Consumption

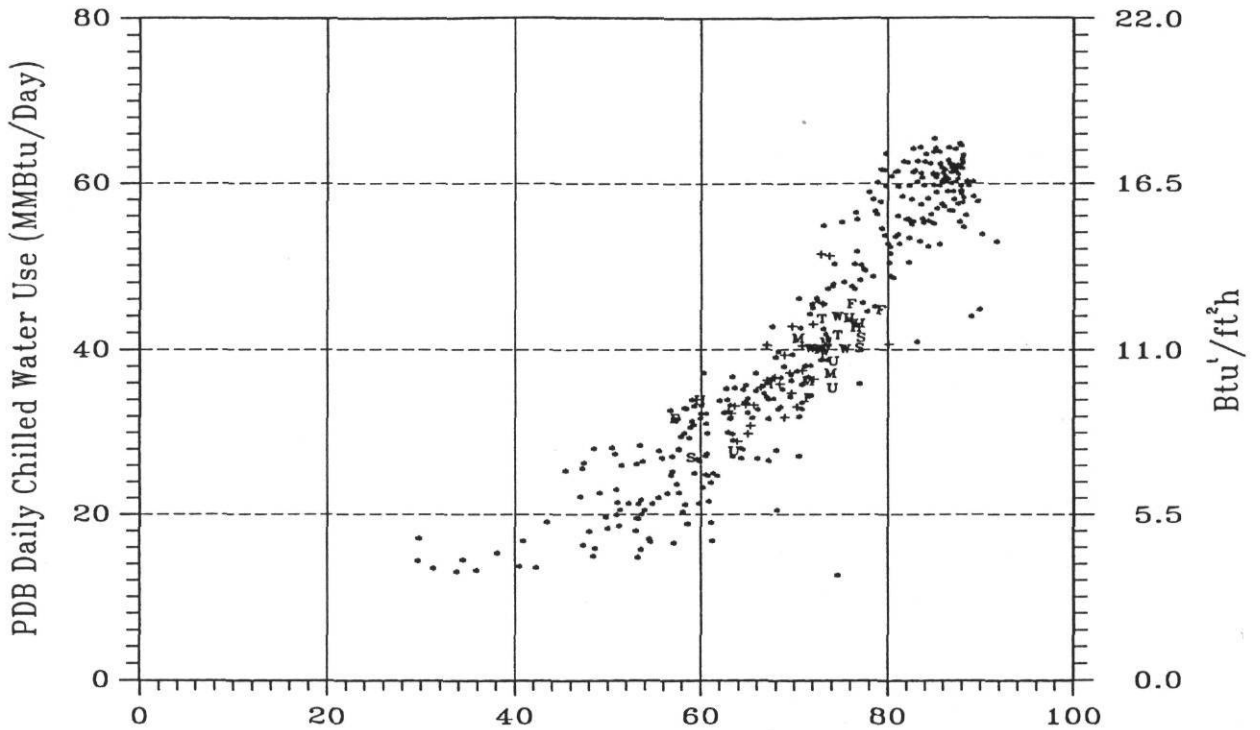
	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	194136 kWh	100	\$0.03360	\$6523
Peak 60 Minute Demand	414 kW	100	\$11.40	\$4715
Chilled Water	1153.1 MMBtu	100	\$3.250	\$3747

Peak 60 minute demand was recorded at 1400 Tuesday 04/20/99.  
There were 720 hours in this month.

### Monthly Retrofit Savings

\* Please see last page for savings/retrofit status.

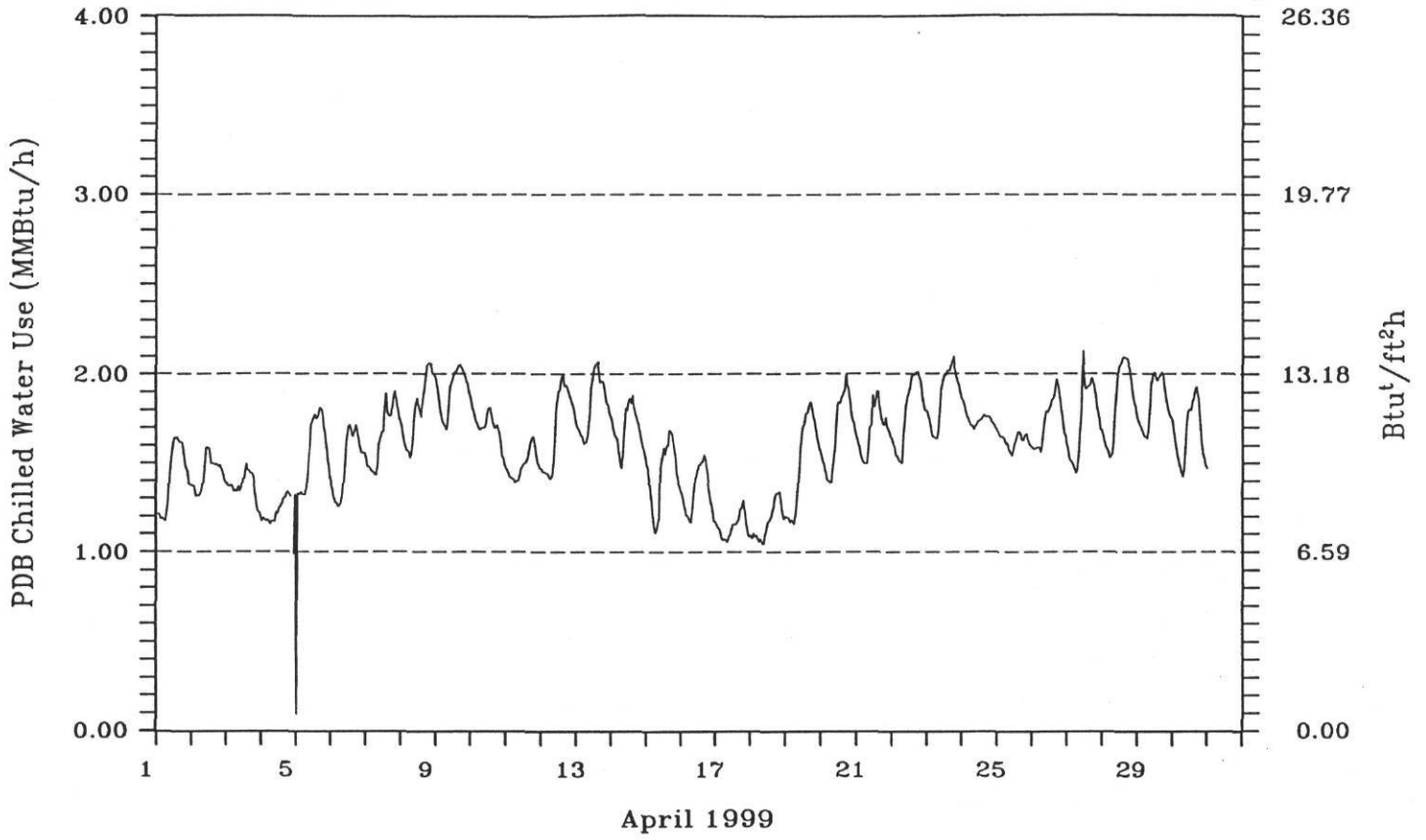
Comments



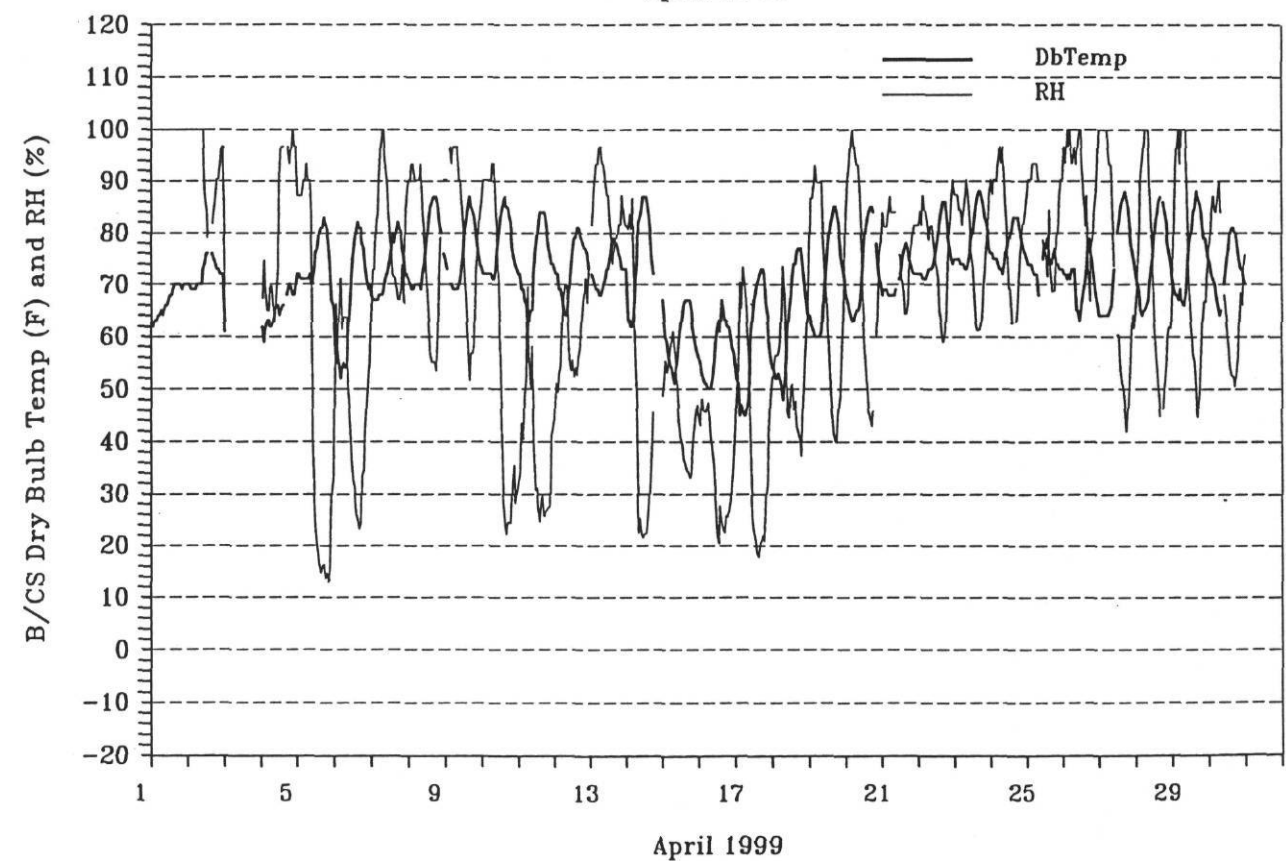
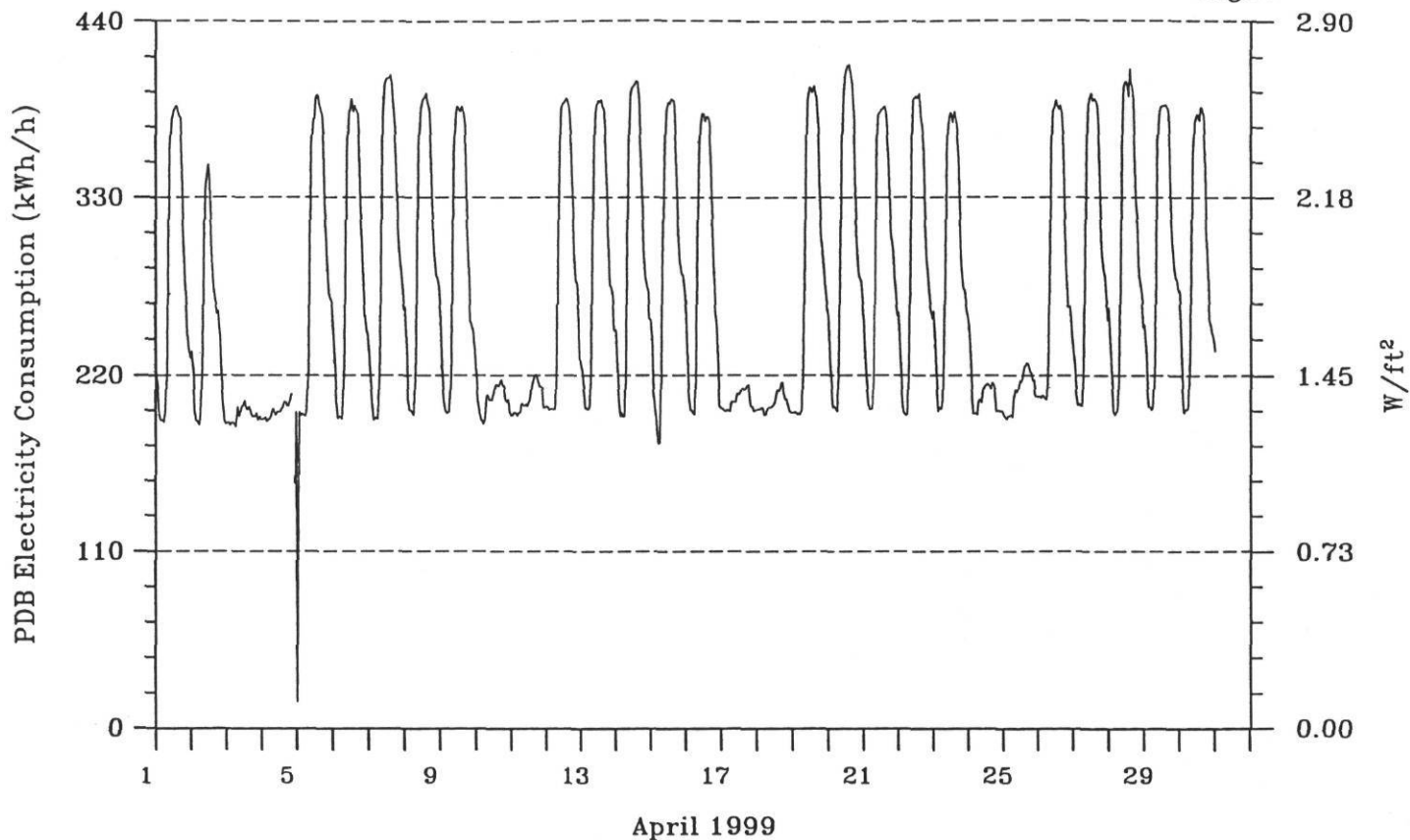
Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

Points from this month last year are shown as +.  
All other points are shown as \*.

Price Daniels Building - Texas Capitol Complex - April 1999

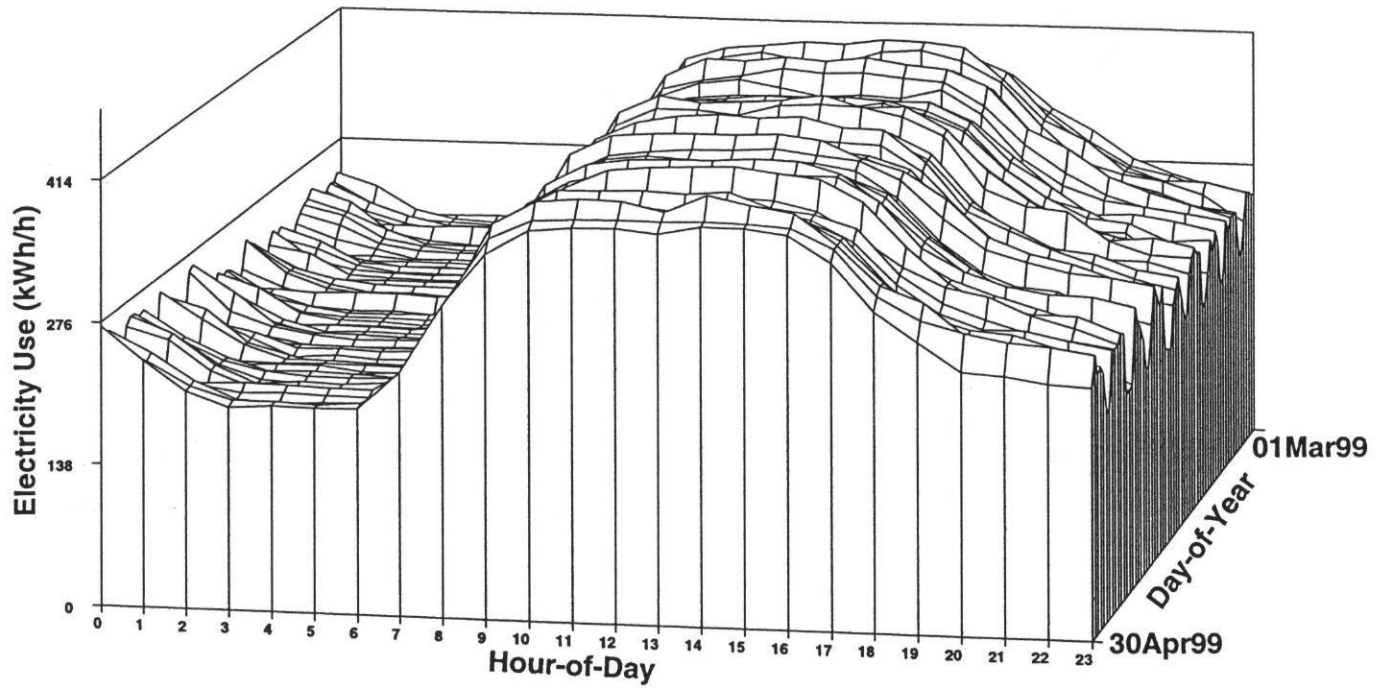


Price Daniels Building - Texas Capitol Complex - April 1999

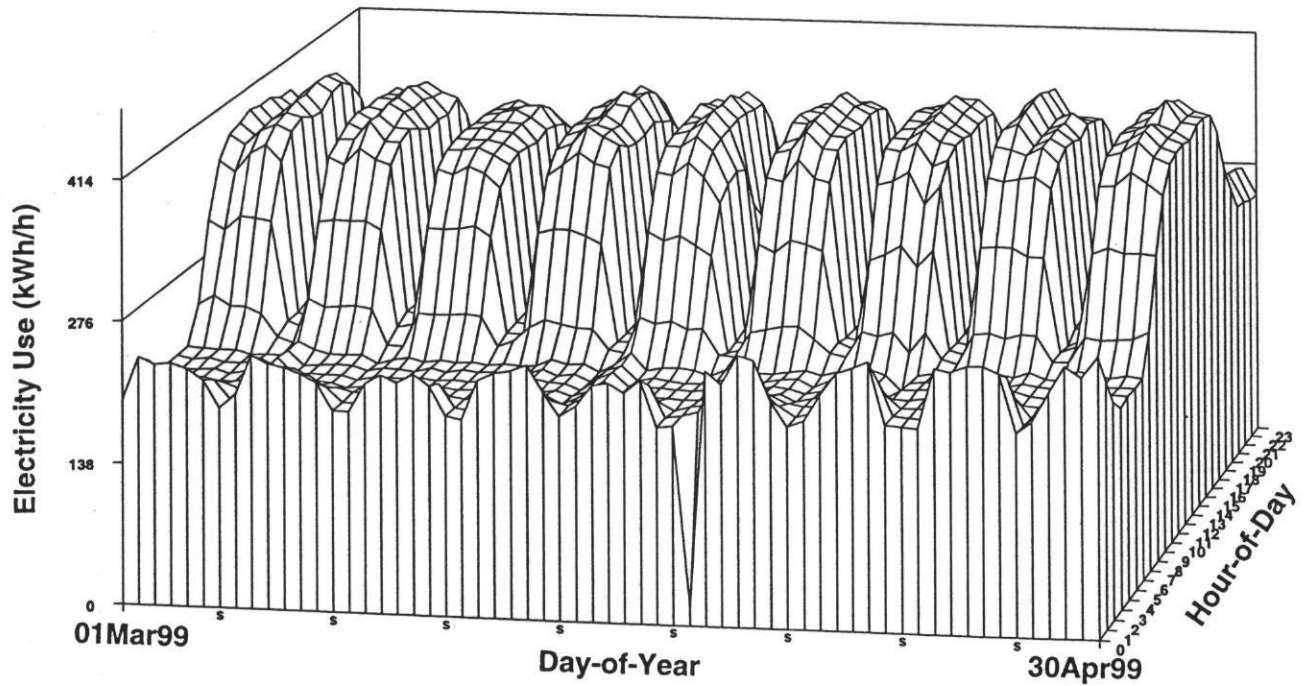


Price Daniels Building - Texas Capitol Complex - April 1999

### Whole-Building Electric



### Whole-Building Electric



Sundays are marked with an "S"

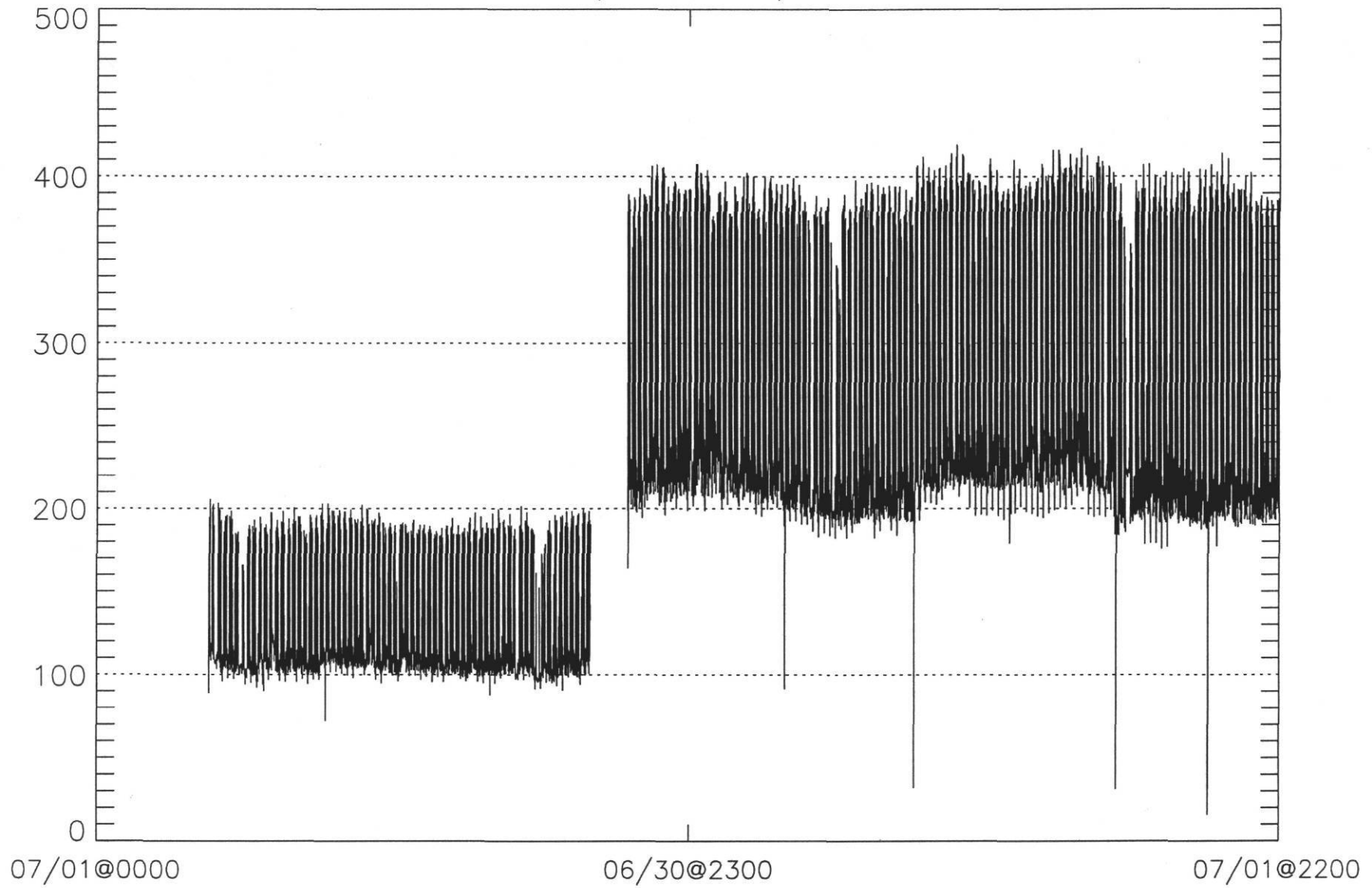
Price Daniels Building - Texas Capitol Complex - April 1999

"PRICE Daniels Building"

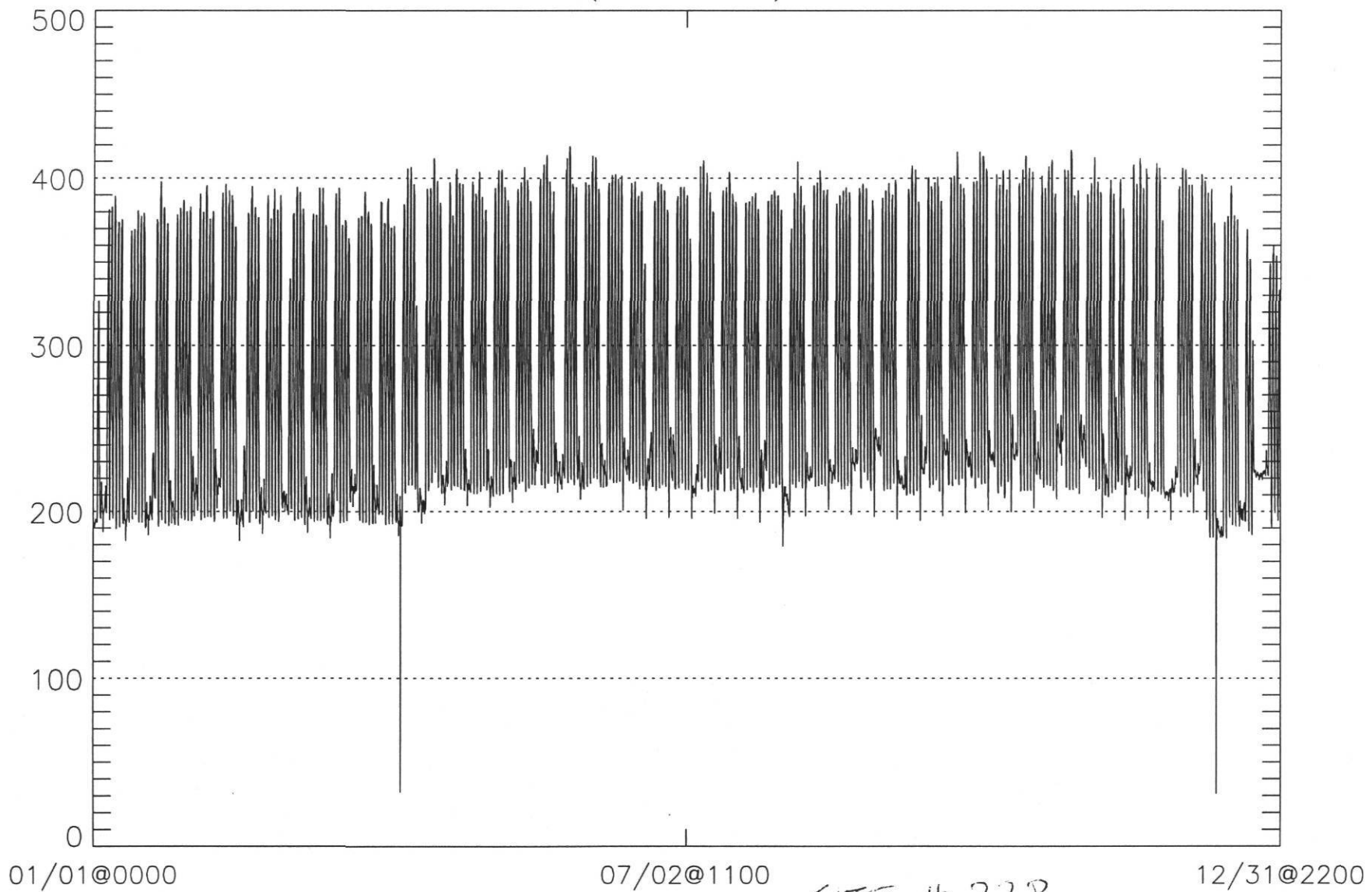
SITE # 228

07/95 - 07/99

(ch2255)



(ch2255) WBE



SITE # 228  
01/98 - 12/98



**Site: 229                    Tom C. Clark Building (Tom)**

---

Mecr id:

Start date:     11/16/1995

Energy Type:   default

Construction

    begin:       02/01/1994            end:     N/A

Area:            121654.00

Facility:        Texas Capitol Complex

Contact Info:   Denis Feary  
                  State Purchasing \& General Services Com  
                  Building Maintenance Department  
                  P.O. Box 13047  
                  Austin, TX 78711  
                  (512) 475--2455

## CAPITOL COMPLEX

## Tom C. Clark Building

**Building Envelope:**

- 121,654 sq.ft.
- seven floors with upper and lower basement; occupied by Supreme Court, Board of Law Examiners, Court Reporter Certification Board, Court of Criminal Appeals, State Law Library, Council on Sex Offender Treatment, Criminal Justice Policy Council and Judicial Museum
- walls: granite and marble clad exterior facade
- windows: single pane

**Building Schedule:**

- 7:00 am to 6:00 pm weekdays; certain areas are utilized during nights and weekends

**Building HVAC and Equipment:**

- AHU's are located on each floor, AHU's serving library area are single zone with reheat
- 15 Hp local chilled water pump and a local hot water pump
- steam to hot water converter
- three electric submeters

**HVAC Schedule:**

- 24 hour/day schedule with no night setback

**Lighting:**

- 521 2'x4' 3-T12-34 lamp
- 114 150W incandescent
- 33 wall fixture 3-100W incandescent
- 50 incandescent 40W fixture
- 57 1'x4' 2-T12 lamp fixture
- 254 1'x4' 1-T12 lamp fixture
- 256 4' lamp with reflector
- 266 reference table lamps (25W)
- 46 track lights
- 15 PL lamps

**Proposed Retrofits:**

- retrofit existing three lamp fixture with two lamps, electronic ballast and specular reflector
- retrofit 150W incandescent lamps in the existing downlights with 26W PL lamps and electronic ballast
- retrofit 75W incandescent lamps in the existing downlights with 13W PL lamp and electronic ballast
- retrofit existing 1'x4', 2-T12-34W fixture with 1-T8-32W lamp, electronic ballast and specular reflector
- add new VSD to the building chilled water pump

**Status of Retrofits:**

- All the lighting projects are on hold. VSD on the chilled water pump was installed in December 1996

**Other Information:**

- chilled water and steam from the central plant is fed to the building. Building air conditioning system is currently connected to the central chiller plant located in Sam Houston building

**Tom C. Clark Building**  
 Texas Capitol Complex  
 121,654 square feet

Site Contact

Denis Feary  
 State Purchasing & General Services Com  
 Building Maintenance Department  
 P.O. Box 13047  
 Austin, TX 78711  
 (512) 475-2455

LoanSTAR Metering Contact

Sam Farouz  
 053 WERC  
 Texas A&M University  
 College Station, TX 77843-3123  
 (409) 845-9213

**Summary of Energy Consumption**

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	127444 kWh	100	\$0.03360	\$4282
Peak 60 Minute Demand	217 kW	100	\$11.40	\$2465
Chilled Water	1148.5 MMBtu	100	\$3.250	\$3733
Hot Water	394.7 MMBtu	100	\$3.570	\$1409

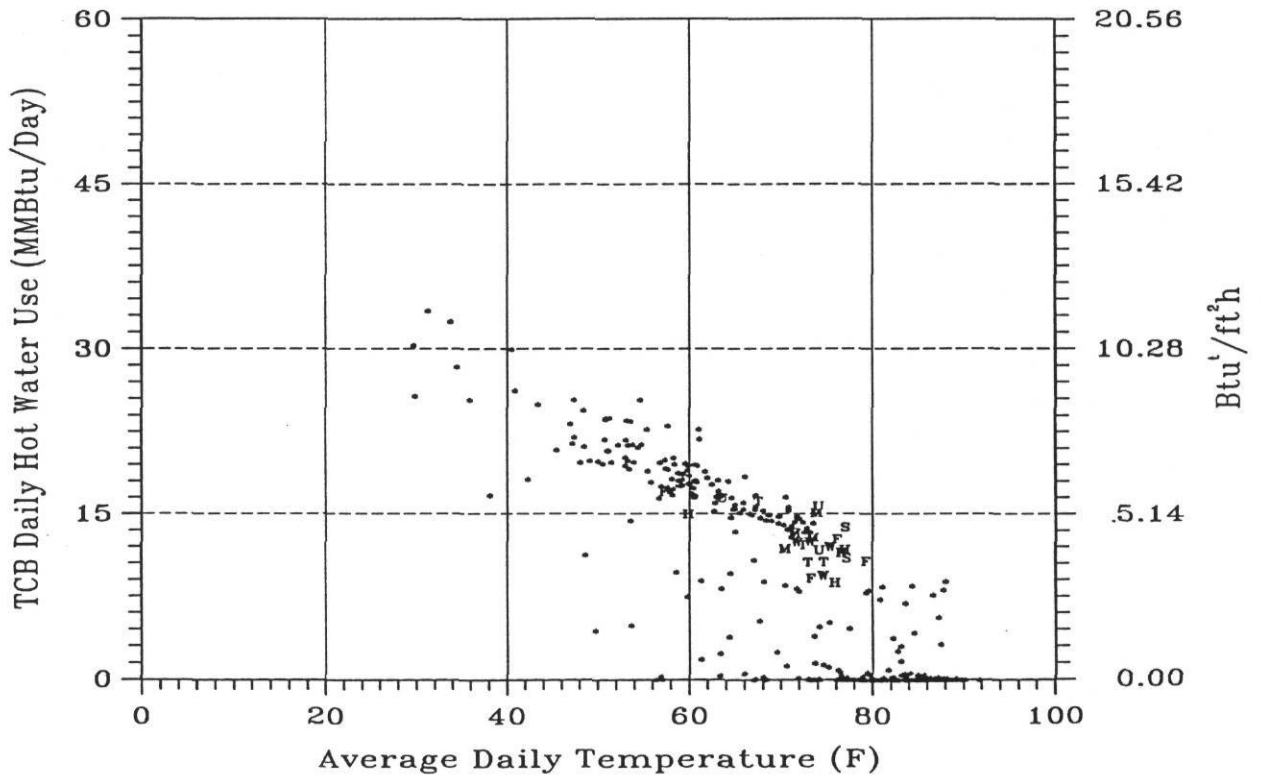
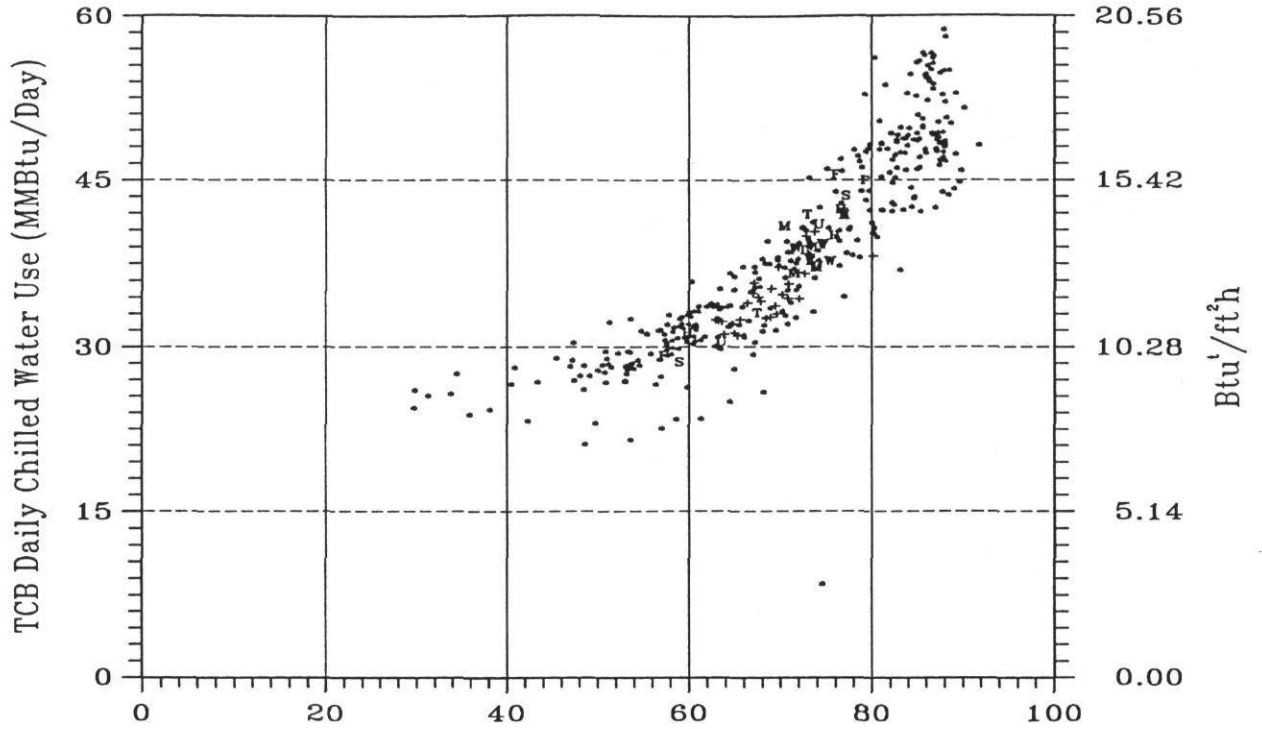
Peak 60 minute demand was recorded at 1400 Thursday 04/15/99.  
 There were 720 hours in this month.

**Monthly Retrofit Savings**

\* Please see last page for savings/retrofit status.

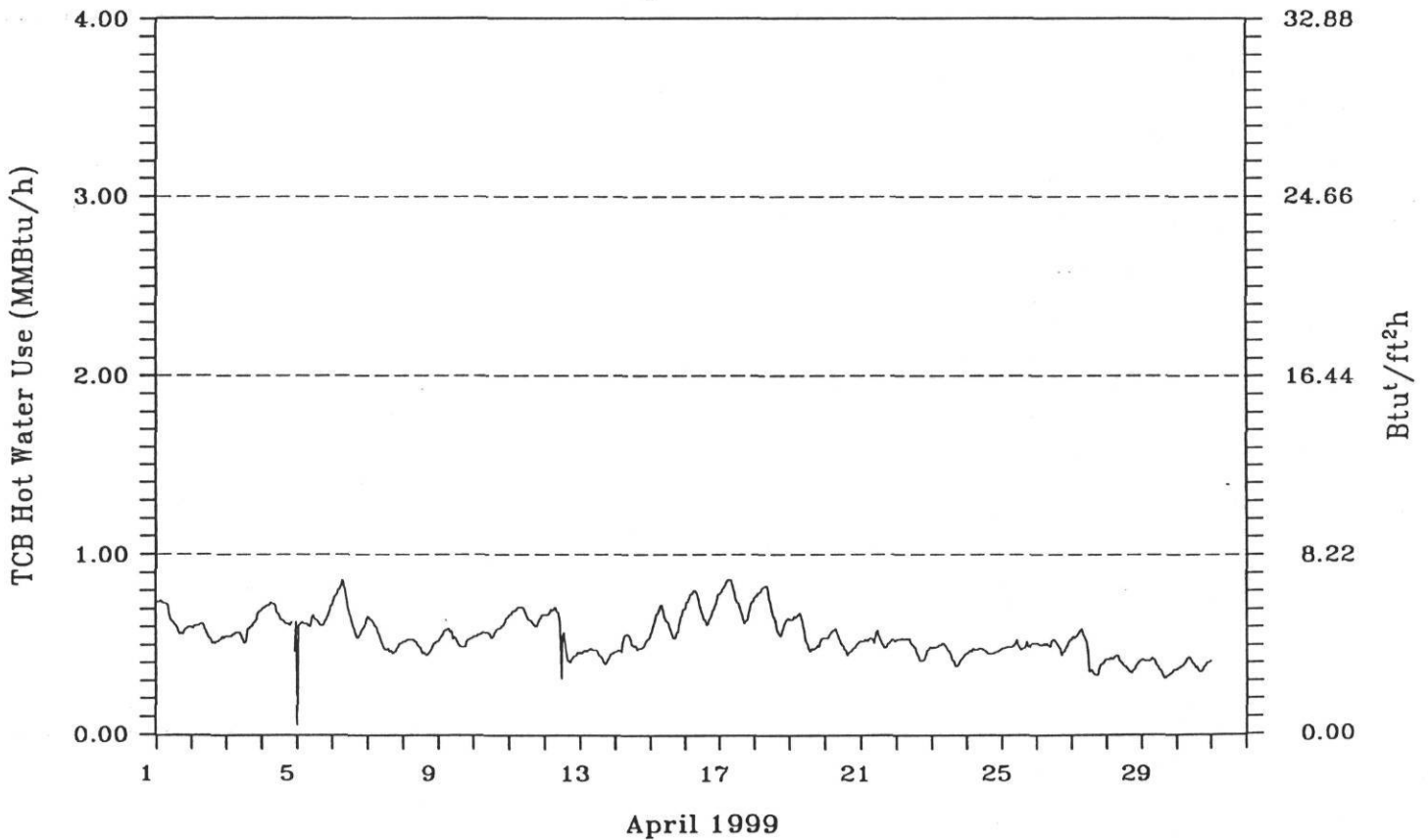
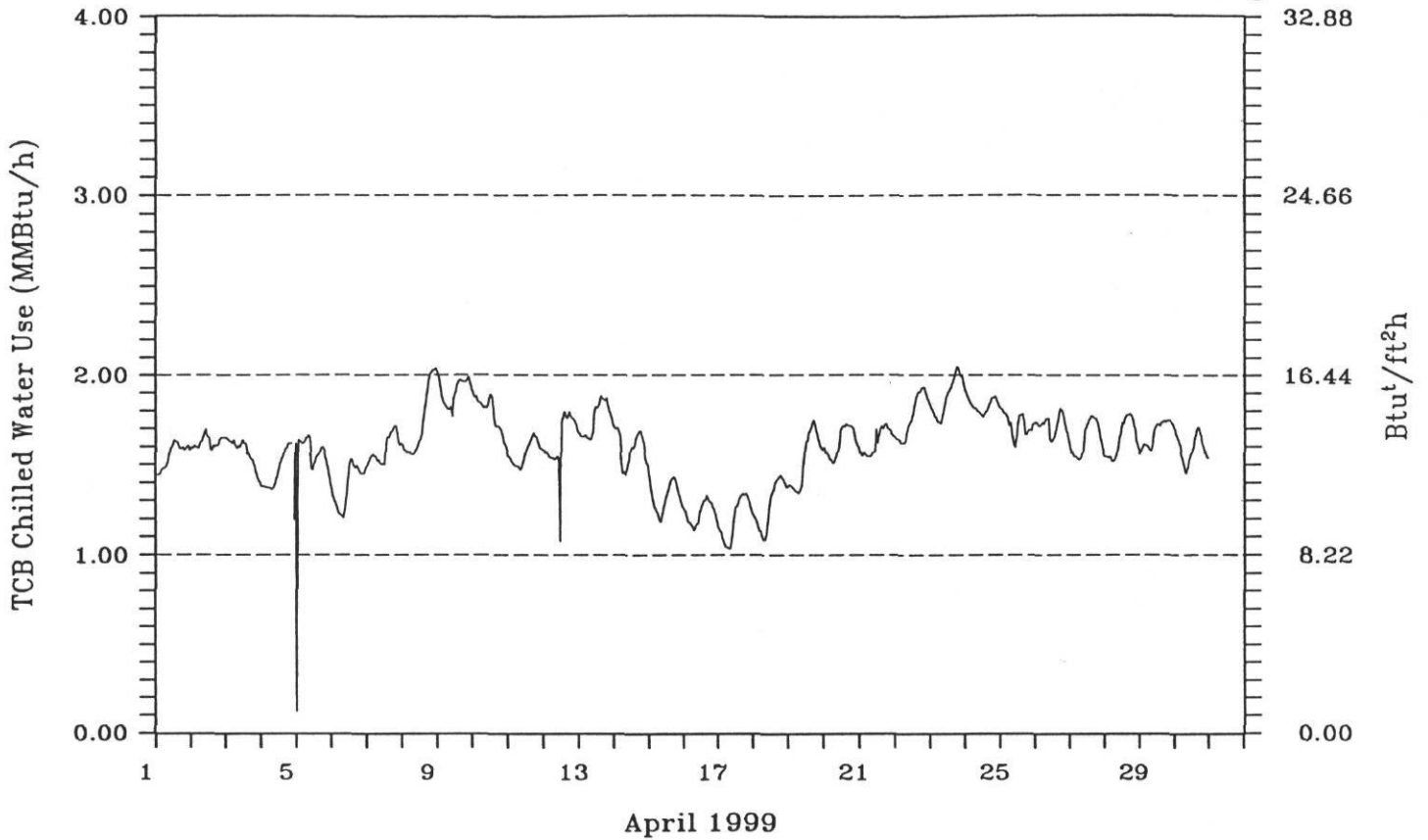
**Comments**

**★ Facility personnel implemented several Continuous Commissioning measures in June 1996. Measured CC savings for April 1999 are \$878. Total savings to date are \$70,382.**

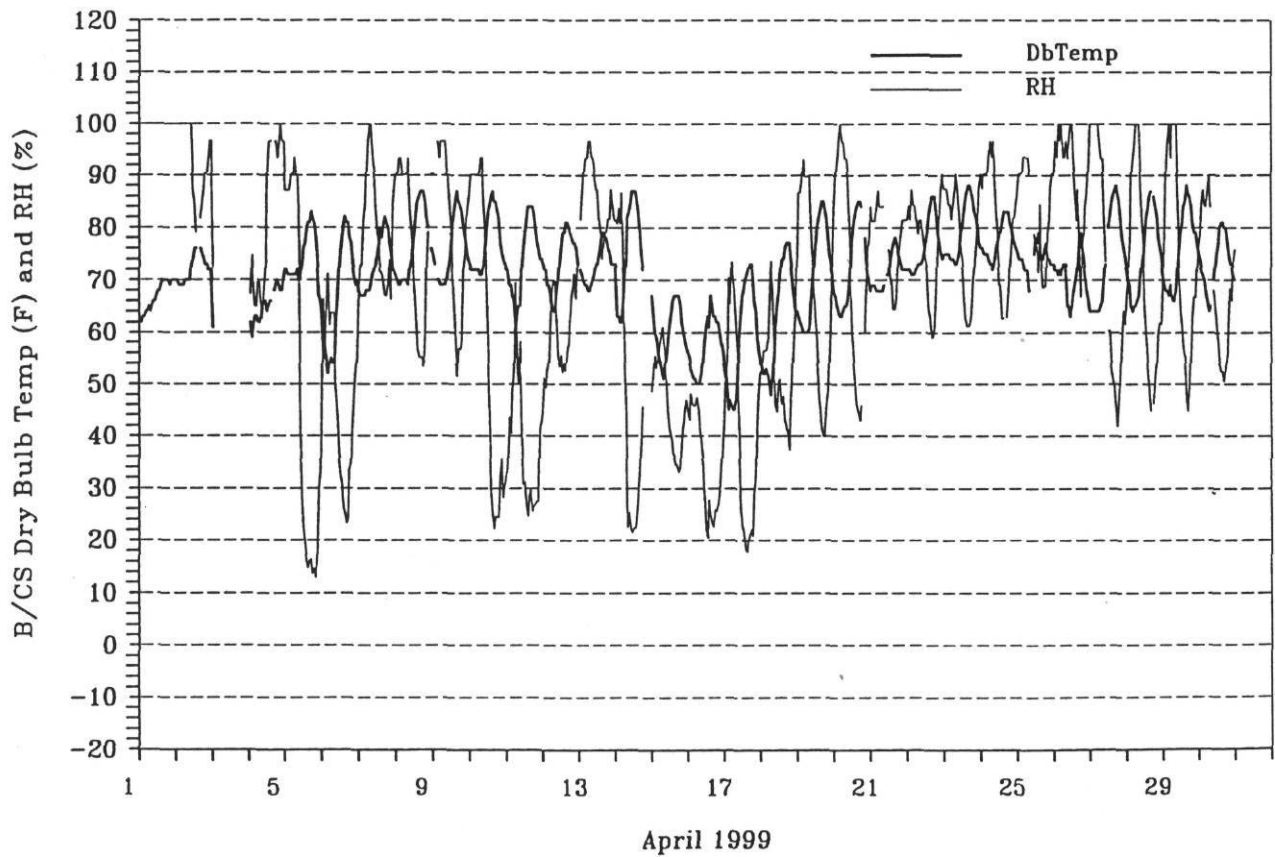
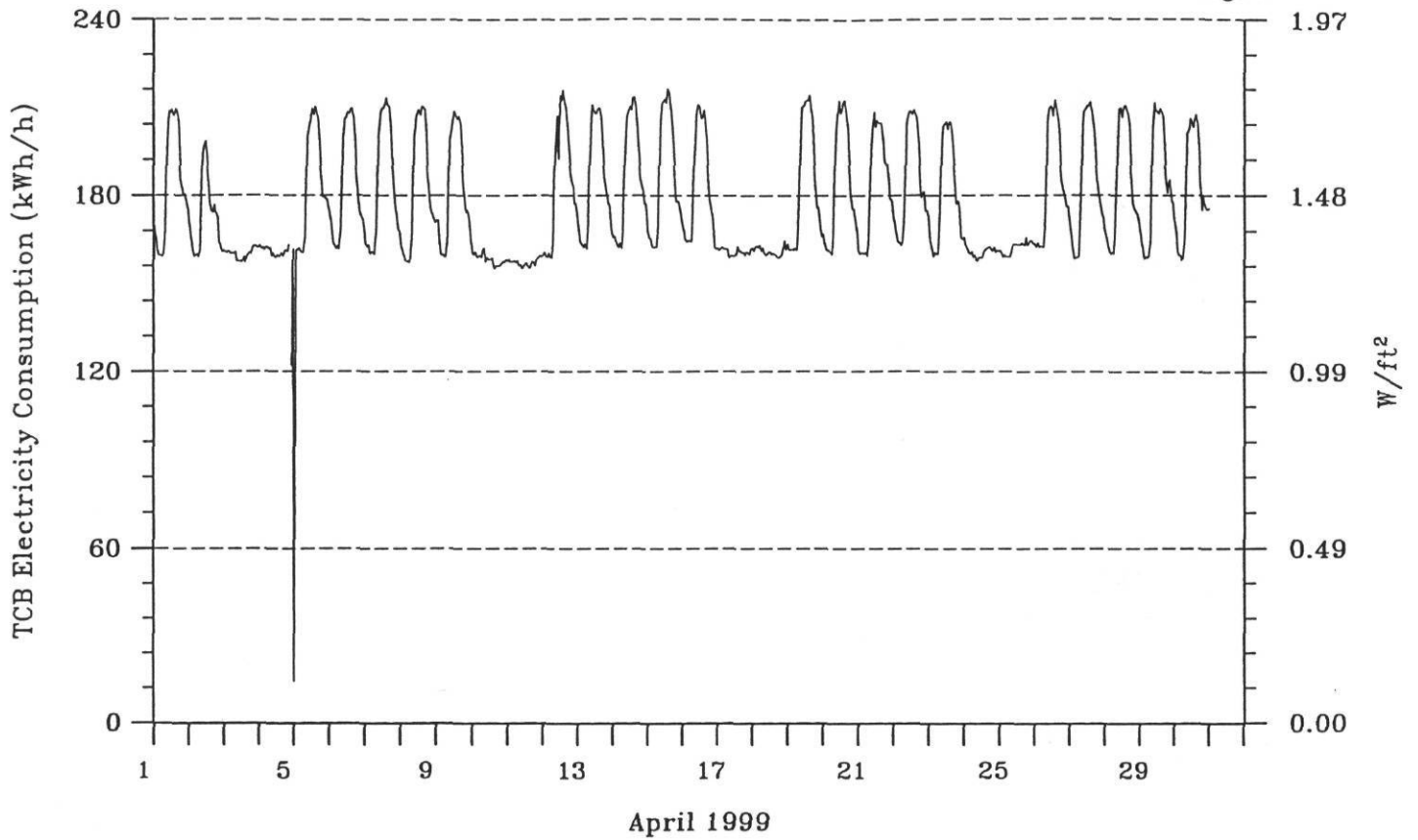


Data points for the current month are shown as letters. Points from this month last year are shown as +.  
 Monday through Sunday are represented as M,T,W,H,F,S,U. All other points are shown as \*.

Tom C. Clark Building - Texas Capitol Complex - April 1999

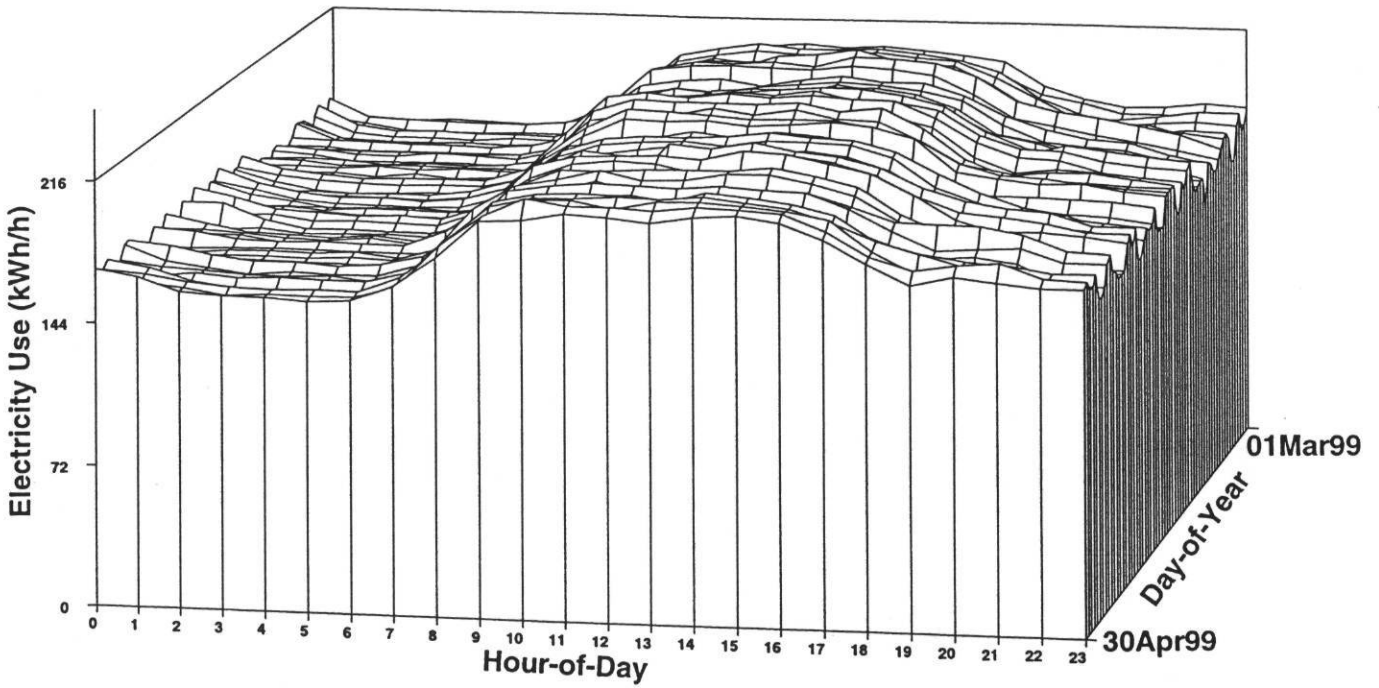


Tom C. Clark Building - Texas Capitol Complex - April 1999

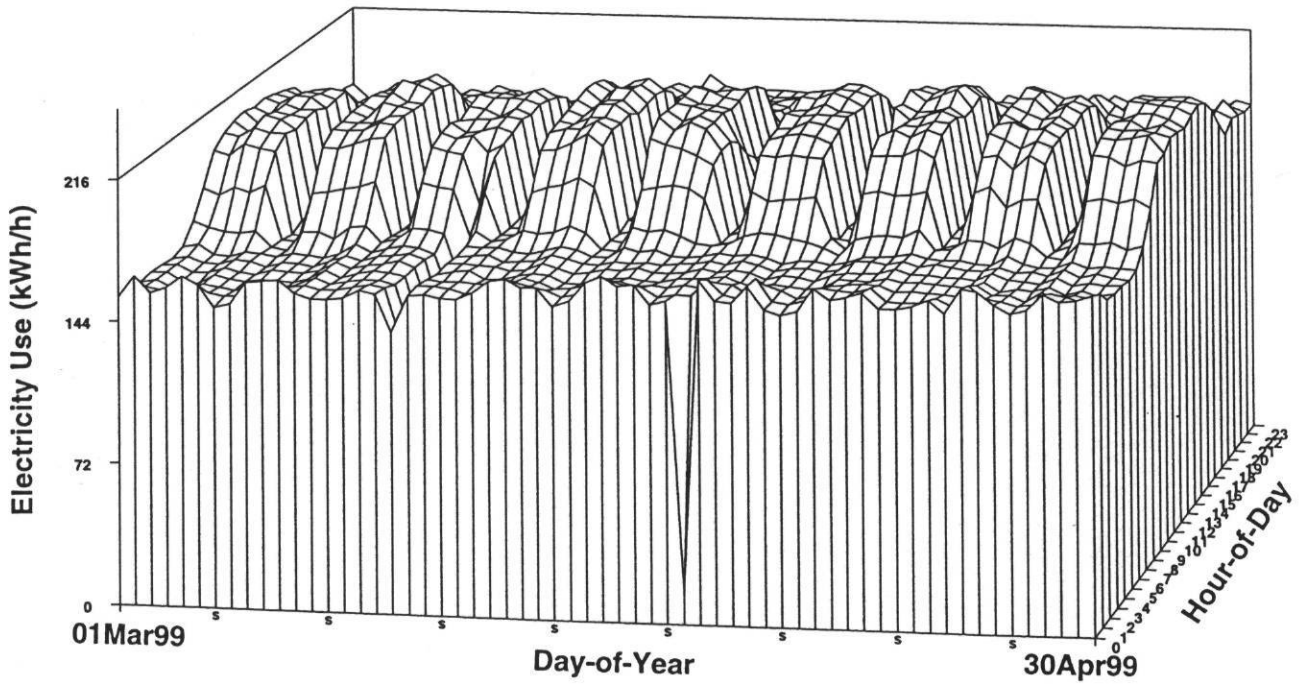


Tom C. Clark Building - Texas Capitol Complex - April 1999

### Whole-Building Electric



### Whole-Building Electric



Sundays are marked with an "S"

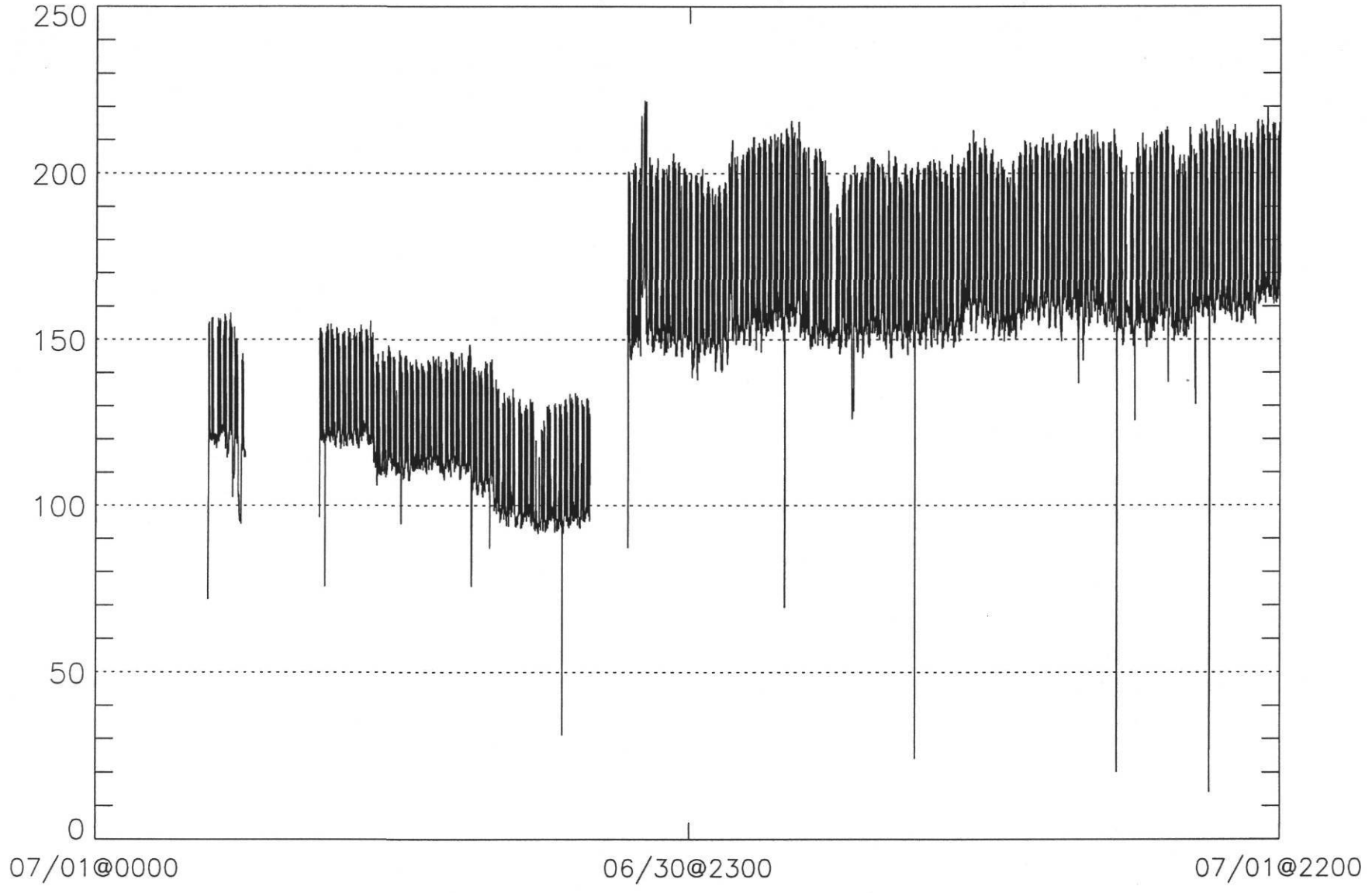
Tom C. Clark Building - Texas Capitol Complex - April 1999

" TOM C. CLARK Bldg " AUSTIN

SITE # 229

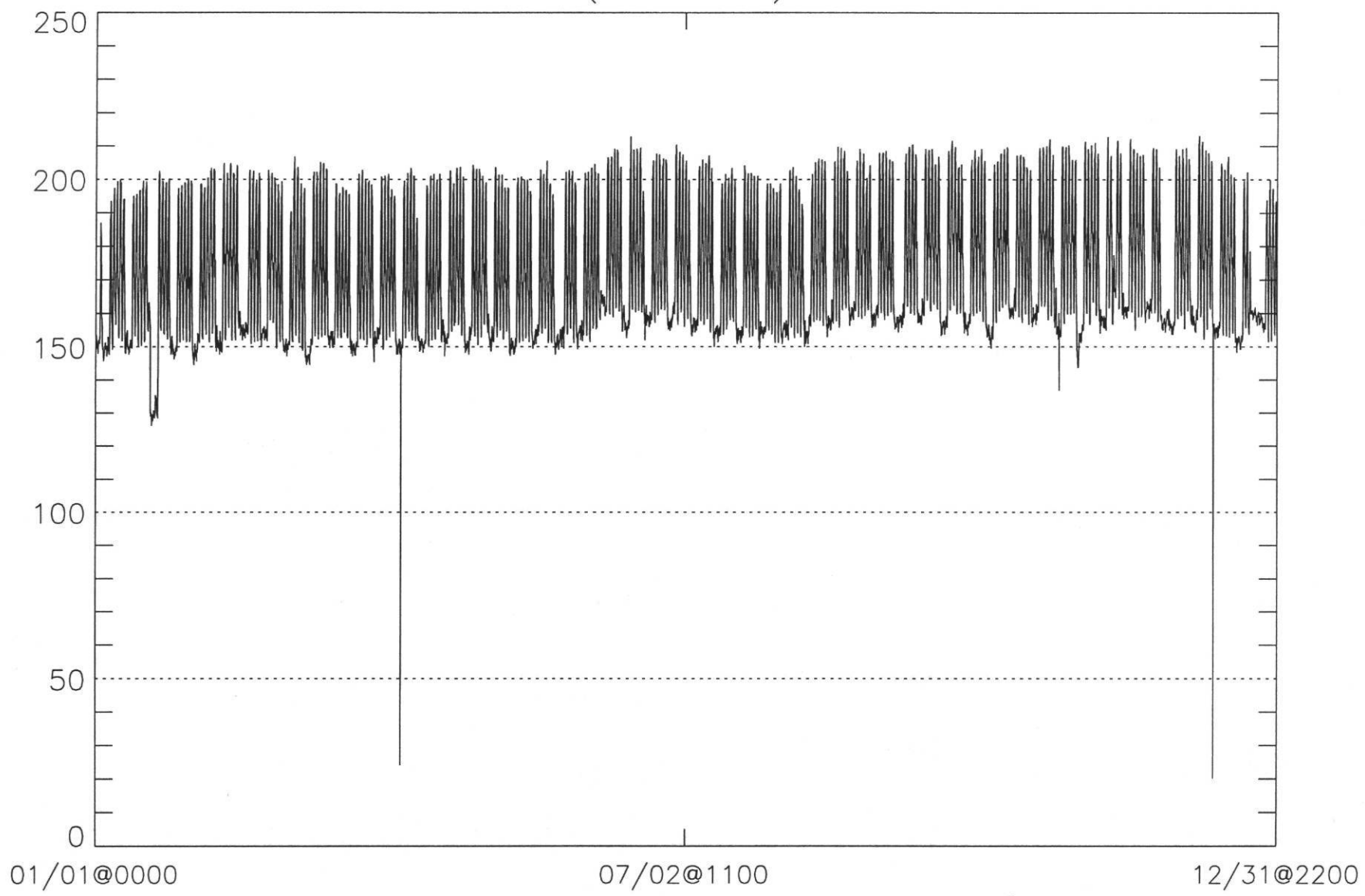
07/95-07/99

(ch2256) (wbe)





(ch2256) WBE



SITE # 229  
01/98 -12/98

lstaraxp% listsite 236

**Site: 236**                    **Brown Heatly Building (Bro)**

Mecr id:

Start date:        11/16/1995

Energy Type:    default

Construction

      begin:        02/01/1994                    end:        N/A

Area:             262905.00

Facility:         Texas Capitol Complex

Contact Info:    Denis Feary  
                  State Purchasing \& General Services Com  
                  Building Maintenance Department  
                  P.O. Box 13047  
                  Austin, TX 78711  
                  (512) 475--2455

## CAPITOL COMPLEX

## Brown Heatly State Office Building

**Building Envelope:**

- 262,905 gross sq.ft.
- seven floors; occupied by Texas Rehabilitation Commission and Texas Youth Commission
- walls: brick masonry construction
- windows: double pane tinted
- roof: built up roof
- year of construction: 1988

**Building Schedule:**

- average occupancy schedule is 6 am to 6 pm weekdays, with some evening and weekend operation

**Building HVAC and Equipment:**

- two 450 ton and one 250 ton chiller in the central plant
- two gas fired boilers
- domestic hot water is supplied by individual electric units on each floor in the lavatories
- air distribution is by double duct variable air volume units and selected single zone AHU and fan coils

**Building HVAC Schedule:**

- 24 hours a day

**Lighting:**

- lighting in the office areas is predominately by 4-lamp, 40W and 34W recessed troffers with magnetic ballast. The elevator lobbies have fluorescent indirect lighting, plus recessed downlight PL's. In addition, recessed downlights with dual 13W PL-lamp (plus ballast) are used for both aesthetics and aisleway markings

**Proposed Retrofits:**

- retrofit the existing 2'x4', 4-T12 34W lamp fixtures with 2 T8-32W lamp, one electronic ballast and specular reflector
- retrofit 2-lamp open industrial to 1-lamp T8 with new electronic ballast and reflector
- retrofit existing downlight incandescent fixtures to PL lamp
- retrofit (1) T12-34W cove light to 1-lamp T8 with new electronic ballast for every 4 lamps
- convert 1'x4' 2-lamp parabolic T-12 to 1-lamp T8 with new electronic ballast with specular reflector
- install VSD on chilled water and hot water pumps in central plant - 40
- install chilled water fan coil units in three (3) computer areas and shut down the affected AHU's after hours  
- Recommended for cancelation

**Status of Retrofits:**

- All the lighting projects are on hold. VSDs on the pumps are in design phase while the installation of the fan coil units have been canceled.

**Other Information:**

- electricity is supplied by City of Austin
- maintenance and operation is done by the Texas Department of Health

## Brown Heatly Building

Texas Capitol Complex  
262,905 square feet

Site Contact

Denis Feary  
State Purchasing & General Services Com  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512) 475-2455

LoanSTAR Metering Contact

Sam Farouz  
053 WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409) 845-9213

### Summary of Energy Consumption

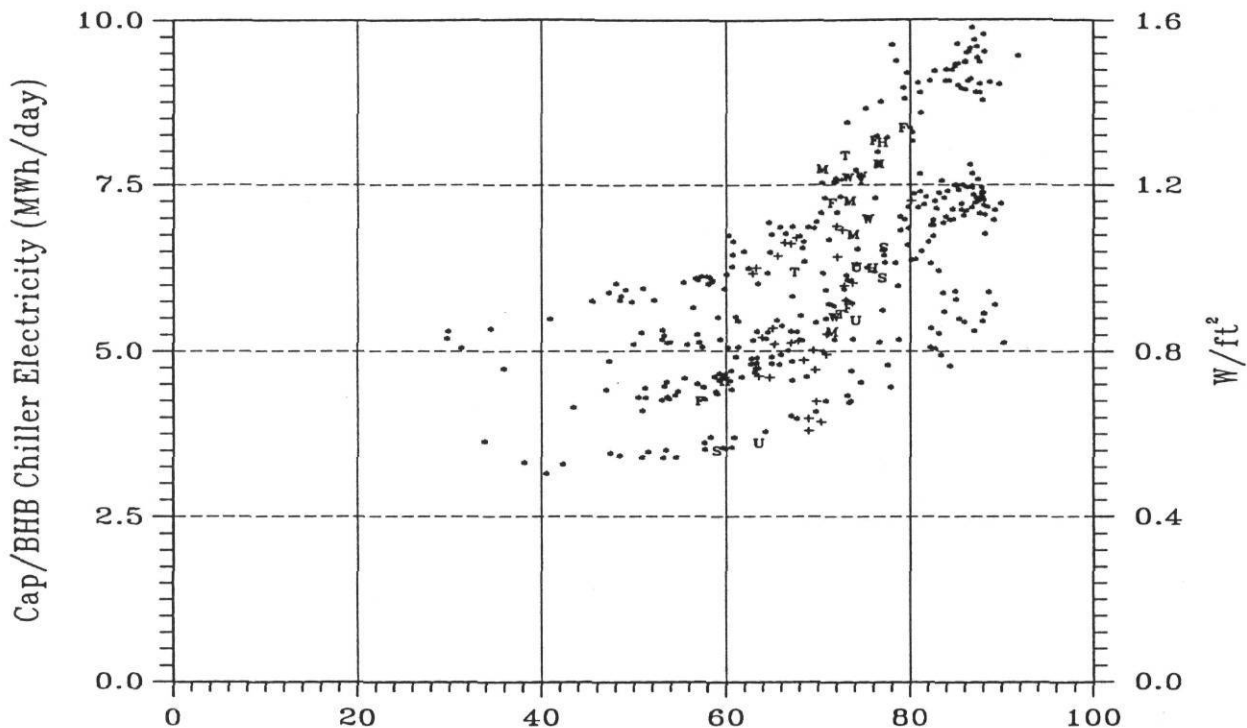
	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	722298 kWh	100	\$0.03360	\$24269
Peak 60 Minute Demand	1469 kW	100	\$11.40	\$16737
Chiller Electricity	193.2 MWh	100	\$33.600	\$6490
Natural Gas	633.4 MMBtu	100	\$3.850	\$2439

Peak 60 minute demand was recorded at 1200 Monday 04/26/99.  
There were 720 hours in this month.

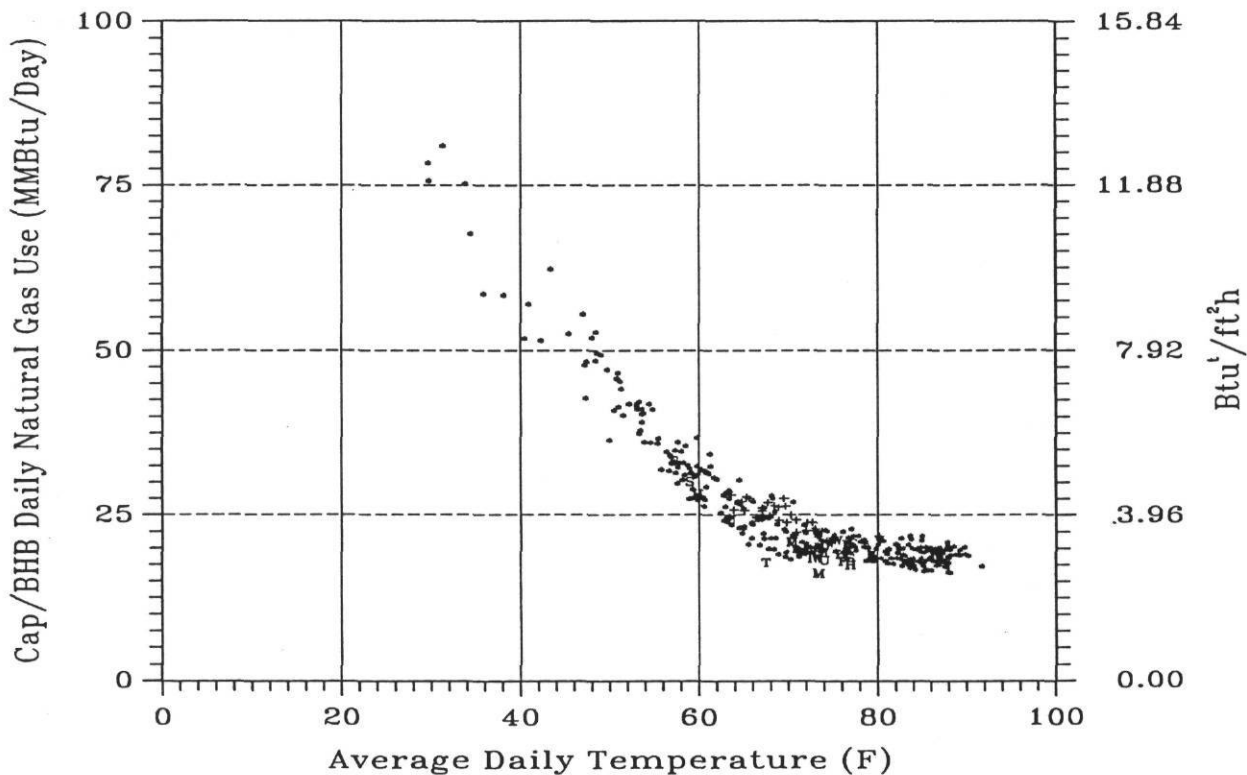
### Monthly Retrofit Savings

\* Please see last page for savings/retrofit status.

### Comments

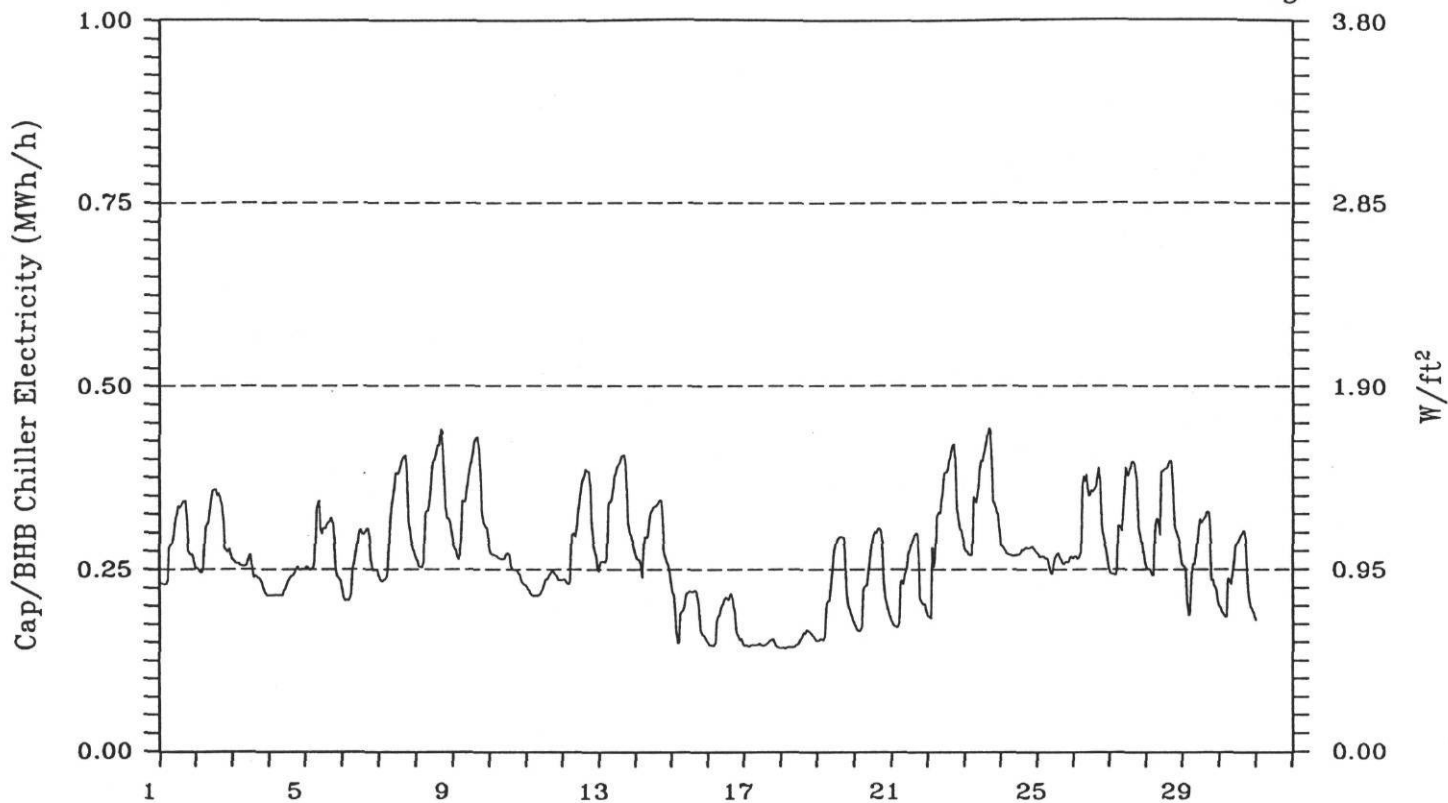


Apr 01 1998 - Apr 30 1999

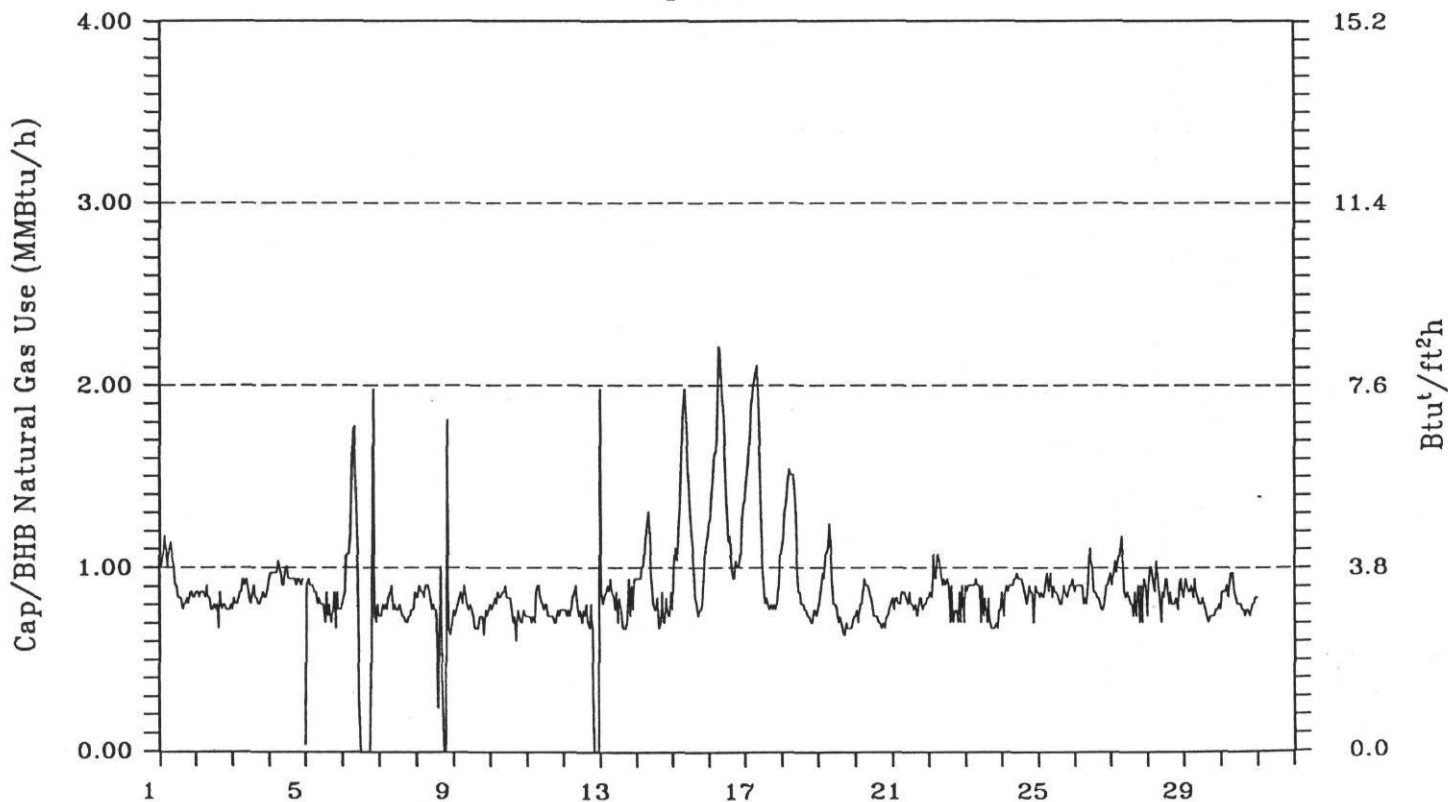


Data points for the current month are shown as letters. Points from this month last year are shown as +.  
 Monday through Sunday are represented as M,T,W,H,F,S,U. All other points are shown as \*.

Brown Heatly Building - Texas Capitol Complex - April 1999

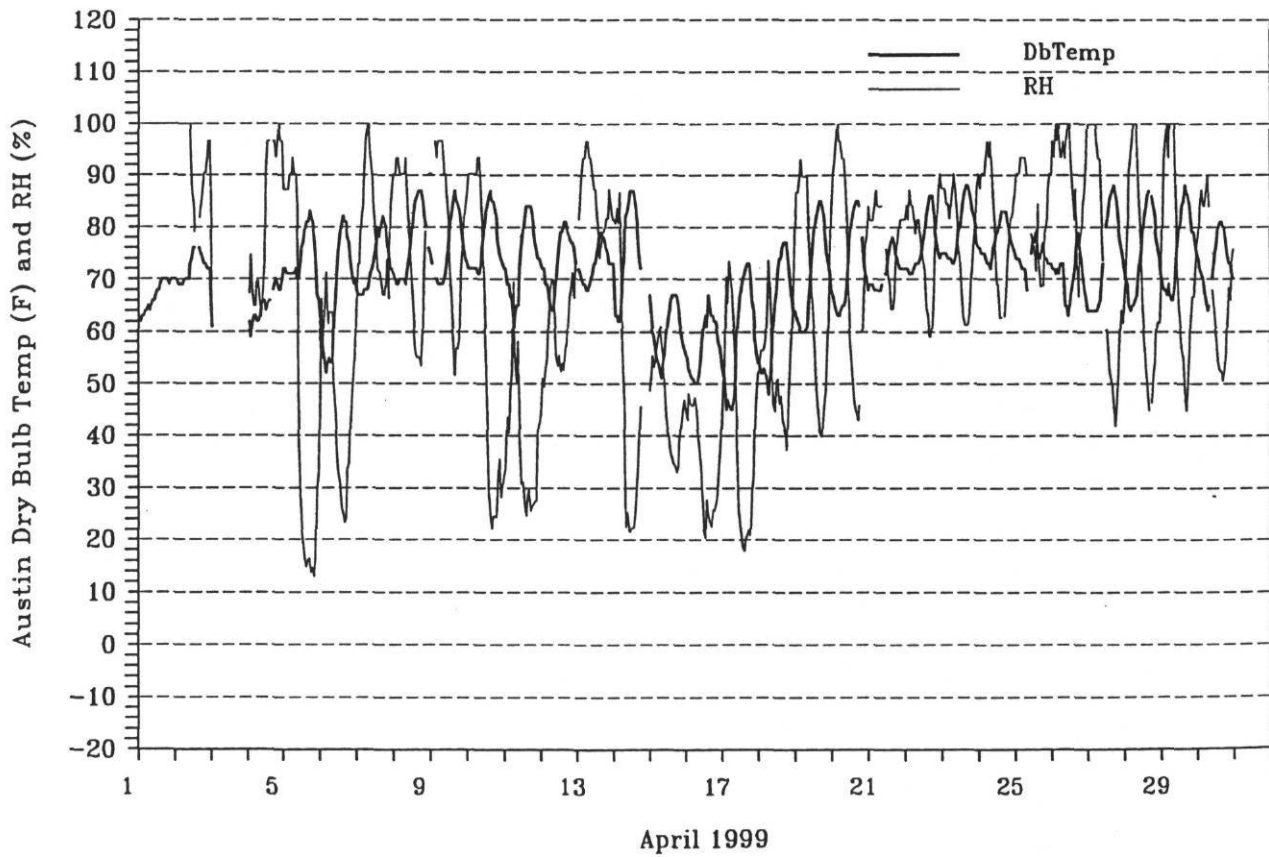
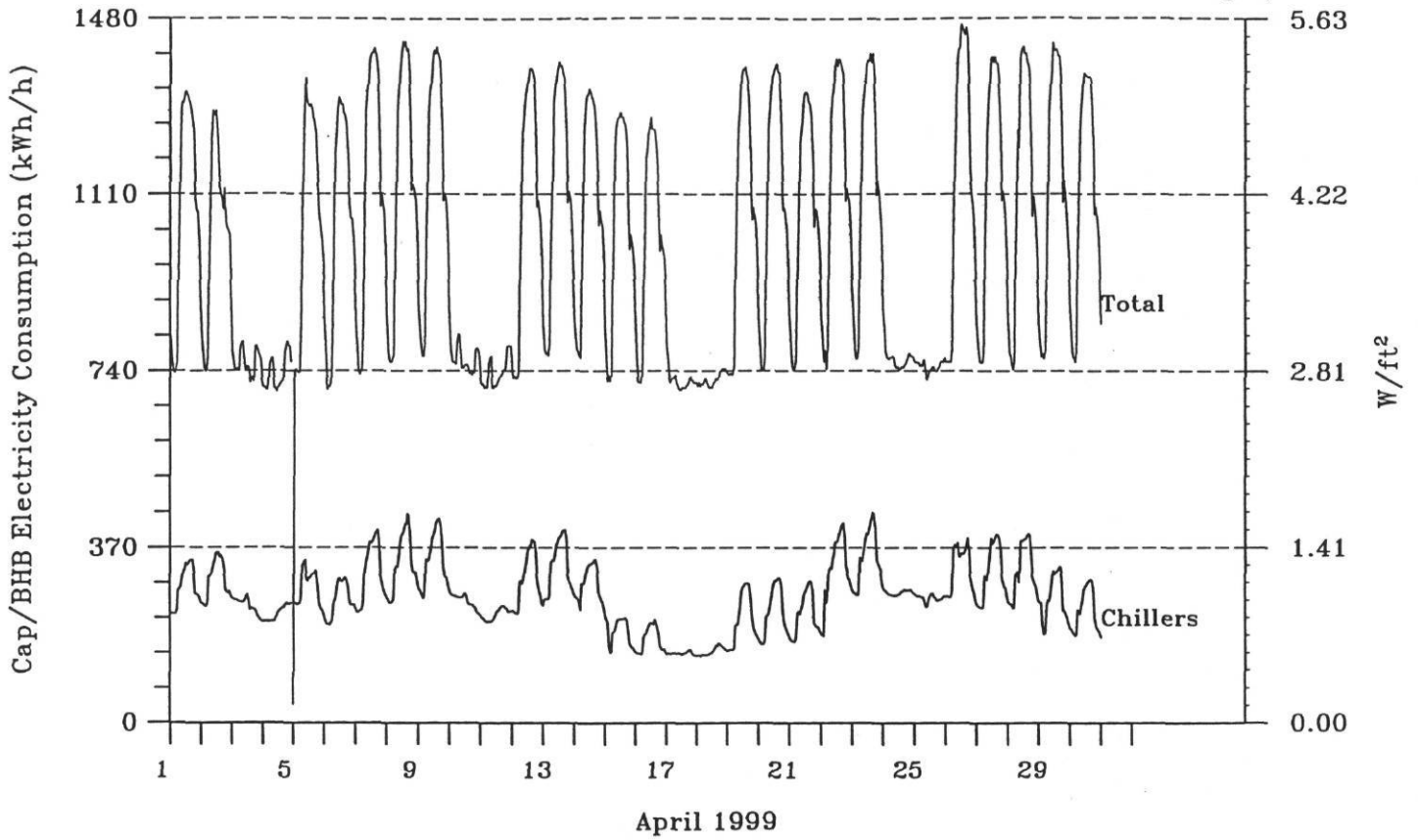


April 1999



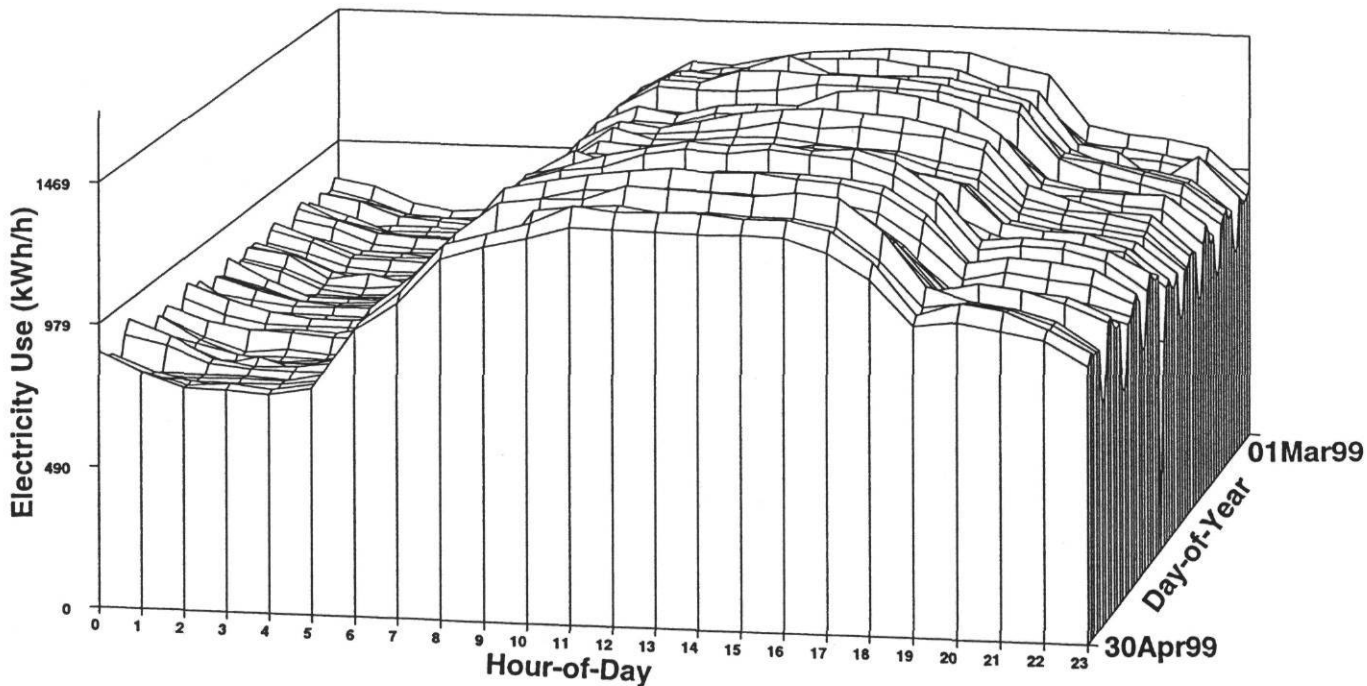
April 1999

Brown Heatly Building - Texas Capitol Complex - April 1999

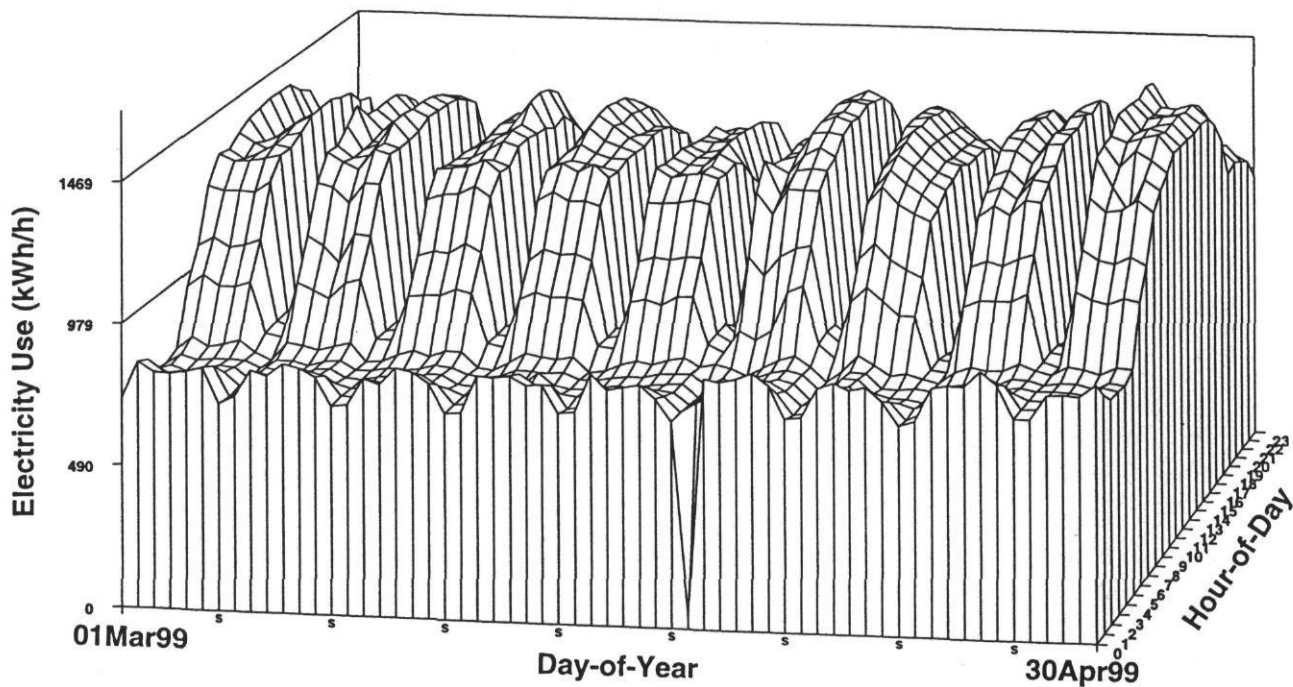


Brown Heatly Building - Texas Capitol Complex - April 1999

### Whole-Building Electric



### Whole-Building Electric



Sundays are marked with an "S"

Brown Heatly Building - Texas Capitol Complex - April 1999

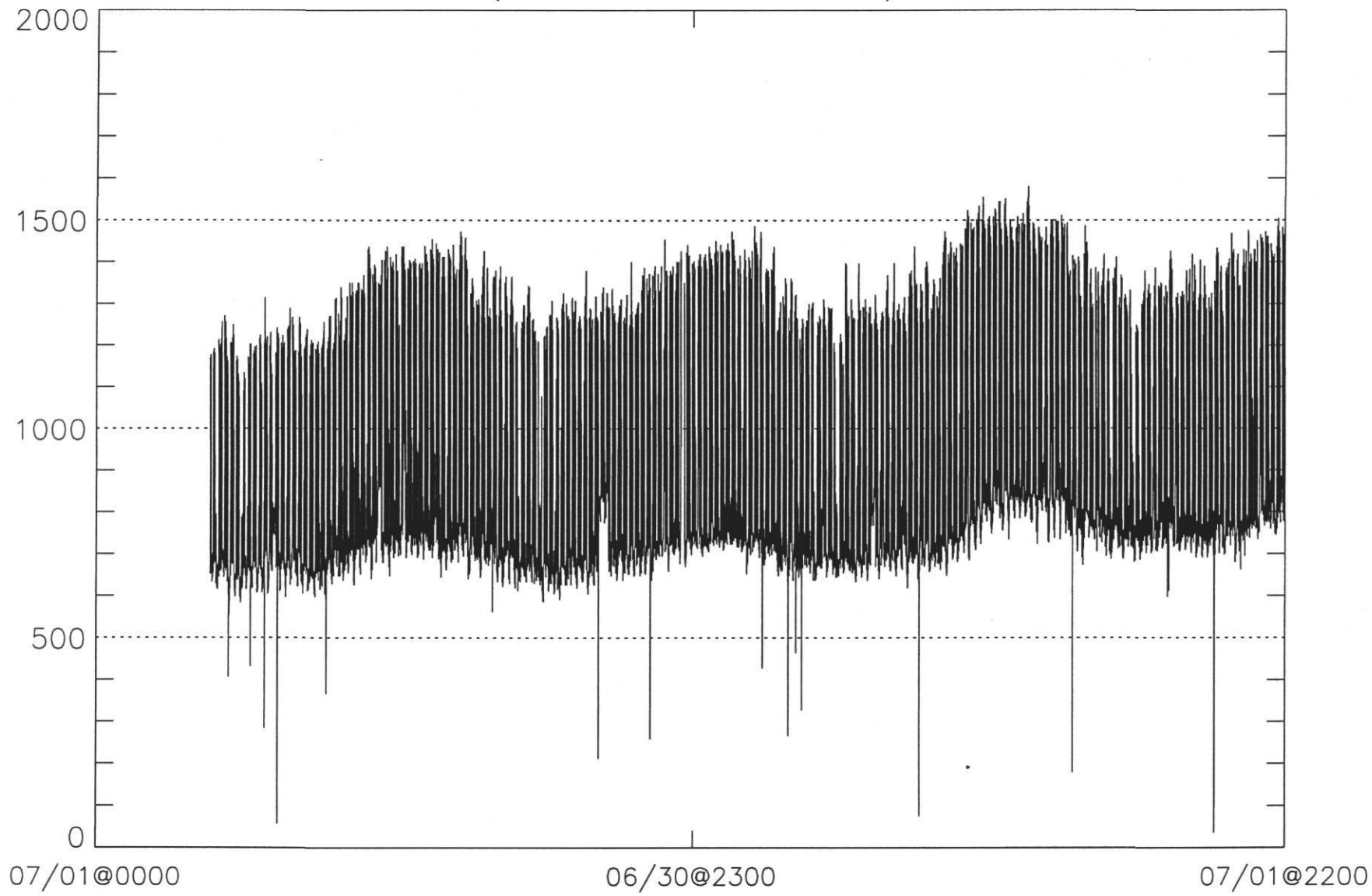


" Brown nearly diag "  
~~602 P 2000000~~

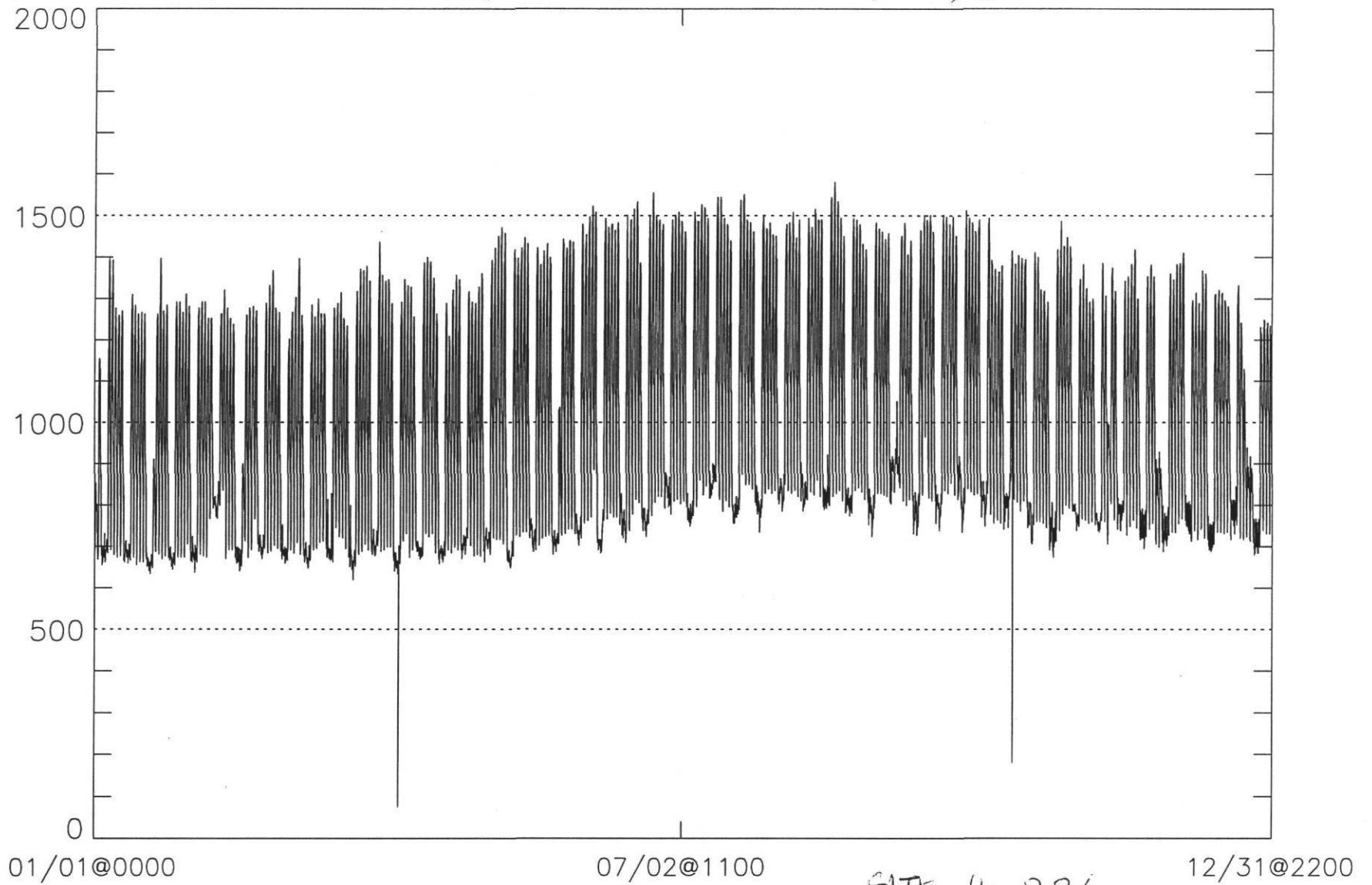
SITE # 236

07/95 - 07/99

(ch2429+ch2430)



(ch2429+ch2430) WBE



SITE # 236

01/98 - 12/98

lstarxp% listsite 237

**Site: 237      W. P. Clements Building (W. )**

Mecr id:

Start date:      11/16/1995

Energy Type: default

Construction

begin:      02/01/1994      end:      N/A

Area:      461611.00

Facility:      Texas Capitol Complex

Contact Info: Denis Feary  
State Purchasing \& General Services Com  
Building Maintenance Department  
P.O. Box 13047  
Austin, TX 78711  
(512) 475--2455

## CAPITOL COMPLEX

## W. P. Clements Building

**Building Envelope:**

- 461,611 sq.ft.
- fifteen floors; occupied by State Senate, Office of the Attorney General, Department of Information Service, State Pension Review Board, Texas Public Finance Authority and other state offices
- walls: granite
- roof: built-up type
- windows: single pane

**Building Schedule:**

- 7:00 am - 6:00 pm on weekdays, and certain areas are utilized during nights and weekends

**Building HVAC and Equipment:**

- air conditioning for the building is accomplished by a water cooled chilled water system

**Lighting:**

- 5274 2'x4' 3-T12 Lamp fixture
- 330 2'x2' 2-U lamp fixture
- 120 1'x4' 2-T12 lamp fixture
- 45 4' 1-lamp lensed

**Proposed Retrofits:**

- Scheduled start/stop of HVAC equipment - Design (15)
- Reduce condenser water pump loses - Recommended for cancelation
- Increase cooling tower efficiency - In design phase, 10% design work has been completed as of May 1997
- Lighting control - Hold, team selection in progress
- retrofit the existing 2'x4', three T12-34W fluorescent lamp fixtures with two (2) T8-32W lamps, one electronic ballast and a specular reflector
- retrofit the existing 2'x2', two (2) T12-40W U-type fluorescent lamp fixtures with two (2) T8-18W U-type lamps, one electronic ballast and a specular reflector
- retrofit the existing 1'x4', two (2) T12-34W fluorescent lamp fixtures with one (1) T8-32W lamp, one electronic ballast and a specular reflector
- retrofit the existing 4' two T12-34W fluorescent lamp fixtures with one (1) T8-32W lamp, one electronic ballast and a specular reflector

**Status of Retrofits:**

- All the lighting projects are on hold and team selection is in progress

**Other Information:**

- electricity is supplied by City of Austin
- major mechanical and building services are located in the basement and serve the entire building

**W. P. Clements Building**  
 Texas Capitol Complex  
 461,611 square feet

Site Contact

Denis Feary  
 State Purchasing & General Services Com  
 Building Maintenance Department  
 P.O. Box 13047  
 Austin, TX 78711  
 (512) 475-2455

LoanSTAR Metering Contact

Sam Farouz  
 053 WERC  
 Texas A&M University  
 College Station, TX 77843-3123  
 (409) 845-9213

**Summary of Energy Consumption**

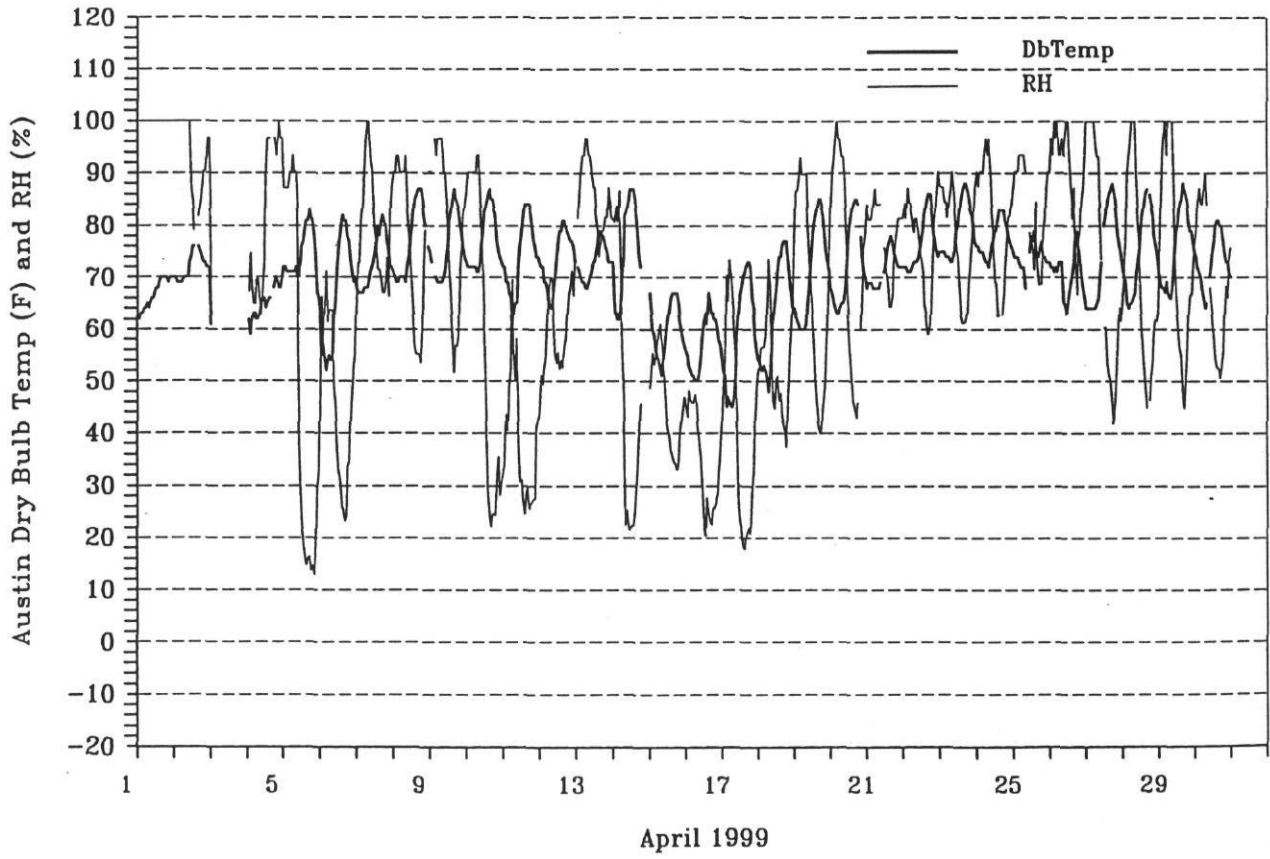
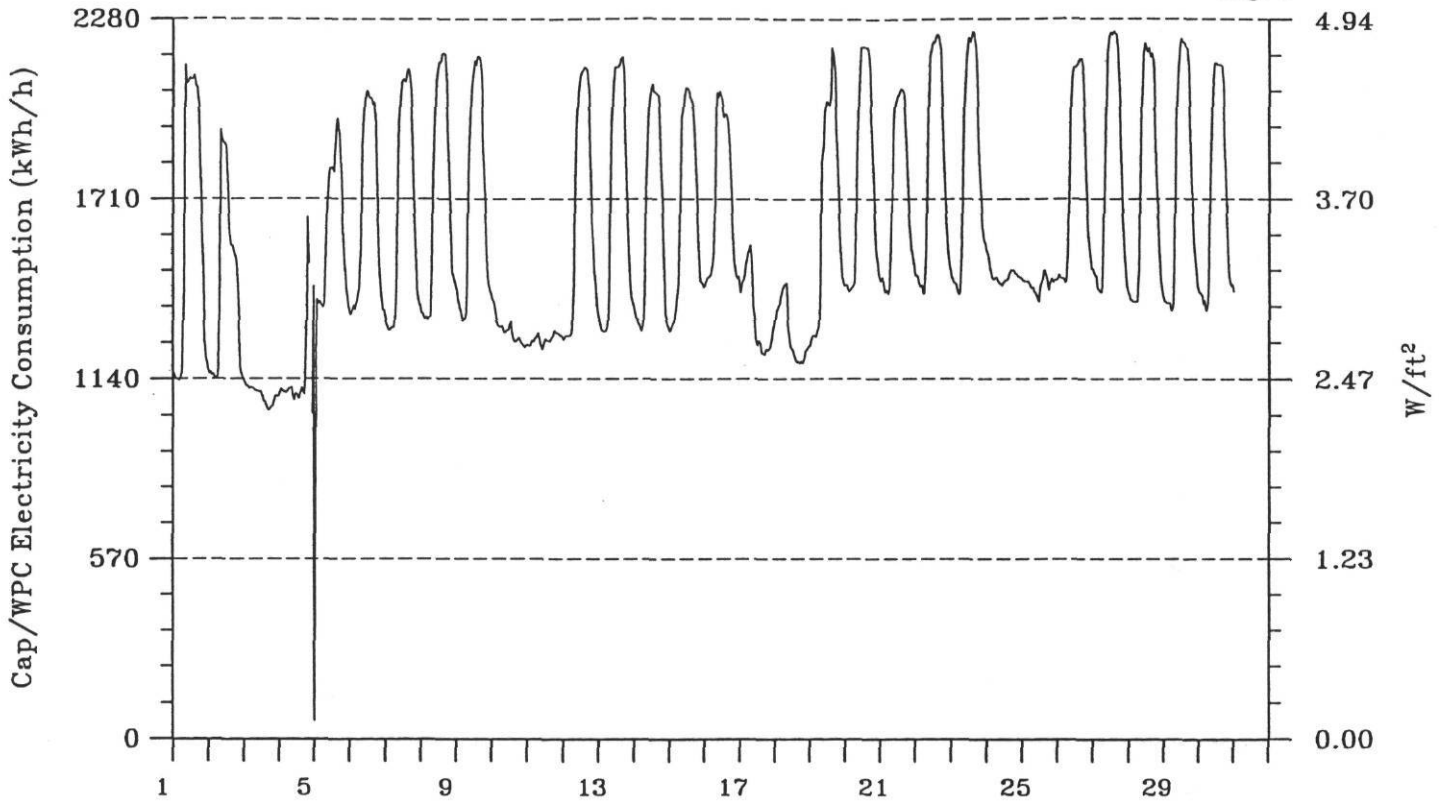
	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	1145729 kWh	100	\$0.03360	\$38496
Peak 60 Minute Demand	2243 kW	100	\$11.40	\$25557

Peak 60 minute demand was recorded at 1500 Friday 04/23/99.  
 There were 720 hours in this month.

**Monthly Retrofit Savings**

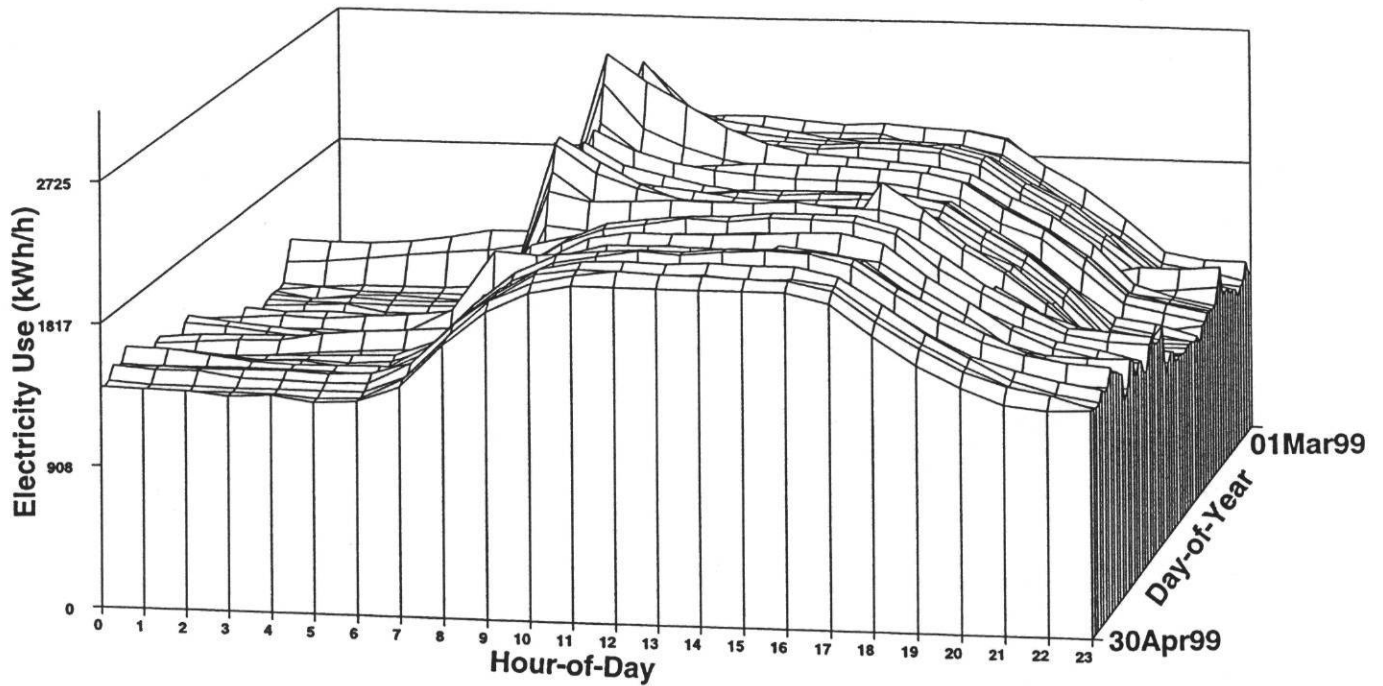
\* Please see last page for savings/retrofit status.

**Comments**

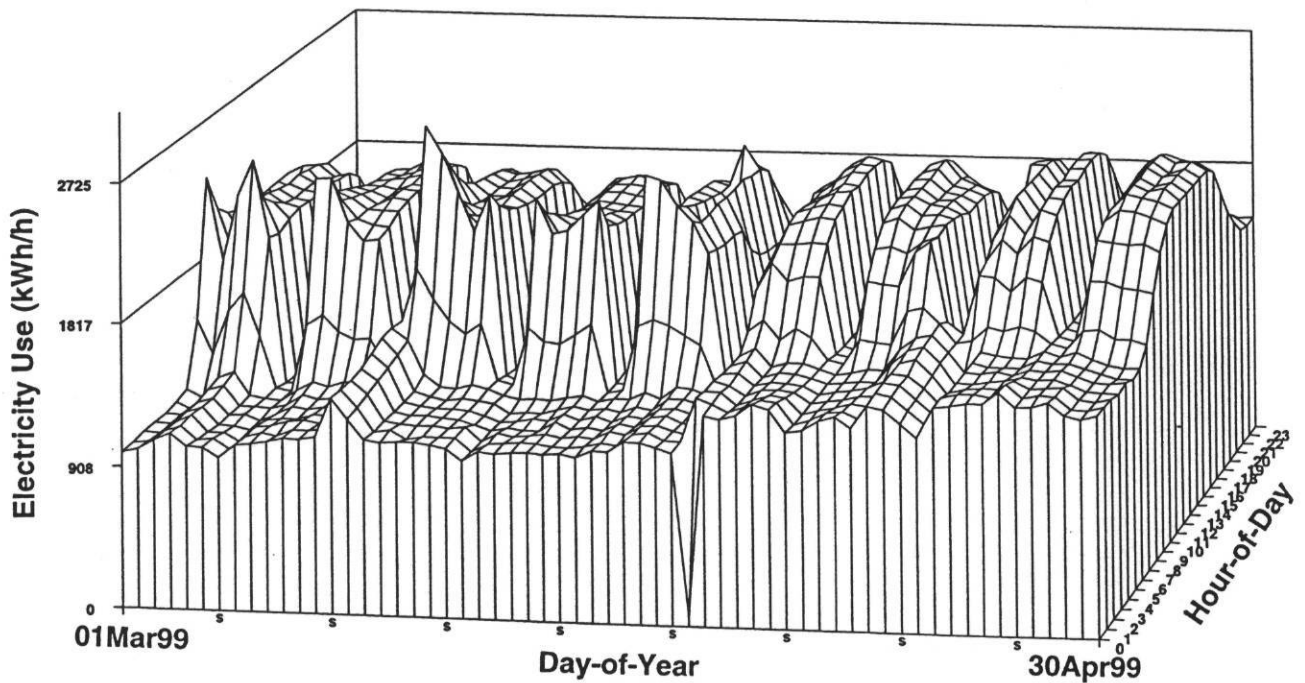


W. P. Clements Building - Texas Capitol Complex - April 1999

### Whole-Building Electric



### Whole-Building Electric



Sundays are marked with an "S"

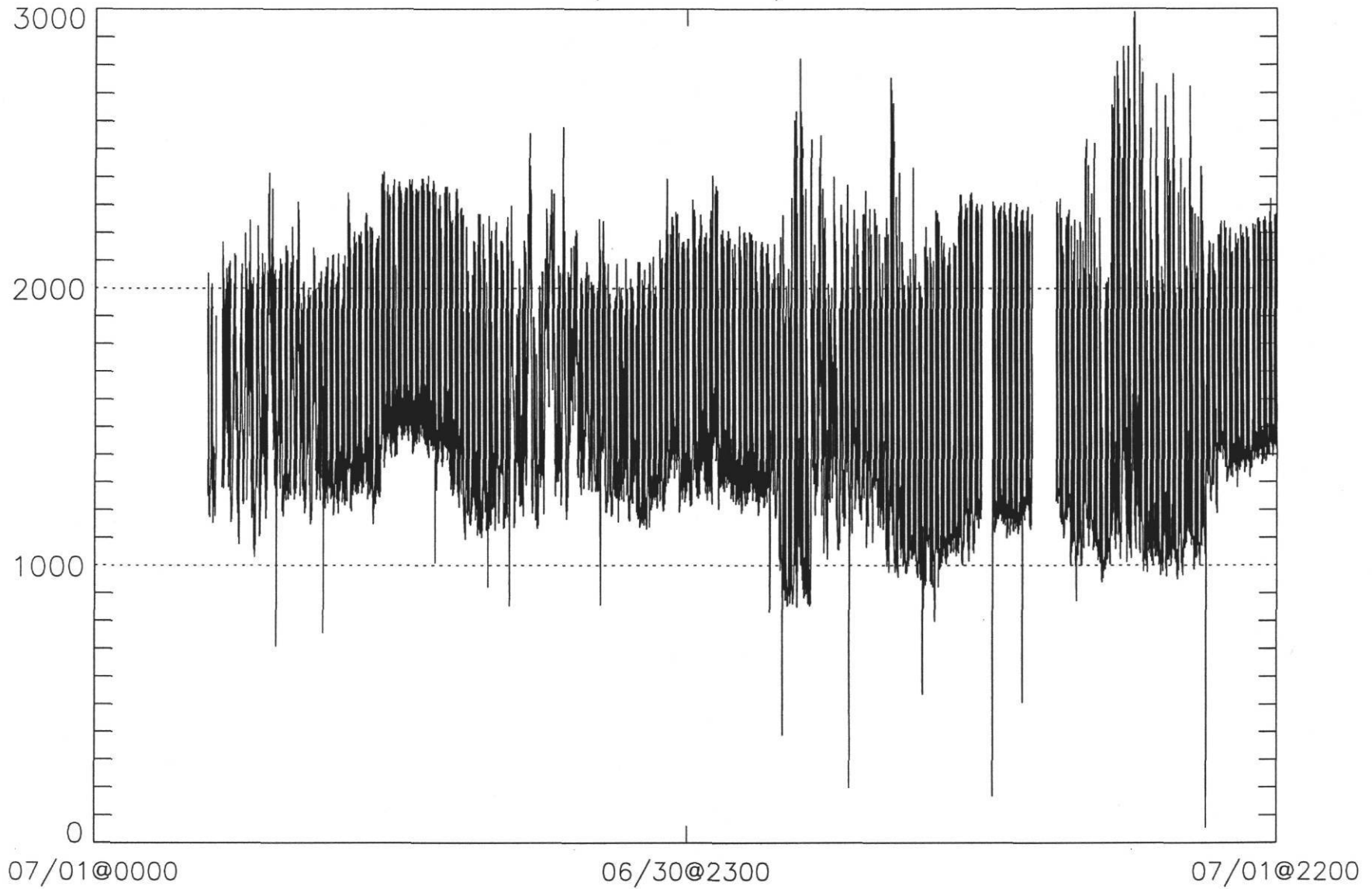
W. P. Clements Building - Texas Capitol Complex - April 1999

W.P. CLEMENTS, AUSTIN

(SITE # 237)

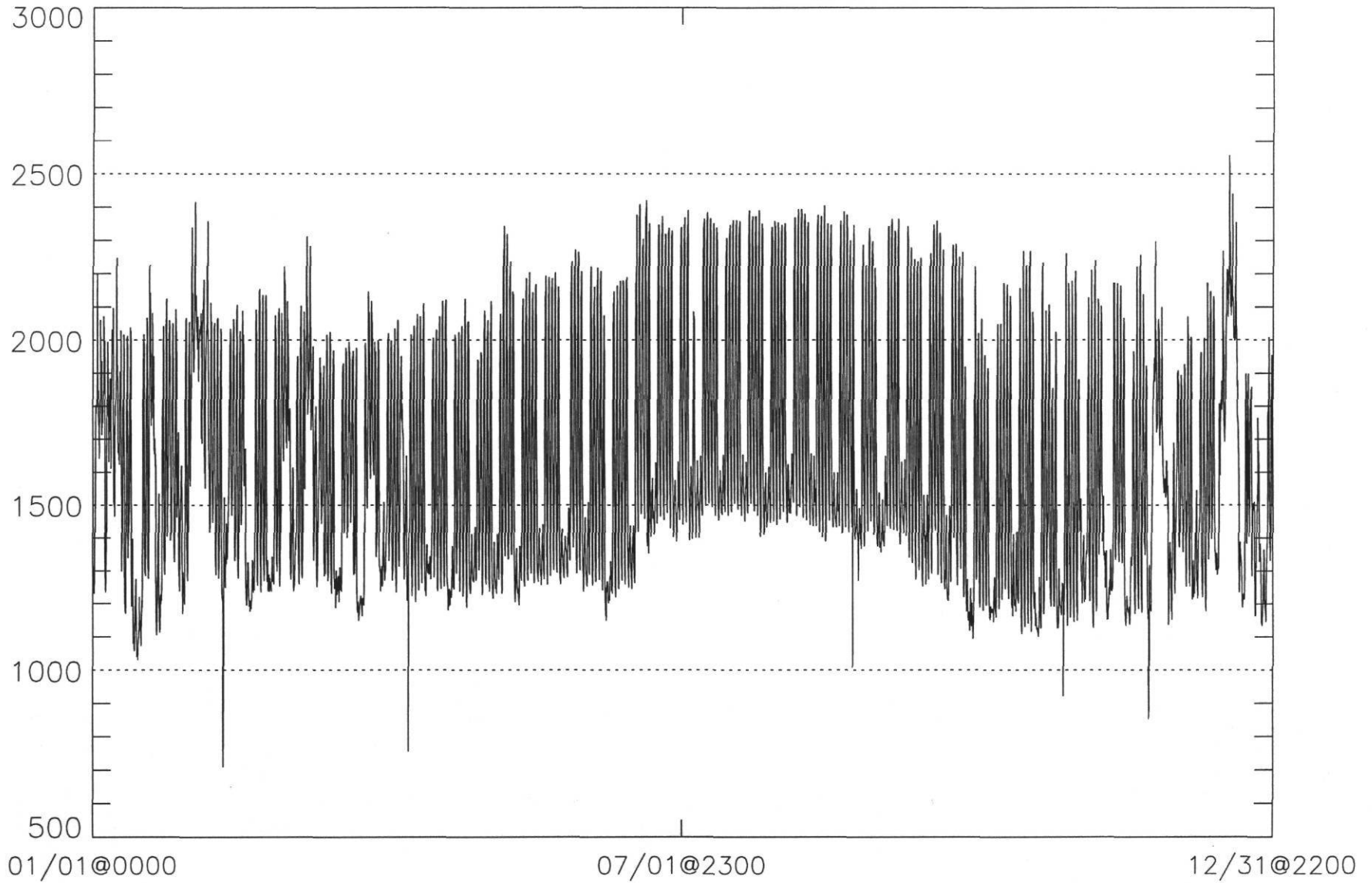
07/95 - 07/99

(ch2200) (WBE)





(ch2200) WBE



SITE # 237

01/96 - 12/96

lstarxp% listsite 241

**Site: 241            Municipal Court Building (Mun)**

Mecr id:

Start date:    11/27/1995

Energy Type: default

Construction

begin:            N/A                            end:    N/A

Area:            44155.00

Facility:        City of Austin

Contact Info: Mr. Scot Jarman  
Energy Services Division  
P.O. Box 1088  
Austin, TX 78767-8844  
(512) 499--3507

## CITY OF AUSTIN

## Municipal Court Building

**Building Envelope:**

- 44,155 gross sq.ft.
- 3 floors
- walls: CMU/brick veneer
- roof: insulated flat built-up

**Building Schedule:**

- majority of this building operates approximately 70 hours per week

**Building HVAC and Equipment:**

- heating is provided by a boiler
- centrifugal chiller
- mechanical equipment and temperature control is maintained by an Andover Energy Management and Control System (EMCS)

**HVAC Schedule:**

- all HVAC equipment operates 24 hours a day

**Lighting:**

- indoor lighting is provided by fluorescent lamps but there are a few dispersed incandescent lamps. Exterior lighting is provided by mercury vapor luminaries

**Proposed Retrofits:**

- replace existing centrifugal chiller w/high efficiency screw type chiller
- replace F40T12 lamps with F32T8 lamps with electronic ballasts

**Status of Retrofits:**

- chiller was replaced in November 1996. Lighting retrofit was completed in April 1997.

**Other Information:**

- electricity is provided by City of Austin, chilled water is supplied by the chillers in the Police headquarter building, while natural gas is provided by Southern Union Gas Co.

## Municipal Court Building

City of Austin  
44,155 square feet

Site Contact  
Mr. Scot Jarman  
Energy Services Division  
P.O. Box 1088  
Austin, TX 78767-8844  
(512) 499-3507

LoanSTAR Metering Contact  
Sam Farouz  
053 WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409) 845-9213

### Summary of Energy Consumption

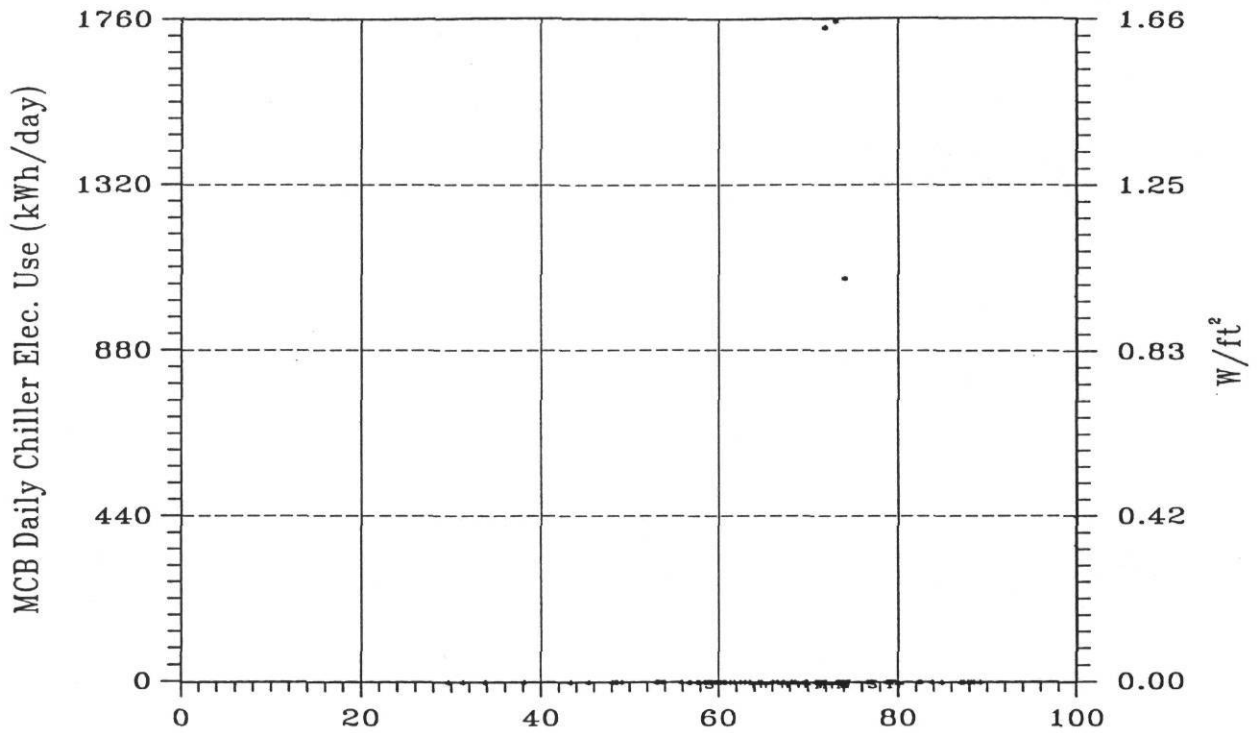
	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	81724 kWh	100	\$0.05790	\$4732
Peak 60 Minute Demand	135 kW	100	\$2.69	\$361
Chiller Electricity	0.0 kWh	93	\$0.058	\$0
Chilled Water	436.7 MMBtu	100	\$5.000	\$2183

Peak 60 minute demand was recorded at 900 Tuesday 04/20/99.  
There were 720 hours in this month.

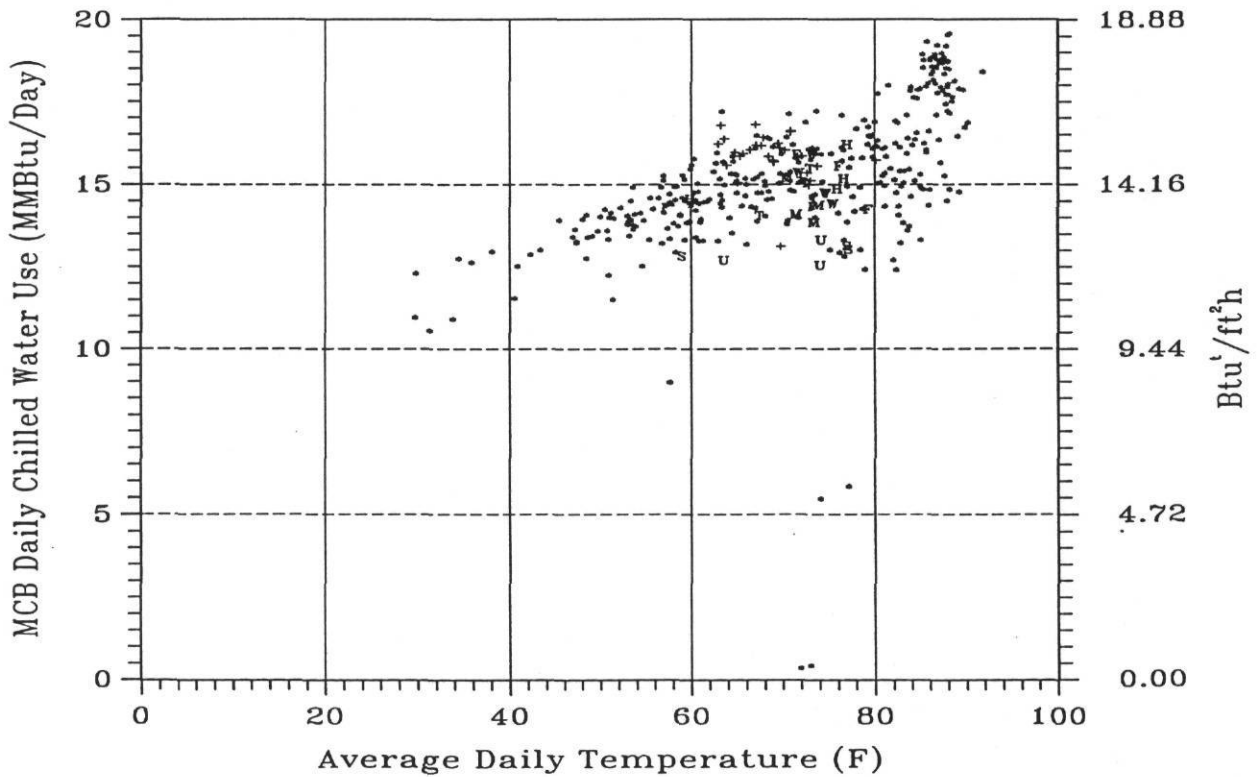
### Monthly Retrofit Savings

\* Savings from the completed retrofits are included in the Police Department Headquarters savings.

Comments

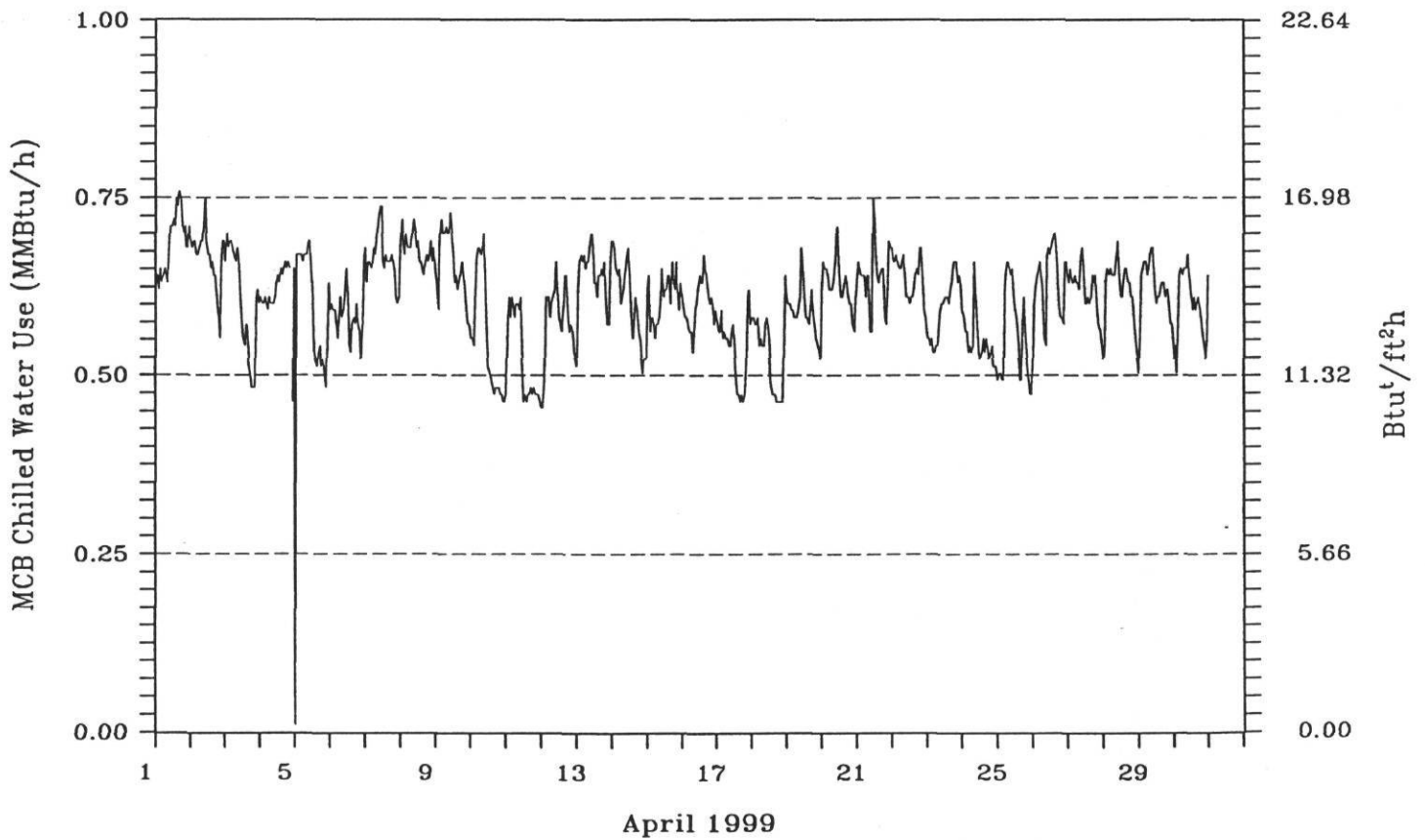


Apr 01 1998 - Apr 30 1999

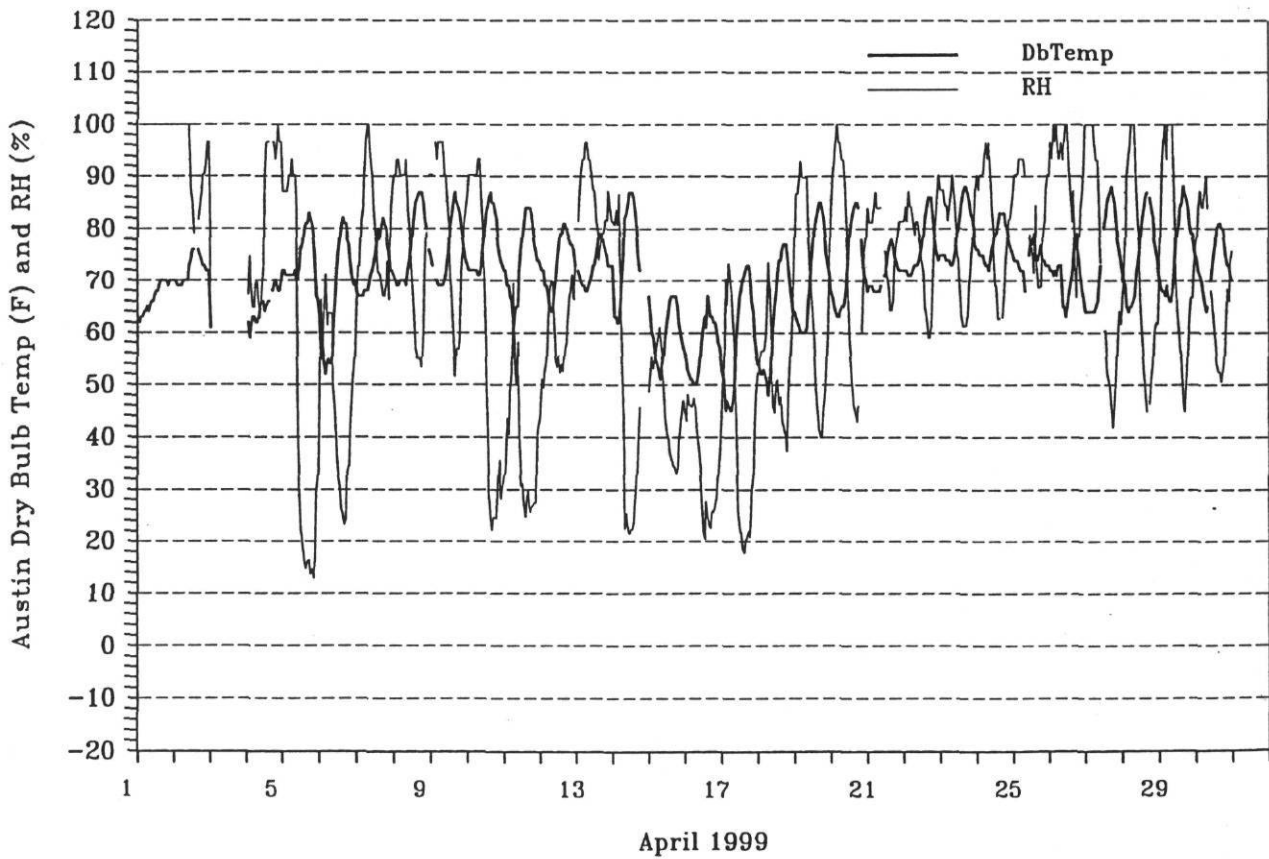
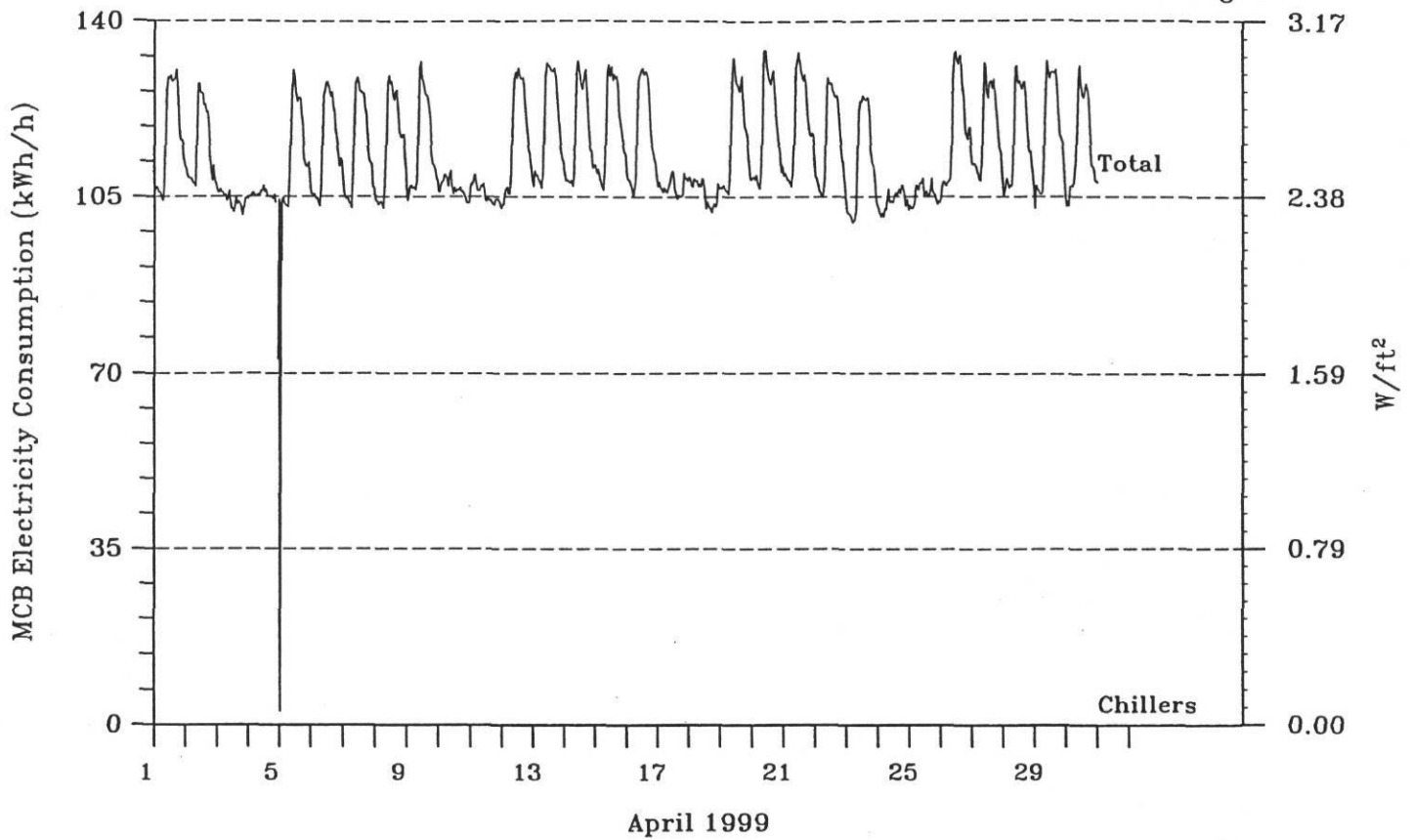


Data points for the current month are shown as letters. Points from this month last year are shown as +.  
 Monday through Sunday are represented as M,T,W,H,F,S,U. All other points are shown as \*.

Municipal Court Building - City of Austin - April 1999

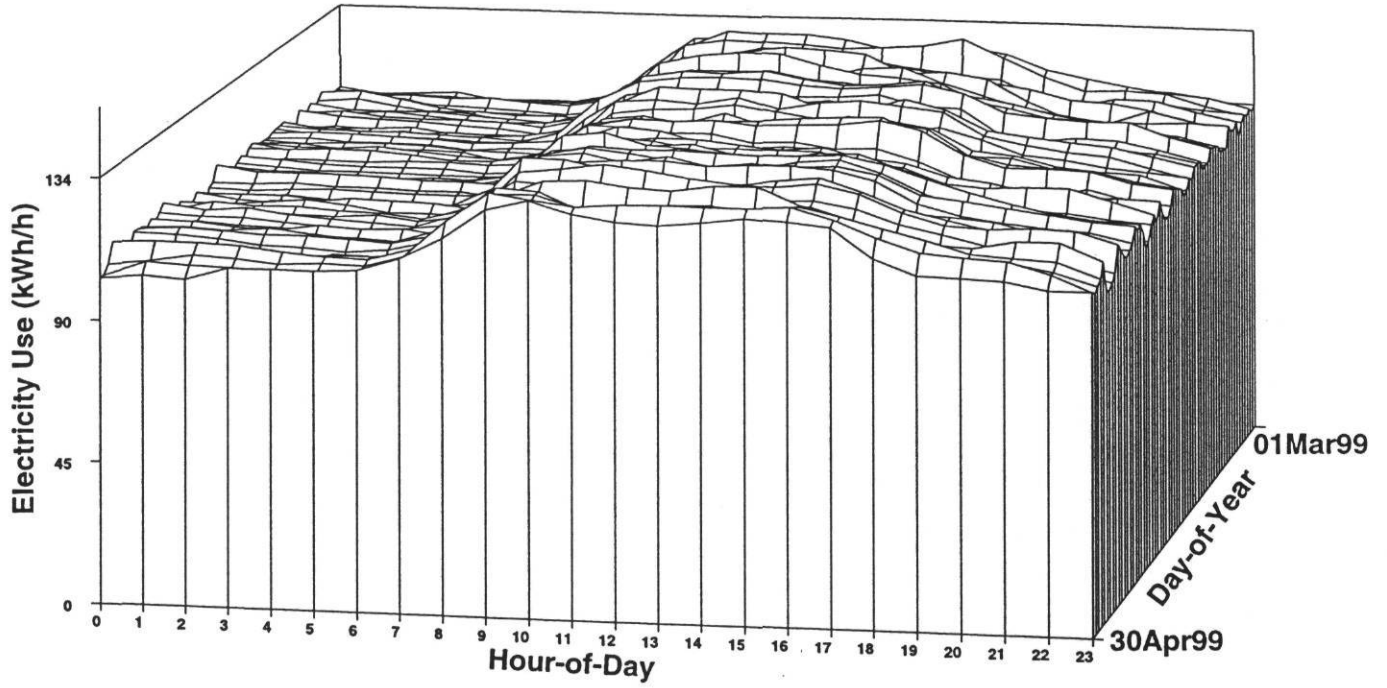


Municipal Court Building - City of Austin - April 1999

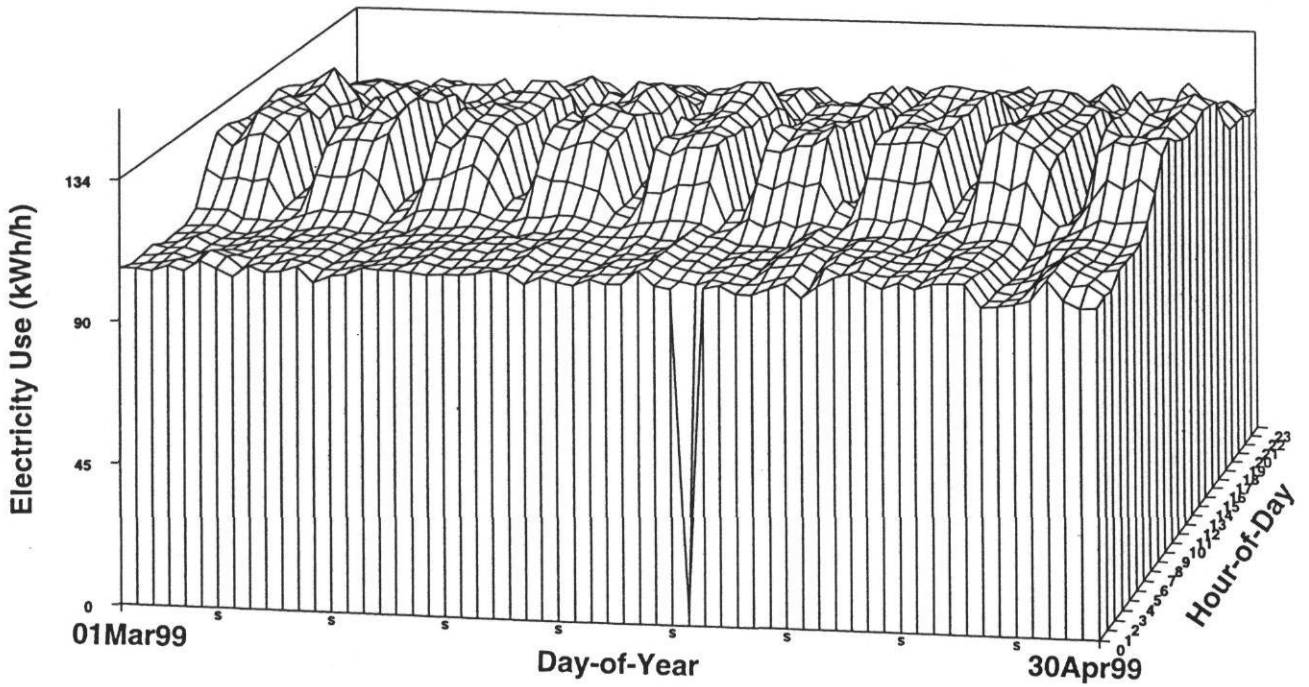


Municipal Court Building - City of Austin - April 1999

### Whole-Building Electric



### Whole-Building Electric

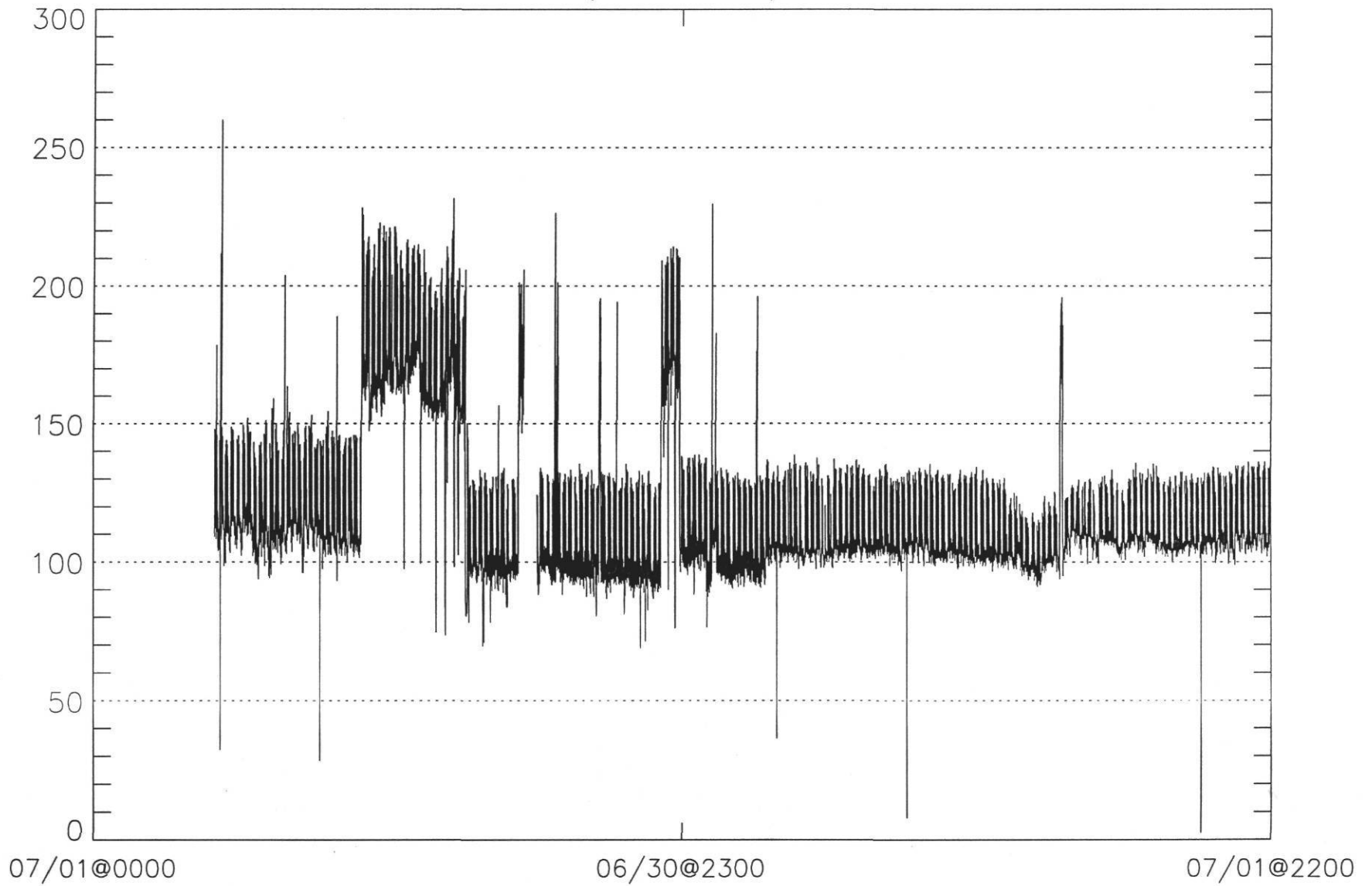


Sundays are marked with an "S"

Municipal Court Building - City of Austin - April 1999



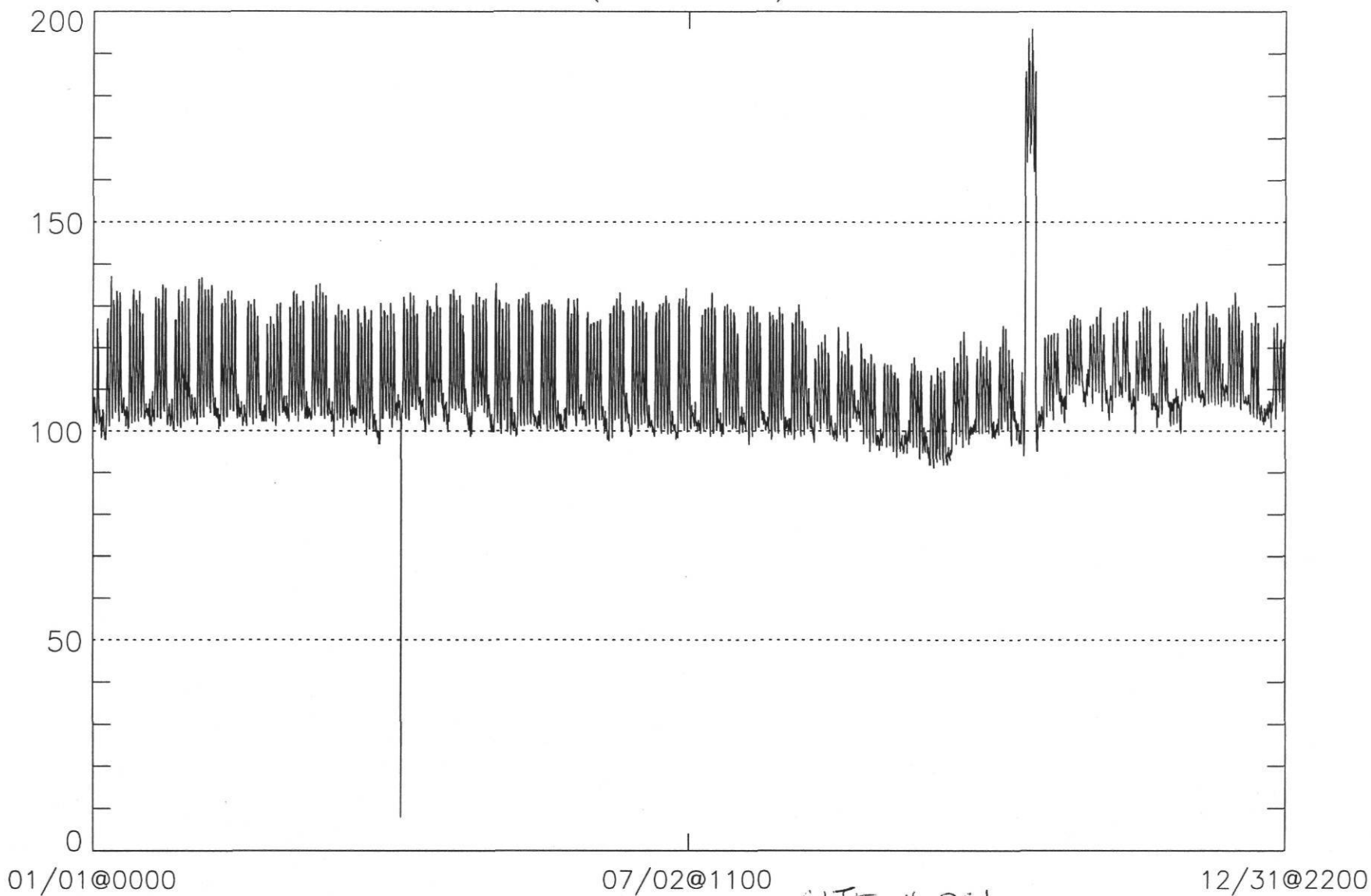
(ch2236) WBE



SITE # 241 MUNICIPAL COURT BLDG

07/95 - 07/99.

(ch2236) WBE



SITE # 241

01/98 - 12/98

**Site: 529                      State Headquarters (Sta)**

Mecr id:            TAMU3200  
Start date:        04/26/1996

Energy Type:      default  
Construction  
    begin:        04/26/1996            end: 04/26/1996  
Area:             123961.00

Facility:         Texas A\&M University

Contact Info:     Mr. Charles Darnell, Jr.  
                   Physical Plant Administration  
                   Texas A\&M University  
                   (409) 845--5318  
                   Gene Stewart  
                   (409) 845--5511

## State Headquarters

Texas A&M University  
123,961 square feet

### Site Contact

Charles Darnell, Jr.  
Physical Plant Administration  
Texas A&M University  
(409) 845-5318  
Gene Stewart  
(409) 845-5511

### ESL Metering Contact

Namir Saman  
053A WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409) 845-9213

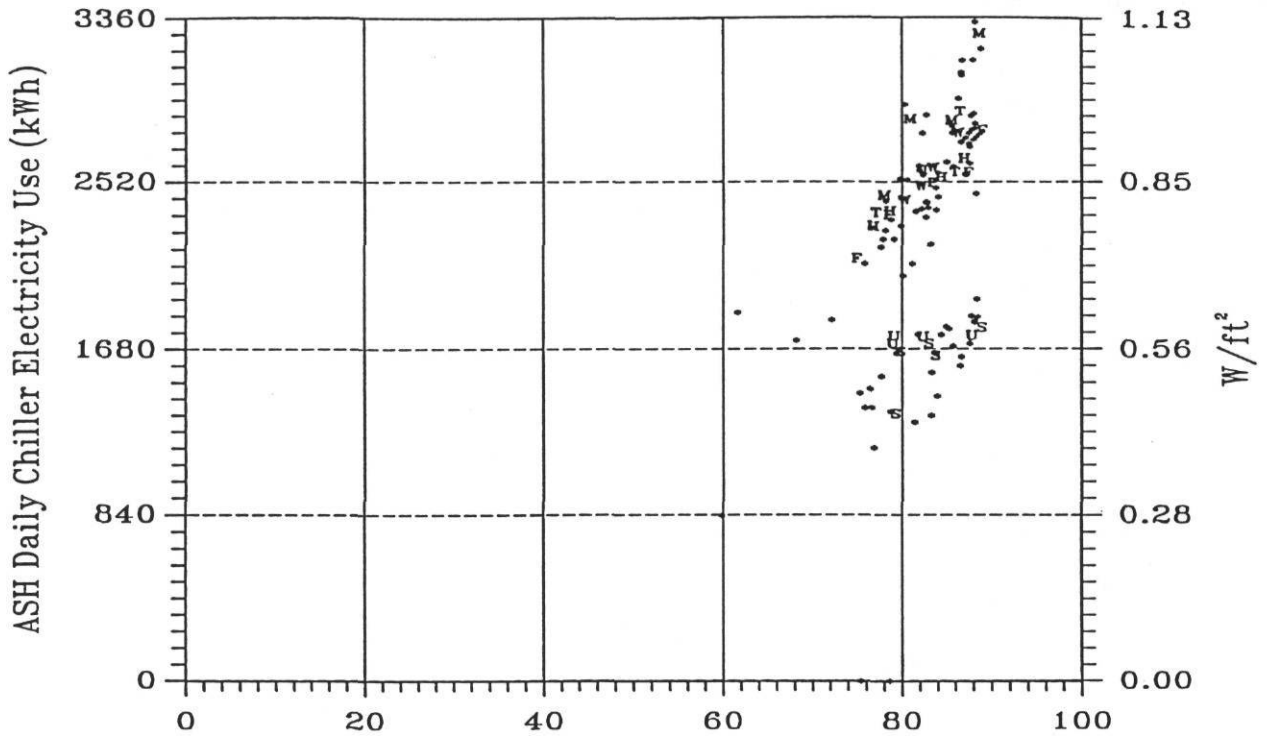
## Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	271632 kWh	100	\$0.02788	\$7573
Peak 60 Minute Demand	606 kW	100	-	-
Chilled Water	- MMBtu	-	-	-
Hot Water	- MMBtu	-	-	-

Peak 60 minute demand was recorded at 1100 Monday 08/05/96.  
There were 744 hours in this month.

Comments

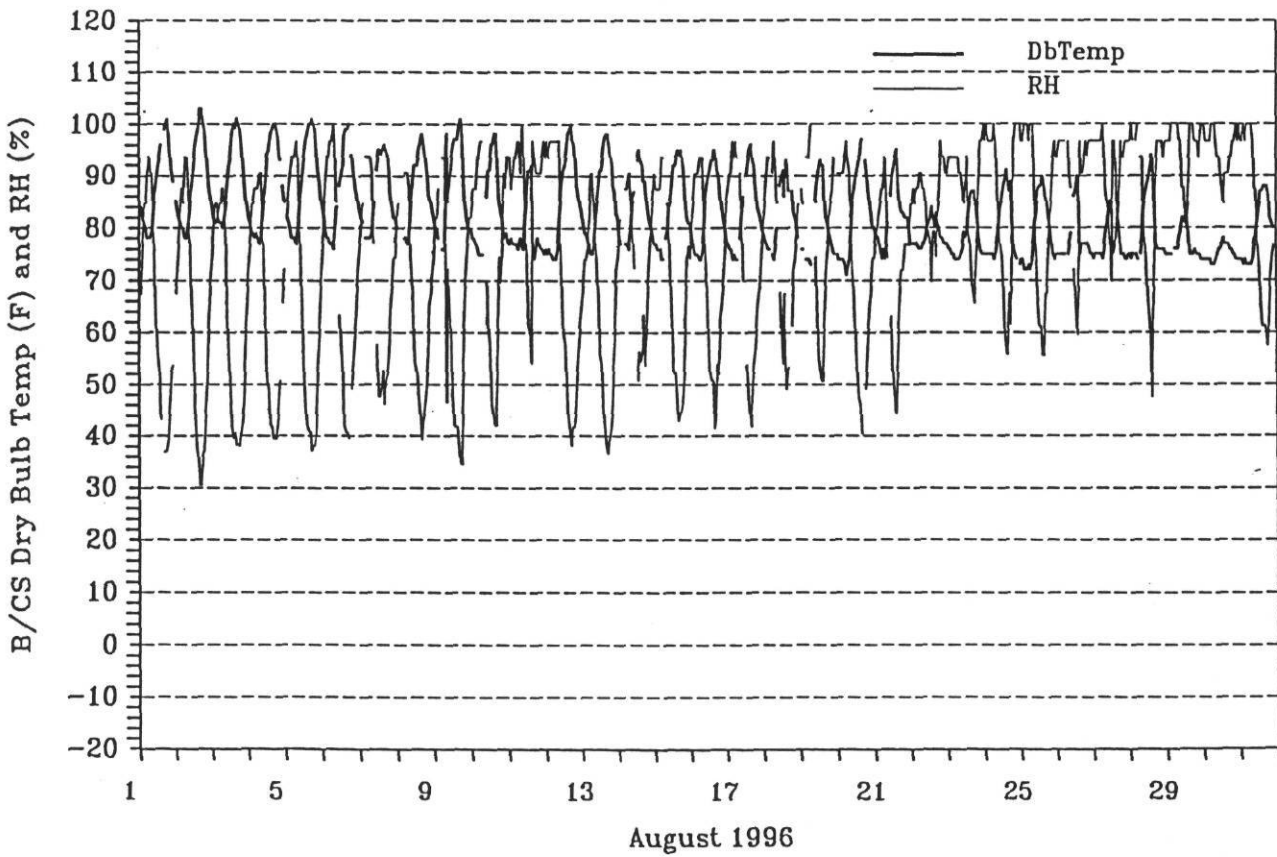
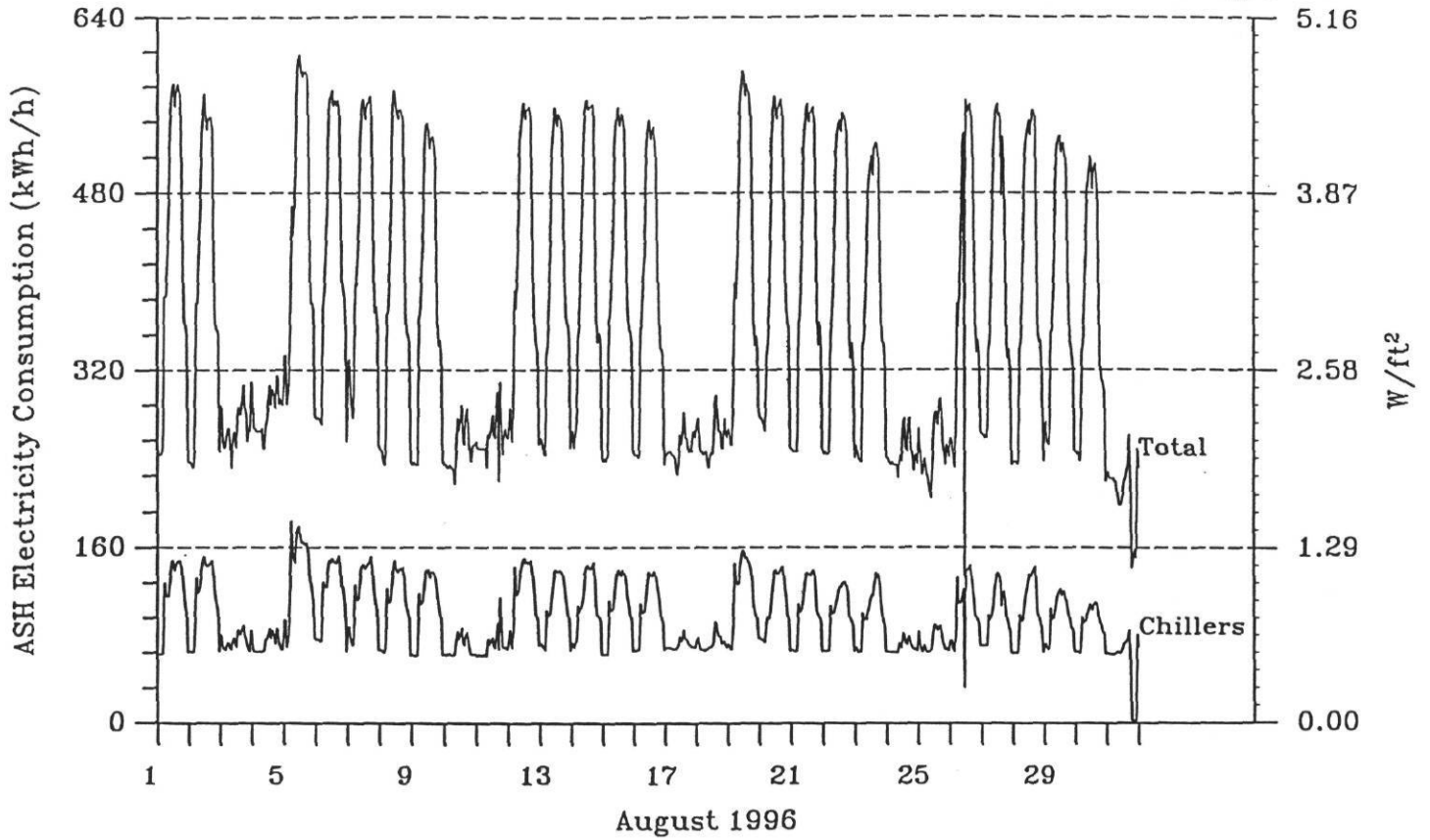
State Headquarters - Texas A&M University - August 1996



Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

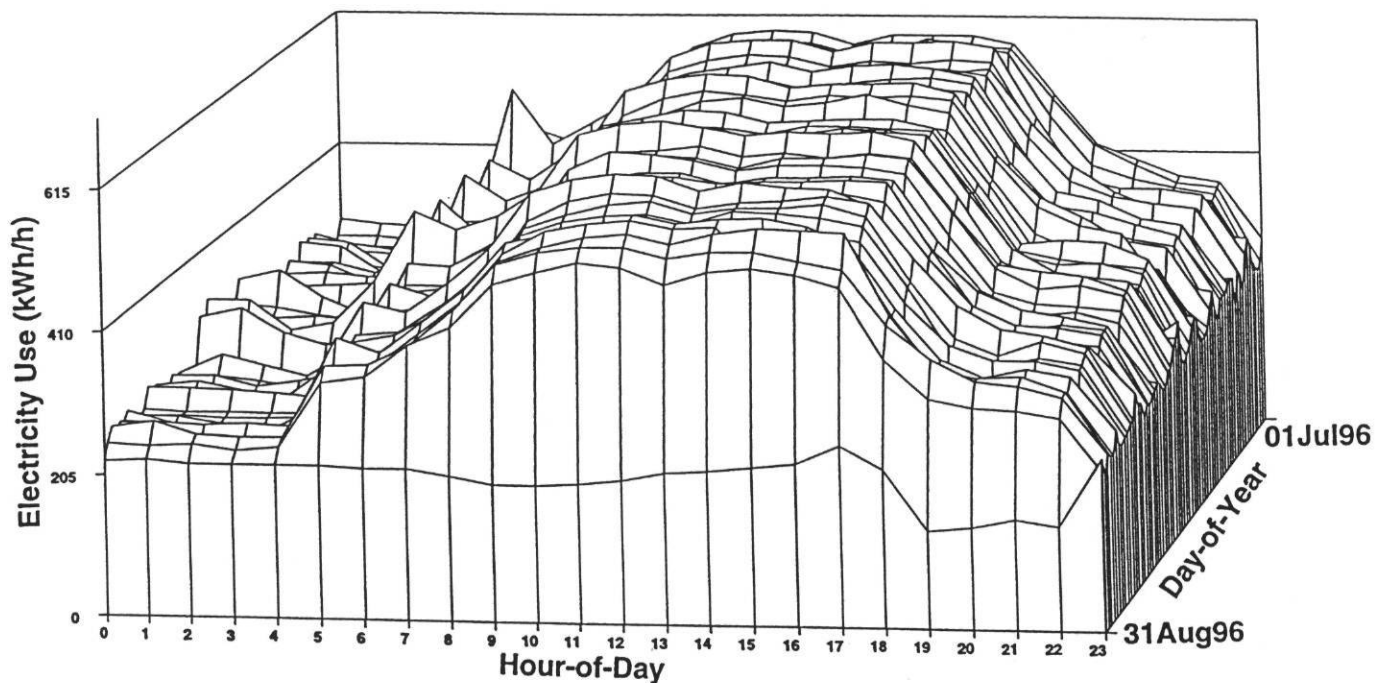
Points from this month last year are shown as +.  
All other points are shown as \*.

State Headquarters - Texas A&M University - August 1996

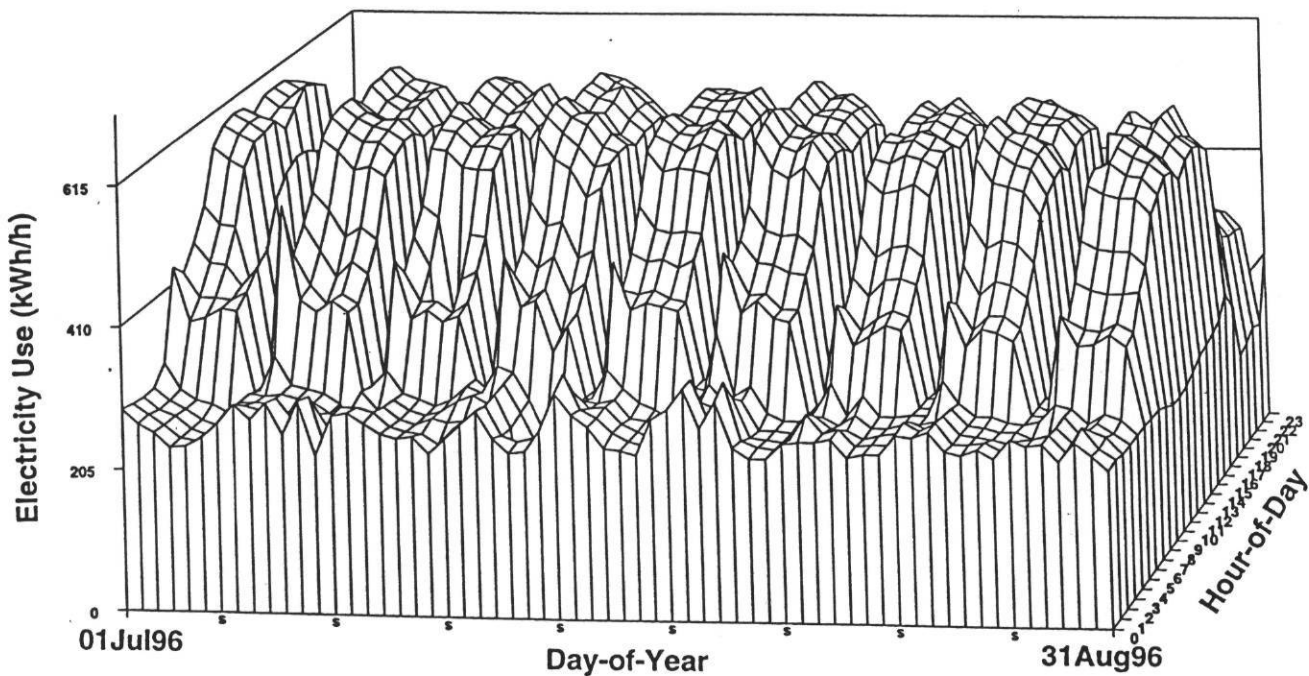


State Headquarters - Texas A&M University - August 1996

### Whole-Building Electric



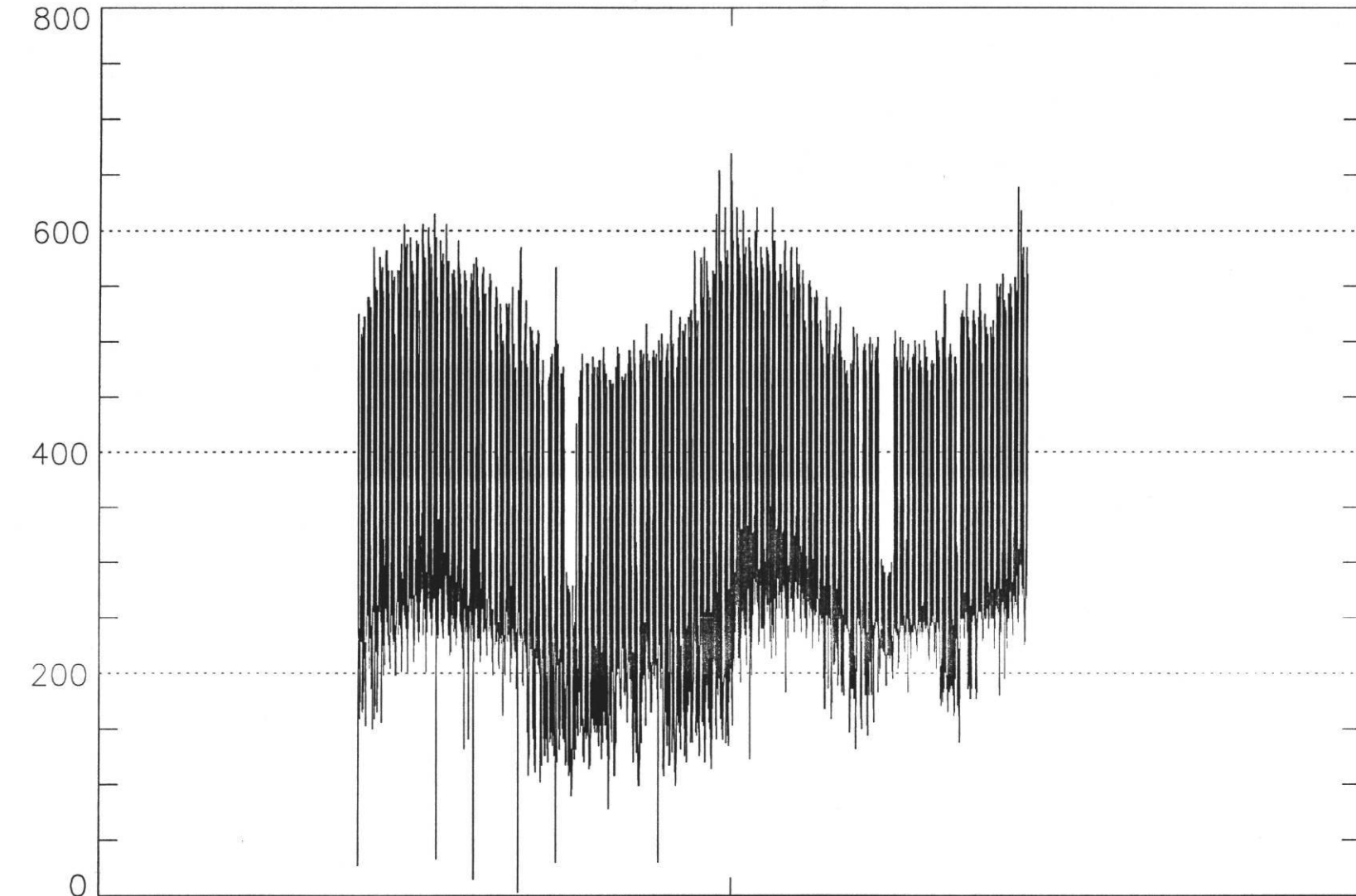
### Whole-Building Electric



Sundays are marked with an "S"

State Headquarters - Texas A&M University - August 1996

(ch2836) WBE



07/01@0000

06/30@2300

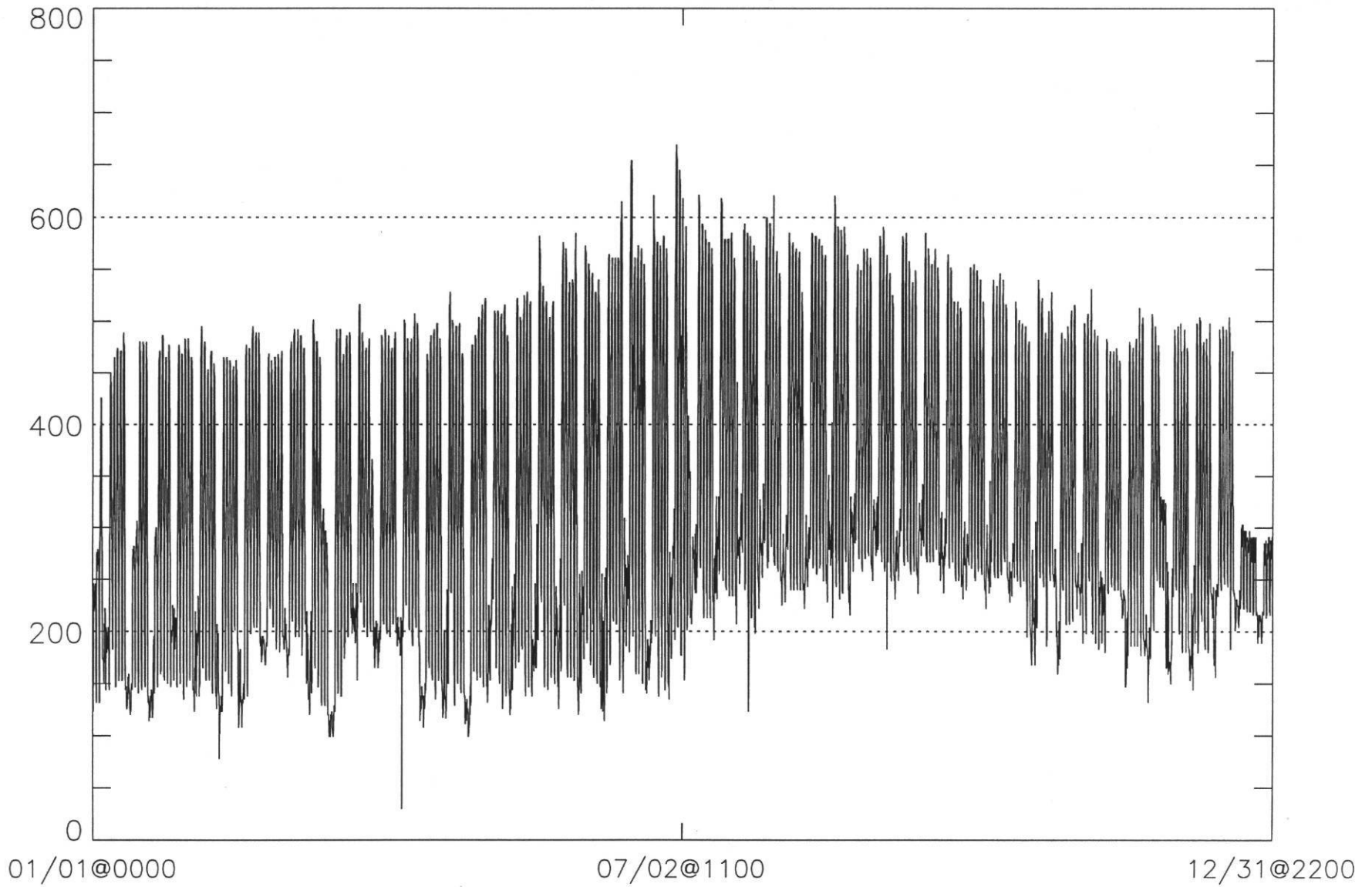
07/01@2200

SITE # 529 STATE HEADQUARTER.

07/95 - 07/99



(ch2836) WBE



SITE # 529

01/97 - 12/97

lstarxp% listsite 703

**Site: 703                    Administration Bldg. (Adm)**

---

Mecr id:

Start date:

Energy Type: default

Construction

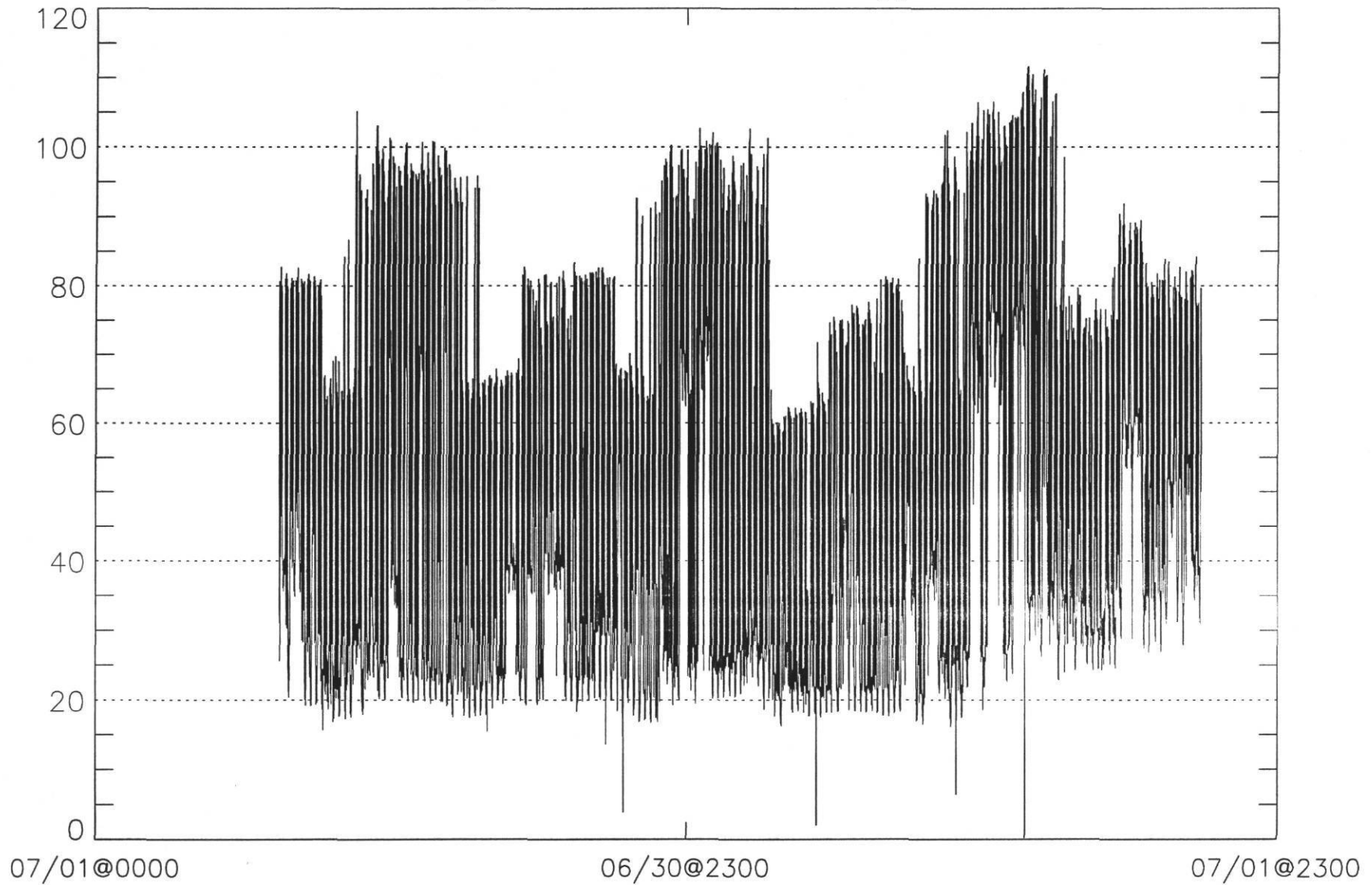
begin: 09/08/1993                    end: 06/16/1994

Area: 80000.00

Facility: Minnesota - Capitol Complex

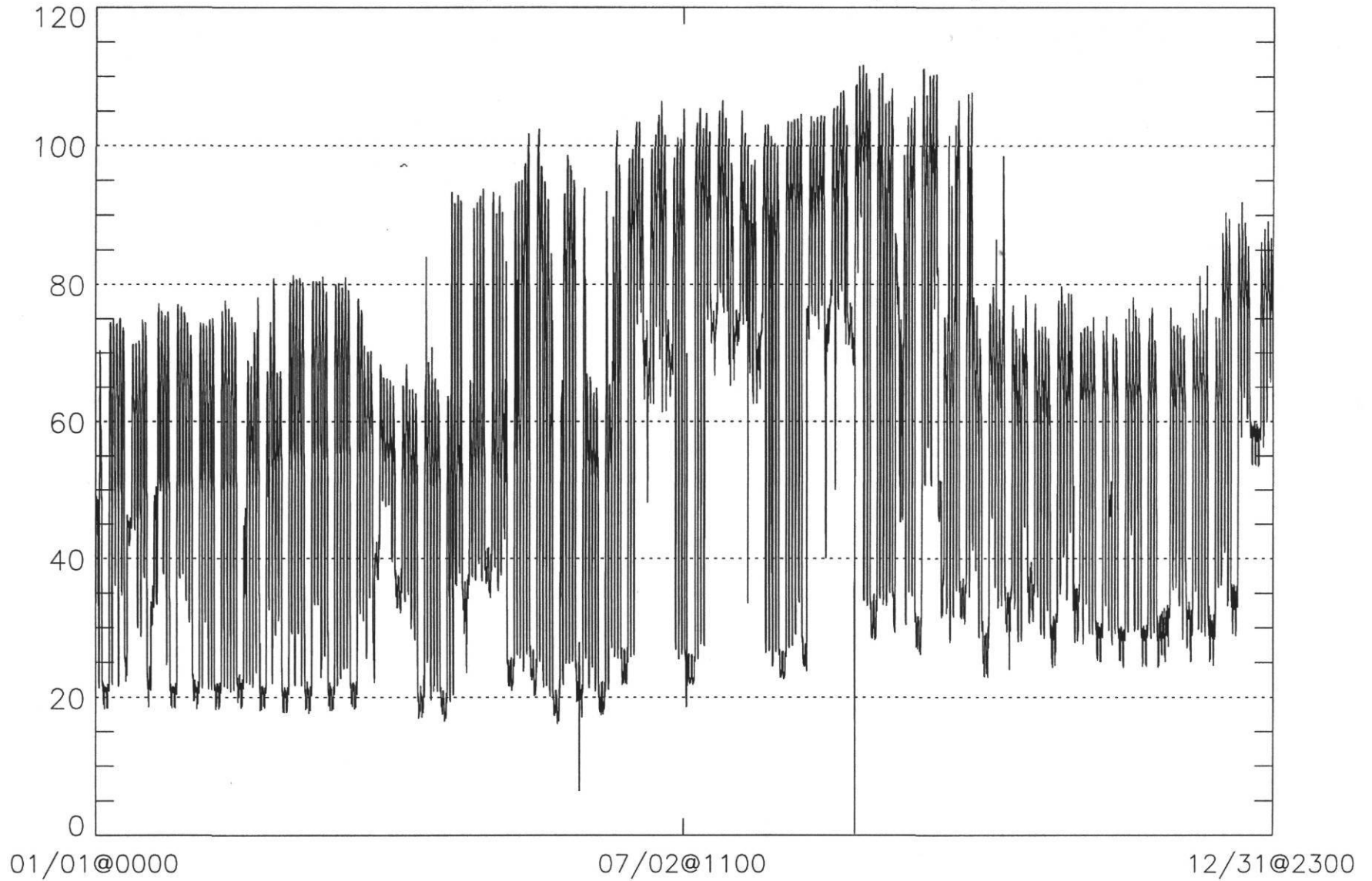
Contact Info: Rajan Thomas

((ch2478+ch2479)) WBE



SITE # 703 ADMIN BLDG, MINNESOTA  
07/95 - 07/99

((ch2478+ch2479)) WBE



SITE # 703

01/98 - 12/98

lstarxp% listsite 704

**Site: 704                    Judicial Building (Jud)**

Mecr id:

Start date:

Energy Type: default

Construction

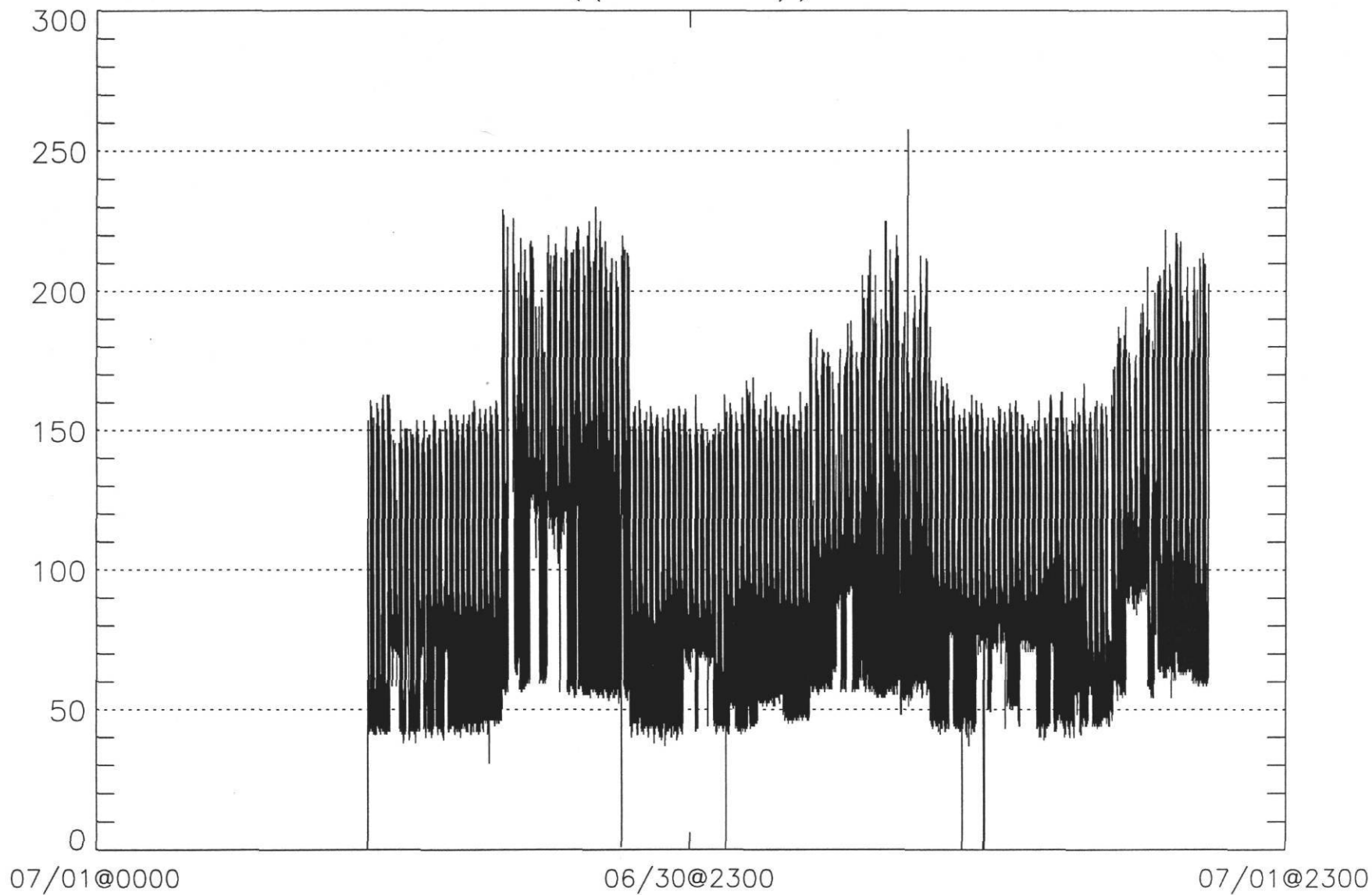
begin:            07/22/1994                    end: 06/23/1995

Area:            200829.00

Facility:            Minnesota - Capitol Complex

Contact Info: Rajan Thomas

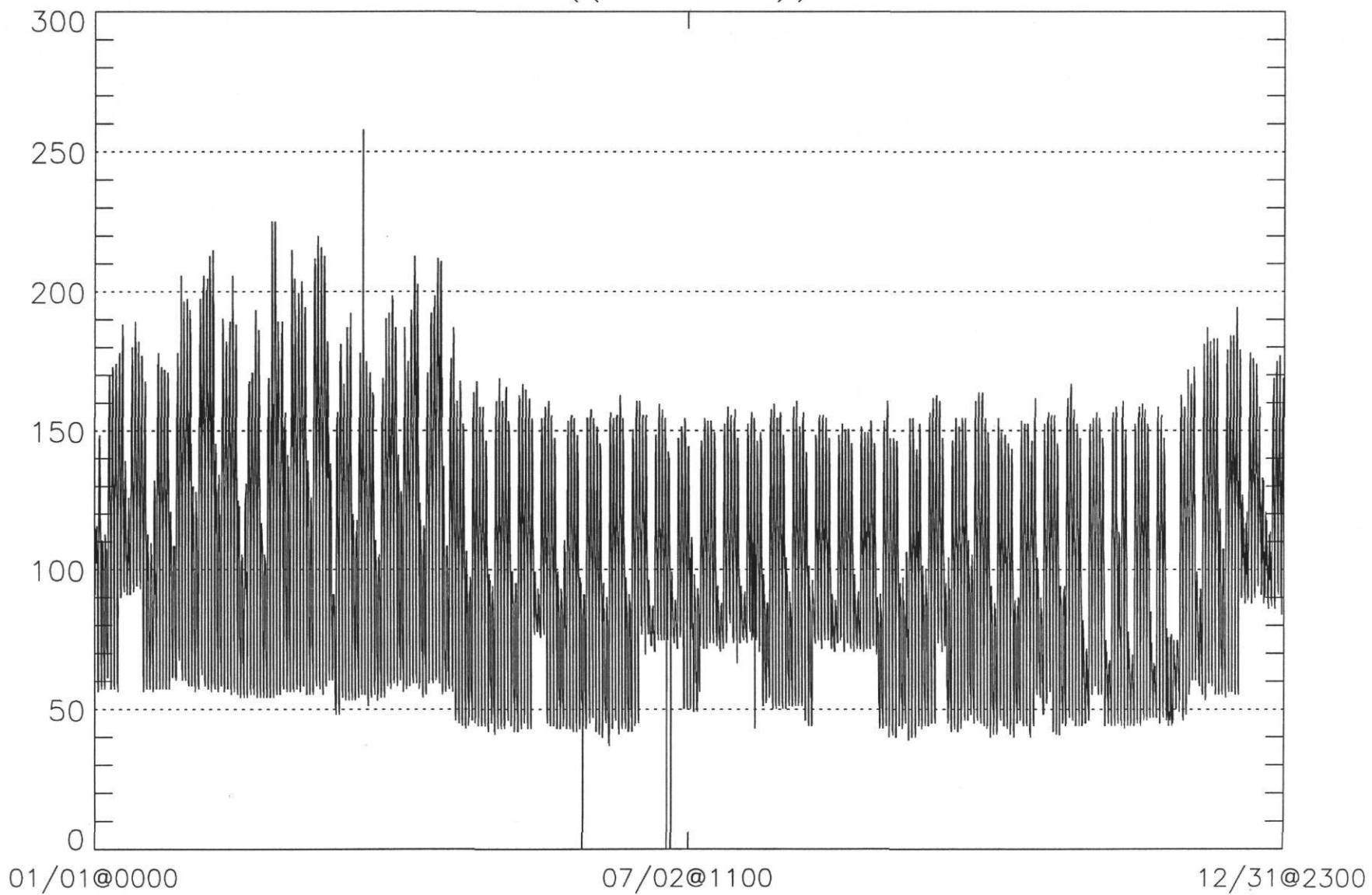
((ch2484)) WBE



SITE # 704 Judicial Bldg.

07/95 - 07/99

((ch2484)) WBE



SITE # 704

01/98 - 12/98

lstarxp% listsite 705

**Site: 705                    Health Building (Hea)**

Mecr id:

Start date:

Energy Type: default

Construction

begin:            07/22/1994                    end: 06/23/1995

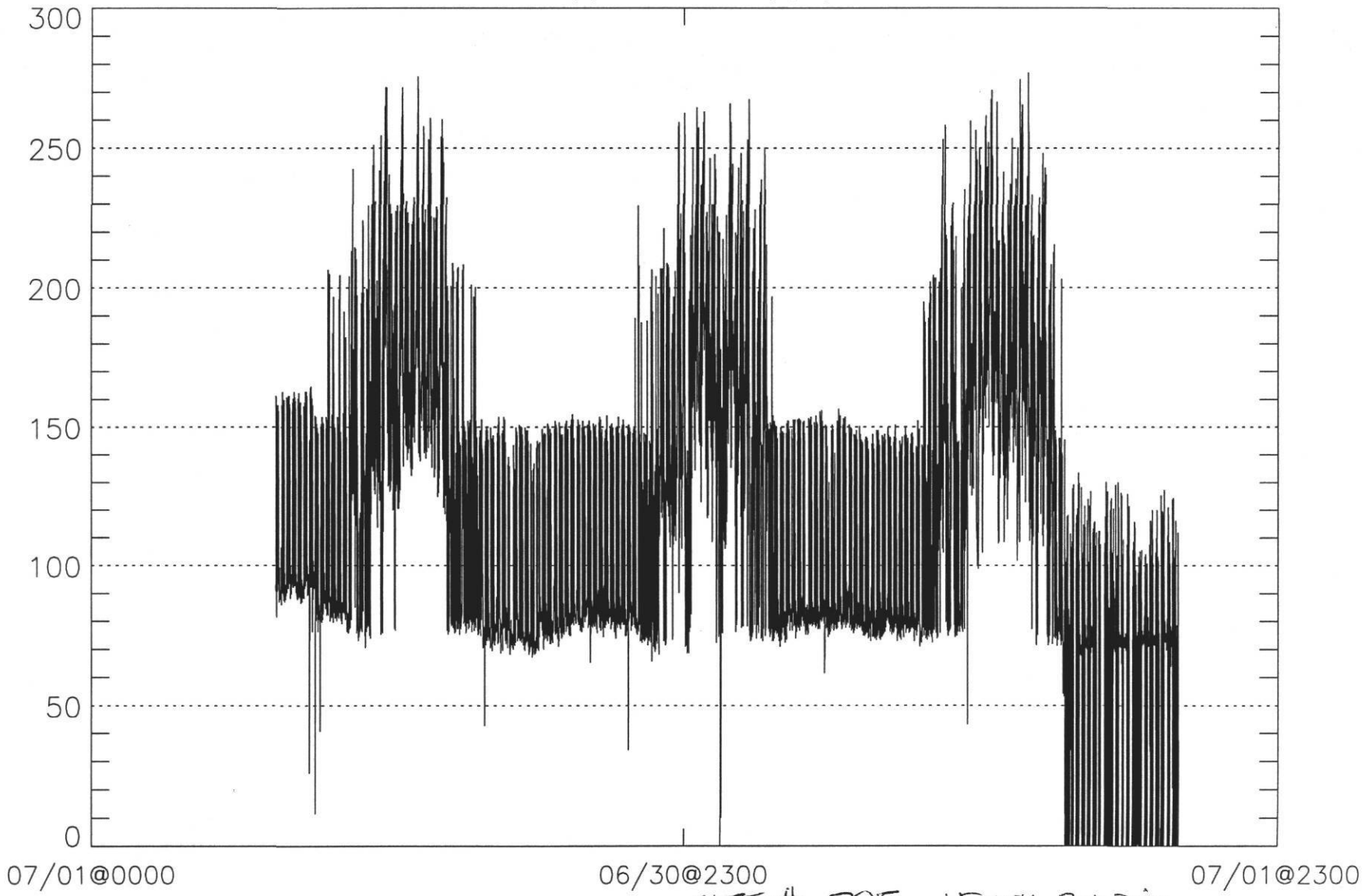
Area:            197260.00

Facility:            Minnesota - Capitol Complex

Contact Info: Rajan Thomas

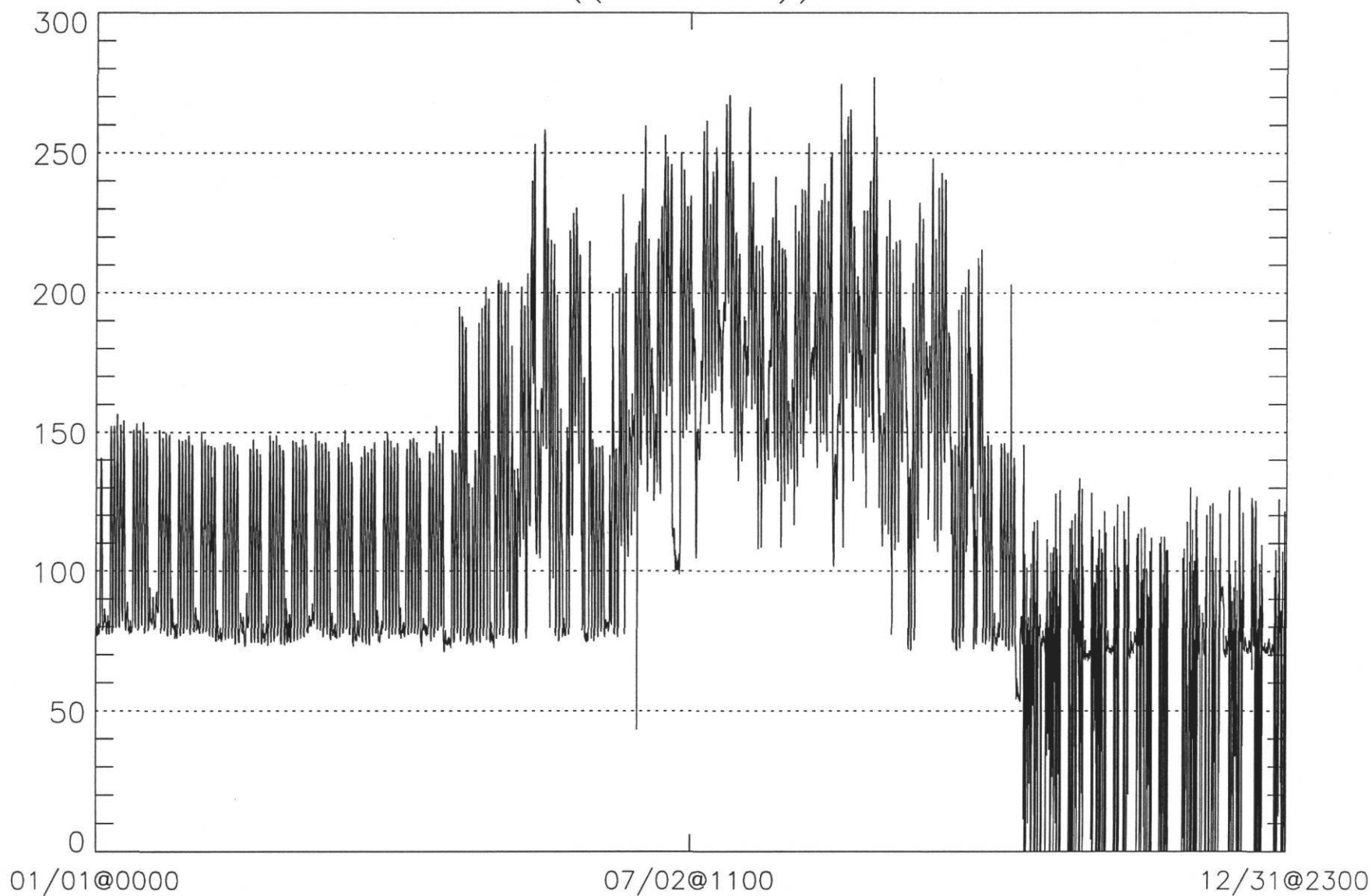


((ch2491)) WBE



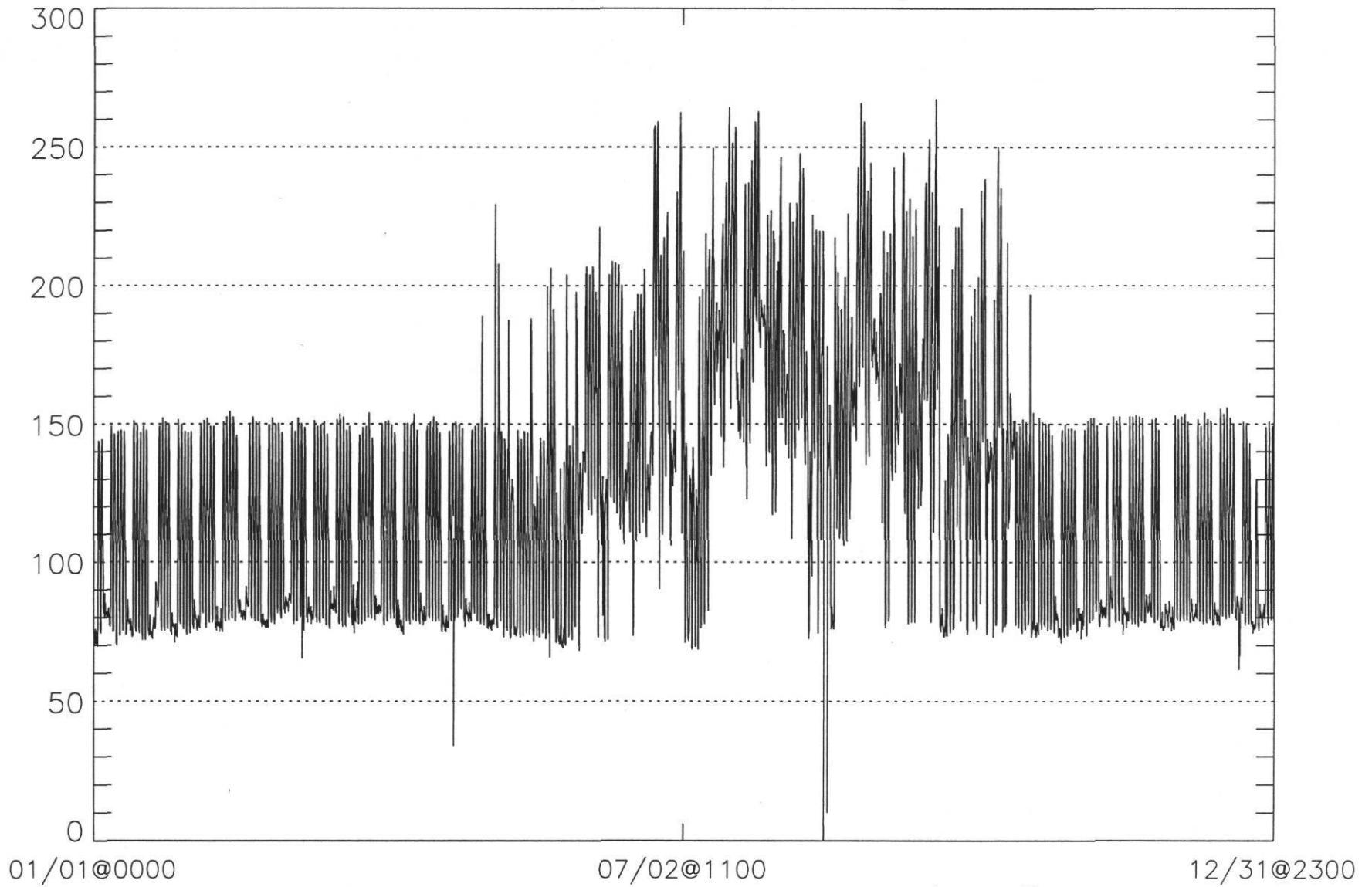
SITE # 705 HEALTH BUILDING.  
07/95 - 07/99

((ch2491)) WBE



SITE # 705  
01/98 - 12/98

((ch2491)) WBE



SITE # 705

01/97 - 02/97

lstarxp% listsite 706

**Site: 706**      **Ford Building (For)**

Mecr id:

Start date:

Energy Type: default

Construction

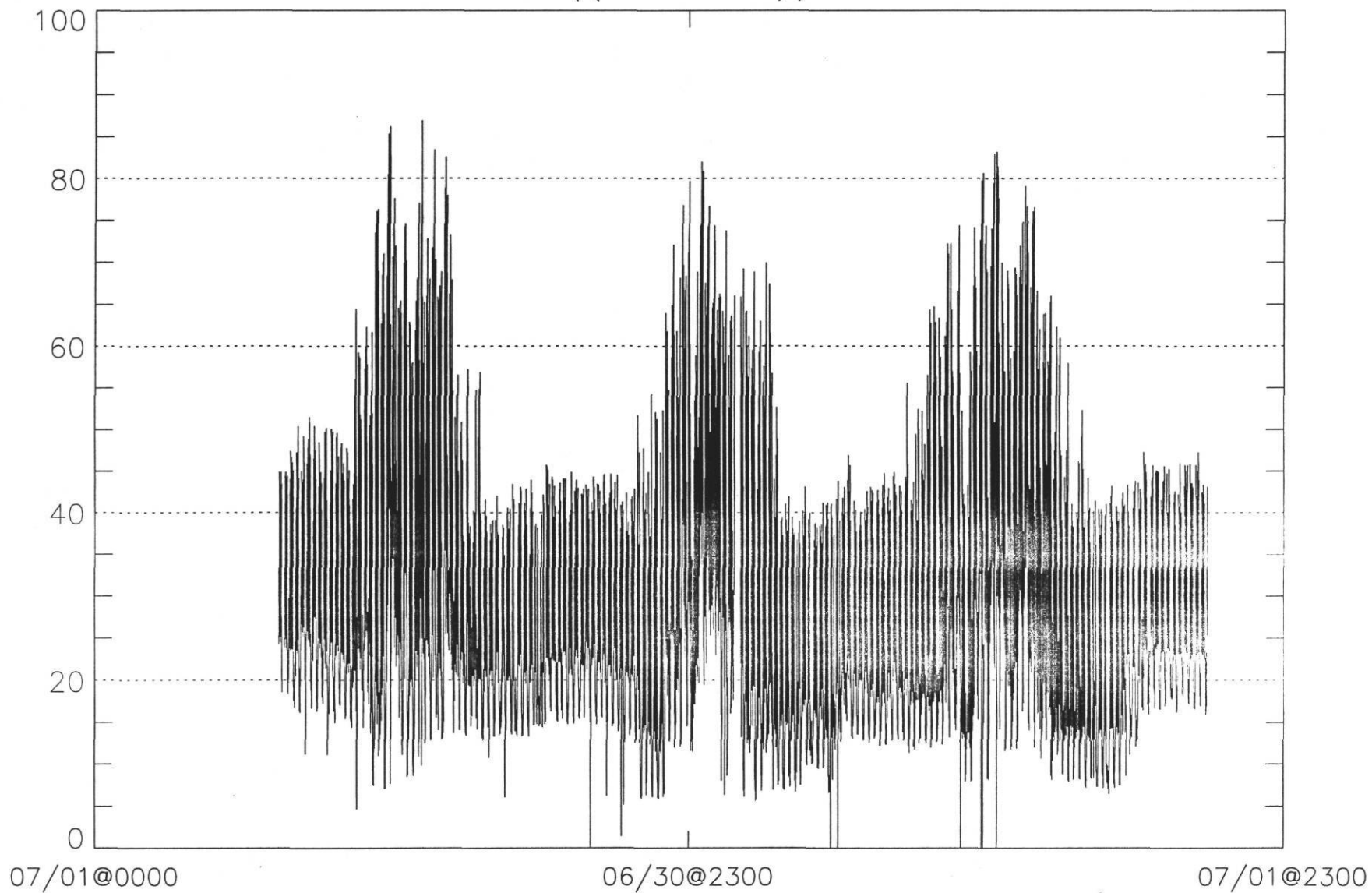
begin: 09/02/1994      end: 04/05/1995

Area: 57047.00

Facility: Minnesota - Capitol Complex

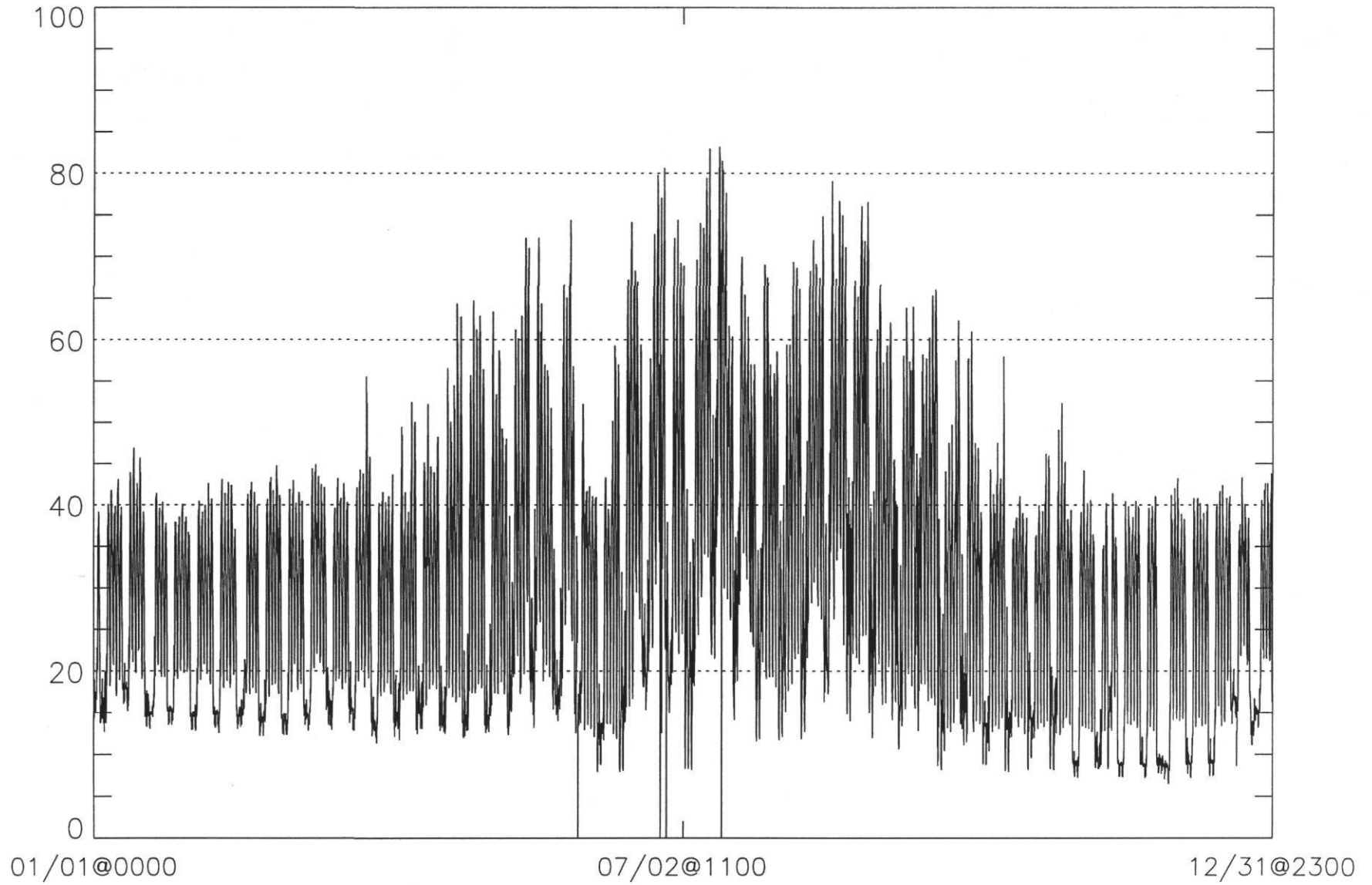
Contact Info: Rajan Thomas

((ch2518)) ~~WBE~~ WBE



SITE 706 FORD Bldg,  
07/95 - 07/99

((ch2518)) WBE



SITE # 706

01/98 - 12/98

lstarxp% listsite 707

**Site: 707            State Office Bldg. (Sta)**

Mecr id:

Start date:

Energy Type: default

Construction

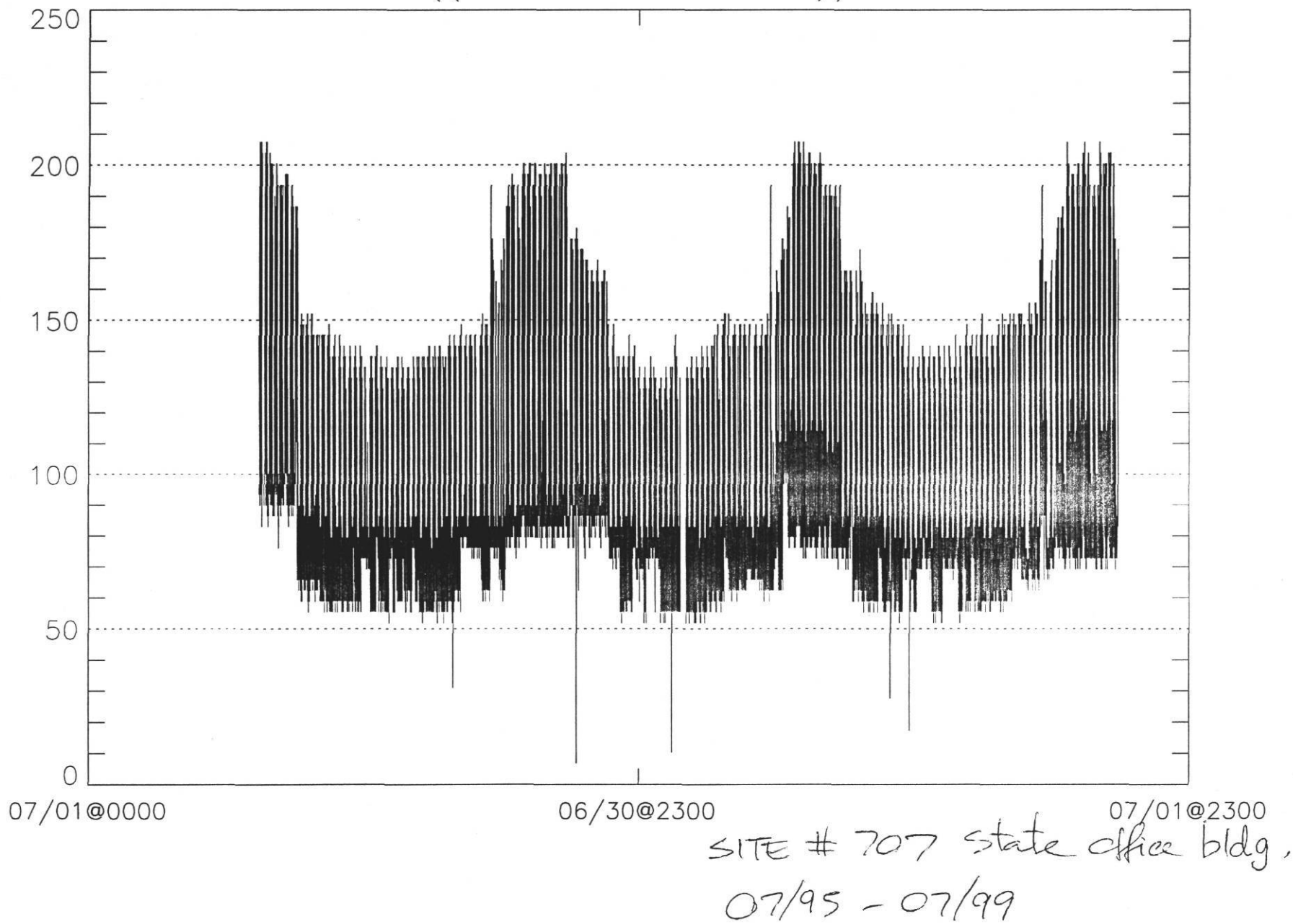
begin: 06/13/1994            end: 12/28/1994

Area: 281850.00

Facility: Minnesota - Capitol Complex

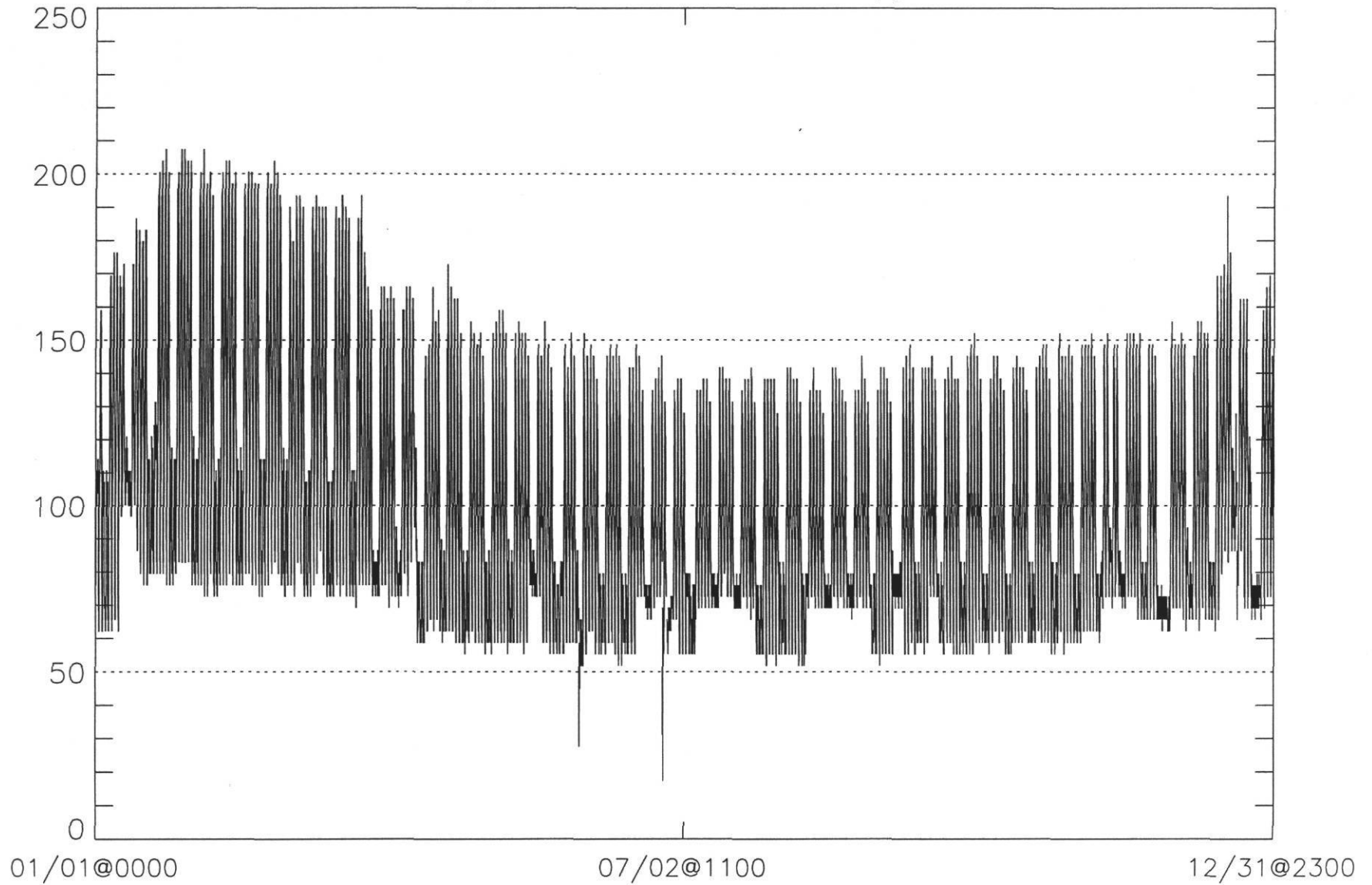
Contact Info: Rajan Thomas

((ch2515+ch2516)) WBE





((ch2515+ch2516)) WBE



SITE # 707

01/98 - 12/98

lstarxp% listsite 708

**Site: 708      Dept. of Transportation Bldg. (Dep)**

Mecr id:

Start date:

Energy Type: default

Construction

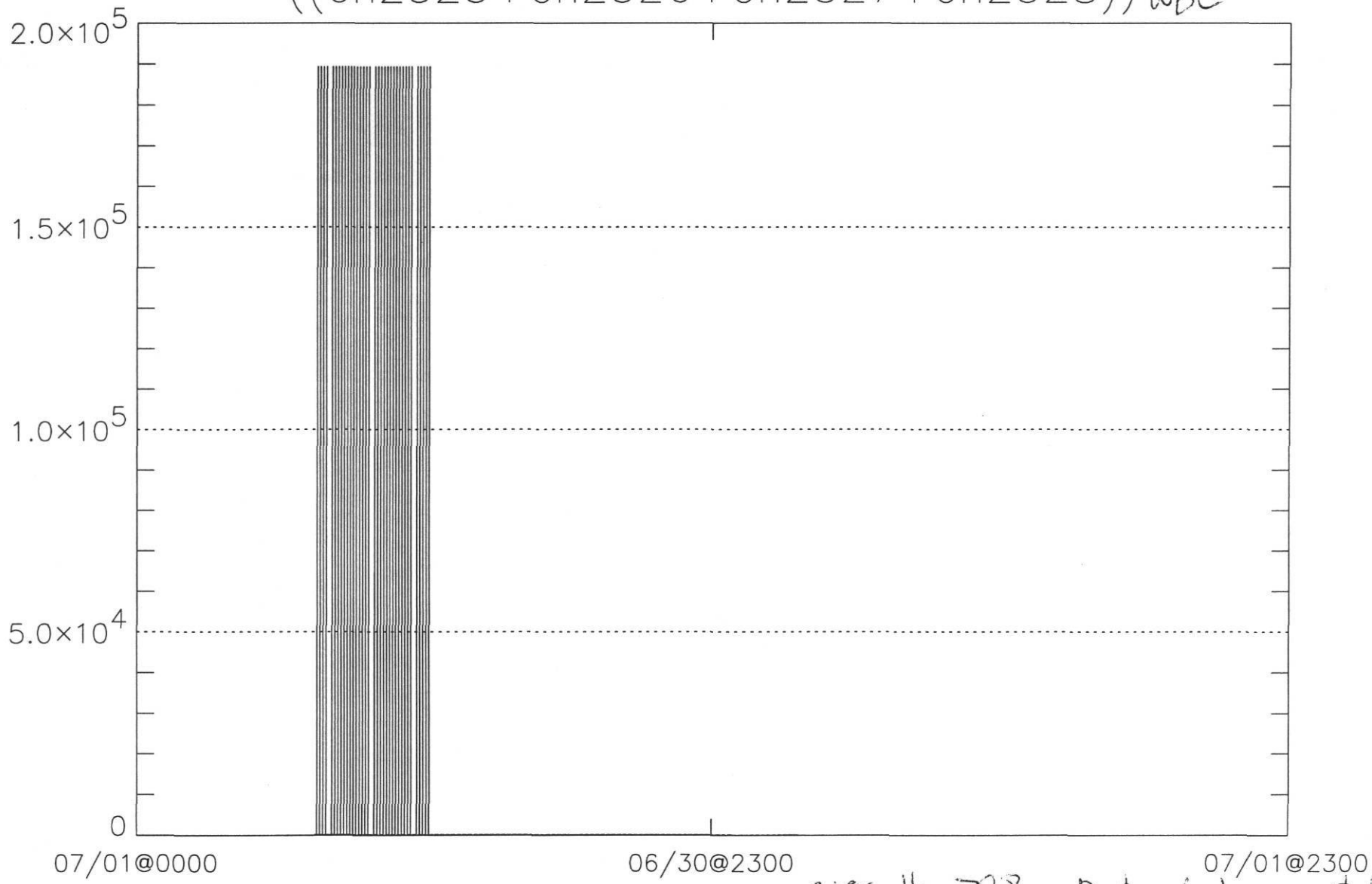
begin: 06/13/1994      end: 12/28/1994

Area: 378100.00

Facility: Minnesota - Capitol Complex

Contact Info: Rajan Thomas

((ch2525+ch2526+ch2527+ch2528)) WBE



SITE # 708 Dept. of transportation.  
07/95 - 07/99

lstaraxp% listsite 709

**Site: 709                      Veterans Building (Vet)**

---

Mecr id:

Start date:

Energy Type: default

Construction

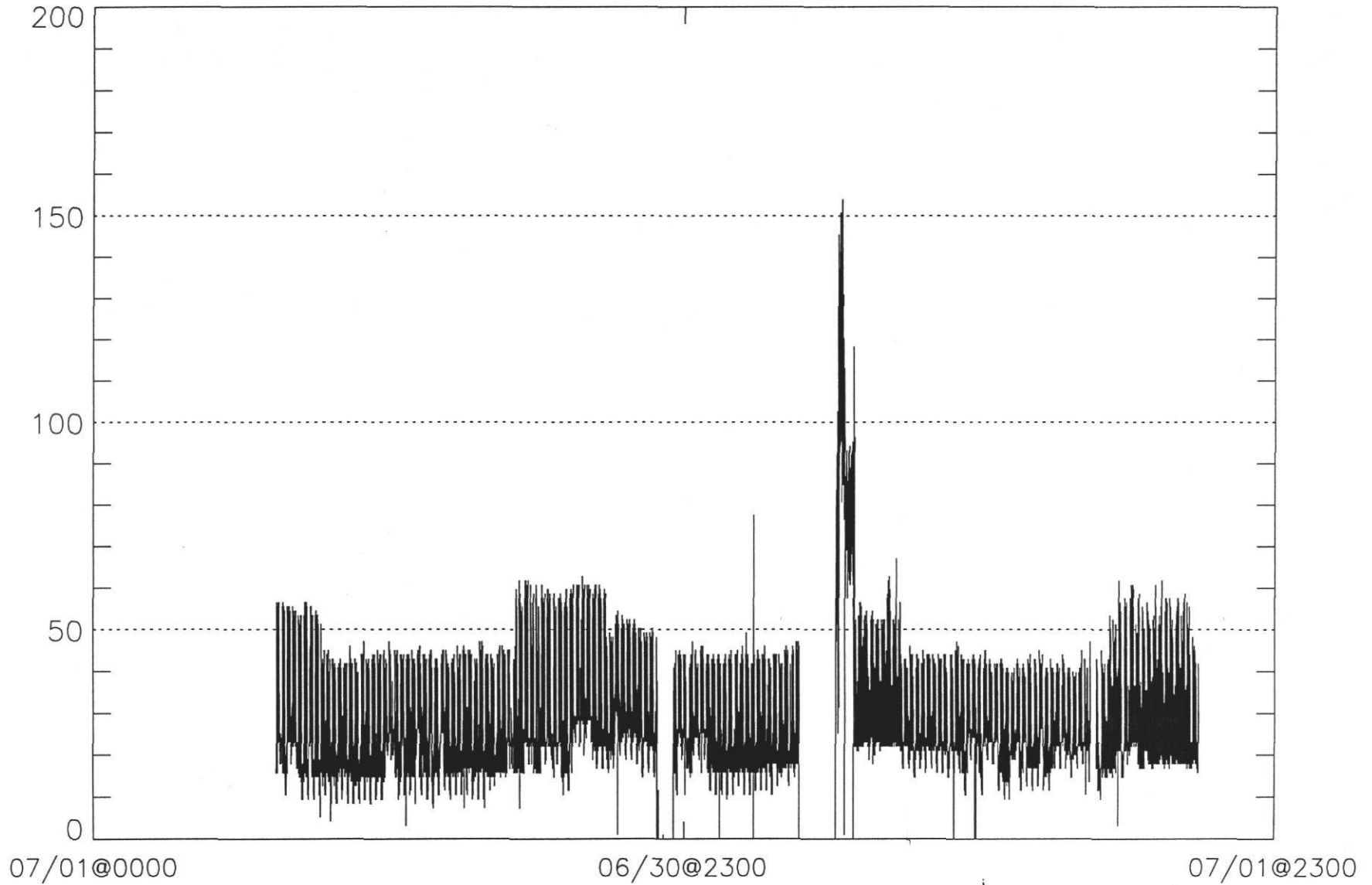
begin: 09/24/1994                      end: 04/05/1995

Area: 87664.00

Facility: Minnesota - Capitol Complex

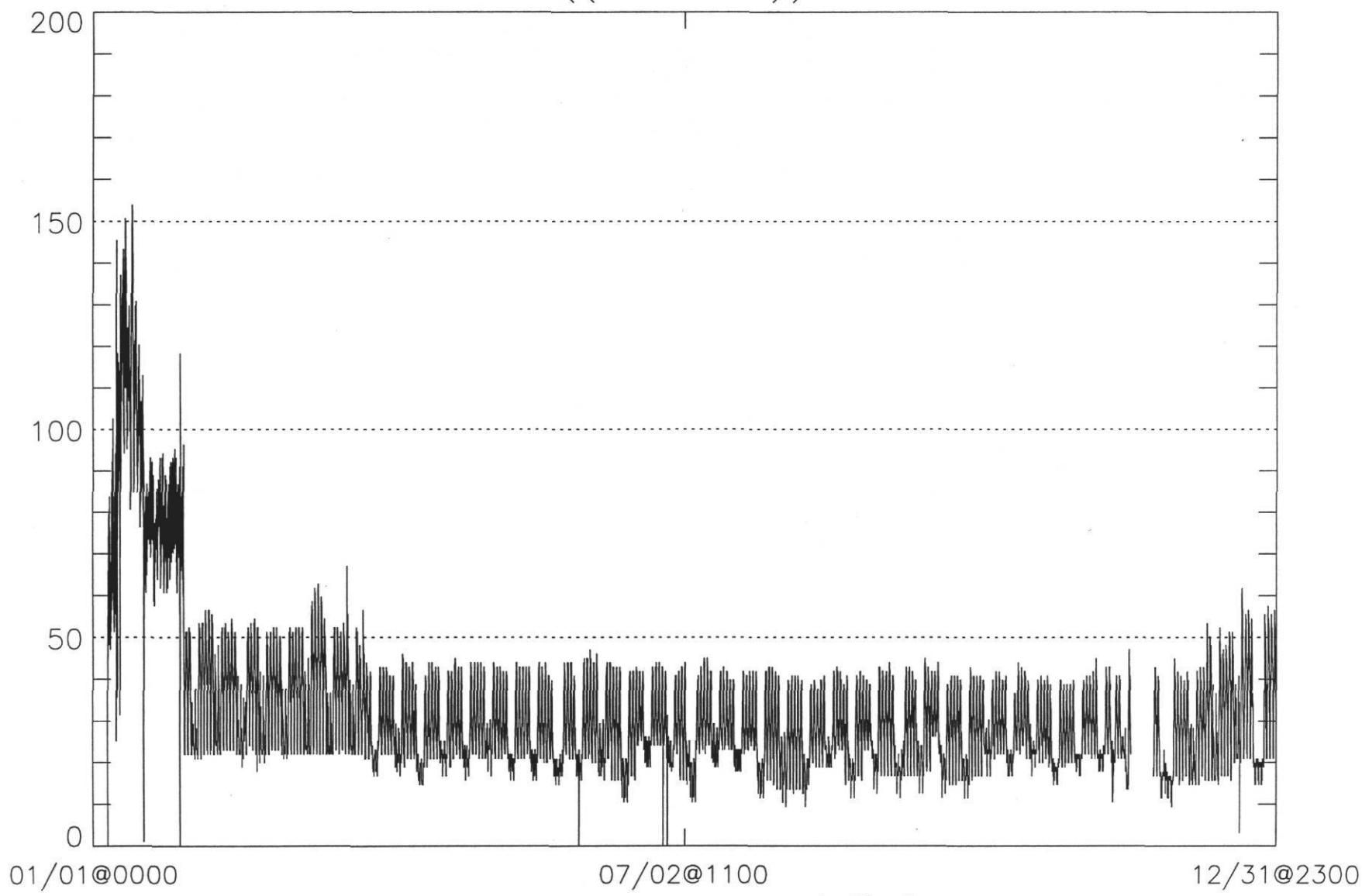
Contact Info: Rajan Thomas

((ch2532)) WBE



SITE # 709 Veterans Bldg.  
07/95 - 07/99

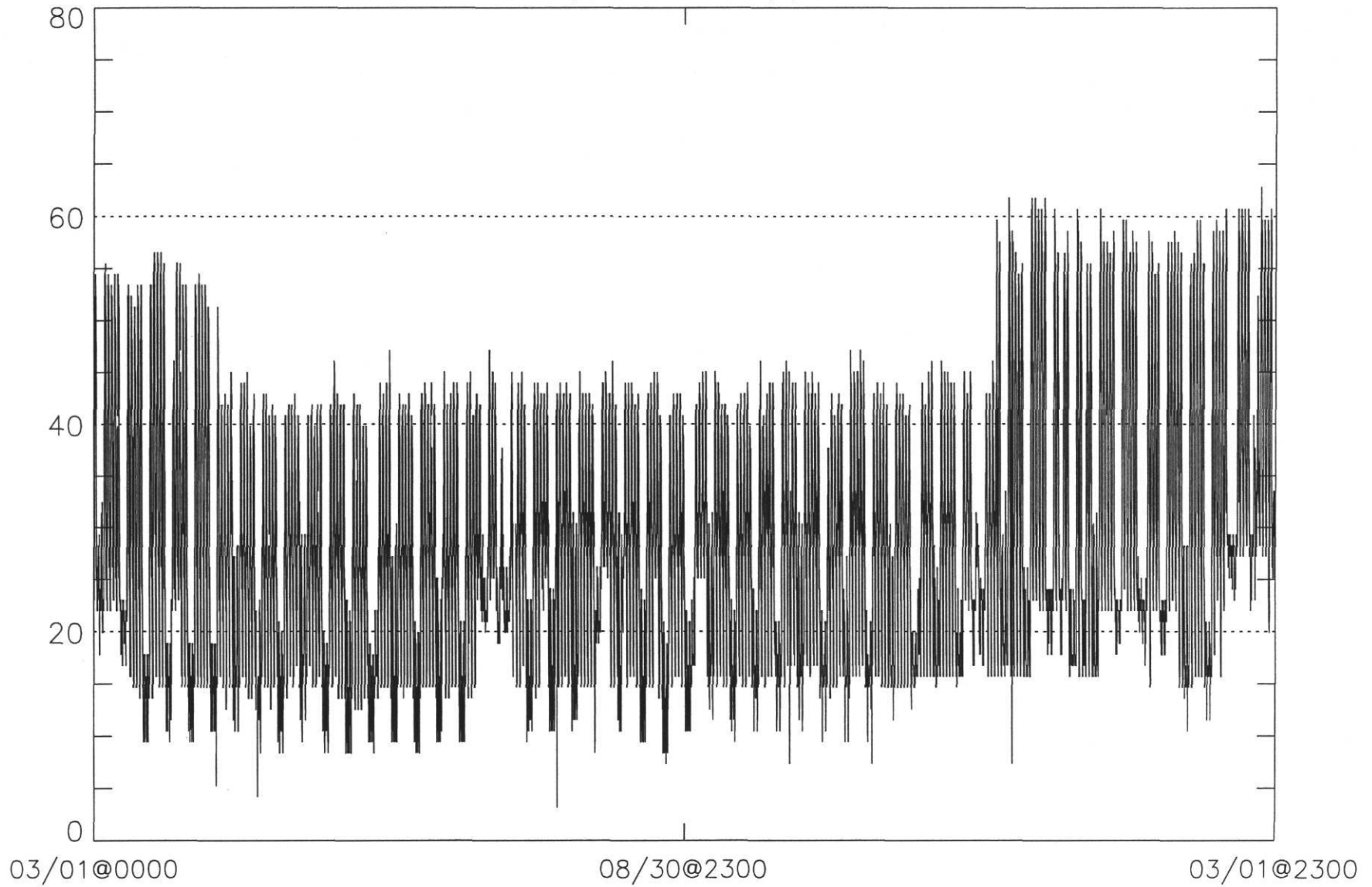
((ch2532)) WFE



SITE # 709

01/98 - 12/98

((ch2532)) WPE



SITE # 709

03/96 - 03/97

lstarxp% listsite 710

**Site: 710                      Capitol Building (Cap)**

---

Mecr id:

Start date:

Energy Type: default

Construction

begin: 07/01/1994                      end: 12/28/1994

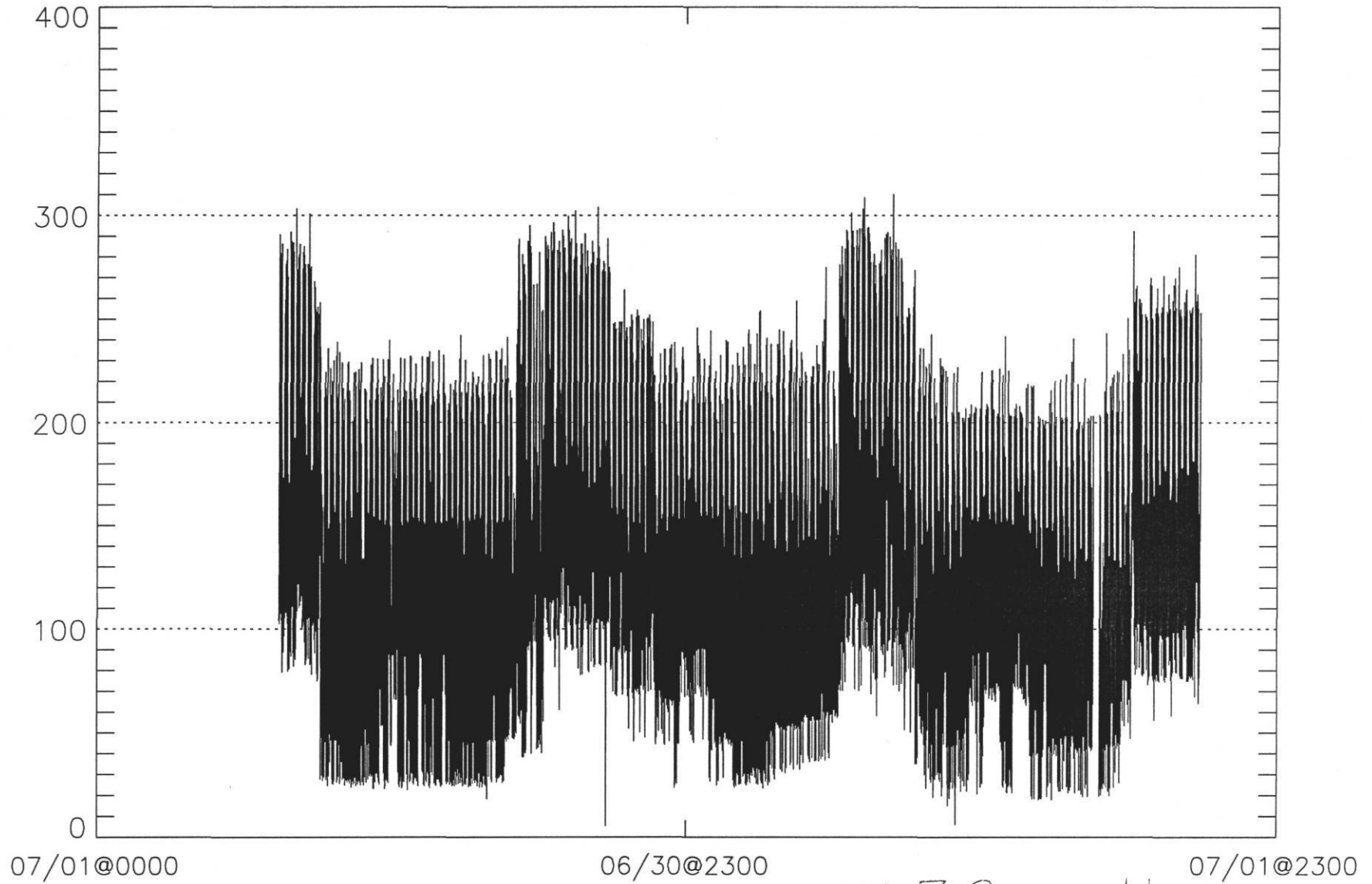
Area: 366805.00

Facility: Minnesota - Capitol Complex

Contact Info: Rajan Thomas

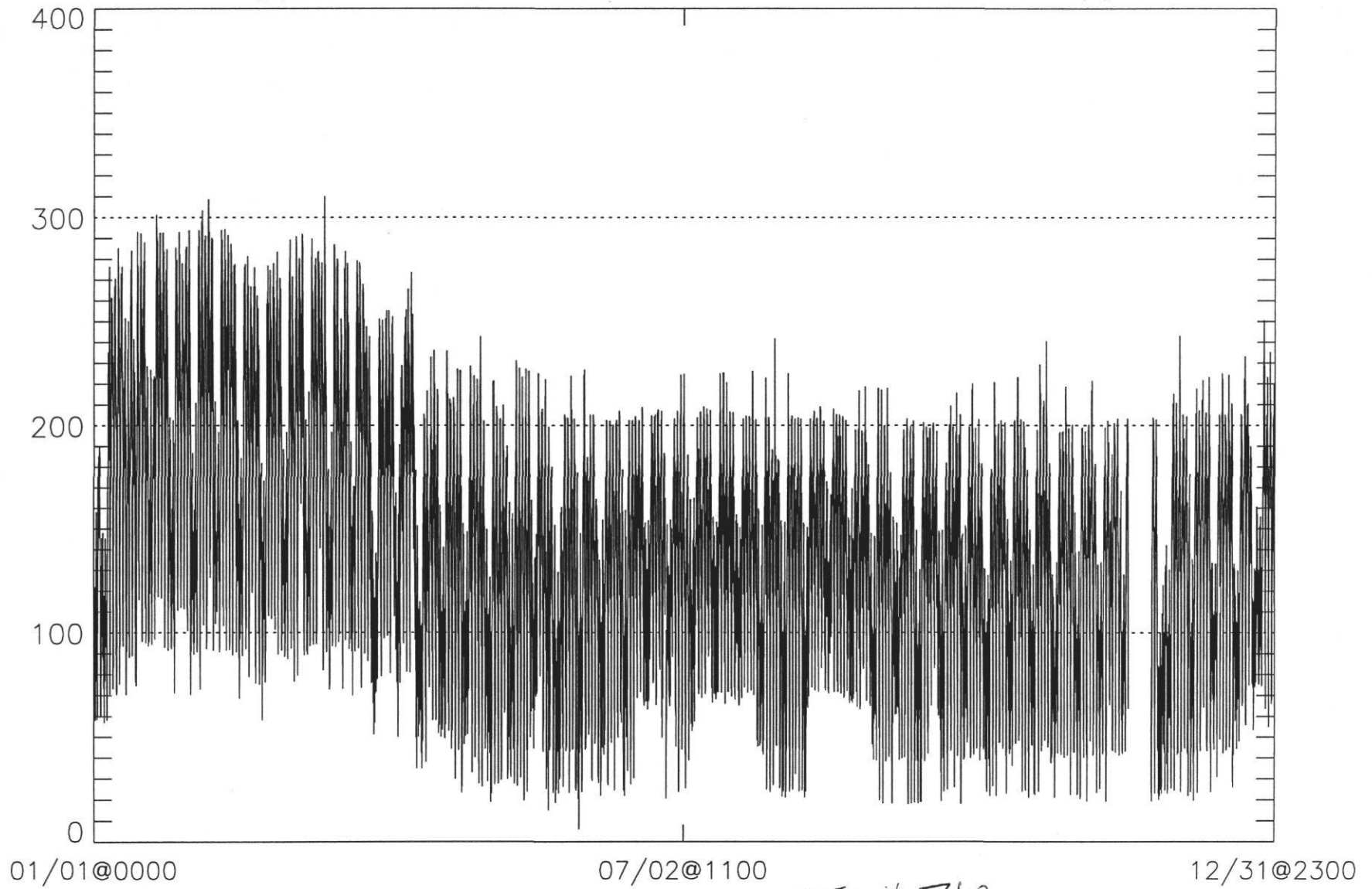


((ch2539+ch2540+ch2541+ch2542)) WBE



SITE # 710 capital bldg.  
07/99 - 07/99

((ch2539+ch2540+ch2541+ch2542)) WBE



site # 710

01/98 - 12/98

lstarxp% listsite 711

**Site: 711            Centennial Building (Cen)**

Mecr id:

Start date:

Energy Type: default

Construction

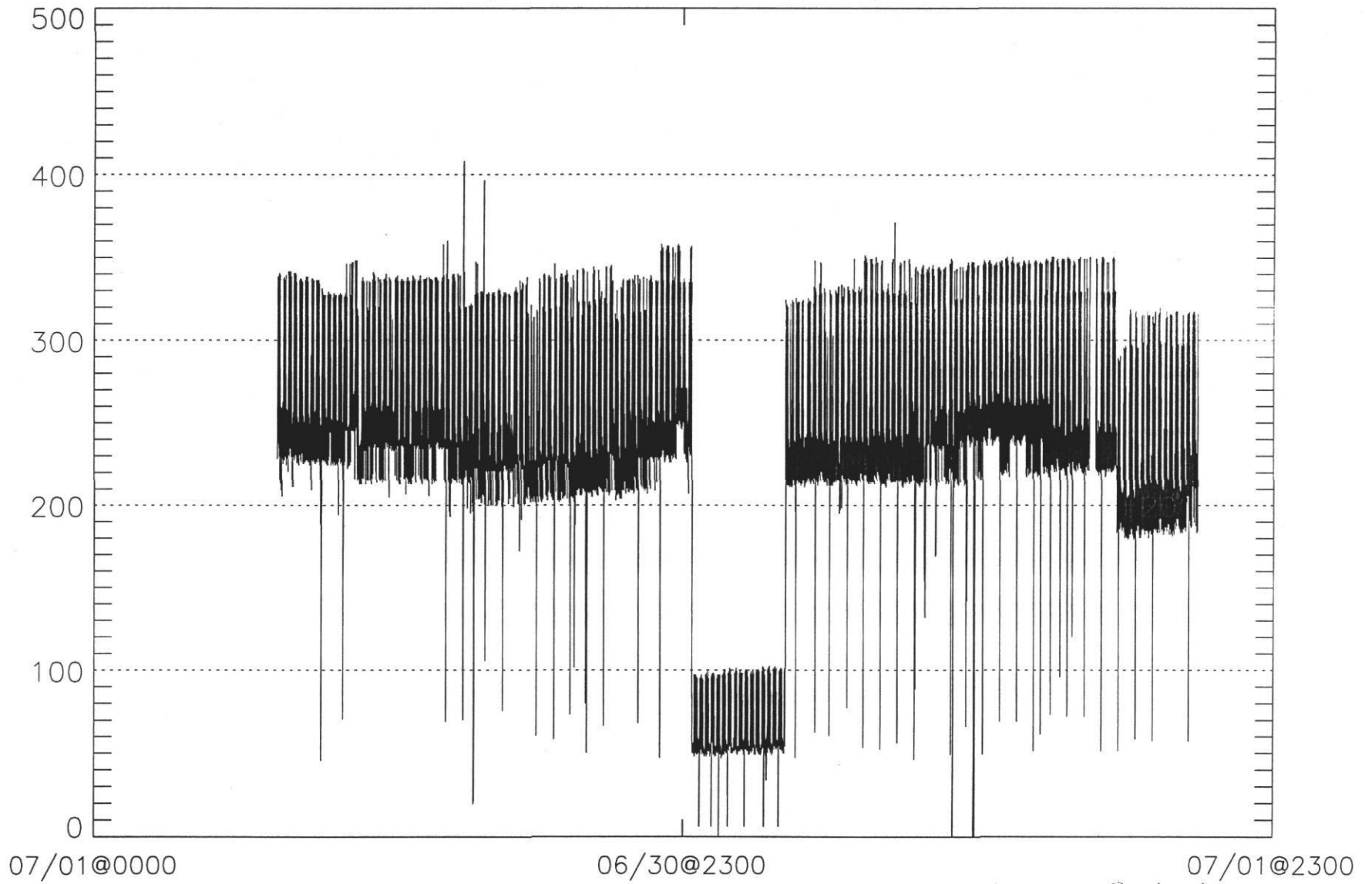
begin: 05/06/1994            end: 09/09/1994

Area: 317286.00

Facility: Minnesota - Capitol Complex

Contact Info: Rajan Thomas

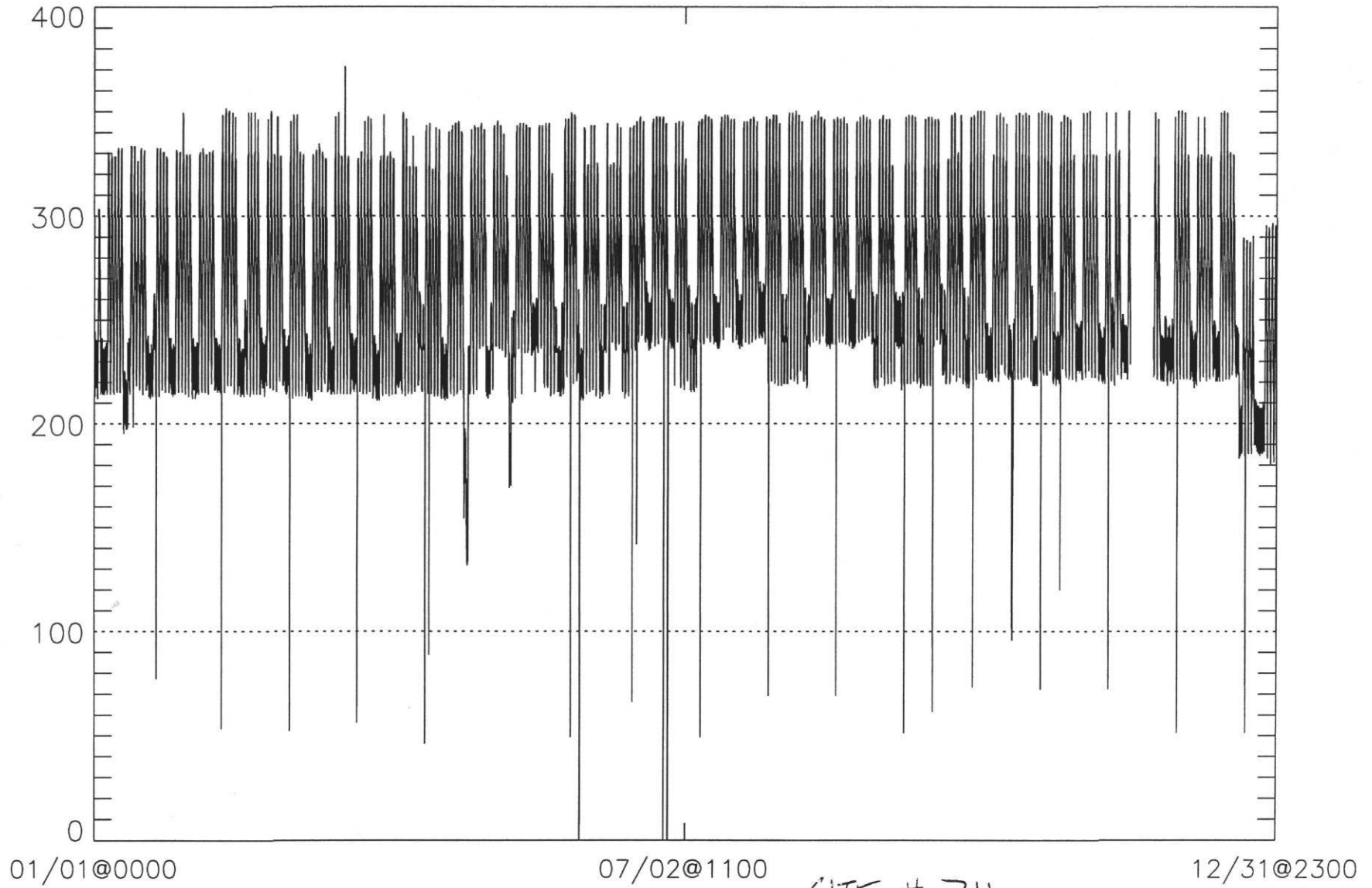
(ch2545+ch2546) WBE



SITE # 711 Centennial Bldg.

07/95 - 07/99

(ch2545+ch2546) WBE



SITE # 711

01/98 - 12/98

lstarxp% listsite 712

**Site: 712                      Criminal Apprehension Bldg. (Cri)**

---

Mecr id:

Start date:

Energy Type: default

Construction

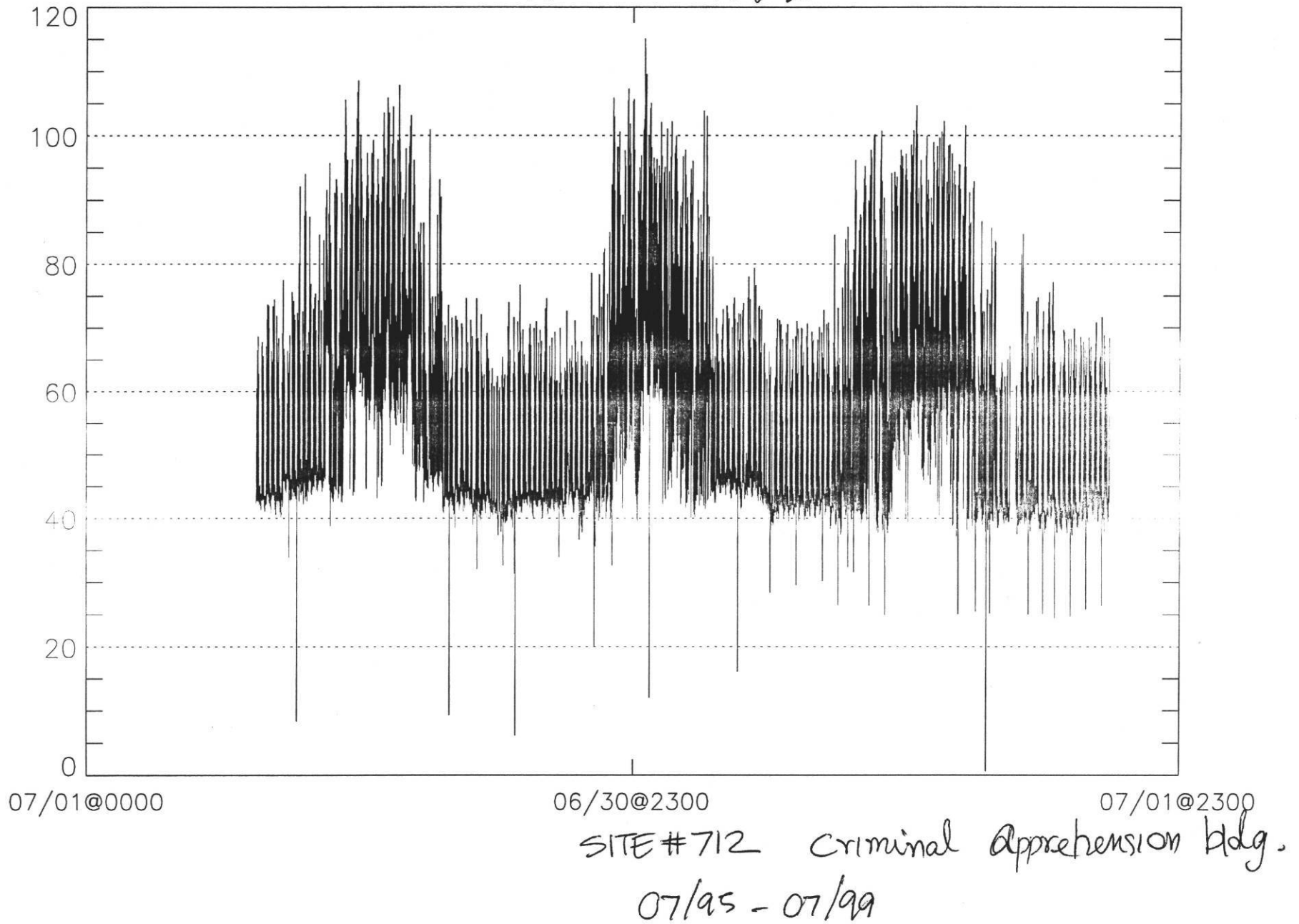
begin: 07/11/1994                      end: 06/23/1995

Area: 77630.00

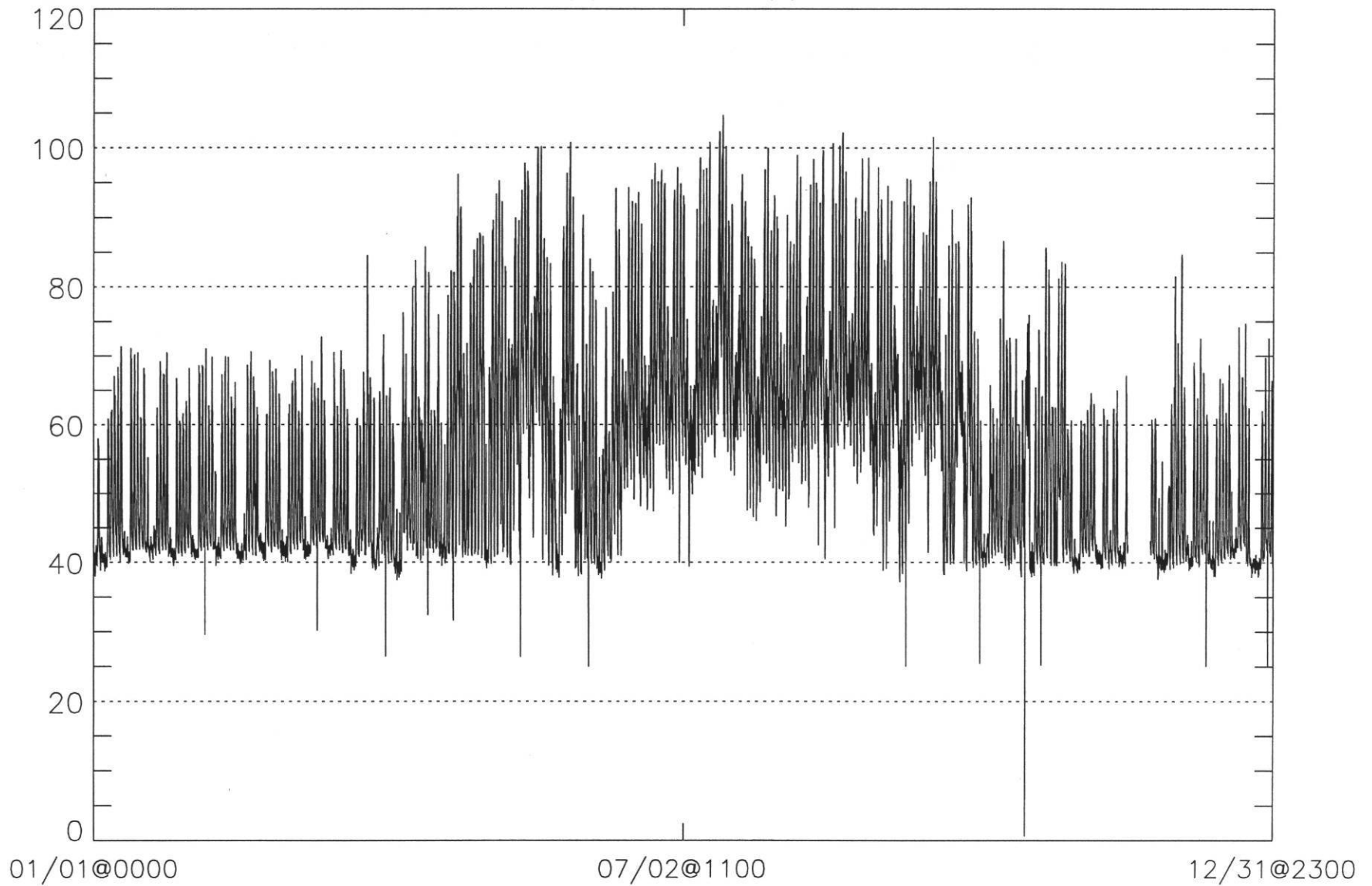
Facility: Minnesota - Capitol Complex

Contact Info: Rajan Thomas

((ch2555)) WBE



((ch2555)) WBE



SITE # 712

01/98 - 12/98



lstarxp% listsite 713

**Site: 713 Capitol Square Building (Cap)**

Mecr id:

Start date:

Energy Type: default

Construction

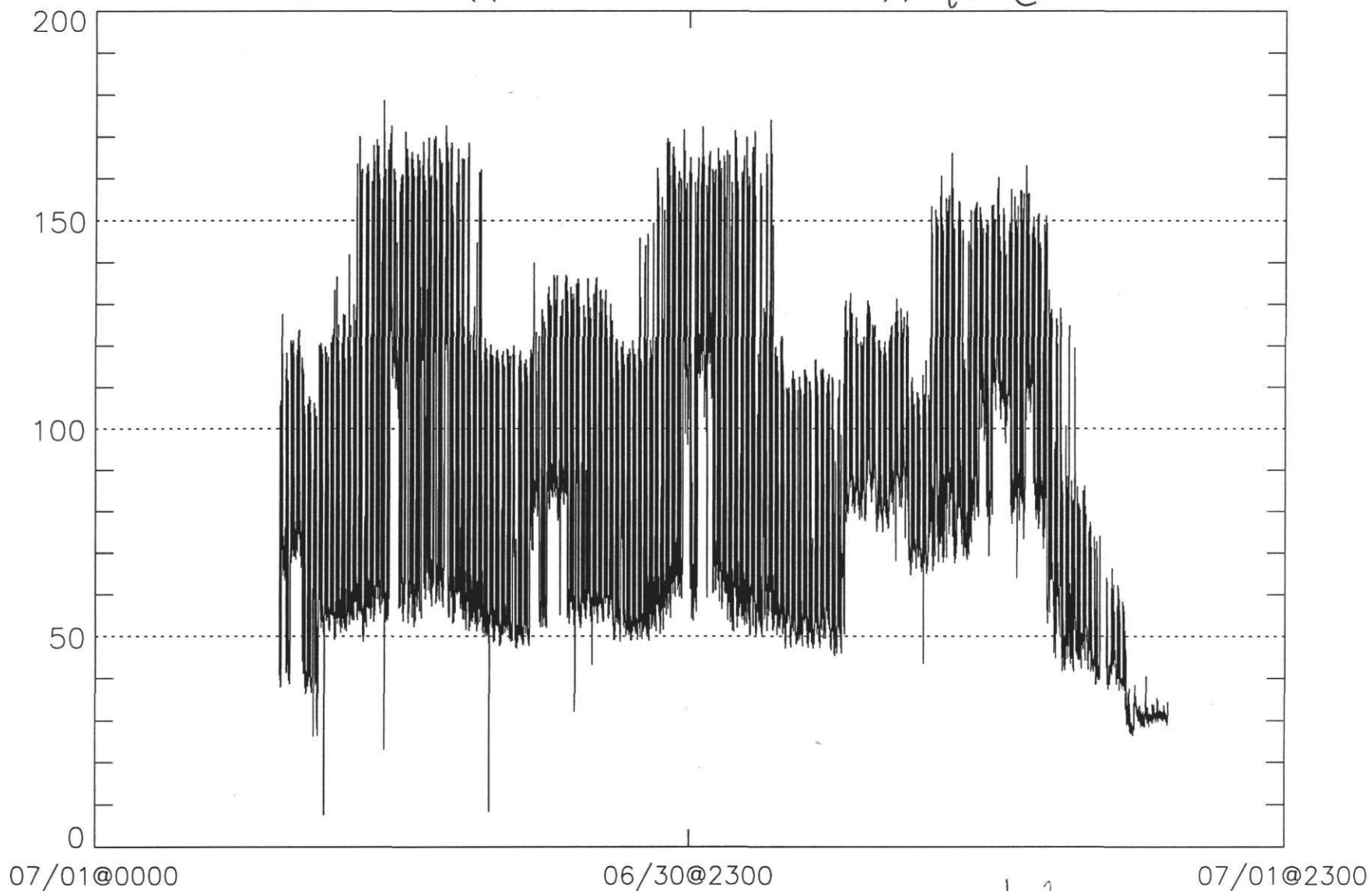
begin: 10/07/1994 end: 06/23/1995

Area: 225479.00

Facility: Minnesota - Capitol Complex

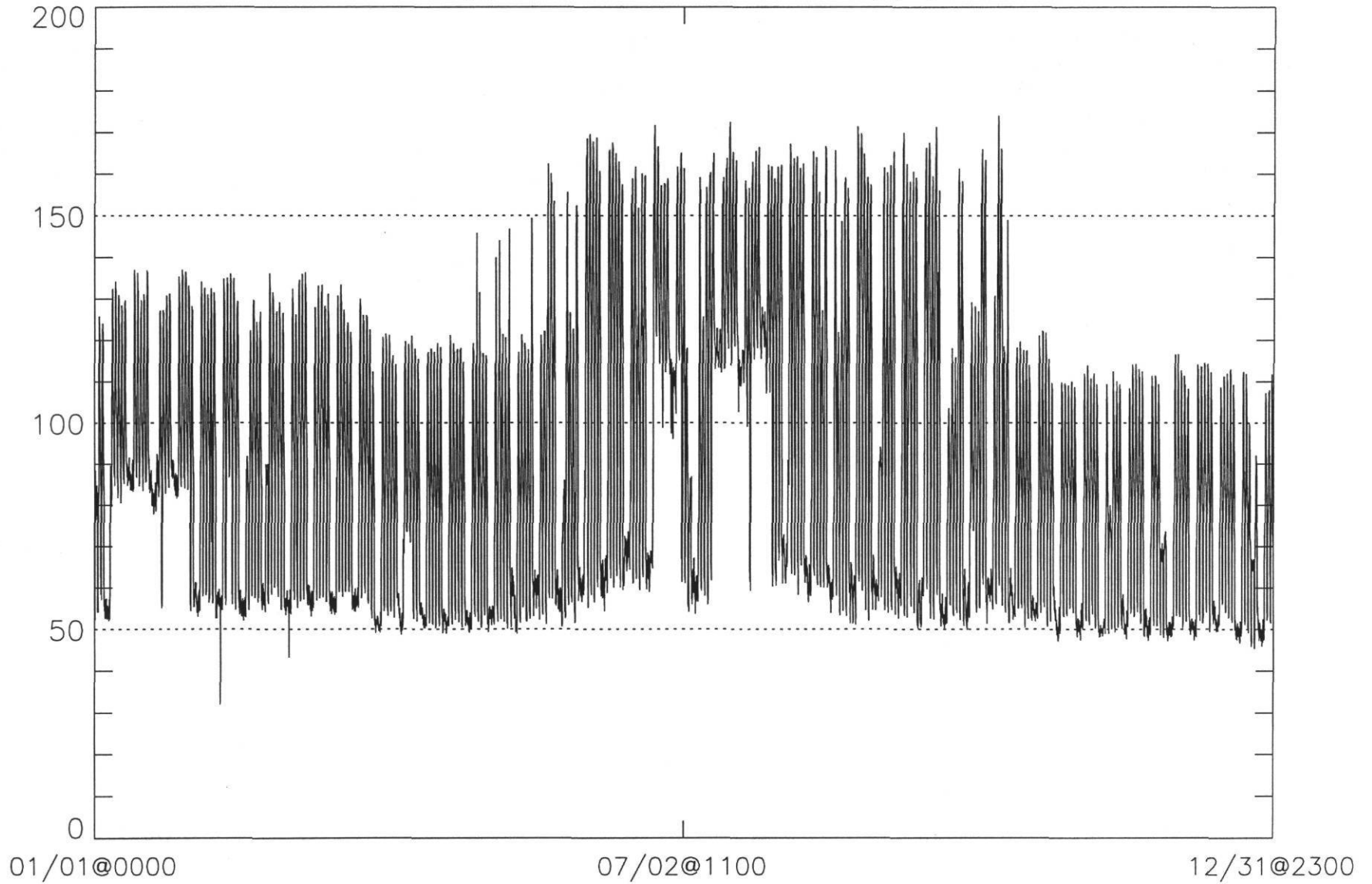
Contact Info: Rajan Thomas

((ch2561+ch2562)) WFE



site 713 capital square.  
07/95 - 07/99

((ch2561+ch2562)) WBE



SITE # 713  
01/97 - 12/97

lstarxp% listsite 904

**Site: 904                    USDOE Forrestal Building (XXX)**

---

Mecr id:

Start date:

Energy Type: default

Construction

begin:            N/A                    end:            N/A

Area:            1200000.00

Facility:            USDOE

Contact Info: Mr. Louis A. D'Angelo  
US DOE - Administrative Services  
1000 Independence S.W.  
Washington, DC 70585  
(202) 586--5710

# USDOE Forrestal Building

1,200,000 square feet

## Site Contact

Mr. Louis A. D'Angelo  
US DOE - Administrative Services  
1000 Independence S.W.  
Washington, DC 70585  
(202)-586-5710

## LoanSTAR Metering Contact

Aamer Athar  
053D WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409)-845-9213

## Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	2247170 kWh	100	-	-
Peak 60 Minute Demand	4813 kW	100	-	-
Chilled Water	- MMBtu	-	-	-
Steam	775.4 MMBtu	99	-	-

Peak 60 minute demand was recorded at 1200 Wednesday 6/28/95.  
There were 720 hours in this month.

## Monthly Retrofit Savings

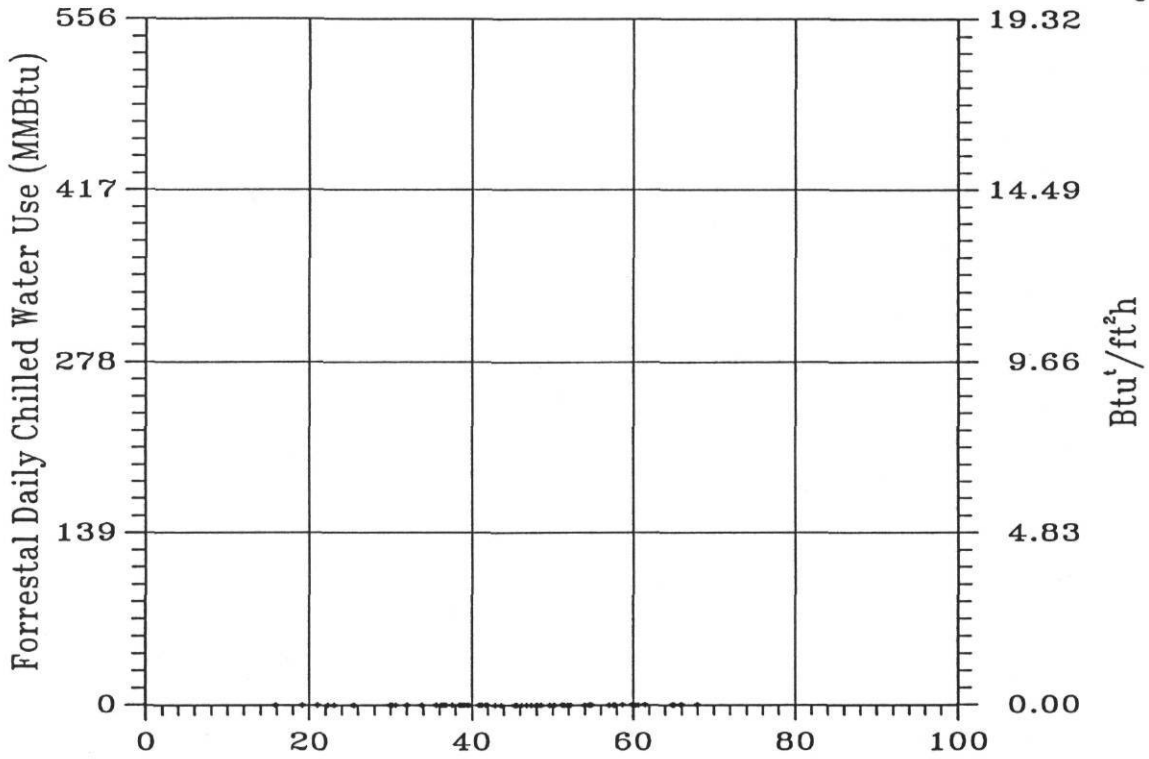
	Measured Savings	Audit Estimated Savings
Monthly Total		
Total to Date*		

\*Measured savings include construction period. Audit estimated savings do not.

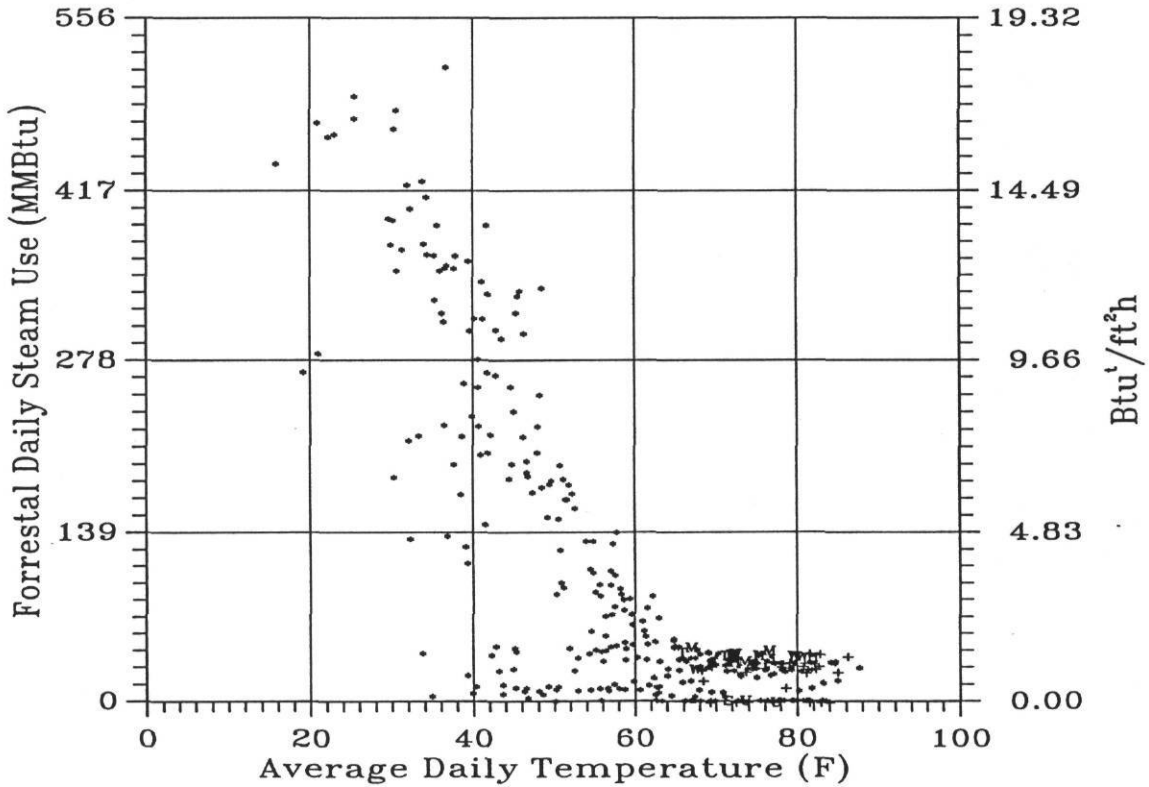
## Comments

- ★ Chilled water data are missing due to a hardware problem.
- ★ The whole-building electricity remained fixed during June.
- ★ Evening use of the AHUs occurred on 6/26/95.

USDOE Forrestal Building - - June 1995

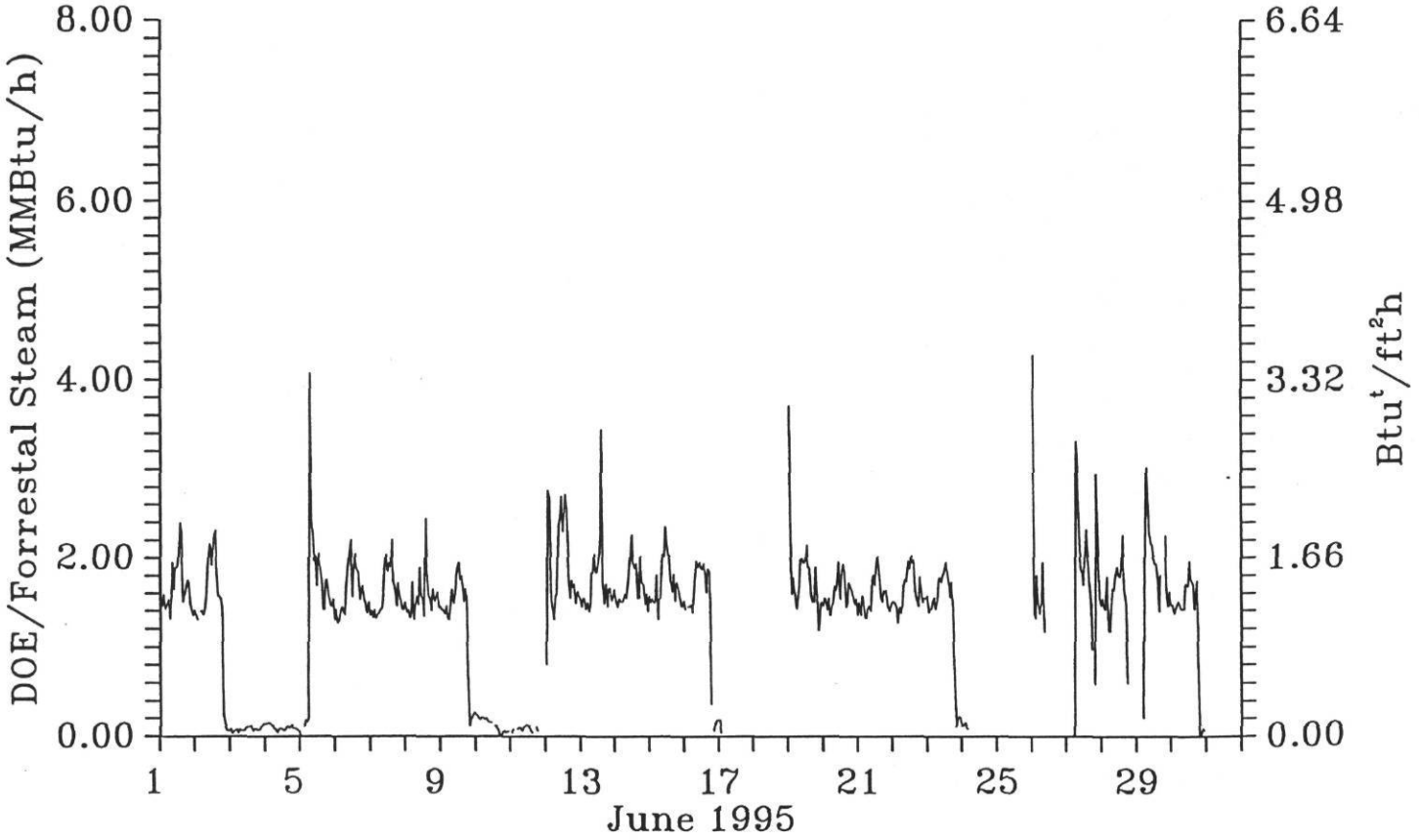
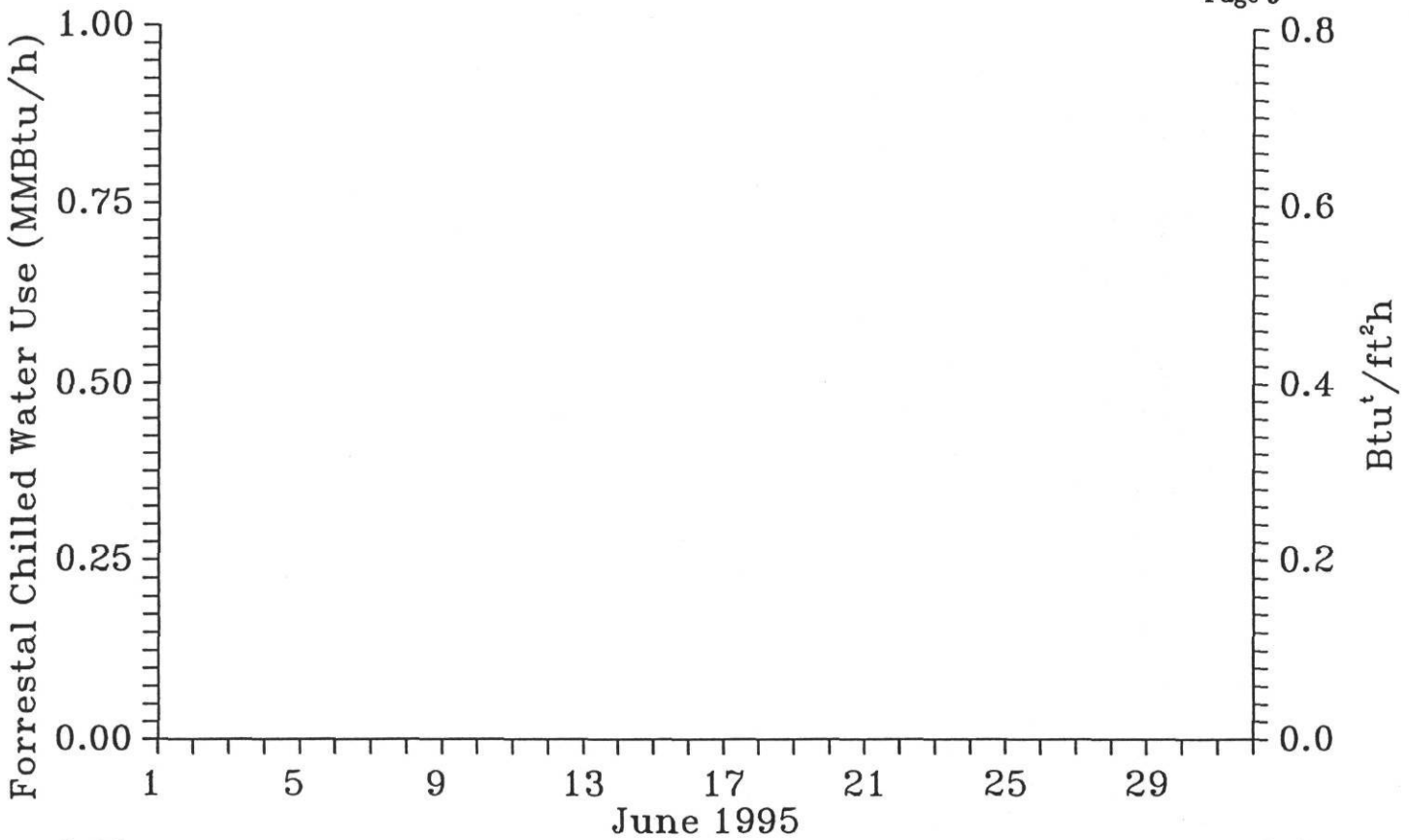


Jun 01 1994 - Jun 30 1995

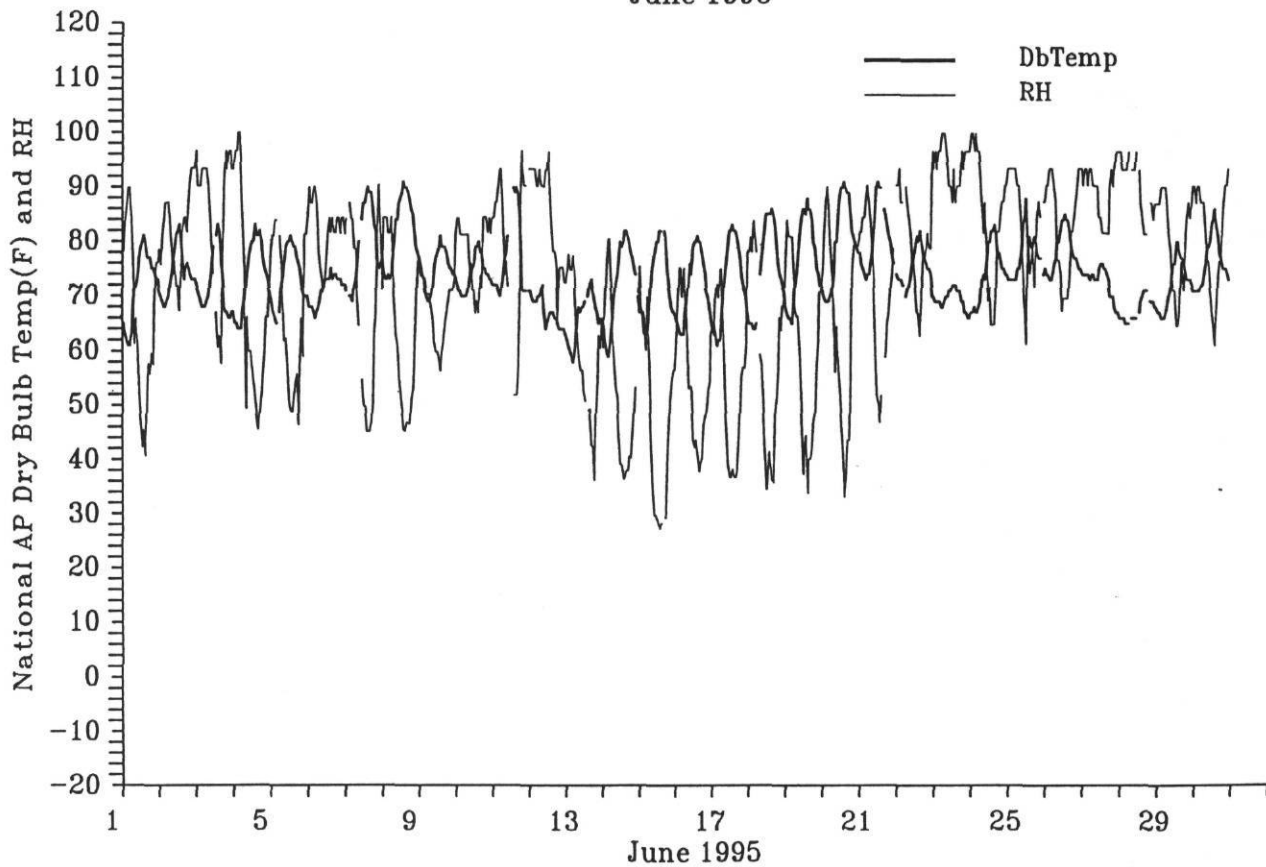
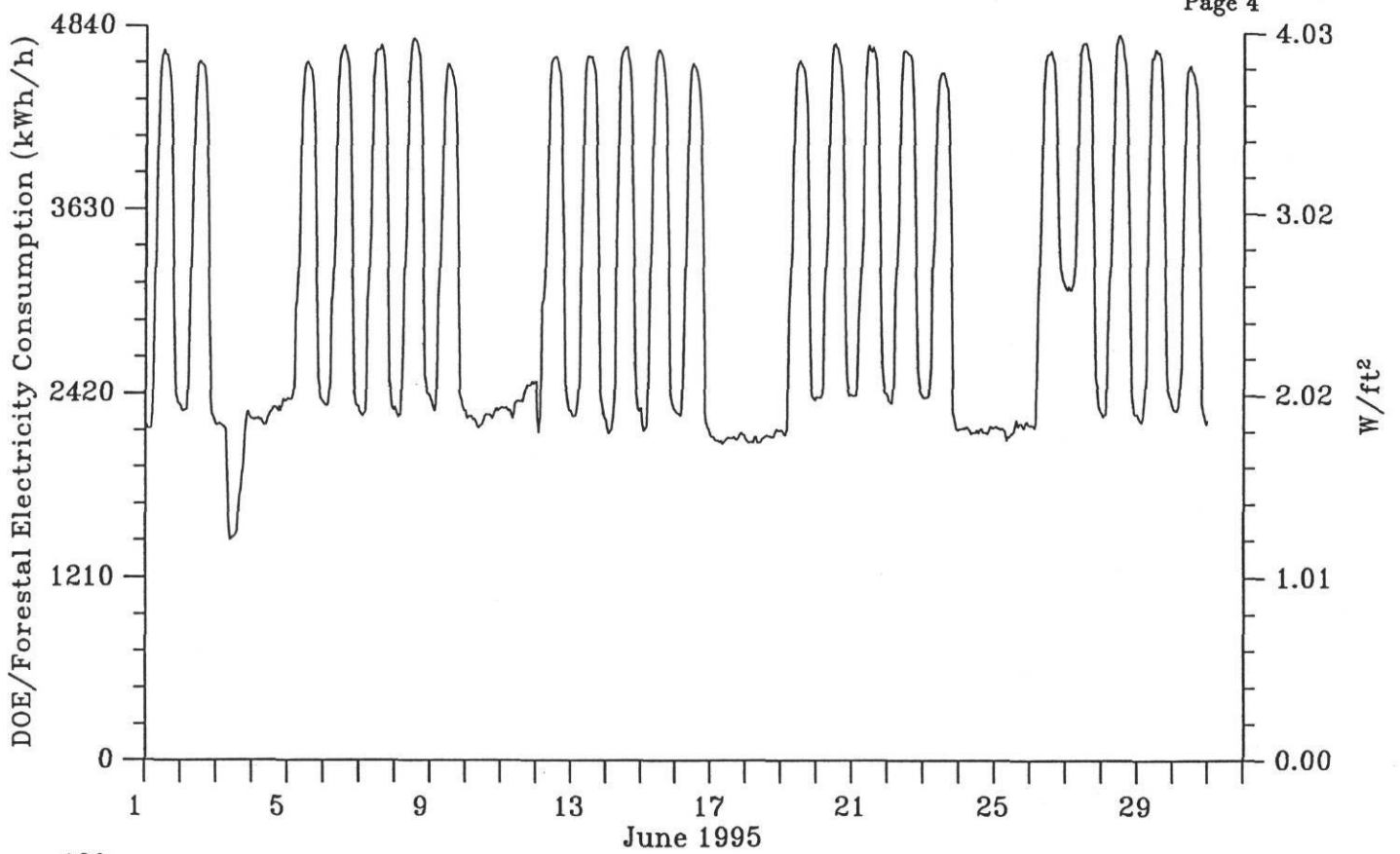


Data points for the current month are shown as letters. Points from this month last year are shown as +.  
 Monday through Sunday are represented as M,T,W,H,F,S,U. All other points are shown as \*.

USDOE Forrestral Building - - June 1995



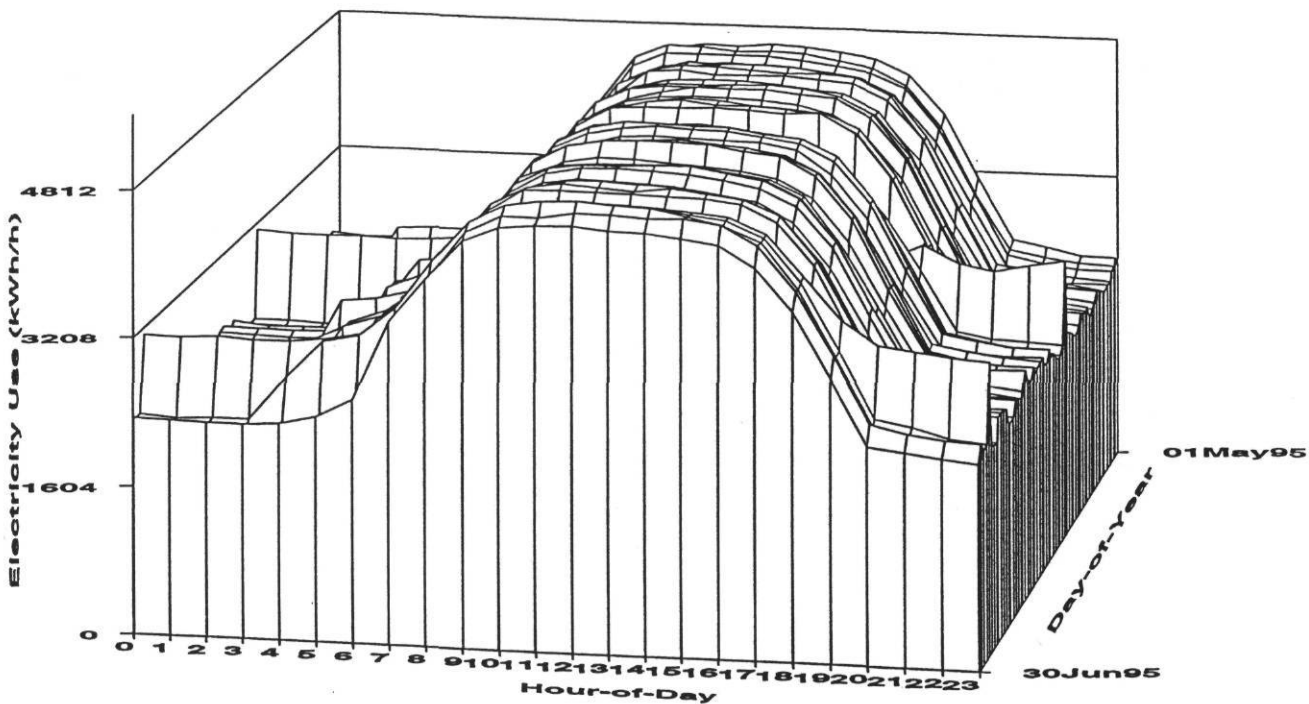
USDOE Forrestral Building - - June 1995



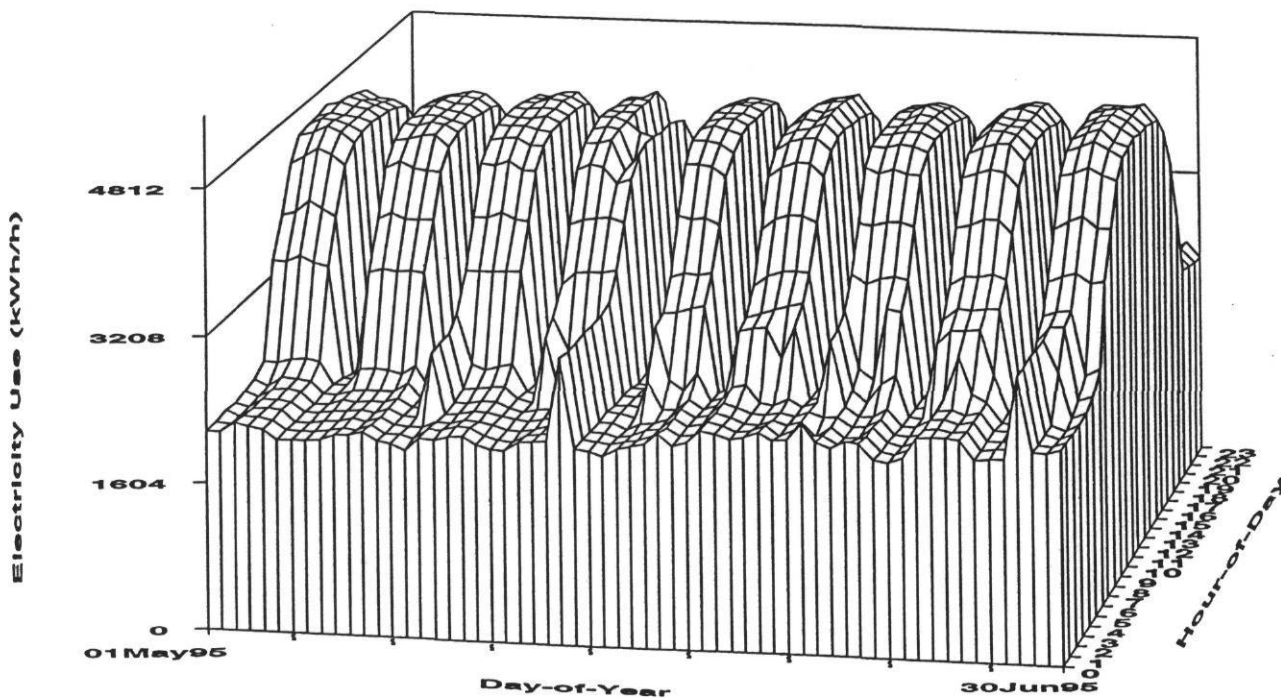
USDOE Forrestal Building - - June 1995



### Whole-Building Electric



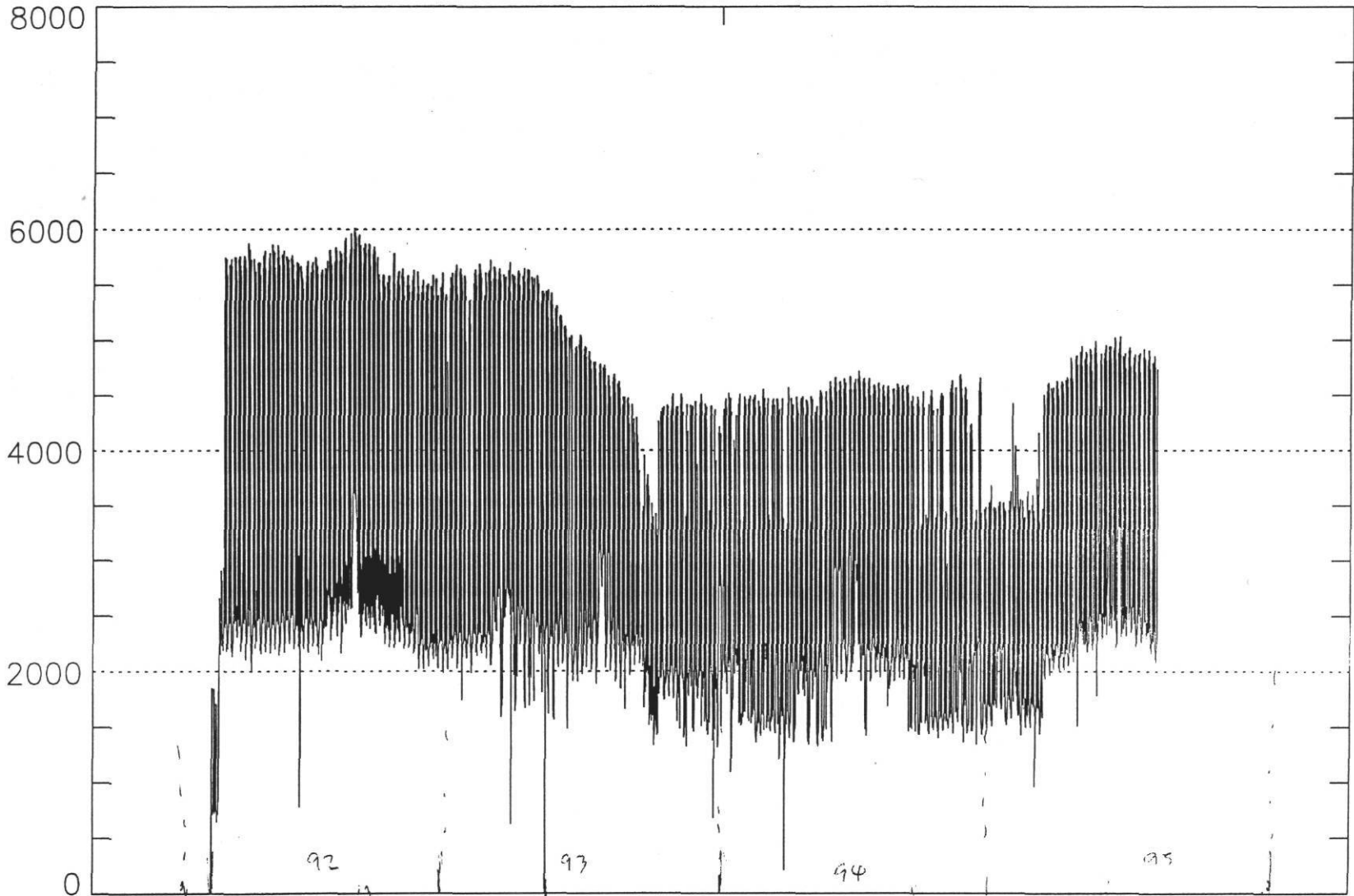
### Whole-Building Electric



Sundays are marked with an "S"

USDOE Forrestal Building - - June 1995

(ch0299) WBE



07/01@0000

92

93

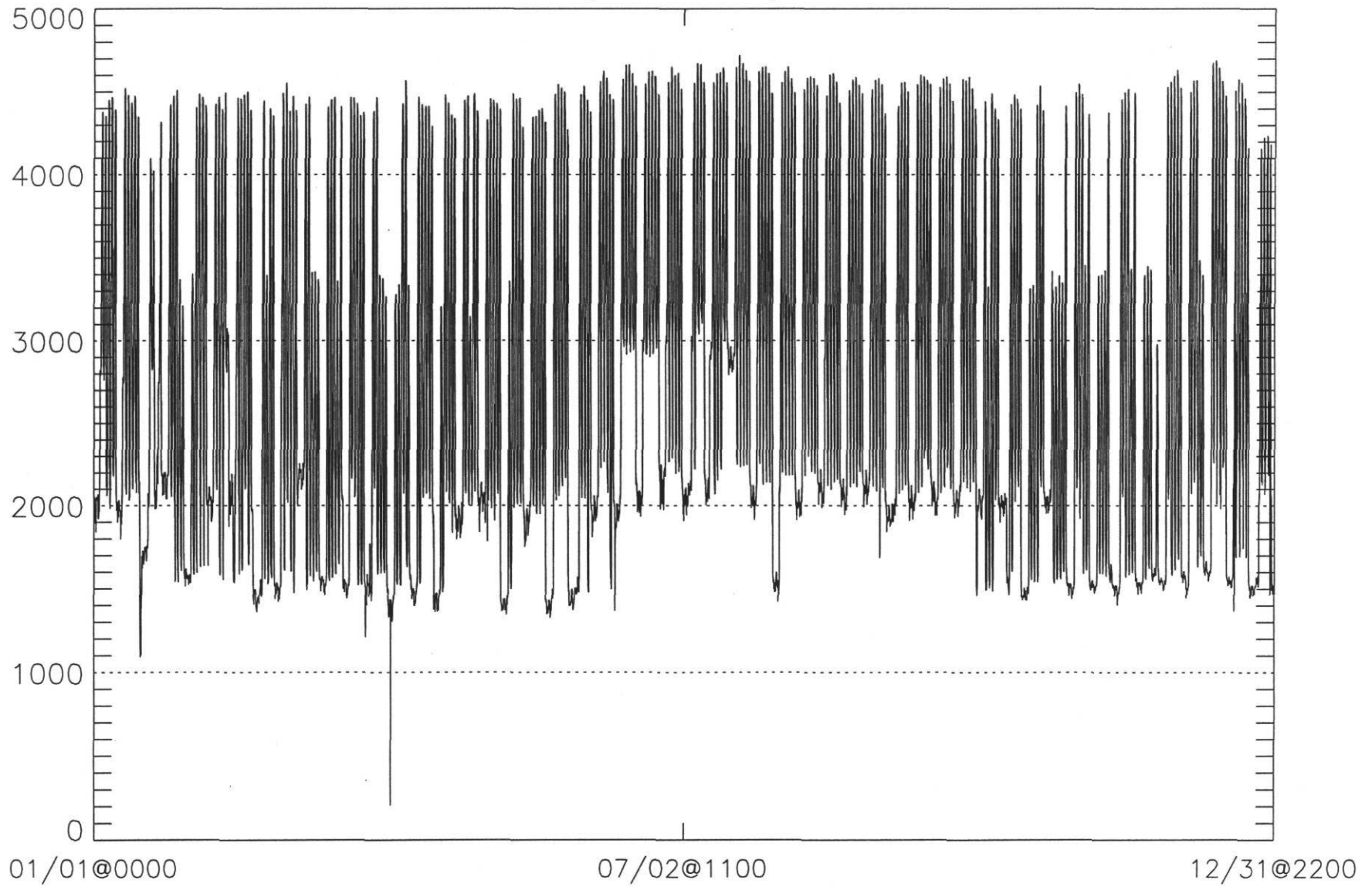
12/30@2300

SITE # 904 US. DOE

07/01@2200  
FORRESTAL BLDG.

07/91 - 07/96

(ch0299) WBE



SITE # 904

01/94 - 12/94

lstarxp% listsite 951

**Site: 951 Administration (and JFK) (ADM)**

---

Mecr id:

Start date:

Energy Type: default

Construction

begin: N/A end: N/A

Area: 42385.00

Facility: Dallas County

Contact Info: Mr. John Nolan  
Energy Manager  
Dallas County  
411 Elm Street  
Dallas TX 75202  
(214) 653--6724

## Administration (and JFK)

Dallas County  
42,385 square feet

### Site Contact

Mr. John Nolan  
Energy Manager  
Dallas County  
411 Elm Street  
Dallas TX 75202  
(214) 653-6724

### ESL Metering Contact

Sam Farouz  
053 WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409) 845-9213

## Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	167004 kWh	100	\$0.03200	\$5344
Peak 60 Minute Demand	345 kW	100	\$11.82	\$4071
Chiller Electricity	50.8 MWh	100	\$32.200	\$1637

Peak 60 minute demand was recorded at 1500 Thursday 04/08/99.  
There were 720 hours in this month.

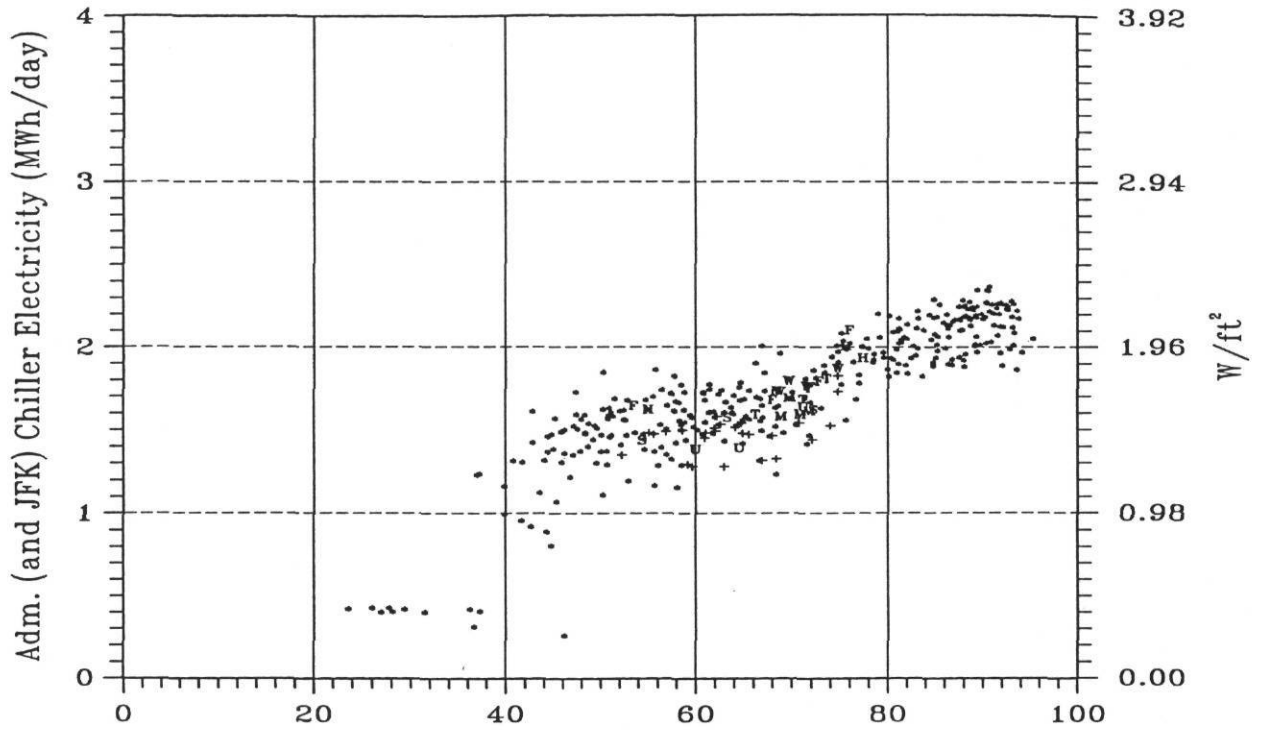
## Monthly Retrofit Savings

	Measured Savings	Audit Estimated Savings
Monthly Total		
Total to Date*		

\*Measured savings include construction period. Audit estimated savings do not.

Comments

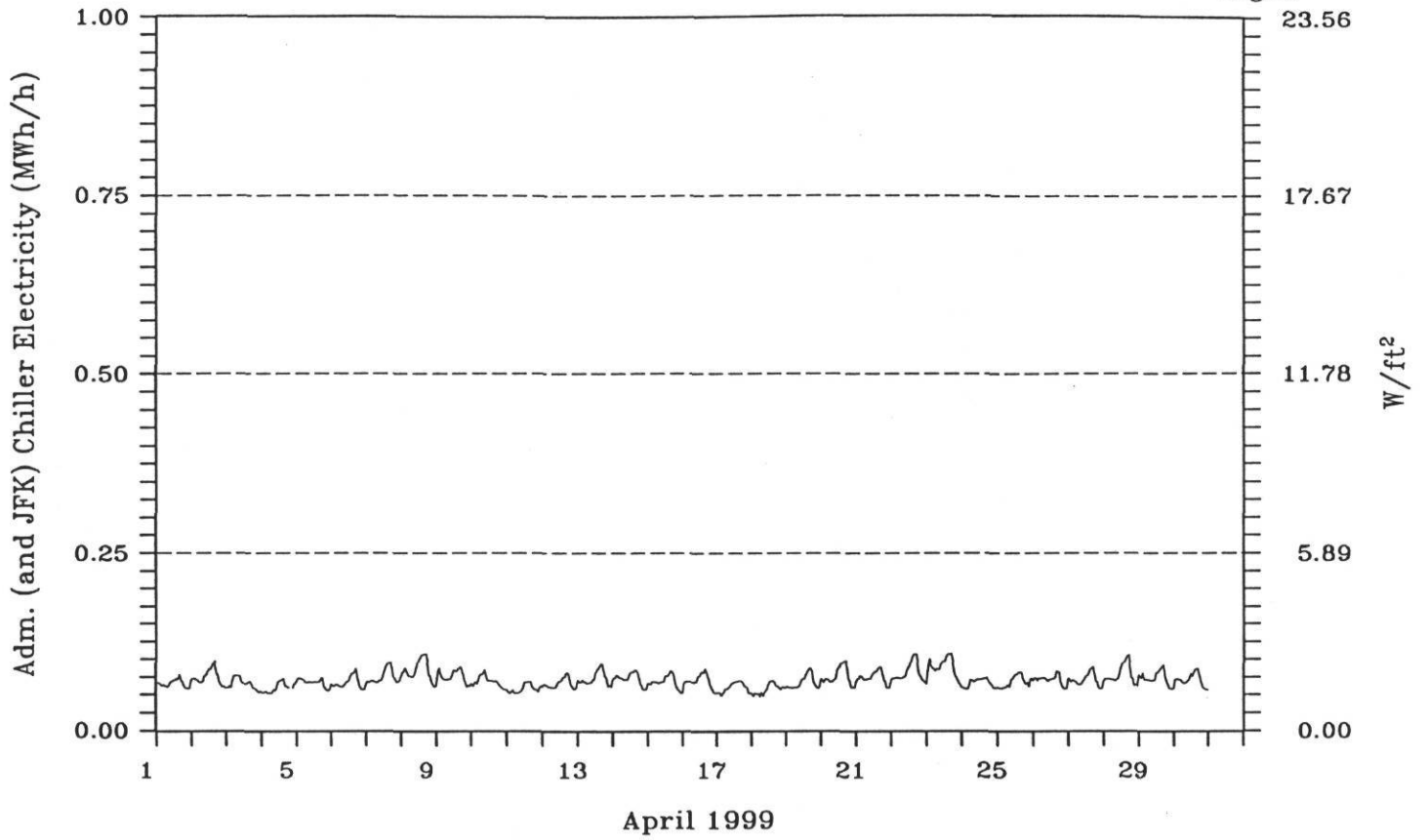
Administration (and JFK) - Dallas County - April 1999



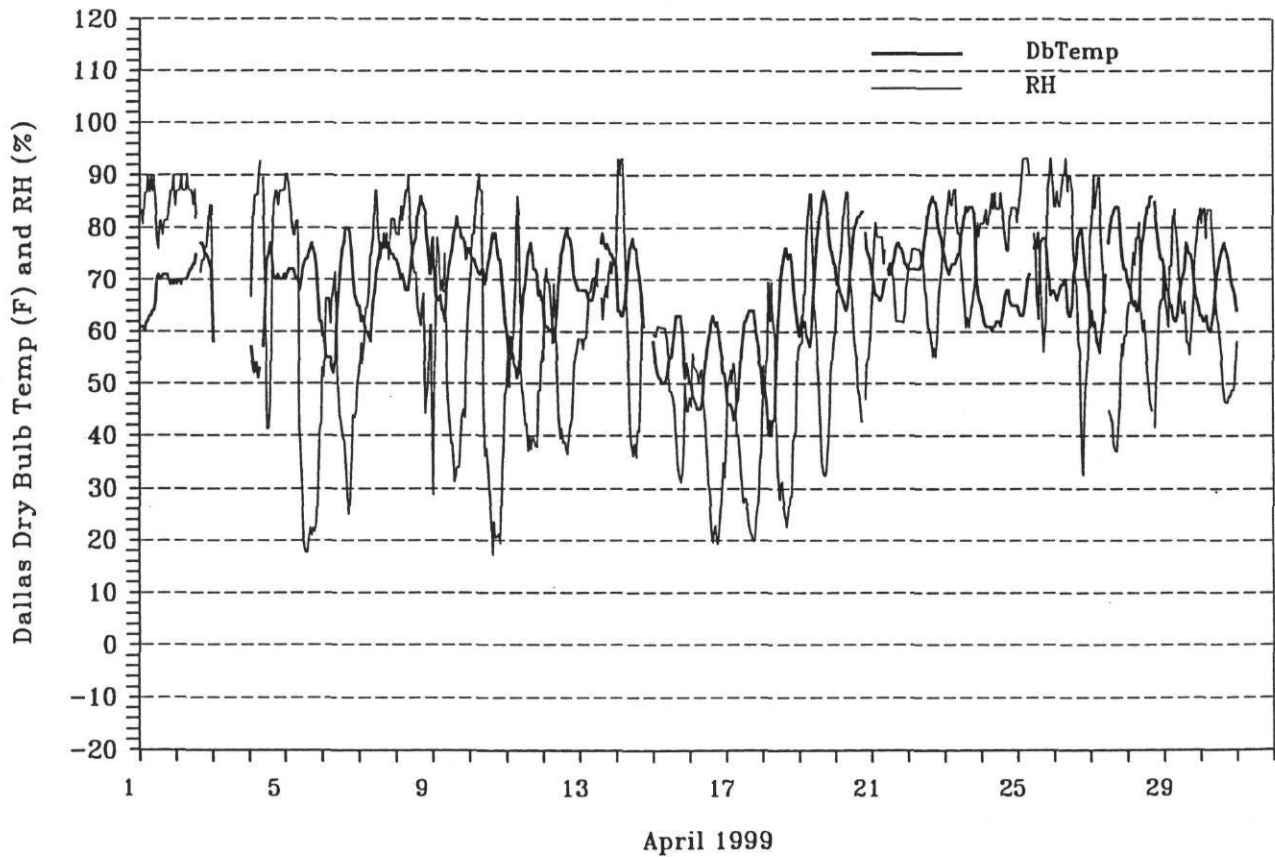
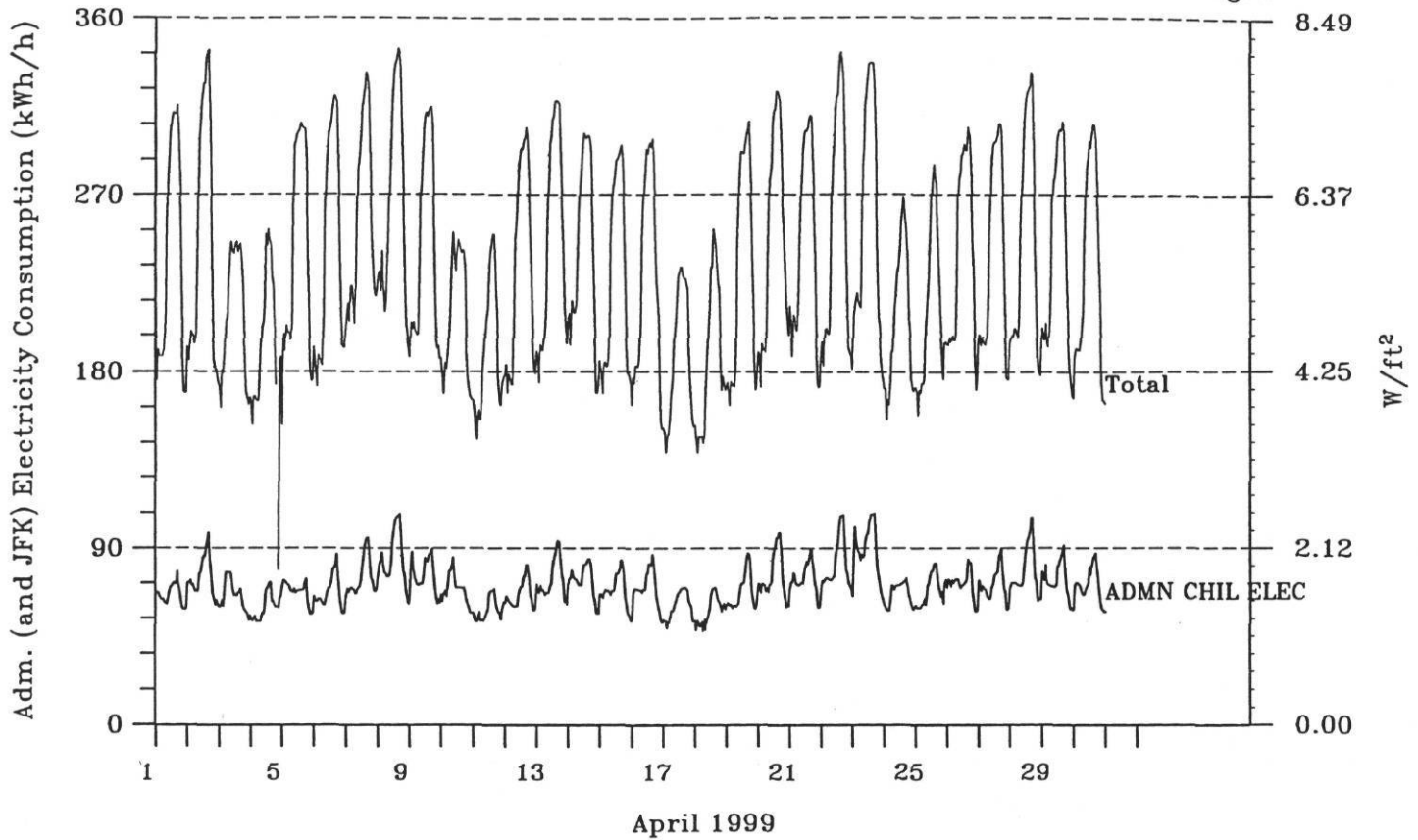
Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

Points from this month last year are shown as +.  
All other points are shown as \*.

Administration (and JFK) - Dallas County - April 1999



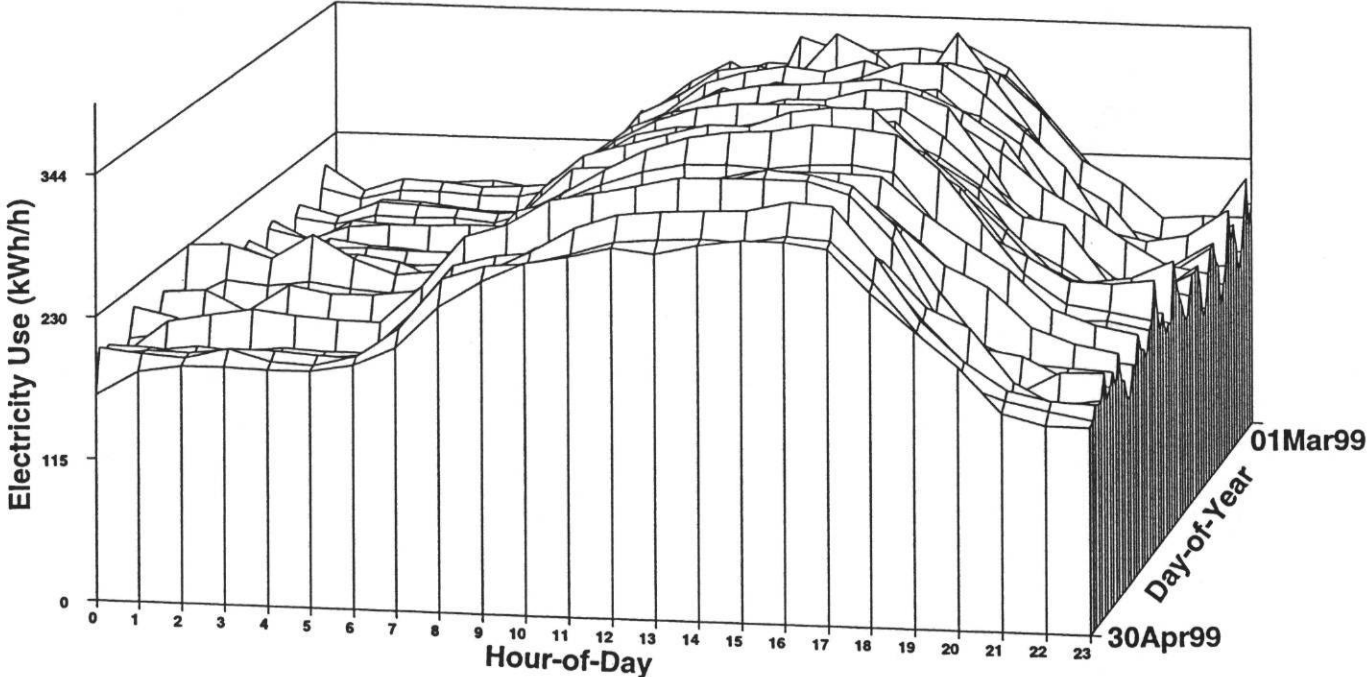
Administration (and JFK) - Dallas County - April 1999



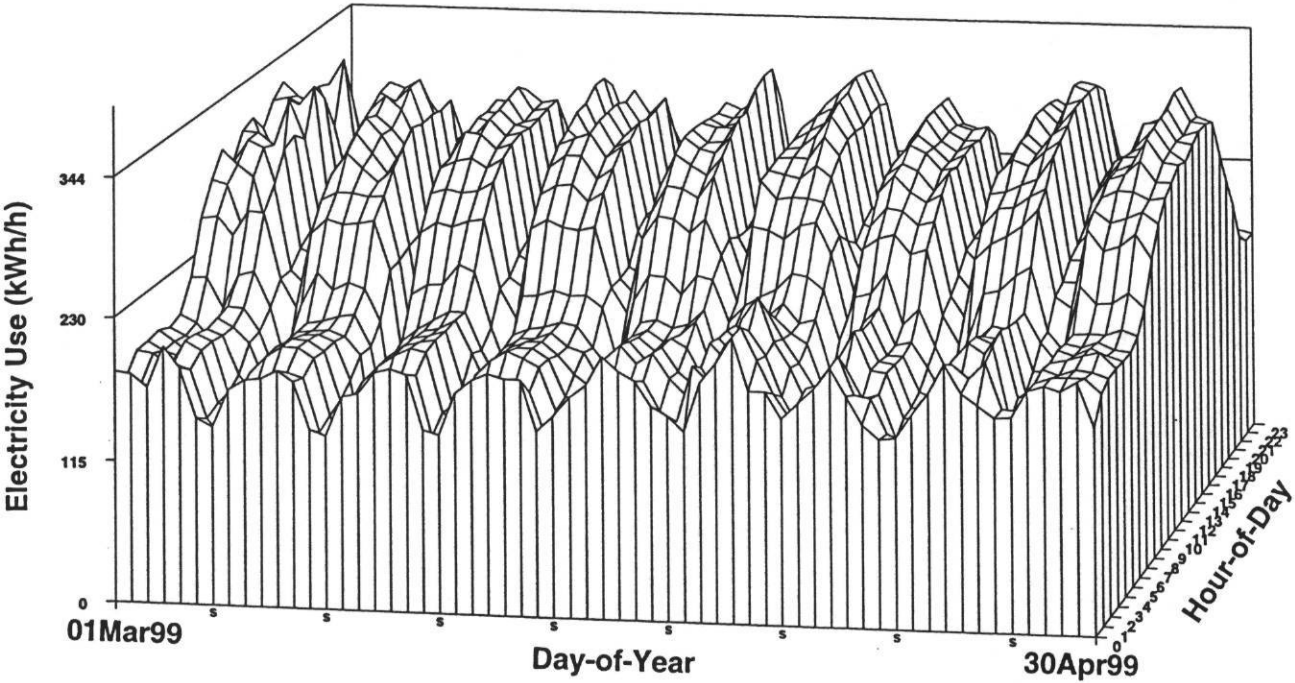
Administration (and JFK) - Dallas County - April 1999



### Whole-Building Electric



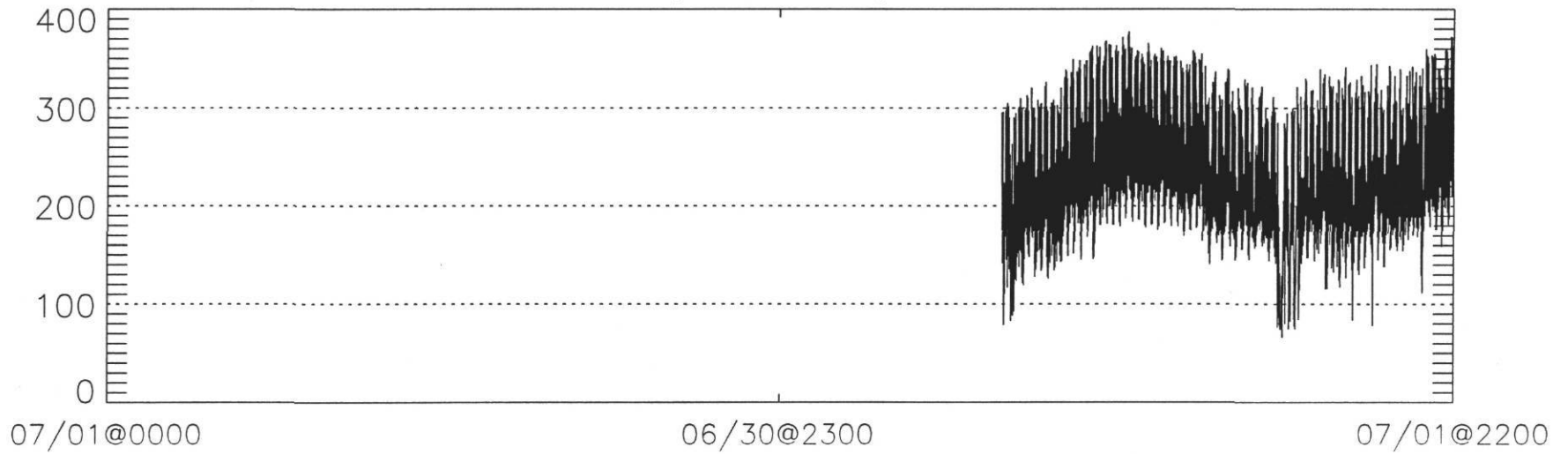
### Whole-Building Electric



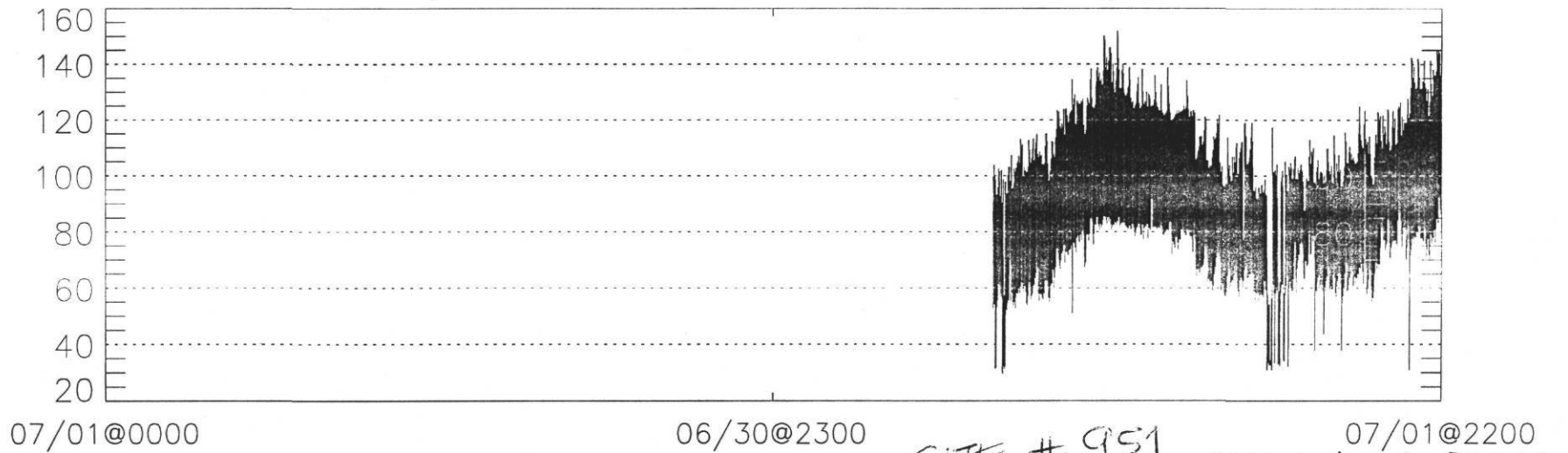
Sundays are marked with an "S"

Administration (and JFK) - Dallas County - April 1999

(ch3592) WBE

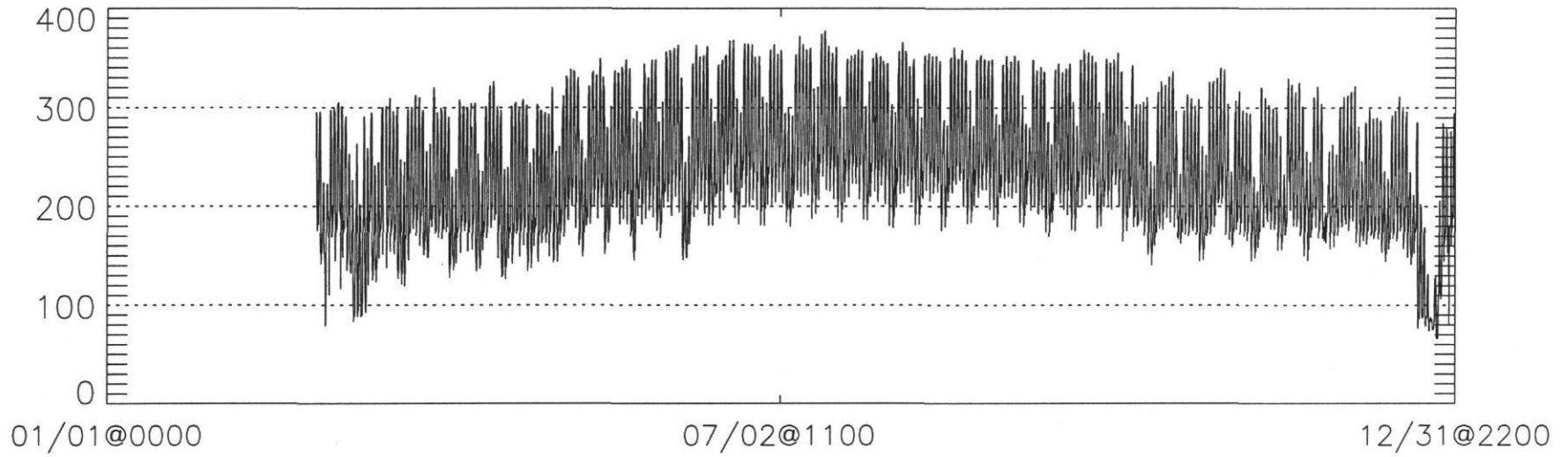


(ch3586+ch3587+ch3588) JFK ELEC.

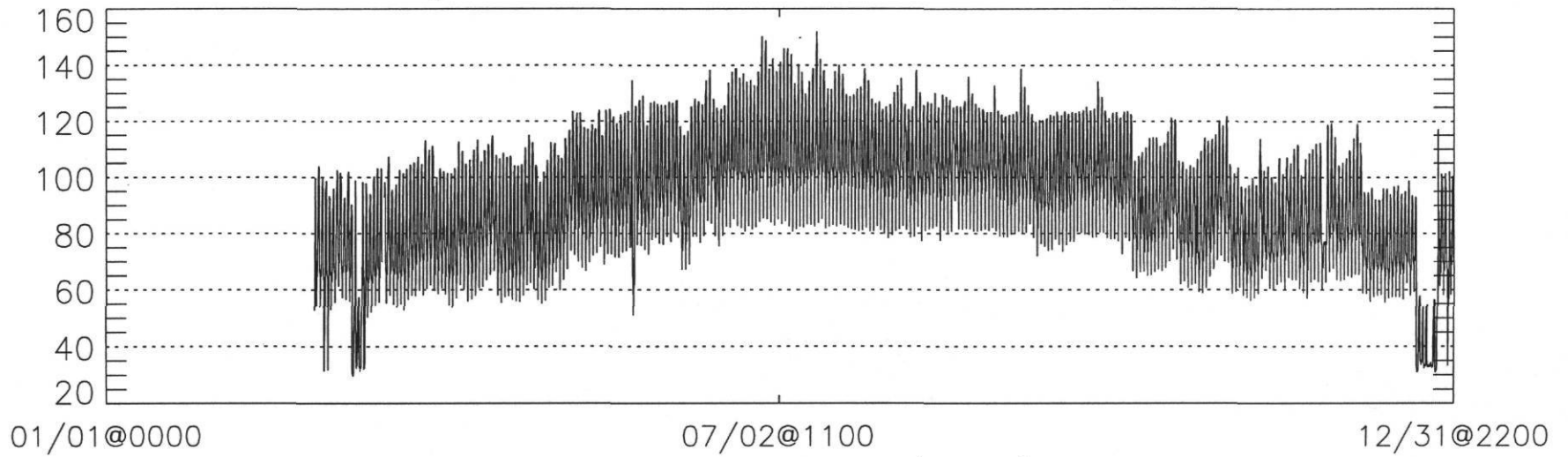


SITE # 951 ADMIN BLDG, DALLAS  
07/95 - 07/99

(ch3592) WBE



(ch3586+ch3587+ch3588) JFK, ELEC.



SITE # 951

01/98 - 12/98

lstarxp% listsite 952

**Site: 952**            **Records Complex (REC)**

Mecr id:

Start date:

Energy Type: default

Construction

begin:            N/A            end:    N/A

Area:            323232.00

Facility:        Dallas County

Contact Info:    Mr. John Nolan  
                  Energy Manager  
                  Dallas County  
                  411 Elm Street  
                  Dallas TX 75202  
                  (214) 653--6724

# Records Complex

Dallas County  
323,232 square feet

## Site Contact

Mr. John Nolan  
Energy Manager  
Dallas County  
411 Elm Street  
Dallas TX 75202  
(214) 653-6724

## ESL Metering Contact

Sam Farouz  
053 WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409) 845-9213

## Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	451833 kWh	100	\$0.02600	\$11748
Peak 60 Minute Demand	867 kW	100	\$12.66	\$10975
Chiller Electricity	350.4 100xKwh	46	\$2.600	\$911
Natural Gas	236.9 MMBtu	100	\$4.700	\$1113

Peak 60 minute demand was recorded at 1400 Tuesday 04/06/99.  
There were 720 hours in this month.

## Monthly Retrofit Savings

	Measured Savings	Audit Estimated Savings
--	------------------	-------------------------

Monthly Total

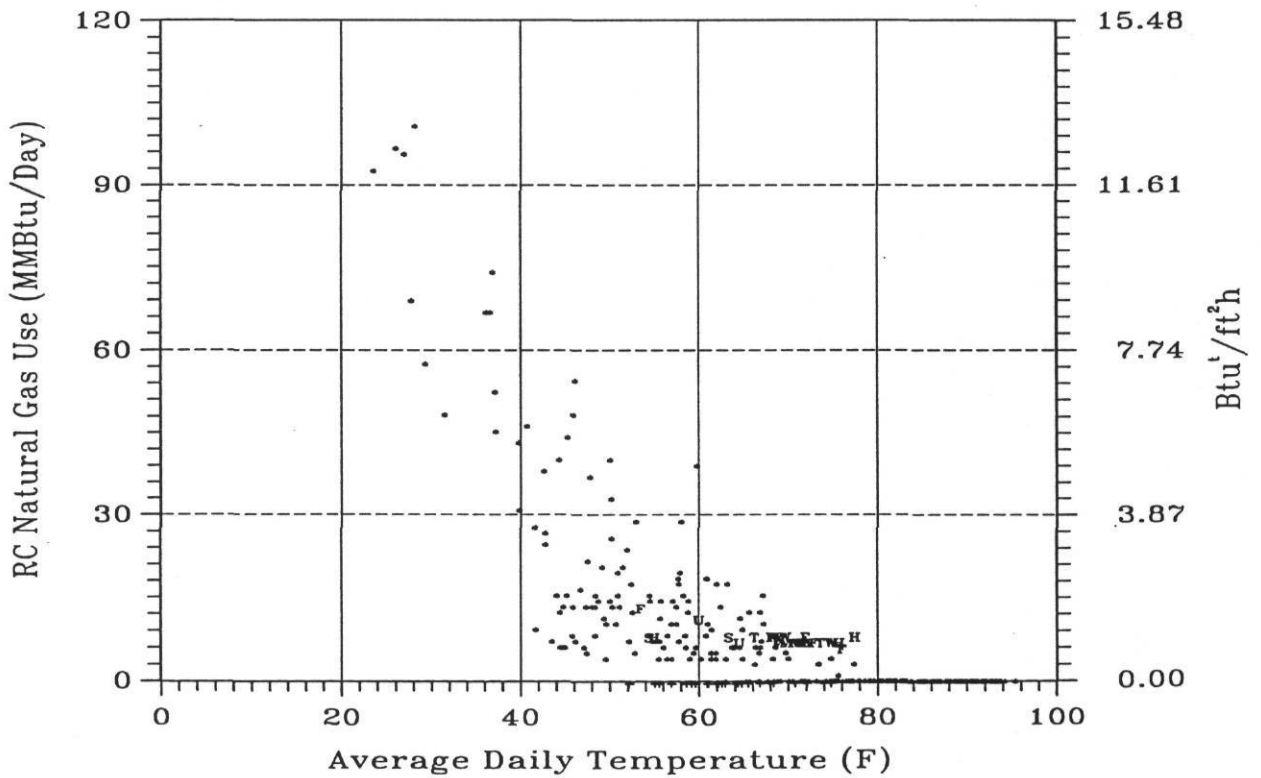
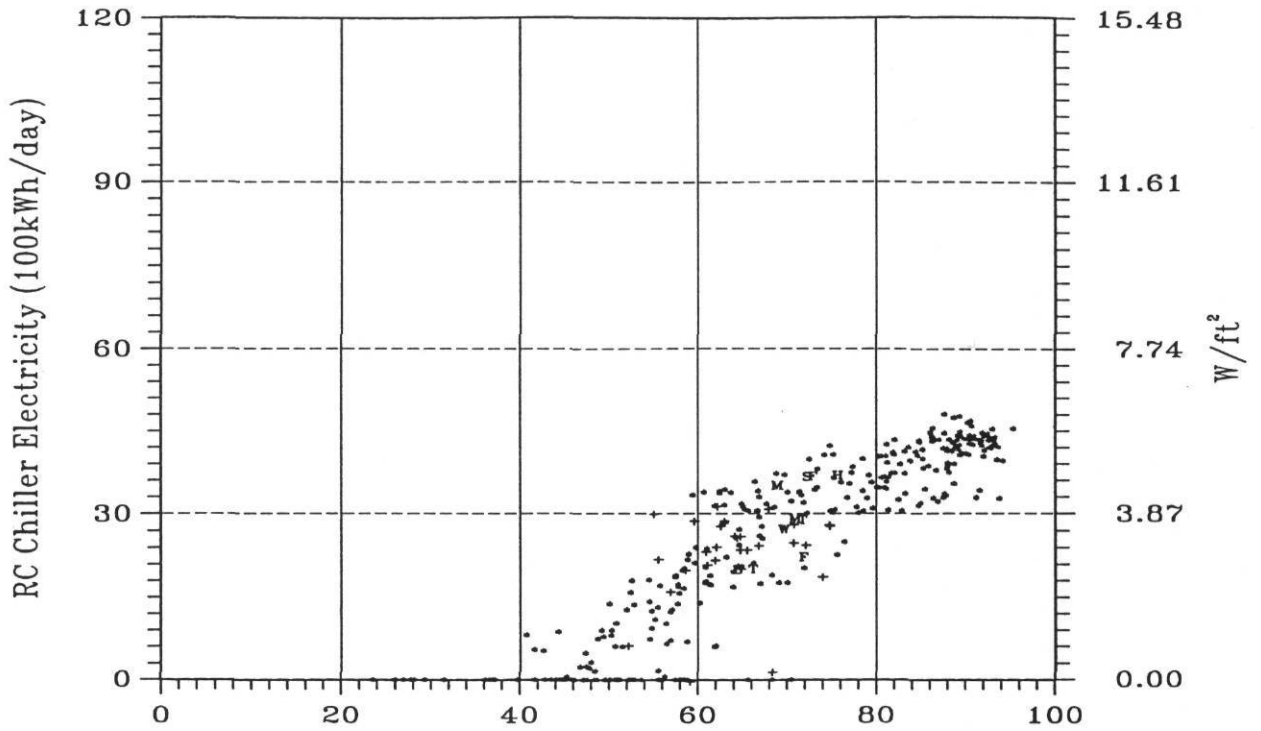
Total to Date\*

\*Measured savings include construction period. Audit estimated savings do not.

## Comments

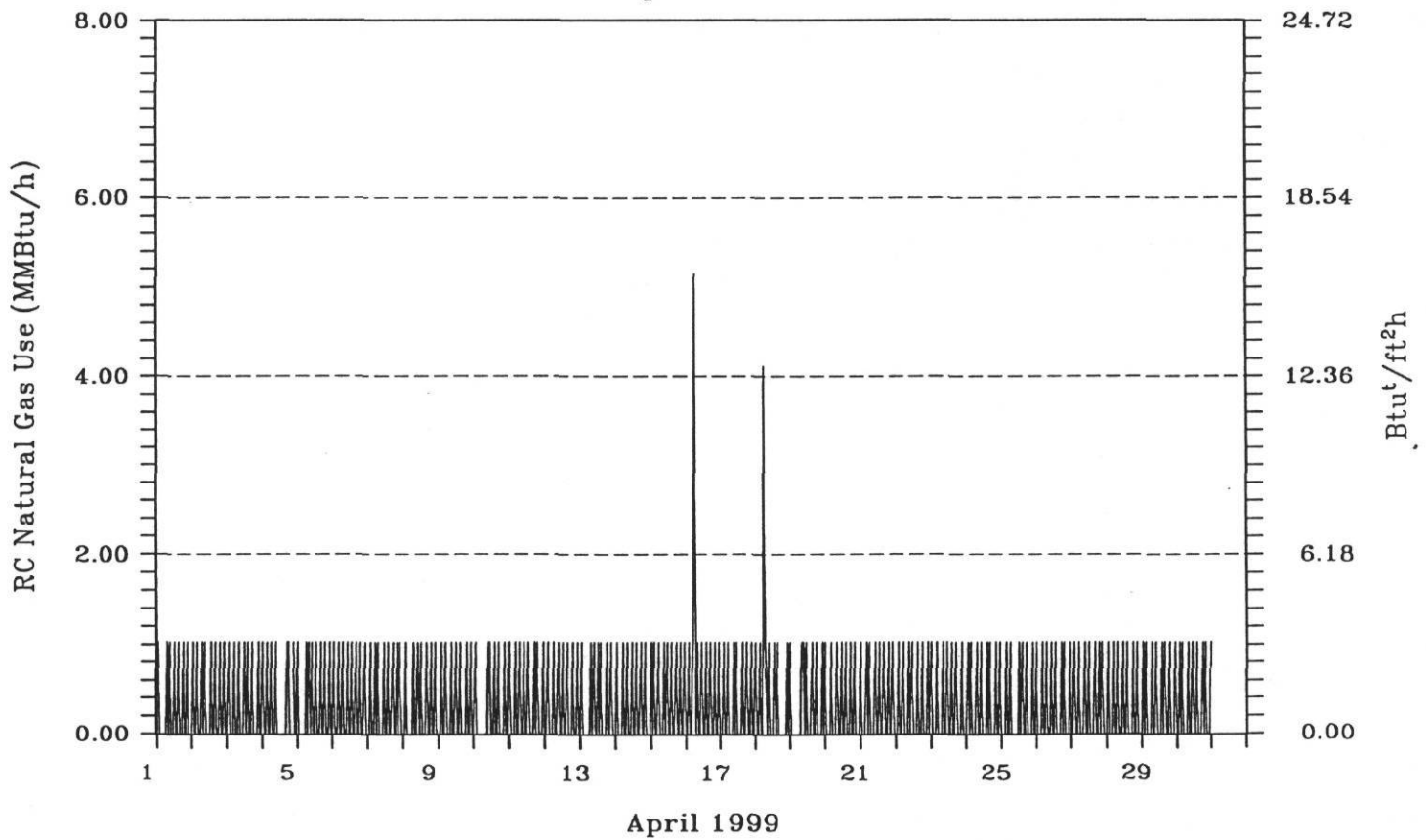
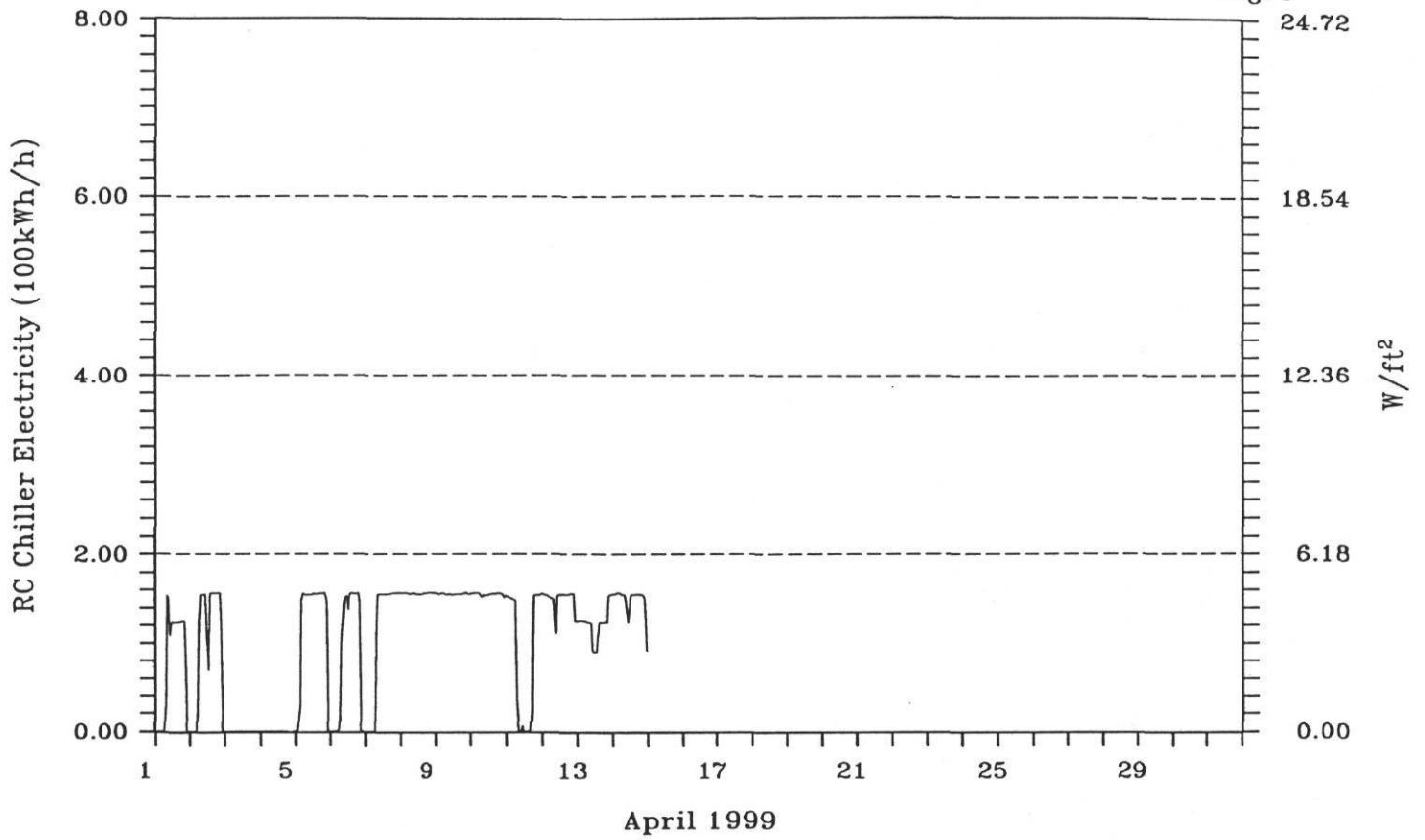
★ Chiller and cooling tower electricity consumption data are missing from 4/15/99 and 4/30/99 due to a monitoring hardware problems.

Records Complex - Dallas County - April 1999

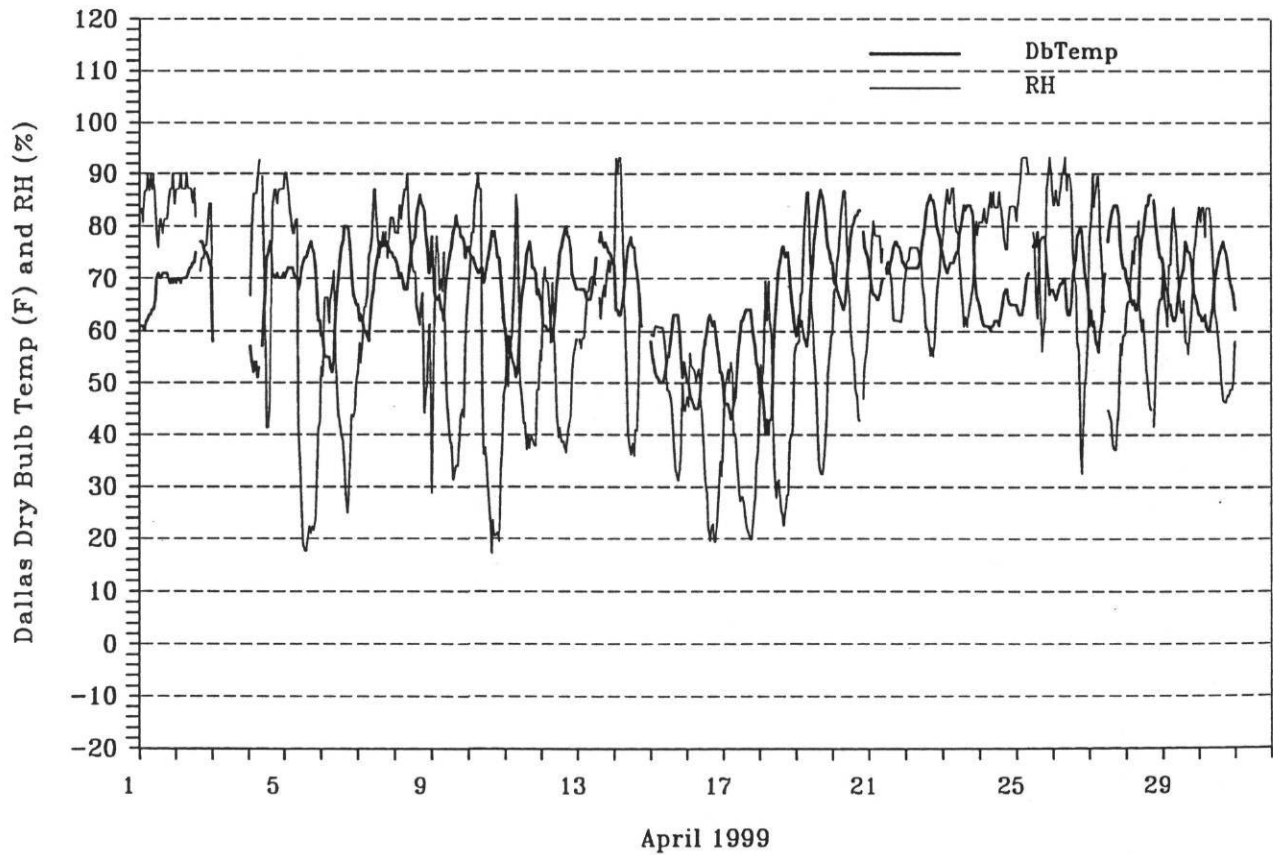
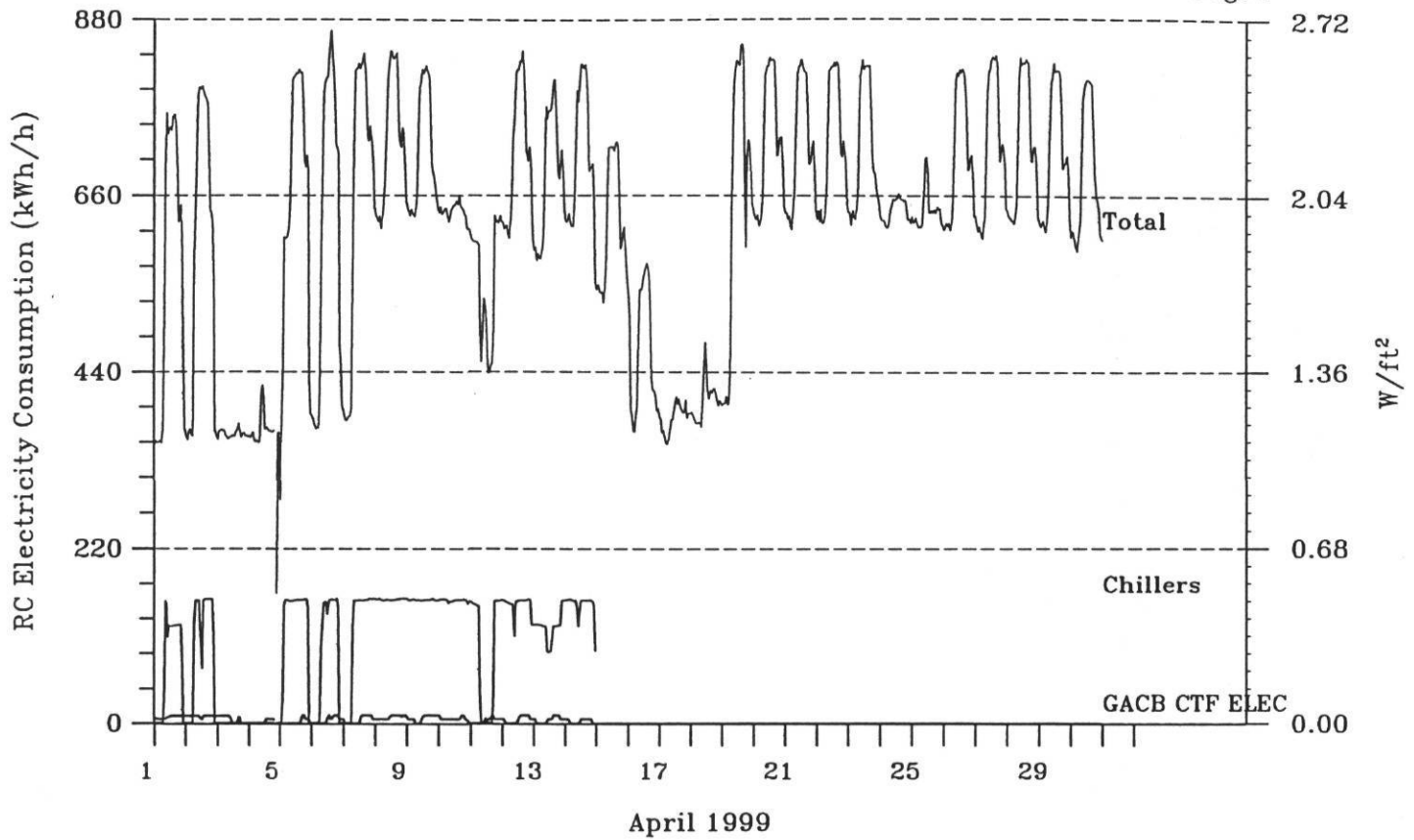


Data points for the current month are shown as letters. Points from this month last year are shown as +.  
 Monday through Sunday are represented as M,T,W,H,F,S,U. All other points are shown as \*.

Records Complex - Dallas County - April 1999



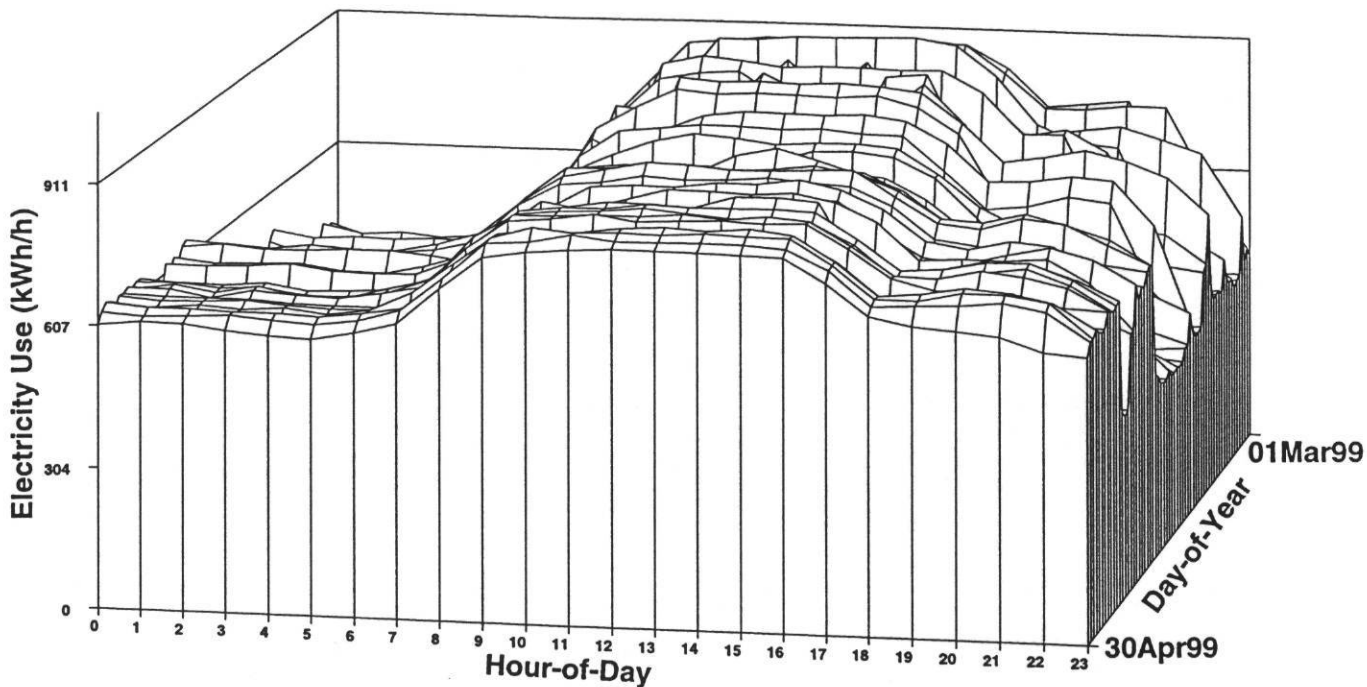
Records Complex - Dallas County - April 1999



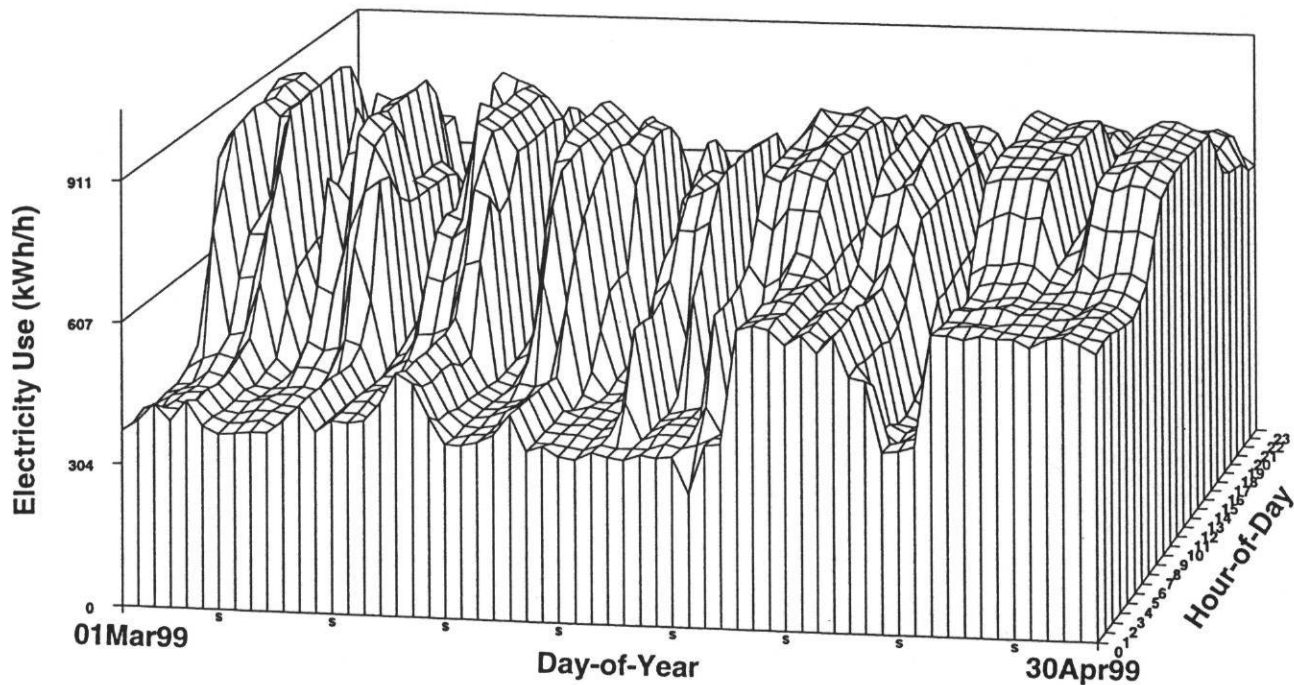
Records Complex - Dallas County - April 1999



### Whole-Building Electric



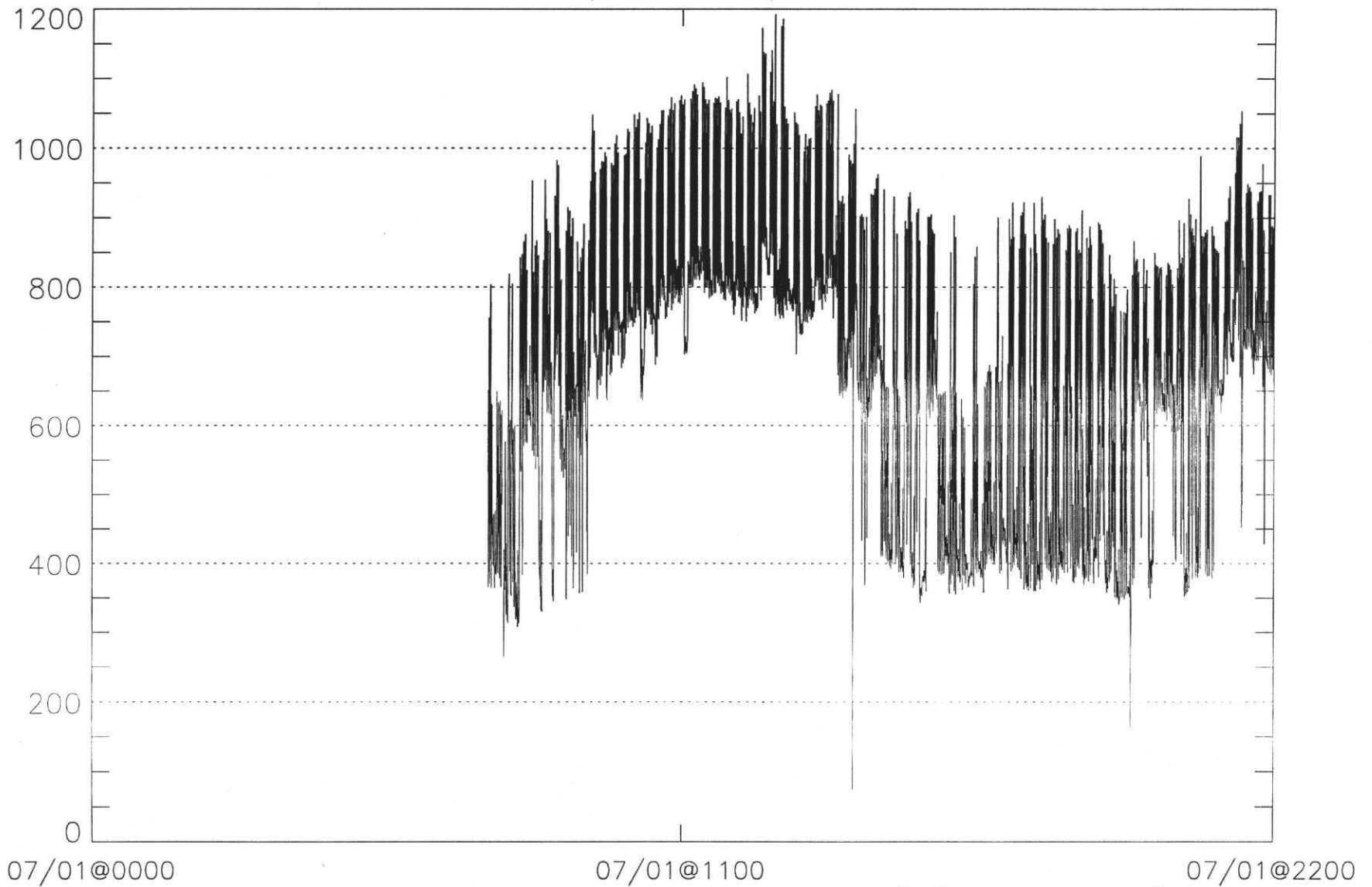
### Whole-Building Electric



Sundays are marked with an "S"

Records Complex - Dallas County - April 1999

(ch3584) WBE

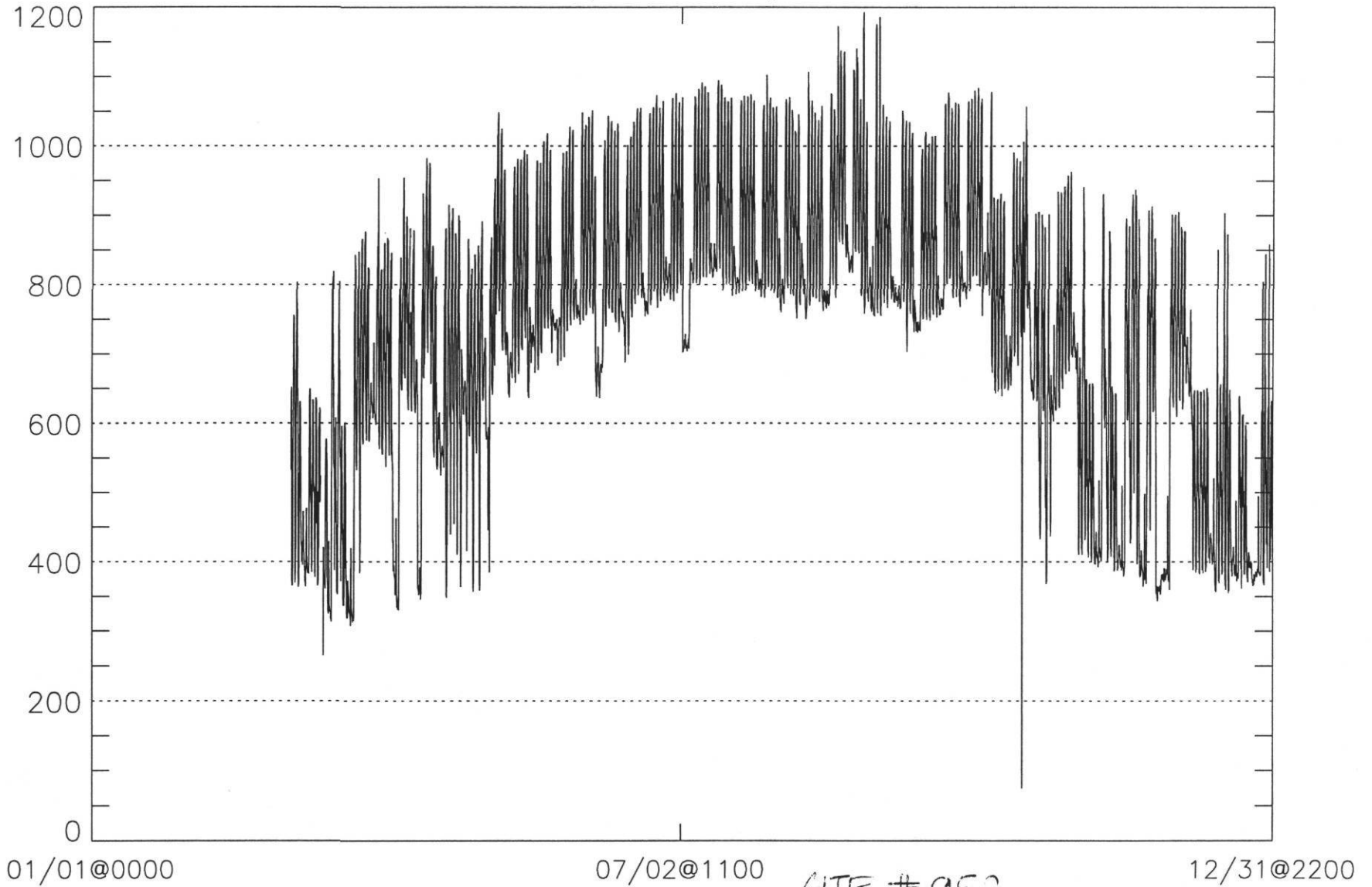


SITE # 952 Record Complex

07/97 - 07/99

98

(ch3584) WBE



SITE # 952

01/98 - 12/98

lstaraxp% listsite 963

**Site: 963      Butte Courthouse Complex (BCH)**

Mecr id:

Start date:      05/05/1998

Energy Type: default

Construction

begin:            N/A                    end:      N/A

Area:            100000.00

Facility:        Butte Courthouse Complex

Contact Info:    John McBride  
National Center for Appropriate Tech.  
3040 Continental Dr.  
P. O. Box 3838  
Butte, MT 59702  
406-494-8646  
406-494-2905

# Butte Courthouse Complex

Butte Courthouse Complex  
100,000 square feet

## Site Contact

John McBride  
National Center for Appropriate Tech.  
3040 Continental Dr.  
P. O. Box 3838  
Butte, MT 59702  
406-494-8646  
406-494-2905

## ESL Metering Contact

Sam Farouz  
053 WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409) 845-9213

## Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	26888 kWh	77	\$0.05000	\$1344
Peak 60 Minute Demand	106 kW	77	\$7.60	\$799
Natural Gas	685.0 MMBtu	77	\$5.000	\$3425

Peak 60 minute demand was recorded at 1100 Tuesday 04/06/99.  
There were 720 hours in this month.

## Monthly Retrofit Savings

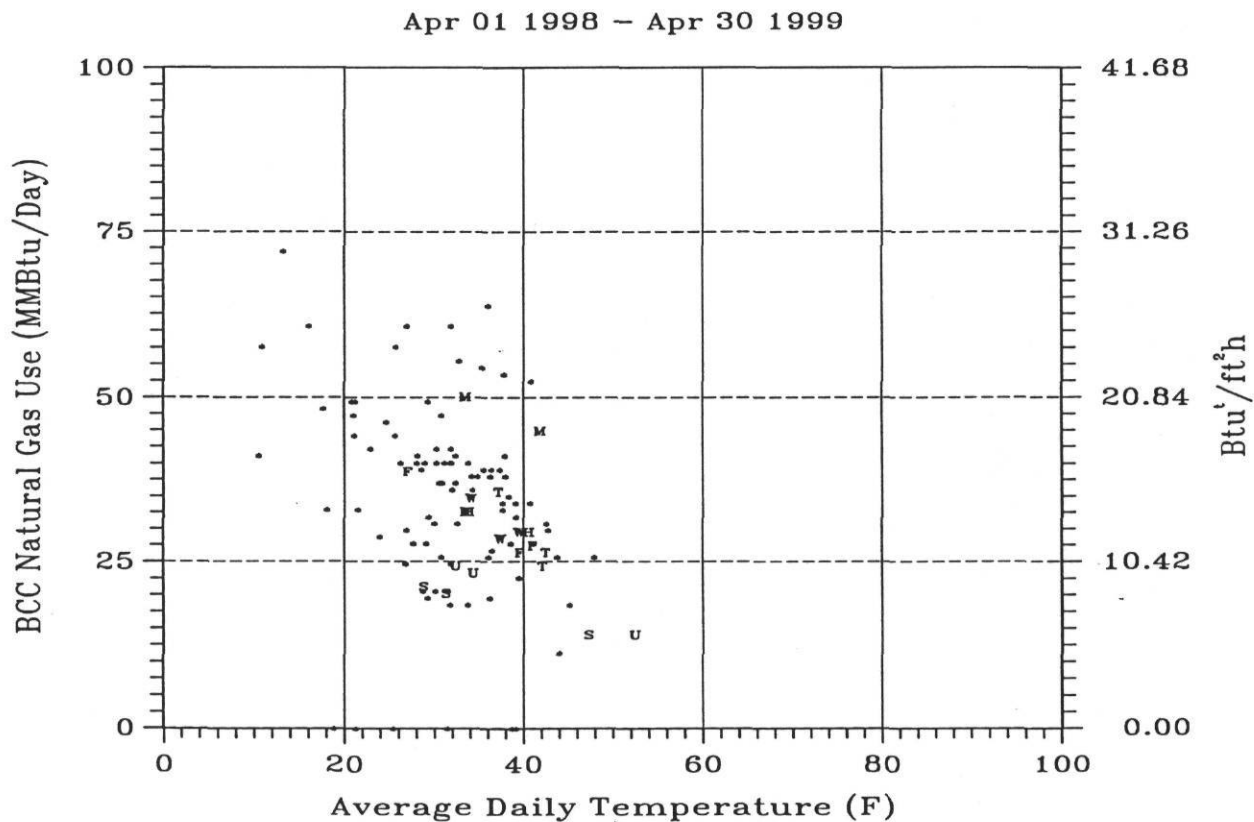
	Measured Savings	Audit Estimated Savings
Monthly Total		
Total to Date*		

\*Measured savings include construction period. Audit estimated savings do not.

## Comments

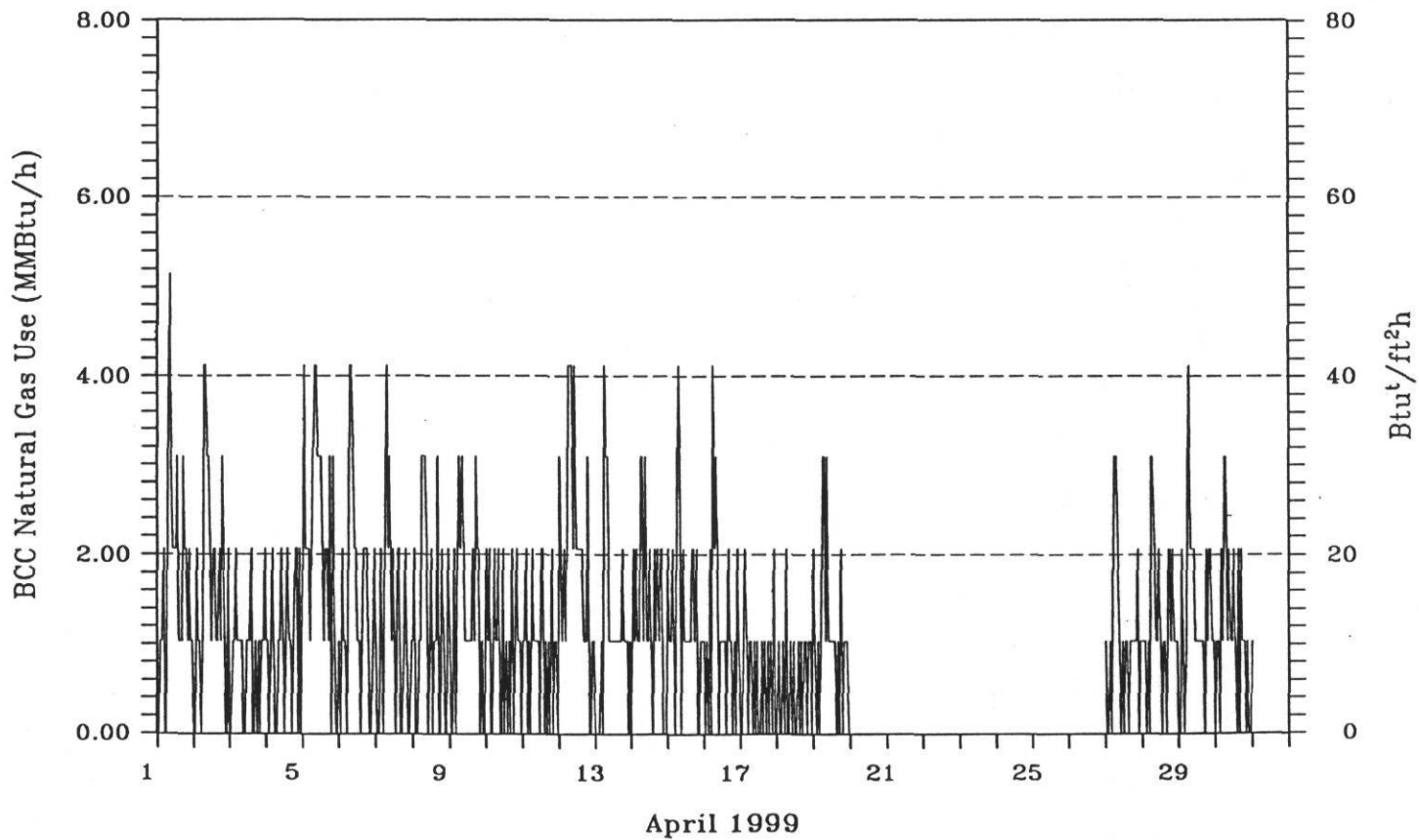
★ Electricity and natural gas consumption data are missing from 4/20/99 to 4/26/99 due to monitoring hardware problem.

Butte Courthouse Complex - Butte Courthouse Complex - April 1999

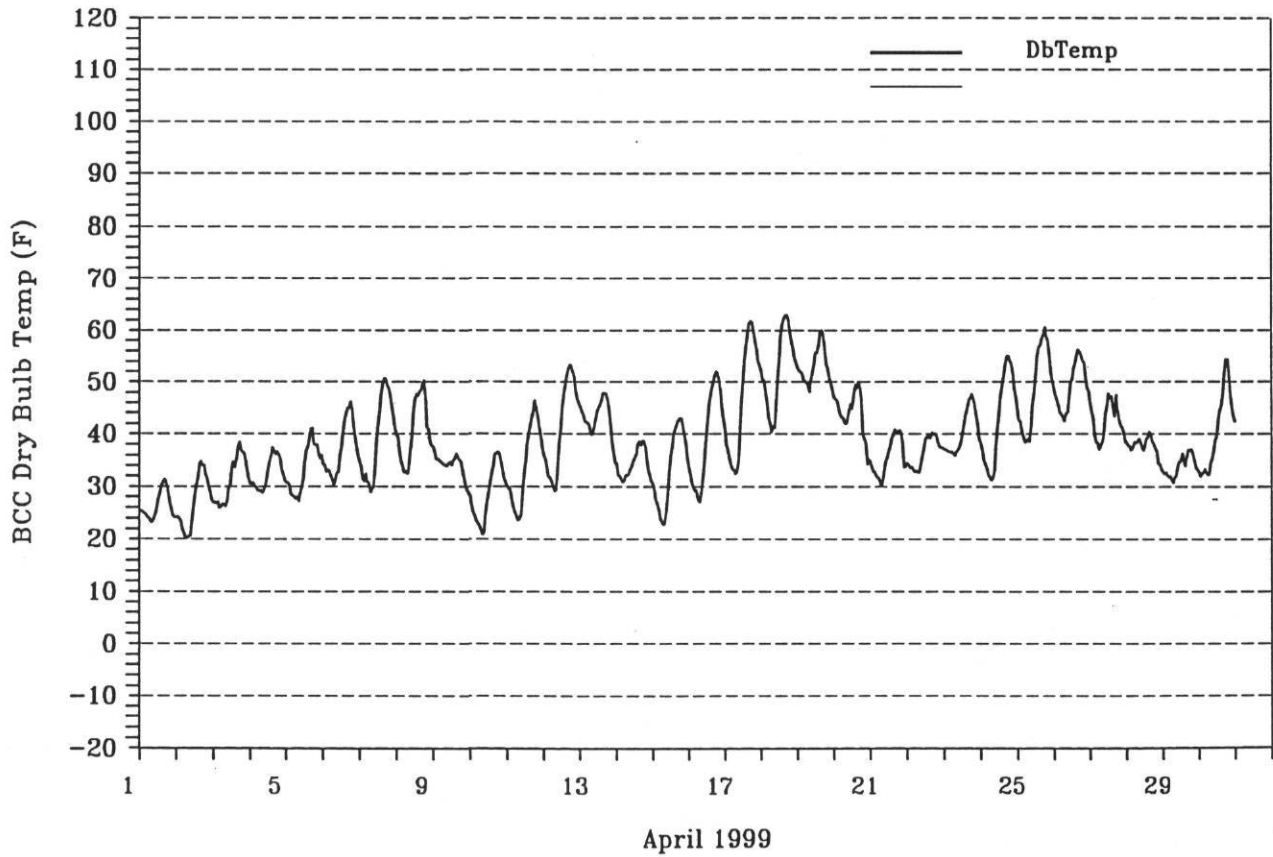
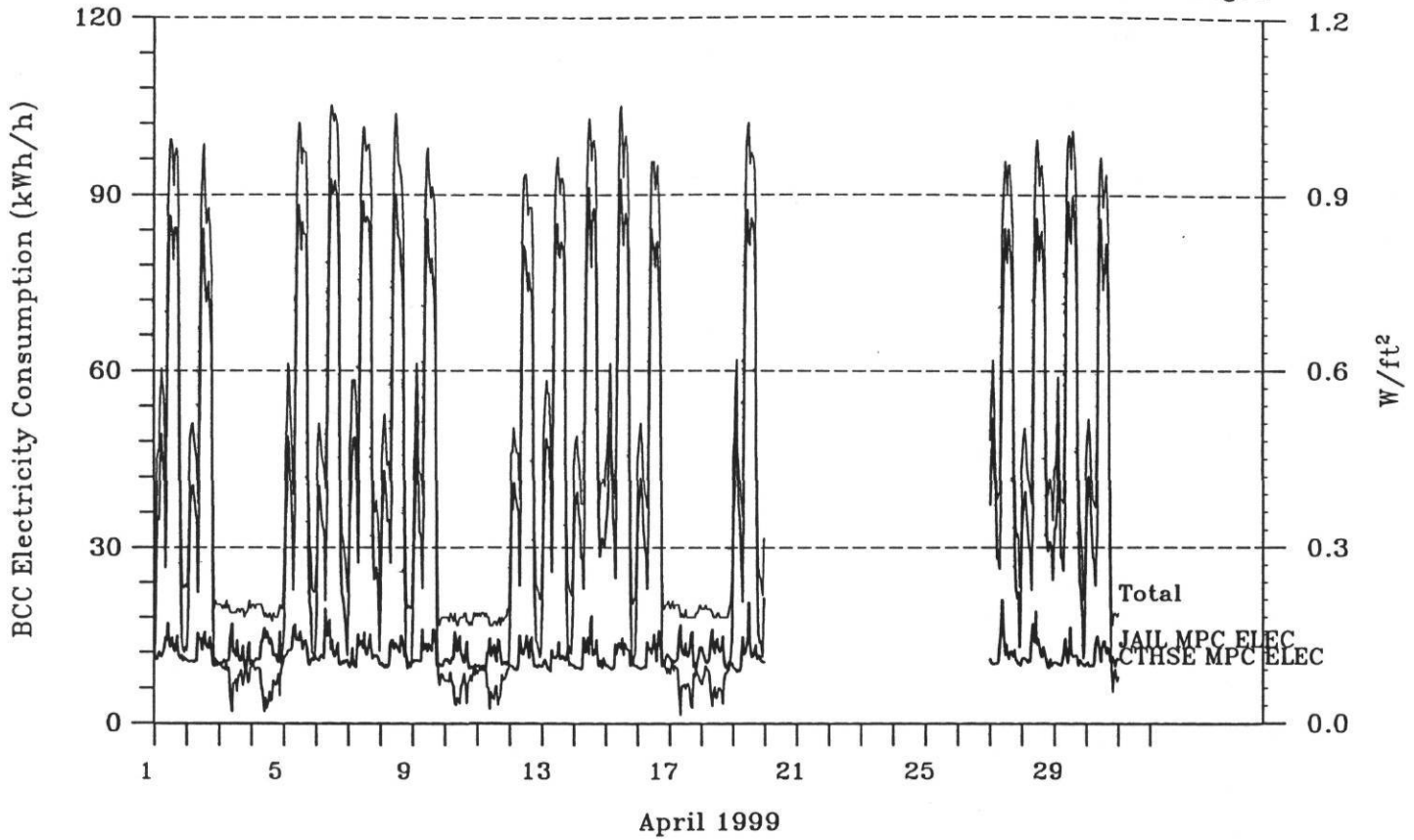


Data points for the current month are shown as letters. Points from this month last year are shown as +.  
 Monday through Sunday are represented as M,T,W,H,F,S,U. All other points are shown as \*.

Butte Courthouse Complex - Butte Courthouse Complex - April 1999



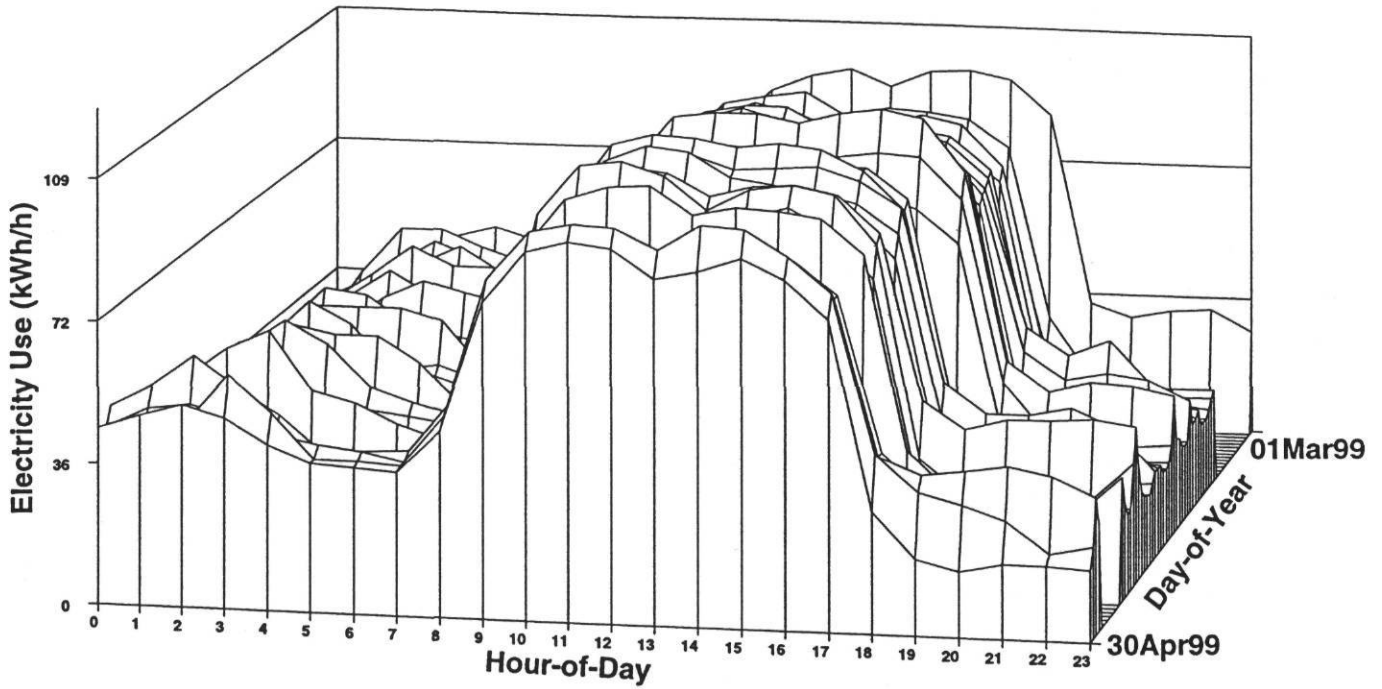
Butte Courthouse Complex - Butte Courthouse Complex - April 1999



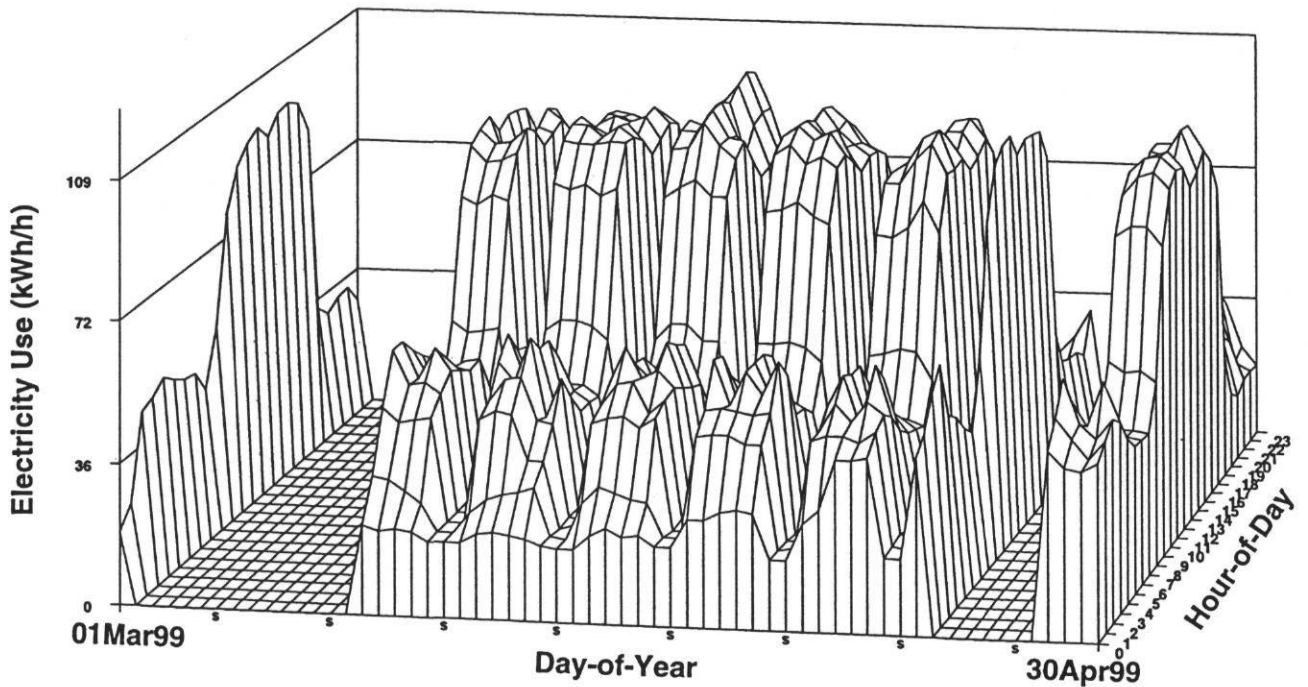
Butte Courthouse Complex - Butte Courthouse Complex - April 1999



### Whole-Building Electric



### Whole-Building Electric

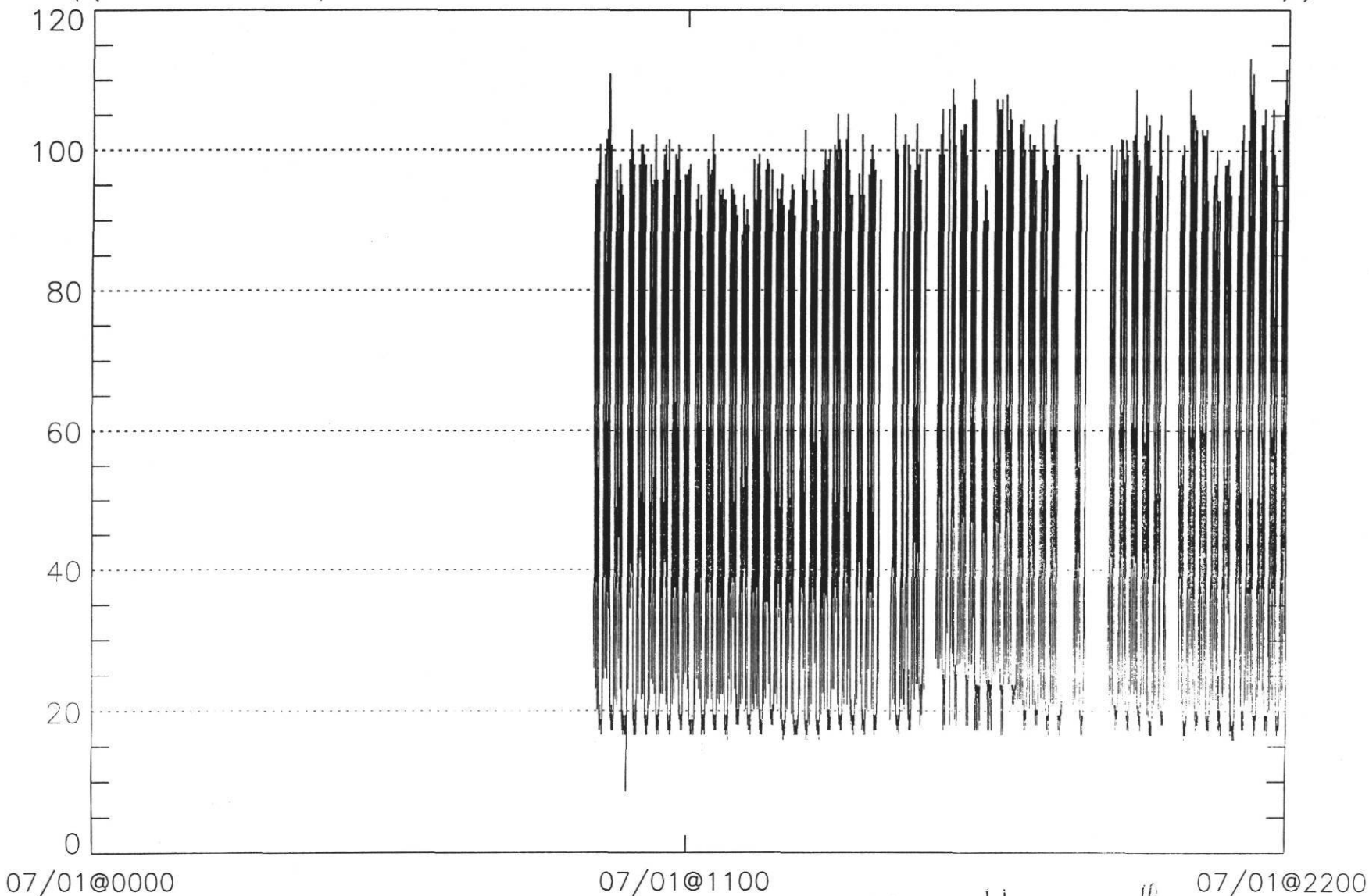


Sundays are marked with an "S"

Butte Courthouse Complex - Butte Courthouse Complex - April 1999

(timestamp > "1998-11-24 00:00" ? ch4058:ch3705)

(WBE)

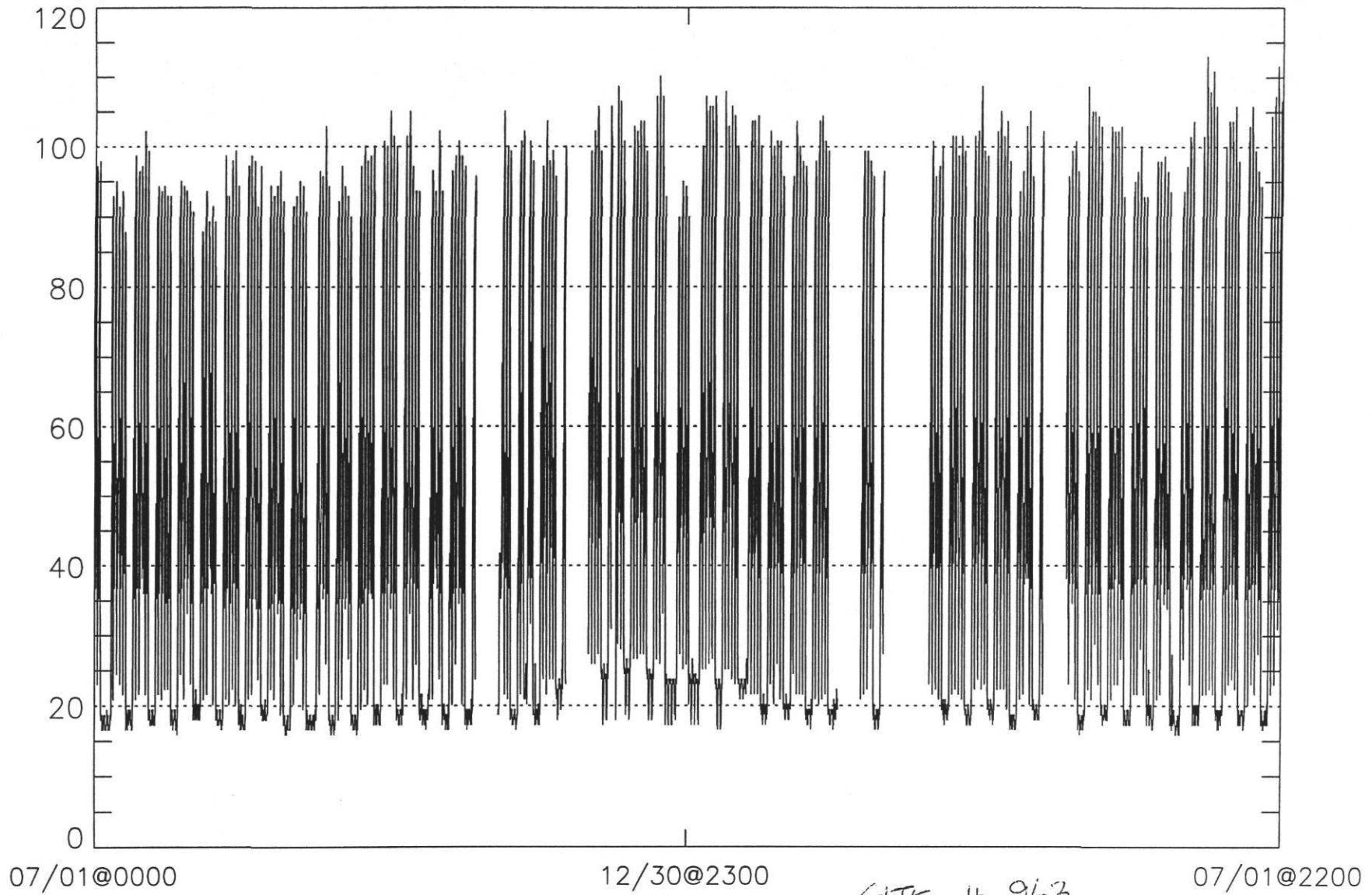


07/98 - 07/99

SITE # 963 Butte coorhouse

07/99 - 07/99

(WBE)  
((timestamp>"1998-11-24 00:00"?ch4058:ch3705))



SITE # 963  
07/93 - 07/99

lstarxp% listsite 974

**Site: 974                    Brazos County Courthouse Annex (Brz)**

Mecr id:            BCA

Start date:

Energy Type:    default

Construction

    begin:            N/A                    end:        N/A

Area:              20288.00

Facility:            Brazos County

Contact Info:    Mr. Ed Dobbins  
                  Plant Maintenance Manager  
                  Brazos County  
                  206 North Washington St.  
                  Bryan, TX 77803

(409) 361-4460

BCA  
**Brazos County Courthouse Annex**  
 Brazos County  
 20,288 square feet

Site Contact

Mr. Ed Dobbins  
 Plant Maintenance Manager  
 Brazos County  
 206 North Washington St.  
 Bryan, TX 77803  
  
 (409) 361-4460

ESL Metering Contact

Sam Farouz  
 053 WERC  
 Texas A&M University  
 College Station, TX 77843-3123  
 (409) 845-9213

### Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	39406 kWh	100	\$0.05050	\$1990
Peak 60 Minute Demand	117 kW	100	\$7.35	\$857

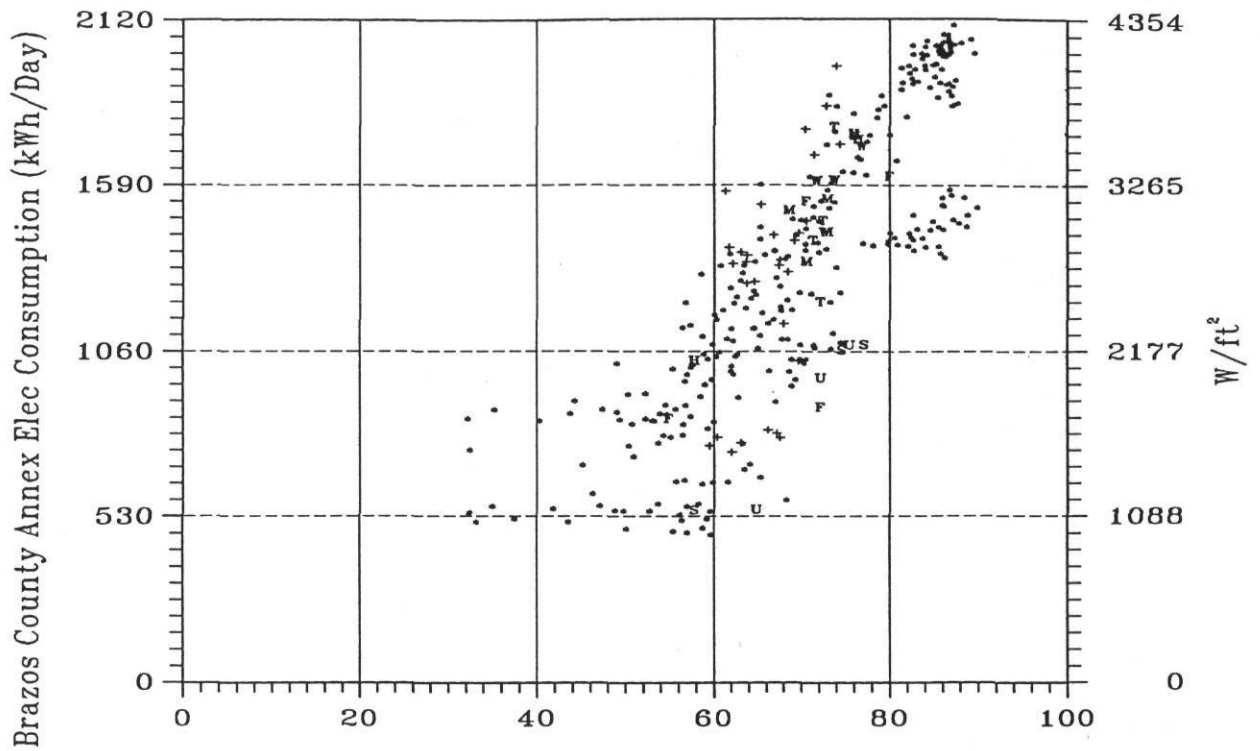
Peak 60 minute demand was recorded at 1500 Wednesday 04/21/99.  
 There were 720 hours in this month.

### Monthly Retrofit Savings

	Measured Savings		Audit Estimated Savings	
Electricity (kWh)	2155	\$93	10319	\$444
Chilled Water (MMBtu)	10	\$64	52	\$330
Monthly Total		\$157		\$774
Total to Date*	(14 months)	\$1331	(6 months)	\$4644

\*Measured savings include construction period. Audit estimated savings do not.

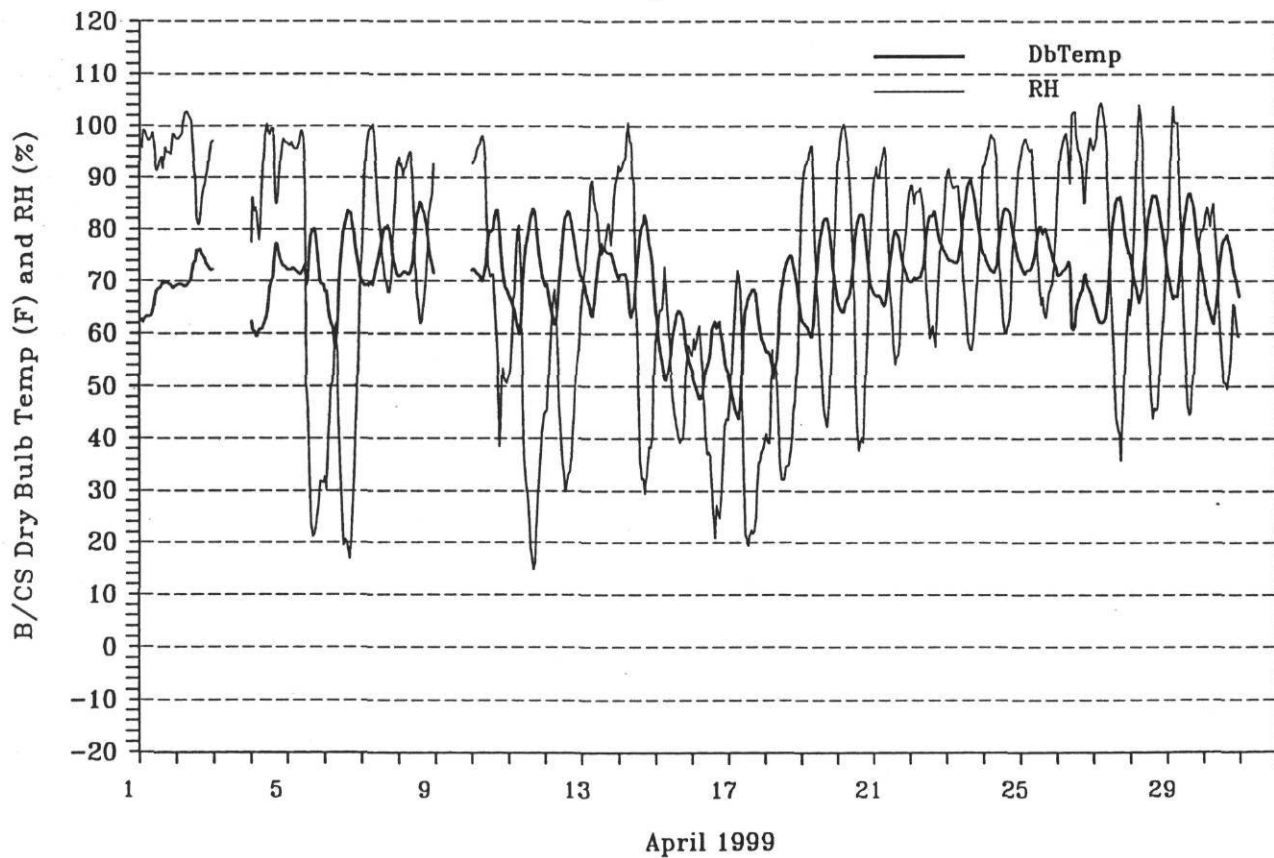
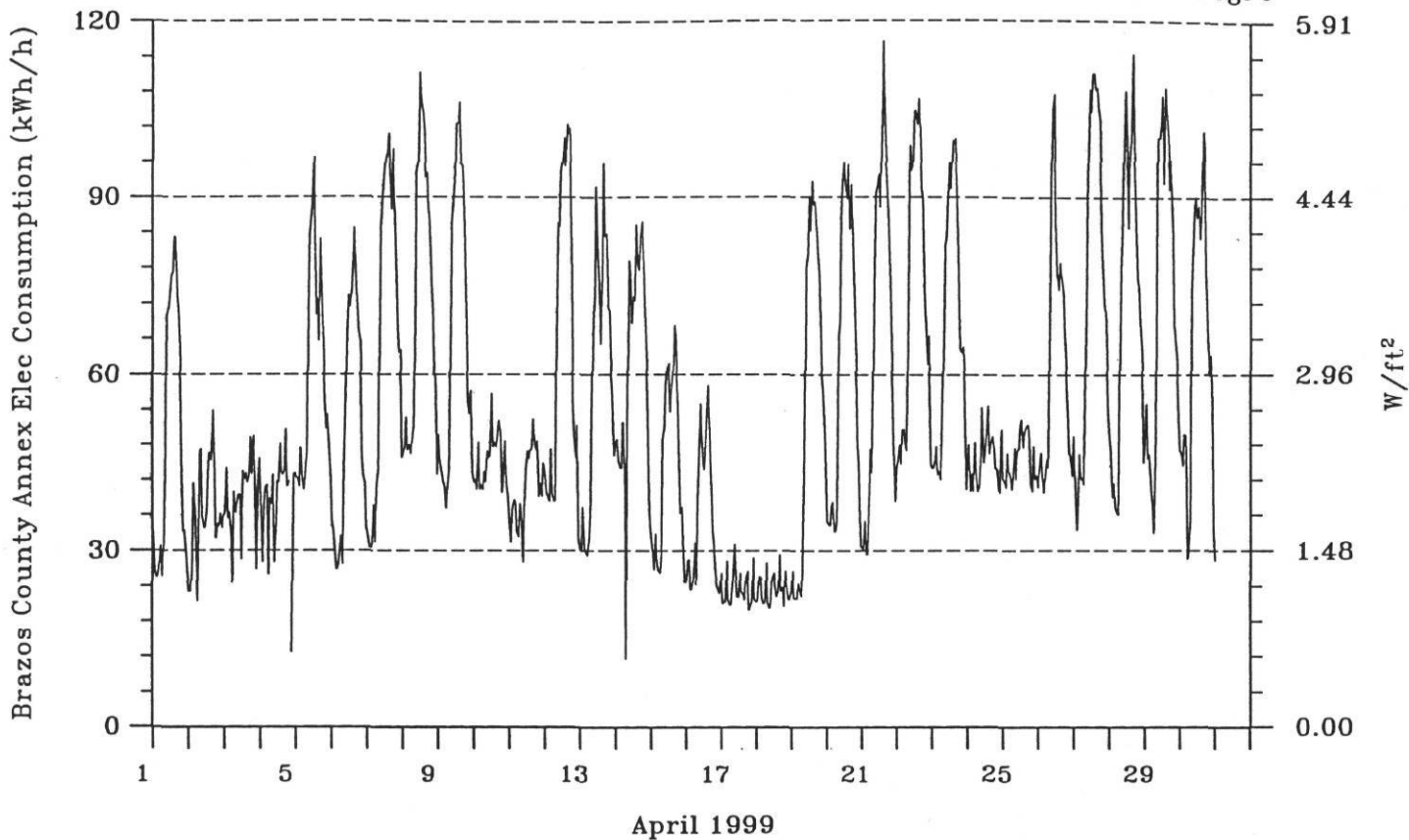
Comments



Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

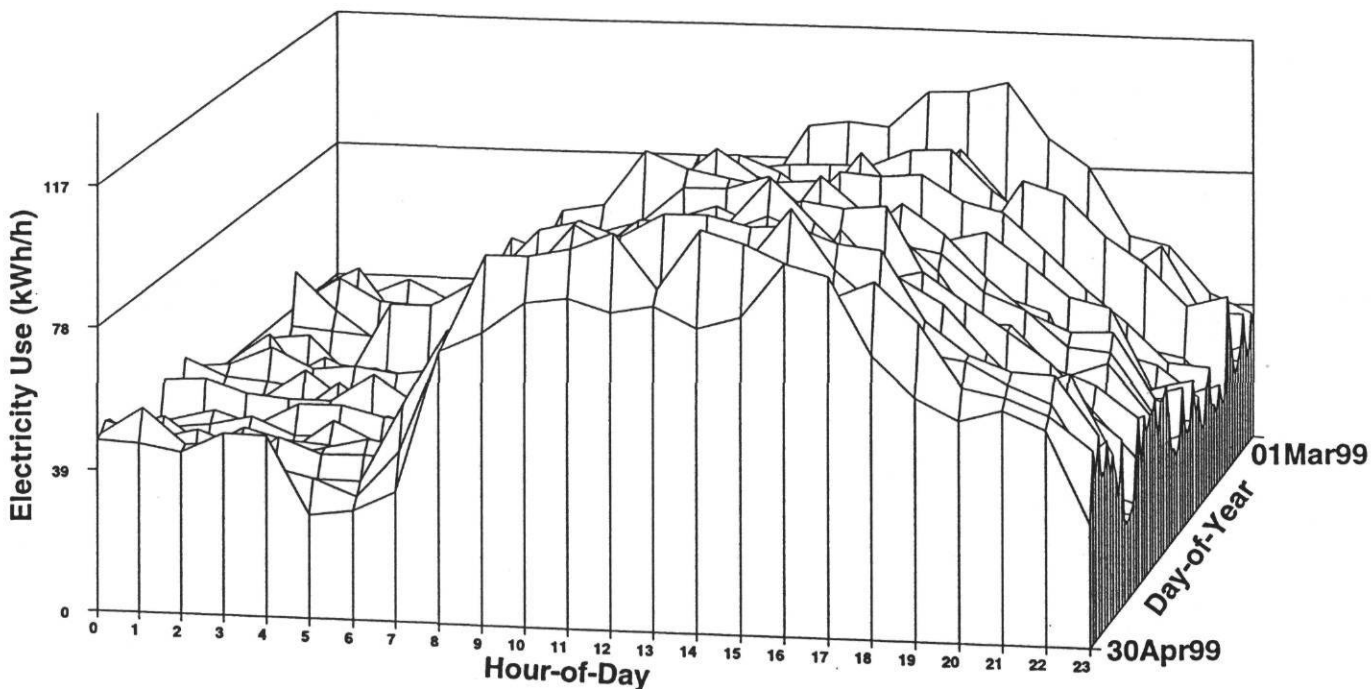
Points from this month last year are shown as +.  
All other points are shown as \*.

BCA - Brazos County Courthouse Annex - Brazos County - April 1999

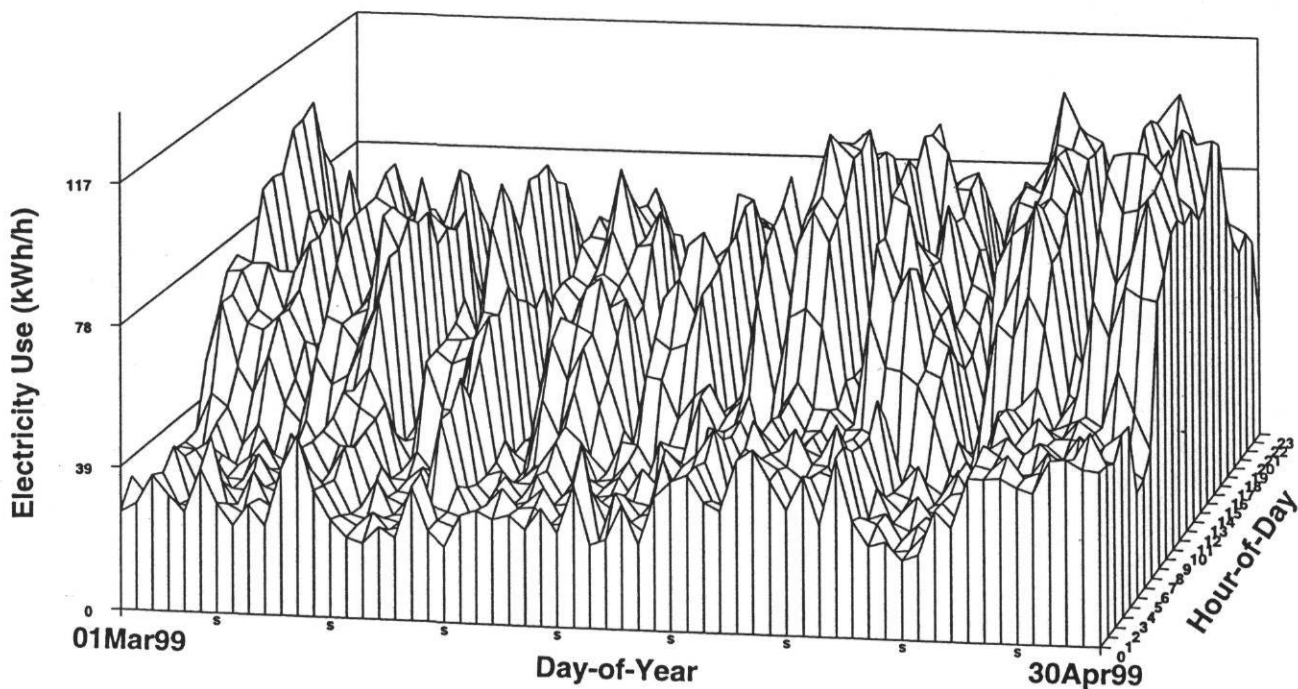


BCA - Brazos County Courthouse Annex - Brazos County - April 1999

### Whole-Building Electric



### Whole-Building Electric

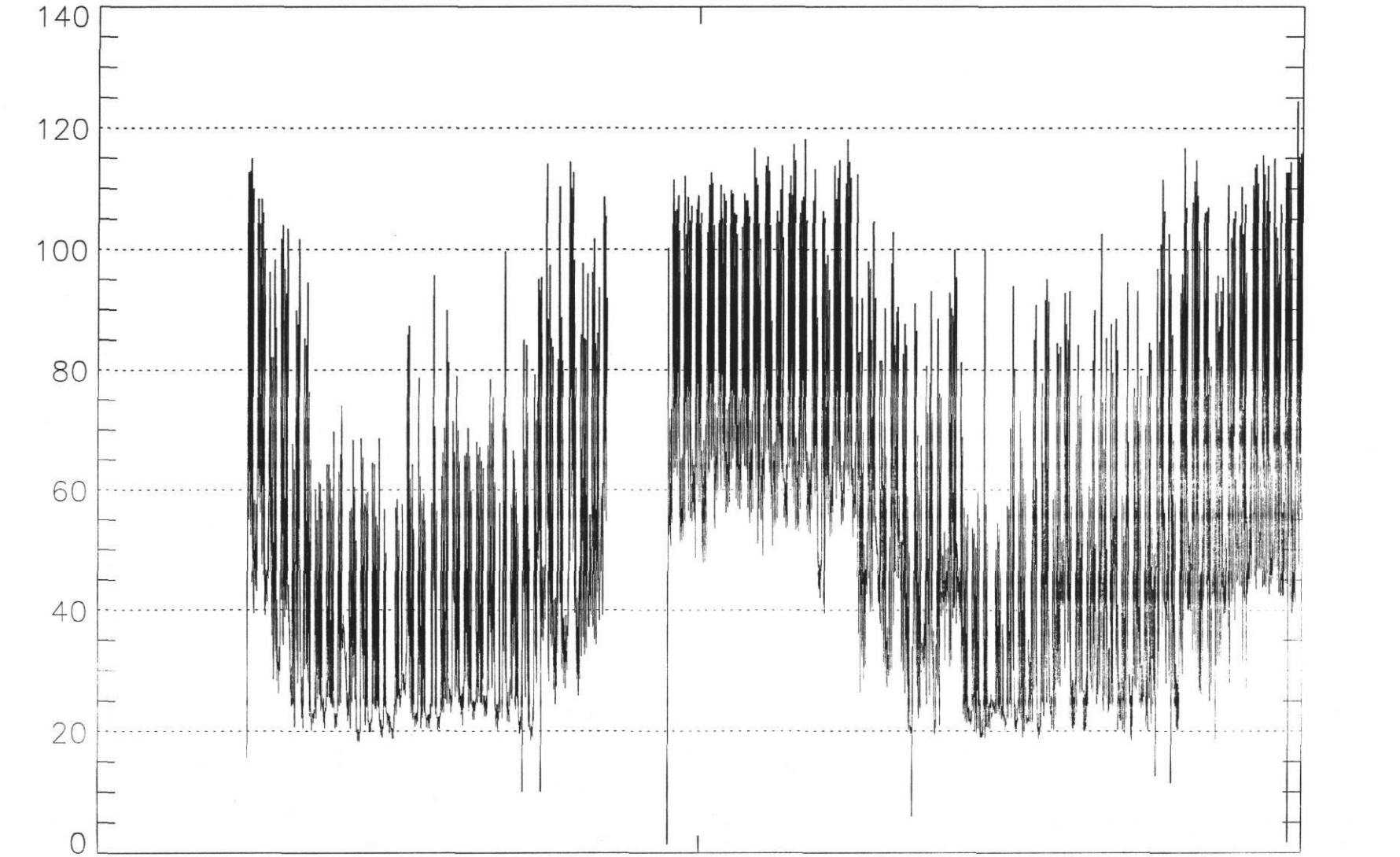


Sundays are marked with an "S"

BCA - Brazos County Courthouse Annex - Brazos County - April 1999



(ch3495) WBE



07/01@0000

07/01@1100

07/01@2200

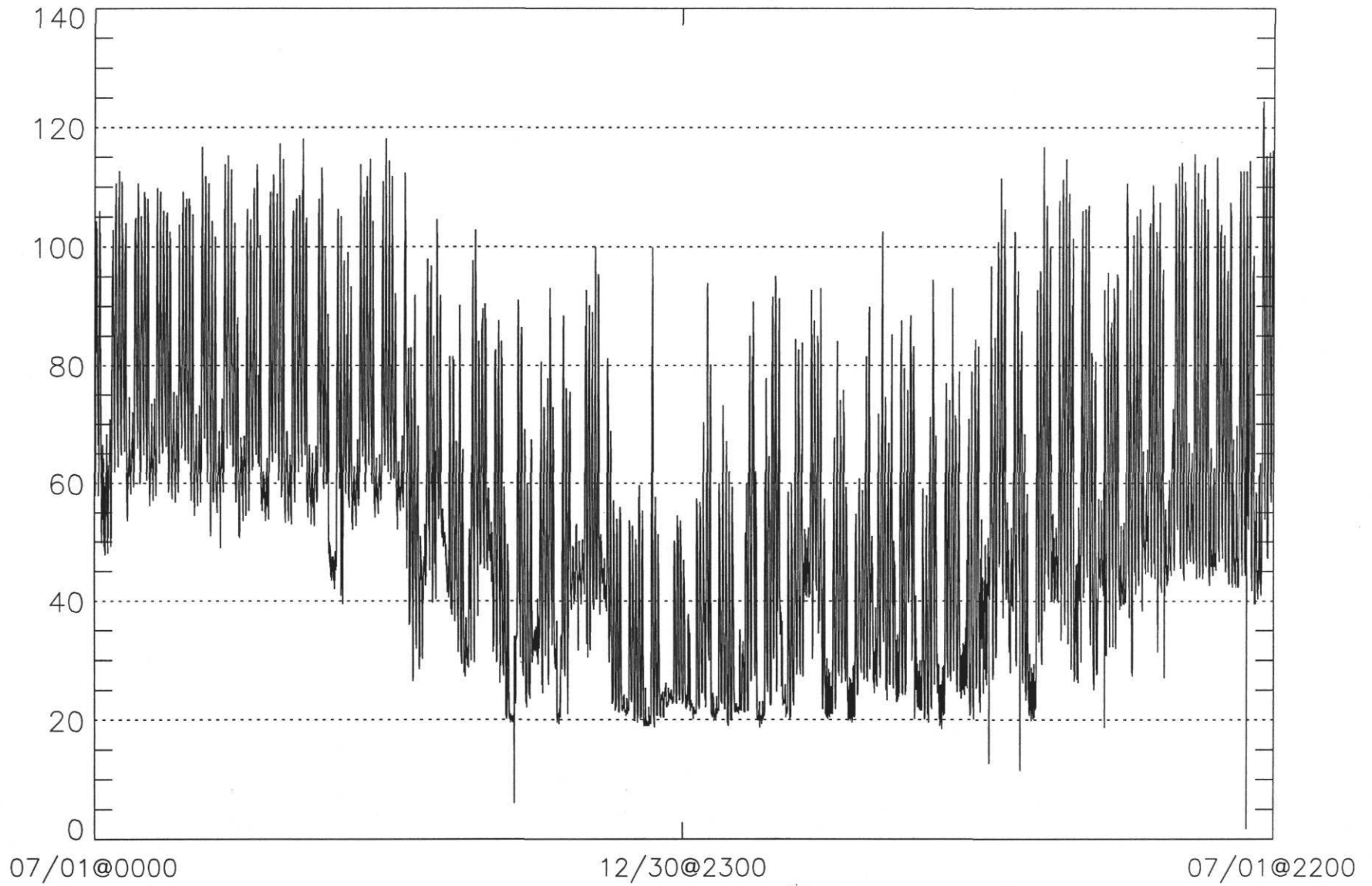
SITE # 974

BRAZOS COURTHOUSE  
ANNEX

07/97 - 07/99

~~07/97 - 07/99~~

(ch3495) WBE



SITE # 974

07/98 - 07/99

lstaraxp% listsite 975

**Site: 975                    Brazos County Courthouse (Brz)**

---

Mecr id:            BCC

Start date:

Energy Type:    default

Construction

    begin:            N/A                    end:        N/A

Area:              100000.00

Facility:           Brazos County

Contact Info:    Mr. Ed Dobbins  
                  Plant Maintenance Manager  
                  Brazos County  
                  206 North Washington St.  
                  Bryan, TX 77803

(409) 361-4460

BCC  
**Brazos County Courthouse**  
 Brazos County  
 100,000 square feet

Site Contact

Mr. Ed Dobbins  
 Plant Maintenance Manager  
 Brazos County  
 206 North Washington St.  
 Bryan, TX 77803

(409) 361-4460

ESL Metering Contact

Sam Farouz  
 053 WERC  
 Texas A&M University  
 College Station, TX 77843-3123  
 (409) 845-9213

**Summary of Energy Consumption**

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	170269 kWh	100	\$0.05050	\$8599
Peak 60 Minute Demand	355 kW	100	\$7.35	\$2604

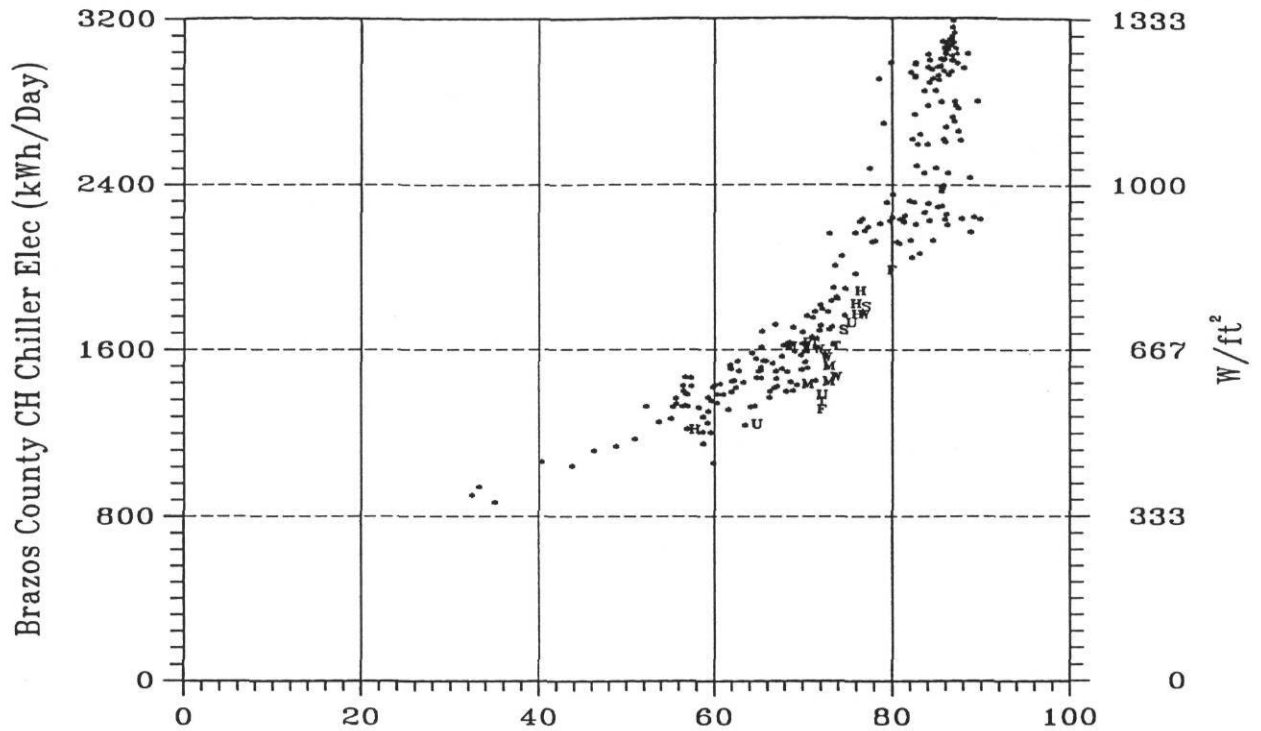
Peak 60 minute demand was recorded at 1300 Thursday 04/08/99.  
 There were 720 hours in this month.

**Monthly Retrofit Savings**

	Measured Savings		Audit Estimated Savings	
Electricity (kWh)	39795	\$1711	39128	\$1683
Chilled Water (MMBtu)	80	\$508	105	\$667
Monthly Total		\$2219		\$2350
Total to Date*	(14 months)	\$21954	(6 months)	\$14096

\*Measured savings include construction period. Audit estimated savings do not.

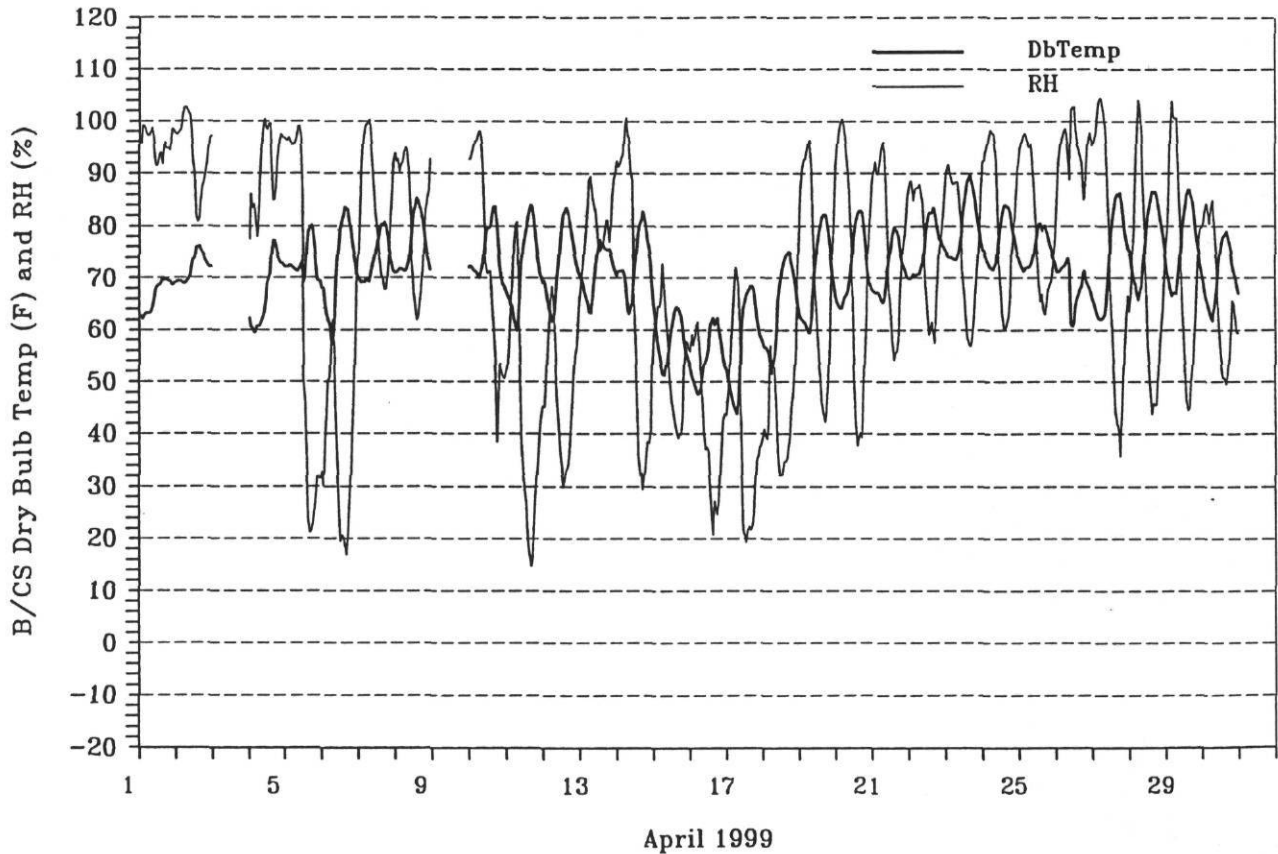
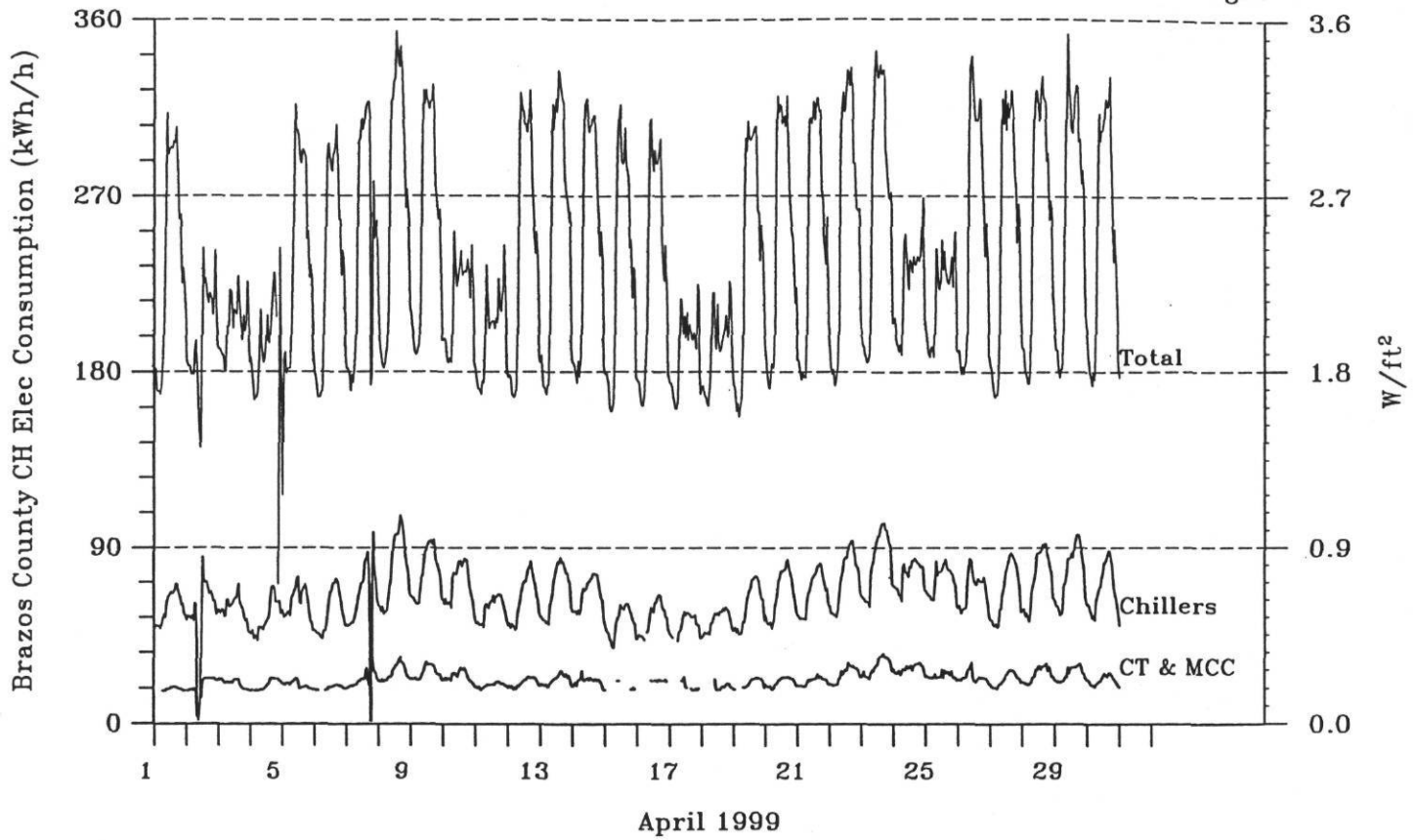
Comments



Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

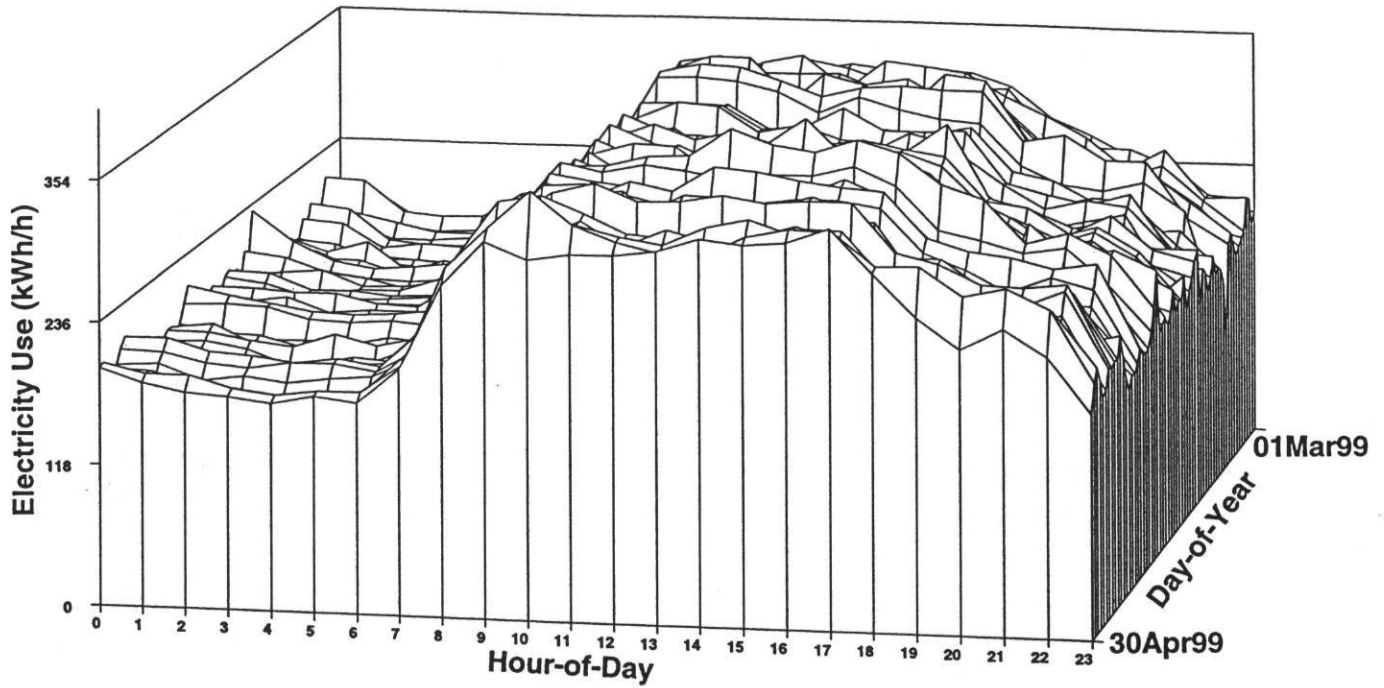
Points from this month last year are shown as +.  
All other points are shown as \*.

BCC - Brazos County Courthouse - Brazos County - April 1999

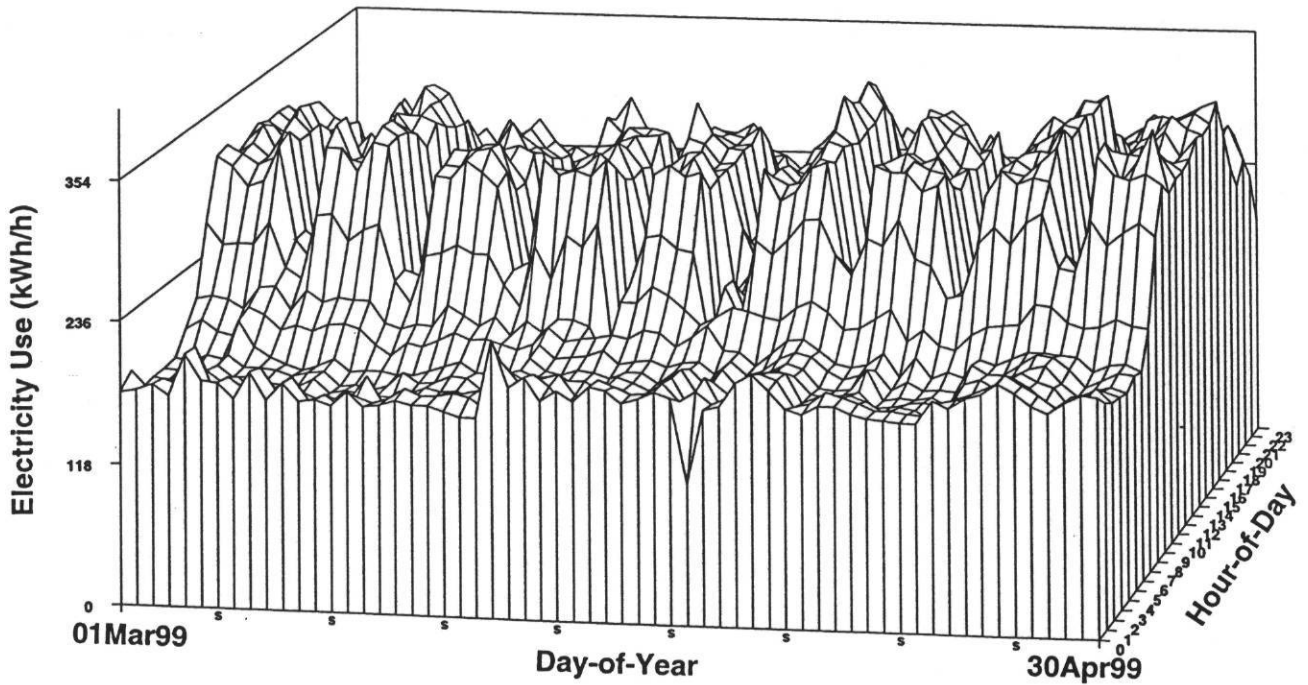


BCC - Brazos County Courthouse - Brazos County - April 1999

### Whole-Building Electric



### Whole-Building Electric



Sundays are marked with an "S"

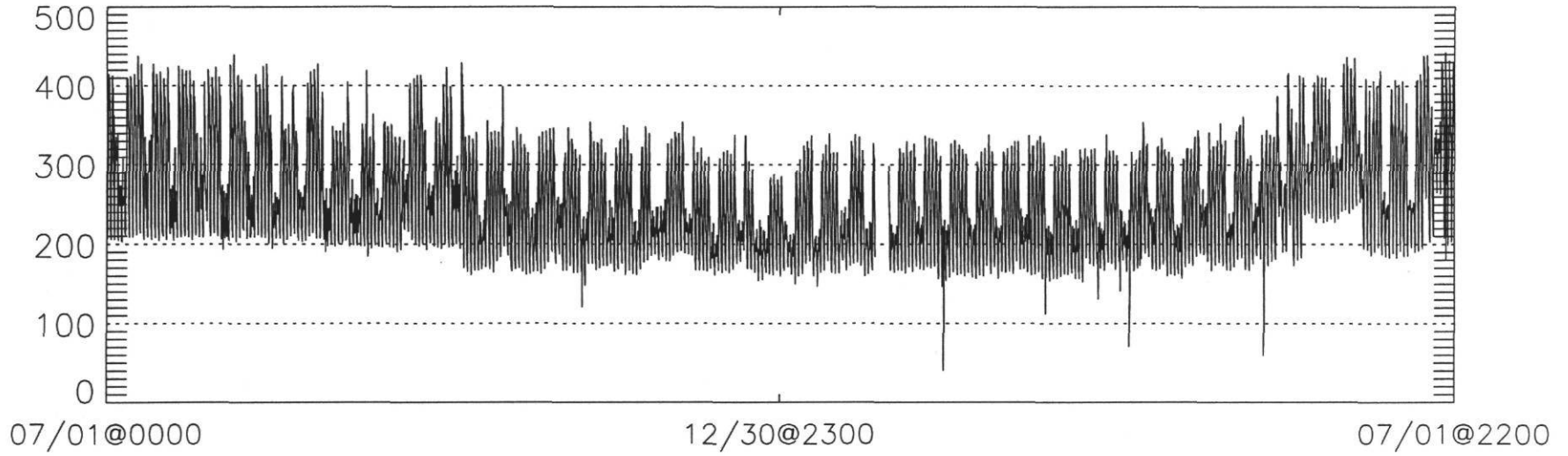
BCC - Brazos County Courthouse - Brazos County - April 1999



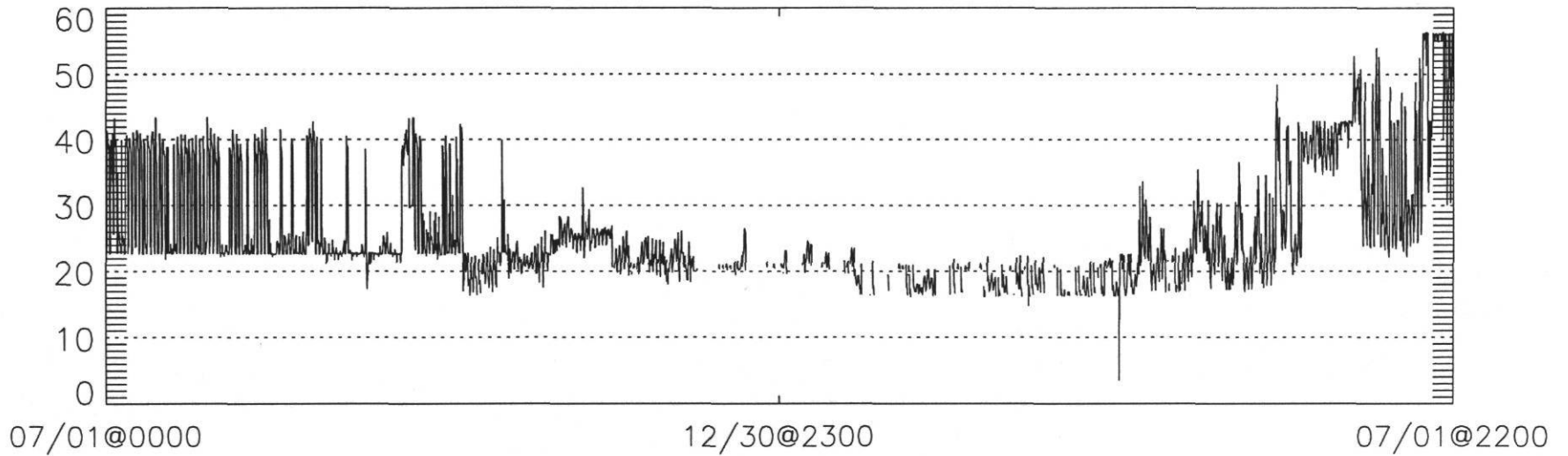


WBE

(timestamp>"1998-06-01 23:59"?(ch3496\*5):(ch3496))



(ch3840+ch3841+ch3846+ch3847) Mcc



SITE # 975

07/98 - 07/99

lstarxp% listsite 980

**Site: 980                      St Paul Place (Spp)**

Mecr id:            SPP  
Start date:        08/08/1997

Energy Type:    default  
Construction  
    begin:            N/A                      end:        N/A  
Area:              100000.00

Facility:

Contact Info:    Mike Sweeney  
                  ENERSHOP  
                  2777, Stemons Freeway  
                  Suite 700  
                  Dallas, TX 75202  
                  (214) 525-1320  
                  (214) 525-1310

SPP  
St Paul Place

100,000 square feet

Site Contact

Mike Sweeney  
ENERSHOP  
2777, Stemons Freeway  
Suite 700  
Dallas, TX 75202  
(214) 525-1320  
(214) 525-1310

ESL Metering Contact

Sam Farouz  
053 WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409) 845-9213

Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	339621 kWh	73	\$0.05755	\$19545
Peak 60 Minute Demand	1372 kW	73	\$8.41	\$11532
Chiller Electricity	66.7 MWh	97	\$57.550	\$3838

Peak 60 minute demand was recorded at 1700 Thursday 04/22/99.  
There were 720 hours in this month.

Monthly Retrofit Savings

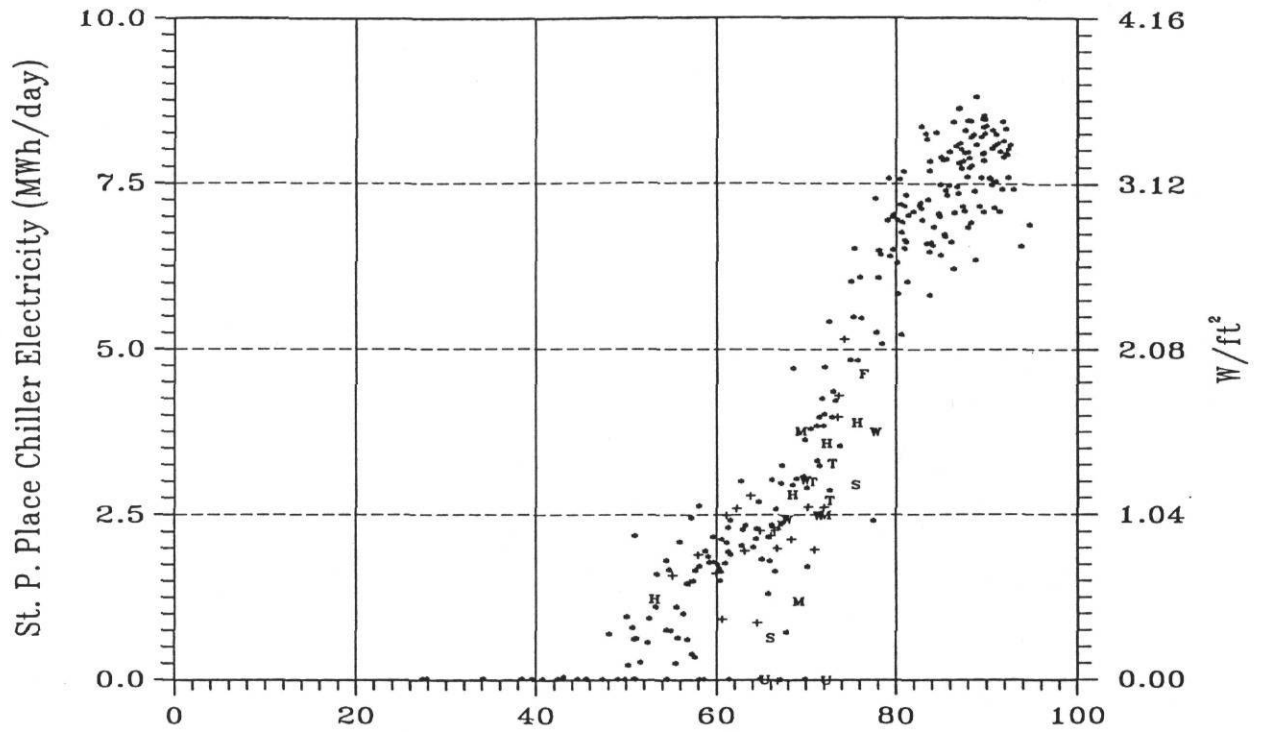
	Measured Savings	Audit Estimated Savings
Monthly Total		
Total to Date*		

\*Measured savings include construction period. Audit estimated savings do not.

Comments

★ Whole-building electricity data from 4/5/99 to 4/12/99 were recorded with an improper date stamp. Data will be corrected and replaced.

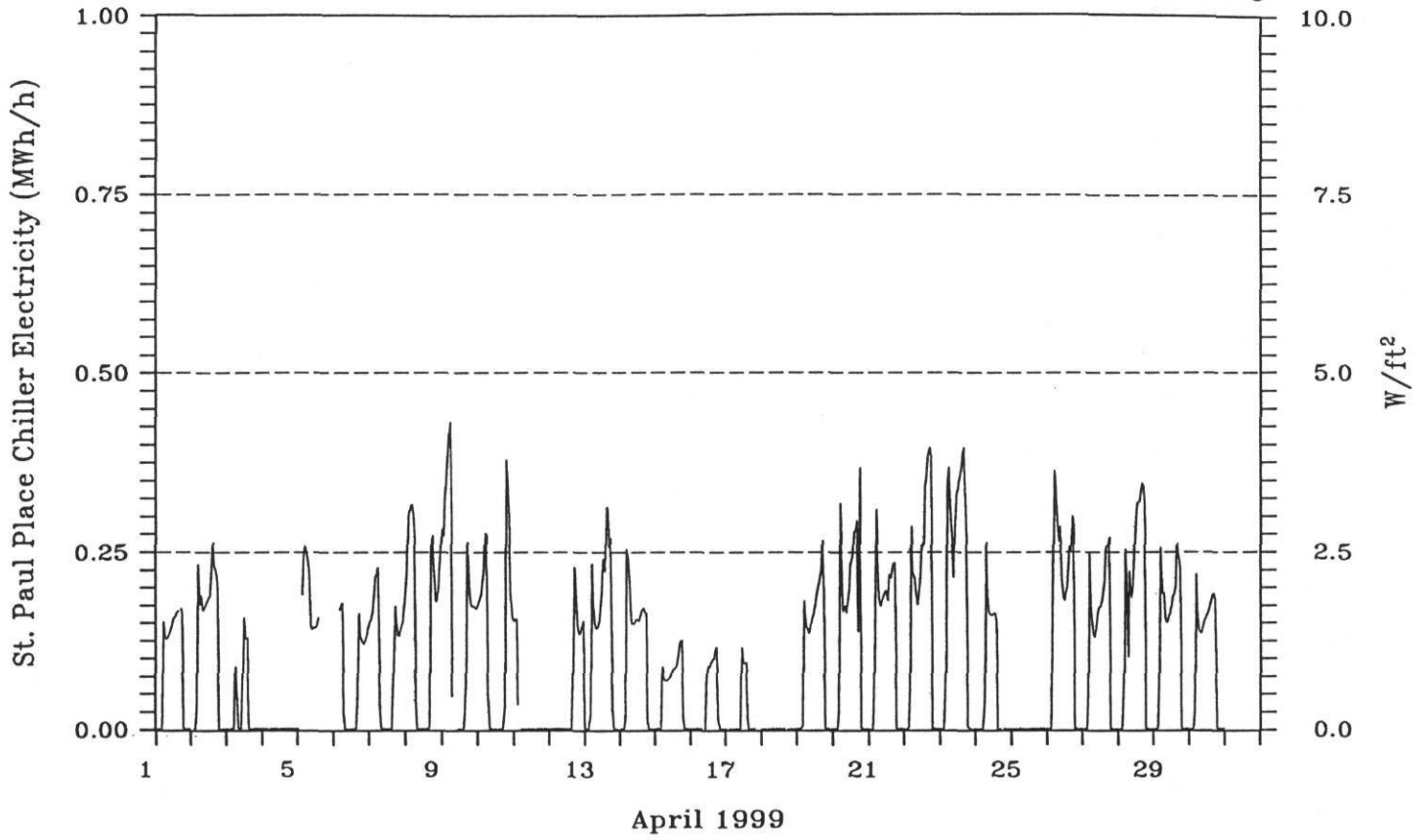
SPP - St Paul Place - - April 1999



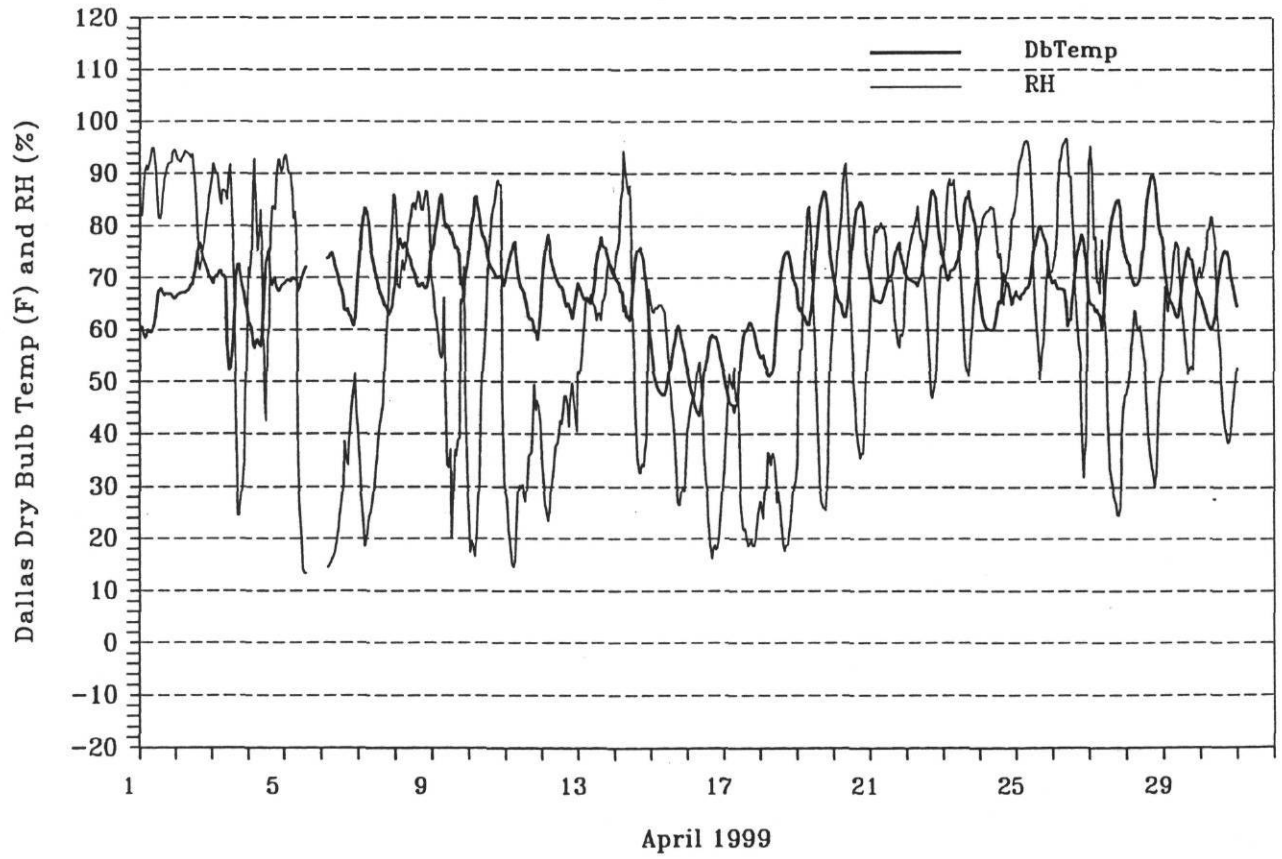
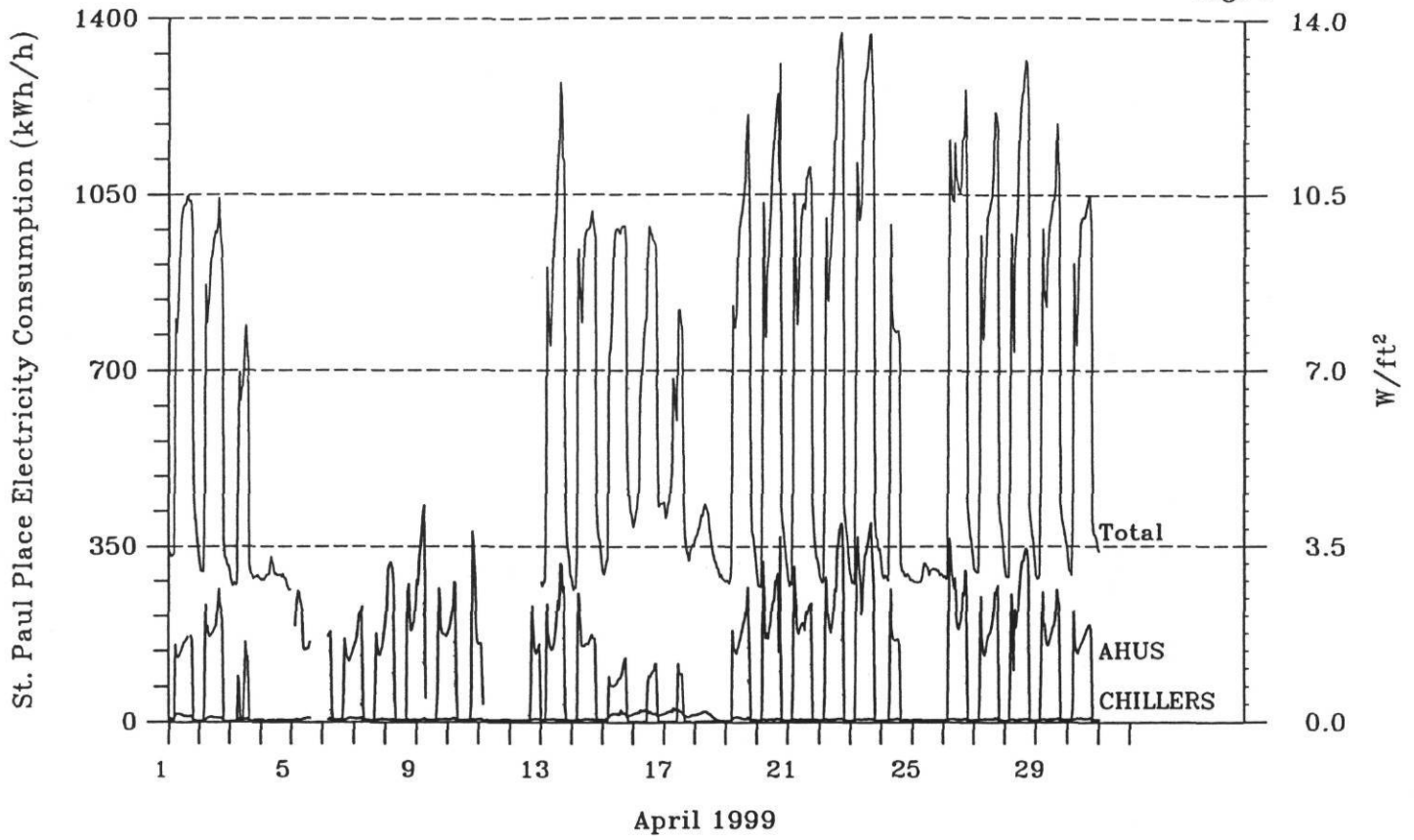
Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

Points from this month last year are shown as +.  
All other points are shown as \*.

SPP - St Paul Place - - April 1999

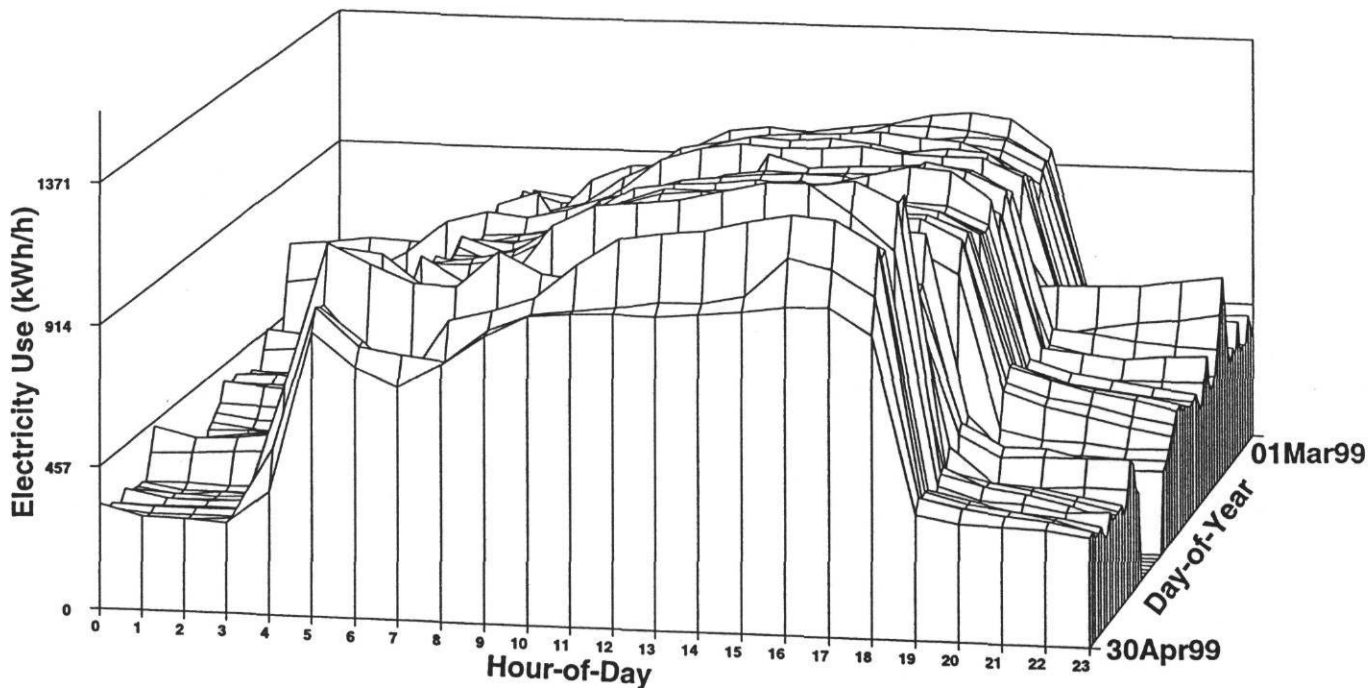


SPP - St Paul Place - - April 1999

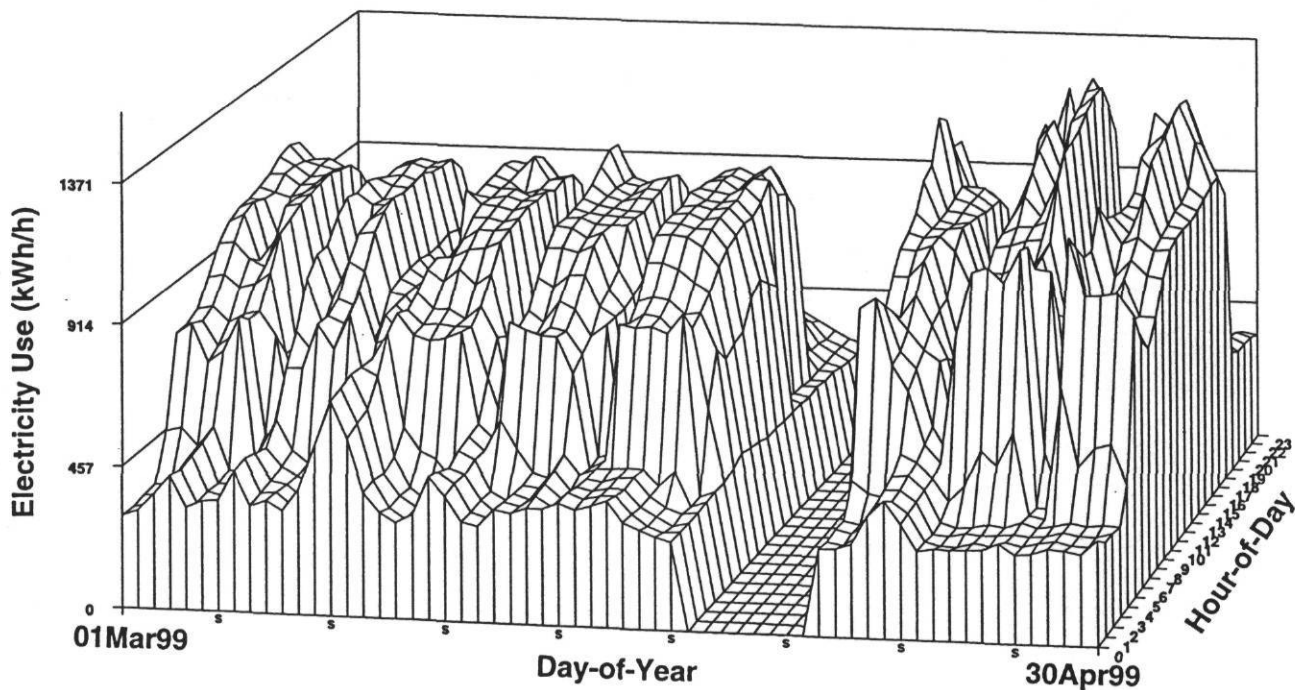


SPP - St Paul Place - April 1999

### Whole-Building Electric



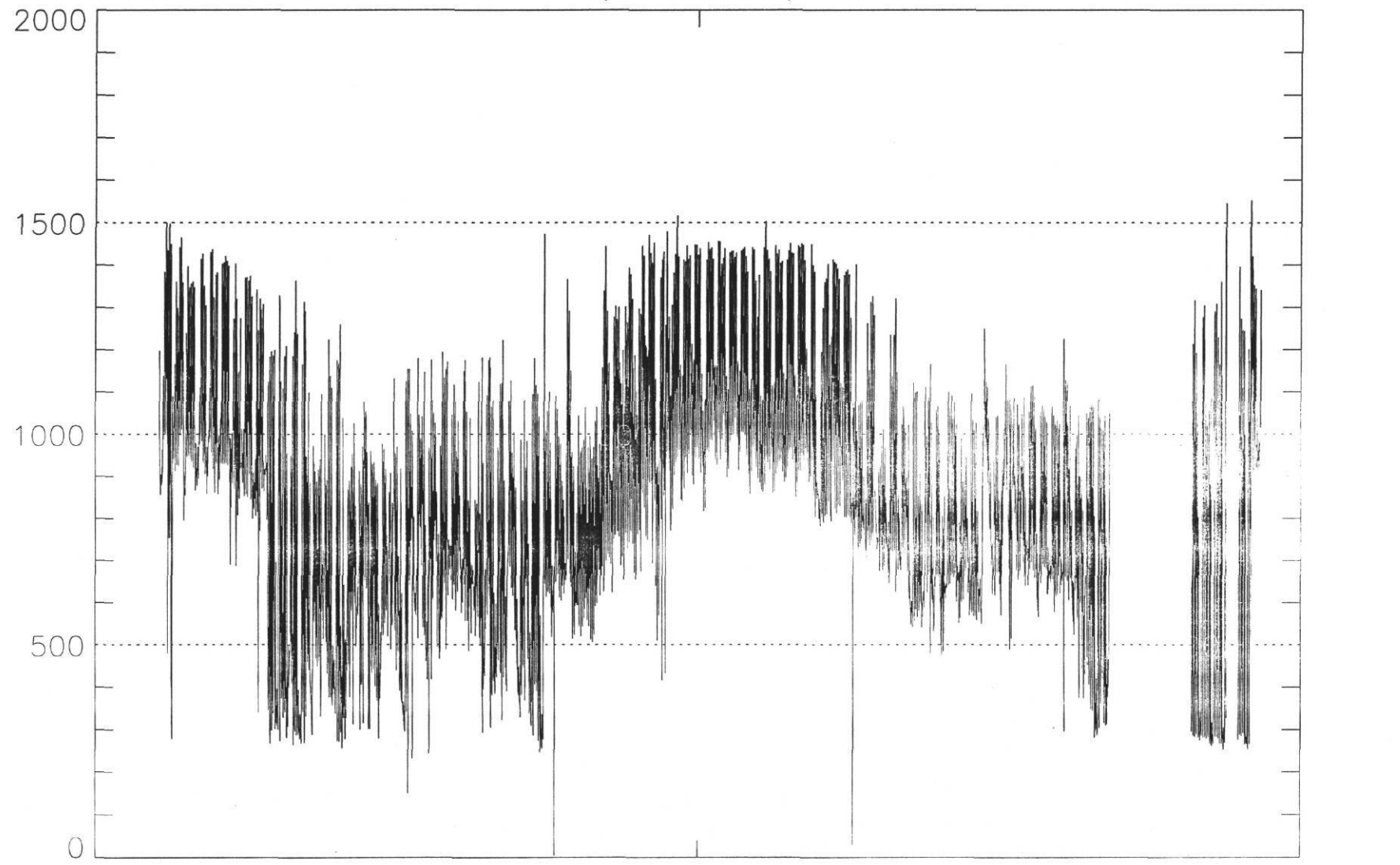
### Whole-Building Electric



Sundays are marked with an "S"

SPP - St Paul Place - - April 1999

(ch3389) WBE



07/01@0000

07/01@1100

07/01@2200

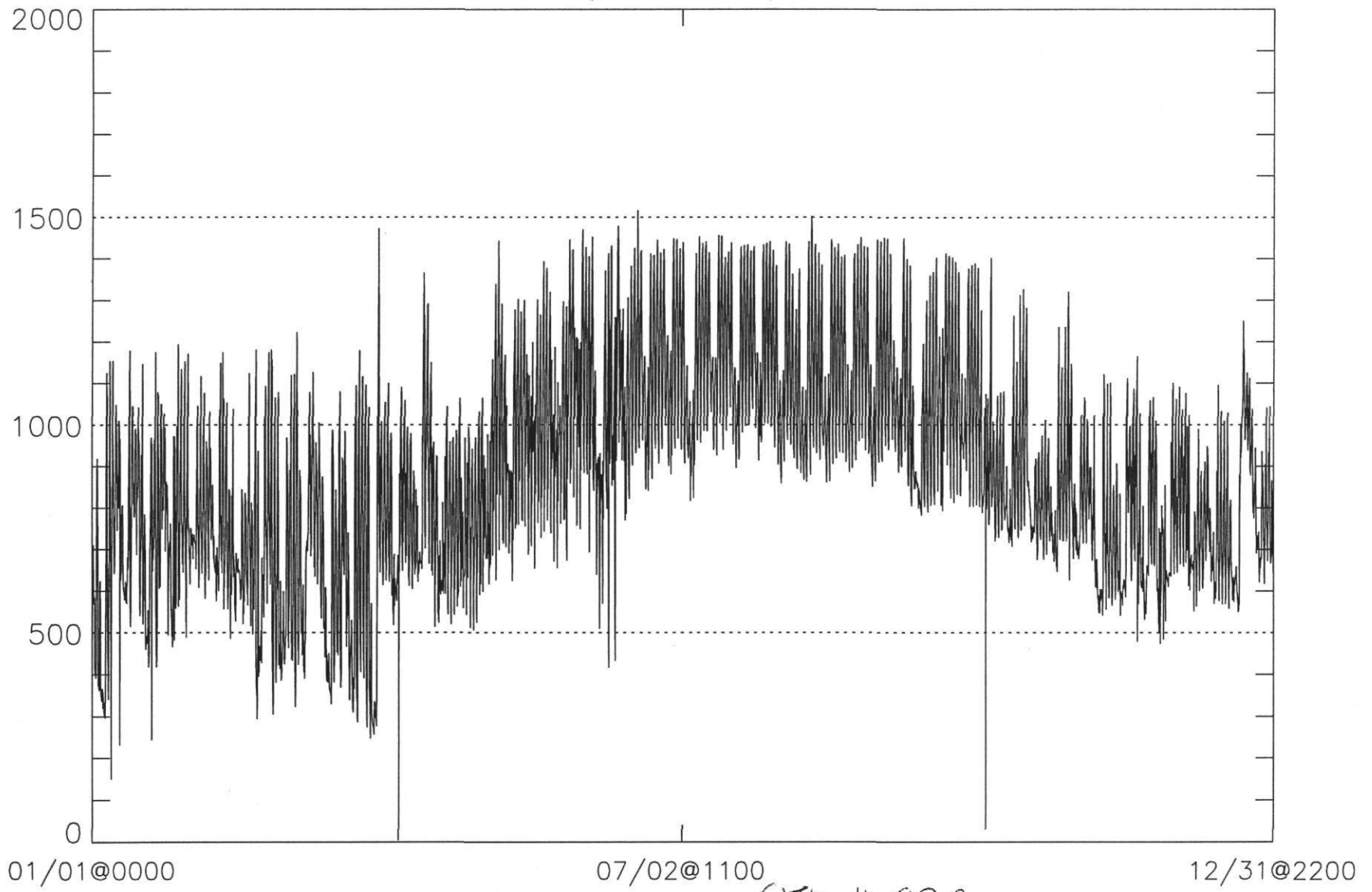
SITE # 980 St. Paul Place

07/97 - 07/99

98 full.



(ch3389) WBE



SITE # 980  
01/98 - 12/98

lstarxp% listsite 981

**Site: 981                      Harwood Center (Har)**

---

Mecr id:                      HAR

Start date:

Energy Type:                default

Construction

          begin:                      N/A                      end:                      N/A

Area:                              750000.00

Facility:

Contact Info:                Mike Sweeney  
                                  ENERSHOP  
                                  2777, Stemons Freeway  
                                  Suite 700  
                                  Dallas, TX 75202  
                                  (214) 525-1320  
                                  (214) 525-1310

HAR  
Harwood Center

750,000 square feet

Site Contact

Mike Sweeney  
ENERSHOP  
2777, Stemons Freeway  
Suite 700  
Dallas, TX 75202  
(214) 525-1320  
(214) 525-1310

ESL Metering Contact

Sam Farouz  
053 WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409) 845-9213

Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	773281 kWh	75	\$0.02810	\$21729
Peak 60 Minute Demand	2807 kW	75	\$13.72	\$38502
Chiller Electricity	74.9 MWh	55	\$28.100	\$2106

Peak 60 minute demand was recorded at 800 Friday 04/16/99.  
There were 720 hours in this month.

Monthly Retrofit Savings

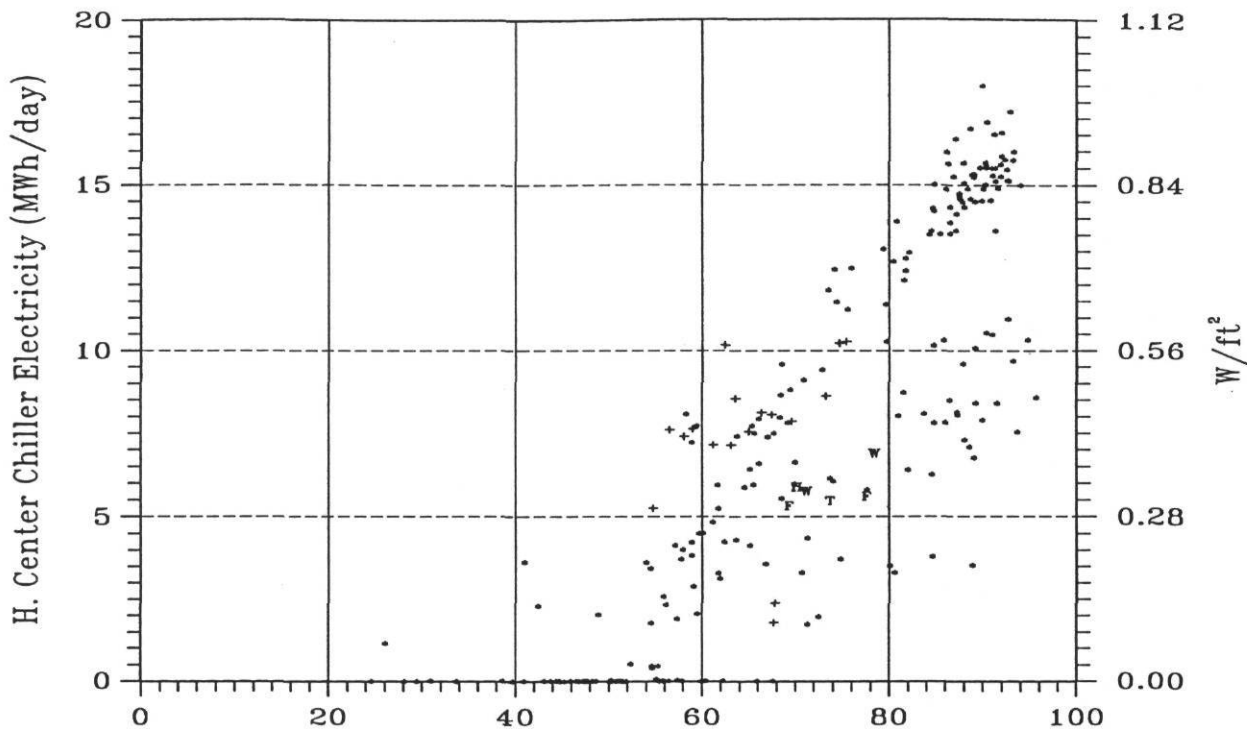
	Measured Savings	Audit Estimated Savings
Monthly Total		
Total to Date*		

\*Measured savings include construction period. Audit estimated savings do not.

Comments

- ★ Chiller electricity data are missing from 4/1/99 to 4/12/99 due to monitoring hardware problems.
- ★ Whole-building electricity data from 4/5/99 to 4/12/99 were recorded with an improper date stamp. Data will be corrected and replaced.

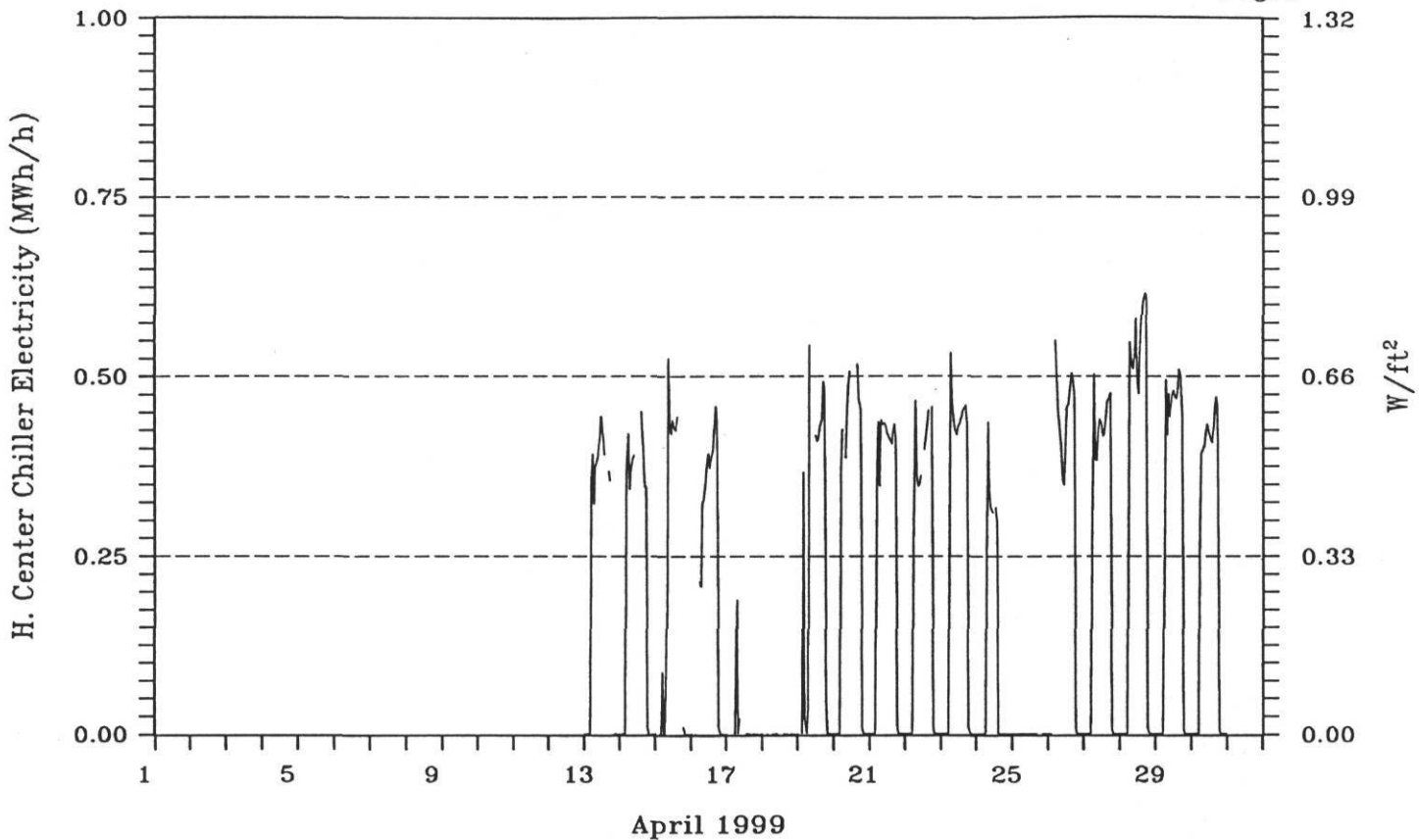
HAR - Harwood Center - - April 1999



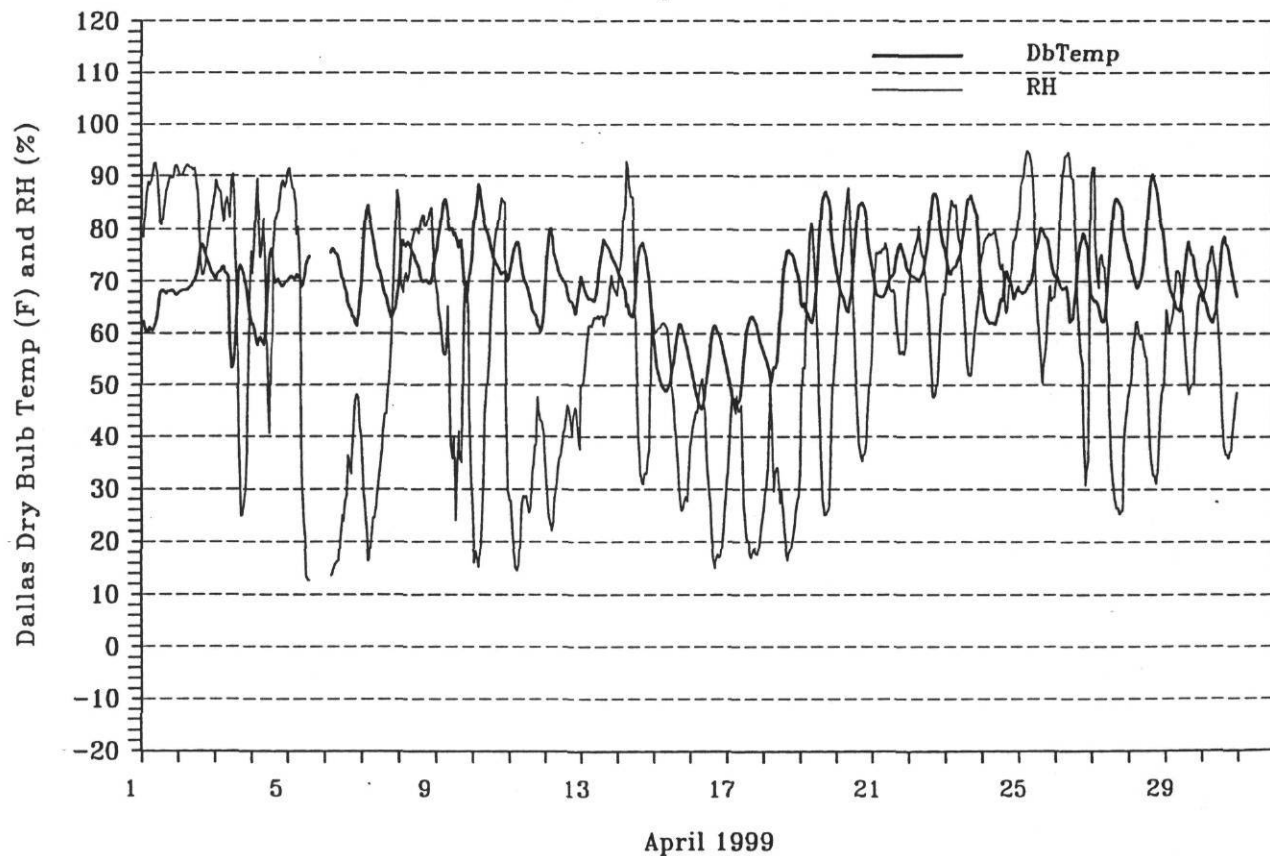
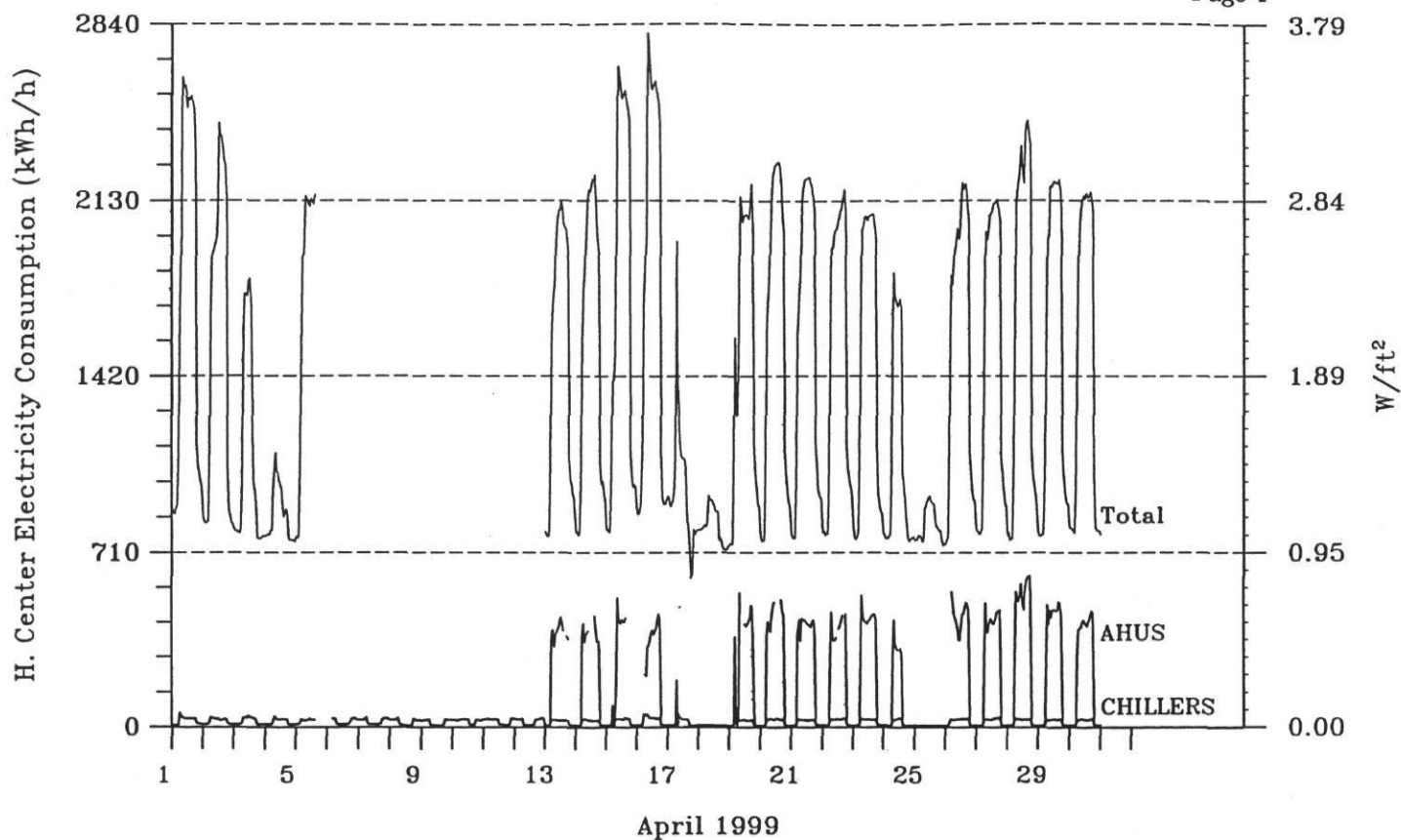
Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

Points from this month last year are shown as +.  
All other points are shown as \*.

HAR - Harwood Center - - April 1999

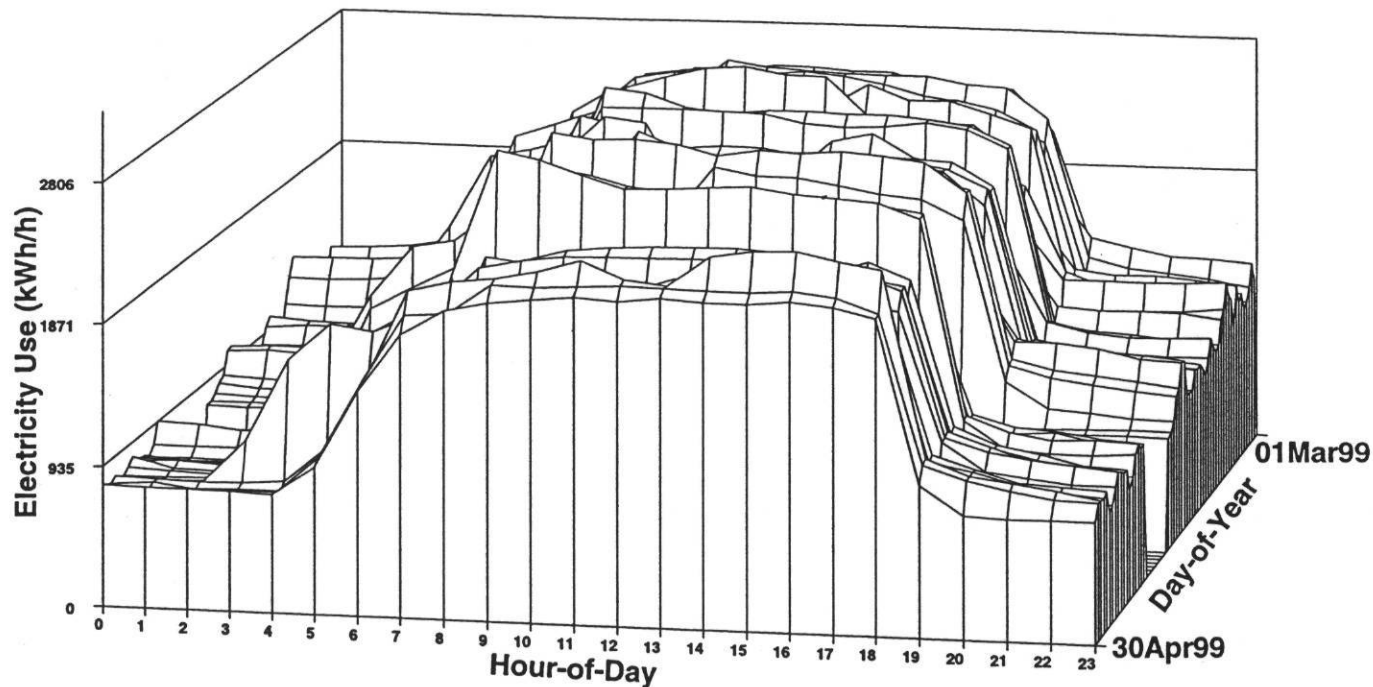


HAR - Harwood Center - - April 1999

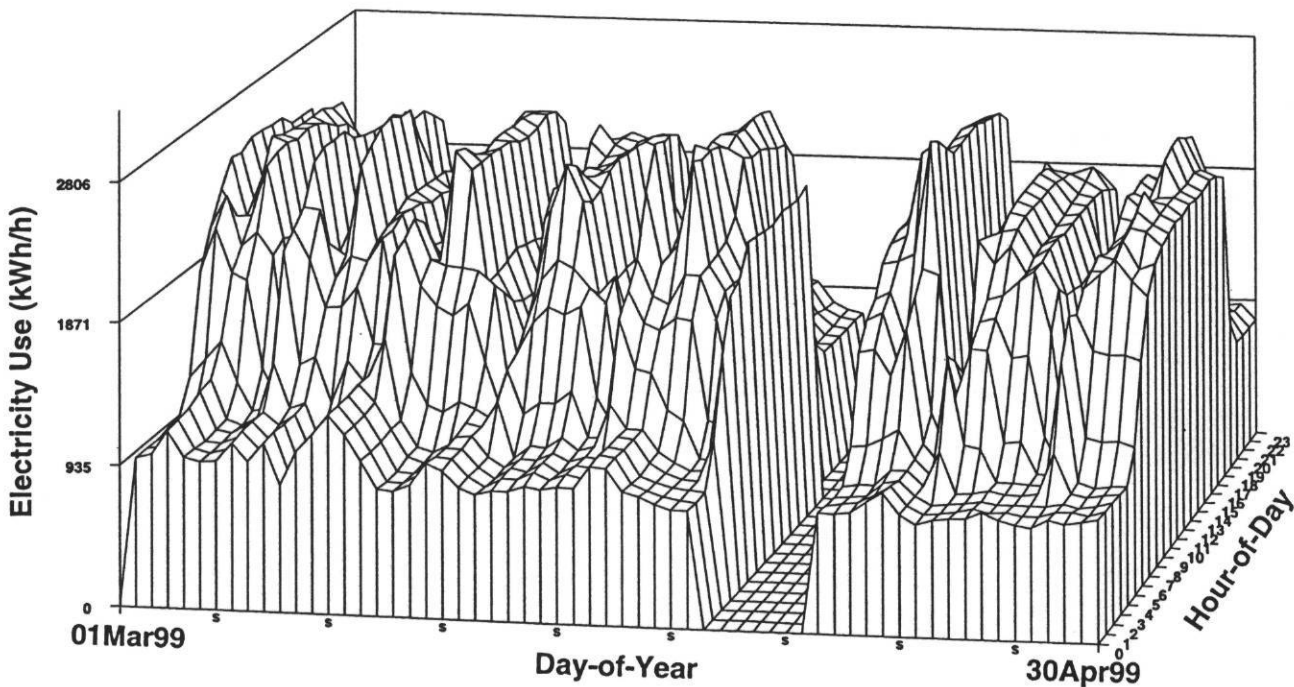


HAR - Harwood Center - - April 1999

### Whole-Building Electric



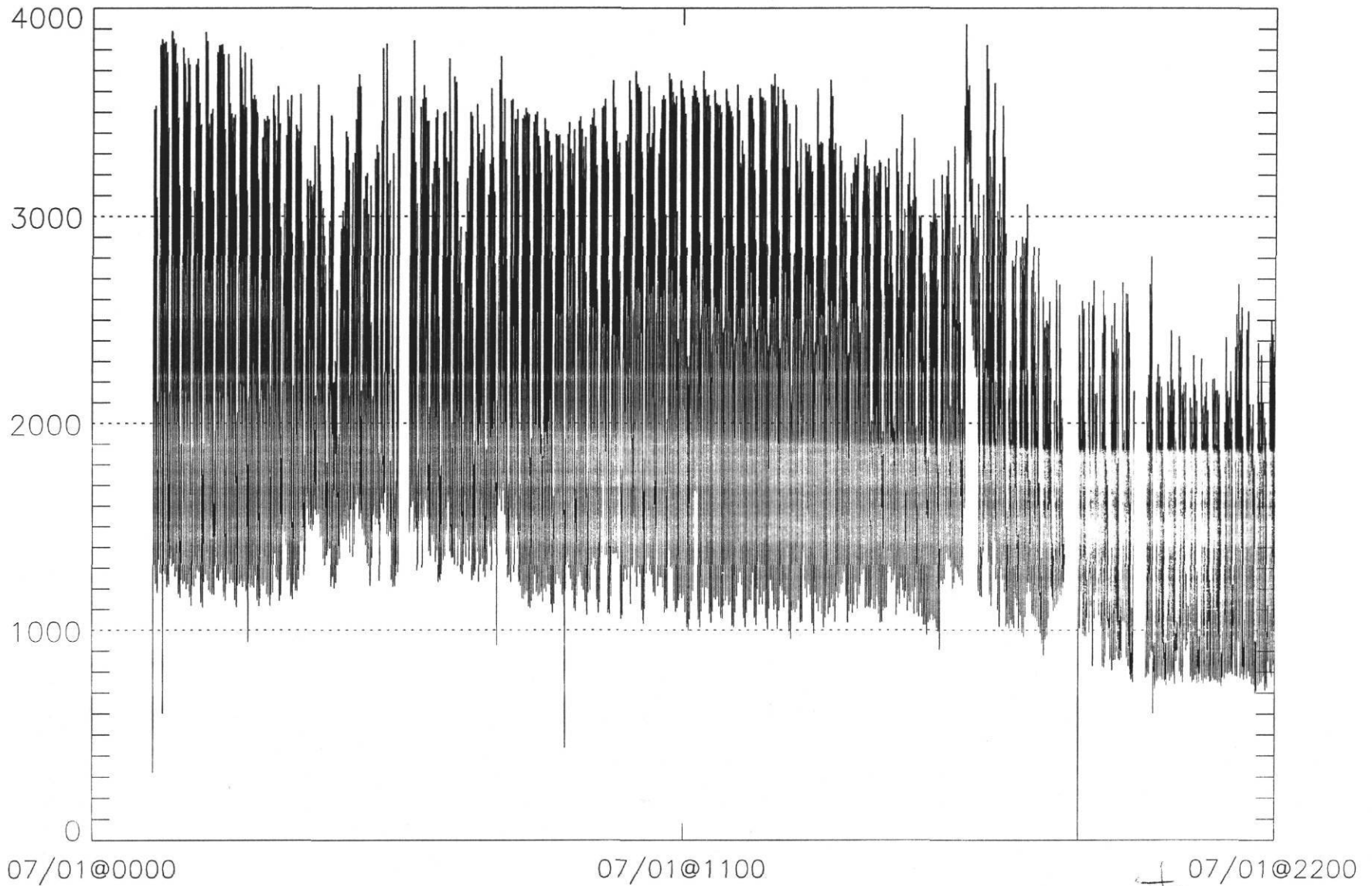
### Whole-Building Electric



Sundays are marked with an "S"

HAR - Harwood Center - - April 1999

(ch3401) WBE



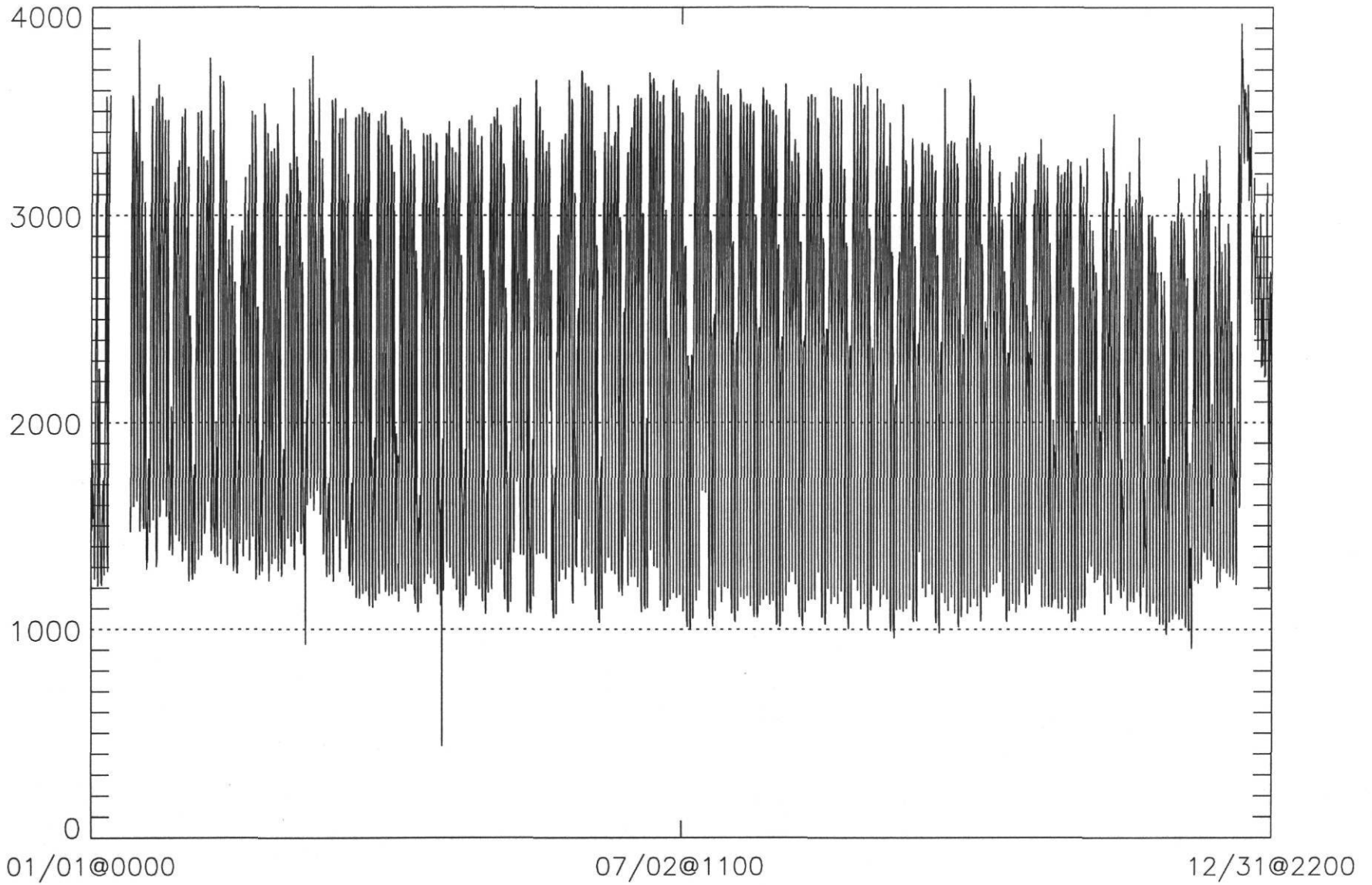
SITE # 981 HARWOOD center

07/97 - 07/99

98 full.



(ch3401) WBE



SITE # 981  
01/98 - 12/98

lstarxp% listsite 982

**Site: 982                    9700 Richmond (RCH)**

---

Mecr id:            RCH

Start date:

Energy Type:    default

Construction

    begin:            N/A                    end:            N/A

Area:              89000.00

Facility:

Contact Info:    Mike Sweeney  
                  ENERSHOP  
                  2777, Stemons Freeway  
                  Suite 700  
                  Dallas, TX 75202  
                  (214) 525-1320  
                  (214) 525-1310

RCH  
9700 Richmond

89,000 square feet

Site Contact

Mike Sweeney  
ENERSHOP  
2777, Stemmons Freeway  
Suite 700  
Dallas, TX 75202  
(214) 525-1320  
(214) 525-1310

ESL Metering Contact

Sam Farouz  
053 WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409) 845-9213

Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	88930 kWh	73	\$0.02810	\$2499
Peak 60 Minute Demand	322 kW	73	\$13.72	\$4416
Chiller Electricity	28.7 MWh	96	\$28.100	\$806

Peak 60 minute demand was recorded at 1000 Wednesday 04/28/99.  
There were 720 hours in this month.

Monthly Retrofit Savings

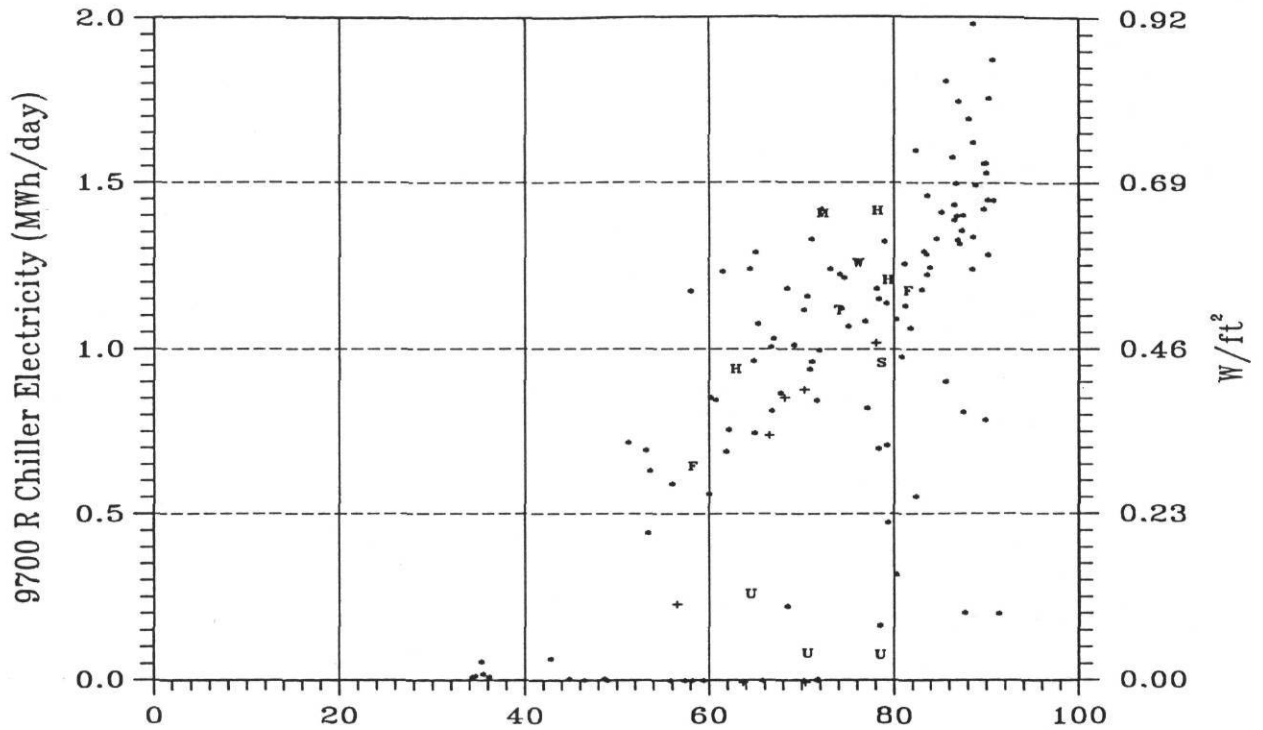
	Measured Savings	Audit Estimated Savings
Monthly Total		
Total to Date*		

\*Measured savings include construction period. Audit estimated savings do not.

Comments

**★ Whole-building electricity data from 4/5/99 to 4/12/99 were recorded with an improper date stamp. Data will be corrected and replaced.**

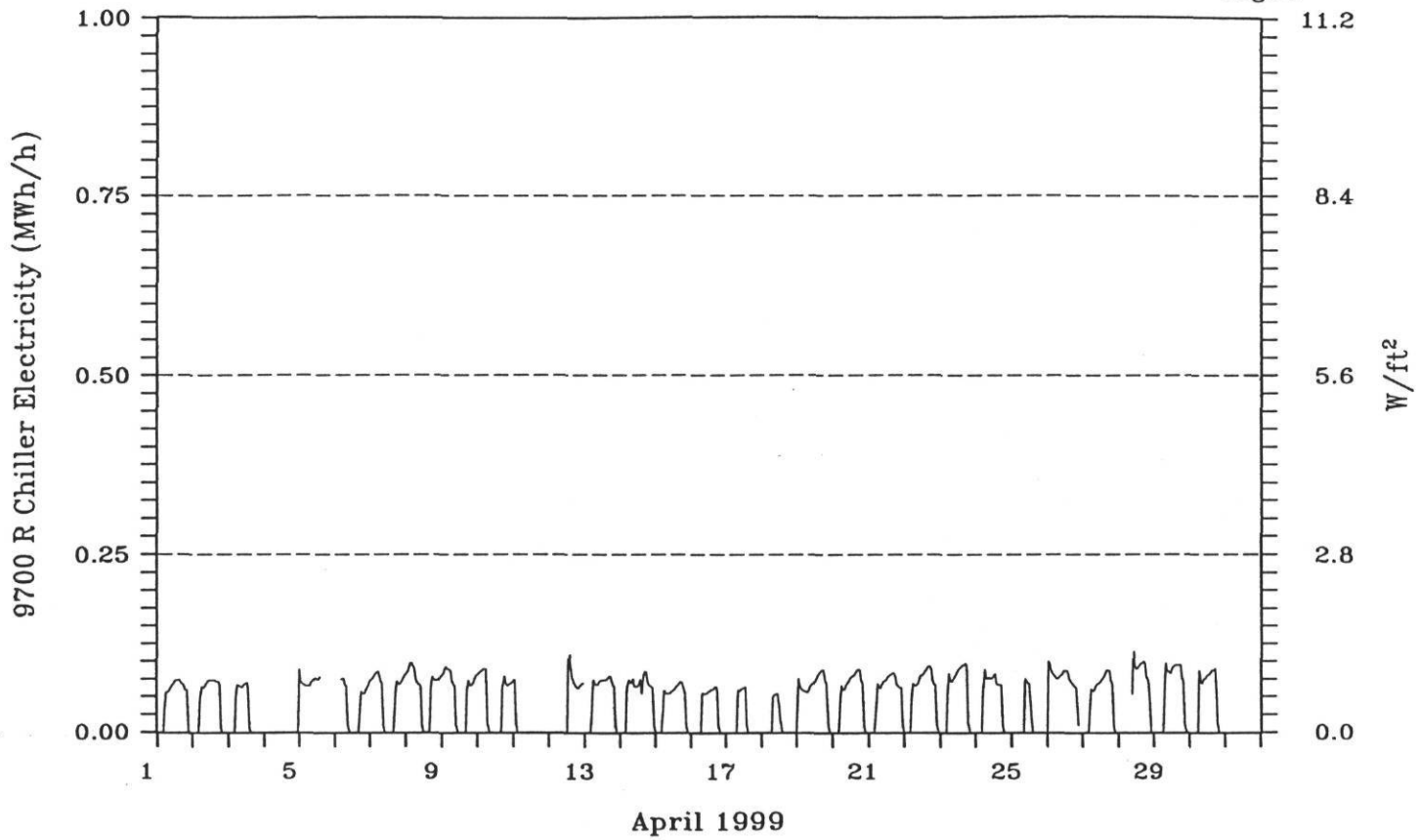
RCH - 9700 Richmond - - April 1999



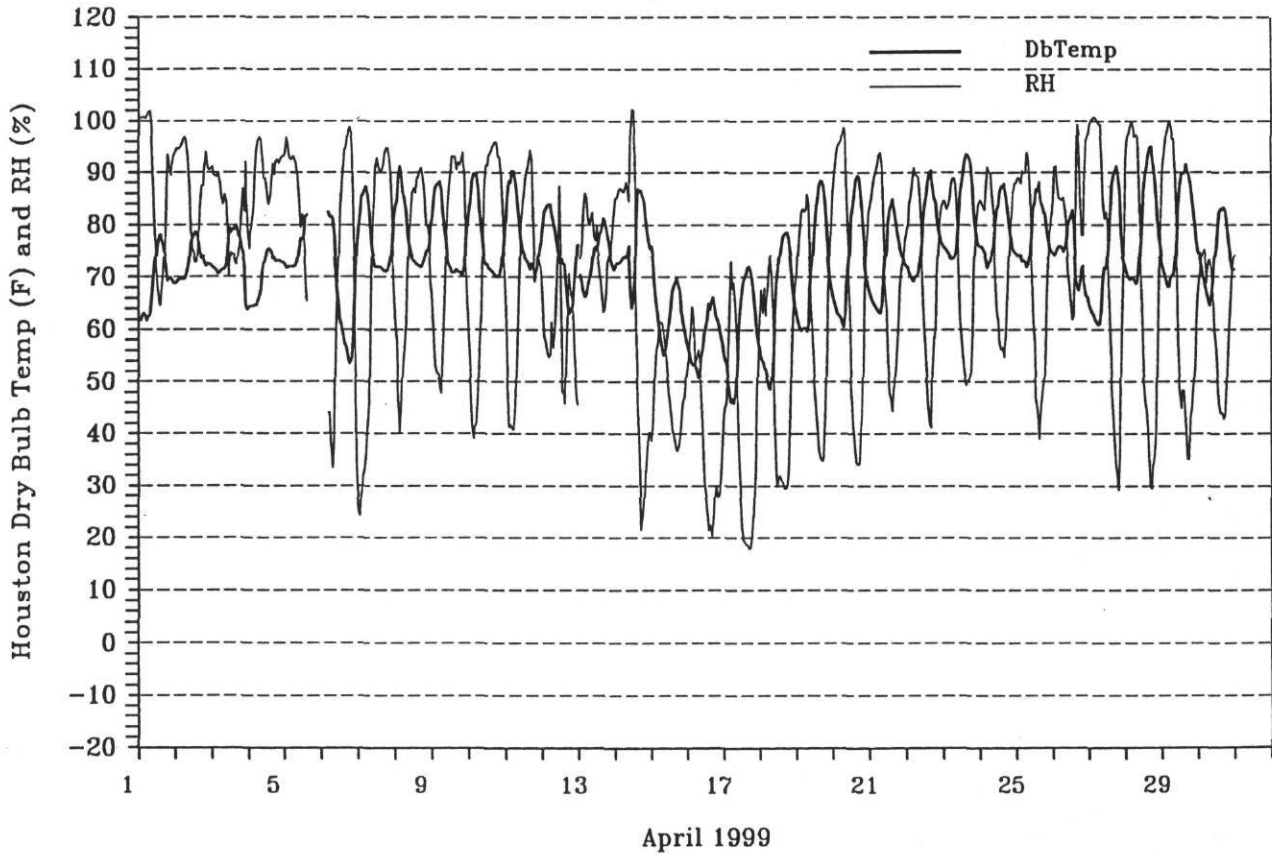
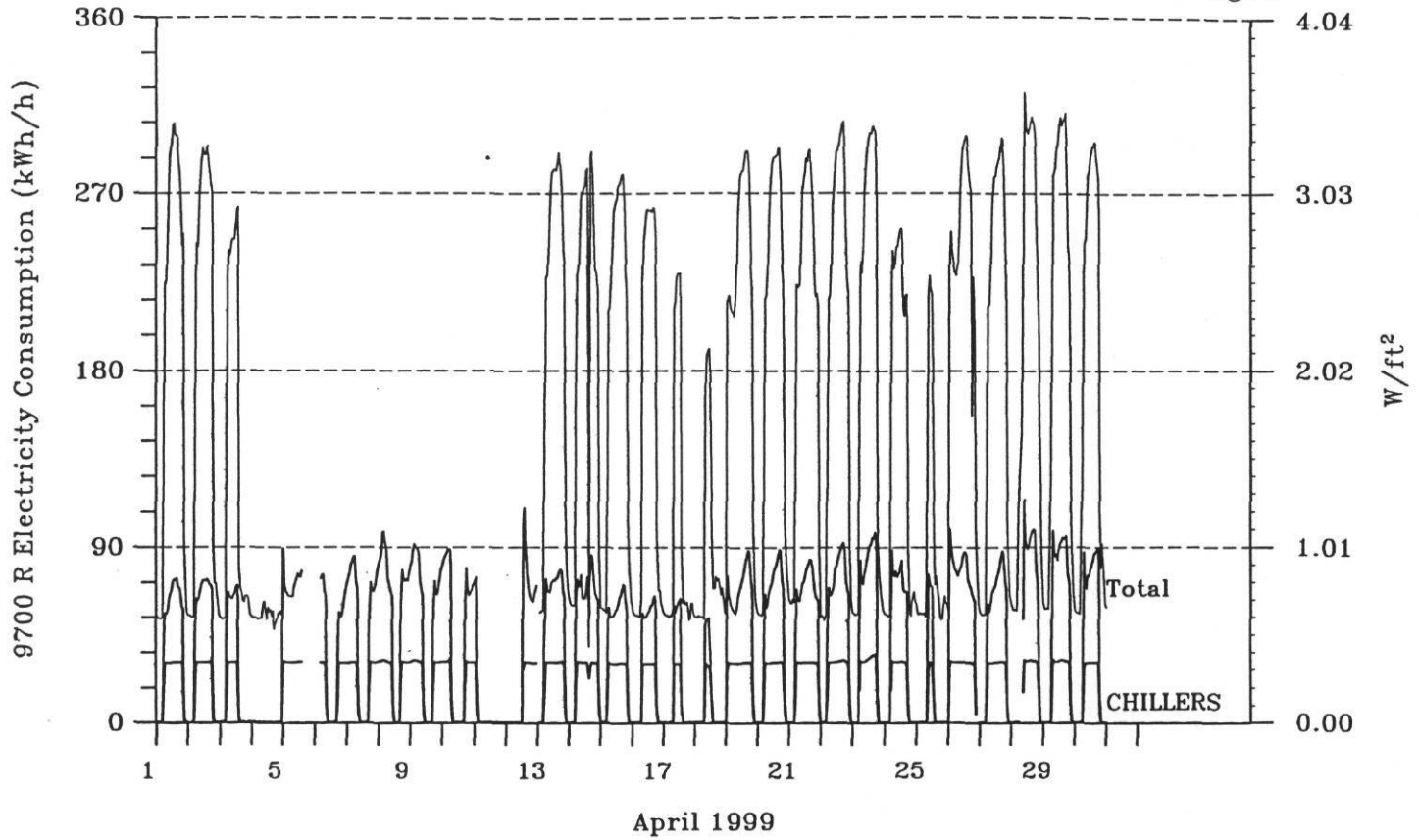
Data points for the current month are shown as letters.  
Monday through Sunday are represented as M,T,W,H,F,S,U.

Points from this month last year are shown as +.  
All other points are shown as \*.

RCH - 9700 Richmond - - April 1999

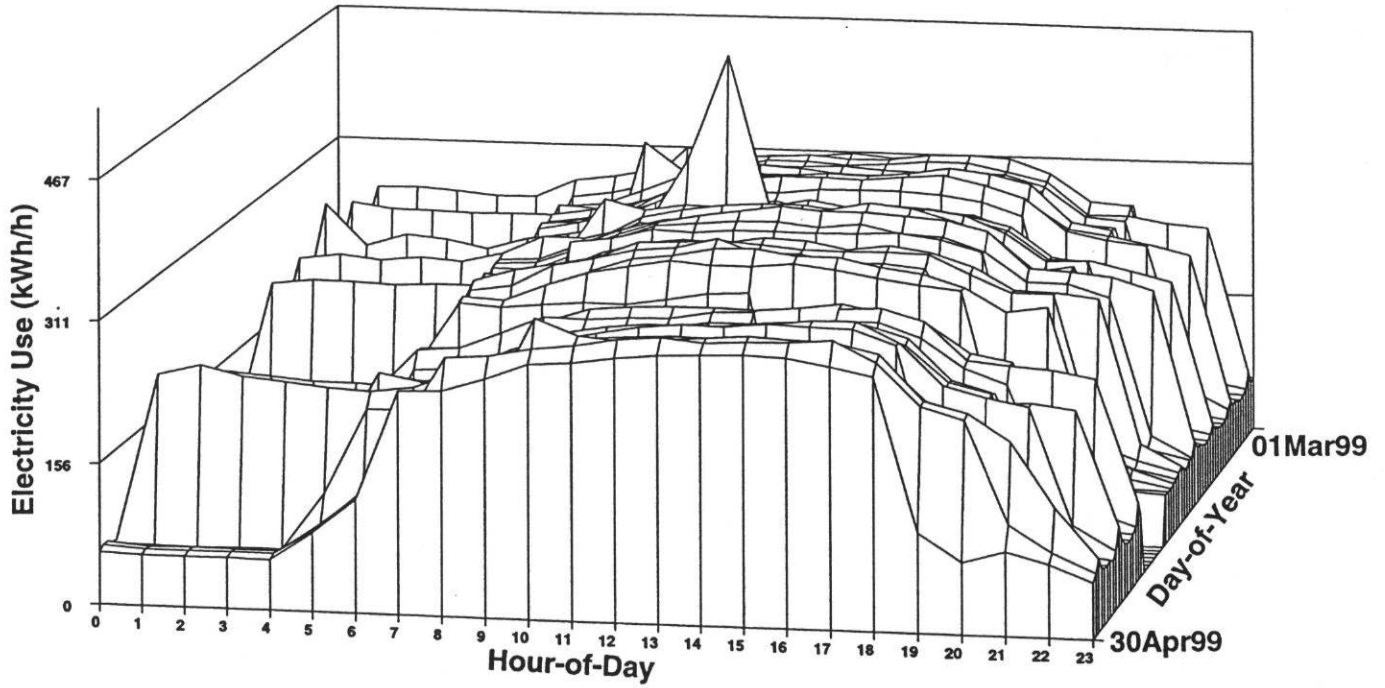


RCH - 9700 Richmond - - April 1999

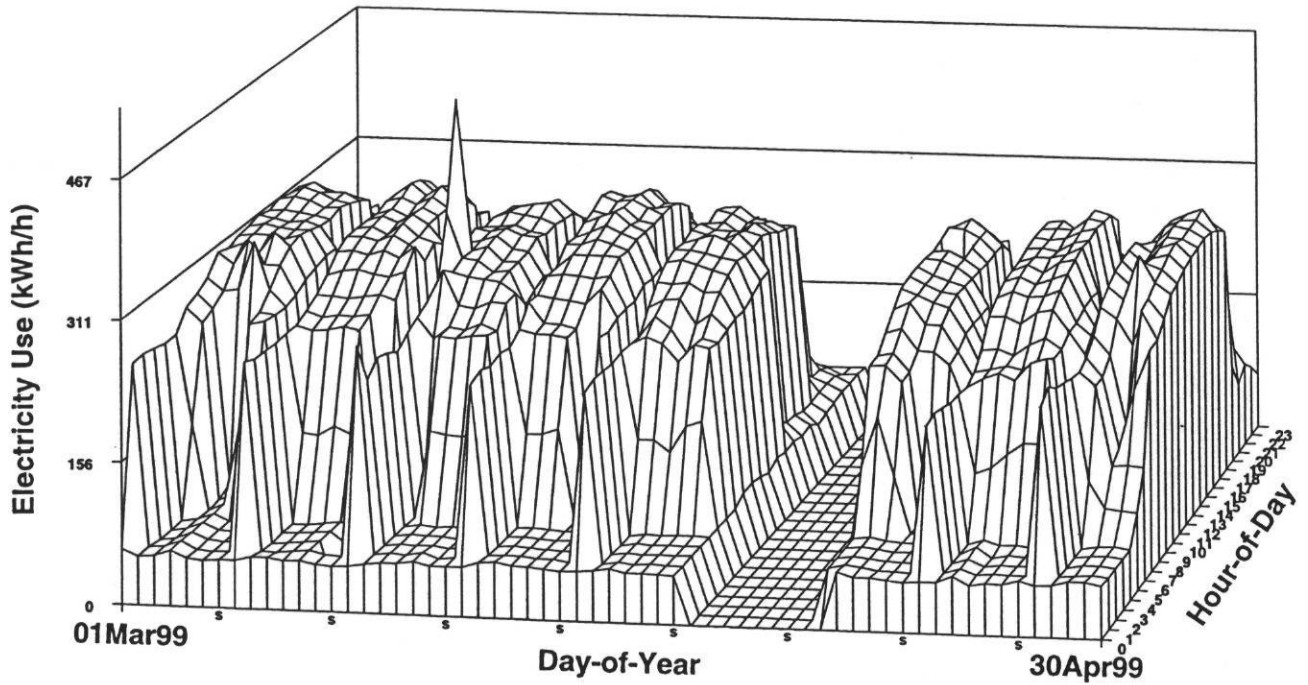


RCH - 9700 Richmond - - April 1999

### Whole-Building Electric



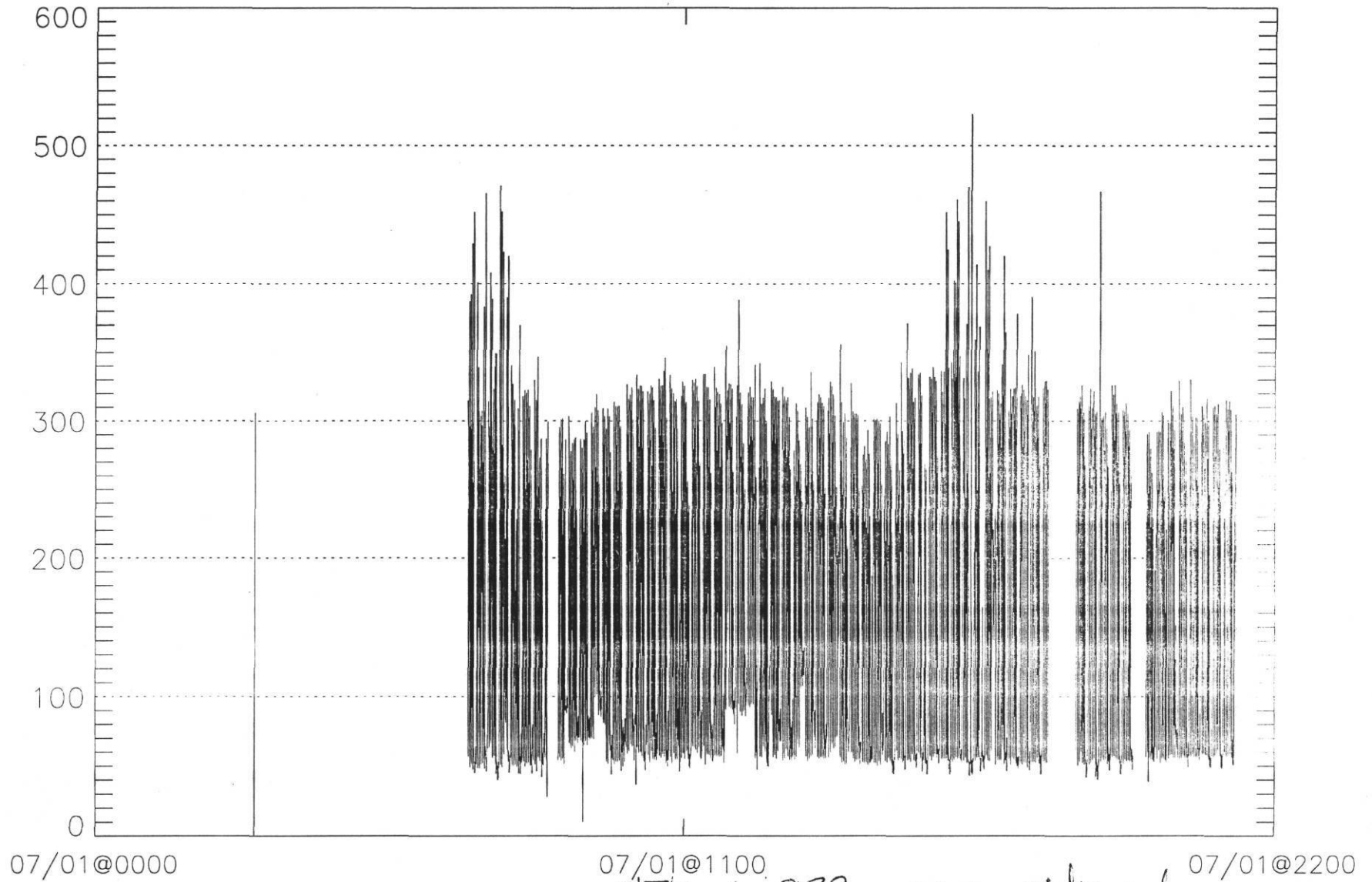
### Whole-Building Electric



Sundays are marked with an "S"

RCH - 9700 Richmond - - April 1999

(ch3552) WBE



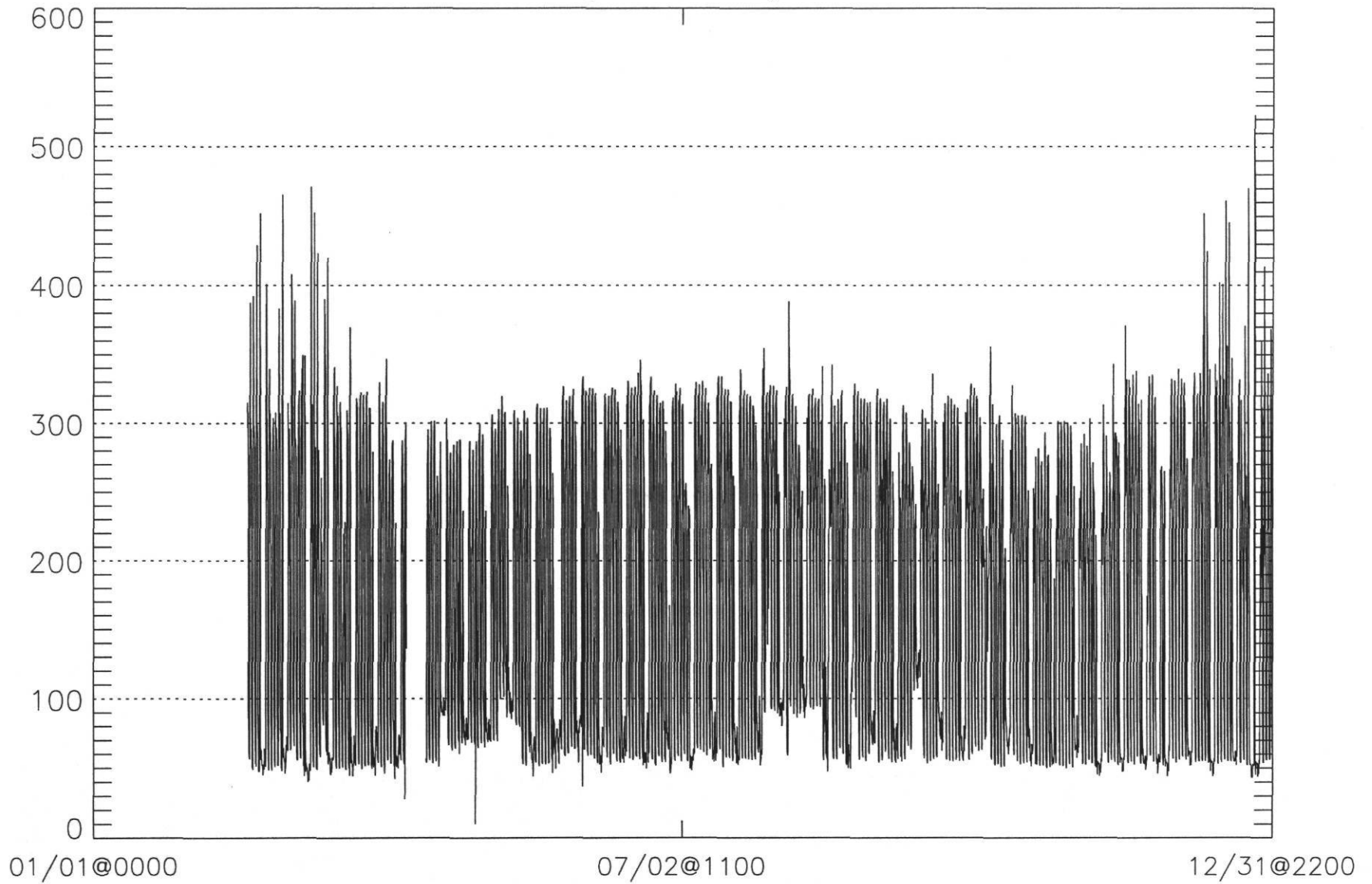
98 full.

07/01@1100  
SITE # 982 9700 Richmond

07/97 - 07/99



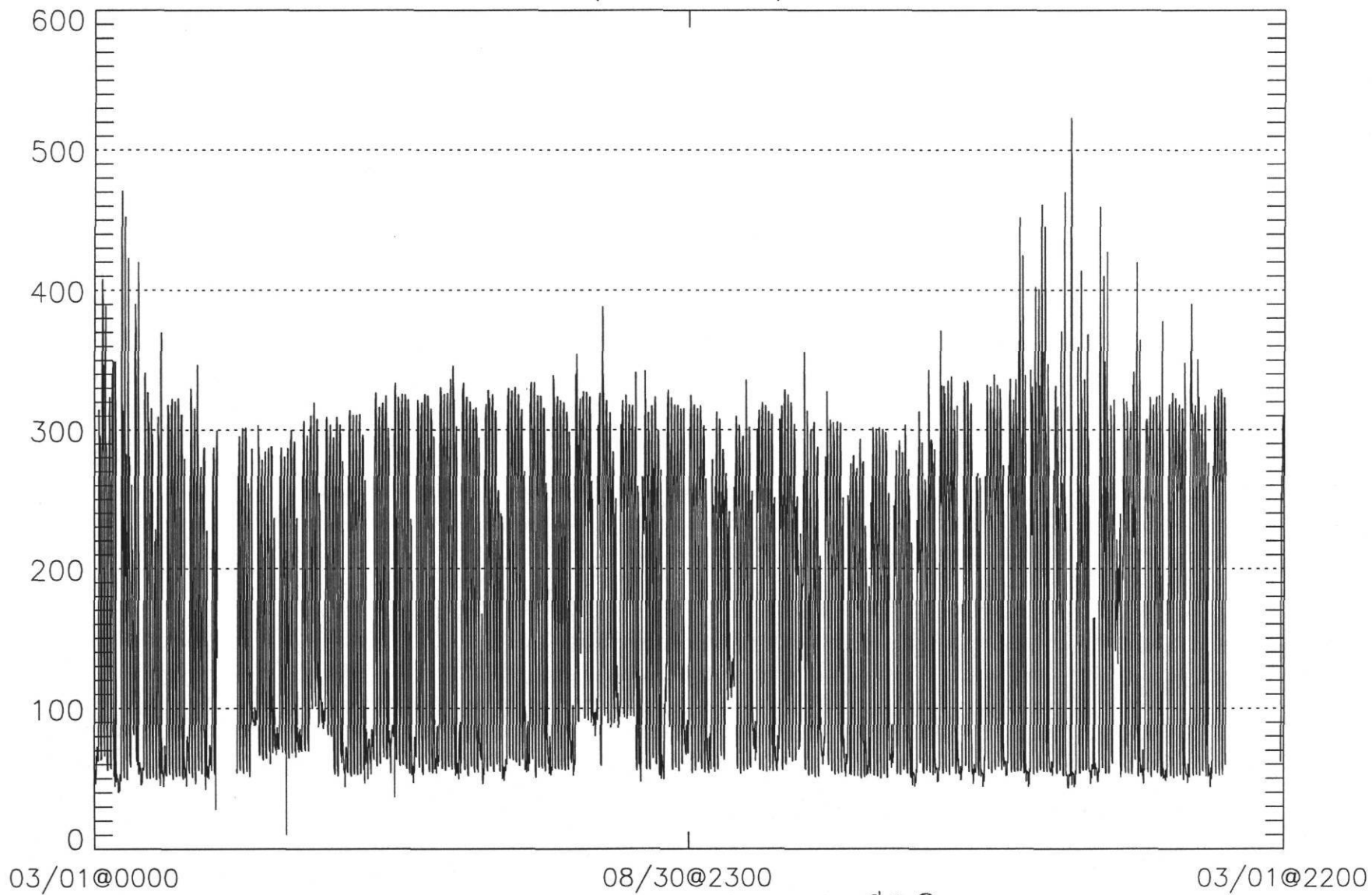
(ch3552) WBE



SITE # 982

01/98 - 12/98

(ch3552) WPE



SITE # 982

03/98 - 03/99

lstarxp% listsite 983

**Site: 983                    3300 Gessner (GSN)**

---

Mecr id:            GSN

Start date:

Energy Type:    default

Construction

    begin:            N/A                    end:            N/A

Area:              65500.00

Facility:

Contact Info:    Mike Sweeney  
                  ENERSHOP  
                  2777, Stemons Freeway  
                  Suite 700  
                  Dallas, TX 75202  
                  (214) 525-1320  
                  (214) 525-1310

GSN  
3300 Gessner

65,500 square feet

Site Contact

Mike Sweeney  
ENERSHOP  
2777, Stemons Freeway  
Suite 700  
Dallas, TX 75202  
(214) 525-1320  
(214) 525-1310

ESL Metering Contact

Sam Farouz  
053 WERC  
Texas A&M University  
College Station, TX 77843-3123  
(409) 845-9213

Summary of Energy Consumption

	Measured Use	% hours reported	Unit Cost	Estimated Cost
Electricity	- kWh	-	\$0.02490	-
Peak 60 Minute Demand	- kW	-	\$13.72	-

No peak 60 minute demand was recorded this month.  
There were 720 hours in this month.

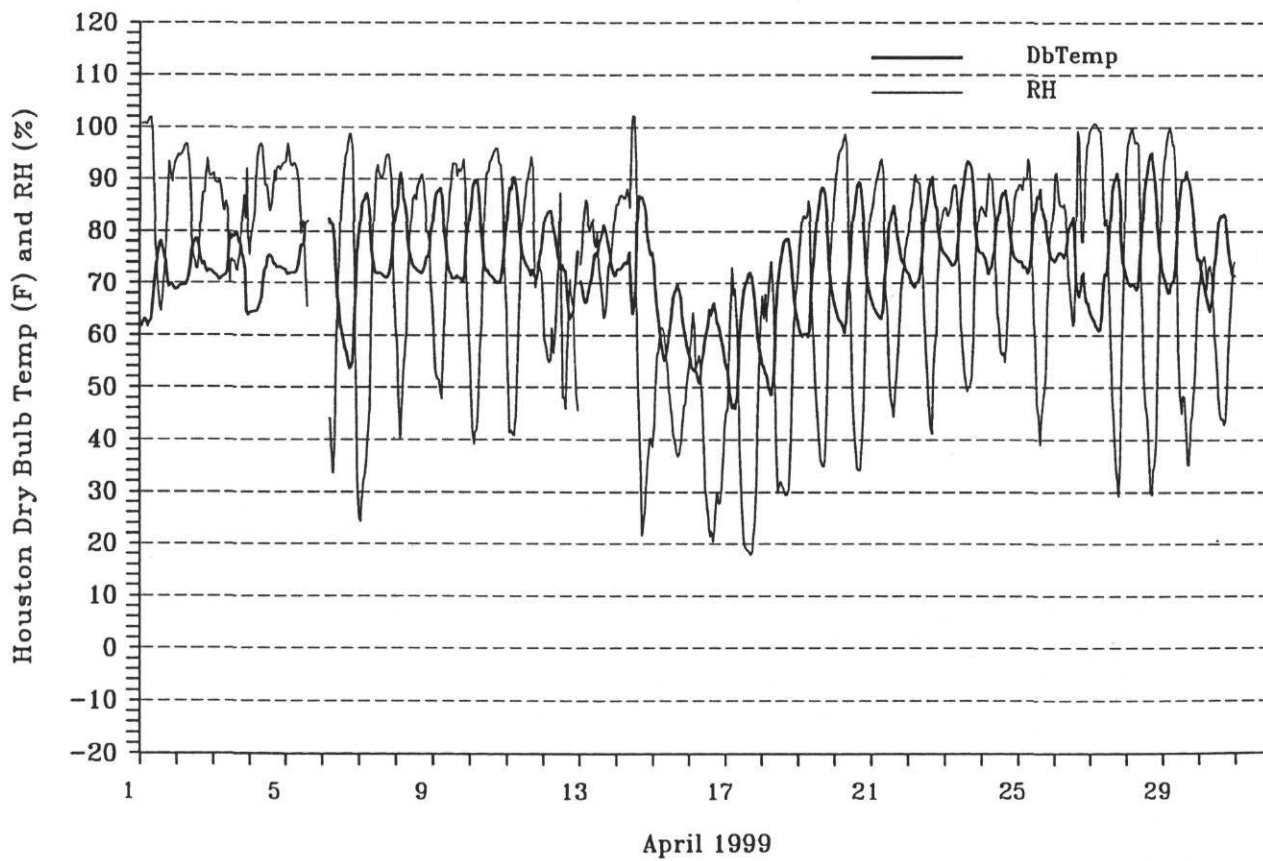
Monthly Retrofit Savings

	Measured Savings	Audit Estimated Savings
Monthly Total		
Total to Date*		

\*Measured savings include construction period. Audit estimated savings do not.

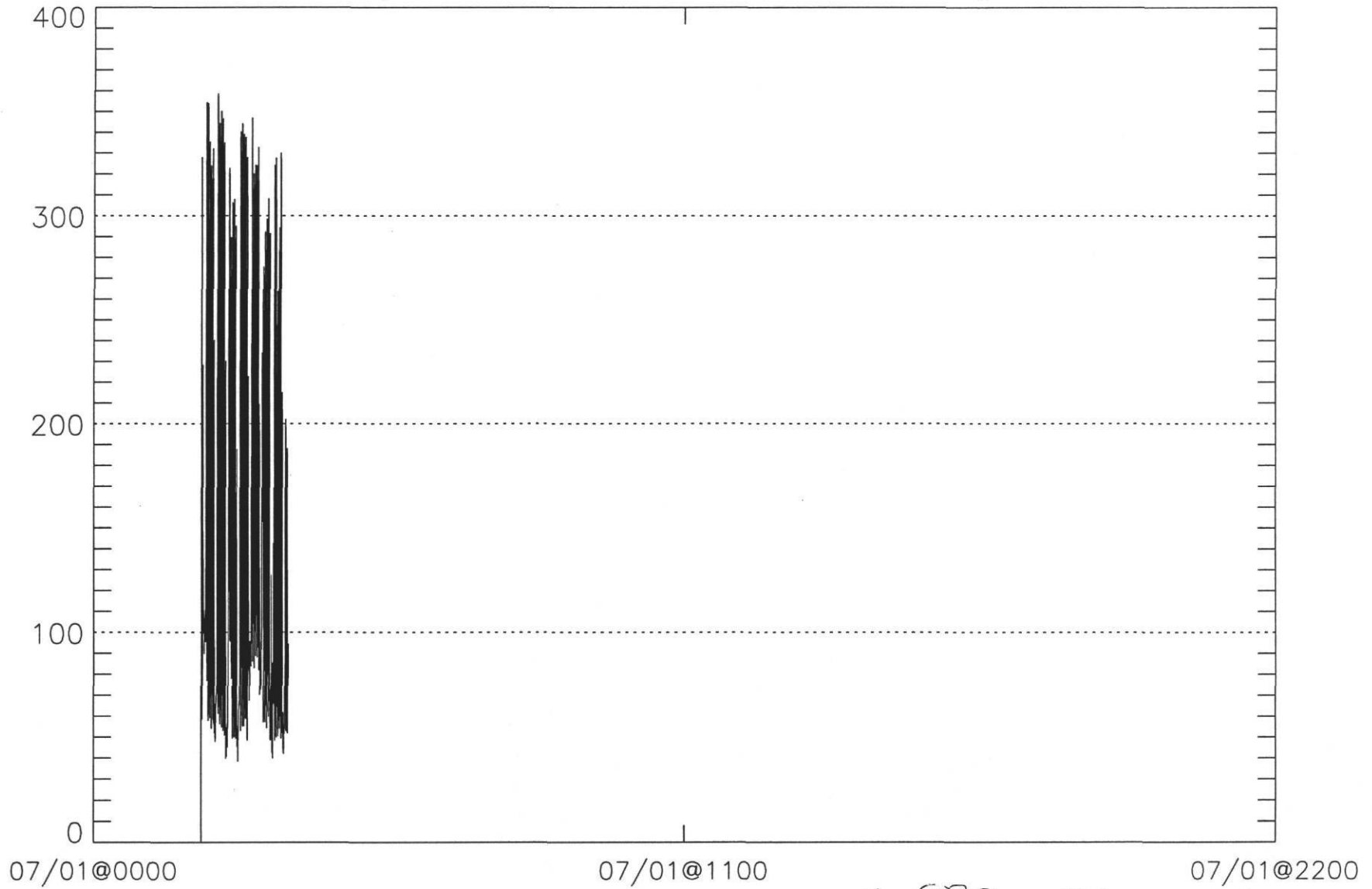
Comments

★ Electricity consumption data are missing from 4/1/99 to 4/30/99 due to a monitoring hardware problem.



GSN - 3300 Gessner - - April 1999

(ch3554+ch3555+ch3556) WBE



Prod.

SITE # 983 3300 GESSNER  
07/97 - 07/99

lstarxp% listsite 984

**Site: 984                      McKinney Place (MCK)**

---

Mecr id:            MCK

Start date:

Energy Type:    default

Construction

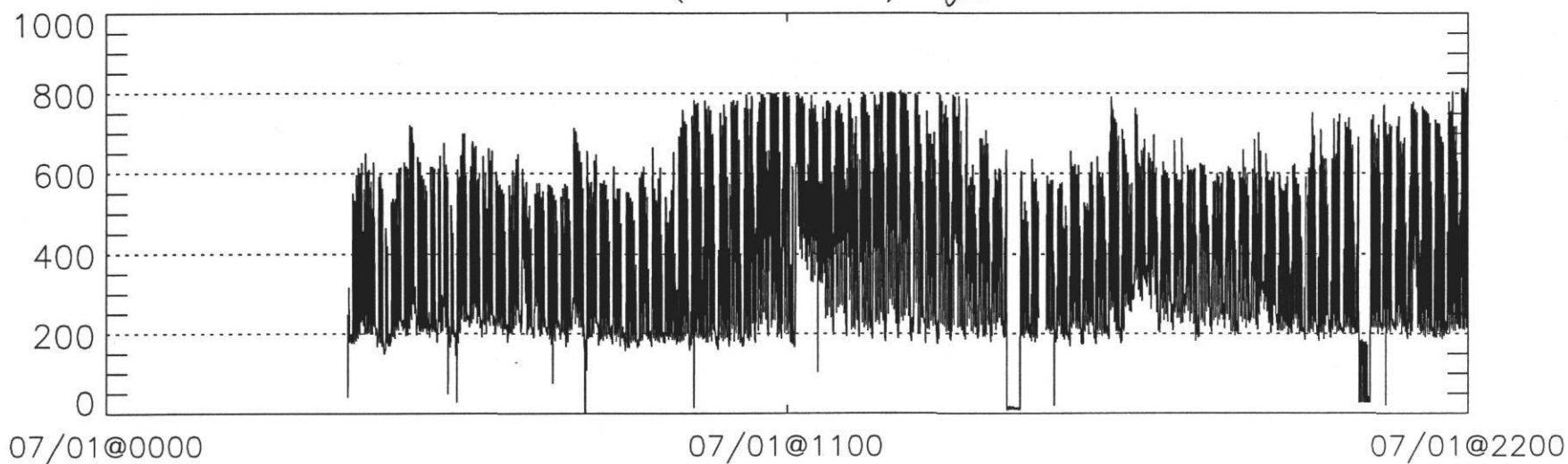
    begin:            N/A                      end:            N/A

Area:              100000.00

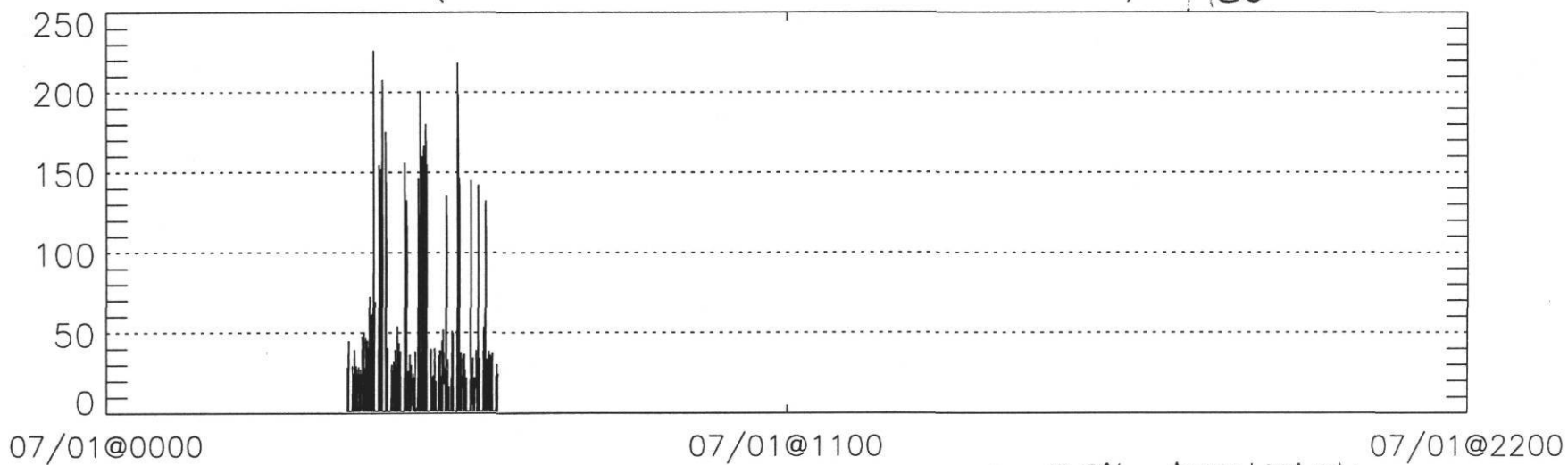
Facility:

Contact Info:    Mike Sweeney  
                  ENERSHOP  
                  2777, Stemons Freeway  
                  Suite 700  
                  Dallas, TX 75202  
                  (214) 525-1320  
                  (214) 525-1310

(ch3534) WBE



(ch3526+ch3527+ch3528) MCC

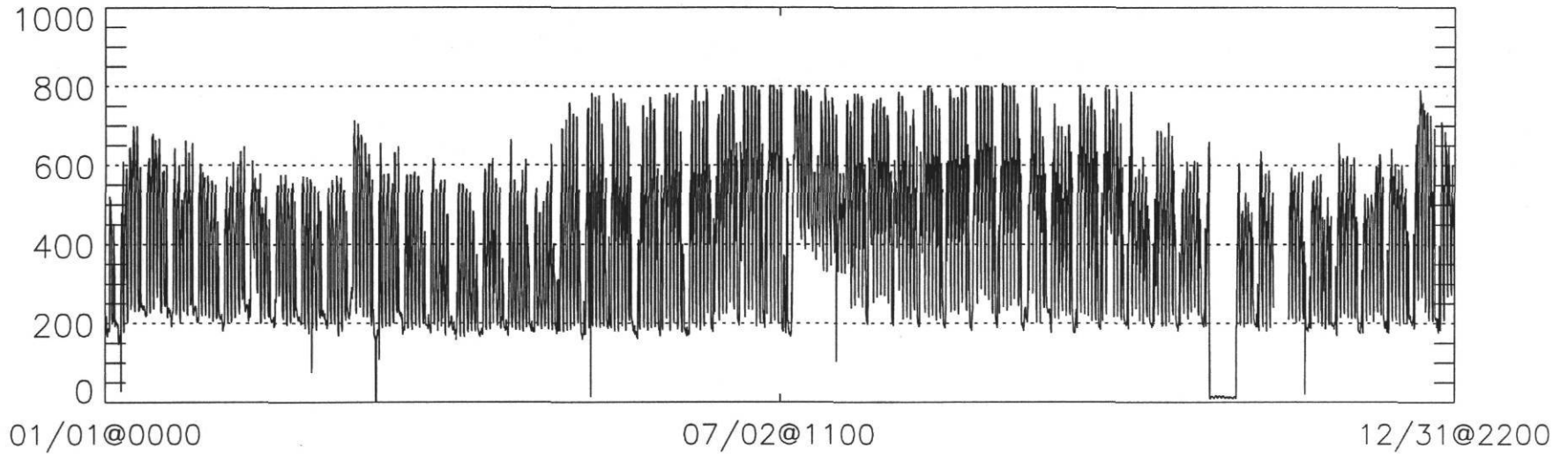


SITE # 984 MCKINNEY

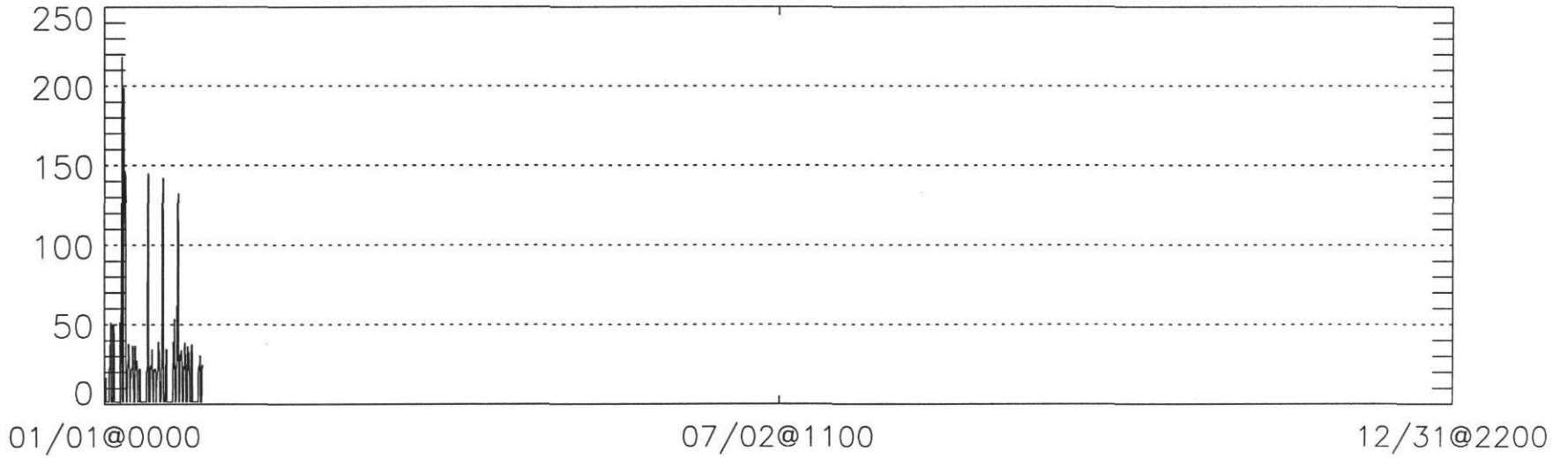
07/97 - 07/99



(ch3534) WBE



(ch3526+ch3527+ch3528) MCC



SITE# 984

01/98 - 12/98

lstarxp% listsite 985

**Site: 985                      Pittman Atrium (PIT)**

---

Mecr id:            PIT

Start date:

Energy Type:    default

Construction

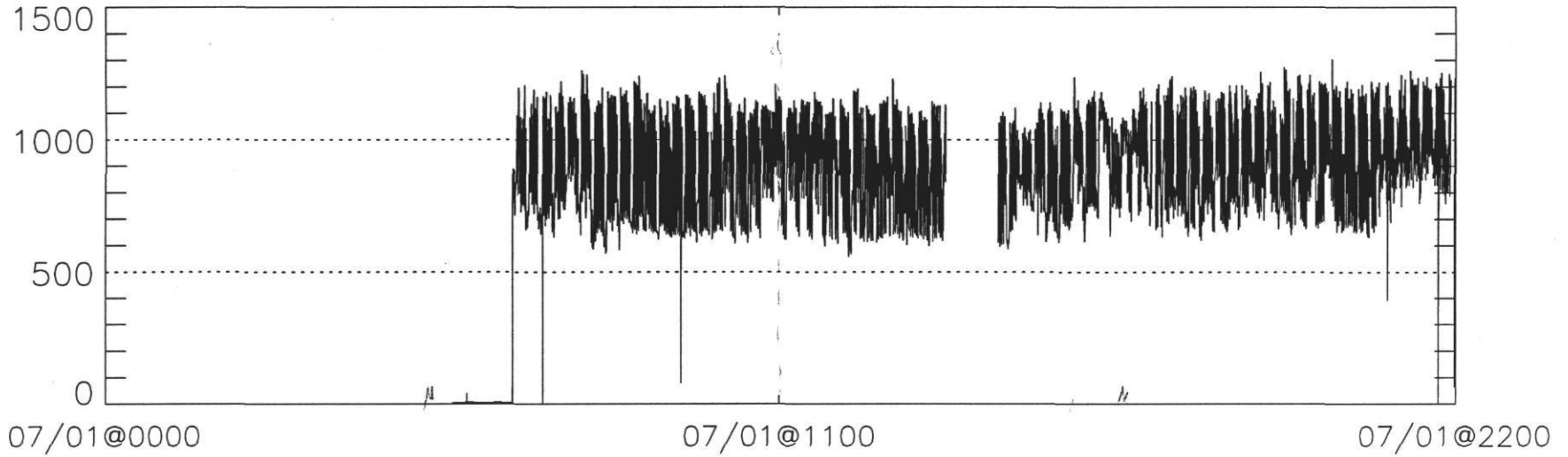
    begin:            N/A                      end:        N/A

Area:              100000.00

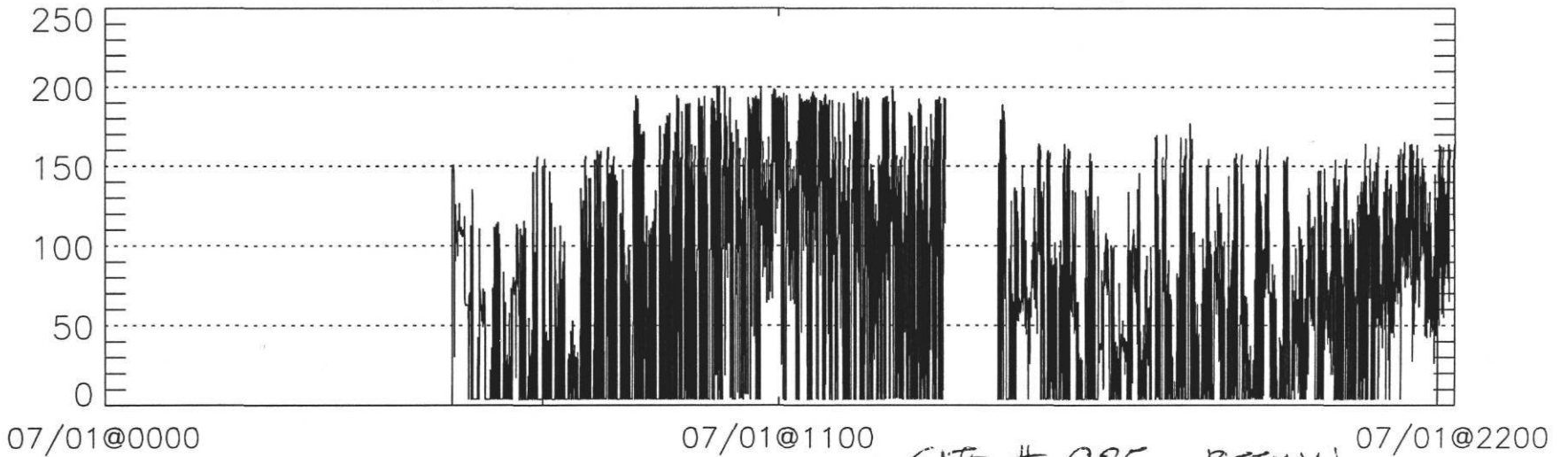
Facility:

Contact Info:    Mike Sweeney  
                  ENERSHOP  
                  2777, Stemons Freeway  
                  Suite 700  
                  Dallas, TX 75202  
                  (214) 525-1320  
                  (214) 525-1310

(ch3545) WBE



(ch3537+ch3538+ch3539) MCC

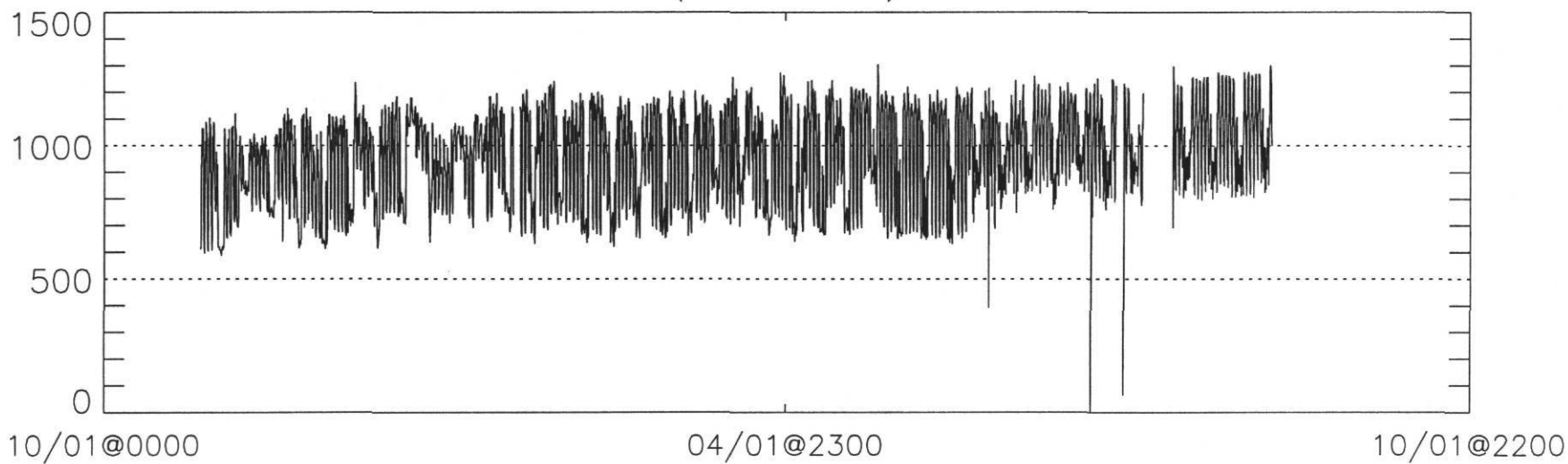


SITE # 985 PITTMAN

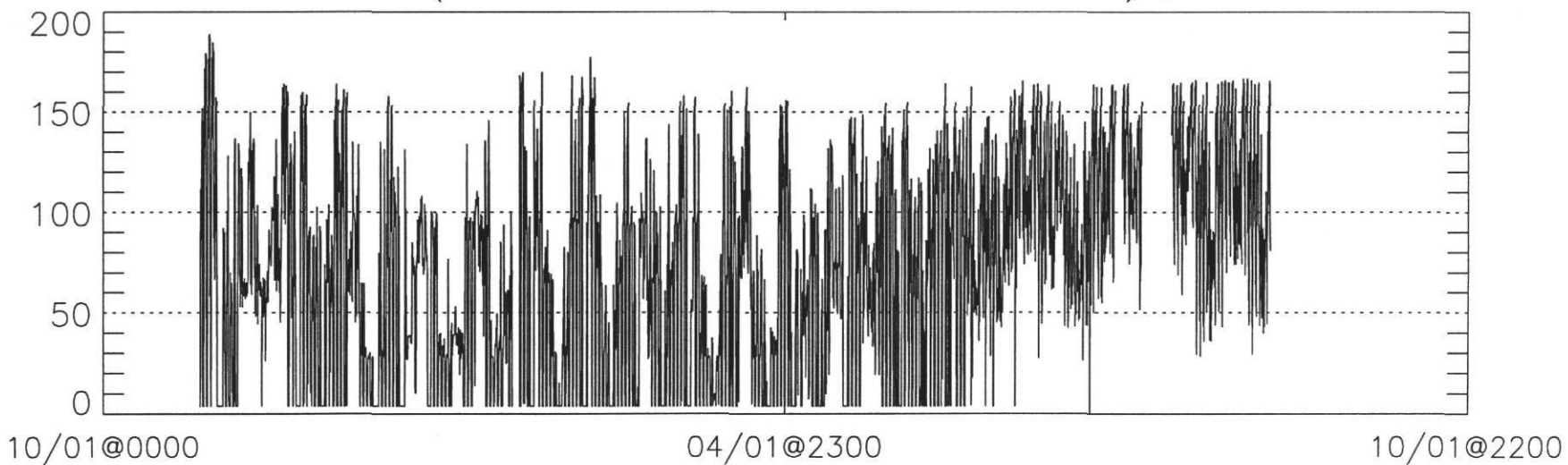
07/97-07/99

as full.

(ch3545) WBE



(ch3537+ch3538+ch3539) MCC



SITE # 985

10/98 - 10/99

### 3. APPENDIX

Table 2 in this appendix includes all buildings monitored at the ESL. It summarizes the buildings in terms of the Logger ID number, Building Name, Location, Square footage, Whole Building Electricity Consumption and Lighting and Receptacles availability, nature of the electricity consumption (weather/non-weather dependent), data source, and format (normally hourly, and mentioned only whenever it has a 15-minute format).

Category	Logger	Building	Building Location	Building	WBE	L&R	Source	Data Format	Cost	Data
	ID			Area (R^2)						Quality
	1	Zachry Engineering Center	TAMU, CS, TX	324,400	NWD	LITEQ	LoanSTAR			
	100	Sanchez E. Building	UT, Austin, TX	251,161	NWD	WBE-MCC	LoanSTAR			
	101	University Teaching Center		152,690	NWD	WBE-MCC	LoanSTAR			
	102	Perry Castaneda Library		483,895	NWD	WBE-MCC	LoanSTAR			
	103	Garrison Hall		54,069	NWD	WBE-MCC	LoanSTAR			
	104	Gearing Hall		61,041	NWD	WBE-MCC	LoanSTAR			
	105	Waggener Hall		57,598	NWD	MCC	LoanSTAR			
	106	Welch Hall		439,540	NWD	MCC	LoanSTAR			
	107	Burdine Hall		103,441	NWD	MCC	LoanSTAR			
	108	Nursing Building		94,815	NWD	MCC	LoanSTAR			
	109	Winship/Steindam Logger		109,064	NWD		LoanSTAR			
	110	Painter/Hogg Logger		128,409	NWD		LoanSTAR			
	111	University Hall	UT, Arlington, TX	123,450	NWD	MCC	LoanSTAR			
	112	Business Building		149,900	NWD	LIGHT, LITEQ	LoanSTAR			
	113	Fine Arts Building		223,000	NWD	LITEQ	LoanSTAR			
	114	Winship Hall	UT, Austin, TX	109,064	NWD	sav_leq	LoanSTAR			
	115	R.A. Steindam Hall		56,849	NWD		LoanSTAR			
	116	Painter Hall		128,409	NWD		LoanSTAR			
	117	W.C. Hogg Building		48,905	NWD		LoanSTAR			
	118	Garrison Hall		54,069	NWD		LoanSTAR			
	119	Gearing Hall		61,000	NWD		LoanSTAR			
	120	MSB Logger 1	Houston, TX	887,187			LoanSTAR			
	121	MSB Logger 2								
	122	MSB Logger 3								
	123	MSB Logger 4								
	124	Medical School Building			NWD	LIGHT				
	125	University of Texas Pan Am	Edinburg, TX	909,642	WD		LoanSTAR			
	126	Stroman High School	Victoria, TX	210,500	WD		LoanSTAR			
	127	Victoria High School		257,014	WD		LoanSTAR			
	128	Sims Elementary School	Fort Worth, TX	62,400	WD	LIGHT	LoanSTAR			
	129	Dunbar Middle School		51,693	WD	LIGHT	LoanSTAR			
	130	Texas Department of Health	Austin, TX	299,700	WD		LoanSTAR			
	131	MDA Cancer Center Boiler Room	Houston, TX	412,872	WD		LoanSTAR			
	132	Basic Research Building		120,376	NWD					
	133	Old Clinic & Lutheran P.v.		499,013	NWD					
	134	New Clinic		276,466	NWD					
	135	MDA Logger 4								
	136	M. D. Anderson Cancer Center		1,522,193	NWD	WBE-ChW P	LoanSTAR			
	137	University of Texas at Dallas	Richardson, TX	481,549	NWD		LoanSTAR			
	138	University of N. Texas Health Science Center	Fort Worth, TX	496,000	NWD		LoanSTAR			
	139	Texas A&M University at Galveston	Galveston, TX	420,868	NWD		LoanSTAR			

140	UTHSC-SA Logger	San Antonio, TX				LoanSTAR		
141	Dental School		484,019	NWD		LoanSTAR		
142	Medical School		606,097	NWD		LoanSTAR		
143	Delmar College	Corpus Christi, TX	636,702	WD		LoanSTAR		
144	Midland County Courthouse	Midland, TX	90,100	WD		LoanSTAR		
145	Ward Memorial Hospital	Monahans, TX	37,000	WD	MCC	LoanSTAR		
146	Government Center	Dallas, TX	473,800	WD	MCC	LoanSTAR		
147	SWTSU-E Logger		637,223	WD		LoanSTAR		
148	SWTSU-W Logger			WD				
149	Southwest Texas State University							
150	TSTC Harlingen	Harlingen, TX	245,258	WD	Non-Mech	LoanSTAR		
151	Austin State Hospital	Austin, TX	845,435	NWD		LoanSTAR		
152	Nacogdoches High School	Nacogdoches, TX	202,615	WD	LIGHT	LoanSTAR		
153	Chamberlain Middle School		66,778	WD	LIGHT	LoanSTAR		
154	PCL Hot Deck Fans Logger	Austin, TX				LoanSTAR		
155	Whole Campus	Harlingen, TX	139,193			LoanSTAR		
160	Oppe Elementary School	Galveston, TX	80,400	WD	MCC	LoanSTAR		
161	Weis Middle School		80,769	WD	MCC	LoanSTAR		
162	Parker Elementary School		81,742	WD	MCC	LoanSTAR		
163	Morgan Elementary School		76,798	WD	MCC	LoanSTAR		
164	Rosenberg Elementary School		63,044	WD	MCC	LoanSTAR		
165	College of Business Administration	UT-Austin, TX	242,857	NWD	MCC	LoanSTAR		
166	Graduate School of Business		146,763	NWD	MCC	LoanSTAR		
167	Main Building		328,752	NWD	LITEQ	LoanSTAR		
168	Engineering II		246,102	NWD	LIGHT	LoanSTAR		
169	Davis Hall		101,580	WD	LITEQ	LoanSTAR		
170	Nursing Hall		155,004	NWD	LIGHT	LoanSTAR		
171	Life Science Building		213,672	NWD	Non-Light,LIGHT	LoanSTAR		
172	Library		201,040	NWD	LIGHT	LoanSTAR		
173	UTA Thermal Energy Plant	UT-Arlington	31,555	WD		LoanSTAR		
174	Thermal Energy Plant Logger 2							
175	Thermal Energy Plant Logger 3							
176	Thermal Energy Plant			WD	MCC	LoanSTAR		
177	Geology Building	UT-Austin, TX	127,000	NWD	MCC	LoanSTAR		
178	Jester Hall		157,270	NWD	LIGHT	LoanSTAR		
179	Taylor Hall		100,773	NWD	MCC	LoanSTAR		
180	Whole Campus							
181	Battle Hall		47,166	NWD	LIGHT	LoanSTAR		
182	Batts Hall		56,190	NWD		LoanSTAR		
190	TAMUK- Central Plant-1	TAMU Kingsville	1,695,000	WD		LoanSTAR		
191	TAMUK- Central Plant-2			WD		LoanSTAR		
192	TAMUK- College Hall			NWD		LoanSTAR		
193	TAMUK- Whole Campus			NWD		LoanSTAR		
194	TAMUK- Turner-Bishop Hall			NWD		LoanSTAR		
200	Capitol Building	AUSTIN	282,499	NWD		LoanSTAR		



201	Sam Houston Building	AUSTIN	182,961	NWD		LoanSTAR			
202	S.F. Austin Plant	AUSTIN	470,000	WD		LoanSTAR			
203	John H. Reagan	AUSTIN	169,746	WD	LIGHT	LoanSTAR			
205	James E. Rudder	AUSTIN	80,000	WD	LITEQ	LoanSTAR			
206	Insurance Building	AUSTIN	102,000	NWD	LITEQ	LoanSTAR			
207	Insurance Annex	AUSTIN	62,000	WD	MCC	LoanSTAR			
208	Archives Building	AUSTIN	120,000	NWD	LITEQ	LoanSTAR			
209	W.B. Travis	AUSTIN	491,000	NWD	LITEQ	LoanSTAR			
210	L.B. Johnson	AUSTIN	308,080	NWD	LIGHT, LITEQ	LoanSTAR			
211	J.H. Winters	AUSTIN	503,000	WD		LoanSTAR			
212	Capitol Extension	AUSTIN	592,781	NWD		LoanSTAR			
213	Sam Houston Physical Plant	AUSTIN	1,925,780	WD		LoanSTAR			
214	S.F. Austin Building	AUSTIN	470,000	WD		LoanSTAR			
220	Treasury Building	AUSTIN	203,672	WD		LoanSTAR			
221	William P. Hobby Building	AUSTIN	546,749	WD		LoanStar			
222	William P. Hobby Building								
223	William P. Hobby Building								
224	William P. Hobby Building								
226	Central Services Building	AUSTIN	97,030	NWD		LoanStar			
227	Supreme Court Building	AUSTIN	72,737	NWD		LoanStar			
228	Price Daniels Building	AUSTIN	151,620	NWD		LoanStar			
229	Tom C. Clark Building	AUSTIN	121,654	NWD		LoanStar			
230	Austin Convention Center	AUSTIN	174,456	WD		LoanStar			
231	Austin Convention Center Logger #2	AUSTIN	108,000			LoanStar			
232	A-Lab	AUSTIN	56,000			LoanStar			
233	Records Building	AUSTIN	33,000	NWD		LoanStar			
234	Main Building (G, F, K Buildings)	AUSTIN	81,000	NWD		LoanStar			
235	Small Labs (A-400, A-500, A-600)	AUSTIN	15,700	NWD		LoanStar			
236	Brown Heatly Building	AUSTIN	262,905	WD		LoanStar			
237	W. P. Clements Building	AUSTIN	484,077	WD		LoanStar			
238	McDermott Library (UTD)	Richardson, TX	NA	NA	NA				
239	Green Center (UTD)	Richardson, TX	NA	NA	NA				
240	Police Department Headquarters	AUSTIN	110,000	WD		LoanStar			
241	Municipal Court Building	AUSTIN	44,155	WD		LoanStar			
242	John Henry Faulk Building	AUSTIN	110,663	WD		LoanStar			
243	Waste Water Facility	AUSTIN	10,000	NWD		LoanStar			
244	WFH Whole Campus	Wichita Falls	495,802	NWD	LIGHT	ESL			
245	WFH Buildings 683 & 700		81,164	NWD	MCC	LoanStar			
246	TSH Whole Campus	Terrel, TX	644782			LoanStar			
247	TSH Bldgs. 537, 725, 686 and 682			WD		LoanStar			
248	TSH Medical Facility (Building 673)			49,651	WD	LoanStar			
249	TSH Mech Room (Building 676)			72,140	WD	LoanStar			
250	TSH Mech Room (Building 680)		88,750	WD		LoanStar			
251	Waco Center for Youth	Waco	124,033	WD		LoanStar			
252	Dobie Middle School	AUSTIN	128,693	WD		LoanStar			



253	Lanier High School	AUSTIN	283,843	WD		LoanStar			
254	Crocket High School	AUSTIN	312,648	WD		LoanStar			
260	McDermott Library	Richardson, TX	211,798			LoanStar			
261	Green Center	Richardson, TX	135,796			LoanStar			
262	Jonsson Center	Richardson, TX	134,055			LoanStar			
263	MED I	Fort Worth, TX	261,000			LoanStar			
264	MED II	Fort Worth, TX	125,000			LoanStar			
265	MED III	Fort Worth, TX	110,000			LoanStar			
300	School of Public Health	Houston	233,738	NWD	MCC	ESL			
301	Physical Education Building	Texas City, TX	58,678	NWD		LoanStar			
302	Student Center	Texas City, TX	23,558	NWD		LoanStar			
303	Fine Arts Building	Texas City, TX	24,106	NWD		LoanStar			
304	Auto/Diesel Laboratory	Texas City, TX	22,230	NWD		LoanStar			
305	Math/Science Building	Texas City, TX	18,827	NWD		LoanStar			
306	Administration Building	Texas City, TX	21,274	NWD		LoanStar			
307	Technical/Vocational Building	Texas City, TX	96,216	NWD		LoanStar			
308	Learning Resource Center	Texas City, TX	56,000	NWD		LoanStar			
309	Welding Technology Laboratory	Texas City, TX	8,400	NWD		LoanStar			
310	Main CUP	Houston, TX	1,147,500	WD	MCC	LoanSTAR			
311	Satellite CUP	Houston, TX	212,500	WD	MCC	LoanSTAR			
312	Bell Building	Houston, TX	55,878	NWD	LITRE	LoanSTAR			
313	Whole Campus	Houston, TX	1,700,000	-		LoanSTAR			
315	Texas Woman's University	Houston, TX	253,175			LoanSTAR			
320	College of the Mainland	Texas City, TX	339,167	WD		LoanSTAR			
321	College of the Mainland					LoanStar			
322	University of Houston - Clear Lake (Boyou Bldg.)	Houston, TX	460,576	WD		LoanSTAR			
325	Valle Verde Campus	El Paso, TX	406,805	WD		LoanSTAR			
326	Rio Grande Campus	El Paso, TX	102,422	WD		LoanSTAR			
327	Trans Mountain Campus	El Paso, TX	154,000	WD		LoanSTAR			
328	Denton State School	Denton, TX	431,580	NWD		LoanSTAR			
329	Vernon State Hospital	Vernon, TX	265,049	WD		LoanSTAR			
330	Abilene State School	Abilene, TX	612,052	WD		LoanSTAR			
331	San Angelo State School	Carlsbad TX	497,091	NWD		LoanSTAR			
332	Central Plant (San Angelo State School)			WD		LoanStar			
333	Big Spring State Hospital	Big Spring, TX	351,892	NWD		LoanSTAR			
334	Big Spring State Hospital (mocr site 2)	Big Spring, TX				LoanSTAR			
335	Lubbock State School	Lubbock, TX	321,357	NWD		LoanSTAR			
336	Rusk State Hospital	Rusk, TX	577,601	NWD		LoanSTAR			
337	Corpus Christi State School	Corpus Christi, TX	263,918	NWD		LoanSTAR			
338	Brenham State School Whole Campus	Brenham, TX	362,249	NWD		LoanSTAR			
339	Brenham State School - Bldg 501 (Admin)		9,681	NWD		LoanSTAR			
340	Brenham State School - Bldg 502 (Infirmary)		20,487	NWD		LoanSTAR			
341	Brenham State School - Bldg 503 (Austin Unit)		38,981	NWD		LoanSTAR			
342	Brenham State School - Bldg 504 (Fannin Unit)		38,981	NWD		LoanSTAR			
343	Brenham State School - Bldg 505 (Childress Unit)		43,519	NWD		LoanSTAR			

344	Brenham State School - Bldg 506 (Driscoll Unit)		38,981	NWD		LoanSTAR			
345	Brenham State School - Bldg 507 (Recreation)		30,310	NWD		LoanSTAR			
346	Brenham State School - Bldg 523 (Bowie Unit)		40,865	NWD		LoanSTAR			
400	John Sealy North	Galveston, TX	54,494	NWD	MCC	LoanSTAR			
401	Clinical Sciences		124,870	NWD	MCC	LoanSTAR			
402	Basic Sciences		137,856	NWD	MCC	LoanSTAR			
403	Moody Library		67,380	NWD	MCC	LoanSTAR			
404	John Sealy South Towers		373,085	NWD	MCC	LoanSTAR			
491	Evans Library (Old)	TAMU, CS, TX		NWD	MCC	TAMU Campus			
492	Evans Library Complex	TAMU, CS, TX		NWD		TAMU Campus			
493	Cushing Library	TAMU, CS, TX	812,289	NWD		TAMU Campus			
494	E. Langford Architecture Center	TAMU, CS, TX	102,105	NWD		TAMU Campus			
495	Old Architecture	TAMU, CS, TX	69,947	NWD		TAMU Campus			
496	Biological Sciences Building	TAMU, CS, TX	96,083	NWD		TAMU Campus			
497	Teague	TAMU, CS, TX	63,515	NWD	MCC	TAMU Campus			
498	Reed McDonald	TAMU, CS, TX	80,218	NWD		TAMU Campus			
499	Heldenfels Hall	TAMU, CS, TX	104,949	NWD		TAMU Campus			
500	Zachry Engineering Center	TAMU, CS, TX	324,400	NWD		TAMU Campus			
502	Main Plant 1	TAMU, CS, TX				TAMU Campus			
503	Main Power Plant E.	TAMU, CS, TX				TAMU Campus			
504	South Satellite Plant	TAMU, CS, TX				TAMU Campus			
505	West Campus	TAMU, CS, TX				TAMU Campus			
506	W. Campus 2 Pl.	TAMU, CS, TX				TAMU Campus			
507	W. Campus Switching St.	TAMU, CS, TX				TAMU Campus			
509	Harrington Tower	TAMU, CS, TX	130,844	NWD		TAMU Campus			
510	Blocker	TAMU, CS, TX	257,953	NWD		TAMU Campus			
511	Oceanography and Meterology	TAMU, CS, TX	180,316	NWD		TAMU Campus			
512	Kleberg Animal & Food Sciences	TAMU, CS, TX	165,031	NWD		TAMU Campus			
513	New Chemistry Building	TAMU, CS, TX	115,797	NWD		TAMU Campus			
514	Chemistry (1959)	TAMU, CS, TX	205,393	NWD		TAMU Campus			
515	Bright Building	TAMU, CS, TX	148,837	NWD		TAMU Campus			
516	CE/TTI Tower	TAMU, CS, TX	157,844	NWD		TAMU Campus			
517	Petroleum Eng (Richardson)	TAMU, CS, TX	113,700	NWD		TAMU Campus			
518	Engineering/Physics Lab	TAMU, CS, TX	115,288	NWD		TAMU Campus			
519	Halbouty Geosciences	TAMU, CS, TX	120,874	NWD		TAMU Campus			
520	Engineering Research Center	TAMU, CS, TX	177,704	NWD		TAMU Campus			
521	Clinical Sciences (Vet)	TAMU, CS, TX	103,440	NWD		TAMU Campus			
522	Vet Med Hospital	TAMU, CS, TX	140,865	NWD		TAMU Campus			
523	Vet Med Center Addition	TAMU, CS, TX	114,666	NWD		TAMU Campus			
524	Soil & Crop/Entomology	TAMU, CS, TX	158,979	NWD		TAMU Campus			
525	Medical Sciences Building	TAMU, CS, TX	169,859	NWD		TAMU Campus			
526	Horticulture-Forest Sciences	TAMU, CS, TX	118,648	NWD		TAMU Campus			
527	Biochemistry/Biophysics	TAMU, CS, TX	166,079	NWD		TAMU Campus			
528	New Business Building	TAMU, CS, TX	192,001	NWD		TAMU Campus			
529	State Headquarters	TAMU, CS, TX	123,961	WD		TAMU Campus	15min		

530	TI Building	TAMU, CS, TX	153,000	WD	TAMU Campus
531	Chemistry (1972)	TAMU, CS, TX	205,393	NWD	TAMU Campus
532	Halbouty Geosciences (New)	TAMU, CS, TX	120,874	NWD	TAMU Campus
533	Harrington Lab	TAMU, CS, TX	61,860	NWD	TAMU Campus
534	Plant Science	TAMU, CS, TX	84,831	NWD	TAMU Campus
535	EV Adams Band Hall	TAMU, CS, TX	55,248	NWD	TAMU Campus
536	Academic	TAMU, CS, TX	82,555	NWD	TAMU Campus
537	Biological Science Building E	TAMU, CS, TX	62,273	NWD	TAMU Campus
538	Academic Administration	TAMU, CS, TX	69,898	NWD	TAMU Campus
539	Anthropology	TAMU, CS, TX	51,592	NWD	TAMU Campus
540	Agriculture Engineering	TAMU, CS, TX	62,228	NWD	TAMU Campus
541	Cyclotron	TAMU, CS, TX	80,646	NWD	TAMU Campus
542	Civil Engineering Building	TAMU, CS, TX	56,537	NWD	TAMU Campus
543	Dulie Bell	TAMU, CS, TX	51,802	NWD	TAMU Campus
544	Vet Sciences Building	TAMU, CS, TX	61,319	NWD	TAMU Campus
545	Vet Hospital	TAMU, CS, TX	96,416	NWD	TAMU Campus
546	Health Center Addition	TAMU, CS, TX	50,015	NWD	TAMU Campus
547	Vet Med Admin Bldg	TAMU, CS, TX	94,680	NWD	TAMU Campus
548	M. E. Shops (Thompson)	TAMU, CS, TX	81,404	NWD	TAMU Campus
549	Southern Crop Improvement Facility	TAMU, CS, TX	59,621	NWD	TAMU Campus
550	Ocean Drilling Facilities	TAMU, CS, TX	60,000	NWD	TAMU Campus
551	West Campus Library	TAMU, CS, TX	68,125	NWD	TAMU Campus
552	Medical Sciences Library	TAMU, CS, TX	84,183	NWD	TAMU Campus
553	Offshore Technology	TAMU, CS, TX	40,014	NWD	TAMU Campus
554	West Campus (old)	TAMU, CS, TX			TAMU Campus
560	Wells Hall	TAMU, CS, TX	67,283	NWD	TAMU Campus
561	Rudder Hall	TAMU, CS, TX	67,283	NWD	TAMU Campus
562	Eppright Hall	TAMU, CS, TX	67,283	NWD	TAMU Campus
563	Appelt Hall	TAMU, CS, TX	82,767	NWD	TAMU Campus
564	Lechner Hall	TAMU, CS, TX	59,541	NWD	TAMU Campus
565	Underwood Hall	TAMU, CS, TX	81,730	NWD	TAMU Campus
566	Commons	TAMU, CS, TX	57,500	NWD	TAMU Campus
568	Krueger Hall	TAMU, CS, TX	112,133	NWD	TAMU Campus
569	Dunn Hall	TAMU, CS, TX	112,133	NWD	TAMU Campus
570	Mosher Hall	TAMU, CS, TX	155,430	NWD	TAMU Campus
571	West Dorm - Aston Hall	TAMU, CS, TX	113,388	NWD	TAMU Campus
572	Clayton Williams Alumni Center	TAMU, CS, TX	56,000	WD	TAMU Campus
573	Read Building	TAMU, CS, TX	149,895	NWD	TAMU Campus
574	Kyle Field	TAMU, CS, TX	149,895	NWD	TAMU Campus
575	G. Rollie White Annex	TAMU, CS, TX	153,886	NWD	TAMU Campus
576	Koldus Student Services	TAMU, CS, TX	111,022	NWD	TAMU Campus
577	Cain Hall Kitchen	TAMU, CS, TX	92,812	NWD	TAMU Campus
578	Rudder Auditorium	TAMU, CS, TX	302,240	NWD	TAMU Campus
579	Duncan Dining Hall	TAMU, CS, TX	75,849	NWD	TAMU Campus
580	G. Rollie White	TAMU, CS, TX	177,838	NWD	TAMU Campus

581	Memorial Student Center	TAMU, CS, TX	177,838	NWD		TAMU Campus		
582	MSC Annex	TAMU, CS, TX	368,935	NWD		TAMU Campus		
583	Sbisa Dining Hall	TAMU, CS, TX	137,913	NWD		TAMU Campus		
586	Clements Hall	TAMU, CS, TX	62,156	NWD		TAMU Campus		
587	Haas Hall	TAMU, CS, TX	69,668	NWD		TAMU Campus		
588	McFadden Hall	TAMU, CS, TX	62,156	NWD		TAMU Campus		
589	Neely Hall	TAMU, CS, TX	69,668	NWD		TAMU Campus		
590	Hobby Hall	TAMU, CS, TX	62,156	NWD		TAMU Campus		
591	McKenzie Terminal	TAMU, CS, TX	32,188	WD		TAMU Campus		
593	Recreational Sports & Natorium	TAMU, CS, TX	289,000	NWD		TAMU Campus		
599	A&M westinghouse data	TAMU, CS, TX	NA	NA				
601	Torres Unit	Huntsville, TX	NA	NA				
602	Boyd Unit	Huntsville, TX	NA	NA				
604	Stevesson Unit	Huntsville, TX	NA	NA				
605	Brisco Unit	Huntsville, TX	NA	NA				
606	Lynaugh Unit	Huntsville, TX	NA	NA				
607	Smith Unit	Huntsville, TX	NA	NA				
608	Wallace Unit	Huntsville, TX	NA	NA				
609	Roach Unit	Huntsville, TX	NA	NA				
610	Neal Unit	Huntsville, TX	NA	NA				
611	Jordan Unit	Huntsville, TX	NA	NA				
612	Dalhart Unit	Huntsville, TX	NA	NA				
701	Power Plant Chillers	Capitol Complex	42,116	WD		Minnesota		
702	Power Plant			WD				
703	Administration Bldg.	Capitol Complex	80,000	WD		Minnesota		
704	Judicial Building	Capitol Complex	200,829	NWD		Minnesota		
705	Health Building	Capitol Complex	197,260	WD		Minnesota		
706	Ford Building	Capitol Complex	57,047	NWD		Minnesota		
707	State Office Bldg.	Capitol Complex	281,850	NWD		Minnesota		
708	Dept. of Transportation Bldg.	Capitol Complex	378,100	NWD		Minnesota		
709	Veterans Building	Capitol Complex	87,664	NWD		Minnesota		
710	Capitol Building	Capitol Complex	366,805	NWD		Minnesota		
711	Centennial Building	Capitol Complex	317,286	NWD		Minnesota		
712	Criminal Apprehension Bldg.	Capitol Complex	77,630	NWD		Minnesota		
713	Capitol Square Building	Capitol Complex	225,479	WD		Minnesota		
714	Somsen Hall	Winona S U, MN	176,221	WD		Minnesota		
715	Phelps Hall	Winona S U, MN	41,058	NWD		Minnesota		
716	Pasteur Hall	Winona S U, MN	60,752	NWD		Minnesota		
717	Kryzsko Building	Winona S U, MN	108,825	NWD		Minnesota		
718	Whole Campus	Winona S U, MN	1,263,428			Minnesota		
719	Lourdes Hall	Winona S U, MN	50,000	NWD		Minnesota		
721	Howell Hall	Winona S U, MN	23,117	NWD		Minnesota		
722	Prentiss Hall	Winona S U, MN	45,503	NWD		Minnesota		
723	Memorial Hall	Winona S U, MN	142,241	NWD		Minnesota		
724	Performance Art Center	Winona S U, MN	86,291	NWD		Minnesota		



725	Maxwell Library	Winona S U, MN	87,567	NWD		Minnesota			
726	Watkins Hall	Winona S U, MN	35,805	NWD		Minnesota			
727	Morey Hall	Winona S U, MN	36,015	NWD		Minnesota			
728	Gildemeister Hall	Winona S U, MN	37,389	NWD		Minnesota			
729	Minne Hall	Winona S U, MN	56,182	NWD		Minnesota			
730	Stark Hall	Winona S U, MN	91,000	NWD		Minnesota			
731	Sheehan Hall	Winona S U, MN	74,268	NWD		Minnesota			
901	College Station Store	C.S. TX							
904	USDOE Forrestal Building	Washington D.C	1,200,000	NWD		ESL			
905	Forrestal Logger 1					ESL			
906	Forrestal Logger 2					ESL			
907	Day Care Center					ESL			
908	Campbell Logger					ESL			
913	Bryan Store	Bryan, TX				ESL			
920	FEMP					ESL			
921	FEMP					ESL			
922	Neil Kirkman Building A-Wing	FL				ESL			
923	Neil Kirkman Building B-Wing	FL				ESL			
924	Neil Kirkman Building C-Wing	FL				ESL			
930	Riverside	TAMU, C.S				ESL			
931	Habitat Humanity Houses	Houston, TX				ESL			
932	Habitat for Humanity Bryan	Bryan, TX				ESL			
941	Ft. Hood					ESL			
946	Ft. Hood					ESL			
948	Ft. Hood					ESL			
949	Fort Hood Weather Station					ESL			
950	Toronto Reference Library	North York, Ontario	300,000			ESL			
951	Administration (and JFK)	Dallas County	42,385			ESL			
952	Records Complex	Dallas County	323,232			ESL			
953	Decker Correctional	Dallas County	193,323			ESL			
954	Health & Human Services	Dallas County	319,883			ESL			
955	Health & Human Services (Logger 2)								
956	Cook/Chill Warehouse	Dallas County	345,532			ESL			
957	Lew Sterrett Complex	Dallas County	1,850,802			ESL			
960	Matagorda County Courthouse								
961	Midwestern State University	Dallas County	697,800			ESL			
962	Butte Jail	Butte, MT				ESL			
963	Butte Courthouse Complex								
964	Butte Courthouse (Lighting)								
965	Butte Courthouse Logger 4								
970	Sam Houston Elementary	Bryan, TX	62,000	WD		Rebuild America			
971	Bryan High School	Bryan, TX	229,033	WD	MCC	Rebuild America			
972	Rayburn Middle School	Bryan, TX	198,443	WD	MCC	Rebuild America			
973	Brazos Center	Bryan, TX	45,000	WD	LITRE	Rebuild America			
974	Brazos County Courthouse Annex	Bryan, TX	20,288	WD		Rebuild America			

975	Brazos County Courthouse	Bryan, TX	100,000	WD	MCC	Rebuild America		
980	St Paul Place	Dallas, TX	100,000	WD		ESL		
981	Harwood Center	Dallas, TX	750,000	WD		ESL		
982	9700 Richmond	Dallas, TX	89,000	WD		ESL		
983	3300 Gessner	Dallas, TX	65,500	WD		ESL		
984	McKinney Place	Dallas, TX	100,000		MCC	ESL		
985	Pittman Atrium	Dallas, TX	100,000	WD	MCC	ESL		
986	Brooke Army Medical Center	Fort Sam Houston	1,200,000	WD		ESL	15 min	

**Legend:**

**WBE** Measured Whole Building Electricity Consumption  
**NWD** for buildings without Chillers  
**WD** for buildings with Chillers  
**L&R** Measured Lights and Receptacles  
**WBE-MCC** L&R derived from the difference between measured Whole Building Electricity and Motor Control Center (Pumps) Consumptions  
**LIGHT** Measured Lighting consumption  
**LITEQ** Measured Lighting and Equipment consumption  
**EQUIP** Measured Equipment consumption

**Table 2. All buildings monitored by ESL**