

TAMU Project

**Energy Consumption Data Quality Assurance/Quality
Control Assessment Report for the
Month of April 2016**

Prepared for

**Utility & Energy Services
Division of Administration
Texas A&M University**

May 2016

Acknowledgements

The TAMU energy consumption and data analysis report for the month of April 2016 is a collaborative effort from the personnel of the Utilities & Energy Services, Texas A&M University and the Energy Systems Laboratory, Texas A&M Engineering Experiment Station.

The authors of this report would like to thank Ms. Yasuko Sakurai, Mr. Alec Pointer at the Utilities & Energy Services for providing energy consumption data and valuable information related to the building operation. The lead of the energy analysis for TAMU project is Dr. Juan-Carlos Baltazar. Ms. Xiaoli Li, Mr. Yifu Sun, and Ms. Kimberly Jones, members of the energy analysis group in Energy Systems Laboratory contributed to this month report of consumption analysis for TAMU buildings. For information regarding to the TAMU Data Analysis project please contact the Energy Analysis Group Manager Dr. Juan-Carlos Baltazar.

Executive Summary

This report analyzes the energy use data collected from 567 meters in 190 buildings and complexes (approximately 17,100,000 GSF) on the campus of Texas A&M University in College Station, Texas. The report consists of five sections: 1) The summary of the monthly energy consumption per meter ID, 2) The quality control and assurance analysis of incorrect or incomplete energy use patterns, 3) Energy consumption time series plots, 4) Energy Balance plots, and 5) Energy Balance plots with filled-in consumption data. Section one contains the summary of monthly energy consumption for each of the TAMU buildings. Section two includes the reviews on each of those building energy use patterns that presented problems in the metered data. Section three and four are a collection of the plots generated for the energy use analysis, as reference to indicate and validate the quality of the metered energy data. The Section five includes the energy balance plots with filled-in energy data.

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I. Summary of Monthly Consumption

Table I-1 April 2016 Monthly Consumption for TAMU Buildings

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
0270	Emerging Technologies Building	305,316	007469	ELE	196,380	kWh	
0270	Emerging Technologies Building	305,316	007470	ELE	50,869	kWh	
0270	Emerging Technologies Building	305,316	007471	CHW	1,804,878	mBtu	
0270	Emerging Technologies Building	305,316	007475	HHW	309,384	mBtu	
0275	Liberal Arts and Arts & Humanities Building	107,500	007715	ELE	61,365	kWh	
0275	Liberal Arts and Arts & Humanities Building	107,500	007716	CHW	444,391	mBtu	
0275	Liberal Arts and Arts & Humanities Building	107,500	007717	HHW	76,424	mBtu	
0290	Wells Residence Hall	67,283	006870	ELE	42,890	kWh	
0290	Wells Residence Hall	67,283	001984	CHW	904,731	mBtu	(2)
0290	Wells Residence Hall	67,283	001988	HHW	475,890	mBtu	(2)
0291	Rudder Residence Hall	67,283	000351	ELE	54,035	kWh	
0291	Rudder Residence Hall	67,283	002132	CHW	734,544	mBtu	(2)
0291	Rudder Residence Hall	67,283	002136	HHW	388,494	mBtu	(2)
0292	Eppright Residence Hall	67,283	000002	ELE	49,601	kWh	
0292	Eppright Residence Hall	67,283	002262	CHW	443,892	mBtu	
0292	Eppright Residence Hall	67,283	002266	HHW	208,123	mBtu	
0293	Appelt Residence Hall	82,767	000003	ELE	56,974	kWh	
0293	Appelt Residence Hall	82,767	002062	CHW	559,730	mBtu	(2)
0293	Appelt Residence Hall	82,767	002066	HHW	217,321	mBtu	(2)
0294	Lechner Residence Hall	59,541	000004	ELE	49,100	kWh	
0294	Lechner Residence Hall	59,541	002285	CHW	654,991	mBtu	
0294	Lechner Residence Hall	59,541	002289	HHW	514,082	mBtu	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006536	ELE	119,955	kWh	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006537	ELE	109,581	kWh	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006534	CHW	912,081	mBtu	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006535	HHW	231,378	mBtu	
0353	Bright Aerospace Building	148,837	001569	ELE	159,746	kWh	
0353	Bright Aerospace Building	148,837	002746	CHW	1,095,359	mBtu	(2)
0353	Bright Aerospace Building	148,837	002757	HHW	64,790	mBtu	(2)
0358	Davis Football Player Development Center	20,026	007699	ELE	28,609	kWh	
0358	Davis Football Player Development Center	20,026	007701	CHW	146,146	mBtu	
0358	Davis Football Player Development Center	20,026	007702	HHW	6,506	mBtu	
0361	Bright Football Complex	124,971	008461	ELE	216,827	kWh	*
0361	Bright Football Complex	124,971	002547	CHW	954,933	mBtu	
0361	Bright Football Complex	124,971	002551	HHW	121,532	mBtu	
0367	Kyle Field	489,000	000336	ELE	153,441	kWh	*
0367	Kyle Field	489,000	008861	ELE	106,636	kWh	
0367	Kyle Field	489,000	008862	ELE	110,715	kWh	
0367	Kyle Field	489,000	008863	ELE	169,347	kWh	
0367	Kyle Field	489,000	008864	ELE	194,774	kWh	
0367	Kyle Field	489,000	008865	ELE	69,179	kWh	
0367	Kyle Field	489,000	008866	ELE	173,888	kWh	
0367	Kyle Field	489,000	008867	ELE	200,590	kWh	
0367	Kyle Field	489,000	008868	ELE	88,128	kWh	
0367	Kyle Field	489,000	008852	CHW	2,183,632	mBtu	
0367	Kyle Field	489,000	008026	CHW	2,491,920	mBtu	
0367	Kyle Field	489,000	008856	HHW	331,907	mBtu	
0367	Kyle Field	489,000	008027	HHW	672,345	mBtu	
0376	Chemistry Building Addition	115,797	006229	ELE	188,869	kWh	
0376	Chemistry Building Addition	115,797	006230	ELE	116,777	kWh	
0376	Chemistry Building Addition	115,797	007115	CHW	2,659,530	mBtu	
0376	Chemistry Building Addition	115,797	007119	HHW	1,251,656	mBtu	
0383	Koldus Building	110,272	001488	ELE	153,790	kWh	
0383	Koldus Building	110,272	002863	CHW	500,880	mBtu	
0383	Koldus Building	110,272	002874	HHW	66,171	mBtu	
0384	Sanders Corps of Cadets Center	19,363	001554	ELE	24,919	kWh	
0384	Sanders Corps of Cadets Center	19,363	002583	CHW	182,910	mBtu	
0384	Sanders Corps of Cadets Center	19,363	002587	HHW	95,222	mBtu	#, (1)
0325-0385	CE TTI Office & Lab Building	157,844	009122	ELE	195,280	kWh	
0325-0385	CE TTI Office & Lab Building	157,844	009123	CHW	1,025,823	mBtu	
0325-0385	CE TTI Office & Lab Building	157,844	009124	HHW	143,026	mBtu	
0385-A	CE TTI Office & Lab Building - Pi R Square	9,393	004240	CHW	84,354	mBtu	
0385-A	CE TTI Office & Lab Building - Pi R Square	9,393	004245	HHW	9,073	mBtu	

Table I-1 April 2016 Monthly Consumption for TAMU Buildings (Continued)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
0386	Jack E. Brown Chemical Engineering Building	205,000	001428	ELE	178,192	kWh	
0386	Jack E. Brown Chemical Engineering Building	205,000	001429	ELE	352,525	kWh	
0386	Jack E. Brown Chemical Engineering Building	205,000	002250	CHW	2,924,755	mBtu	
0386	Jack E. Brown Chemical Engineering Building	205,000	006871	CHW	104,017	mBtu	
0386	Jack E. Brown Chemical Engineering Building	205,000	002254	HHW	481,006	mBtu	
0387	Richardson Petroleum Engineering Building	113,700	005870	ELE	86,910	kWh	
0387	Richardson Petroleum Engineering Building	113,700	005872	ELE	107,848	kWh	*
0387	Richardson Petroleum Engineering Building	113,700	005805	CHW	1,005,828	mBtu	
0387	Richardson Petroleum Engineering Building	113,700	005809	HHW	197,553	mBtu	
0391-0392	James J. Cain '51 and Mechanical Engineering Office Building	173,481	001573	ELE	196,719	kWh	
0391-0392	James J. Cain '51 and Mechanical Engineering Office Building	173,481	002906	CHW	1,215,141	mBtu	
0391-0392	James J. Cain '51 and Mechanical Engineering Office Building	173,481	002910	HHW	233,484	mBtu	
0394	Underwood Residence Hall	81,730	000014	ELE	42,020	kWh	
0394	Underwood Residence Hall	81,730	002117	CHW	858,386	mBtu	(2)
0394	Underwood Residence Hall	81,730	002121	HHW	740,748	mBtu	(2)
0398	Langford Architecture Center Building A	116,619	003806	ELE	115,524	kWh	
0398	Langford Architecture Center Building A	116,619	003951	CHW	879,201	mBtu	(2)
0398	Langford Architecture Center Building A	116,619	003955	HHW	404,774	mBtu	(2)
0400	Spence Hall Dorm 1	31,952	009169	ELE	NA	kWh	*
0400	Spence Hall Dorm 1	31,952	009170	CHW	NA	mBtu	*
0400	Spence Hall Dorm 1	31,952	009171	HHW	NA	mBtu	*
0401	Kiest Hall Dorm 2	35,967	009150	ELE	NA	kWh	*
0401	Kiest Hall Dorm 2	35,967	009151	CHW	NA	mBtu	*
0401	Kiest Hall Dorm 2	35,967	009152	HHW	NA	mBtu	*
0405-0407-1402	Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center	91,310	007721	ELE	72,724	kWh	
0407-1402	Harrell Hall - Dorm 8 and Buzbee LLC	54,443	007722	CHW	397,921	mBtu	
0407-1402	Harrell Hall - Dorm 8 and Buzbee LLC	54,443	007723	HHW	68,580	mBtu	
0405	Lacy Hall - Dorm 6	36,867	007922	ELE	24,274	kWh	
0405	Lacy Hall - Dorm 6	36,867	007918	CHW	272,297	mBtu	#, (1)
0405	Lacy Hall - Dorm 6	36,867	007919	HHW	92,580	mBtu	
0407	Harrell Hall - Dorm 8	36,943	007729	ELE	29,264	kWh	
1402	Buzbee Leadership Learning Center	17,500	007725	CHW	179,323	mBtu	
1402	Buzbee Leadership Learning Center	17,500	007726	HHW	4,377	mBtu	
0406-1403	Leonard Hall - Dorm 7 and Ash LLC	54,179	007981	ELE	62,073	kWh	
0406-1403	Leonard Hall - Dorm 7 and Ash LLC	54,179	007982	CHW	430,113	mBtu	
0406-1403	Leonard Hall - Dorm 7 and Ash LLC	54,179	007983	HHW	91,327	mBtu	
0406	Leonard Hall - Dorm 7	36,893	008011	ELE	12,561	kWh	
0406	Leonard Hall - Dorm 7	36,893	008012	ELE	15,929	kWh	
1403	H. Grady Ash, Jr. '58 Leadership Learning Center	17,286	008005	CHW	143,730	mBtu	
1403	H. Grady Ash, Jr. '58 Leadership Learning Center	17,286	008006	HHW	16,836	mBtu	
0408	Whitely Hall - Dorm 9	36,893	000024	ELE	30,047	kWh	
0408	Whitely Hall - Dorm 9	36,893	002079	CHW	372,161	mBtu	
0408	Whitely Hall - Dorm 9	36,893	002083	HHW	187,771	mBtu	
0409	White Hall - Dorm 10	36,893	000025	ELE	26,391	kWh	
0409	White Hall - Dorm 10	36,893	002094	CHW	312,458	mBtu	
0409	White Hall - Dorm 10	36,893	002098	HHW	123,659	mBtu	
0410	Harrington Hall - Dorm 11	36,893	000327	ELE	21,337	kWh	
0410	Harrington Hall - Dorm 11	36,893	002349	CHW	306,053	mBtu	
0410	Harrington Hall - Dorm 11	36,893	002353	HHW	138,343	mBtu	
0411	Utay Hall - Dorm 12	36,943	000026	ELE	29,438	kWh	
0411	Utay Hall - Dorm 12	36,943	002102	CHW	252,774	mBtu	
0411	Utay Hall - Dorm 12	36,943	002106	HHW	99,866	mBtu	
0412	Moses Residence Hall	40,828	000027	ELE	33,827	kWh	
0412	Moses Residence Hall	40,828	002384	CHW	504,169	mBtu	(2)
0412	Moses Residence Hall	40,828	002395	HHW	225,725	mBtu	
0415	Davis-Gary Residence Hall	40,828	000030	ELE	30,457	kWh	
0415	Davis-Gary Residence Hall	40,828	002532	CHW	448,326	mBtu	
0415	Davis-Gary Residence Hall	40,828	002543	HHW	210,625	mBtu	
0419	Legett Residence Hall	45,134	000031	ELE	24,645	kWh	
0419	Legett Residence Hall	45,134	002218	CHW	200,957	mBtu	
0419	Legett Residence Hall	45,134	002222	HHW	95,608	mBtu	
0420	Milner Hall	48,268	009144	ELE	20,122	kWh	
0420	Milner Hall	48,268	009145	CHW	177,940	mBtu	#, (1), (2)
0420	Milner Hall	48,268	009146	HHW	68,916	mBtu	(2)
0422	Walton Residence Hall	51,494	000378	ELE	67,351	kWh	
0422	Walton Residence Hall	51,494	002364	HHW	62,619	mBtu	
0424	Hotard Hall	18,500	000032	ELE	12,880	kWh	
0424	Hotard Hall	18,500	002657	CHW	101,903	mBtu	
0424	Hotard Hall	18,500	002668	HHW	49,951	mBtu	
0425	Henderson Hall	22,185	001553	ELE	14,663	kWh	
0425	Henderson Hall	22,185	002607	CHW	171,518	mBtu	
0425	Henderson Hall	22,185	002611	HHW	90,631	mBtu	

Table I-1 April 2016 Monthly Consumption for TAMU Buildings (Continued)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
0426-0427-0428	FHK Complex	154,349	000331	ELE	121,297	kWh	
0426-0427-0428	FHK Complex	154,349	002848	CHW	1,098,293	mBtu	
0426-0427-0428	FHK Complex	154,349	002859	HHW	482,017	mBtu	
0430	Schumacher Residence Hall	38,957	000034	ELE	35,256	kWh	
0430	Schumacher Residence Hall	38,957	002015	CHW	313,881	mBtu	
0430	Schumacher Residence Hall	38,957	002030	HHW	98,892	mBtu	
0359	Architecture Building B	28,545	005518	ELE	21,804	kWh	
0432	Architecture Building C	73,020	005584	ELE	81,227	kWh	
0359-0432	Architecture Building B&C	101,565	006419	CHW	597,276	mBtu	
0359-0432	Architecture Building B&C	101,565	006423	HHW	221,718	mBtu	#, (1)
0434	Luedecke Building (Cyclotron)	80,646	005555	ELE	143,464	kWh	
0434	Luedecke Building (Cyclotron)	80,646	005558	ELE	941,247	kWh	
0434	Luedecke Building (Cyclotron)	80,646	006664	CHW	1,566,344	mBtu	
0434	Luedecke Building (Cyclotron)	80,646	006668	HHW	94,163	mBtu	
0435	Harrington Education Center Office Tower	130,844	001546	ELE	116,955	kWh	
0435	Harrington Education Center Office Tower	130,844	002792	CHW	795,332	mBtu	
0435	Harrington Education Center Office Tower	130,844	002796	HHW	376,713	mBtu	
0436	Reed-McDonald Building	77,435	006868	ELE	88,198	kWh	
0436	Reed-McDonald Building	77,435	002419	CHW	900,716	mBtu	
0436	Reed-McDonald Building	77,435	002423	HHW	288,870	mBtu	
0438	Harrington Education Center Classroom Building	61,860	003630	ELE	35,624	kWh	
0438	Harrington Education Center Classroom Building	61,860	002784	CHW	204,291	mBtu	
0438	Harrington Education Center Classroom Building	61,860	002788	HHW	61	mBtu	
0433-0440-0441-04	Mosher Commons Krueger Dunn Aston	577,584	009099	ELE	430,089	kWh	
0433	Mosher Residence Hall	155,430	009083	ELE	106,186	kWh	(2)
0433	Mosher Residence Hall	155,430	002485	CHW	1,758,132	mBtu	
0433	Mosher Residence Hall	155,430	002489	HHW	655,111	mBtu	
0441	Krueger Residence Hall	112,133	009091	ELE	126,309	kWh	
0441	Krueger Residence Hall	112,133	002504	CHW	948,308	mBtu	
0441	Krueger Residence Hall	112,133	002500	HHW	404,075	mBtu	
0442	Dunn Residence Hall	112,133	009095	ELE	122,160	kWh	
0442	Dunn Residence Hall	112,133	002519	CHW	788,403	mBtu	
0442	Dunn Residence Hall	112,133	002515	HHW	353,929	mBtu	
0447	Aston Residence Hall	113,388	009087	ELE	74,794	kWh	
0447	Aston Residence Hall	113,388	002474	CHW	1,031,265	mBtu	
0447	Aston Residence Hall	113,388	002470	HHW	511,160	mBtu	
0443	Oceanography & Meteorology Building	180,316	005322	ELE	170,055	kWh	*
0443	Oceanography & Meteorology Building	180,316	005323	ELE	60,802	kWh	
0443	Oceanography & Meteorology Building	180,316	006388	CHW	930,224	mBtu	
0443	Oceanography & Meteorology Building	180,316	006392	HHW	473,680	mBtu	
0444	Peterson Building	84,831	004714	ELE	145,744	kWh	
0444	Peterson Building	84,831	002922	CHW	1,002,687	mBtu	
0444	Peterson Building	84,831	006435	HHW	308,158	mBtu	
0445-0517	Teague Research Center and DPC Annex	89,735	003948	ELE	29,667	kWh	
0445-0517	Teague Research Center and DPC Annex	89,735	004719	ELE	53,902	kWh	
0445	Teague Research Center	63,515	006411	CHW	256,394	mBtu	
0445	Teague Research Center	63,515	006415	HHW	28,807	mBtu	
0517	DPC Annex	26,220	006563	CHW	455,300	mBtu	
0517	DPC Annex	26,220	006567	HHW	330,643	mBtu	
0446	Rudder Theatre Complex	209,293	002977	ELE	98,162	kWh	
0446	Rudder Theatre Complex	209,293	002980	ELE	39,026	kWh	
0446	Rudder Theatre Complex	209,293	004297	CHW	1,656,091	mBtu	
0446	Rudder Theatre Complex	209,293	004309	HHW	948,074	mBtu	
0446	Rudder Tower	92,947	001550	ELE	30,496	kWh	
0446	Rudder Tower	92,947	001551	ELE	65,440	kWh	
0446	Rudder Tower	92,947	002455	CHW	529,540	mBtu	
0446	Rudder Tower	92,947	002459	HHW	102,800	mBtu	
0448	Adams Band Hall	55,248	000978	ELE	61,440	kWh	
0448	Adams Band Hall	55,248	002555	CHW	483,243	mBtu	
0448	Adams Band Hall	55,248	002566	HHW	283,139	mBtu	
0449	Biological Sciences Building - West	96,038	003978	ELE	185,557	kWh	
0449	Biological Sciences Building - West	96,038	003981	CHW	1,179,949	mBtu	
0449	Biological Sciences Building - West	96,038	003985	HHW	327,096	mBtu	
0450	Duncan Dining Hall	128,482	000300	ELE	111,389	kWh	
0450	Duncan Dining Hall	128,482	002998	CHW	553,822	mBtu	
0450	Duncan Dining Hall	128,482	003009	HHW	3,366	mBtu	

Table I-1 April 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
0454	MSC (East Main)	392,000	007600	ELE	326,817	kWh	
0454	MSC (West Main)	392,000	007601	ELE	228,161	kWh	
0454	MSC BOR	392,000	008047	ELE	17,766	kWh	
0454	MSC	392,000	007584	CHW	2,498,799	mBtu	
0454	MSC BOR	392,000	004184	CHW	370,955	mBtu	
0454	MSC	392,000	007585	HHW	358,143	mBtu	
0454	MSC BOR	392,000	004196	HHW	243,530	mBtu	
0456	Military Sciences Building	43,808	006939	CHW	450,381	mBtu	
0456	Military Sciences Building	43,808	006943	HHW	198,693	mBtu	
0457	TAES Annex Building	16,364	005863	ELE	15,041	kWh	
0457	TAES Annex Building	16,364	005913	CHW	67,424	mBtu	
0457	TAES Annex Building	16,364	005917	HHW	38,581	mBtu	#, (1)
0461	Coke Building	24,466	004008	ELE	32,450	kWh	*
0461	Coke Building	24,466	005307	CHW	126,472	mBtu	
0461	Coke Building	24,466	004023	HHW	11,065	mBtu	
0462	Academic Building	82,555	005861	ELE	21,911	kWh	
0462	Academic Building	82,555	005903	ELE	33,341	kWh	
0462	Academic Building	82,555	005905	CHW	490,636	mBtu	
0462	Academic Building	82,555	005909	HHW	406,321	mBtu	
0463	Psychology Building	48,215	001575	ELE	39,711	kWh	
0463	Psychology Building	48,215	002941	CHW	389,850	mBtu	(2)
0463	Psychology Building	48,215	002945	HHW	54,826	mBtu	
0464	State Chemist Building	20,027	005839	ELE	7,259	kWh	
0464	State Chemist Building	20,027	005837	ELE	7,210	mBtu	
0464	State Chemist Building	20,027	005841	HHW	191	mBtu	
0465	Butler Hall	29,699	003997	ELE	32,350	kWh	
0465	Butler Hall	29,699	004000	CHW	234,027	mBtu	
0465	Butler Hall	29,699	004004	HHW	97,025	mBtu	
0467	Biological Sciences Building - East	62,273	001543	ELE	193,407	kWh	(2)
0467	Biological Sciences Building - East	62,273	003851	CHW	550,392	mBtu	
0467	Biological Sciences Building - East	62,273	003862	HHW	156,671	mBtu	(2)
0468	Evans Library	712,093	000304	ELE	264,222	kWh	
0468	Evans Library	712,093	000318	ELE	128,648	kWh	*
0468	Evans Library	712,093	000319	ELE	106,978	kWh	
0468	Evans Library	712,093	000320	ELE	88,176	kWh	
0468	Evans Library	712,093	006429	ELE	95,400	kWh	
0468	Evans Library	712,093	003701	CHW	1,133,223	mBtu	(2)
0468	Evans Library	712,093	003895	CHW	1,445,163	mBtu	(2)
0468	Evans Library	712,093	003903	CHW	205,639	mBtu	*, (2)
0468	Evans Library	712,093	003911	CHW	1,031,502	mBtu	*, (2)
0468	Evans Library	712,093	003712	HHW	136,470	mBtu	(2)
0468	Evans Library	712,093	003899	HHW	396,002	mBtu	(2)
0468	Evans Library	712,093	003907	HHW	61,920	mBtu	*, (2)
0468	Evans Library	712,093	003922	HHW	101,433	mBtu	*, (2)
0468	Evans Library	712,093	005303	HHW	1,101	mBtu	*, (2)
0469	Central Campus Parking Garage	251,304	000306	ELE	45,479	kWh	*
0469	Central Campus Parking Garage	2,844	003716	CHW	29,479	mBtu	
0469	Central Campus Parking Garage	2,844	003720	HHW	5,065	mBtu	
0470	Glasscock History Bldg	39,887	006407	ELE	17,534	kWh	
0470	Glasscock History Bldg	39,887	006638	CHW	149,824	mBtu	
0470	Glasscock History Bldg	39,887	006642	HHW	40,531	mBtu	
0471	Pavilion	40,062	001455	ELE	36,375	kWh	
0471	Pavilion	40,062	002769	CHW	195,364	mBtu	
0471	Pavilion	40,062	002780	HHW	4,891	mBtu	(2)
0472	Animal Industries	44,856	009042	ELE	48,305	kWh	
0472	Animal Industries	44,856	009109	CHW	357,876	mBtu	
0472	Animal Industries	44,856	009113	HHW	85,385	mBtu	
0473	Williams Administration Building	69,898	007945	ELE	56,418	kWh	
0473	Williams Administration Building	69,898	007946	CHW	550,177	mBtu	
0473	Williams Administration Building	69,898	007947	HHW	256,639	mBtu	
0474	YMCA Building	36,035	007524	ELE	23,230	kWh	
0474	YMCA Building	36,035	007525	CHW	109,138	mBtu	
0474	YMCA Building	36,035	007526	HHW	8,678	mBtu	
0476	Francis Hall	36,850	008015	ELE	36,133	kWh	
0476	Francis Hall	36,850	008033	CHW	270,070	mBtu	
0476	Francis Hall	36,850	008034	HHW	7,432	mBtu	

Table I-1 April 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
0477	Anthropology Building	51,592	001558	ELE	29,117	kWh	
0477	Anthropology Building	51,592	003664	CHW	306,948	mBtu	
0477	Anthropology Building	51,592	003668	HHW	63,761	mBtu	
0478	Scoates Hall	62,228	007961	ELE	65,125	kWh	
0478	Scoates Hall	62,228	007968	CHW	541,205	mBtu	# (1)
0478	Scoates Hall	62,228	007969	HHW	237,279	mBtu	# (1)
0480	Bolton Hall	39,686	006845	ELE	34,892	kWh	
0480	Bolton Hall	39,686	007012	CHW	185,598	mBtu	
0480	Bolton Hall	39,686	007016	HHW	50,868	mBtu	
0481	Heaton Hall	13,640	005712	ELE	NA	kWh	*
0481	Heaton Hall	13,640	007531	CHW	215,859	mBtu	
0481	Heaton Hall	13,640	007535	HHW	157,428	mBtu	
0482	Fermier Hall	19,074	005779	ELE	24,095	kWh	
0482	Fermier Hall	19,074	005878	CHW	302,115	mBtu	
0482	Fermier Hall	19,074	005881	HHW	138,515	mBtu	
0483	Thompson Hall	81,404	003688	ELE	64,980	kWh	*
0483	Thompson Hall	81,404	003887	CHW	208,485	mBtu	*
0483	Thompson Hall	81,404	003891	HHW	27,860	mBtu	*
0484	Chemistry Building	205,393	007152	ELE	91,005	kWh	
0484	Chemistry Building	205,393	007556	ELE	15,586	kWh	*
0484	Chemistry Building	205,393	007557	ELE	122,873	kWh	*
0484	Chemistry Building	205,393	007559	ELE	186,806	kWh	*
0484	Chemistry Building	205,393	007028	CHW	1,712,847	mBtu	
0484	Chemistry Building	205,393	007223	CHW	3,007,881	mBtu	
0484	Chemistry Building	205,393	007032	HHW	566,921	mBtu	
0484	Chemistry Building	205,393	007227	HHW	1,249,695	mBtu	
0490	Halbouty Geosciences Building	120,874	006691	ELE	66,594	kWh	
0490	Halbouty Geosciences Building	120,874	006695	ELE	106,887	kWh	
0490	Halbouty Geosciences Building	120,874	006896	CHW	1,123,057	mBtu	
0490	Halbouty Geosciences Building	120,874	006913	CHW	545,982	mBtu	
0490	Halbouty Geosciences Building	120,874	006900	HHW	334,610	mBtu	
0490	Halbouty Geosciences Building	120,874	006917	HHW	199,800	mBtu	
0492	Civil Engineering Building	56,537	005783	ELE	72,779	kWh	*
0492	Civil Engineering Building	56,537	005950	CHW	376,521	mBtu	
0492	Civil Engineering Building	56,537	005954	HHW	148,165	mBtu	
0495	Sbisa Dining Hall	94,233	000352	ELE	154,723	kWh	
0495	Sbisa Dining Hall	94,233	000353	ELE	127,104	kWh	
0495	Sbisa Dining Hall	94,233	001951	CHW	1,271,084	mBtu	
0495	Sbisa Dining Hall	94,233	001957	HHW	231,876	mBtu	
0496	Utilities & Energy Services Central Office	46,110	007706	ELE	10,915	kWh	(2)
0496	Utilities & Energy Services Central Office	46,110	006929	CHW	137,846	mBtu	(2)
0496	Utilities & Energy Services Central Office	46,110	006933	HHW	40,130	mBtu	(2)
0499	Engineering Innovation Center	28,339	001561	ELE	26,829	kWh	
0499	Engineering Innovation Center	28,339	002672	CHW	70,199	mBtu	*(2)
0499	Engineering Innovation Center	28,339	002683	HHW	15,518	mBtu	*(2)
0501	Concrete Materials Laboratory	9,600	005791	ELE	4,217	kWh	*
0506	Nagle Hall	32,306	001484	ELE	12,905	kWh	(2)
0506	Nagle Hall	32,306	003619	CHW	289,132	mBtu	
0506	Nagle Hall	32,306	003623	HHW	27,661	mBtu	
0507	Veterinary Medical Science Building	69,367	003013	ELE	84,184	kWh	
0507	Veterinary Medical Science Building	69,367	003640	CHW	1,092,719	mBtu	
0507	Veterinary Medical Science Building	69,367	003644	HHW	385,427	mBtu	
0508	Veterinary Teaching Hospital	96,416	003022	ELE	93,187	kWh	
0508-1026	Veterinary Teaching Hospital and Veterinary Medicine Administration	191,096	004166	CHW	1,841,591	mBtu	
0508-1026	Veterinary Teaching Hospital and Veterinary Medicine Administration	191,096	004170	HHW	580,913	mBtu	
0511	Heep Laboratory Building	40,476	005787	ELE	65,814	kWh	
0511	Heep Laboratory Building	40,476	005821	CHW	468,976	mBtu	
0511	Heep Laboratory Building	40,476	005825	HHW	204,571	mBtu	
0512	All Faiths Chapel	8,999	004340	ELE	7,310	kWh	*
0512	All Faiths Chapel	8,999	004288	CHW	88,116	mBtu	
0512	All Faiths Chapel	8,999	004293	HHW	46,327	mBtu	
0513	Doherty Building	42,336	000299	ELE	58,512	kWh	
0513	Doherty Building	42,336	002898	CHW	651,576	mBtu	
0513	Doherty Building	42,336	002902	HHW	322,483	mBtu	
0514	Munnerlyn Astronomy & Space Sciences Engineering	22,134	007558	ELE	13,631	kWh	
0514	Munnerlyn Astronomy & Space Sciences Engineering	22,134	007487	CHW	68,489	mBtu	
0514	Munnerlyn Astronomy & Space Sciences Engineering	22,134	007491	HHW	3,066	mBtu	

Table I-1 April 2016 Monthly Consumption for TAMU Buildings (Continued)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
0516	Computing Services Center	30,014	005259	ELE	513,222	kWh	
0516	Computing Services Center	30,014	003959	CHW	1,546,120	mBtu	
0516	Computing Services Center	30,014	003963	HHW	2	mBtu	
0520	Beutel Health Center	63,318	003785	ELE	62,243	kWh	
0520	Beutel Health Center	63,318	003933	CHW	528,041	mBtu	#, (1)
0520	Beutel Health Center	63,318	003944	HHW	205,516	mBtu	#, (1)
0521	Heldenfels Hall	104,949	001547	ELE	93,651	kWh	
0521	Heldenfels Hall	104,949	002962	CHW	847,621	mBtu	
0521	Heldenfels Hall	104,949	002973	HHW	217,606	mBtu	
0524	Blocker building	257,953	001545	ELE	218,859	kWh	
0524	Blocker building	257,953	002914	CHW	1,272,438	mBtu	
0524	Blocker building	257,953	002918	HHW	24,681	mBtu	(2)
0548	Clements Residence Hall	62,156	000048	ELE	36,628	kWh	
0548	Clements Residence Hall	62,156	002729	CHW	740,486	mBtu	
0548	Clements Residence Hall	62,156	002740	HHW	352,460	mBtu	
0549	Haas Residence Hall	69,668	001398	ELE	49,104	kWh	*
0549	Haas Residence Hall	69,668	002983	CHW	785,540	mBtu	
0549	Haas Residence Hall	69,668	002994	HHW	501,489	mBtu	
0550	McFadden Residence Hall	62,156	000339	ELE	41,062	kWh	
0550	McFadden Residence Hall	62,156	002188	CHW	705,331	mBtu	
0550	McFadden Residence Hall	62,156	002192	HHW	395,288	mBtu	
0652	Neeley Residence Hall	69,668	000056	ELE	47,786	kWh	
0652	Neeley Residence Hall	69,668	002147	CHW	519,060	mBtu	
0652	Neeley Residence Hall	69,668	002151	HHW	247,000	mBtu	
0653	Hobby Residence Hall	62,156	000057	ELE	45,834	kWh	
0653	Hobby Residence Hall	62,156	002401	CHW	706,229	mBtu	
0653	Hobby Residence Hall	62,156	002405	HHW	362,292	mBtu	
0682	Wisnaker Engineering Research Center	177,704	005246	ELE	257,289	kWh	
0682	Wisnaker Engineering Research Center	177,704	003879	CHW	1,191,175	mBtu	
0682	Wisnaker Engineering Research Center	177,704	003883	HHW	177,853	mBtu	
0740	McNew Laboratory	20,904	005874	ELE	49,480	kWh	
0740	McNew Laboratory	20,904	005974	CHW	420,071	mBtu	#, (1)
0740	McNew Laboratory	20,904	005968	HHW	131,318	mBtu	#, (1)
0806	Soil Testing Labs	5,544	006875	ELE	19,988	kWh	
0815	Entomology Research Lab	17,618	005799	ELE	29,757	kWh	
0815	Entomology Research Lab	17,618	006043	CHW	116,464	mBtu	
0880	TVMC-Small Animal Building	3,260	005958	CHW	24,901	mBtu	
0880	TVMC-Small Animal Building	3,260	005962	HHW	0	mBtu	(2)
0972	Laboratory Animal Care Building	52,178	007063	ELE	129,327	kWh	
0972	Laboratory Animal Care Building	52,178	007067	ELE	50,401	kWh	
0972	Laboratory Animal Care Building	52,178	007071	CHW	1,964,239	mBtu	
0972	Laboratory Animal Care Building	52,178	006991	HHW	475,679	mBtu	
1020	Vivarium III	12,234	005857	ELE	21,529	kWh	
1020	Vivarium III	12,234	005997	CHW	211,355	mBtu	#, (1)
1020	Vivarium III	12,234	006001	HHW	85,407	mBtu	#, (1)
1026	Veterinary Medicine Administration	94,680	006072	ELE	137,656	kWh	
1026	Veterinary Medicine Administration	94,680	006049	CHW	1,056,793	mBtu	
1026	Veterinary Medicine Administration	98,680	006053	HHW	483,694	mBtu	*
1041	Texas Vet Med Diagnostic Lab	55,169	001466	ELE	98,502	kWh	
1041	Texas Vet Med Diagnostic Lab	55,169	001539	ELE	79,278	kWh	
1041	Texas Vet Med Diagnostic Lab	55,169	003817	CHW	697,286	mBtu	
1041	Texas Vet Med Diagnostic Lab	55,169	004137	CHW	1,033,092	mBtu	
1041	Texas Vet Med Diagnostic Lab	55,169	003821	HHW	140,722	mBtu	
1041	Texas Vet Med Diagnostic Lab	55,169	004130	HHW	229,997	mBtu	
1042	Forest Science Laboratory Building	9,632	006036	ELE	28,187	kWh	
1085	Veterinary Small Animal Hospital	103,440	004136	ELE	237,600	kWh	
1085	Veterinary Small Animal Hospital	103,440	003656	CHW	1,608,482	mBtu	
1085	Veterinary Small Animal Hospital	103,440	003660	HHW	319,343	mBtu	
1089	Utilities Energy Office Annex	2,937	006964	ELE	3,202	kWh	
1146	Biological Control Facility	13,492	005795	ELE	33,862	kWh	(2)
1146	Biological Control Facility	13,492	005887	CHW	160,348	mBtu	
1146	Biological Control Facility	13,492	005891	HHW	59,516	mBtu	
1156	Physical Plant Administration & Shops	101,704	007483	ELE	117,351	kWh	
1156	Physical Plant Administration & Shops	101,704	007679	CHW	212,233	mBtu	(2)
1156	Physical Plant Administration & Shops	101,704	007683	HHW	96,400	mBtu	

Table I-1 April 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
1184	Veterinary Anatomic Pathology	17,223	001445	ELE	56,929	kWh	
1184	Veterinary Anatomic Pathology	17,223	006995	CHW	295,197	mBtu	# (1)
1184	Veterinary Anatomic Pathology	17,223	006999	HHW	101,001	mBtu	# (1)
1194	Veterinary Large Animal Hospital	140,865	005256	ELE	100,724	kWh	
1194	Veterinary Large Animal Hospital	140,865	003016	ELE	71,816	kWh	
1194	Veterinary Large Animal Hospital	140,865	007455	ELE	41,686	kWh	
1194	Veterinary Large Animal Hospital	140,865	003648	CHW	1,605,776	mBtu	
1194	Veterinary Large Animal Hospital	140,865	007456	CHW	250,200	mBtu	
1194	Veterinary Large Animal Hospital	140,865	003652	HHW	630,107	mBtu	
1194	Veterinary Large Animal Hospital	140,865	007457	HHW	43,580	mBtu	
1197	Veterinary Research Building	114,666	006355	ELE	67,655	kWh	(2)
1197	Veterinary Research Building	114,666	006359	ELE	33,639	kWh	(2)
1197	Veterinary Research Building	114,666	006062	CHW	1,971,760	mBtu	
1197	Veterinary Research Building	114,666	006066	HHW	707,315	mBtu	
1416	Hullabaloo Residence Hall	253,452	007845	ELE	194,315	kWh	
1416	Hullabaloo Residence Hall	253,452	007846	CHW	1,099,697	mBtu	
1416	Hullabaloo Residence Hall	253,452	007847	HHW	125,481	mBtu	
1450	University Apartments - Laundry at the Gardens	1,428	006885	ELE	5,391	kWh	
1451	University Apartments - The Gardens J	33,535	006981	ELE	17,006	kWh	
1453	University Apartments - The Gardens L	33,535	006884	ELE	16,283	kWh	
1454	University Apartments - The Gardens F	33,535	006980	ELE	19,408	kWh	*
1455	University Apartments - The Gardens G	33,535	006882	ELE	16,846	kWh	*
1456	University Apartments - The Gardens H	33,535	007962	ELE	15,000	kWh	
1457	University Apartments - The Gardens M	33,535	007503	ELE	22,907	kWh	
1458	University Apartments - The Gardens N	33,535	007504	ELE	24,113	kWh	
1459	University Apartments - The Gardens P	33,535	007505	ELE	20,345	kWh	
1460	University Apartments - The Gardens Q	33,535	007506	ELE	18,105	kWh	
1497	Utilities & Energy Services Business Office	3,480	007082	ELE	3,533	kWh	
1497	Utilities & Energy Services Business Office	3,480	006341	CHW	15,570	mBtu	
1497	Utilities & Energy Services Business Office	3,480	006345	HHW	319	mBtu	
1501	Kleberg Center	165,031	007449	ELE	269,313	kWh	
1501	Kleberg Center	165,031	002624	CHW	1,303,120	mBtu	(2)
1501	Kleberg Center	165,031	002628	HHW	905,527	mBtu	
1502	Heep Center	158,979	001556	ELE	267,183	kWh	
1502	Heep Center	158,979	002599	CHW	1,691,287	mBtu	
1502	Heep Center	158,979	002603	HHW	236,397	mBtu	
1503	Cater-Mattil Hall	27,958	007977	ELE	81,325	kWh	
1503	Cater-Mattil Hall	27,958	008001	CHW	389,152	mBtu	
1504	Reynolds Medical Sciences Building	169,859	003975	ELE	237,045	kWh	*
1504	Reynolds Medical Sciences Building	169,859	003989	CHW	1,600,131	mBtu	
1504	Reynolds Medical Sciences Building	169,859	003993	HHW	431,833	mBtu	
1505	Rosenthal Meat Science & Technology Center	30,889	003627	ELE	144,442	kWh	
1505	Rosenthal Meat Science & Technology Center	30,889	002573	CHW	202,309	mBtu	
1505	Rosenthal Meat Science & Technology Center	30,889	002577	HHW	57,176	mBtu	
1506	Horticulture-Forest Science Building	118,648	001544	ELE	161,817	kWh	
1506	Horticulture-Forest Science Building	118,648	003967	CHW	566,321	mBtu	
1506	Horticulture-Forest Science Building	118,648	003971	HHW	129,267	mBtu	
1507	Biochemistry-Biophysics Building	166,079	001459	ELE	157,374	kWh	
1507	Biochemistry-Biophysics Building	166,079	001460	ELE	165,299	kWh	
1507	Biochemistry-Biophysics Building	166,079	003025	CHW	1,310,170	mBtu	
1507	Biochemistry-Biophysics Building	166,079	003029	HHW	597,451	mBtu	
1508	Price Hobgood Ag. Engineering Research Lab	27,666	005638	ELE	26,706	kWh	
1508	Price Hobgood Ag. Engineering Research Lab	27,666	006005	CHW	115,991	mBtu	(1)
1508	Price Hobgood Ag. Engineering Research Lab	27,666	006009	HHW	7,455	mBtu	#, (1)
1509	Medical Sciences Library	84,183	000350	ELE	112,449	kWh	
1509	Medical Sciences Library	84,183	003777	CHW	666,394	mBtu	(1)
1509	Medical Sciences Library	84,183	003781	HHW	91,037	mBtu	
1510	Wehner Building	259,681	006849	ELE	219,088	kWh	
1510	Wehner Building	259,681	006685	ELE	253,483	kWh	
1510	Wehner Building	259,681	002687	CHW	1,530,382	mBtu	
1510	Wehner Building	259,681	002691	HHW	178,124	mBtu	
1511	West Campus Library Facility	68,125	004342	ELE	97,221	kWh	
1511	West Campus Library Facility	68,125	004313	CHW	708,108	mBtu	
1511	West Campus Library Facility	68,125	004318	HHW	149,351	mBtu	
1512	Southern Crop Improvement Greenhouse	48,154	005931	ELE	89,326	kWh	#, (1)
1513	Borlaug Center for Southern Crop Improvement	68,739	005802	ELE	331,298	kWh	
1513	Borlaug Center for Southern Crop Improvement	68,739	005936	CHW	1,200,272	mBtu	
1513	Borlaug Center for southern Crop Improvement	68,739	005895	HHW	176,512	mBtu	

Table I-1 April 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
1518	TX School of Rural Public Health A	69,079	005273	ELE	75,470	kWh	
1519	TX School of Rural Public Health B	24,761	005274	ELE	49,773	kWh	#, (1)
1520	TX School of Rural Public Health C	13,264	005275	ELE	105,447	kWh	#, (1)
1518-1519-1520	TX School of Rural Public Health A,B,C	107,104	005294	CHW	990,784	mBtu	
1518-1519-1520	TX School of Rural Public Health A,B,C	107,104	005298	HHW	235,599	mBtu	
1525	Nuclear Magnetic Resonance Facility	37,282	006718	ELE	86,961	kWh	
1525	Nuclear Magnetic Resonance Facility	37,282	006715	CHW	743,433	mBtu	
1525	Nuclear Magnetic Resonance Facility	37,282	006716	HHW	395,144	mBtu	
1530	Interdisciplinary Life Sciences Building	218,540	006286	ELE	376,531	kWh	*
1530	Interdisciplinary Life Sciences Building	218,540	006288	ELE	220,404	kWh	
1530	Interdisciplinary Life Sciences Building	218,540	006290	CHW	3,533,692	mBtu	
1530	Interdisciplinary Life Sciences Building	218,540	006294	HHW	971,167	mBtu	
1535	Agriculture and Life Sciences Building	168,353	007205	ELE	121,705	kWh	
1535	Agriculture and Life Sciences Building	168,353	007206	CHW	580,457	mBtu	
1535	Agriculture and Life Sciences Building	168,353	007207	HHW	24,318	mBtu	
1536	AgriLife Services Building	80,907	007571	ELE	46,490	kWh	
1536	AgriLife Services Building	80,907	007572	CHW	197,156	mBtu	
1536	AgriLife Services Building	80,907	007573	HHW	20,220	mBtu	
1538	Agriculture Program Visitors Center	12,923	007209	ELE	14,412	kWh	
1538	Agriculture Program Visitors Center	12,923	007210	CHW	73,537	mBtu	
1538	Agriculture Program Visitors Center	12,923	007211	HHW	9,205	mBtu	
1540	Physical Education Activity Program Building	116,900	007881	ELE	77,881	kWh	
1540	Physical Education Activity Program Building	116,900	007878	CHW	506,741	mBtu	
1540	Physical Education Activity Program Building	116,900	007879	HHW	131,784	mBtu	
1550	Olsen Field at Bluebell Park	60,537	007560	ELE	125,945	kWh	
1554	Reed Arena	230,000	007582	ELE	140,629	kWh	
1554	Reed Arena	230,000	006243	ELE	730	kWh	#, (1)
1554	Reed Arena	230,000	006244	ELE	71,543	kWh	
1554-1558	Reed Arena and Cox-McFerrin Center	328,185	007576	CHW	1,674,958	mBtu	
1554-1558	Reed Arena and Cox-McFerrin Center	328,185	007578	HHW	544,266	mBtu	
1558	Cox-McFerrin Center for Aggie Basketball	98,185	007581	ELE	73,053	kWh	
1558	Cox-McFerrin Center for Aggie Basketball	98,185	007575	CHW	338,889	mBtu	
1558	Cox-McFerrin Center for Aggie Basketball	98,185	007577	HHW	169,443	mBtu	(1)
1559	West Campus Parking Garage	1,541,457	001453	ELE	168,804	kWh	
1559	West Campus Parking Garage	13,000	004322	CHW	33,219	mBtu	(2)
1559	West Campus Parking Garage	13,000	004327	HHW	7,028	mBtu	
1560	Student Recreation Center	334,642	000363	ELE	174,835	kWh	
1560	Student Recreation Center	334,642	000366	ELE	425,297	kWh	
1560	Student Recreation Center	334,642	002933	CHW	3,248,512	mBtu	
1560	Student Recreation Center	334,642	002937	HHW	1,170,332	mBtu	
1590	White Creek Apartment 1	168,246	008517	ELE	104,993	kWh	
1590	White Creek Apartment 1	168,246	008518	CHW	486,984	mBtu	
1590	White Creek Apartment 1	168,246	008522	HHW	56,380	mBtu	
1591	White Creek Apartment 2	179,467	008528	ELE	113,286	kWh	
1591	White Creek Apartment 2	179,467	008529	CHW	445,386	mBtu	
1591	White Creek Apartment 2	179,467	008533	HHW	71,720	mBtu	
1592	White Creek Apartment 3	179,467	008538	ELE	113,892	kWh	
1592	White Creek Apartment 3	179,467	008539	CHW	540,410	mBtu	
1592	White Creek Apartment 3	179,467	008543	HHW	67,431	mBtu	
1600	Gilchrist TTI Building	67,143	005286	ELE	50,411	kWh	*
1600	Gilchrist TTI Building	67,143	002649	CHW	264,848	mBtu	*
1600	Gilchrist TTI Building	67,143	002653	HHW	77,192	mBtu	*
1601	International Ocean Discovery Building	86,576	006351	ELE	123,901	kWh	(2)
1601	International Ocean Discovery Building	86,576	006382	CHW	197,085	mBtu	(2)
1601	International Ocean Discovery Building	86,576	008144	CHW	48,243	mBtu	(2)
1601	International Ocean Discovery Building	86,576	008145	HHW	17,360	mBtu	(2)
1604	Offshore Technology Research Center	40,014	006659	ELE	90,430	kWh	
1604	Offshore Technology Research Center	40,014	006660	ELE	10,027	kWh	(2)
1604	Offshore Technology Research Center	40,014	008142	CHW	445,105	mBtu	
1604	Offshore Technology Research Center	40,014	008143	HHW	142,562	mBtu	
1606	George Bush Presidential Library & Museum	121,678	000244	ELE	104,494	kWh	
1606	George Bush Presidential Library & Museum	121,678	002808	CHW	953,761	mBtu	
1606	George Bush Presidential Library & Museum	121,678	002812	HHW	279,146	mBtu	
1607	Allen Building	133,327	000243	ELE	94,399	kWh	
1607	Allen Building	133,327	002800	CHW	438,895	mBtu	
1607	Allen Building	133,327	002804	HHW	43,758	mBtu	

Table I-1 April 2016 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
1608	Annenberg Presidential Conference Center	65,688	000245	ELE	80,482	kWh	
1608	Annenberg Presidential Conference Center	65,688	002761	CHW	722,146	mBtu	
1608	Annenberg Presidential Conference Center	65,688	002765	HHW	316,162	mBtu	
1609	TTI Headquarters	66,707	006495	ELE	57,140	kWh	
1609	TTI Headquarters	66,707	006496	CHW	322,966	mBtu	
1609	TTI Headquarters	66,707	006497	HHW	62,963	mBtu	
1611	Engineering Research Building	35,000	008462	ELE	164,849	kWh	(2)
1611	Engineering Research Building	35,000	008463	CHW	1,340,343	mBtu	(2)
1611	Engineering Research Building	35,000	008467	HHW	482,233	mBtu	(2)
1800	General Services Complex	203,369	005441	ELE	190,565	kWh	
1800	General Services Complex	203,369	005468	CHW	795,566	mBtu	
1800	General Services Complex	203,369	005472	HHW	53,194	mBtu	
1810	Office of the State Chemist Building	31,735	009073	ELE	60,900	kWh	*
1810	Office of the State Chemist Building	31,735	005460	CHW	313,931	mBtu	
1810	Office of the State Chemist Building	31,735	005464	HHW	92,681	mBtu	
1811	Vet Med Research Bldg Addition	52,993	006705	ELE	213,182	kWh	
1811	Vet Med Research Bldg Addition	52,993	006706	CHW	910,708	mBtu	
1811	Vet Med Research Bldg Addition	52,993	006707	HHW	367,983	mBtu	
1900	Texas Institute for Genomic Medicine	34,120	005548	ELE	83,743	kWh	*
1900	Texas Institute for Genomic Medicine	34,120	005545	CHW	942,333	mBtu	
1900	Texas Institute for Genomic Medicine	34,120	005546	HHW	281,090	mBtu	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006364	ELE	225,736	kWh	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006365	CHW	1,885,996	mBtu	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006366	HHW	701,788	mBtu	
1910	National Center for Therapeutics Manufacturing	149,924	007517	ELE	194,997	kWh	
1910	National Center for Therapeutics Manufacturing	149,924	007518	ELE	172,041	kWh	
1910	National Center for Therapeutics Manufacturing	149,924	007519	CHW	3,730,352	mBtu	
1910	National Center for Therapeutics Manufacturing	149,924	007520	HHW	1,339,243	mBtu	
1911	Multi-Species Research Building	21,000	009138	ELE	23,447	kWh	
1911	Multi-Species Research Building	21,000	009129	CHW	287,856	mBtu	
1911	Multi-Species Research Building	21,000	009133	HHW	134,826	mBtu	
10226	NCTM Manufacturing Building	113,397	007648	CHW	3,275,964	mBtu	
10226	NCTM Manufacturing Building	113,397	007649	HHW	1,042,571	mBtu	
10226	NCTM Manufacturing Building	113,397	008133	HHW	87,639	mBtu	

1 mBtu = 1 000 Btu

NA: Not available
 Monthly consumption in blue: Modified values
 *: Missing data
 #: Questionable data
 (1): Consumption estimated and documented in the report *Part II - Data Analysis: Energy Use Estimation and Observations Section 2*
 (2): Observation(s) documented in the report *Part II - Data Analysis: Energy Use Estimation and Observations Section 3*
 (3): Missing data or changed consumption levels due to construction

II. Data Analysis: Energy Use Estimation and Observation

Architecture Building B&C (TAMU Bldg# 359-432)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	006423	22	4/1/2016 – 4/22/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	Scattering data are observed.	3/8/2016 – 4/22/2016

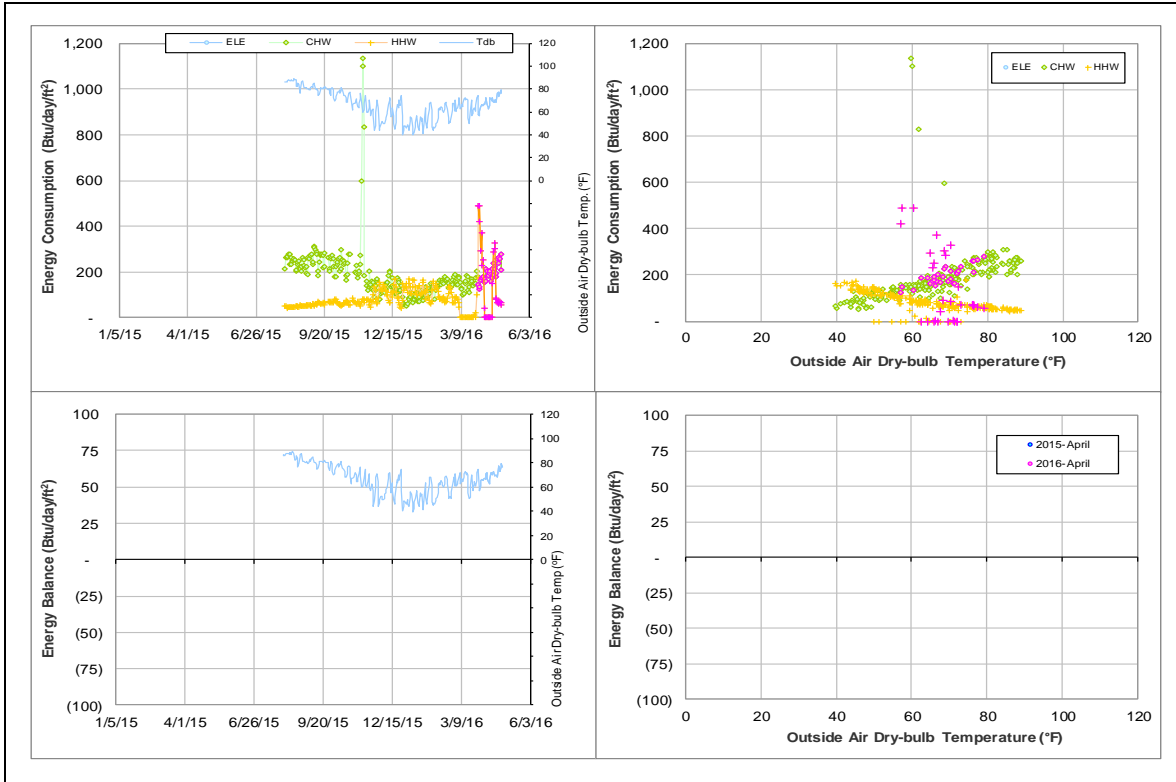
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	006423	3/30/2016 – 4/7/2016	Return Temperature	Faulty, Decreased
		4/8/2016 – 4/19/2016	Return Temperature	Faulty, Increased/main tained at a constant value
		4/20/2016 – 4/22/2016	Return Temperature	Faulty, Decreased

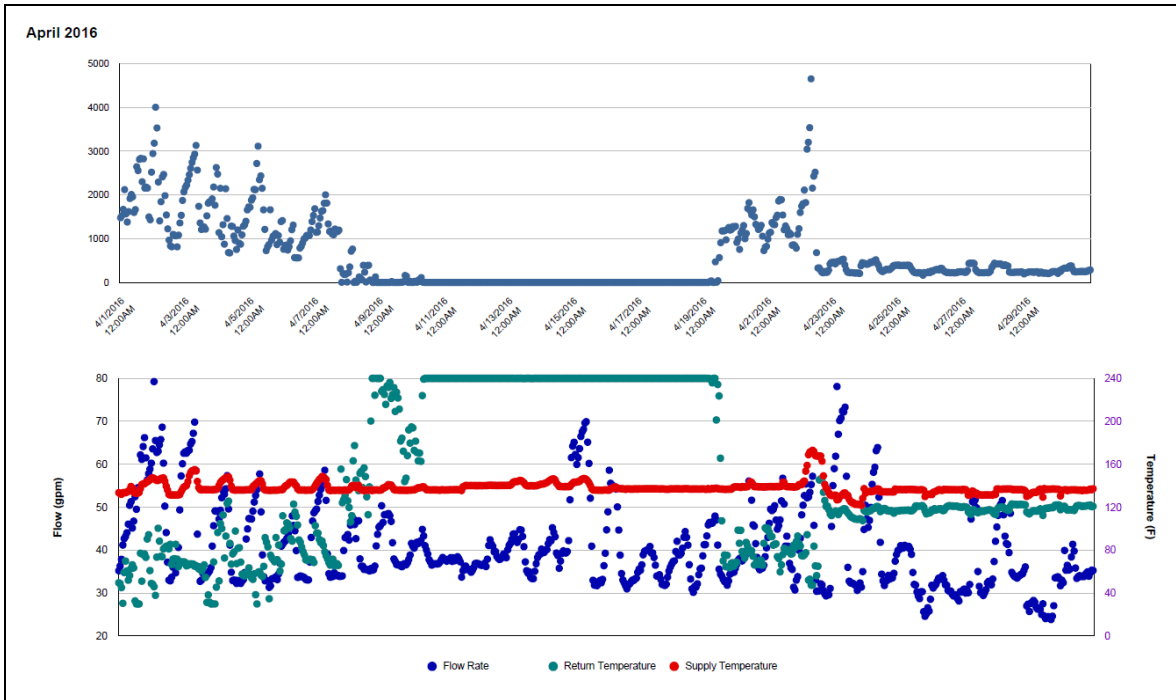
Quantitative descriptions and comments

The HHW consumption was scattered during 3/8/2016-4/22/2016, and the HHW return temperature was either too low or too high (stuck at a faulty value). The consumption was estimated by a model.

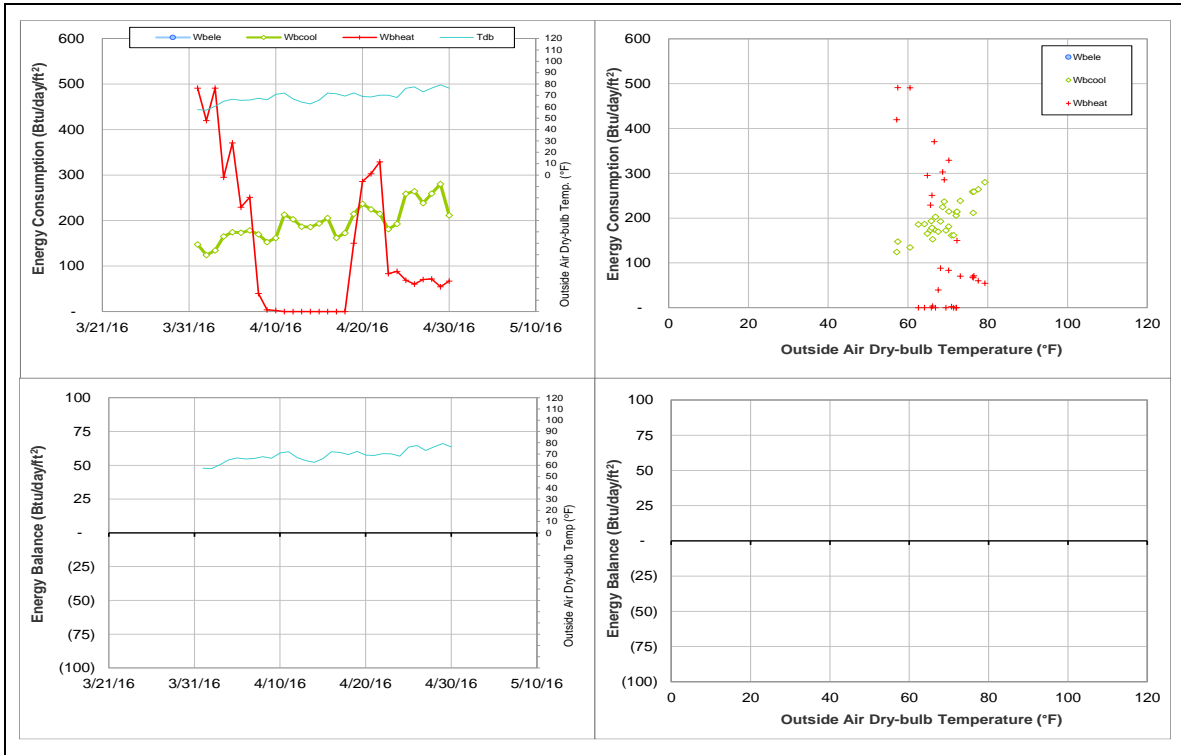
Explanatory Figure: 13 months energy balance plot with original data



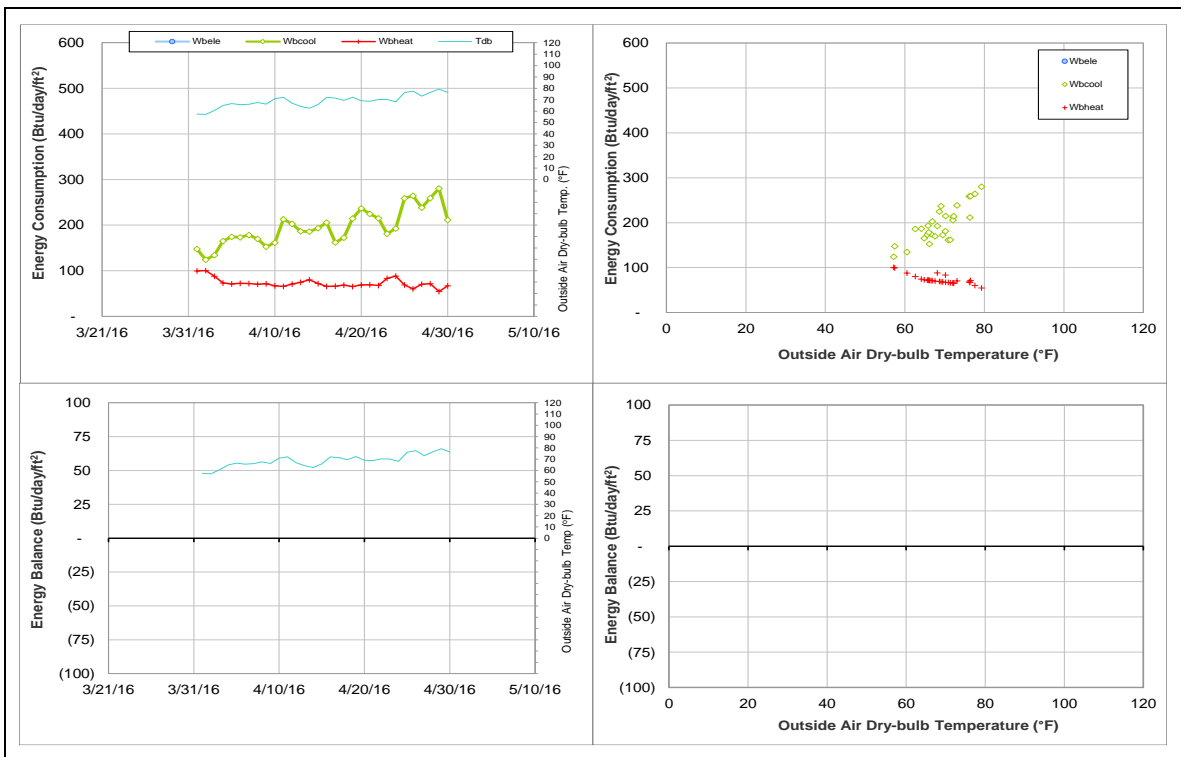
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW meter during April 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Sanders Corps of Cadets Center (TAMU Bldg# 384)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	002587	3	4/28/2016 – 4/30/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The consumption level has decreased suddenly.	4/28/2016 – 4/30/2016

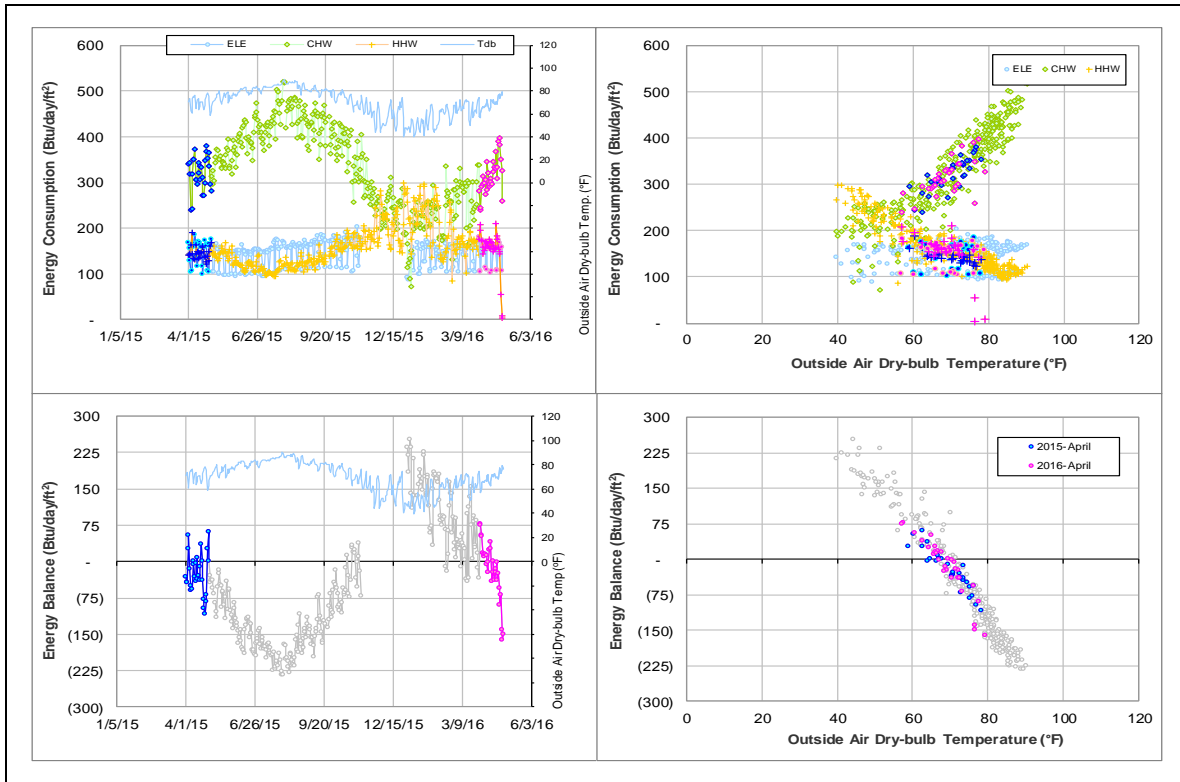
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	002587	4/28/2016 – 4/30/2016	Flow Rate	Decreased

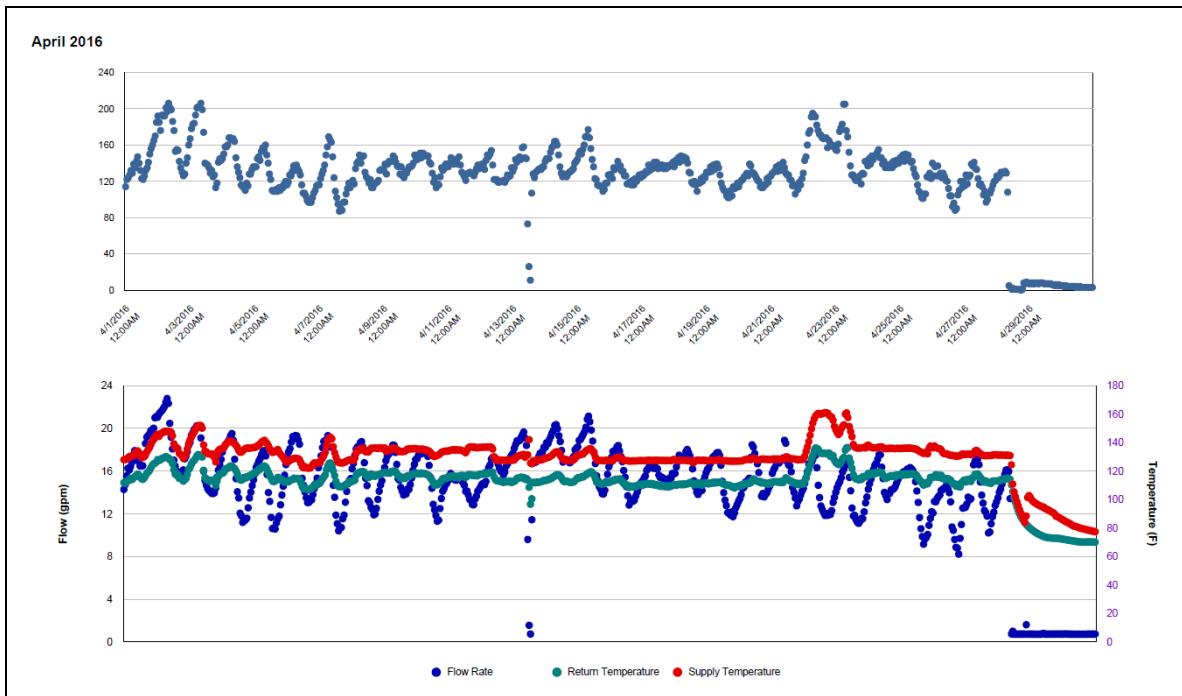
Quantitative descriptions and comments

The HHW consumption suddenly decreased to nearly zero since 4/28/2016, as the HHW flow rate decreased from around 16 gpm to less than 1 gpm. The consumption was estimated by a model.

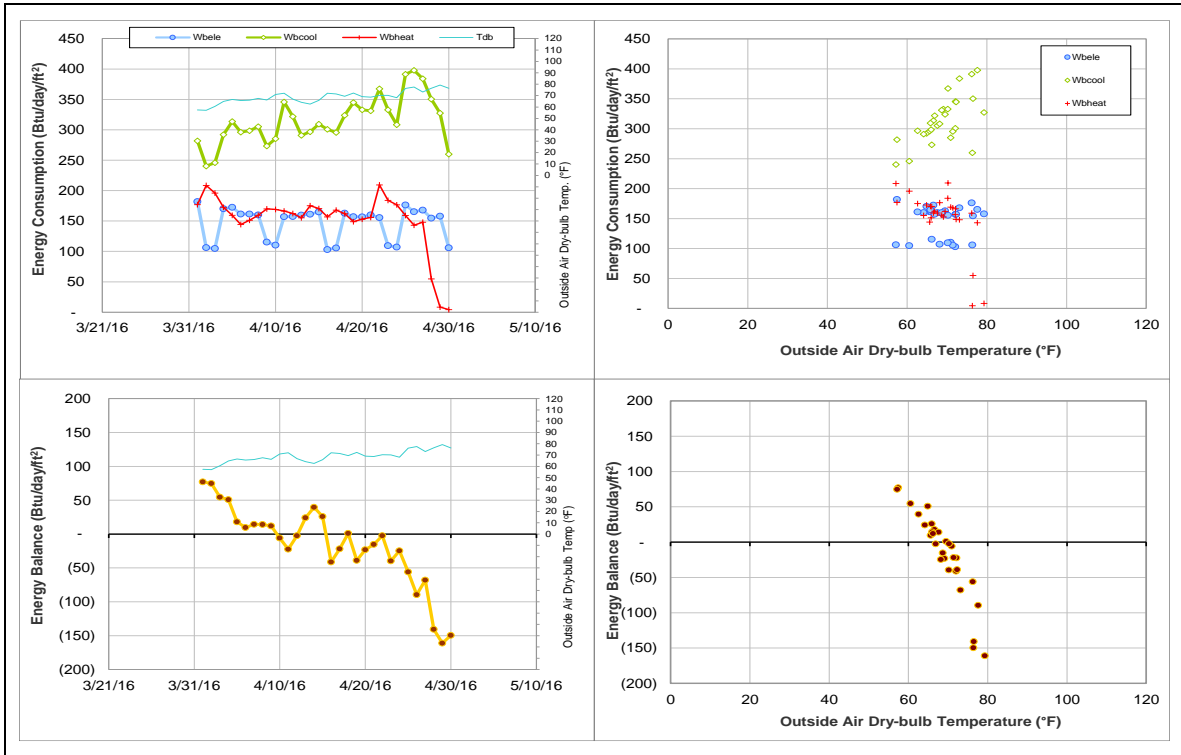
Explanatory Figure: 13 months energy balance plot with original data



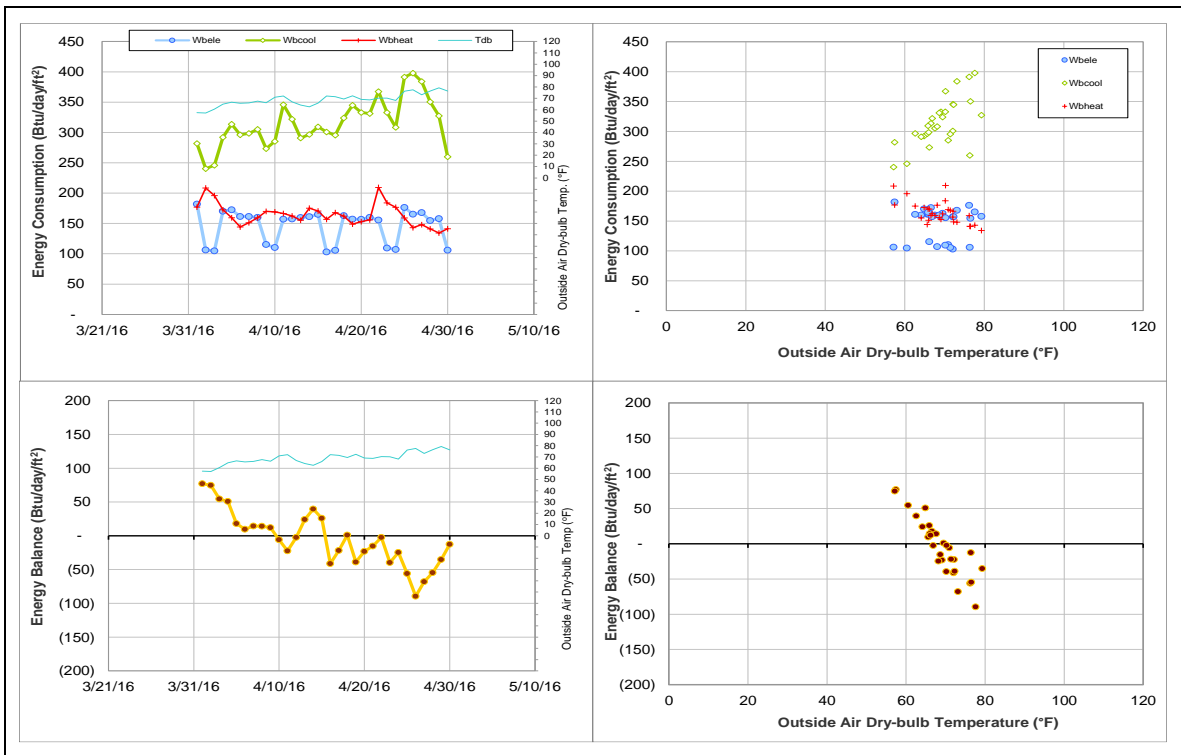
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW meter during April 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Lacy Hall - Dorm 6 (TAMU Bldg# 405)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	007918	21	4/10/2016 – 4/30/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The consumption level has increased suddenly.	4/10/2016 – 4/30/2016

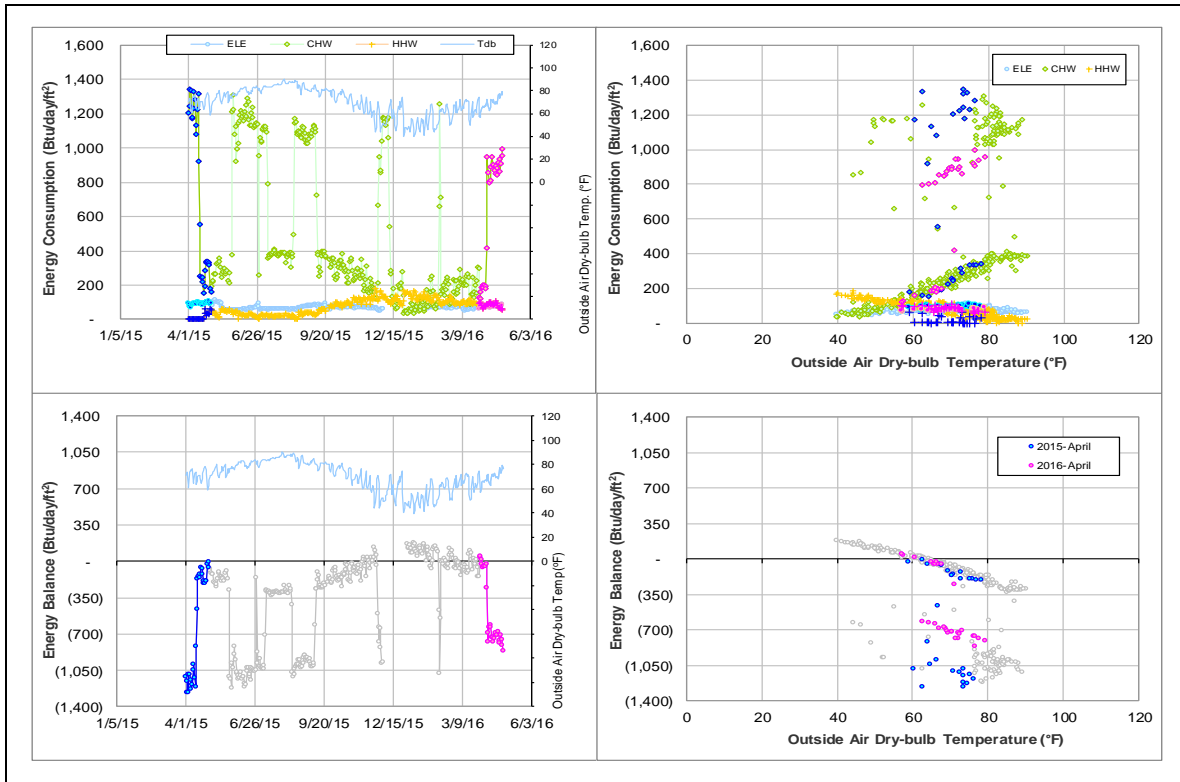
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	007918	4/10/2016 – 4/30/2016	Flow Rate	Increased

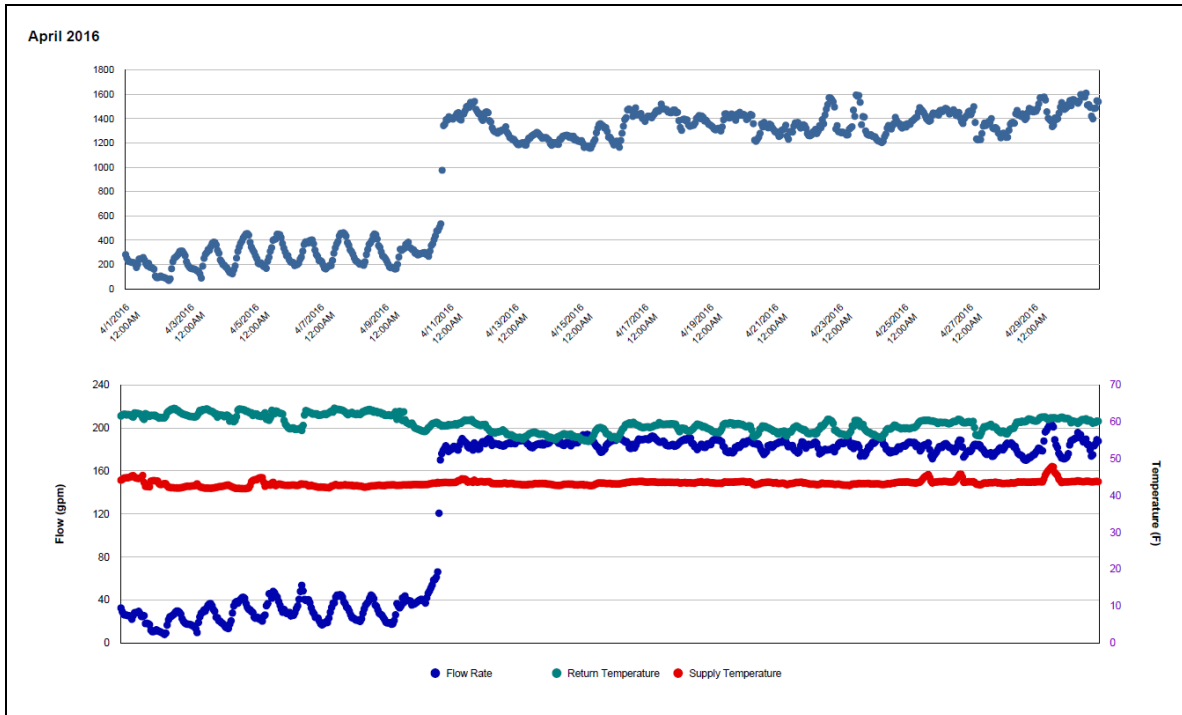
Quantitative descriptions and comments

The CHW consumption suddenly decreased by 600 Btu/day/ft² since 4/10/2016, as the CHW flow rate increased by 150 gpm. The consumption was estimated by a model.

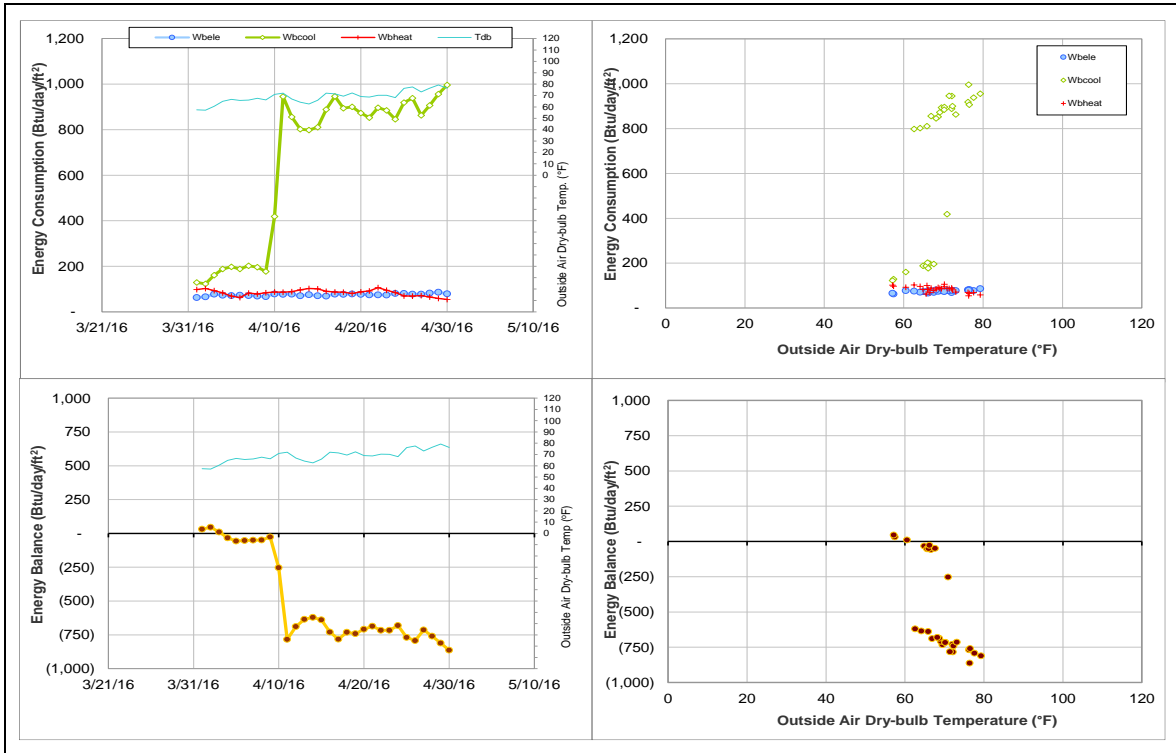
Explanatory Figure: 13 months energy balance plot with original data



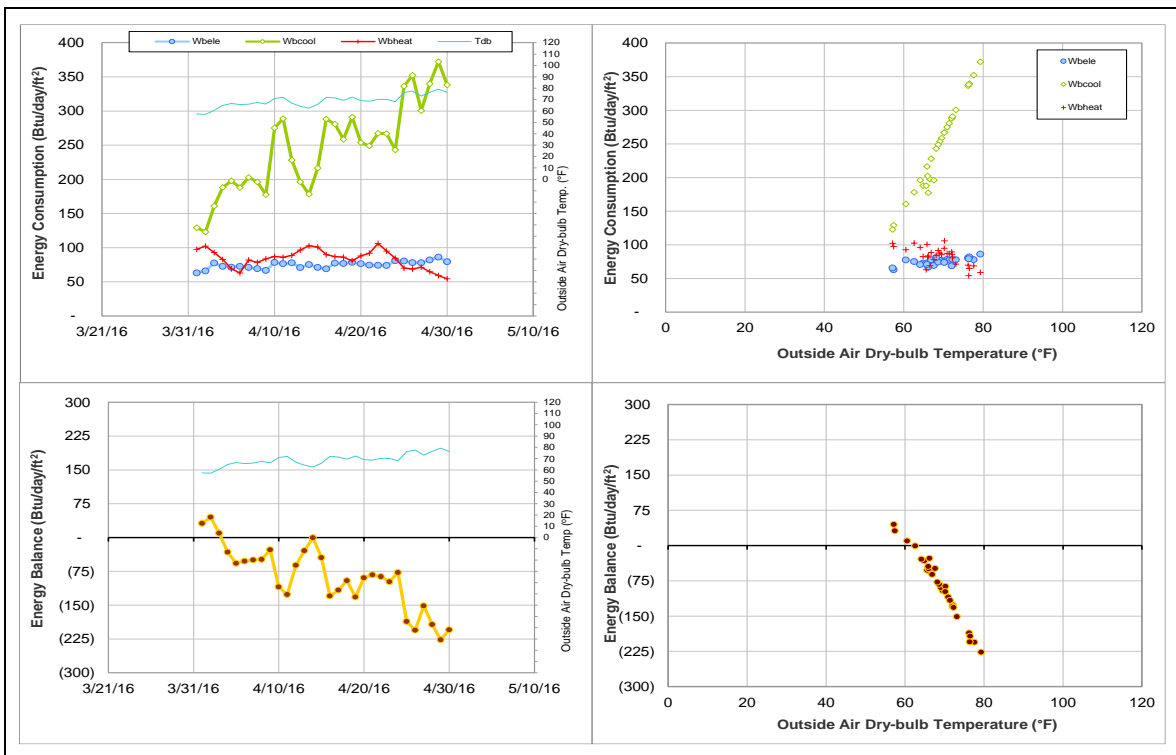
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW meter during April 2016)



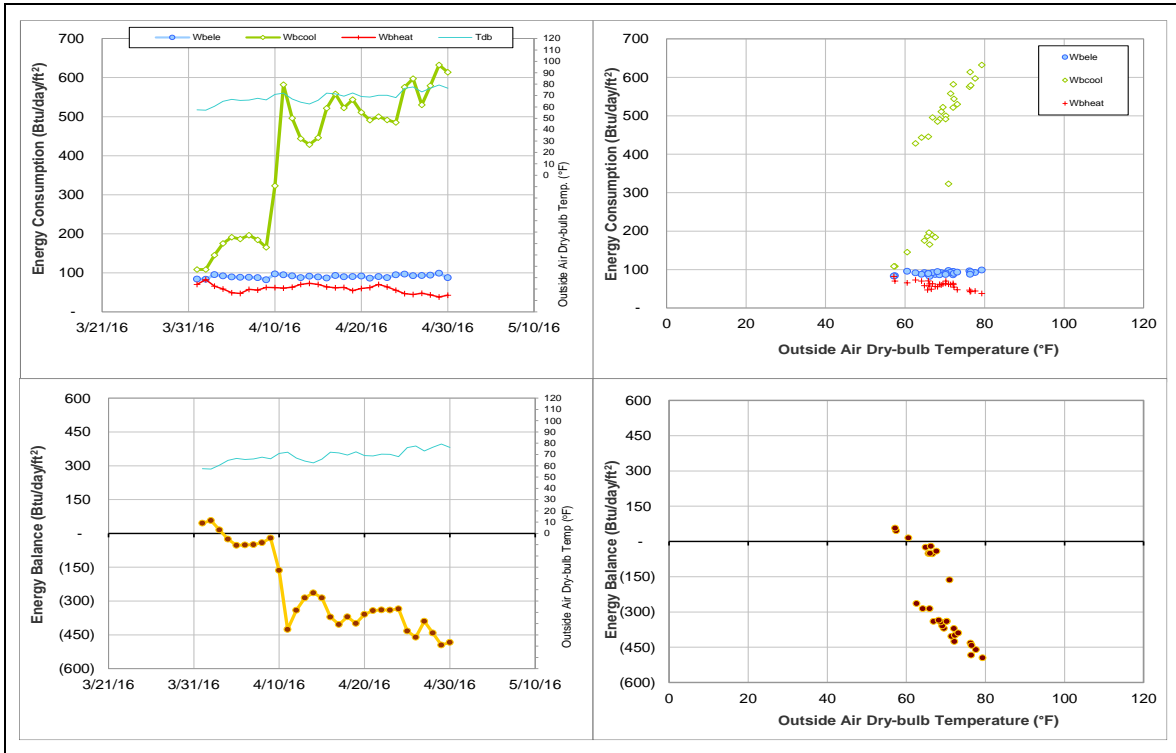
**Energy balance plot using the original data for the month of analysis for Lacy Hall.
Missing data have been filled in, if any.**



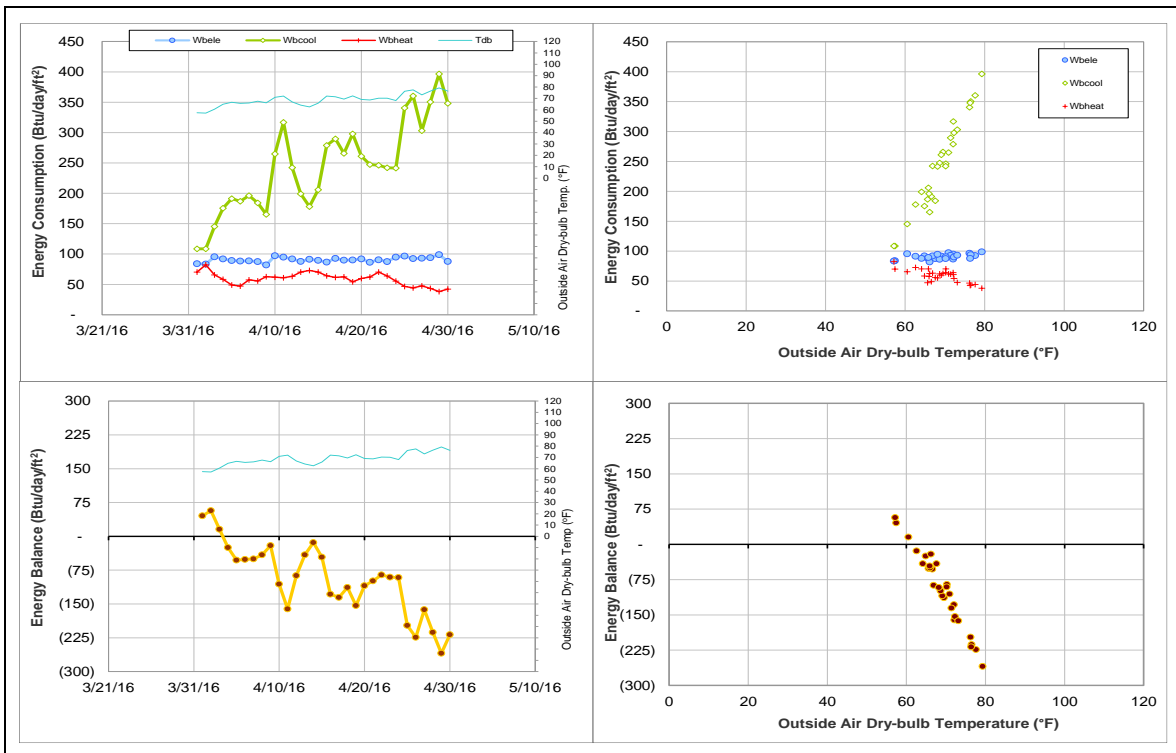
Energy balance plot using the estimated data for the month of analysis for Lacy Hall.



Energy balance plot using the original data for the month of analysis for Lacy Hall, Harrell Hall and Leadership Learning Center. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis for Lacy Hall, Harrell Hall and Leadership Learning Center.



Milner Hall (TAMU Bldg# 420)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	009145	4	4/1/2016 – 4/4/2016	Model

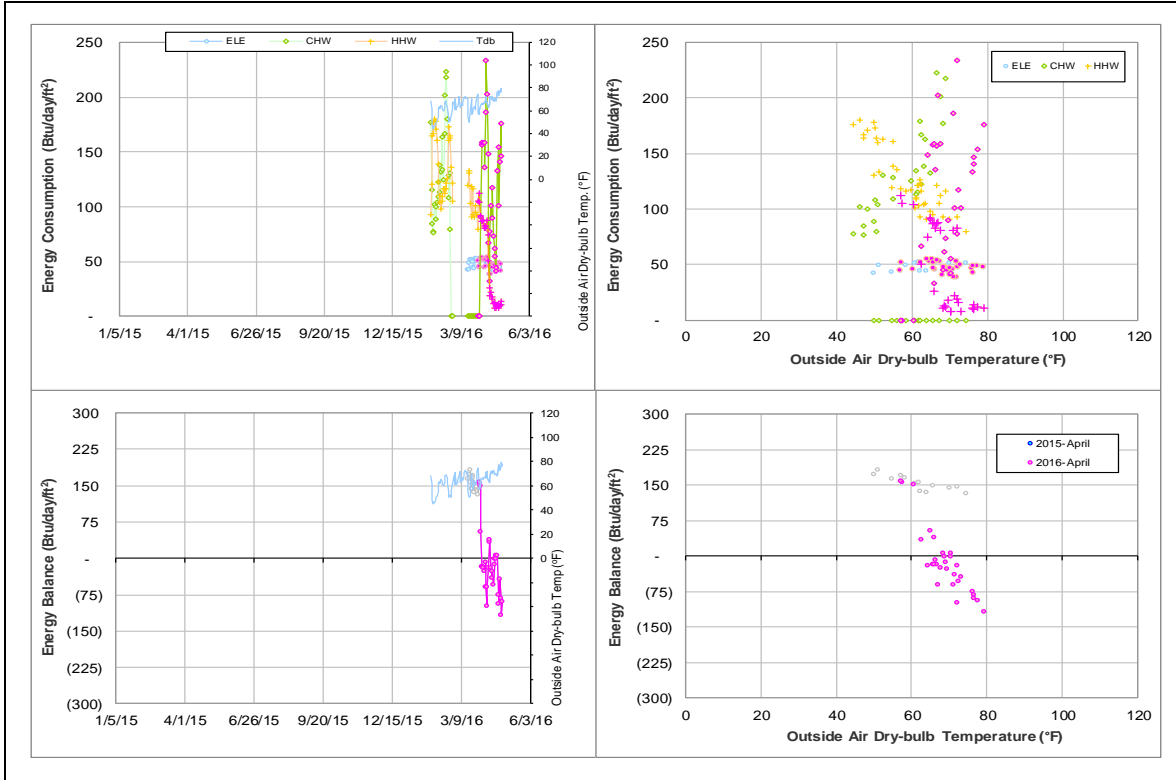
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The metered values appear to be faulty.	3/19/2016 – 4/4/2016

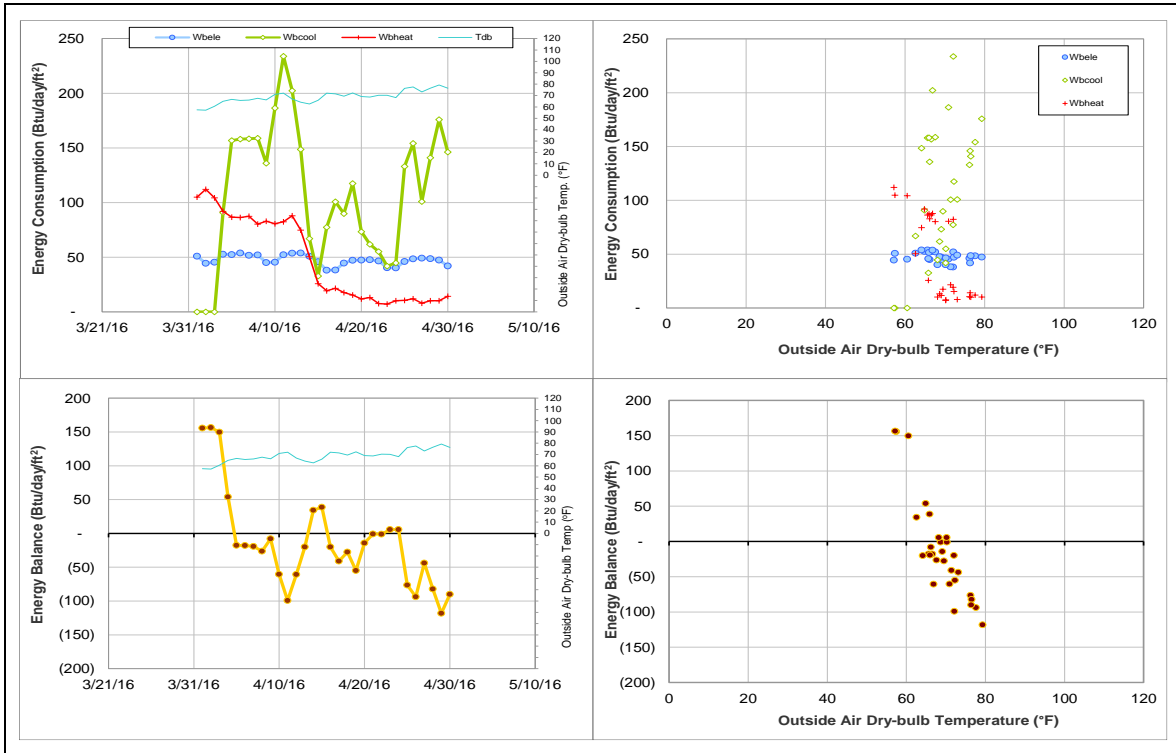
Quantitative descriptions and comments

The CHW consumption was zero during 3/19/2016-4/4/2016, and the sensors readings were not available. The consumption was estimated by a temporary model using the data of 2/1/2016-2/26/2016.

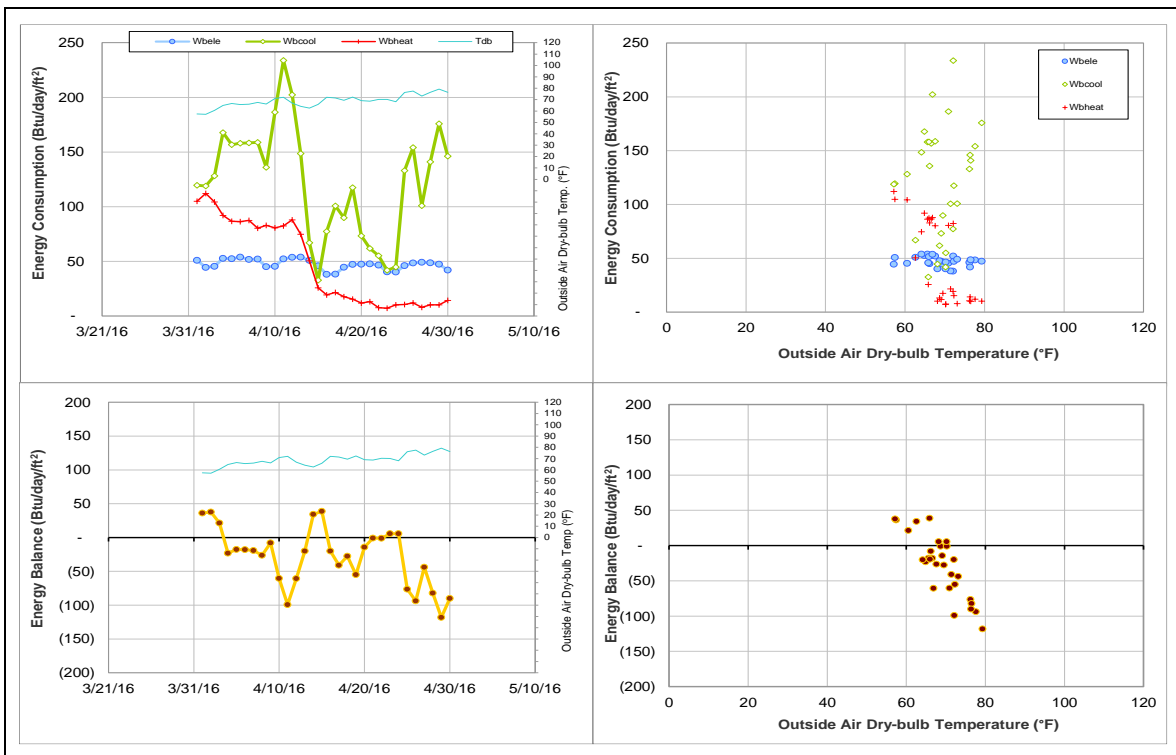
Explanatory Figure: 13 months energy balance plot with original data



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



TAES Annex Building (TAMU Bldg #457)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	005917	4	4/1/2016 – 4/4/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The metered values appear to be faulty.	2/16/2016– 4/4/2016

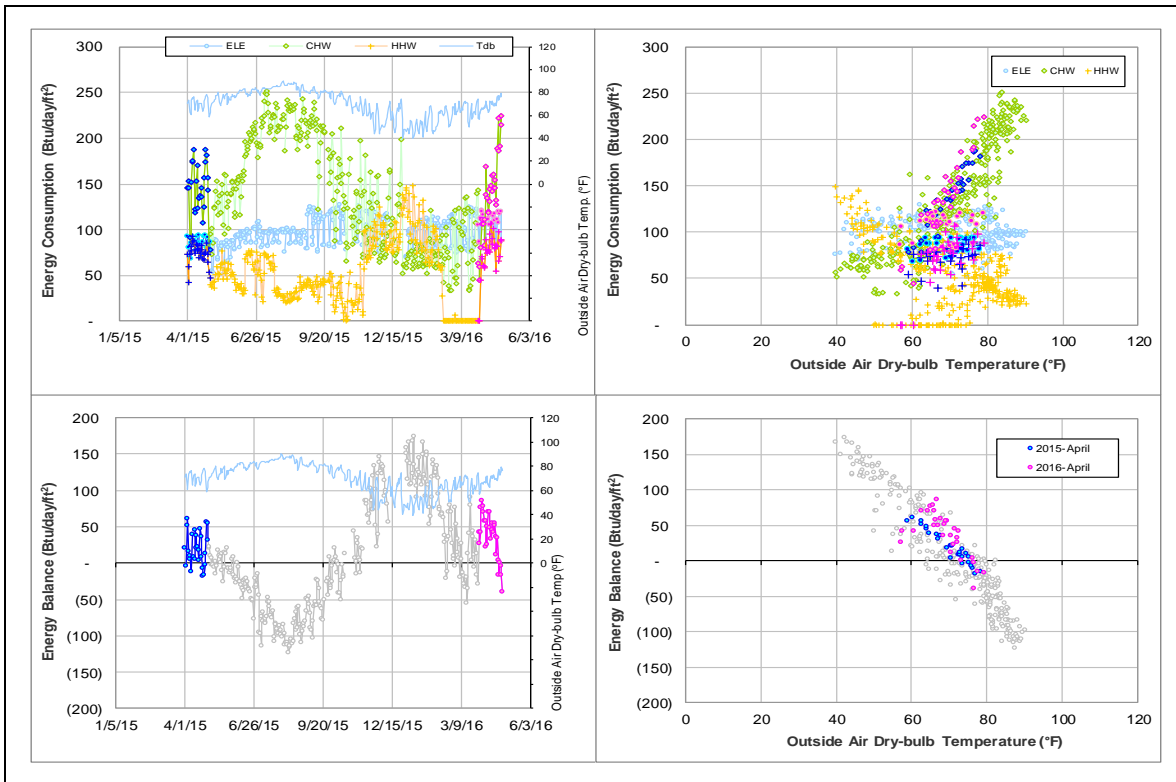
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	005917	2/16/2016 – 4/4/2016	Delta T	Negative
		3/3/2016 – 4/4/2016	Flow rate	Nearly zero

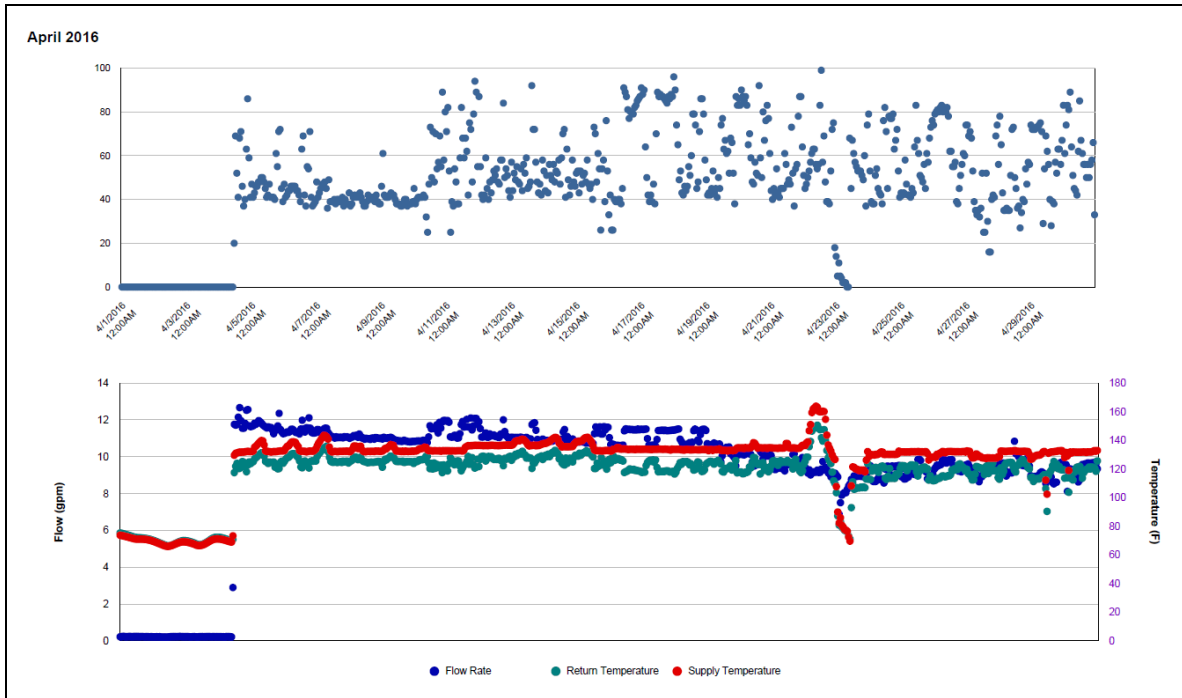
Quantitative descriptions and comments

The HHW consumption decreased to nearly zero during 2/16/2016-4/4/2016, as the HHW delta-T was negative and the flow rate was nearly zero. The consumption was estimated by a model.

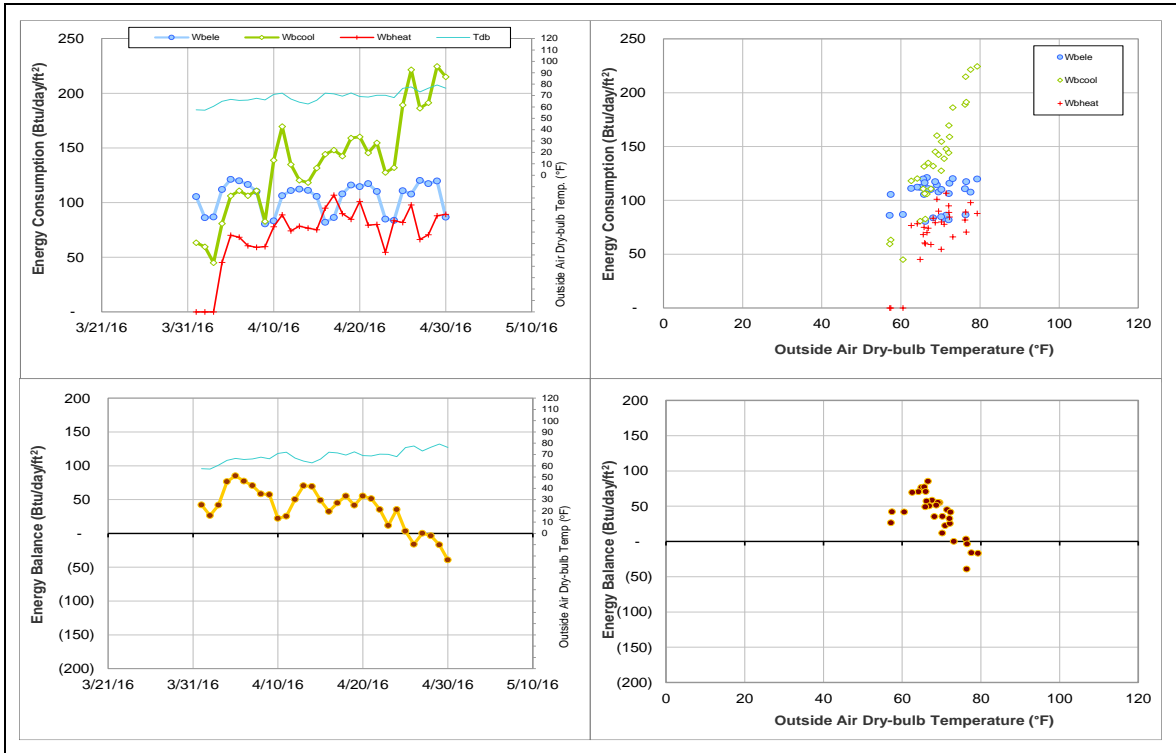
Explanatory Figure: 13 months energy balance plot with original data.



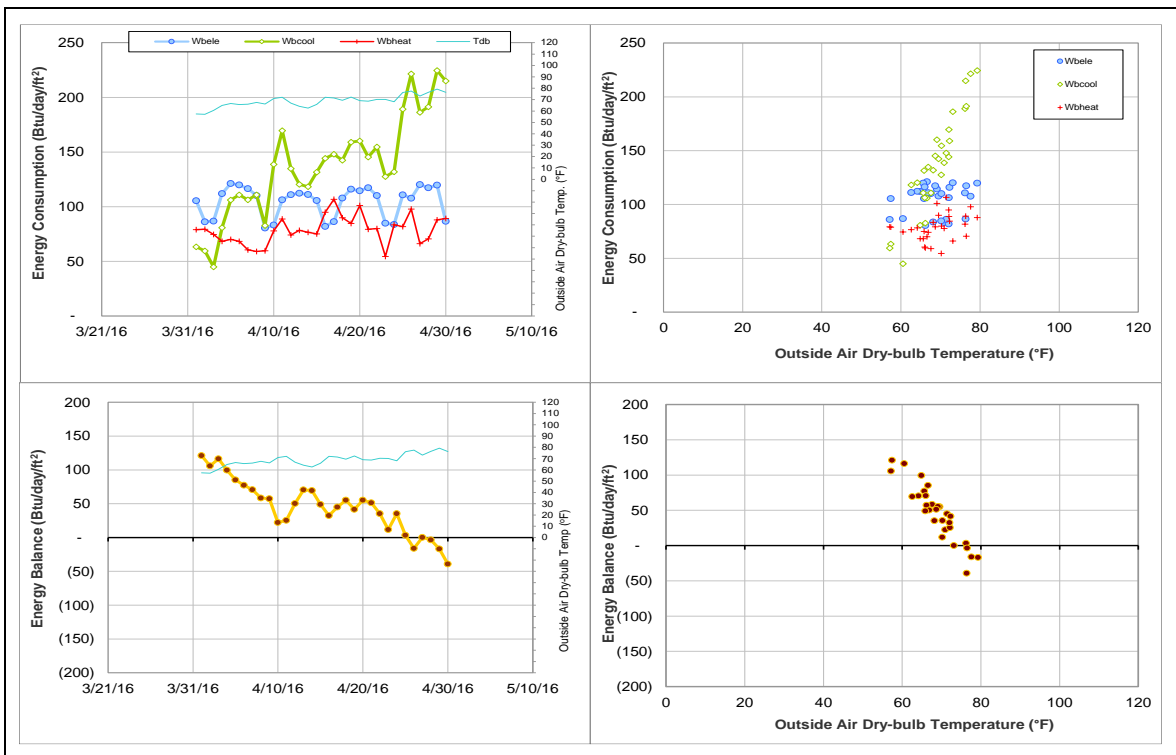
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW meter during April 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis.



Scoates Hall (TAMU Bldg #478)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	007968	5	4/26/2016 – 4/30/2016	Model
HHW	007969	5	4/26/2016 – 4/30/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level decreased for a short period.	4/26/2016 – 4/30/2016
HHW	The consumption level decreased for a short period.	4/26/2016 – 4/30/2016

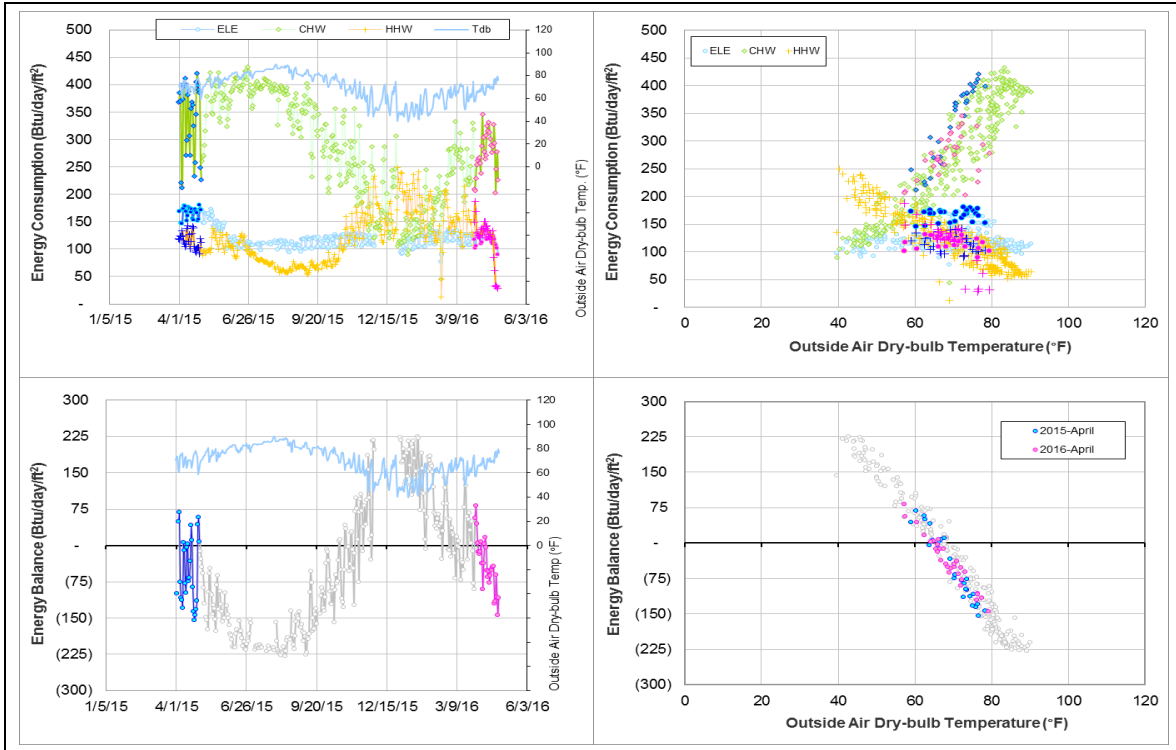
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	007968	4/26/2016 – 4/30/2016	Flow	period of low flow
			Delta T	period of high delta T
HHW	007969	4/26/2016 – 4/30/2016	Flow	period of low flow
			Delta T	period of low delta T

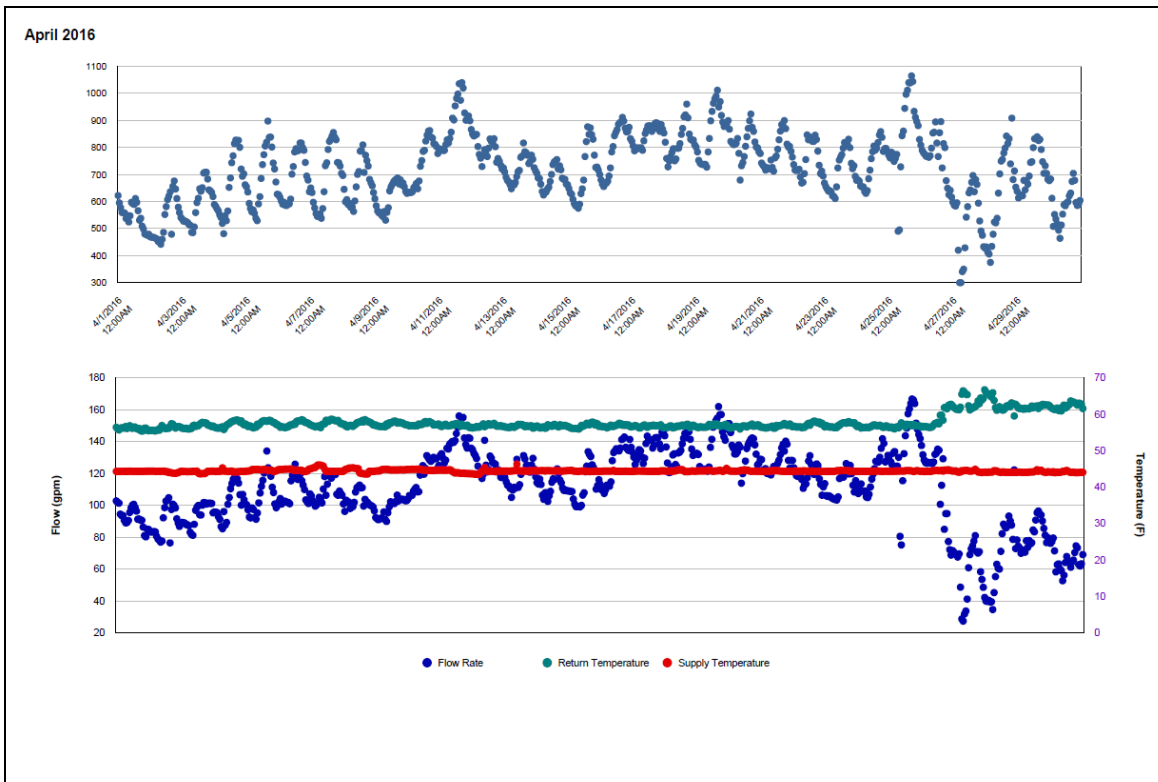
Quantitative descriptions and comments

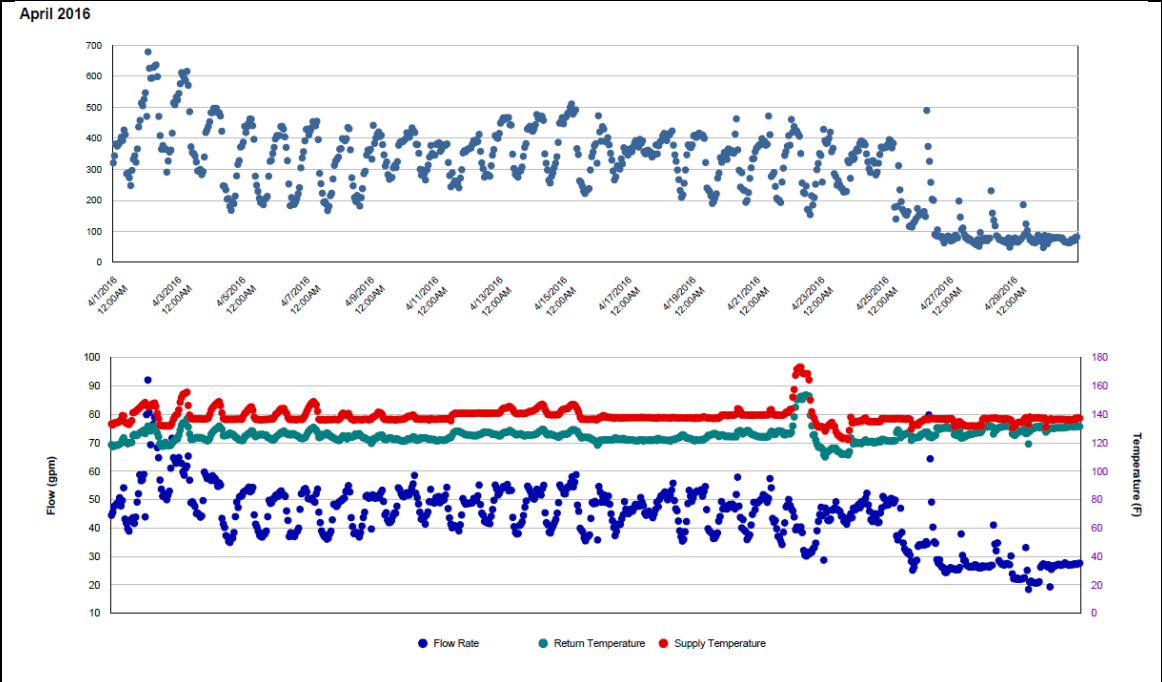
The CHW consumption dropped almost in half during this period due to a decrease in flow. As an added note, the CHW delta T did increase during this period as well. The HHW consumption also dropped almost in half during this period due to a decrease in flow and delta T. Since both CHW and HHW experienced a drop at the same time, the energy balance shows to be within the normal pattern for this period. Estimations were made by a model for these five days because of the sudden change in flow and delta T.

Explanatory Figure: 13 months energy balance plot with original data

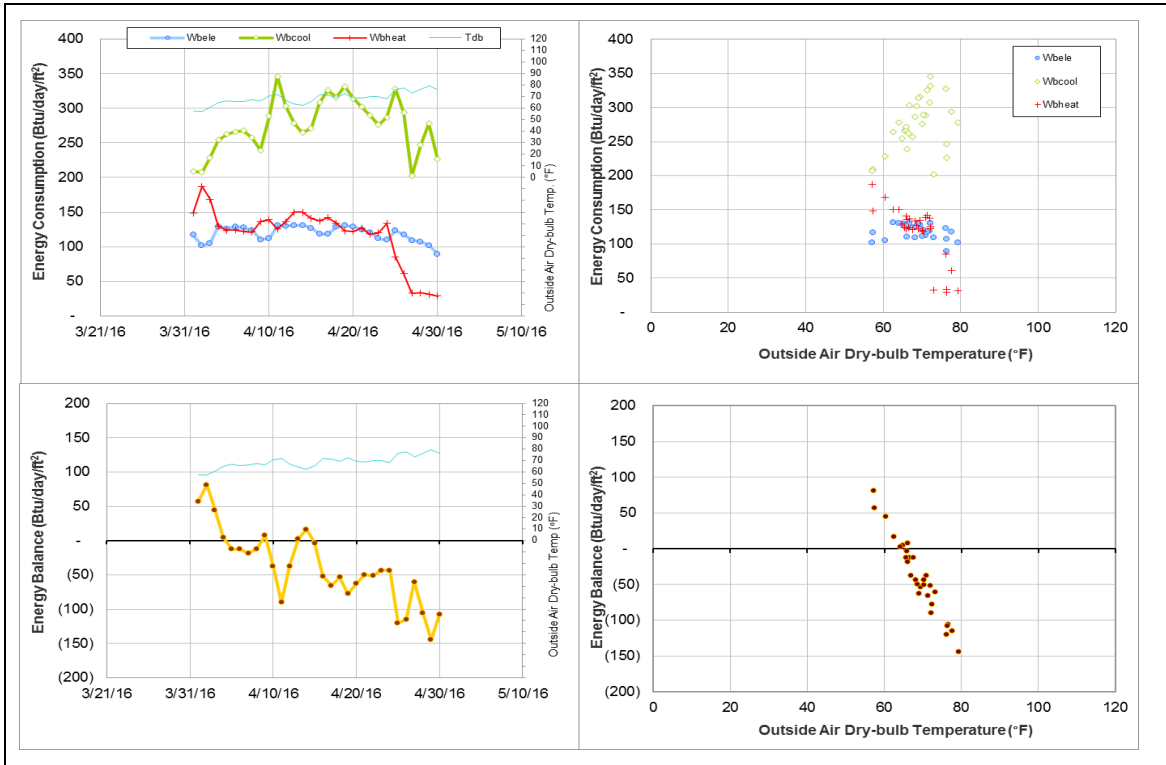


Explanatory Figure: Time series plots of hourly CHW (above) and HHW (below) energy consumption, flow rate, and supply and return temperatures from the utilities office. CHW and HHW were estimated for the period of 4/26/2016 – 4/30/2016.

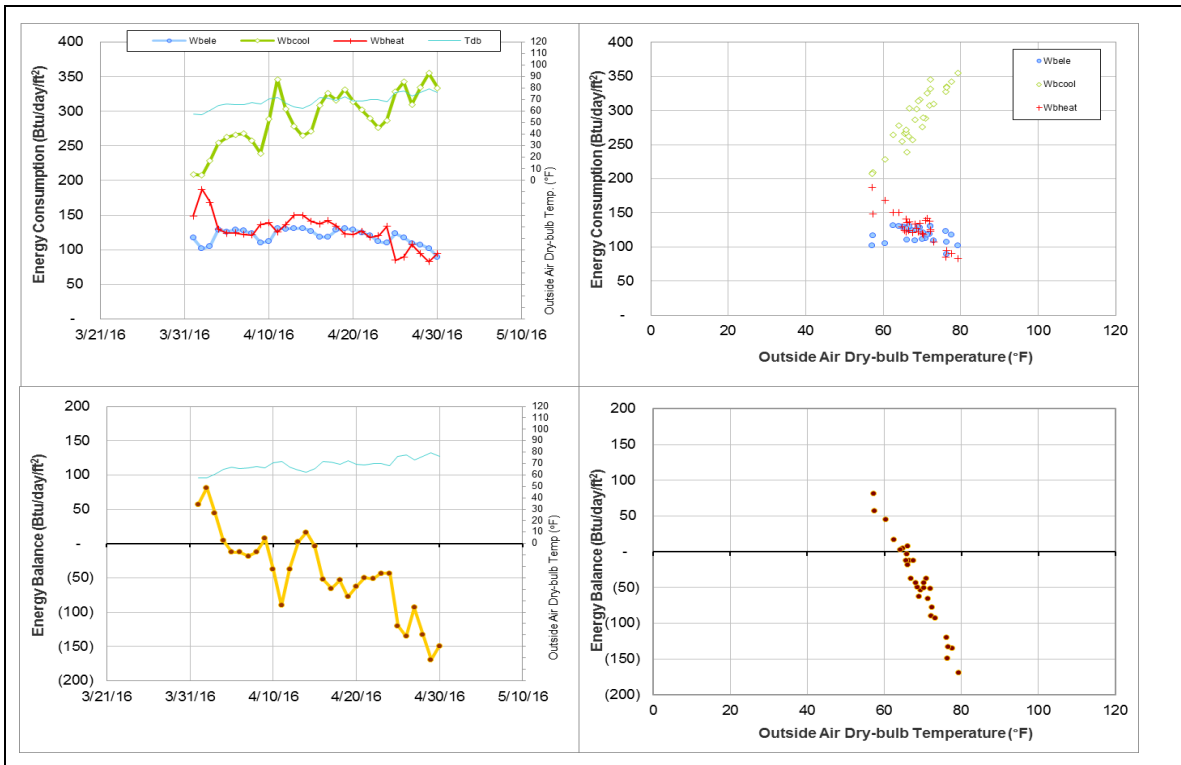




Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Beutel Health Center (TAMU Bldg # 520)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	003933	30	4/1/2016 – 4/30/2016	Model
HHW	003944	30	4/1/2016 – 4/30/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level decreased.	8/22/2015-ongoing
HHW	The consumption level decreased.	8/22/2015-ongoing

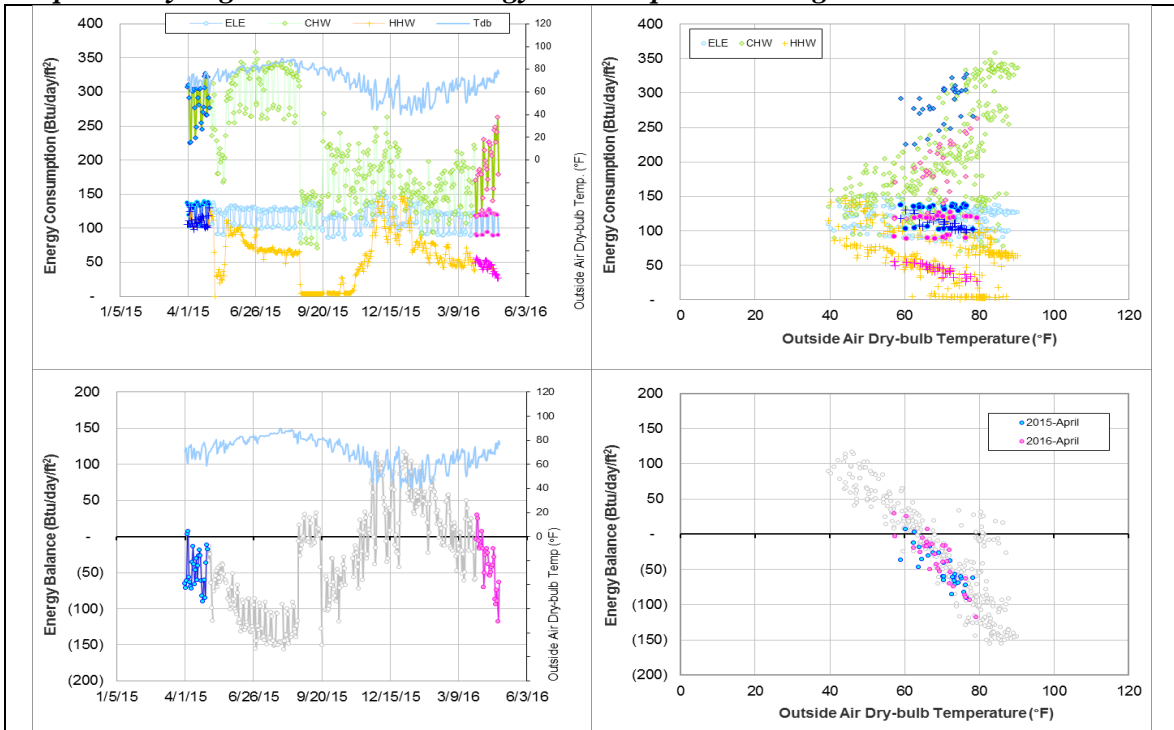
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	003933	8/22/2015 – 9/19/2015	Flow Rate	Decreased
		8/22/2015 - ongoing	Delta-T	Decreased
HHW	003944	8/22/2015 - ongoing	Delta-T	Decreased and small

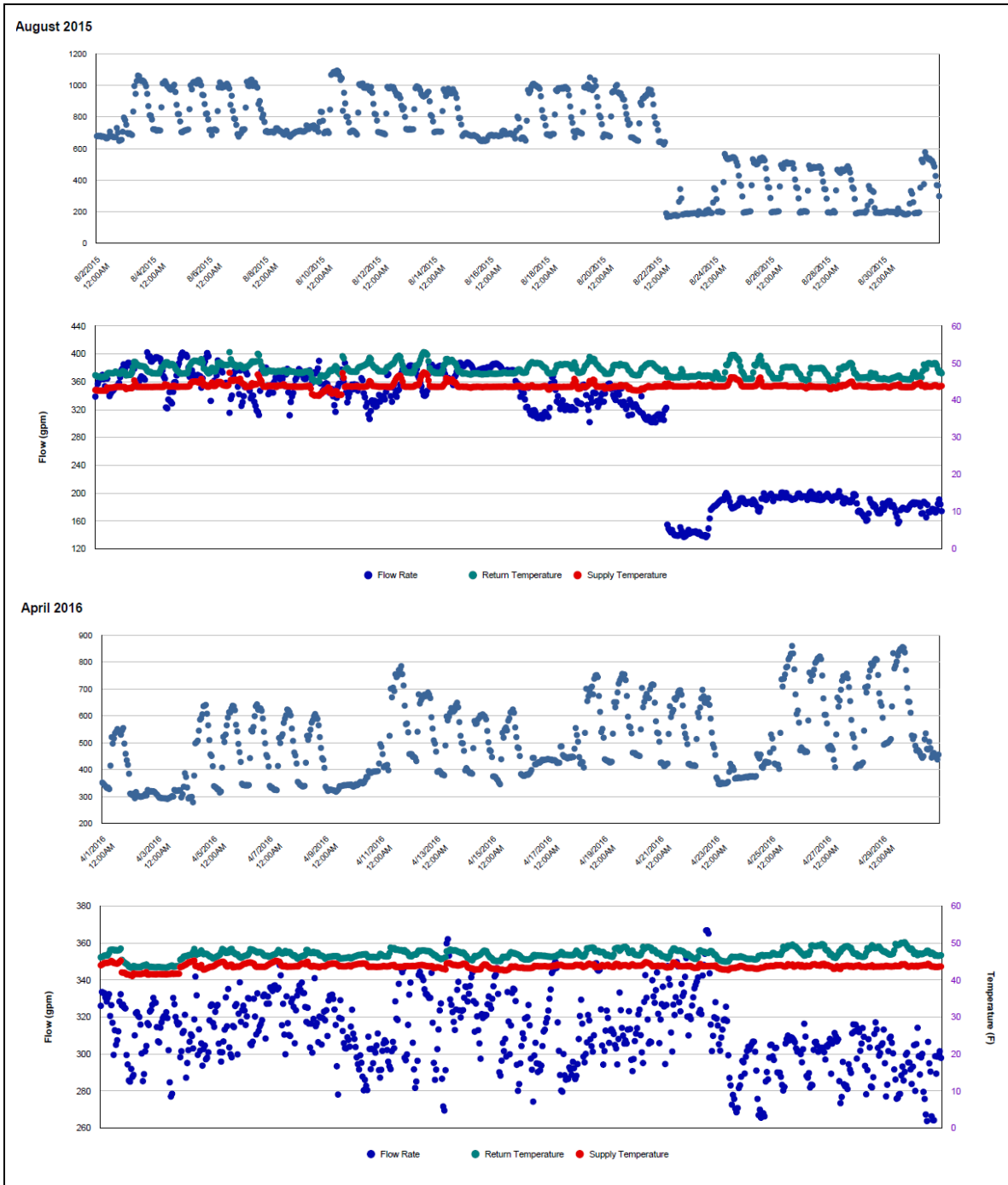
Quantitative descriptions and comments

The return temperature for HHW meter increased and the delta-T became very small since 8/22/2015. At the same time, the flow rate decreased around 50%. As a result, the HHW consumption decreased largely (~80%). The CHW consumption also decreased by approximately 50% after 8/22/2015 caused by a decrease in flow rate. The flow rate increased back on 9/19/2015, but the consumption level for current month is 100 Btu/day/ft² lower than that before 8/22/2015. The consumption was estimated by models based on the data during 8/1/2014 - 7/31/2015. We would like to know if this building has been renovated recently.

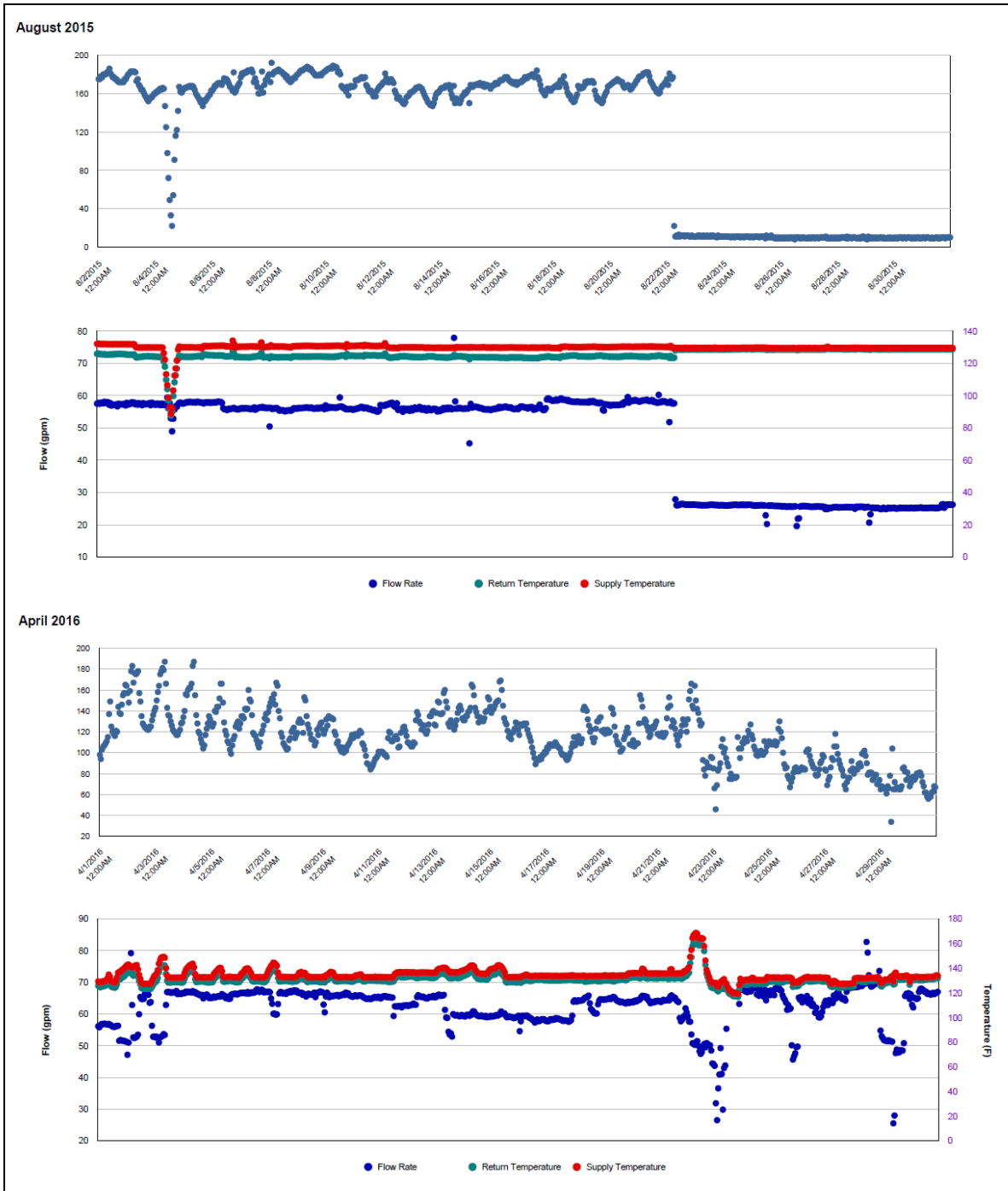
Explanatory Figure: 13 months energy balance plot with original data.



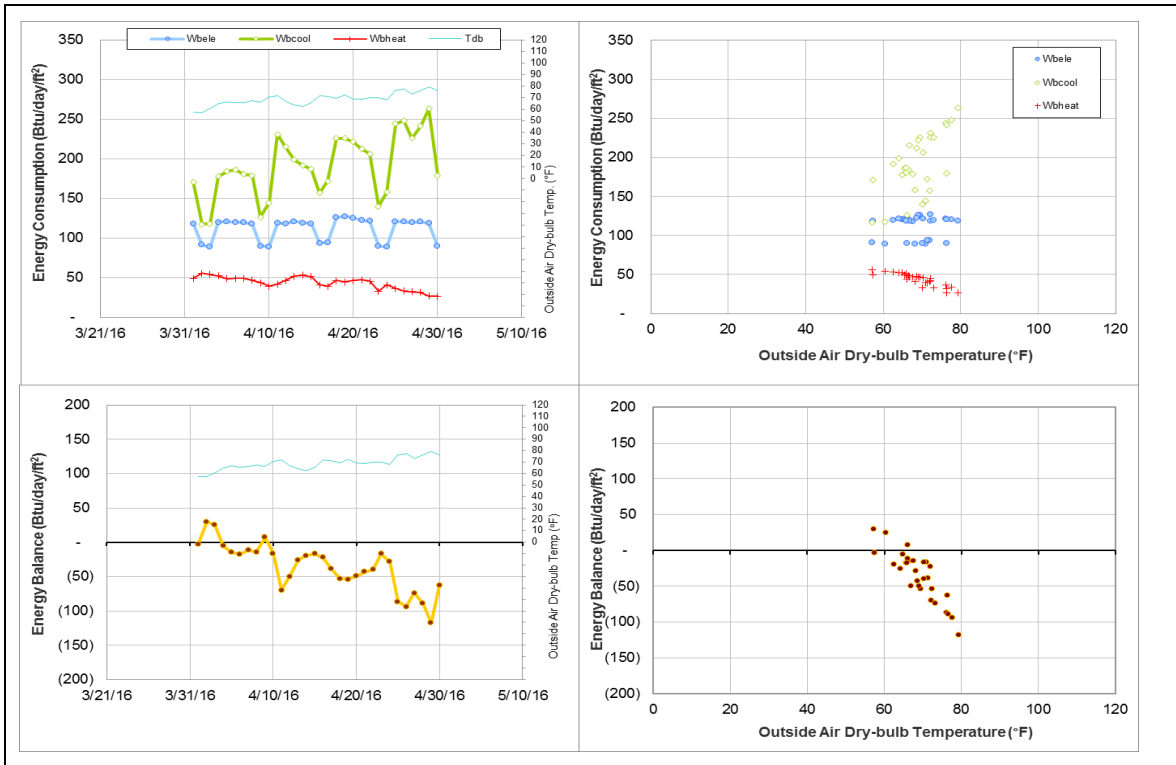
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW meter during August 2015 (top) and April 2016 (bottom))



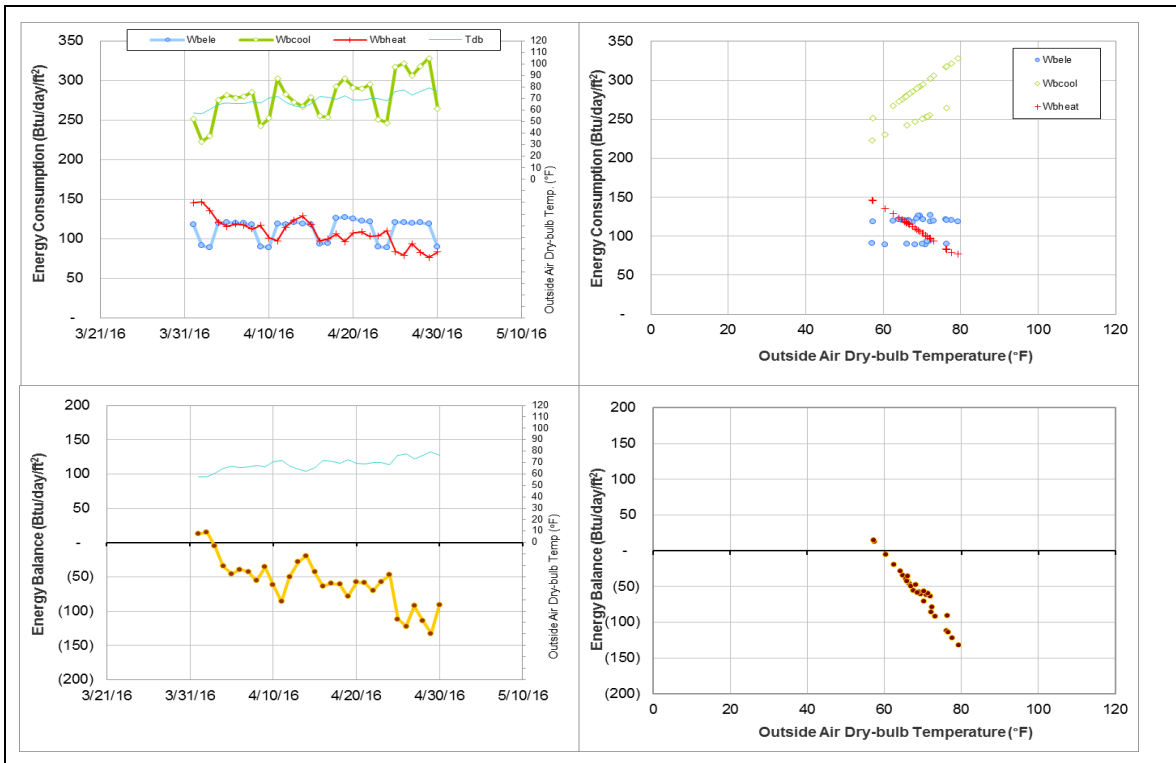
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW meter during August 2015 (top) and April 2016 (bottom))



Energy balance plot using the original data for the month of analysis.



Energy balance plot using the estimated data for the month of analysis



McNew Laboratory (TAMU Bldg #740)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	005968	30	4/1/2016 – 4/30/2016	Model
CHW	005974	4	4/25/2016 – 4/26/2016 4/27/2016 – 4/28/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The level decreased and the cross-point of temperature is too low.	3/22/2013–ongoing
HHW	The consumption level decreased by 60% or more.	3/22/2013–ongoing
CHW	The consumption level decreased.	4/25/2016 – 4/26/2016 4/27/2016 – 4/28/2016

Changes in sensor readings related to the detected issues

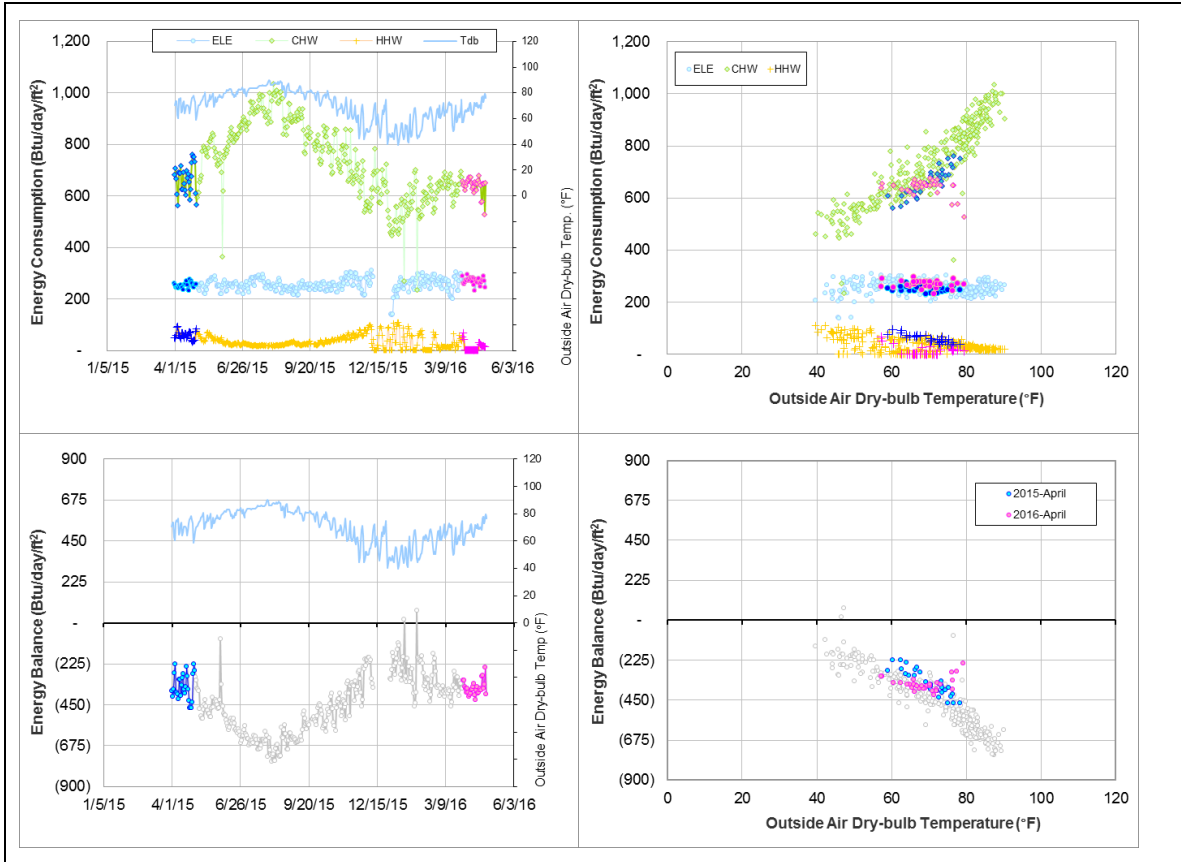
Energy Type	Meter ID	Period	Type	Description
HHW	005968	3/22/2013–1/1/2014	Flow Rate	Decreased largely
		1/1/2014 - ongoing	Delta-T	Small
CHW	005974	4/25/2016 – 4/26/2016 4/27/2016 – 4/28/2016	Flow Rate	Decreased largely
			Delta T	Small

Quantitative descriptions and comments

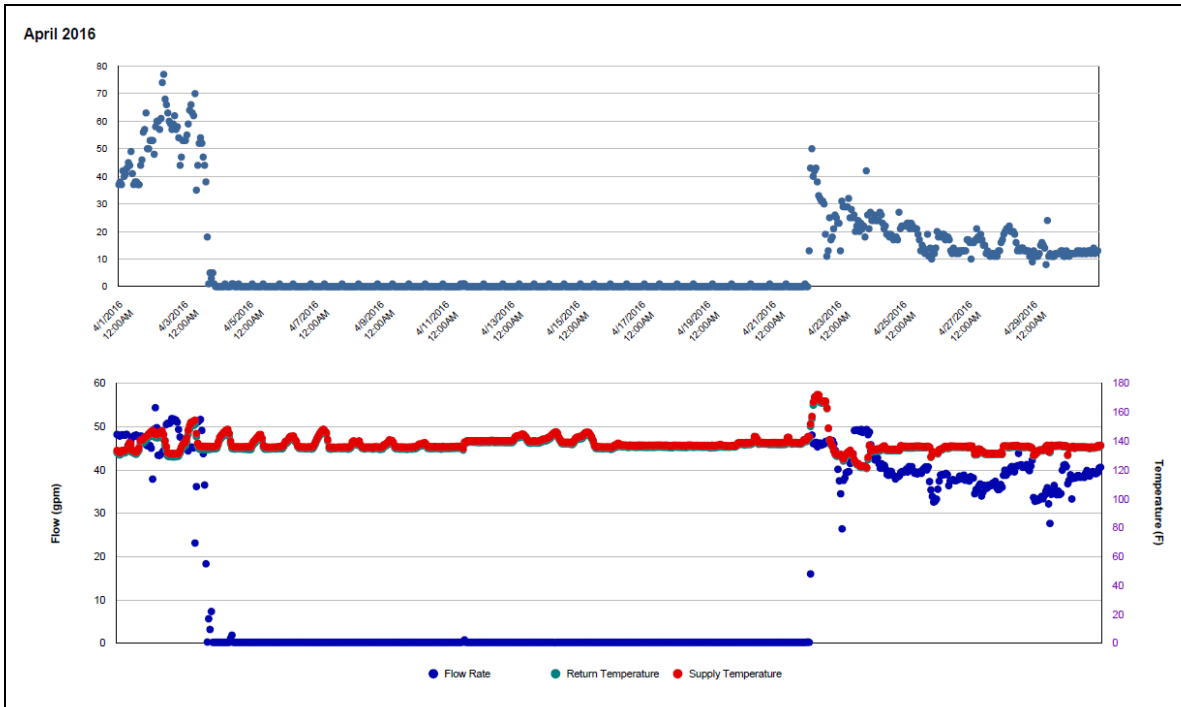
The energy balance level decreased to around 40°F cross-point temperature after 3/22/2013 due to the decreased of the HHW consumption. The HHW consumption in current month is about 200 Btu/day/ft² lower than that before 3/22/2013. The HHW was estimated by a model.

CHW showed a couple of days of lower than expected consumption during higher OA temperatures. There appeared to be a decrease in CHW flow and delta T during these days. The CHW for these four days was estimated by a model.

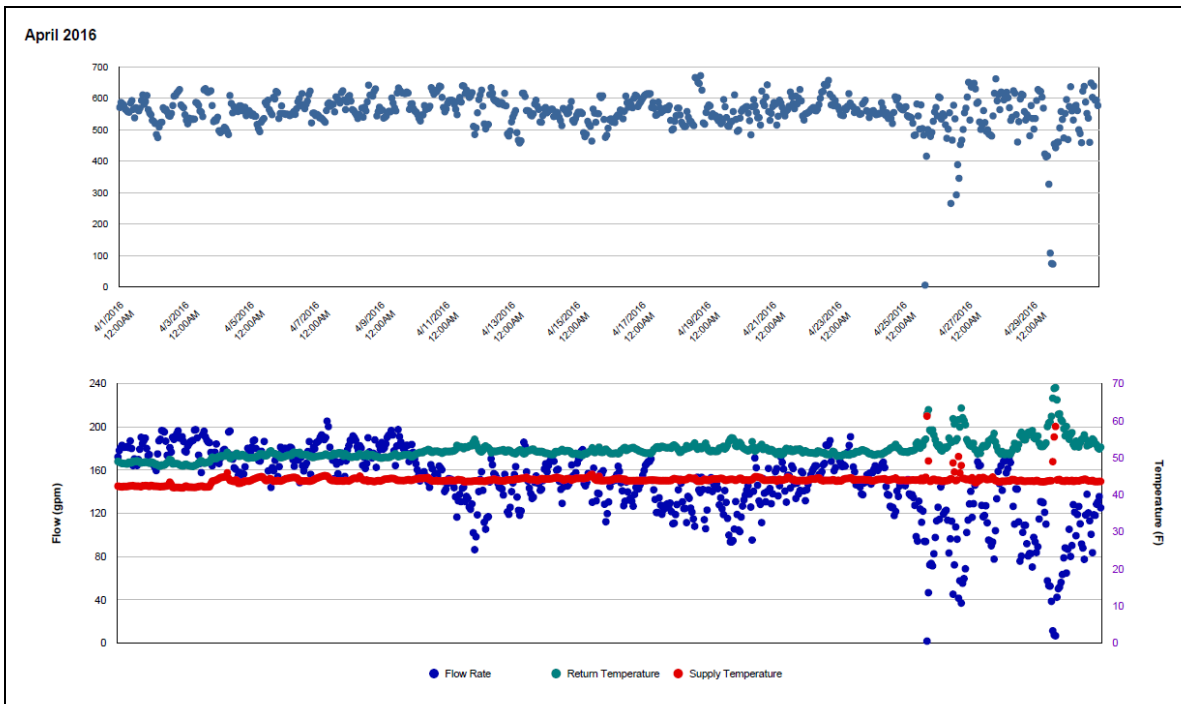
Explanatory Figure: 13 months energy balance plot with original data



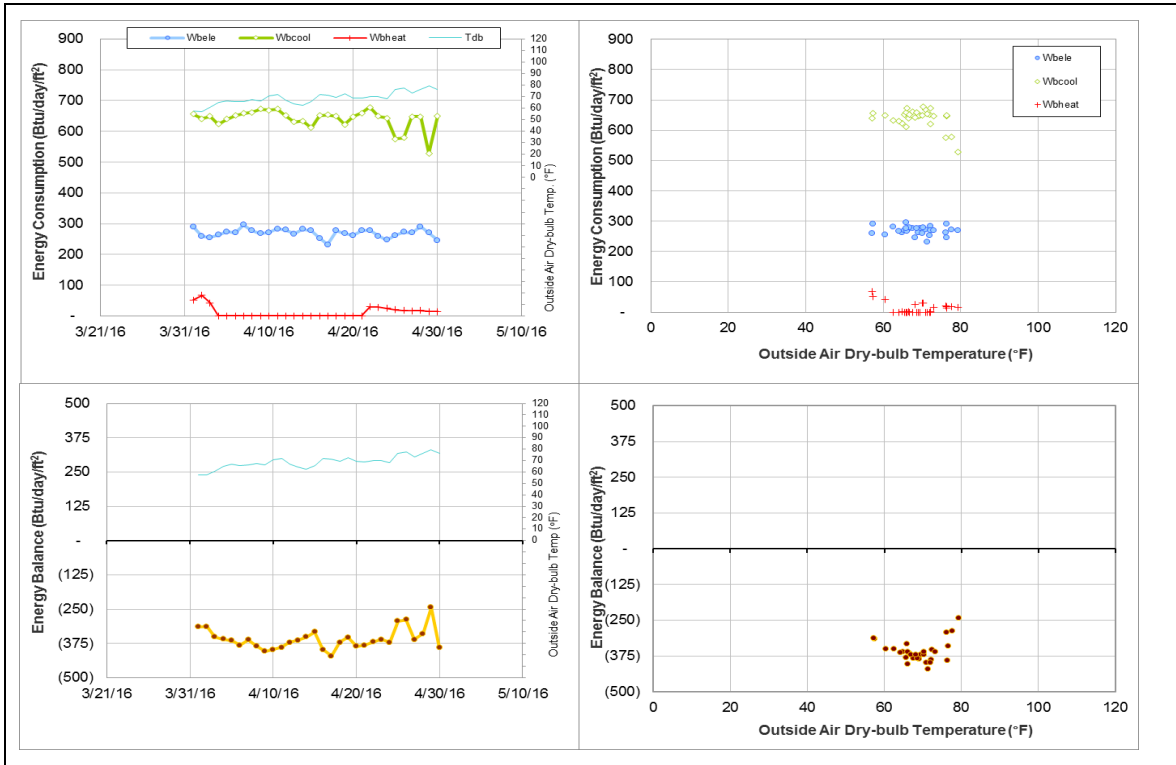
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from utilities office. (HHW meter during April 2016)



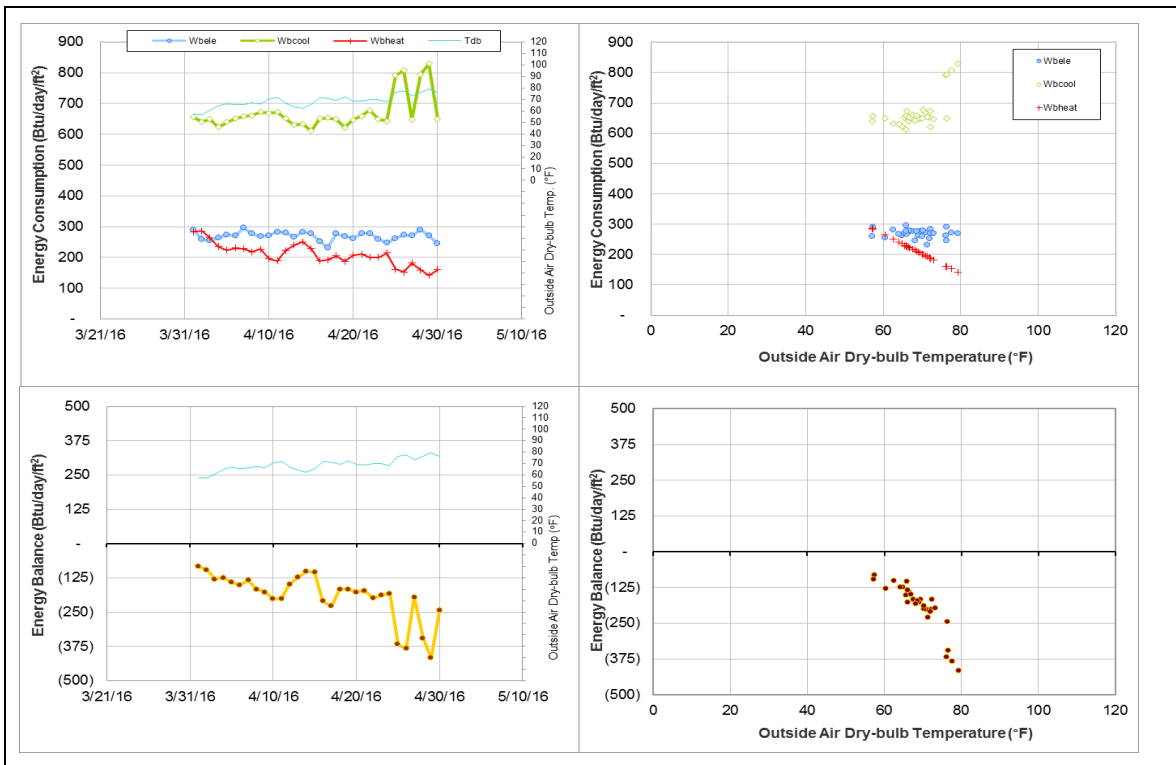
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from utilities office. CHW was estimated for 4/25/2106-4/26/2016 and 4/28/2016-4/29/2016.



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Vivarium III (TAMU Bldg #1020)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	005997	30	4/1/2016 – 4/30/2016	Model
HHW	006001	30	4/1/2016 – 4/30/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level increased.	1/14/2016 – ongoing
HHW	The consumption level increased.	4/1/2016 – 4/29/2016
	The consumption decreased to zero.	4/30/2016 - ongoing

Changes in sensor readings related to the detected issues

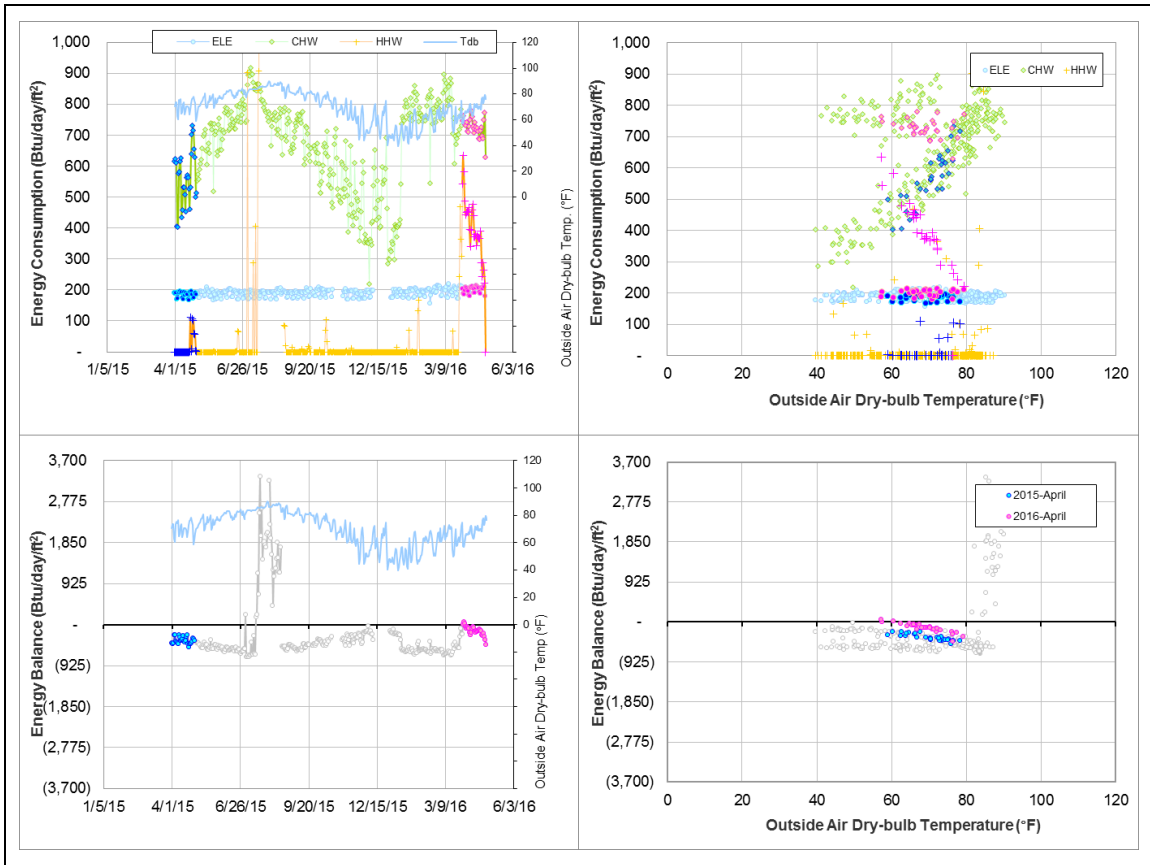
Energy Type	Meter ID	Period	Type	Description
CHW	006001	1/14/2016 – ongoing	Return Temperature	Increased

Quantitative descriptions and comments

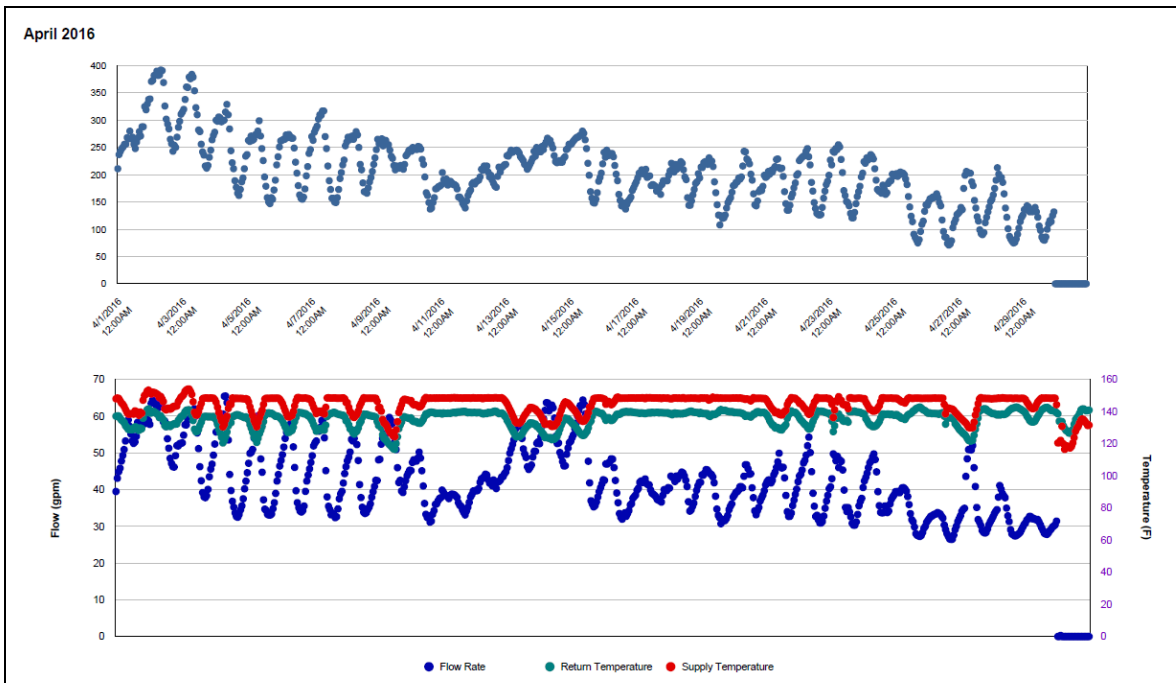
CHW consumption increased by approximately 100% since 1/14/2016 due to a sudden increase of return temperature. The return temperature increased from ~48°F to ~55°F. The consumption for entire month was estimated by a model.

The HHW does not seem to be consumed much during summer period, but usually increases after October. However, the HHW consumption starting October 2015 continues to maintain a low consumption level. As a result, the energy balance load is lowered with the cross-point temperature less than 40°F. For April 2016, the HHW flow increased for 4/1/2016 – 4/29/2016 and then returned to zero gpm for 4/30/2016. When compared to the HHW consumption pattern from 2015, this period of increased flow shows an energy consumption increase of almost 50% during lower OA temperatures. The consumption for entire month was estimated by a model.

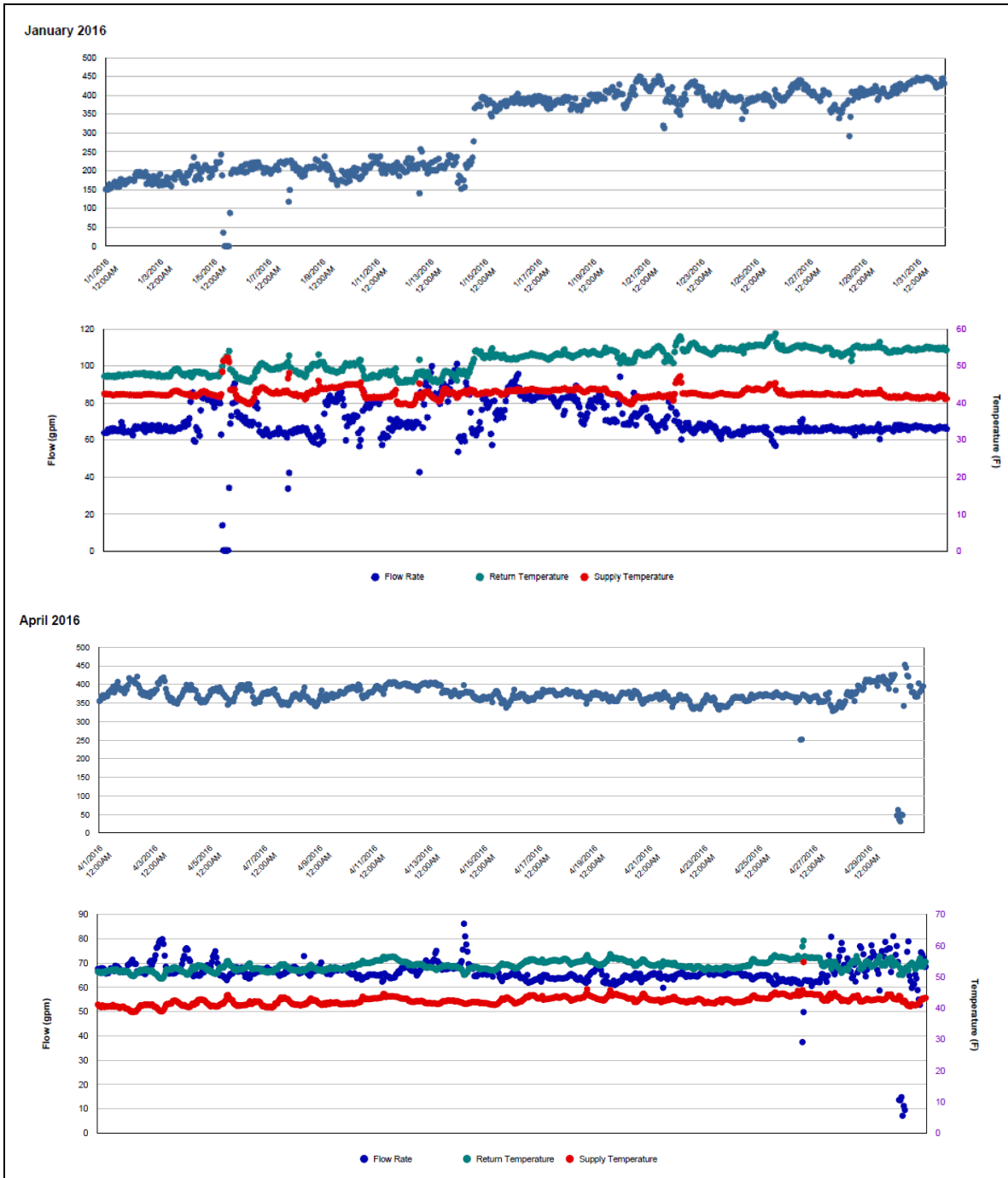
Explanatory Figure: 13 months energy balance plot with original data (problematic HHW data during 7/16/2015 – 8/16/2015 has not been removed from the plot.)



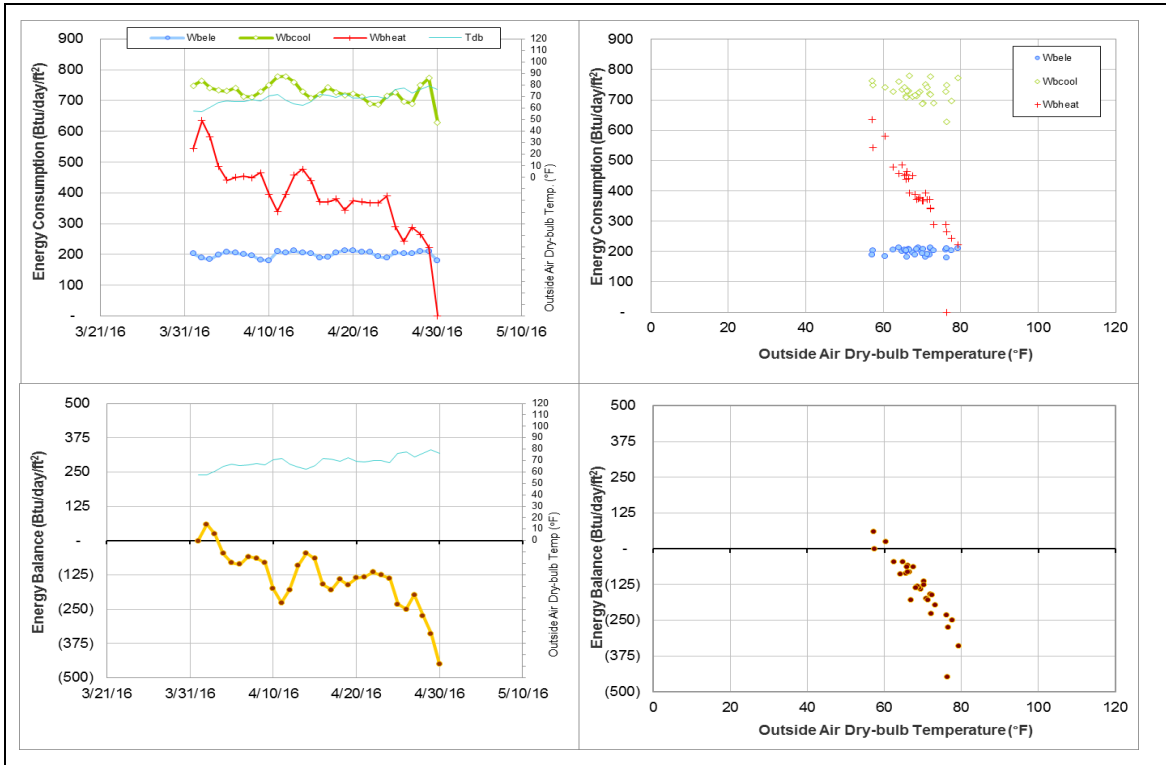
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from the utilities office (April 2016).



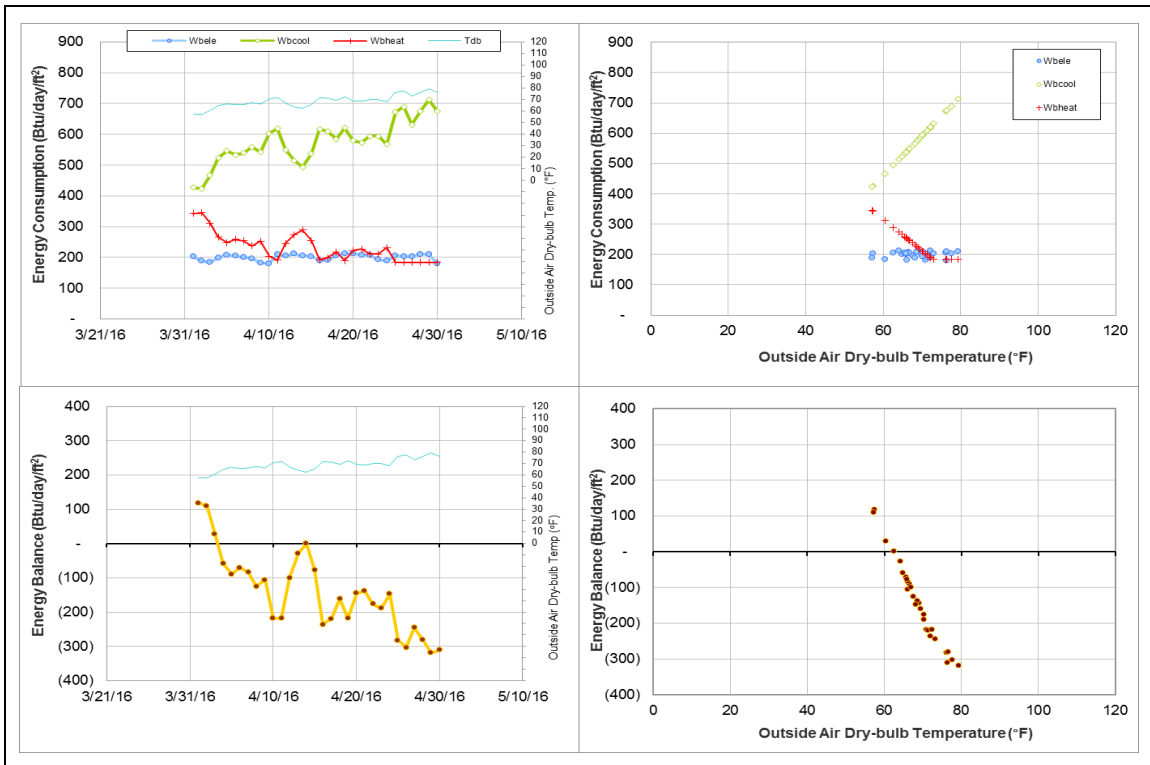
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from the utilities office. CHW meter for January (top) and April (bottom) 2016.



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Veterinary Anatomic Pathology (TAMU Bldg #1184)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	006995	11	4/16/2016 – 4/26/2016	Model
HHW	006999	11	4/16/2016 – 4/26/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level increased for a short period.	4/16/2016 – 4/26/2016
HHW	The consumption level increased for a short period.	4/16/2016 – 4/26/2016

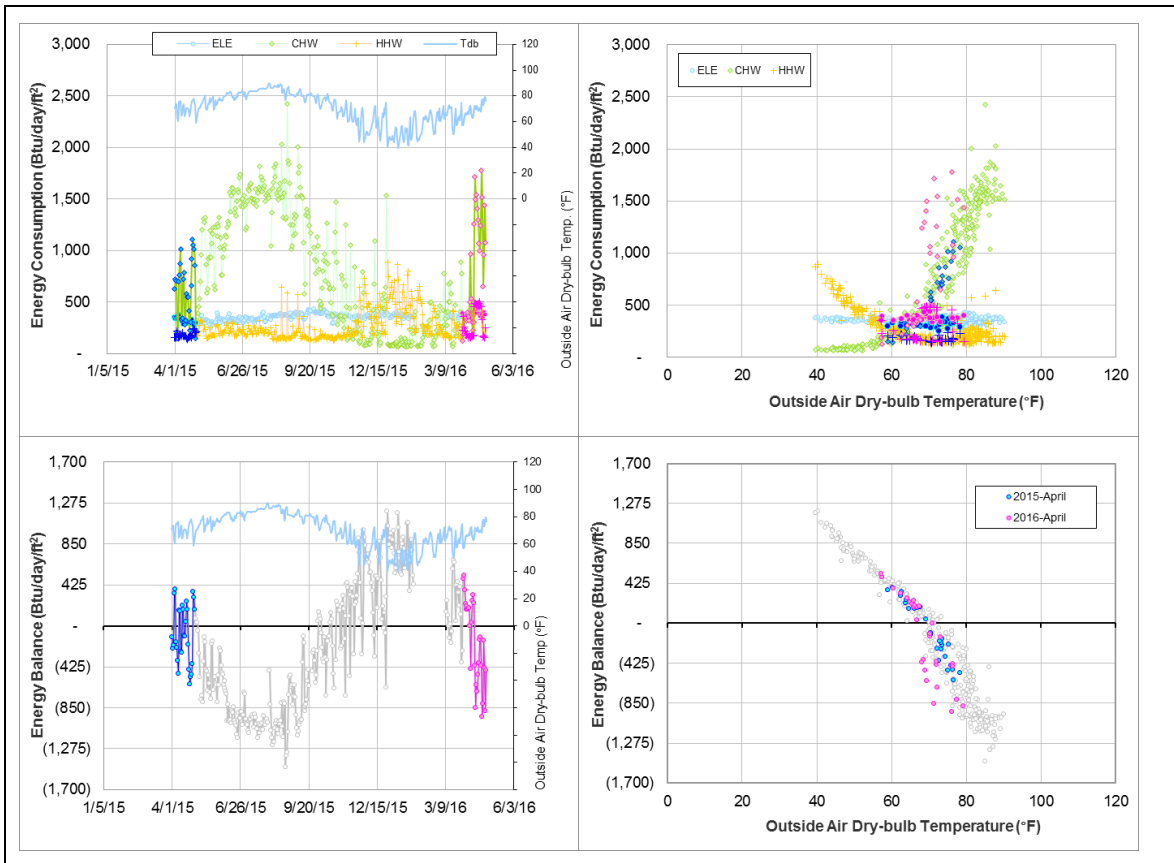
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	006995	4/16/2016 – 4/26/2016	Flow rate	period of sustained high flow
HHW	006999	4/16/2016 – 4/26/2016	Flow rate	period of sustained high flow

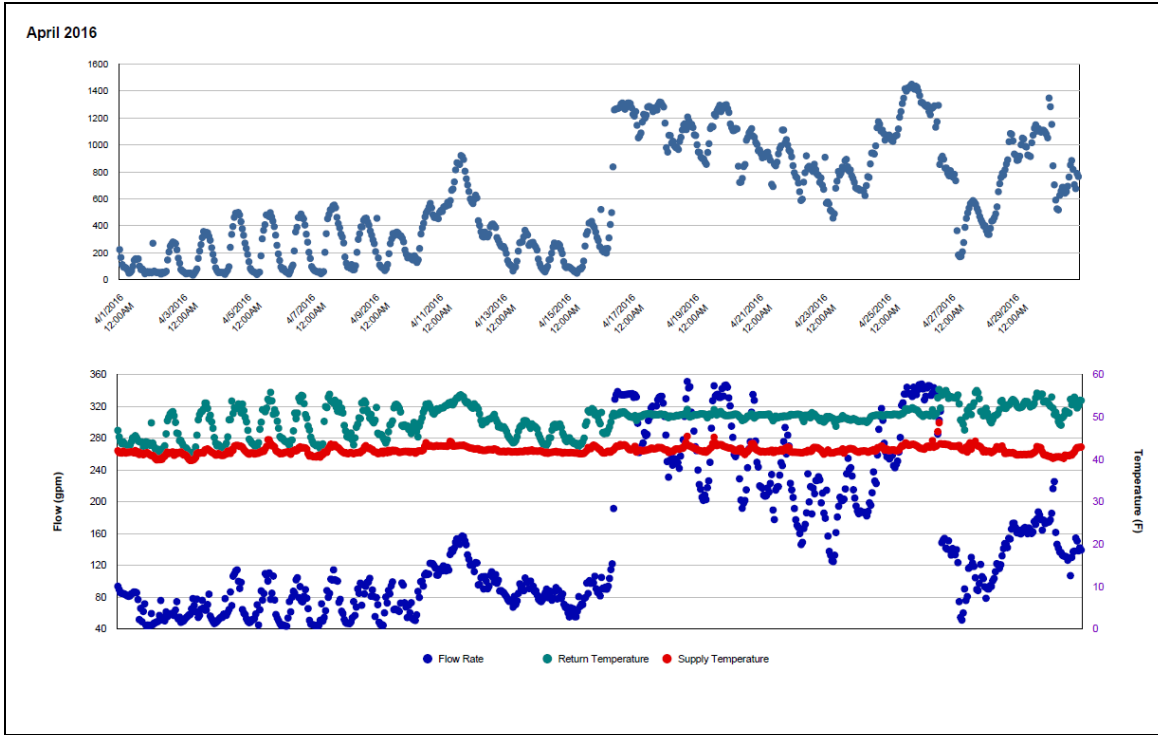
Quantitative descriptions and comments

Both CHW and HHW showed a period of sustained high flow from 4/16/2016 – 4/26/2016. The consumption during this period was estimated by models.

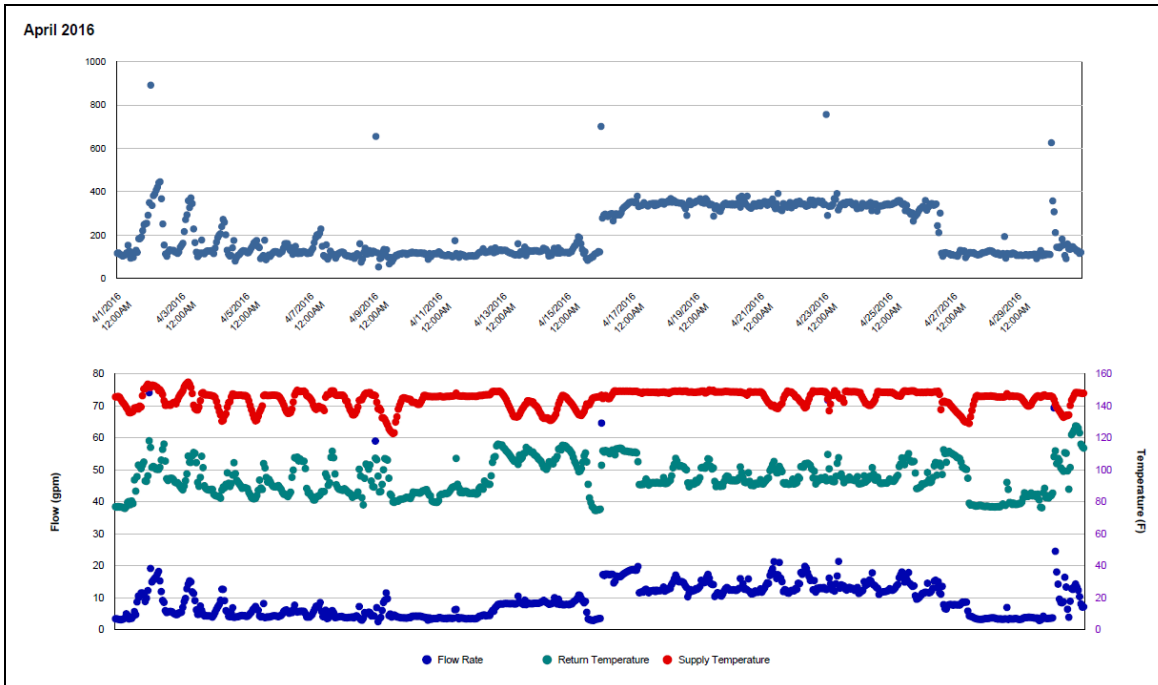
Explanatory Figure: 13 months energy balance plot with original data



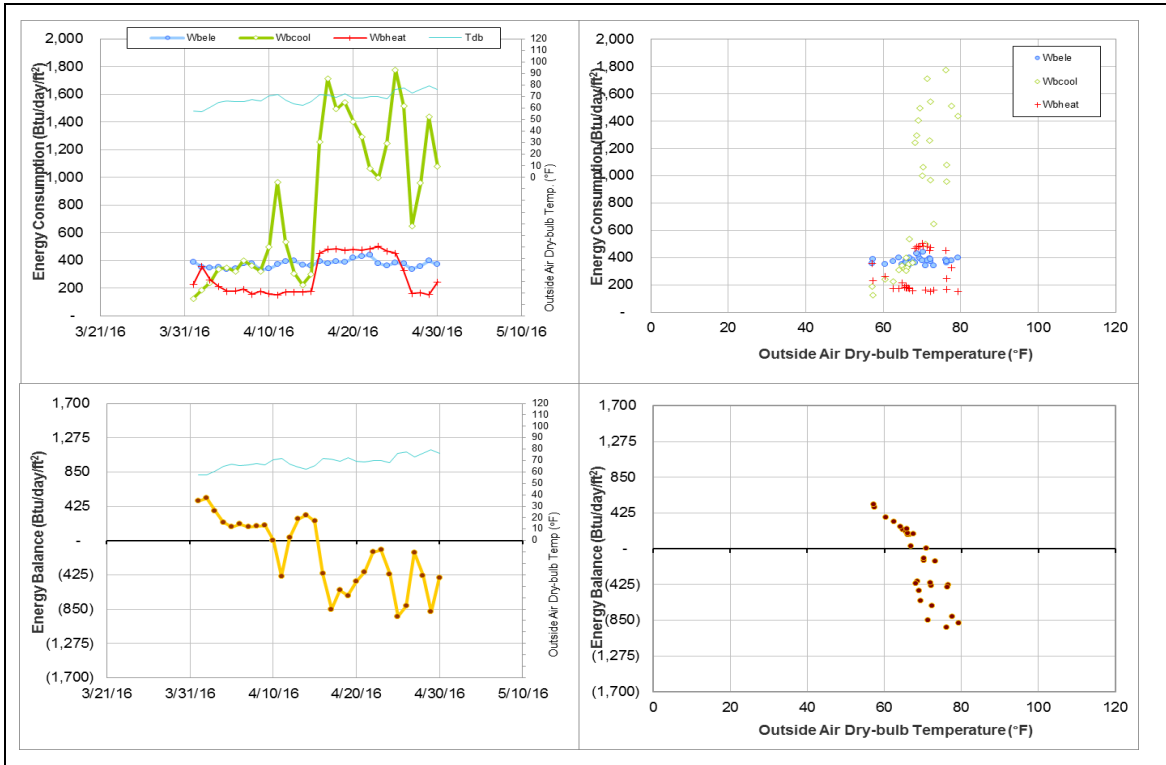
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from the utilities office. CHW was estimated for the period of 4/16/2016 – 4/26/2016 due to sustained high flow.



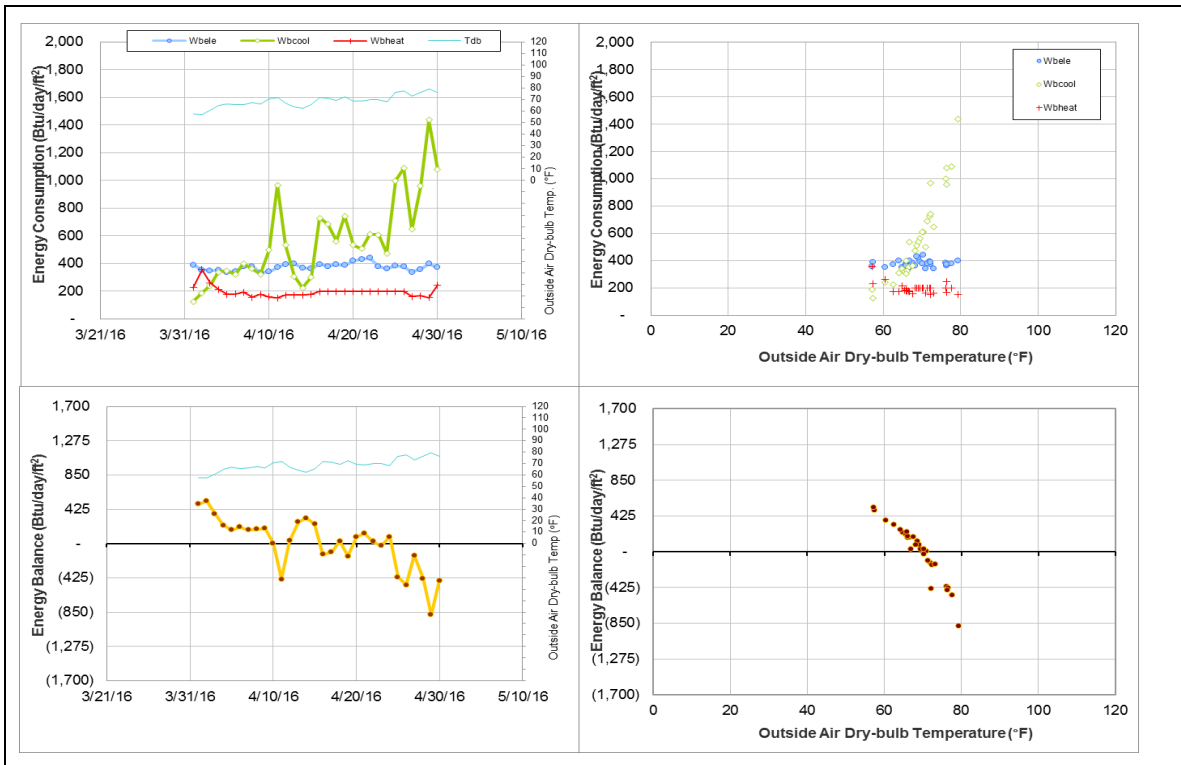
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from the utilities office. HHW was estimated for the period of 4/16/2016 – 4/26/2016 due to sustained high flow.



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Price Hobgood Ag. Engineering Research Lab (TAMU Bldg #1508)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	006005	30	4/1/2016-4/30/2016	Model
HHW	006009	30	4/1/2016-4/30/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level is lower than the level during the past year.	December 2015 - ongoing
HHW	The consumption level is lower than the level during the past year.	4/1/2016 - ongoing

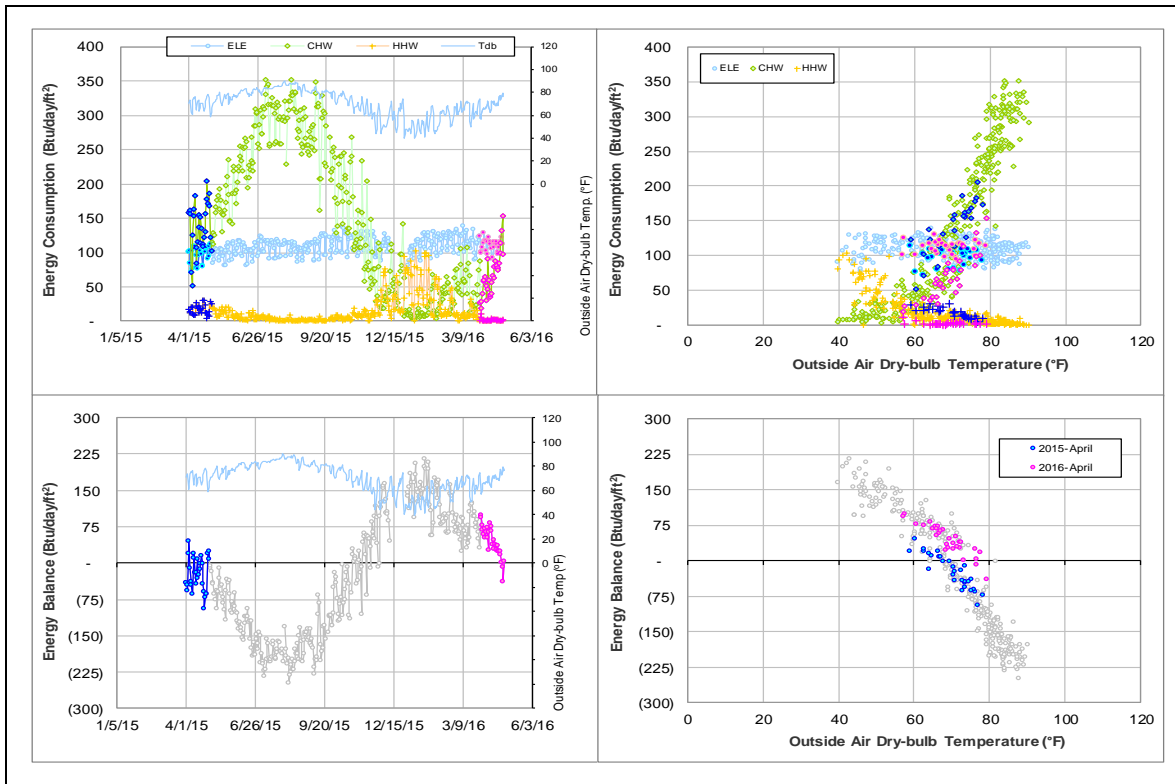
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	006009	4/1/2016-ongoing	Delta-T	Small and sometimes negative

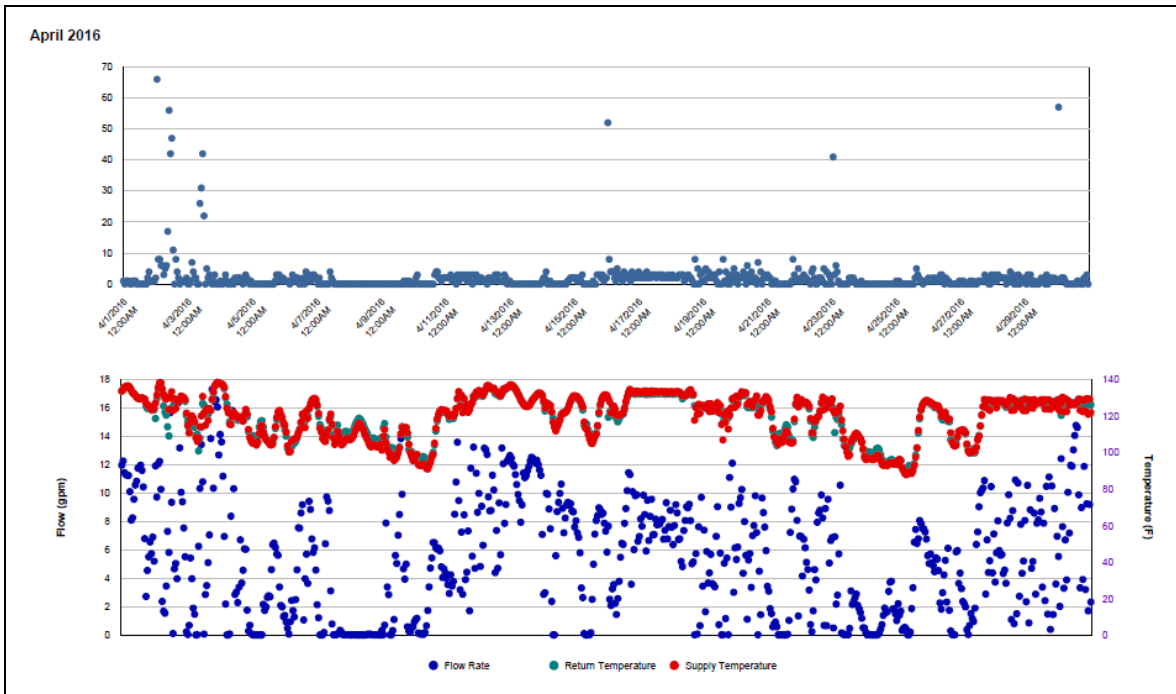
Quantitative descriptions and comments

The CHW consumption was about 50 Btu/day/ft² lower than the level during the past year. The delta-T for HHW meter was negative sometimes in this month. The consumption was estimated by models.

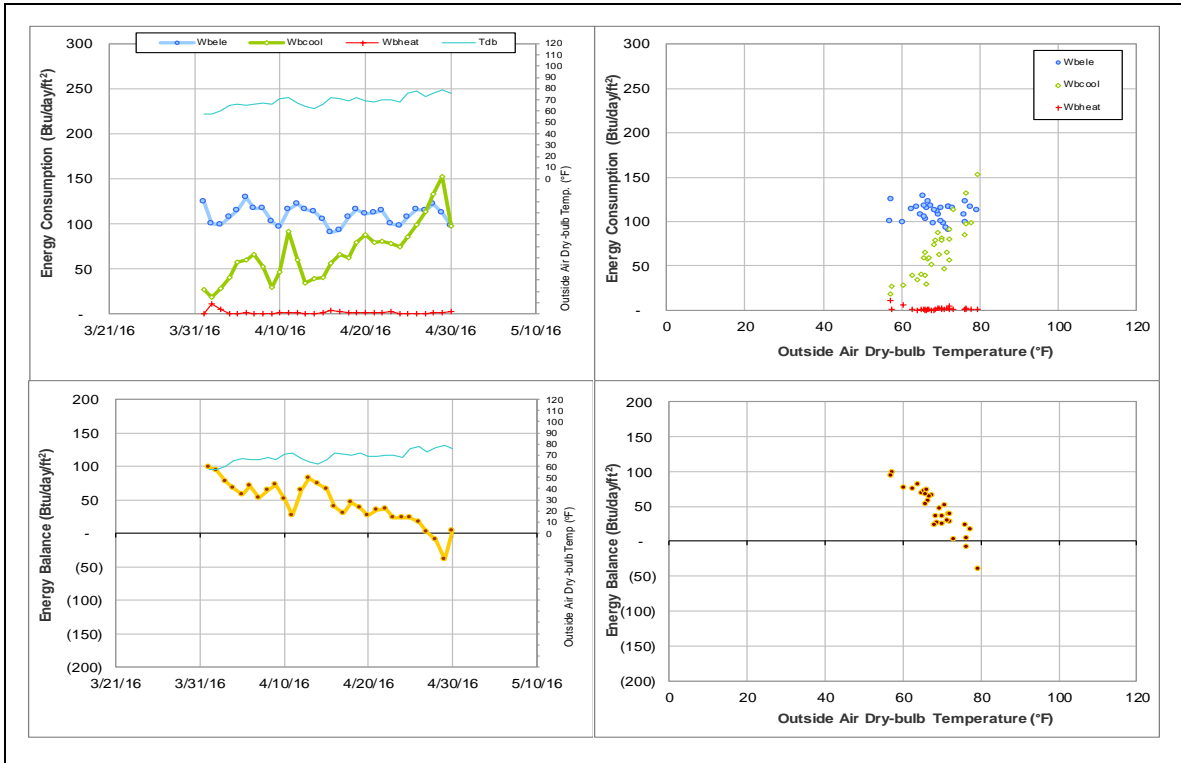
Explanatory Figure: 13 months energy balance plot with original data



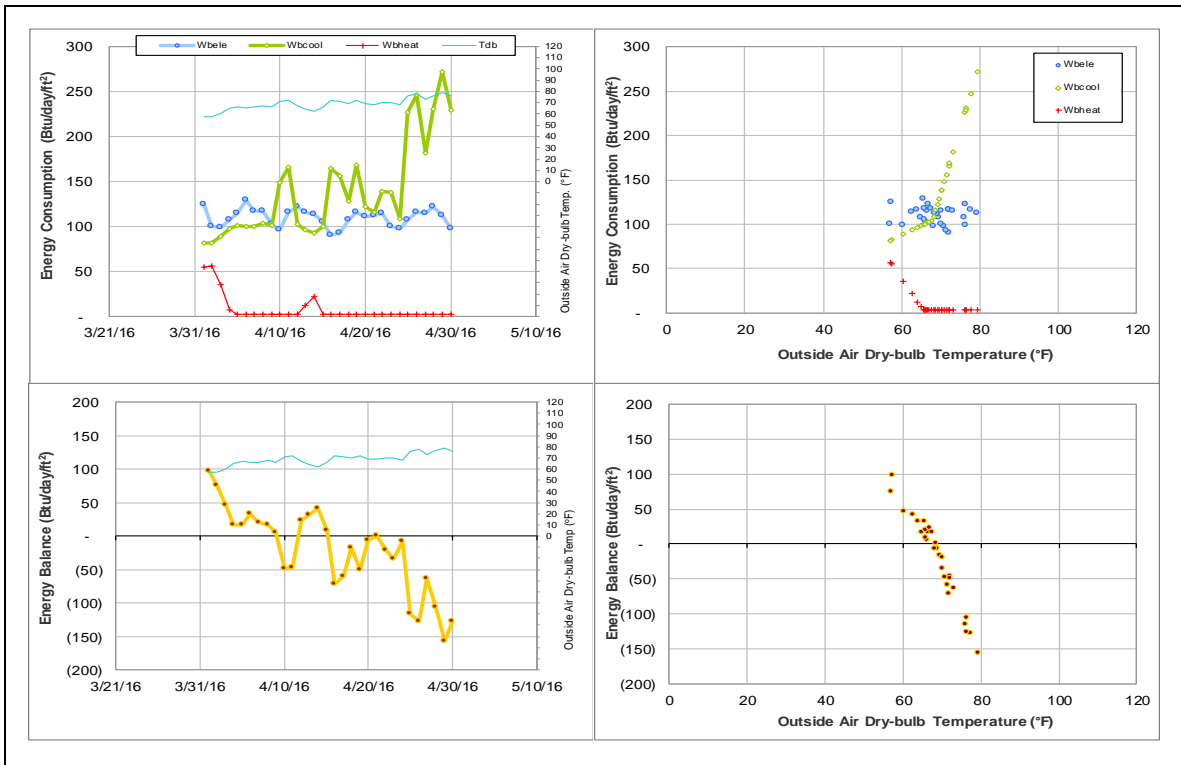
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office (HHW meter April 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Medical Sciences Library (TAMU Bldg #1509)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	003777	5	4/26/2016-4/30/2016	Model

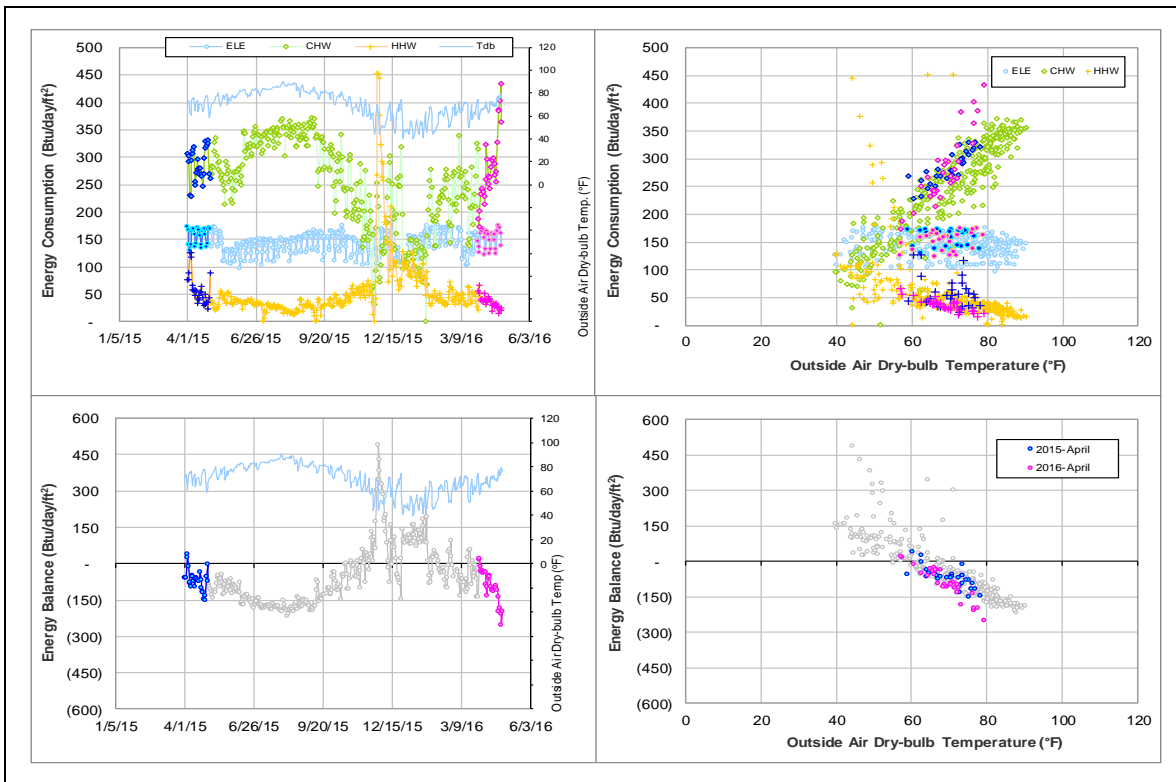
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level is higher than the level during the past year.	4/26/2016 - ongoing

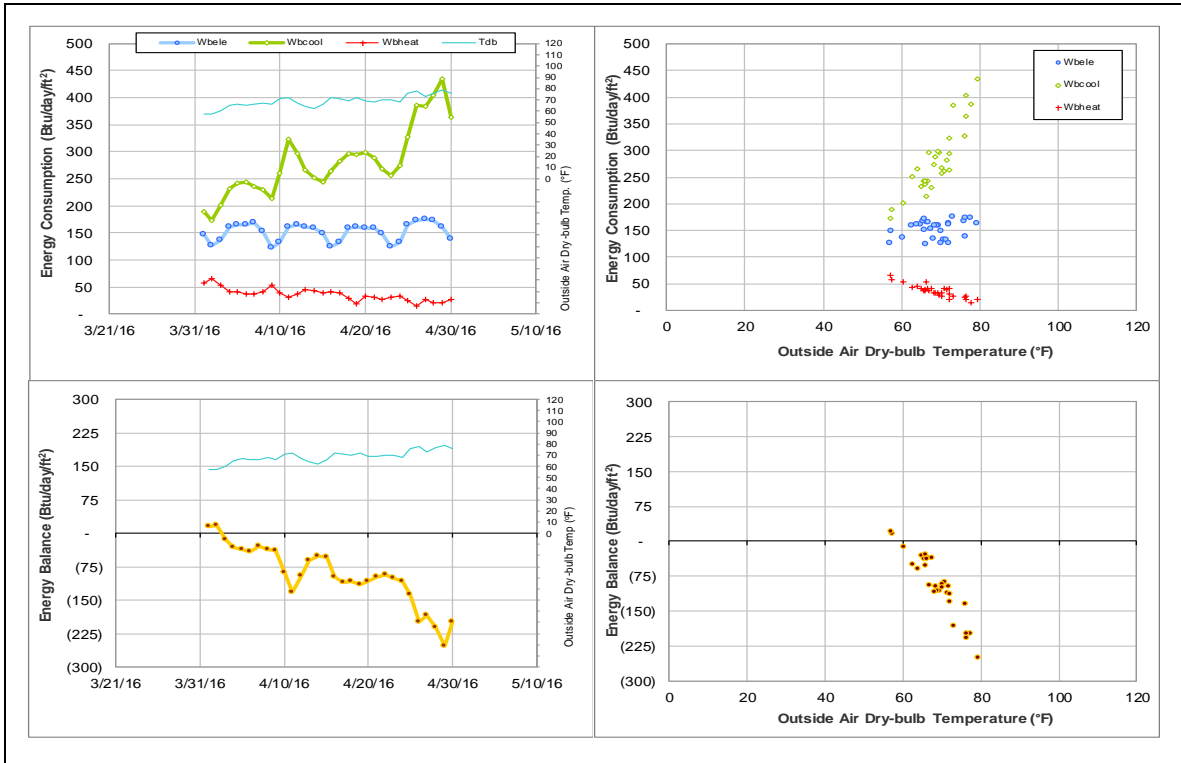
Quantitative descriptions and comments

CHW consumption after 4/26/2016 is 50 - 100 Btu/day/ft² higher than the level during last year. The consumption was estimated by a model.

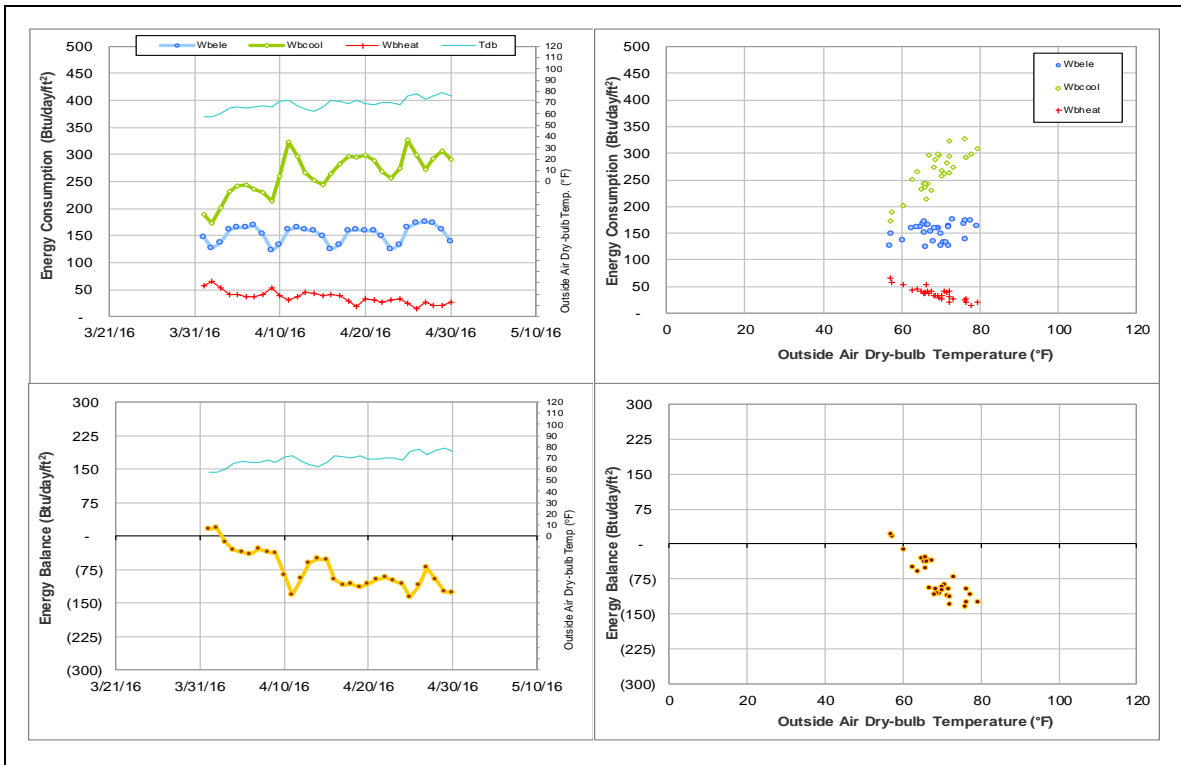
Explanatory Figure: 13 months energy balance plot with original data



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Southern Crop Improvement Greenhouse (TAMU Bldg #1512)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	005931	30	4/1/2016 – 4/30/2016	Model

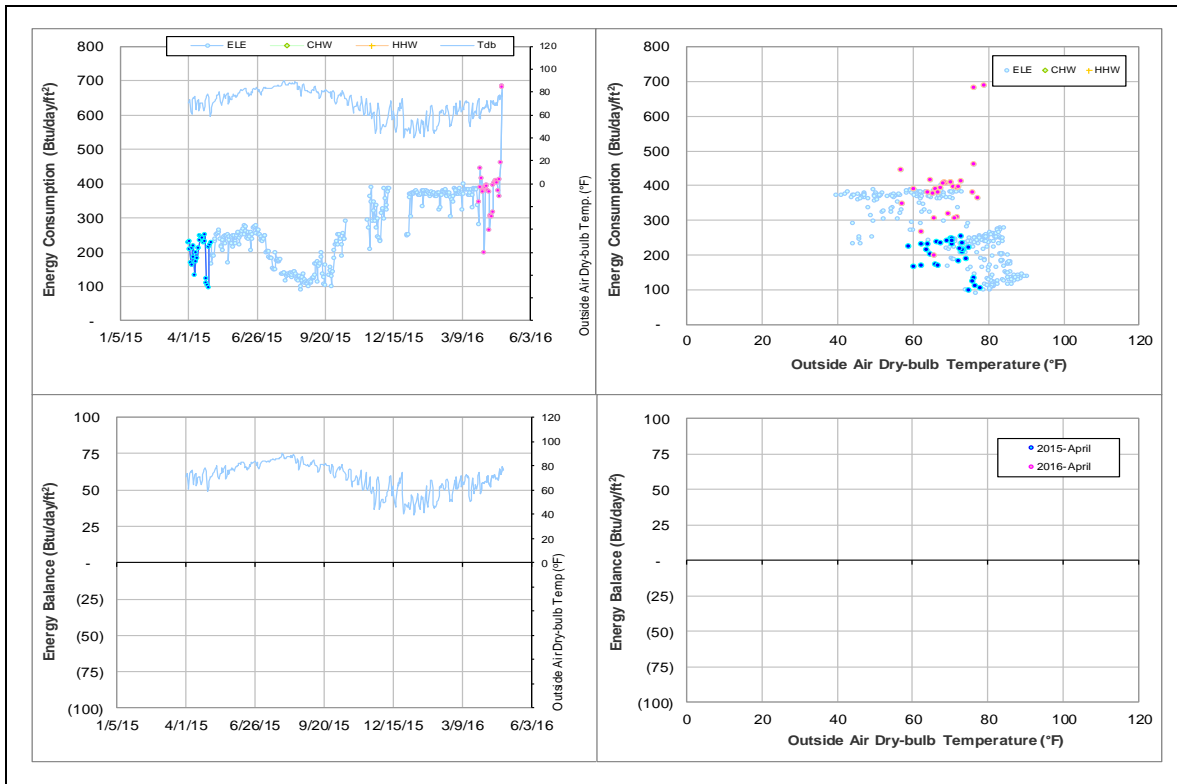
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption decreased.	7/22/2015 – 10/3/2015
	The consumption increased.	11/13/2015 – ongoing

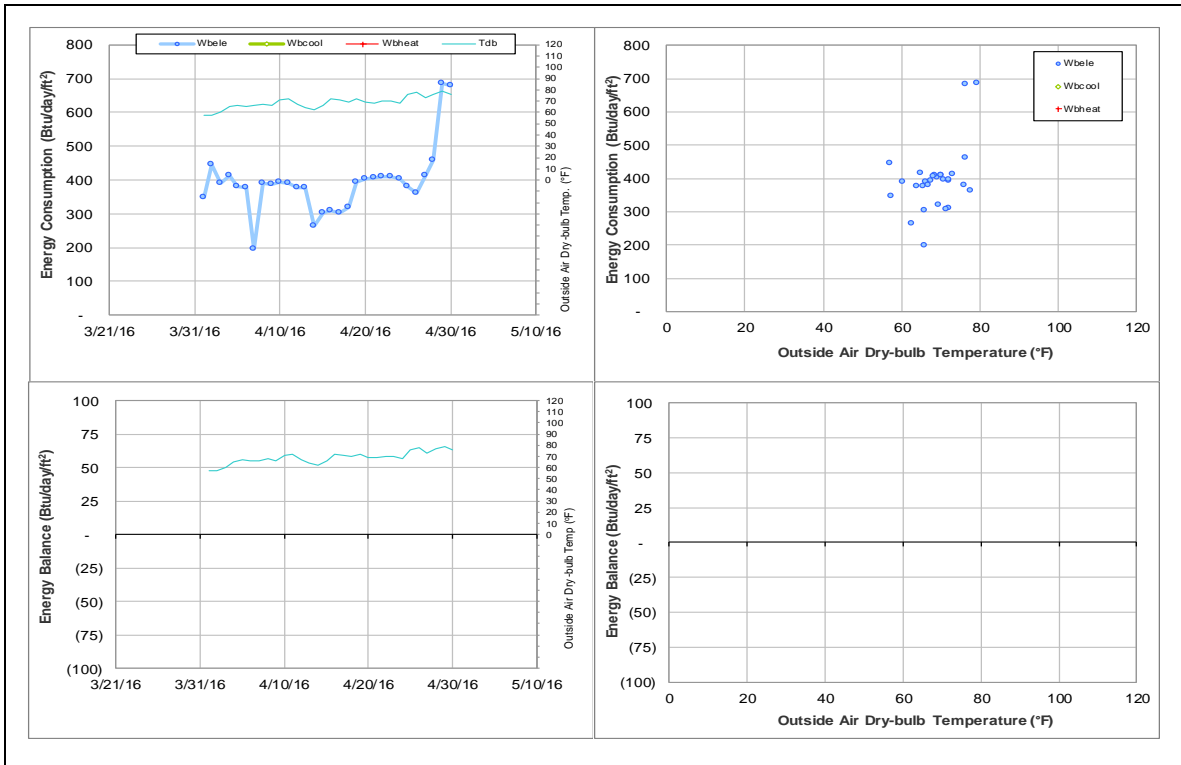
Quantitative descriptions and comments

The electricity consumption gradually decreased by approximately 120 Btu/day/ft² (~50%) since July 2015. It seemed that the building peak demand decreased during this period. The consumption level increased back after 10/3/2015. But it increased largely (50 – 200 Btu/day/ft²) after 11/13/2015 and further increased (300 Btu/day/ft²) after 4/29/2016. The consumption for entire month was estimated by a model based on the data during 7/1/2014 – 6/30/2015.

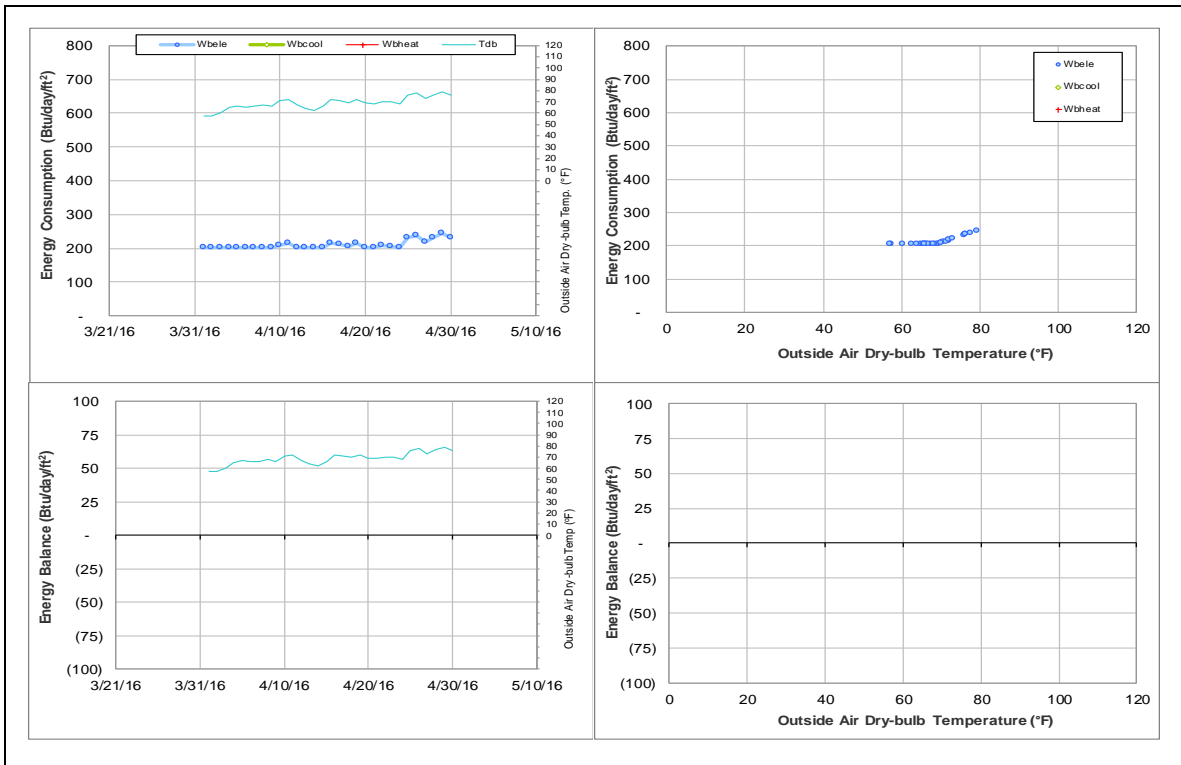
Explanatory Figure: 13 months energy balance plot with original data



Energy balance plot using the original data for the month of analysis.



Energy balance plot using the estimated data for the month of analysis



TX School of Rural Public Health (TAMU Bldg # 1518, 1519, 1520)

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE (005274)	The consumption level increased largely.	8/14/2015 - ongoing
ELE (005275)	The consumption level decreased largely.	8/14/2015 - ongoing

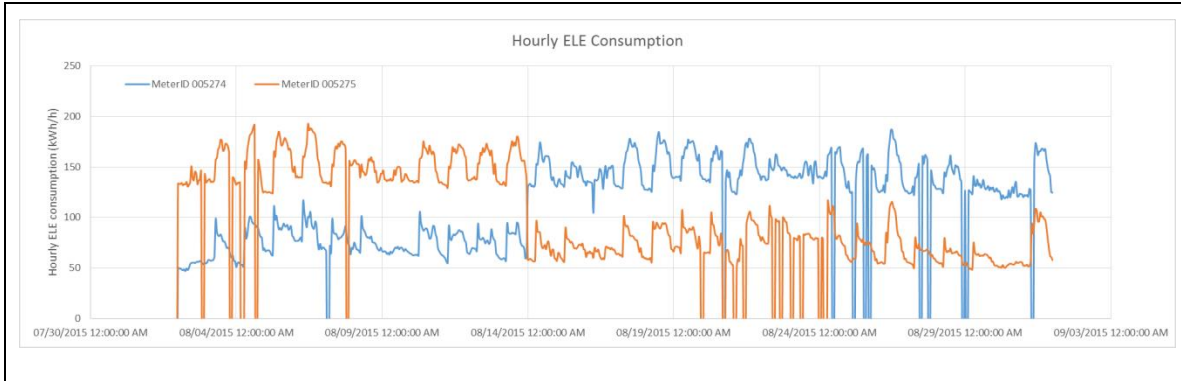
Comments

ELE meter (ID# 005274) is serve for TX School of Rural Public Health B and ELE meter (ID# 005275) is for TX School of Rural Public Health C.

The ELE consumption levels for these two meters have a sudden change on 8/14/2015. The consumption level for meterID 005274 increased by approximate 80 kWh/h (~ 100%) and the consumption level for meter ID 005275 decreased by around 80 kWh/h (~50%).

It was observed that the cumulative reading for these two meters switched on 8/14/2015 12:00 AM. It is suggested to investigate these two meters.

Explanatory Figure: The time series plot of hourly electricity consumption for two ELE meters #005274 and# 005275



Explanatory Figure: The time series plot of hourly electricity consumption for two ELE meters #005274 and# 005275

Time	Cumulative reading	Hourly Consumption	MeterID	Time	Cumulative reading	Hourly Consumption	MeterID
08/13/2015 12:00:00 PM	2930884.013	84.262	005274	08/13/2015 12:00:00 PM	4741958.002	170.658	005275
08/13/2015 01:00:00 PM	2930908.589	84.576	005274	08/13/2015 01:00:00 PM	4742132.336	174.334	005275
08/13/2015 02:00:00 PM	2931051.959	83.37	005274	08/13/2015 02:00:00 PM	4742303.554	171.218	005275
08/13/2015 03:00:00 PM	2931146.799	94.84	005274	08/13/2015 03:00:00 PM	4742483.683	180.129	005275
08/13/2015 04:00:00 PM	2931240.505	93.709	005274	08/13/2015 04:00:00 PM	4742662.753	179.07	005275
08/13/2015 05:00:00 PM	2931324.169	83.664	005274	08/13/2015 05:00:00 PM	4742832.009	169.256	005275
08/13/2015 06:00:00 PM	2931399.91	75.741	005274	08/13/2015 06:00:00 PM	4742993.53	161.521	005275
08/13/2015 07:00:00 PM	2931472.181	72.271	005274	08/13/2015 07:00:00 PM	4743149.675	156.145	005275
08/13/2015 08:00:00 PM	2931543.838	71.657	005274	08/13/2015 08:00:00 PM	4743305.9	156.225	005275
08/13/2015 09:00:00 PM	2931613.306	69.468	005274	08/13/2015 09:00:00 PM	4743462.087	156.197	005275
08/13/2015 10:00:00 PM	2931672.706	59.4	005274	08/13/2015 10:00:00 PM	4743610.221	148.134	005275
08/13/2015 11:00:00 PM	2931733.072	60.366	005274	08/13/2015 11:00:00 PM	4743745.645	135.424	005275
08/14/2015 12:00:00 AM	4743876.03	130.385	005274	08/14/2015 12:00:00 AM	2931791.19	58.118	005275
08/14/2015 01:00:00 AM	4744008.406	132.376	005274	08/14/2015 01:00:00 AM	2931849.35	58.16	005275
08/14/2015 02:00:00 AM	4744141.74	133.334	005274	08/14/2015 02:00:00 AM	2931908.534	59.184	005275
08/14/2015 03:00:00 AM	4744272.553	130.813	005274	08/14/2015 03:00:00 AM	2931966.686	58.152	005275
08/14/2015 04:00:00 AM	4744404.045	131.492	005274	08/14/2015 04:00:00 AM	2932023.589	56.903	005275
08/14/2015 05:00:00 AM	4744534.38	130.335	005274	08/14/2015 05:00:00 AM	2932080.05	56.461	005275
08/14/2015 06:00:00 AM	4744667.111	132.731	005274	08/14/2015 06:00:00 AM	2932137.05	57	005275
08/14/2015 07:00:00 AM	4744820.038	152.927	005274	08/14/2015 07:00:00 AM	2932232.983	95.933	005275
08/14/2015 08:00:00 AM	4744972.221	152.183	005274	08/14/2015 08:00:00 AM	2932319.182	86.179	005275
08/14/2015 09:00:00 AM	4745134.467	162.246	005274	08/14/2015 09:00:00 AM	2932404.691	85.529	005275
08/14/2015 10:00:00 AM	4745308.905	174.438	005274	08/14/2015 10:00:00 AM	2932489.976	85.285	005275
08/14/2015 11:00:00 AM	4745476.832	167.927	005274	08/14/2015 11:00:00 AM	2932564.419	74.443	005275
08/14/2015 12:00:00 PM	4745634.44	157.608	005274	08/14/2015 12:00:00 PM	2932634.064	69.645	005275
08/14/2015 01:00:00 PM	4745789.345	154.905	005274	08/14/2015 01:00:00 PM	2932704.723	70.659	005275
08/14/2015 02:00:00 PM	4745949.369	160.024	005274	08/14/2015 02:00:00 PM	2932777.973	72.255	005275
08/14/2015 03:00:00 PM	4746110.346	160.977	005274	08/14/2015 03:00:00 PM	2932845.908	68.535	005275
08/14/2015 04:00:00 PM	4746270.903	160.571	005274	08/14/2015 04:00:00 PM	2932920.525	74.617	005275
08/14/2015 05:00:00 PM	4746431.347	160.444	005274	08/14/2015 05:00:00 PM	2932996.835	76.31	005275
08/14/2015 06:00:00 PM	4746596.415	155.068	005274	08/14/2015 06:00:00 PM	2933075.618	68.683	005275
08/14/2015 07:00:00 PM	4746727.476	141.061	005274	08/14/2015 07:00:00 PM	2933127.559	62.041	005275
08/14/2015 08:00:00 PM	4746864.372	136.896	005274	08/14/2015 08:00:00 PM	2933195.384	67.825	005275
08/14/2015 09:00:00 PM	4747004.372	140	005274	08/14/2015 09:00:00 PM	2933263.632	68.248	005275
08/14/2015 10:00:00 PM	4747137.886	133.514	005274	08/14/2015 10:00:00 PM	2933323.26	59.628	005275
08/14/2015 11:00:00 PM	4747269.569	131.683	005274	08/14/2015 11:00:00 PM	2933382.3	59.04	005275

Reed Arena (TAMU Bldg #1554)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	006243	19	4/1/2016-4/19/2016	Model

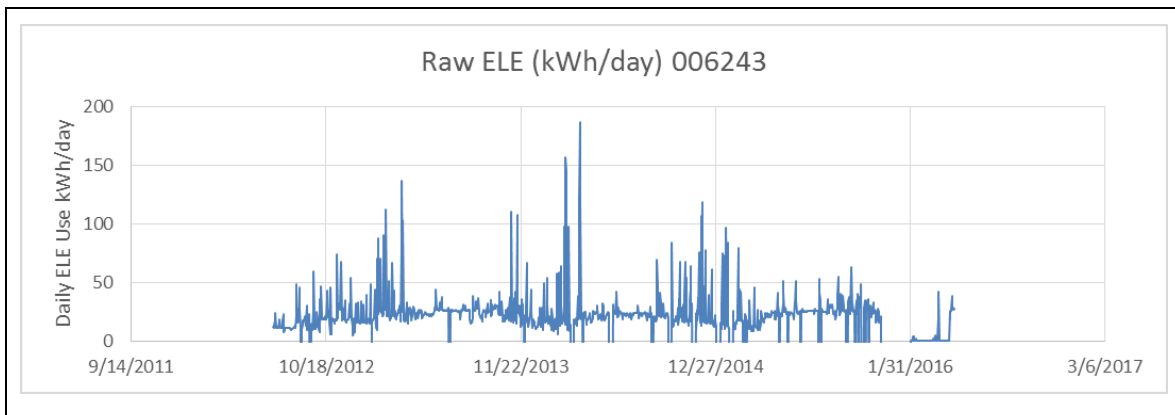
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption decreased largely.	2/1/2016-3/28/2016 3/30/2016-4/19/2016

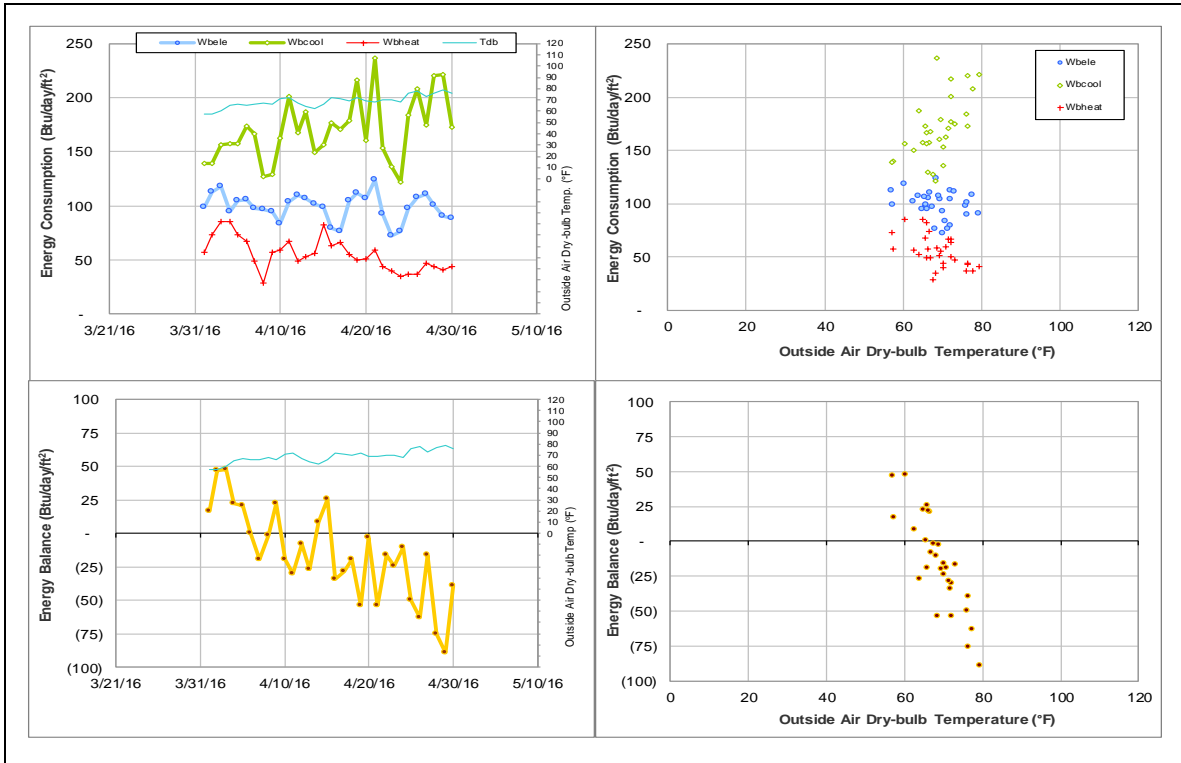
Quantitative descriptions and comments

There are three ELE meters for this building. The consumption for one of them (ELE MID 006243) only counts for around 0.3% of total ELE consumption for this building. The consumption for ELE MID 006243 decreased to nearly zero since 2/1/2016. It increased back on 3/28/2016, but decreased to nearly zero during 3/30/2016 – 4/19/2016. However, it doesn't affect the energy balance. The problem seemed to be fixed on 4/20/2016. The problematic consumption was estimated by a model based on the data during 1/1/2015 – 12/31/2015.

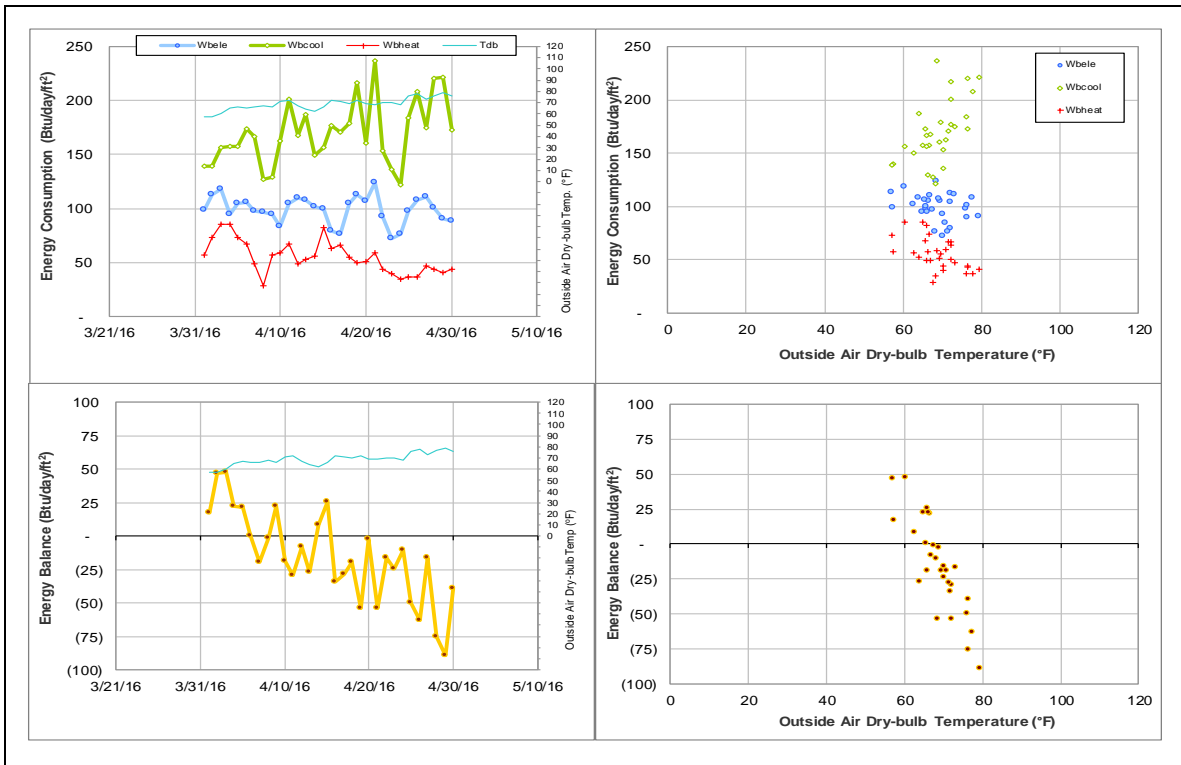
Explanatory Figure: Time series plot for ELE meter 006243



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



Cox-McFerrin Center for Aggie Basketball (TAMU Bldg #1558)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	007577	30	4/1/2016-4/30/2016	Model

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The consumption is lower than that of same month last year.	Feb 2016-ongoing

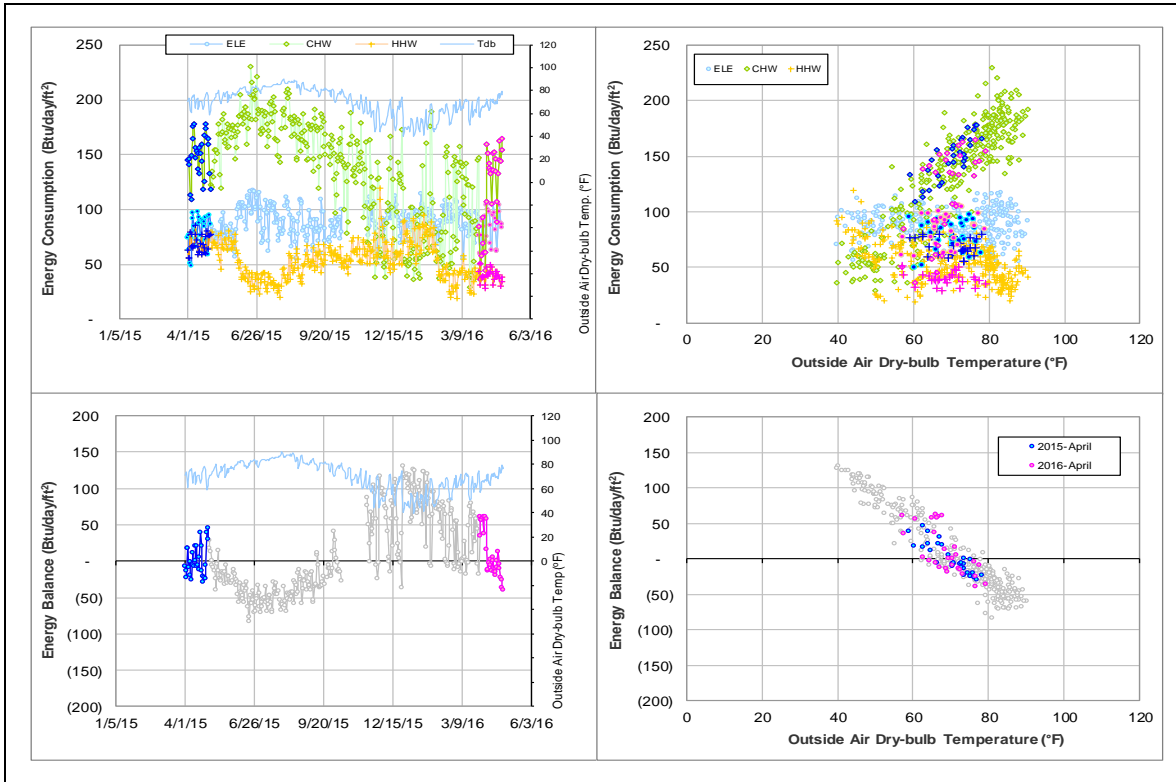
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	007577	Feb 2016-ongoing	Flow rate	Decreased

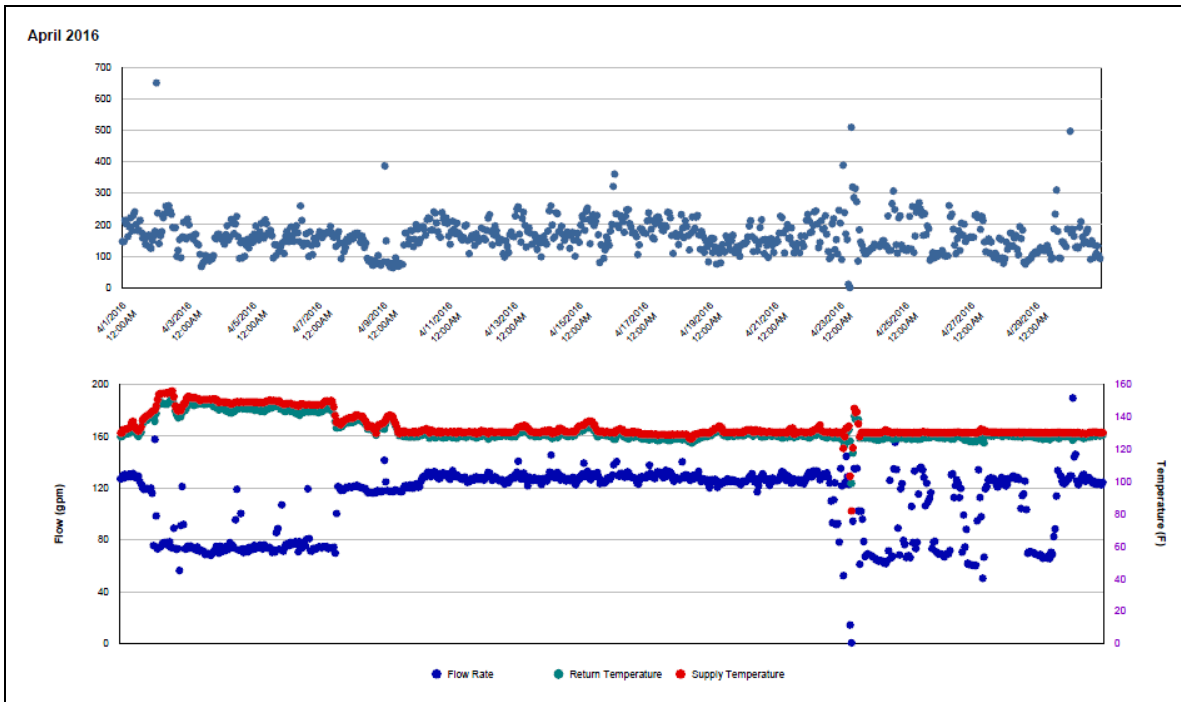
Quantitative descriptions and comments

The HHW consumption around 50 Btu/day/ft² lower than that of same month last year since February 2016. The consumption was estimated by a model.

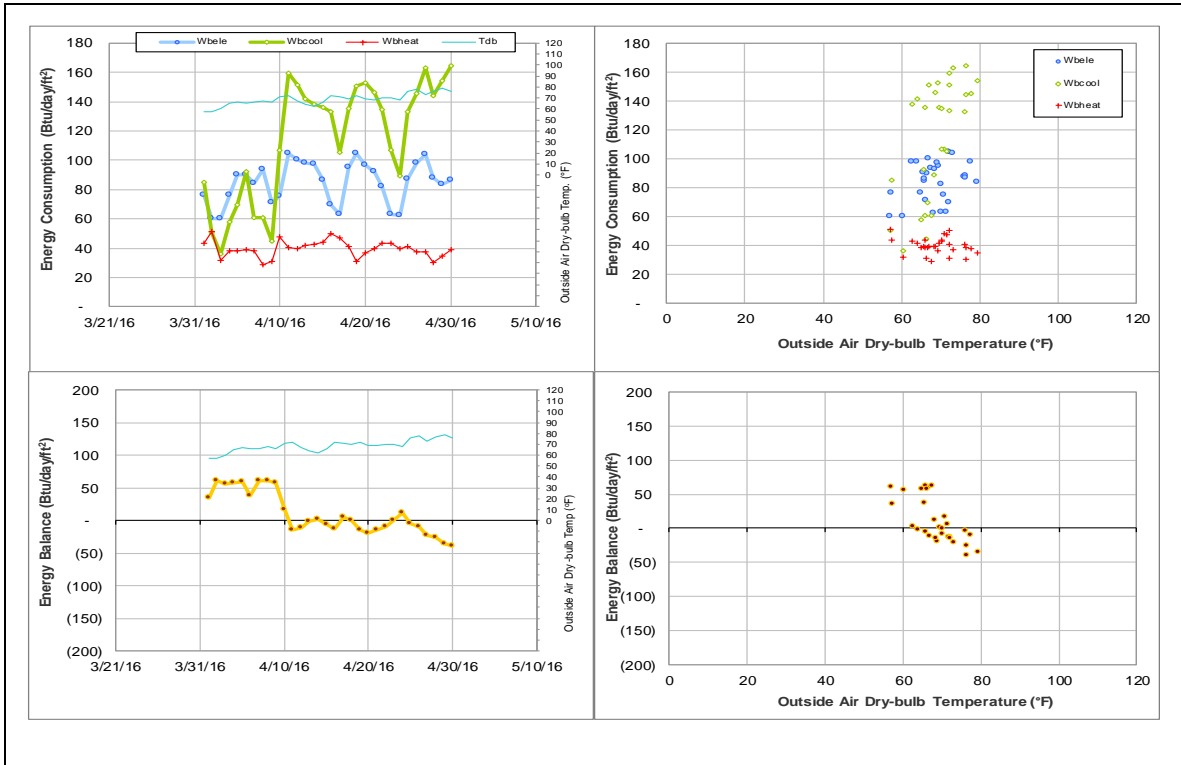
Explanatory Figure: 13 months energy balance plot with original data



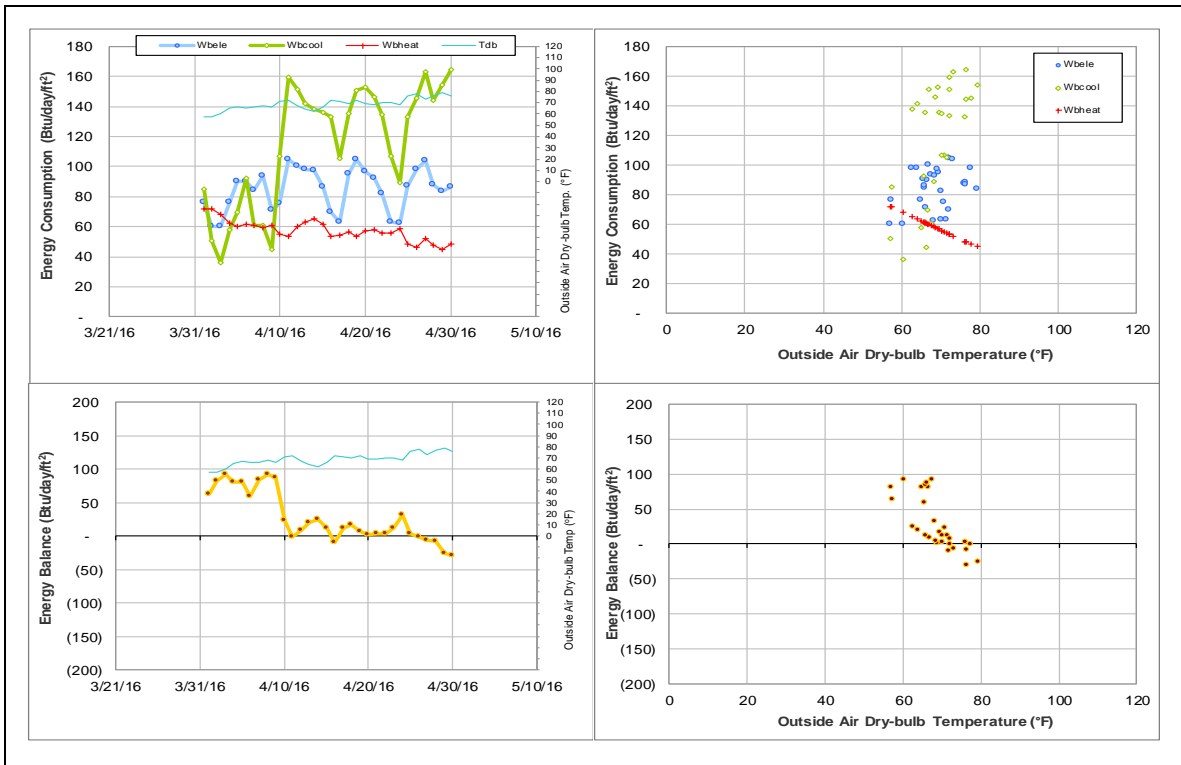
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office (HHW meter April 2016)



Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.



Energy balance plot using the estimated data for the month of analysis



II-3 Meters with Significant Issues in Energy Consumption Data

In this section, significant issues in the data behavior are described. On the contrary to the section II-2, alternative consumption is not estimated for some reasons: presence of continuous problems since the beginning of the data acquisition, unbalanced energy uses in the past data, changes in the consumption patterns without evidence of data problems, etc. Table II-3 gives a list of meters included in this section.

Table II-3 Meters with significant issues in the consumption data during April 2016

Building No.	Building Name	MeterID	Type
290	Wells Residence Hall	001984	CHW
		001988	HHW
291	Rudder Residence Hall	002132	CHW
		002136	HHW
293	Appelt Residence Hall	002062	CHW
		002066	HHW
353	Bright Aerospace Building	002746	CHW
		002757	HHW
394	Underwood Residence Hall	002117	CHW
		002121	HHW
398	Langford Architecture Center Building A	003951	CHW
		003955	HHW
412	Moses Residence Hall	002384	CHW
420	Milner Hall	009145	CHW
		009146	HHW
433	Mosher Residence Hall	009083	ELE
463	Psychology Building	002941	CHW
467	Biological Sciences Building - East	001543	ELE
		003862	HHW
468	Evans Library	003701	CHW
		003895	CHW
		003903	CHW
		003911	CHW
		003712	HHW
		003899	HHW
		003907	HHW
		003922	HHW
		005303	HHW
		471	Pavilion
496	Utilities & Energy Services Central Office	007706	ELE
		006929	CHW
		006933	HHW
499	Engineering Innovation Center	002672	CHW
		002683	HHW
506	Nagle Hall	001484	ELE
524	Blocker building	002918	HHW
880	TVMC-Small Animal Building	005962	HHW
1026	Veterinary Medicine Administration	006053	HHW
1146	Biological Control Facility	005795	ELE
		005891	HHW
1156	Physical Plant Administration & Shops	007679	CHW
1197	Veterinary Research Building	006355	ELE
		006359	ELE
1501	Kleberg Center	002624	CHW
1559	West Campus Parking Garage	004322	CHW
1601	International Ocean Discovery Building	008144	CHW
1604	Offshore Technology Research Center	006660	ELE
		008462	ELE
		008463	CHW
		008467	HHW
1611	Engineering Research Building		

Wells Residence Hall (TAMU Bldg #290)

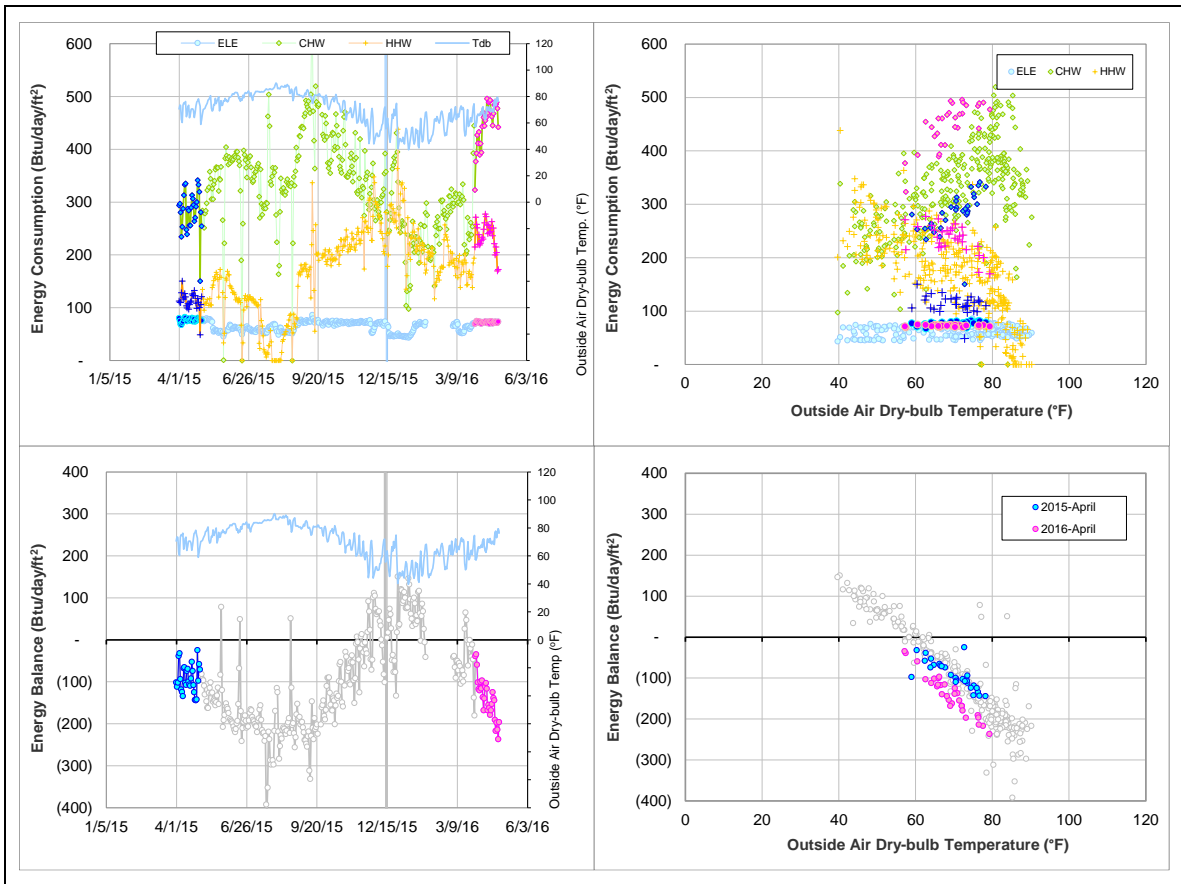
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW/HHW	Both the CHW and HHW consumption levels are higher than the same month of last year.	April 2016

Comments

Both the CHW and HHW consumption increased in the month of April 2016. The CHW consumption of this month was about 150 Btu/day/ft² higher than the same month of last year, while the HHW consumption increased 100 Btu/day/ft² comparing with the last year. This building has a low level of energy balance load with the cross-point temperature around 60°F, and it was even lower for this month, around 55°F. The low E_{BL} level suggests imbalance of metered energy use in the building, but we are not able to determine the cause.

Explanatory Figure: 13 months energy balance plot with original data



Rudder Hall (TAMU Bldg #291)

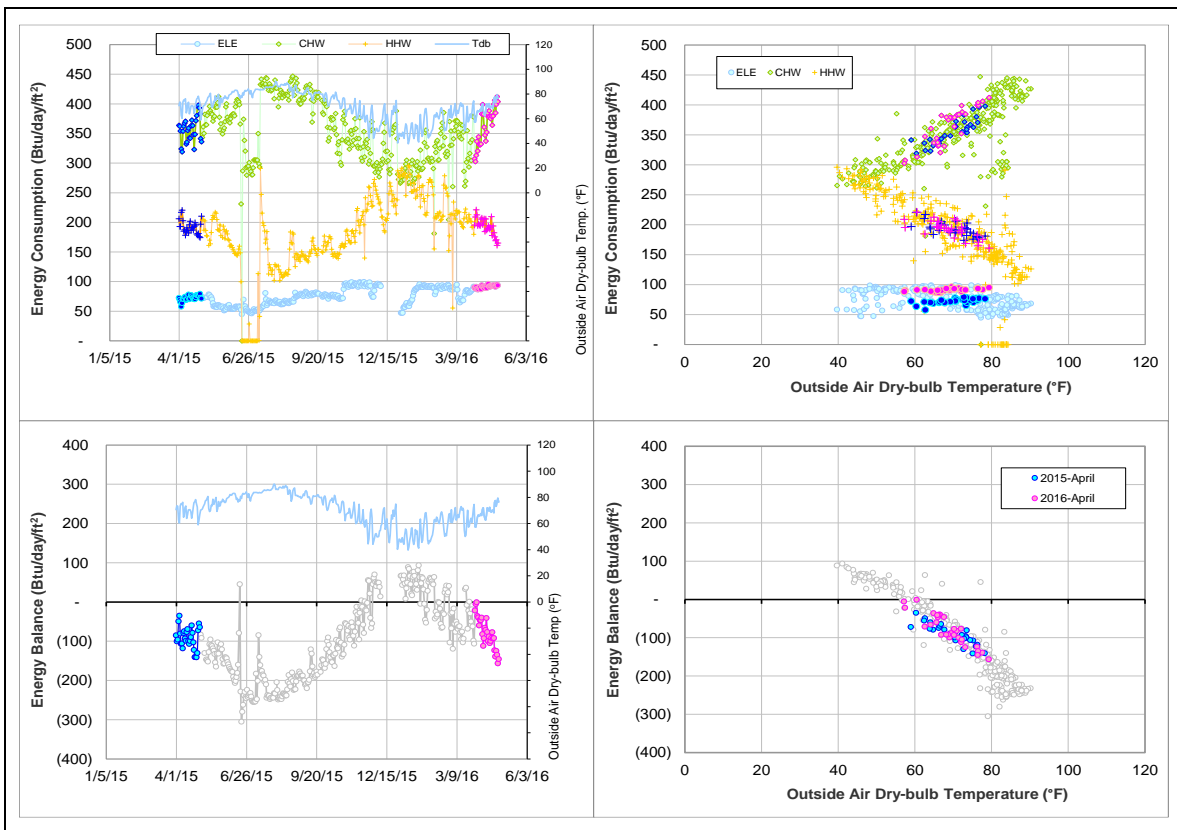
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The energy balance level is low. The cross-point temperature is around 60°F.	For several years

Comments

This building has a low level of energy balance load with the cross-point temperature around 60°F for the past year. The low E_{BL} level suggests imbalance of metered energy use in the building, but we are not able to determine the cause.

Explanatory Figure: 13 months energy balance plot with original data



Appelt Residence Hall (TAMU Bldg #293)

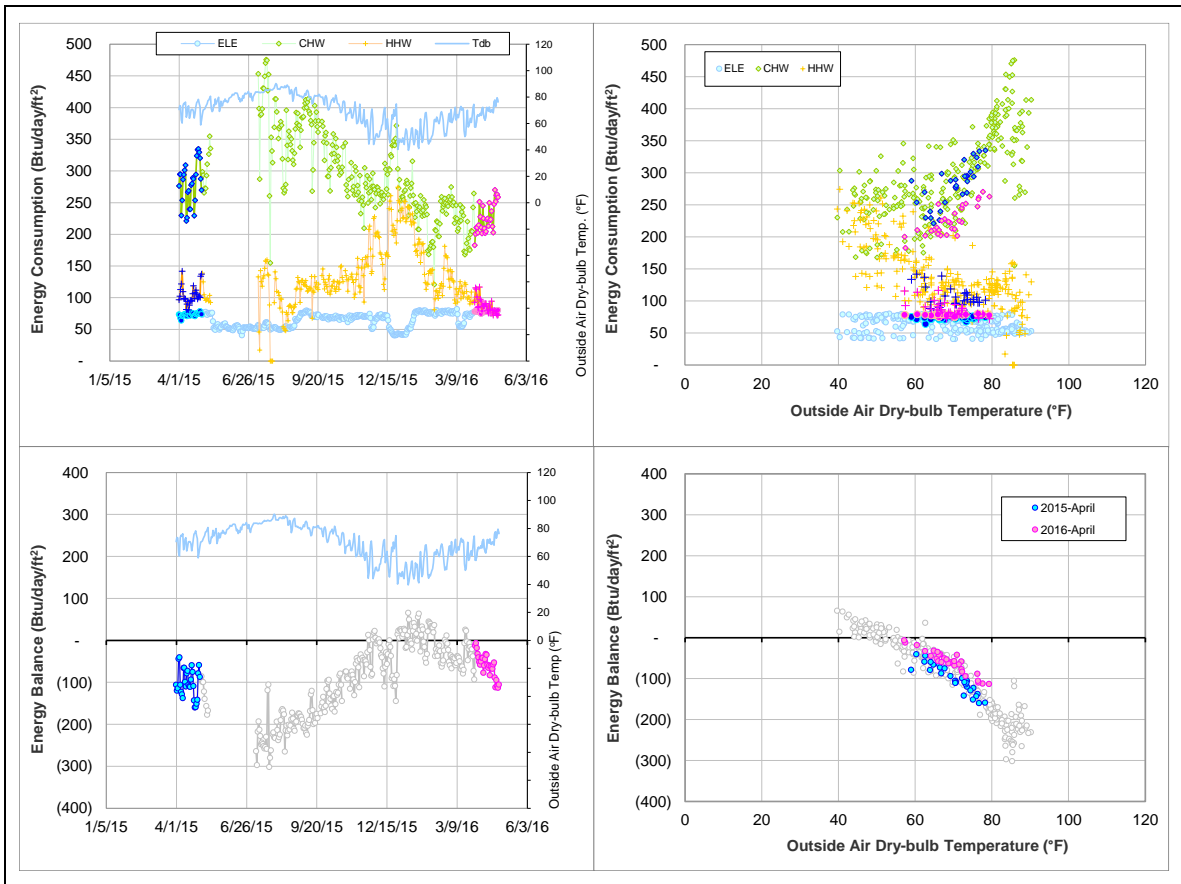
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level suddenly decreased.	Since December 2014
HHW	The consumption gradually decreased.	Since January 2015
Energy Balance	The energy balance decreased and the cross-point temperature is around 55°F.	Since January 2015

Comments

Both the CHW and HHW consumption levels have decreased, respectively. As a result, the energy balance load was low with the cross-point temperature around 55°F. The low E_{BL} level suggests imbalance of metered energy use in the building, but we are not able to determine the cause.

Explanatory Figure: 13 months energy balance plot with original data



Bright Building (TAMU Bldg #353)

Detected issues in the energy balance and/or the consumption data

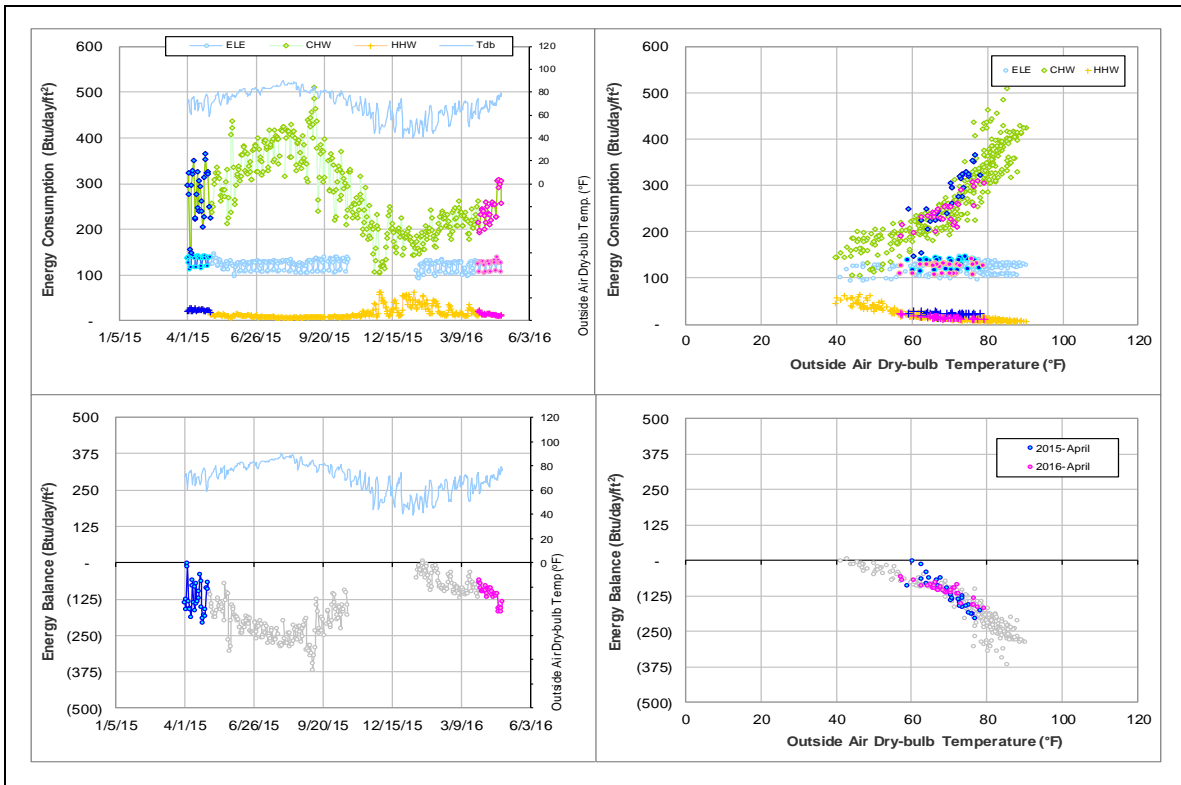
Data Type	Description of data behaviors	Period
Energy Balance	The energy balance level has been low for years. The cross-point temperature was in the range of 40- 70 °F.	For several years
	The energy balance level increased to more reasonable level.	October 2014 – December 2015
	The energy balance level decreased.	January 2016 - ongoing

Comments

The energy balance load (E_{BL}) of this building has been low and the cross-point temperature was around 50°F for years. The electricity use level was in a typical range for office and classroom buildings on campus. Therefore, either CHW or HHW consumption might be causing the unbalanced energy balance in the building.

The CHW consumption gradually decreased since October 2014, which made the energy balance shifted to more reasonable range and the temperature at $E_{BL} = 0$ was 60°F. The HHW consumption increased during January to March of 2015, but then it decreased back and even a little lower for recent months. As a result, the energy balance decreased with the cross point temperature lower than 50°F.

Explanatory Figure: 13 months energy balance plot with original data



Underwood Hall (TAMU BLDG # 394)

Detected issues in the energy balance and/or the consumption data

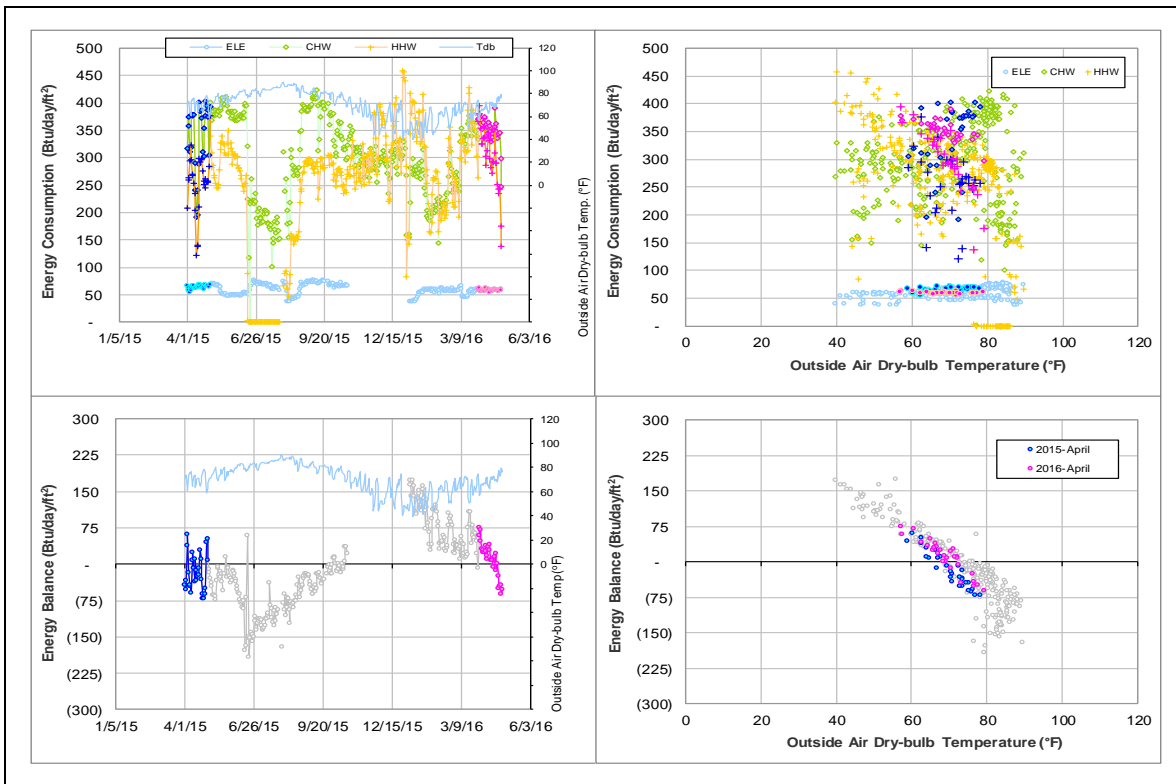
Data Type	Description of data behaviors	Period
CHW and HHW	The consumption varied frequently.	Since June 2015
CHW	The consumption pattern was very scattering and no clear temperature dependence was observed.	For one year

Comments

Both CHW and HHW consumption increased or decreased at the same time since June 2015. As we know, VFDs have been installed for HHW and CHW in December 2014 and June 2015, respectively.

The CHW consumption pattern was very scattering and no clear temperature dependence was observed for last year. It is suggested to investigate this meter.

Explanatory Figure: 13 months energy balance plot with original data



Langford Architecture Center Building A (TAMU BLDG # 398)

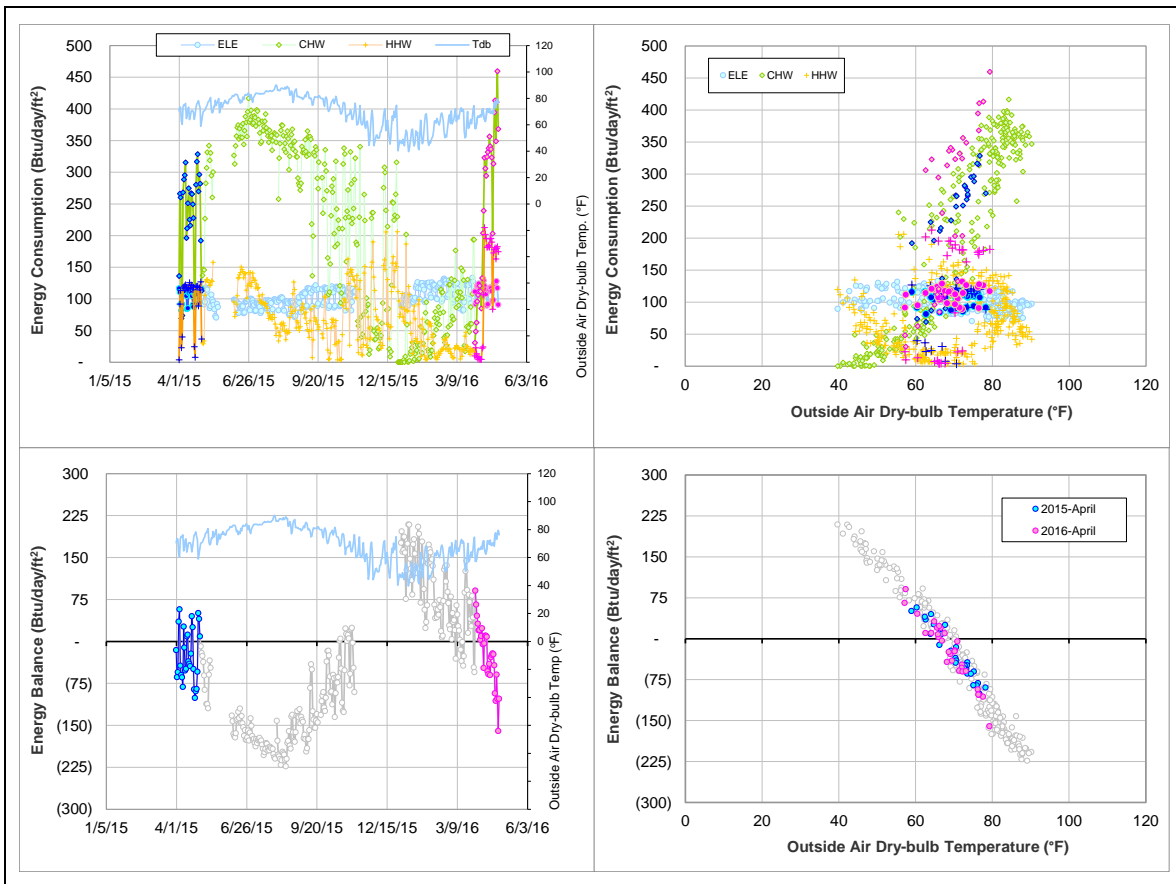
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW and HHW	The consumption increased suddenly.	Since 4/11/2016

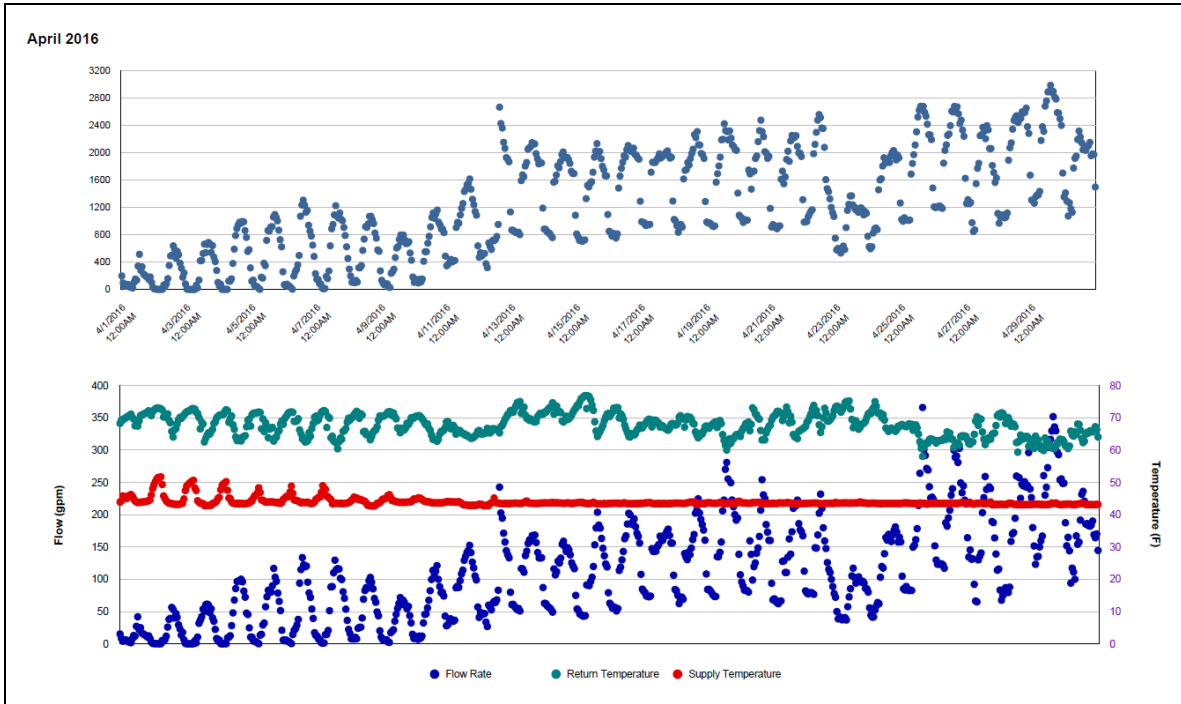
Comments

The CHW flow rate increased gradually after 4/10/2016. While the HHW flow rate suddenly increased from 10 gpm on 4/11/2016 and further increased to 120 gpm after 4/13/2016. The HHW delta-T also increased since 4/11/2016. As a result, both CHW and HHW consumption increased by 100 Btu/day/ft² in the month of April 2016 comparing to the same month of last year, but the energy balance had no change and its cross point temperature was reasonable (nearly 70°F).

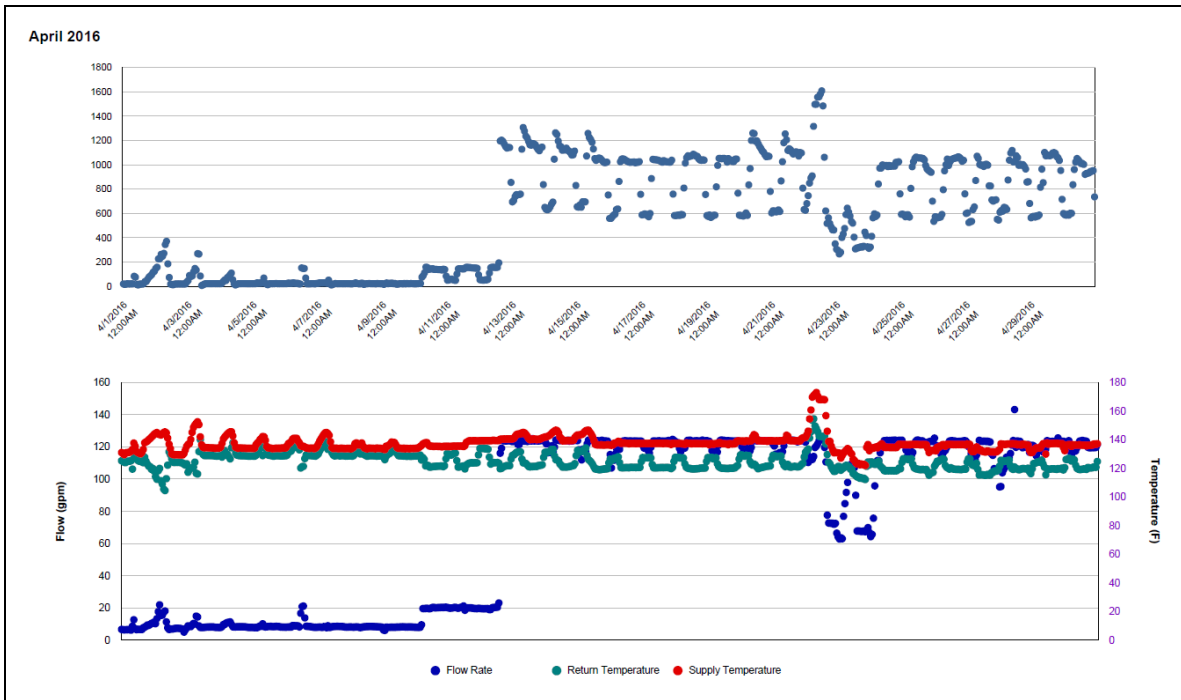
Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during April 2016)



Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during April 2016)



Moses Residence Hall (TAMU BLDG # 412)

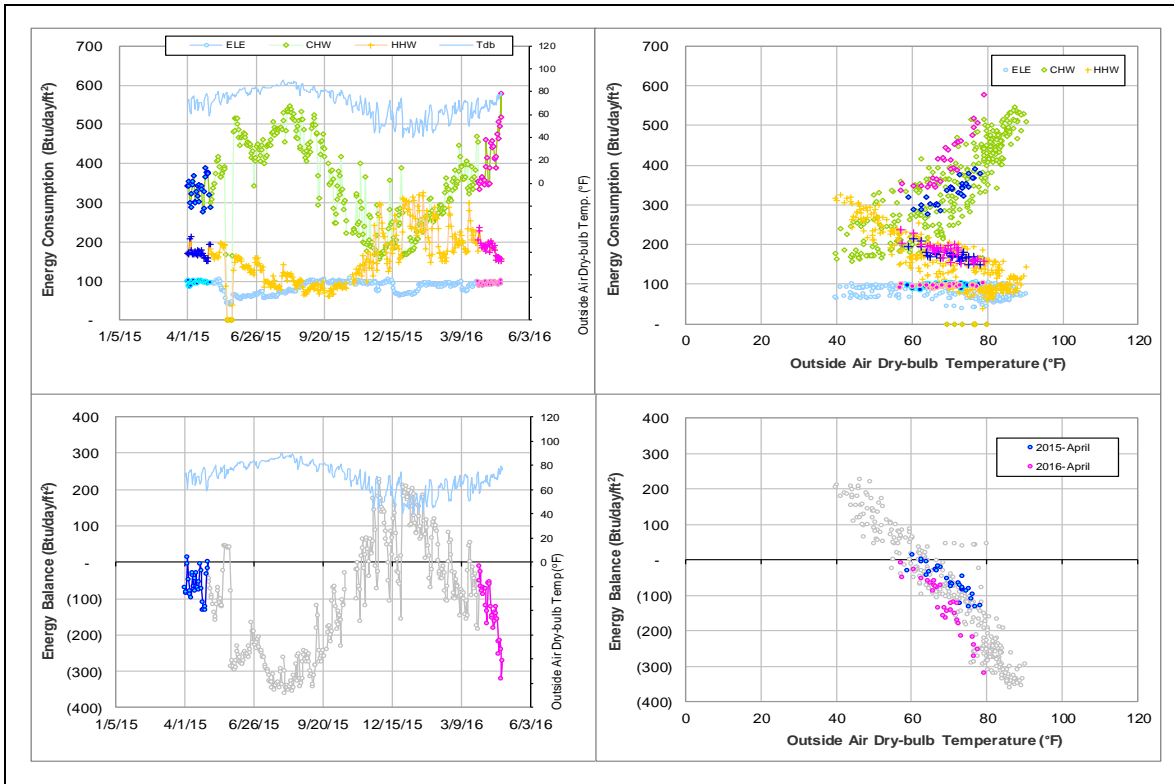
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level was higher than the same month of last year.	Since March 2016
Energy Balance	The energy balance decreased and the cross-point temperature was around 55°F.	Since March 2016

Comments

The CHW consumption was about 80 Btu/day/ft² higher than the same month of the last year since March 2016, which resulted the lower energy balance with the cross-point temperature decreased from 65°F to 55°F.

Explanatory Figure: 13 months energy balance plot with original data



Milner Hall (TAMU BLDG # 420)

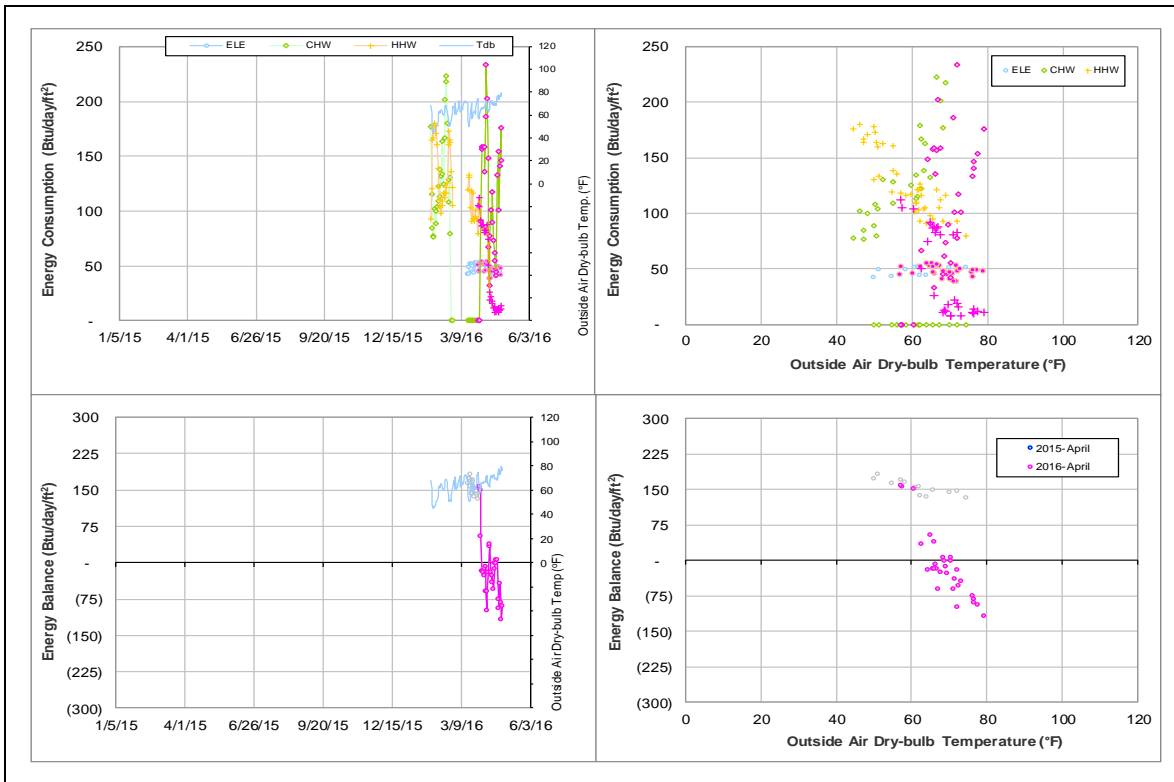
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW and HHW	The consumption level suddenly decreased.	Since 4/14/2016

Comments

Both the CHW and HHW consumption suddenly decreased by 70 Btu/day/ft² since 4/14/2016, but the energy balance was in a reasonable range with the cross-point temperature around 70°F.

Explanatory Figure: 13 months energy balance plot with original data



Mosher Residence Hall (TAMU BLDG # 433)

Detected issues in the energy balance and/or the consumption data

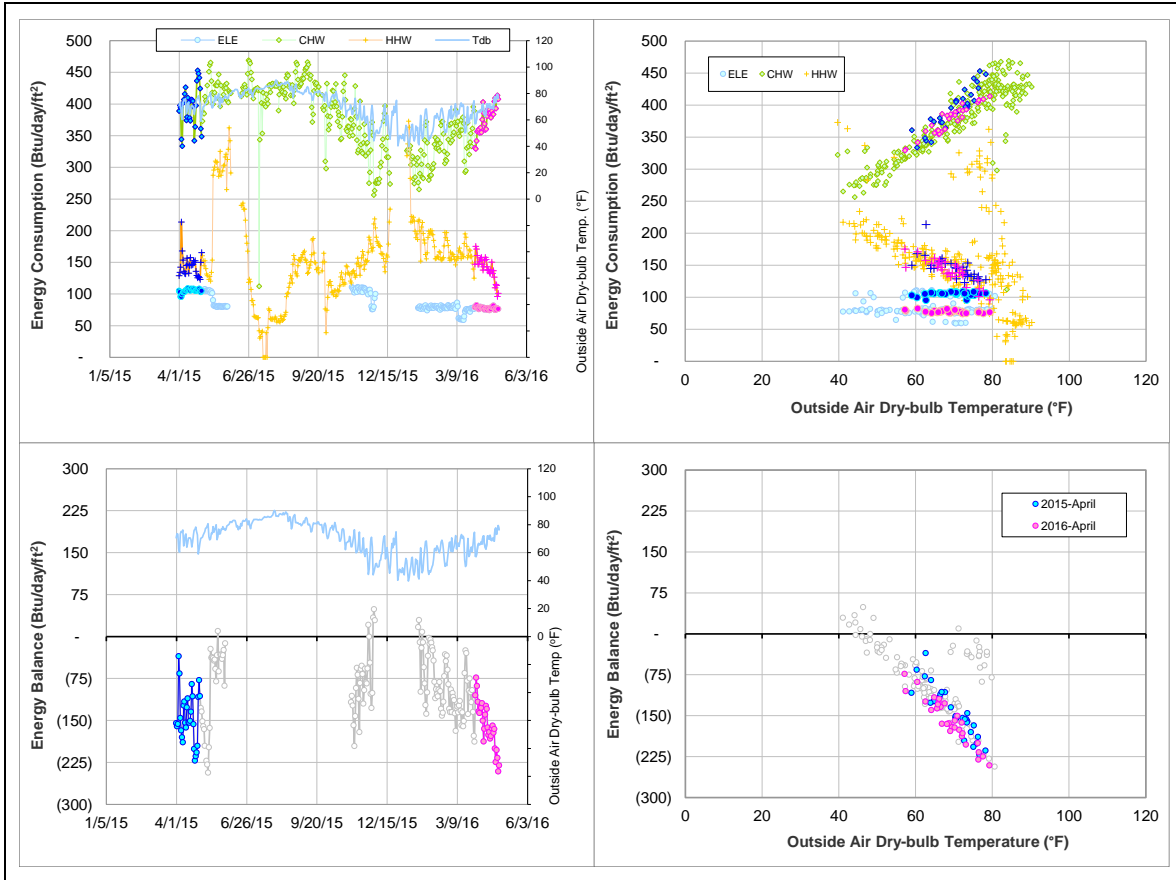
Data Type	Description of data behaviors	Period
ELE 009083	The consumption level suddenly decreased.	Since 1/23/2016

Comments

The cross-point temperature for this building was around 55°F before March 2015. CHW consumption increased 50- 100 Btu/day/ft² due to an increase of flow rate after March 2015 and the pattern was stable over one year. As a result, the cross-point temperature decreased from ~ 55°F to ~50°F.

The ELE meter (MID 009083) replaced old meter (MID 000290) since January 2016. After that, the consumption decreased from ~105 Btu/day/ft² to ~80 Btu/day/ft² (approximately 25%). The CHW and HHW consumption levels didn't changed. The cross-point temperature was further decreased and it is lower than 50°F now. It is suggested to investigate this meter.

Explanatory Figure: 13 months energy balance plot with original data



Psychology Building (TAMU Bldg #463)

Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The pattern scatters and the level is low.	For several years after ESCO implementation in 2011
CHW	The consumption pattern versus ambient temperature scatters.	

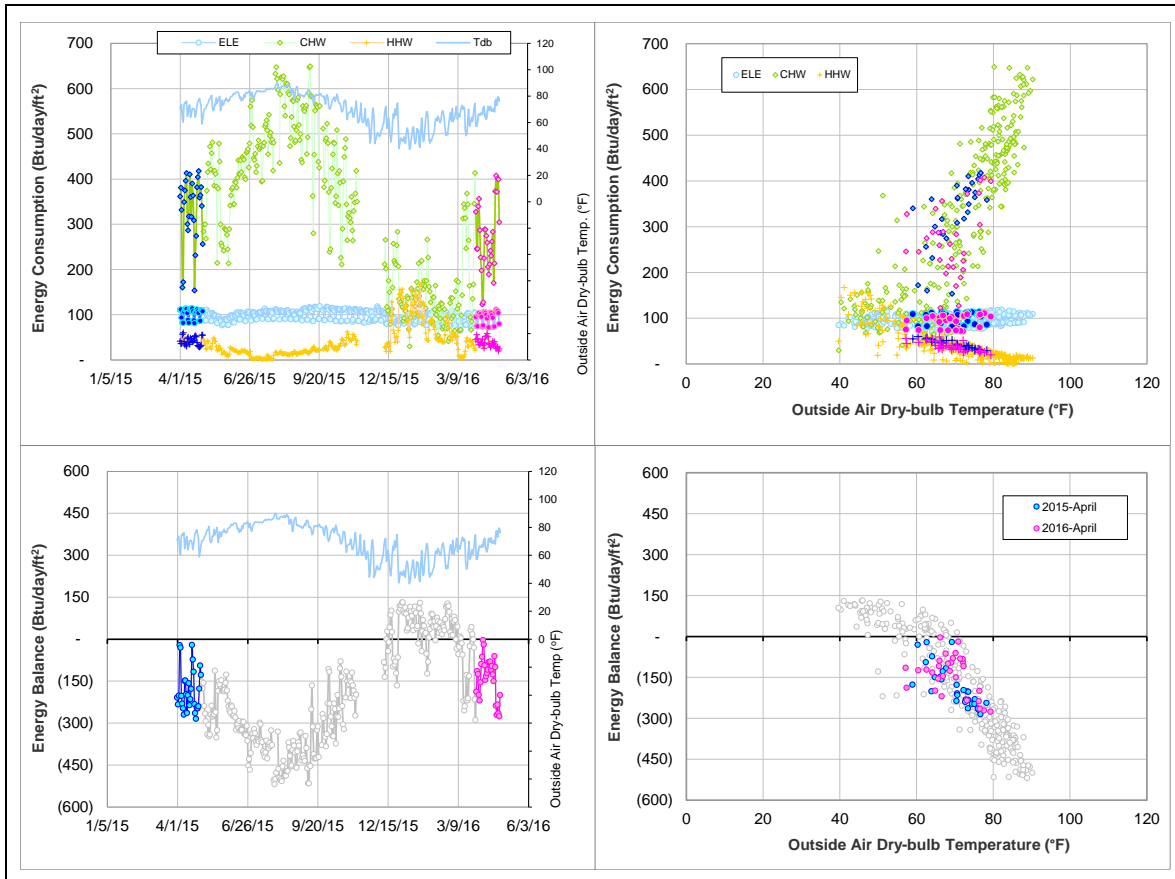
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002941	11/29/2012–ongoing	Delta T	Large for office building

Quantitative descriptions and comments

The CHW consumption pattern versus ambient temperature started to scatter after ESCO implementation. The CHW consumption level is high, because the CHW temperature differential is around 20°F that is high for an office building with conventional HVAC systems. The cross-point temperature of the energy balance is 50 - 70°F. The building had energy efficiency improvements by ESCO during the period of 5/9/2011–8/19/2011.

Explanatory Figure: 13 months energy balance plot with original data



Biological Sciences Building – East (TAMU Bldg # 467)

Detected issues in the energy balance and/or the consumption data

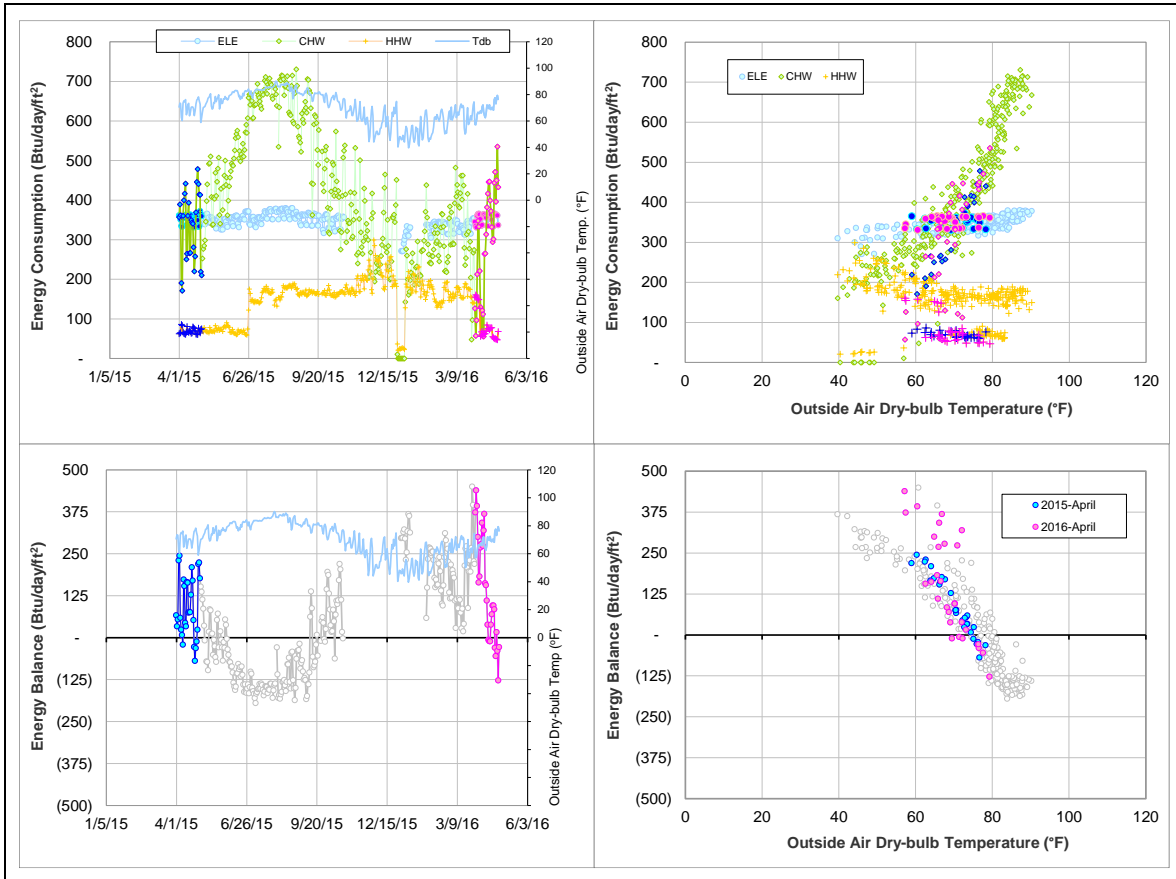
Data Type	Description of data behaviors	Period
ELE	The consumption level may be high.	1/2/2013–ongoing
HHW	The consumption level suddenly increased.	6/26/2015–4/8/2016

Comments

The ELE consumption suddenly increased after 1/2/2013 by approximately 100 Btu/day/ft². There was a power outage in the building right before this increase. The CHW and HHW consumption levels did not change. The increased ELE usage level was in the range 290 - 390 Btu/day/ft² for the last year, which was higher than those for other buildings with similar functionality. For example, the ELE use range in the adjacent Biological Sciences Building – West (Bldg 449) was 190 –250 Btu/day/ft² during the same time period. These buildings have similar CHW and HHW consumption levels. The energy balance load after the ELE increase was higher than expected range by approximately 120 Btu/day/ft². The increase of the ELE use in Biological Sciences Building – East after 1/2/2013 was questionable and this meter needs attention.

The HHW consumption suddenly increased about 100 Btu/day/ft² since 6/26/2015 due to an increase in the delta-T, and it decreased back to the previous consumption level after 4/8/2016.

Explanatory Figure: 13 months energy balance plot with original data



Evans Library (TAMU BLDG # 468)

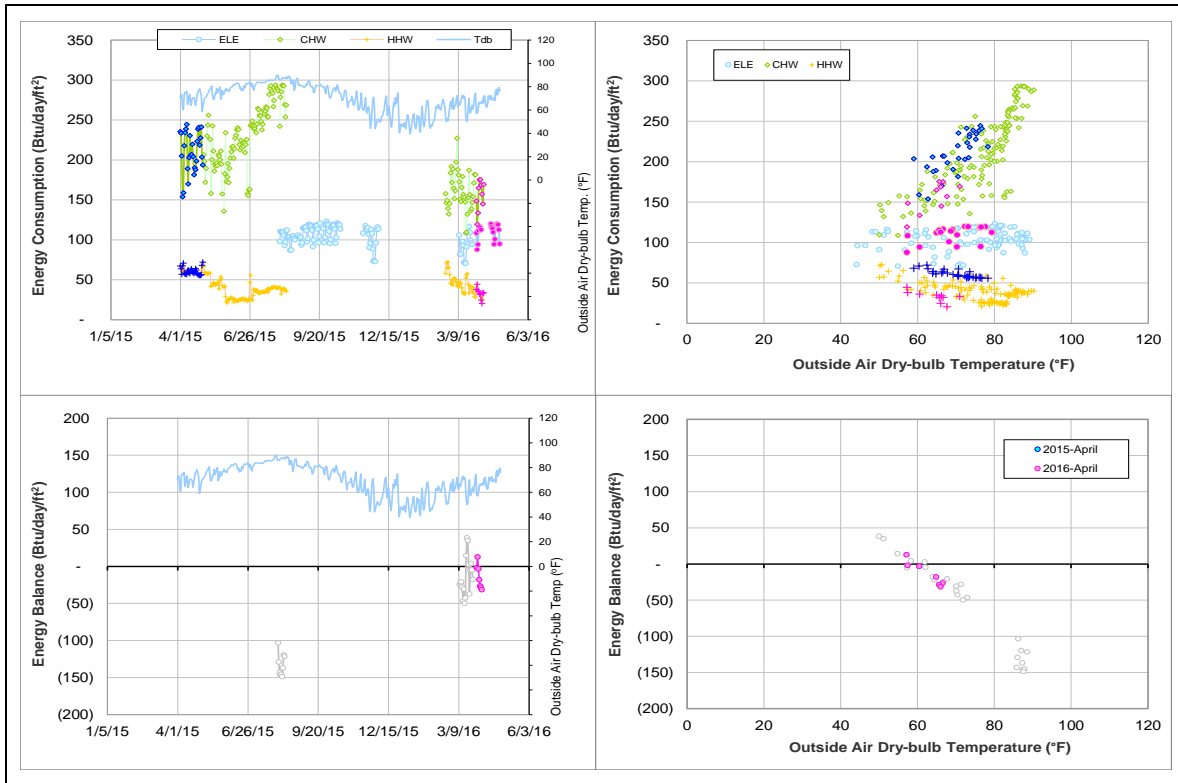
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The cross-point temperature was low.	2/23/2016–ongoing
CHW and HHW	The consumption level was lower than the same period of last year.	2/23/2016–ongoing

Comments

CHW includes 4 meters and HHW includes 5 meters. For years, the meters reading consumption varied year by year, but the total CHW or HHW use followed reasonable trends. After about 6 months (8/11/2015 – 2/22/2016) of missing data for one CHW meter (Meter ID 003903) and one HHW meter (Meter ID 003907), both total CHW and total HHW consumption was about 30 Btu/day/ft² lower than the same period of last year. The energy balance decreased gradually for years, and it was a little low after 2/23/2016 with the cross-point temperature around 60°F.

Explanatory Figure: 13 months energy balance plot with original data



Pavilion (TAMU Bldg #471)

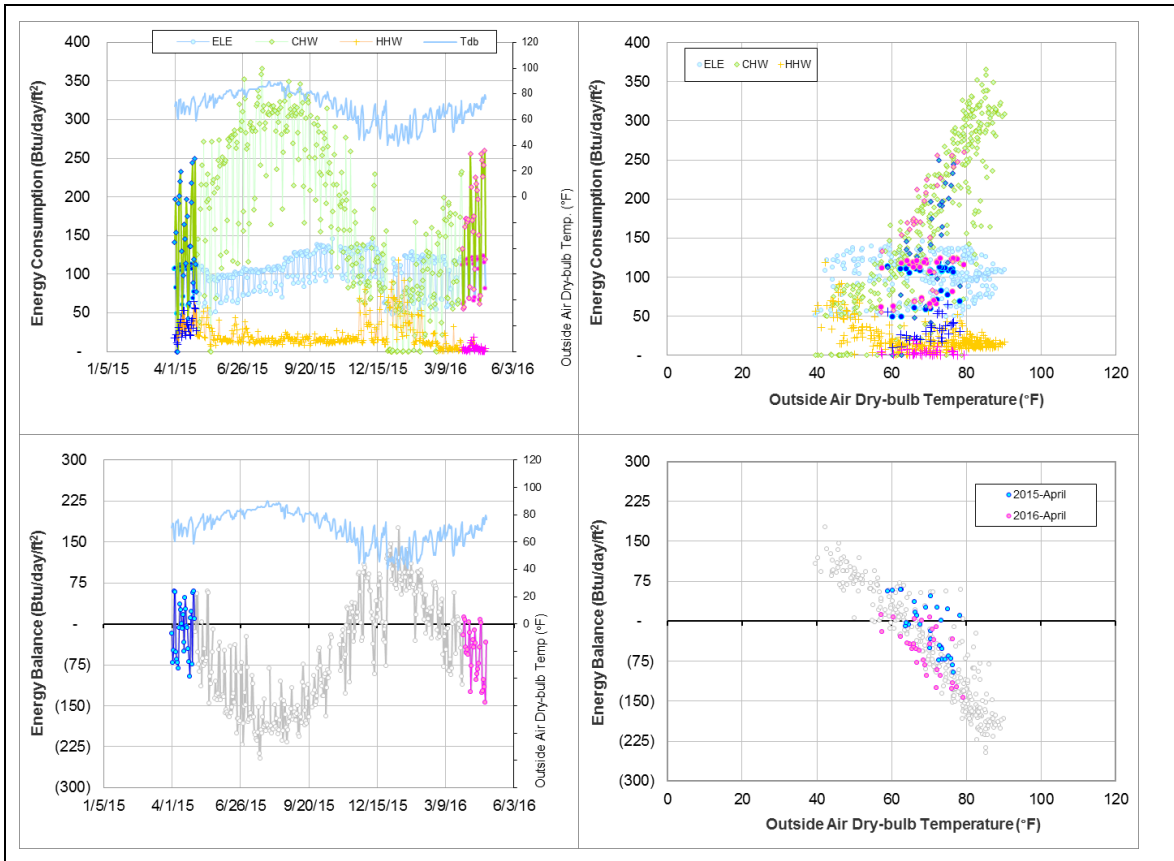
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	Drop in HHW flow.	3/2/2016 – ongoing

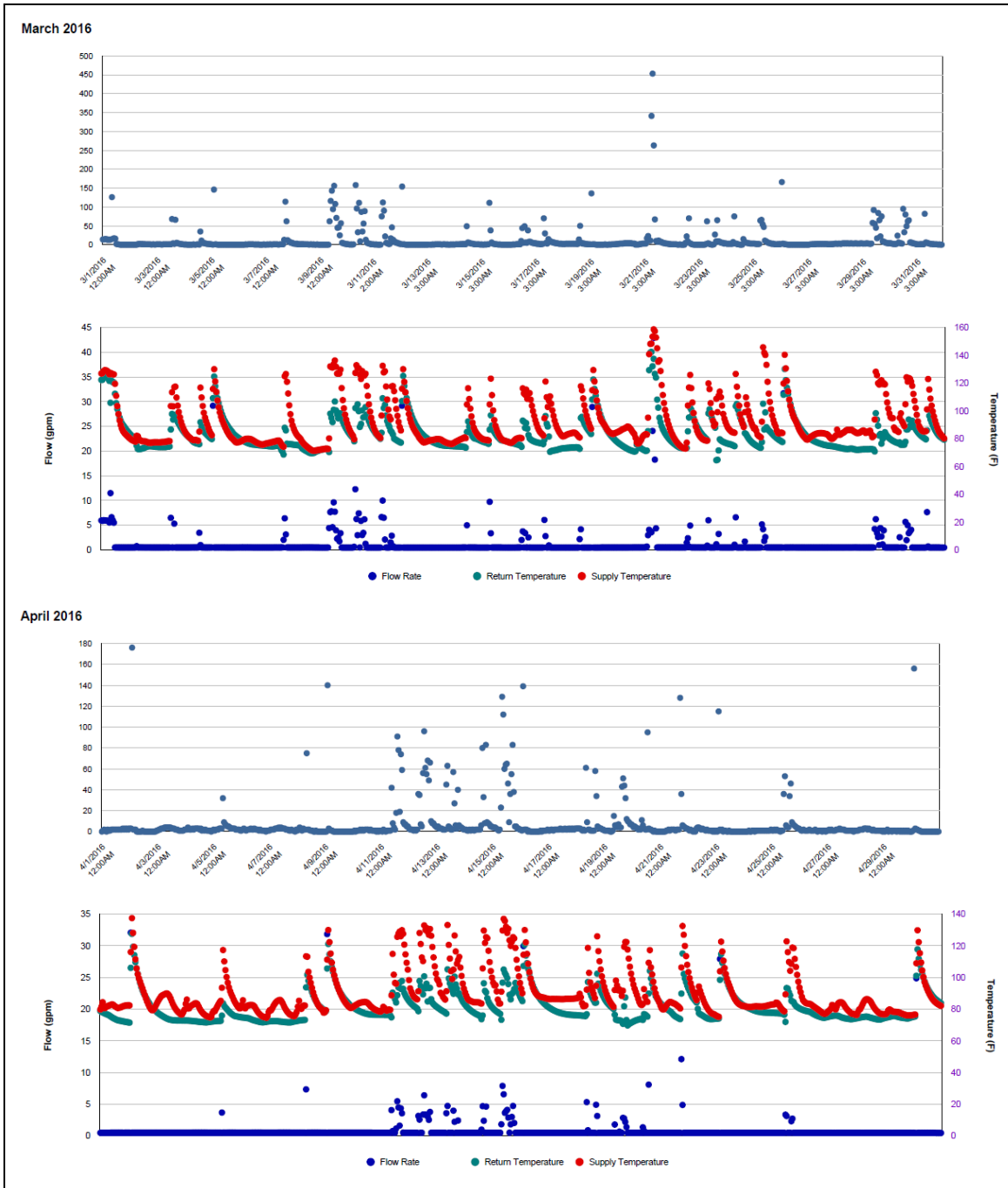
Quantitative descriptions and comments

Prior to March 2016, the HHW minimum flow ranged around 6 gpm. Starting March 2, 2016 the HHW minimum flow dropped to around 0 gpm.

Explanatory Figure: 13 months energy balance plot with original data.



Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from the utilities office for March 2016 (above) and April 2016 (below). The March plot shows the drop in flow around the 2nd.



Utilities & Energy Services Central Office (TAMU Bldg #496)

Detected issues in the energy balance and/or the consumption data

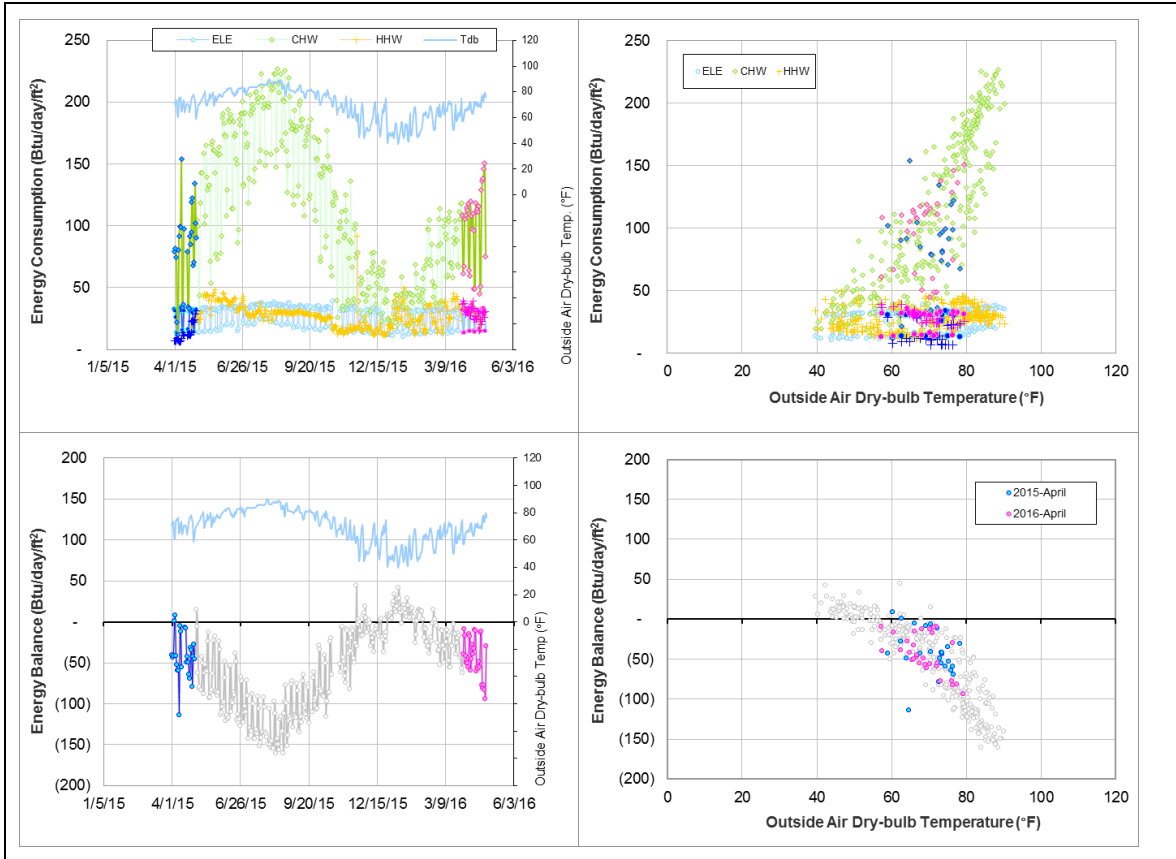
Data Type	Description of data behaviors	Period
ELE, CHW, and HHW	The energy use per unit floor area was low compared to other buildings.	Since the data became available on 7/1/2012

Quantitative descriptions and comments

The peak electricity use density was around 0.65 W/ft² which is small compared to that of other office buildings on campus. The delta T for HHW seemed to be small for years. The CHW and HHW consumption per the unit floor area also seemed to be low. It is possible that the GSF we have (46,110 ft²) includes substantial unoccupied space.

The energy balance was scattered due to the consumption level changes for CHW and HHW, the cross-point temperature of the energy balance was ranged around 50 to 70°F.

Explanatory Figure: 13 months energy balance plot with original data.



Engineering Innovation Center (TAMU Bldg # 499)

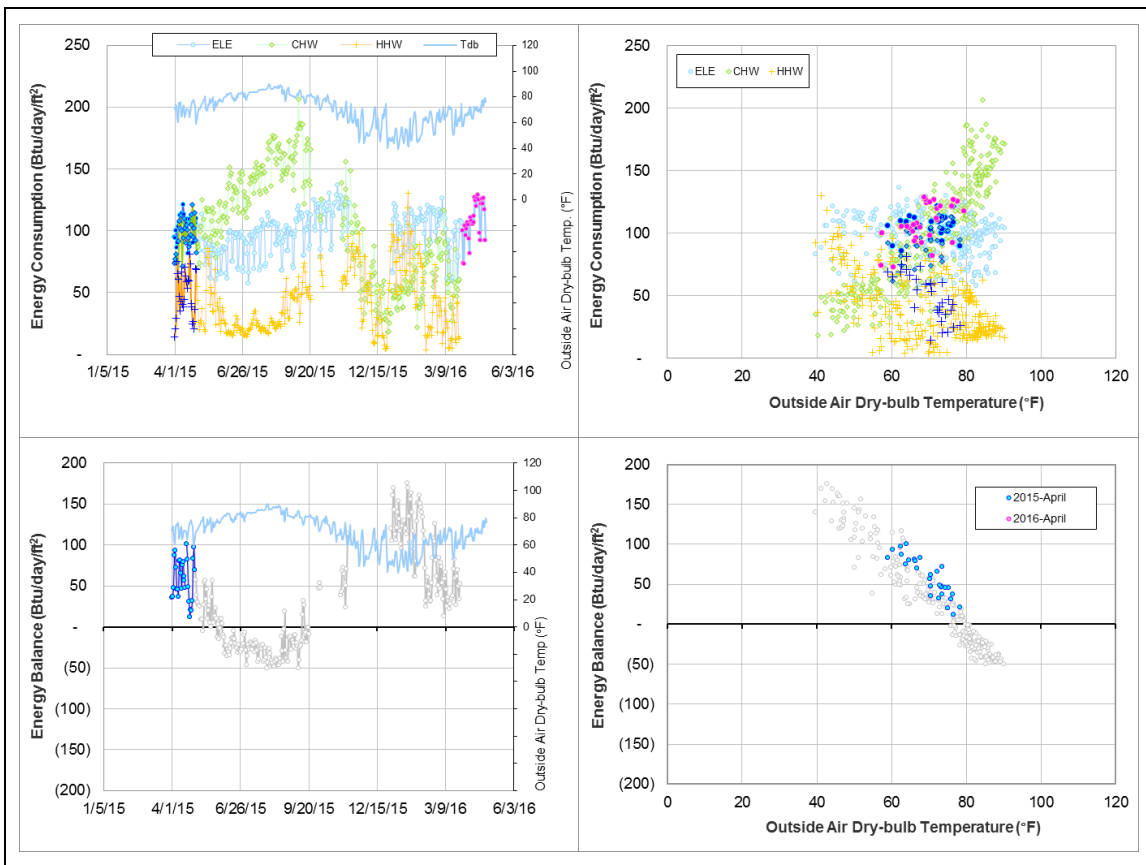
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The cross-point temperature is high.	For years
CHW	The consumption level is low compared to the ELE and HHW consumption.	For years
HHW	The consumption was lower than the same period of last year.	Since December 2015

Comments

The cross-point temperature of the energy balance is around 80°F. The CHW consumption is relatively low and its delta T is always small. The HHW consumption since December 2015 is much lower than the same month of last year (about 100 Btu/day/ft² lower).

Explanatory Figure: 13 months energy balance plot with original data. CHW and HHW data is not available for the month of April and does not appear in the below plots.



Nagle Hall (TAMU Bldg #506)

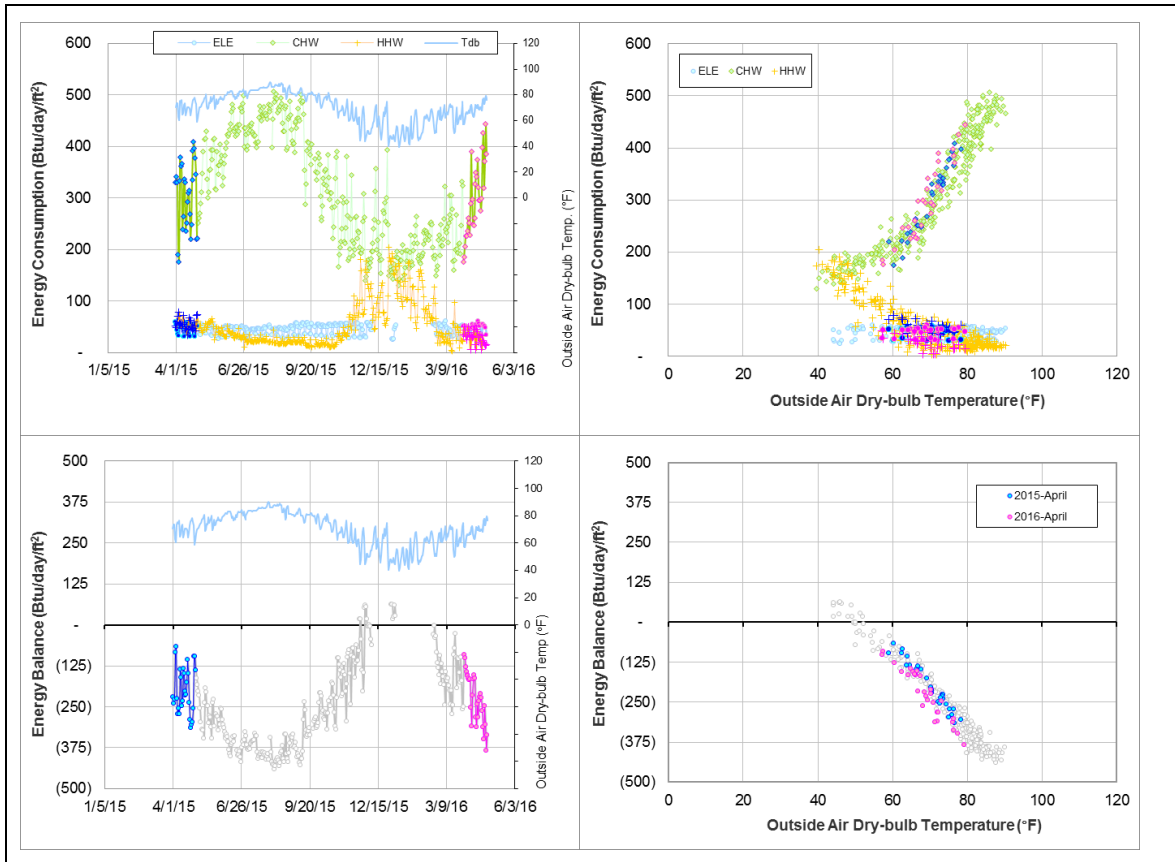
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The level was low and the cross-point temperature was around 50°F.	The cross-point temperature has always been low.
ELE	The consumption per unit floor area was smaller than those for other office buildings.	The level was always low and gradually decreased over the past 4 years.

Comments

The ELE consumption was about 100 Btu/day/ft² lower than the levels in typical office buildings on campus, and this might be a metering error or this meter might not cover the whole building.

Explanatory Figure: 13 months energy balance plot with original data



Blocker Building (TAMU Bldg #524)

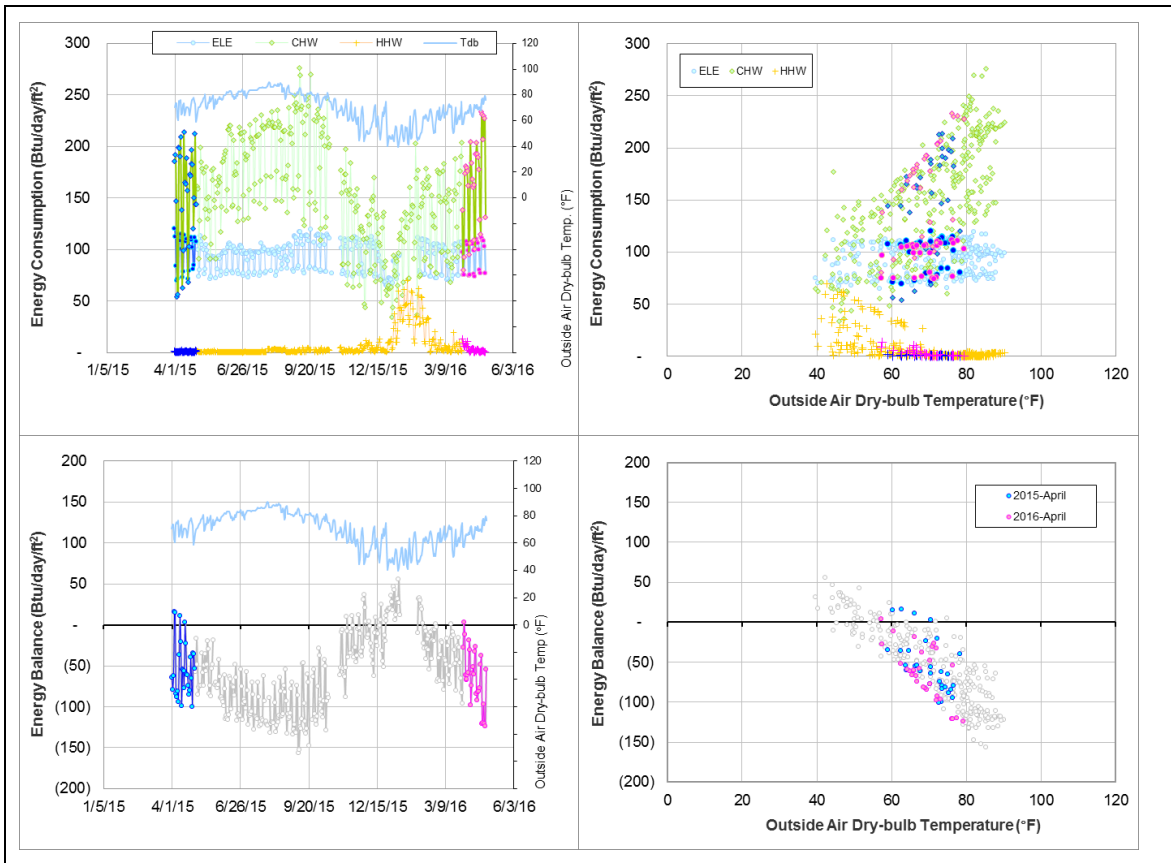
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The consumption level might be low.	Past several years

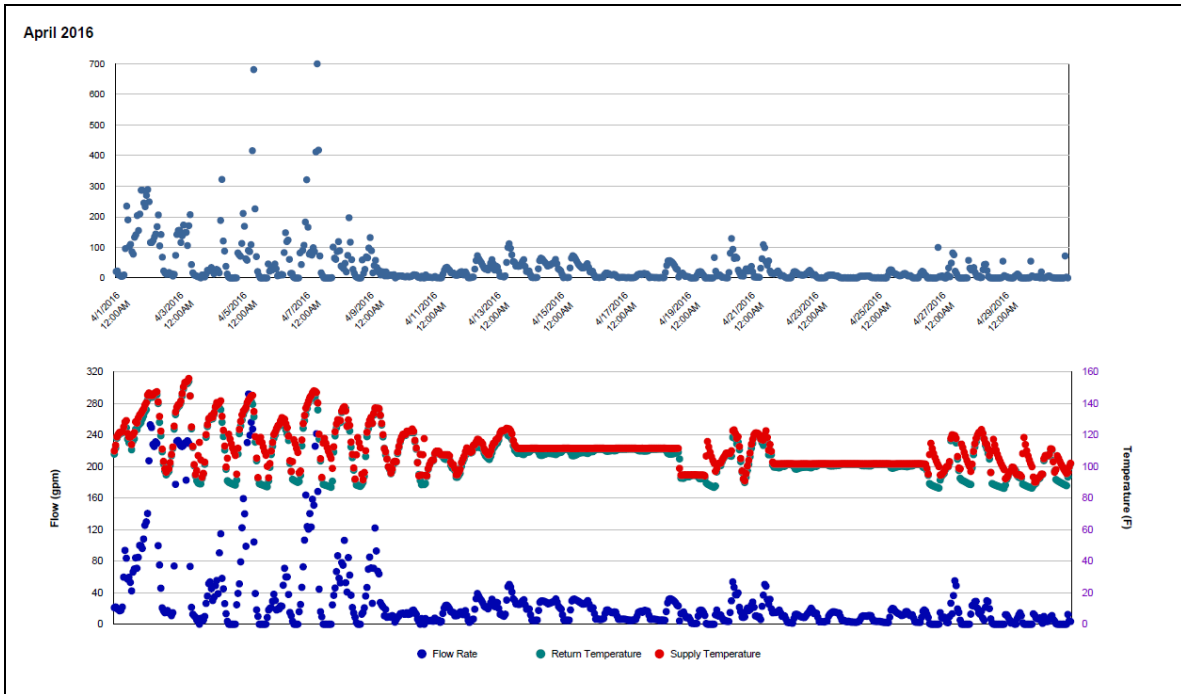
Quantitative descriptions and comments

The delta T and consumption level for HHW seems low for the past couple of years.

Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW meter during April 2016)



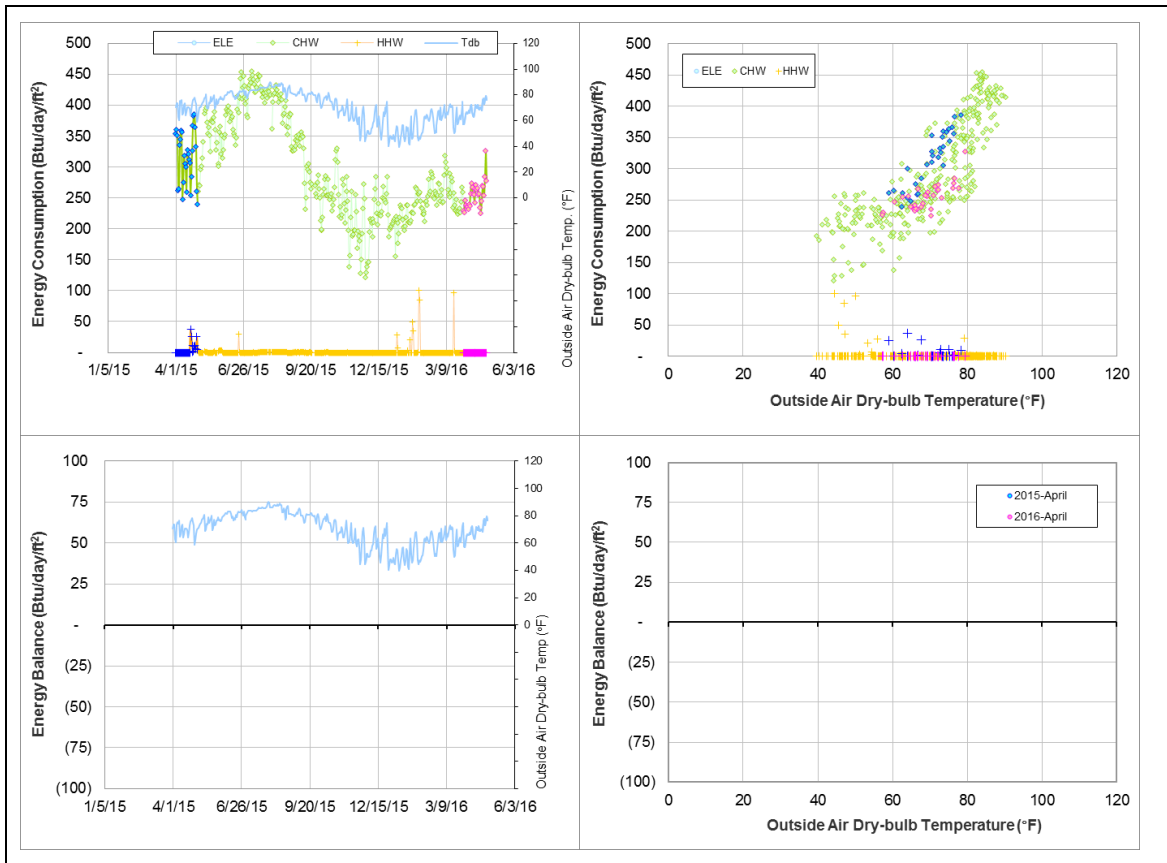
TVMC-Small Animal Building (TAMU Bldg# 880)

Data Type	Description of data behaviors	Period
HHW	The daily consumption is zero or nearly zero for the majority of the days during the year.	Since the data became available in October 2008

Comments

The daily HHW consumption pattern is zero or nearly zero for the majority of the days for years. Because the HHW consumption level appears unstable since the data became available, a valid consumption model for this meter has not been created.

Explanatory Figure: 13 months energy balance plot with original data



Veterinary Medicine Administration (TAMU Bldg# 1026)

Detected issues in the energy balance and/or the consumption data

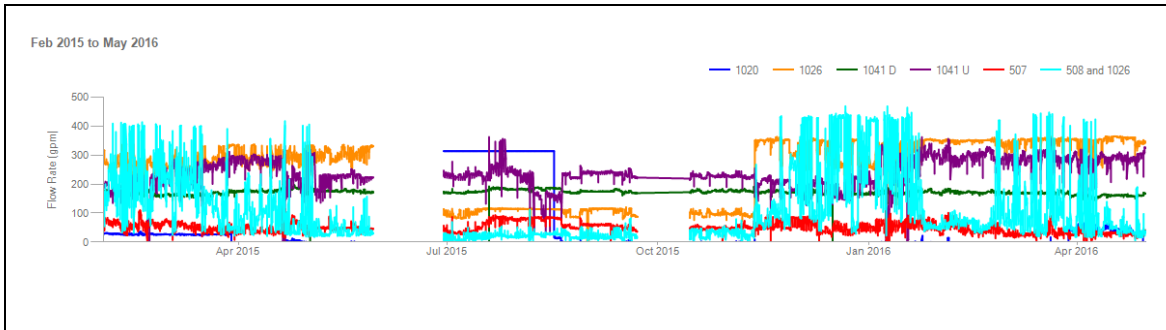
Data Type	Description of data behaviors	Period
HHW 006053	The sub-meter's (006053) flow rate for one building sometimes is higher than the total meter (004170) for two buildings.	For several years

Comments

The HHW meter ID 006053 is a sub-meter of the meter ID 004170 which meters the total energy use in the buildings #508 and 1026. It is questionable that the flow rate of the sub-meter exceeds the flow rate of the main meter. We would like to know the HHW distribution route for the two buildings and the locations of the sensors.

ESL has not received the consumption data for the HHW meter since 10/21/2012.

Explanatory Figure: Time series of hourly HHW flow rates for Veterinary Medicine Administration (Bldg #1026) and neighboring buildings during 2/1/2015–4/1/2016. The combined HHW metered for Bldg #1026 and #508 (light blue) is lower than the standalone HHW meter for only Bldg #1026 (dark blue).



Biological Control Facility (TAMU Bldg# 1146)

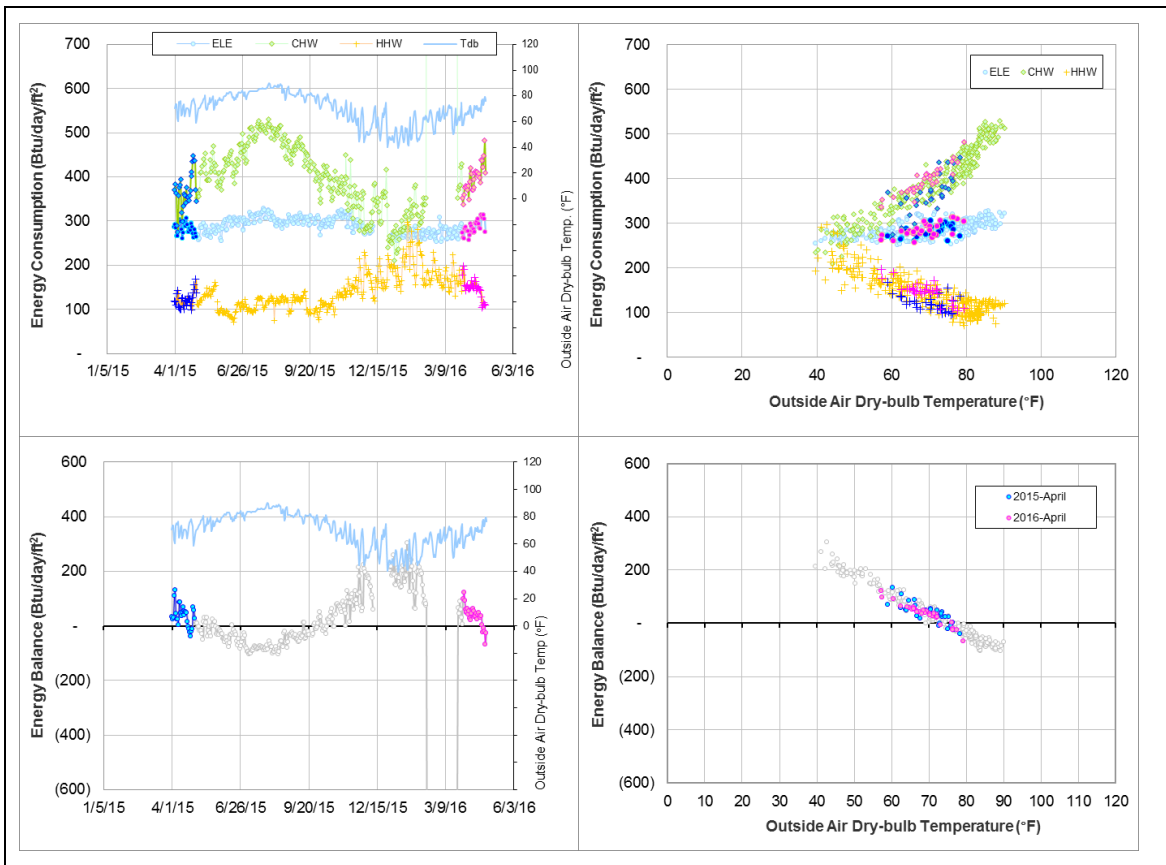
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The cross-point temperature is slightly high, ~75°F.	12/28/2014-ongoing
ELE	The consumption increased gradually.	For several years

Comments

The electricity consumption increased gradually over several years. As a result, the energy balance pattern changed and the cross-point temperature shifted slightly higher from approximately 70°F to 75°F.

Explanatory Figure: 13 months energy balance plot with original data



Physical Plant Administration & Shops (TAMU Bldg# 1156)

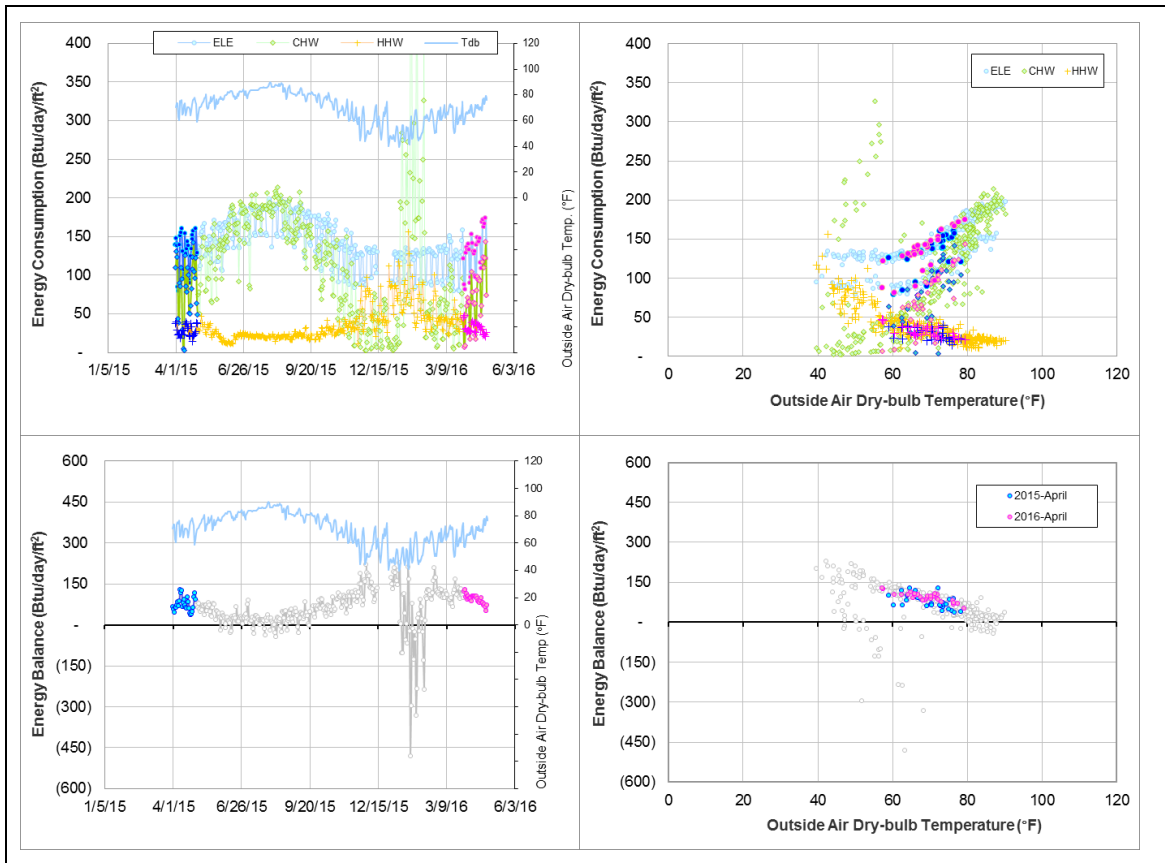
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The cross-point temperature is high, ~85°F.	7/1/2014-ongoing
CHW	The consumption level might be low compared to the ELE and HHW use level.	Since the data became available on 7/1/2012.

Comments

The electricity is not available until 7/1/2014. CHW consumption level might be low compared to the ELE and HHW use level. But the CHW consumption level has been stable since the data became available on 7/1/2012. More information might be needed to help identify which type energy causes the high cross-point temperature.

Explanatory Figure: 13 months energy balance plot with original data



Veterinary Research Building (TAMU Bldg# 1197)

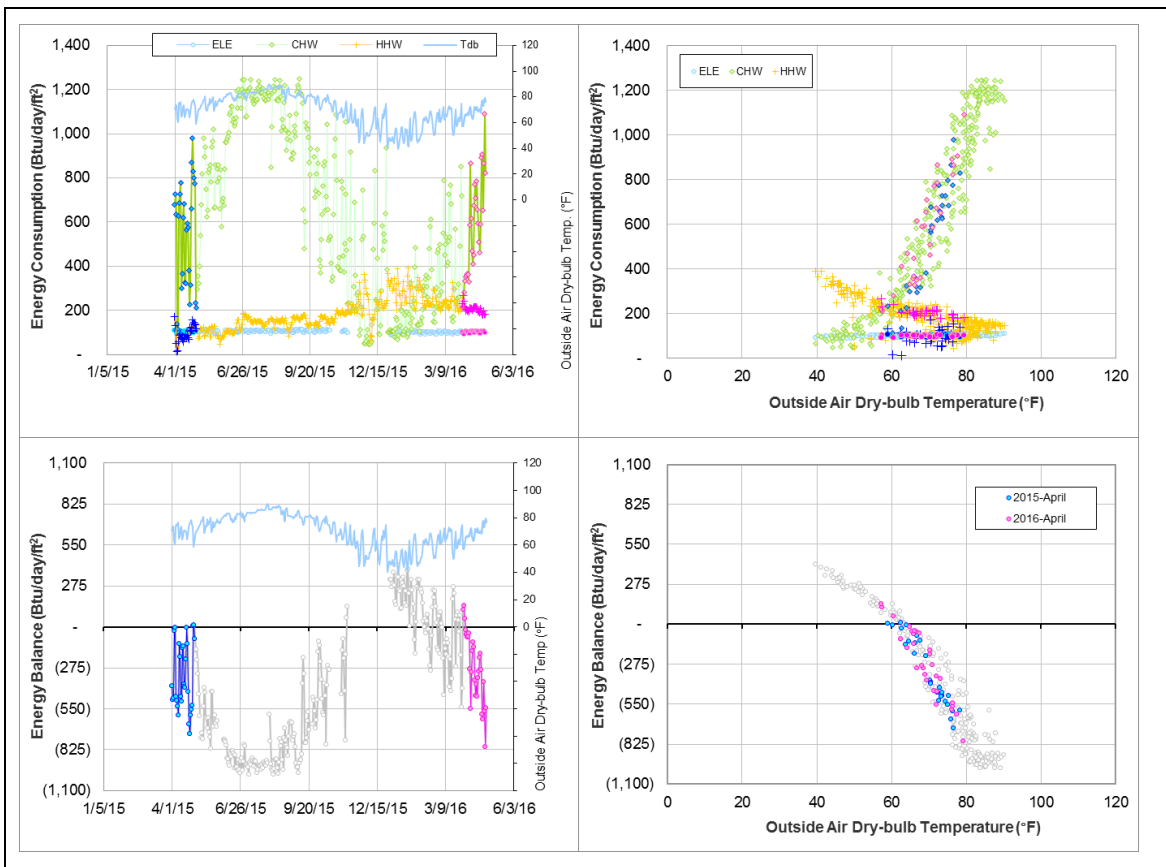
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption is low for a laboratory building.	Since January 2010 when the meter was added to this report

Comments

The whole building hourly electricity use is in the range 130 kWh to 180 kWh (1.13 W/ft² to 1.57 W/ft²), which is low for a veterinary laboratory building on the campus. This seems to be the reason for the low level of the energy balance load. The temperature-axis intercept of the energy balance is around 62°F.

Explanatory Figure: 13 months energy balance plot with original data



Kleberg Center (TAMU Bldg #1501)

Detected issues in the energy balance and/or the consumption data

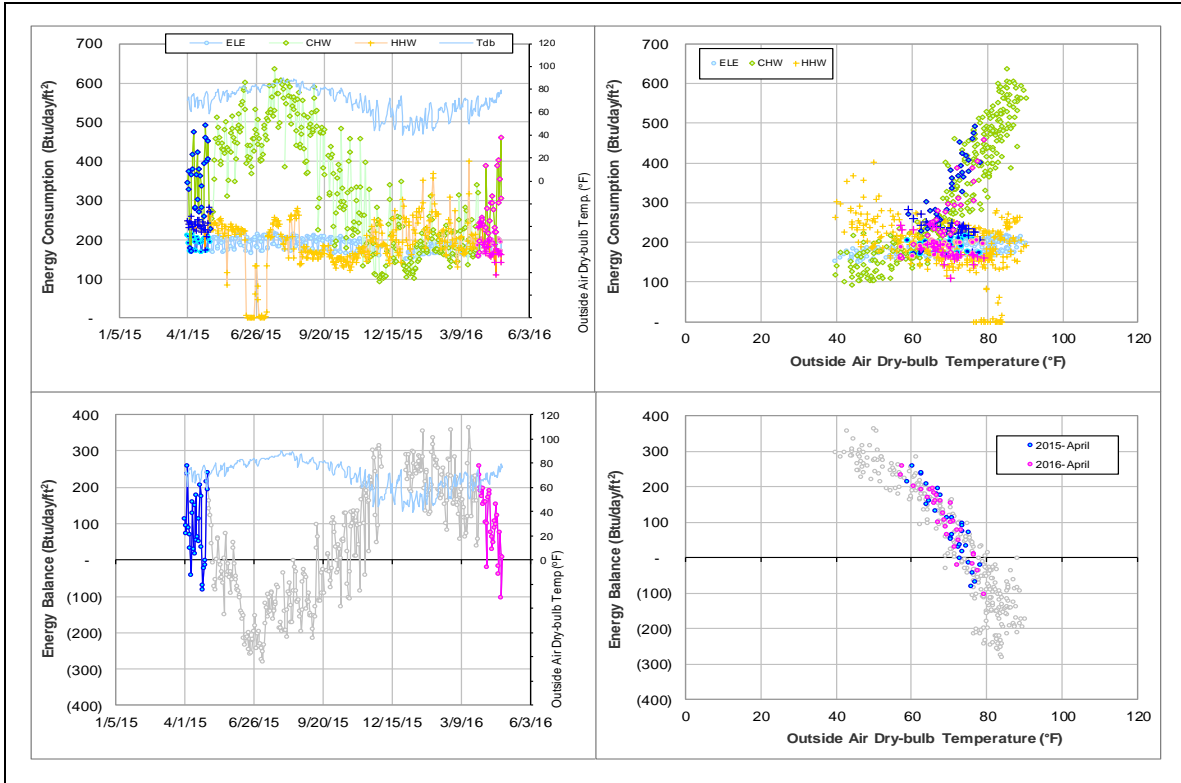
Data Type	Description of data behaviors	Period
CHW	The return temperatures is high. Delta-T is bigger than that for similar buildings in campus.	Since we started to analysis this building in 2006.

Comments

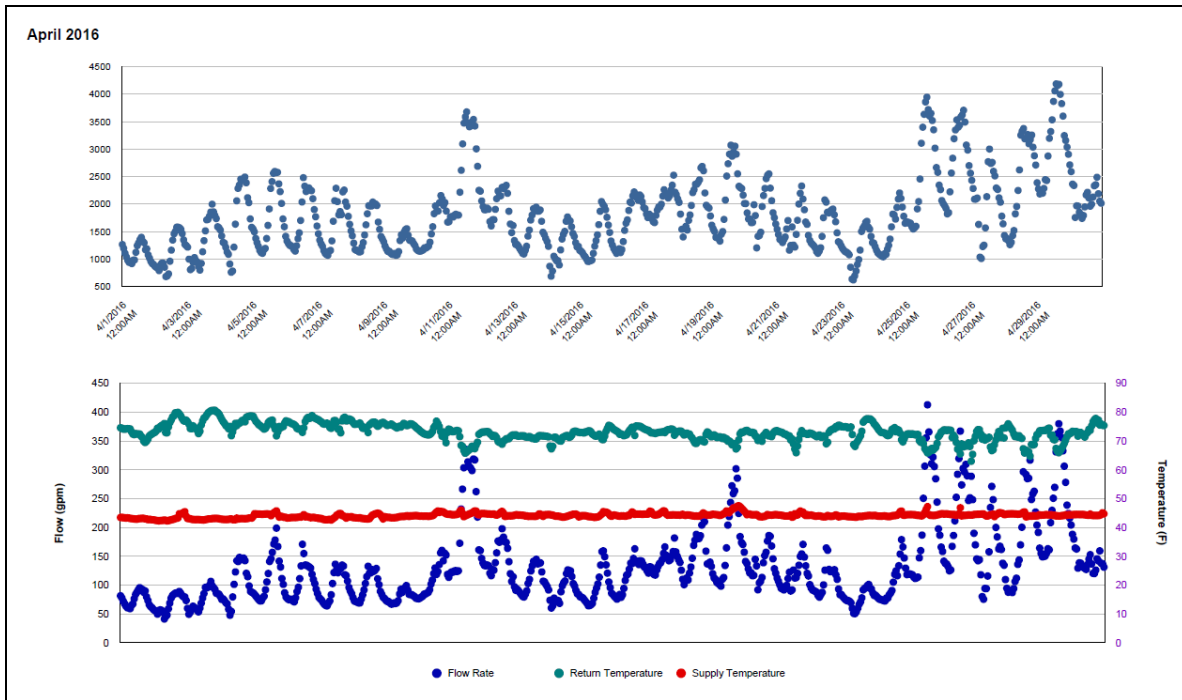
The return temperature for CHW meter was high, about 60 - 70°F for years. The return temperature increased further on 11/13/2014 and it reached 80°F sometimes. Delta-T for this building (25 - 35°F) is much bigger than that for similar buildings in campus. It is suggested to investigate the temperature sensor for CHW meter.

The ESCO period for this building is 5/1/2011-1/1/2012. The CHW consumption level has been stable for over three years after ESCO period.

Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office (CHW during April 2016)



West Campus Parking Garage (TAMU Bldg #1559)

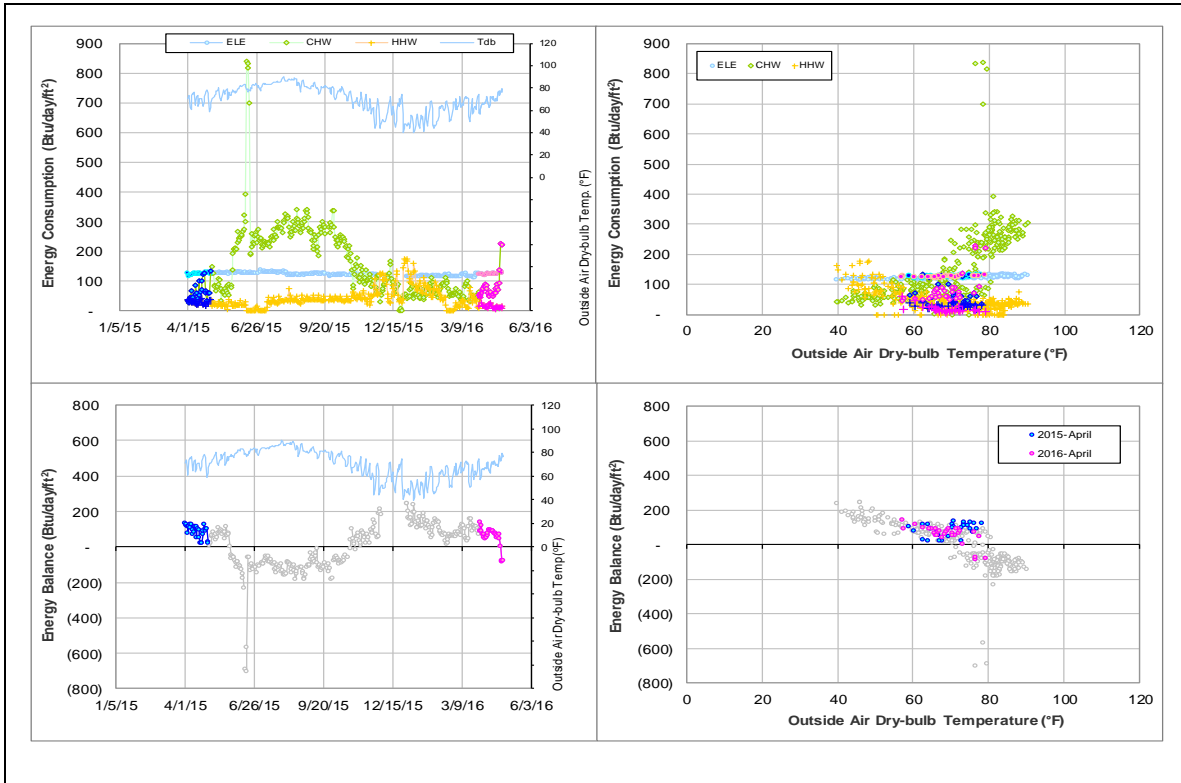
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level decreased largely. The scattering data was observed.	October 2013 - ongoing
	The consumption level increased. The scattering data was observed.	5/28/2015 - ongoing

Comments

The CHW consumption level decreased from 800 Btu/day/ft² to 100 Btu/day/ft² since October 2013 mainly caused by a decrease in the flow rate. The consumption pattern was very scattering and the cross-point temperature is high, 75-85°F, after this decrease. The CHW consumption increased at the end of May 2015 which causing the cross-point shift to more reasonable range. We need more data to verify this trend. But the consumption pattern is still very scattering.

Explanatory Figure: 13 months energy balance plot with original data



International Ocean Discovery Building (TAMU Bldg #1601)

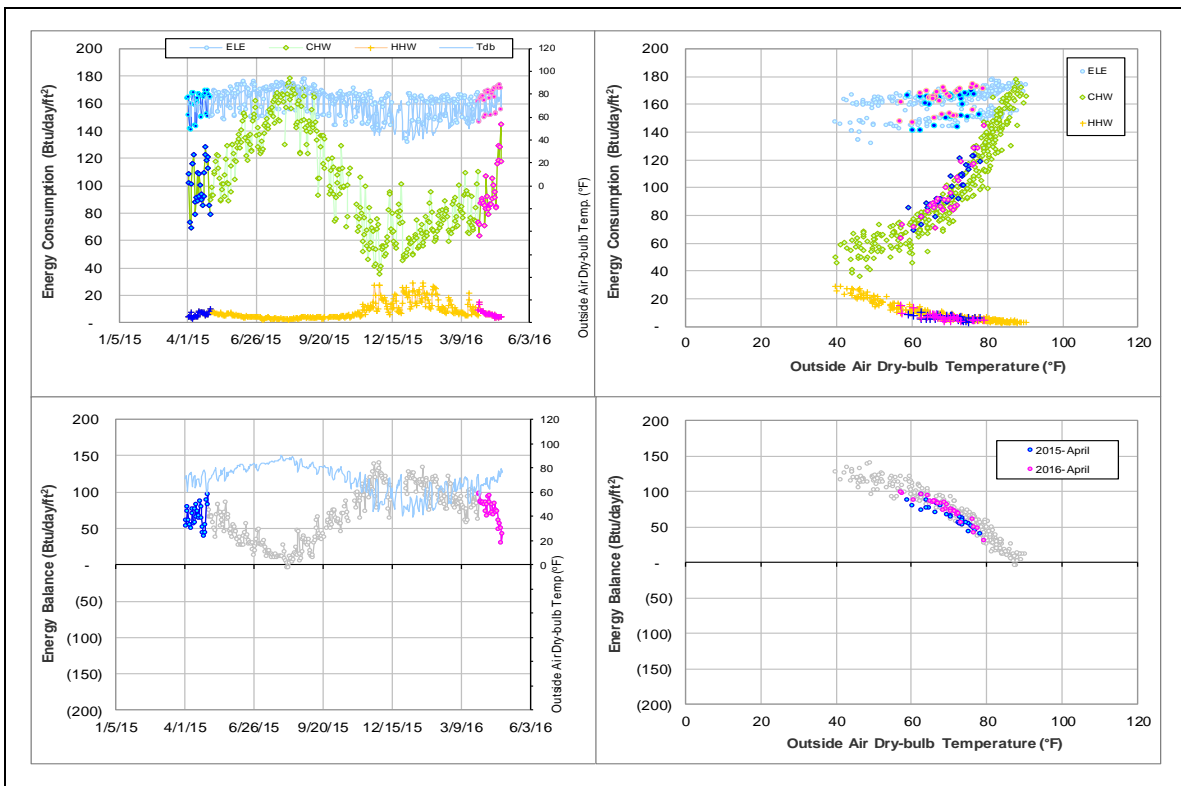
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The cross-point is high, around 88 °F.	Since data became available in Feb 2015

Comments

The cross-point temperature is high for this building, around 88°F. The daily CHW consumption for last year is 40 – 180 Btu/day/ft². The CHW consumption level is low compared to ELE and HHW levels. This building might have its chillers.

Explanatory Figure: 13 months energy balance plot with original data



Offshore Technology Research Center (TAMU Bldg #1604)

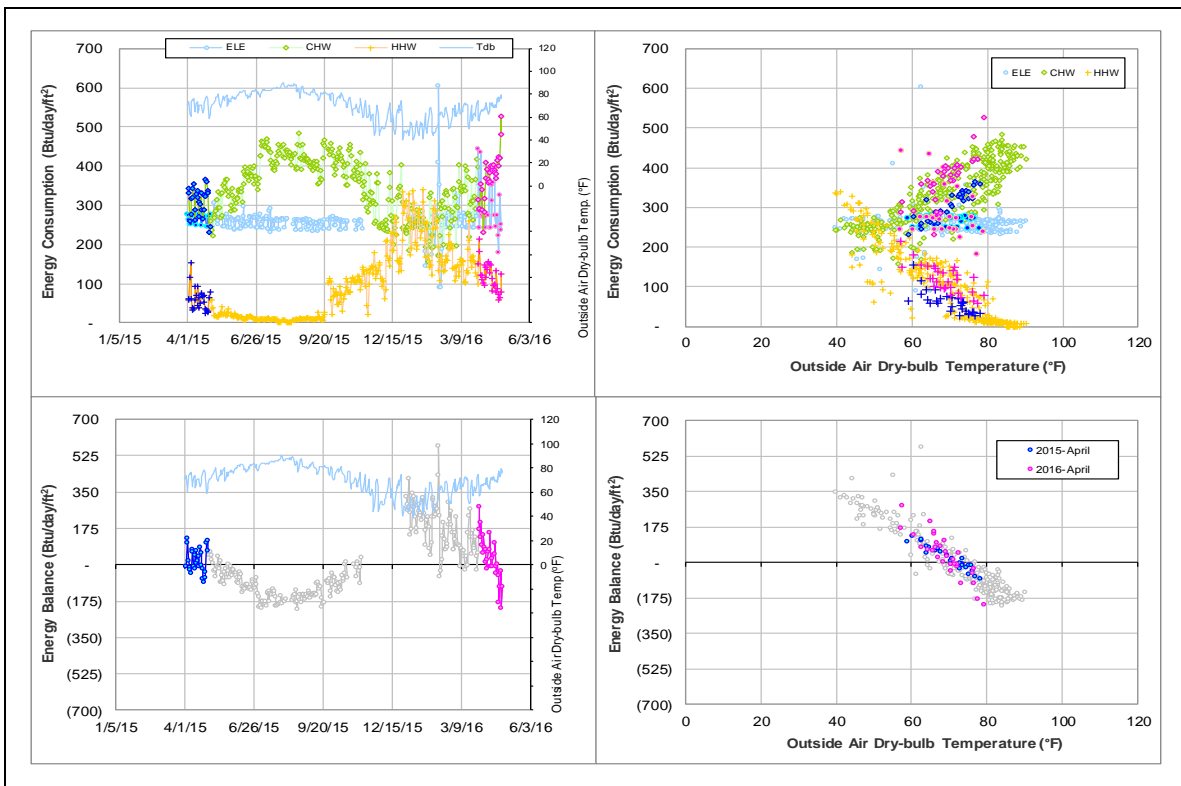
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE (006660)	The daily consumption was recorded as zero for the majority of the days.	Since data became available in Feb 2015

Comments

There are two ELE meters (006659 and 006660). The daily consumption for MeterID 006660 was recorded as zero for the majority of the days since data became available in February 2015. The daily consumption for several days in recent several months increased largely and caused scattering energy balance.

Explanatory Figure: 13 months energy balance plot with original data



Engineering Research Building (TAMU Bldg #1611)

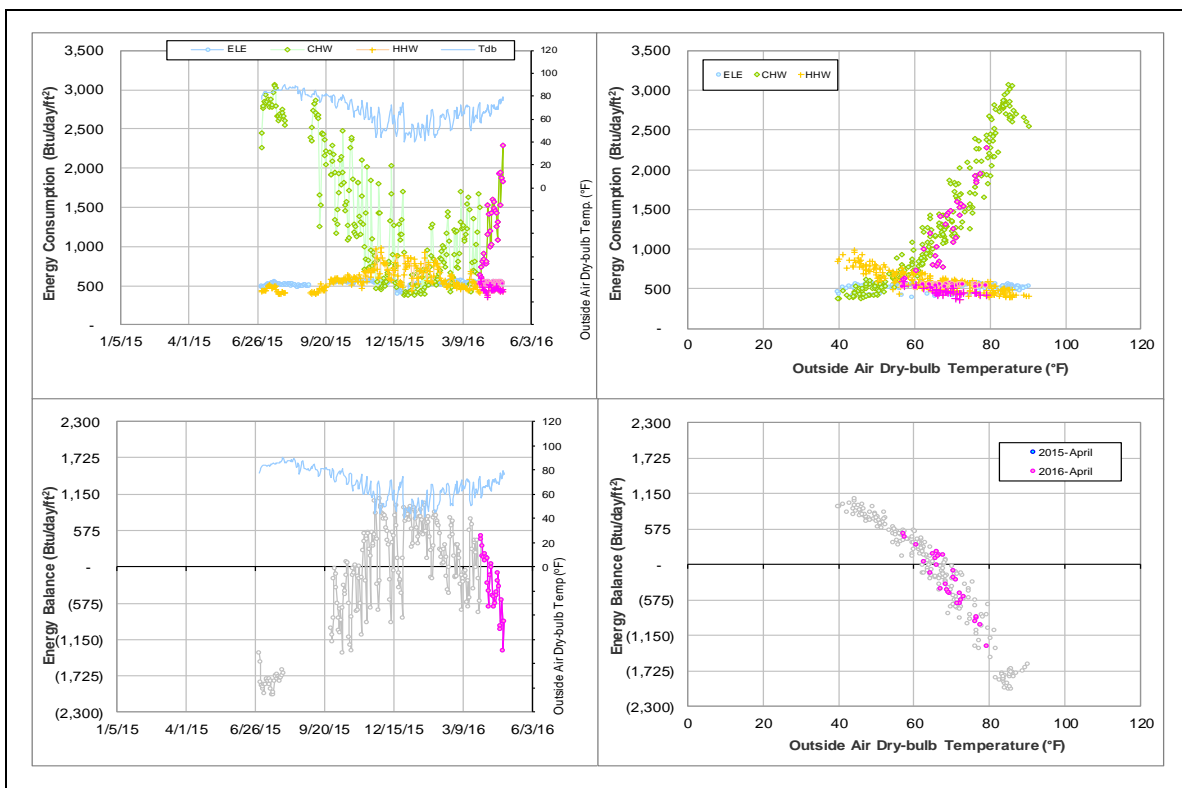
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE, CHW and HHW	The consumption levels are too high.	Since the data became available in July 2015

Comments

The energy data for this building just becomes available since July 2015. All consumption levels seem to be high. ELE: ~500 Btu/day/ft²; CHW: 500 – 3100 Btu/day/ft²; HHW: 400 - 1000 Btu/day/ft². However, the cross-point of temperature for energy balance load is in the reasonable range.

Explanatory Figure: 13 months energy balance plot with original data



III. Time Series Plots for April 2016 Consumption



Figure III-1 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Emerging Technologies Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-2 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Liberal Arts and Arts & Humanities Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

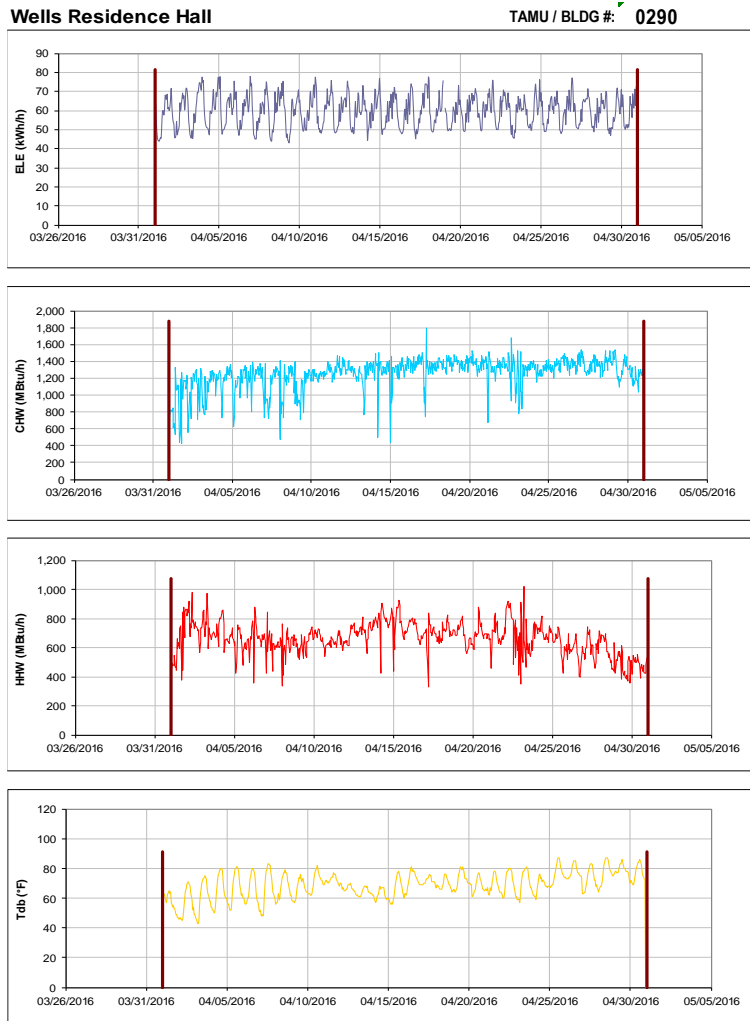


Figure III-3 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wells Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

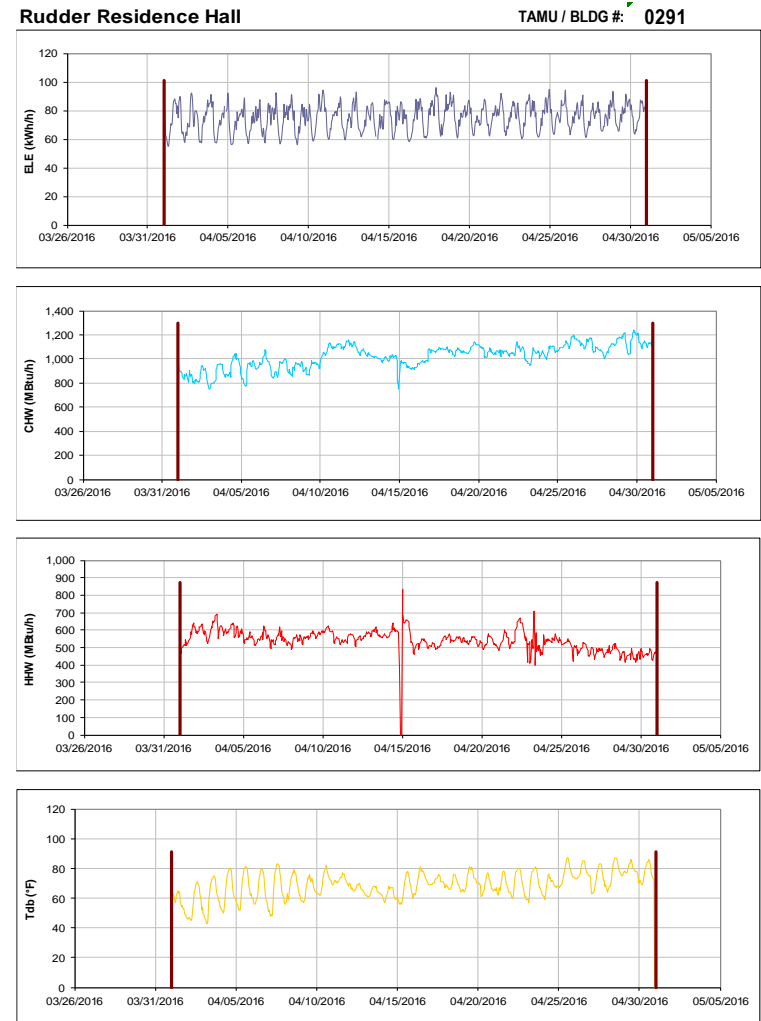


Figure III-4 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

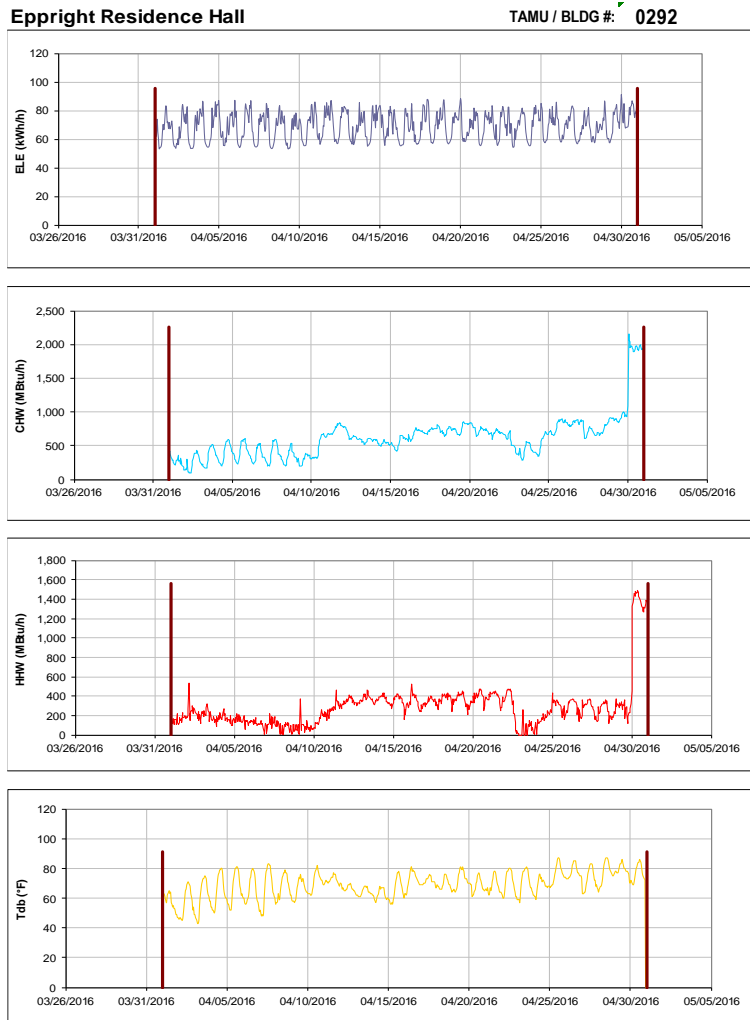


Figure III-5 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Eppright Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

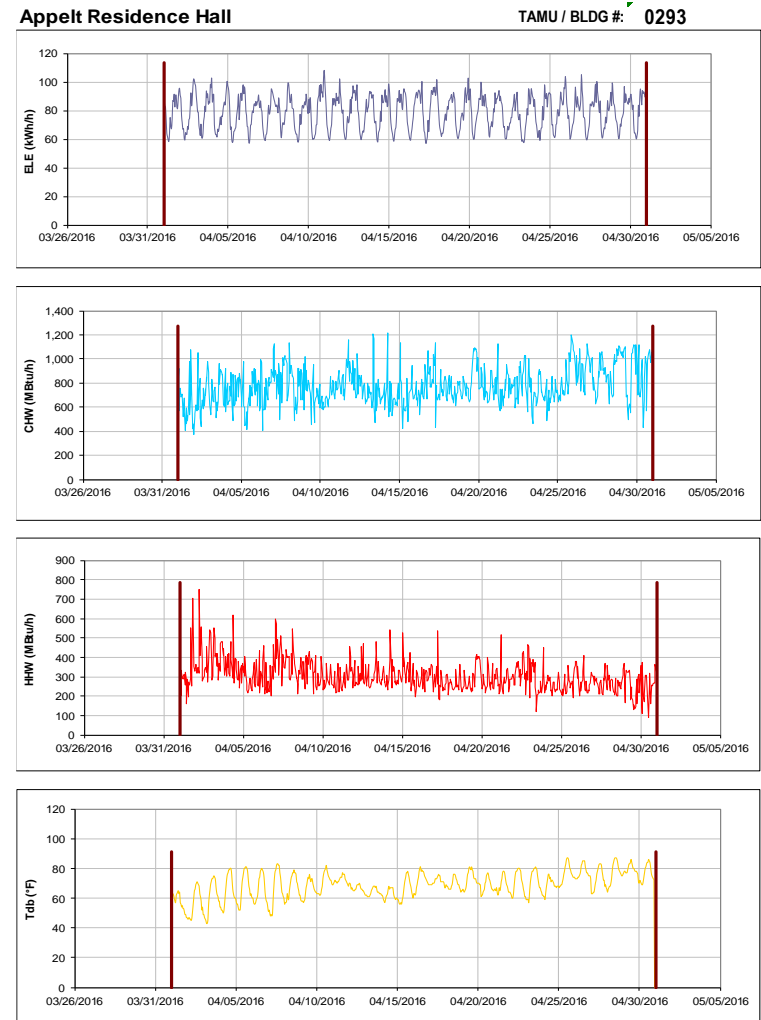


Figure III-6 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Appelt Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

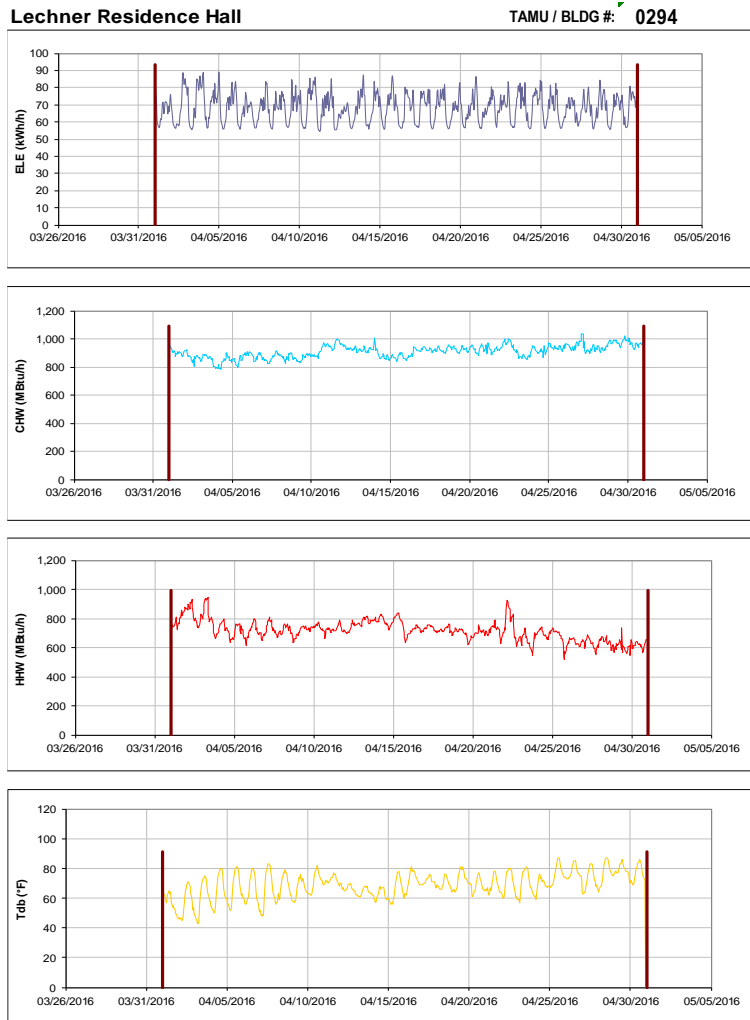


Figure III-7 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lechner Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-8 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mitchell Inst. for Fundamental Phys & Astronomy during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-9 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for CE TTI Office & Lab Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

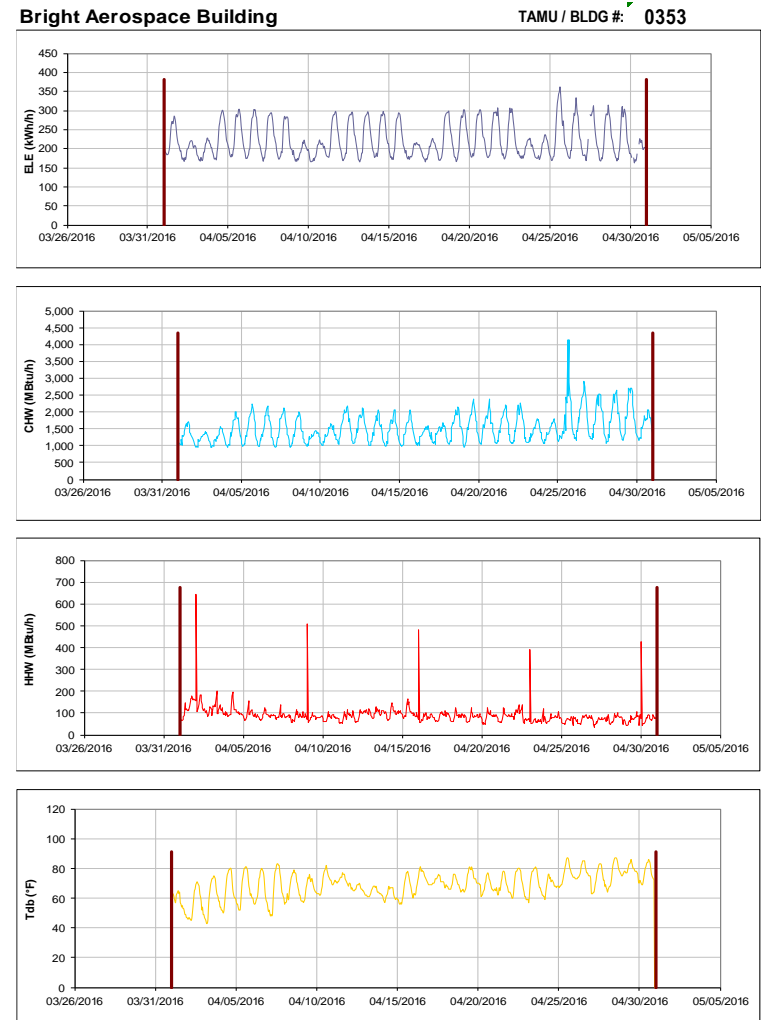


Figure III-10 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bright Aerospace Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Davis Football Player Development Center TAMU / BLDG #: 0358



Figure III-11 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Davis Football Player Development Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Architecture Building B&C TAMU / BLDG #: 1359-0432



Figure III-12 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building B&C during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

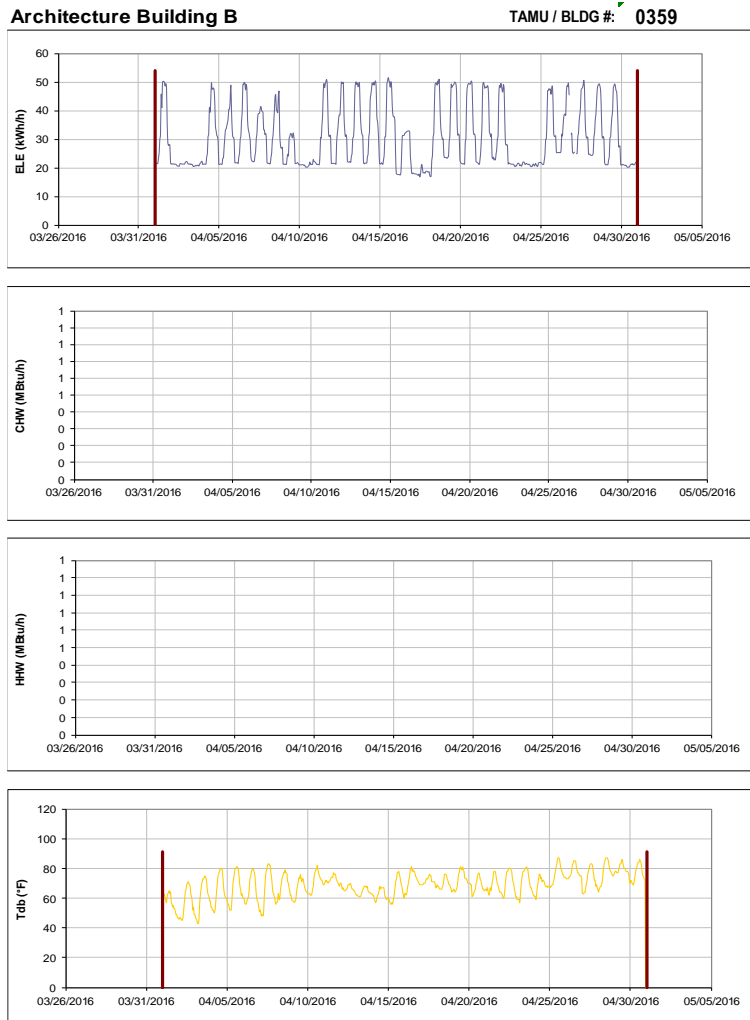


Figure III-13 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building B during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

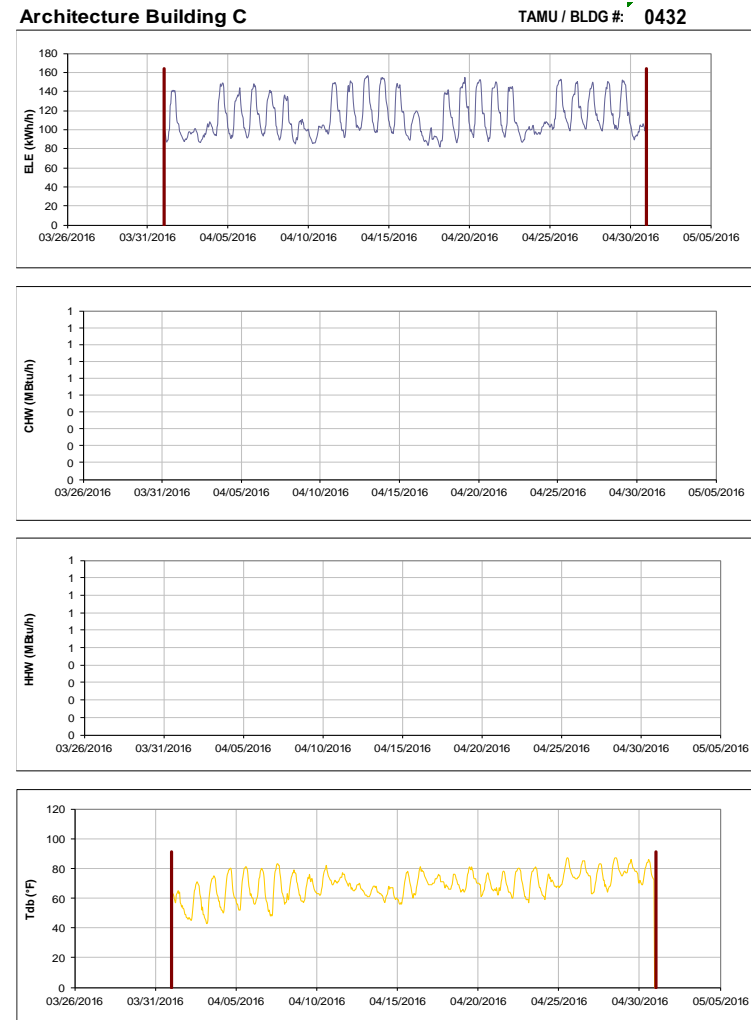


Figure III-14 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building C during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Bright Football Complex

TAMU / BLDG #: 0361



Figure III-15 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bright Football Complex during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Kyle Field

TAMU / BLDG #: 0367

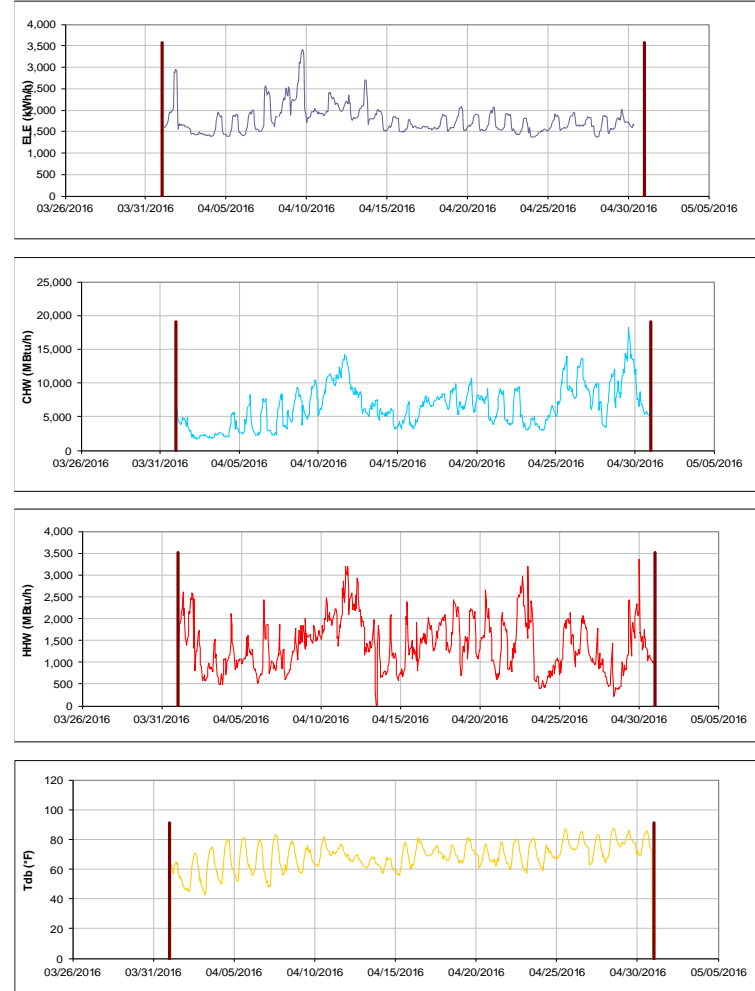


Figure III-16 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kyle Field during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Chemistry Building Addition

TAMU / BLDG #: 0376



Figure III-17 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Chemistry Building Addition during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Koldus Building

TAMU / BLDG #: 0383

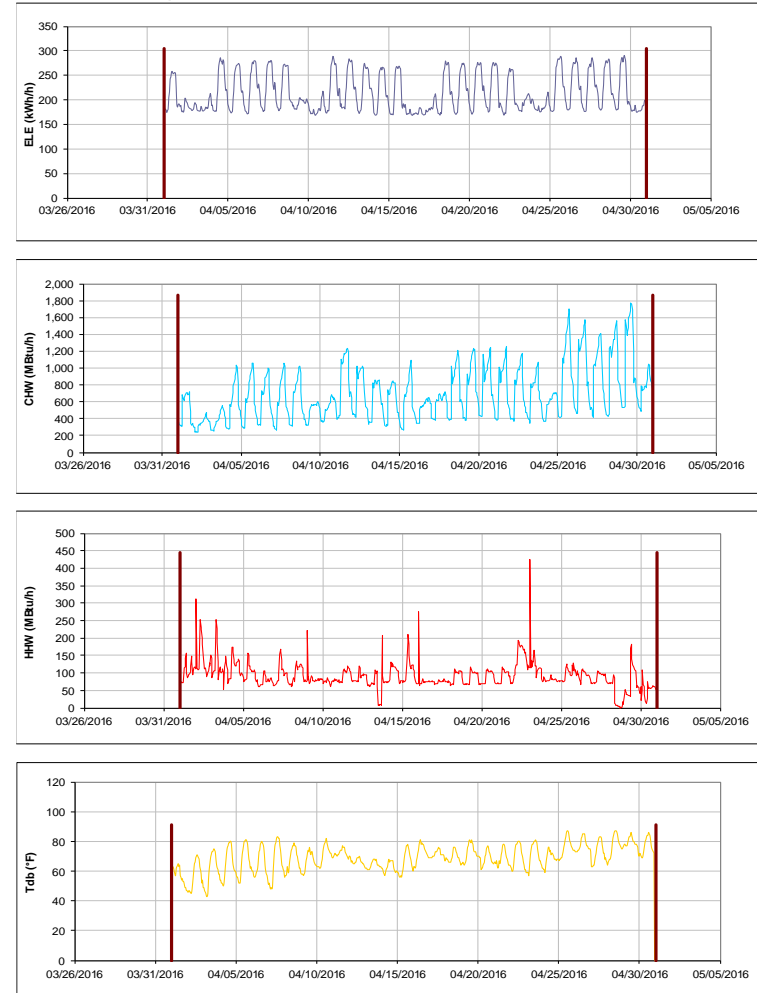


Figure III-18 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Koldus Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

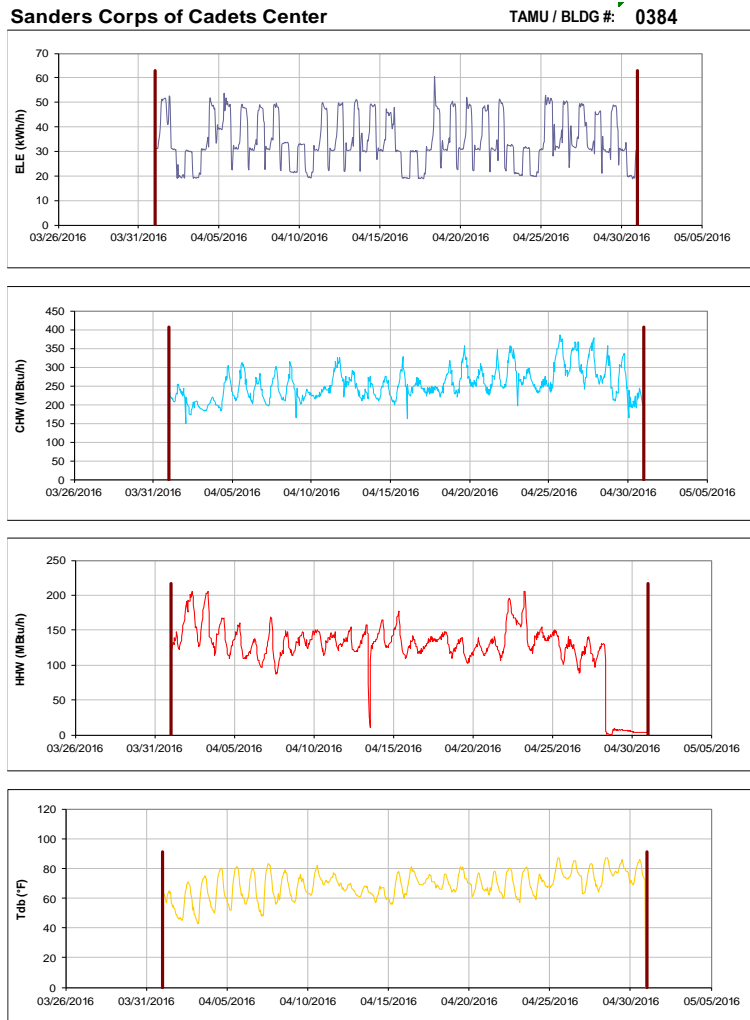


Figure III-19 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Sanders Corps of Cadets Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

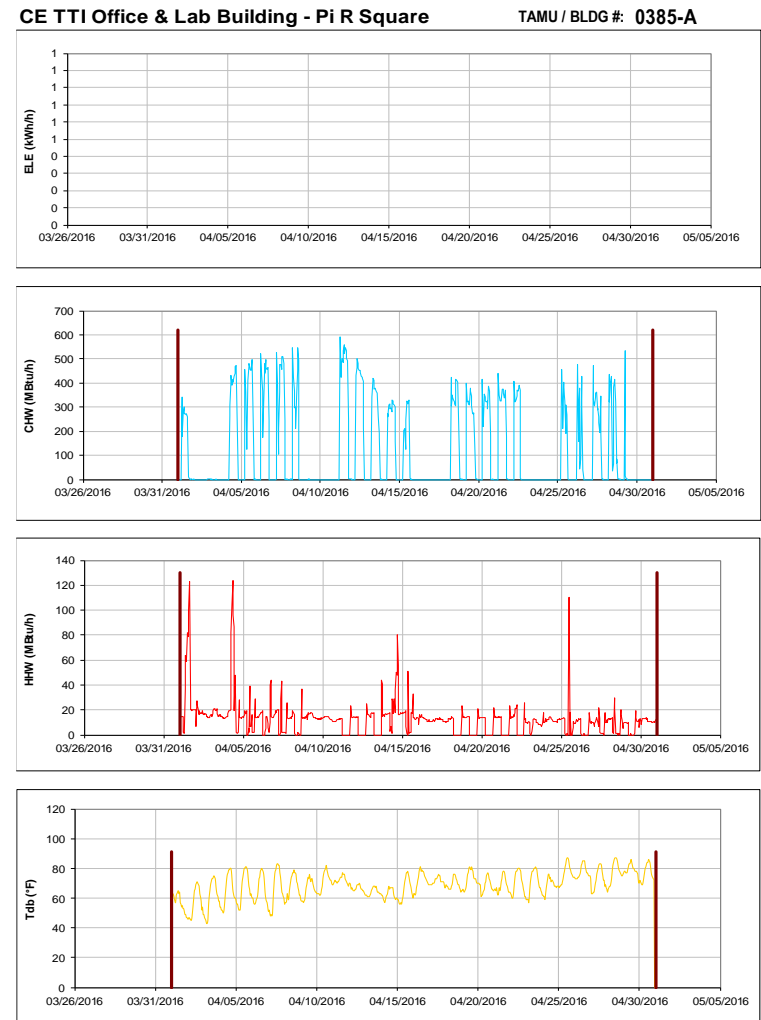


Figure III-20 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for CE TTI Office & Lab Building - Pi R Square during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Jack E. Brown Chemical Engineering Building TAMU / BLDG #: 0386



Figure III-21 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Jack E. Brown Chemical Engineering Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Richardson Petroleum Engineering Building TAMU / BLDG #: 0387

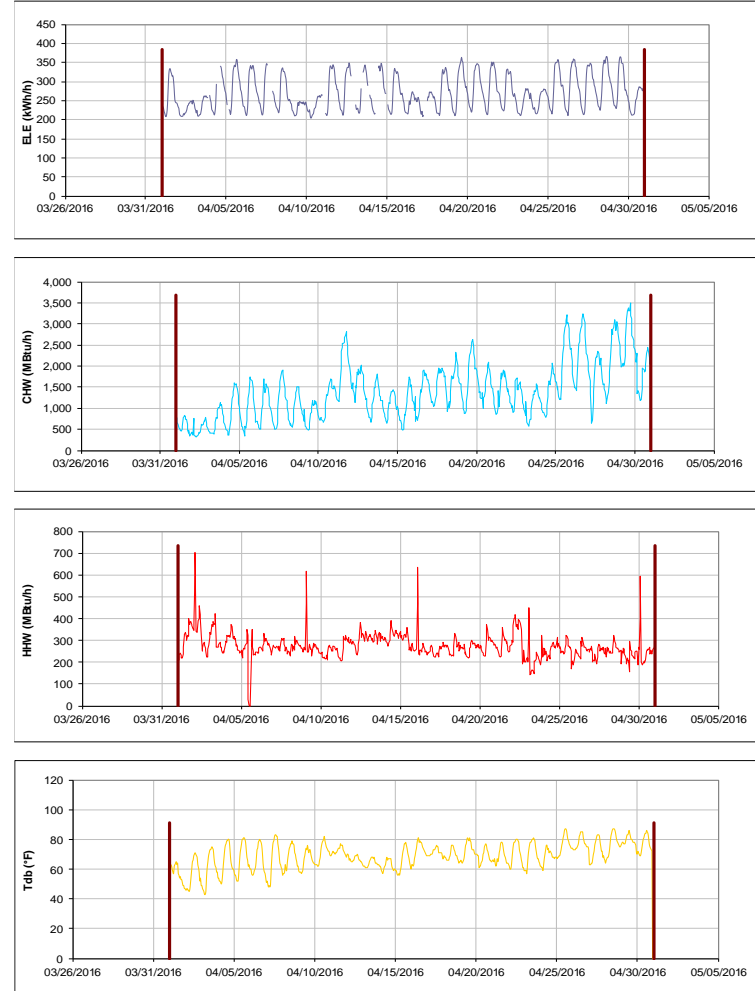


Figure III-22 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Richardson Petroleum Engineering Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

James J. Cain'51 and Mechanical Engineering Office BLDG # 1391-0392

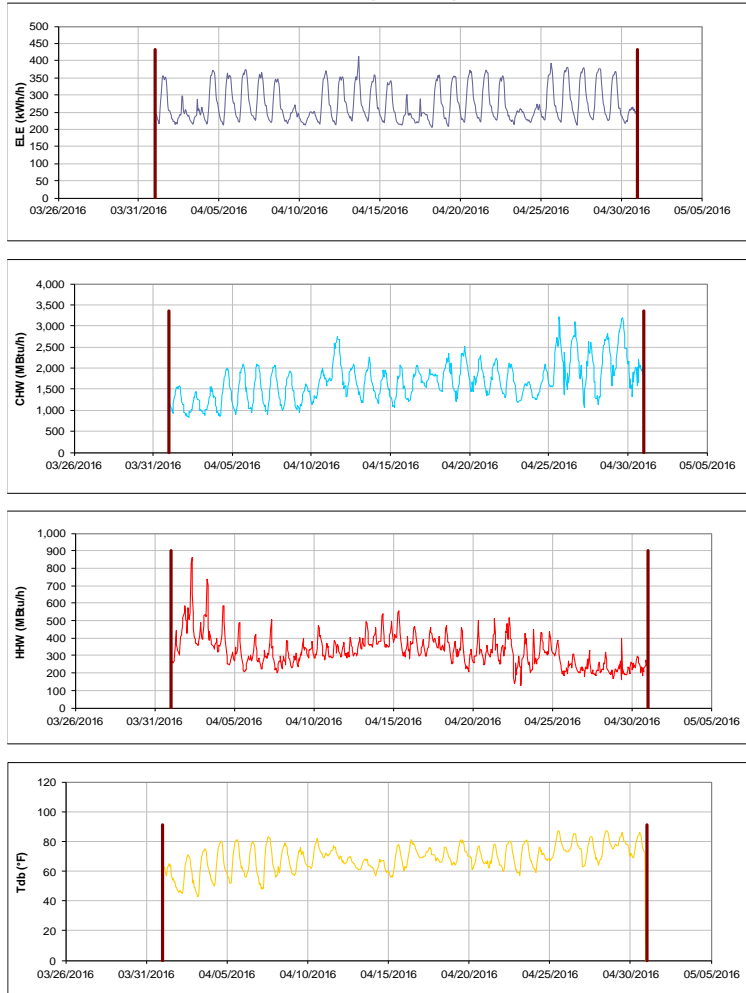


Figure III-23 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for James J. Cain'51 and Mechanical Engineering Office Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Underwood Residence Hall TAMU / BLDG #: 0394

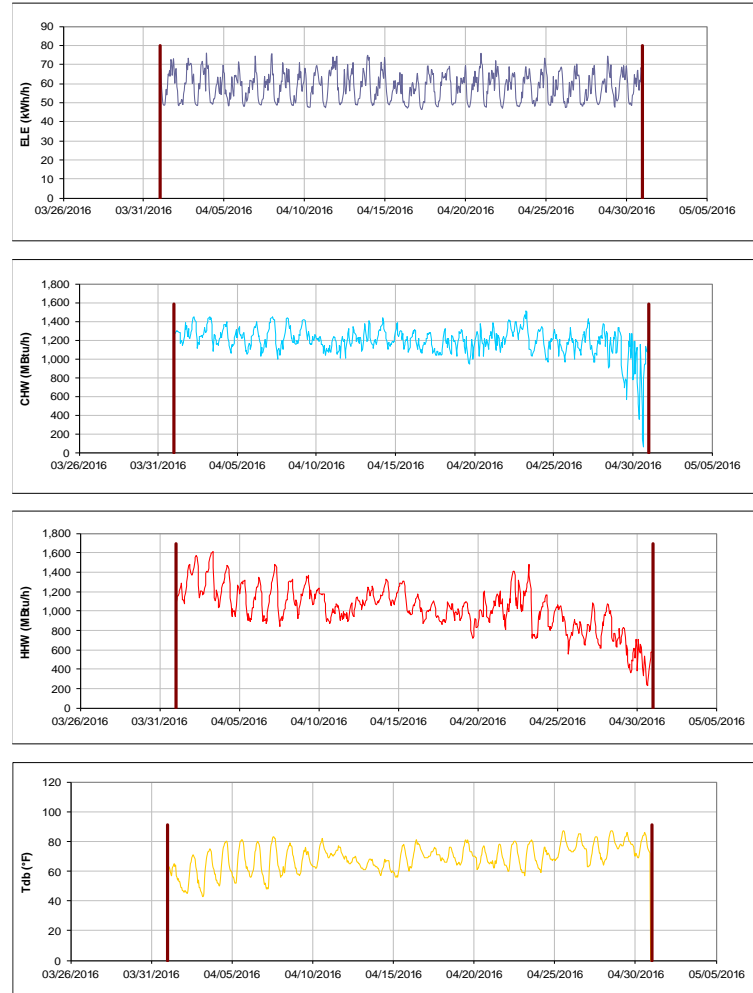


Figure III-24 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Underwood Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-25 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Langford Architecture Center Building A during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

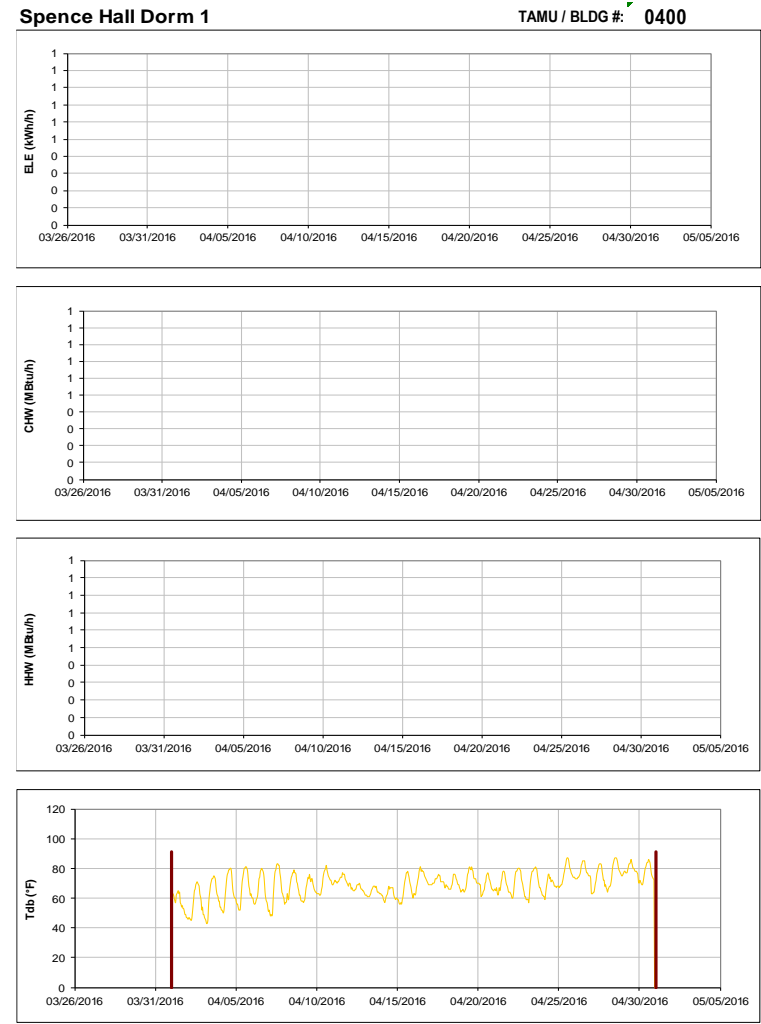


Figure III-26 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Spence Hall Dorm 1 during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Kiest Hall Dorm 2

TAMU / BLDG #: 0401

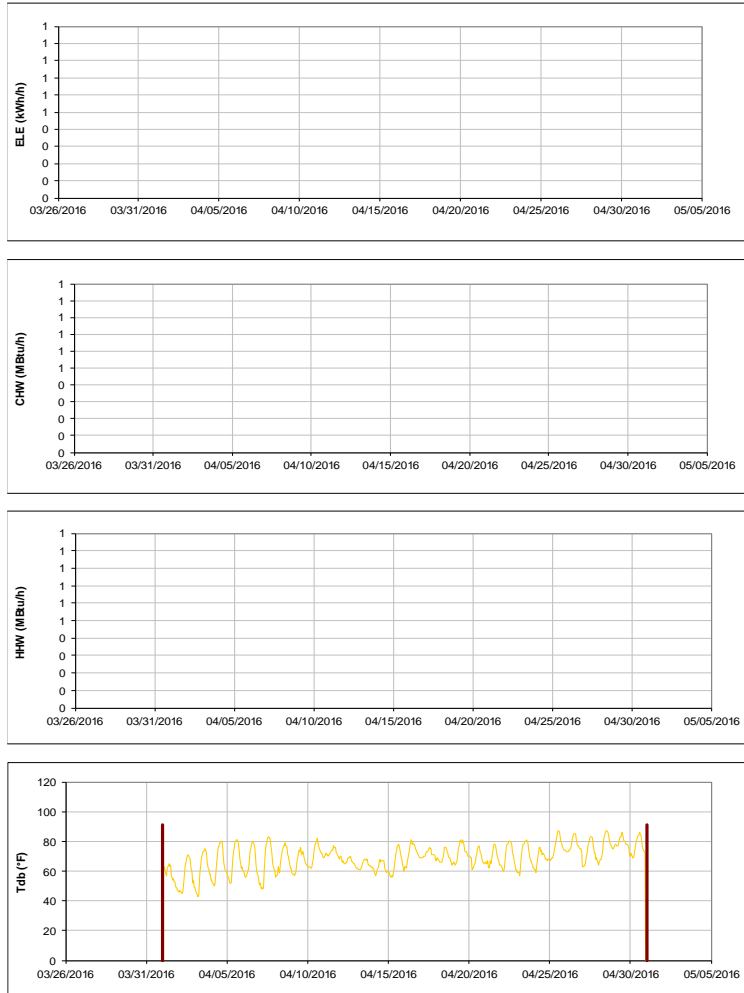


Figure III-27 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kiest Hall Dorm 2 during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center TAMU / BLDG #: 5-0407-1402



Figure III-28 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Lacy Hall - Dorm 6

TAMU / BLDG #: 0405

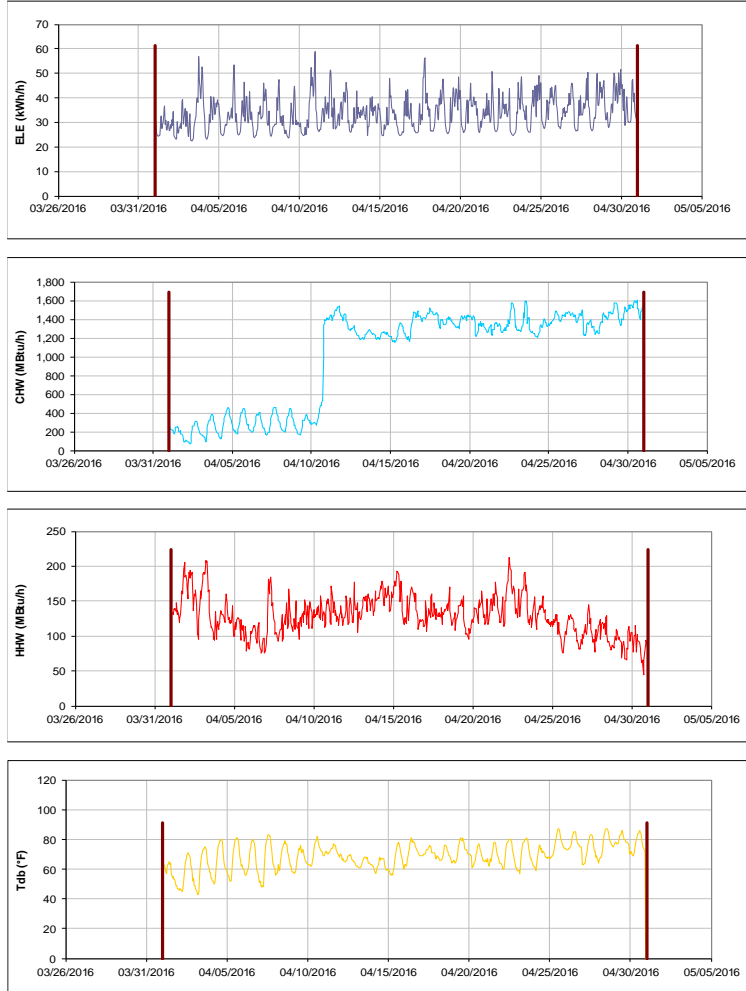


Figure III-29 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lacy Hall - Dorm 6 during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Harrell Hall - Dorm 8

TAMU / BLDG #: 0407

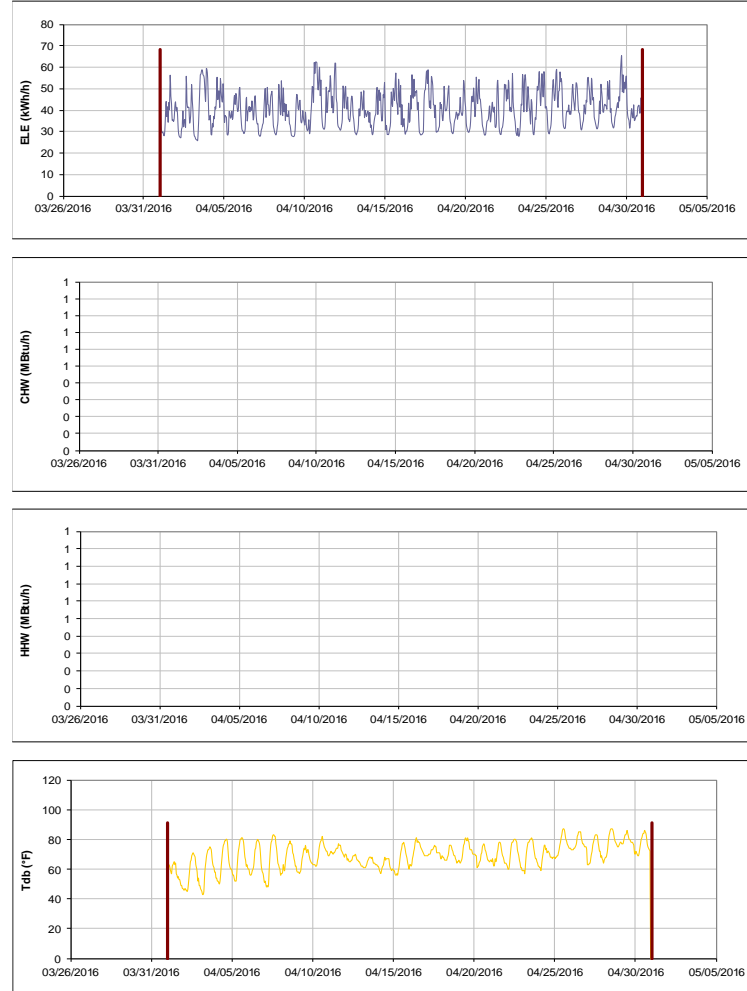


Figure III-30 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrell Hall - Dorm 8 during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

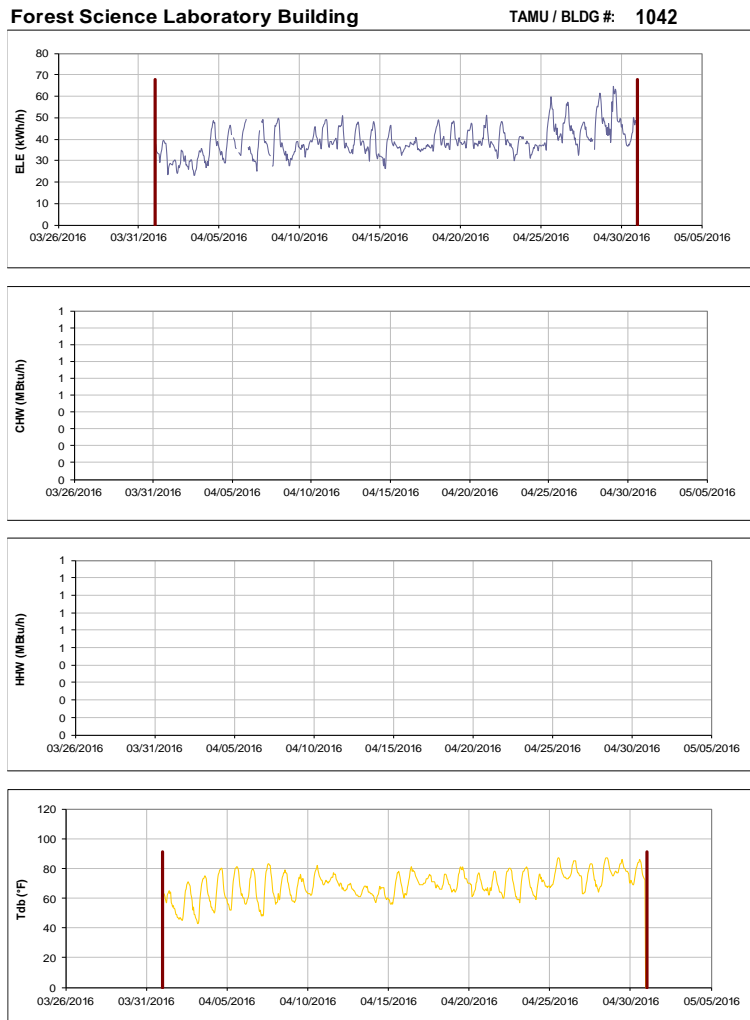


Figure III-31 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Forest Science Laboratory Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

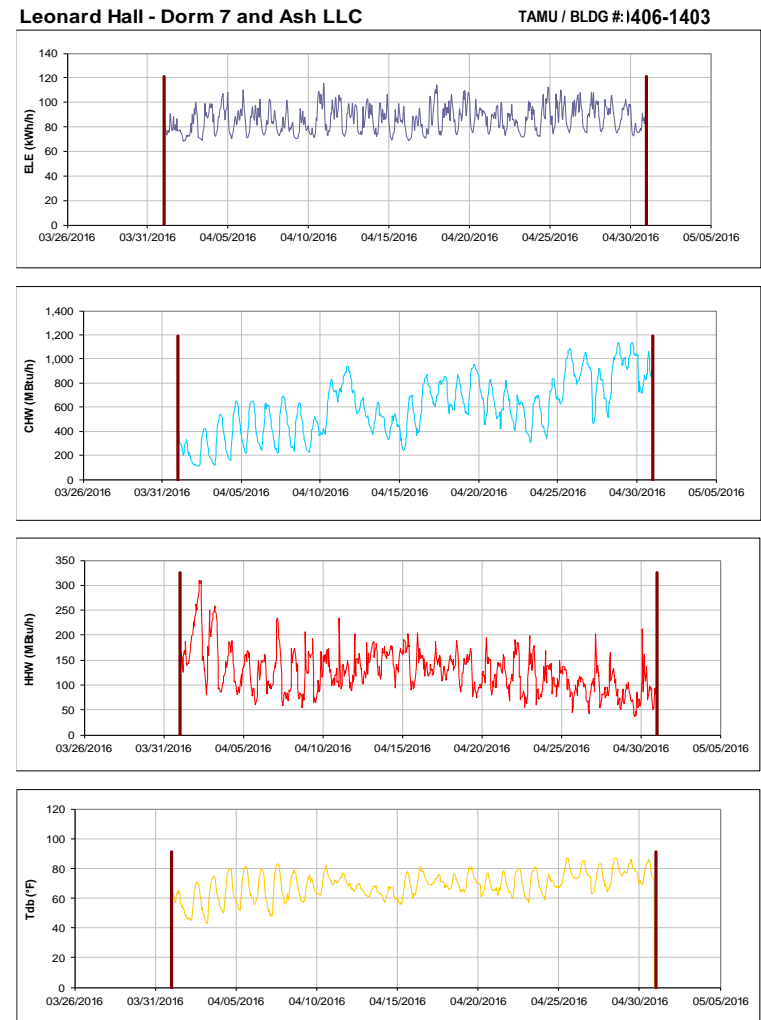


Figure III-32 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Leonard Hall - Dorm 7 and Ash LLC during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Leonard Hall - Dorm 7

TAMU / BLDG #: 0406

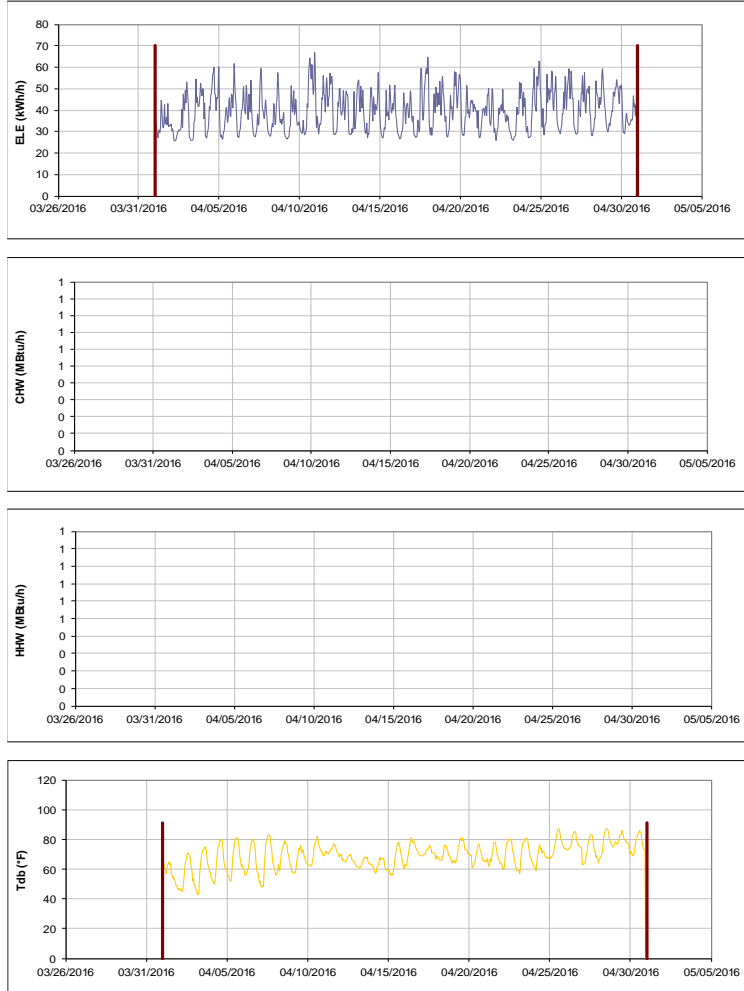


Figure III-33 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Leonard Hall - Dorm 7 during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

H. Grady Ash, Jr. '58 Leadership Learning Center TAMU / BLDG #: 1403



Figure III-34 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for H. Grady Ash, Jr. '58 Leadership Learning Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

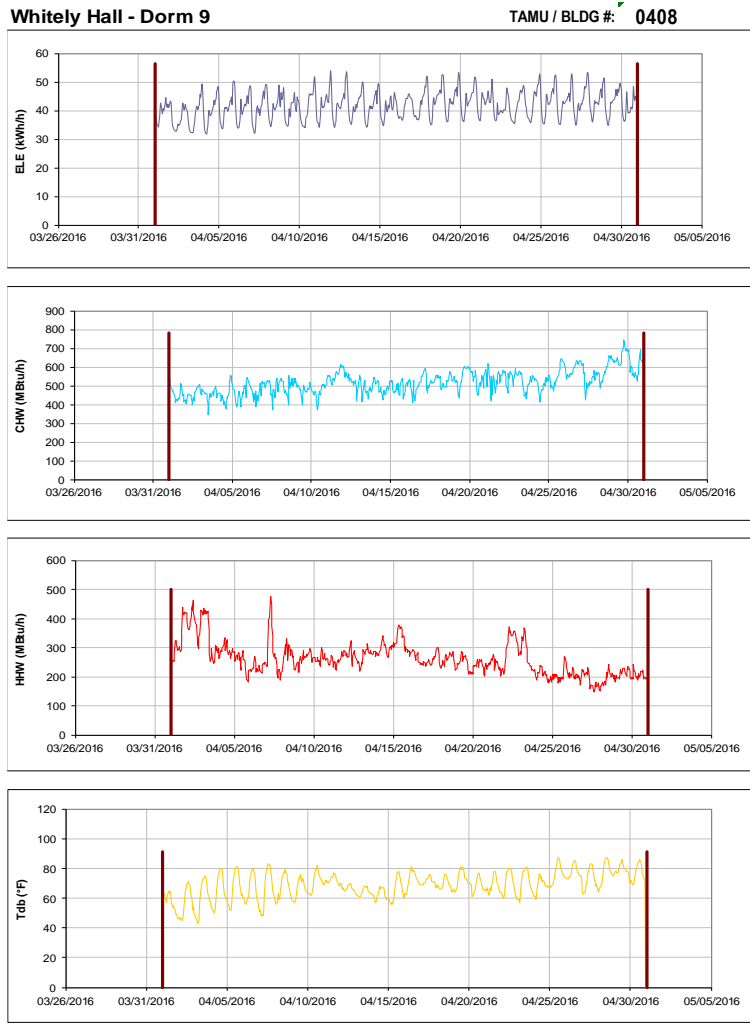


Figure III-35 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Whitely Hall - Dorm 9 during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

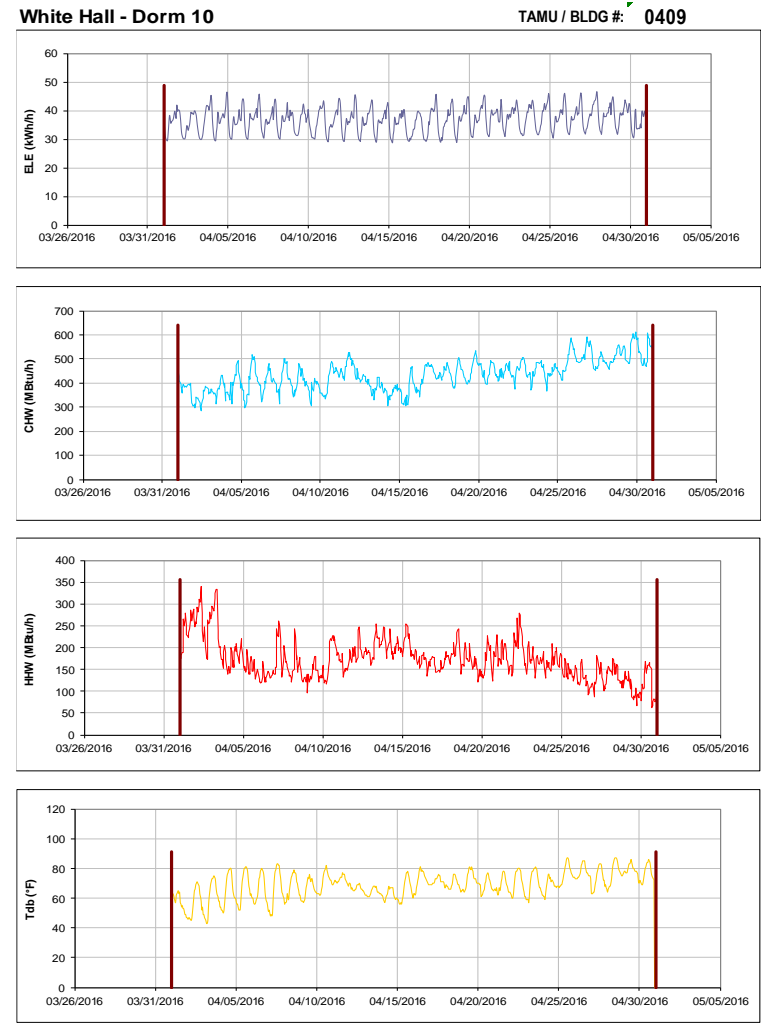


Figure III-36 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Hall - Dorm 10 during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

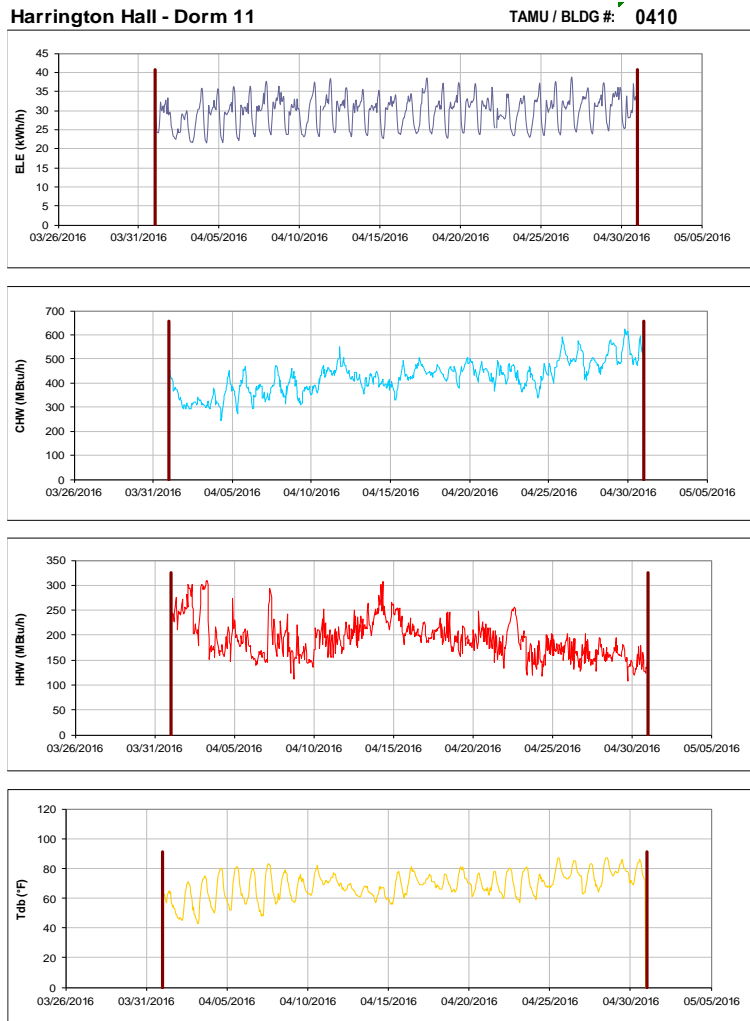


Figure III-37 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrington Hall - Dorm 11 during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

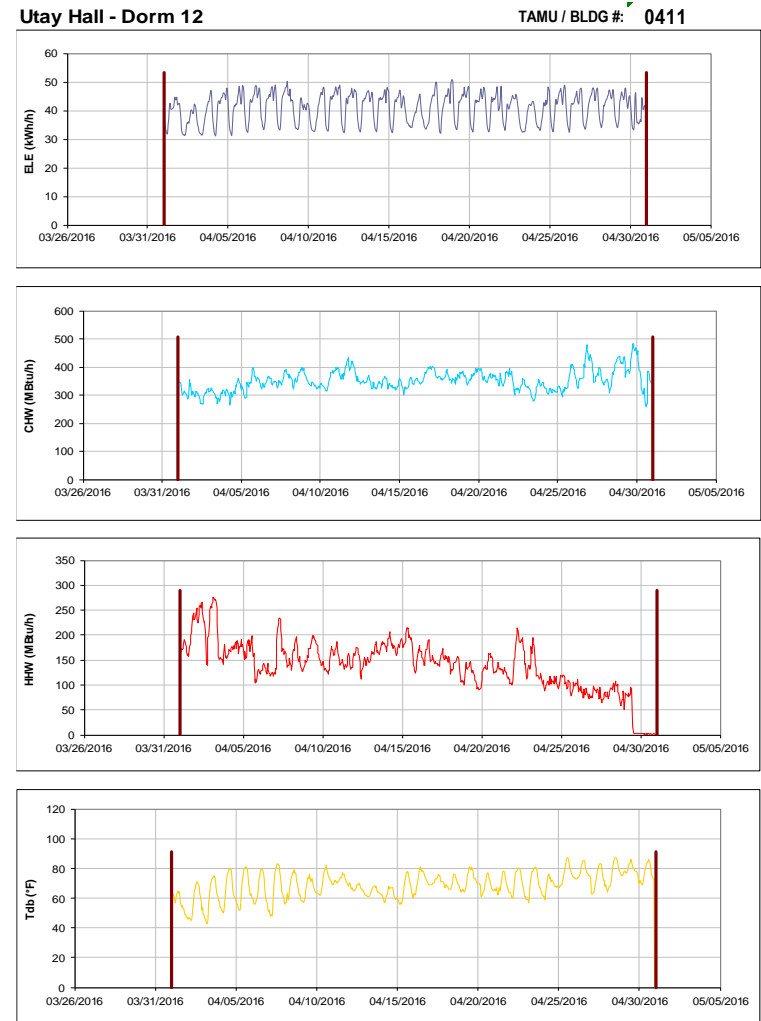


Figure III-38 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utay Hall - Dorm 12 during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

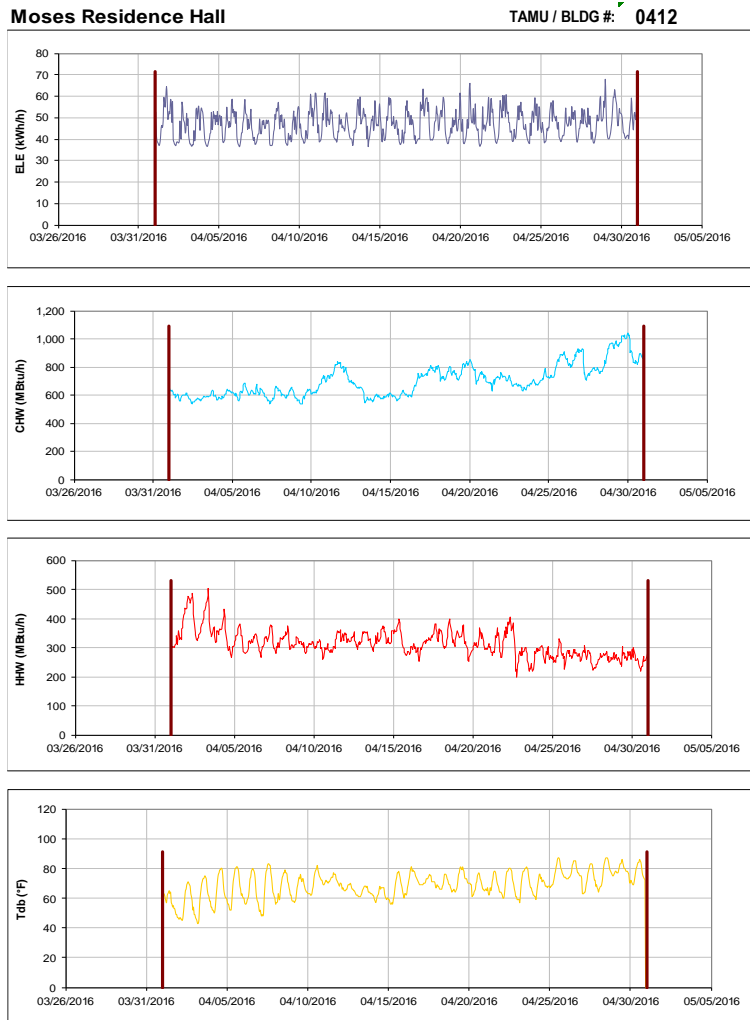


Figure III-39 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Moses Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

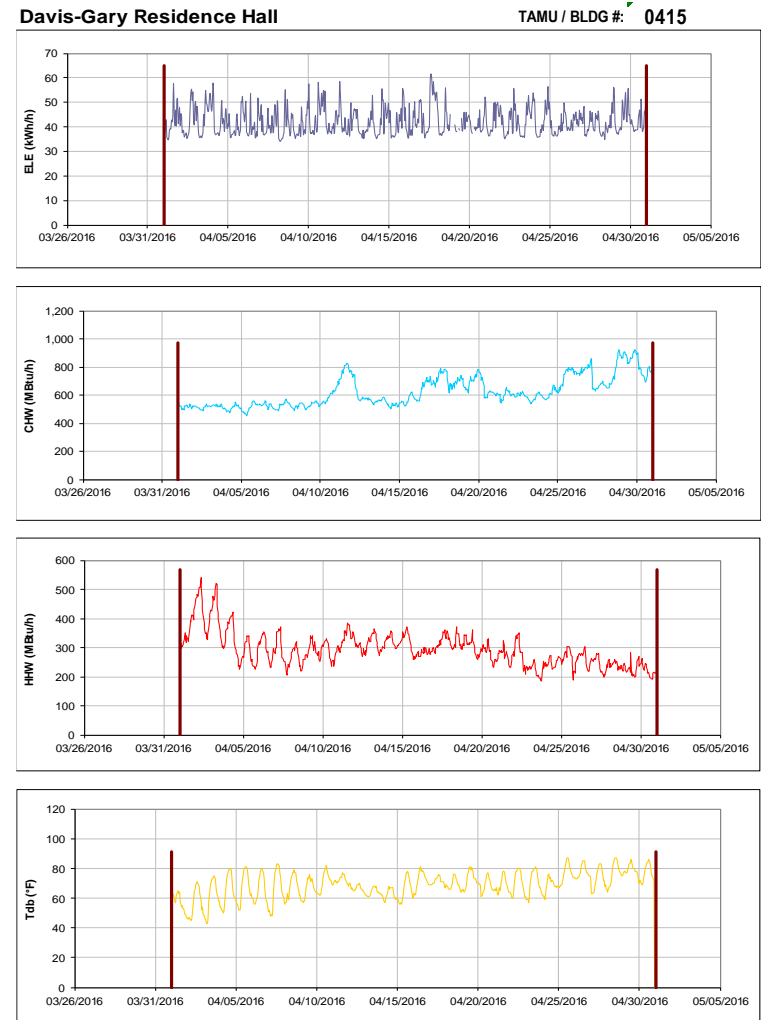


Figure III-40 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Davis-Gary Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

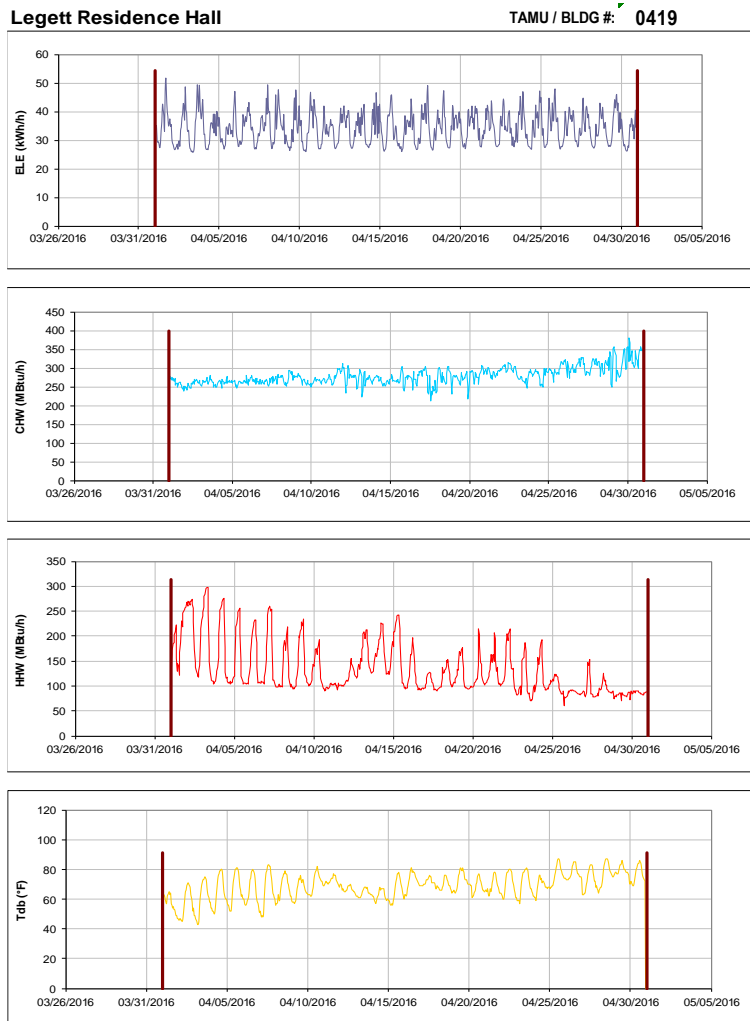


Figure III-41 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Legett Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

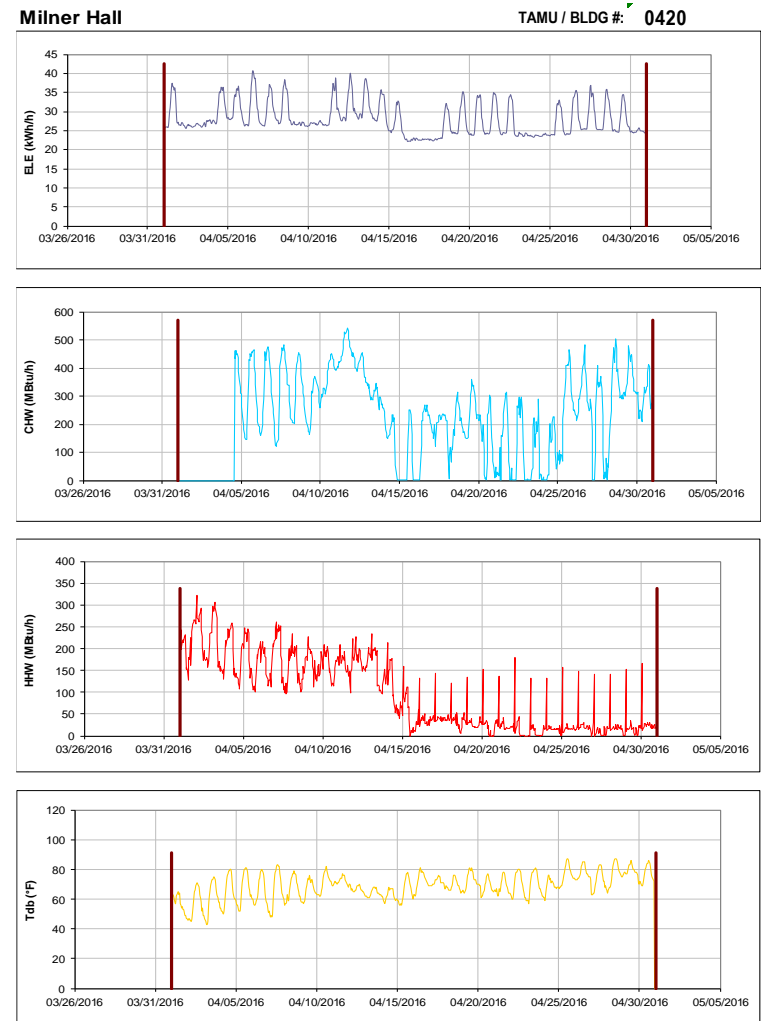


Figure III-42 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Milner Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Walton Residence Hall

TAMU / BLDG #: 0422

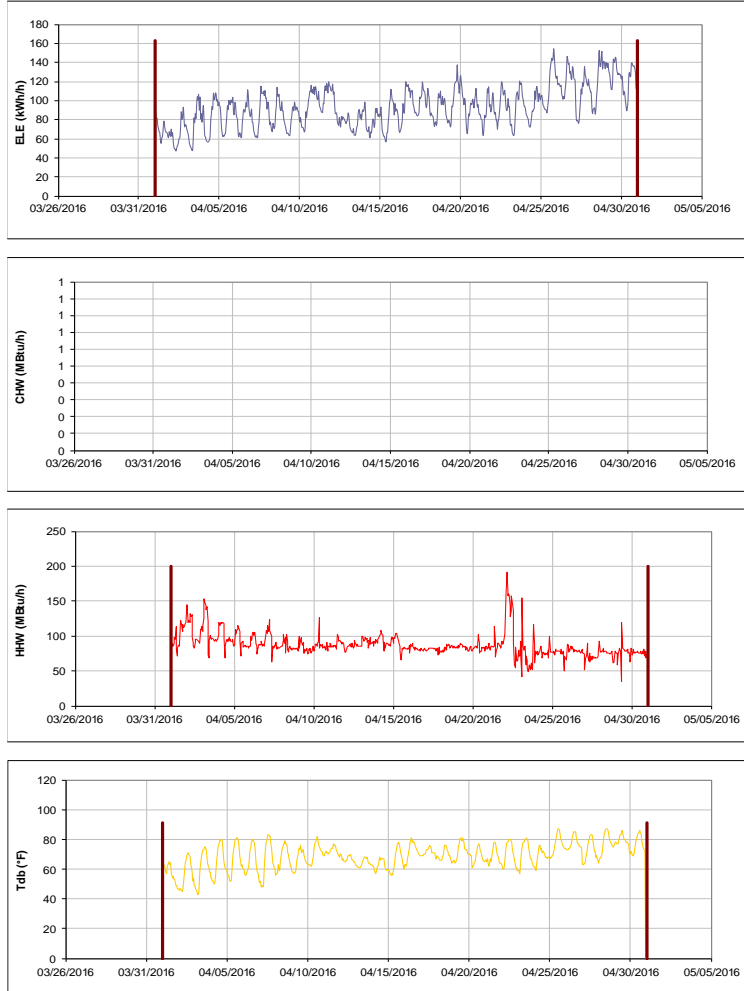


Figure III-43 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Walton Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Hotard Hall

TAMU / BLDG #: 0424

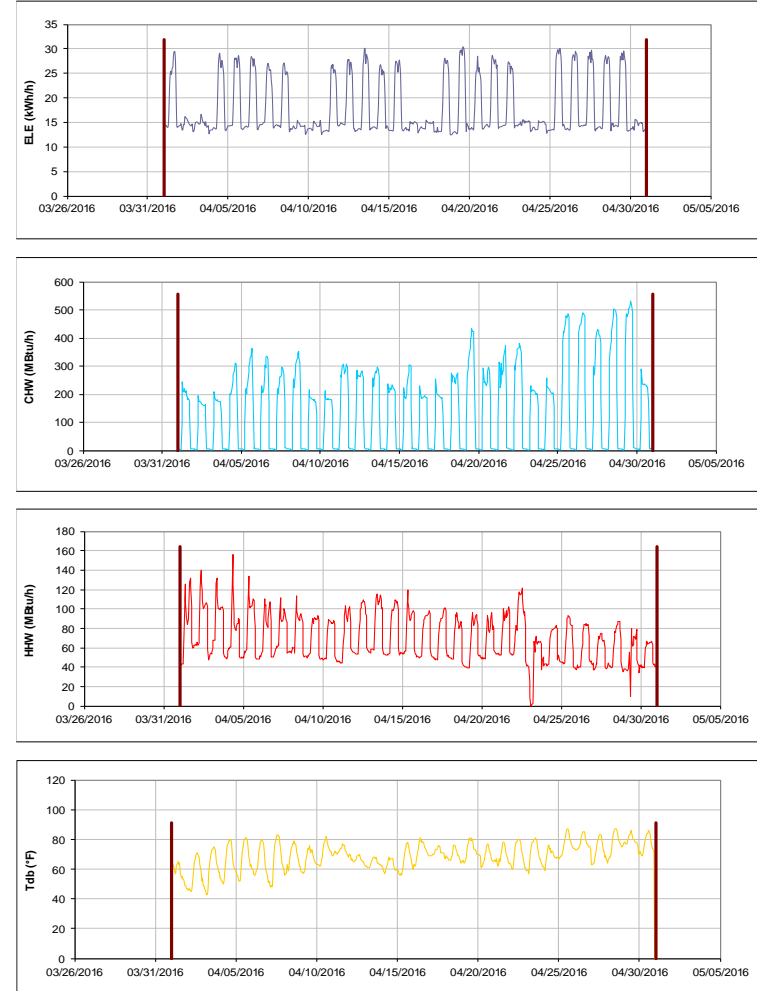


Figure III-44 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hotard Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

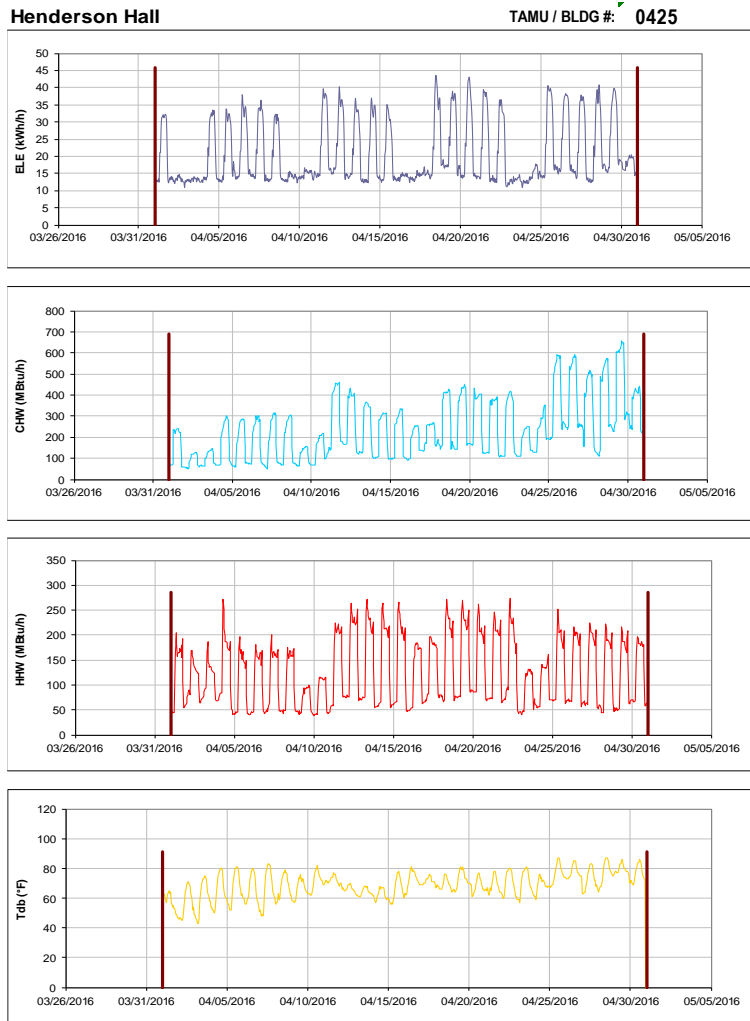


Figure III-45 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Henderson Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

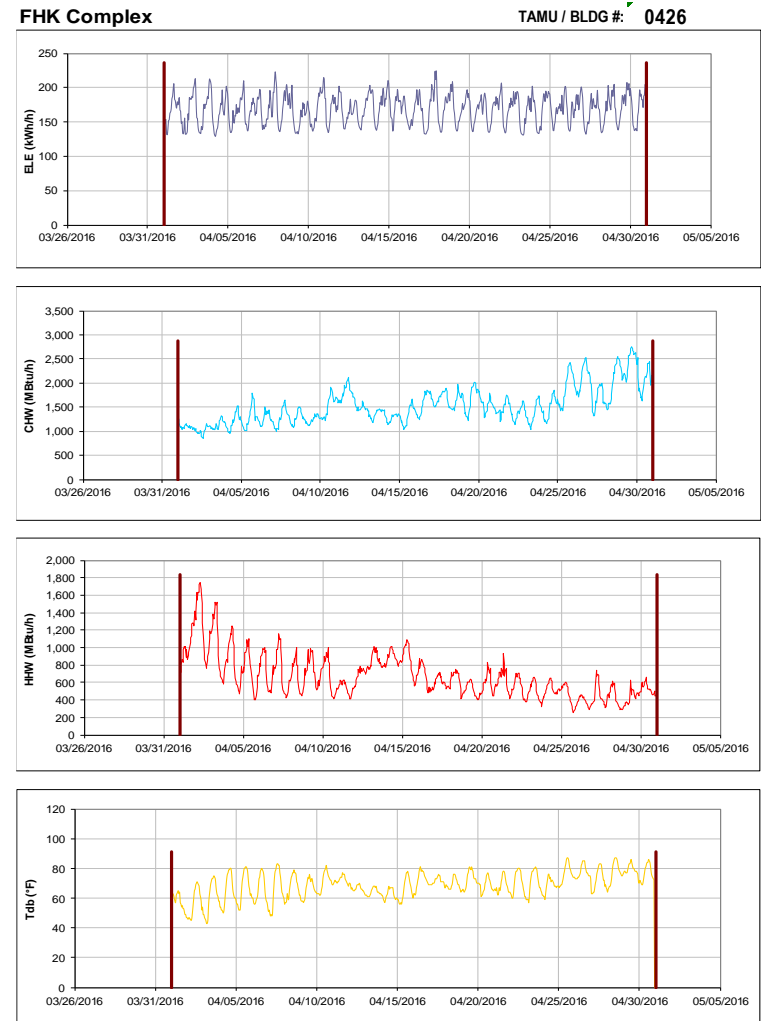


Figure III-46 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for FHK Complex during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Schumacher Residence Hall

TAMU / BLDG #: 0430

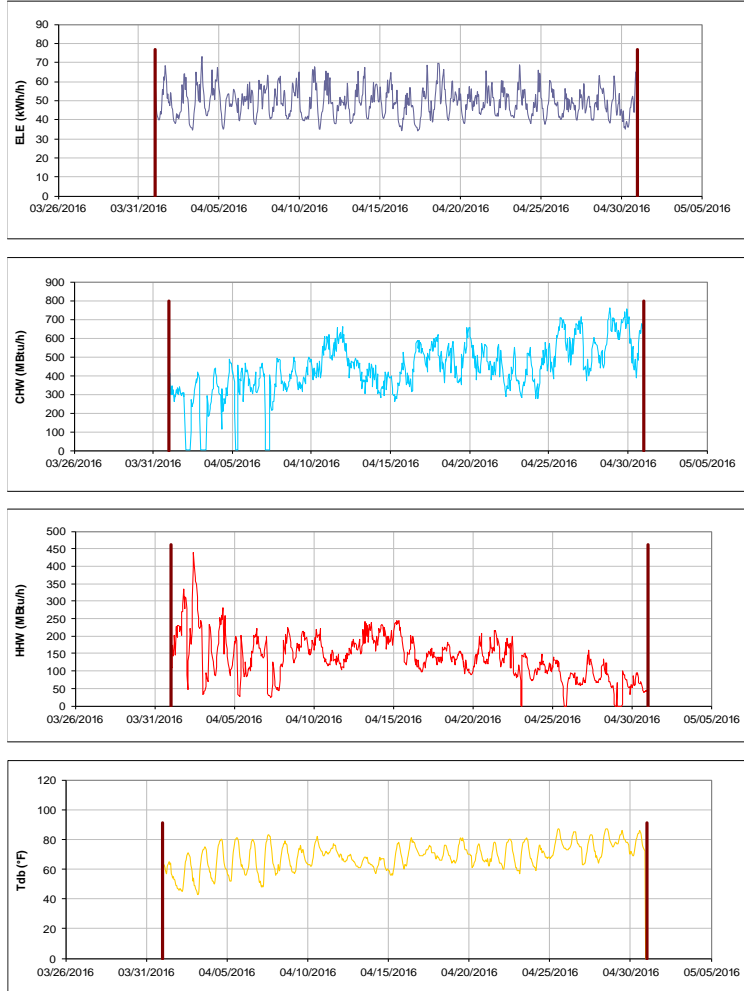


Figure III-47 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Schumacher Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Mosher Commons Krueger Dunn Aston

TAMU / BLDG #: 0-0441-0442-0447

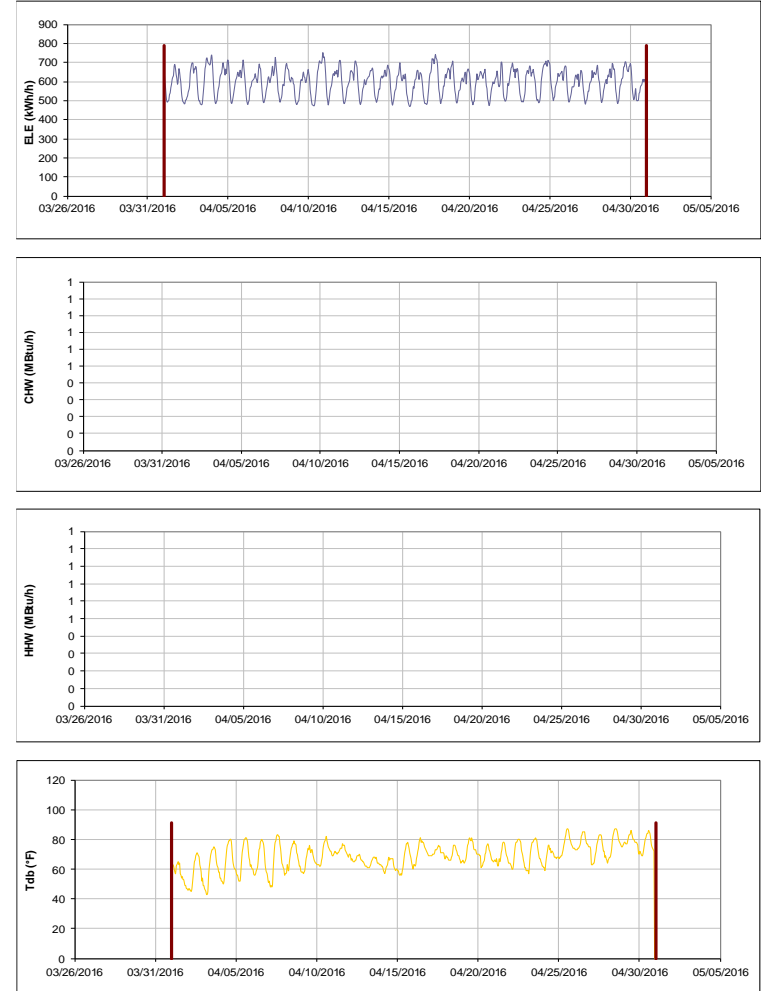


Figure III-48 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mosher Commons Krueger Dunn Aston during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

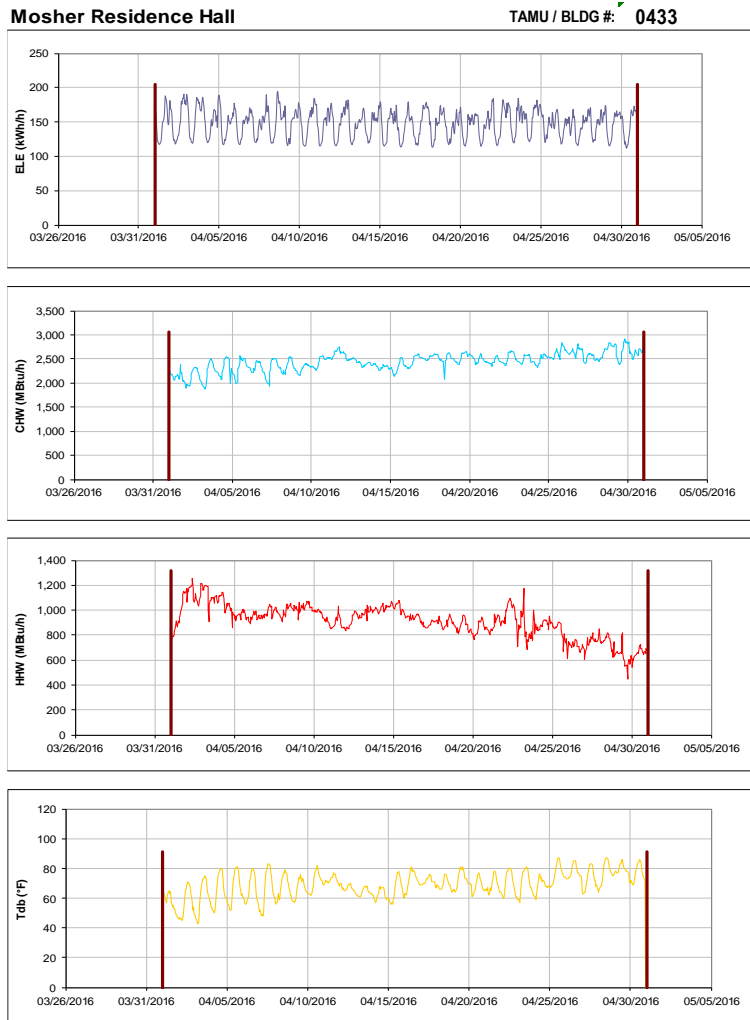


Figure III-49 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mosher Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

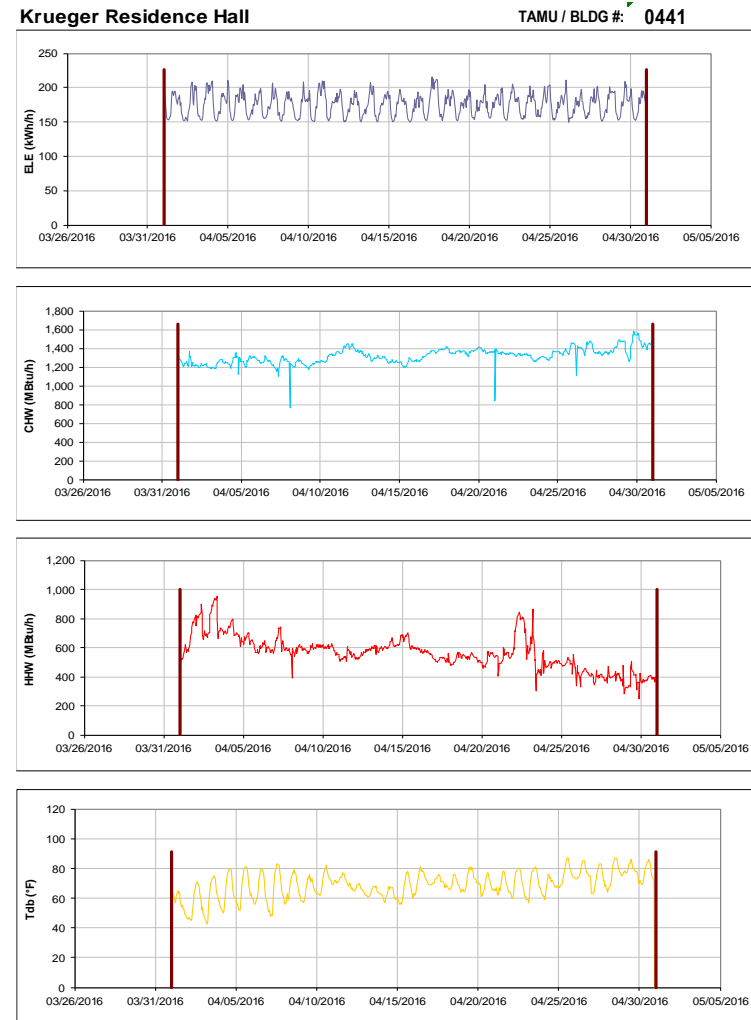


Figure III-50 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Krueger Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-51 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Dunn Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

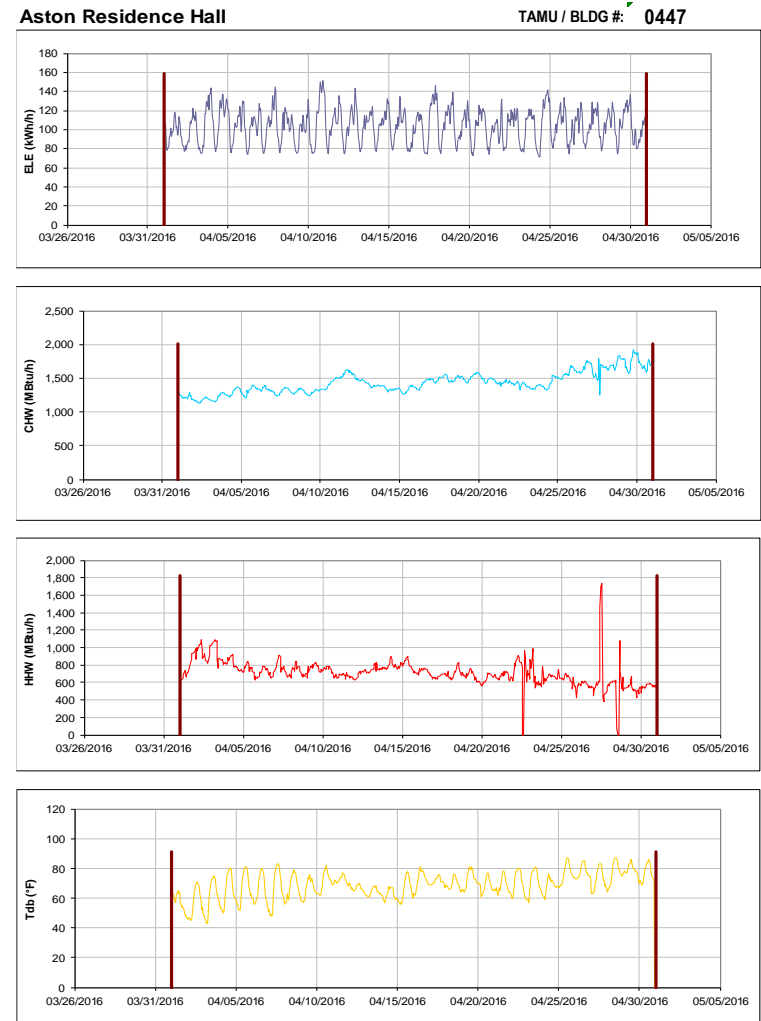


Figure III-52 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Aston Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

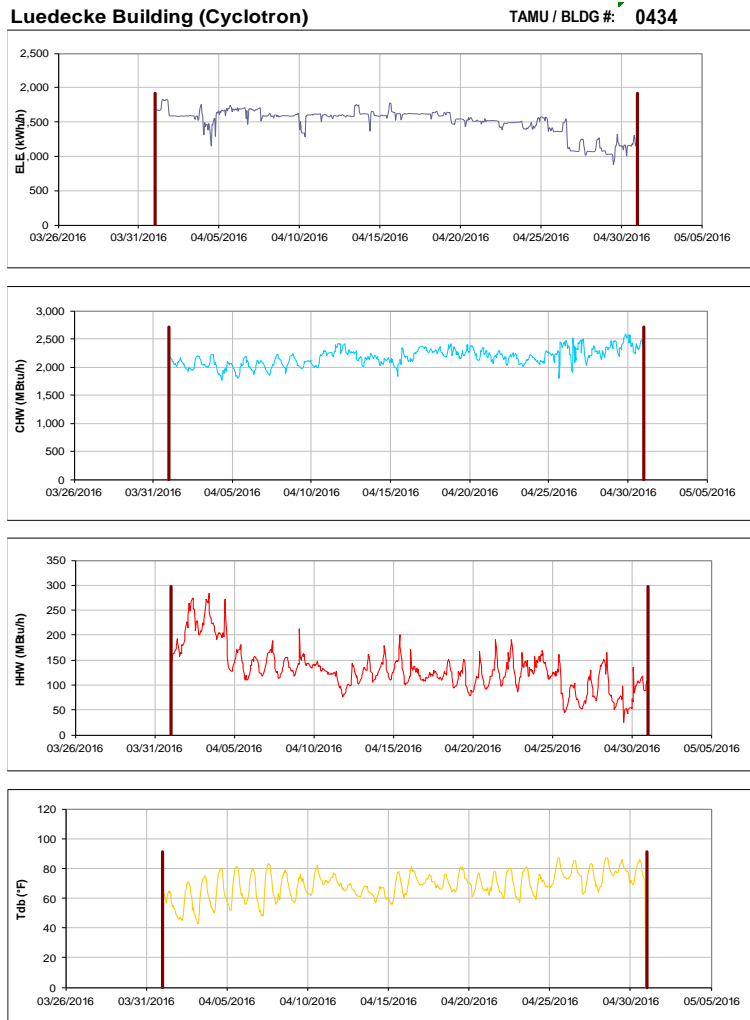


Figure III-53 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Luedecke Building (Cyclotron) during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

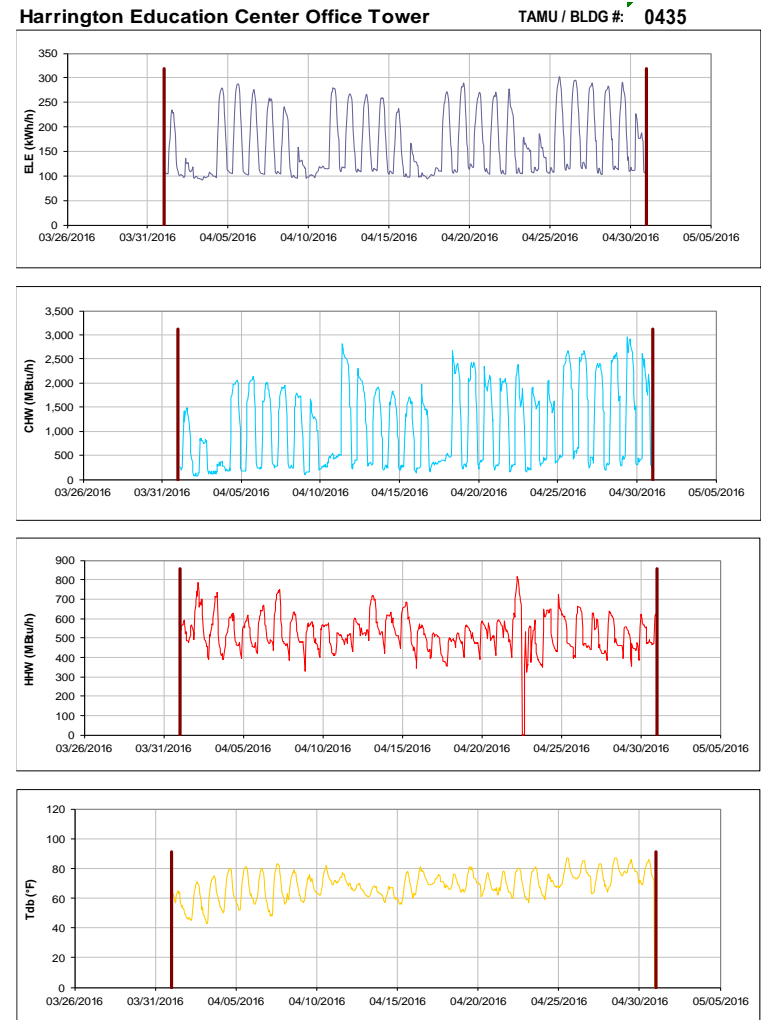


Figure III-54 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrington Education Center Office Tower during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-55 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed-McDonald Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

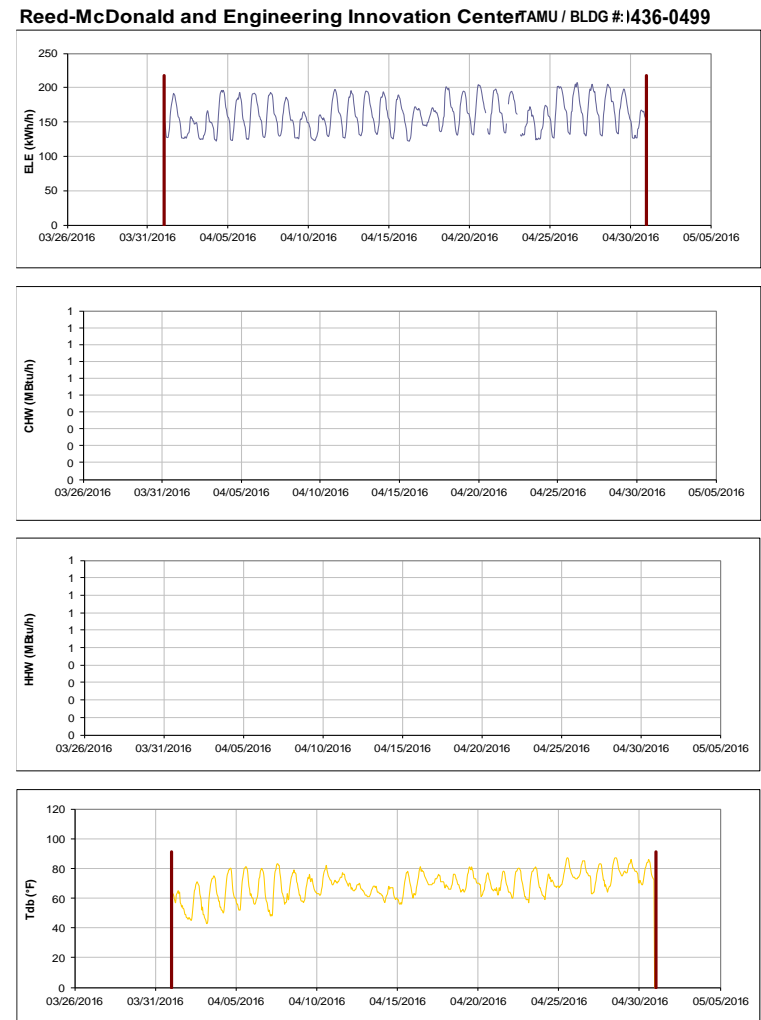


Figure III-56 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed-McDonald and Engineering Innovation Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

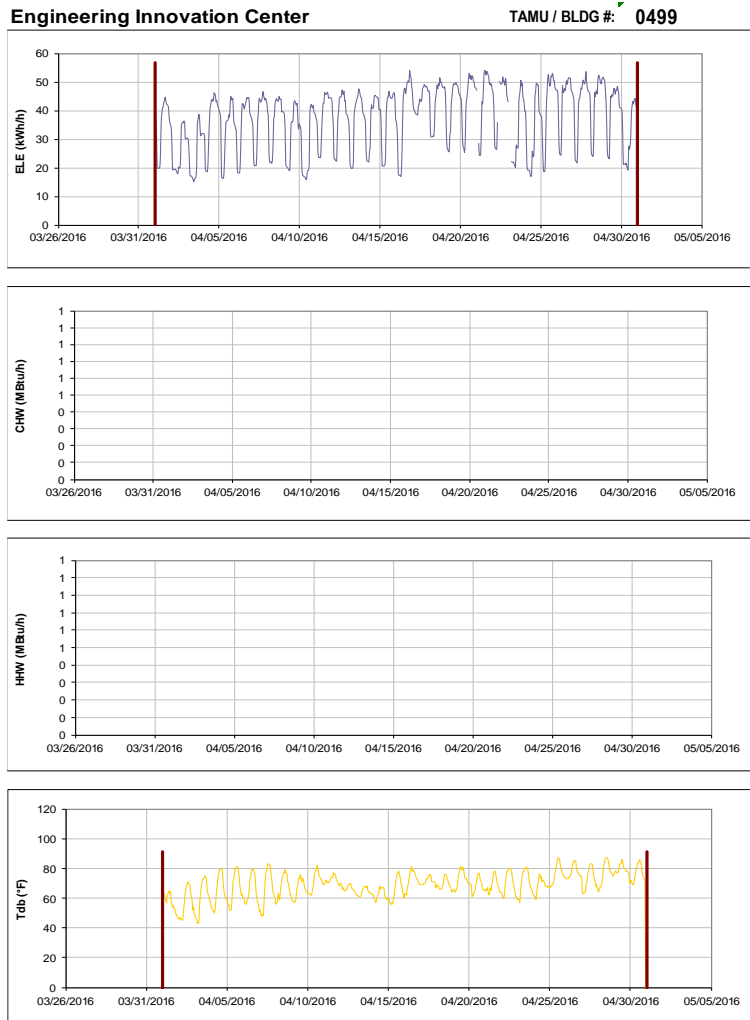


Figure III-57 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Engineering Innovation Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

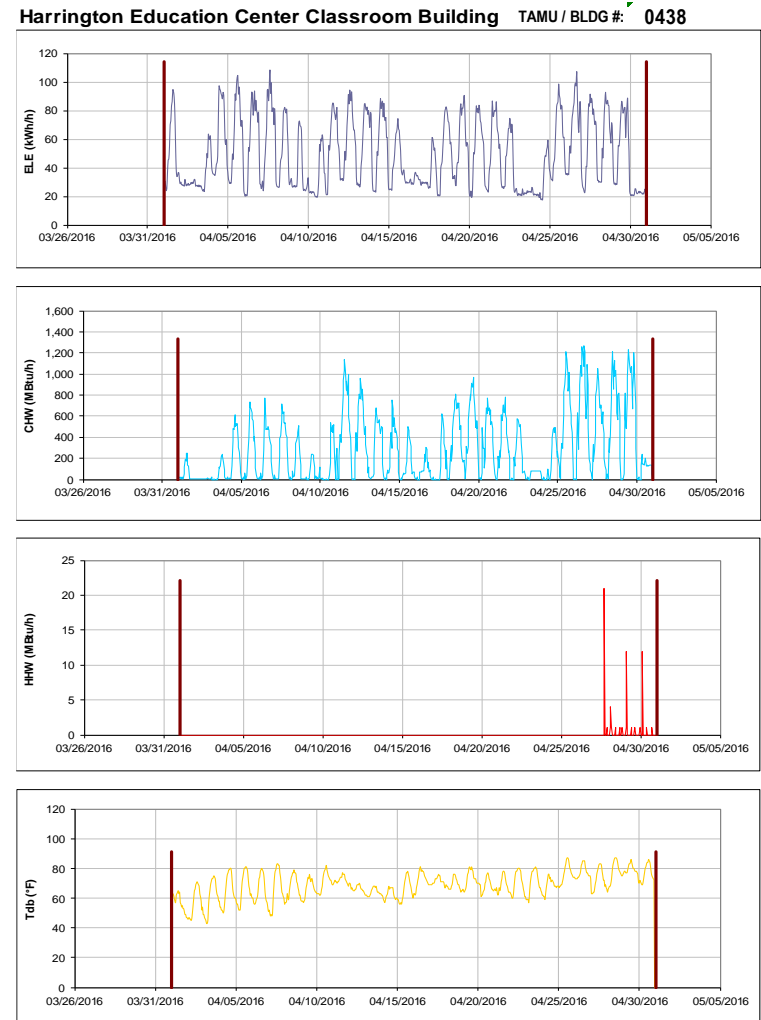


Figure III-58 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrington Education Center Classroom Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

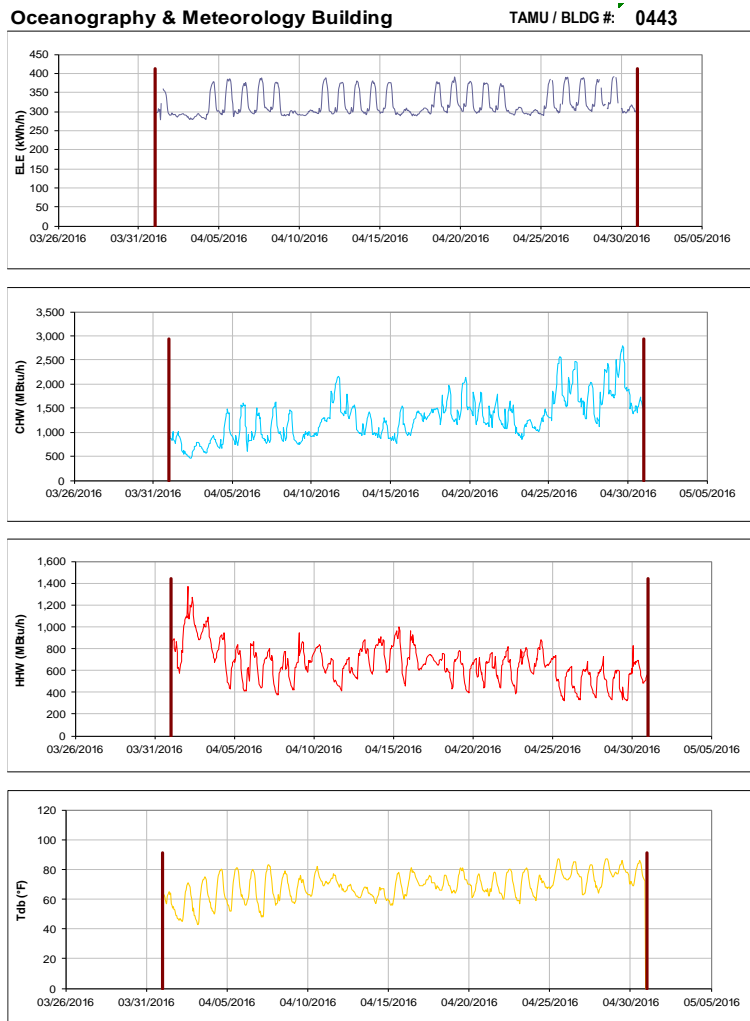


Figure III-59 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Oceanography & Meteorology Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

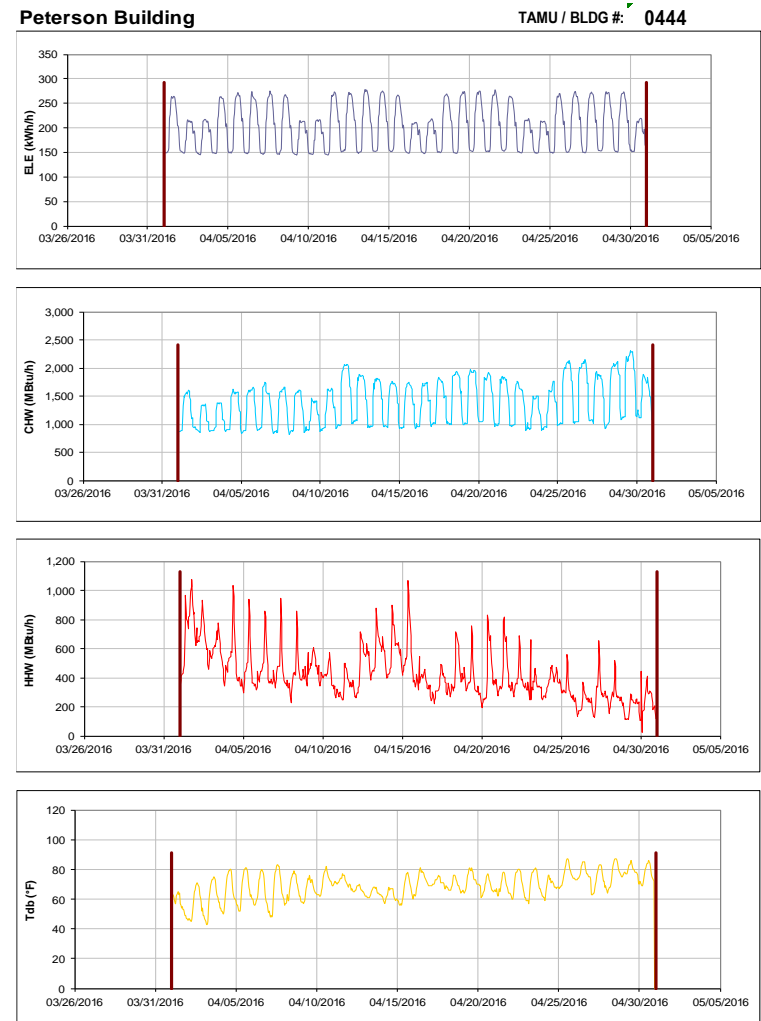


Figure III-60 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Peterson Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Teague Research Center and DPC Annex TAMU / BLDG #: 1445-0517

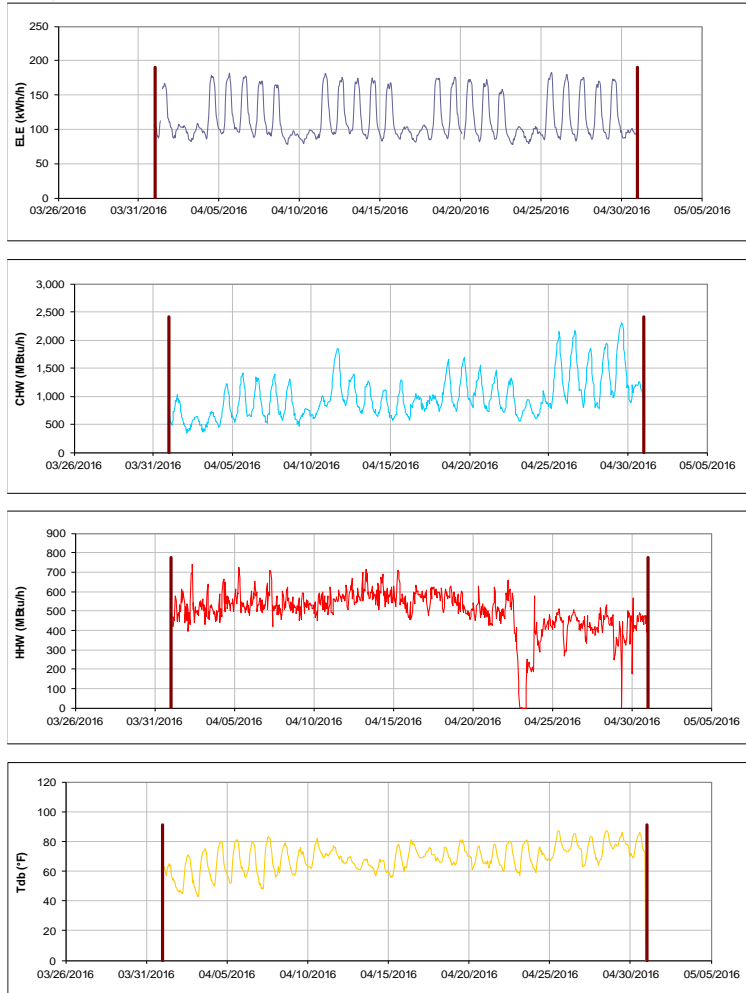


Figure III-61 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Teague Research Center and DPC Annex during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Teague Research Center TAMU / BLDG #: 0445

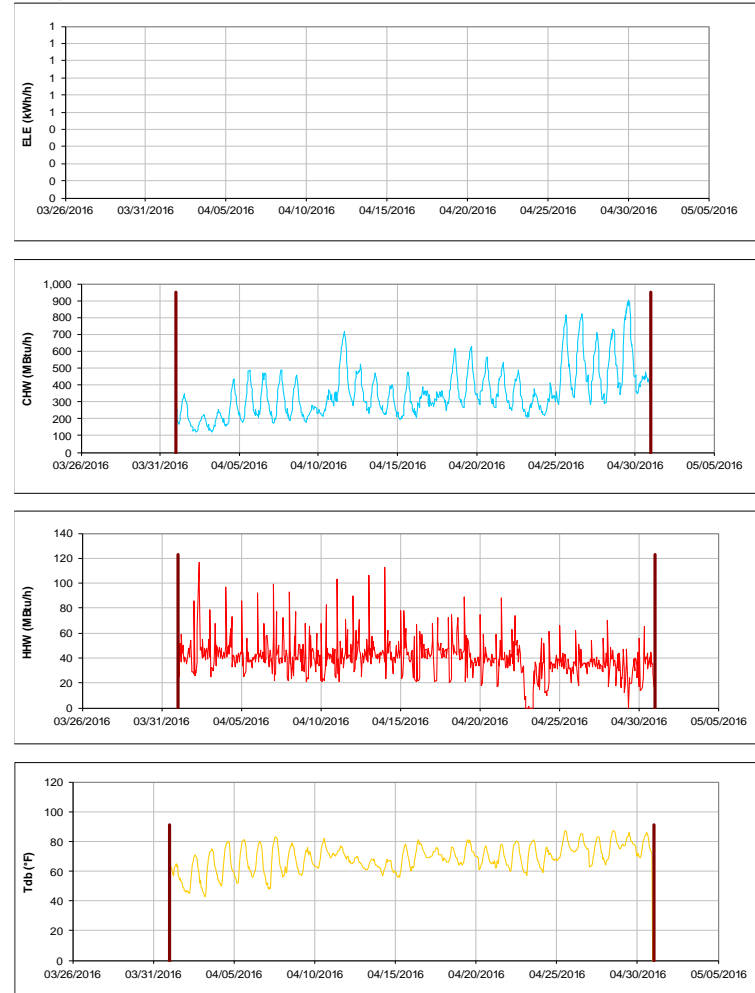


Figure III-62 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Teague Research Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

DPC Annex

TAMU / BLDG #: 0517

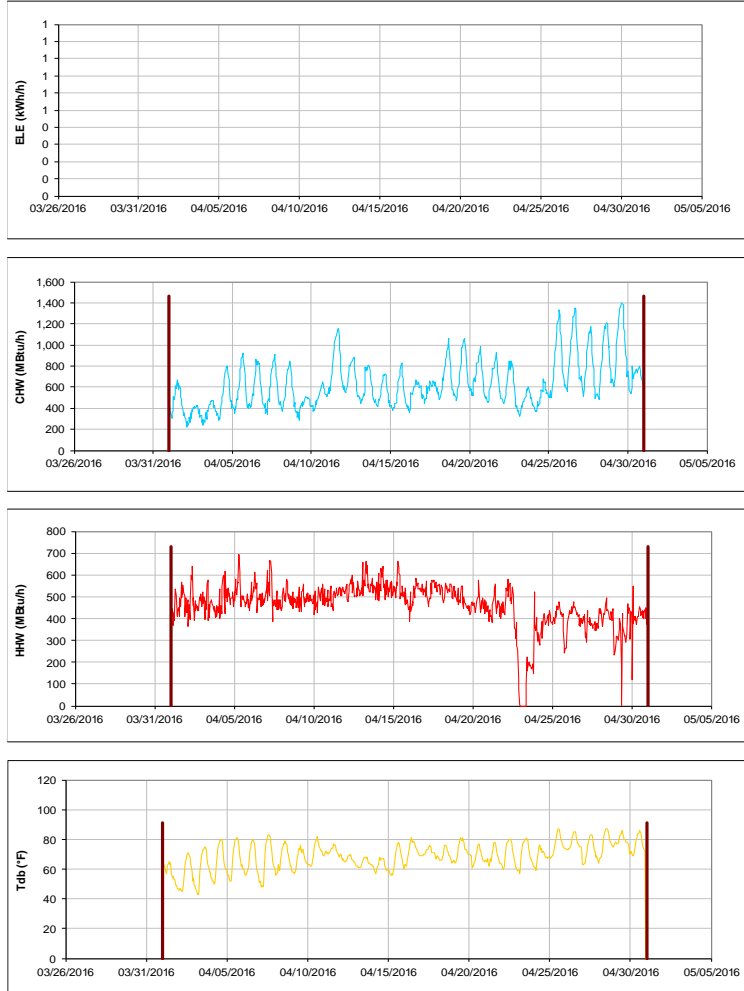


Figure III-63 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for DPC Annex during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Rudder Tower and Theatre Complex

TAMU / BLDG #: 0446



Figure III-64 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Tower and Theatre Complex during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Rudder Theatre Complex

TAMU / BLDG #: 0446-A

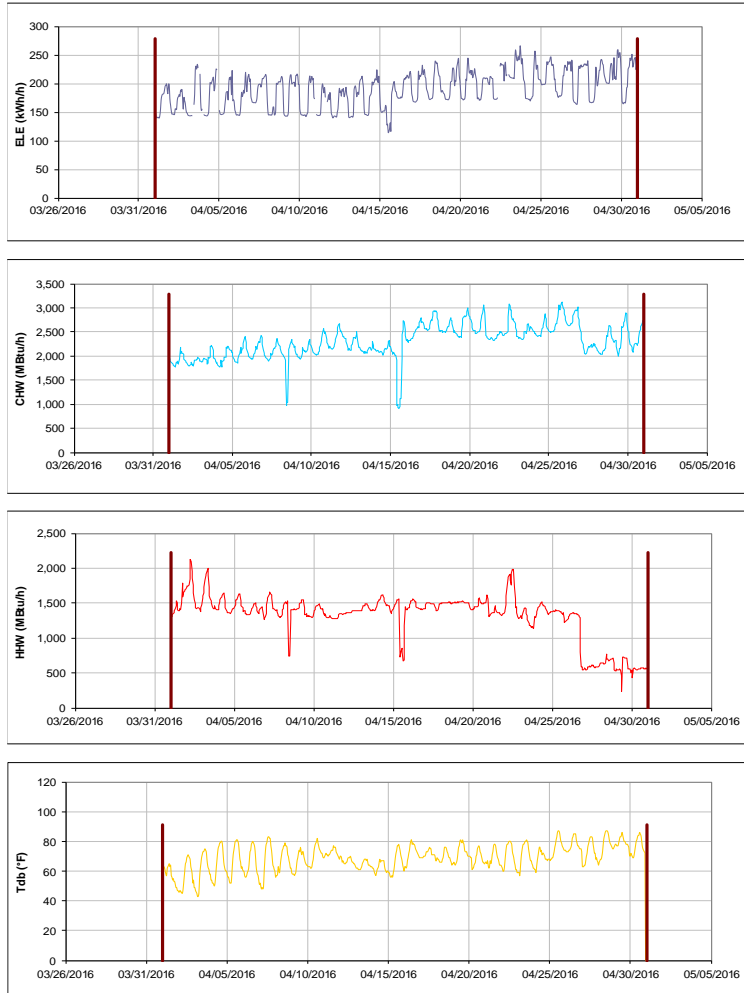


Figure III-65 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Theatre Complex during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Rudder Tower

TAMU / BLDG #: 0446-B



Figure III-66 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Tower during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

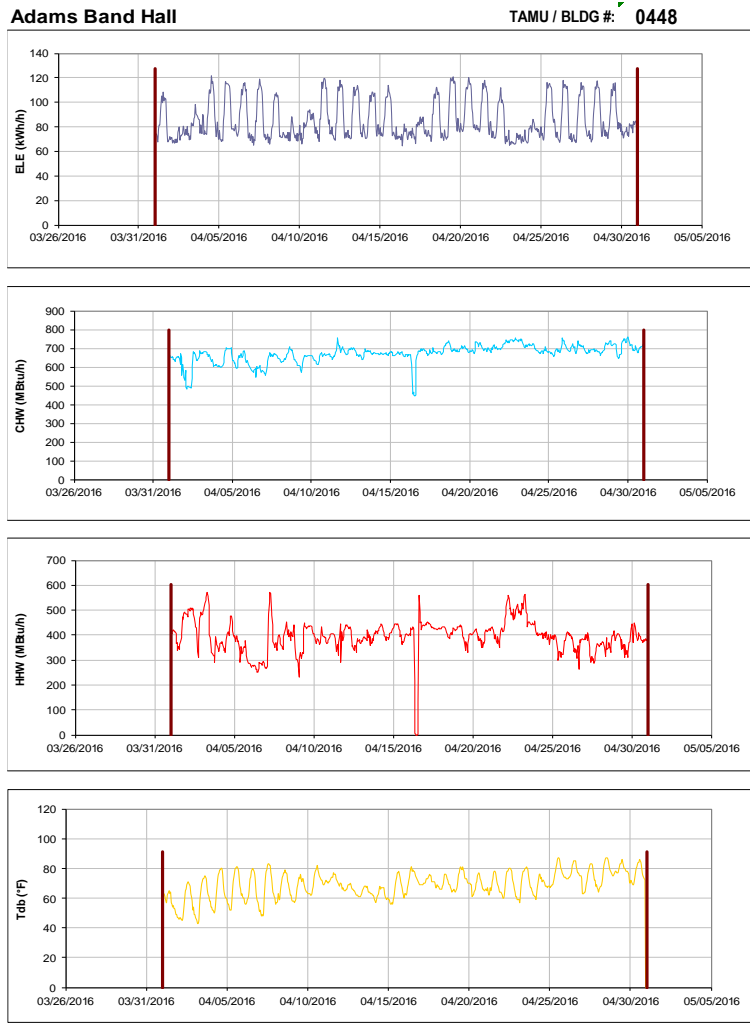


Figure III-67 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Adams Band Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

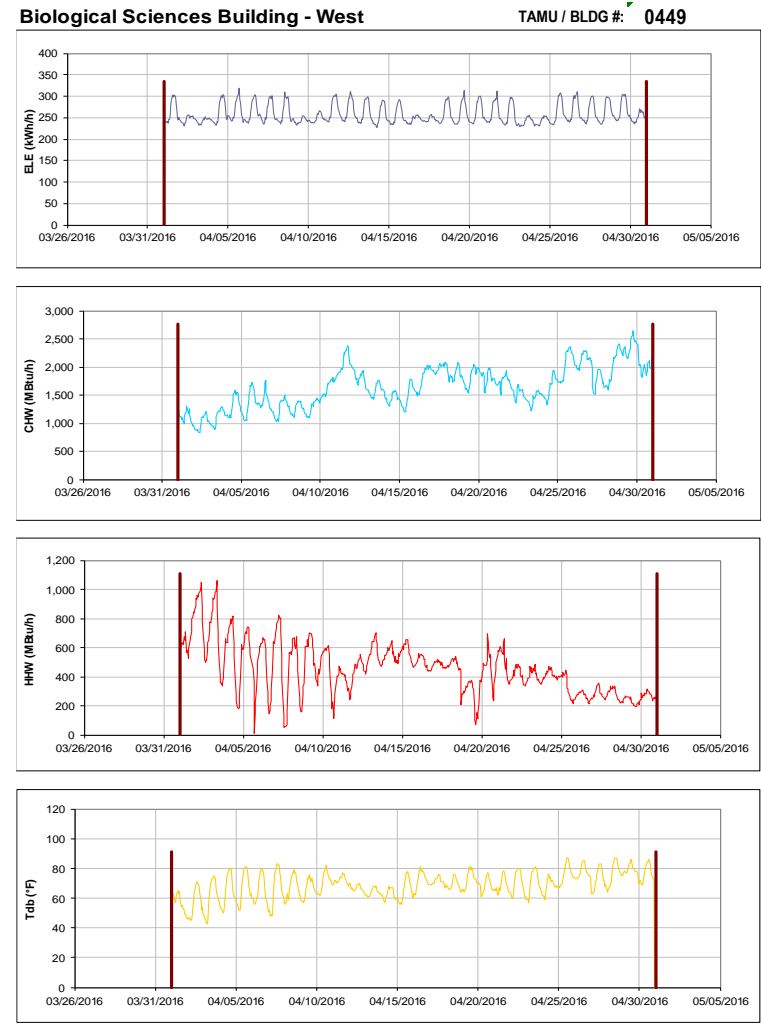


Figure III-68 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Sciences Building - West during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-69 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Duncan Dining Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

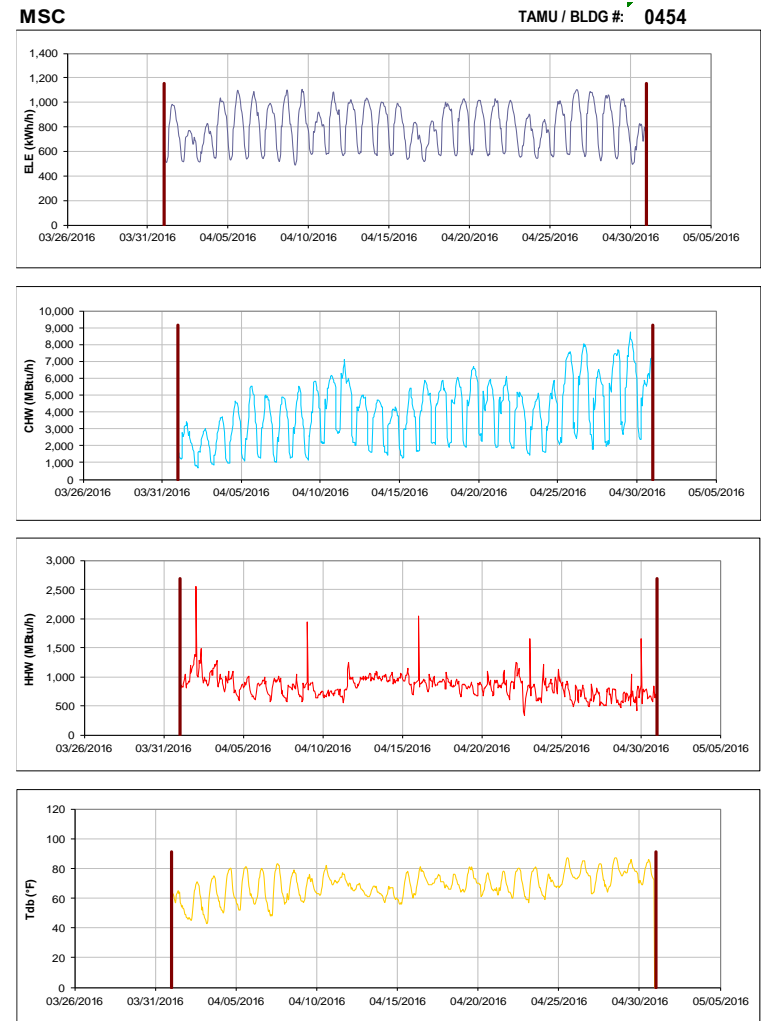


Figure III-70 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for MSC during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Military Sciences Building

TAMU / BLDG #: 0456

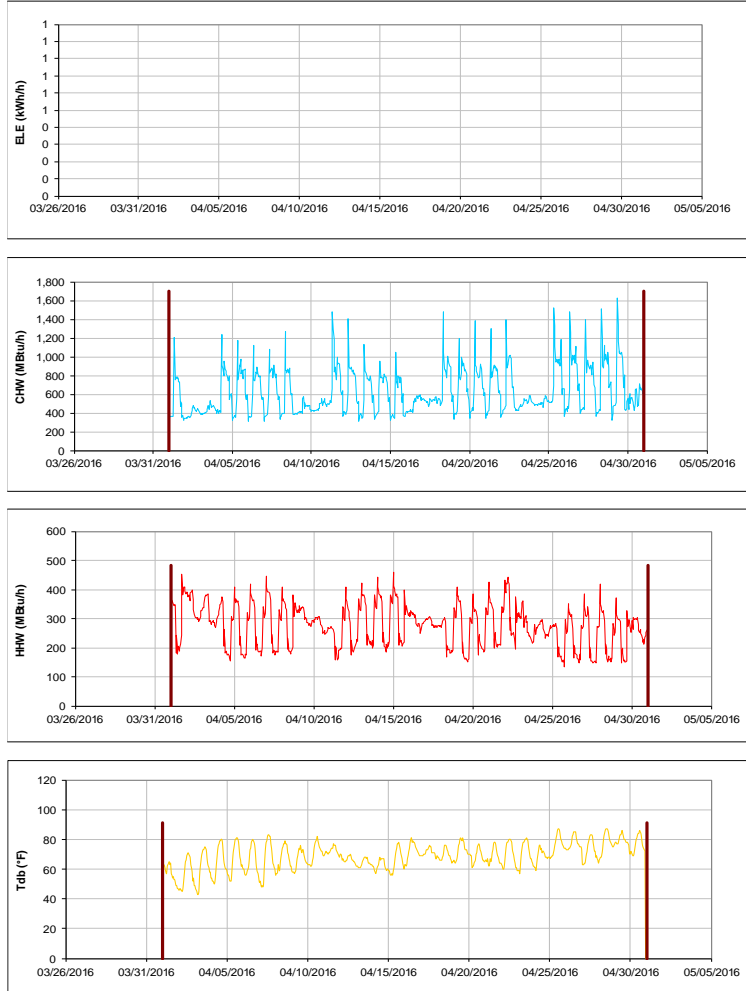


Figure III-71 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Military Sciences Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

TAES Annex Building

TAMU / BLDG #: 0457

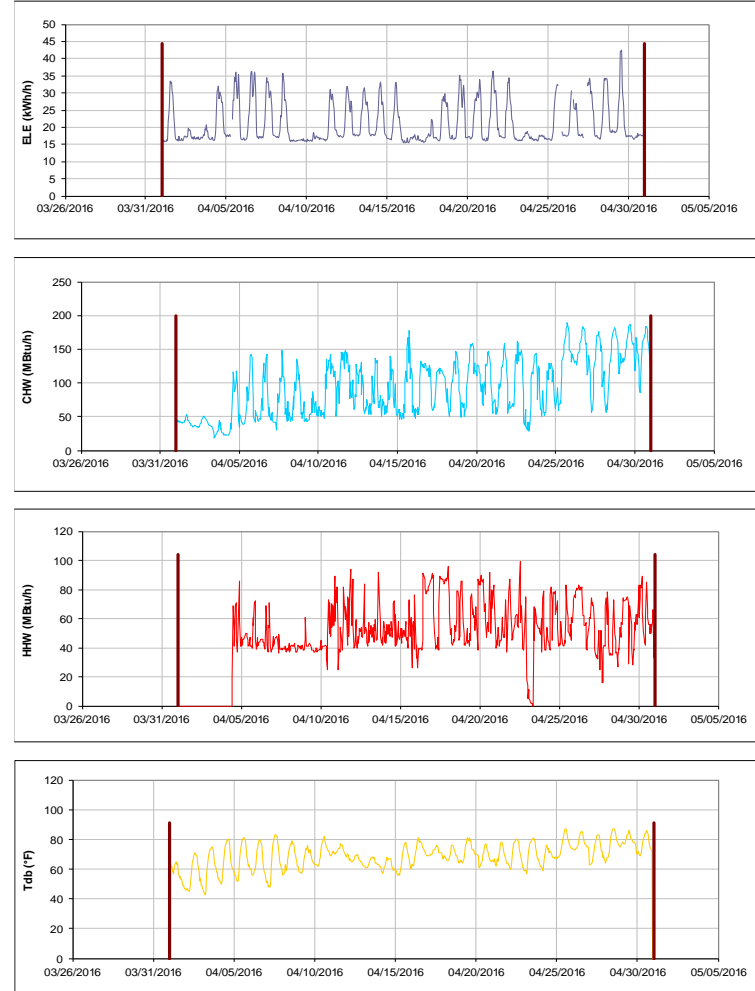


Figure III-72 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TAES Annex Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

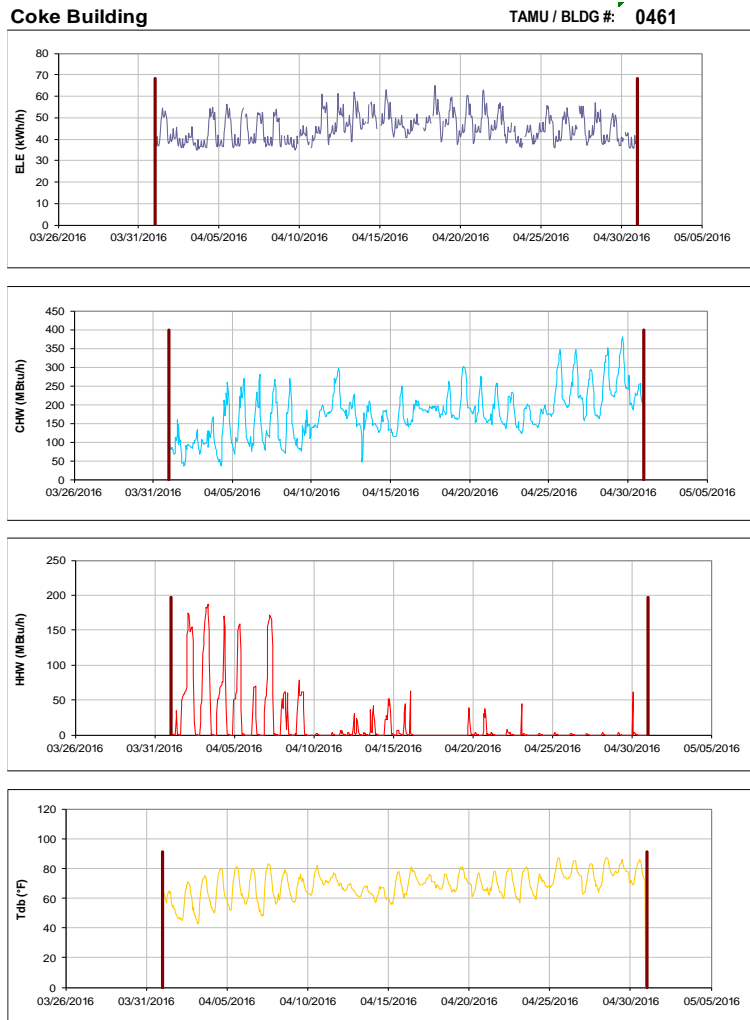


Figure III-73 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Coke Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

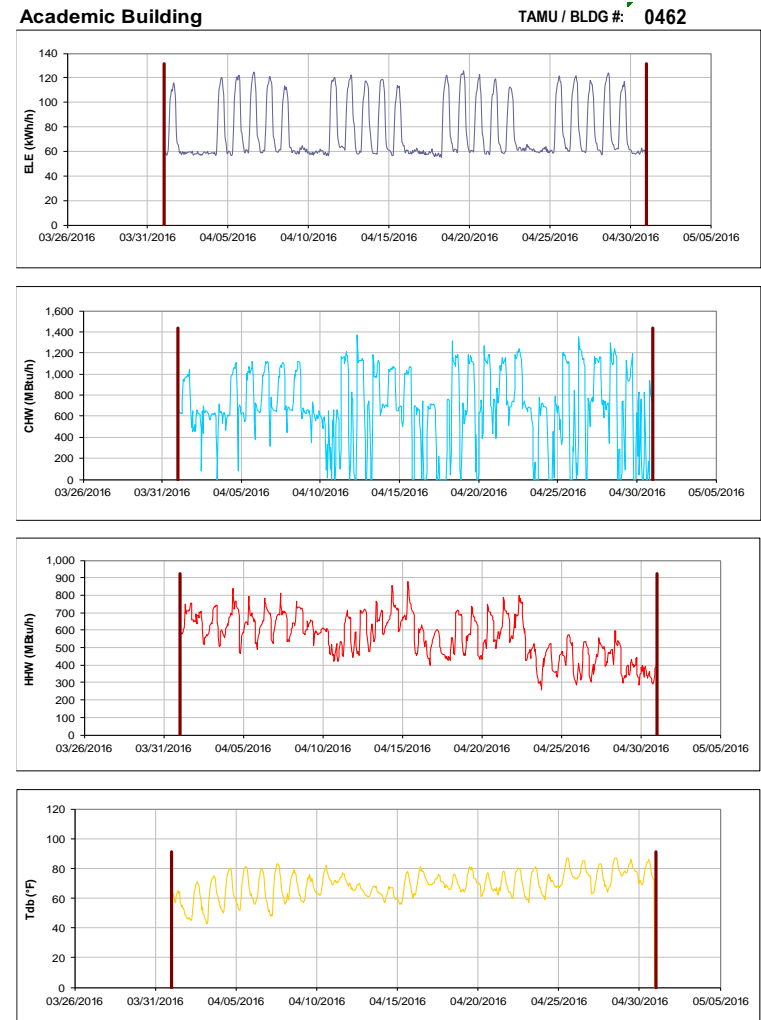


Figure III-74 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Academic Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

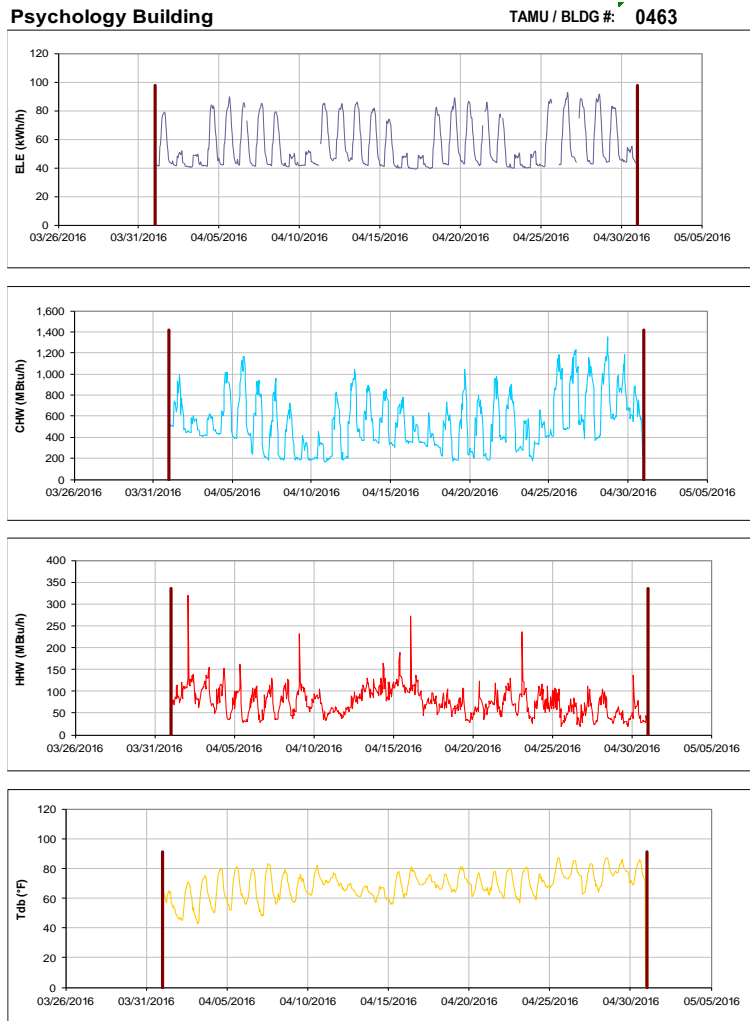


Figure III-75 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Psychology Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

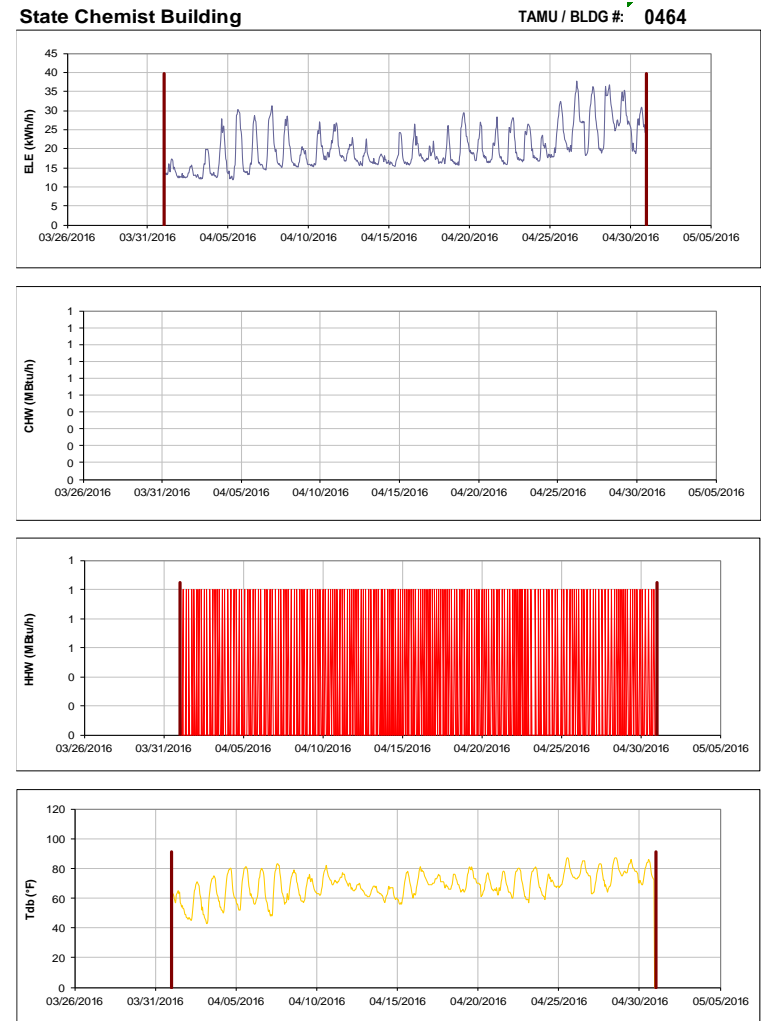


Figure III-76 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for State Chemist Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

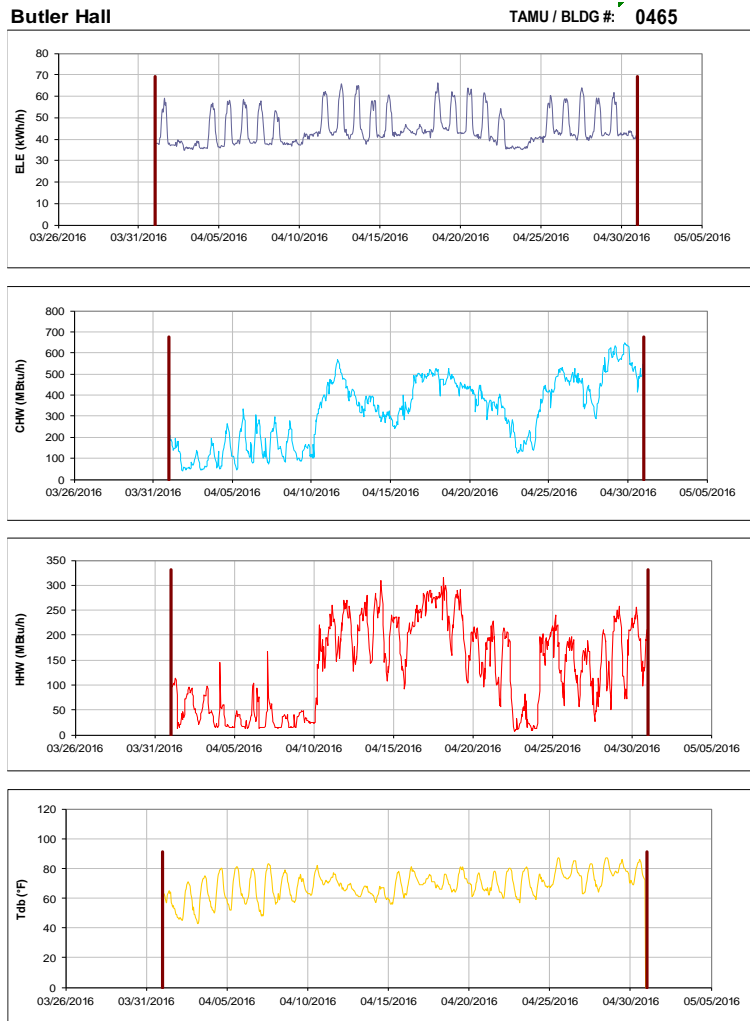


Figure III-77 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Butler Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-78 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Sciences Building - East during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

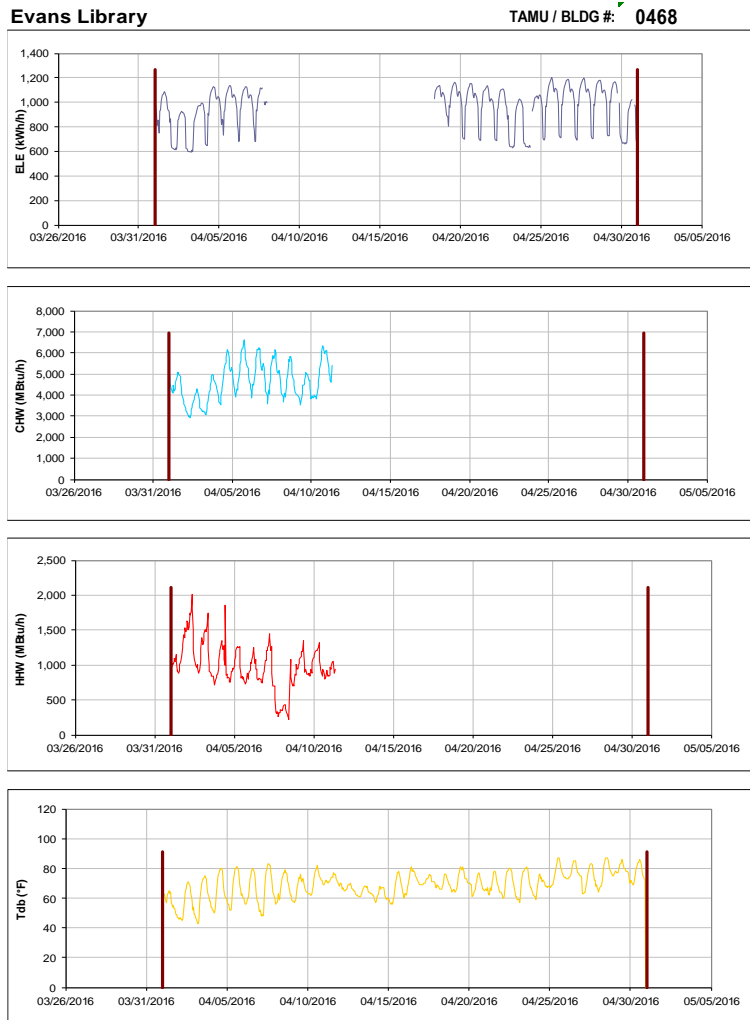


Figure III-79 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Evans Library during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

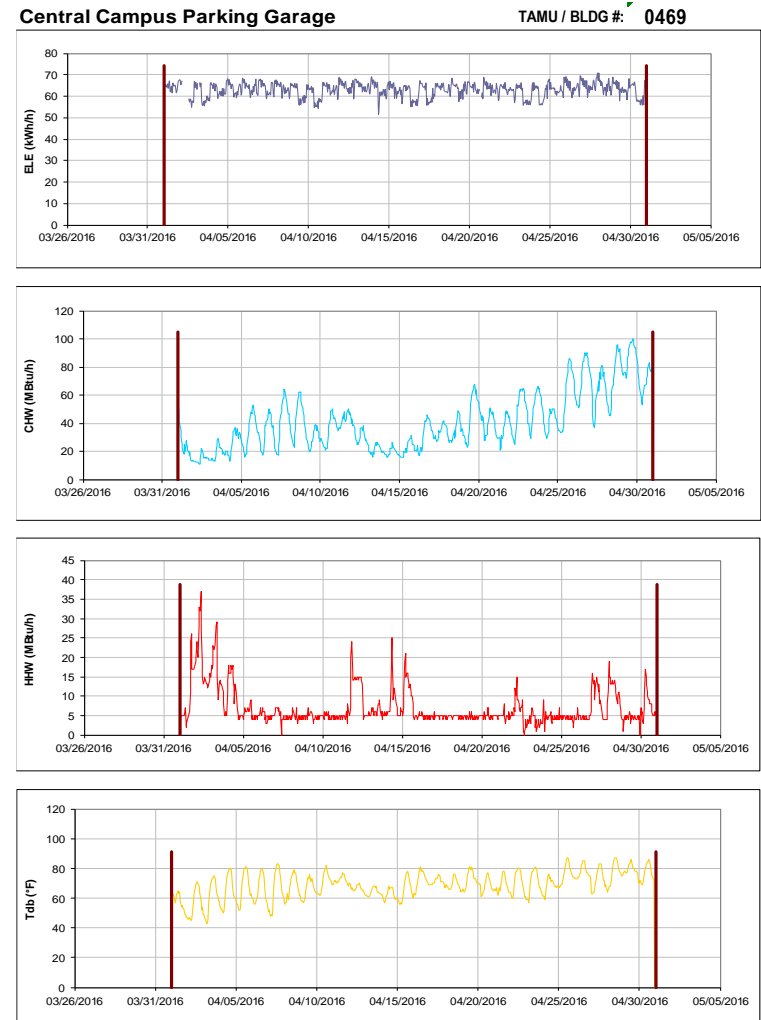


Figure III-80 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Central Campus Parking Garage during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

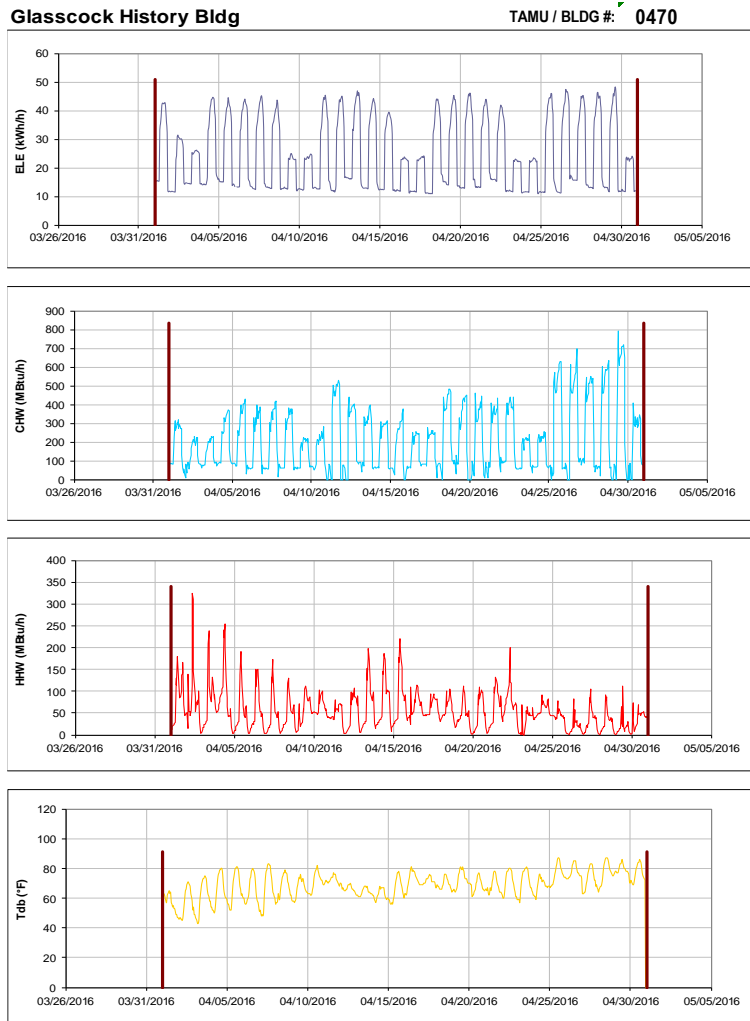


Figure III-81 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Glasscock History Bldg during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

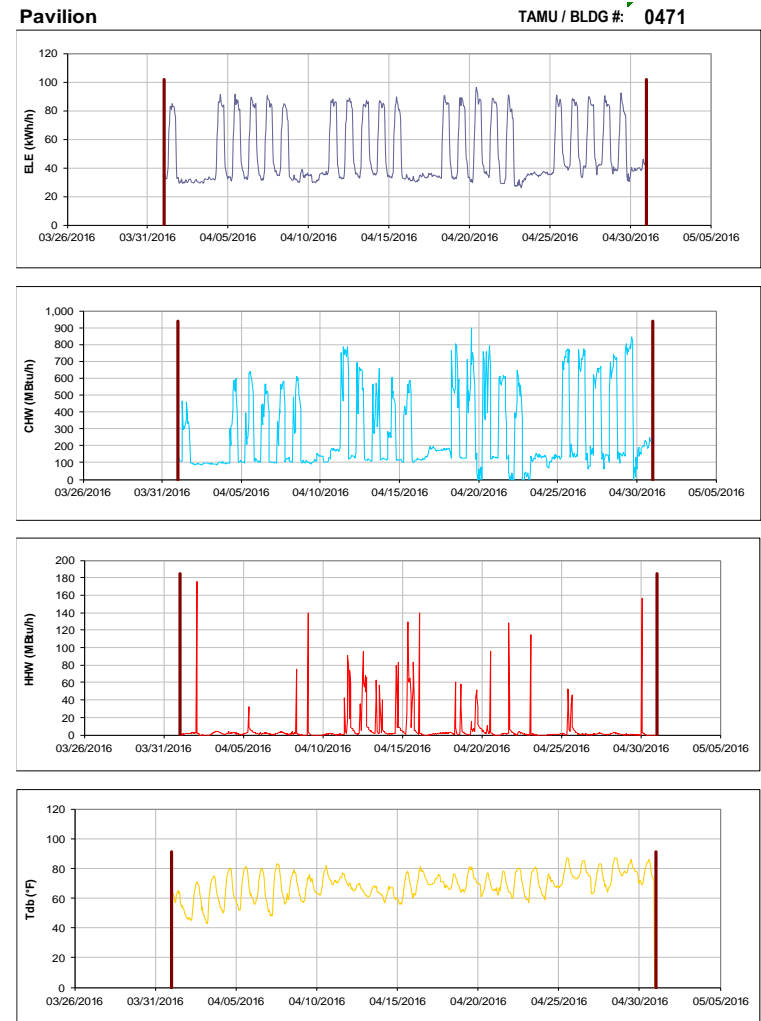


Figure III-82 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Pavilion during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Animal Industries

TAMU / BLDG #: 0472

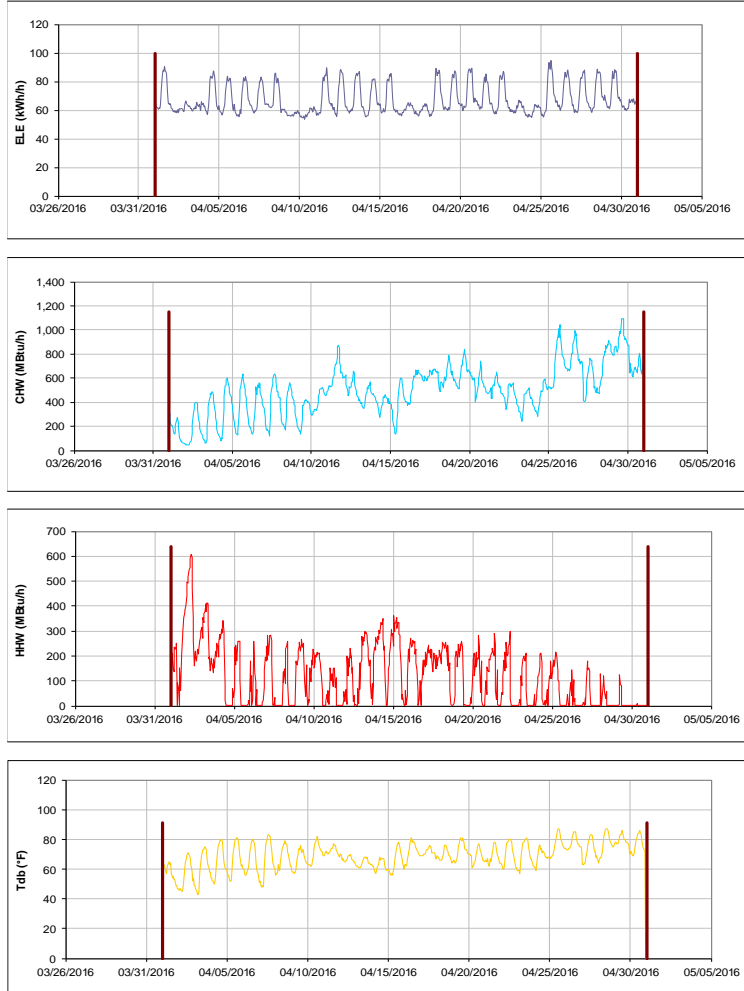


Figure III-83 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Animal Industries during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Williams Administration Building

TAMU / BLDG #: 0473

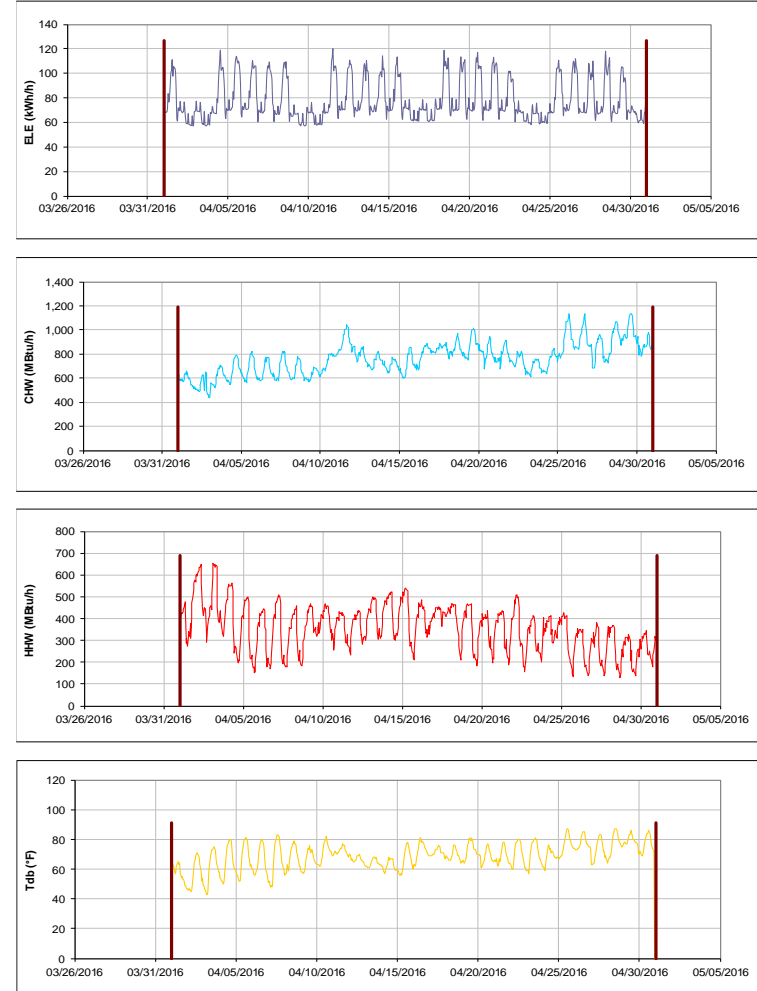


Figure III-84 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Williams Administration Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-85 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for YMCA Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-86 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Francis Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Anthropology Building

TAMU / BLDG #: 0477

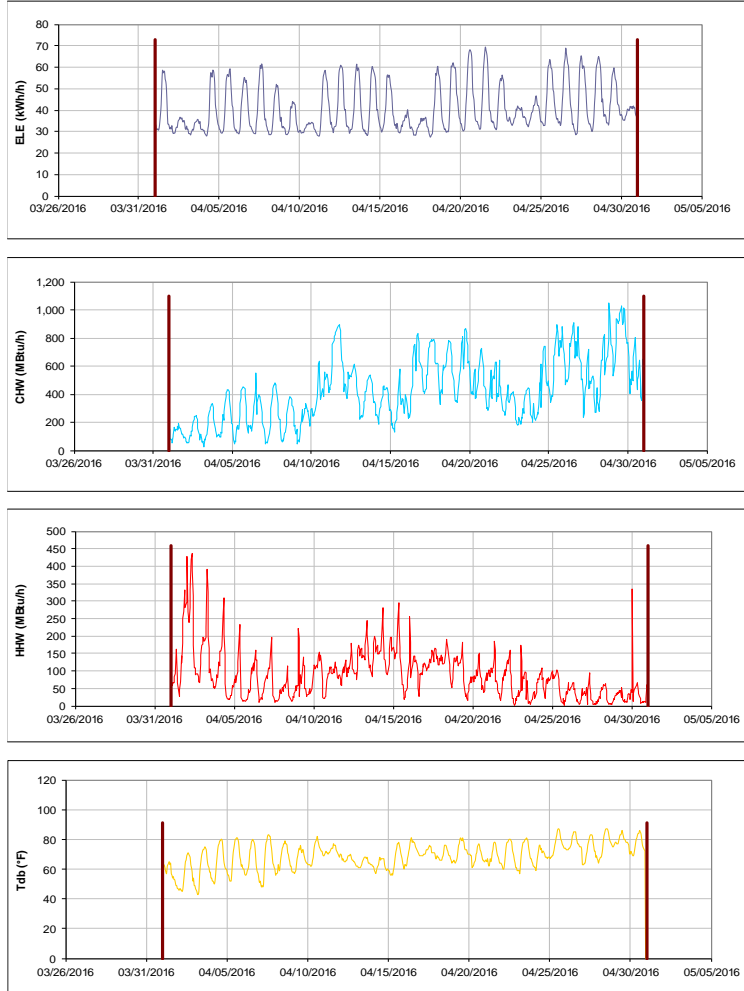


Figure III-87 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Anthropology Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Scoates Hall

TAMU / BLDG #: 0478

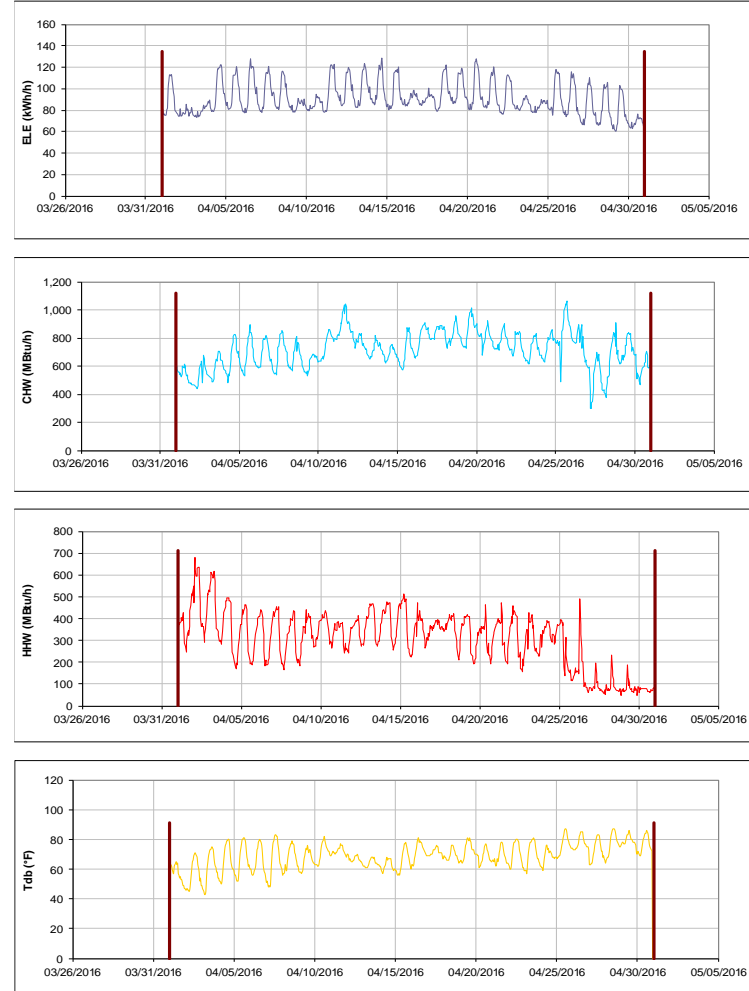


Figure III-88 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Scoates Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

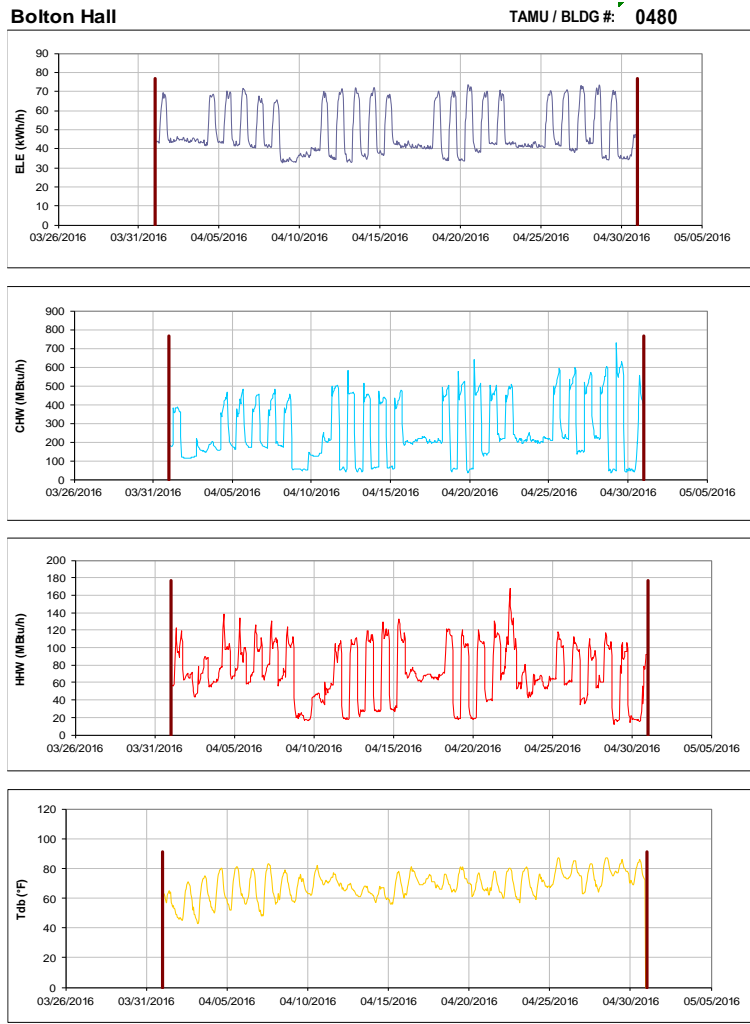


Figure III-89 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bolton Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

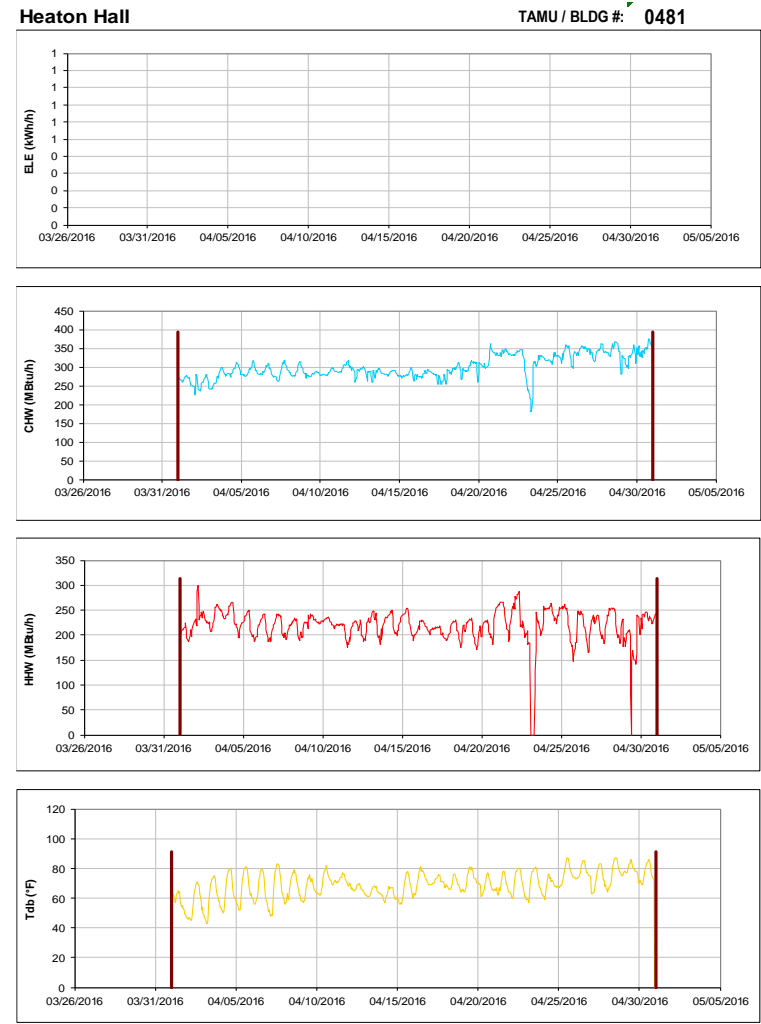


Figure III-90 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heaton Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

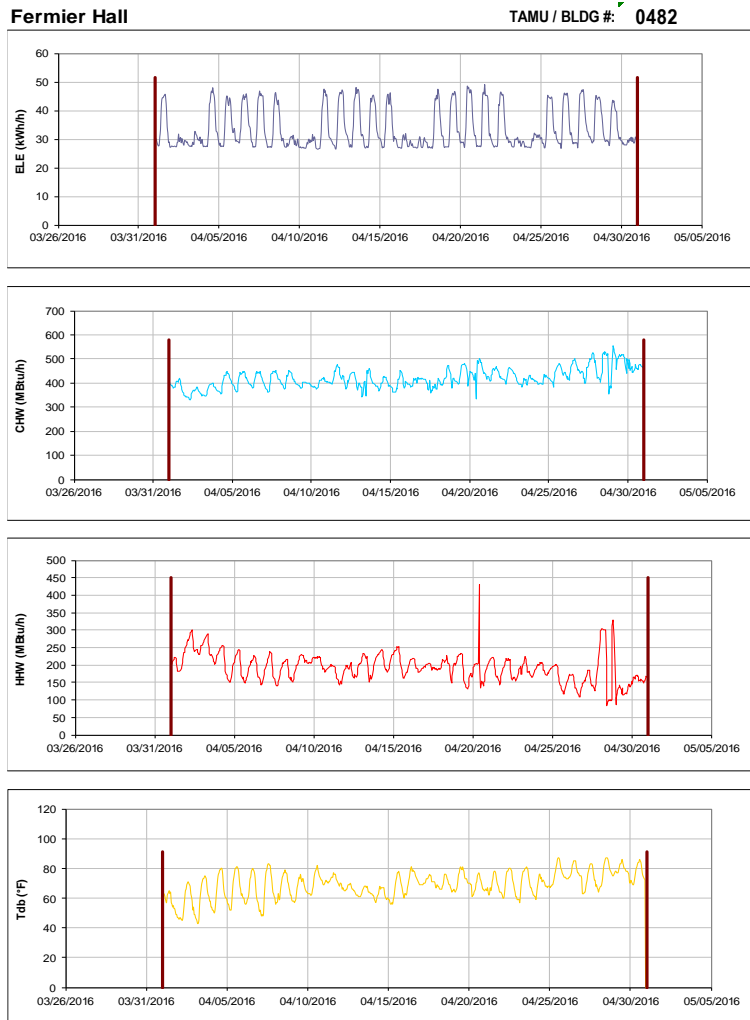


Figure III-91 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Fermier Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

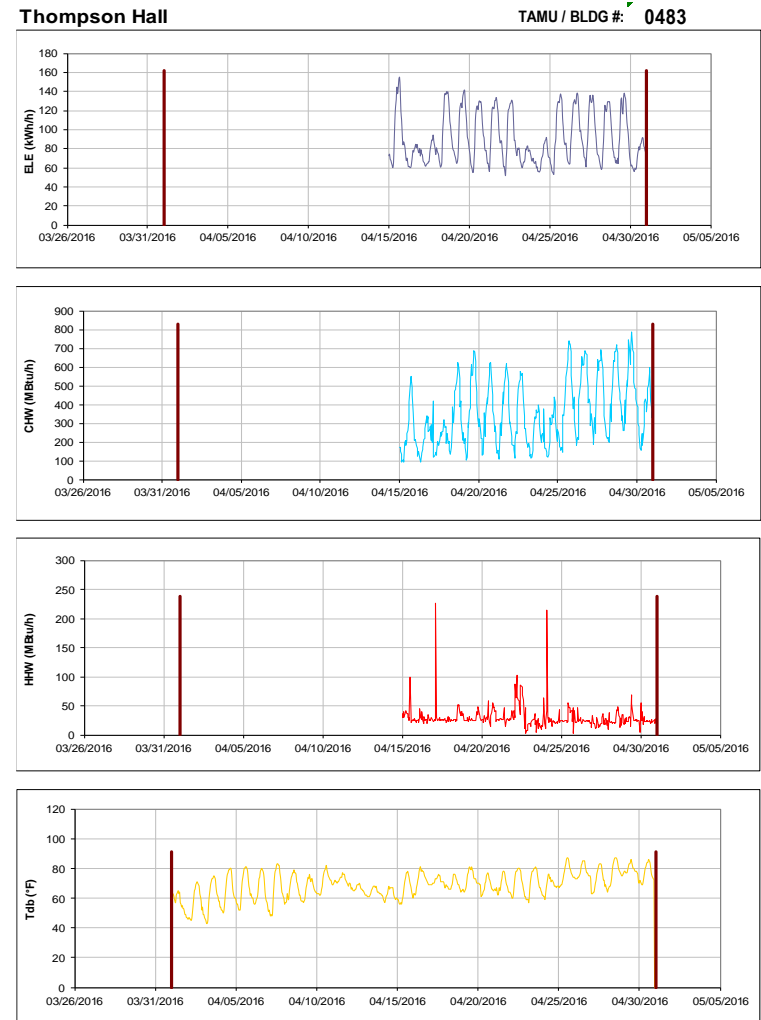


Figure III-92 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Thompson Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Chemistry Building

TAMU / BLDG #: 0484



Figure III-93 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Chemistry Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Halbuty Geosciences Building

TAMU / BLDG #: 0490



Figure III-94 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Halbuty Geosciences Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Civil Engineering Building

TAMU / BLDG #: 0492



Figure III-95 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Civil Engineering Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Sbisa Dining Hall

TAMU / BLDG #: 0495

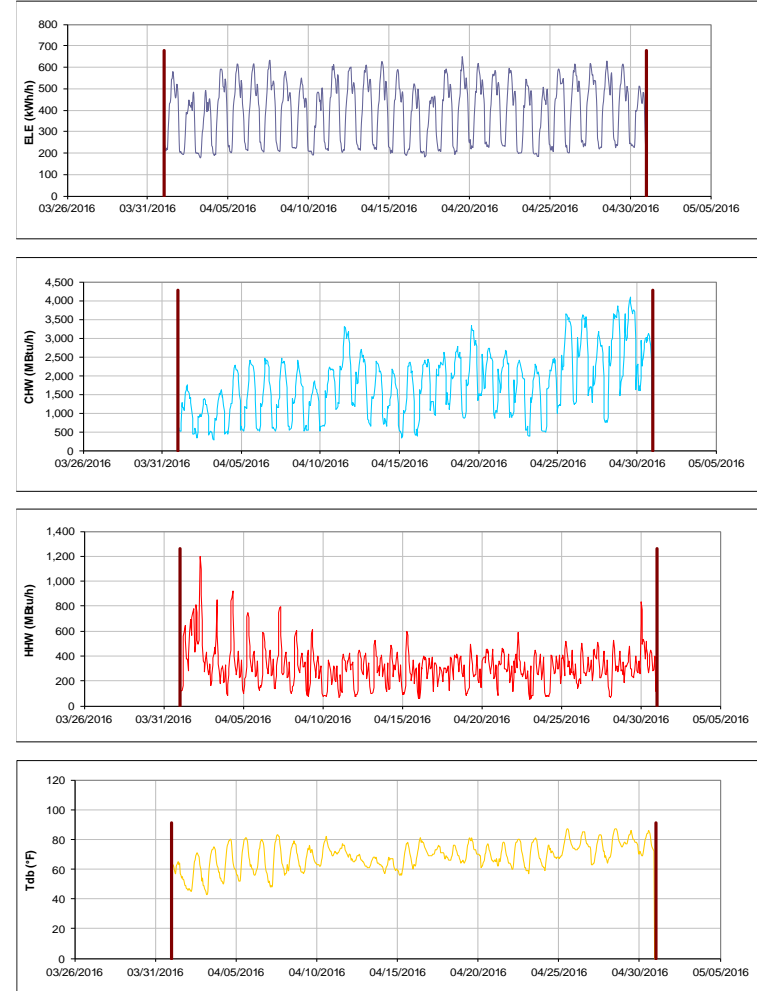


Figure III-96 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Sbisa Dining Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Utilities & Energy Services Central Office TAMU / BLDG #: 0496

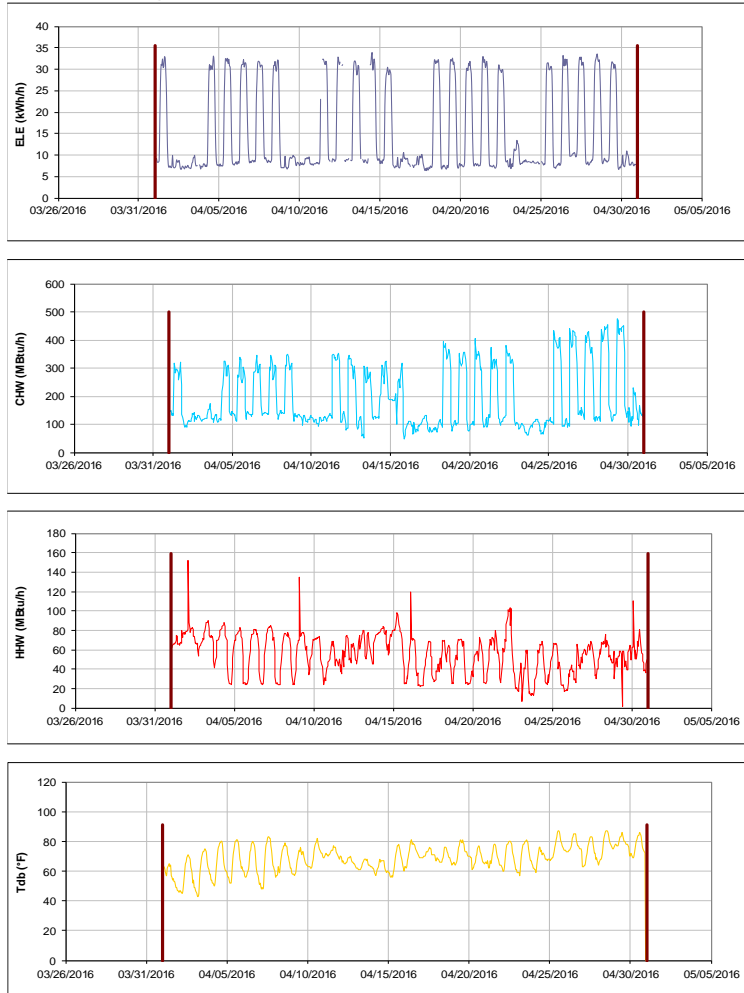


Figure III-97 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities & Energy Services Central Office during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Concrete Materials Laboratory TAMU / BLDG #: 0501

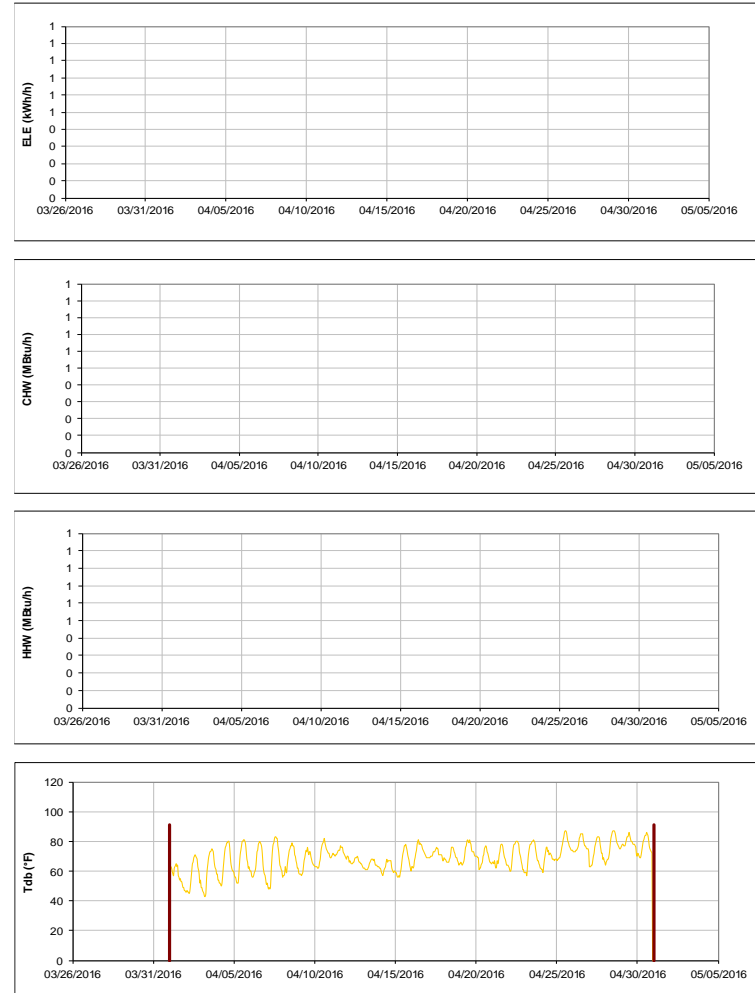


Figure III-98 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Concrete Materials Laboratory during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

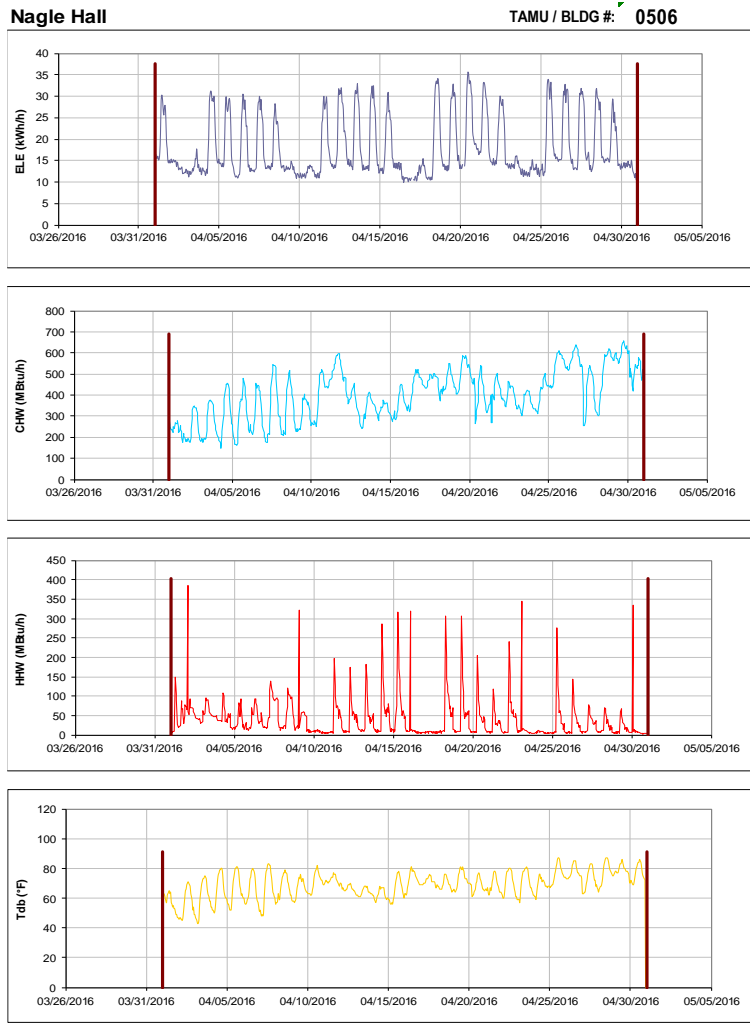


Figure III-99 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Nagle Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

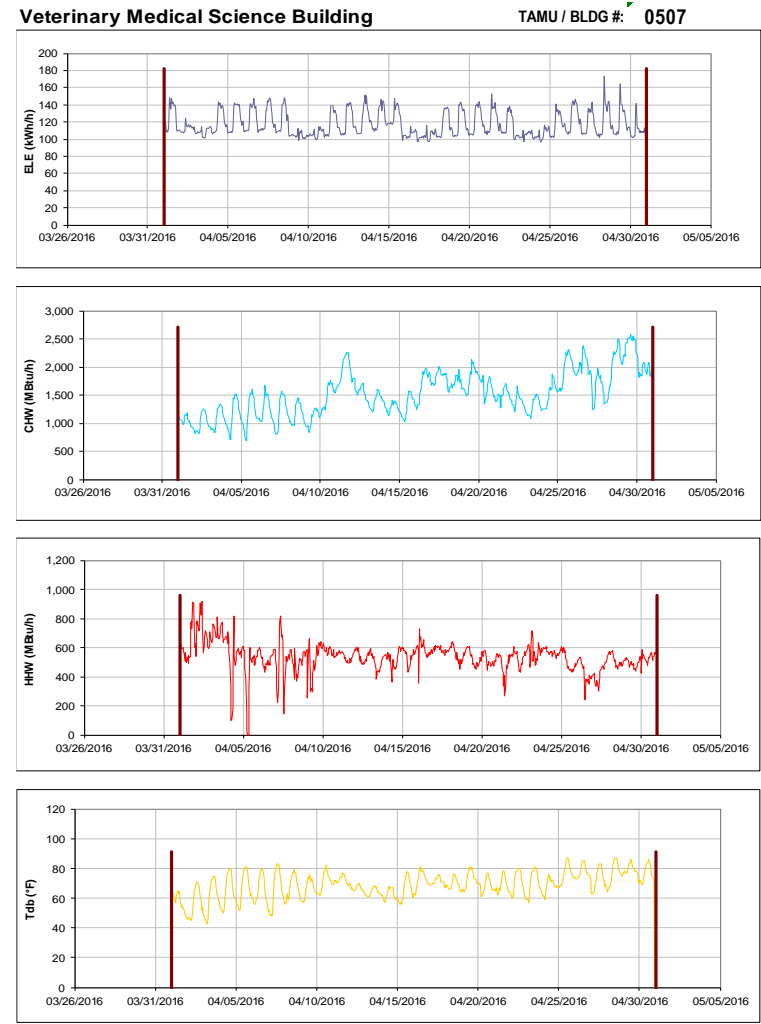


Figure III-100 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medical Science Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

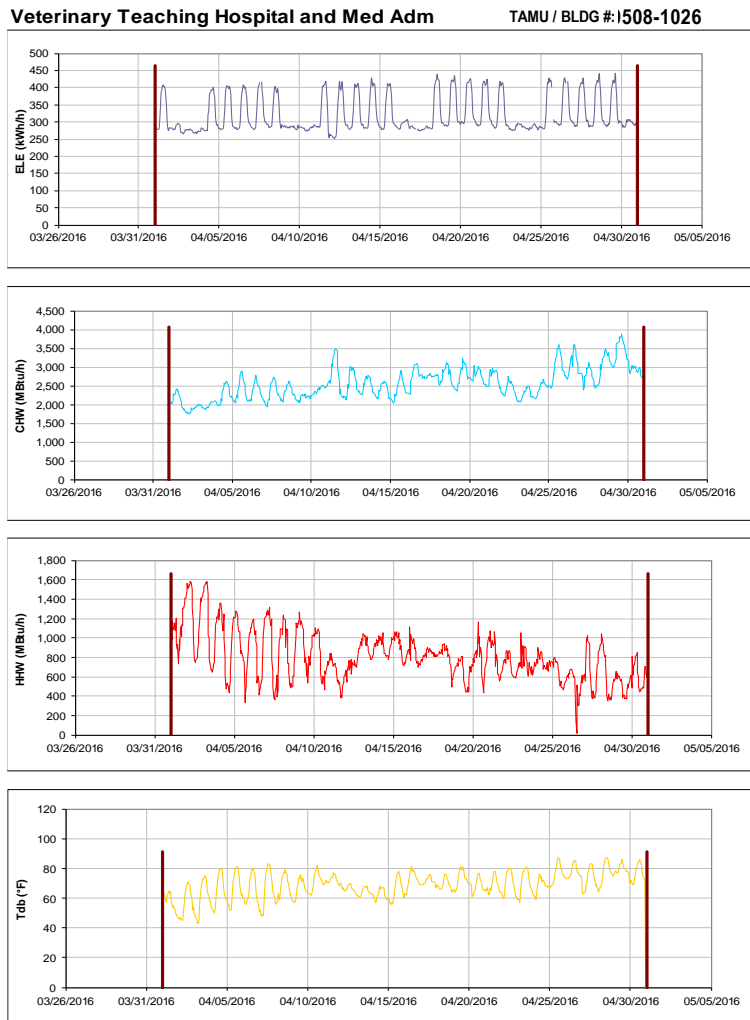


Figure III-101 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Teaching Hospital and Med Adm during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

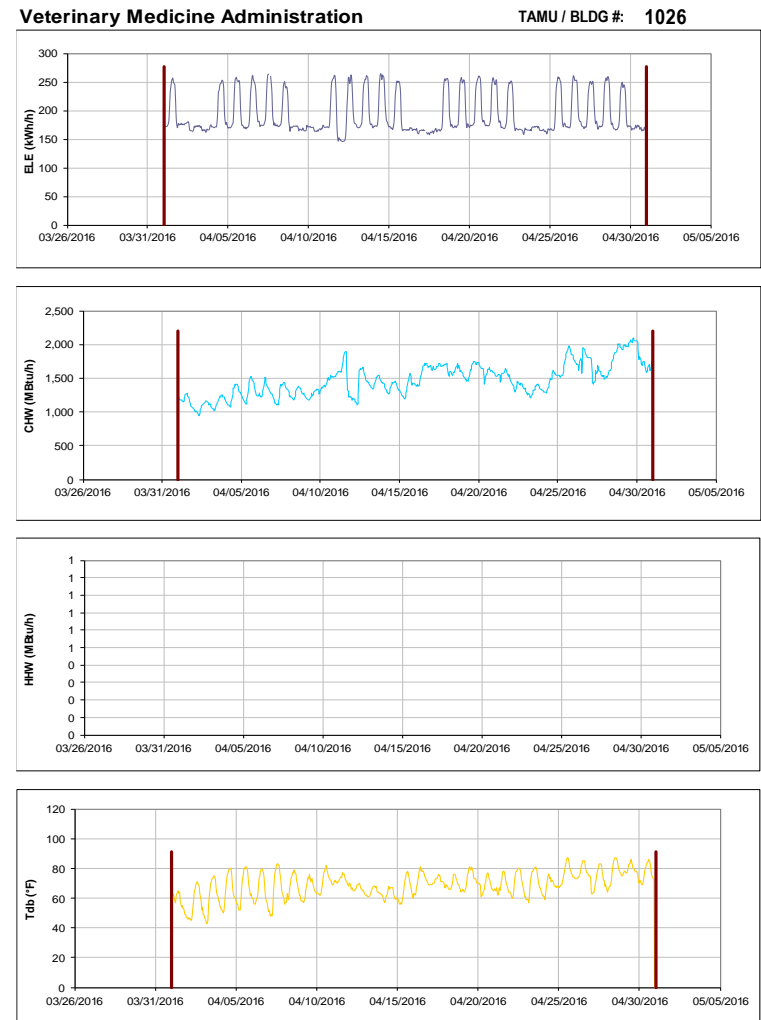


Figure III-102 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medicine Administration during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

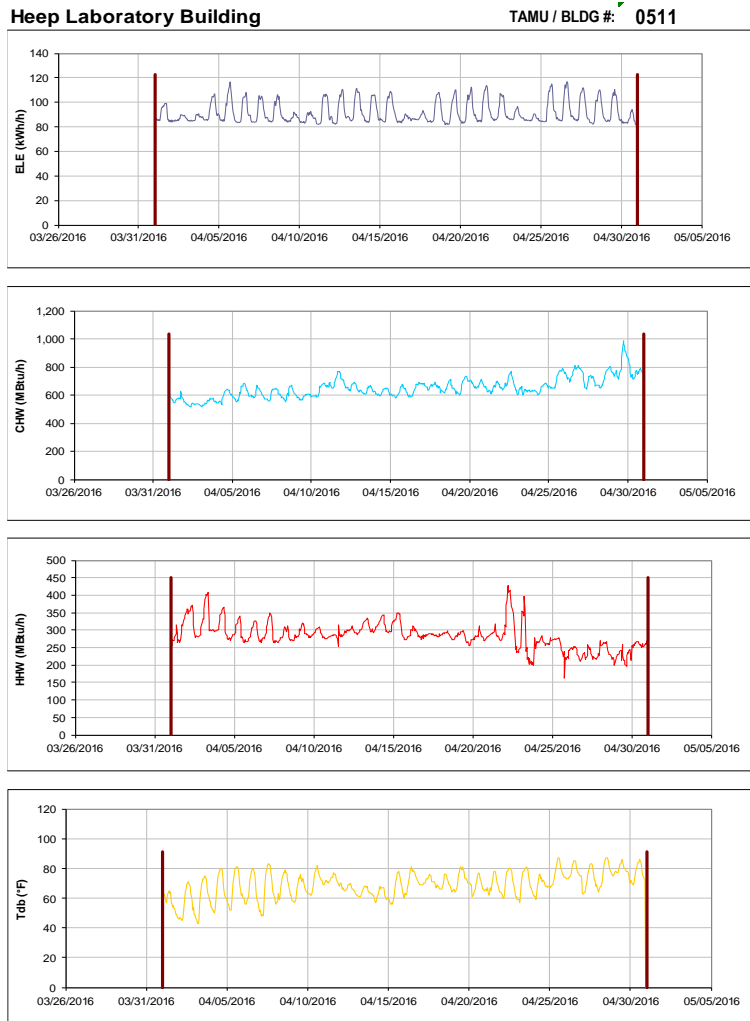


Figure III-103 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heep Laboratory Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

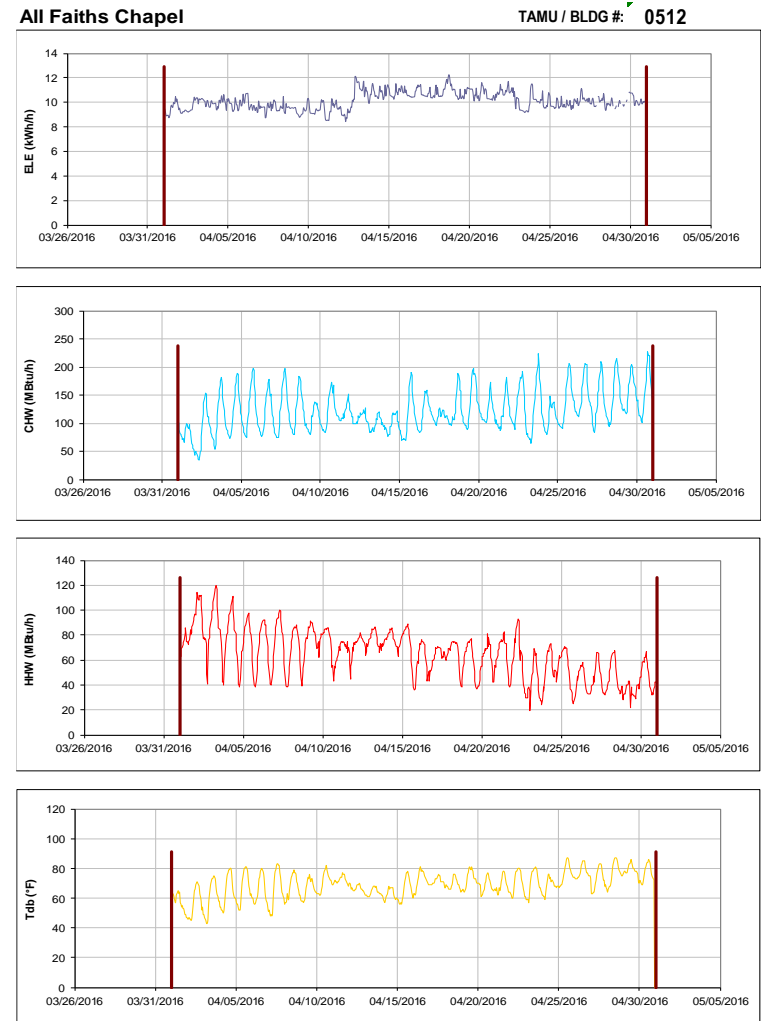


Figure III-104 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for All Faiths Chapel during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

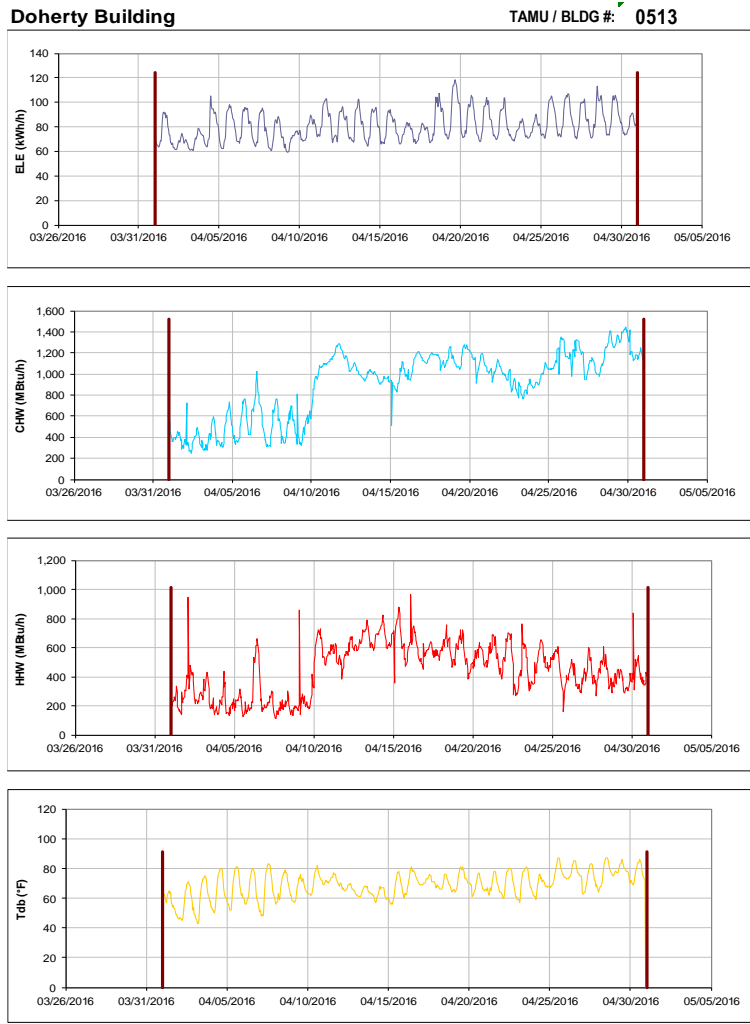


Figure III-105 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Doherty Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

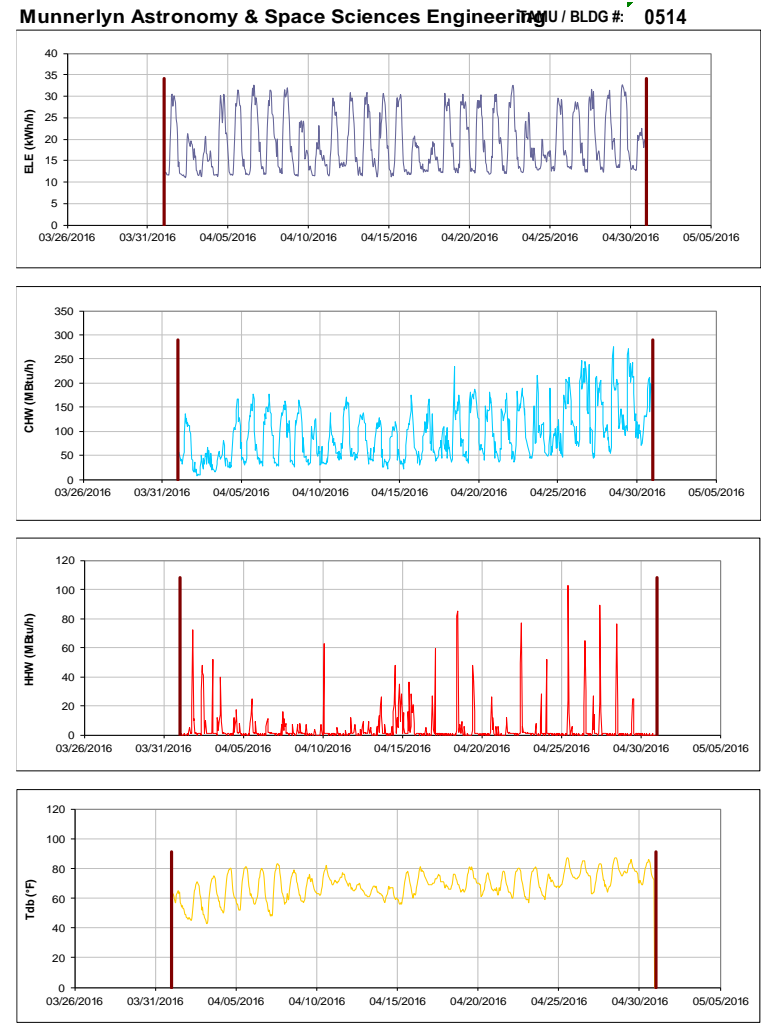


Figure III-106 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Munnerlyn Astronomy & Space Sciences Engineering during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

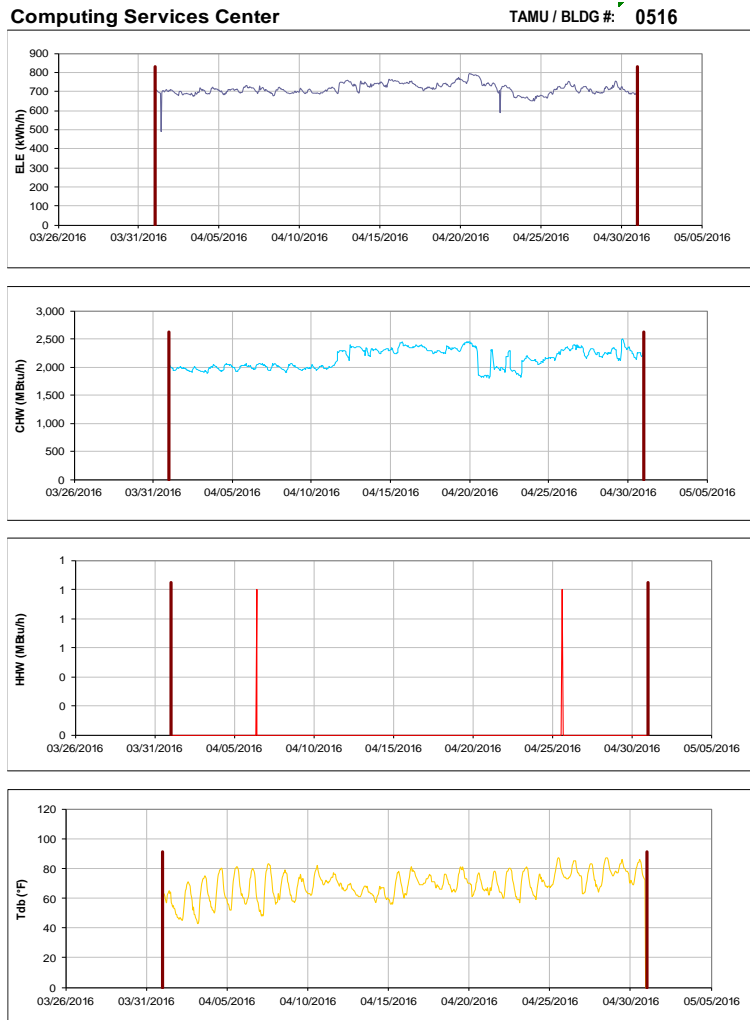


Figure III-107 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Computing Services Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

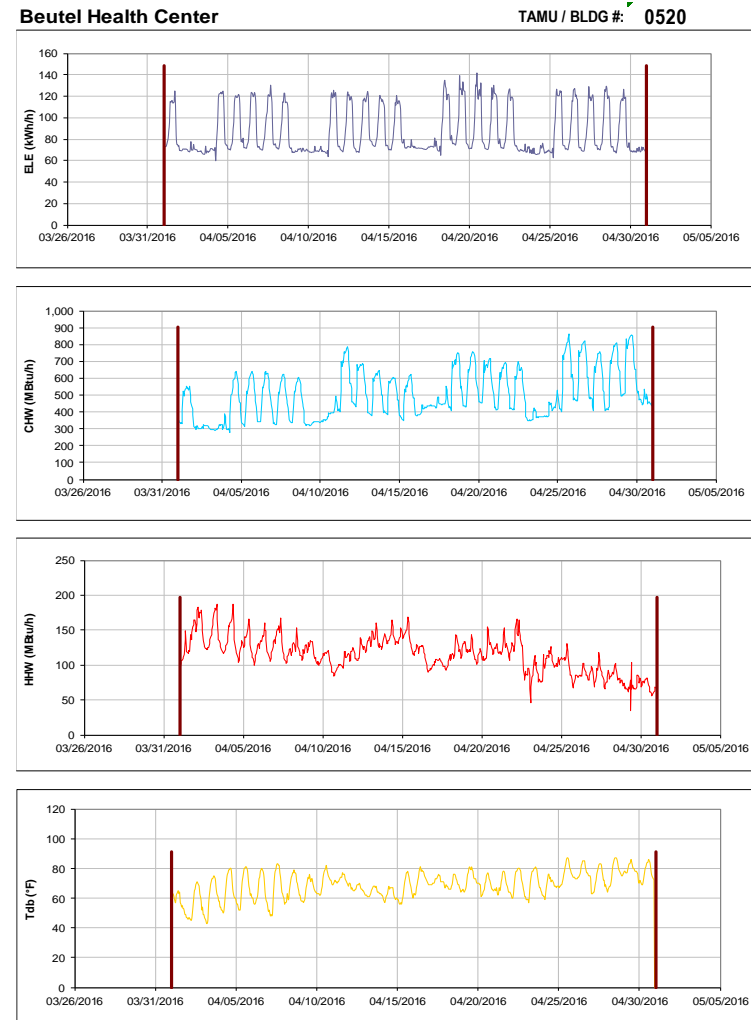


Figure III-108 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Beutel Health Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

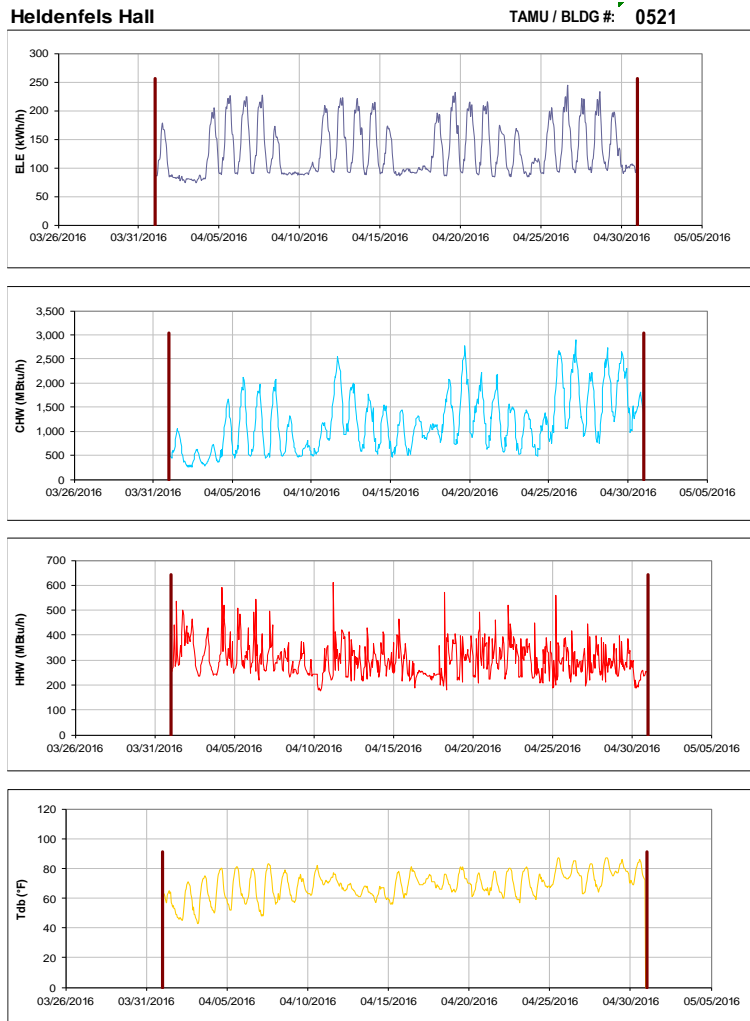


Figure III-109 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heldenfels Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-110 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Blocker building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

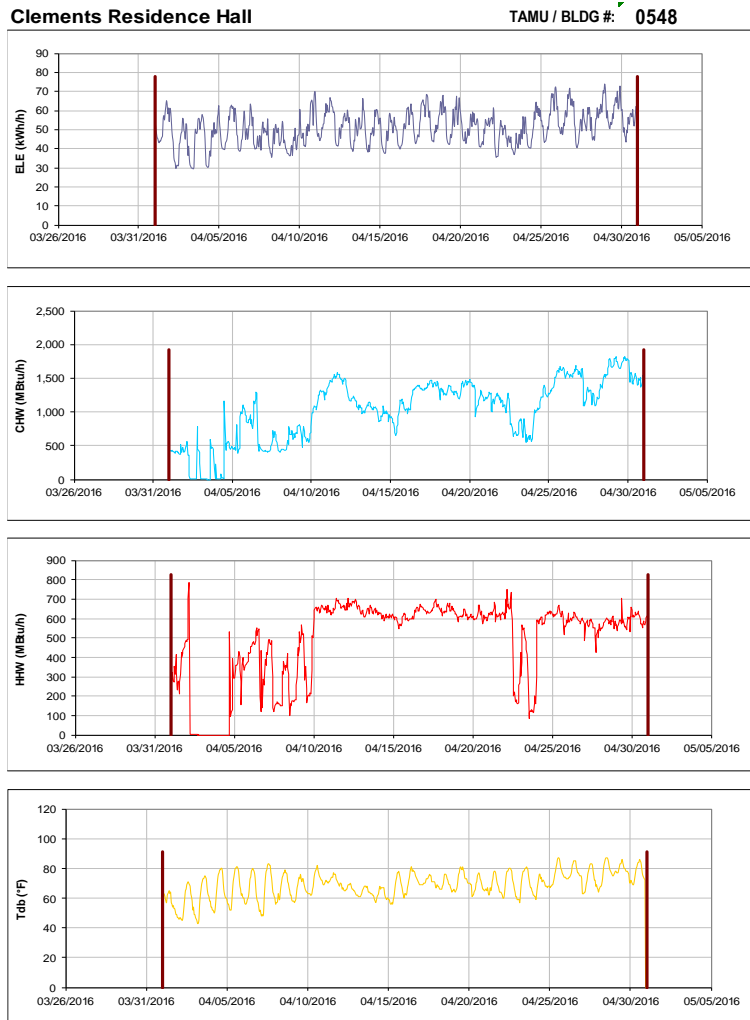


Figure III-111 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Clements Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

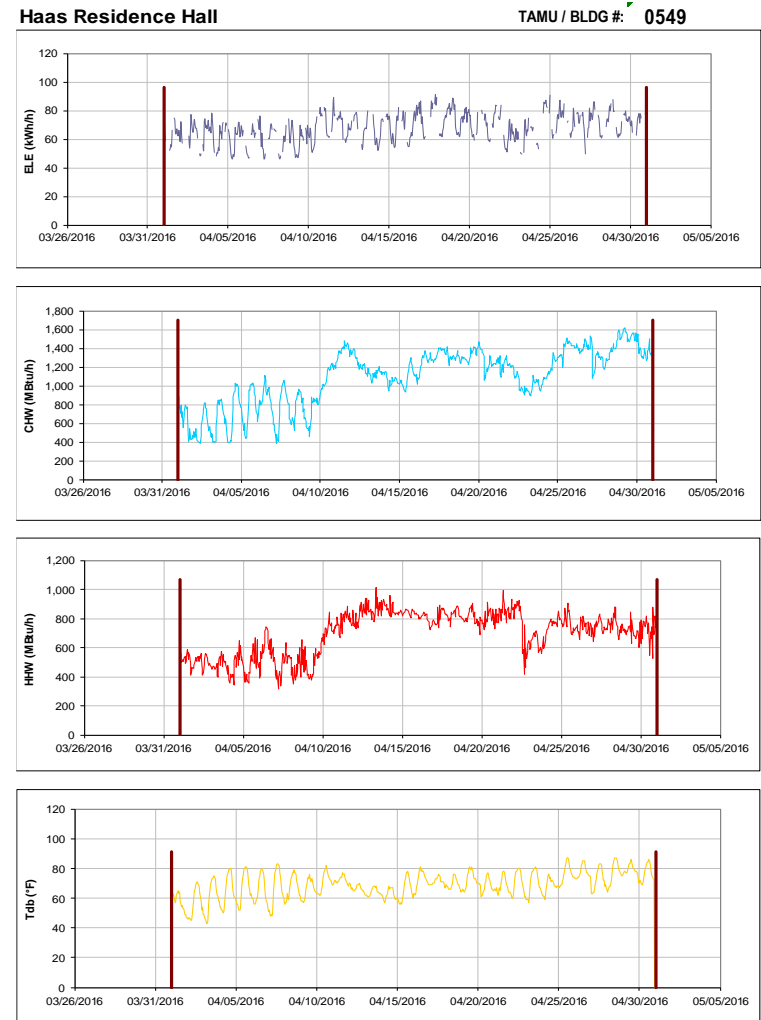


Figure III-112 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Haas Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

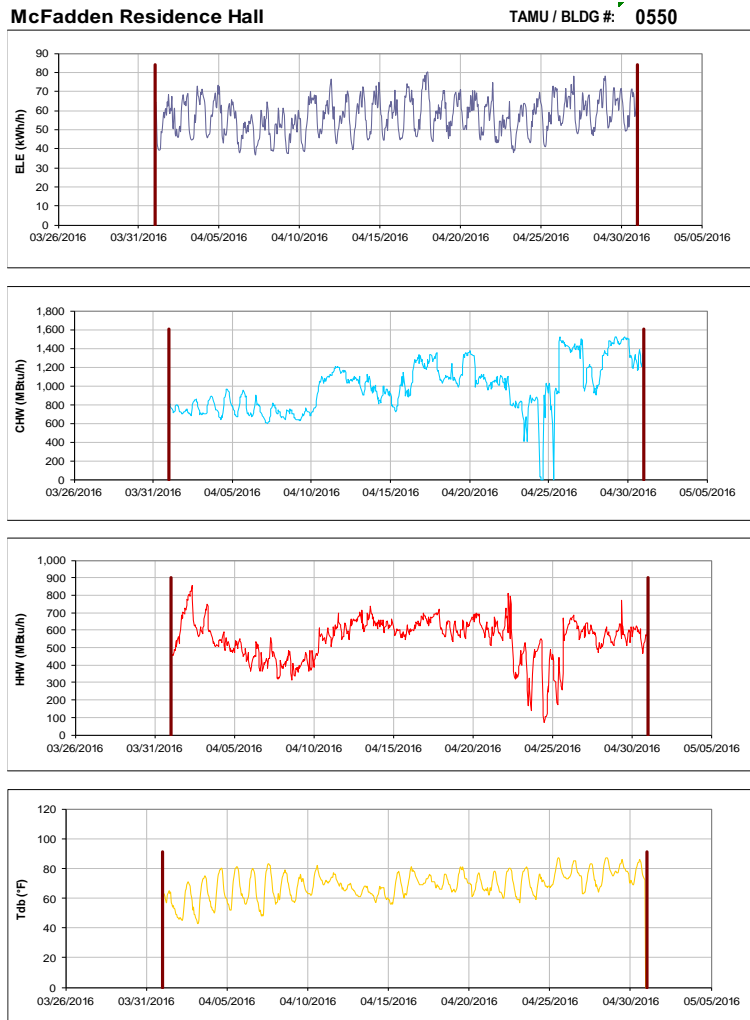


Figure III-113 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for McFadden Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-114 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Neeley Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-115 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hobby Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-116 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wisnaker Engineering Research Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-117 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for McNew Laboratory during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

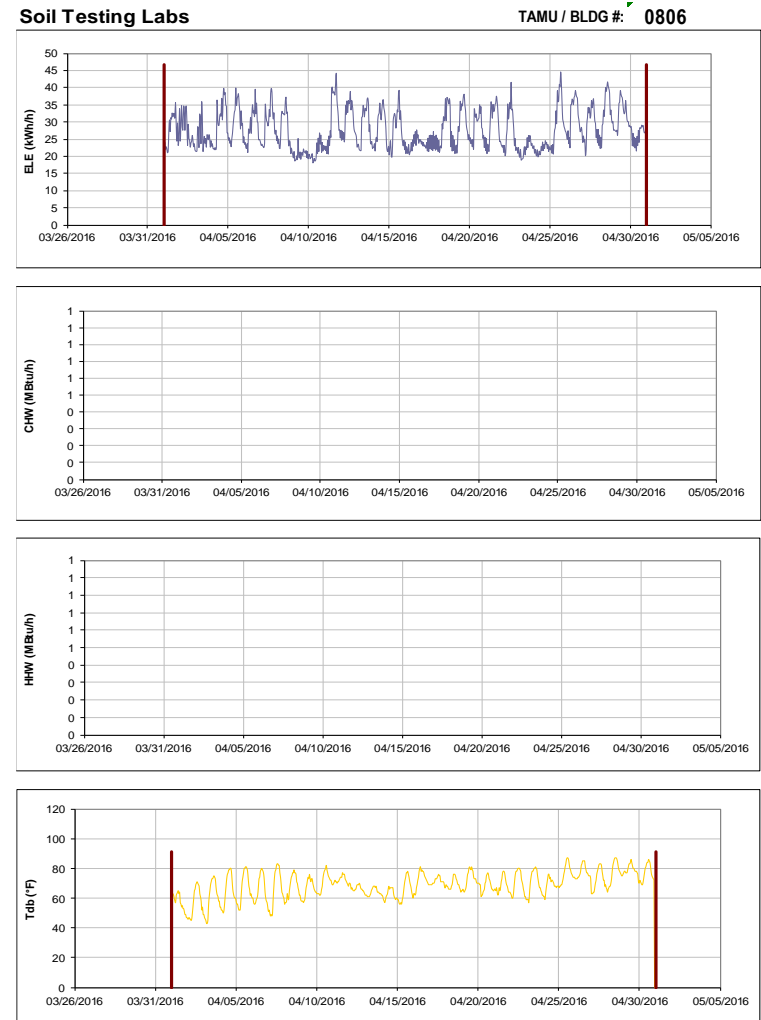


Figure III-118 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Soil Testing Labs during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-119 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Entomology Research Lab during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-120 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TVMC-Small Animal Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-121 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Laboratory Animal Care Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

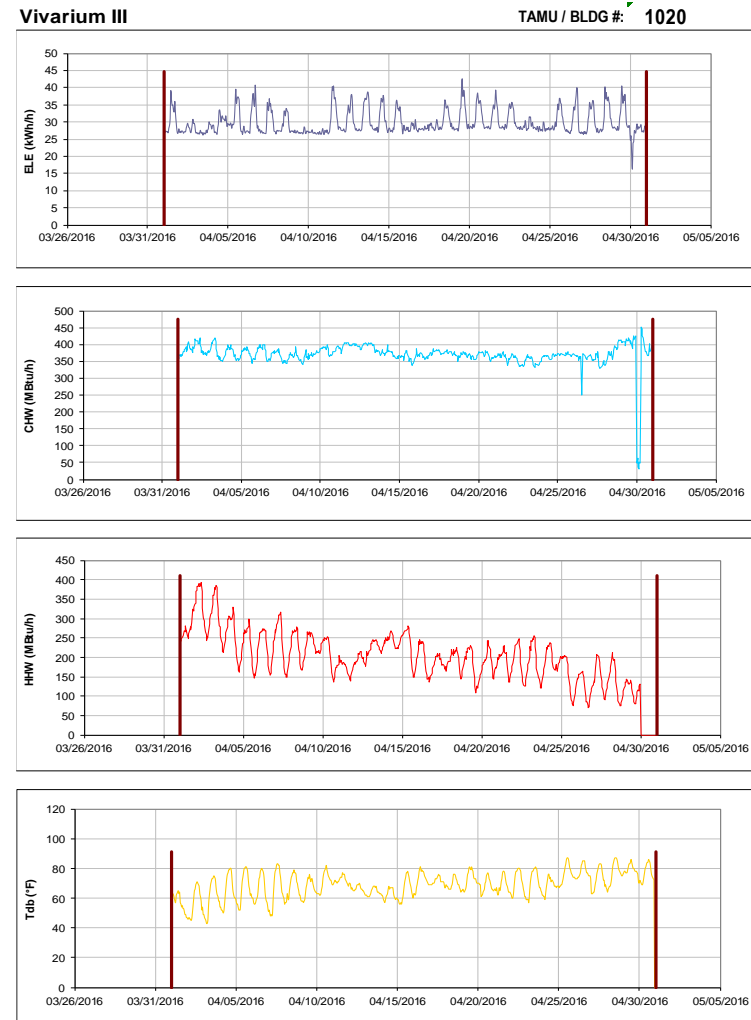


Figure III-122 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Vivarium III during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-123 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas Vet Med Diagnostic Lab during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-124 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Small Animal Hospital during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Utilities Energy Office Annex

TAMU / BLDG #: 1089

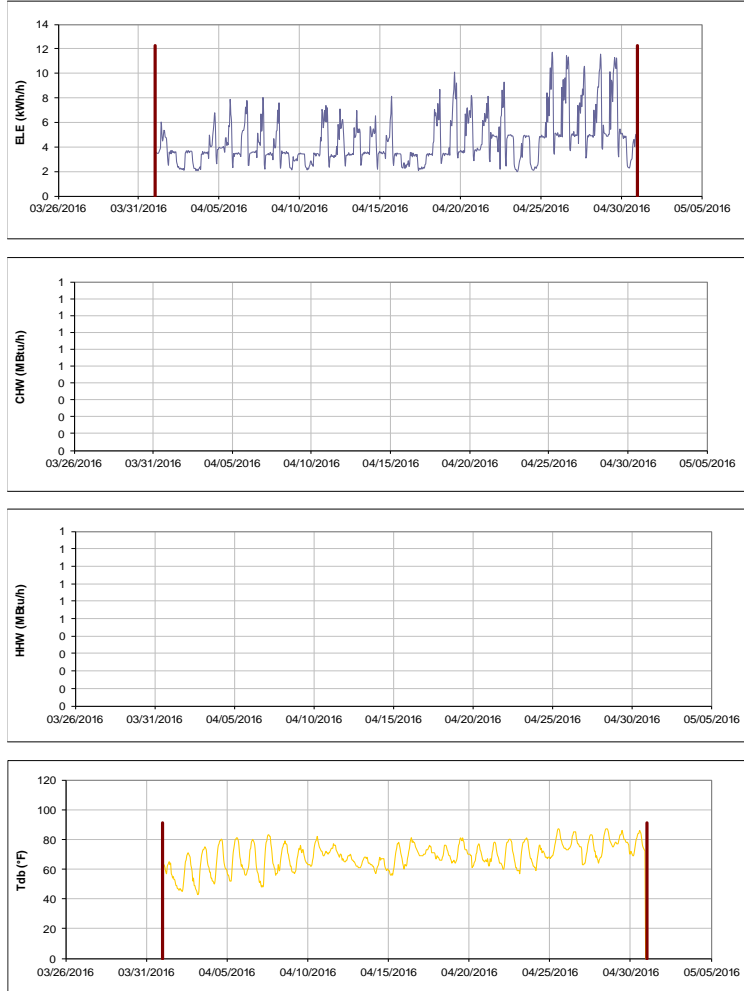


Figure III-125 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities Energy Office Annex during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Biological Control Facility

TAMU / BLDG #: 1146

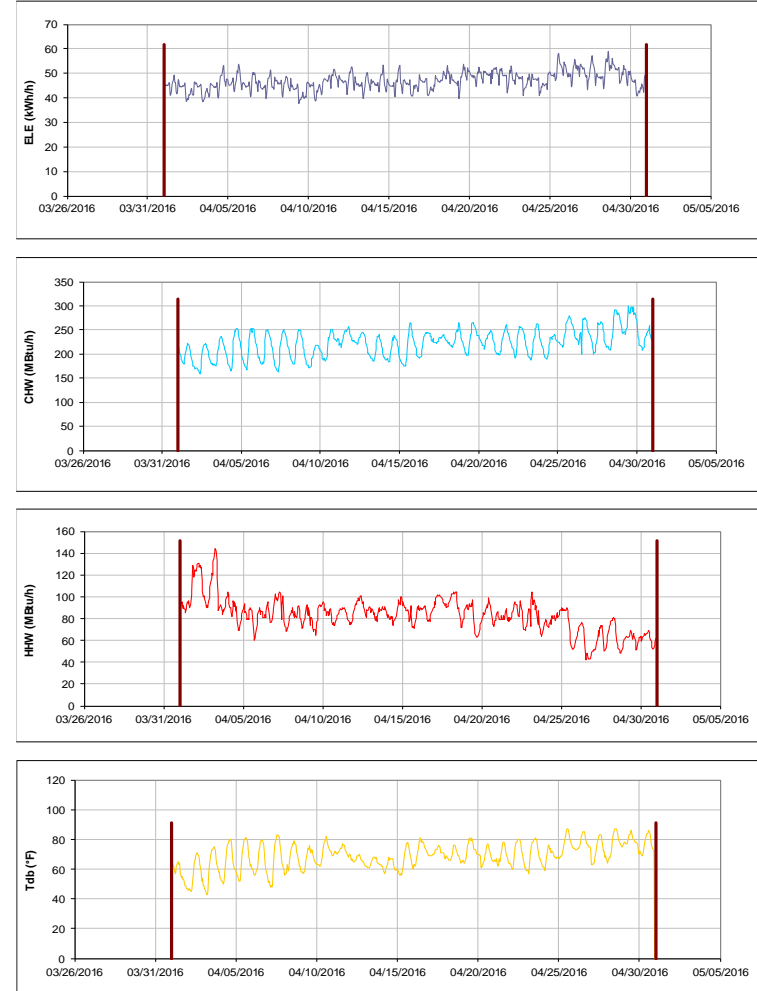


Figure III-126 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Control Facility during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

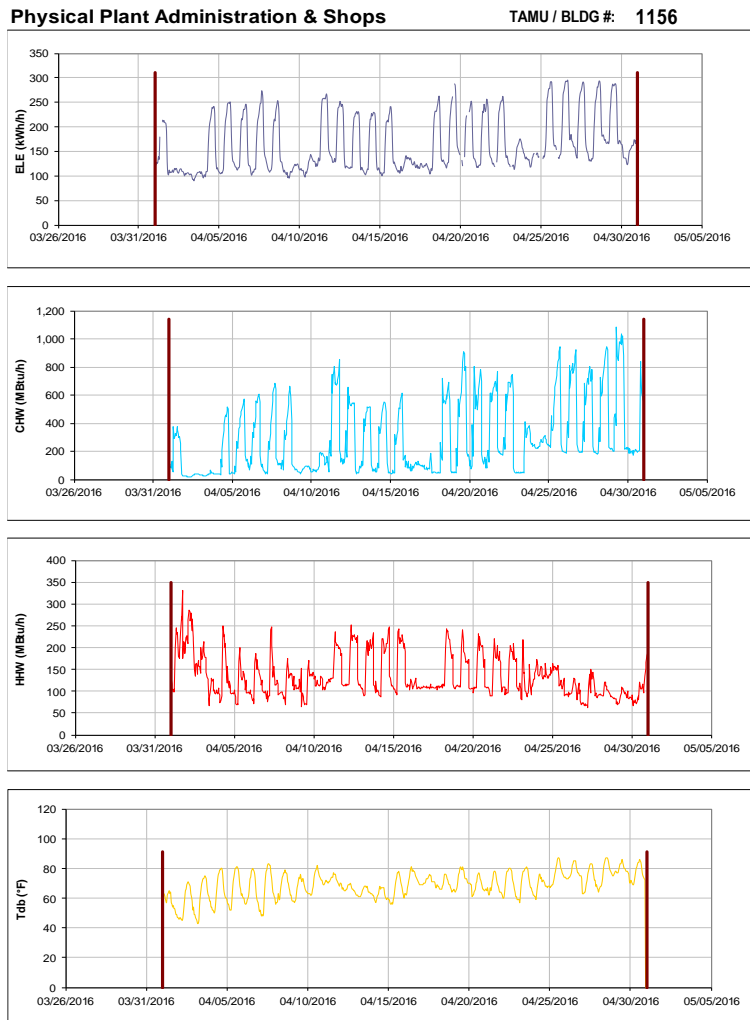


Figure III-127 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Physical Plant Administration & Shops during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

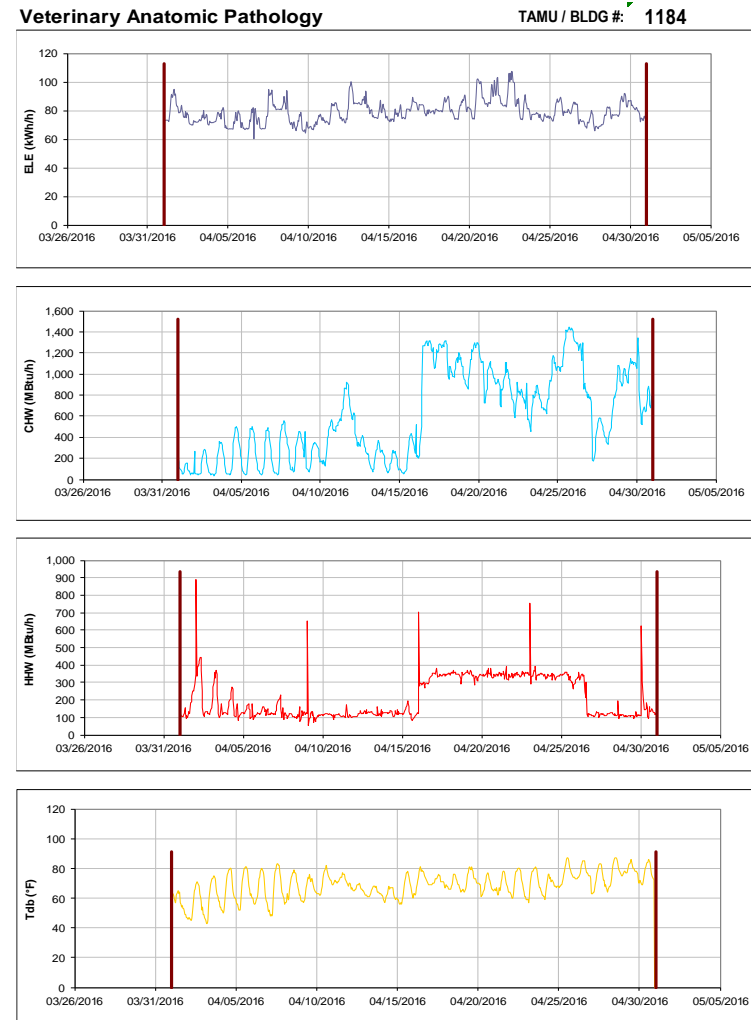


Figure III-128 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Anatomic Pathology during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-129 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Large Animal Hospital during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-130 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Research Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Buzbee Leadership Learning Center TAMU / BLDG #: 1402



Figure III-131 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Buzbee Leadership Learning Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Hullabaloo Residence Hall TAMU / BLDG #: 1416

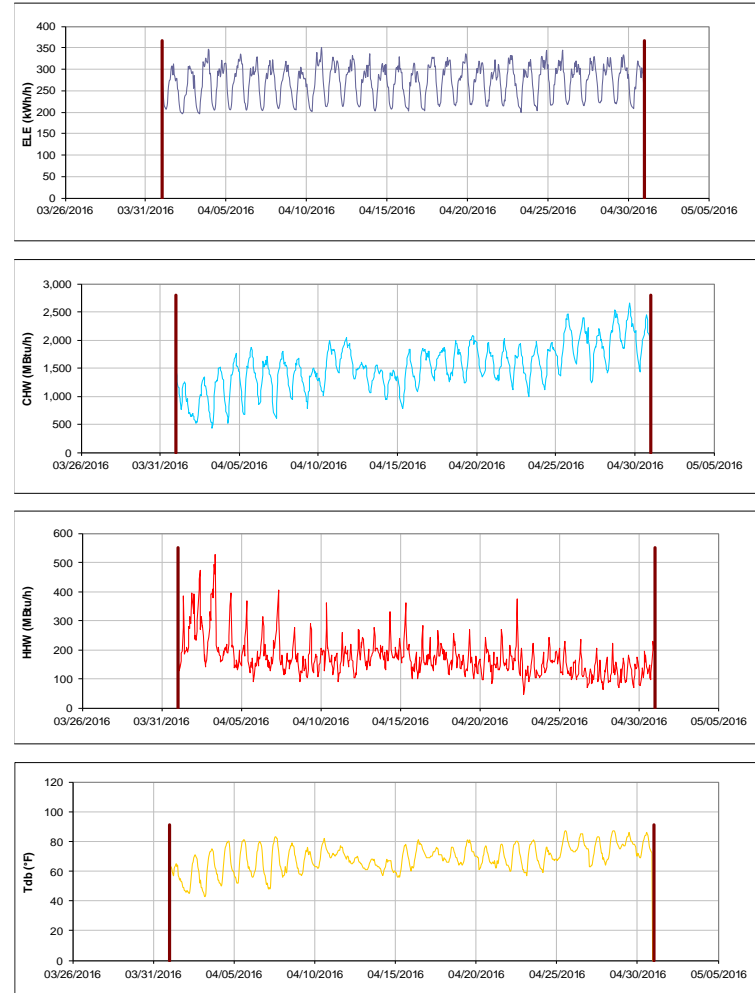


Figure III-132 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hullabaloo Residence Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

University Apartments - Laundry at the Gardens TAMU / BLDG #: 1450

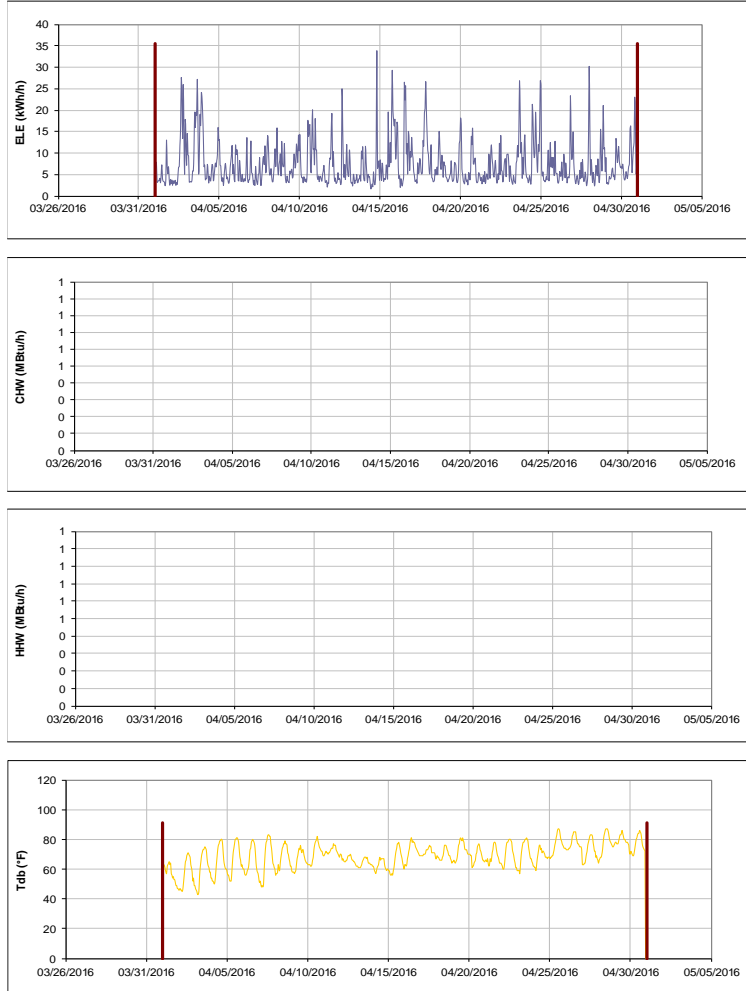


Figure III-133 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - Laundry at the Gardens during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

University Apartments - The Gardens J TAMU / BLDG #: 1451

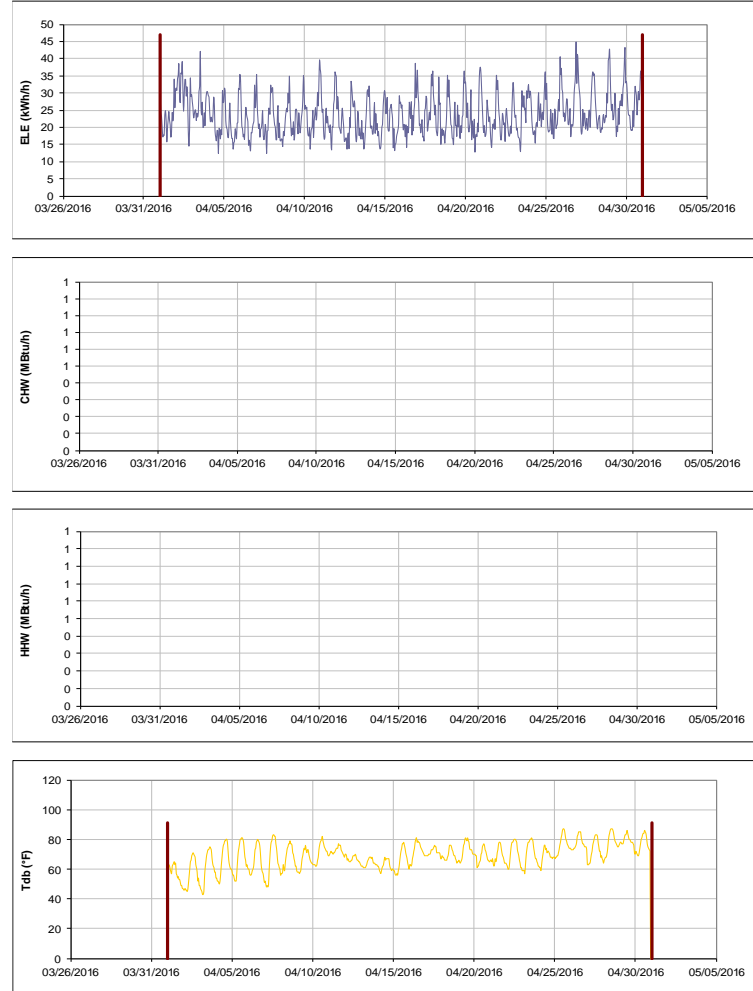


Figure III-134 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens J during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

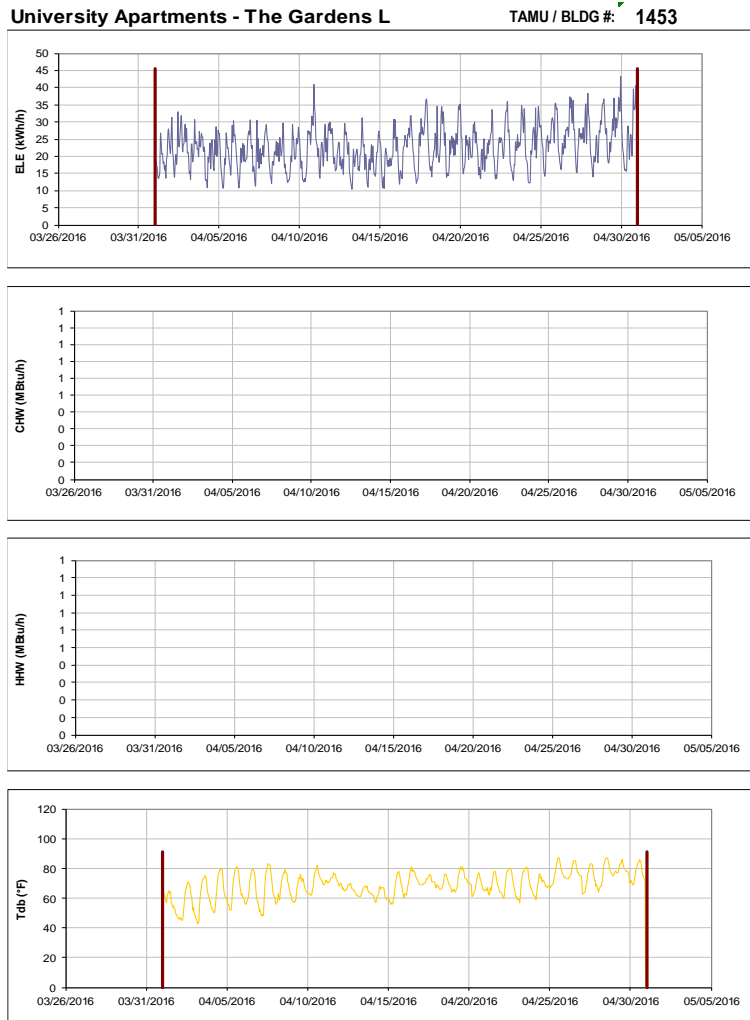


Figure III-135 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens L during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

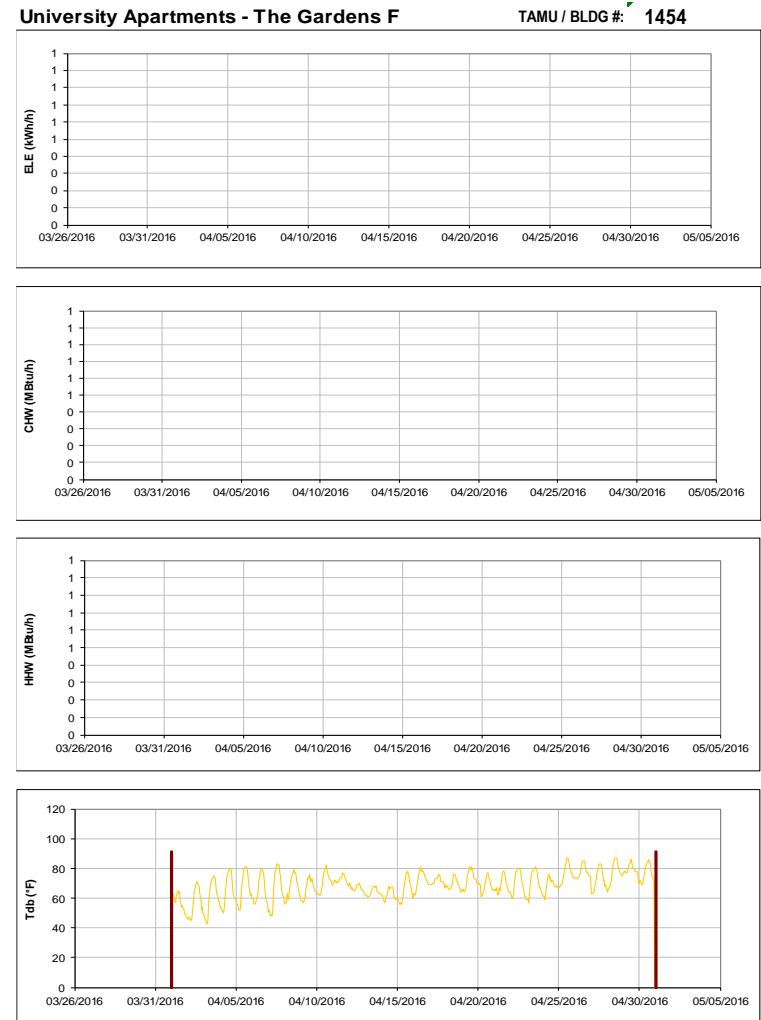


Figure III-136 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens F during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

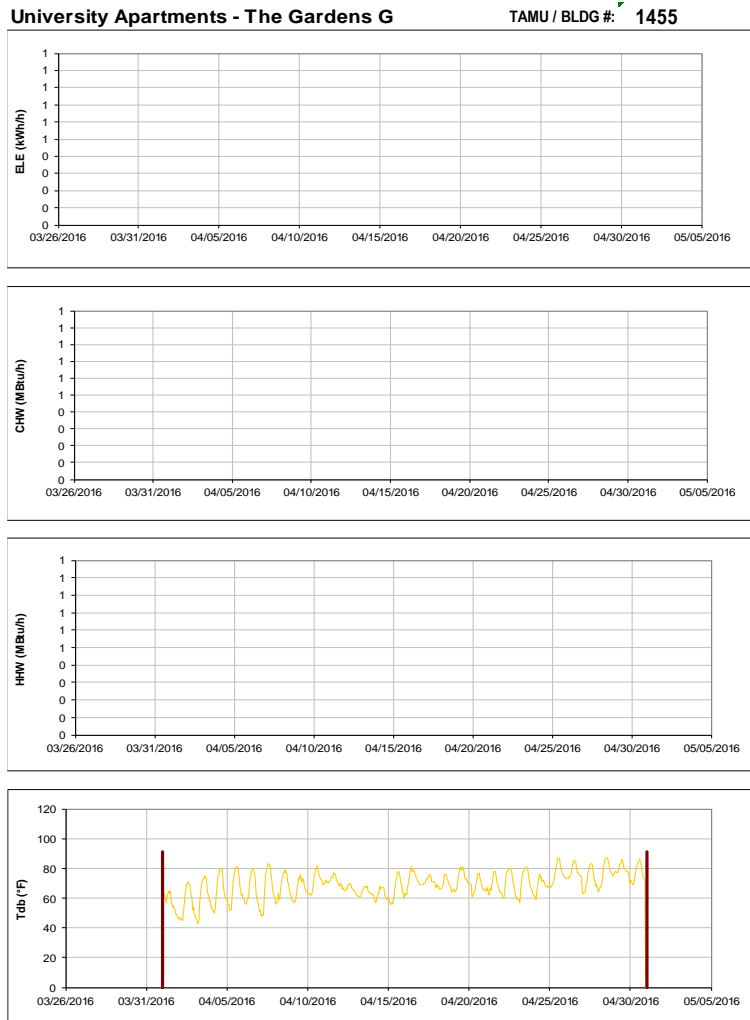


Figure III-137 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens G during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

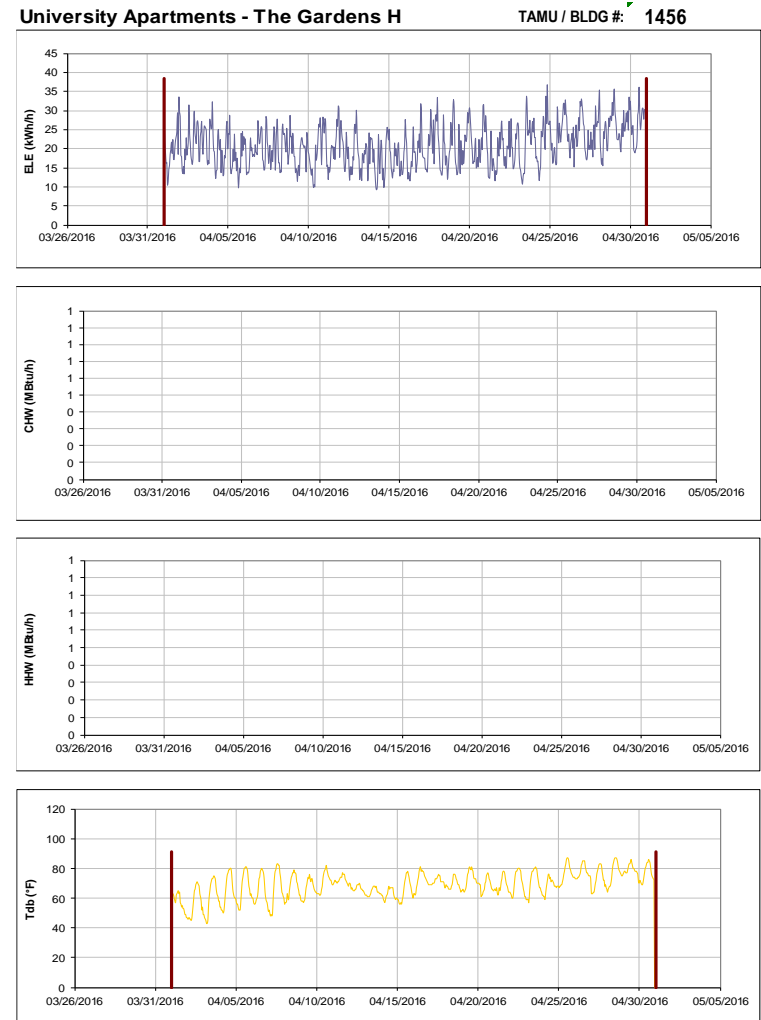


Figure III-138 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens H during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

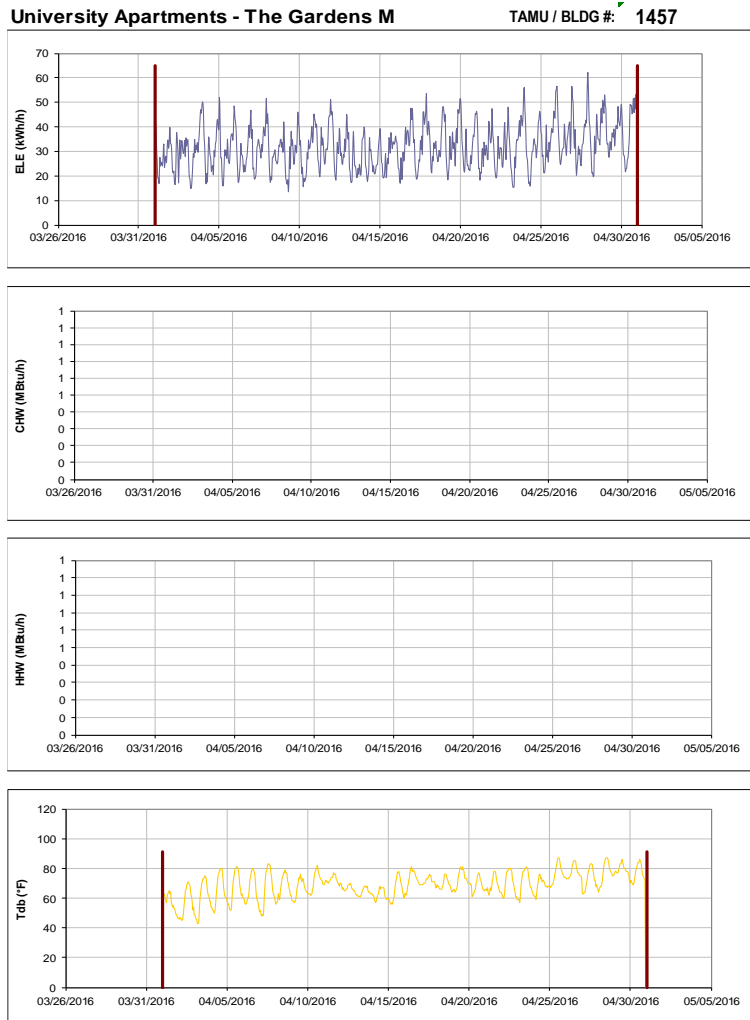


Figure III-139 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens M during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

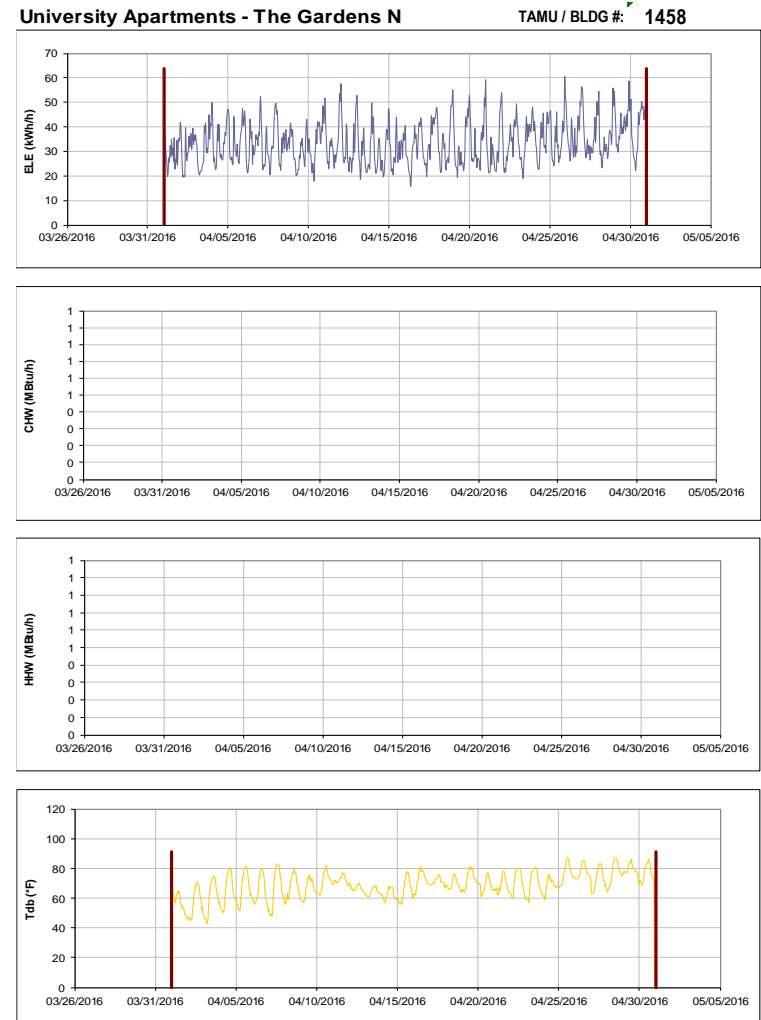


Figure III-140 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens N during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

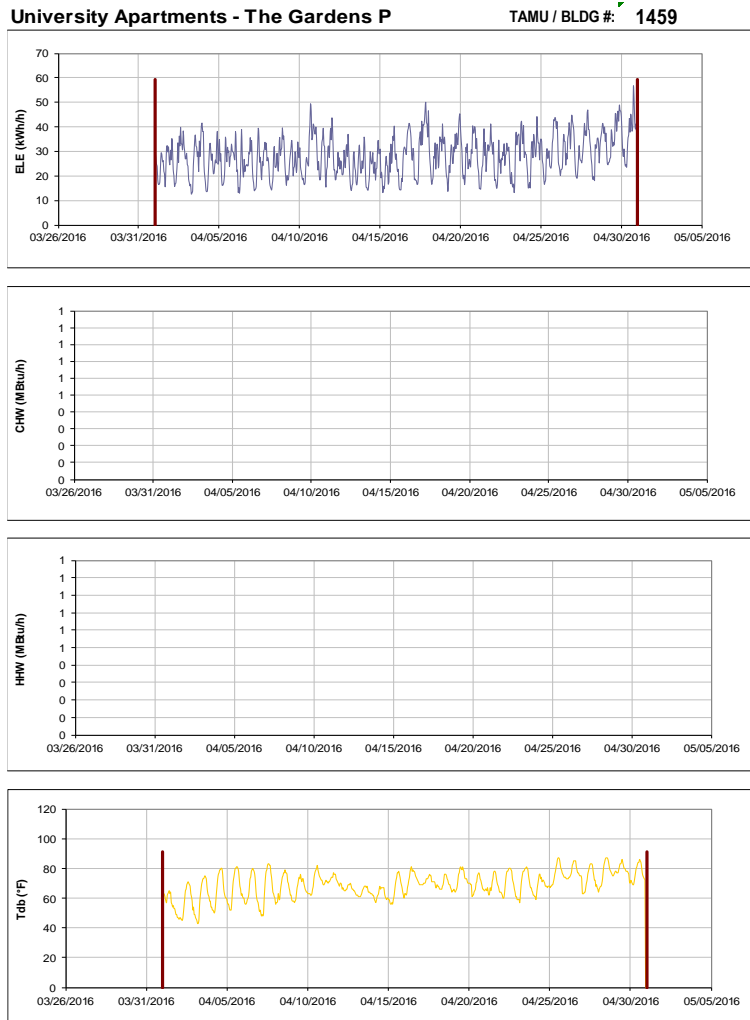


Figure III-141 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens P during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

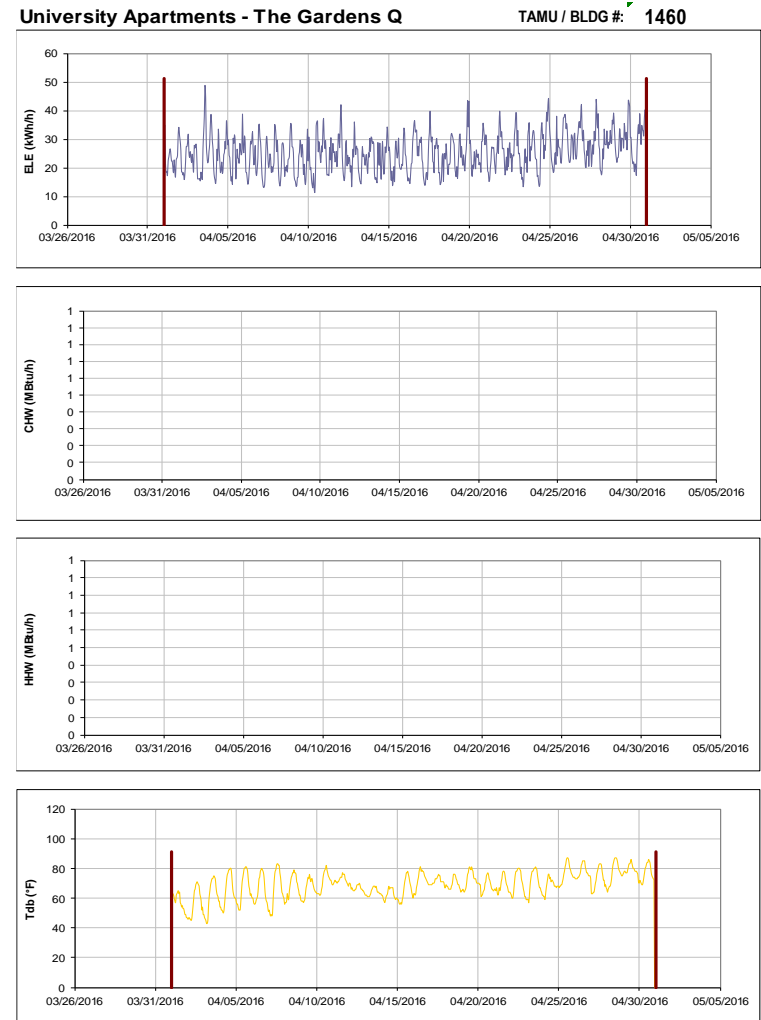


Figure III-142 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens Q during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Utilities & Energy Services Business Office TAMU / BLDG #: 1497

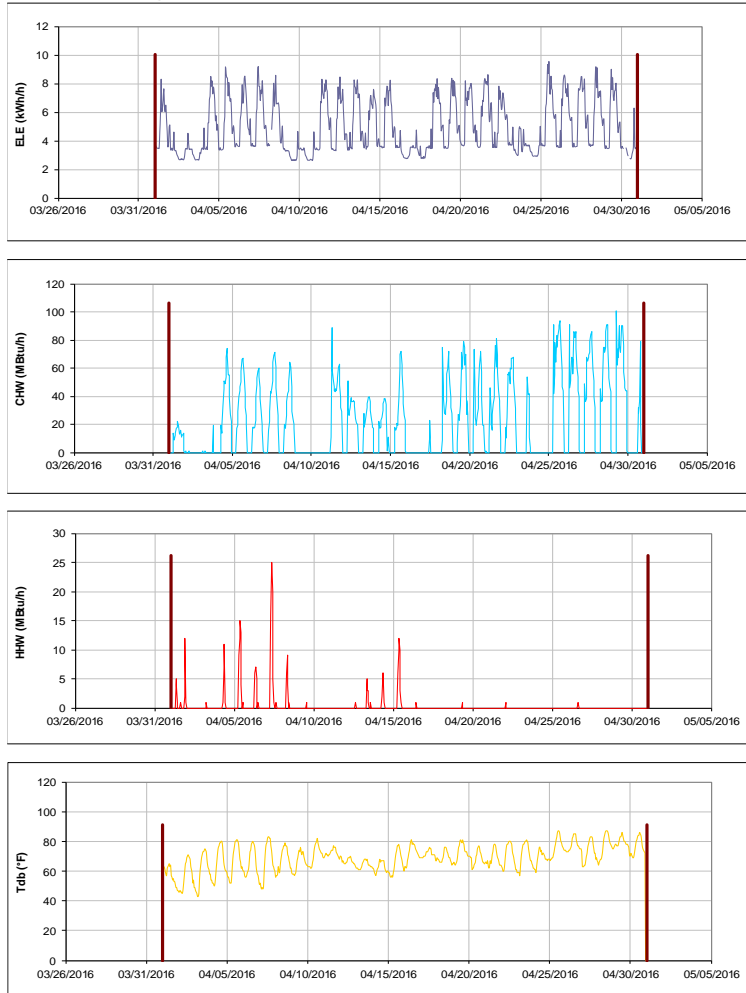


Figure III-143 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities & Energy Services Business Office during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Kleberg Center TAMU / BLDG #: 1501

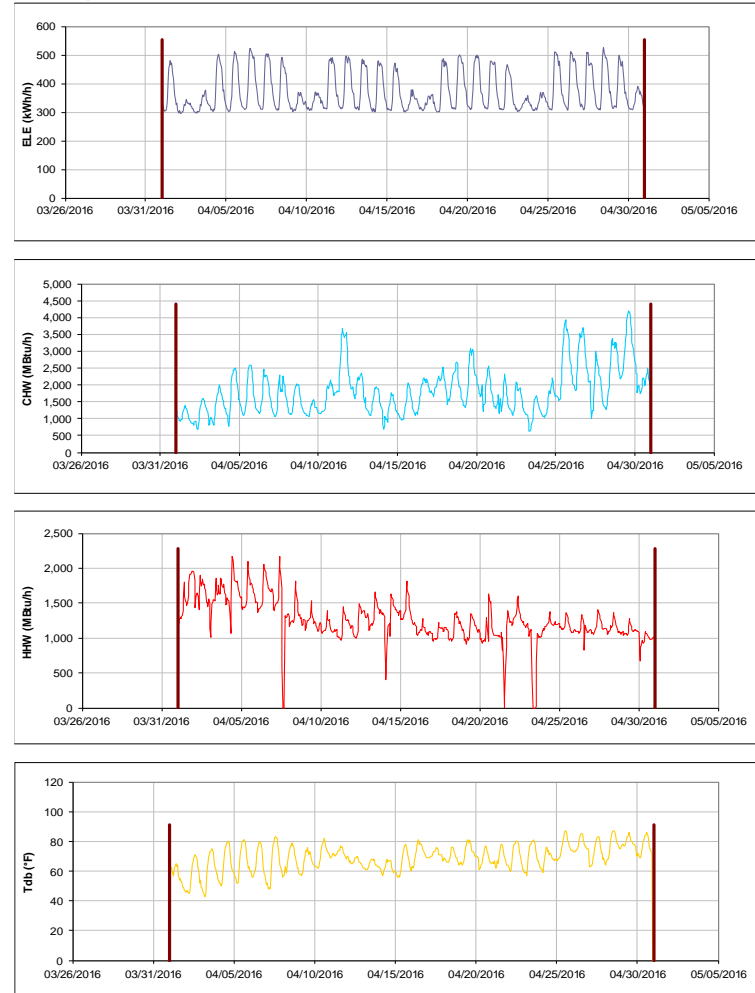


Figure III-144 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kleberg Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

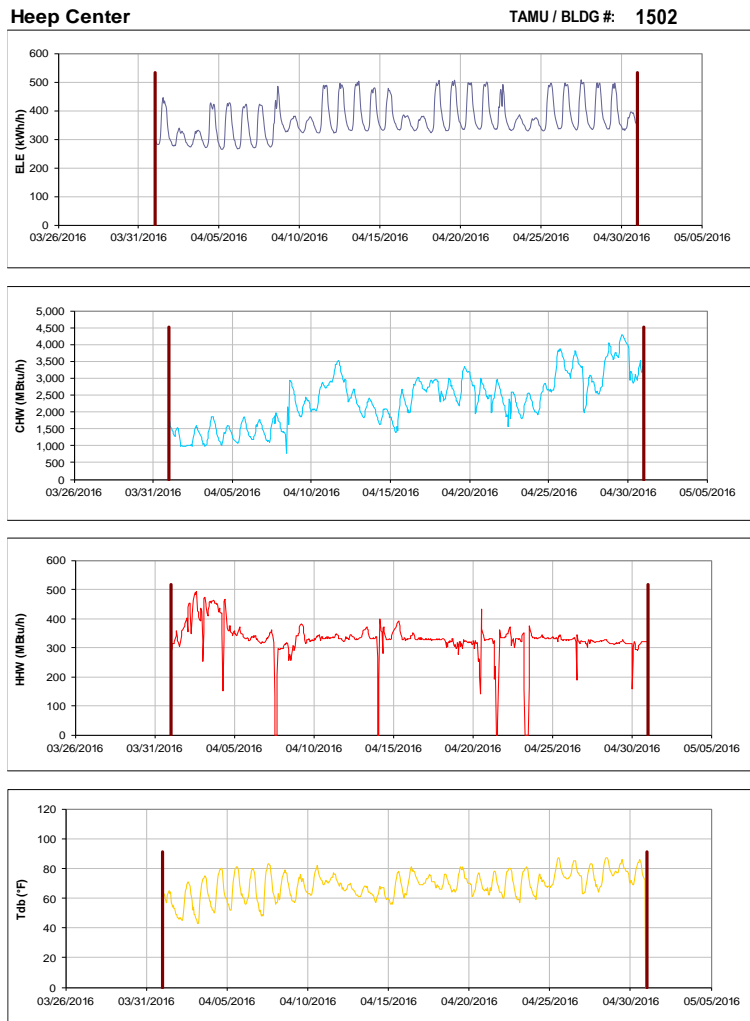


Figure III-145 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heep Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

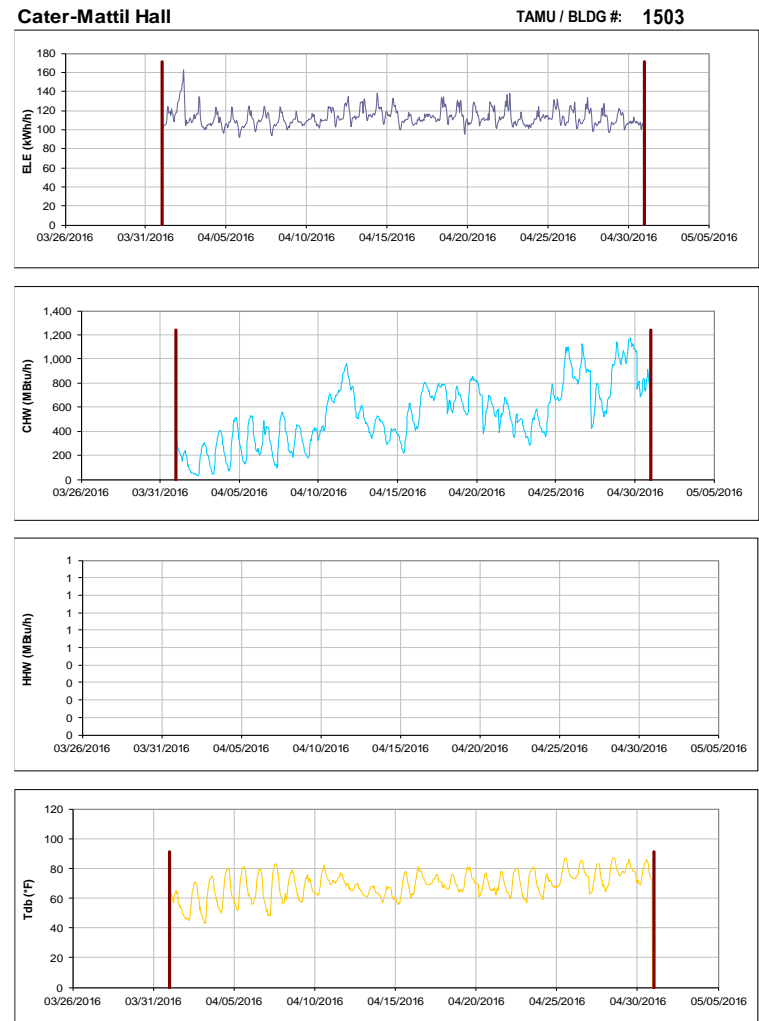


Figure III-146 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cater-Mattil Hall during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

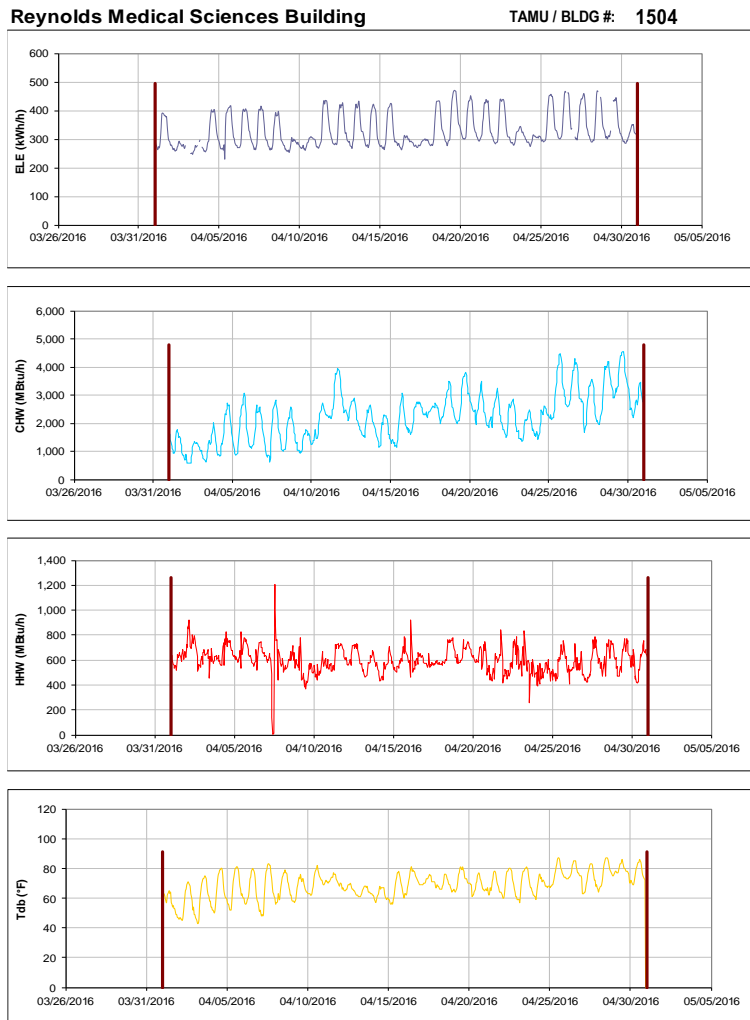


Figure III-147 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reynolds Medical Sciences Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

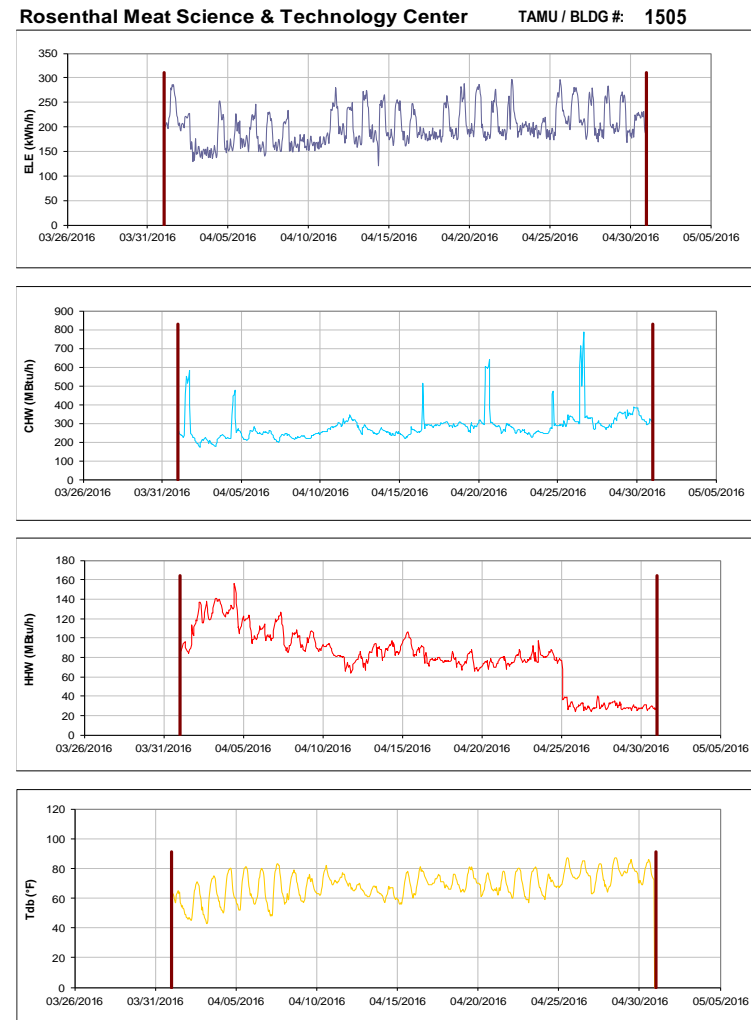


Figure III-148 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rosenthal Meat Science & Technology Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-149 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Horticulture-Forest Science Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

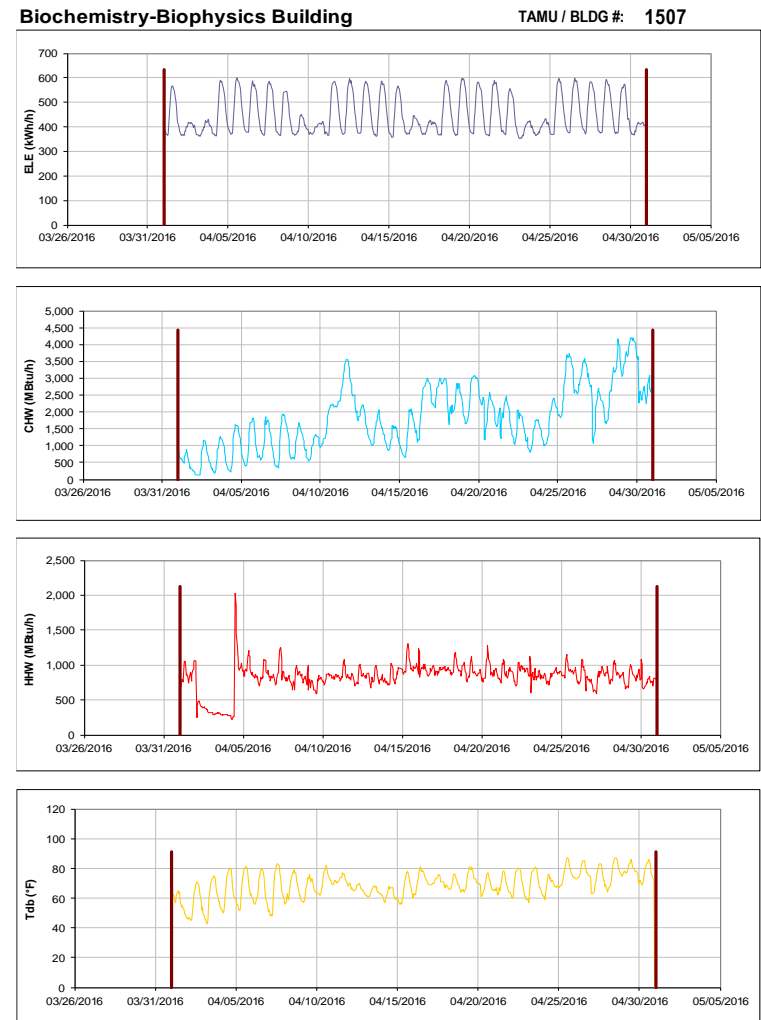


Figure III-150 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biochemistry-Biophysics Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Price Hobgood Ag. Engineering Research Lab TAMU / BLDG #: 1508

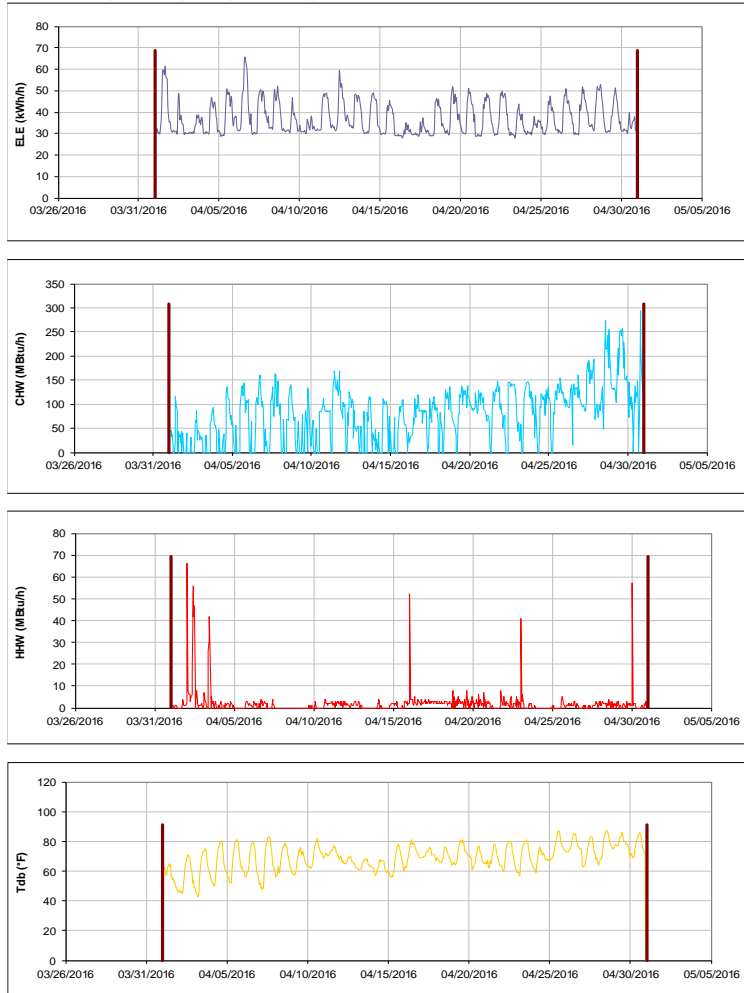


Figure III-151 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Price Hobgood Ag. Engineering Research Lab during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Medical Sciences Library TAMU / BLDG #: 1509

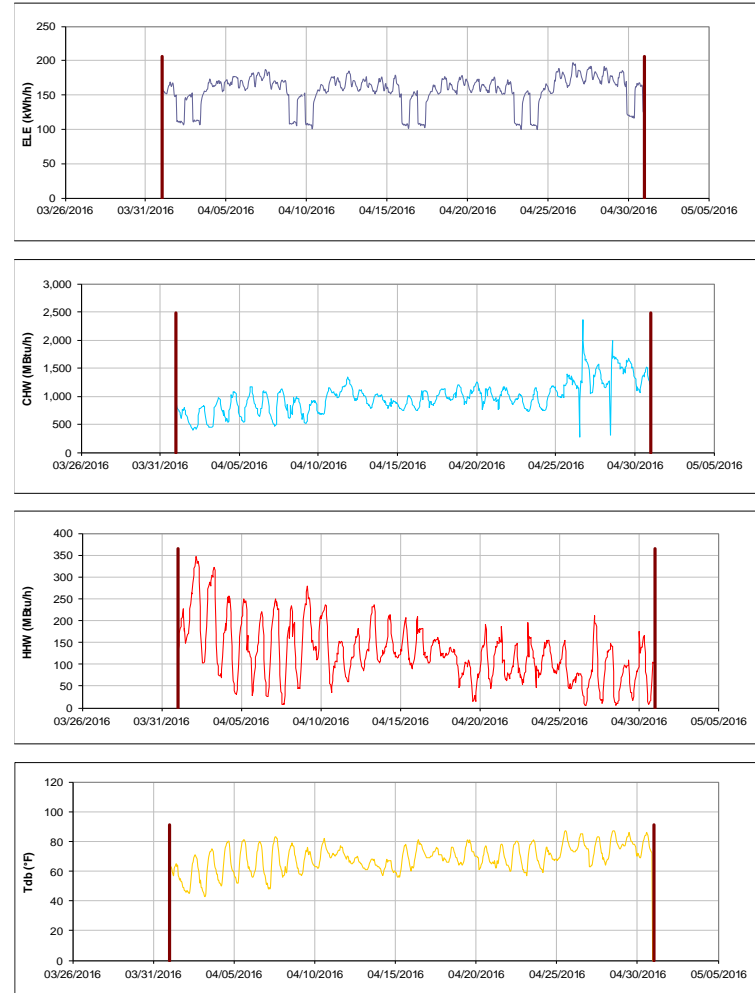


Figure III-152 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Medical Sciences Library during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-153 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wehner Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

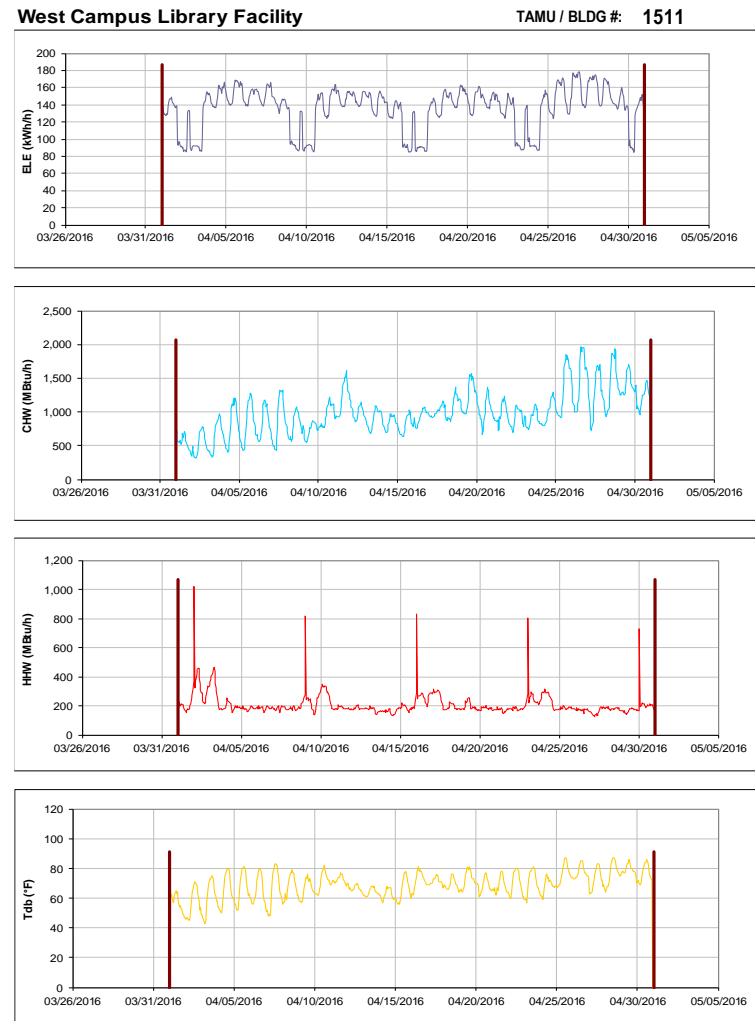


Figure III-154 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for West Campus Library Facility during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

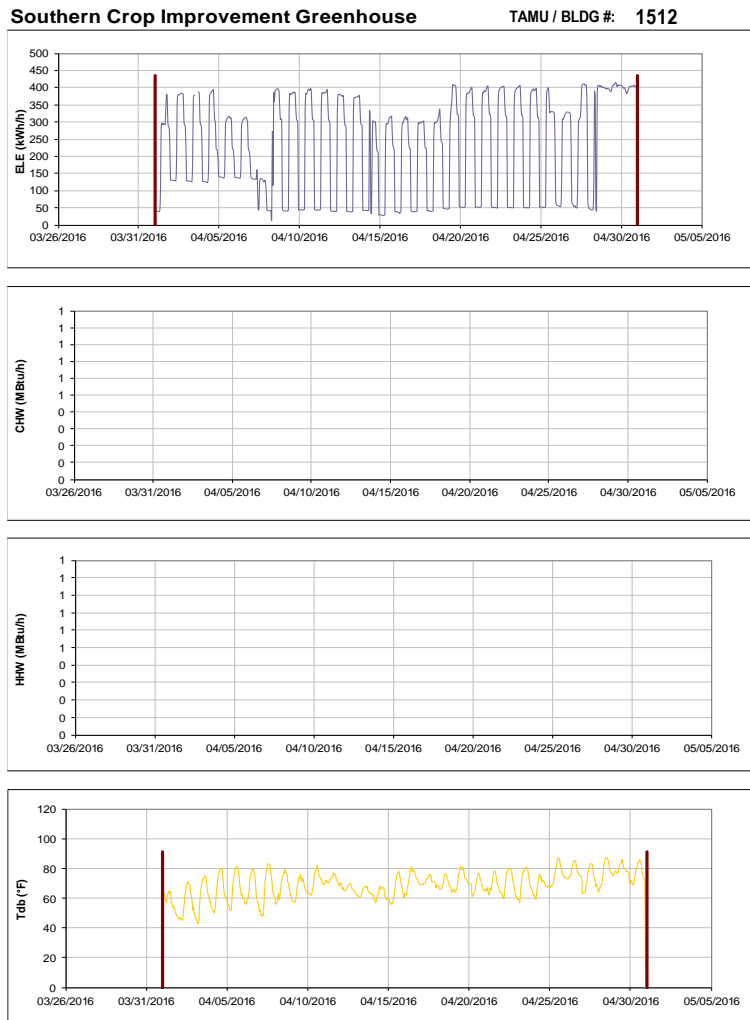


Figure III-155 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Southern Crop Improvement Greenhouse during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

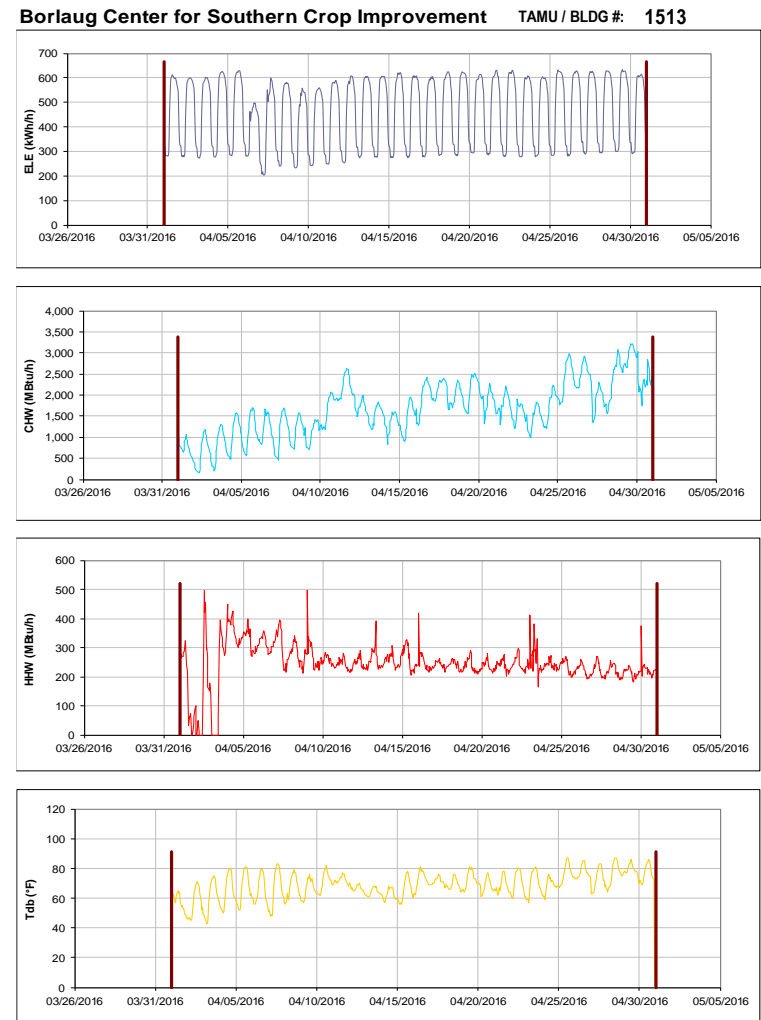


Figure III-156 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Borlaug Center for Southern Crop Improvement during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

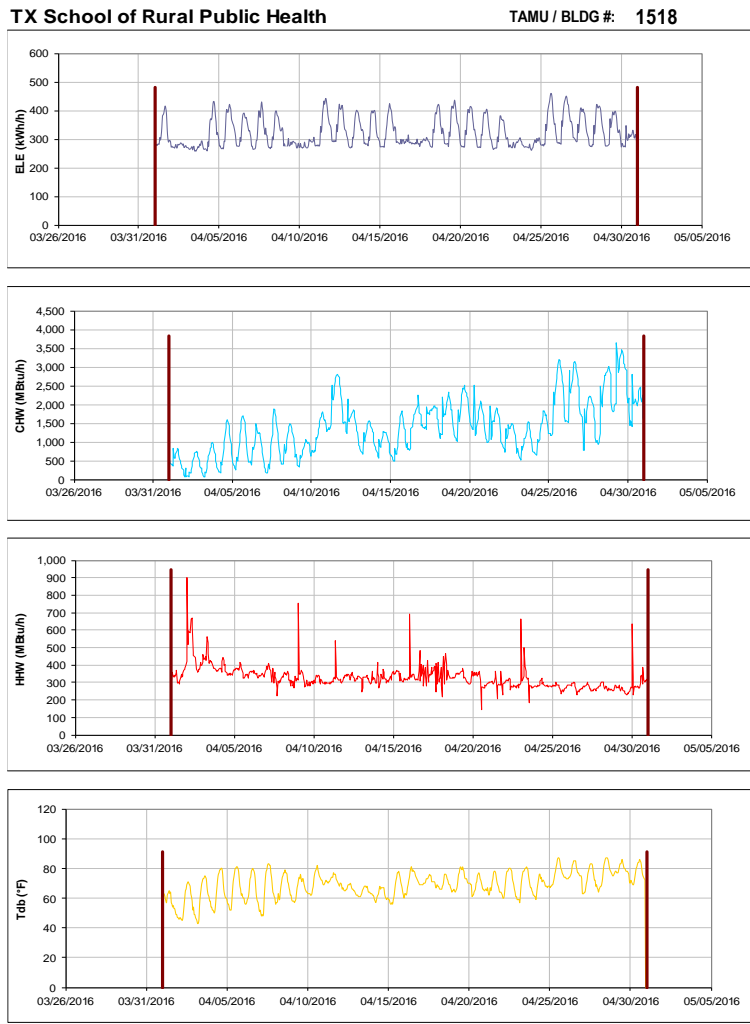


Figure III-157 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TX School of Rural Public Health during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-158 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Nuclear Magnetic Resonance Facility during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

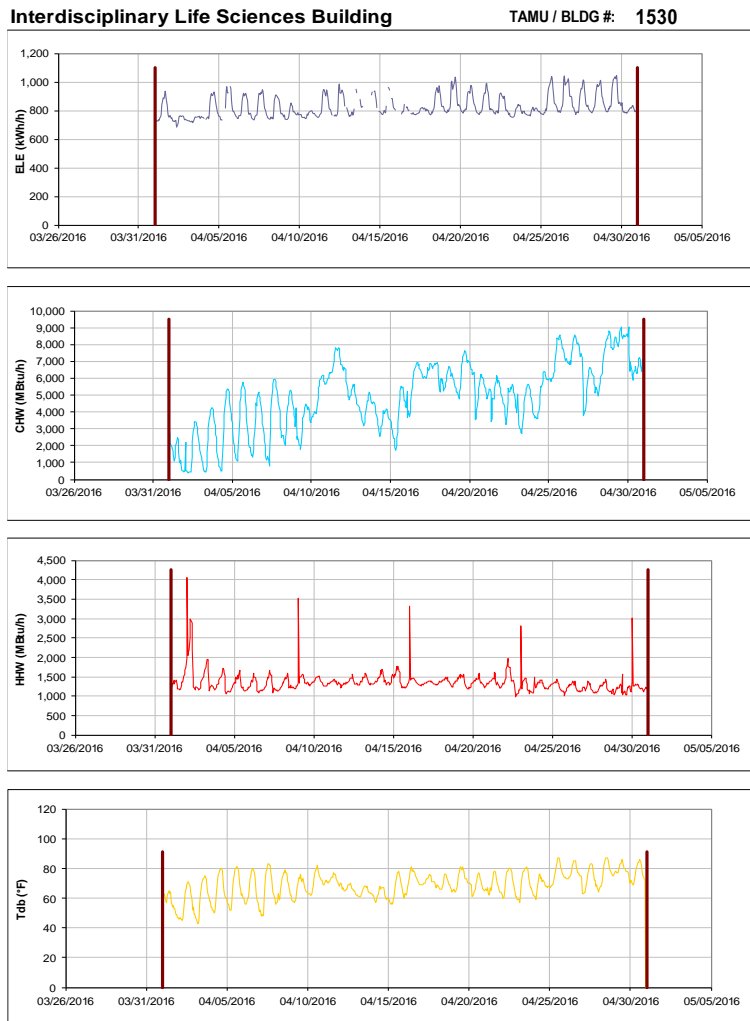


Figure III-159 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Interdisciplinary Life Sciences Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-160 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture and Life Sciences Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-161 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for AgriLife Services Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Figure III-162 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture Program Visitors Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Physical Education Activity Program Building TAMU / BLDG #: 1540



Figure III-163 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Physical Education Activity Program Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Olsen Field at Bluebell Park TAMU / BLDG #: 1550

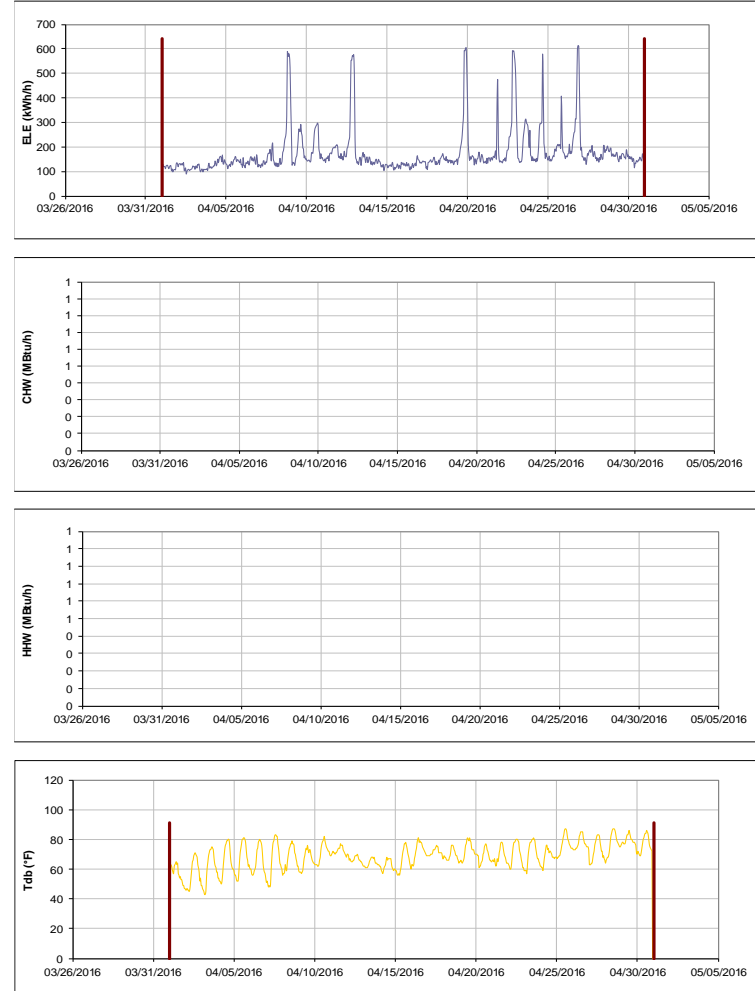


Figure III-164 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Olsen Field at Bluebell Park during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Reed Arena and Cox-McFerrin Center TAMU / BLDG #: 554-1558

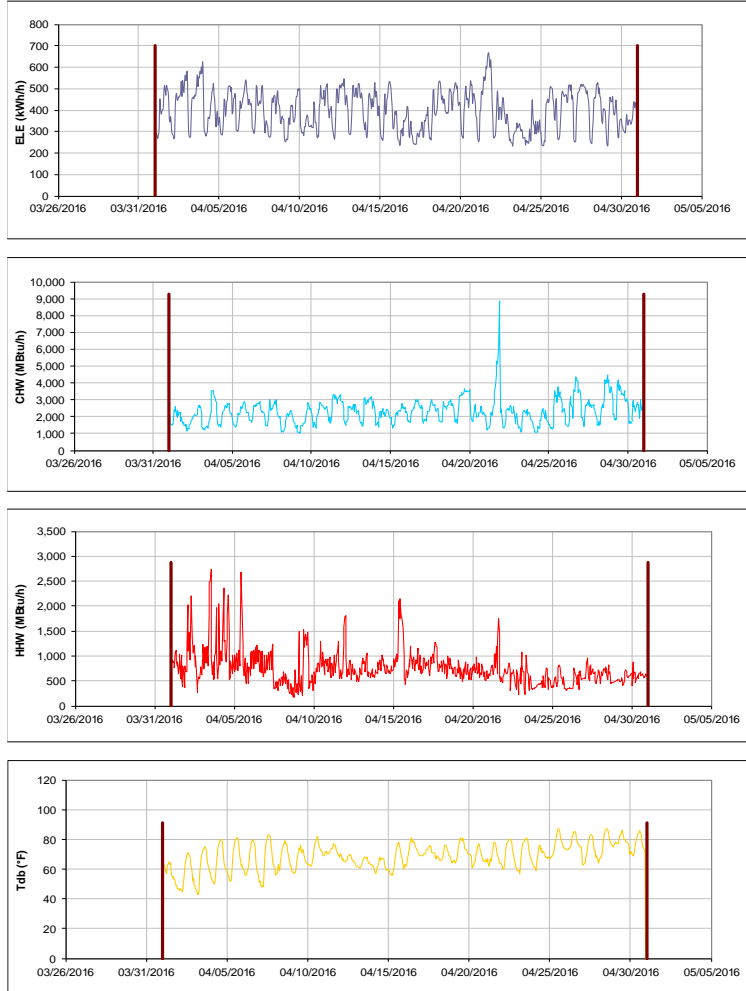


Figure III-165 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed Arena and Cox-McFerrin Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Cox-McFerrin Center for Aggie Basketball TAMU / BLDG #: 1558

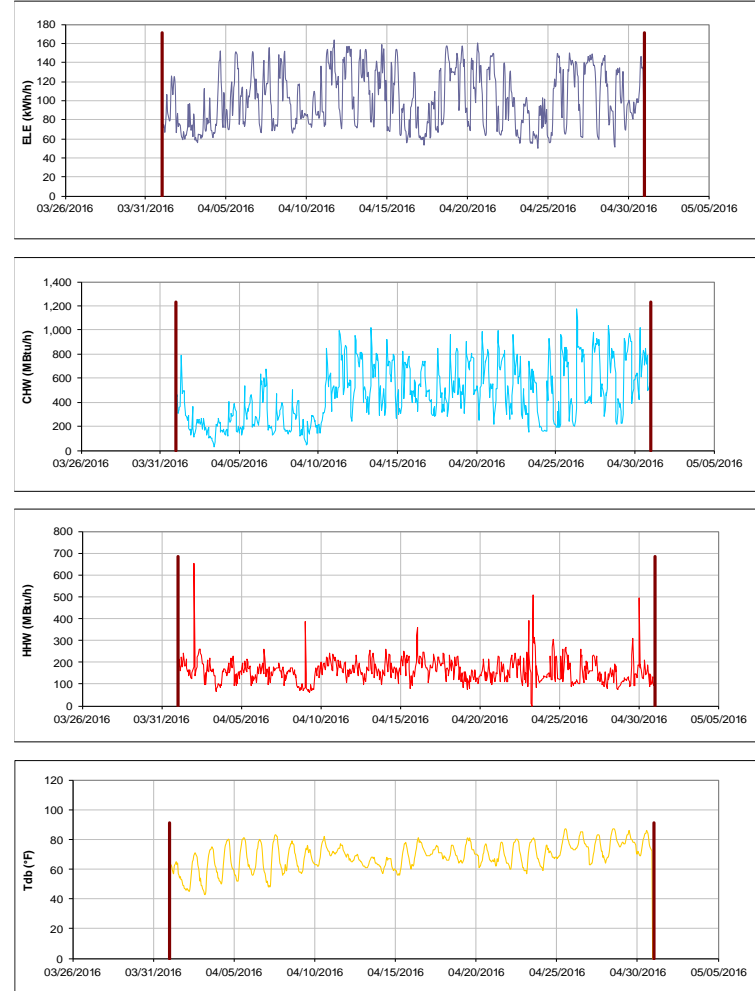


Figure III-166 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cox-McFerrin Center for Aggie Basketball during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

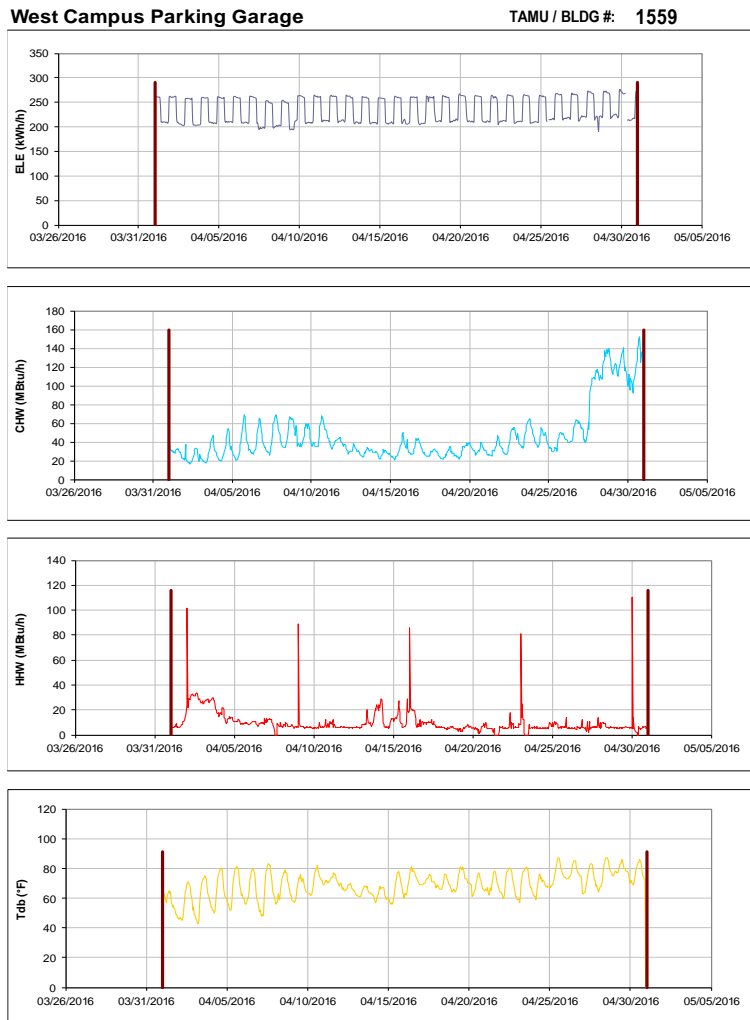


Figure III-167 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for West Campus Parking Garage during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-168 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Student Recreation Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

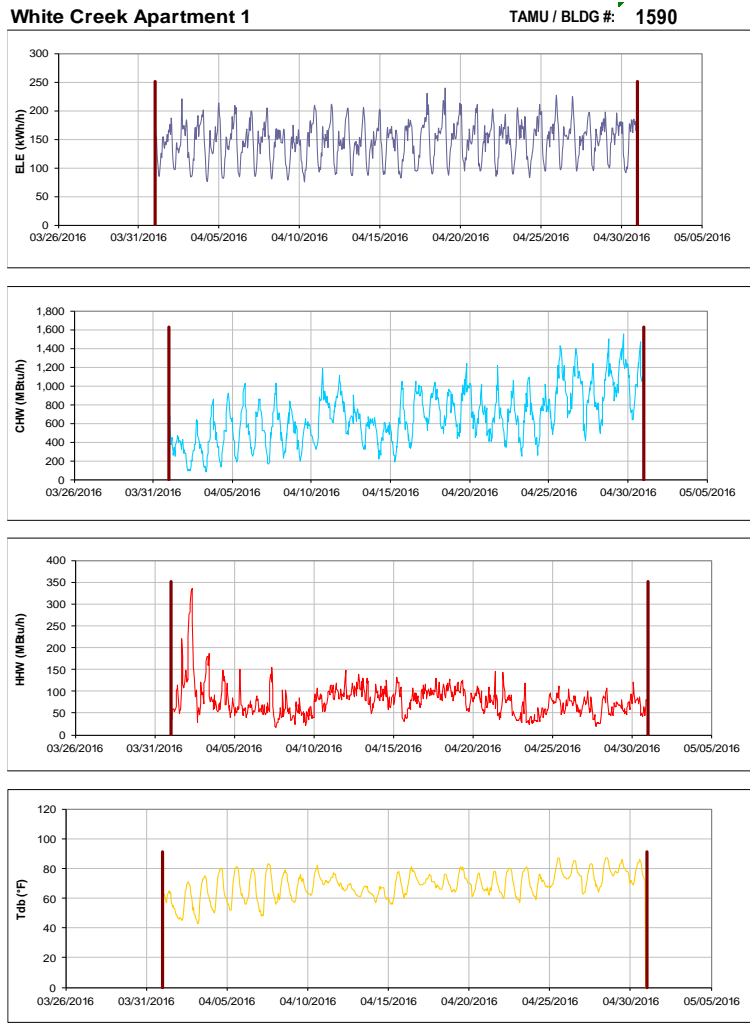


Figure III-169 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 1 during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

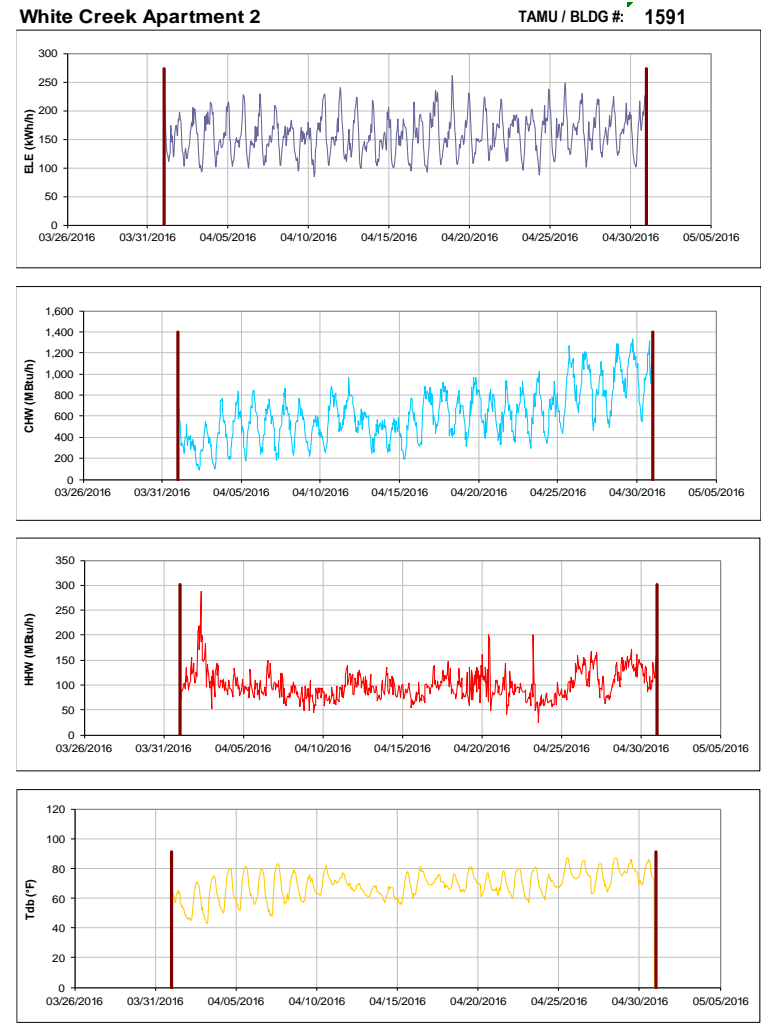


Figure III-170 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 2 during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

White Creek Apartment 3

TAMU / BLDG #: 1592

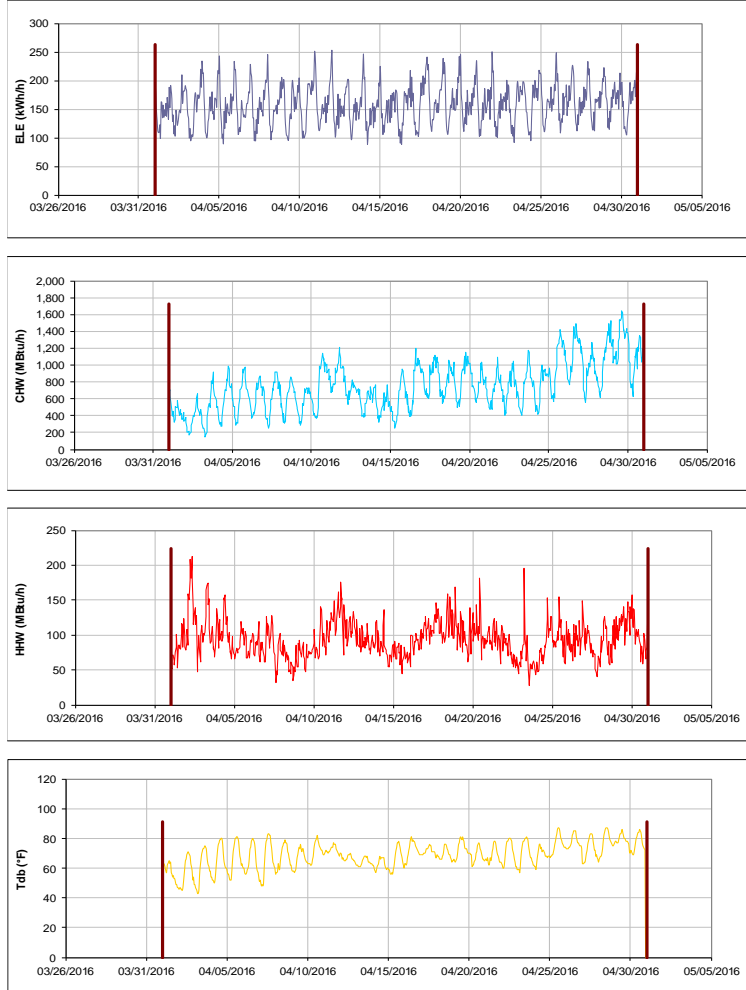


Figure III-171 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 3 during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Gilchrist TTI Building

TAMU / BLDG #: 1600

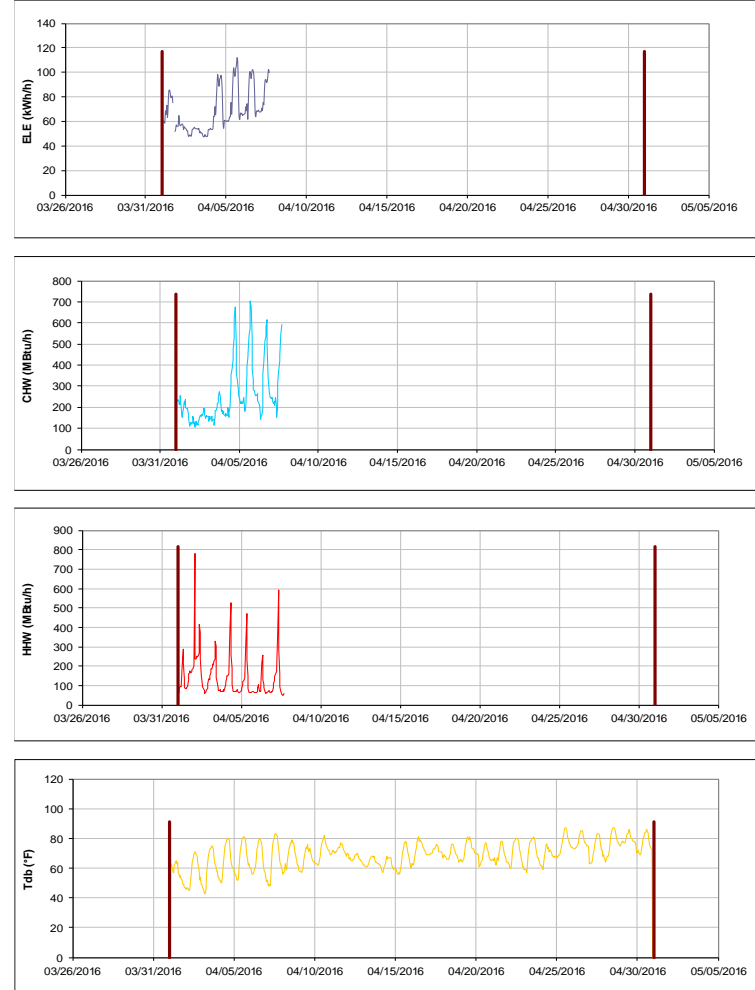


Figure III-172 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gilchrist TTI Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

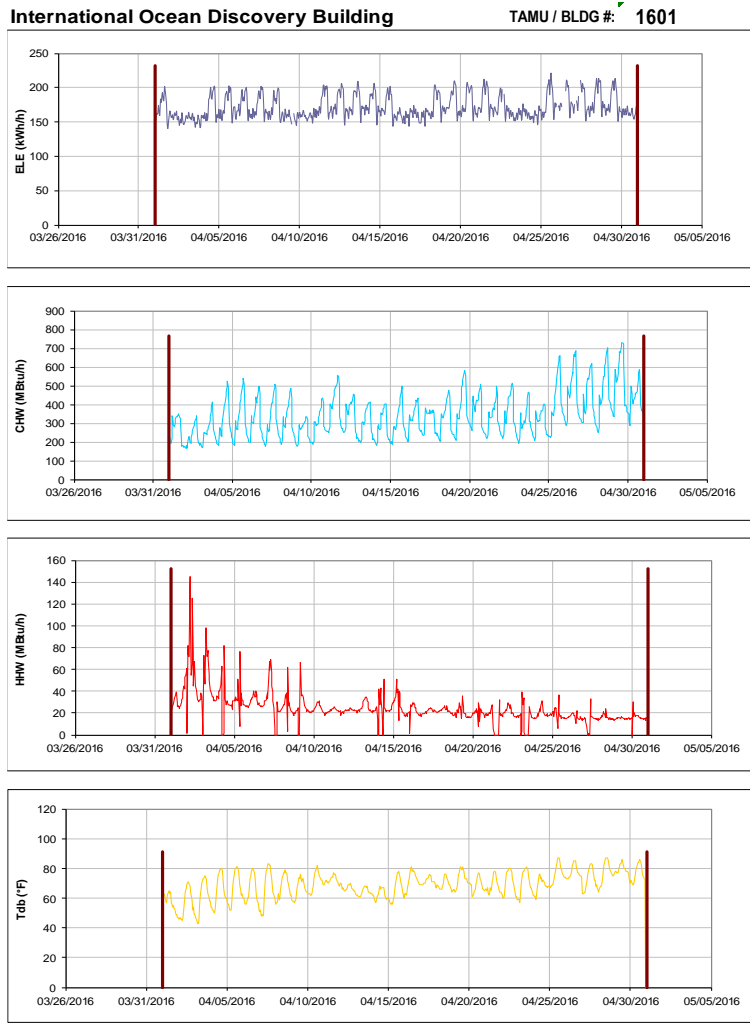


Figure III-173 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for International Ocean Discovery Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

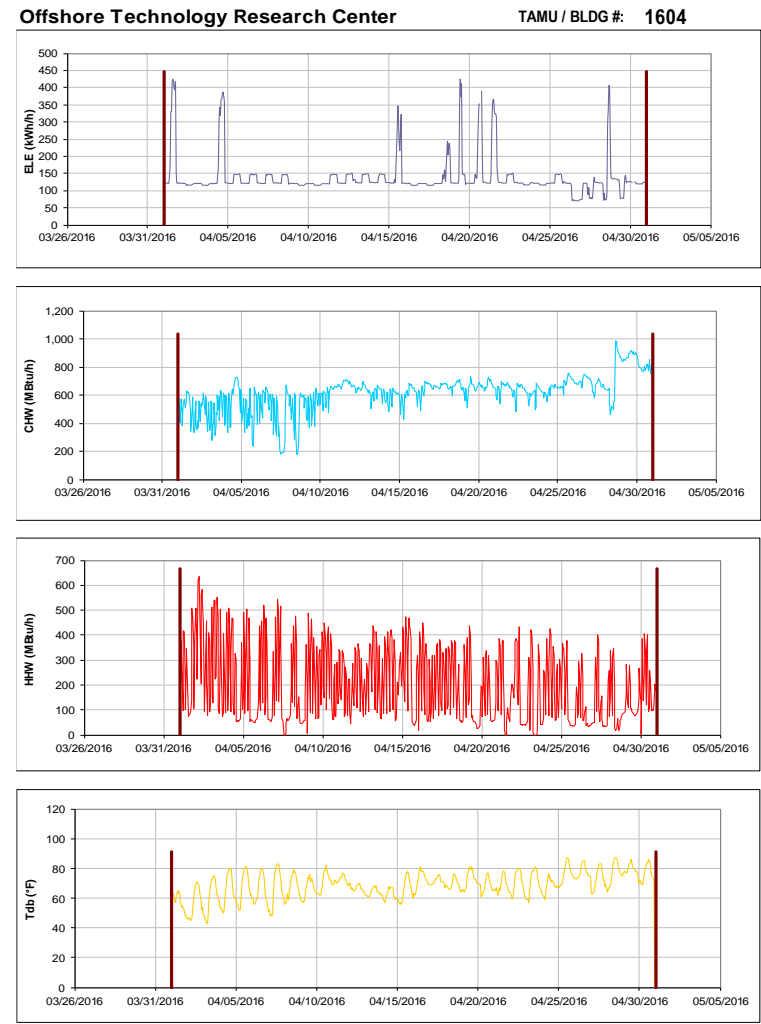


Figure III-174 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Offshore Technology Research Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

George Bush Presidential Library & Museum TAMU / BLDG #: 1606

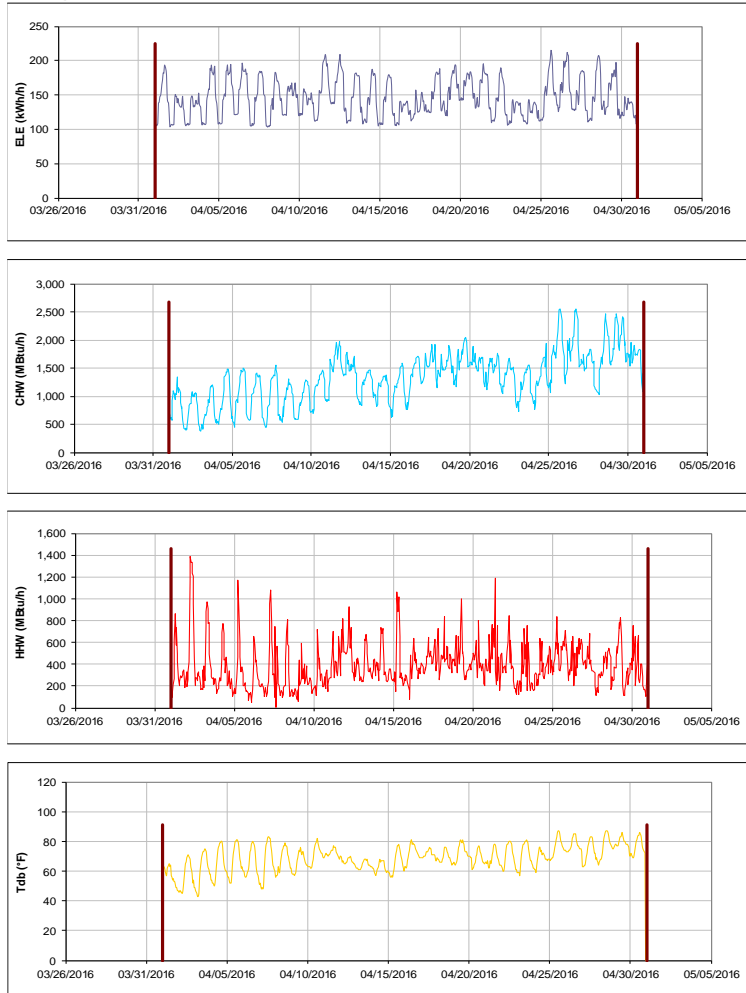


Figure III-175 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for George Bush Presidential Library & Museum during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Allen Building TAMU / BLDG #: 1607



Figure III-176 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Allen Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Annenberg Presidential Conference Center TAMU / BLDG #: 1608

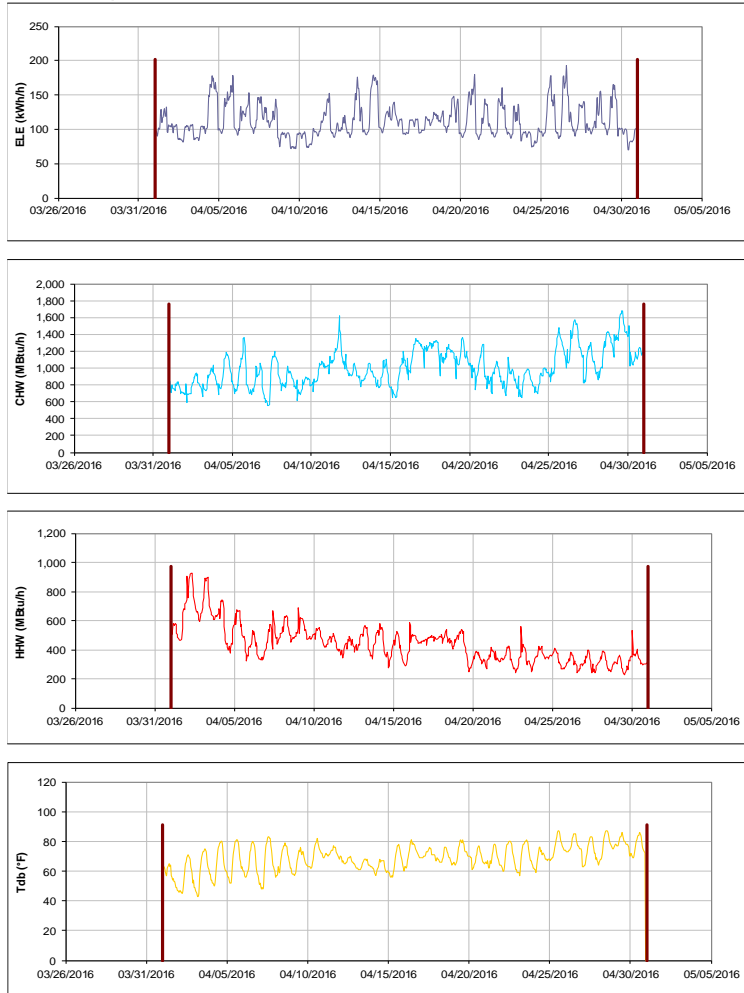


Figure III-177 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Annenberg Presidential Conference Center during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

TTI Headquarters TAMU / BLDG #: 1609



Figure III-178 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TTI Headquarters during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-179 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Engineering Research Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-180 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for General Services Complex during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

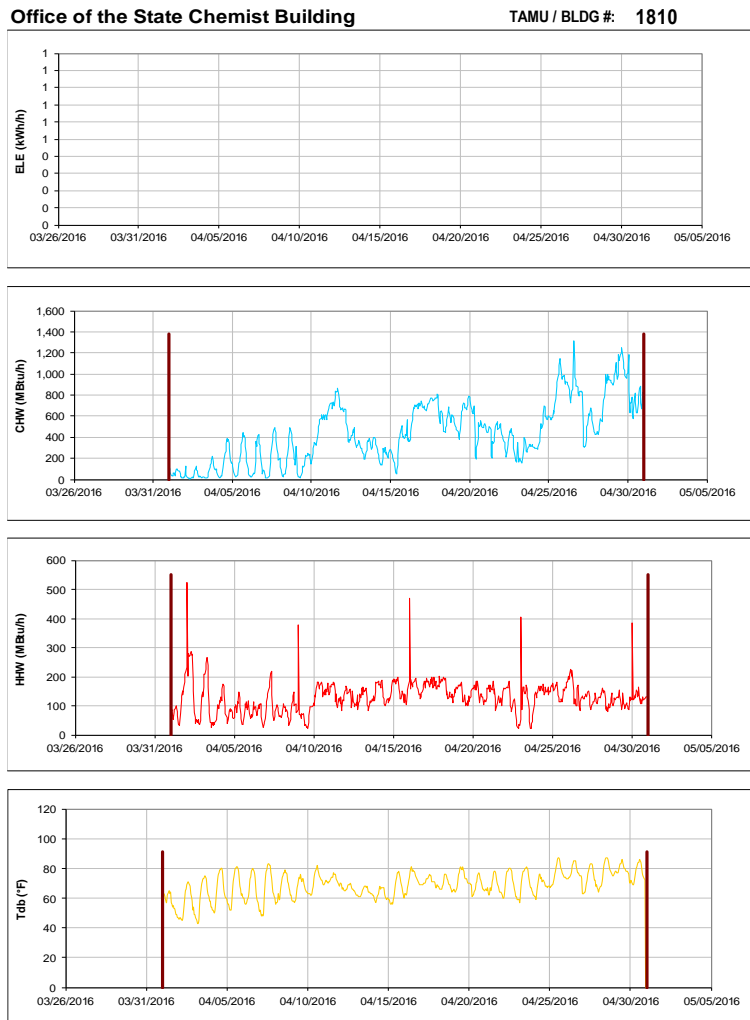


Figure III-181 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Office of the State Chemist Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

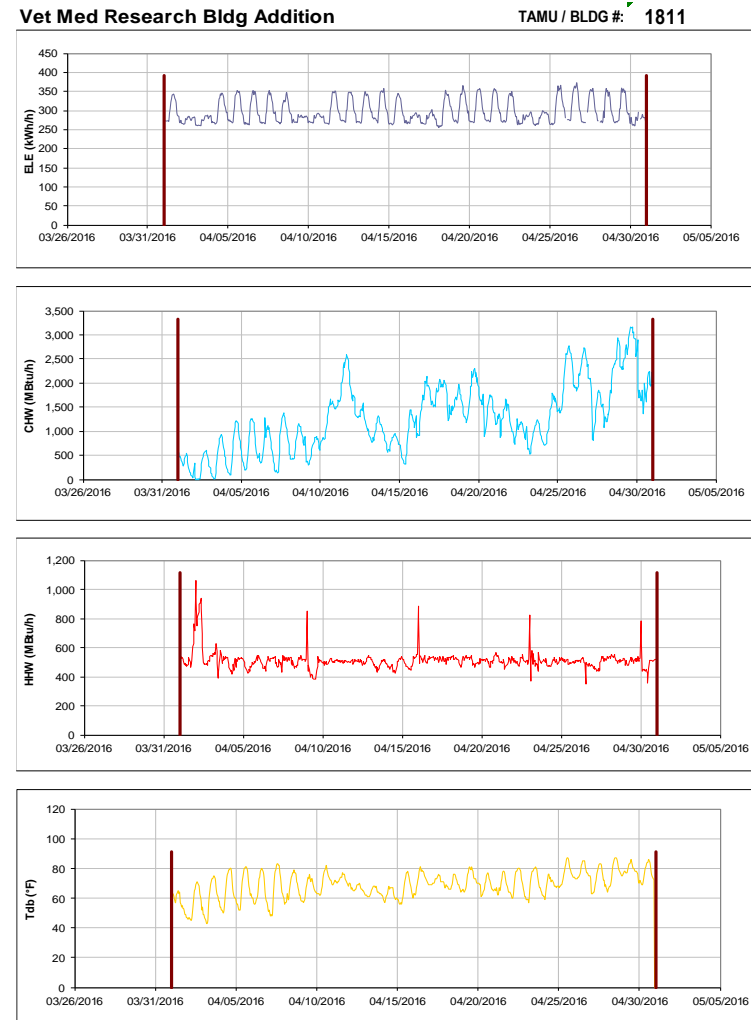


Figure III-182 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Vet Med Research Bldg Addition during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-183 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas Institute for Genomic Medicine during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

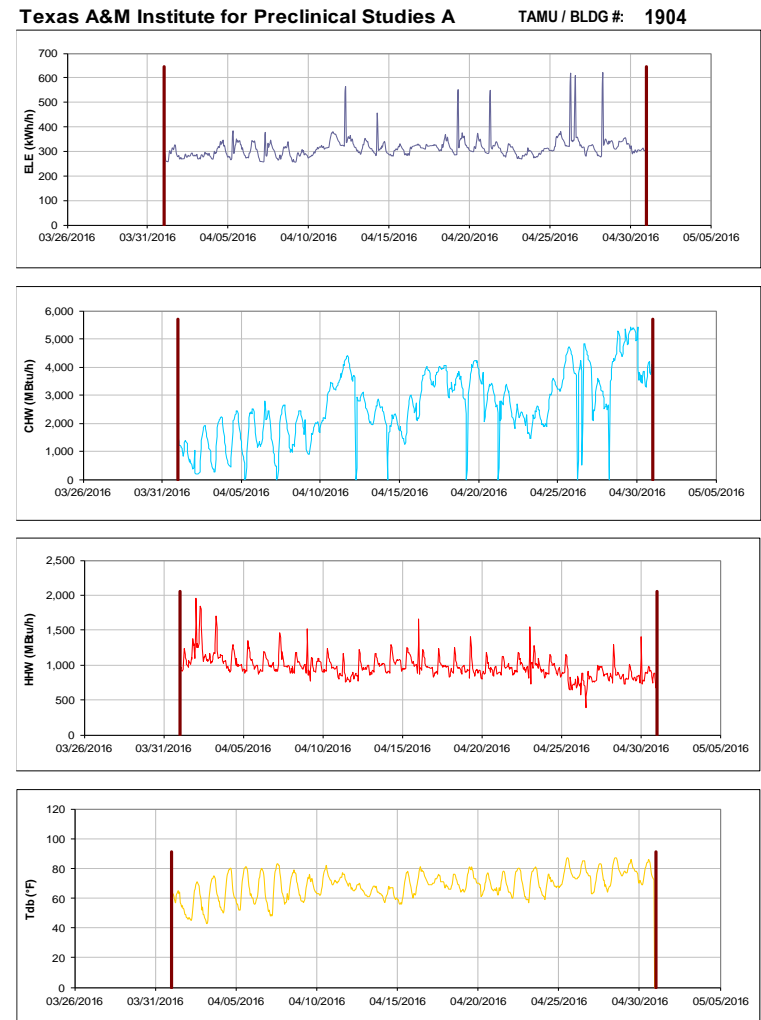


Figure III-184 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas A&M Institute for Preclinical Studies A during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

National Center for Therapeutics Manufacturing TAMU / BLDG #: 1910

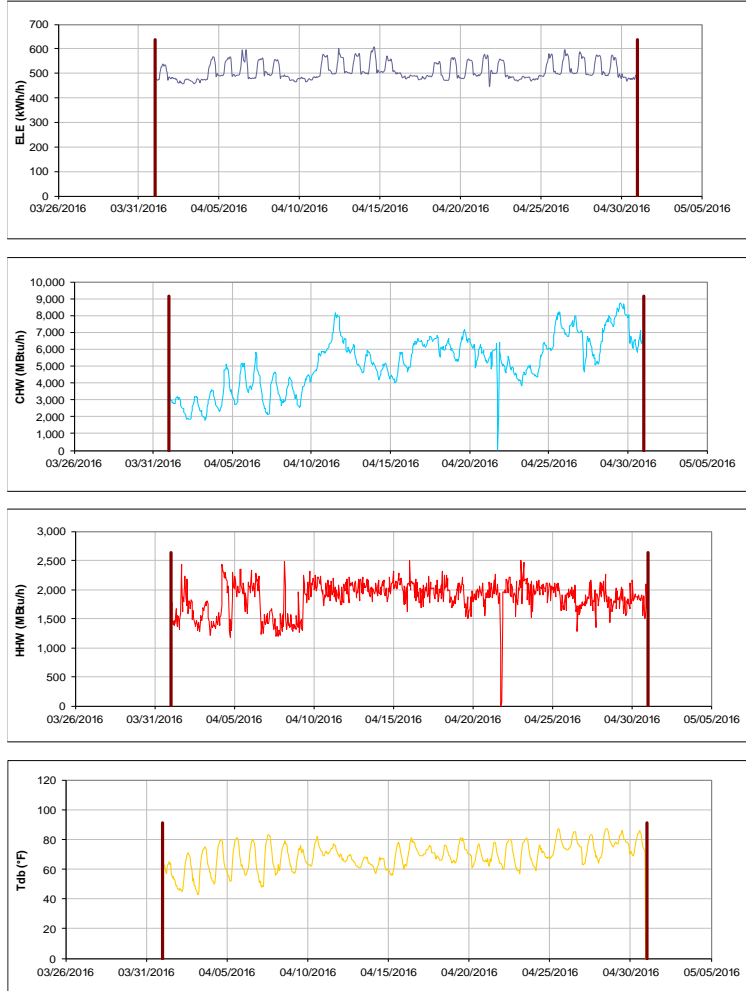


Figure III-185 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for National Center for Therapeutics Manufacturing during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Multi-Species Research Building TAMU / BLDG #: 1911

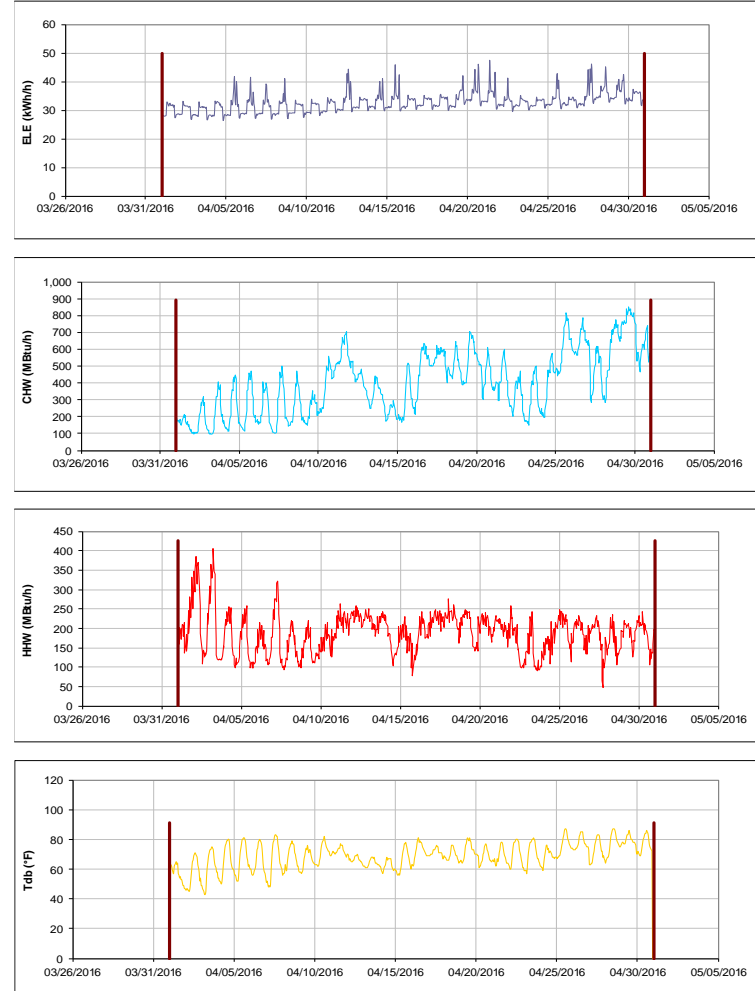


Figure III-186 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Multi-Species Research Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

NCTM Manufacturing Building

TAMU / BLDG #: 10226



Figure III-187 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for NCTM Manufacturing Building during the Month of April 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

**IV. Energy Balance Plots for April 2016
Consumption**

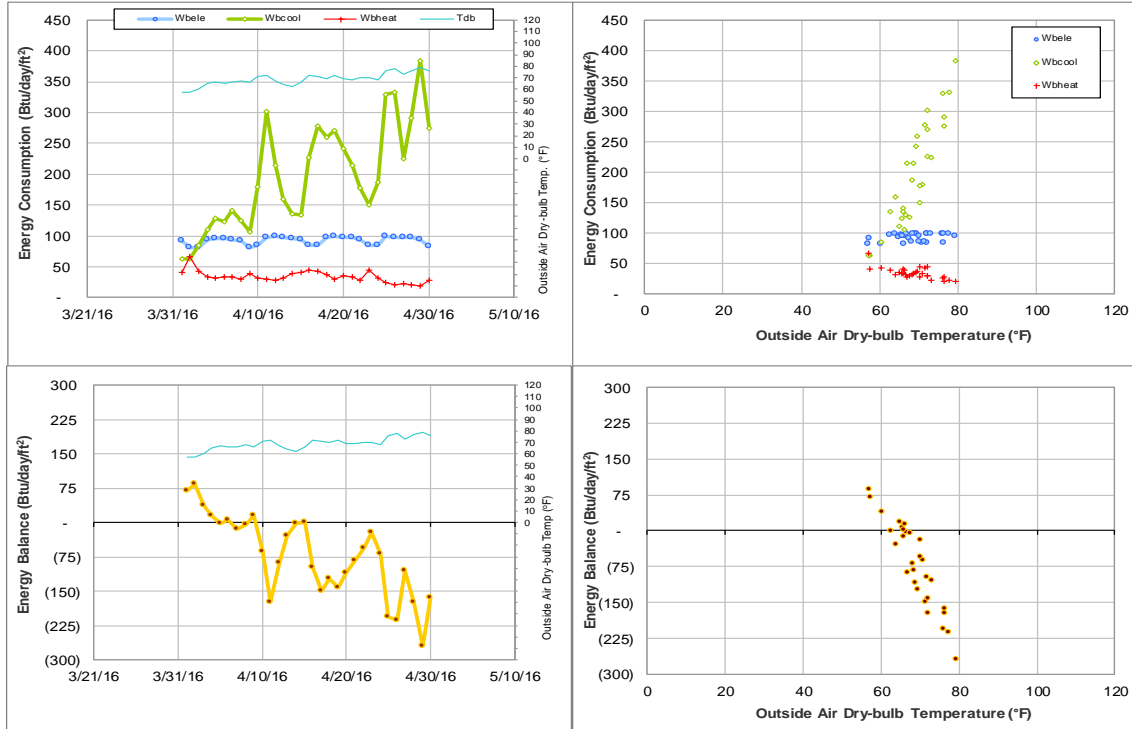


Figure IV-1 Emerging Technologies Building TAMU BLDG # 270 Energy Balance Plot during April 2016

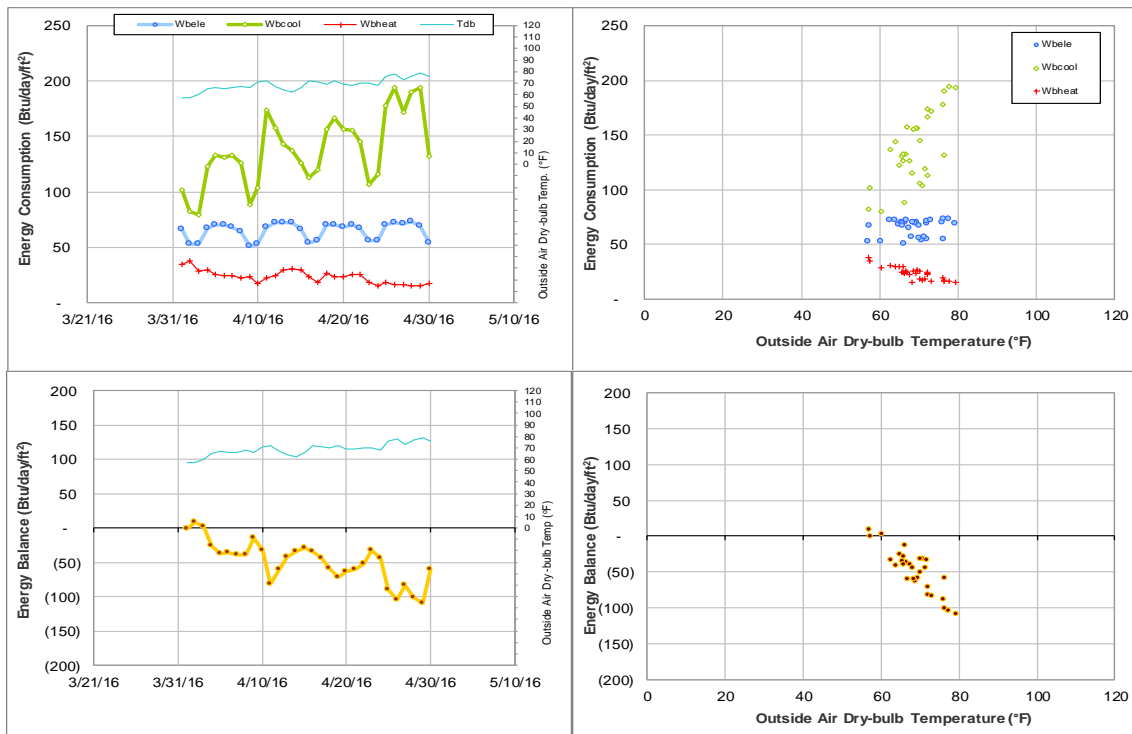


Figure IV-2 Liberal Arts and Arts & Humanities Building TAMU BLDG # 275 Energy Balance Plot during April 2016

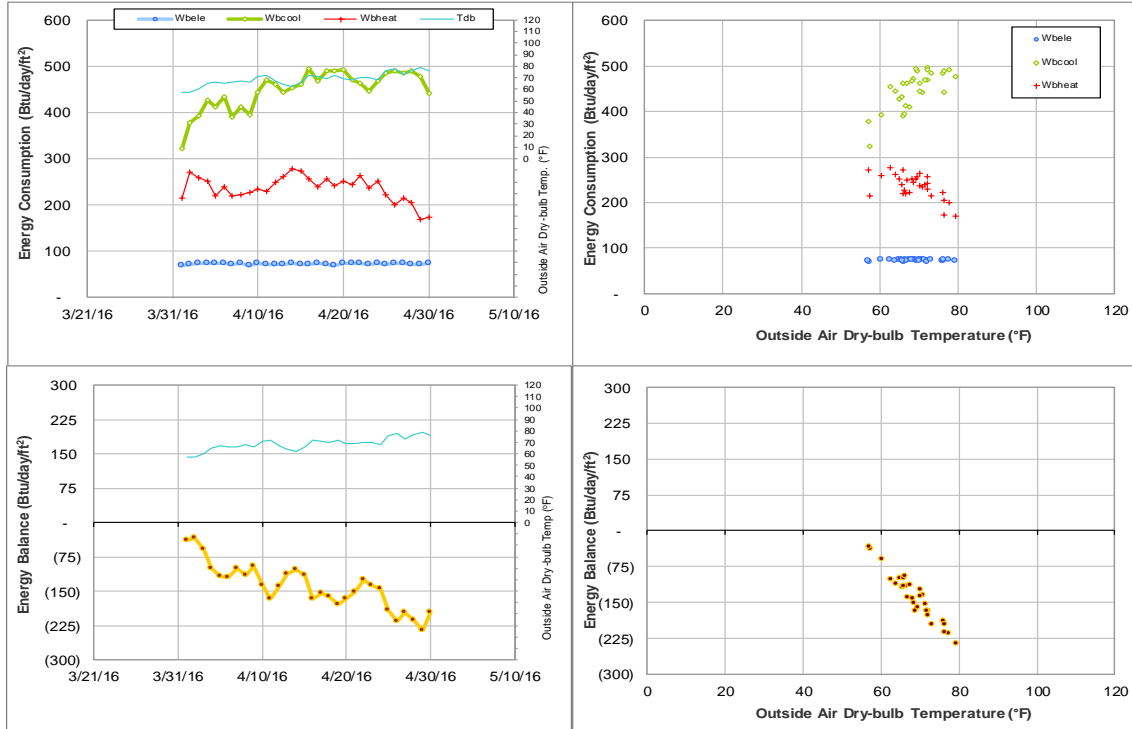


Figure IV-3 Wells Residence Hall TAMU BLDG # 290 Energy Balance Plot during April 2016

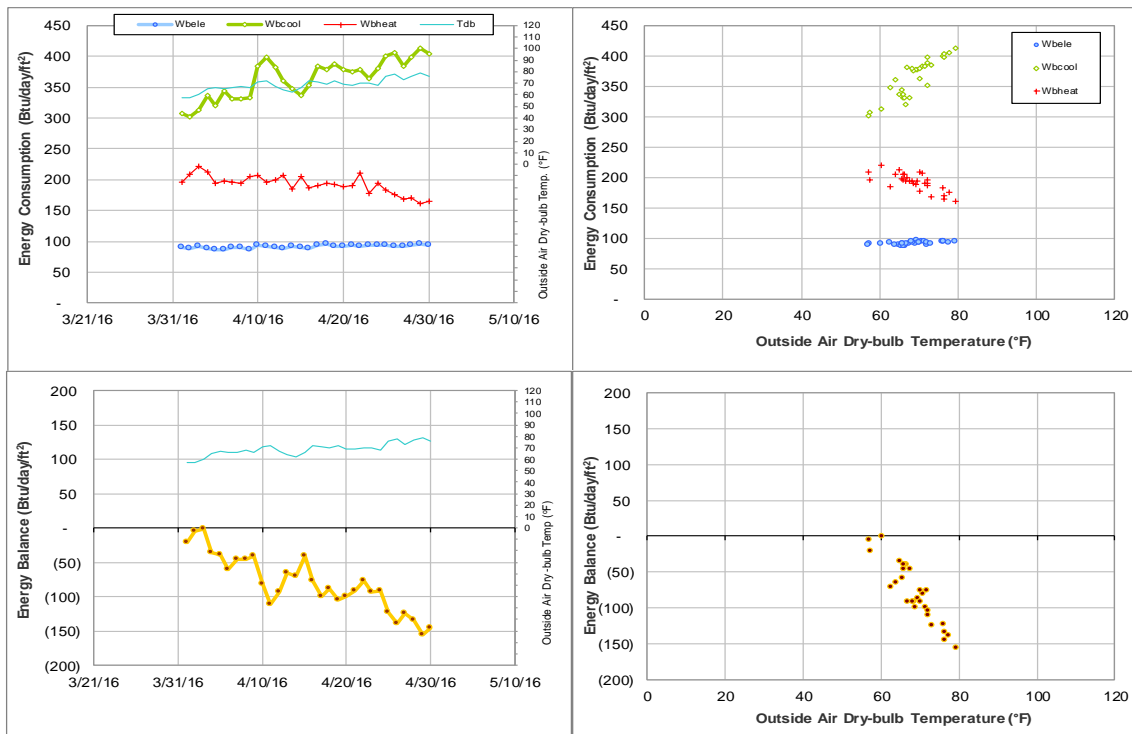


Figure IV-4 Rudder Residence Hall TAMU BLDG # 291 Energy Balance Plot during April 2016

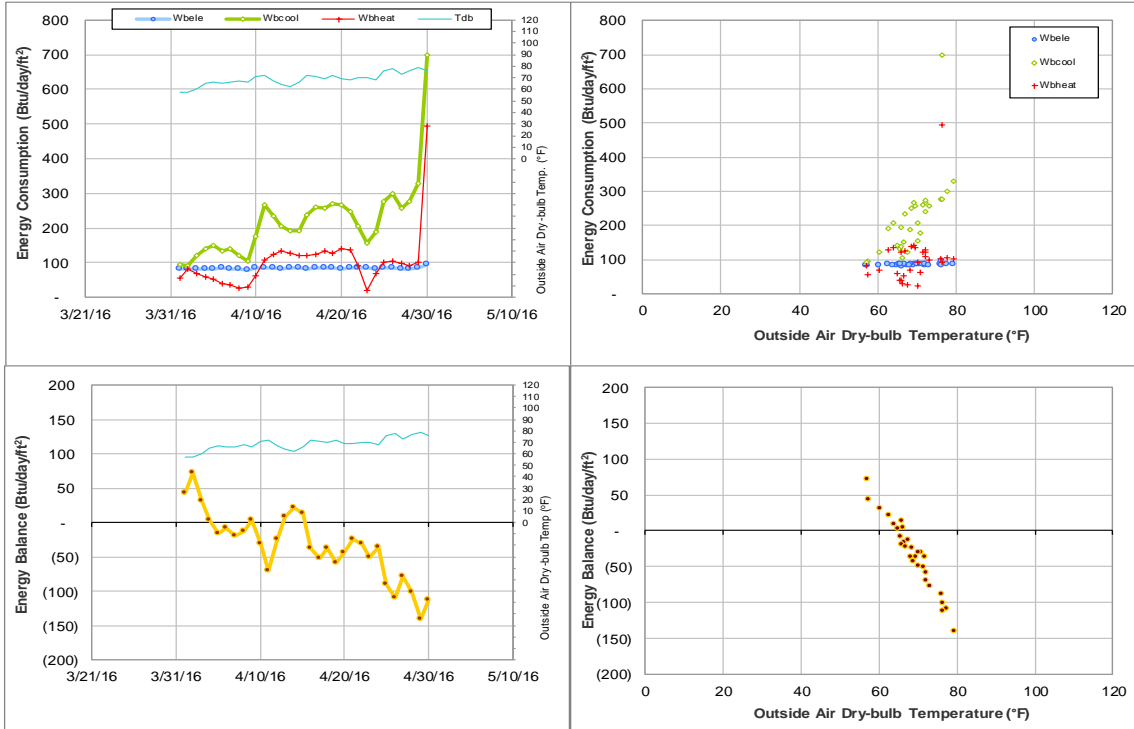


Figure IV-5 Eppright Residence Hall TAMU BLDG # 292 Energy Balance Plot during April 2016

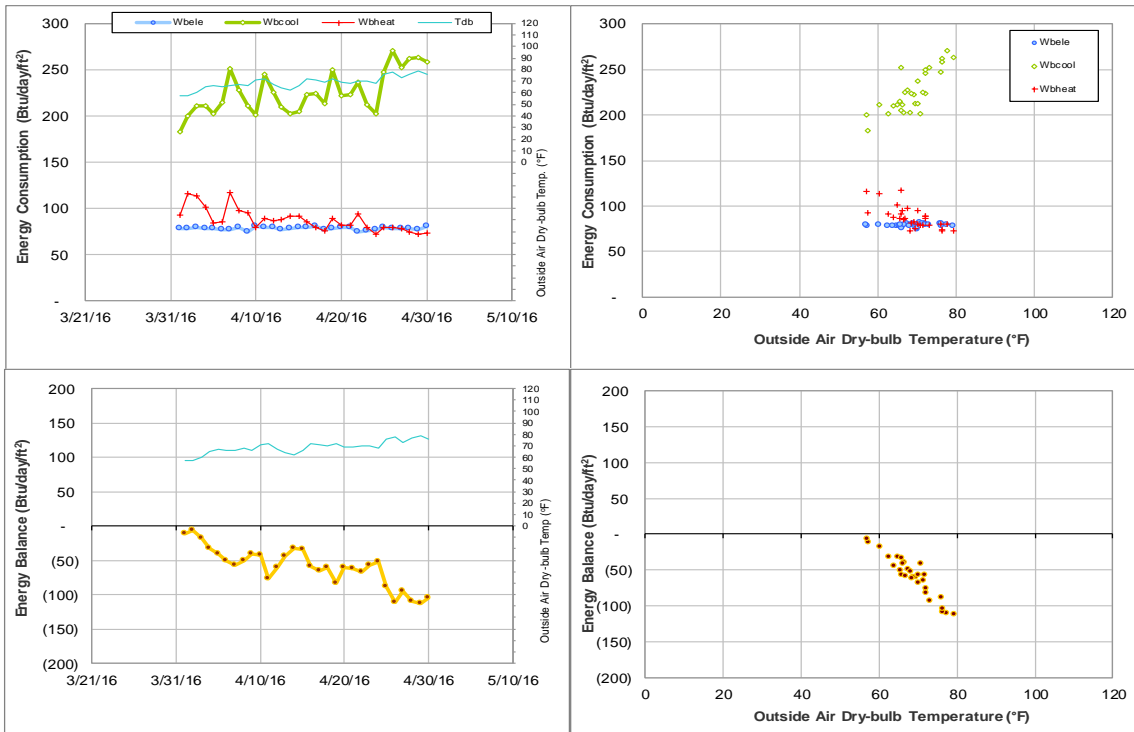


Figure IV-6 Appelt Residence Hall TAMU BLDG # 293 Energy Balance Plot during April 2016

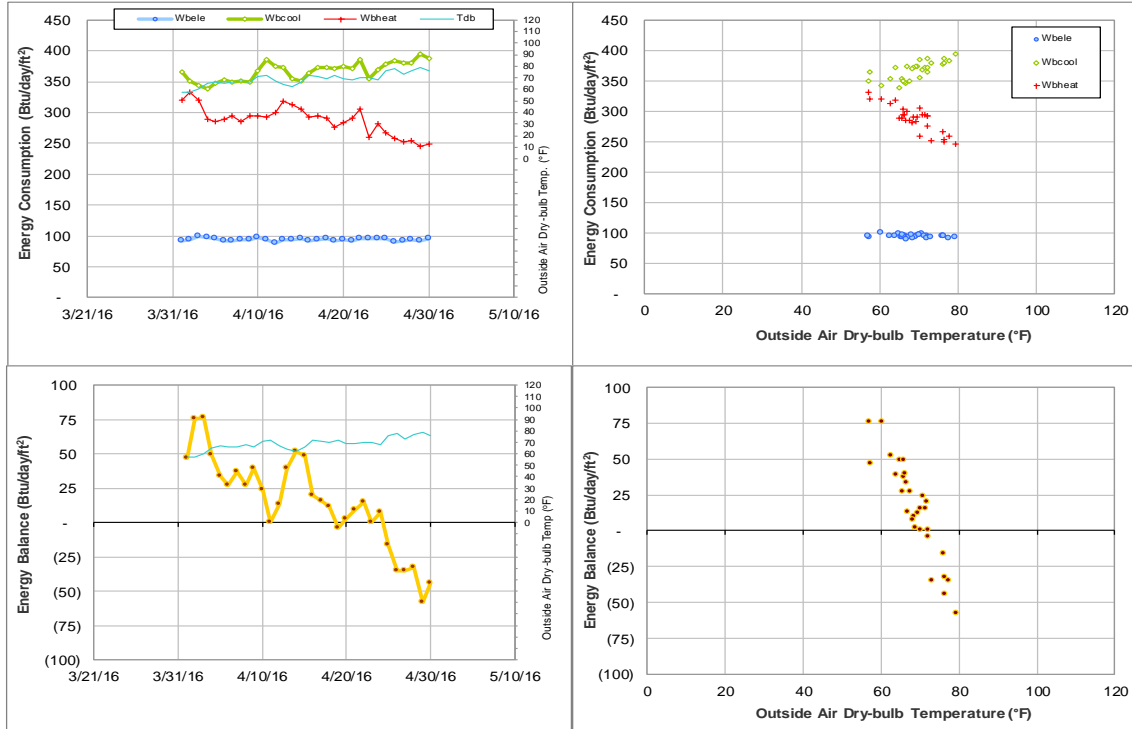


Figure IV-7 Lechner Residence Hall TAMU BLDG # 294 Energy Balance Plot during April 2016

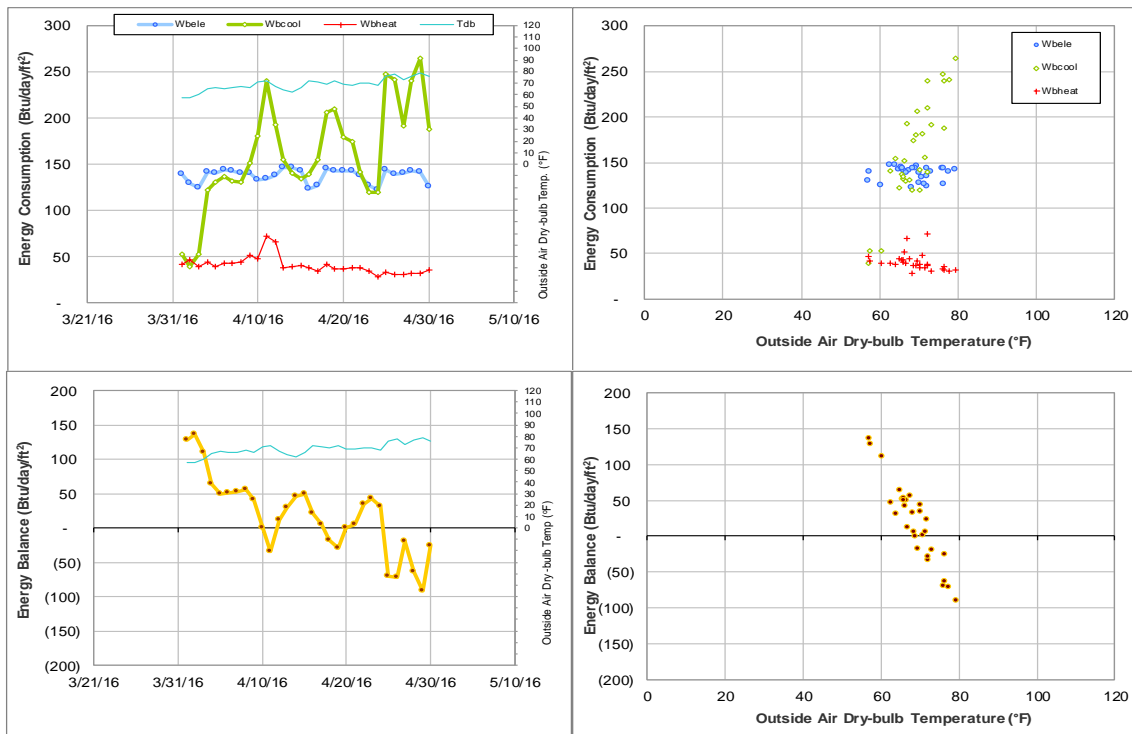


Figure IV-8 Mitchell Inst. for Fundamental Phys & Astronomy TAMU BLDG # 296 Energy Balance Plot during April 2016

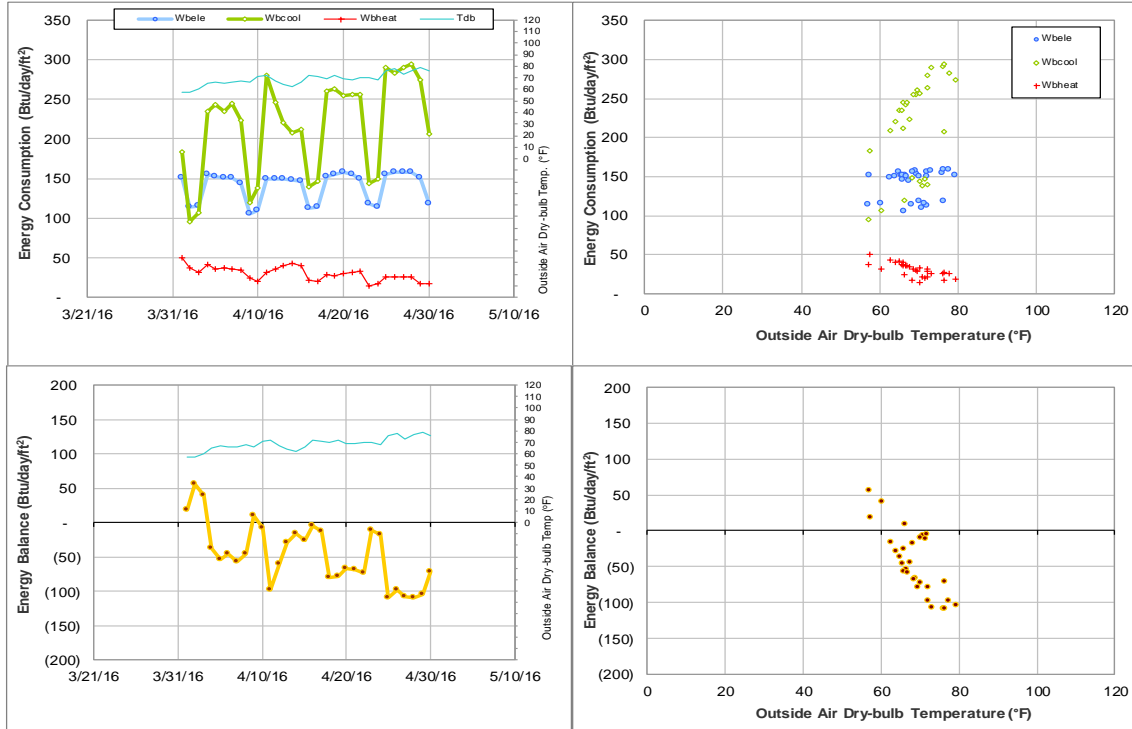


Figure IV-9 CE TTI Office & Lab Building TAMU BLDG # 325 Energy Balance Plot during April 2016

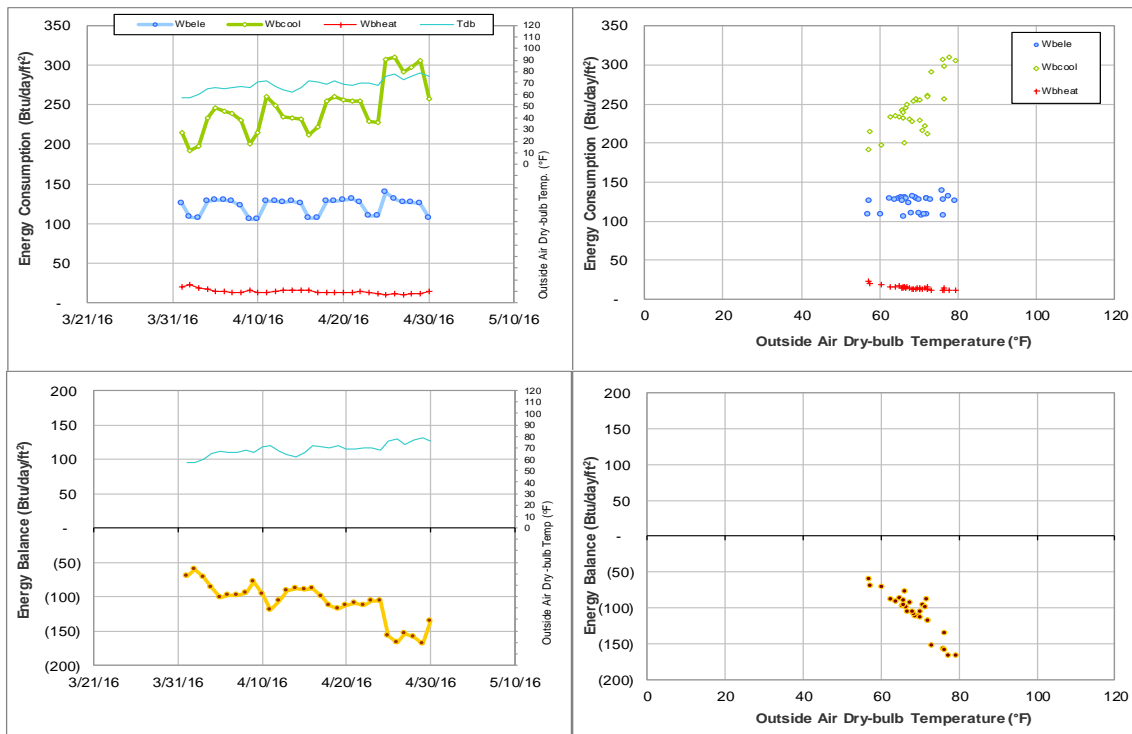


Figure IV-10 Bright Aerospace Building TAMU BLDG # 353 Energy Balance Plot during April 2016

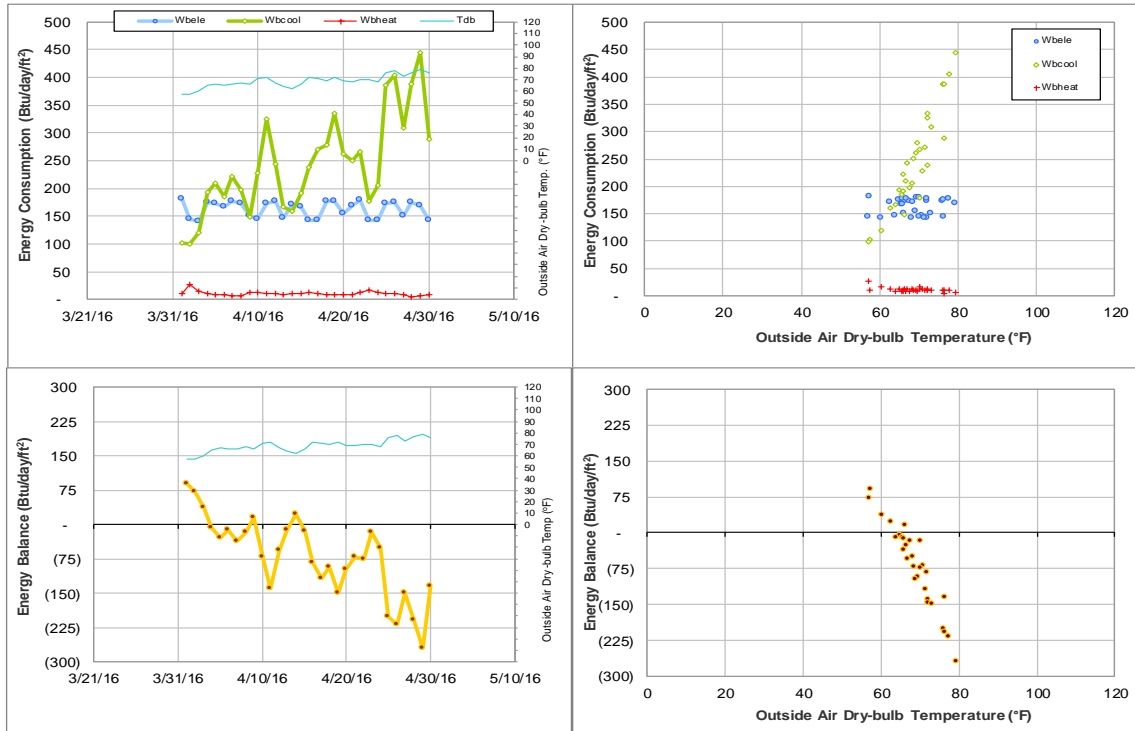


Figure IV-11 Davis Football Player Development Center TAMU BLDG # 358 Energy Balance Plot during April 2016

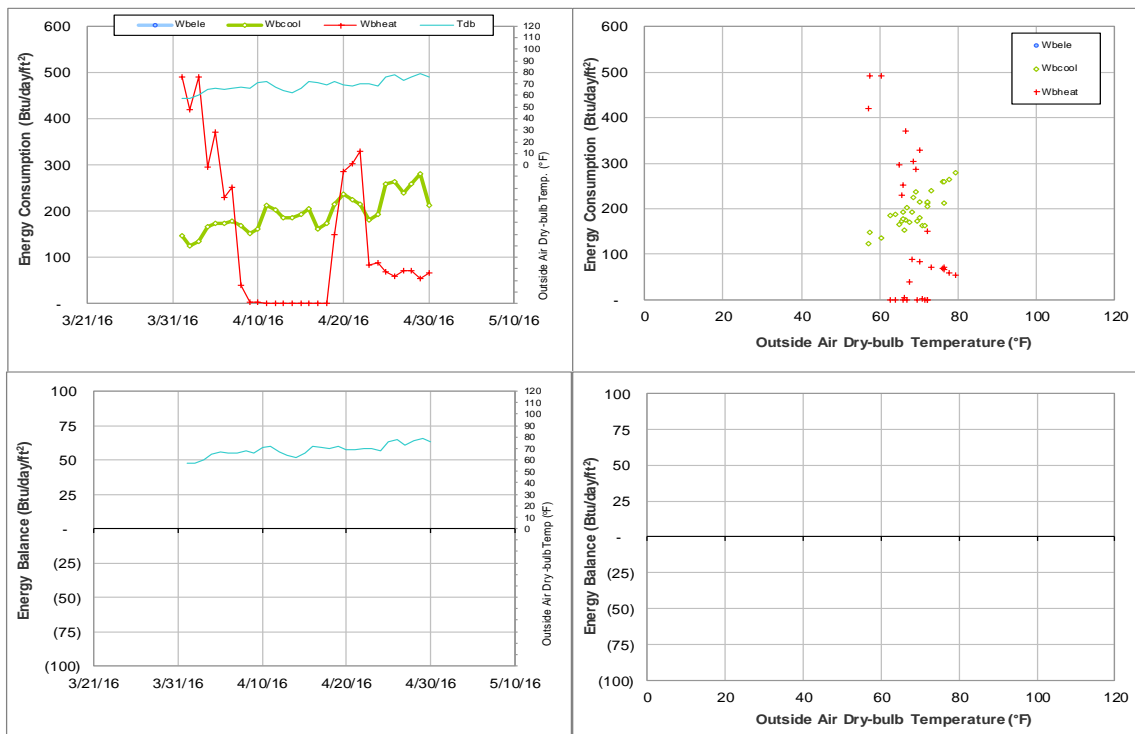


Figure IV-12 Architecture Building B&C TAMU BLDG # 359-432 Energy Balance Plot during April 2016

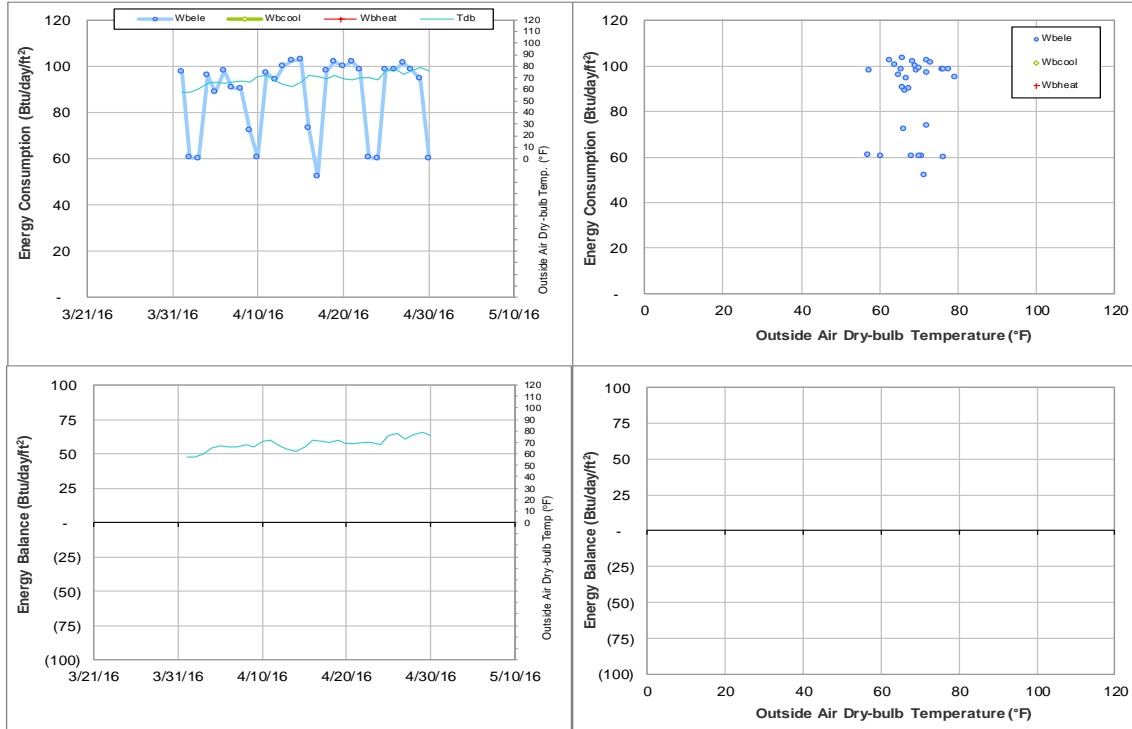


Figure IV-13 Architecture Building B TAMU BLDG # 359 Energy Balance Plot during April 2016

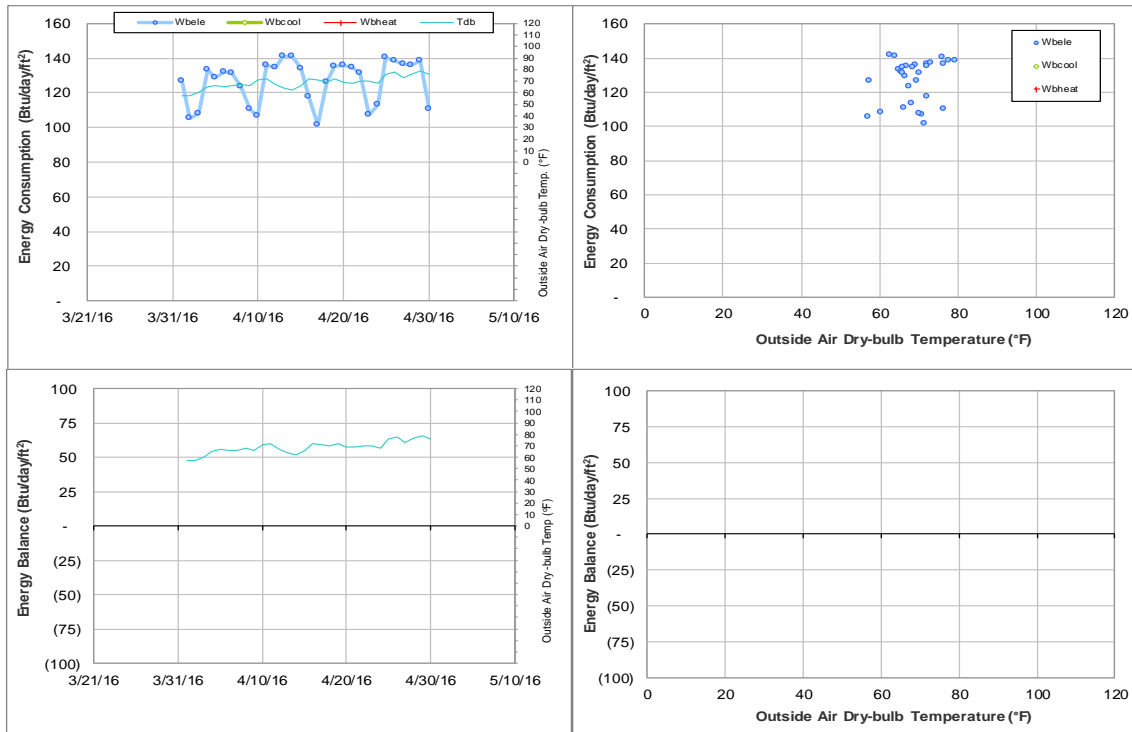


Figure IV-14 Architecture Building C TAMU BLDG # 432 Energy Balance Plot during April 2016

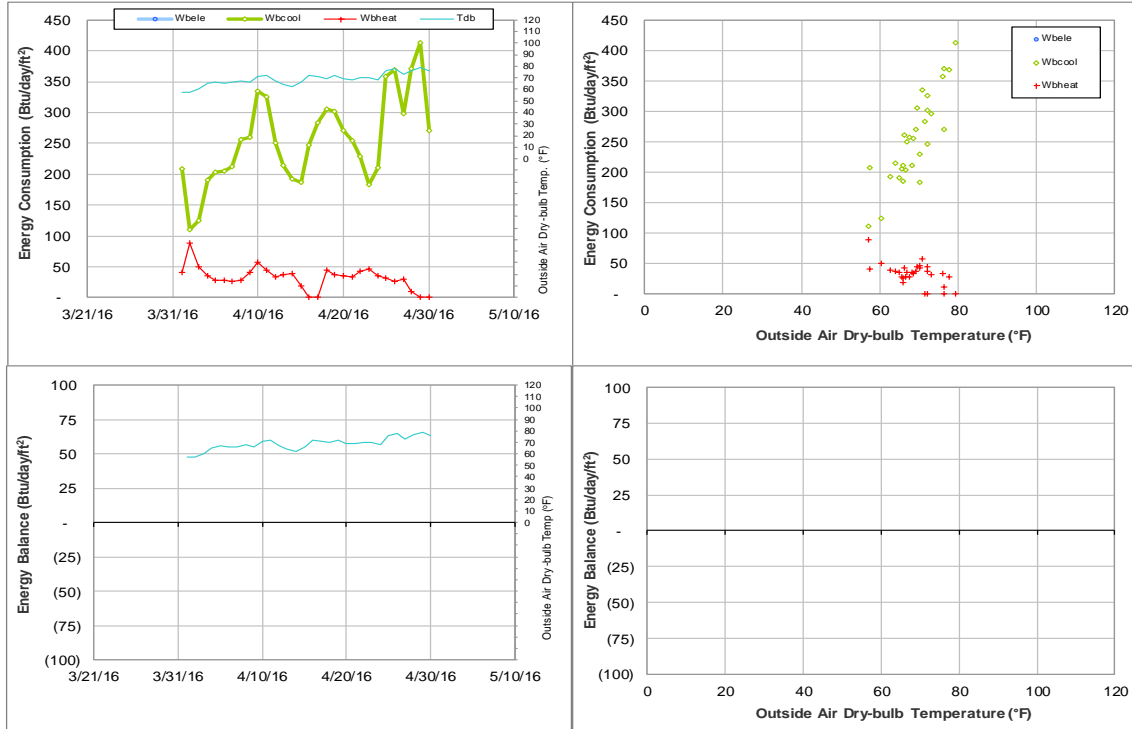


Figure IV-15 Bright Football Complex TAMU BLDG # 361 Energy Balance Plot during April 2016

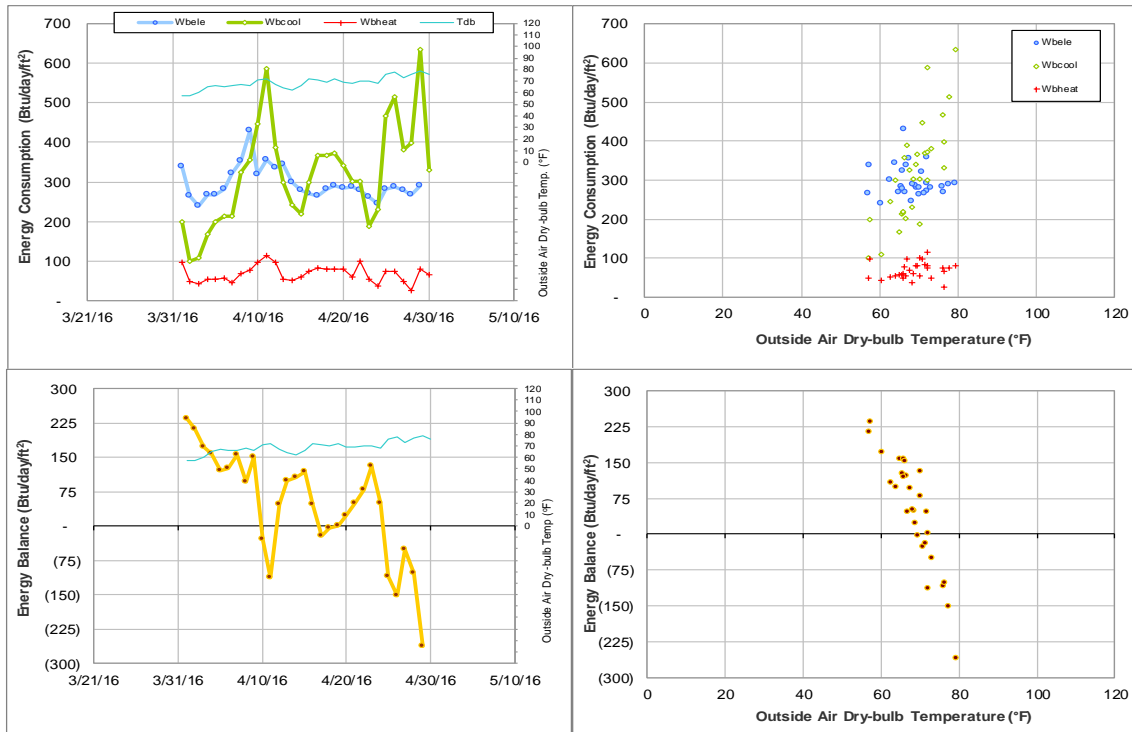


Figure IV-16 Kyle Field TAMU BLDG # 367 Energy Balance Plot during April 2016

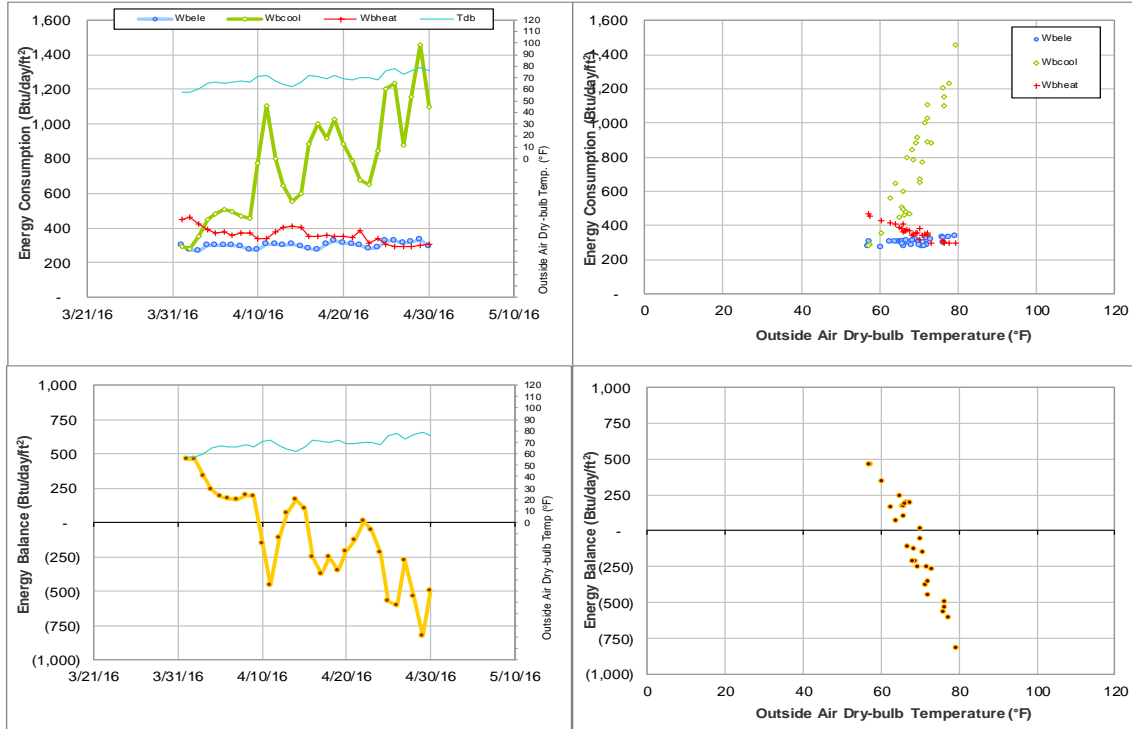


Figure IV-17 Chemistry Building Addition TAMU BLDG # 376 Energy Balance Plot during April 2016

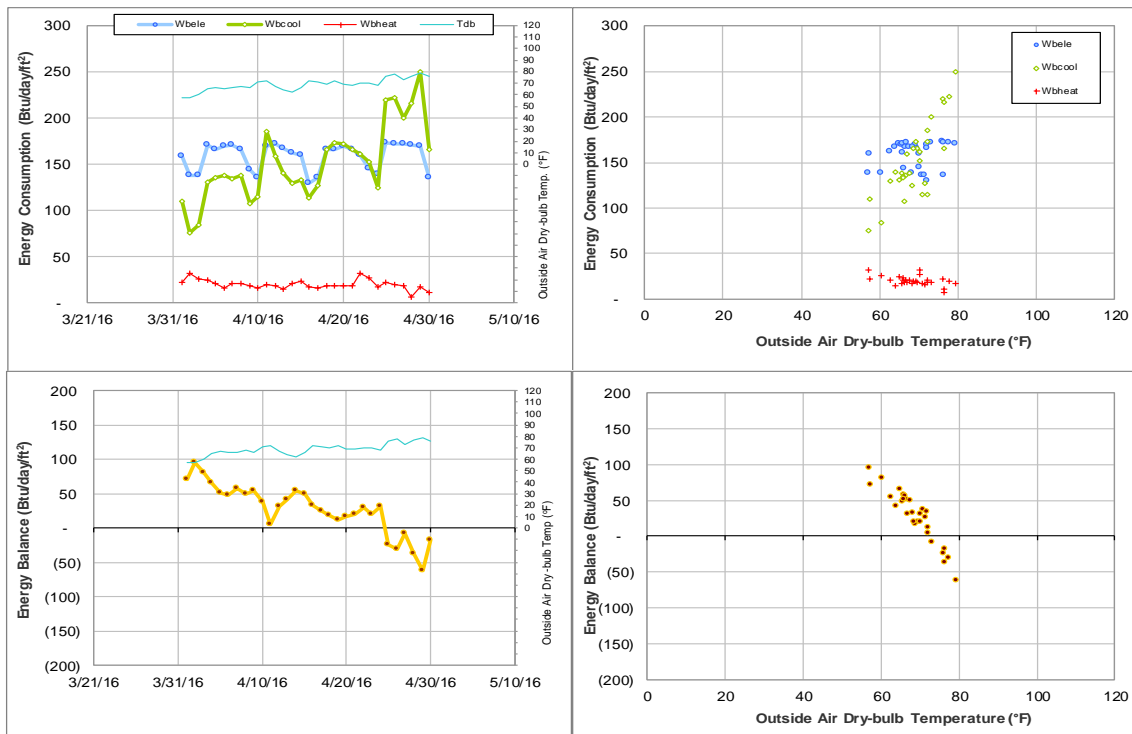


Figure IV-18 Koldus Building TAMU BLDG # 383 Energy Balance Plot during April 2016

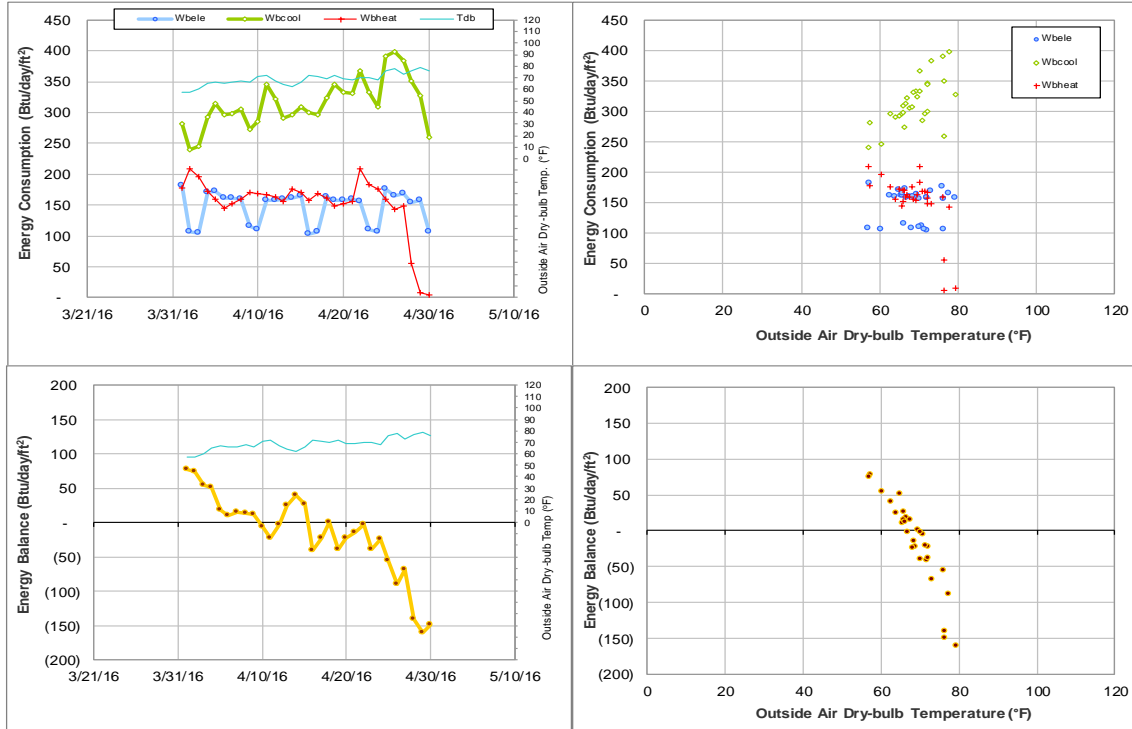


Figure IV-19 Sanders Corps of Cadets Center TAMU BLDG # 384 Energy Balance Plot during April 2016

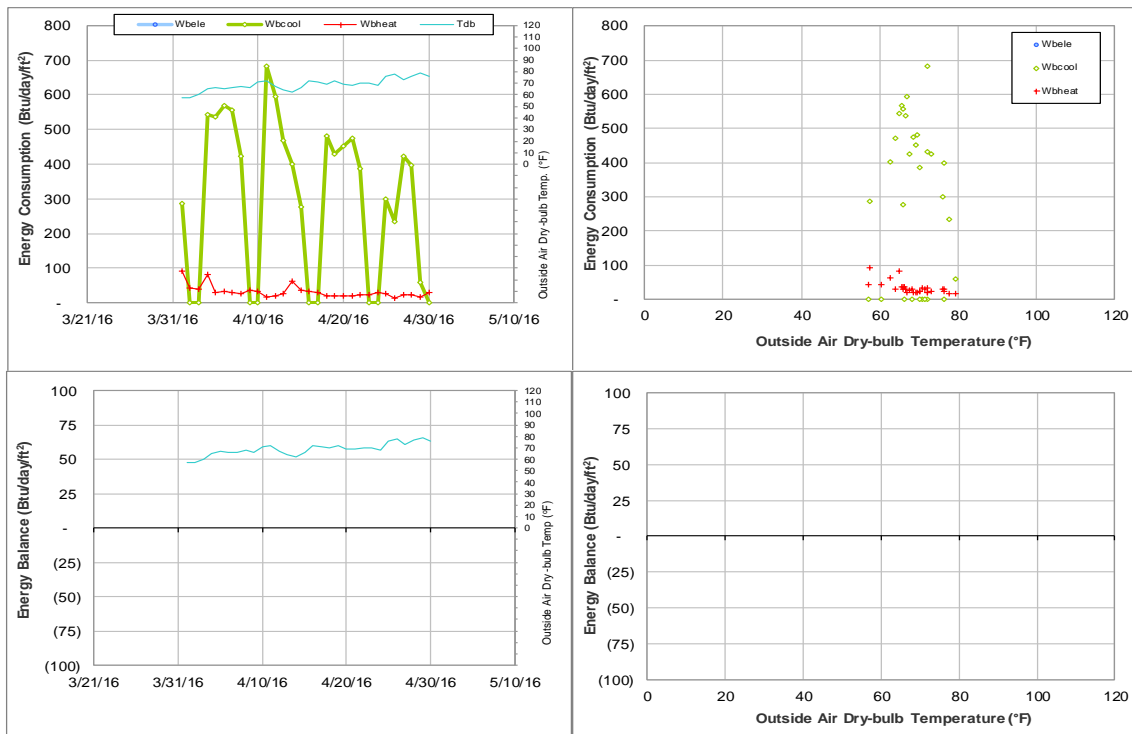


Figure IV-20 CE TTI Office & Lab Building - Pi R Square TAMU BLDG # 385 Energy Balance Plot during April 2016

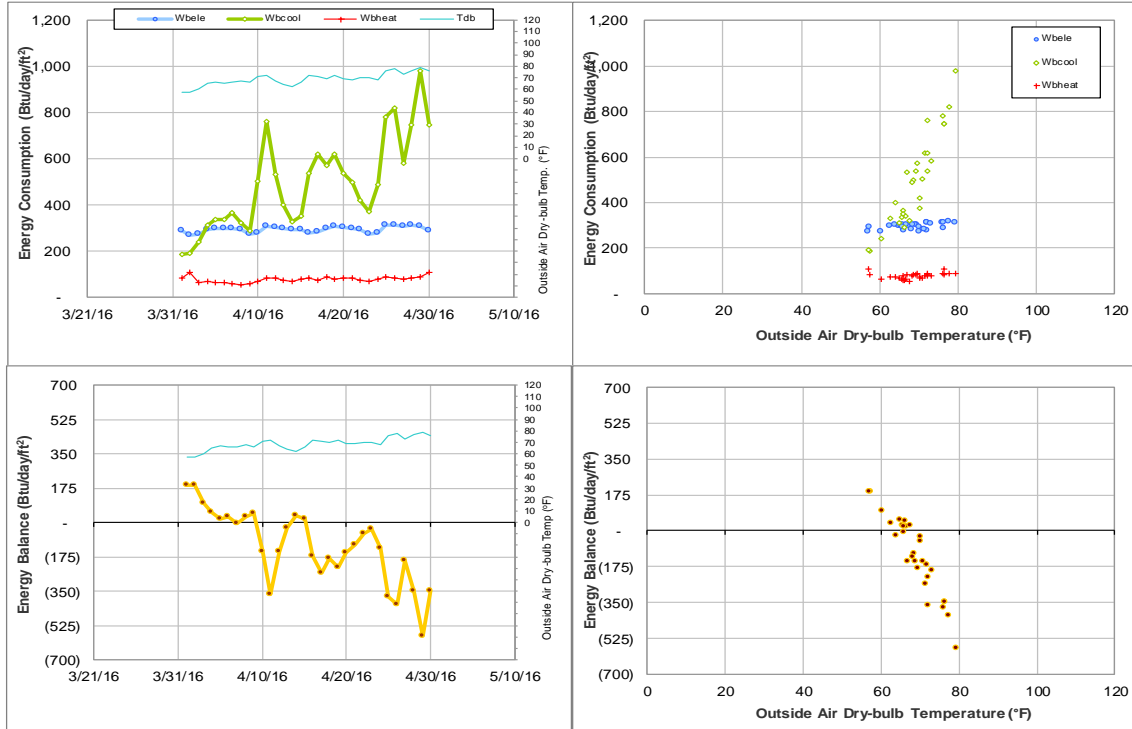


Figure IV-21 Jack E. Brown Chemical Engineering Building TAMU BLDG # 386 Energy Balance Plot during April 2016

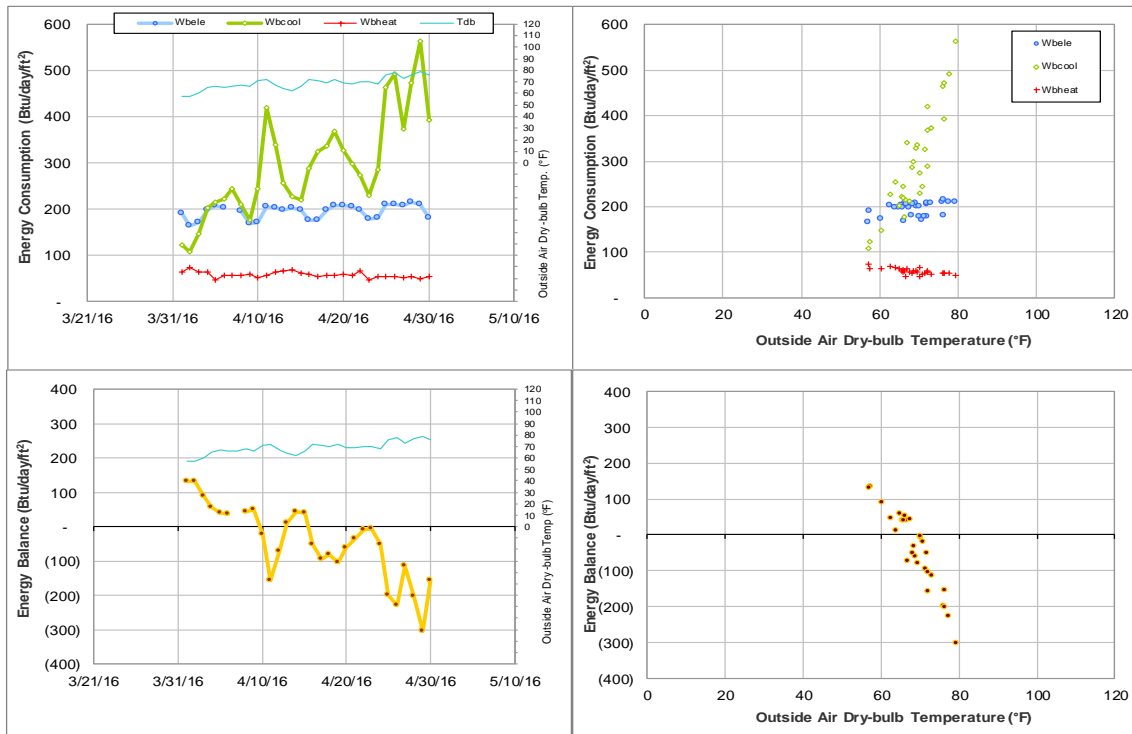


Figure IV-22 Richardson Petroleum Engineering Building TAMU BLDG # 387 Energy Balance Plot during April 2016

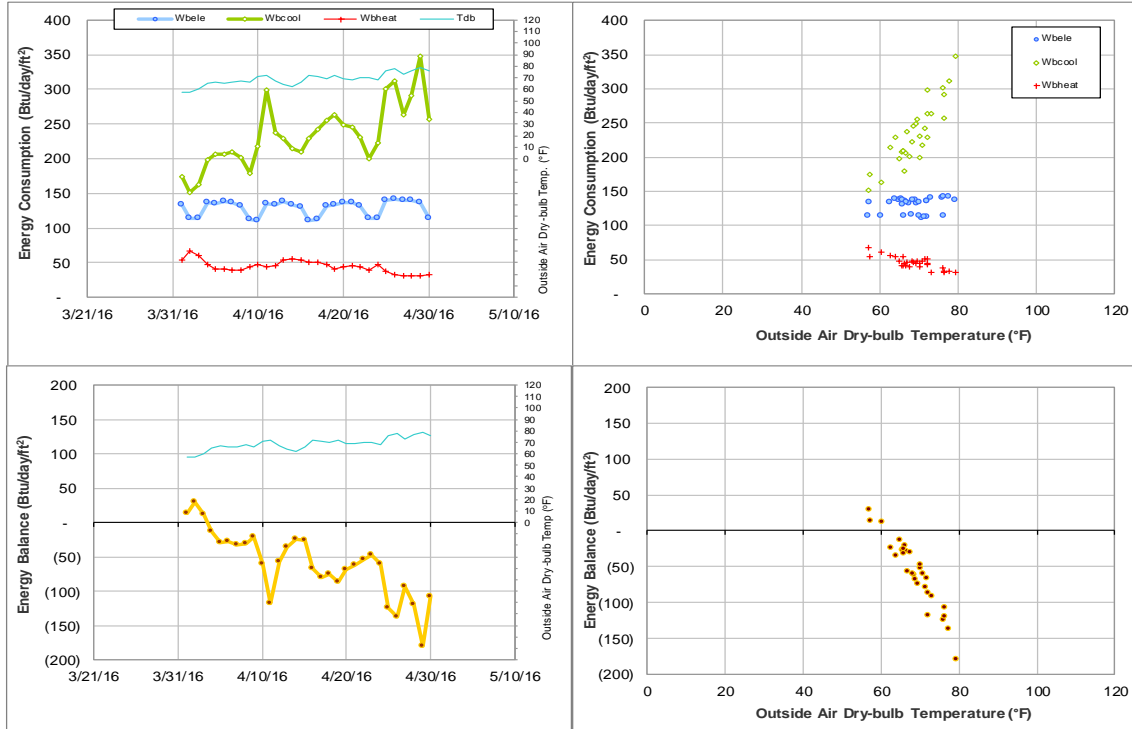


Figure IV-23 James J. Cain 51 and Mechanical Engineering Office Building TAMU BLDG # 391 Energy Balance Plot during April 2016

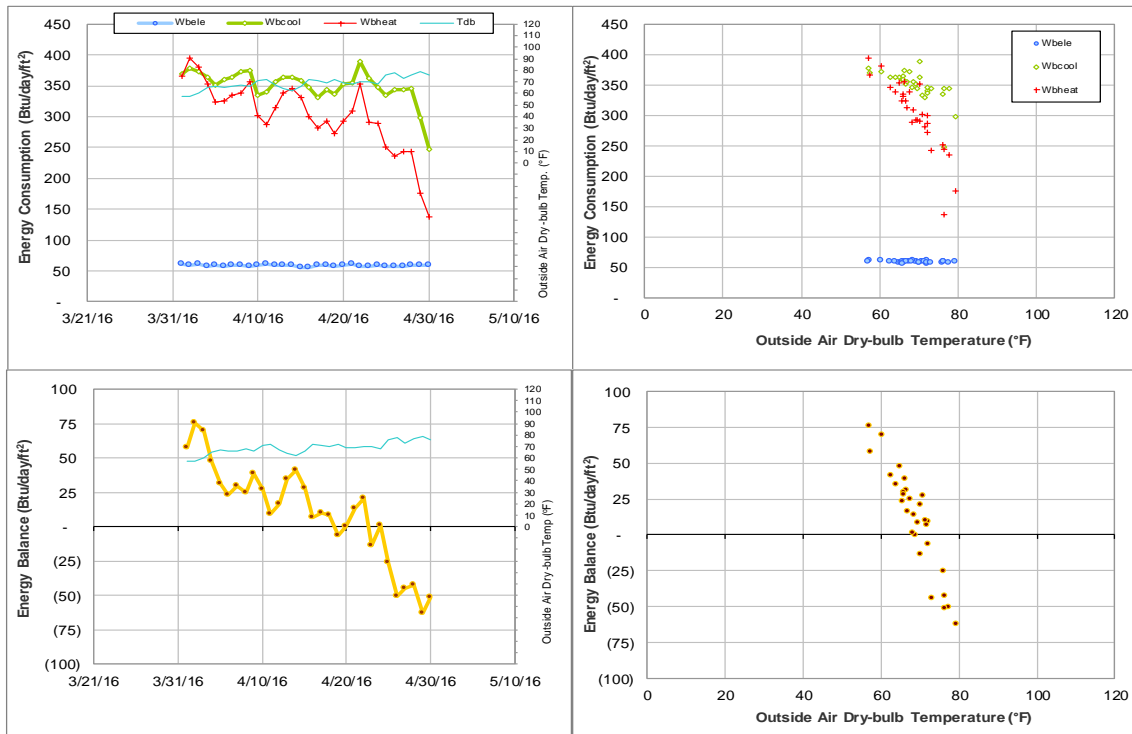


Figure IV-24 Underwood Residence Hall TAMU BLDG # 394 Energy Balance Plot during April 2016

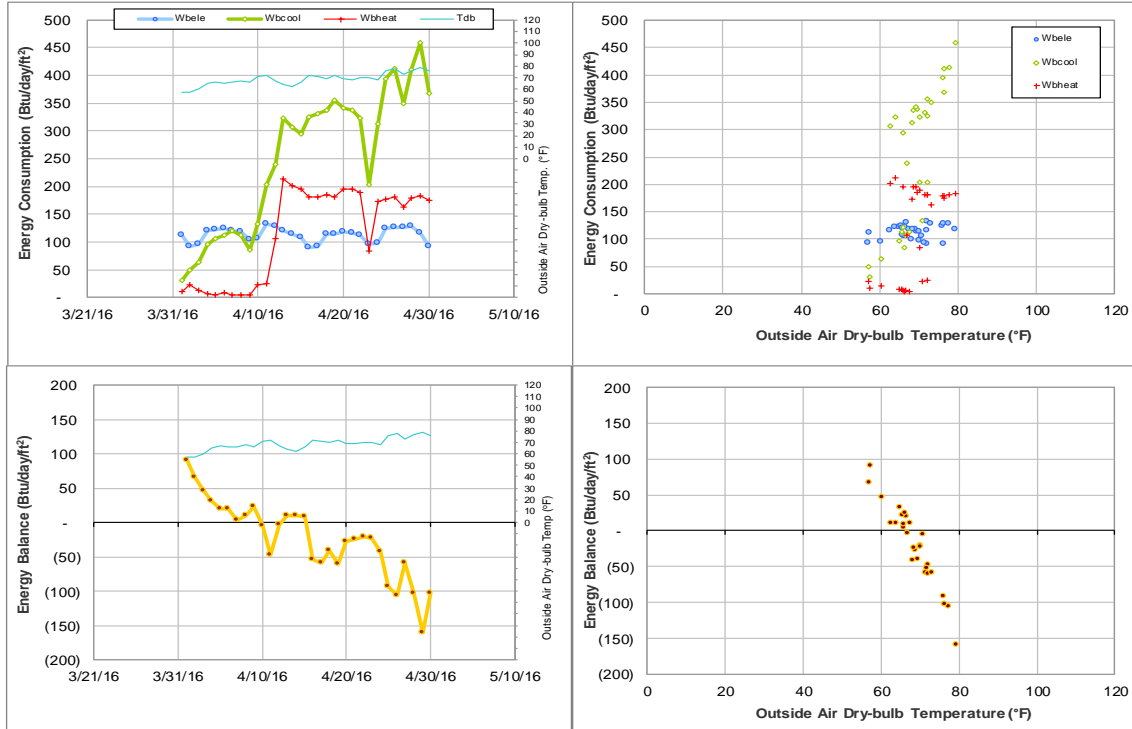


Figure IV-25 Langford Architecture Center Building A TAMU BLDG # 398 Energy Balance Plot during April 2016

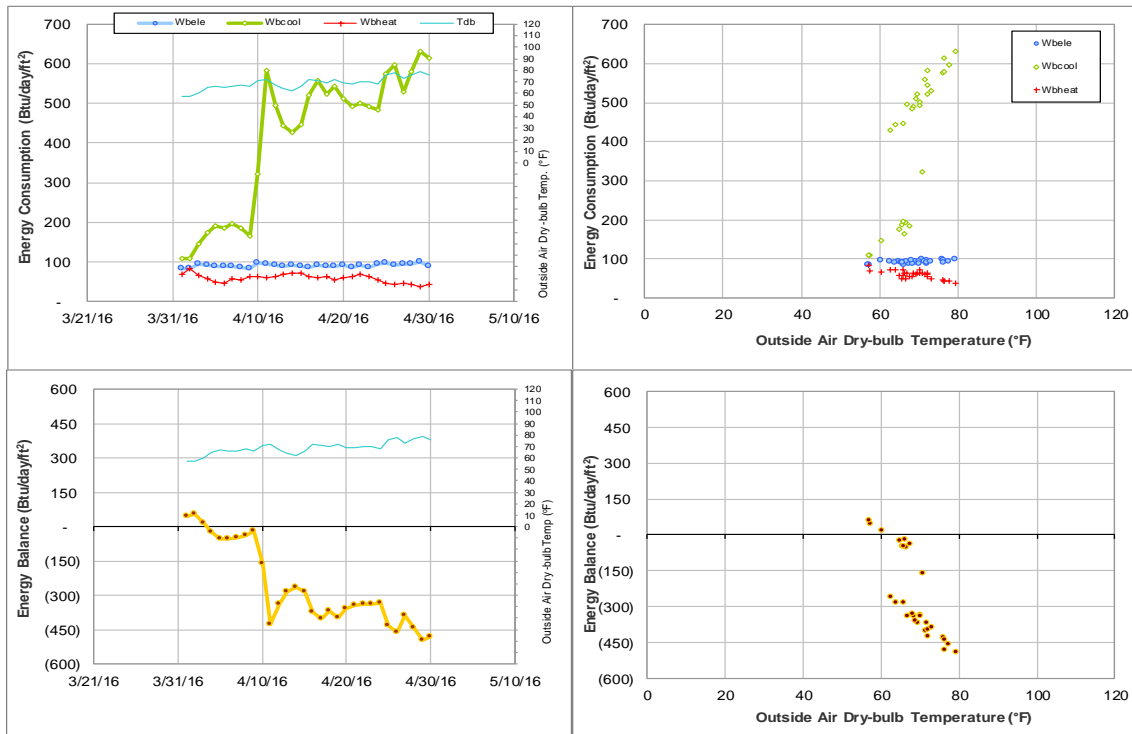


Figure IV-26 Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center TAMU BLDG # 405-407-1402 Energy Balance Plot during April 2016

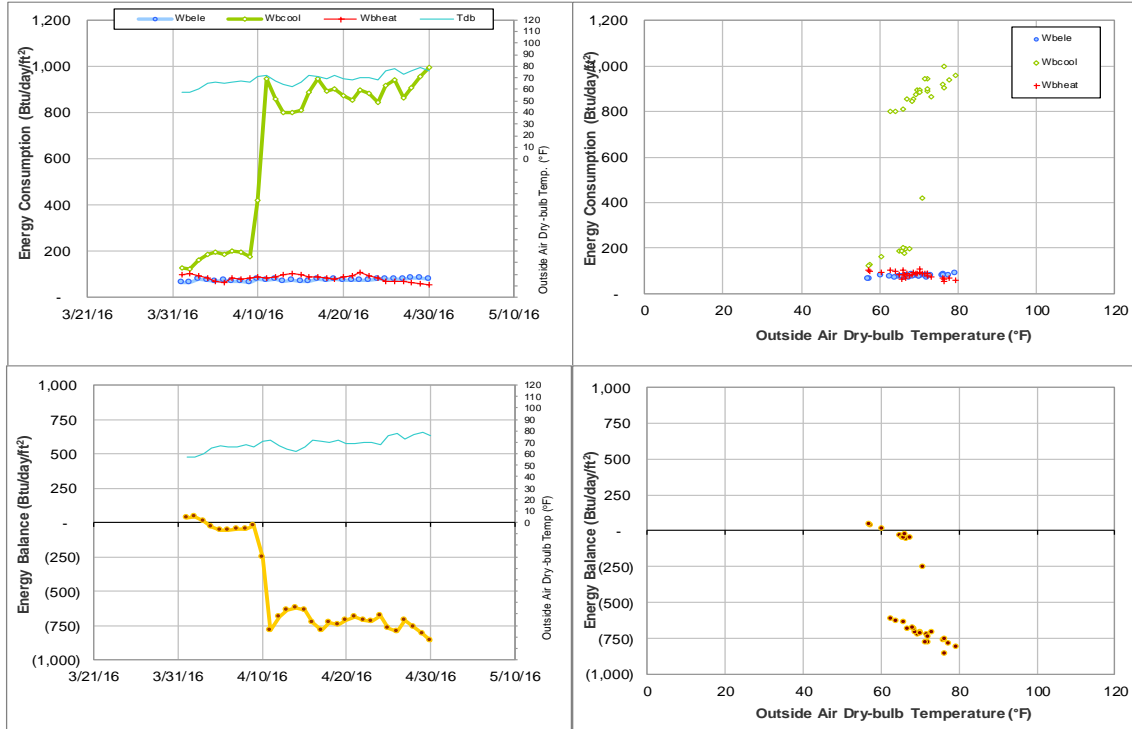


Figure IV-27 Lacy Hall - Dorm 6 TAMU BLDG # 405 Energy Balance Plot during April 2016

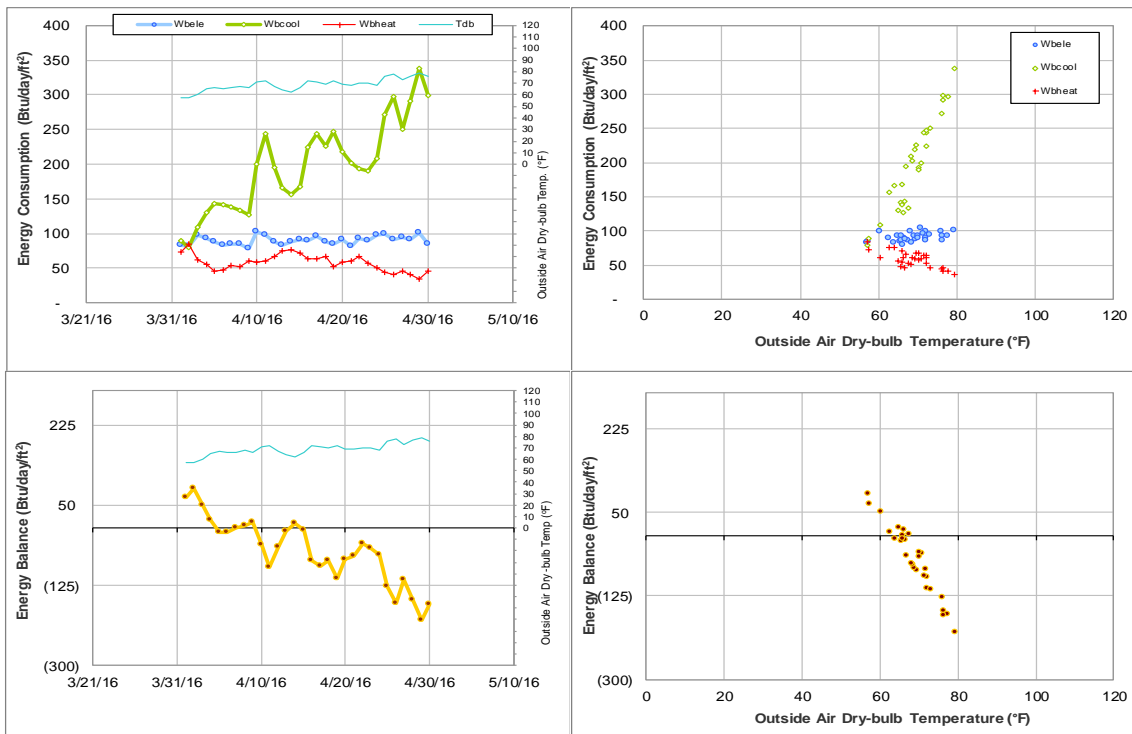


Figure IV-28 Harrell Hall - Dorm 8 TAMU BLDG # 407 Energy Balance Plot during April 2016

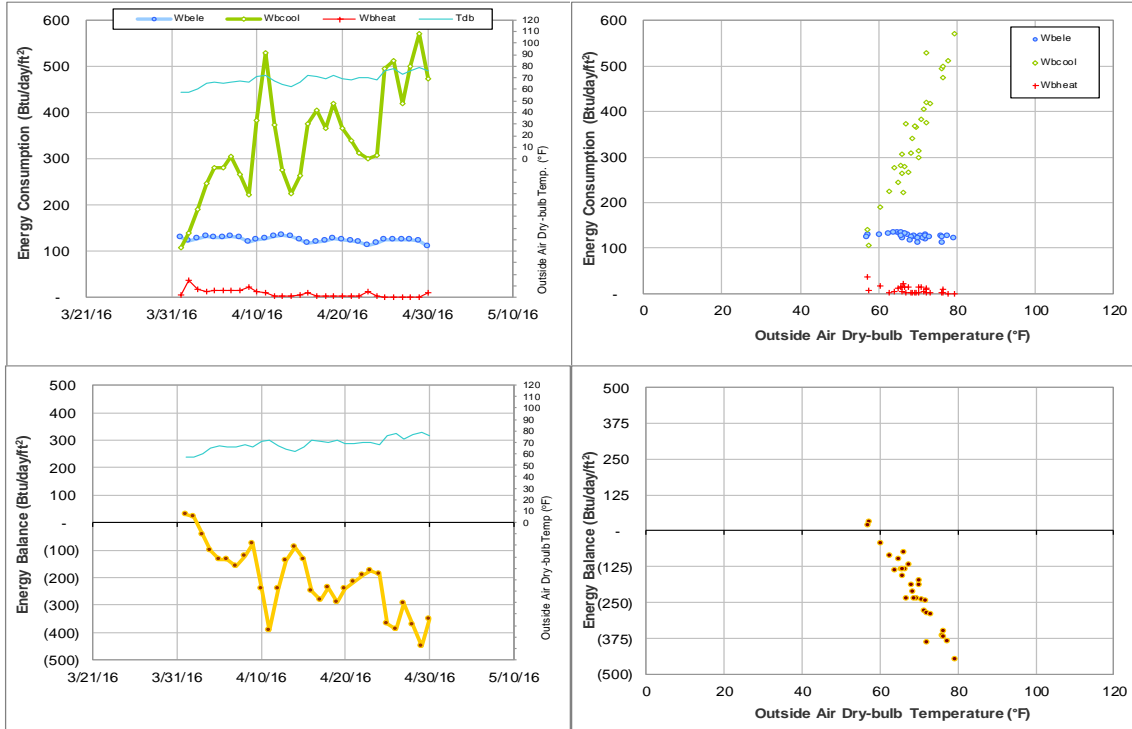


Figure IV-29 Buzbee Leadership Learning Center TAMU BLDG # 1402 Energy Balance Plot during April 2016

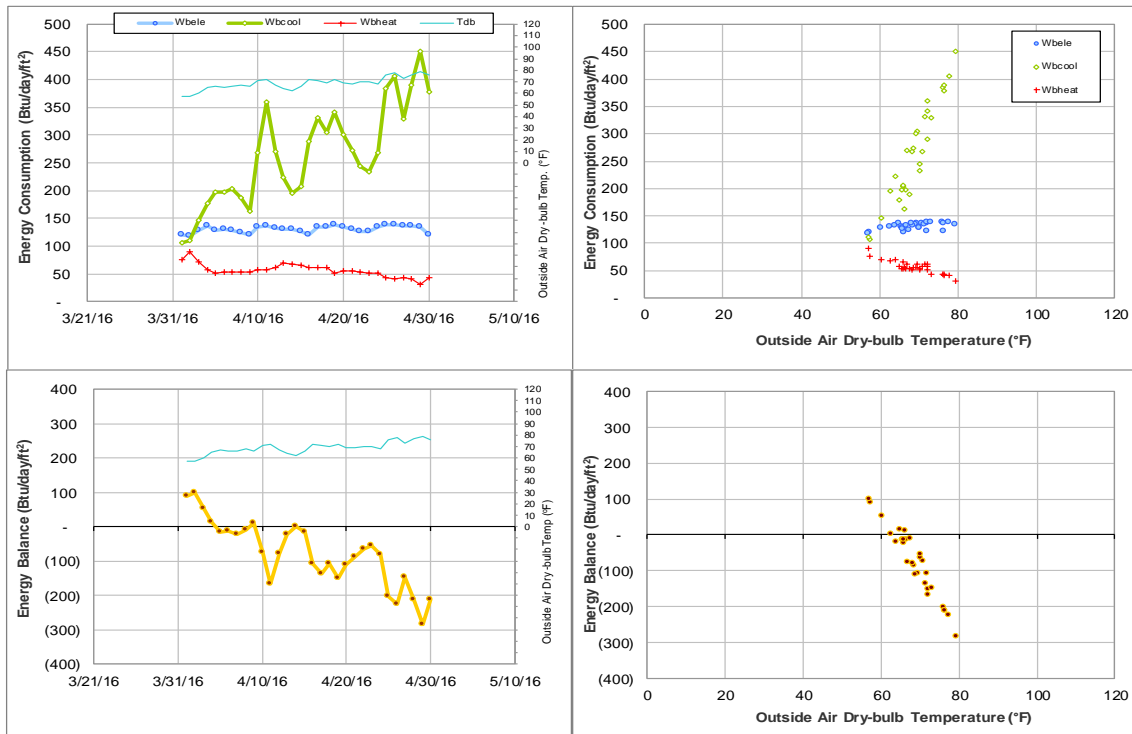


Figure IV-30 Leonard Hall - Dorm 7 and Ash LLC TAMU BLDG # 406-1403 Energy Balance Plot during April 2016

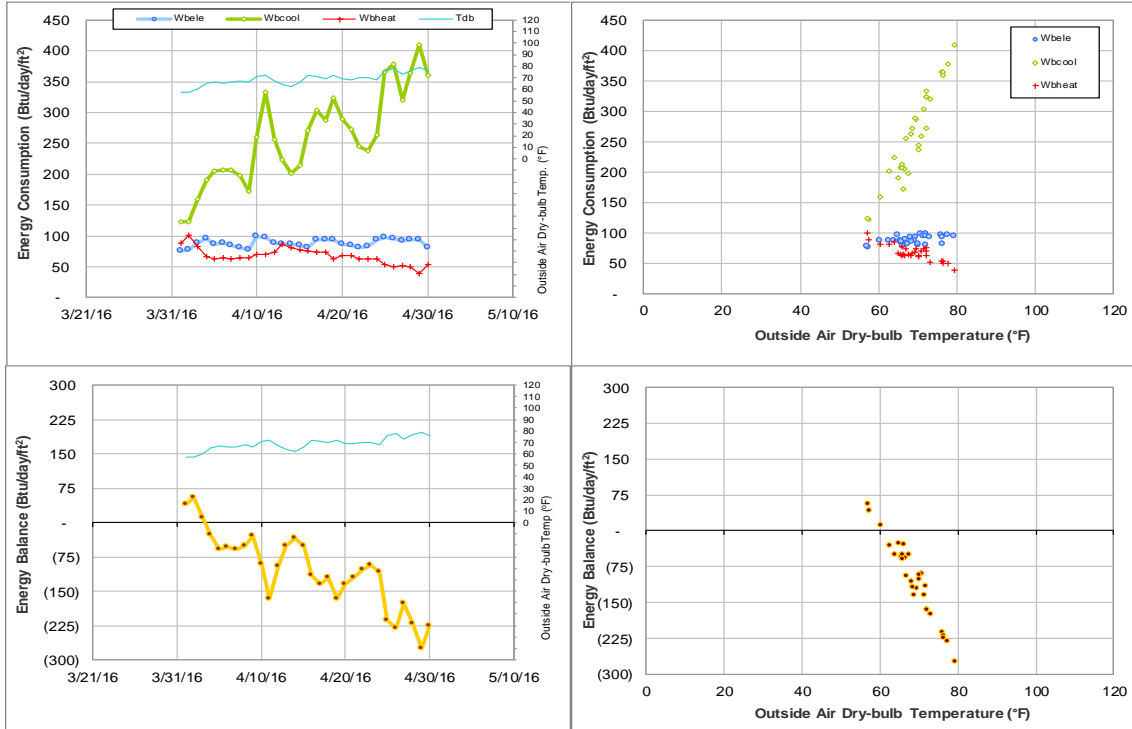


Figure IV-31 Leonard Hall - Dorm 7 TAMU BLDG # 406 Energy Balance Plot during April 2016

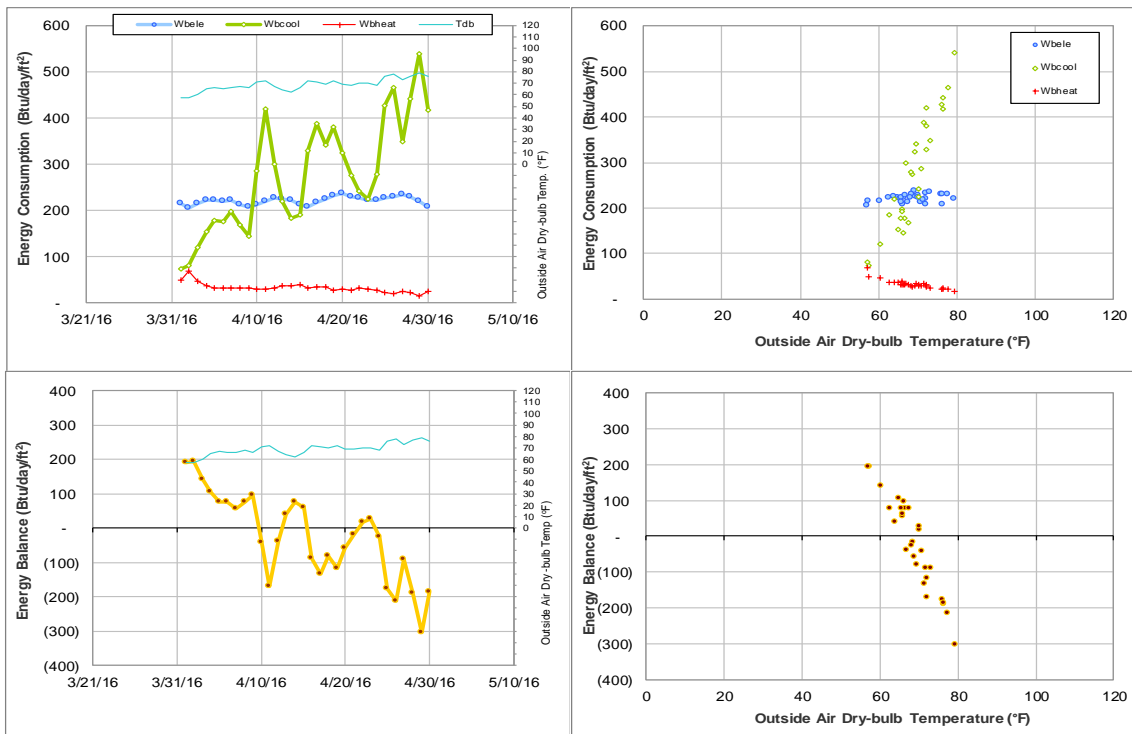


Figure IV-32 H. Grady Ash, Jr. '58 Leadership Learning Center TAMU BLDG # 1403 Energy Balance Plot during April 2016

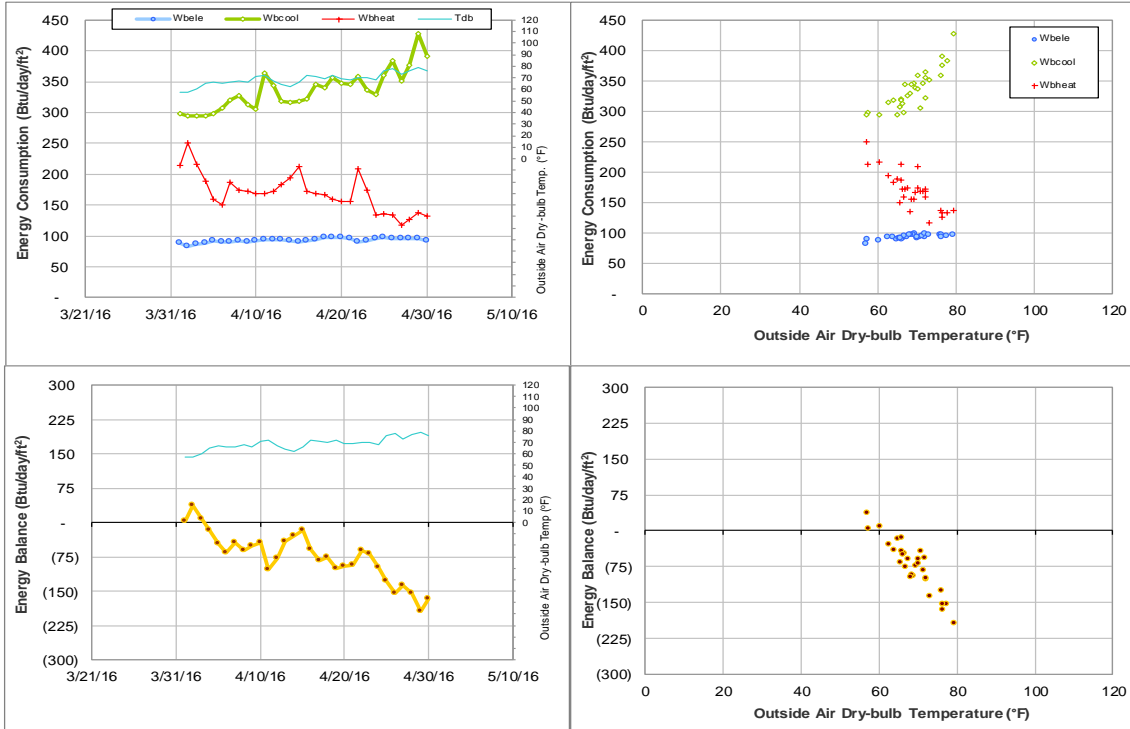


Figure IV-33 Whitely Hall - Dorm 9 TAMU BLDG # 408 Energy Balance Plot during April 2016

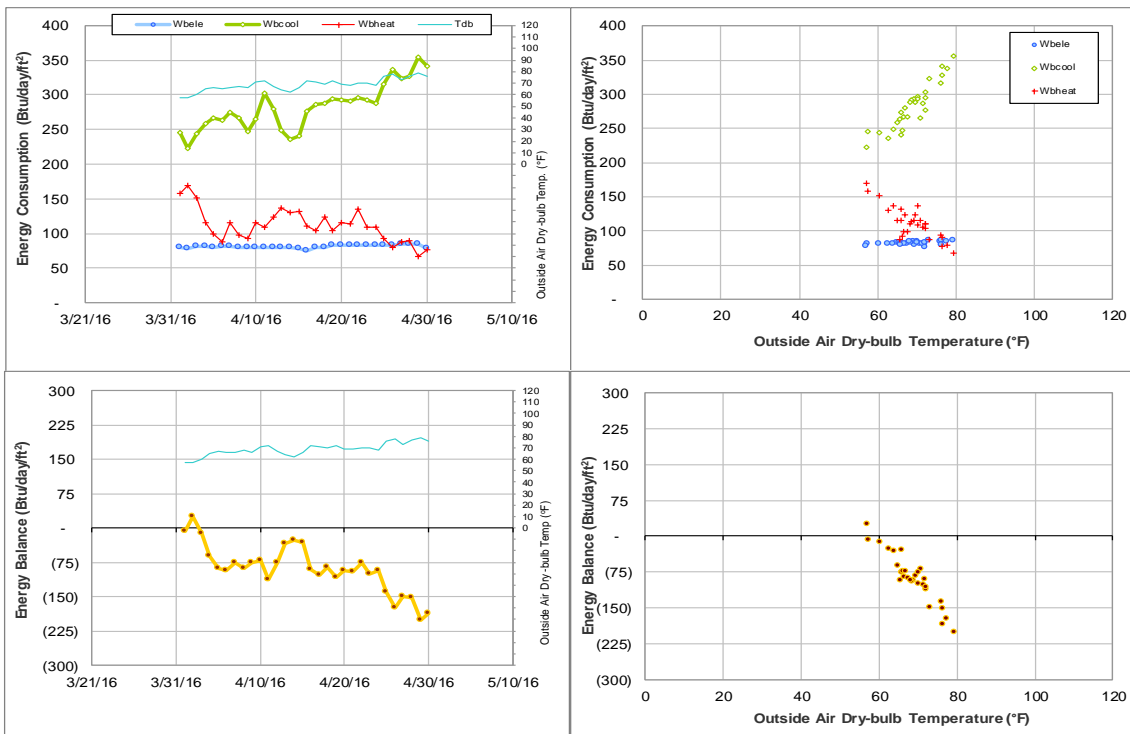


Figure IV-34 White Hall - Dorm 10 TAMU BLDG # 409 Energy Balance Plot during April 2016

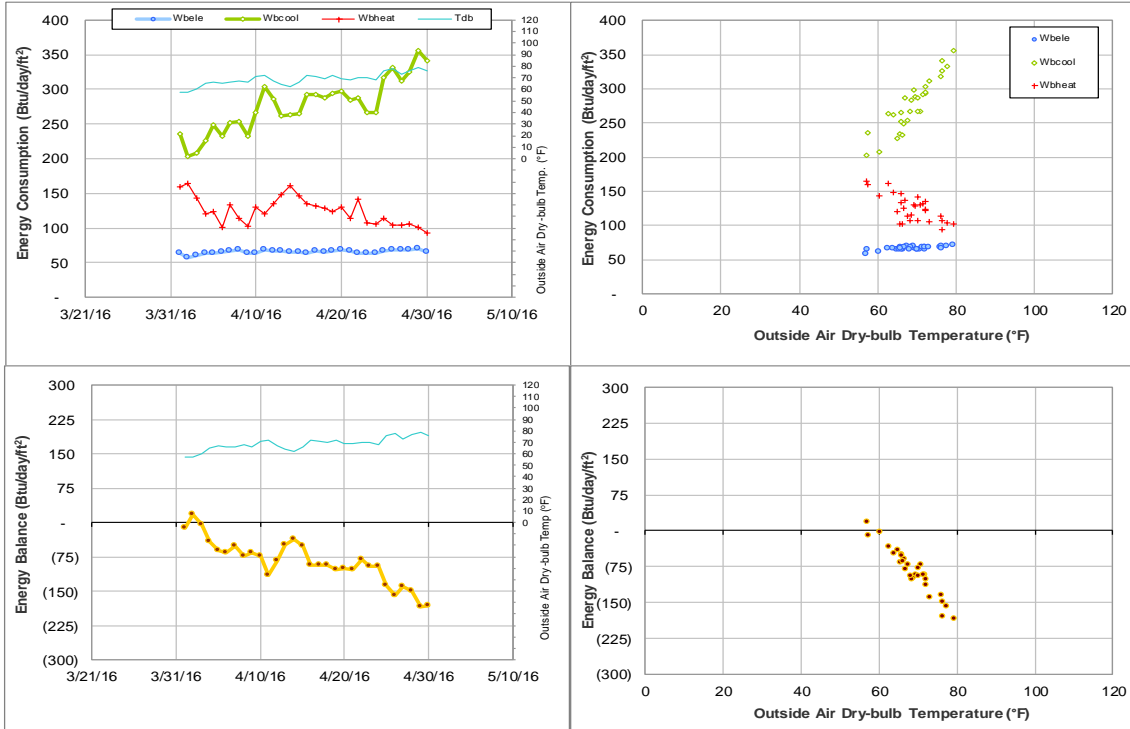


Figure IV-35 Harrington Hall - Dorm 11 TAMU BLDG # 410 Energy Balance Plot during April 2016

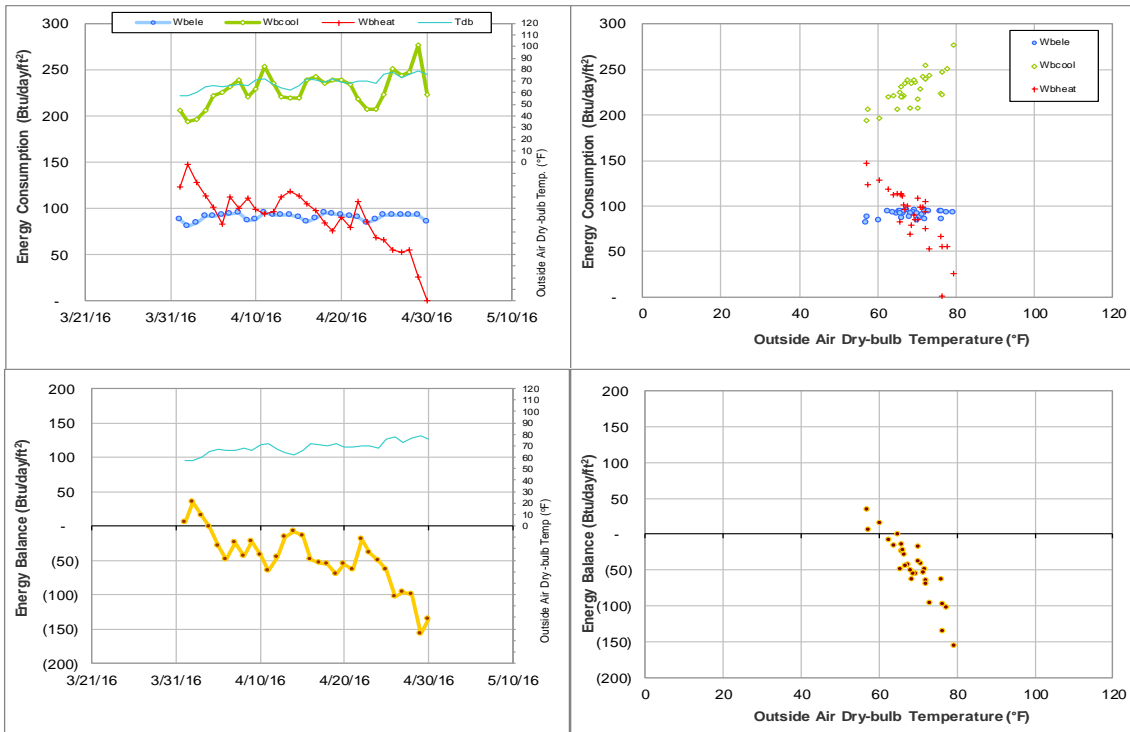


Figure IV-36 Utay Hall - Dorm 12 TAMU BLDG # 411 Energy Balance Plot during April 2016

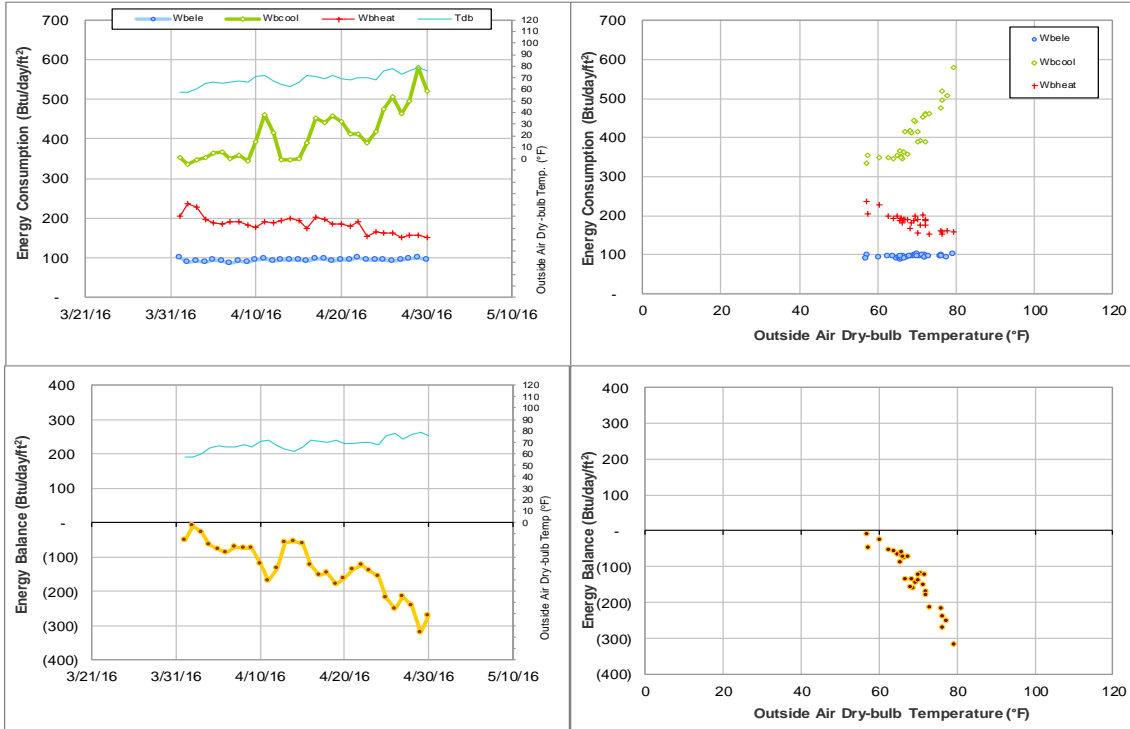


Figure IV-37 Moses Residence Hall TAMU BLDG # 412 Energy Balance Plot during April 2016

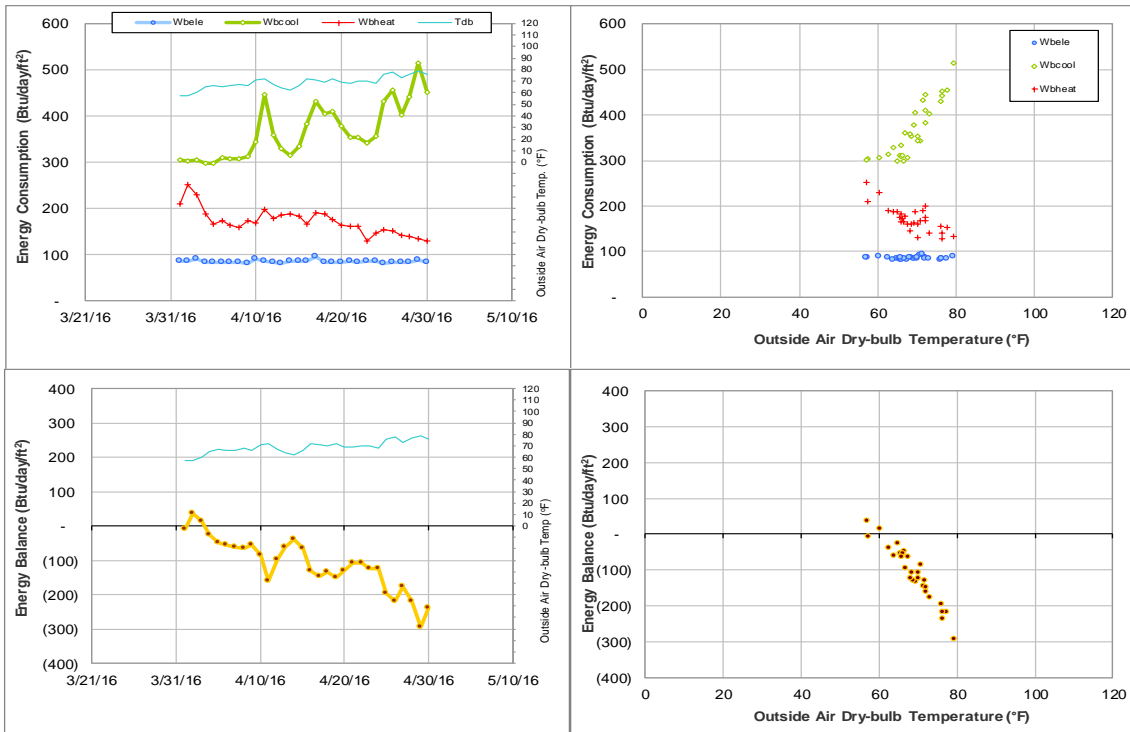


Figure IV-38 Davis-Gary Residence Hall TAMU BLDG # 415 Energy Balance Plot during April 2016

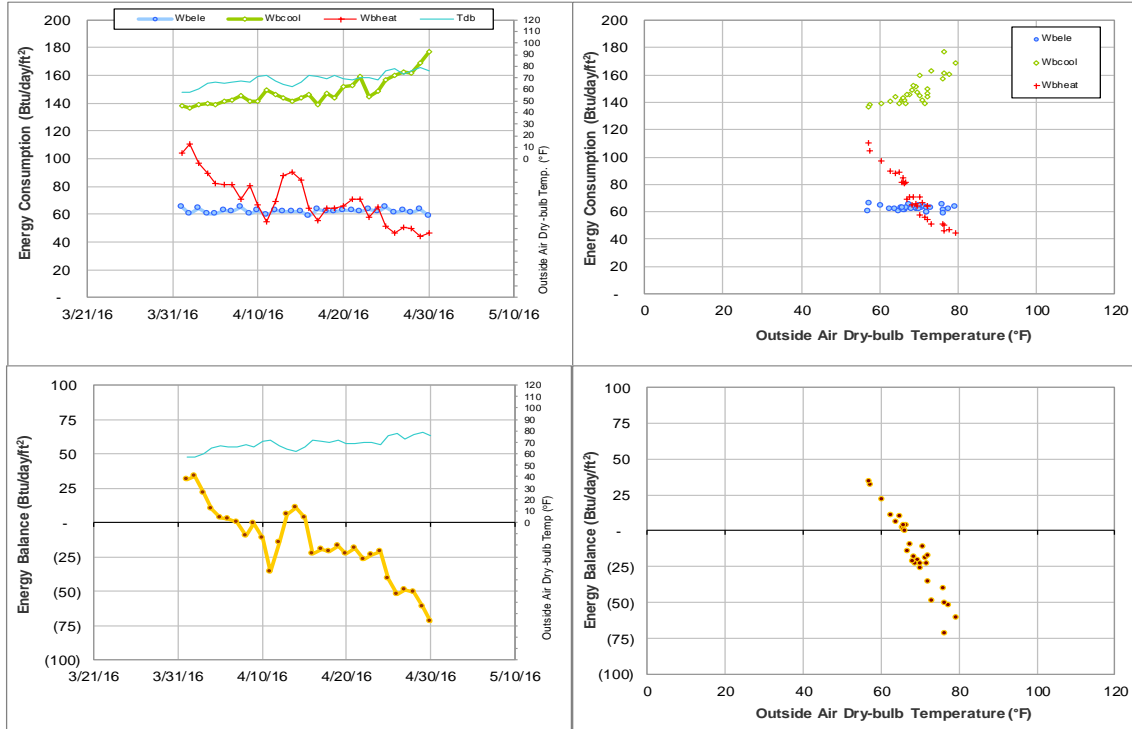


Figure IV-39 Leggett Residence Hall TAMU BLDG # 419 Energy Balance Plot during April 2016

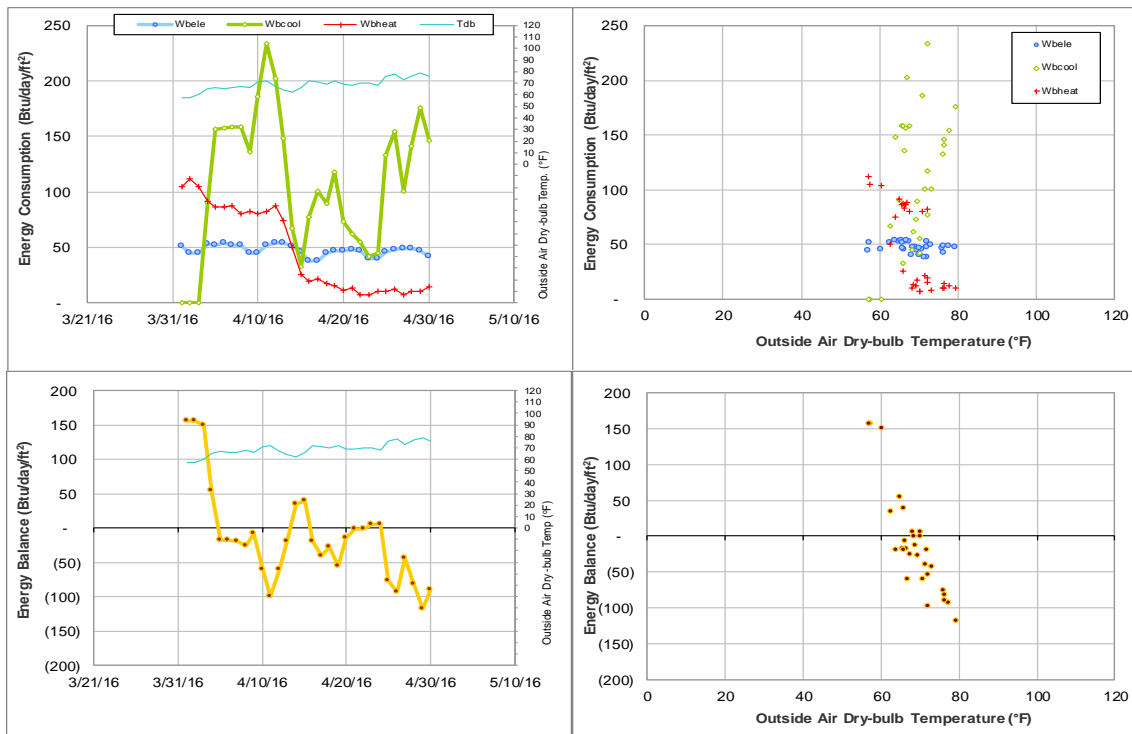


Figure IV-40 Milner Hall TAMU BLDG # 420 Energy Balance Plot during April 2016

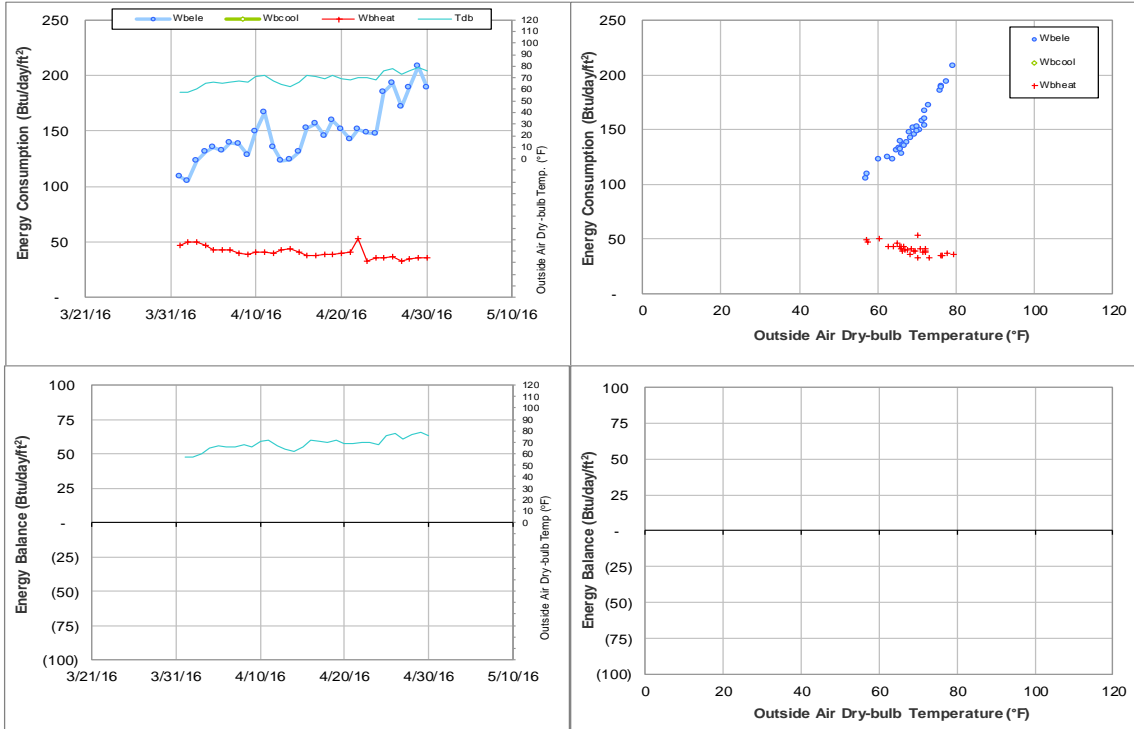


Figure IV-41 Walton Residence Hall TAMU BLDG # 422 Energy Balance Plot during April 2016

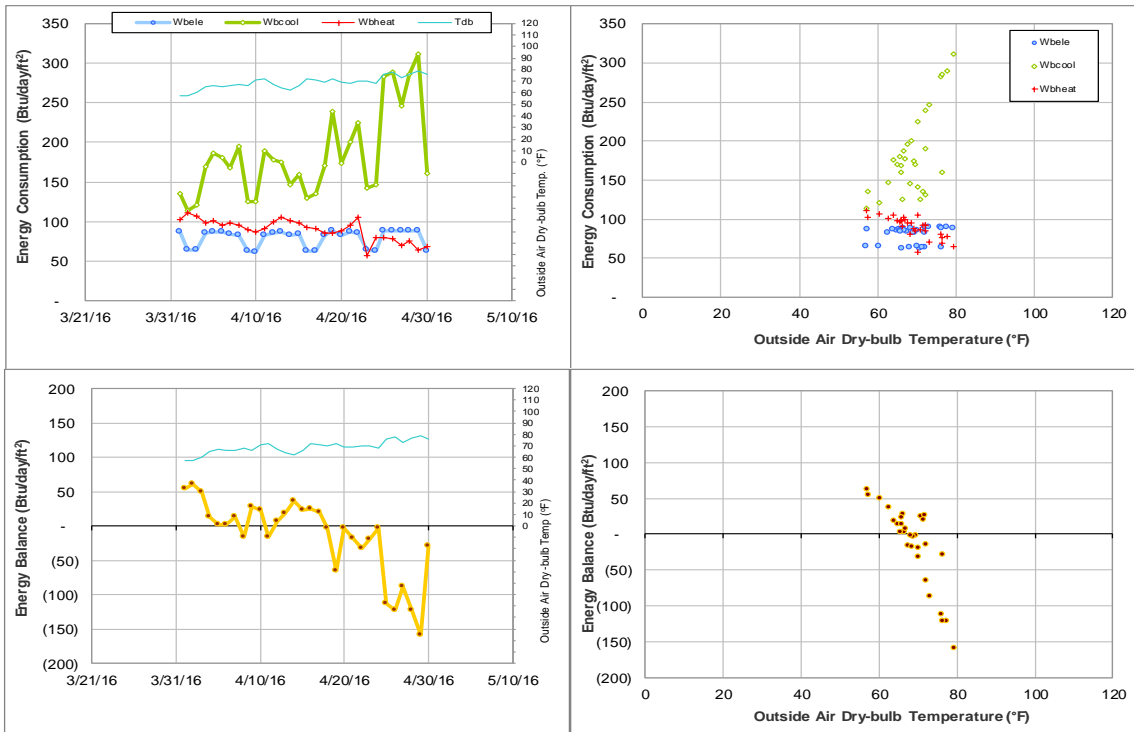


Figure IV-42 Hotard Hall TAMU BLDG # 424 Energy Balance Plot during April 2016

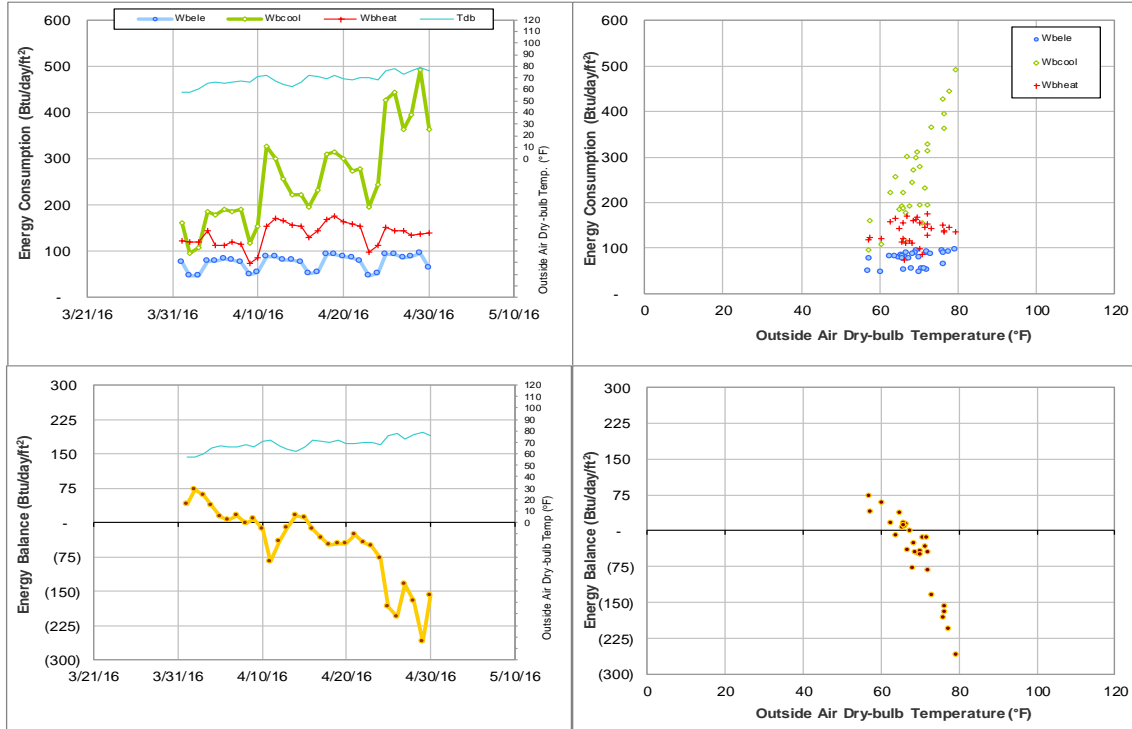


Figure IV-43 Henderson Hall TAMU BLDG # 425 Energy Balance Plot during April 2016

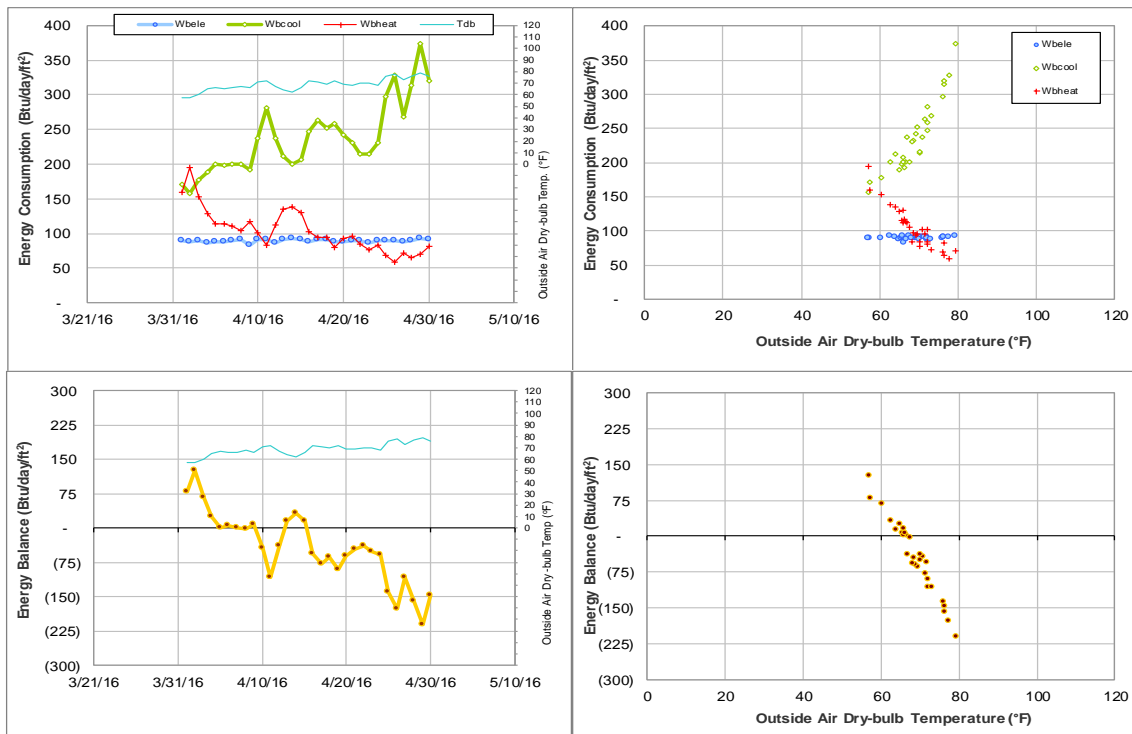


Figure IV-44 FHK Complex TAMU BLDG # 426 Energy Balance Plot during April 2016

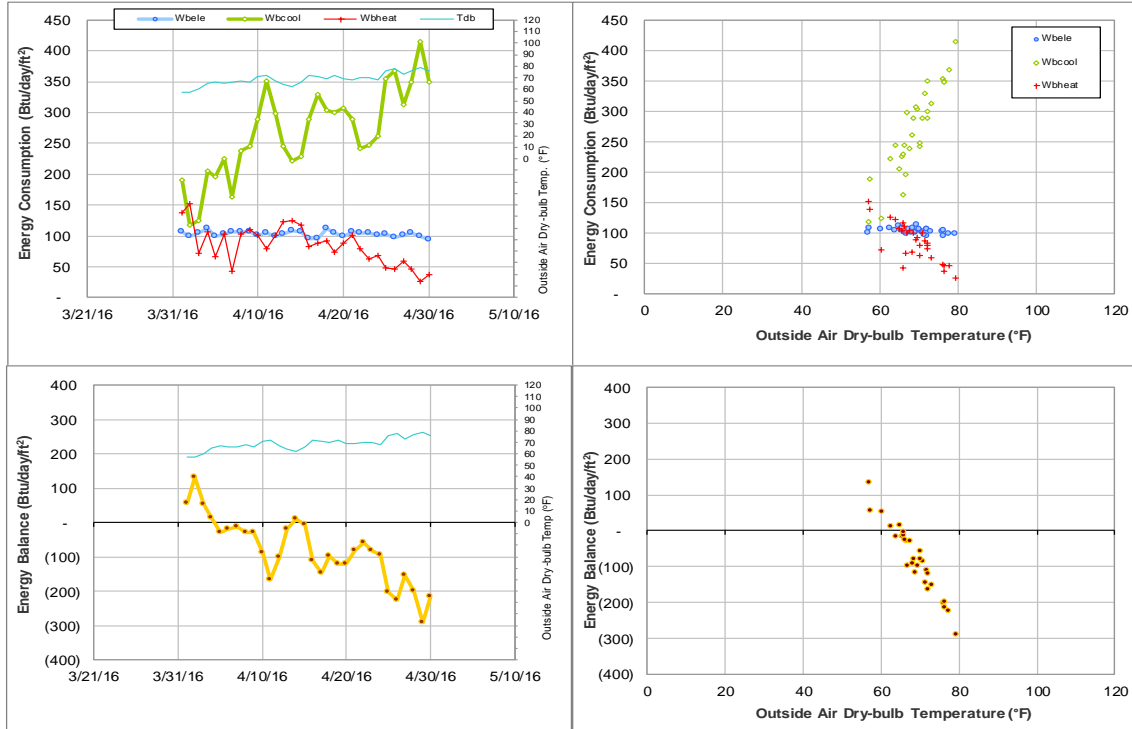


Figure IV-45 Schumacher Residence Hall TAMU BLDG # 430 Energy Balance Plot during April 2016

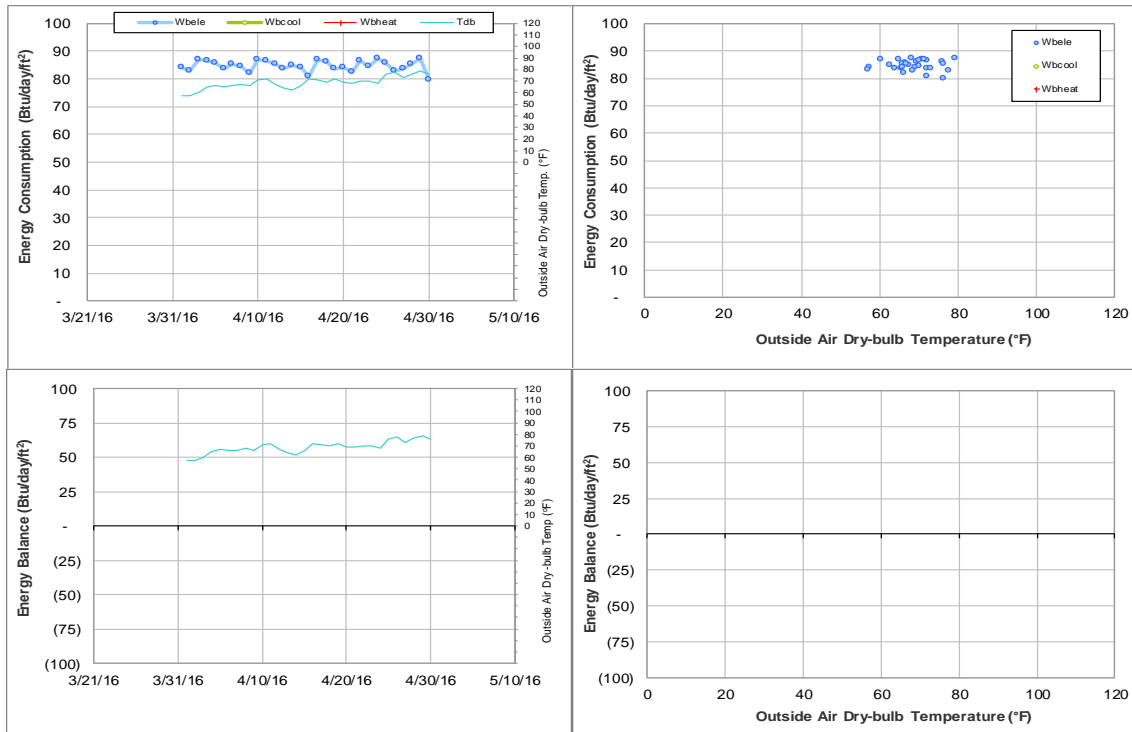


Figure IV-46 Mosher Commons Krueger Dunn Aston TAMU BLDG # 433-440-441-442-447 Energy Balance Plot during April 2016

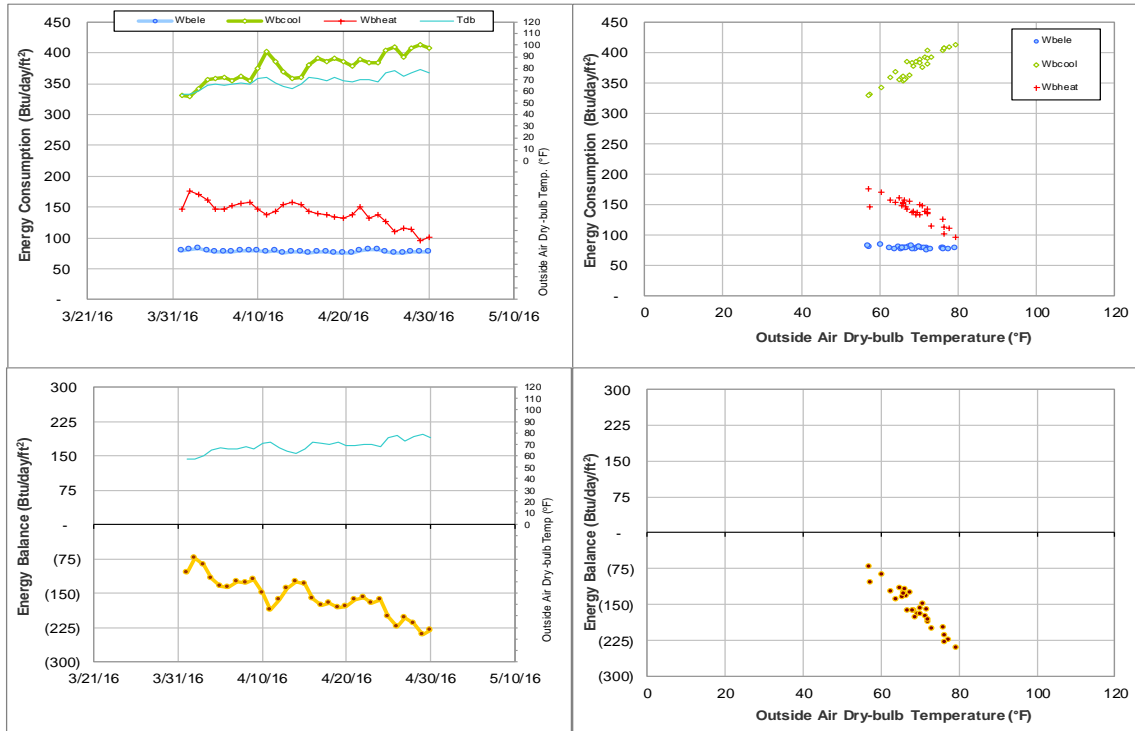


Figure IV-47 Mosher Residence Hall TAMU BLDG # 433 Energy Balance Plot during April 2016

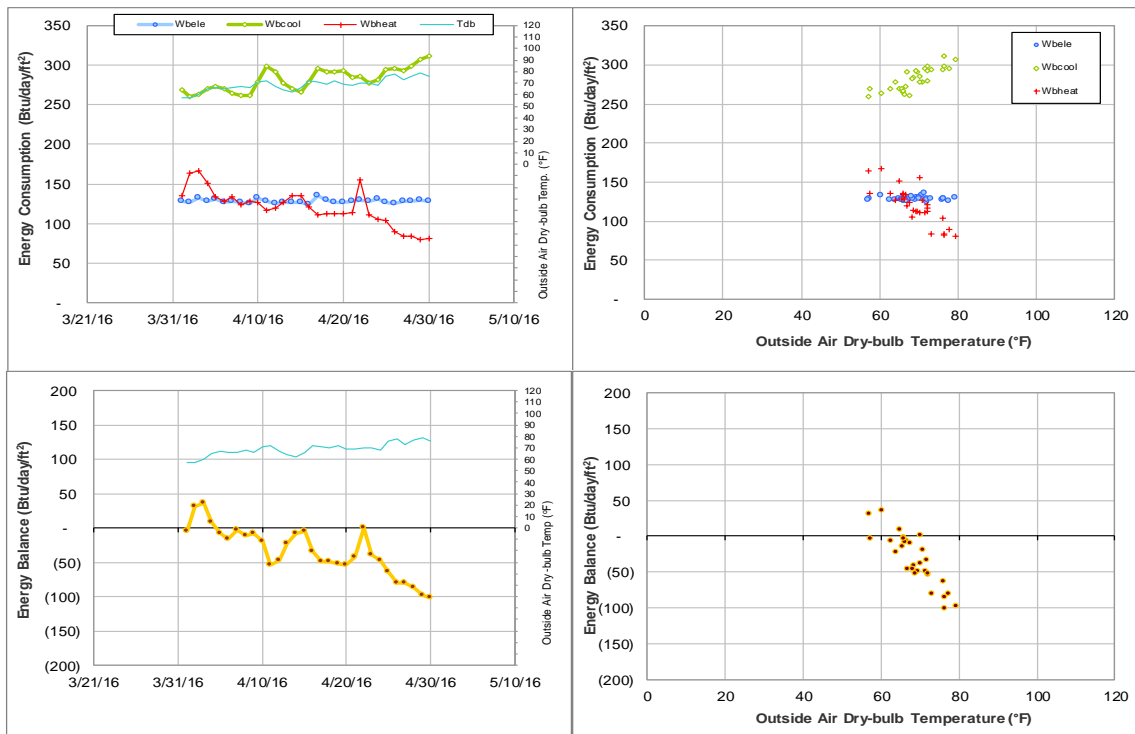


Figure IV-48 Krueger Residence Hall TAMU BLDG # 441 Energy Balance Plot during April 2016

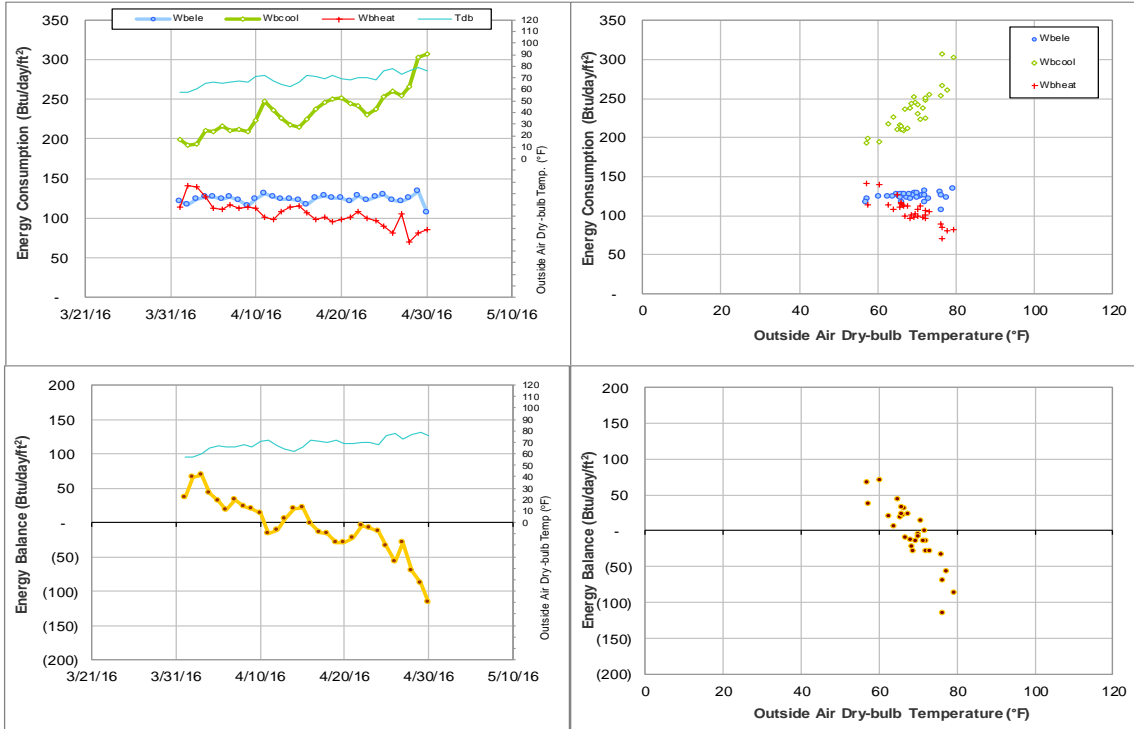


Figure IV-49 Dunn Residence Hall TAMU BLDG # 442 Energy Balance Plot during April 2016

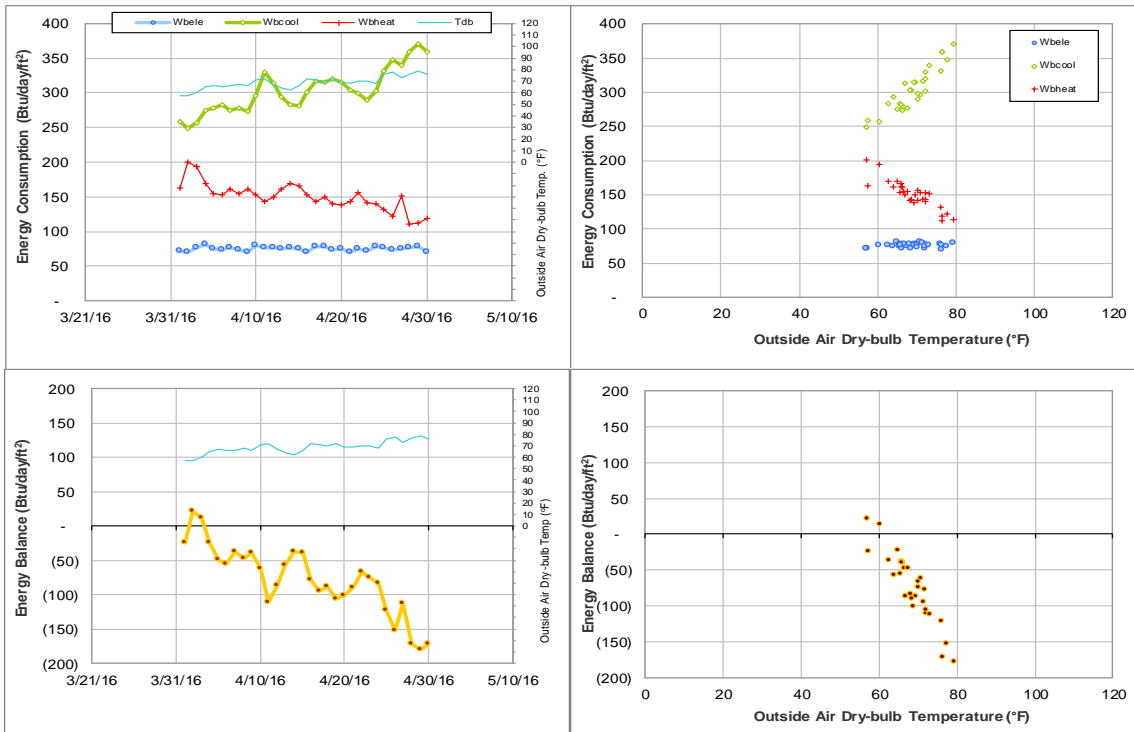


Figure IV-50 Aston Residence Hall TAMU BLDG # 447 Energy Balance Plot during April 2016

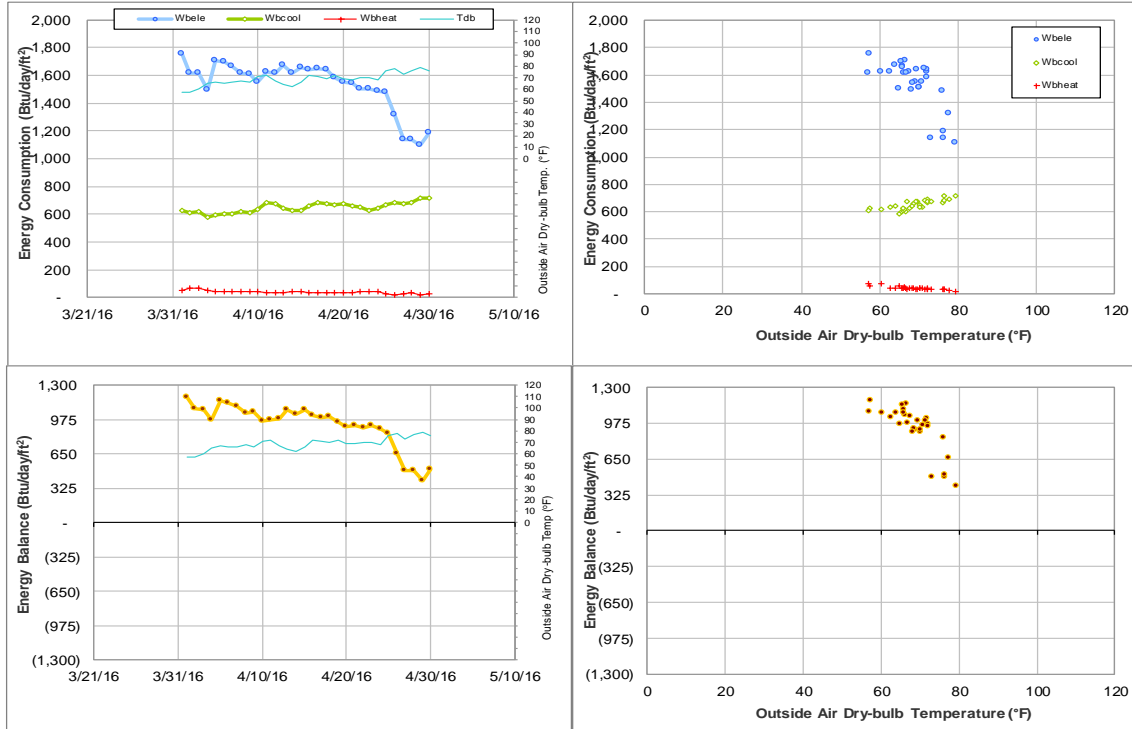


Figure IV-51 Luedcke Building (Cyclotron) TAMU BLDG # 434 Energy Balance Plot during April 2016

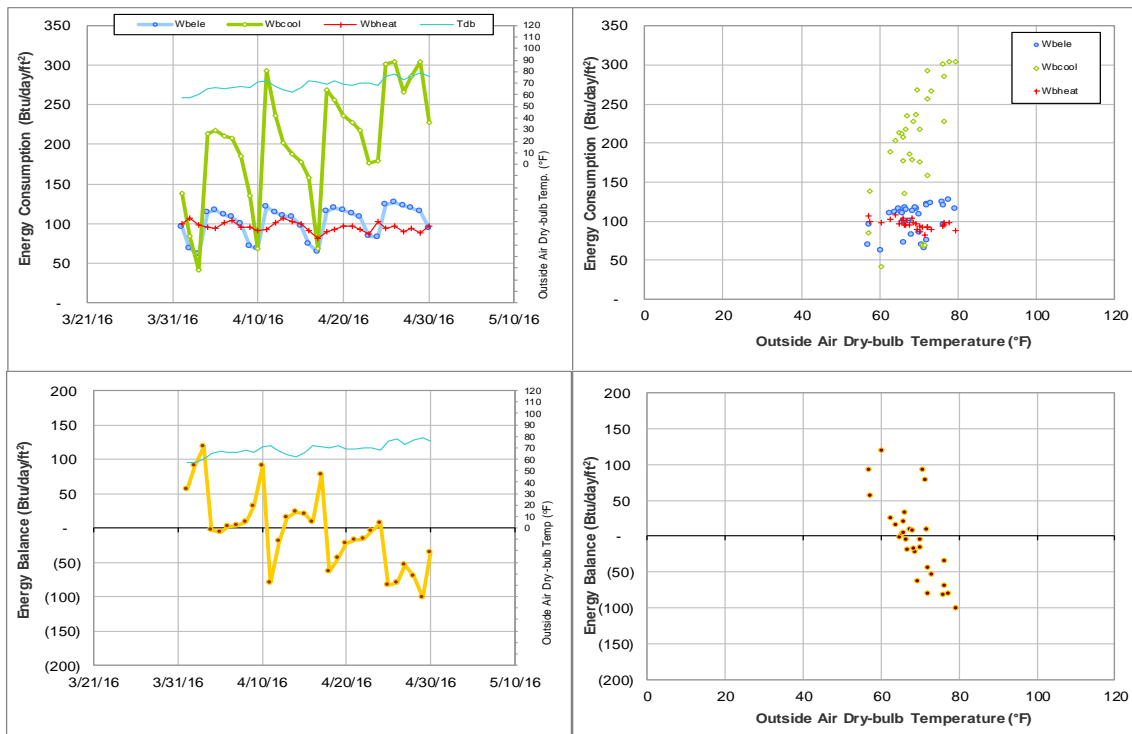


Figure IV-52 Harrington Education Center Office Tower TAMU BLDG # 435 Energy Balance Plot during April 2016

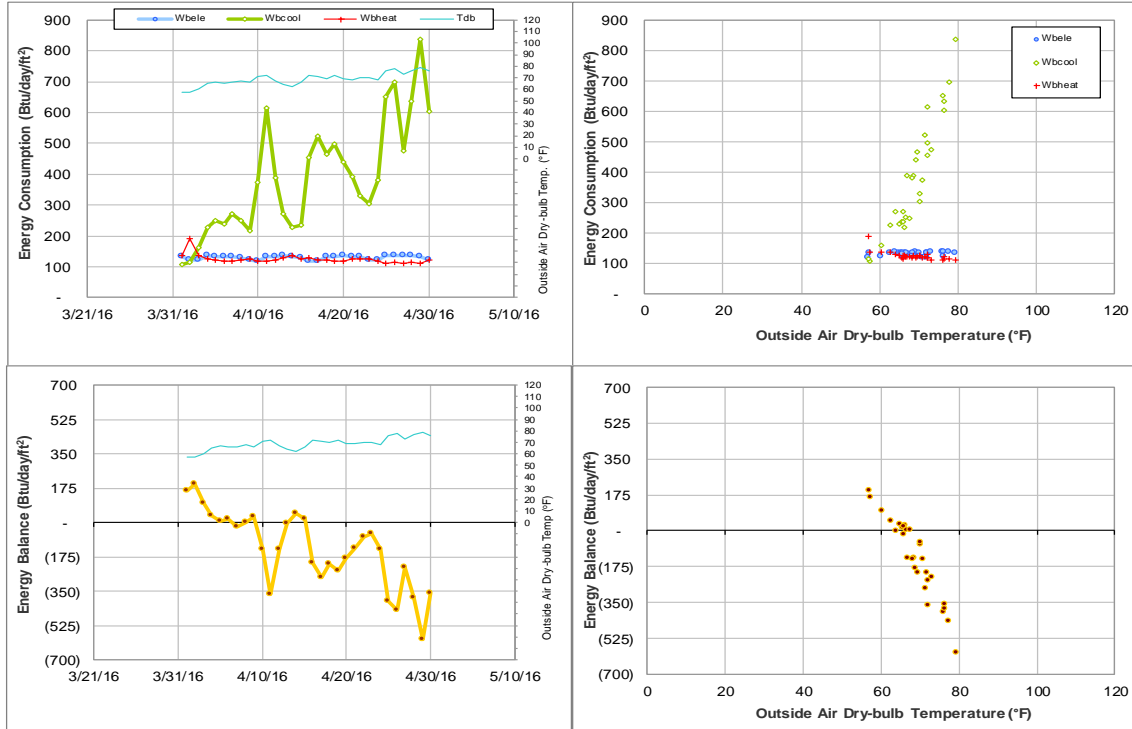


Figure IV-53 Reed-McDonald Building TAMU BLDG # 436 Energy Balance Plot during April 2016

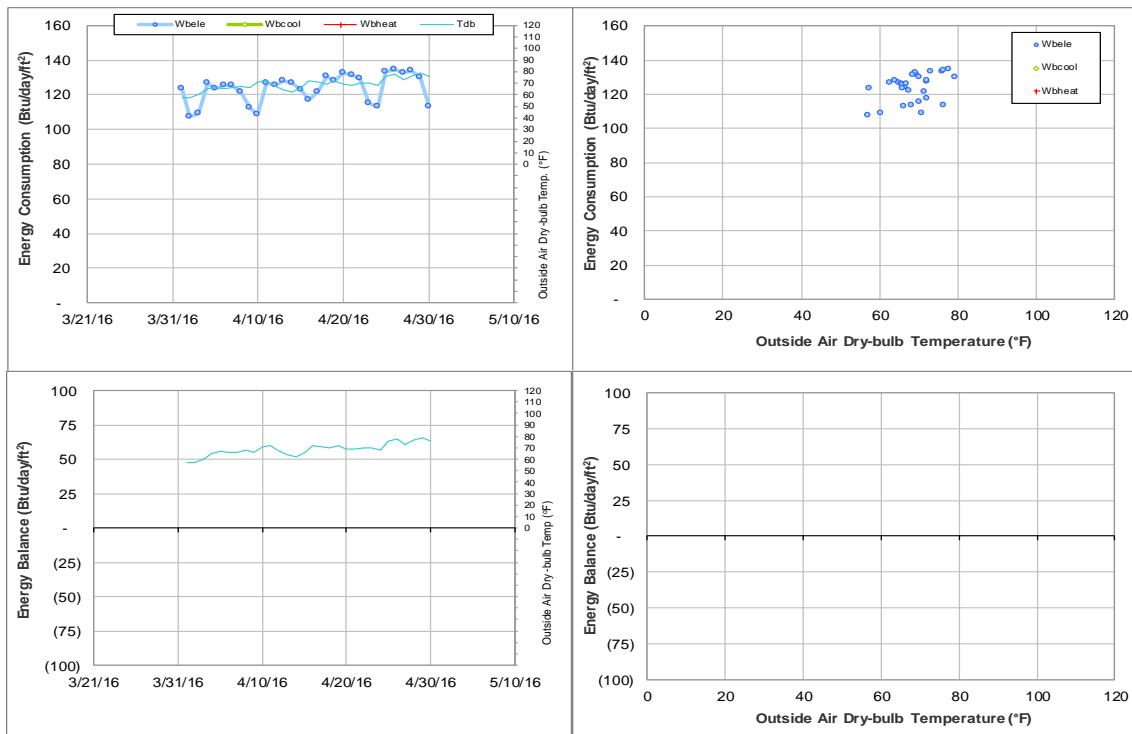


Figure IV-54 Reed-McDonald and Engineering Innovation Center TAMU BLDG # 436 Energy Balance Plot during April 2016

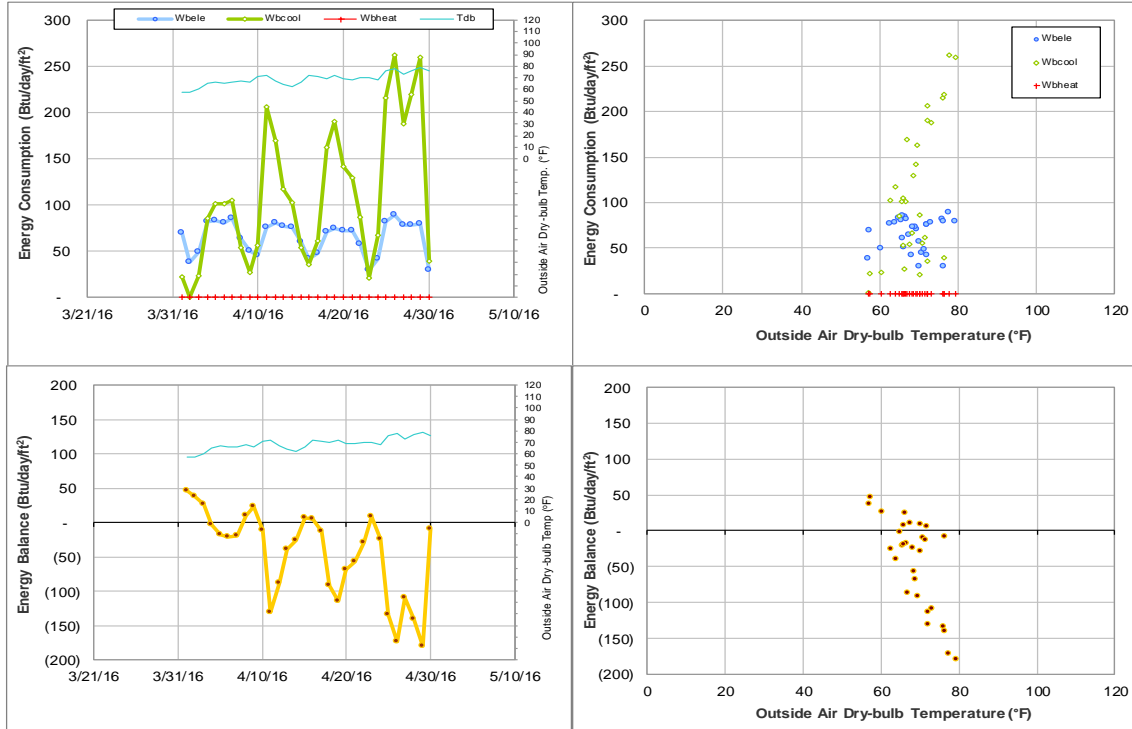


Figure IV-55 Harrington Education Center Classroom Building TAMU BLDG # 438 Energy Balance Plot during April 2016

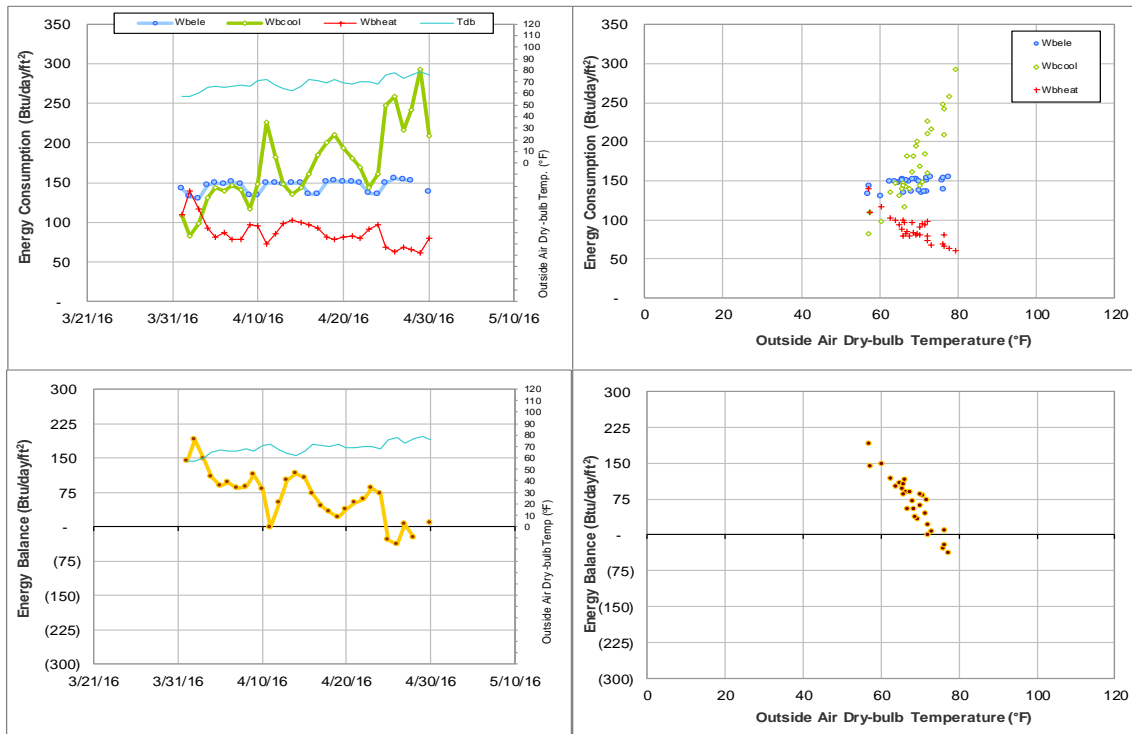


Figure IV-56 Oceanography & Meteorology Building TAMU BLDG # 443 Energy Balance Plot during April 2016

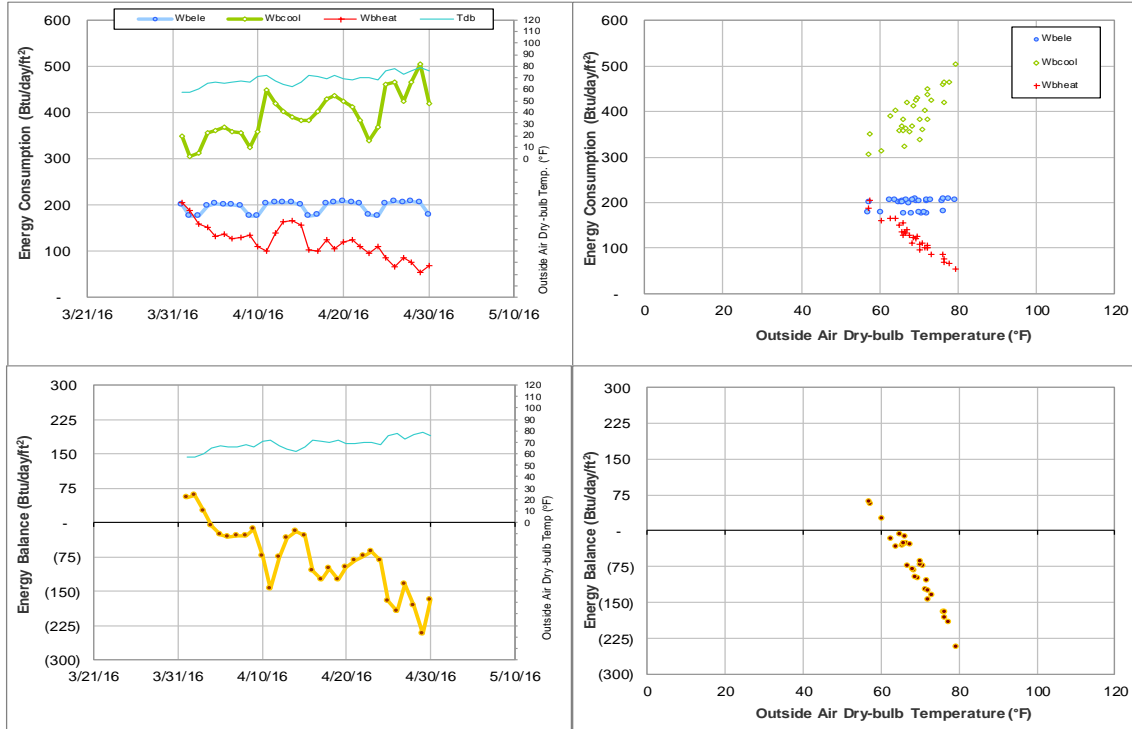


Figure IV-57 Peterson Building TAMU BLDG # 444 Energy Balance Plot during April 2016

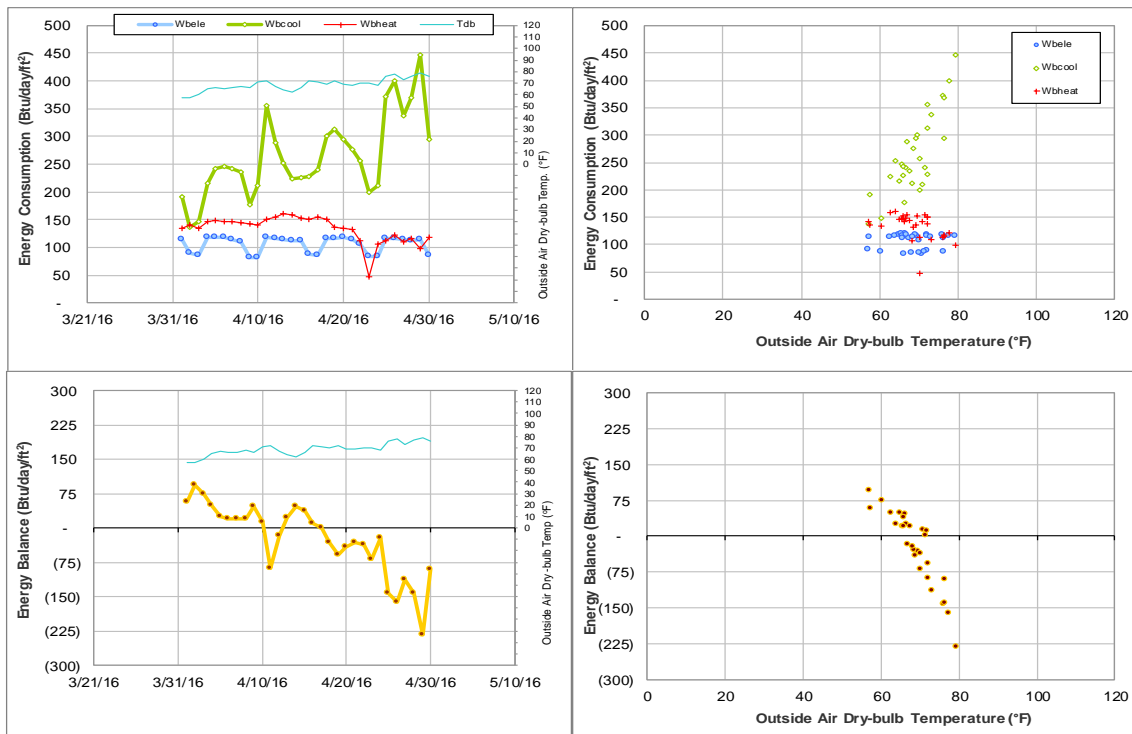


Figure IV-58 Teague Research Center and DPC Annex TAMU BLDG # 445-517 Energy Balance Plot during April 2016

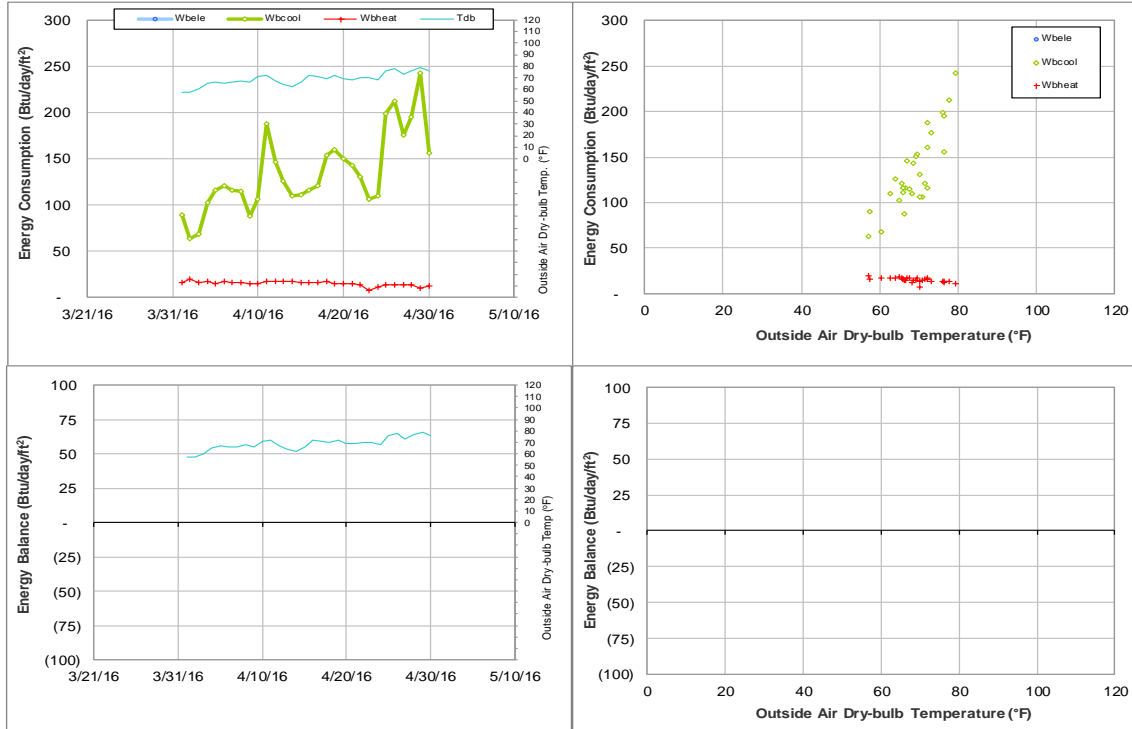


Figure IV-59 Teague Research Center TAMU BLDG # 445 Energy Balance Plot during April 2016

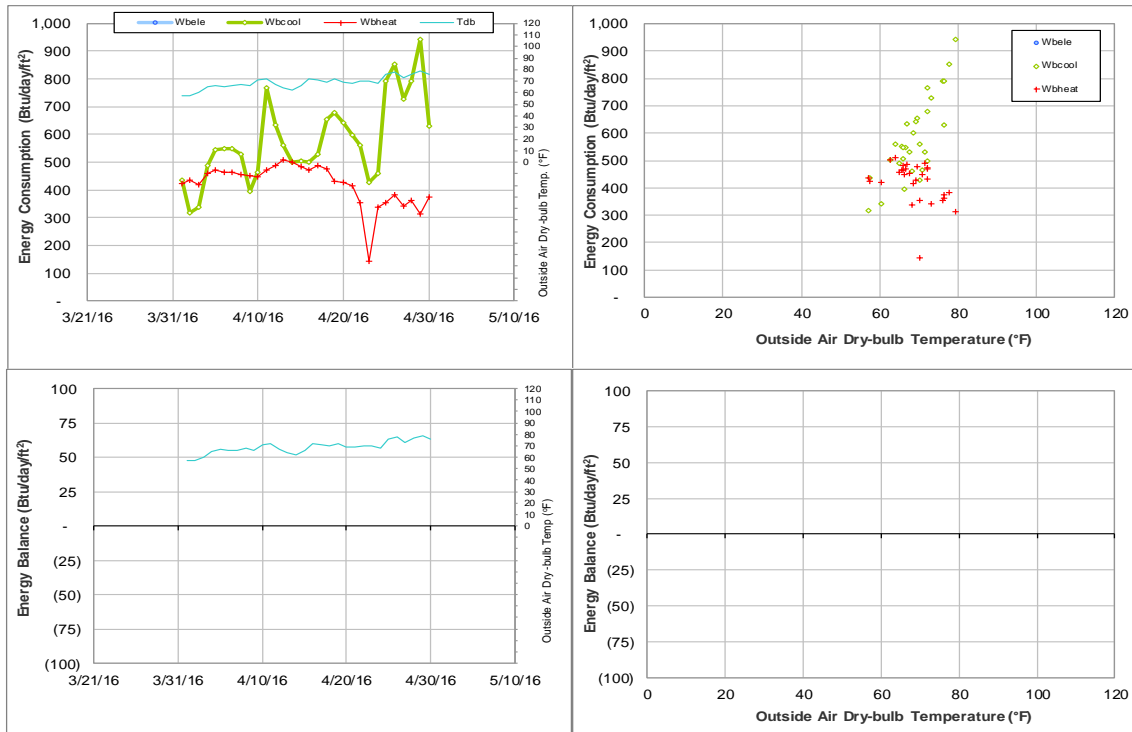


Figure IV-60 DPC Annex TAMU BLDG # 517 Energy Balance Plot during April 2016

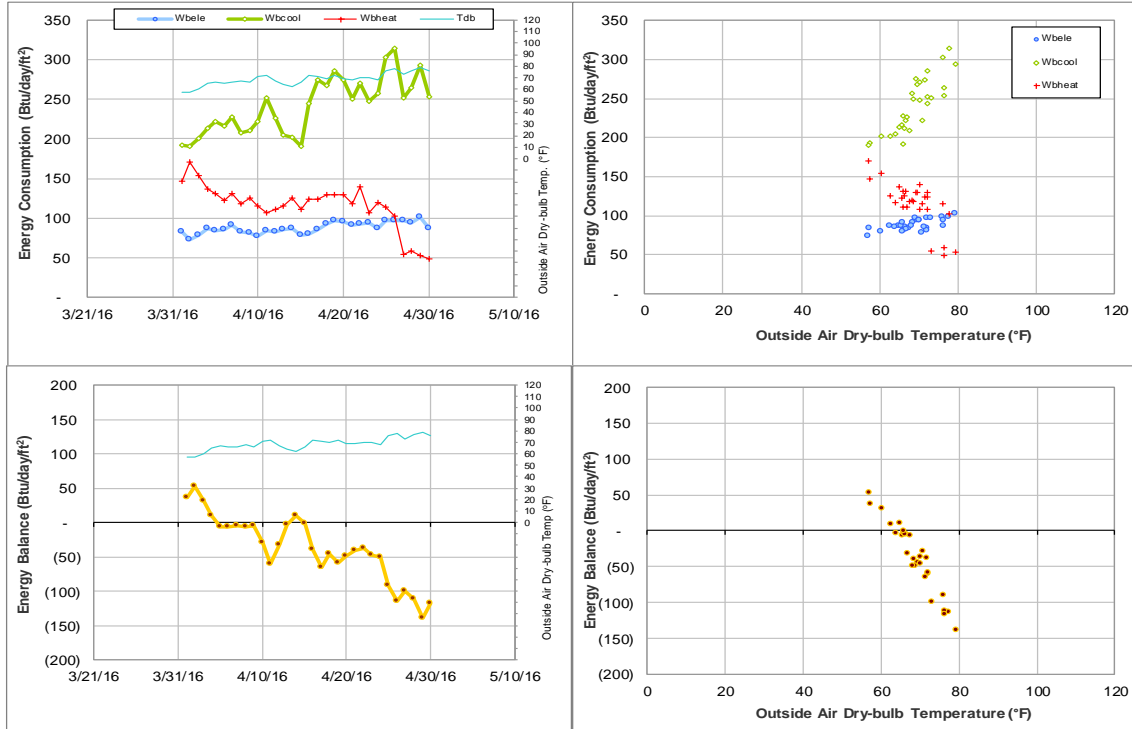


Figure IV-61 Rudder Tower and Theatre Complex TAMU BLDG # 446 Energy Balance Plot during April 2016

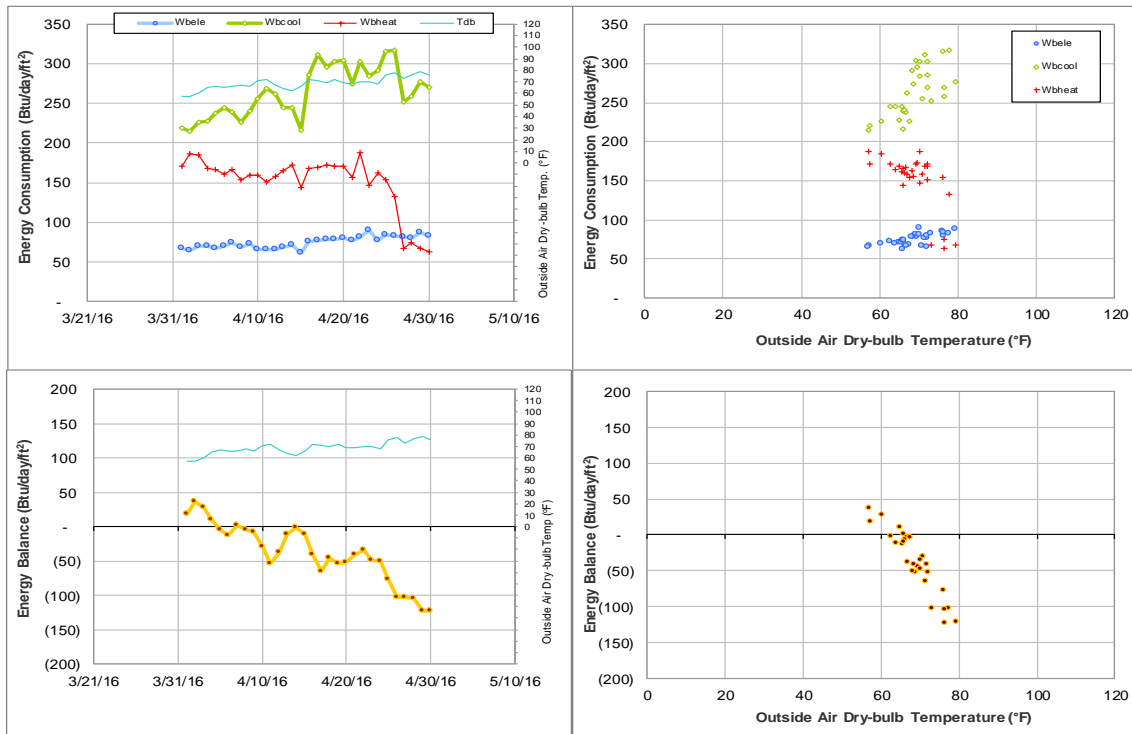


Figure IV-62 Rudder Theatre Complex TAMU BLDG # 446 Energy Balance Plot during April 2016

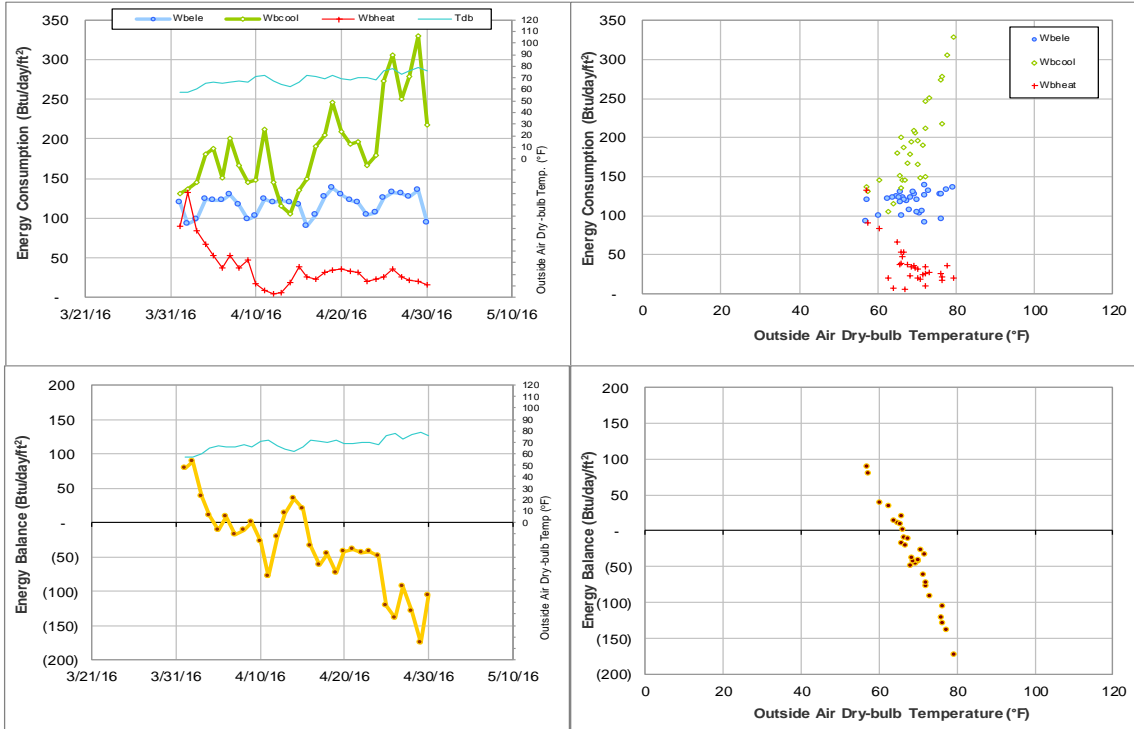


Figure IV-63 Rudder Tower TAMU BLDG # 446 Energy Balance Plot during April 2016

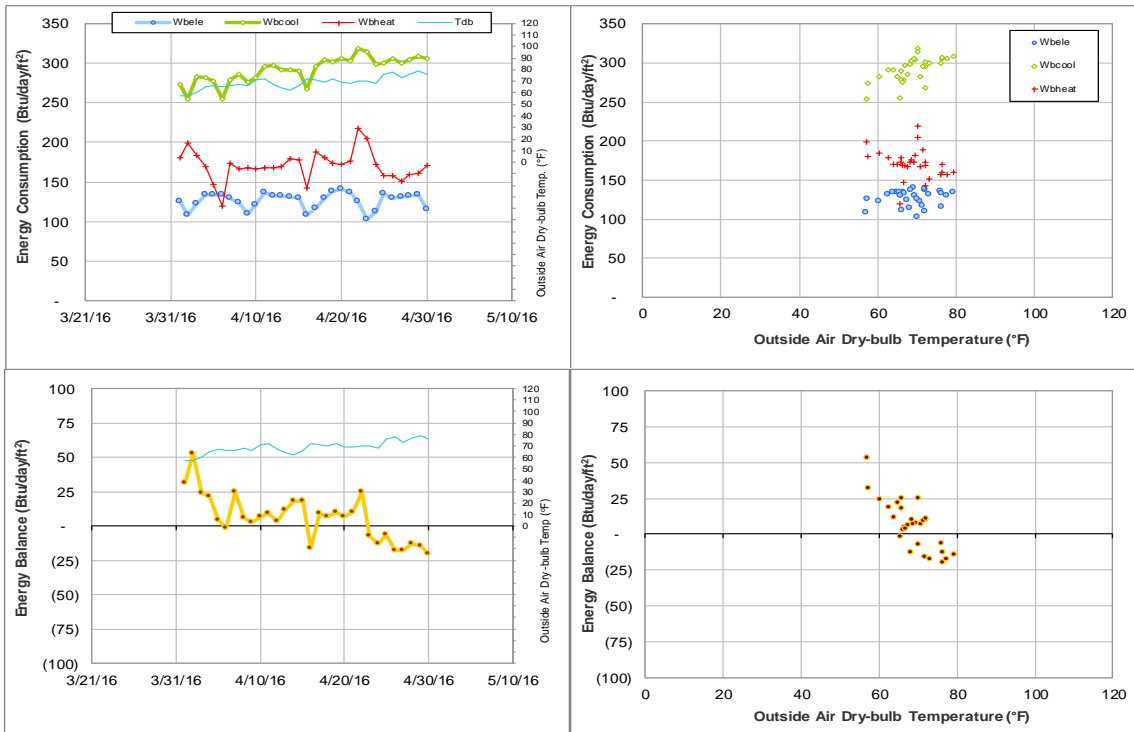


Figure IV-64 Adams Band Hall TAMU BLDG # 448 Energy Balance Plot during April 2016

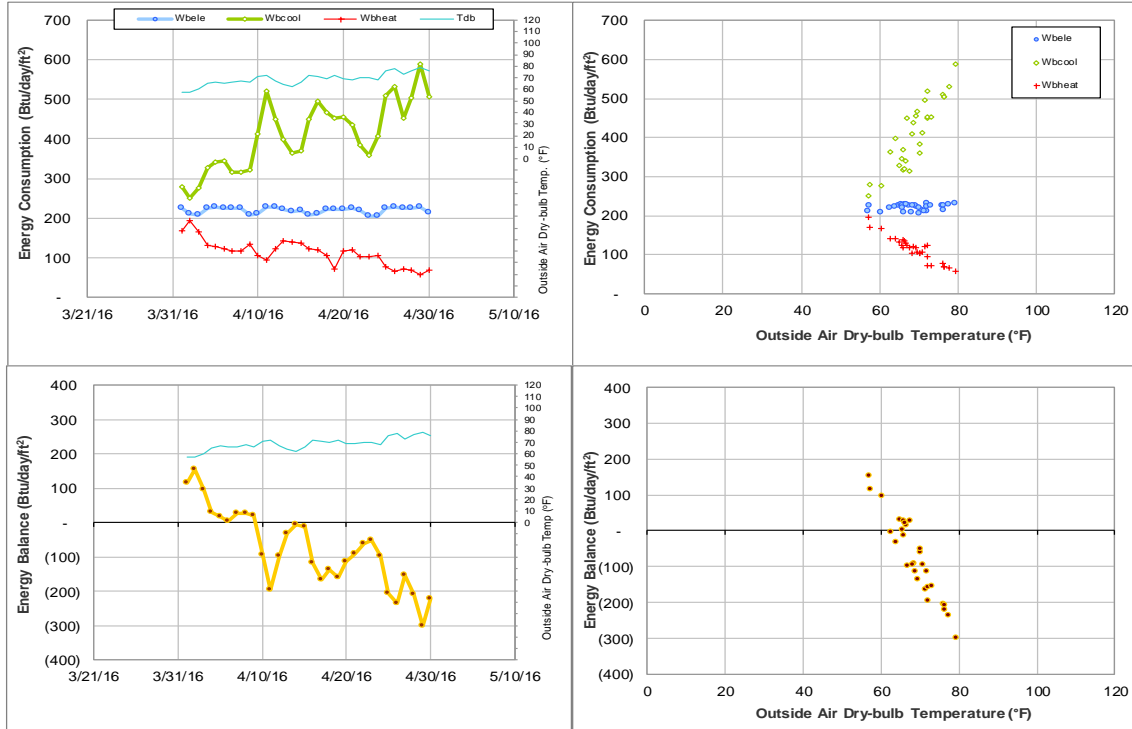


Figure IV-65 Biological Sciences Building - West TAMU BLDG # 449 Energy Balance Plot during April 2016

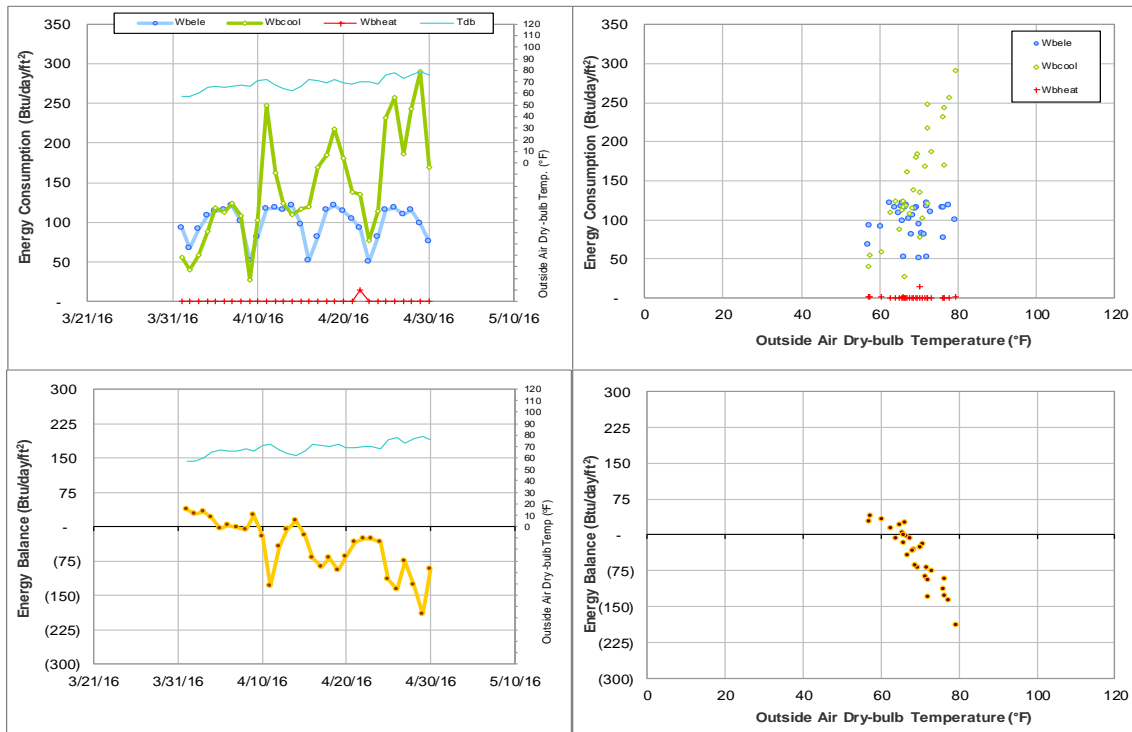


Figure IV-66 Duncan Dining Hall TAMU BLDG # 450 Energy Balance Plot during April 2016

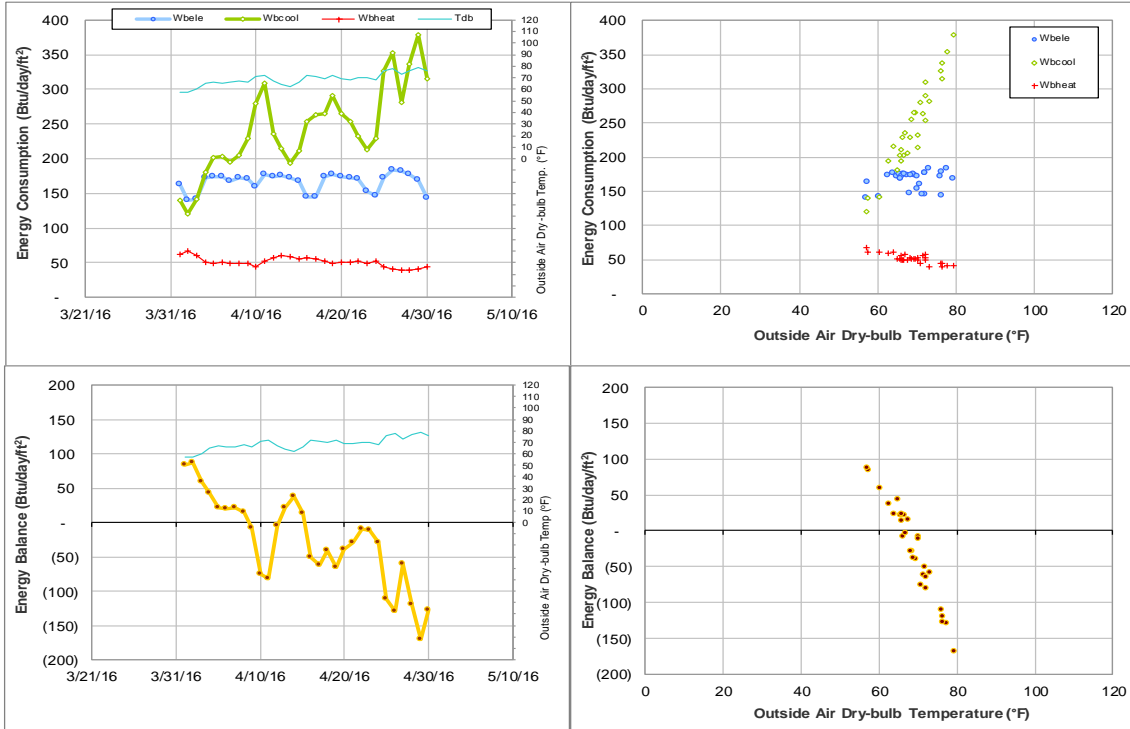


Figure IV-67 MSC TAMU BLDG # 454 Energy Balance Plot during April 2016

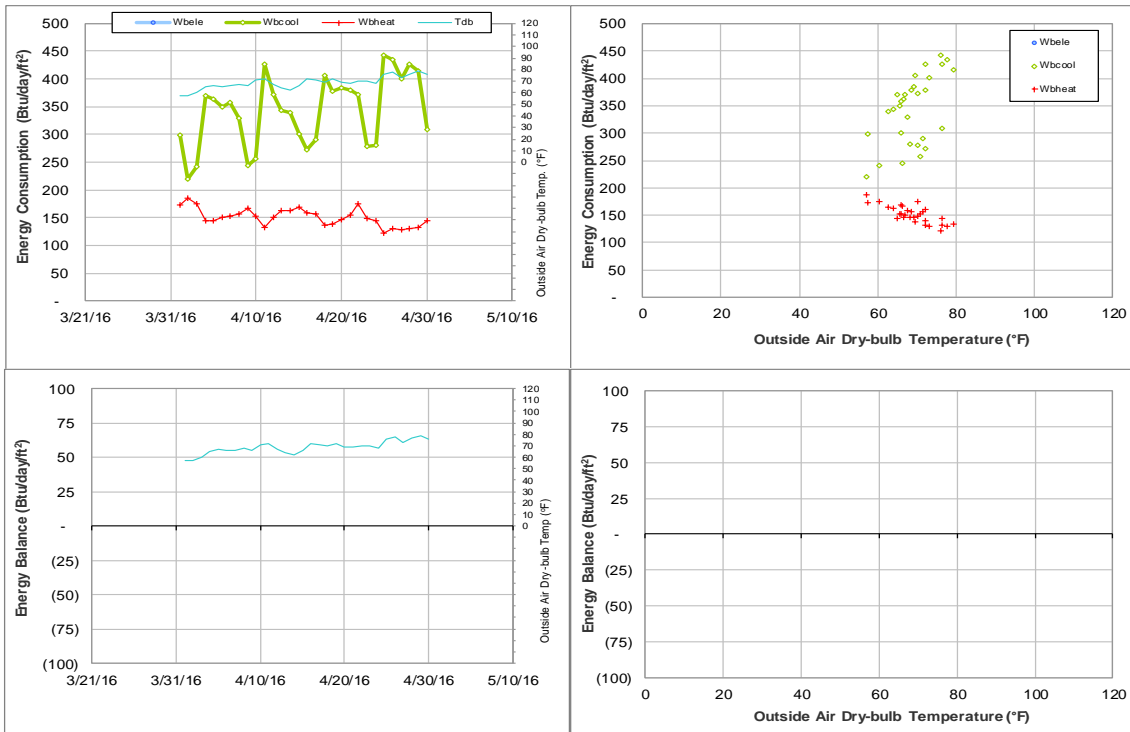


Figure IV-68 Military Sciences Building TAMU BLDG # 456 Energy Balance Plot during April 2016

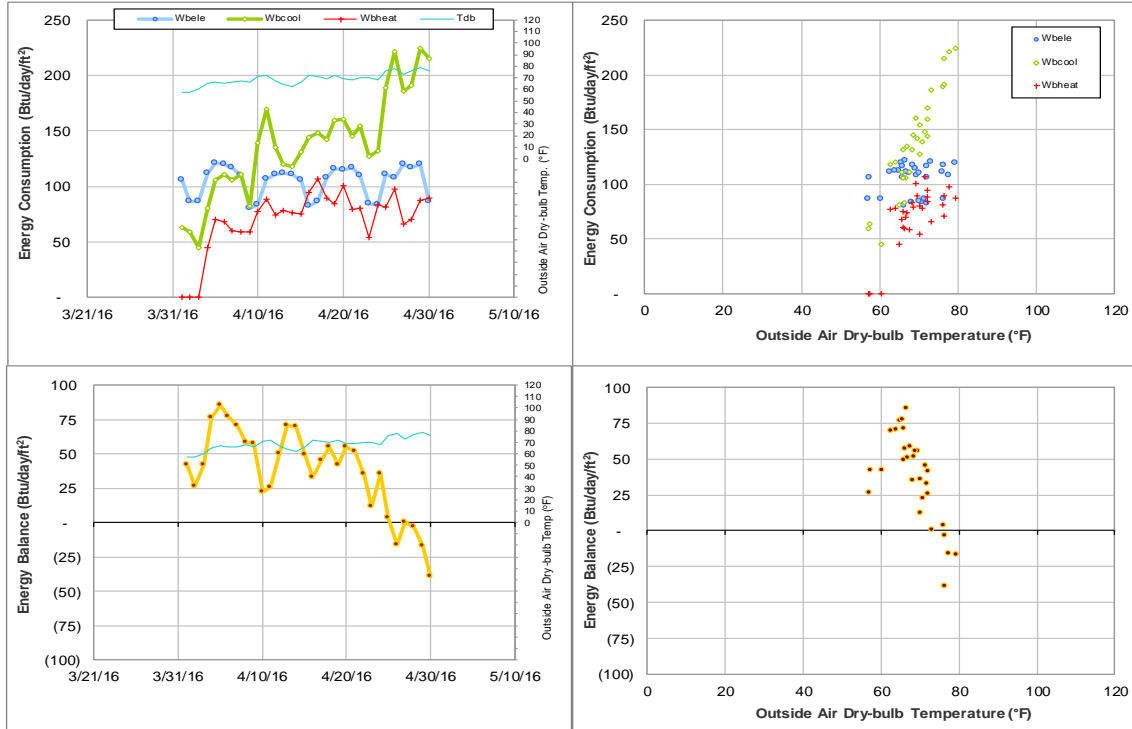


Figure IV-69 TAES Annex Building TAMU BLDG # 457 Energy Balance Plot during April 2016

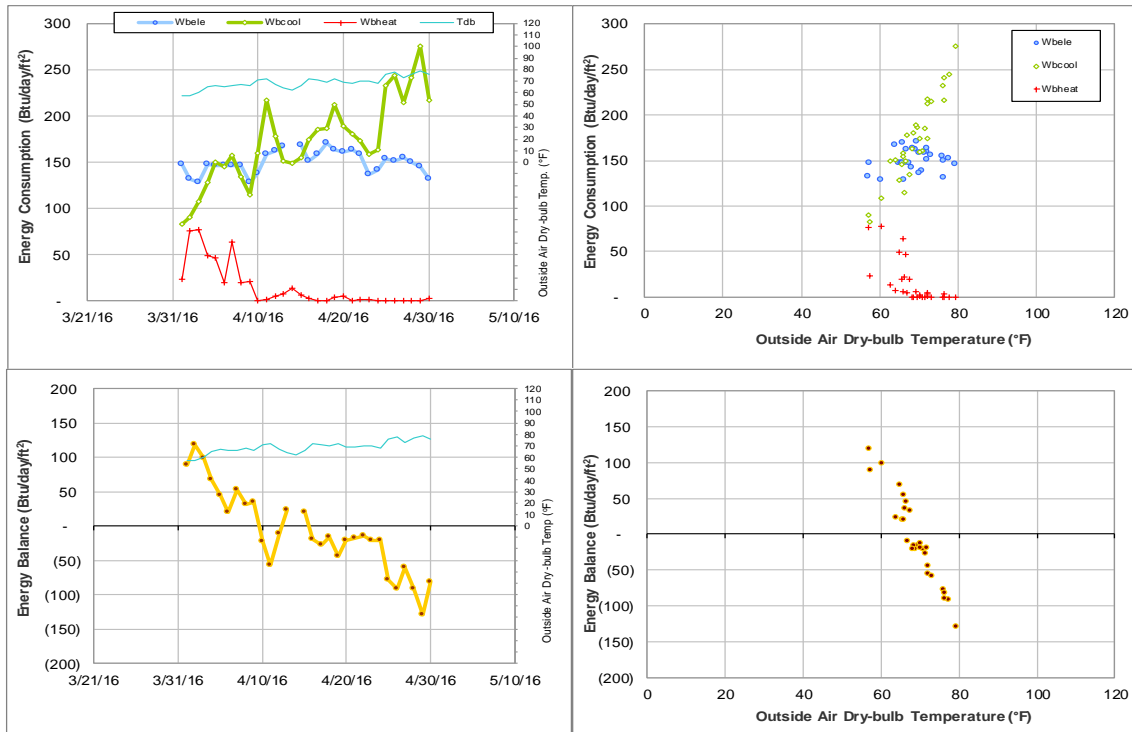


Figure IV-70 Coke Building TAMU BLDG # 461 Energy Balance Plot during April 2016

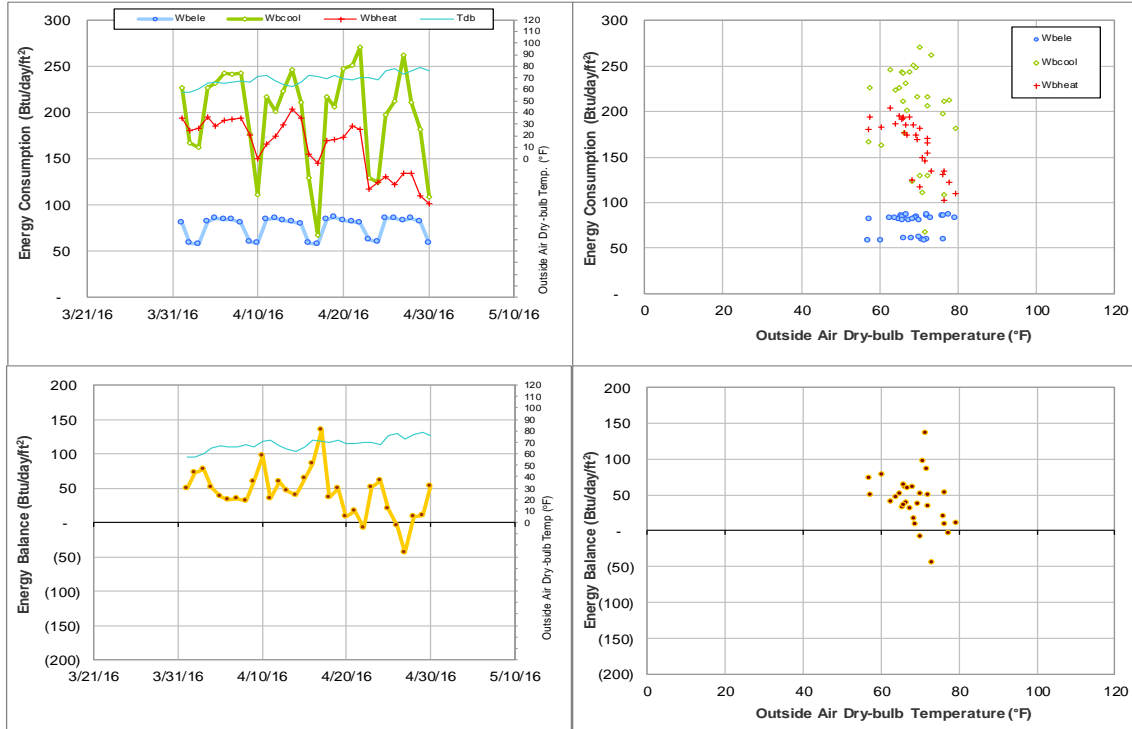


Figure IV-71 Academic Building TAMU BLDG # 462 Energy Balance Plot during April 2016

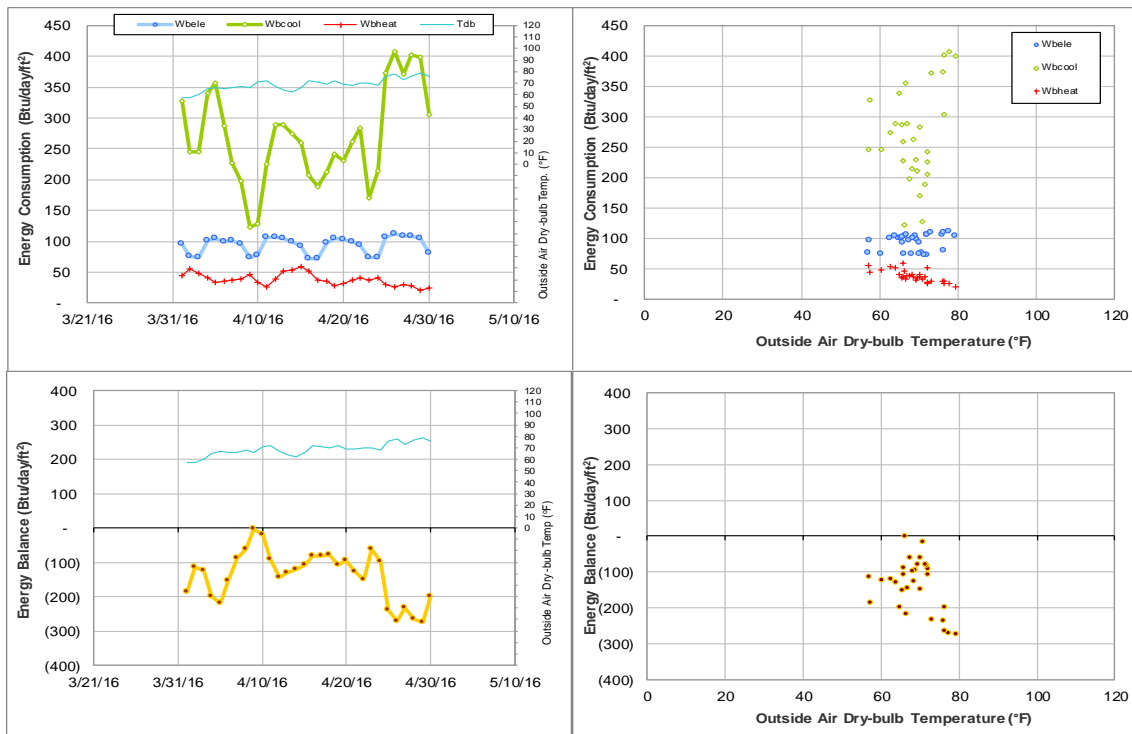


Figure IV-72 Psychology Building TAMU BLDG # 463 Energy Balance Plot during April 2016

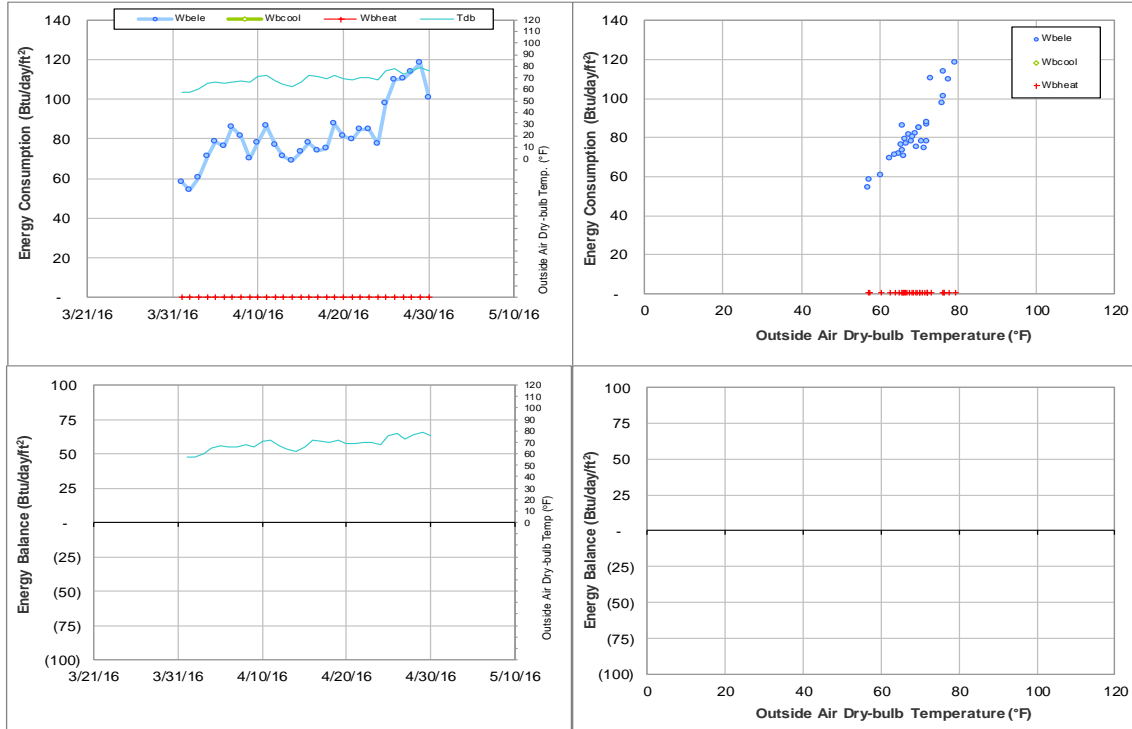


Figure IV-73 State Chemist Building TAMU BLDG # 464 Energy Balance Plot during April 2016

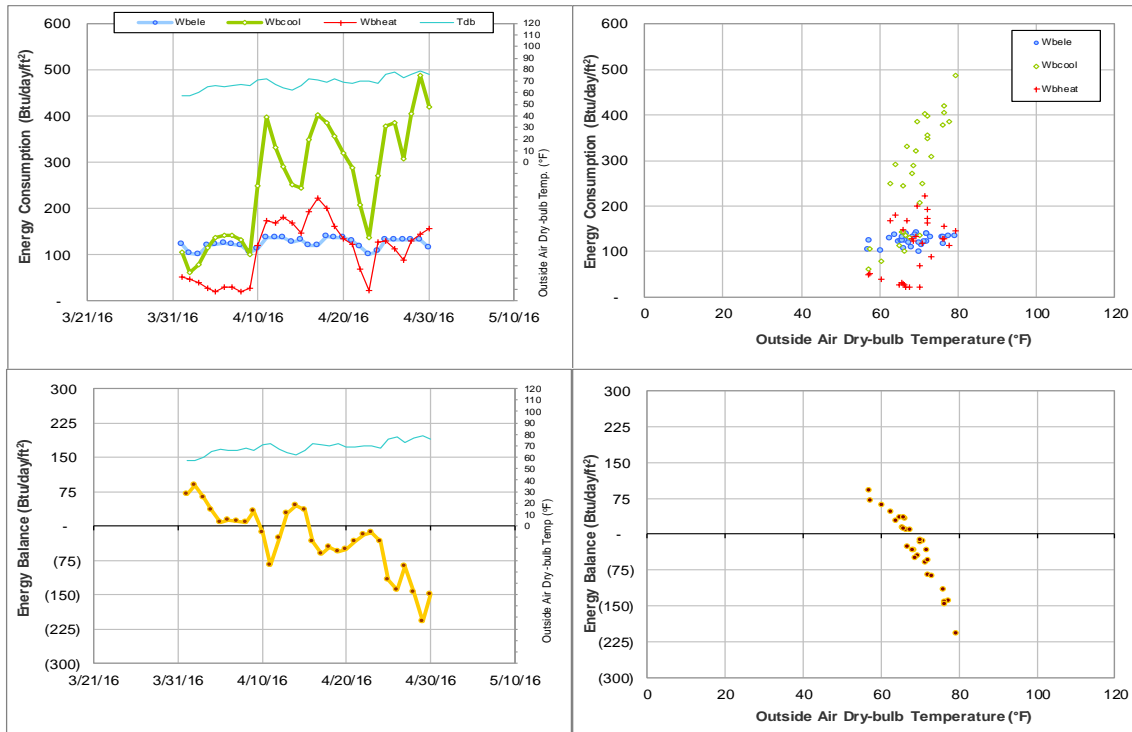


Figure IV-74 Butler Hall TAMU BLDG # 465 Energy Balance Plot during April 2016

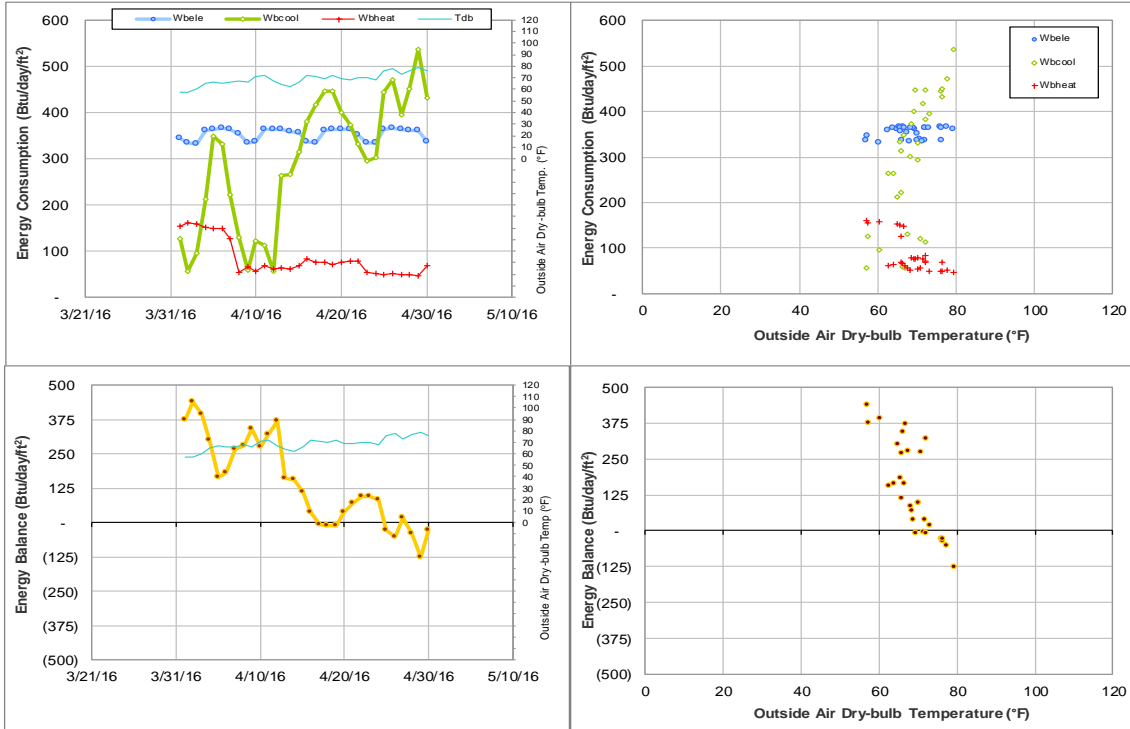


Figure IV-75 Biological Sciences Building - East TAMU BLDG # 467 Energy Balance Plot during April 2016

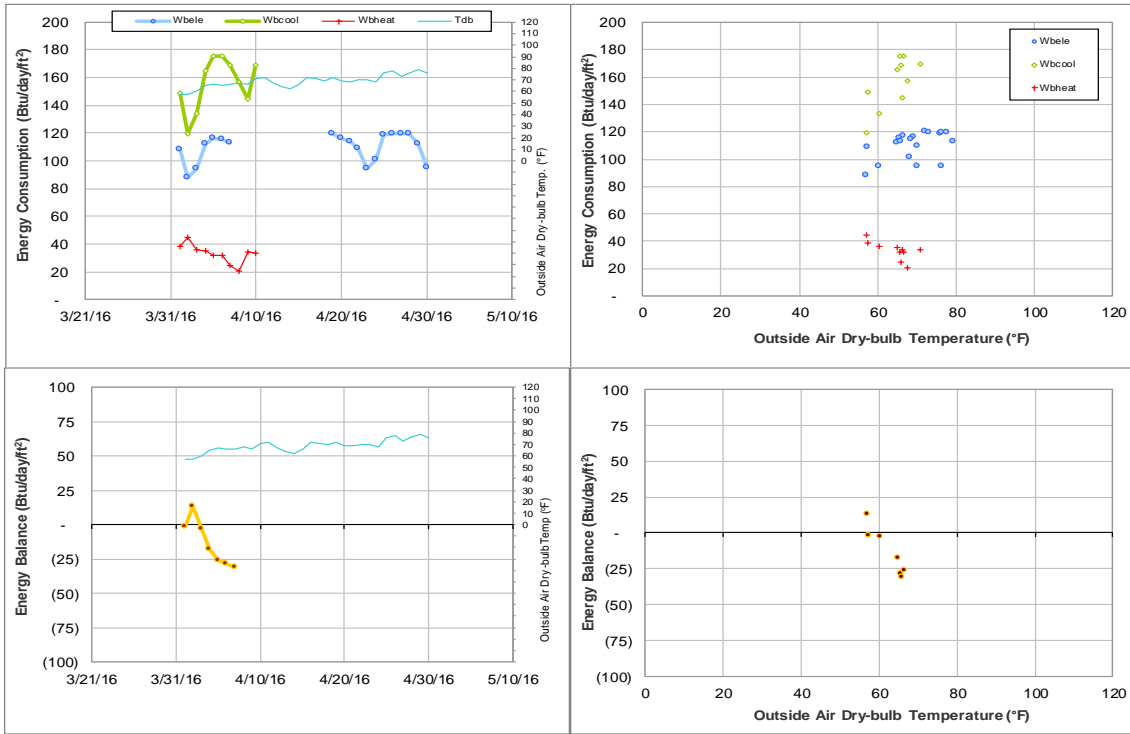


Figure IV-76 Evans Library TAMU BLDG # 468 Energy Balance Plot during April 2016

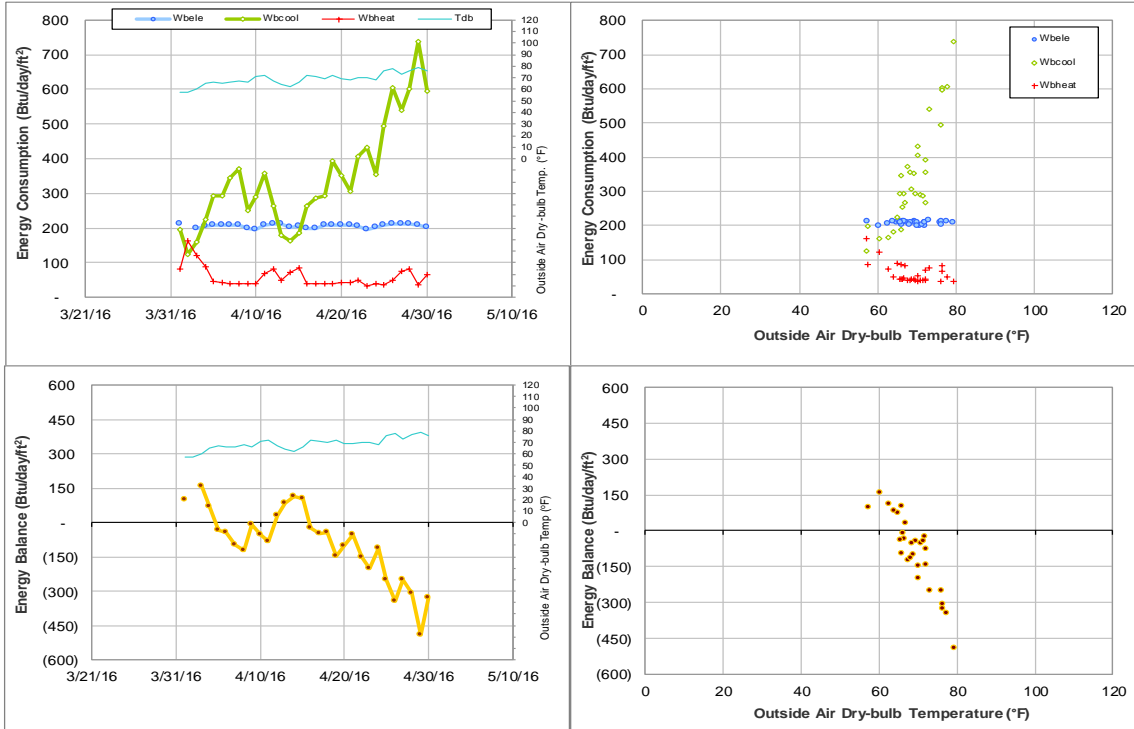


Figure IV-77 Central Campus Parking Garage TAMU BLDG # 469 Energy Balance Plot during April 2016

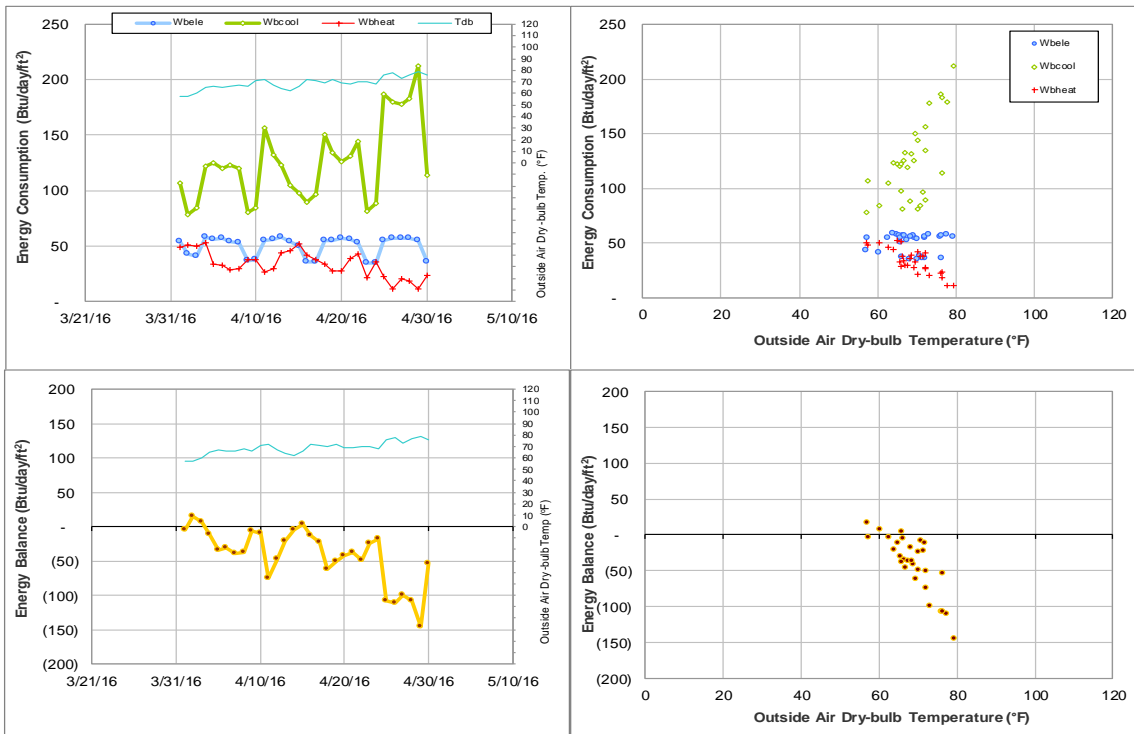


Figure IV-78 Glasscock History Bldg TAMU BLDG # 470 Energy Balance Plot during April 2016

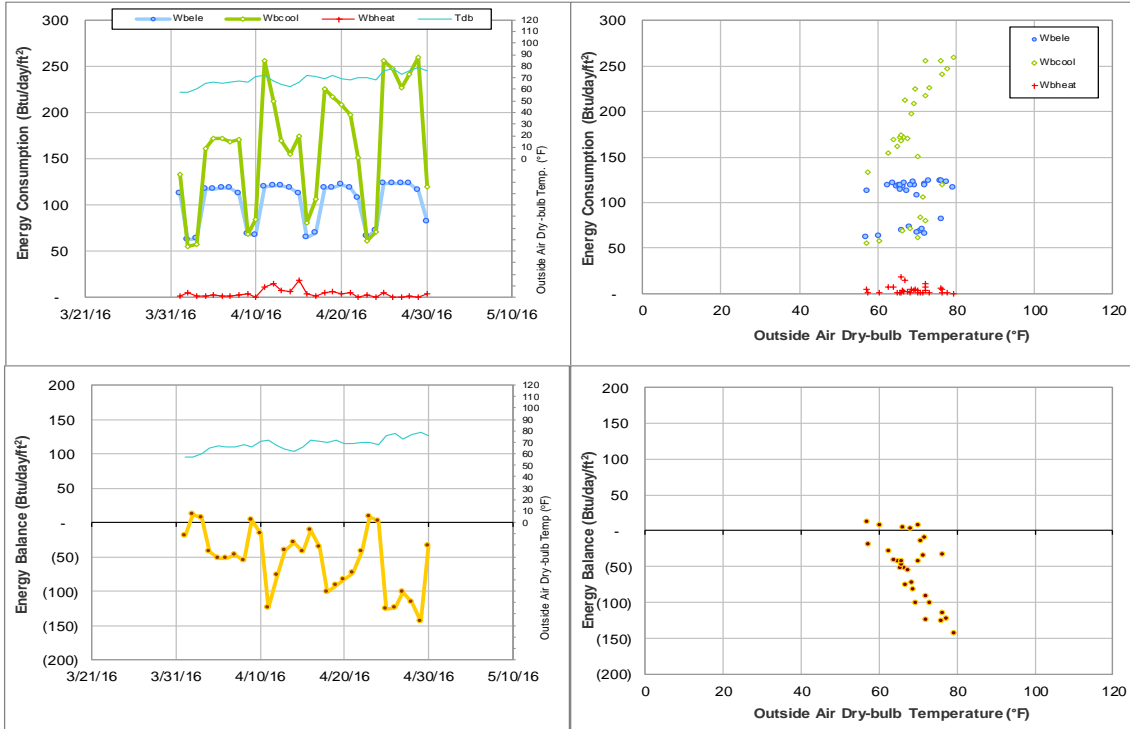


Figure IV-79 Pavilion TAMU BLDG # 471 Energy Balance Plot during April 2016

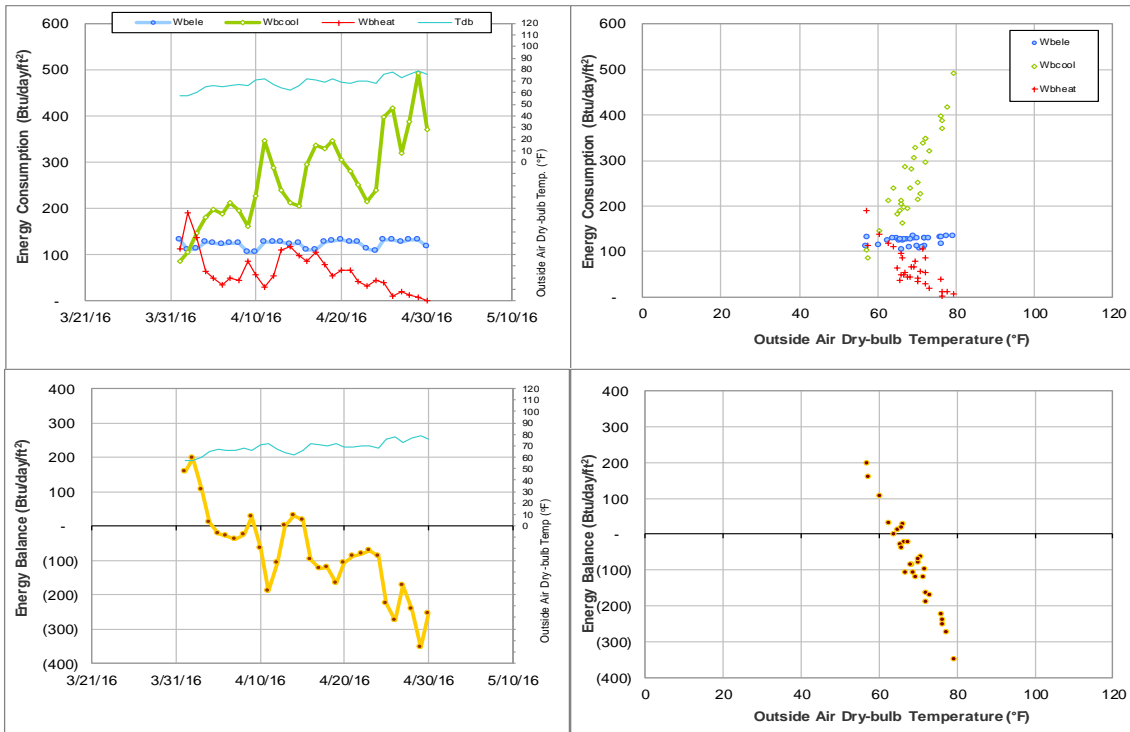


Figure IV-80 Animal Industries TAMU BLDG # 472 Energy Balance Plot during April 2016

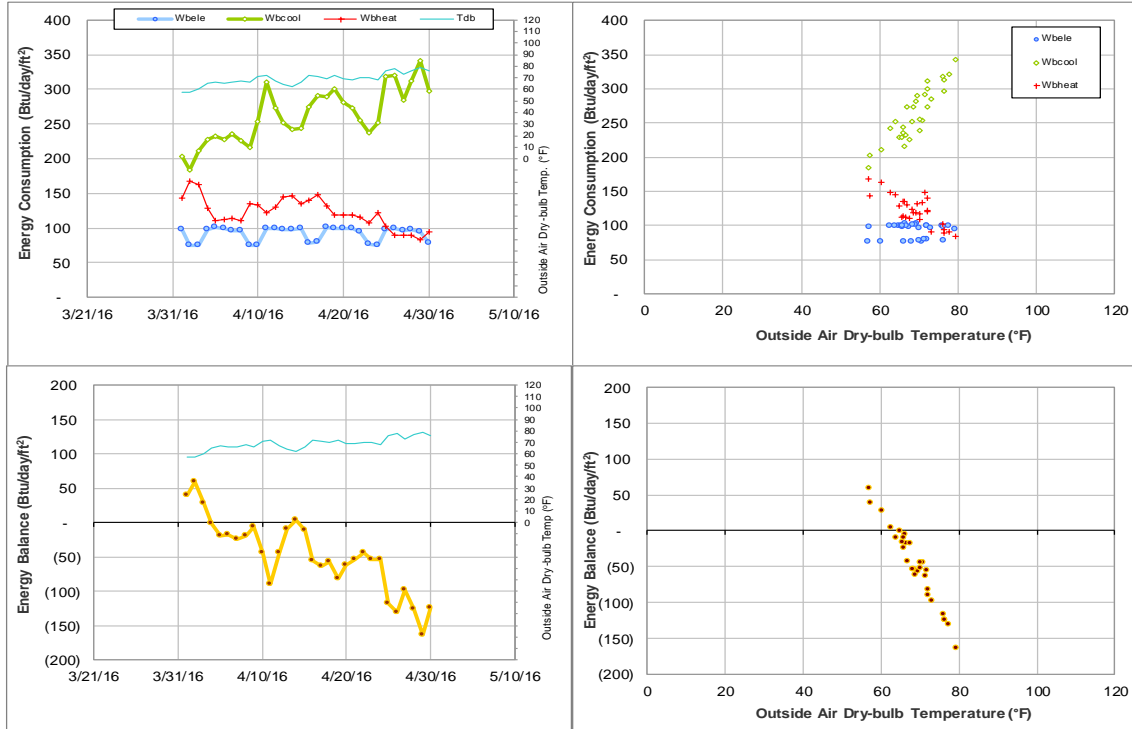


Figure IV-81 Williams Administration Building TAMU BLDG # 473 Energy Balance Plot during April 2016

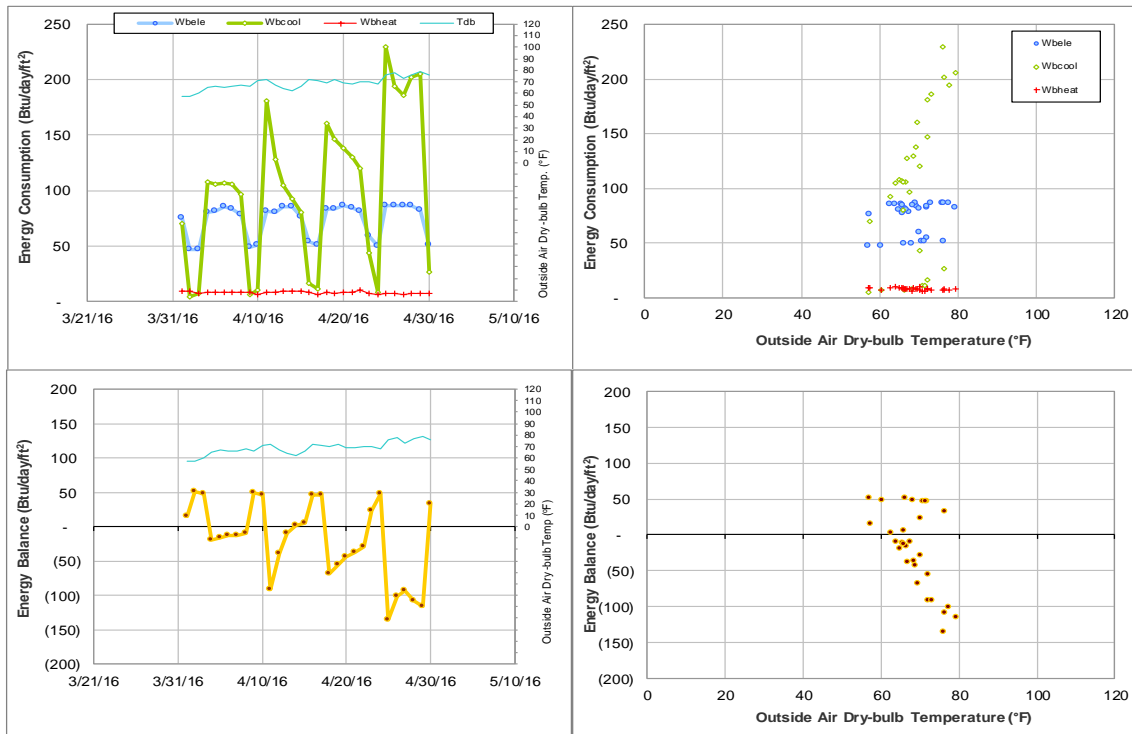


Figure IV-82 YMCA Building TAMU BLDG # 474 Energy Balance Plot during April 2016

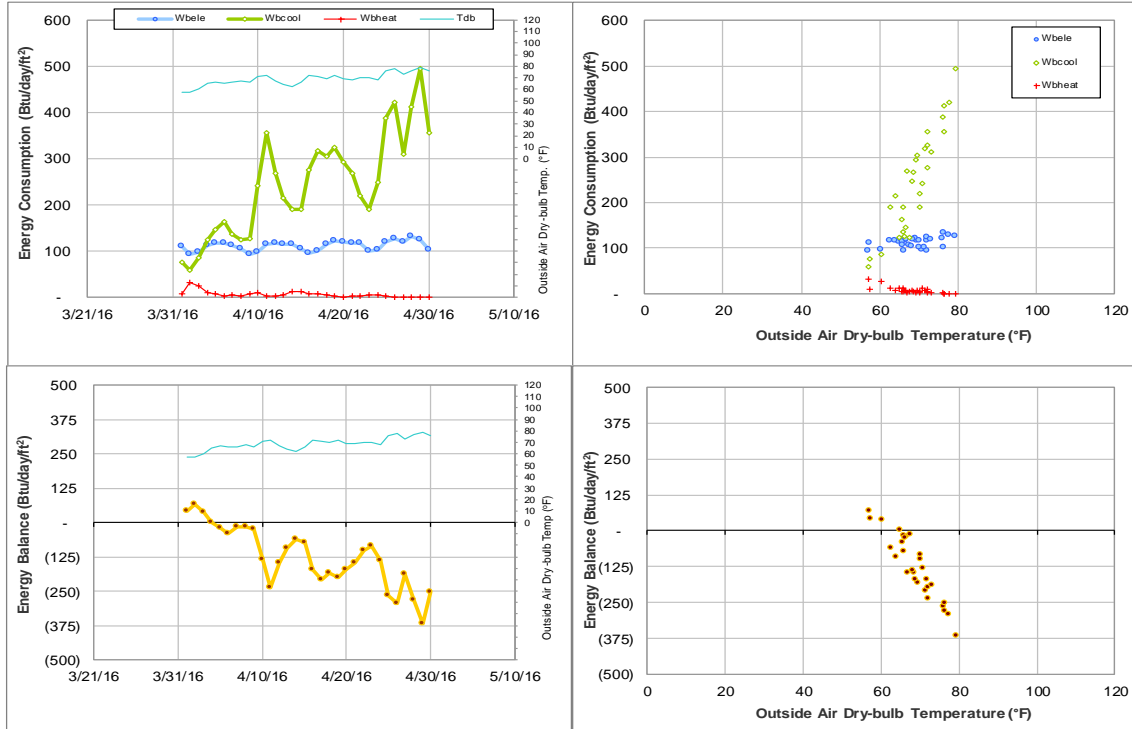


Figure IV-83 Francis Hall TAMU BLDG # 476 Energy Balance Plot during April 2016

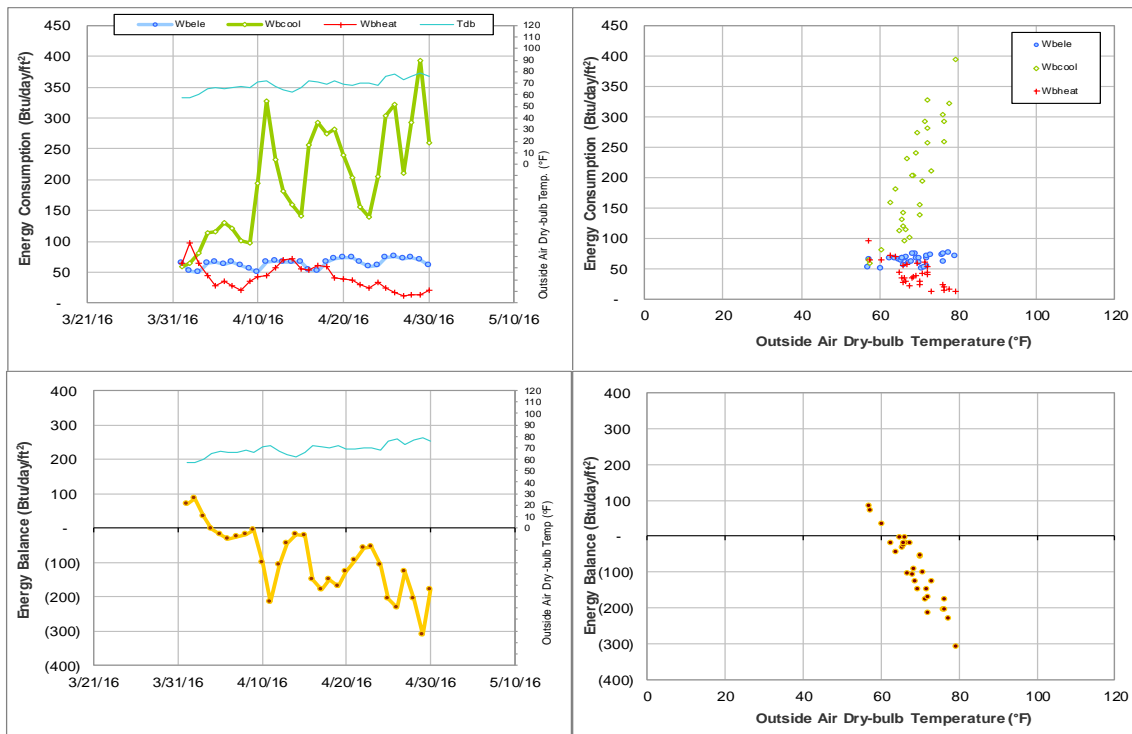


Figure IV-84 Anthropology Building TAMU BLDG # 477 Energy Balance Plot during April 2016

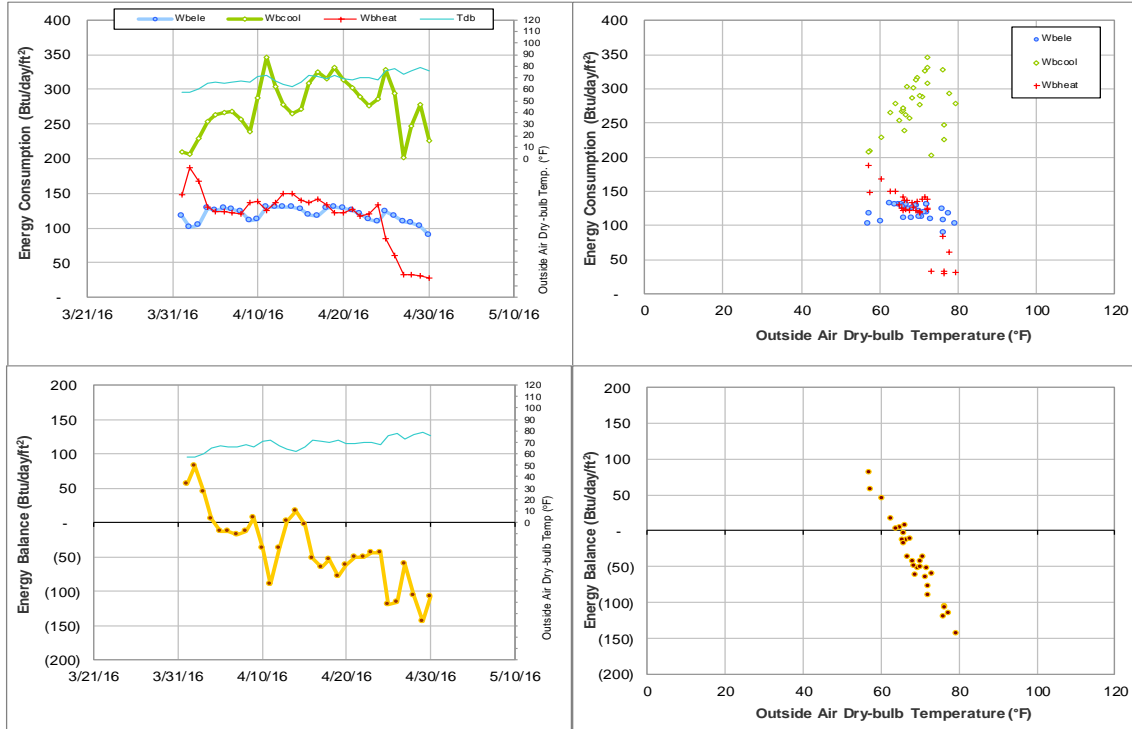


Figure IV-85 Scoates Hall TAMU BLDG # 478 Energy Balance Plot during April 2016

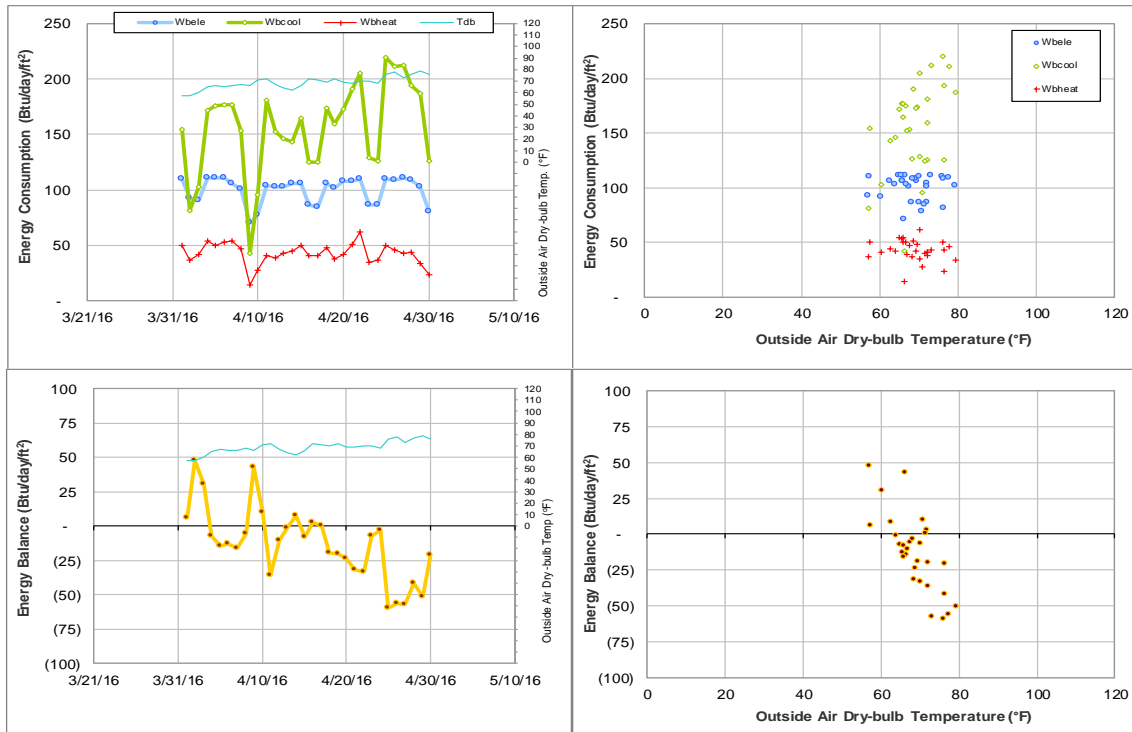


Figure IV-86 Bolton Hall TAMU BLDG # 480 Energy Balance Plot during April 2016

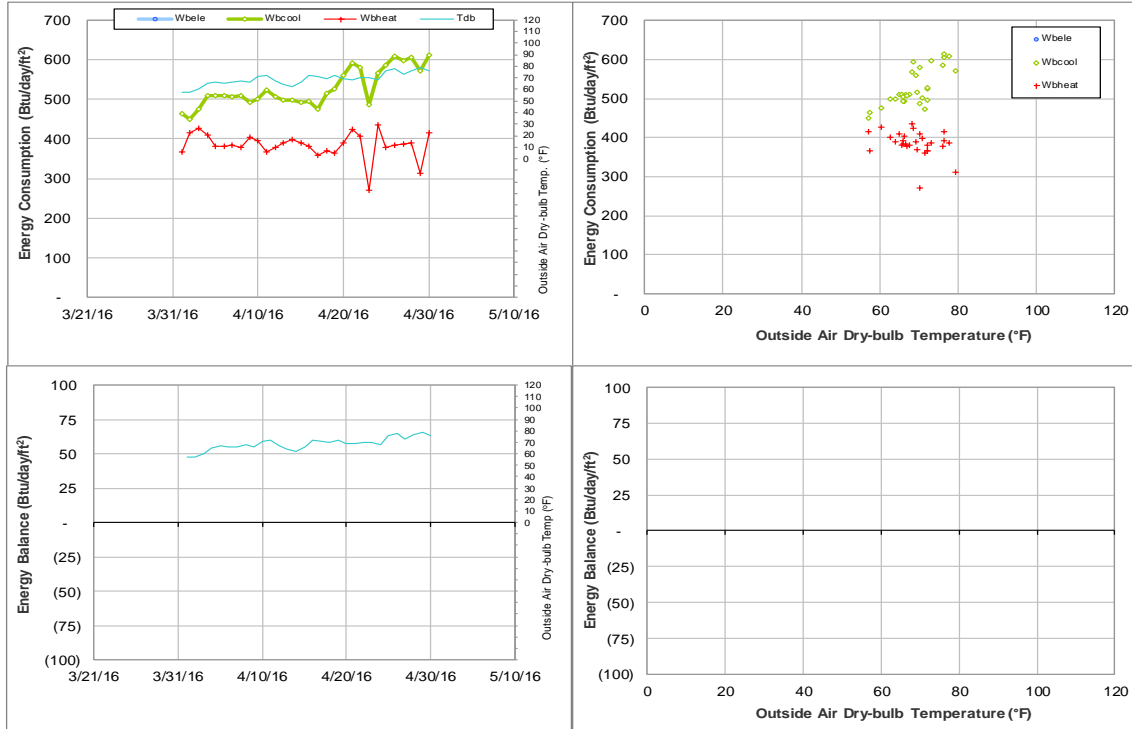


Figure IV-87 Heaton Hall TAMU BLDG # 481 Energy Balance Plot during April 2016

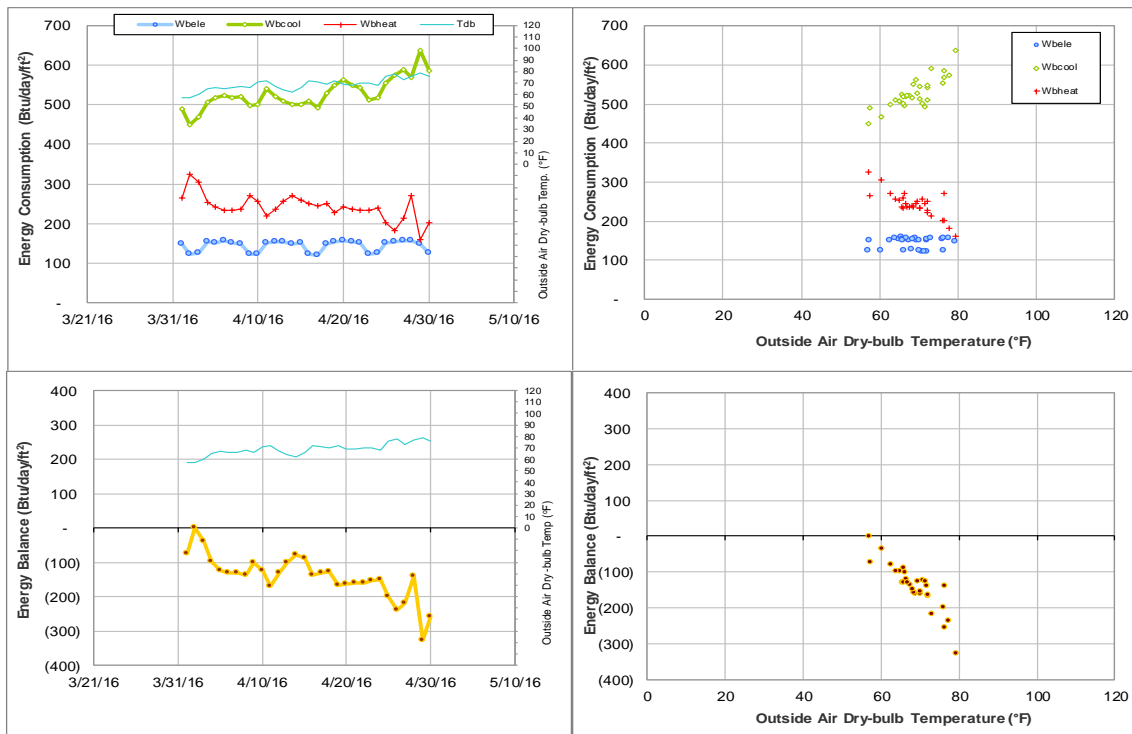


Figure IV-88 Fermier Hall TAMU BLDG # 482 Energy Balance Plot during April 2016

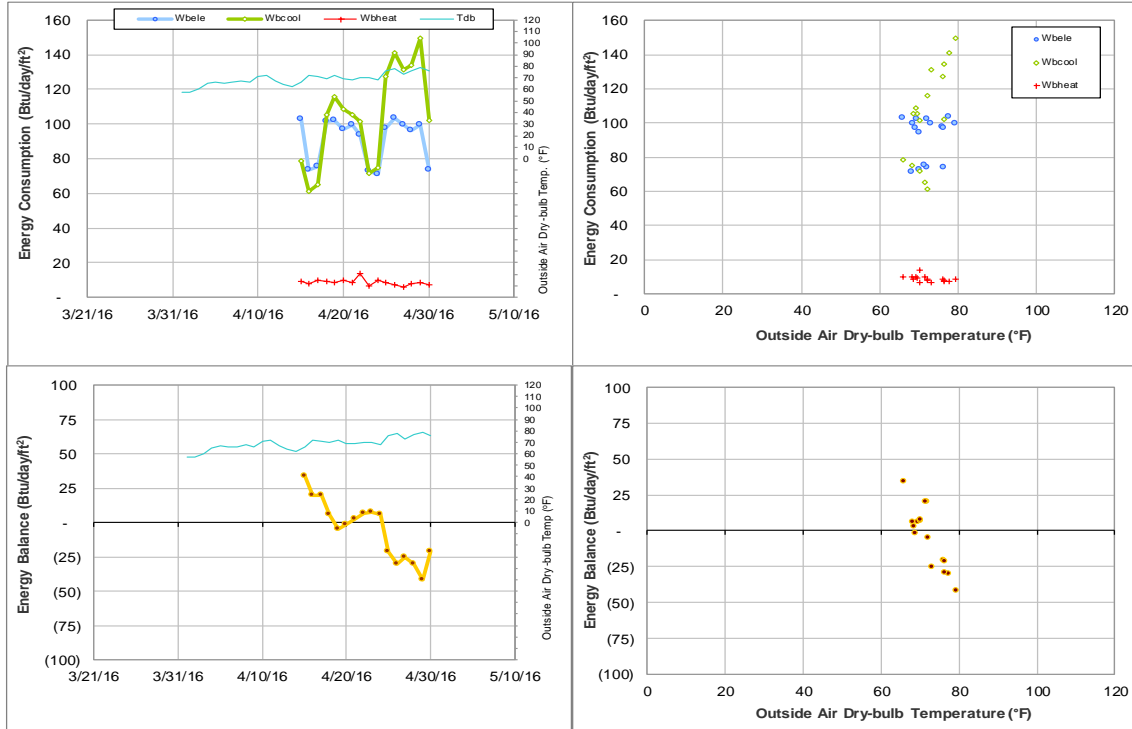


Figure IV-89 Thompson Hall TAMU BLDG # 483 Energy Balance Plot during April 2016

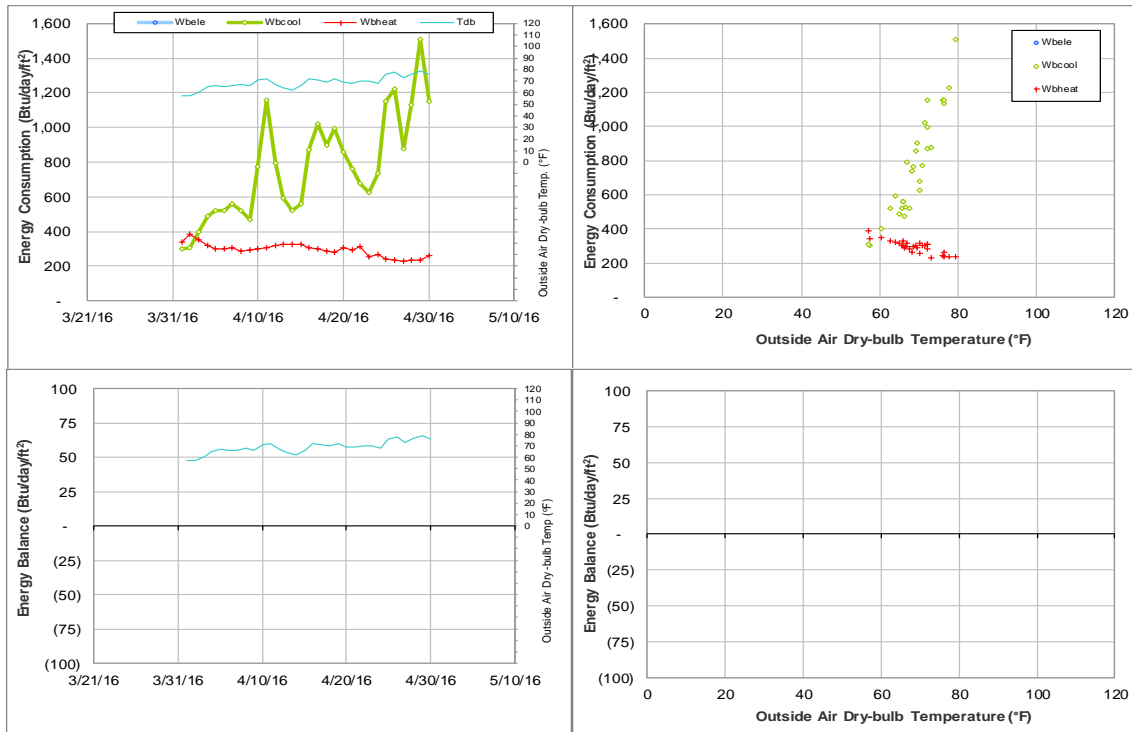


Figure IV-90 Chemistry Building TAMU BLDG # 484 Energy Balance Plot during April 2016

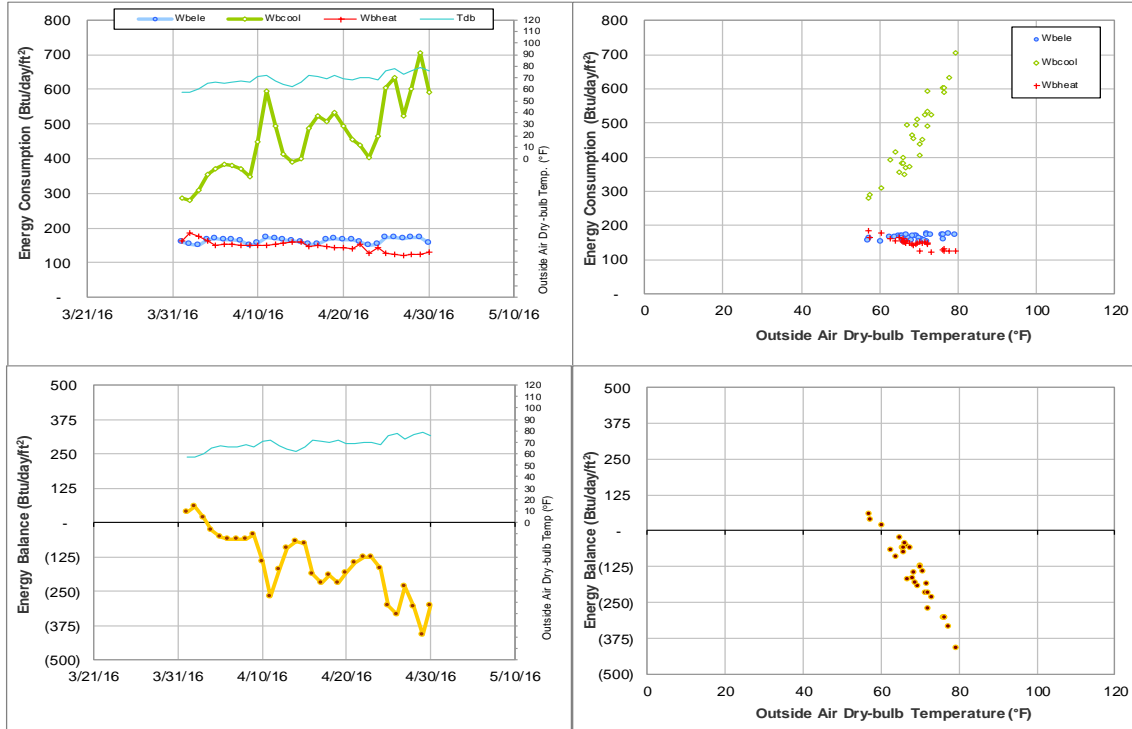


Figure IV-91 Halbouty Geosciences Building TAMU BLDG # 490 Energy Balance Plot during April 2016

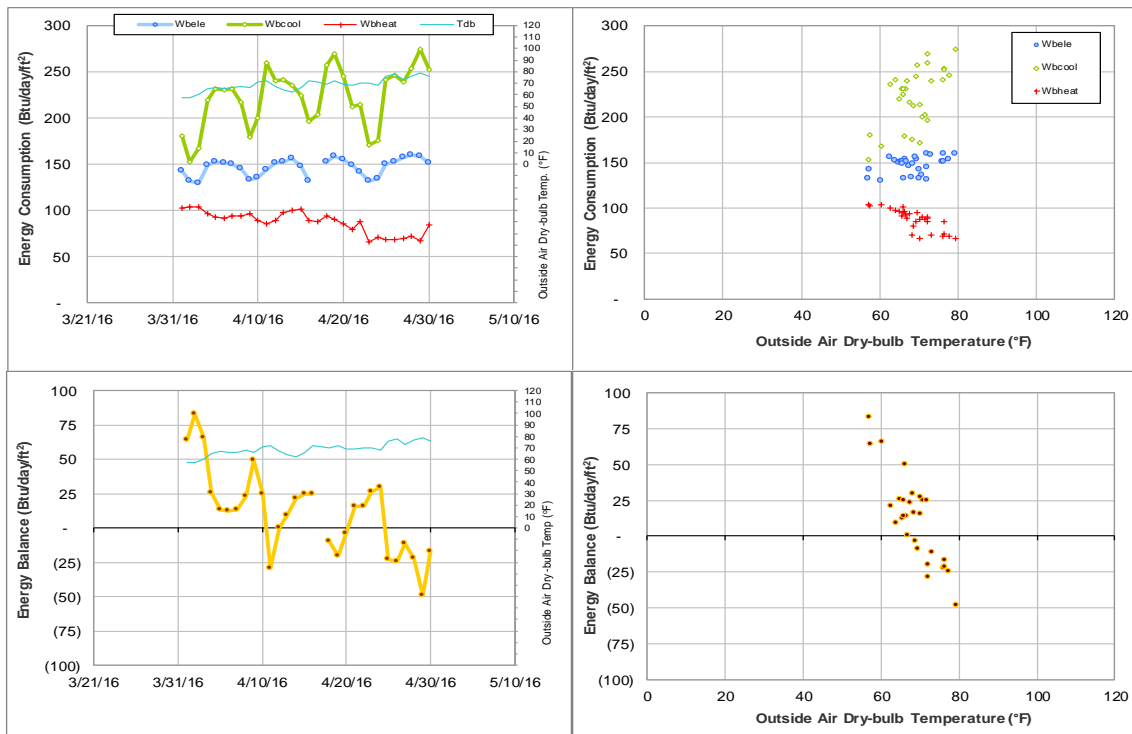


Figure IV-92 Civil Engineering Building TAMU BLDG # 492 Energy Balance Plot during April 2016

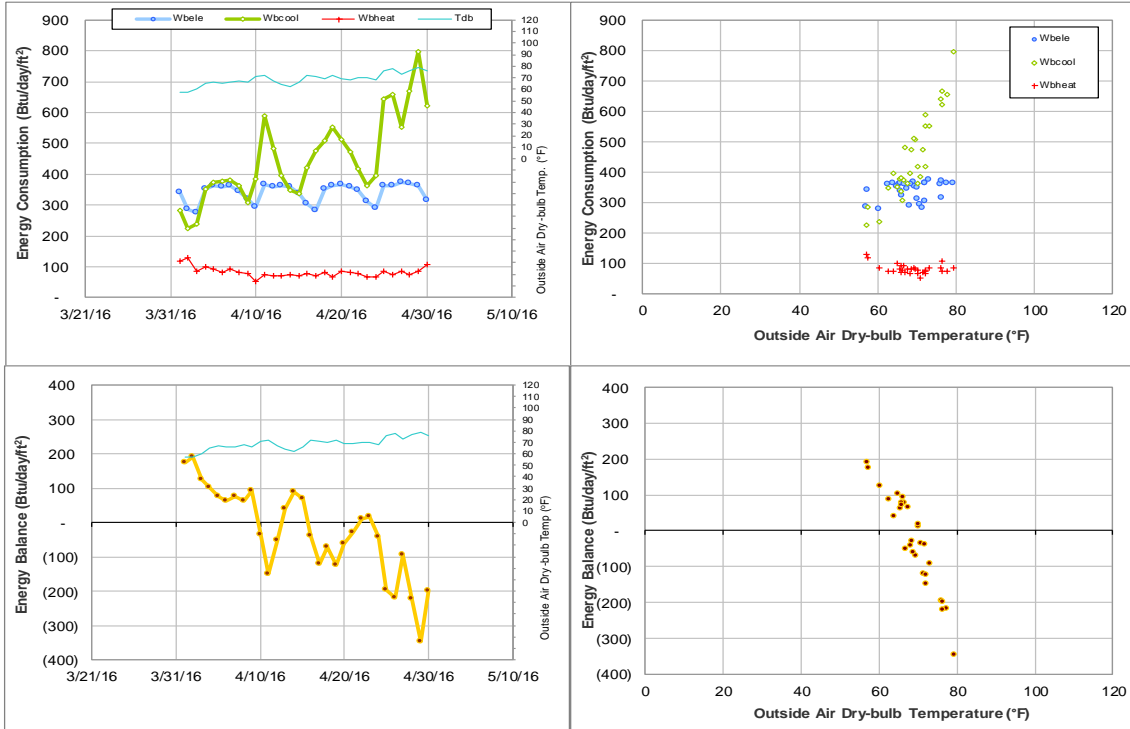


Figure IV-93 Sbsia Dining Hall TAMU BLDG # 495 Energy Balance Plot during April 2016

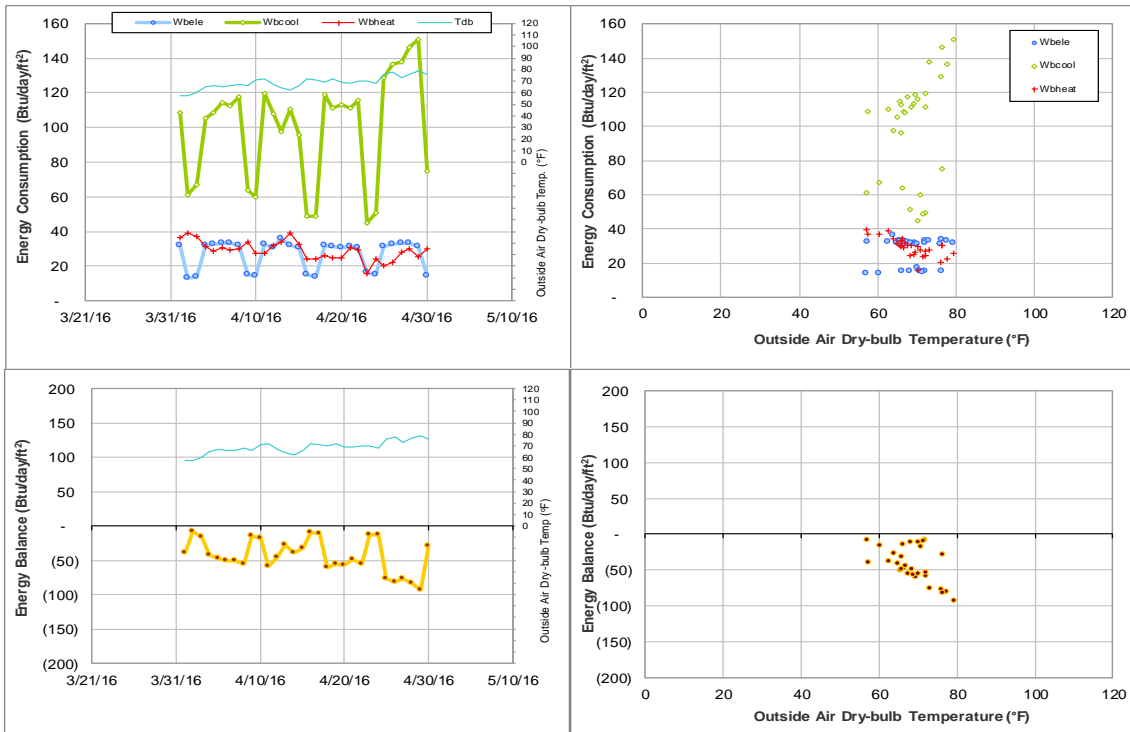


Figure IV-94 Utilities & Energy Services Central Office TAMU BLDG # 496 Energy Balance Plot during April 2016

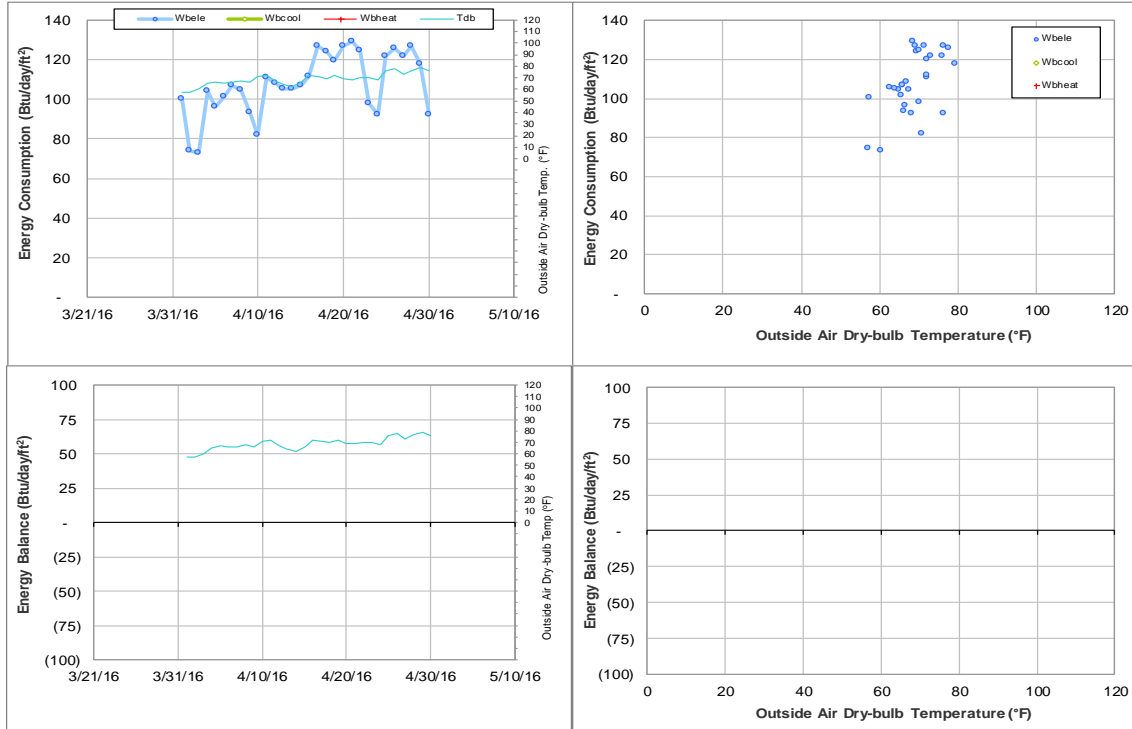


Figure IV-95 Engineering Innovation Center TAMU BLDG # 499 Energy Balance Plot during April 2016

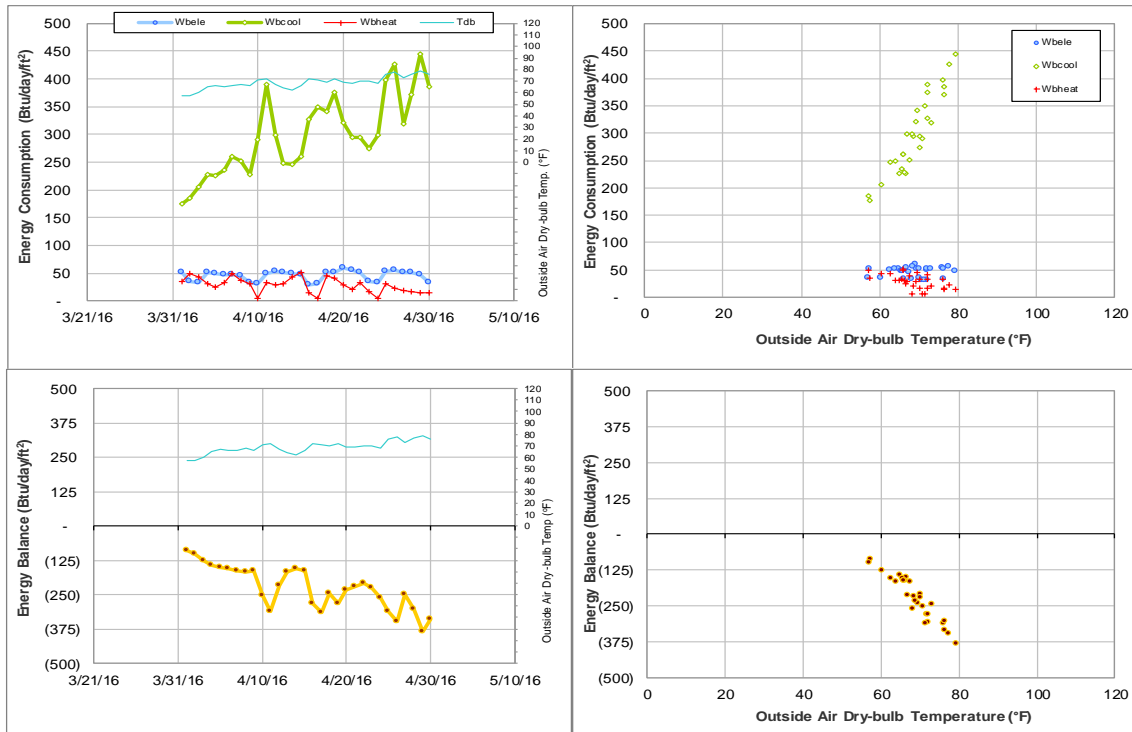


Figure IV-96 Nagle Hall TAMU BLDG # 506 Energy Balance Plot during April 2016

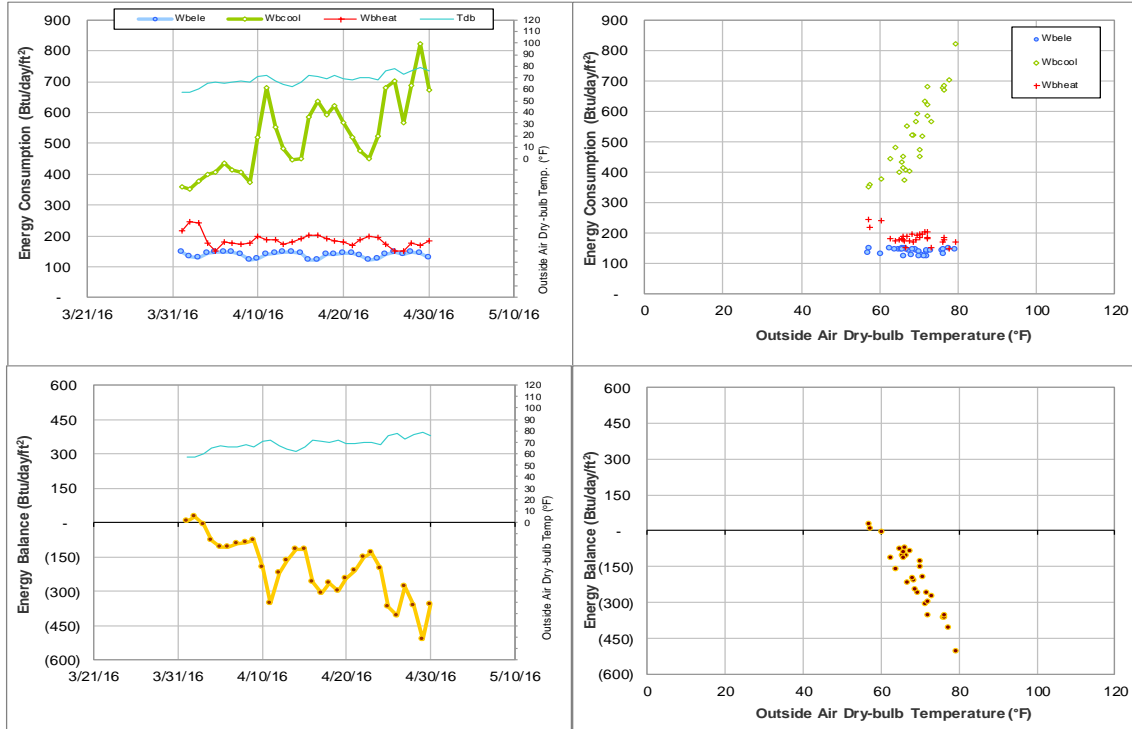


Figure IV-97 Veterinary Medical Science Building TAMU BLDG # 507 Energy Balance Plot during April 2016

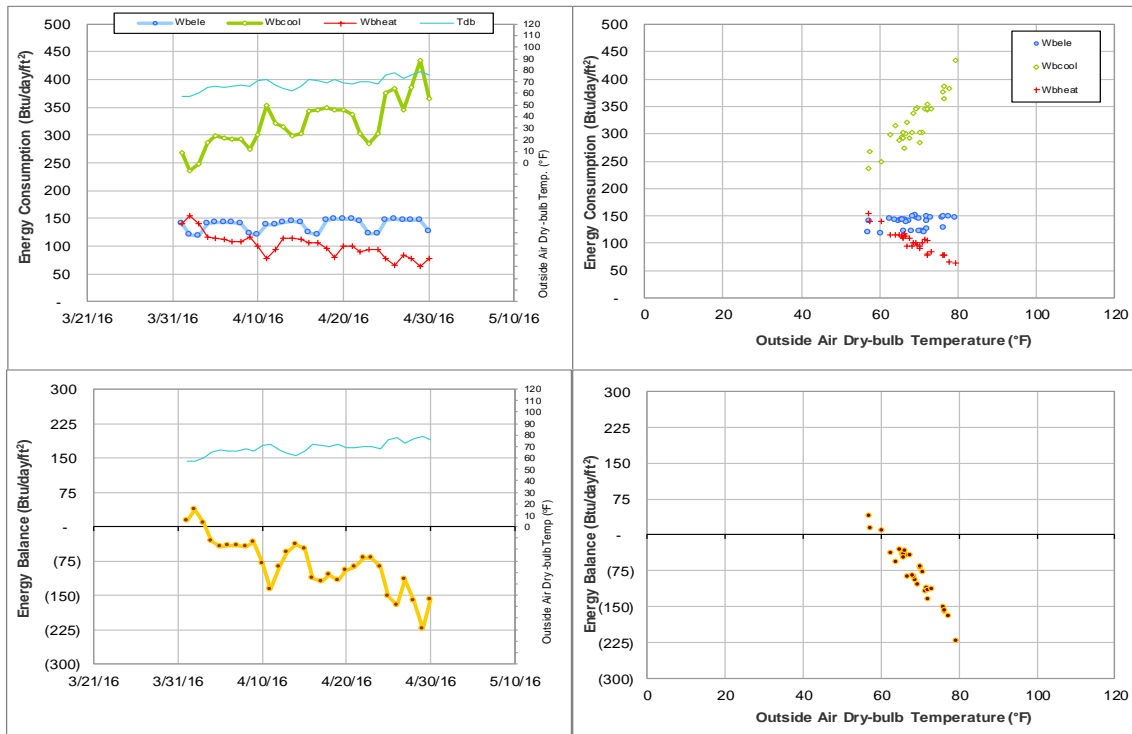


Figure IV-98 Veterinary Teaching Hospital and Med Adm TAMU BLDG # 508-1026 Energy Balance Plot during April 2016

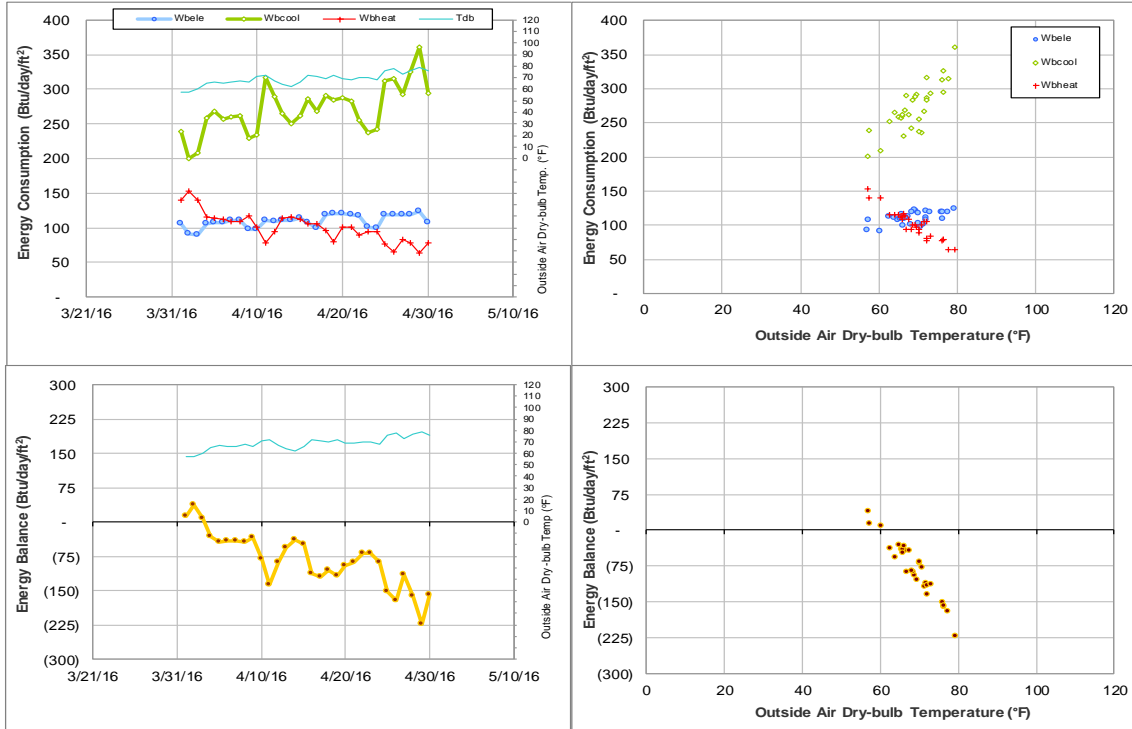


Figure IV-99 Veterinary Teaching Hospital TAMU BLDG # 508 Energy Balance Plot during April 2016

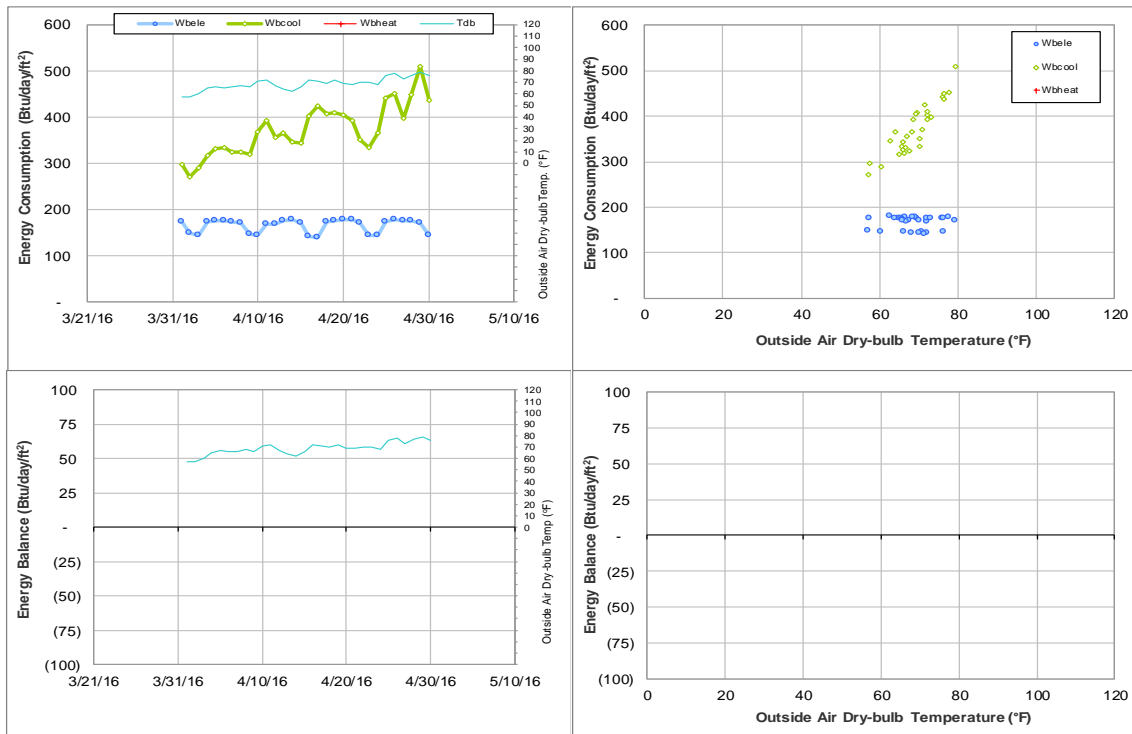


Figure IV-100 Veterinary Medicine Administration TAMU BLDG # 1026 Energy Balance Plot during April 2016

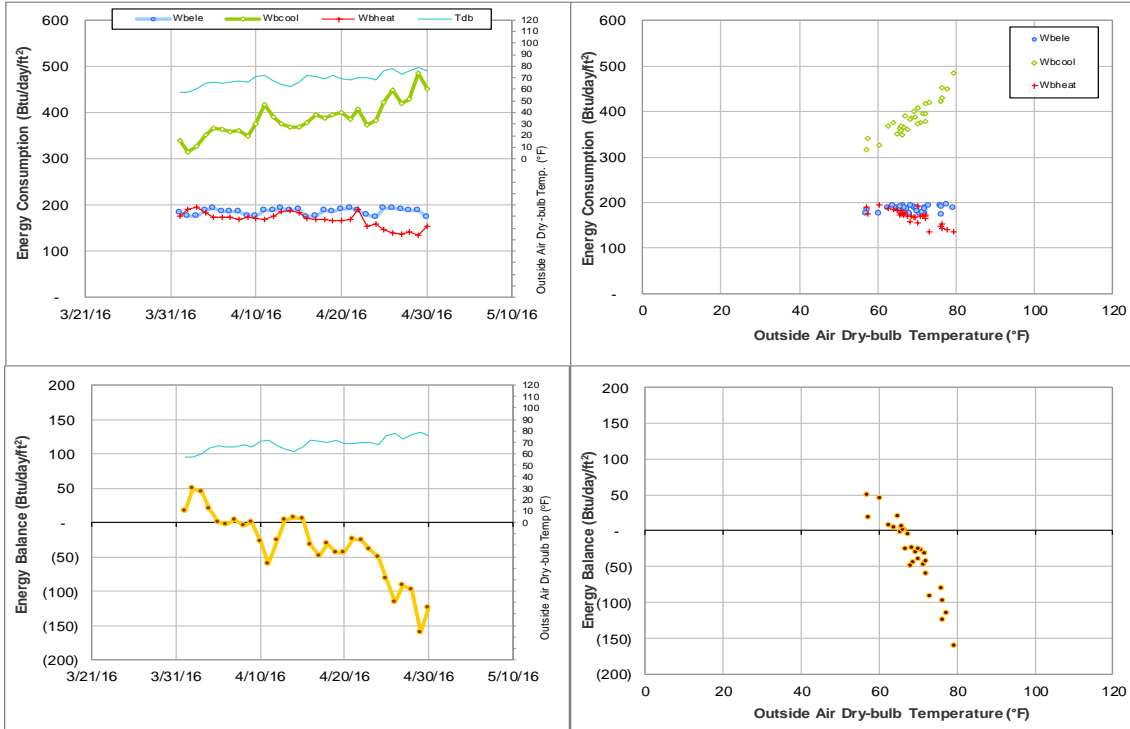


Figure IV-101 Heep Laboratory Building TAMU BLDG # 511 Energy Balance Plot during April 2016

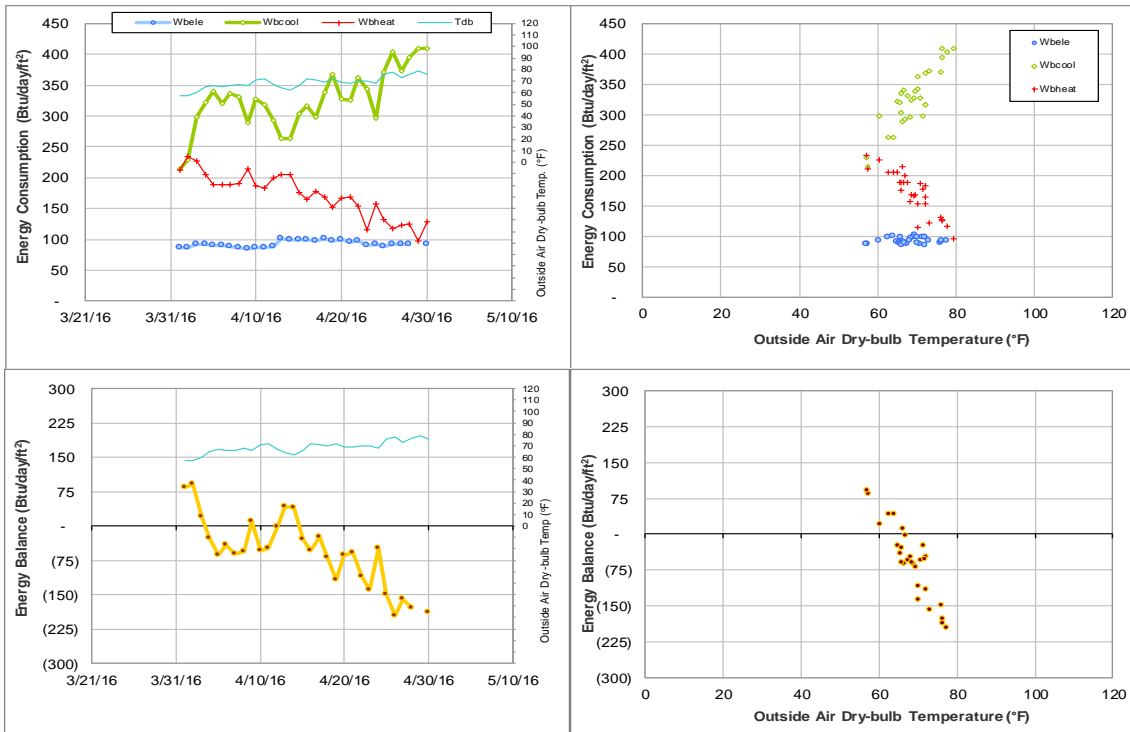


Figure IV-102 All Faiths Chapel TAMU BLDG # 512 Energy Balance Plot during April 2016

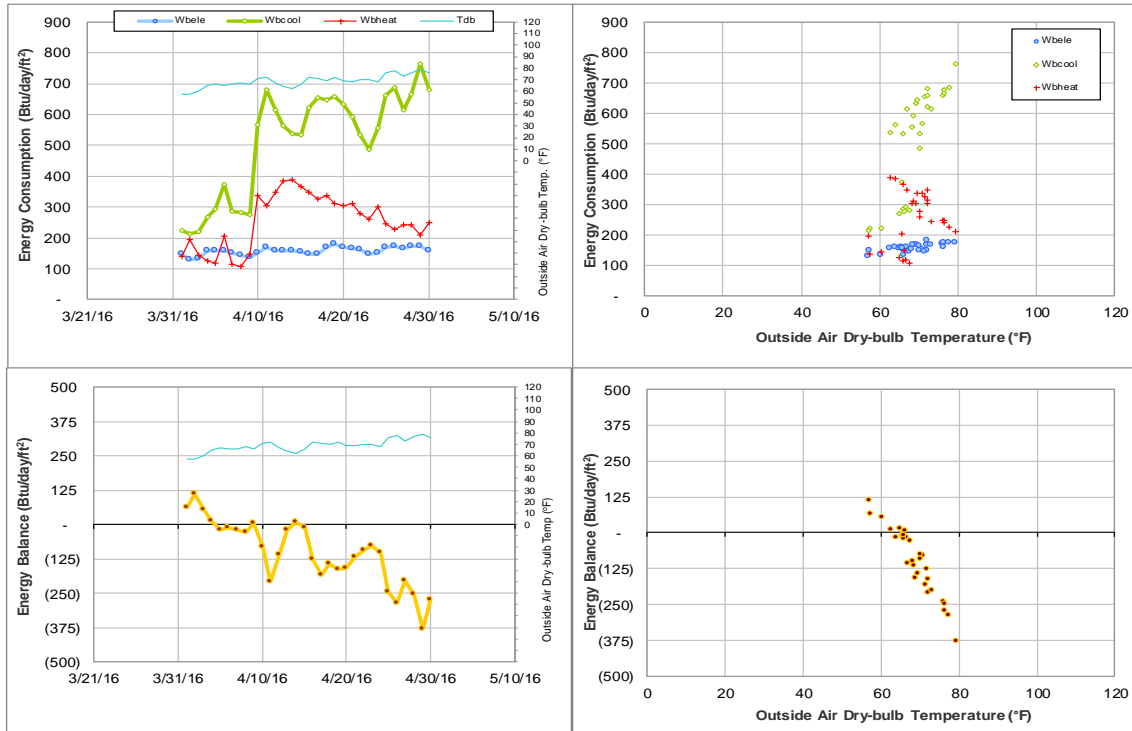


Figure IV-103 Doherty Building TAMU BLDG # 513 Energy Balance Plot during April 2016

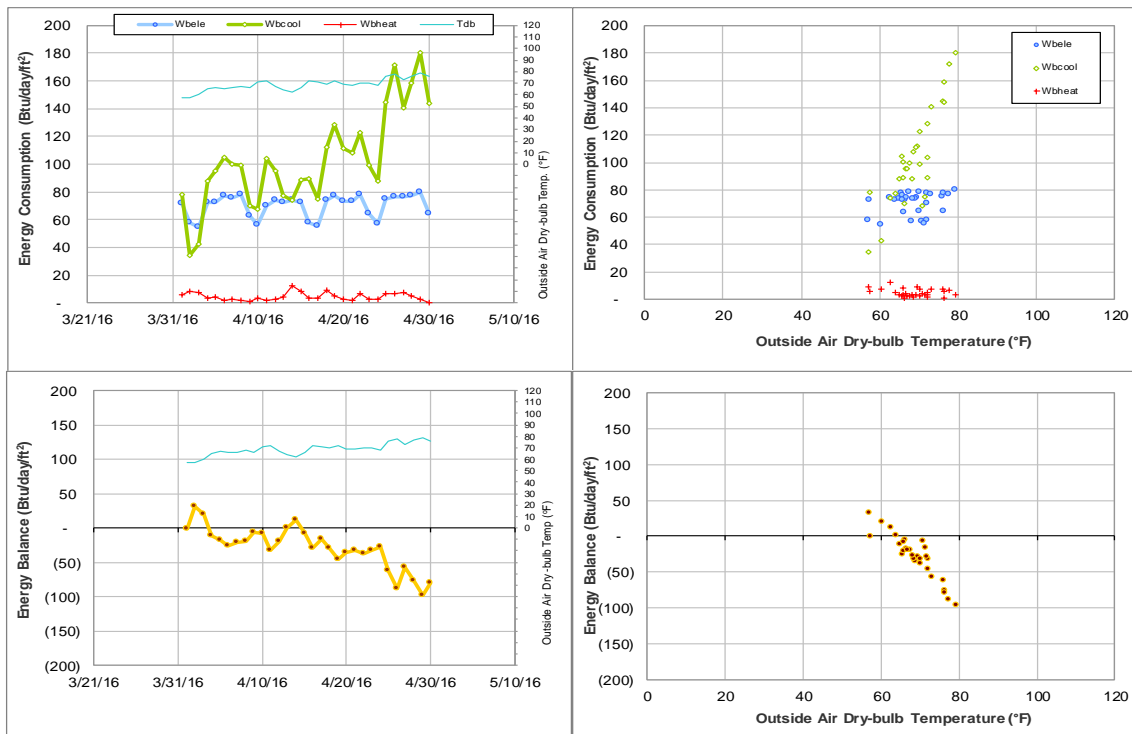


Figure IV-104 Munnerlyn Astronomy & Space Sciences Engineering TAMU BLDG # 514 Energy Balance Plot during April 2016

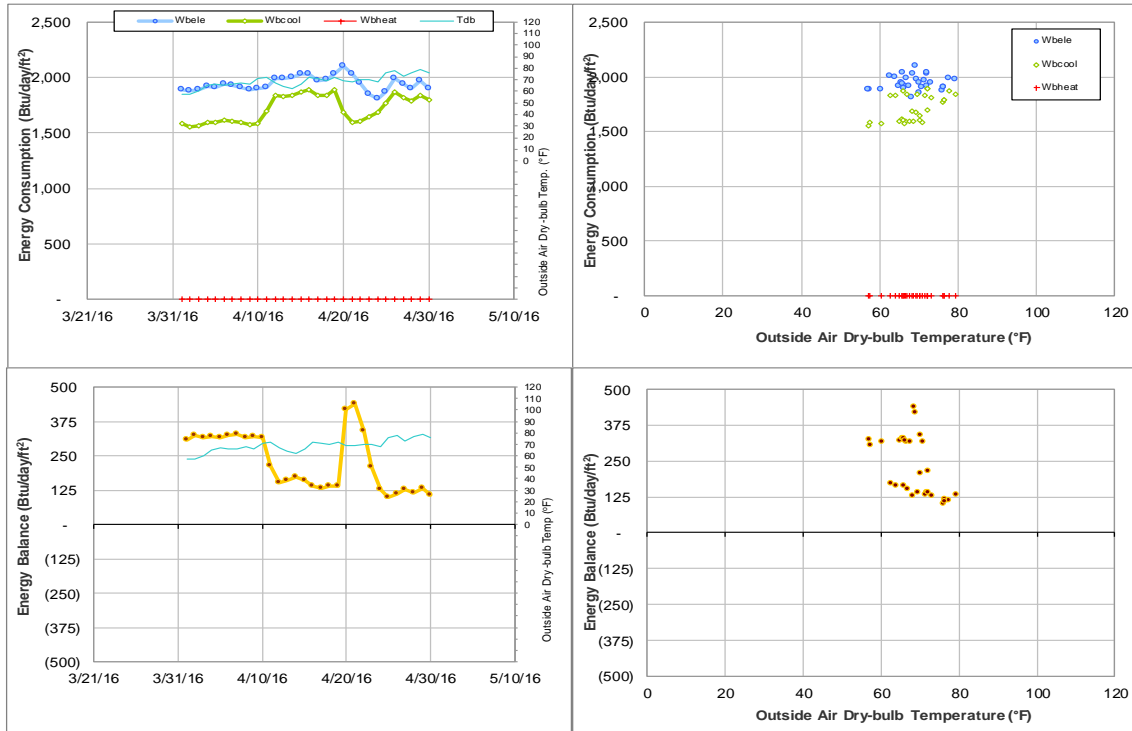


Figure IV-105 Computing Services Center TAMU BLDG # 516 Energy Balance Plot during April 2016

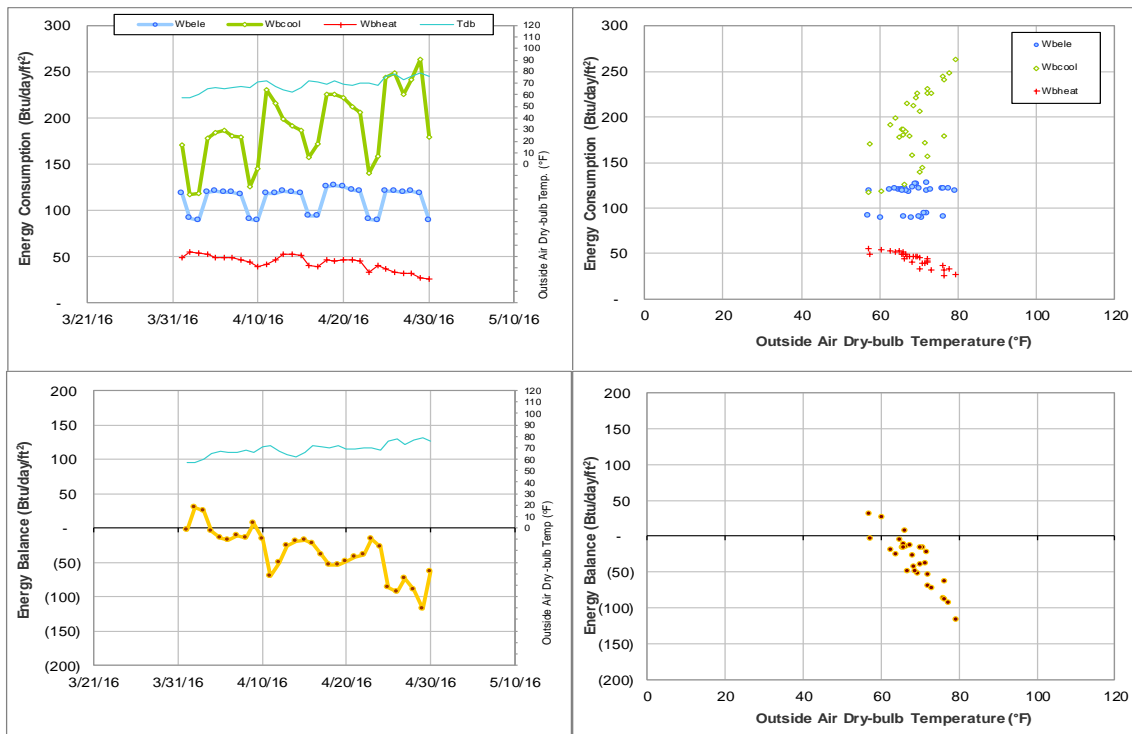


Figure IV-106 Beutel Health Center TAMU BLDG # 520 Energy Balance Plot during April 2016

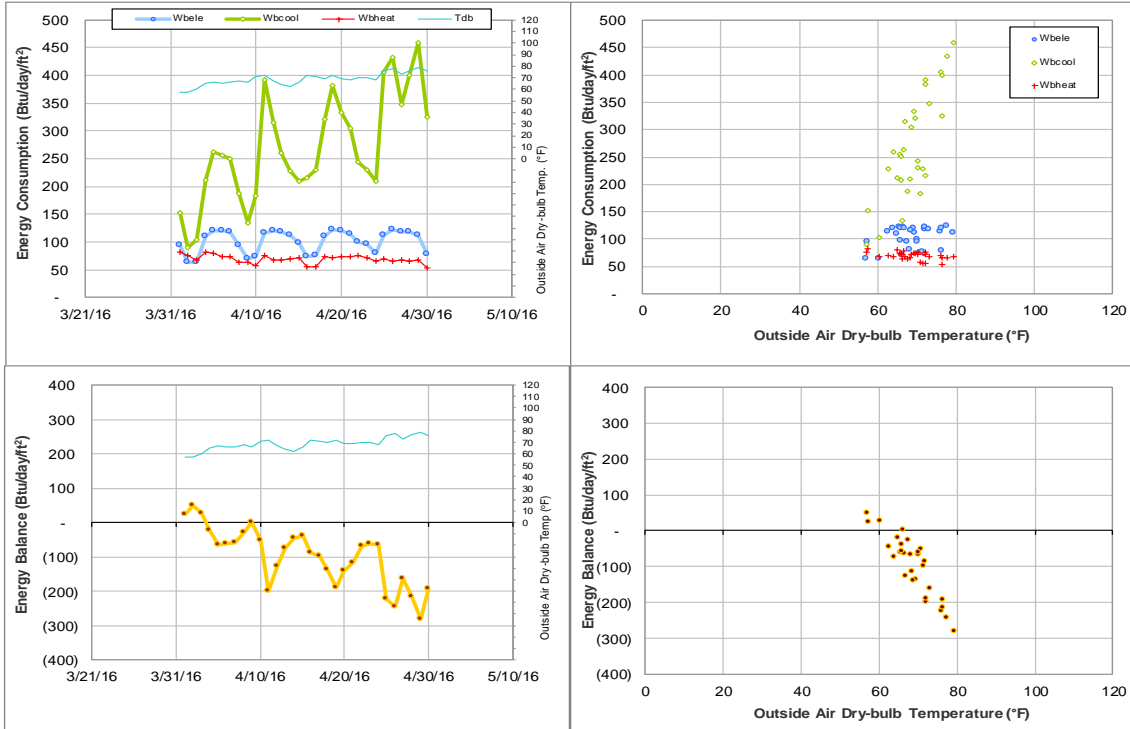


Figure IV-107 Heldenfels Hall TAMU BLDG # 521 Energy Balance Plot during April 2016

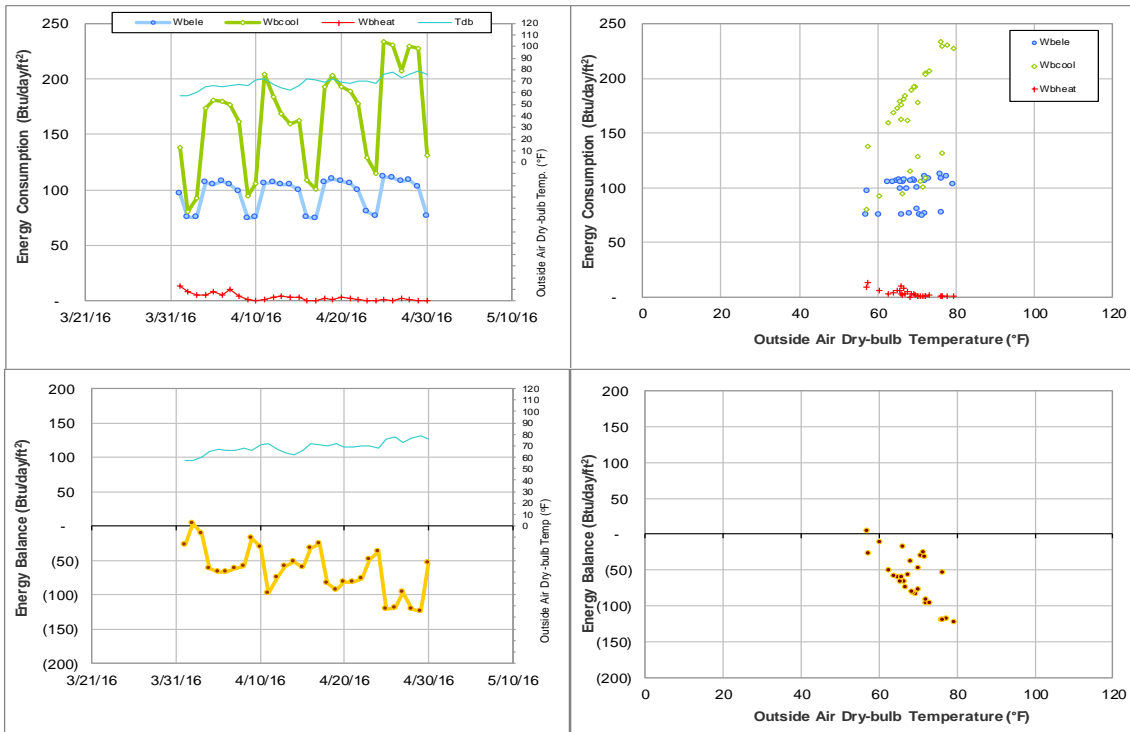


Figure IV-108 Blocker building TAMU BLDG # 524 Energy Balance Plot during April 2016

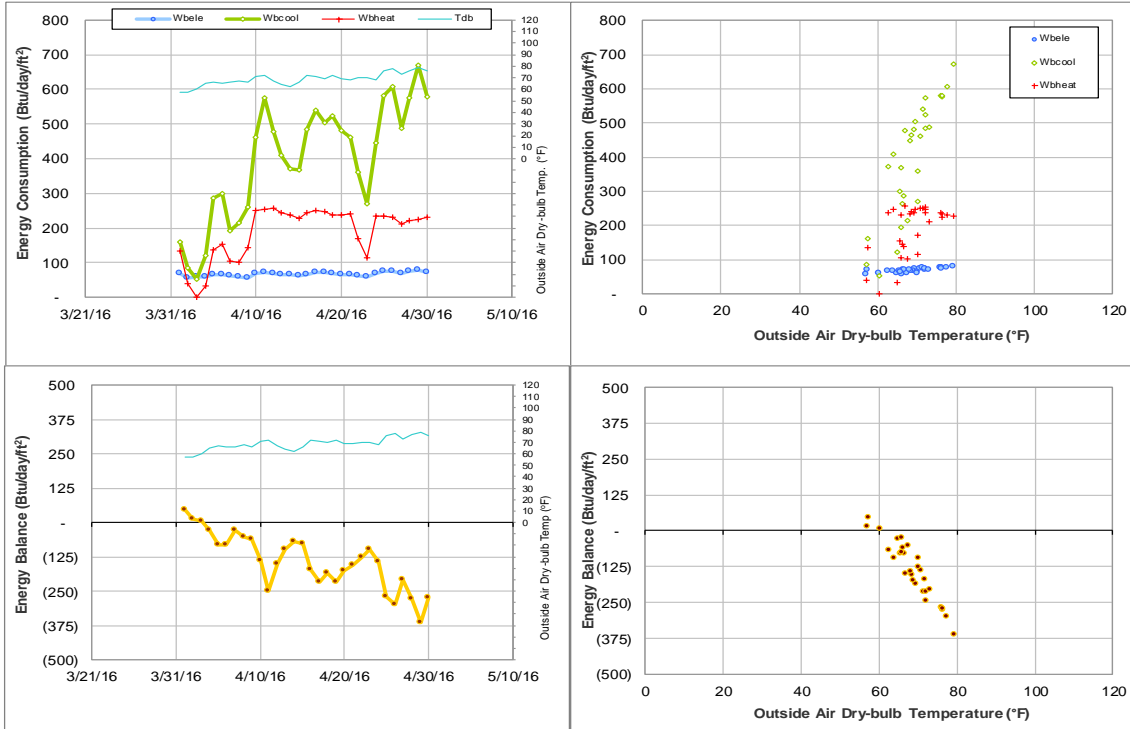


Figure IV-109 Clements Residence Hall TAMU BLDG # 548 Energy Balance Plot during April 2016

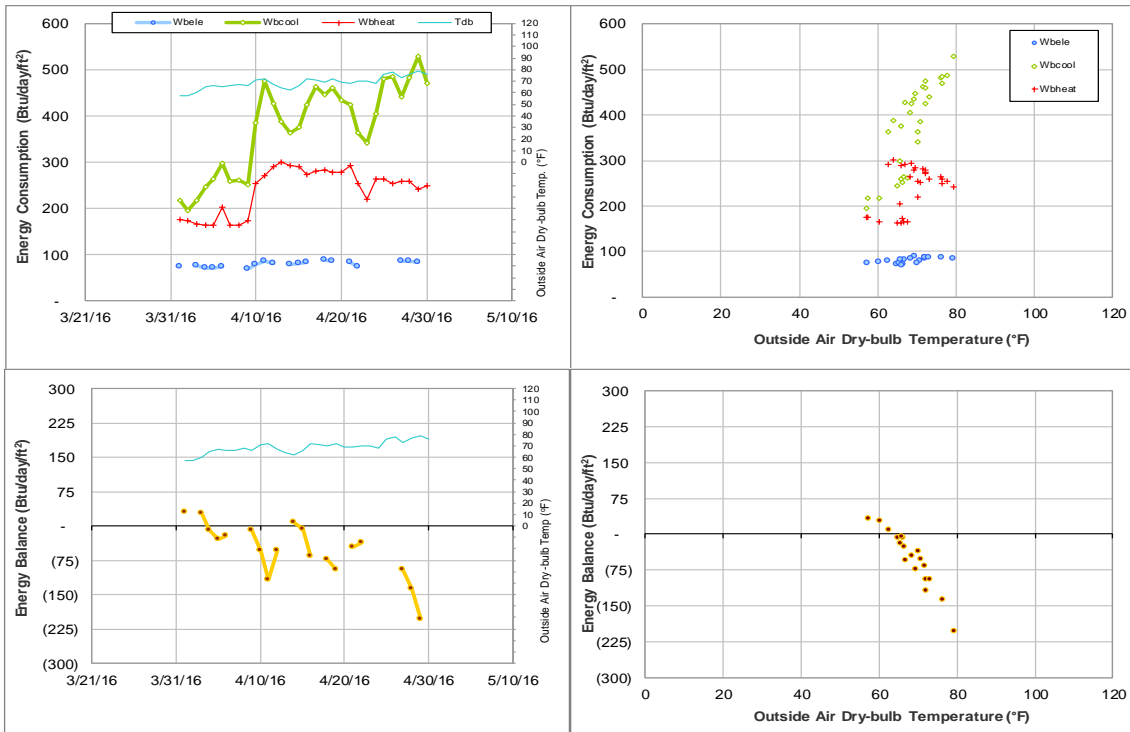


Figure IV-110 Haas Residence Hall TAMU BLDG # 549 Energy Balance Plot during April 2016

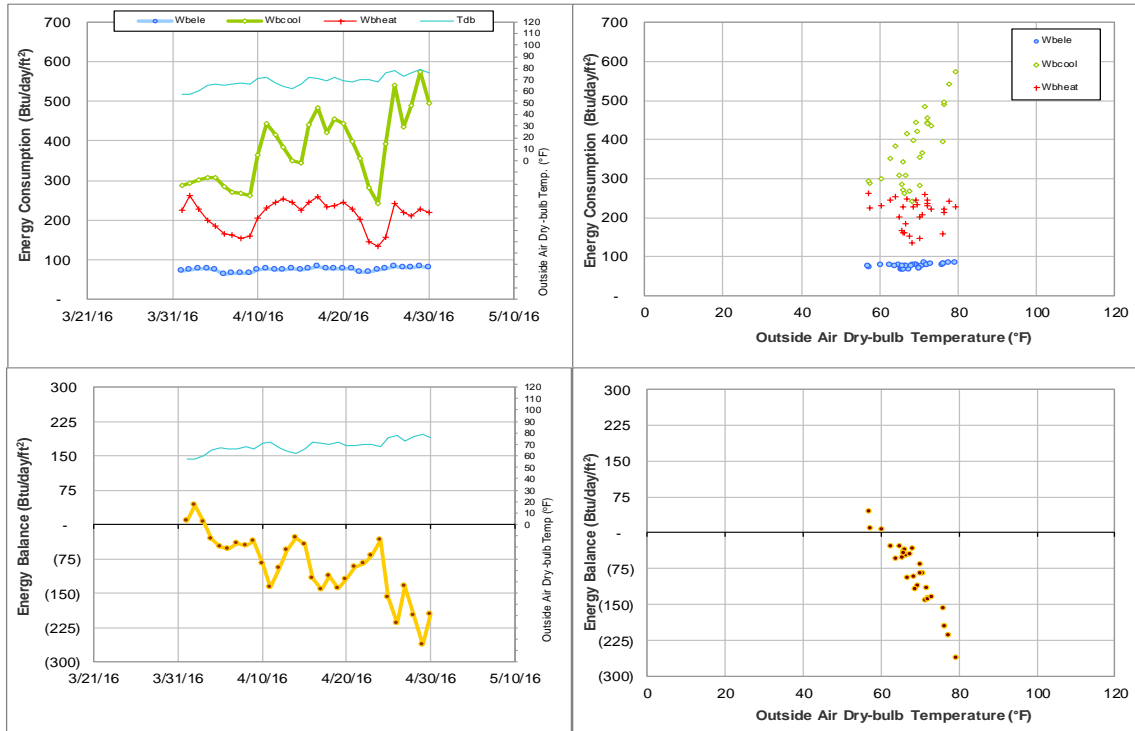


Figure IV-111 McFadden Residence Hall TAMU BLDG # 550 Energy Balance Plot during April 2016

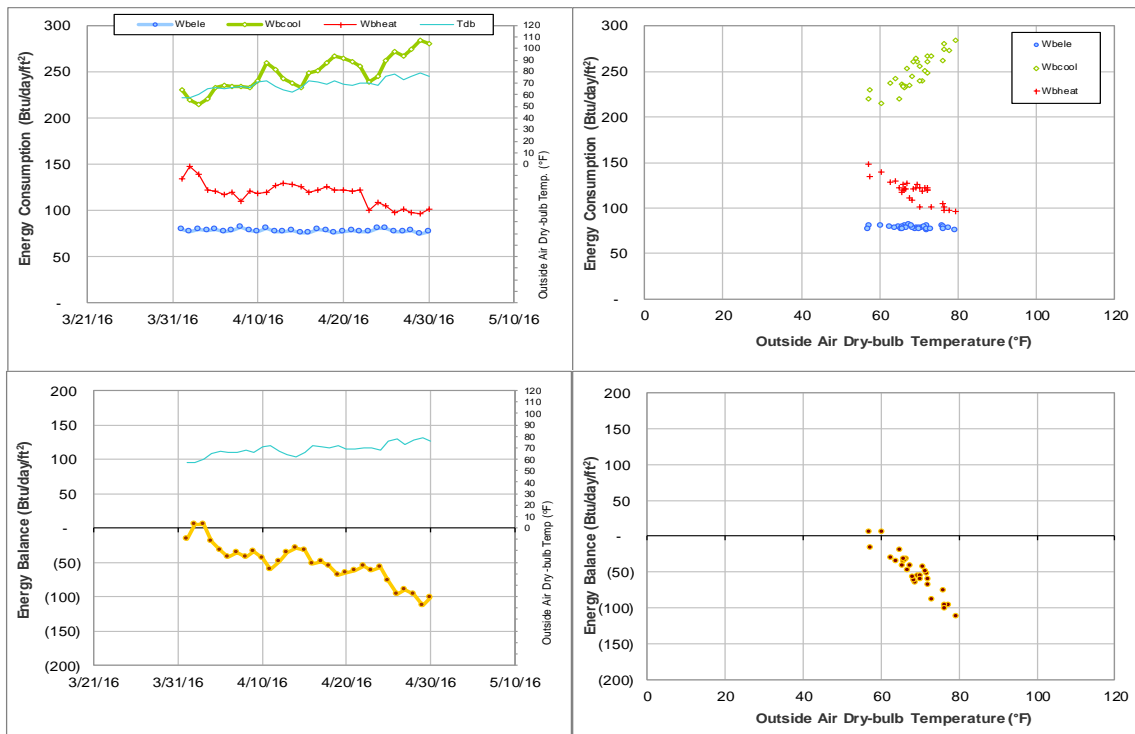


Figure IV-112 Neeley Residence Hall TAMU BLDG # 652 Energy Balance Plot during April 2016

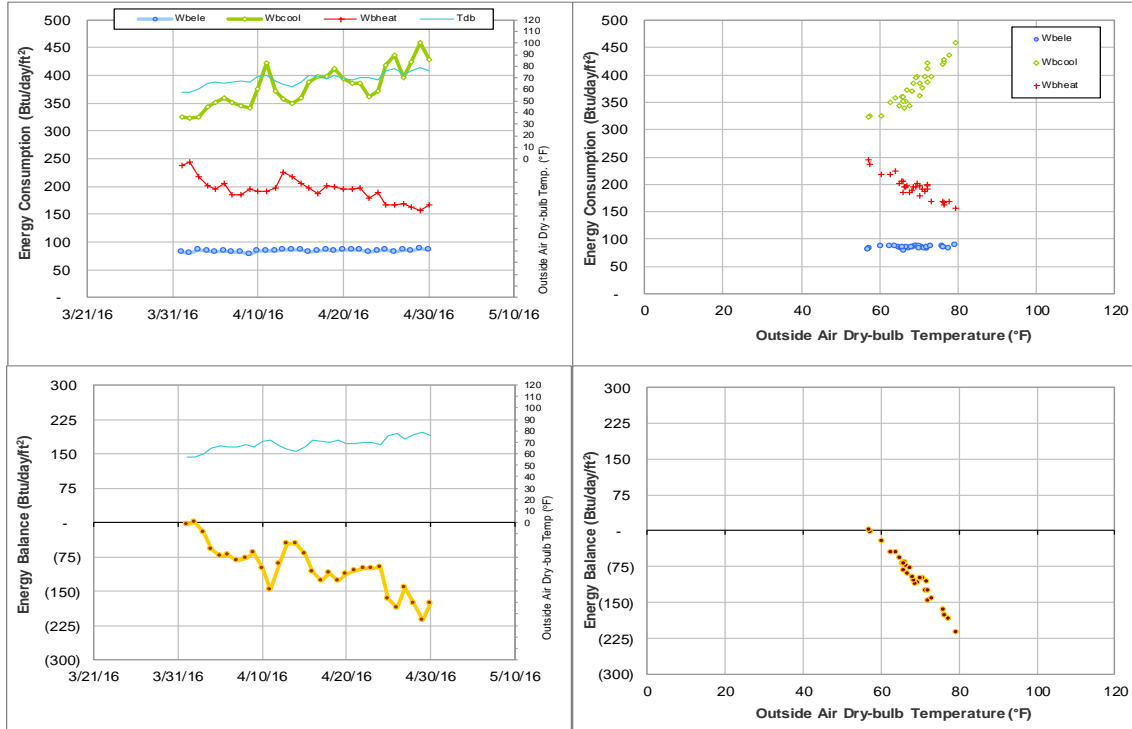


Figure IV-113 Hobby Residence Hall TAMU BLDG # 653 Energy Balance Plot during April 2016

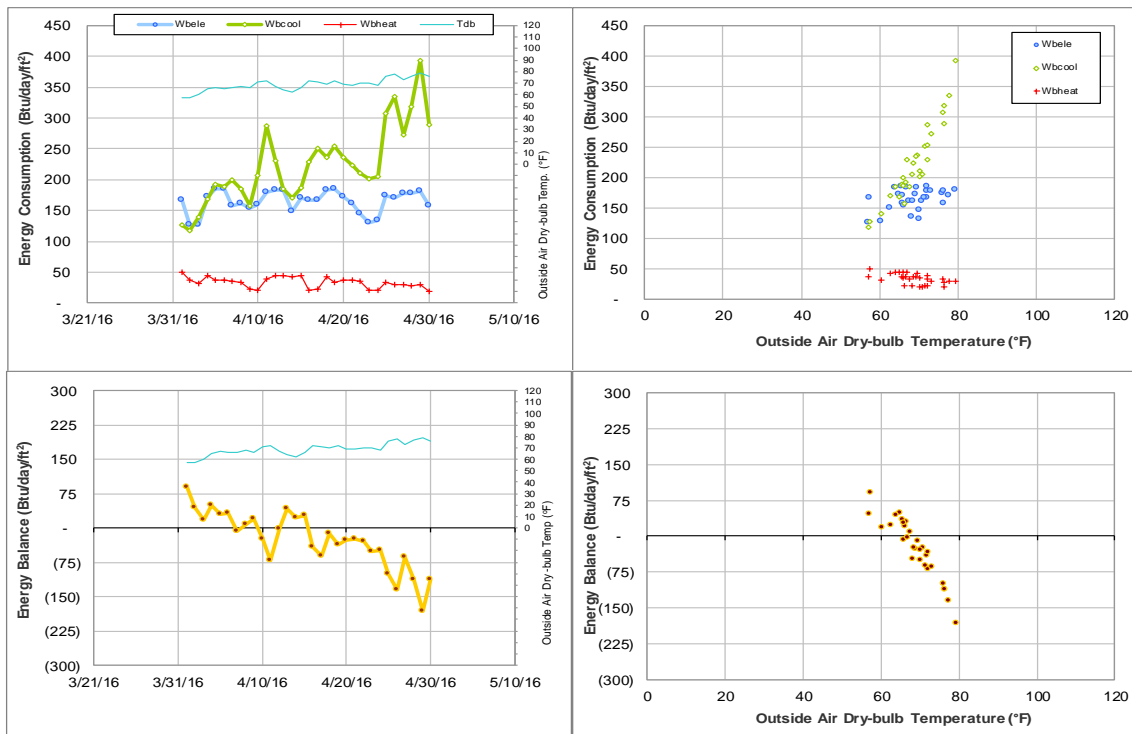


Figure IV-114 Wisenbaker Engineering Research Center TAMU BLDG # 682 Energy Balance Plot during April 2016

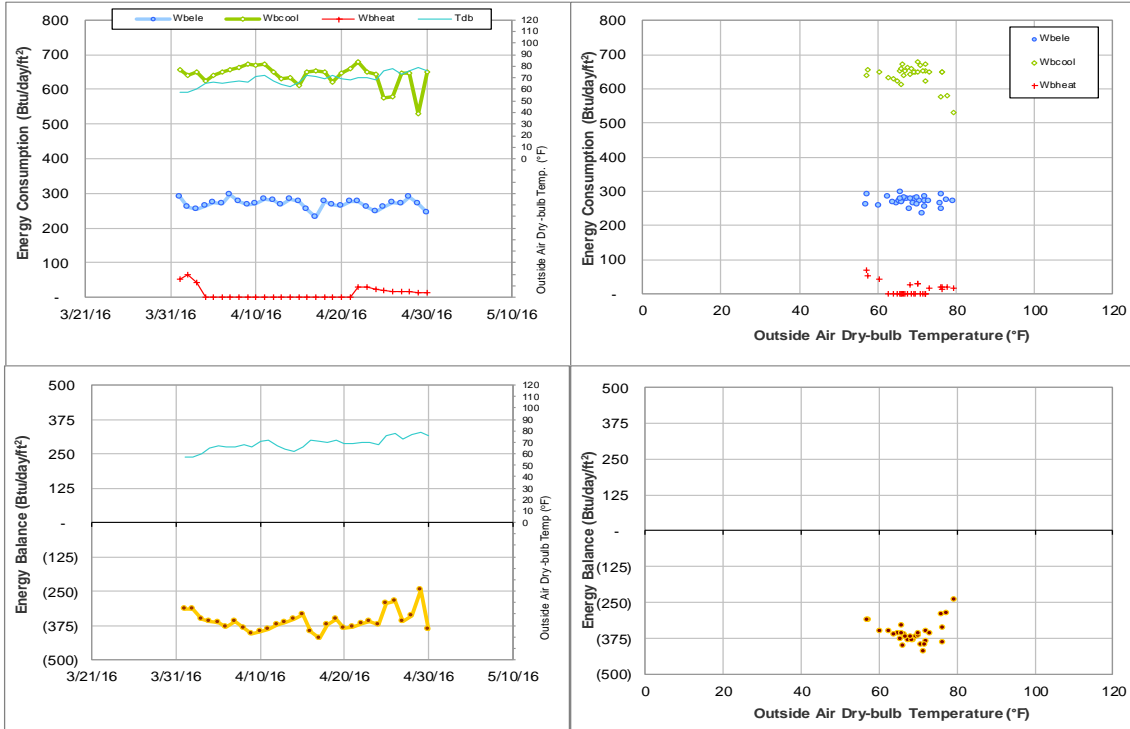


Figure IV-115 McNew Laboratory TAMU BLDG # 740 Energy Balance Plot during April 2016

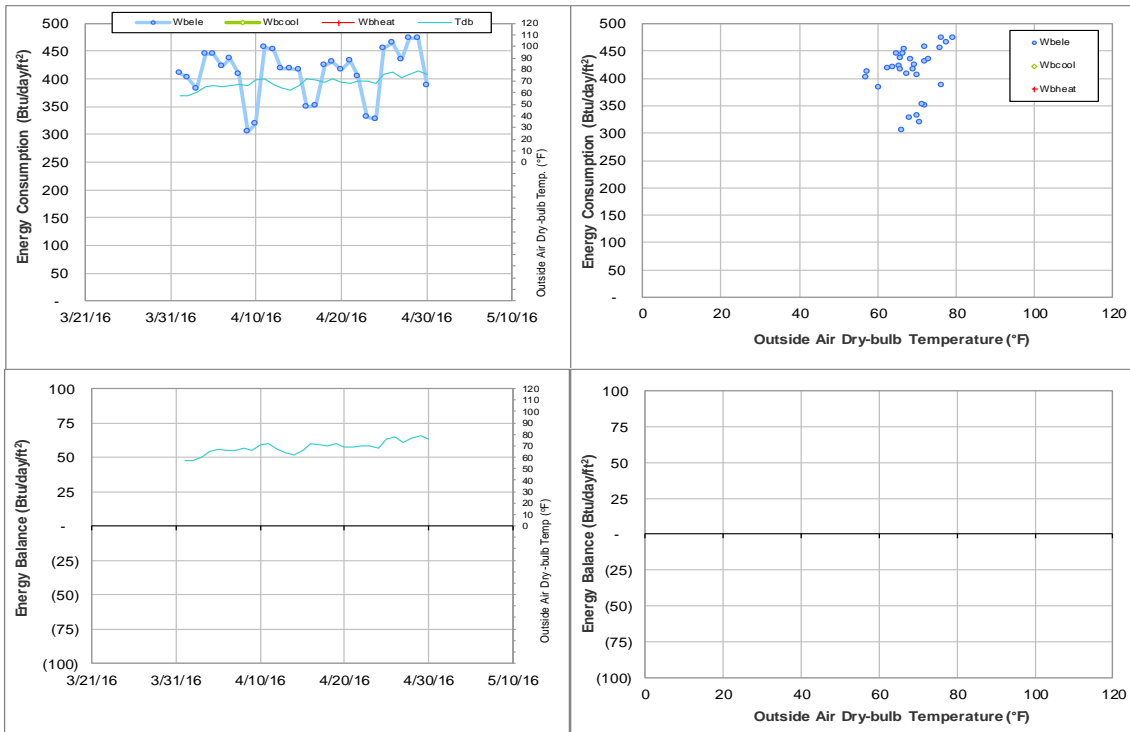


Figure IV-116 Soil Testing Labs TAMU BLDG # 806 Energy Balance Plot during April 2016

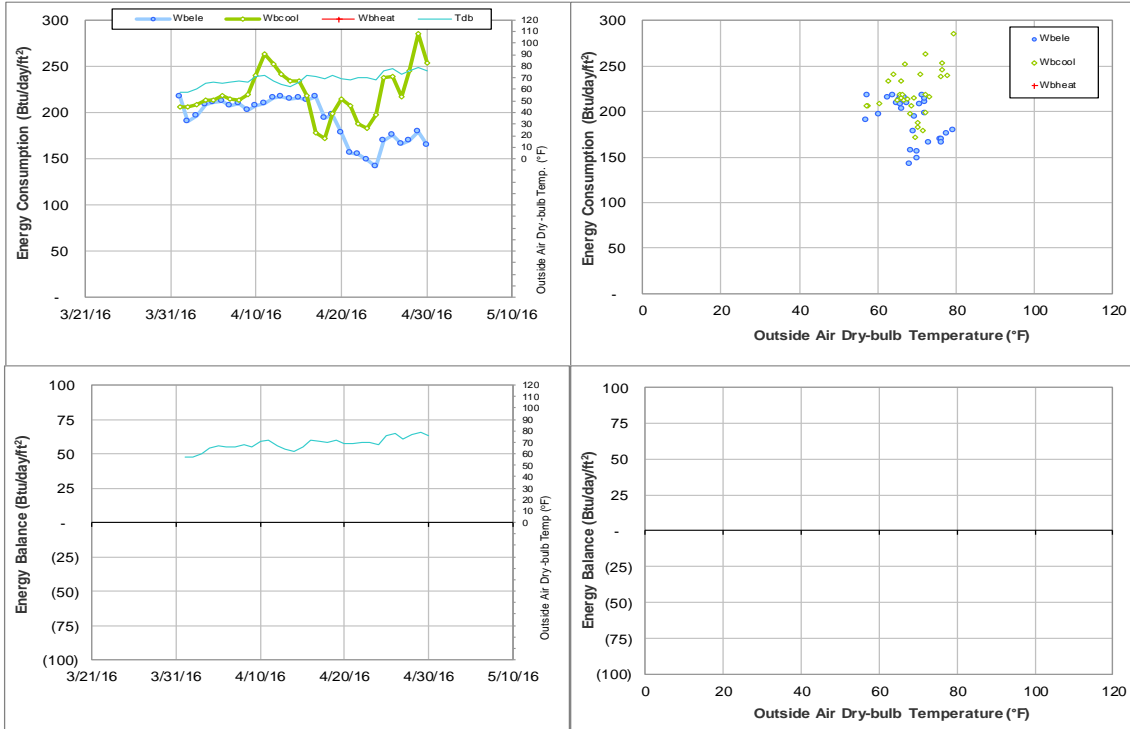


Figure IV-117 Entomology Research Lab TAMU BLDG # 815 Energy Balance Plot during April 2016

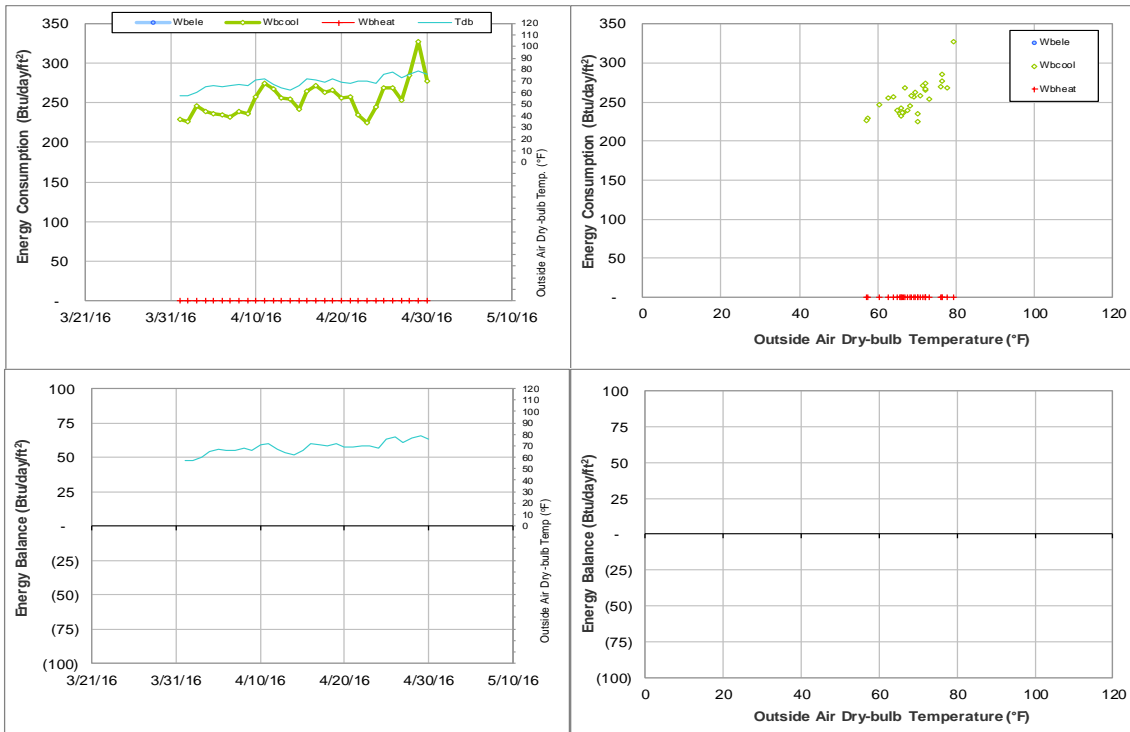


Figure IV-118 TVMC-Small Animal Building TAMU BLDG # 880 Energy Balance Plot during April 2016

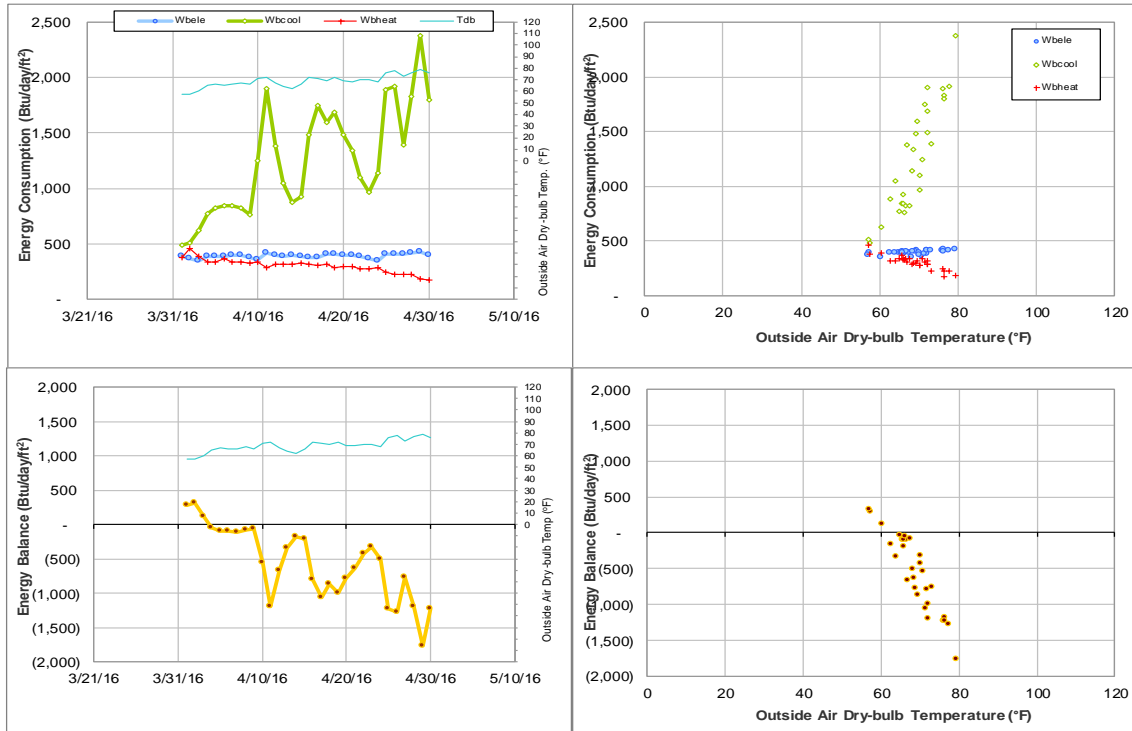


Figure IV-119 Laboratory Animal Care Building TAMU BLDG # 972 Energy Balance Plot during April 2016

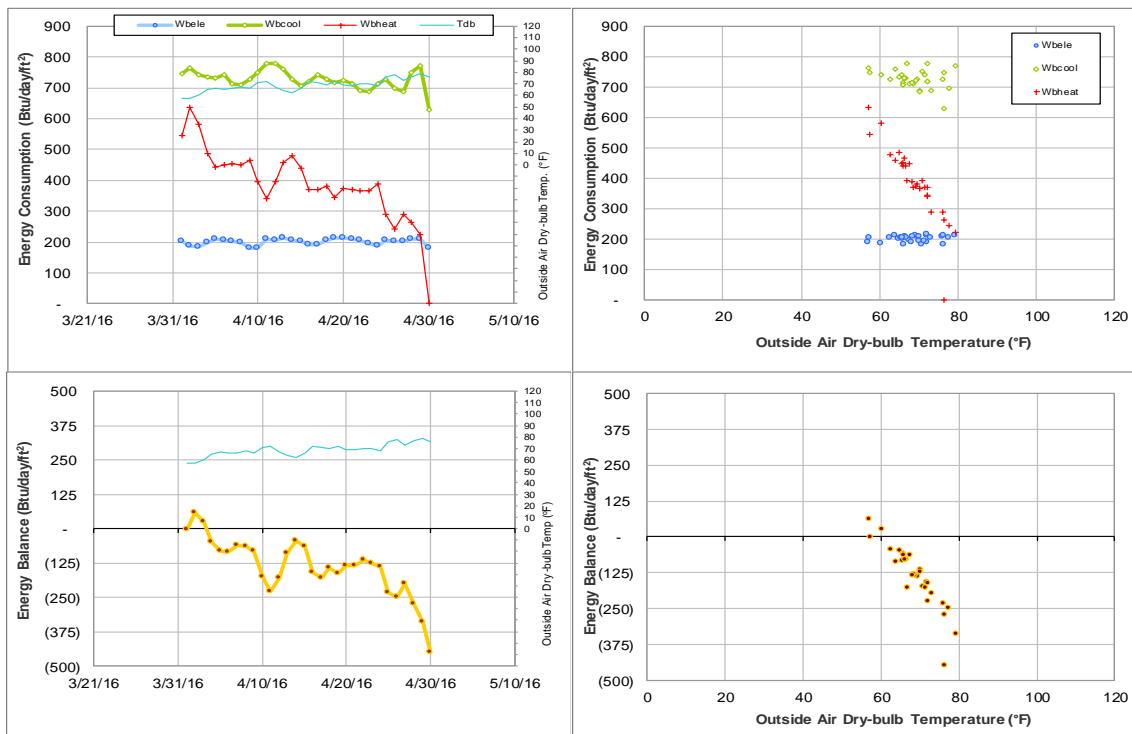


Figure IV-120 Vivarium III TAMU BLDG # 1020 Energy Balance Plot during April 2016

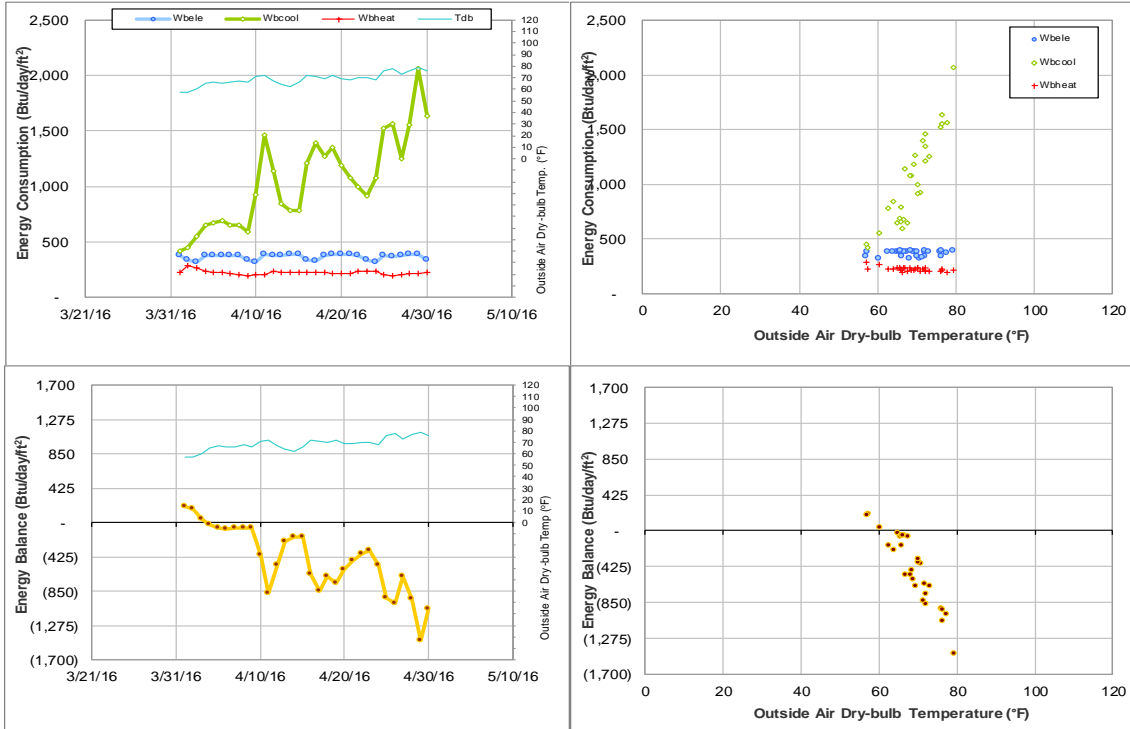


Figure IV-121 Texas Vet Med Diagnostic Lab TAMU BLDG # 1041 Energy Balance Plot during April 2016

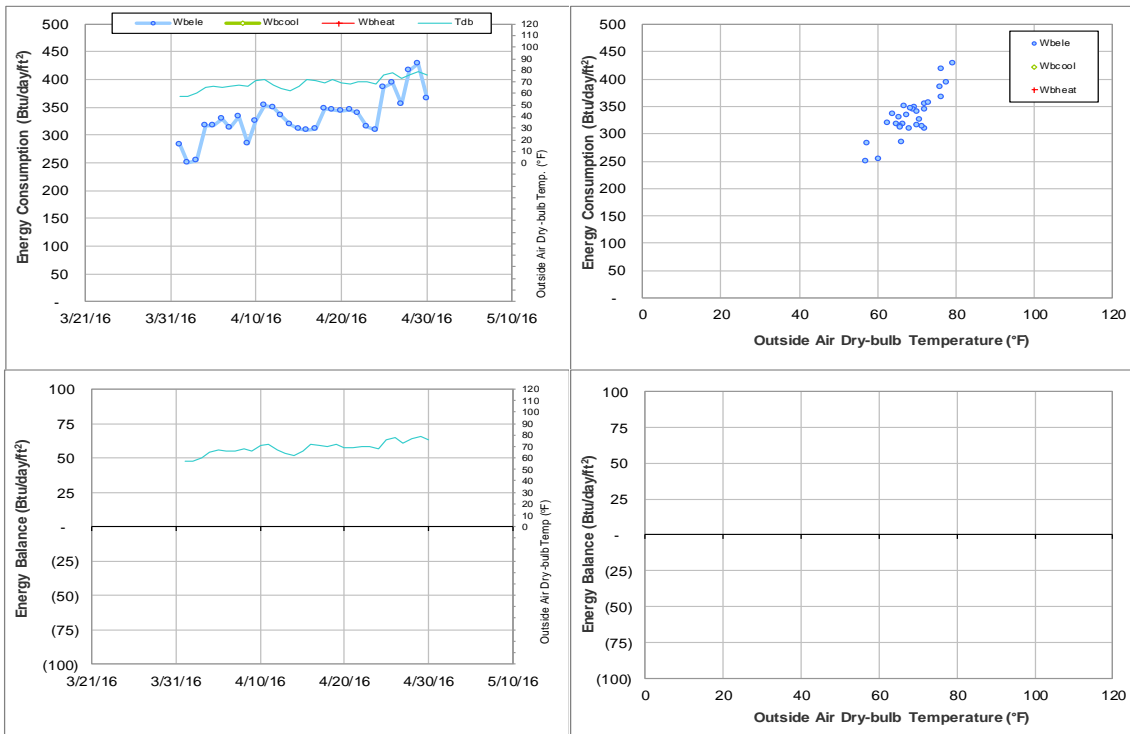


Figure IV-122 Forest Science Laboratory Building TAMU BLDG # 1042 Energy Balance Plot during April 2016

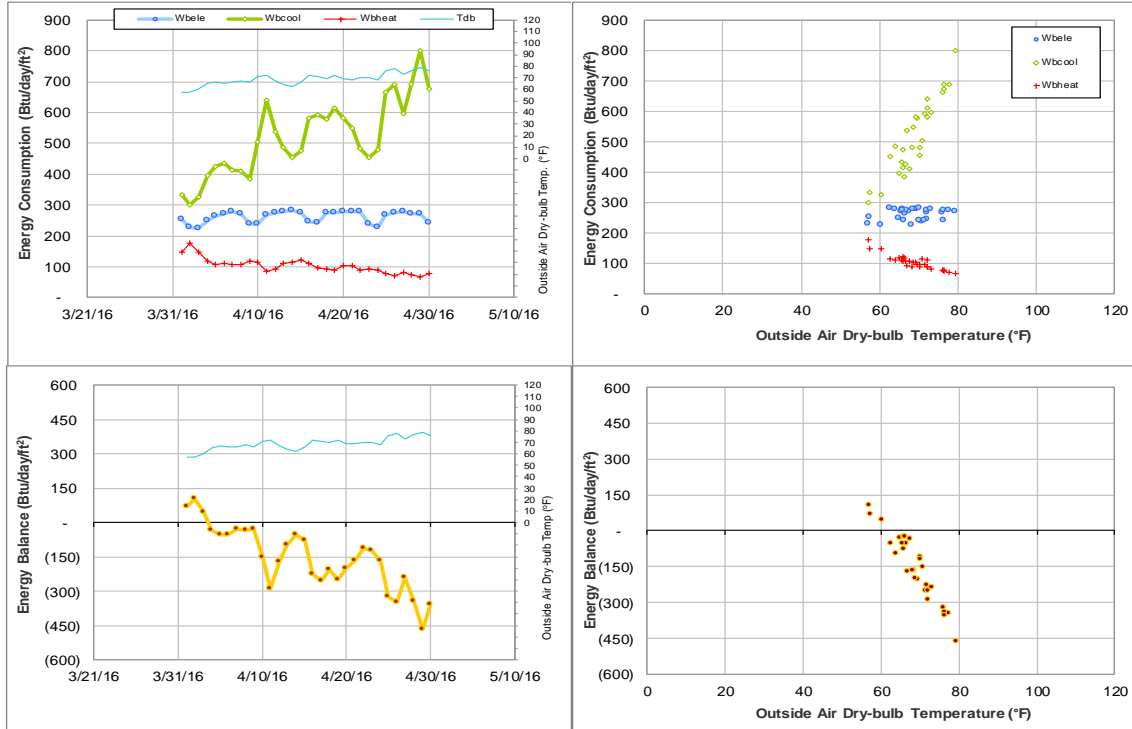


Figure IV-123 Veterinary Small Animal Hospital TAMU BLDG # 1085 Energy Balance Plot during April 2016

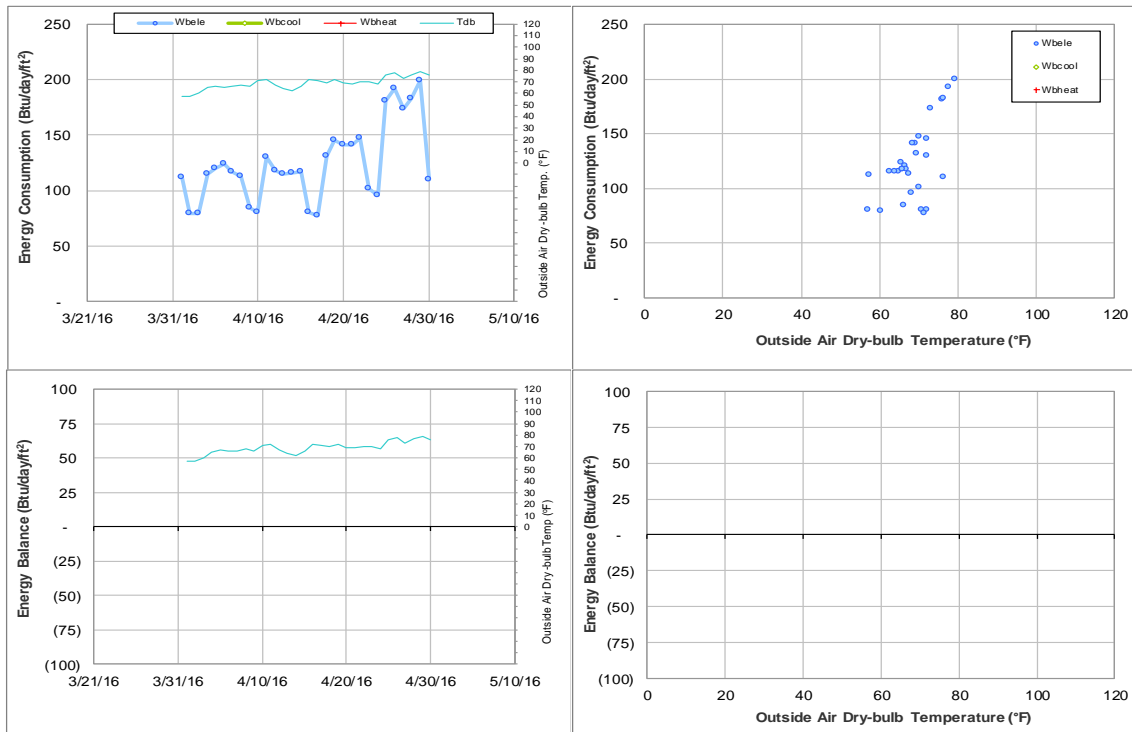


Figure IV-124 Utilities Energy Office Annex TAMU BLDG # 1089 Energy Balance Plot during April 2016

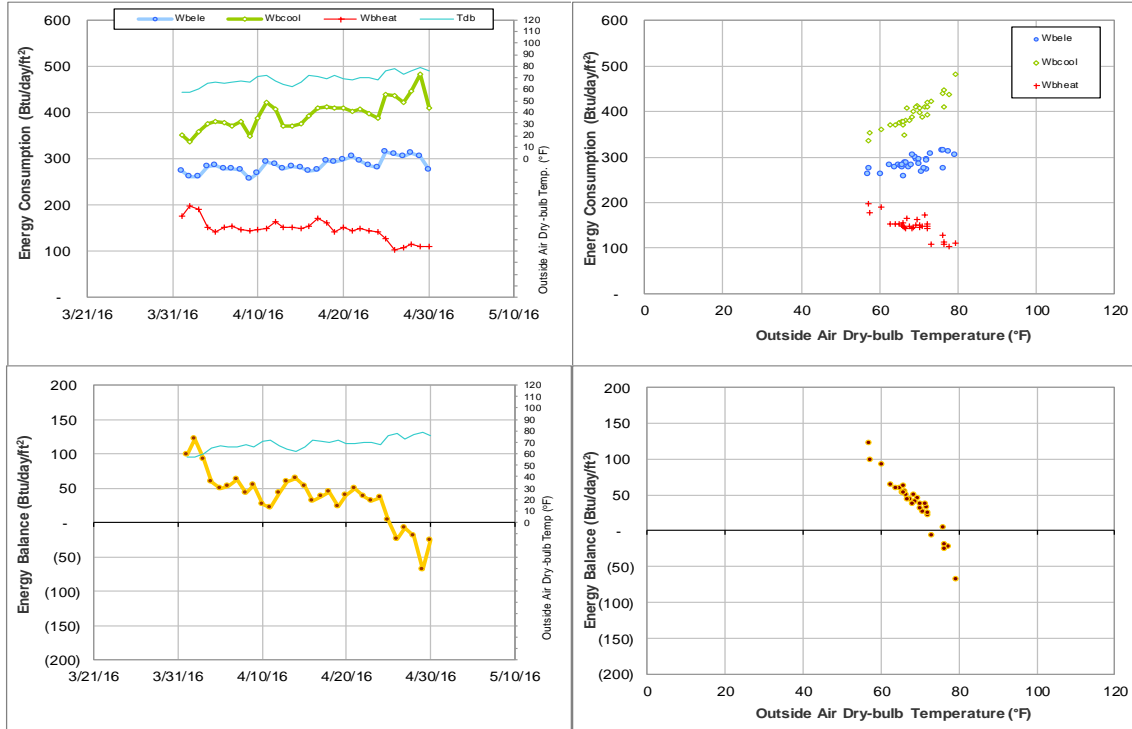


Figure IV-125 Biological Control Facility TAMU BLDG # 1146 Energy Balance Plot during April 2016

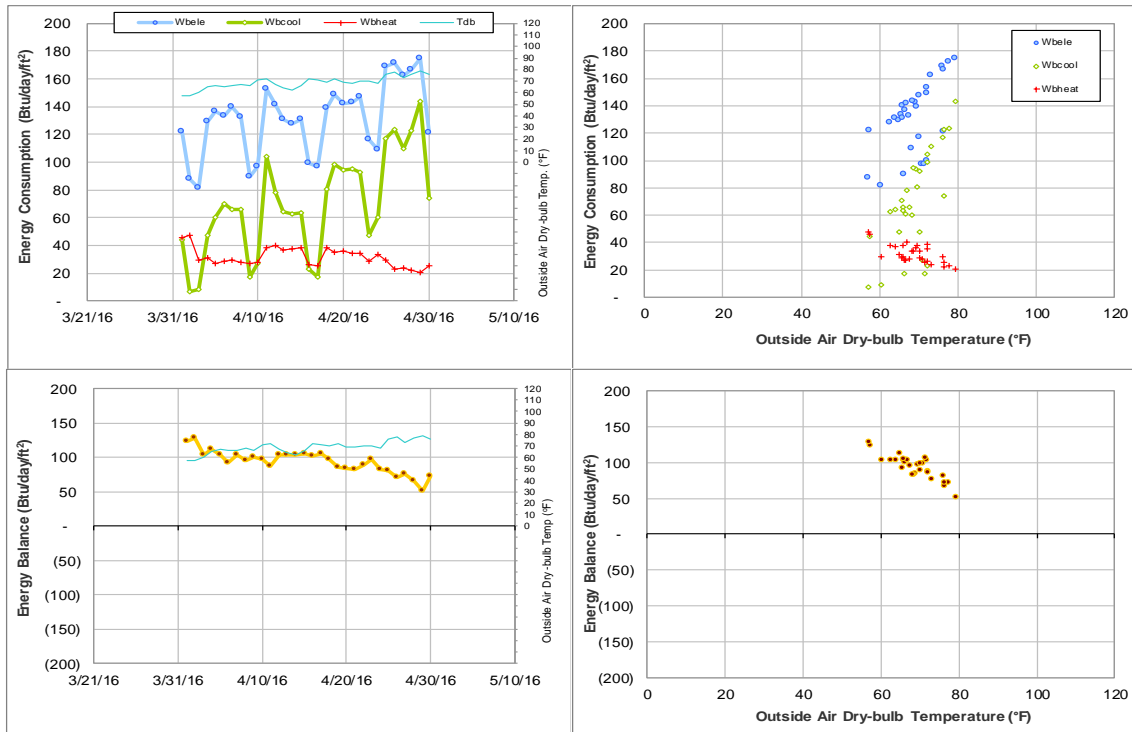


Figure IV-126 Physical Plant Administration & Shops TAMU BLDG # 1156 Energy Balance Plot during April 2016

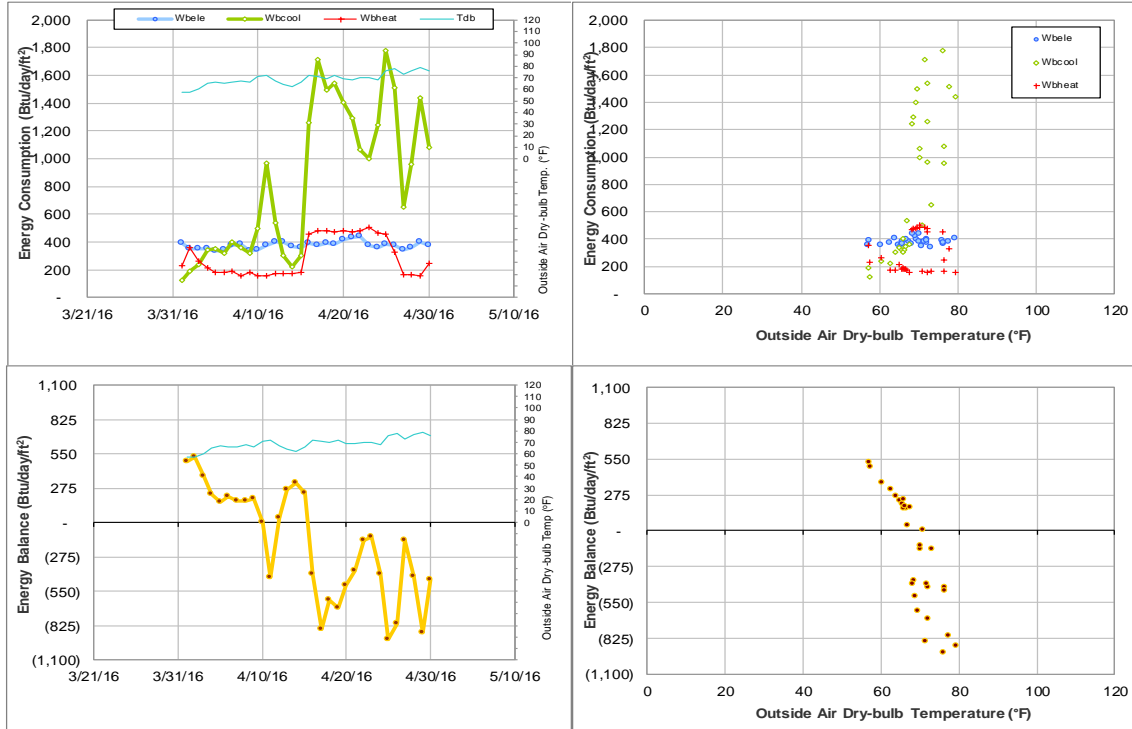


Figure IV-127 Veterinary Anatomic Pathology TAMU BLDG # 1184 Energy Balance Plot during April 2016

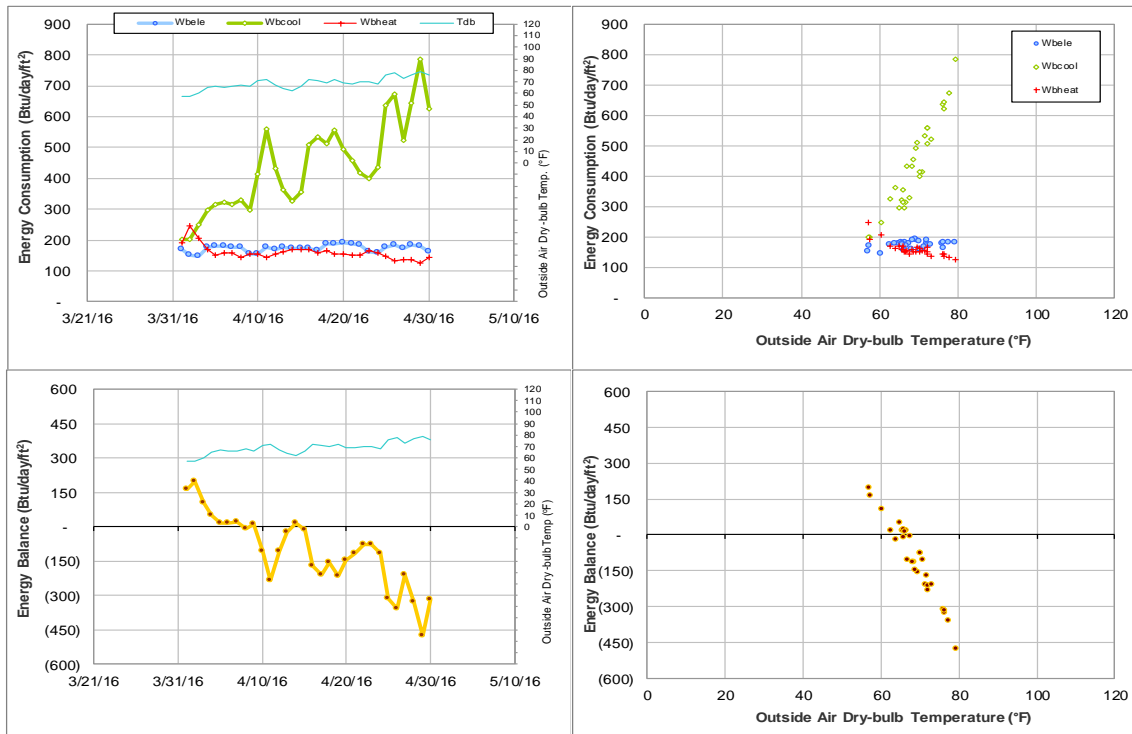


Figure IV-128 Veterinary Large Animal Hospital TAMU BLDG # 1194 Energy Balance Plot during April 2016

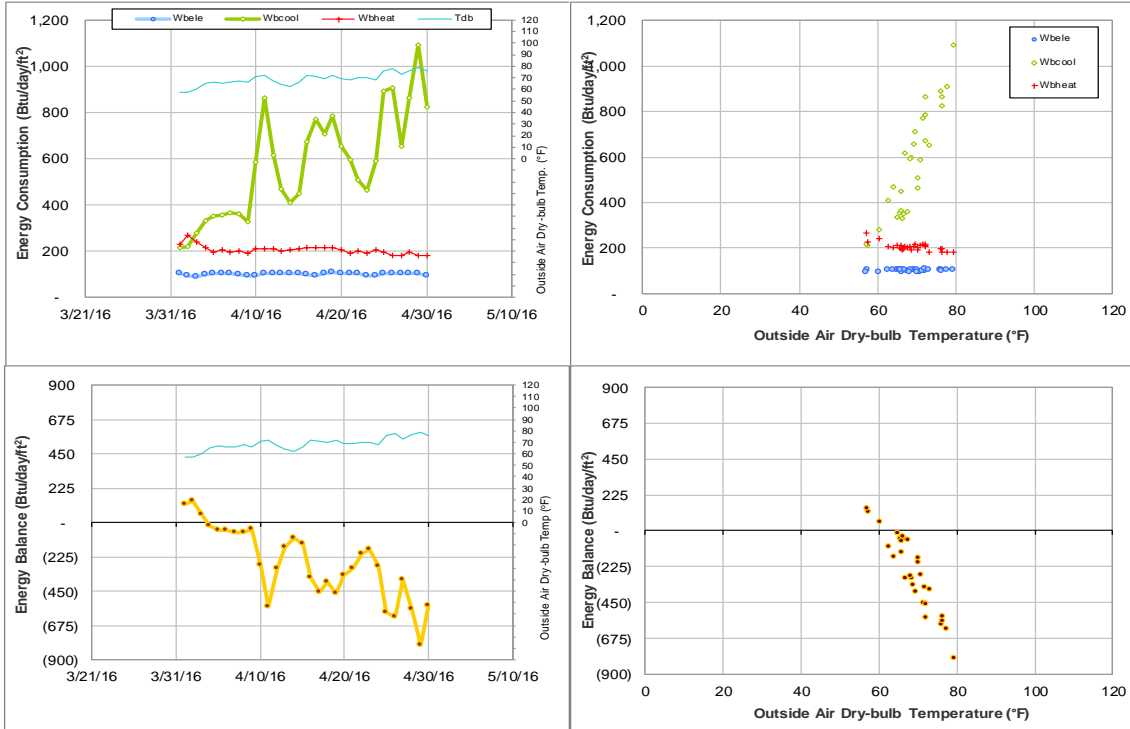


Figure IV-129 Veterinary Research Building TAMU BLDG # 1197 Energy Balance Plot during April 2016

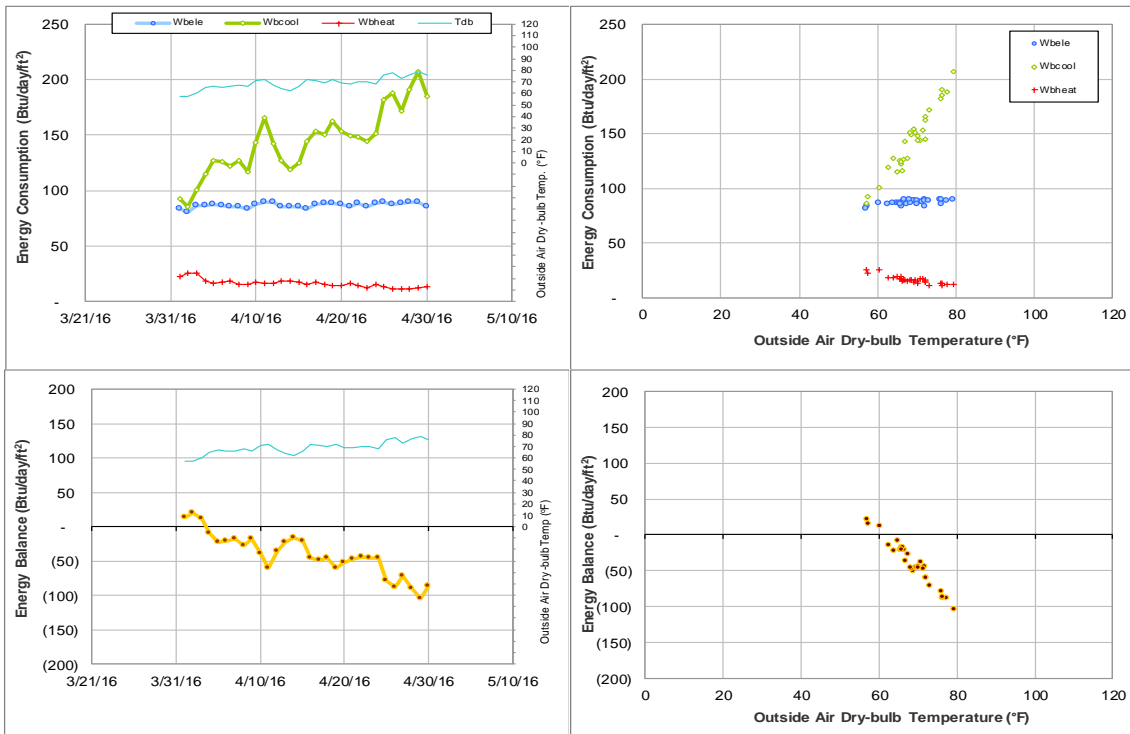


Figure IV-130 Hullabaloo Residence Hall TAMU BLDG # 1416 Energy Balance Plot during April 2016

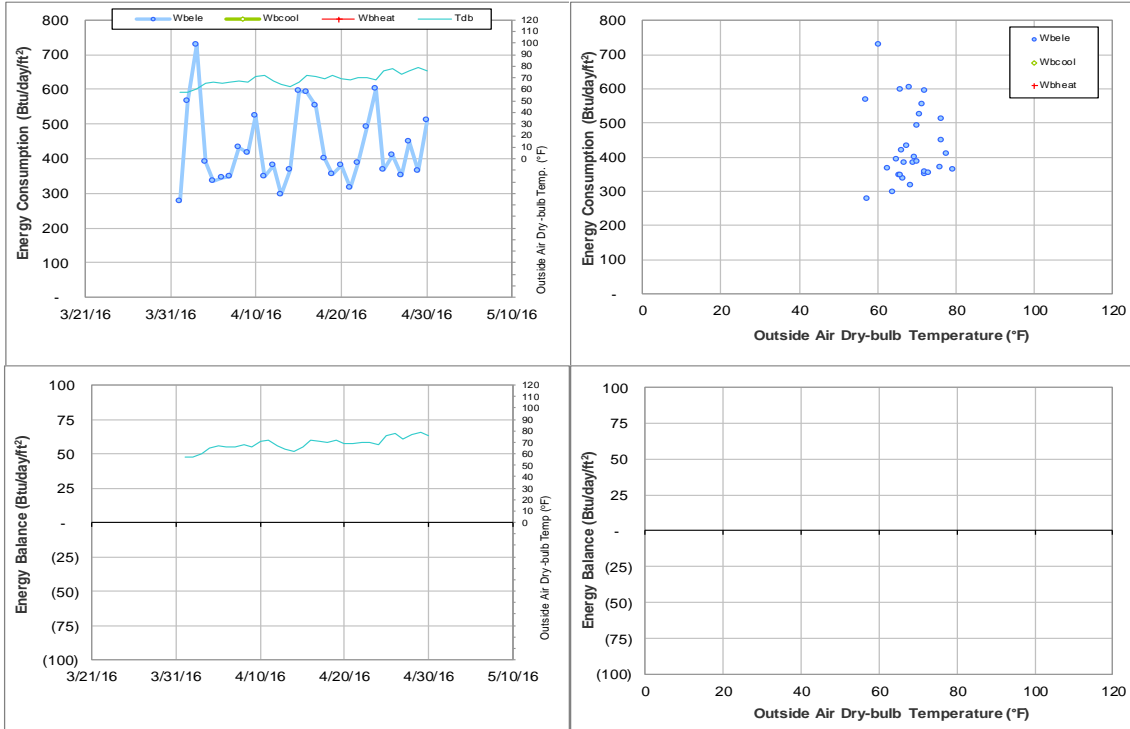


Figure IV-131 University Apartments - Laundry at the Gardens TAMU BLDG # 1450 Energy Balance Plot during April 2016

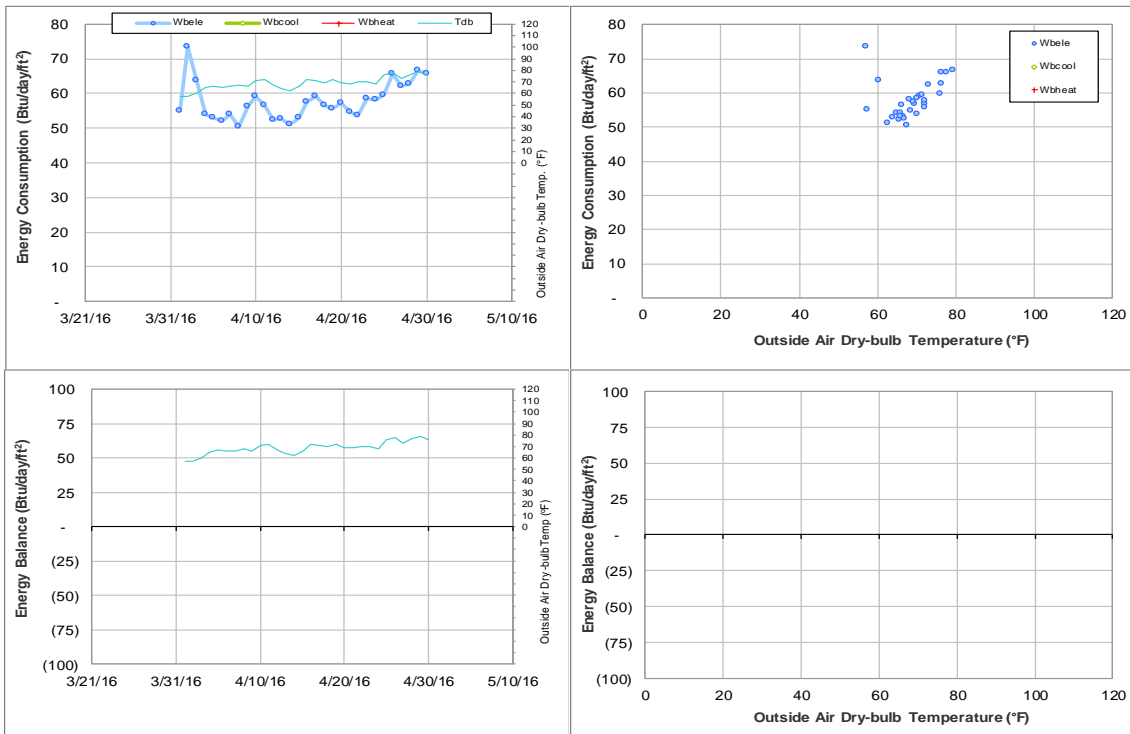


Figure IV-132 University Apartments - The Gardens J TAMU BLDG # 1451 Energy Balance Plot during April 2016

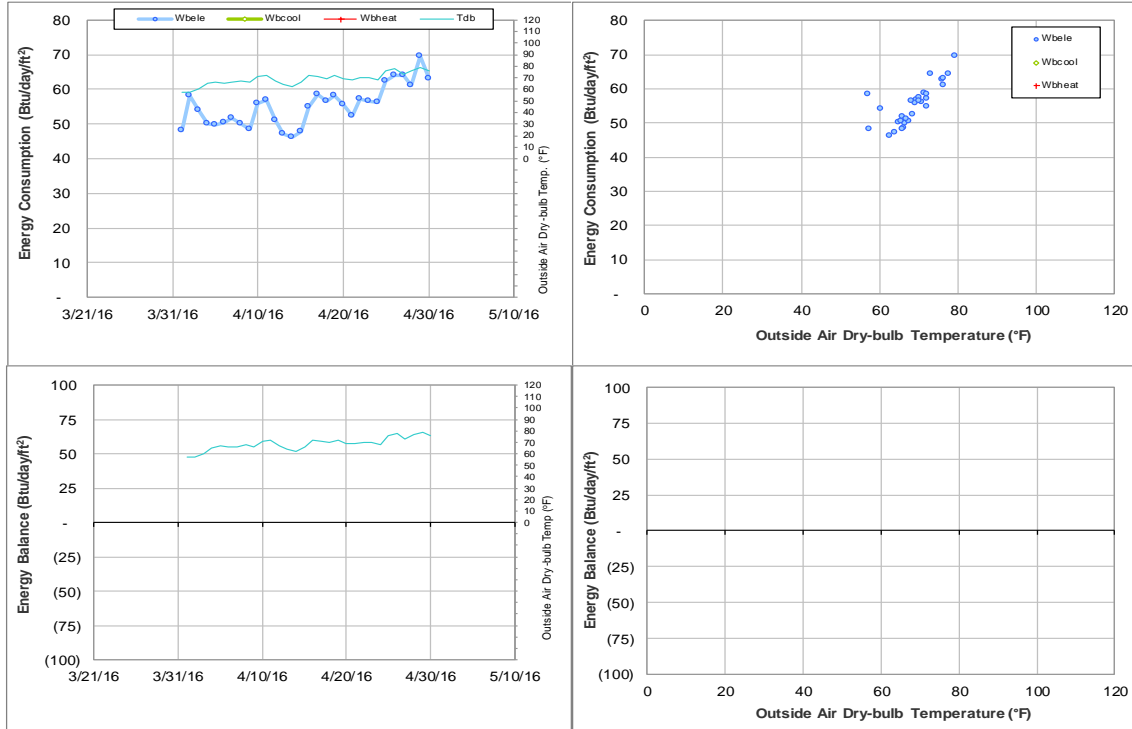


Figure IV-133 University Apartments - The Gardens L TAMU BLDG # 1453 Energy Balance Plot during April 2016

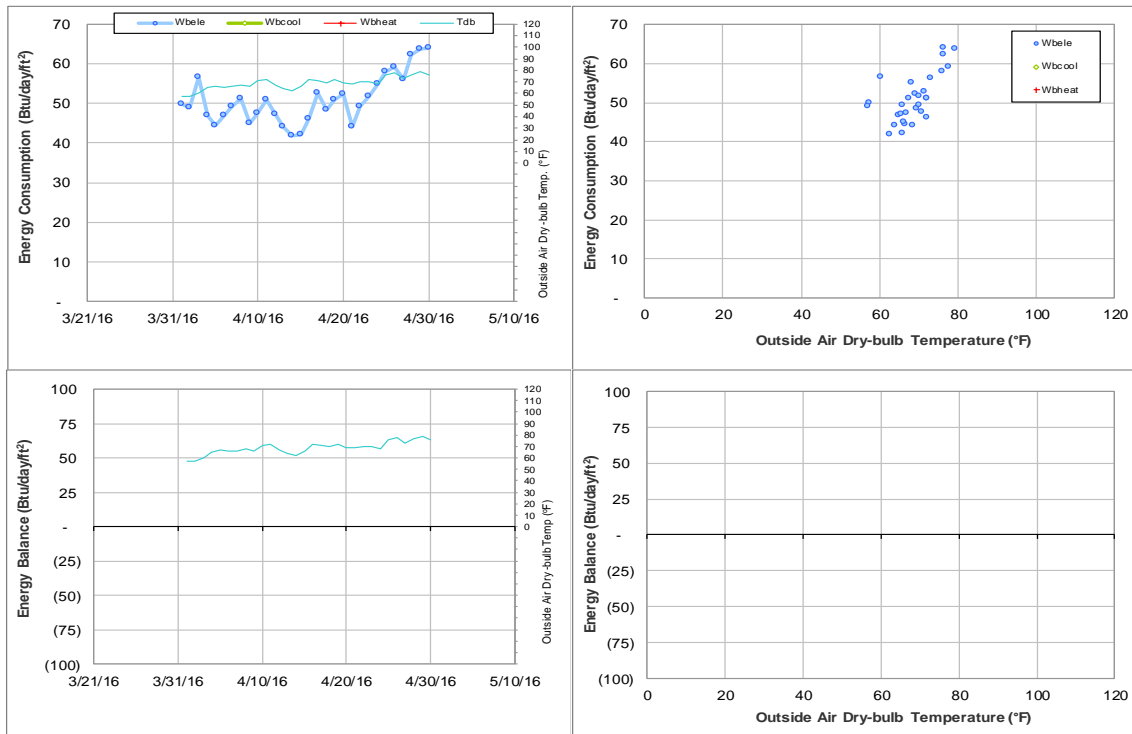


Figure IV-134 University Apartments - The Gardens H TAMU BLDG # 1456 Energy Balance Plot during April 2016

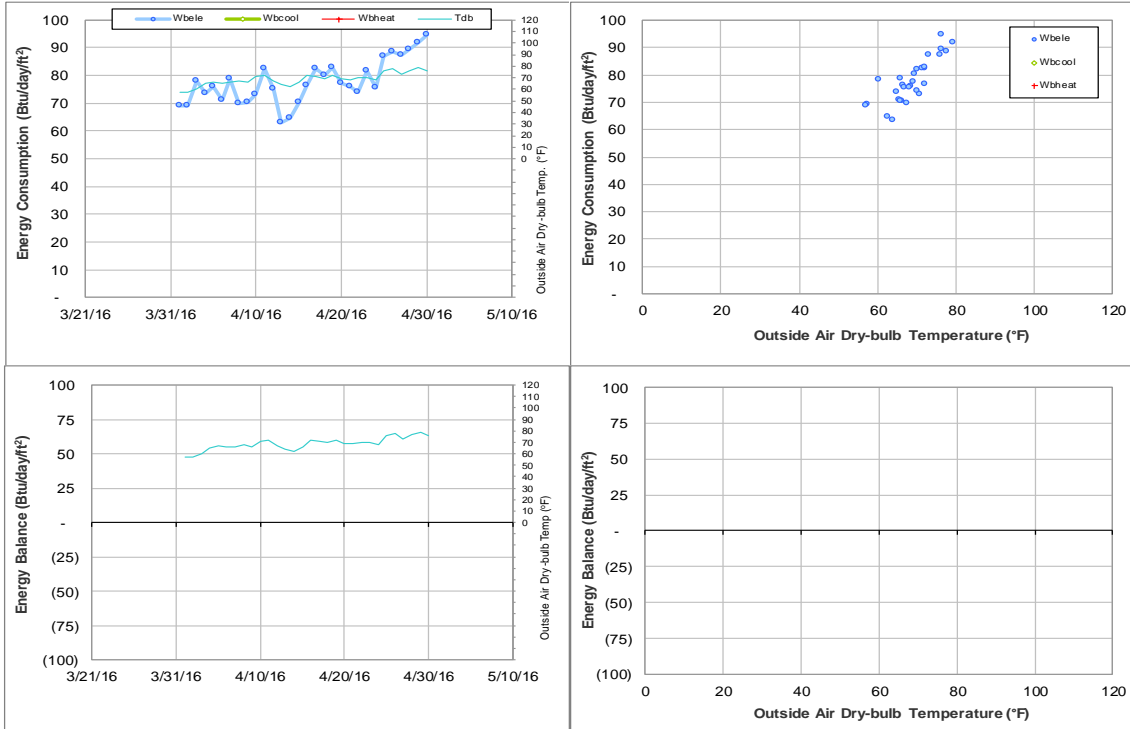


Figure IV-135 University Apartments - The Gardens M TAMU BLDG # 1457 Energy Balance Plot during April 2016

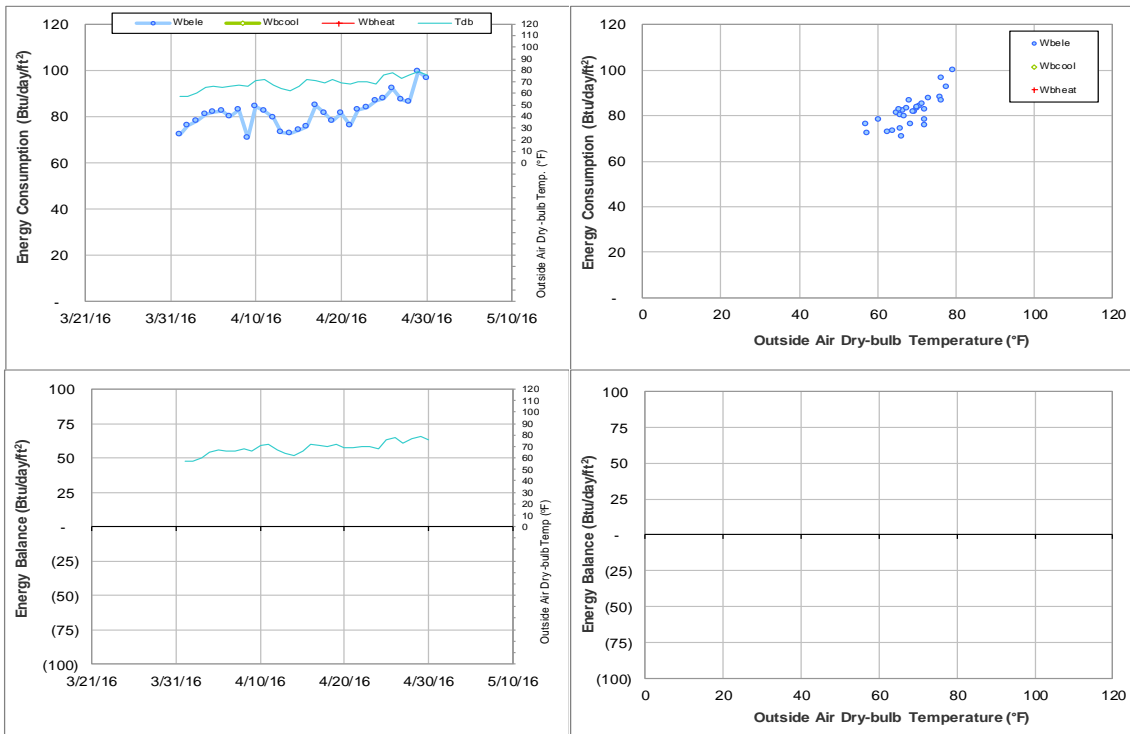


Figure IV-136 University Apartments - The Gardens N TAMU BLDG # 1458 Energy Balance Plot during April 2016

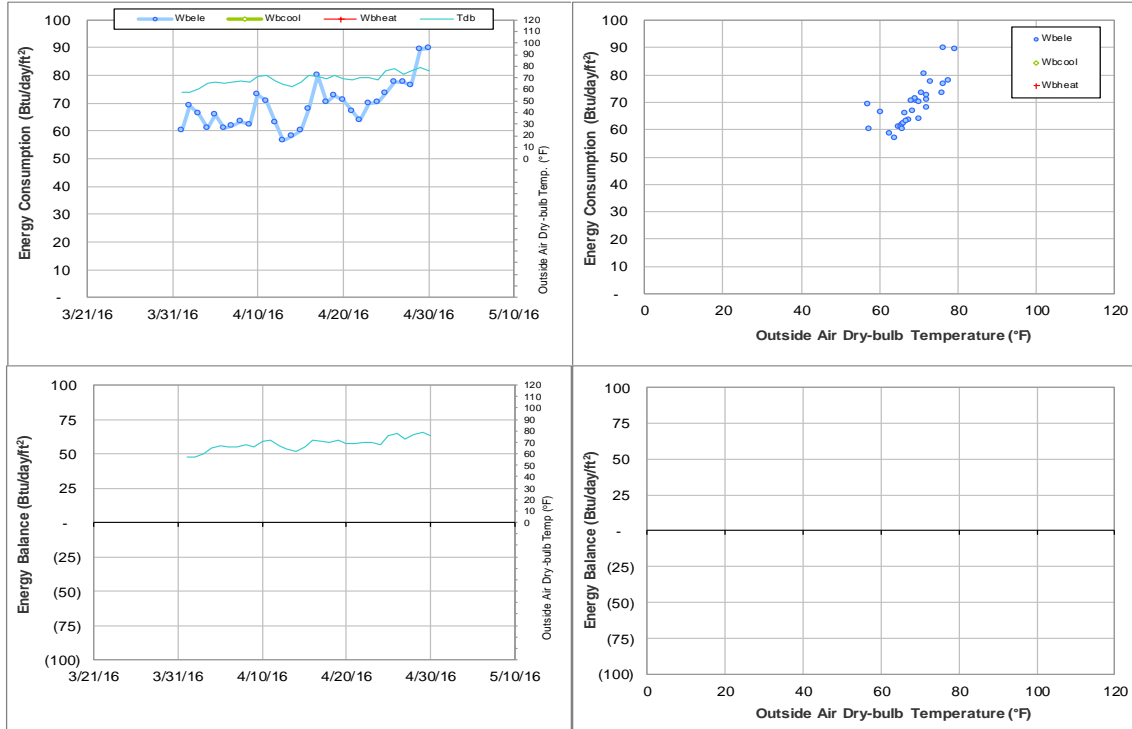


Figure IV-137 University Apartments - The Gardens P TAMU BLDG # 1459 Energy Balance Plot during April 2016

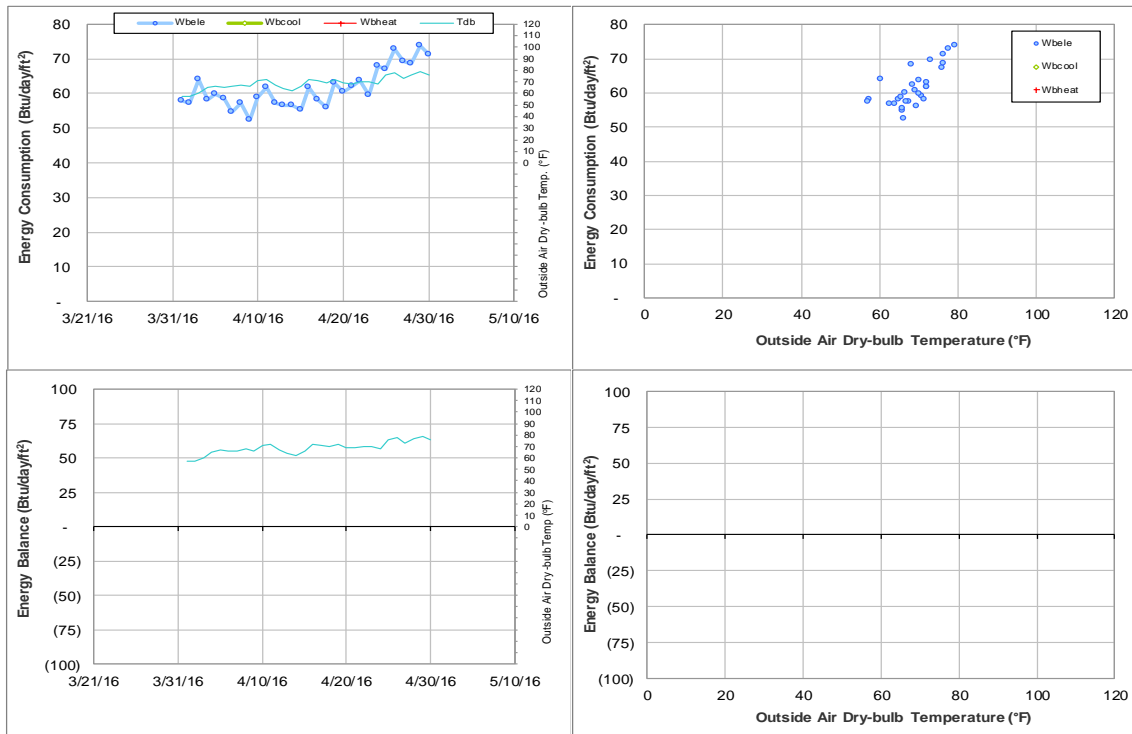


Figure IV-138 University Apartments - The Gardens Q TAMU BLDG # 1460 Energy Balance Plot during April 2016

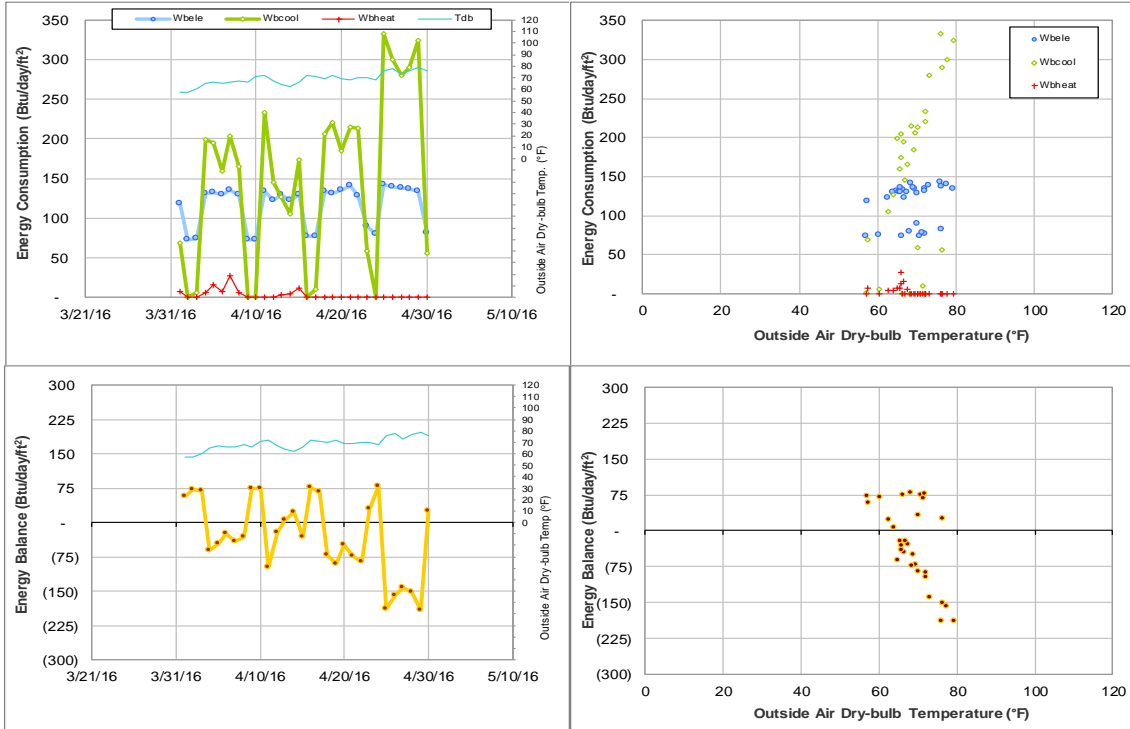


Figure IV-139 Utilities & Energy Services Business Office TAMU BLDG # 1497 Energy Balance Plot during April 2016

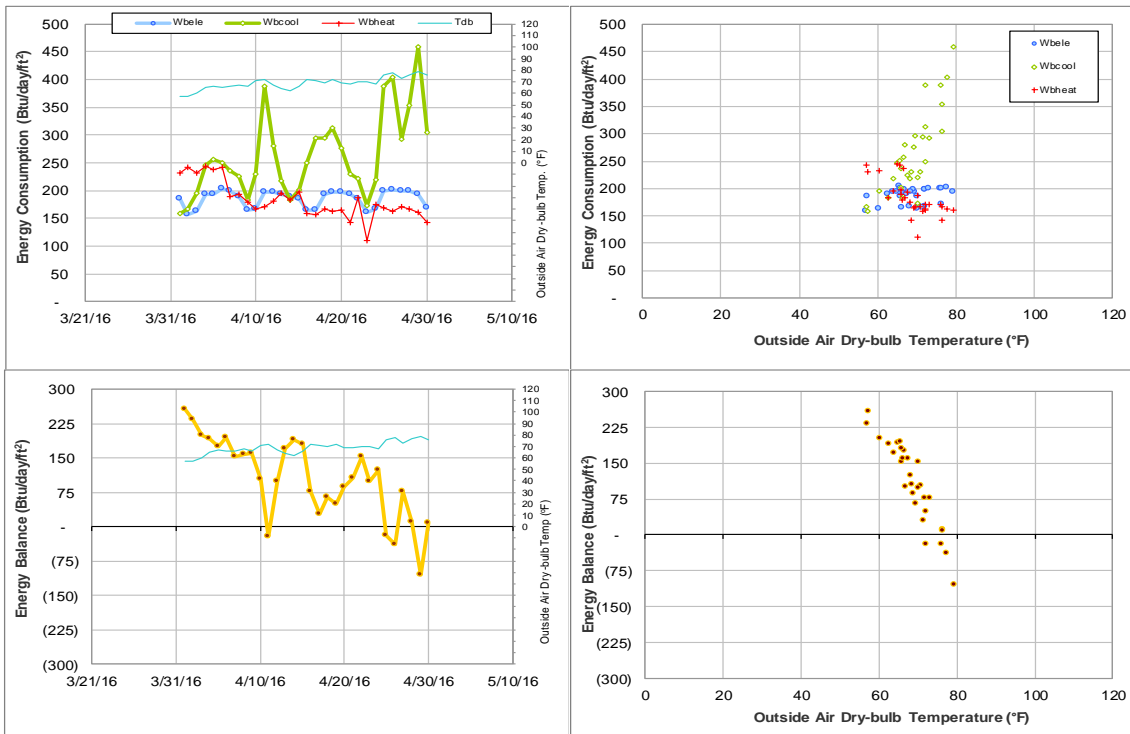


Figure IV-140 Kleberg Center TAMU BLDG # 1501 Energy Balance Plot during April 2016

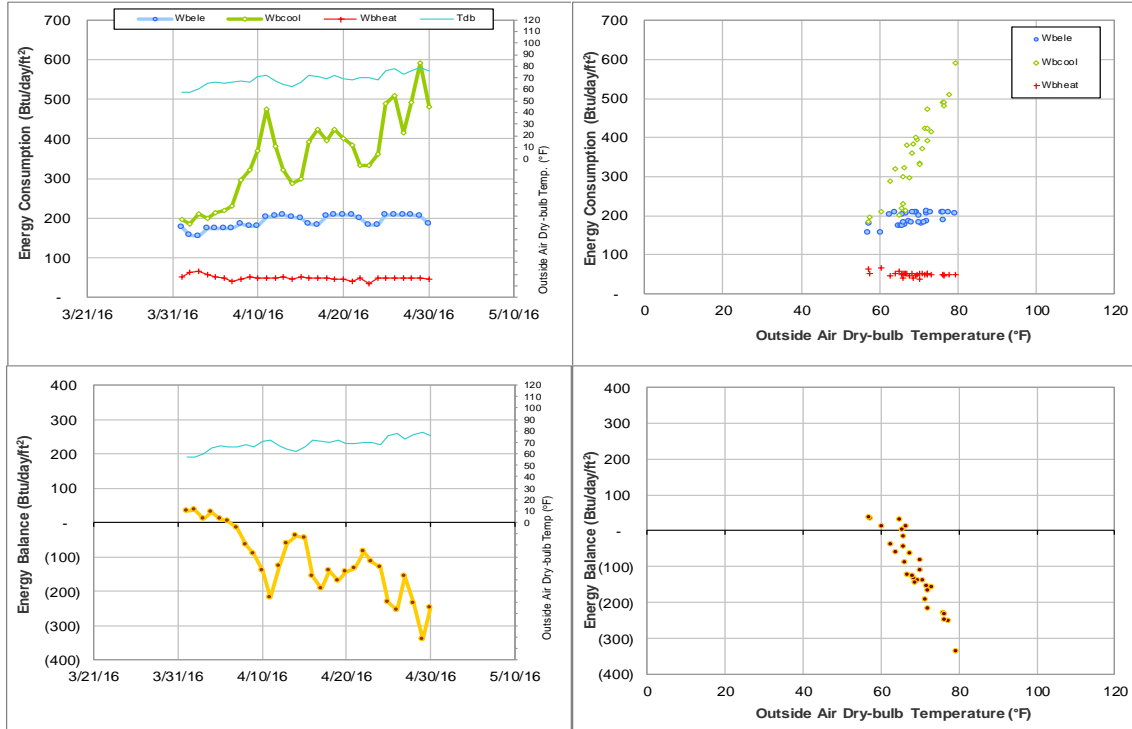


Figure IV-141 Heep Center TAMU BLDG # 1502 Energy Balance Plot during April 2016

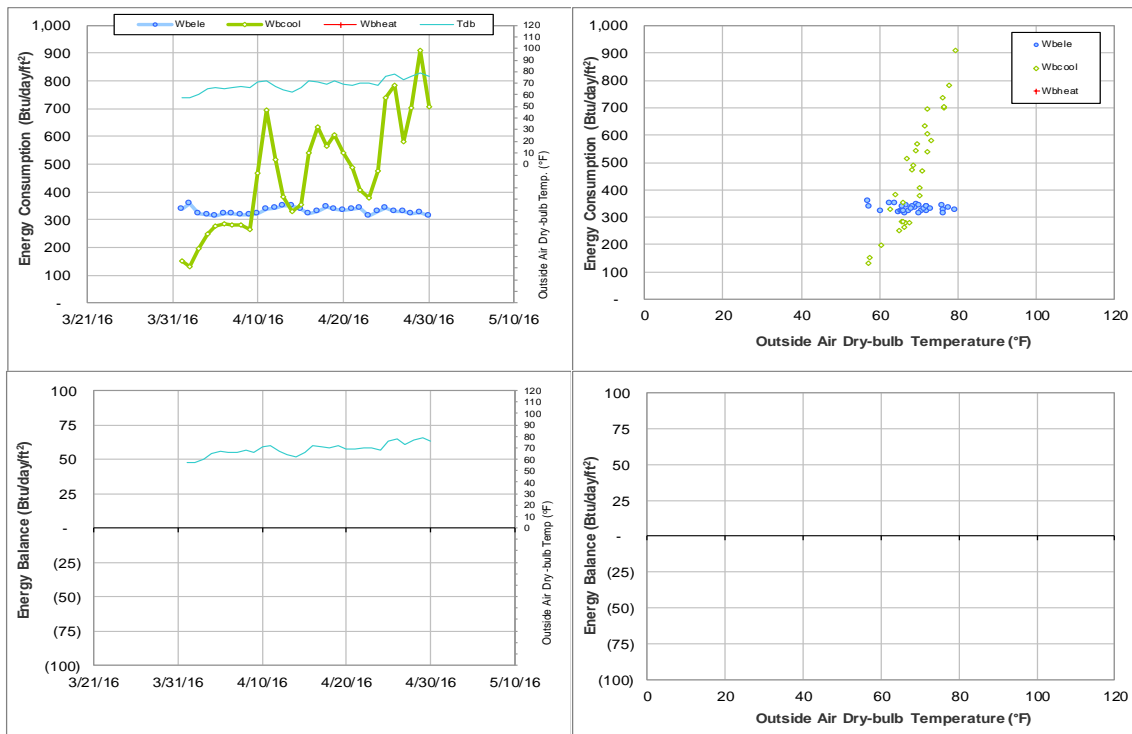


Figure IV-142 Cater-Mattil Hall TAMU BLDG # 1503 Energy Balance Plot during April 2016

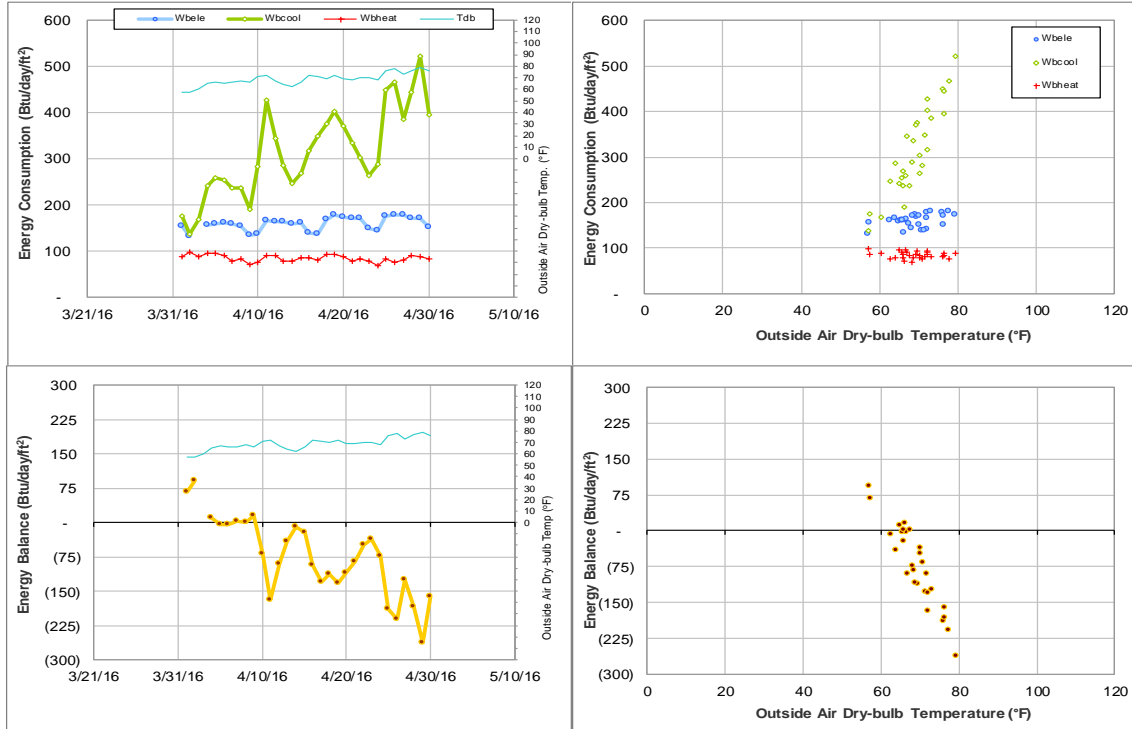


Figure IV-143 Reynolds Medical Sciences Building TAMU BLDG # 1504 Energy Balance Plot during April 2016

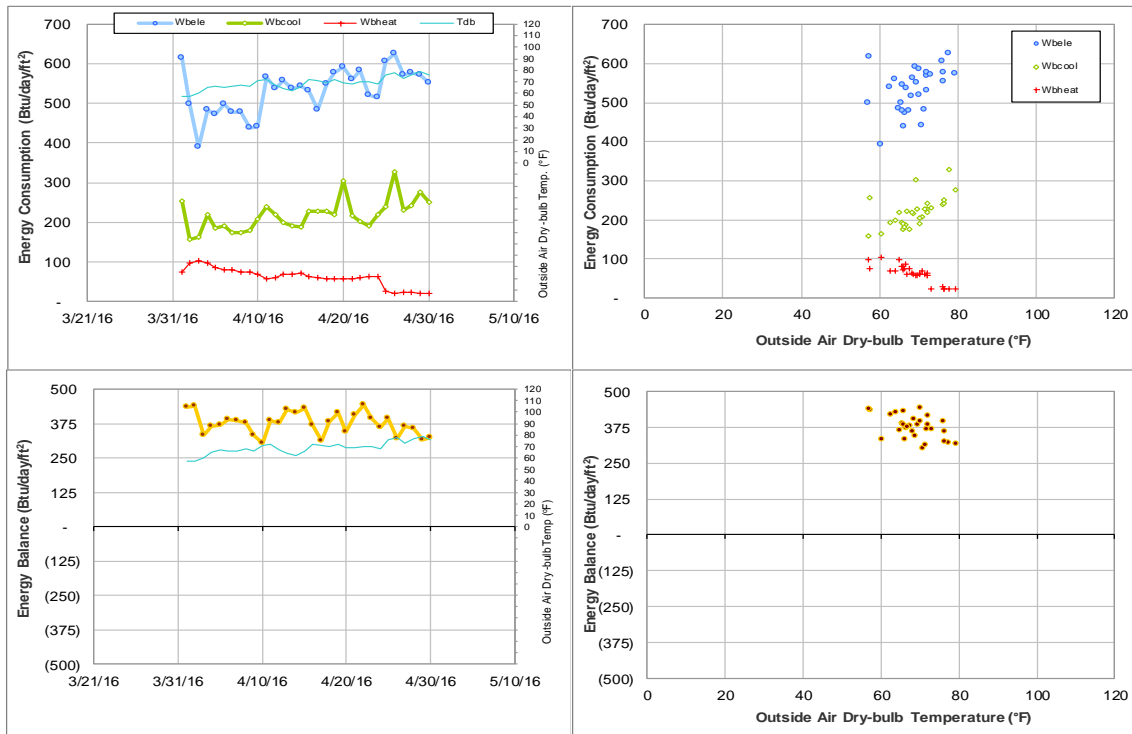


Figure IV-144 Rosenthal Meat Science & Technology Center TAMU BLDG # 1505 Energy Balance Plot during April 2016

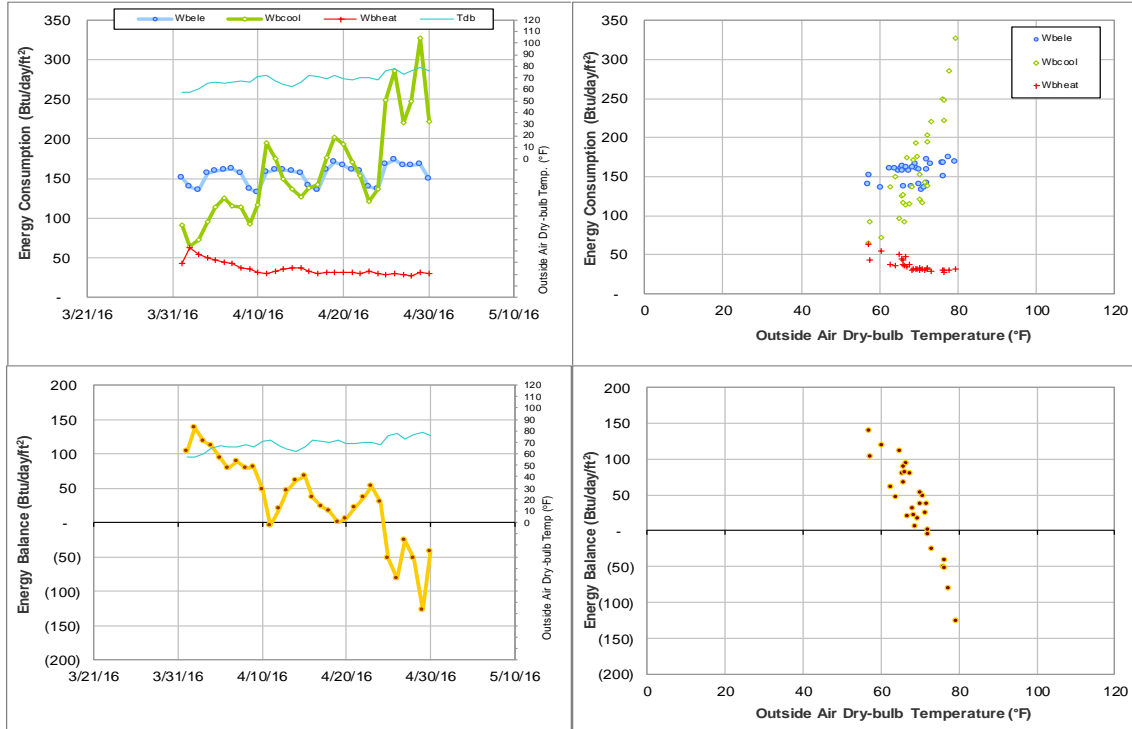


Figure IV-145 Horticulture-Forest Science Building TAMU BLDG # 1506 Energy Balance Plot during April 2016

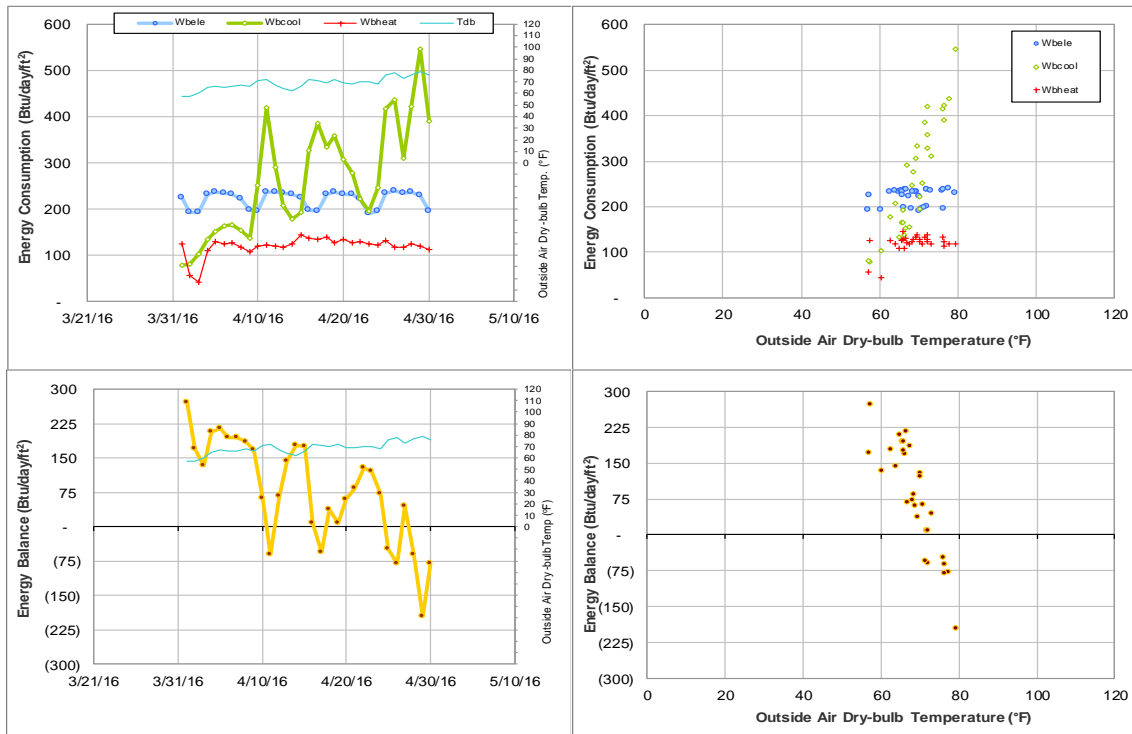


Figure IV-146 Biochemistry-Biophysics Building TAMU BLDG # 1507 Energy Balance Plot during April 2016

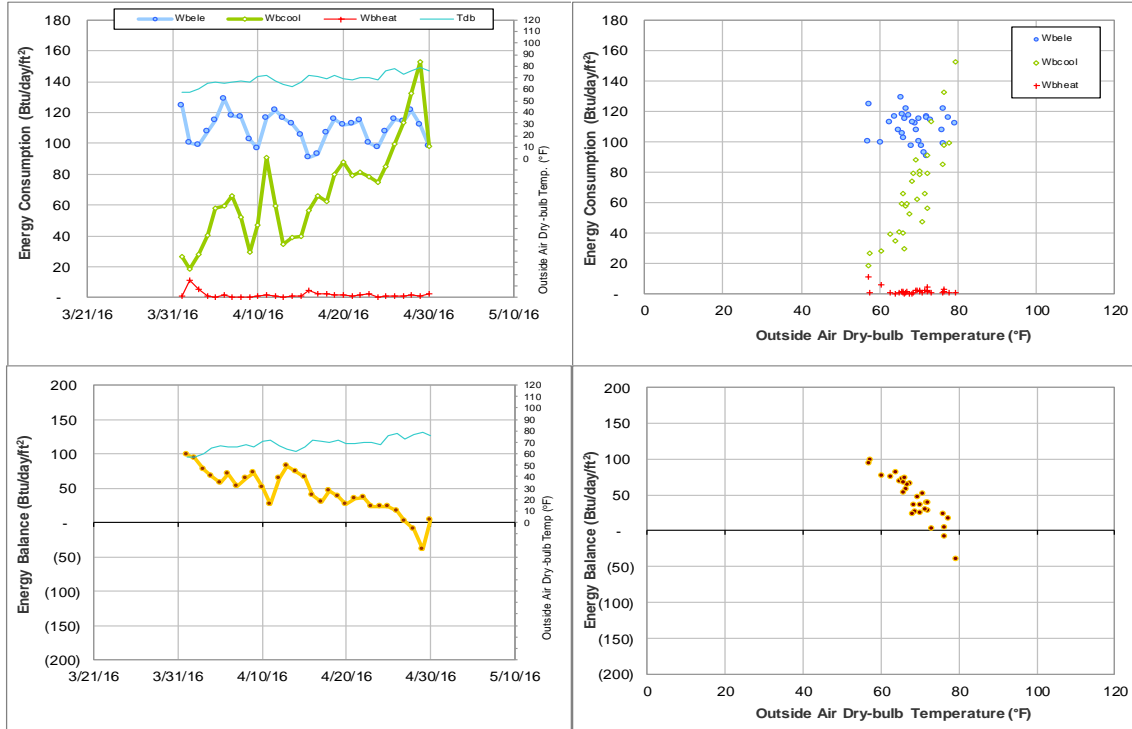


Figure IV-147 Price Hobgood Ag. Engineering Research Lab TAMU BLDG # 1508 Energy Balance Plot during April 2016

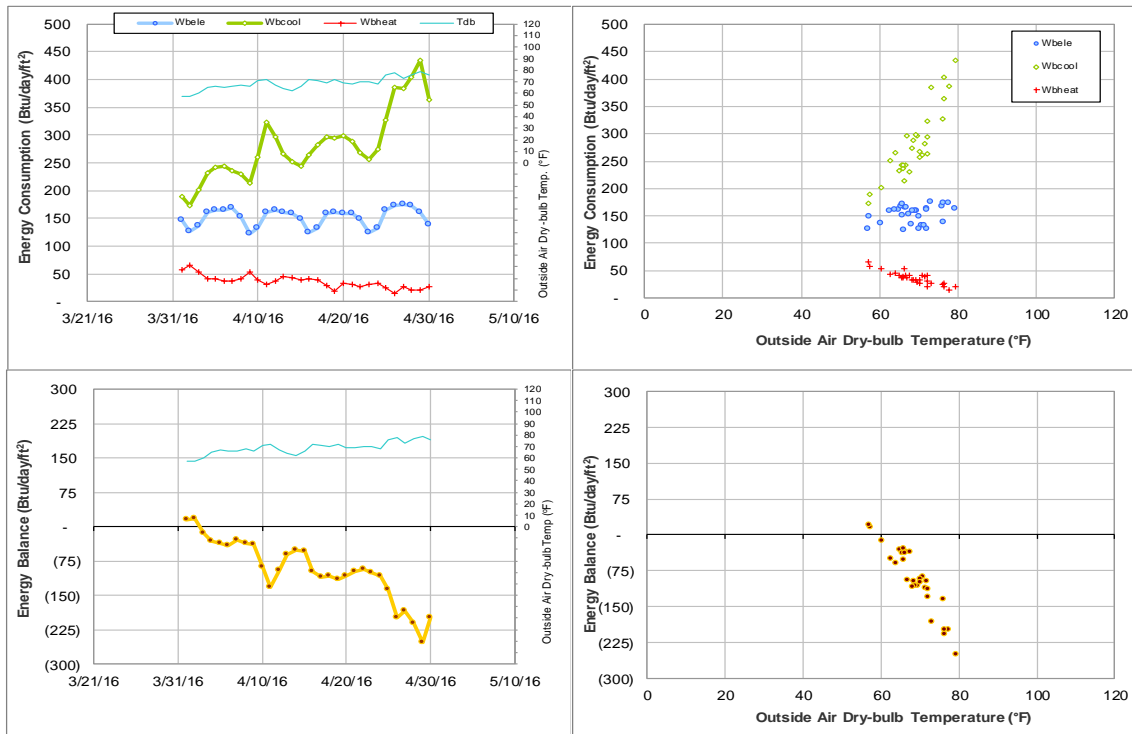


Figure IV-148 Medical Sciences Library TAMU BLDG # 1509 Energy Balance Plot during April 2016

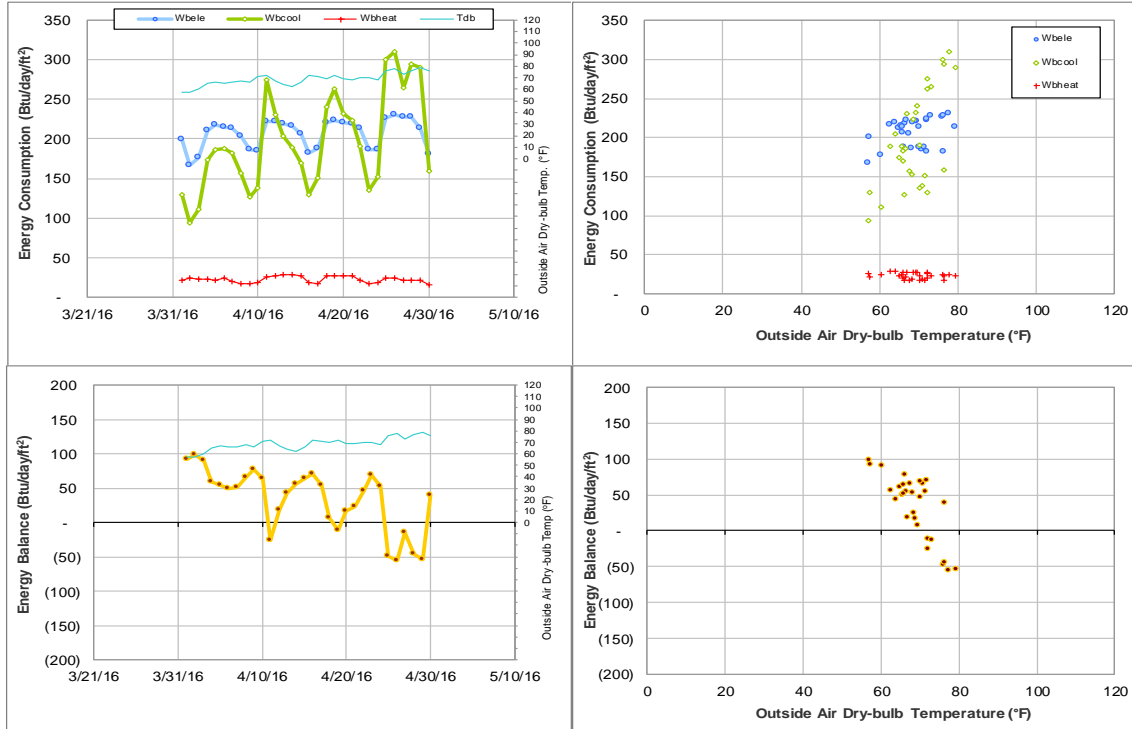


Figure IV-149 Wehner Building TAMU BLDG # 1510 Energy Balance Plot during April 2016

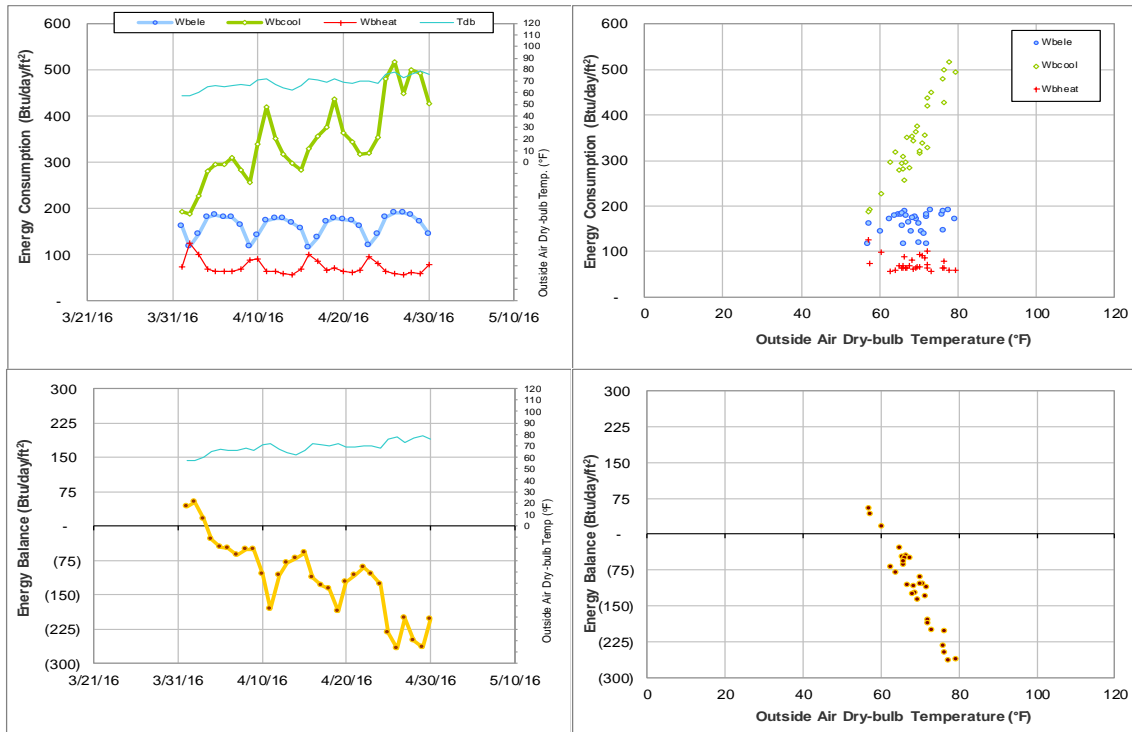


Figure IV-150 West Campus Library Facility TAMU BLDG # 1511 Energy Balance Plot during April 2016

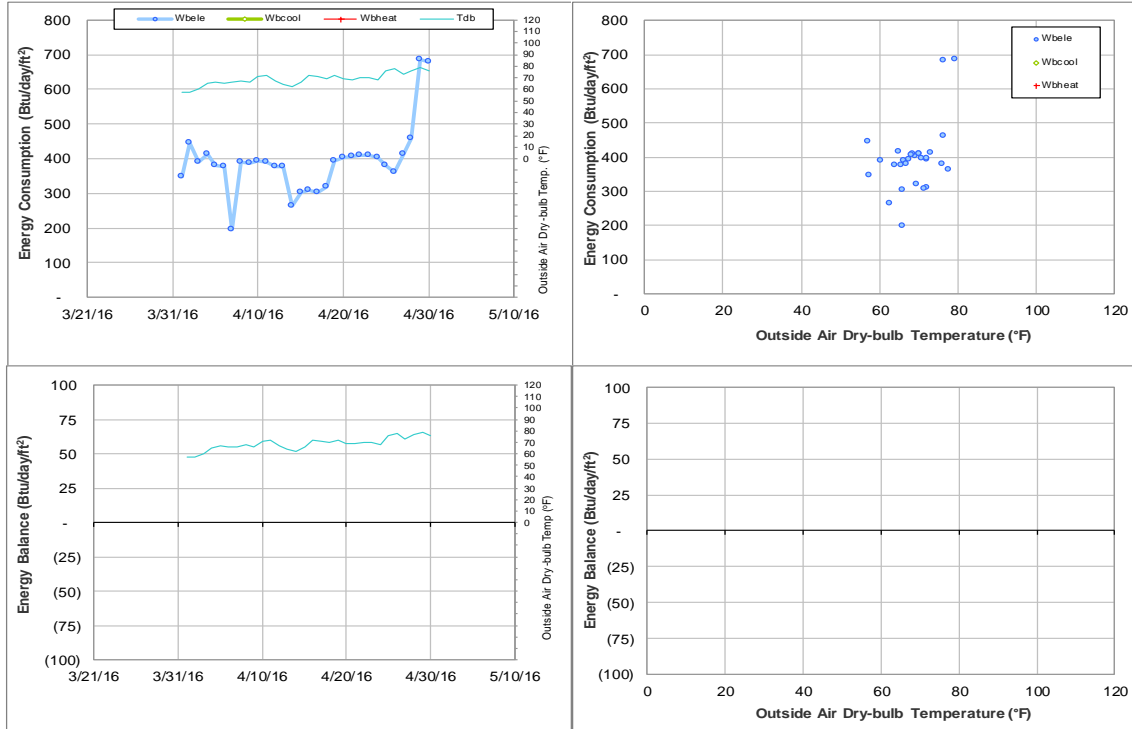


Figure IV-151 Southern Crop Improvement Greenhouse TAMU BLDG # 1512 Energy Balance Plot during April 2016

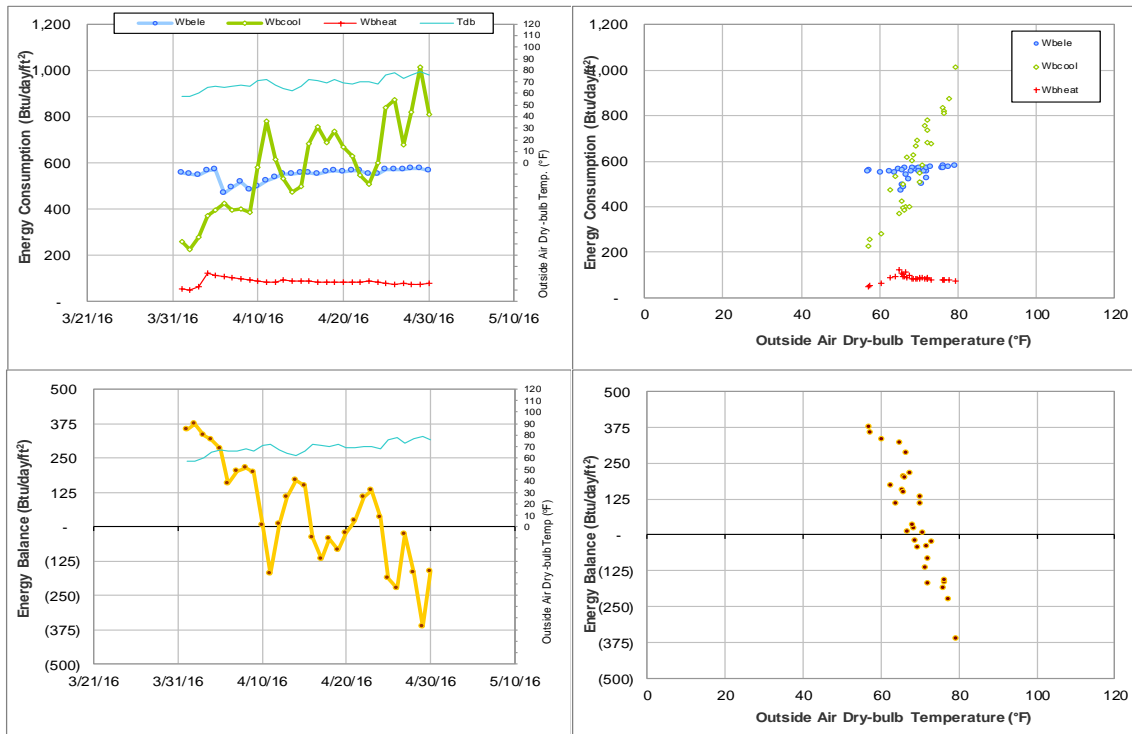


Figure IV-152 Borlaug Center for Southern Crop Improvement TAMU BLDG # 1513 Energy Balance Plot during April 2016

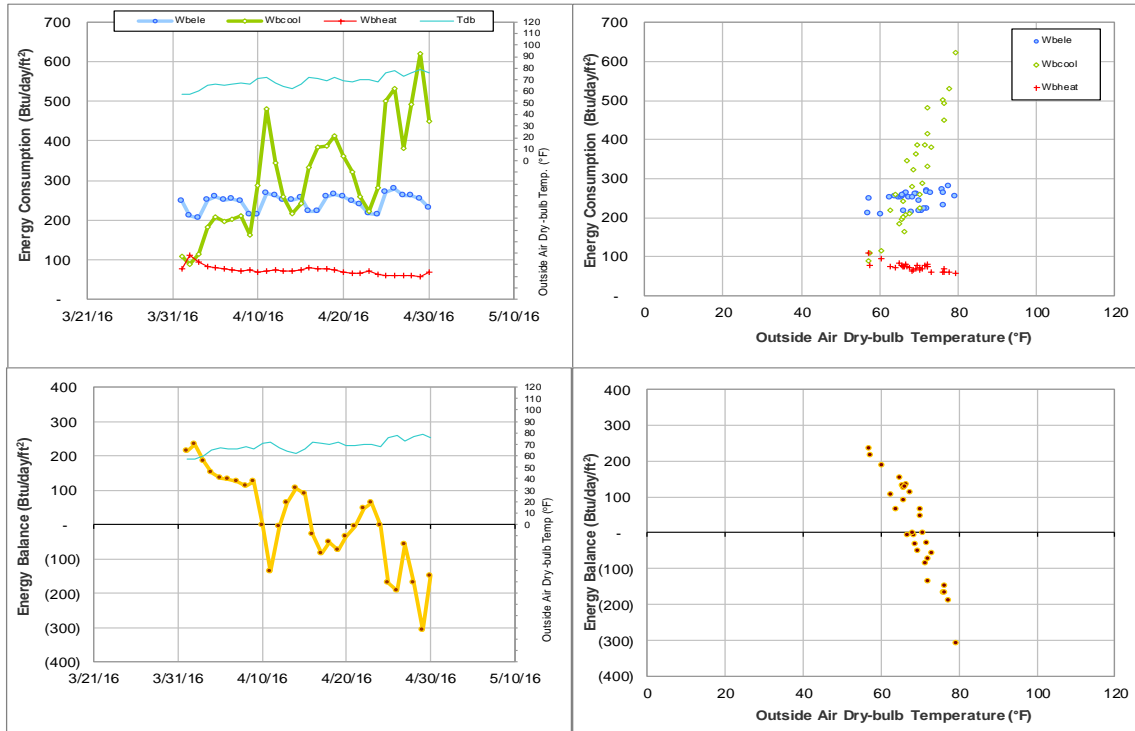


Figure IV-153 TX School of Rural Public Health TAMU BLDG # 1518 Energy Balance Plot during April 2016

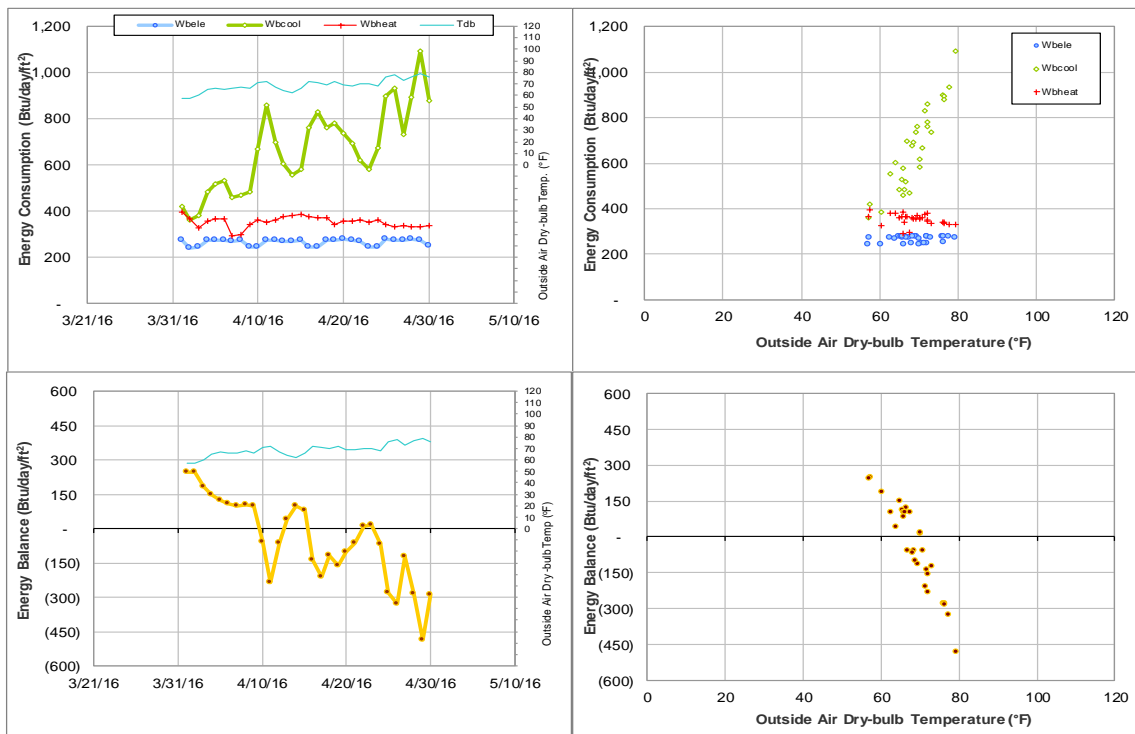


Figure IV-154 Nuclear Magnetic Resonance Facility TAMU BLDG # 1525 Energy Balance Plot during April 2016

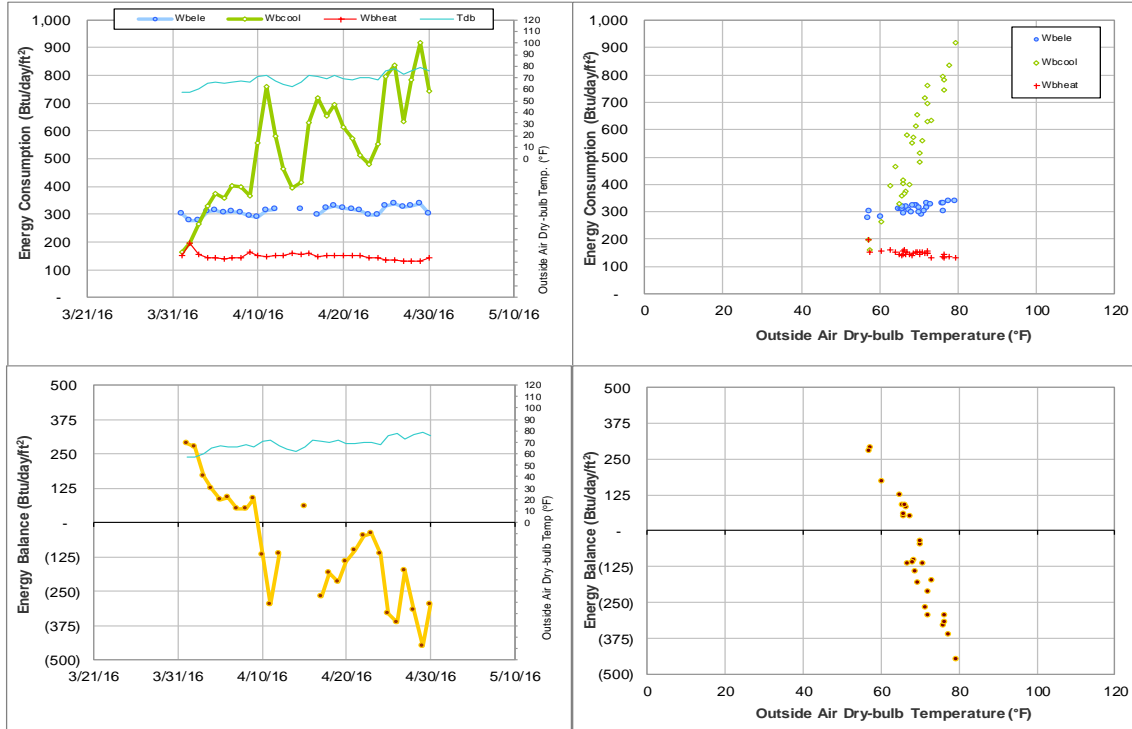


Figure IV-155 Interdisciplinary Life Sciences Building TAMU BLDG # 1530 Energy Balance Plot during April 2016

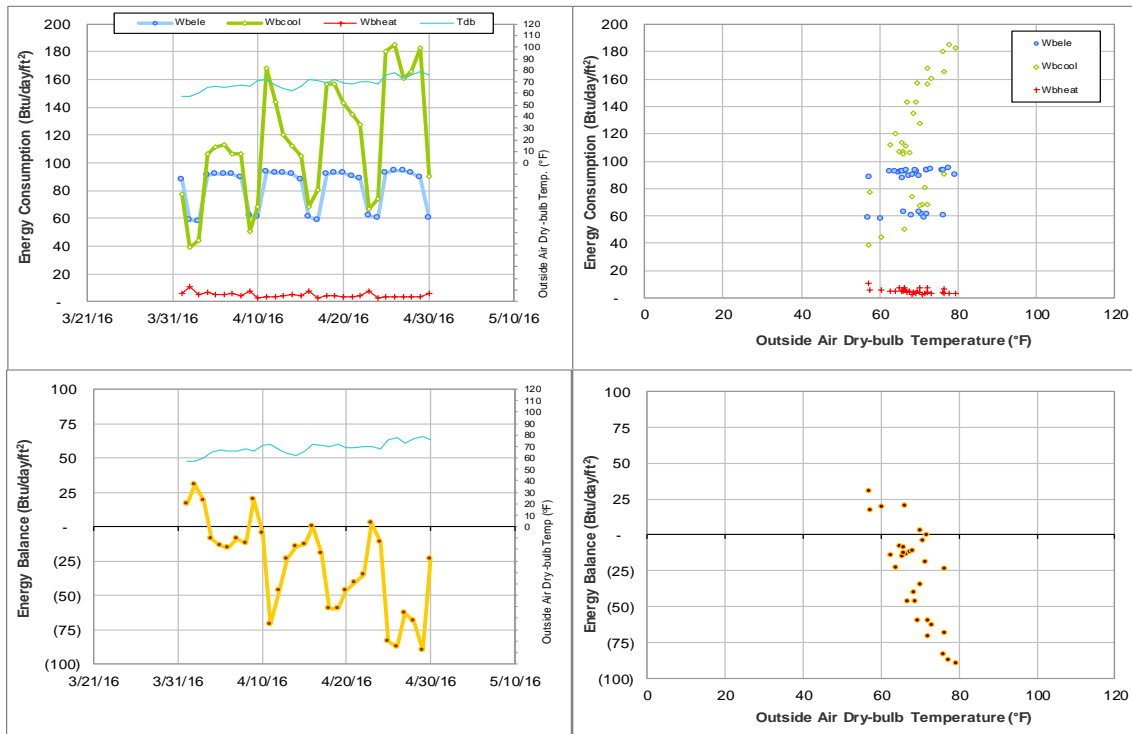


Figure IV-156 Agriculture and Life Sciences Building TAMU BLDG # 1535 Energy Balance Plot during April 2016

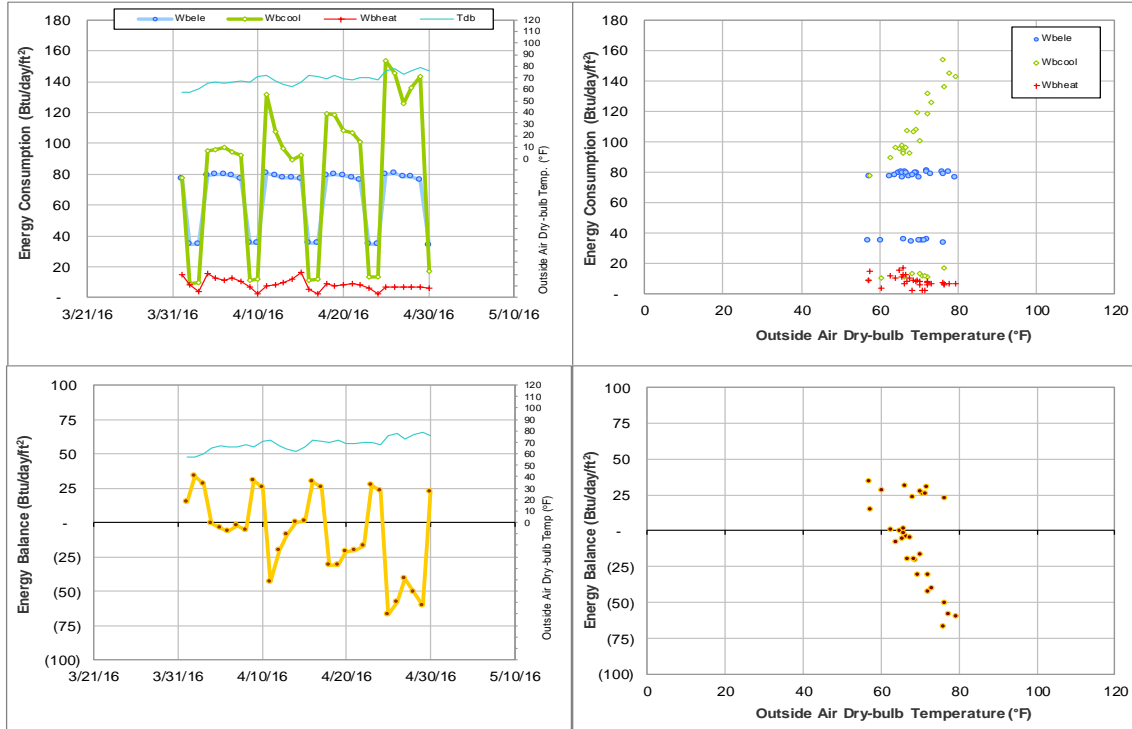


Figure IV-157 AgriLife Services Building TAMU BLDG # 1536 Energy Balance Plot during April 2016

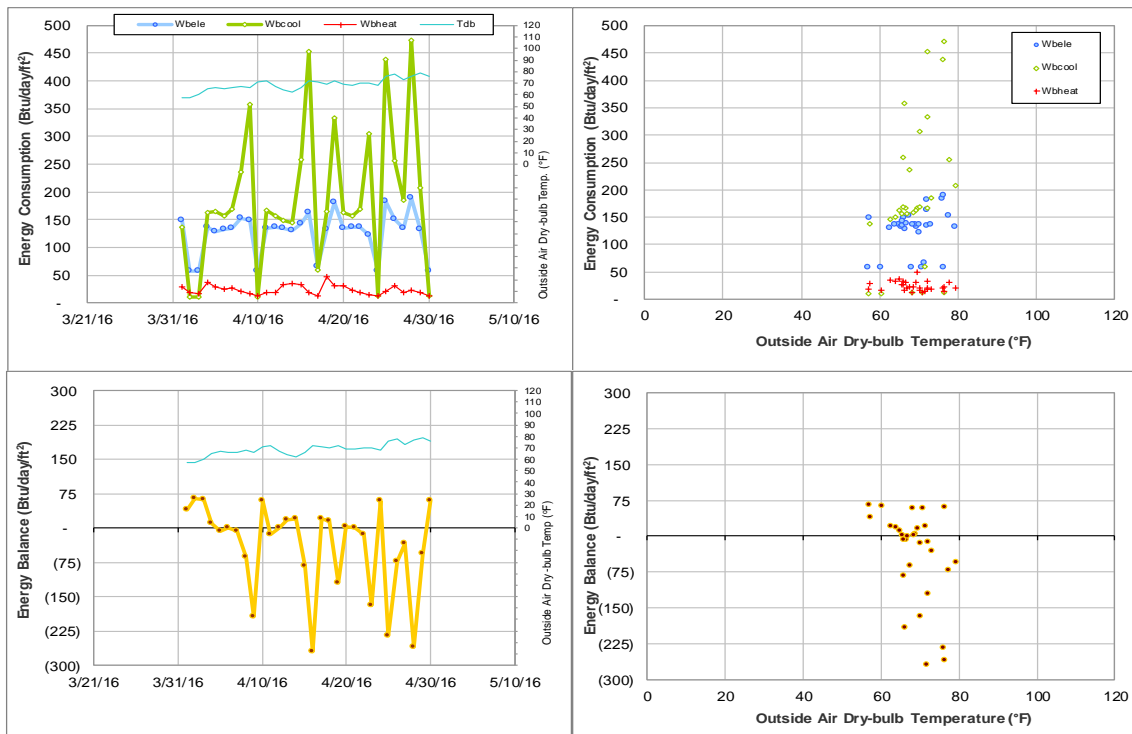


Figure IV-158 Agriculture Program Visitors Center TAMU BLDG # 1538 Energy Balance Plot during April 2016

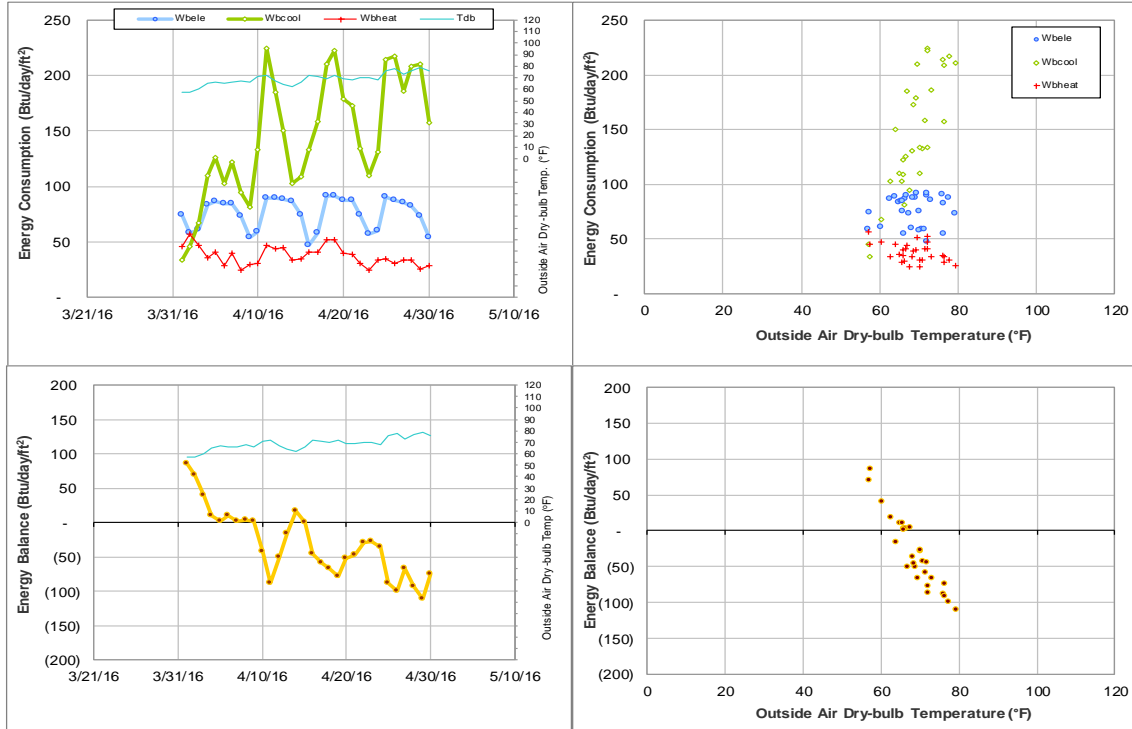


Figure IV-159 Physical Education Activity Program Building TAMU BLDG # 1540 Energy Balance Plot during April 2016

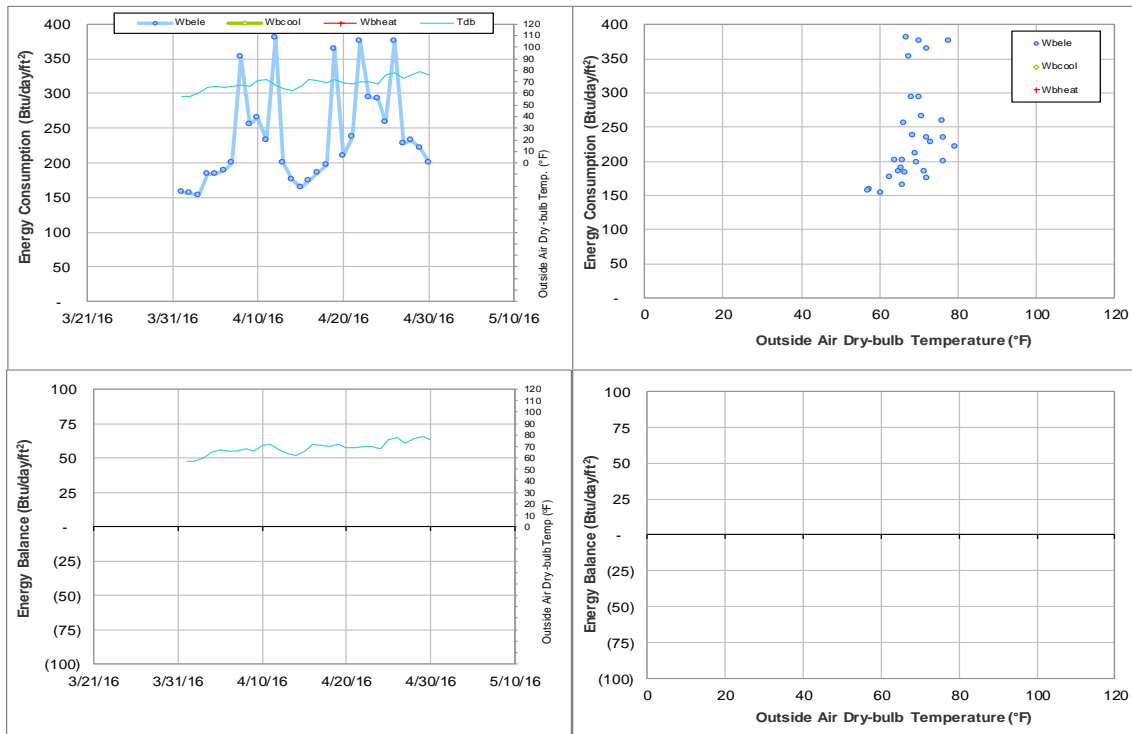


Figure IV-160 Olsen Field at Bluebell Park TAMU BLDG # 1550 Energy Balance Plot during April 2016

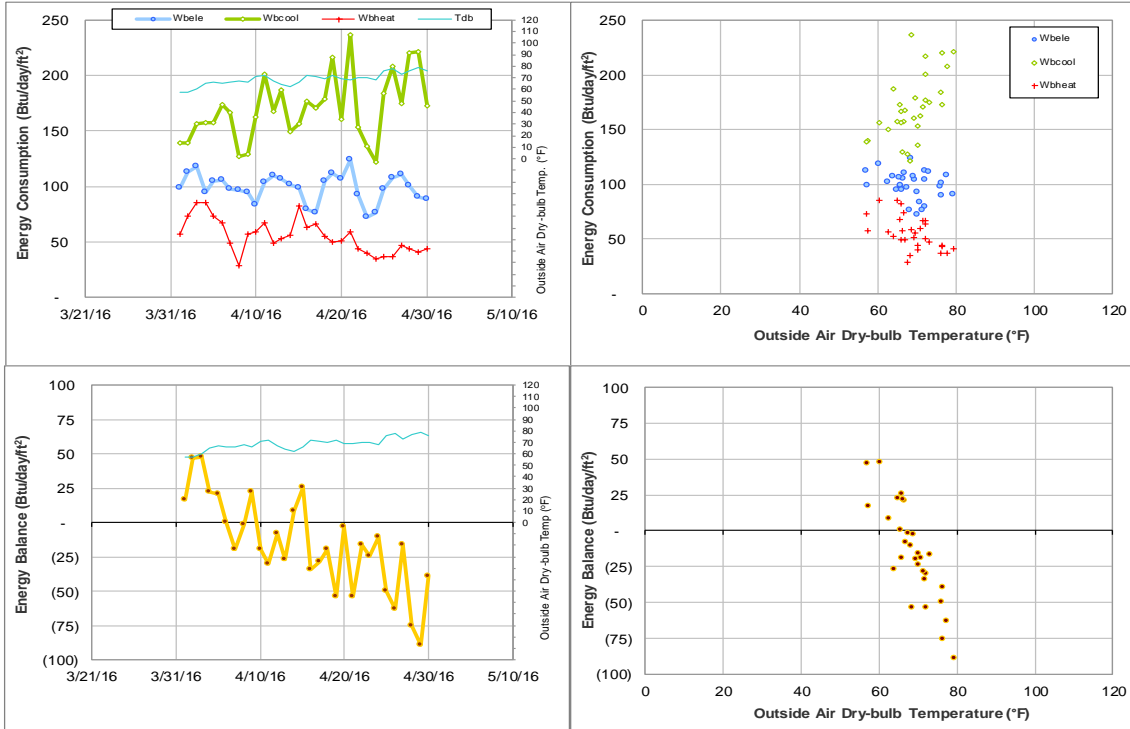


Figure IV-161 Reed Arena and Cox-McFerrin Center TAMU BLDG # 1554-1558 Energy Balance Plot during April 2016

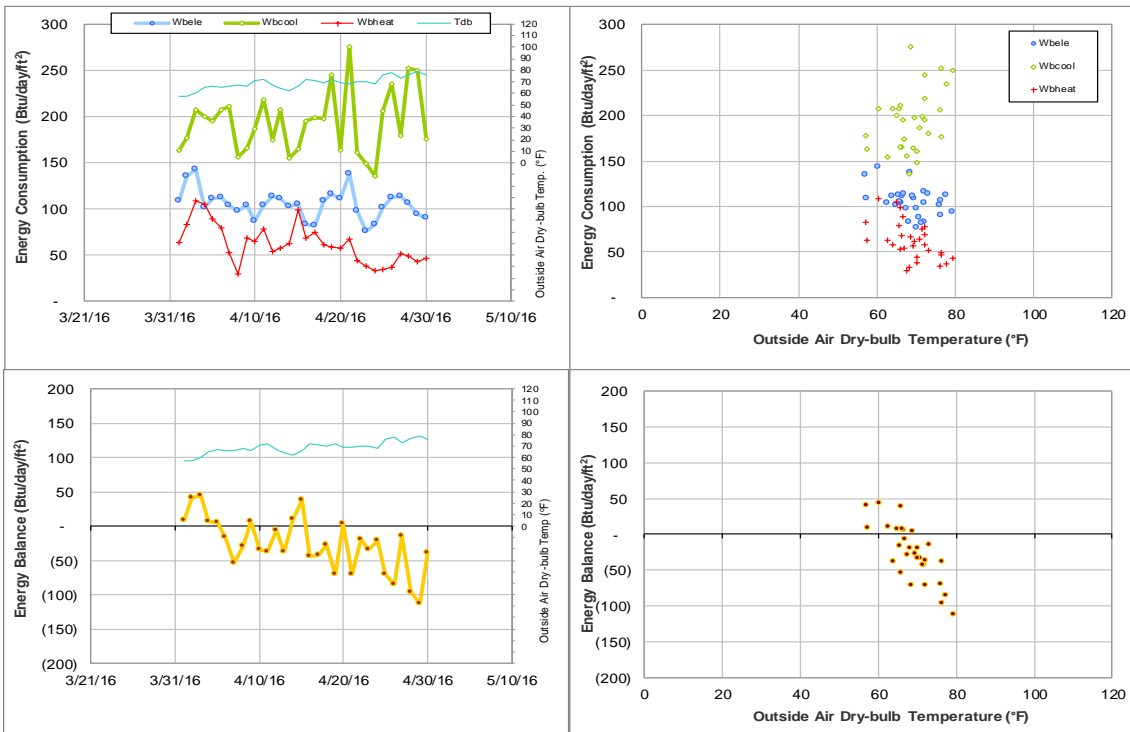


Figure IV-162 Reed Arena TAMU BLDG # 1554 Energy Balance Plot during April 2016

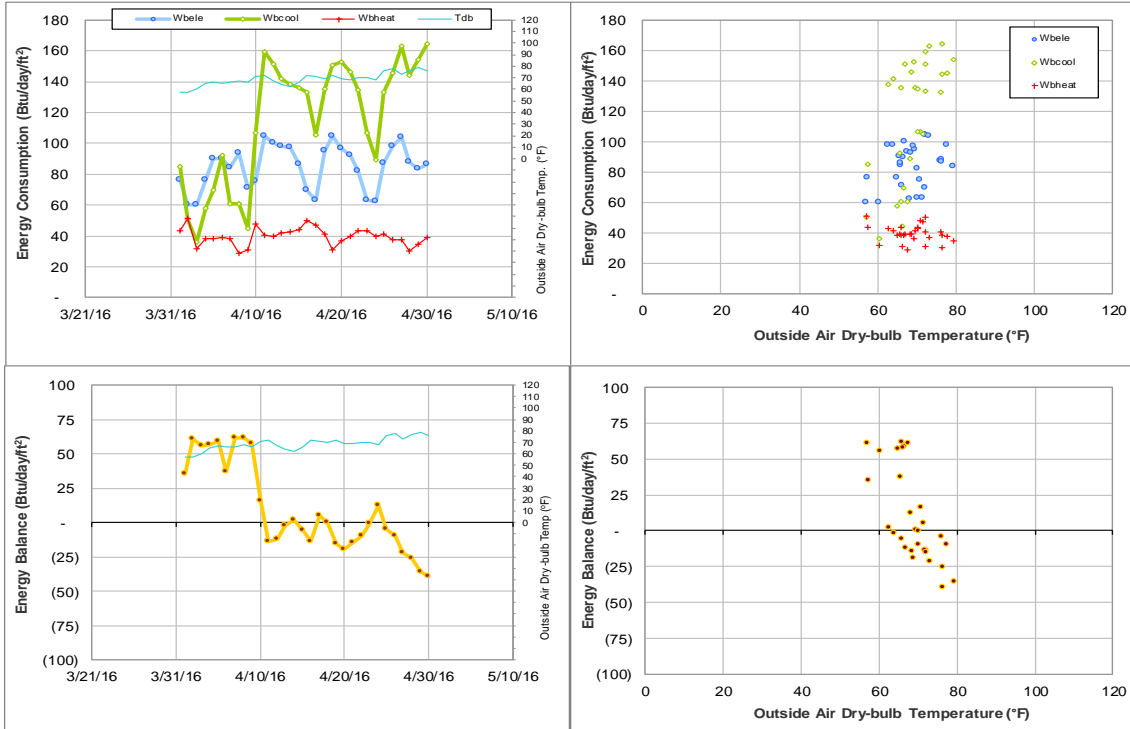


Figure IV-163 Cox-McFerrin Center for Aggie Basketball TAMU BLDG # 1558 Energy Balance Plot during April 2016

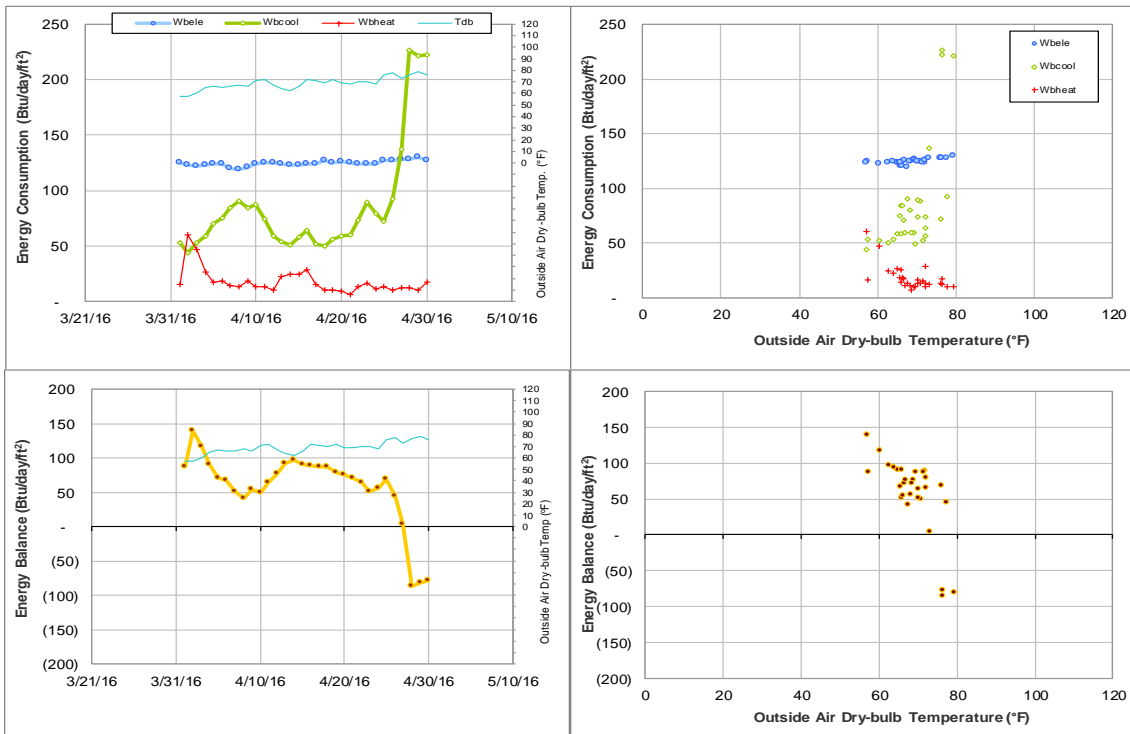


Figure IV-164 West Campus Parking Garage TAMU BLDG # 1559 Energy Balance Plot during April 2016

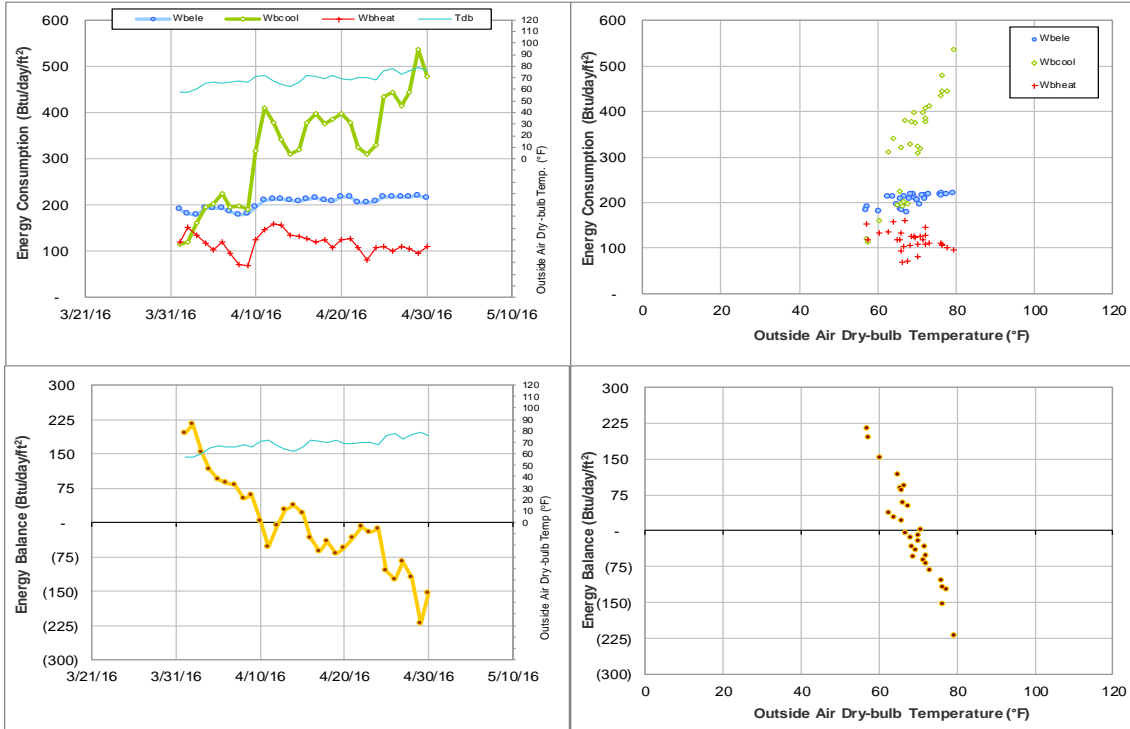


Figure IV-165 Student Recreation Center TAMU BLDG # 1560 Energy Balance Plot during April 2016

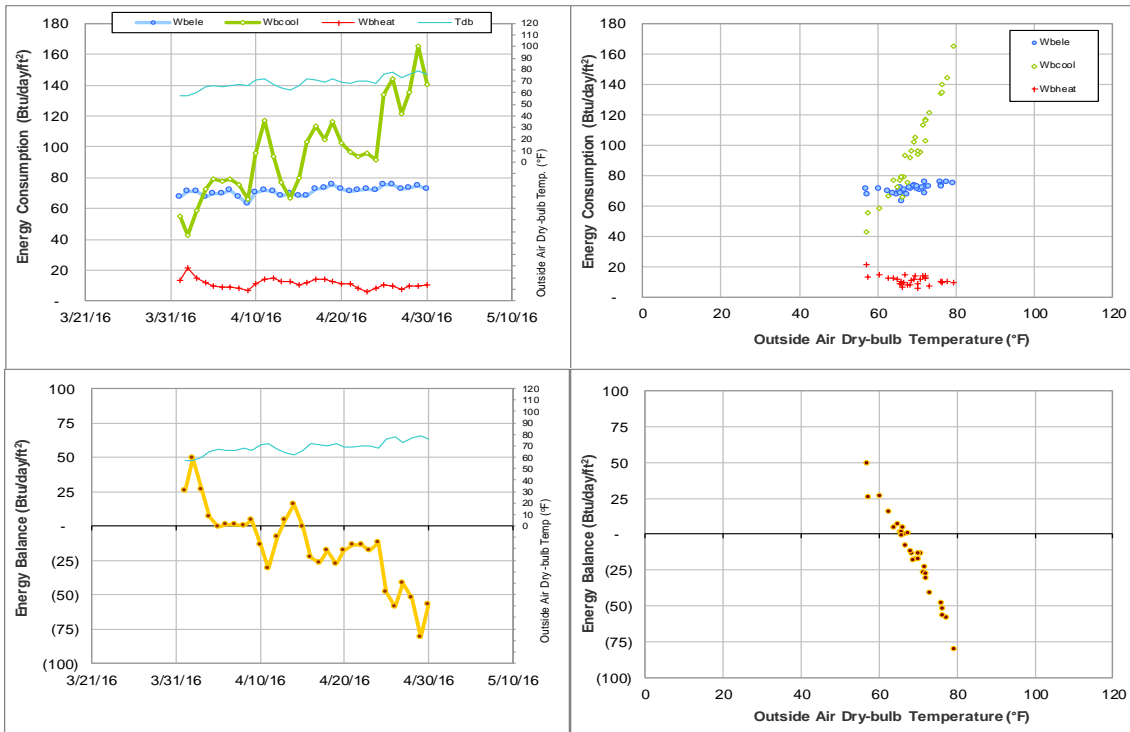


Figure IV-166 White Creek Apartment 1 TAMU BLDG # 1590 Energy Balance Plot during April 2016

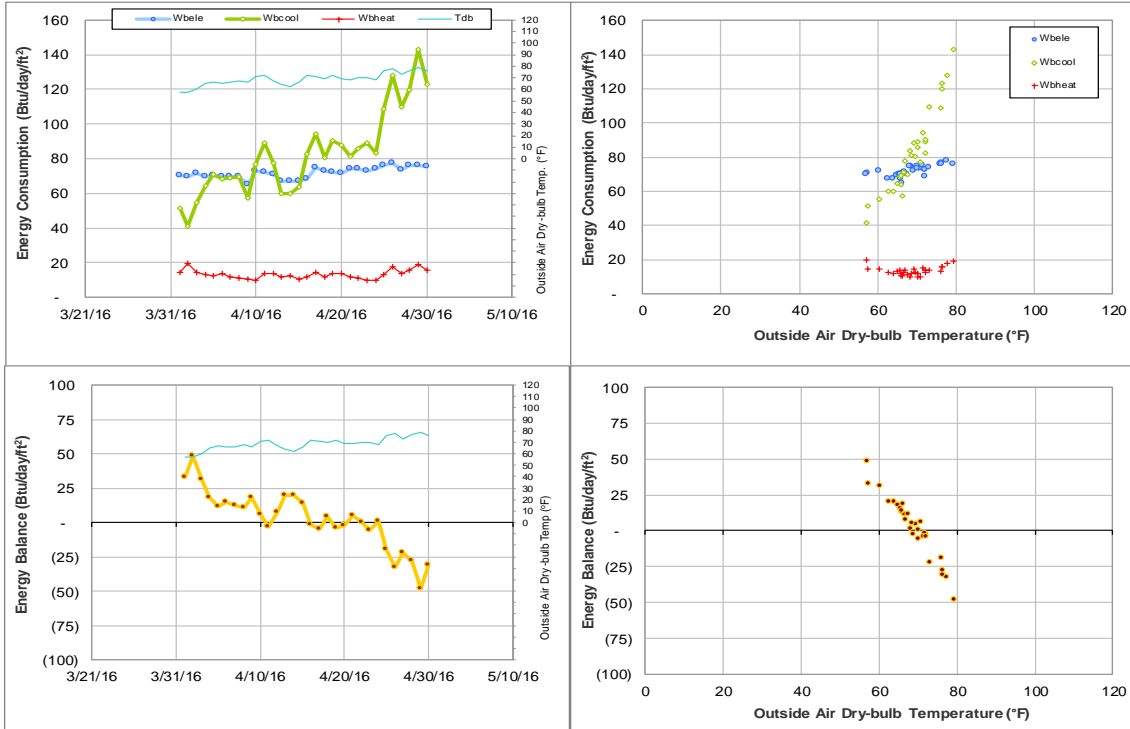


Figure IV-167 White Creek Apartment 2 TAMU BLDG # 1591 Energy Balance Plot during April 2016

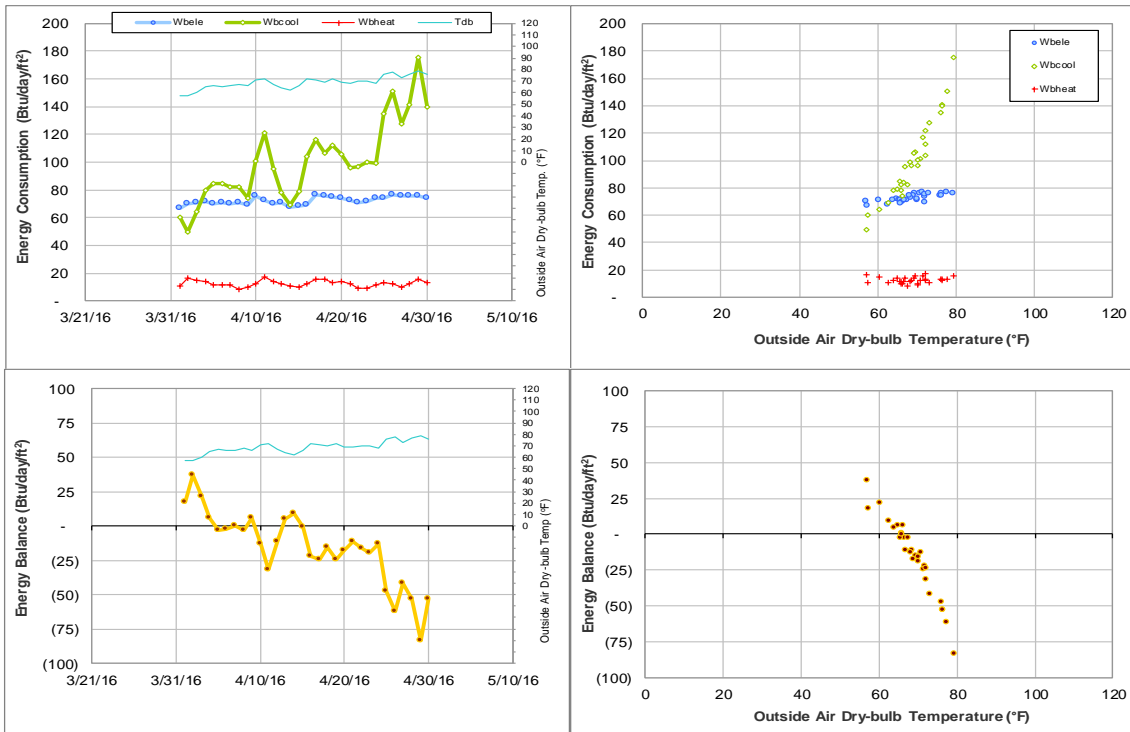


Figure IV-168 White Creek Apartment 3 TAMU BLDG # 1592 Energy Balance Plot during April 2016

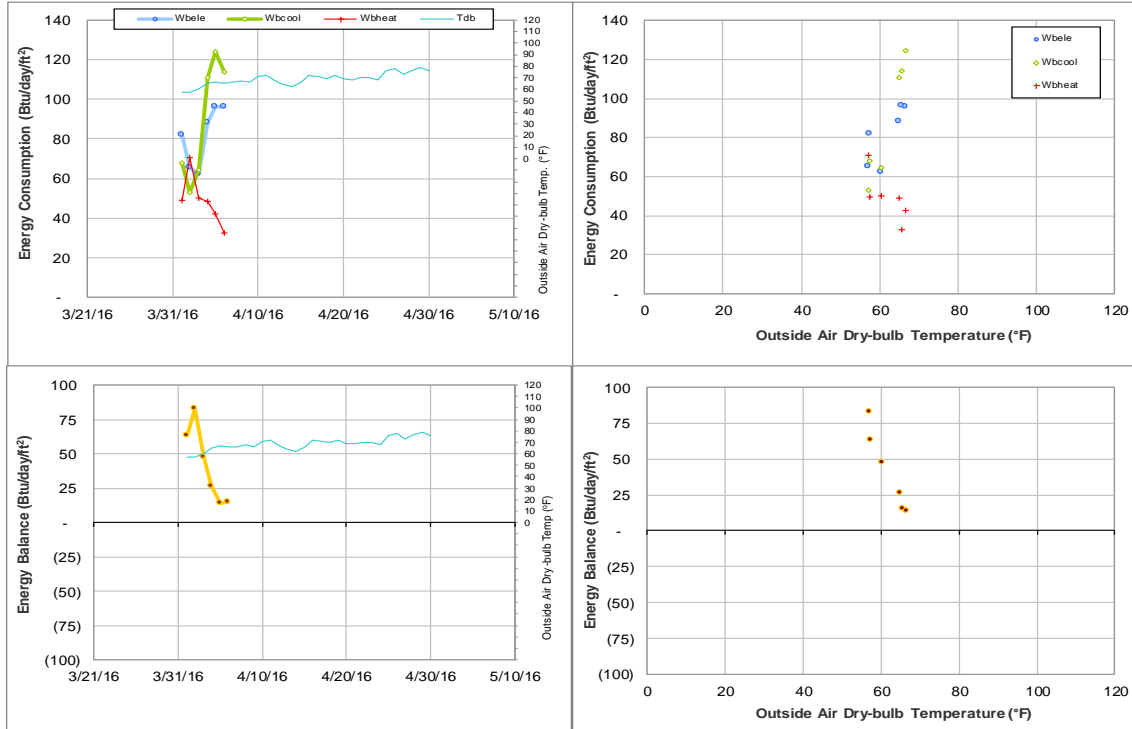


Figure IV-169 Gilchrist TTI Building TAMU BLDG # 1600 Energy Balance Plot during April 2016

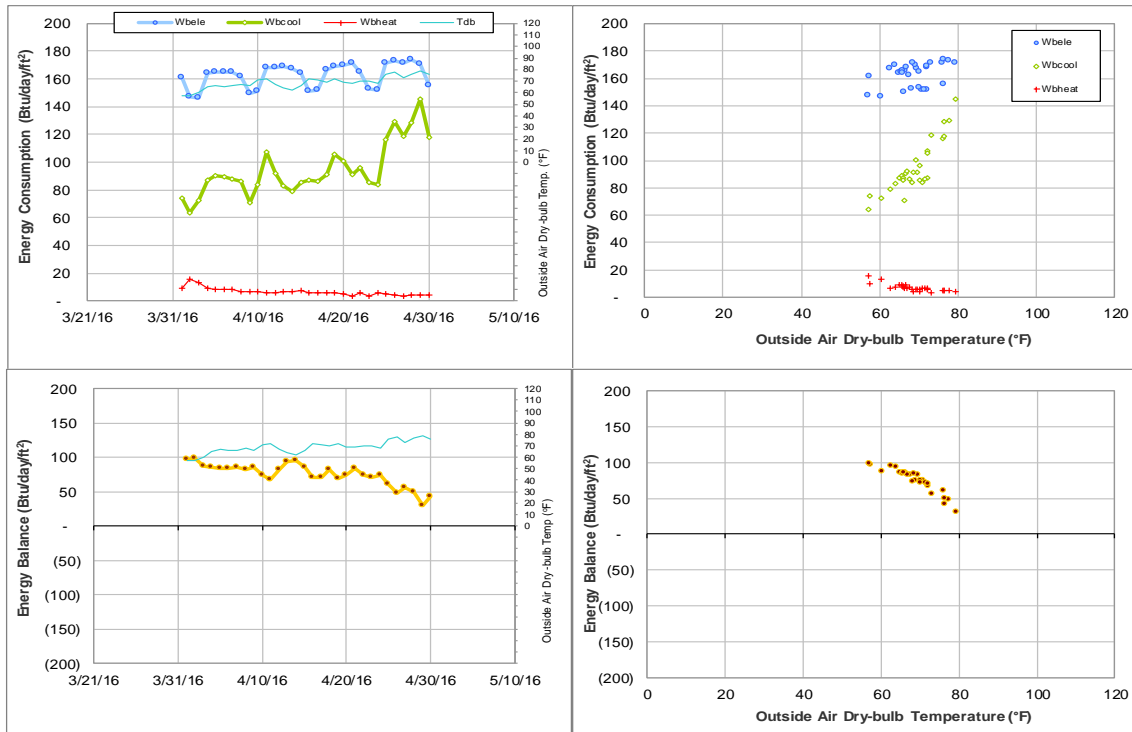


Figure IV-170 International Ocean Discovery Building TAMU BLDG # 1601 Energy Balance Plot during April 2016

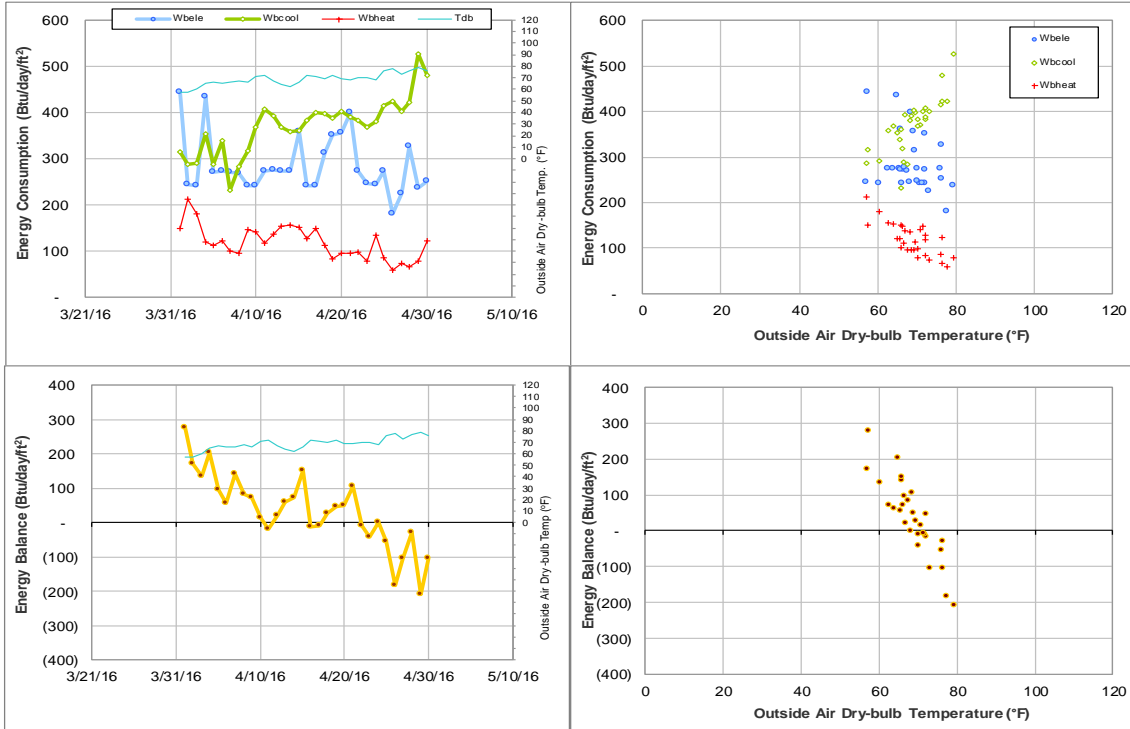


Figure IV-171 Offshore Technology Research Center TAMU BLDG # 1604 Energy Balance Plot during April 2016

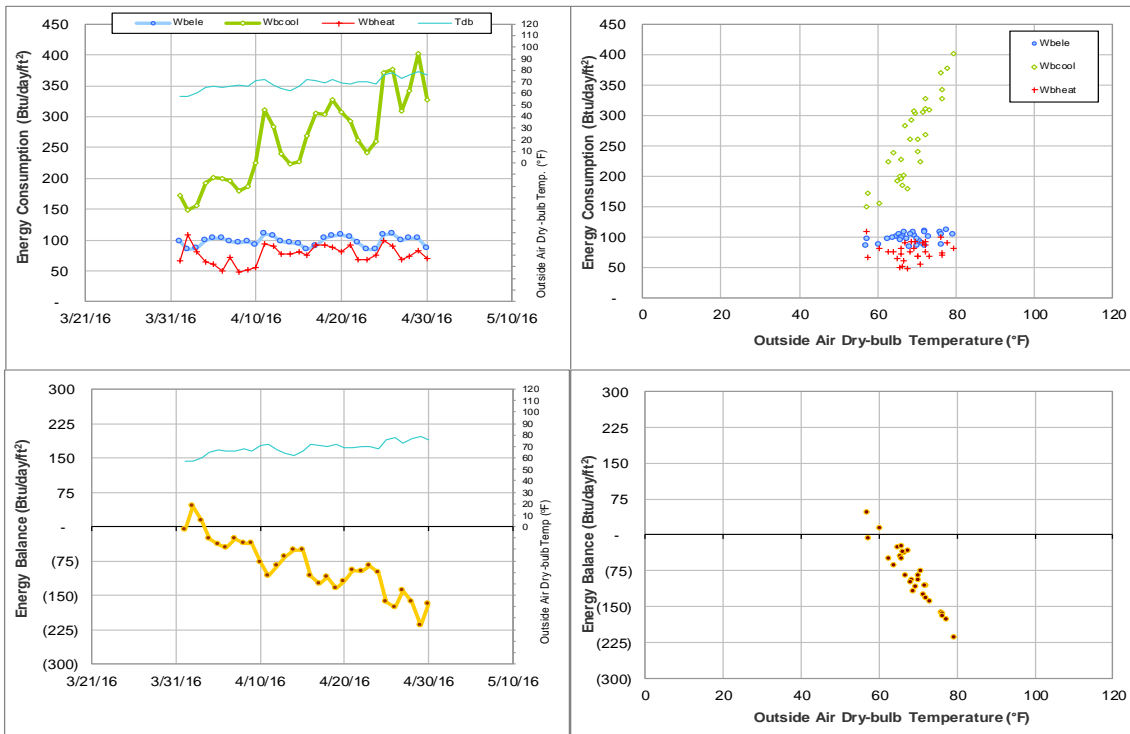


Figure IV-172 George Bush Presidential Library & Museum TAMU BLDG # 1606 Energy Balance Plot during April 2016

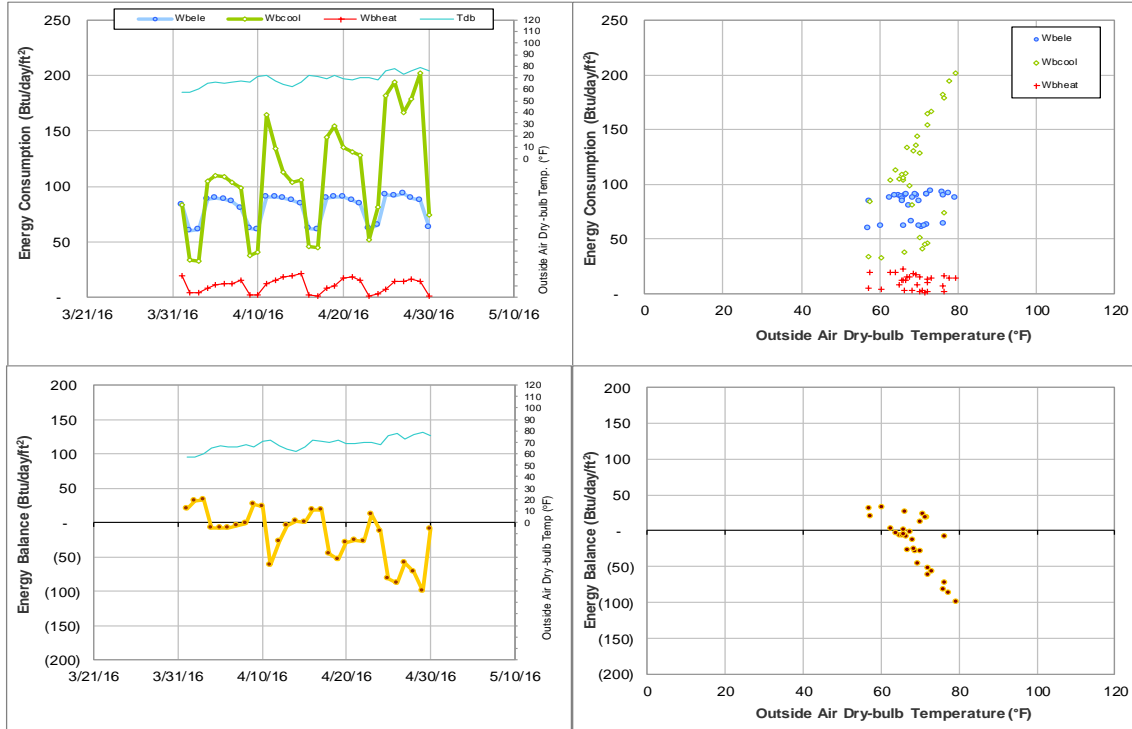


Figure IV-173 Allen Building TAMU BLDG # 1607 Energy Balance Plot during April 2016

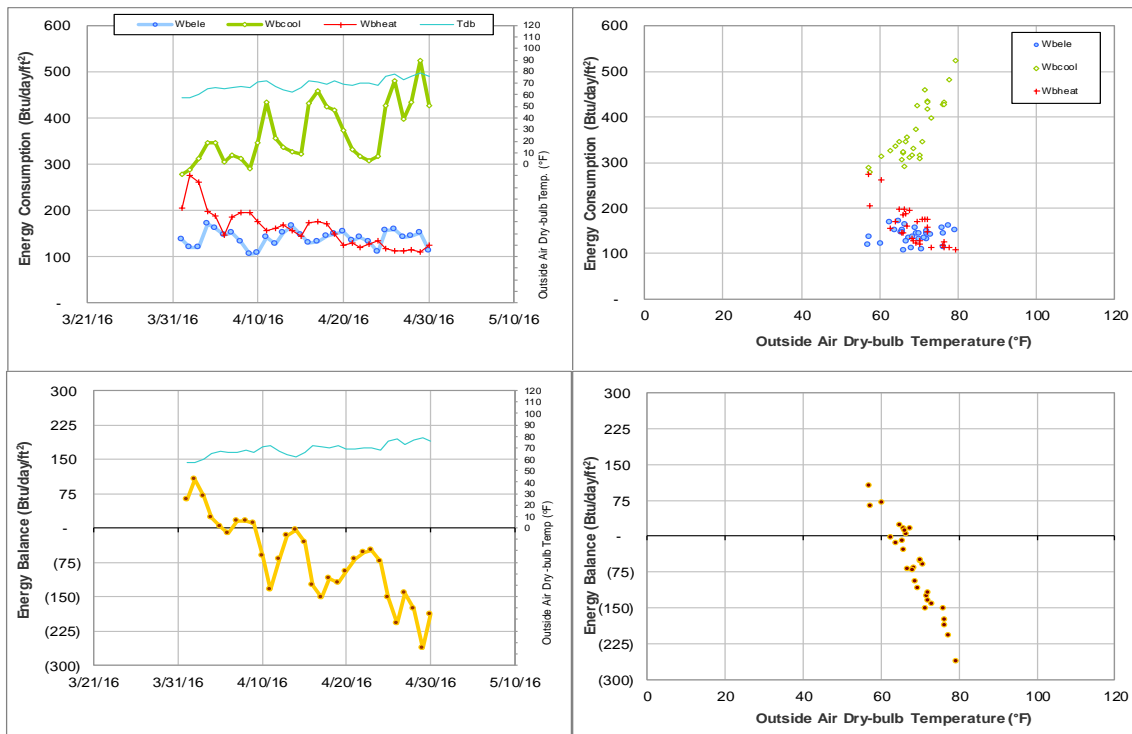


Figure IV-174 Annenberg Presidential Conference Center TAMU BLDG # 1608 Energy Balance Plot during April 2016

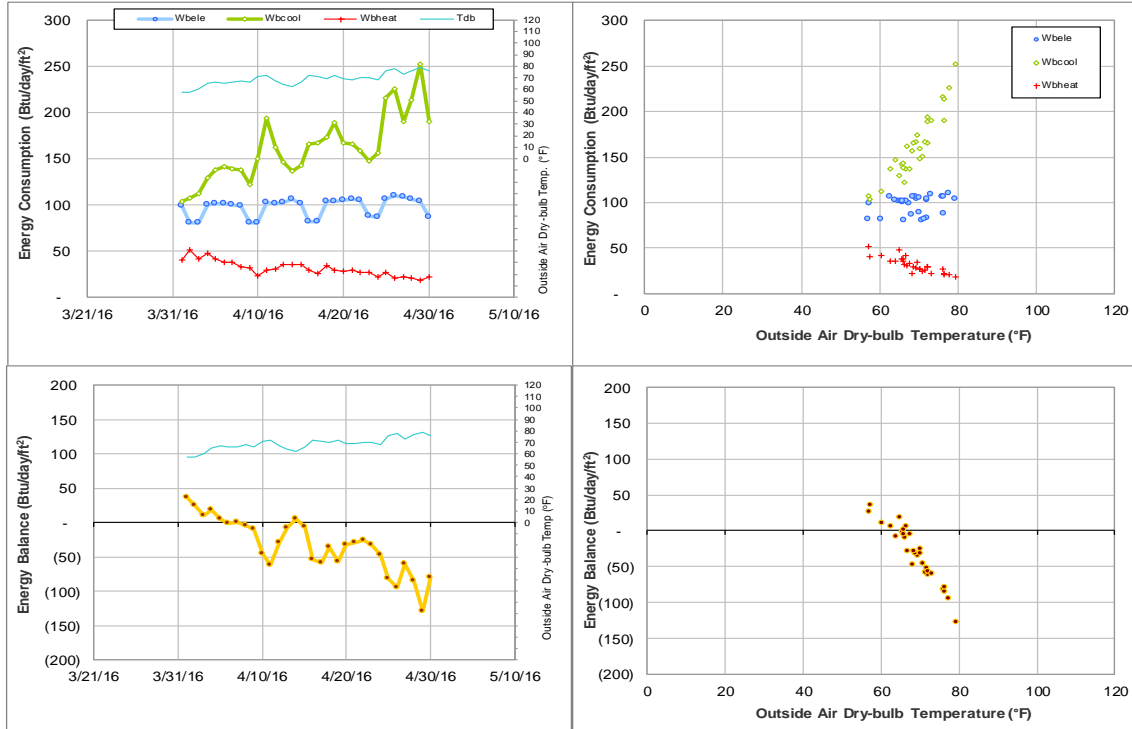


Figure IV-175 TTI Headquarters TAMU BLDG # 1609 Energy Balance Plot during April 2016

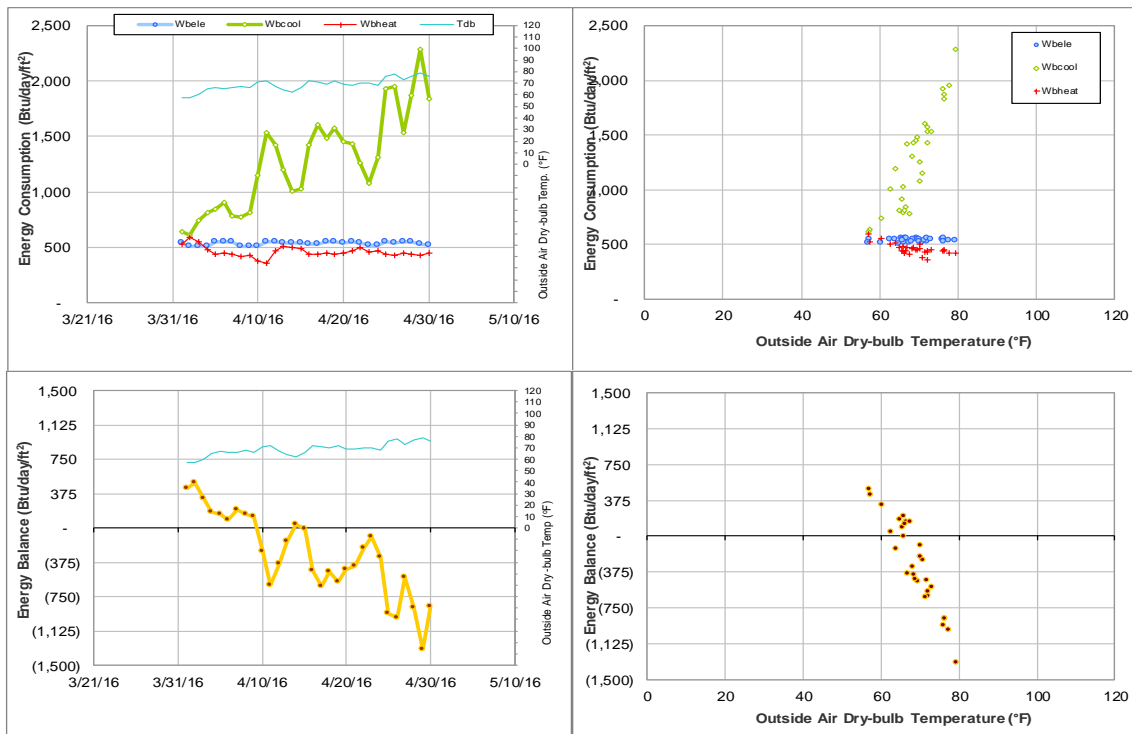


Figure IV-176 Engineering Research Building TAMU BLDG # 1611 Energy Balance Plot during April 2016

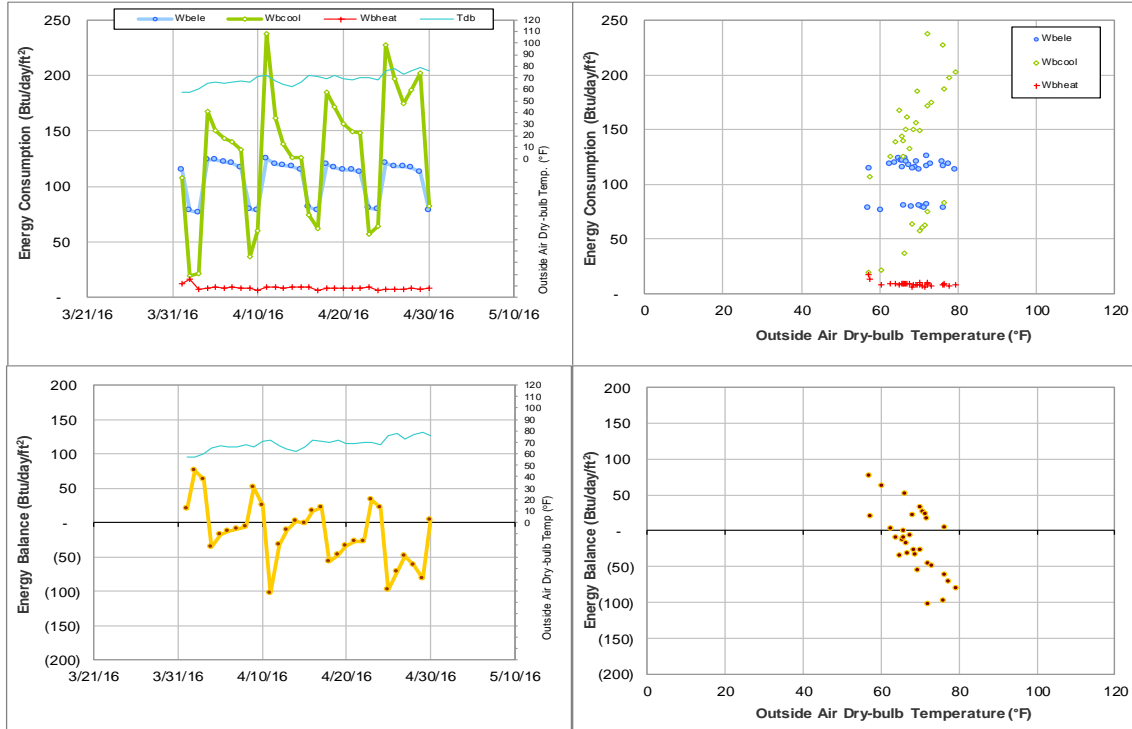


Figure IV-177 General Services Complex TAMU BLDG # 1800 Energy Balance Plot during April 2016

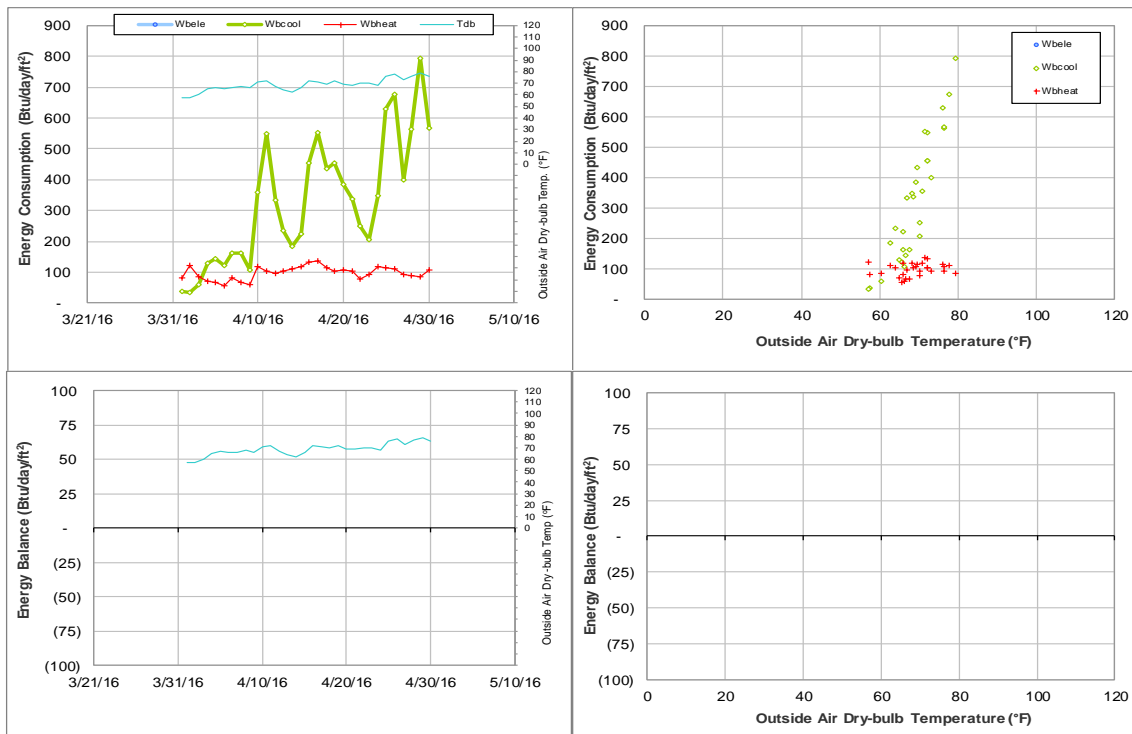


Figure IV-178 Office of the State Chemist Building TAMU BLDG # 1810 Energy Balance Plot during April 2016

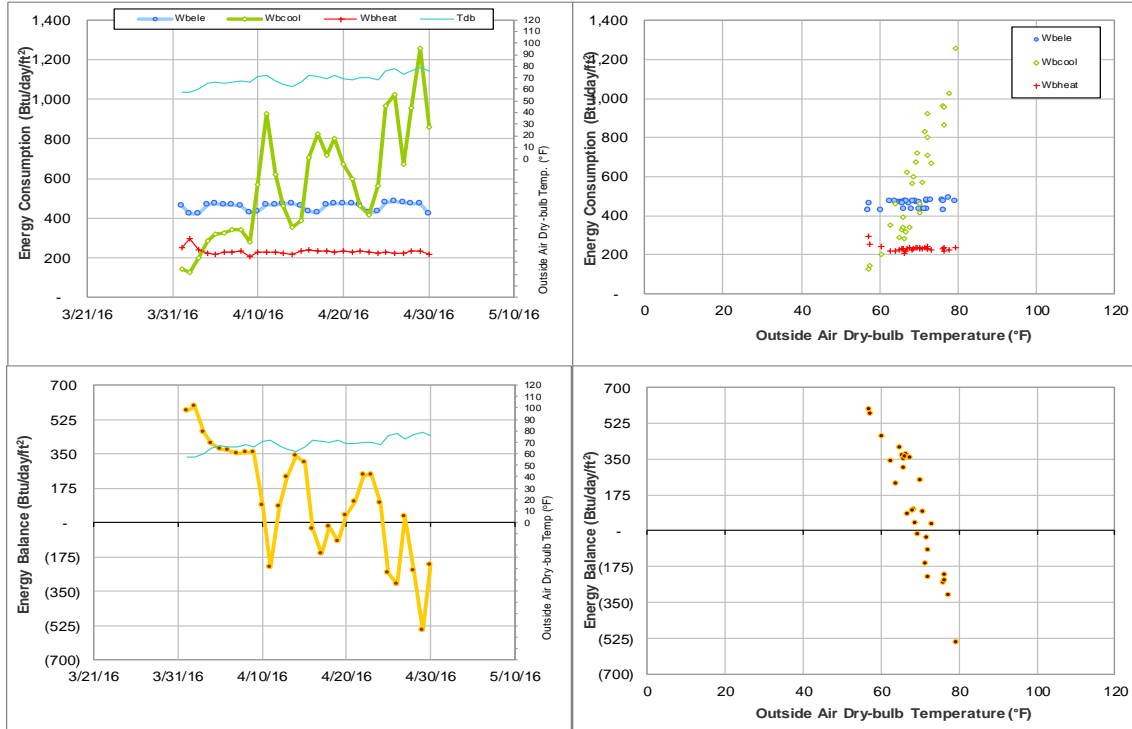


Figure IV-179 Vet Med Research Bldg Addition TAMU BLDG # 1811 Energy Balance Plot during April 2016

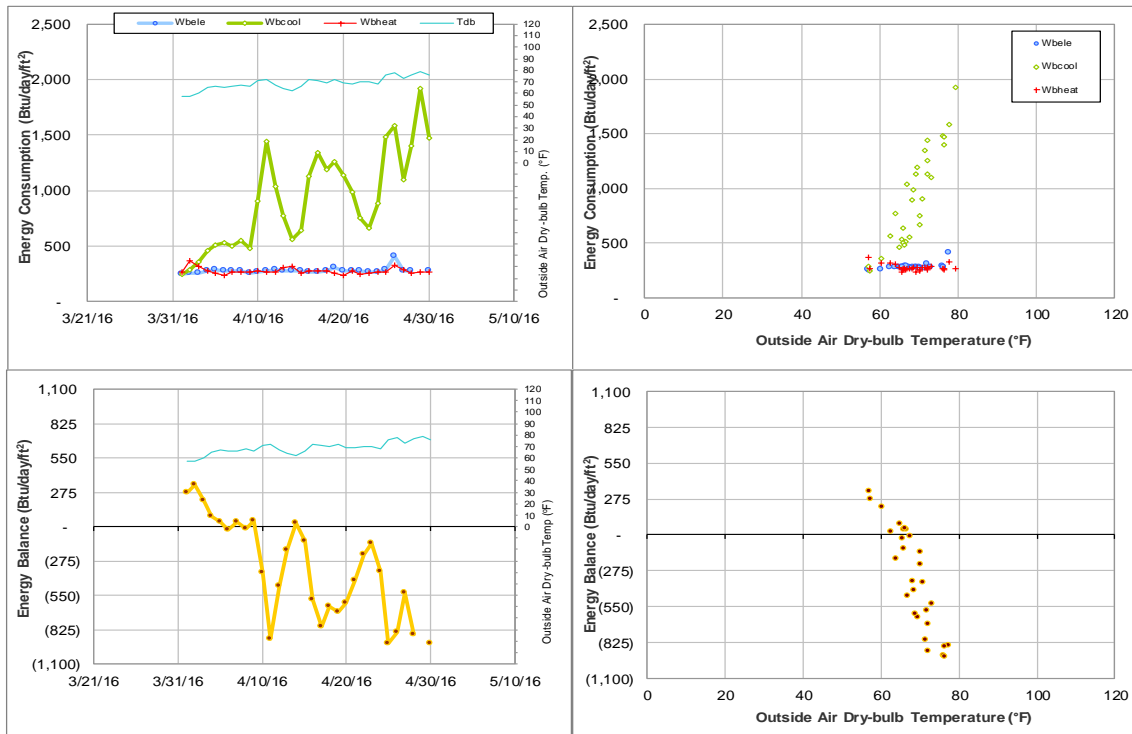


Figure IV-180 Texas Institute for Genomic Medicine TAMU BLDG # 1900 Energy Balance Plot during April 2016

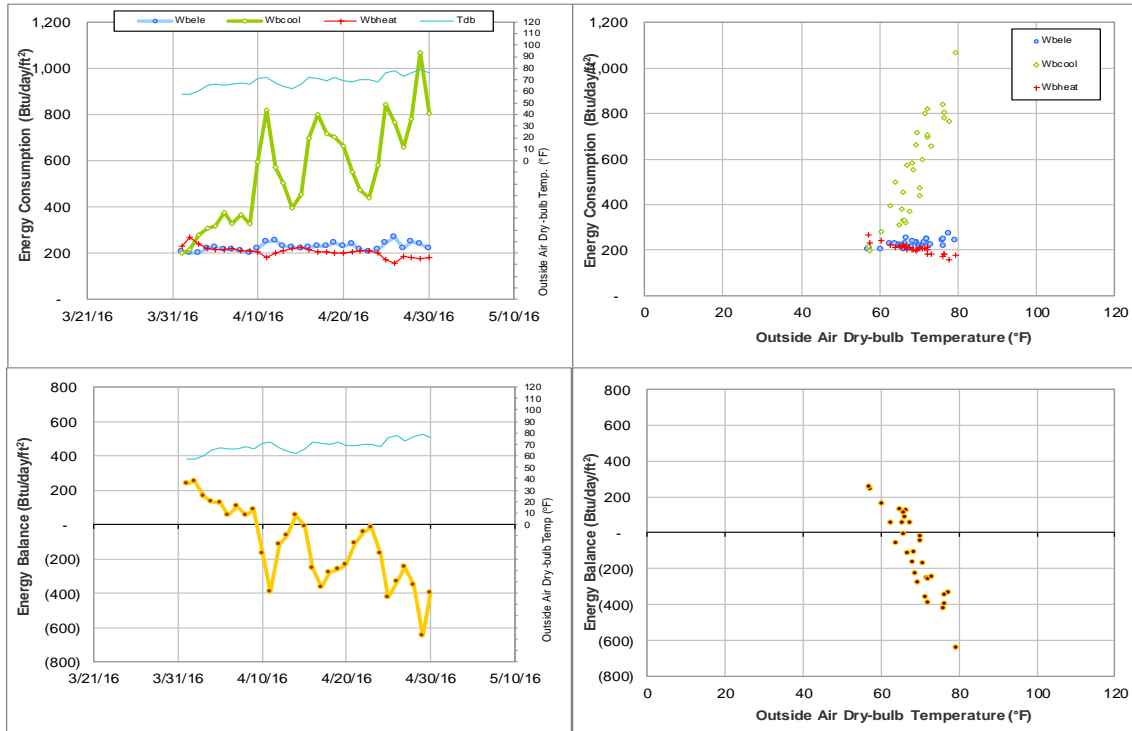


Figure IV-181 Texas A&M Institute for Preclinical Studies A TAMU BLDG # 1904 Energy Balance Plot during April 2016

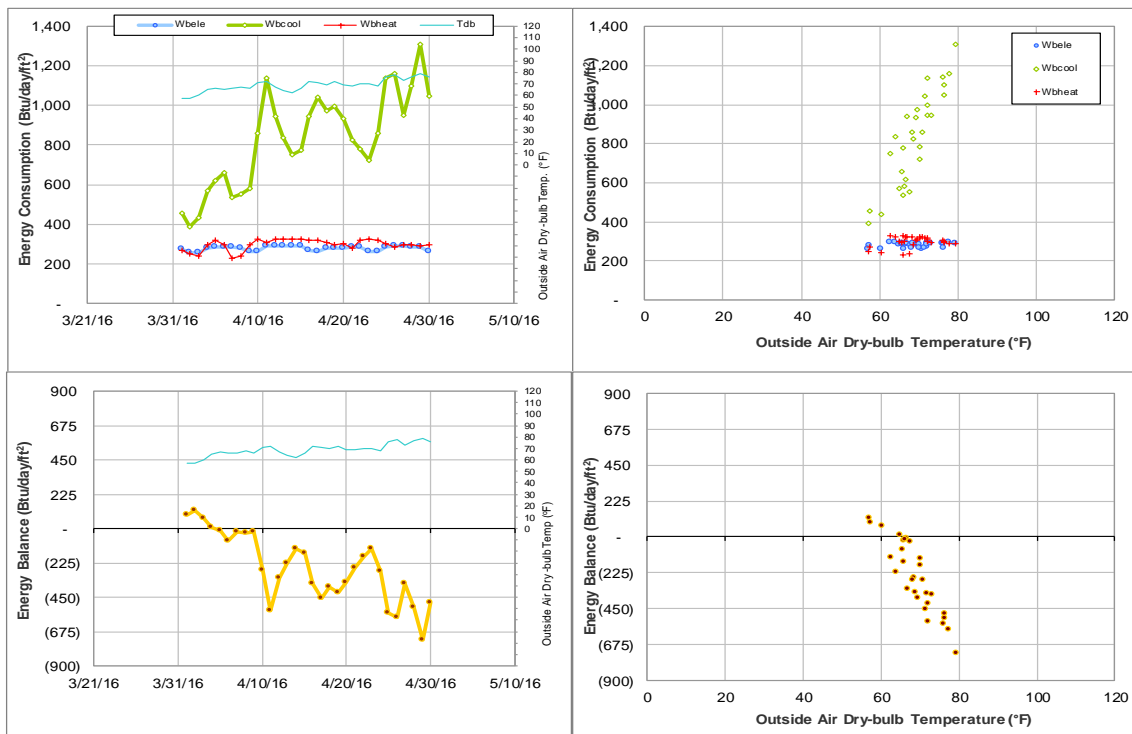


Figure IV-182 National Center for Therapeutics Manufacturing TAMU BLDG # 1910 Energy Balance Plot during April 2016

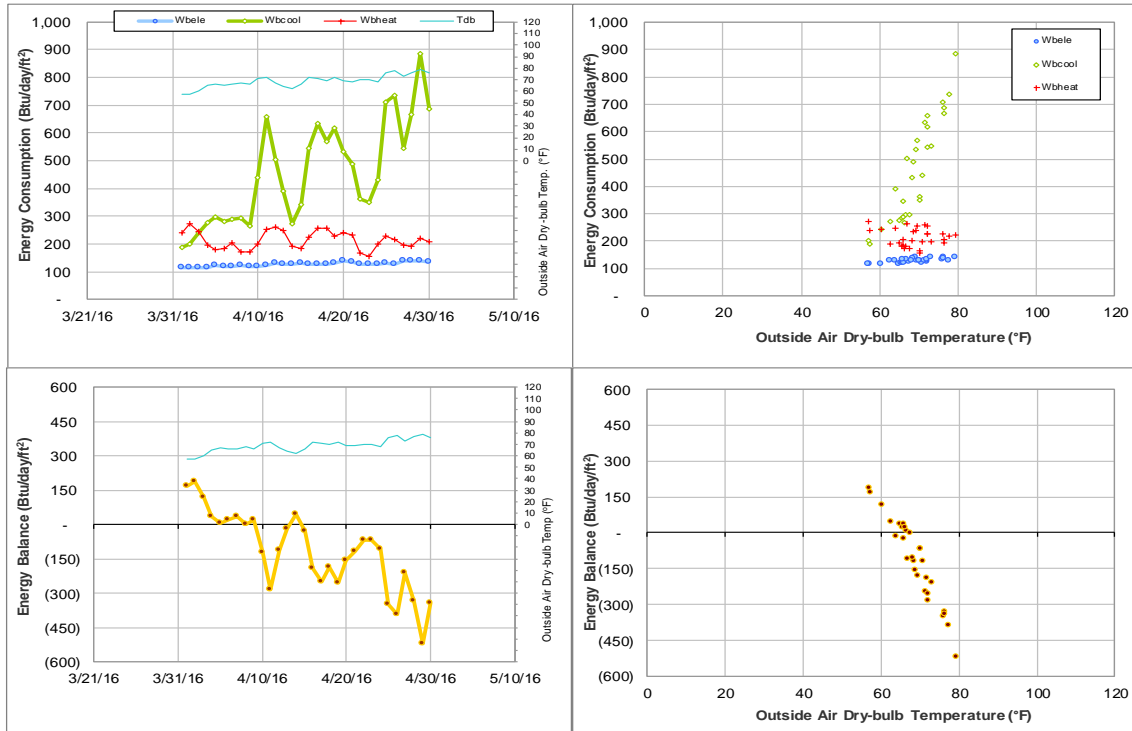


Figure IV-183 Multi-Species Research Building TAMU BLDG # 1911 Energy Balance Plot during April 2016

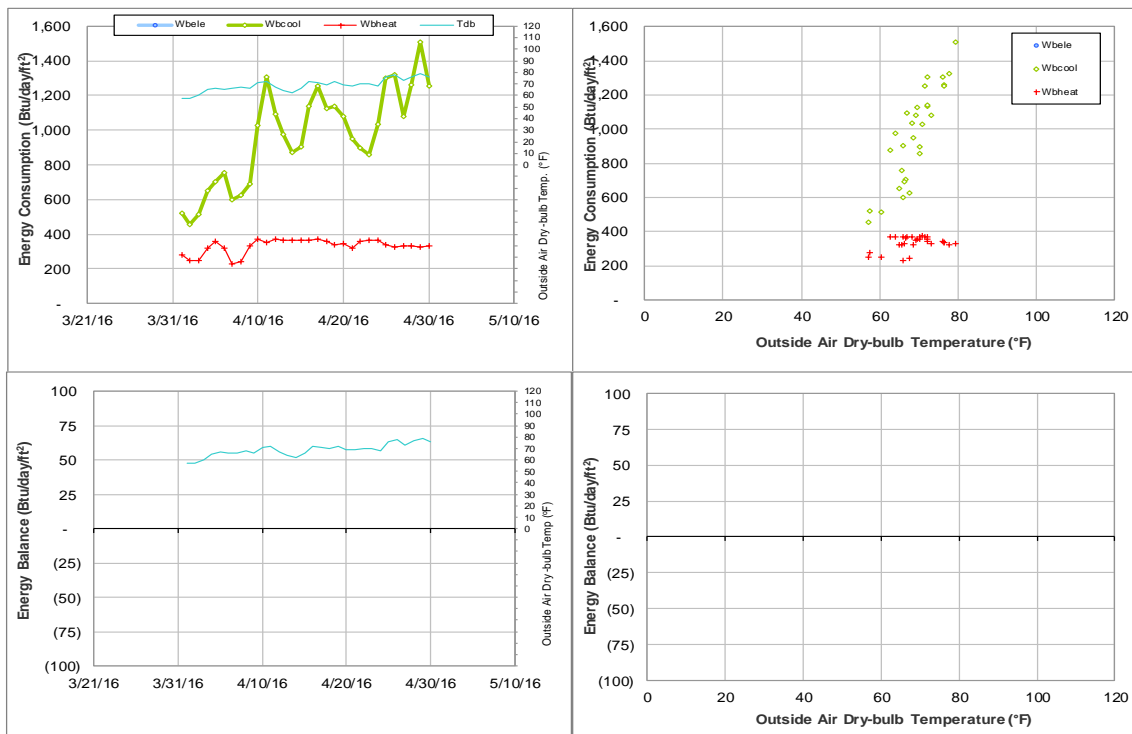


Figure IV-184 NCTM Manufacturing Building TAMU BLDG # 10226 Energy Balance Plot during April 2016

**V. Energy Balance Plots with filled-in data for April
2016 Consumption**

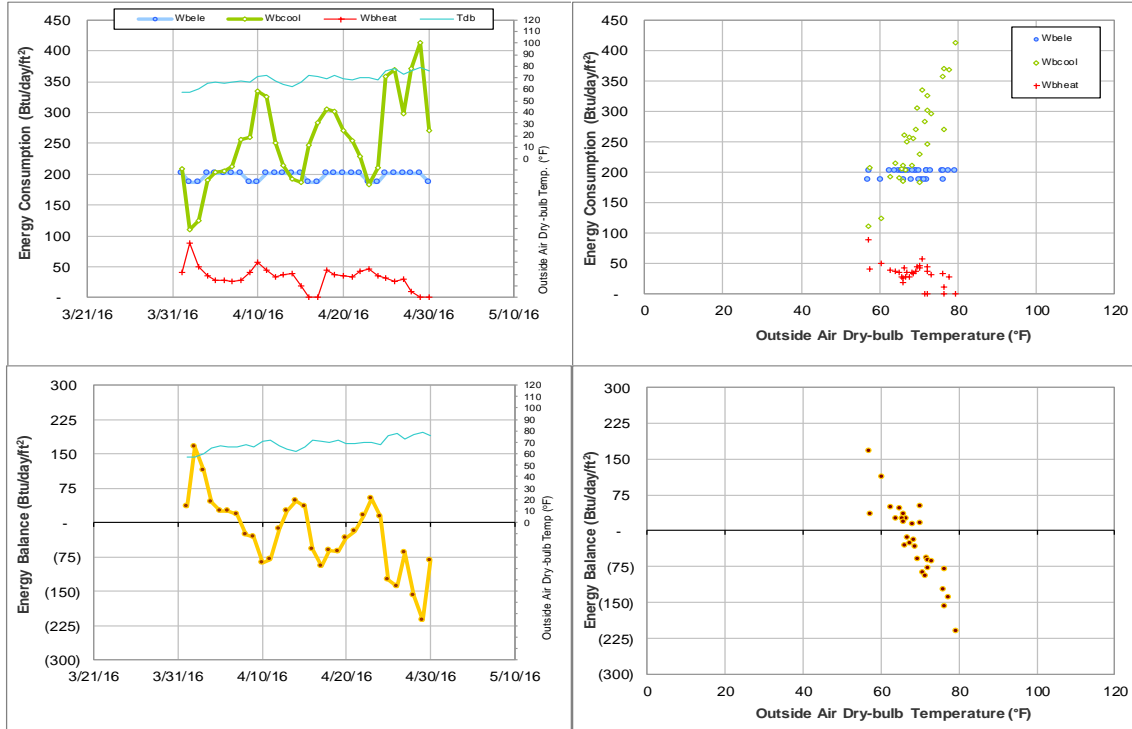


Figure V-1 Bright Football Complex TAMU BLDG # 361 Energy Balance Plot during April 2016

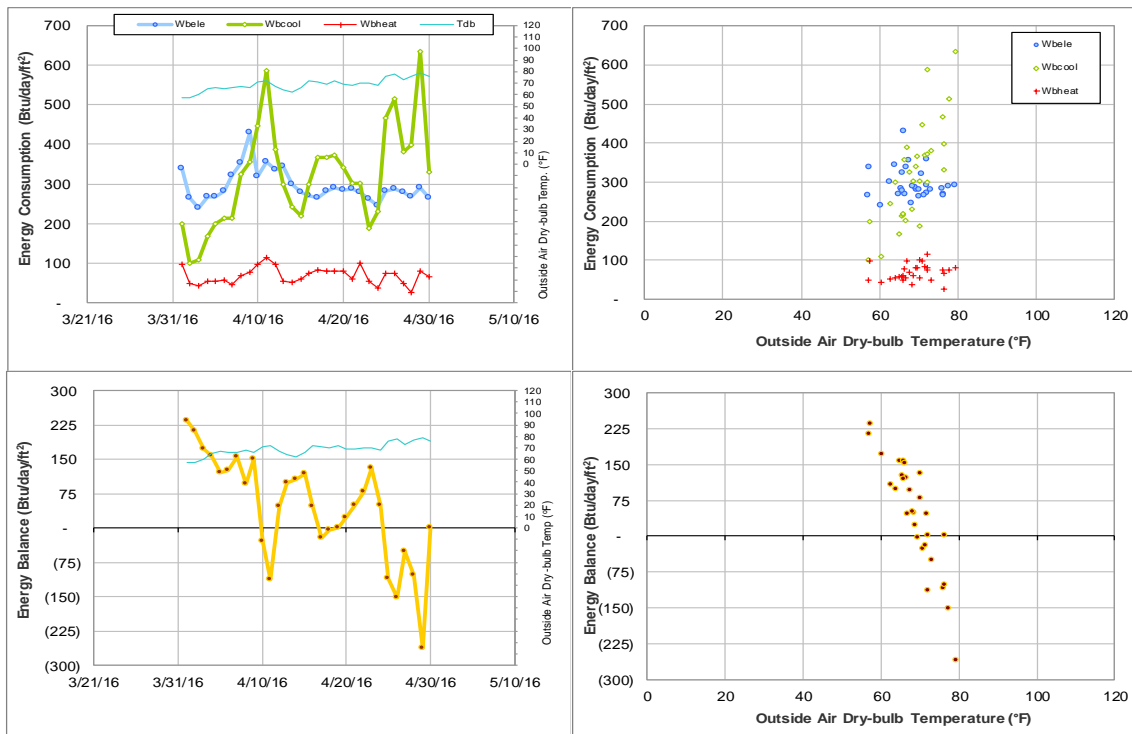


Figure V-2 Kyle Field TAMU BLDG # 367 Energy Balance Plot during April 2016

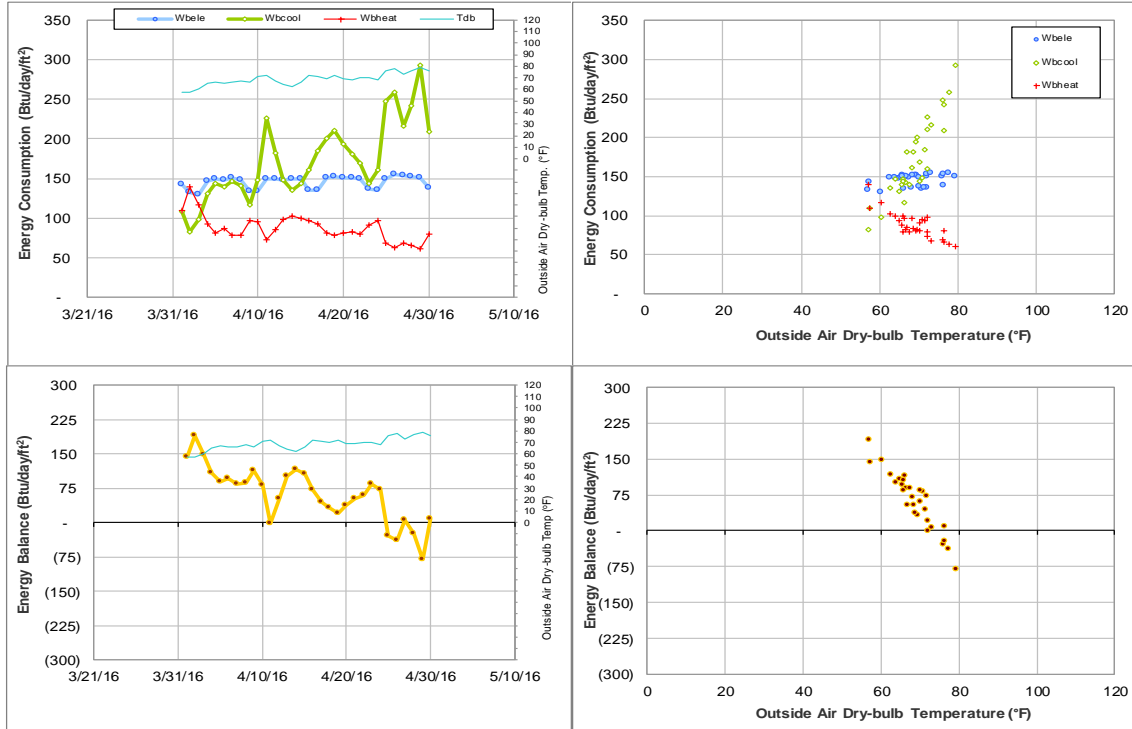


Figure V-3 Oceanography & Meteorology Building TAMU BLDG # 443 Energy Balance Plot during April 2016

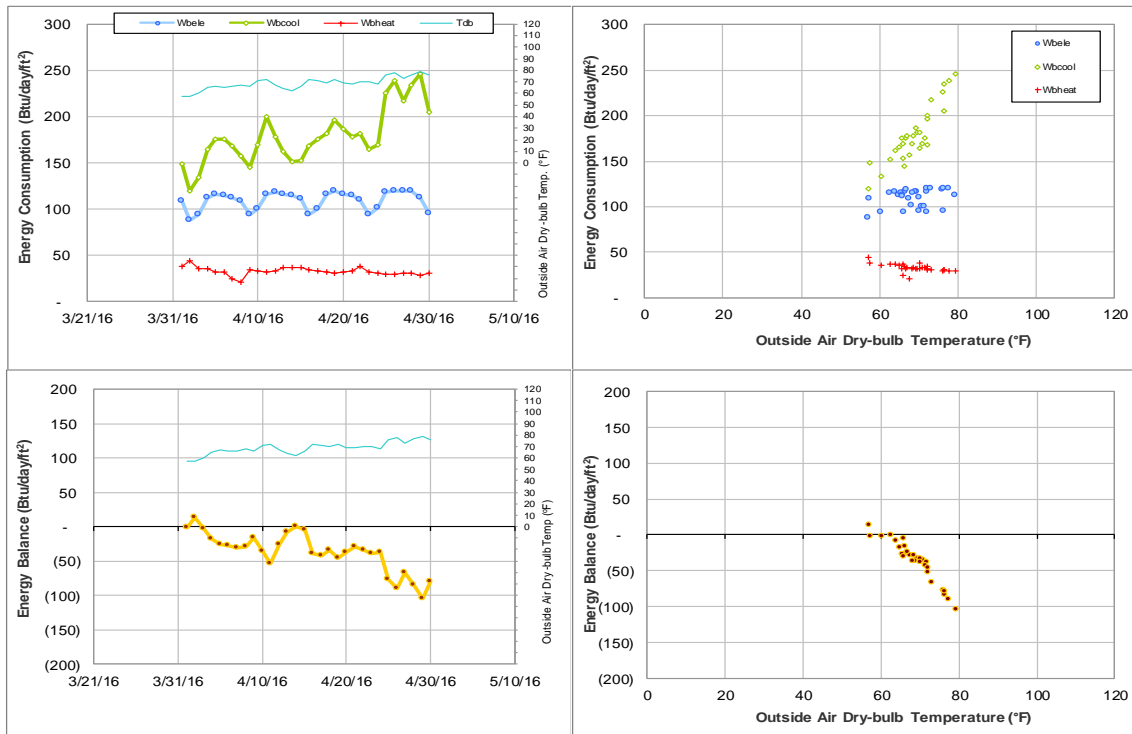


Figure V-4 Evans Library TAMU BLDG # 468 Energy Balance Plot during April 2016

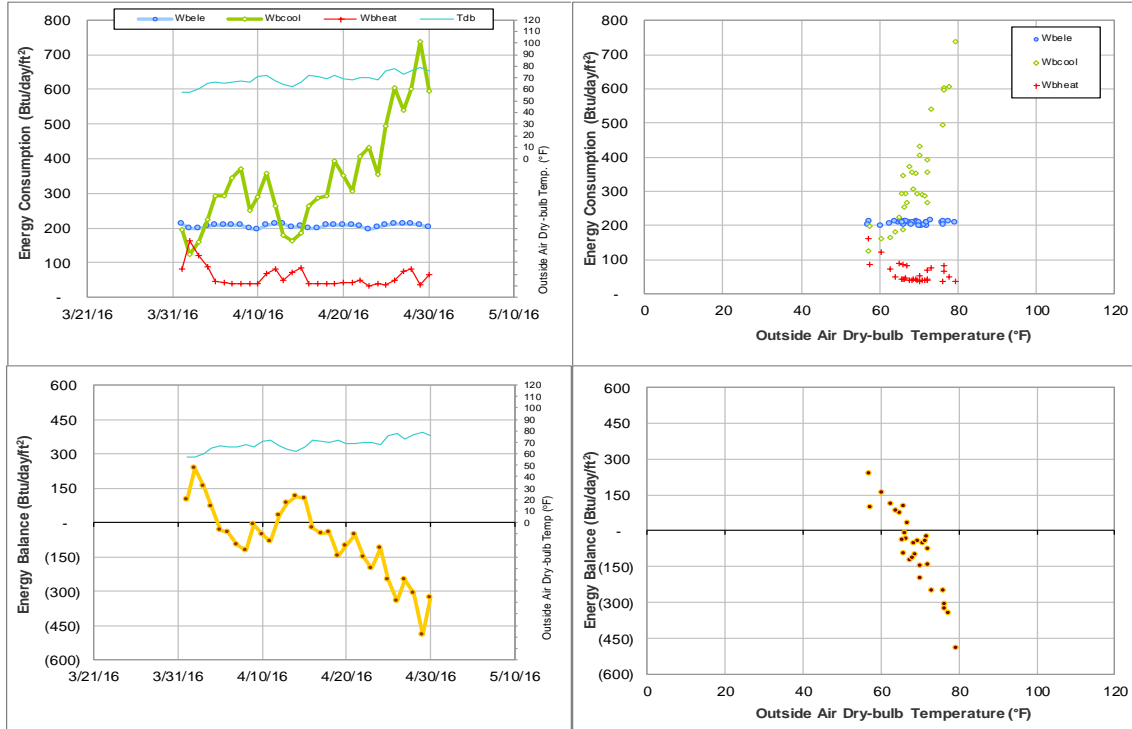


Figure V-5 Central Campus Parking Garage TAMU BLDG # 469 Energy Balance Plot during April 2016

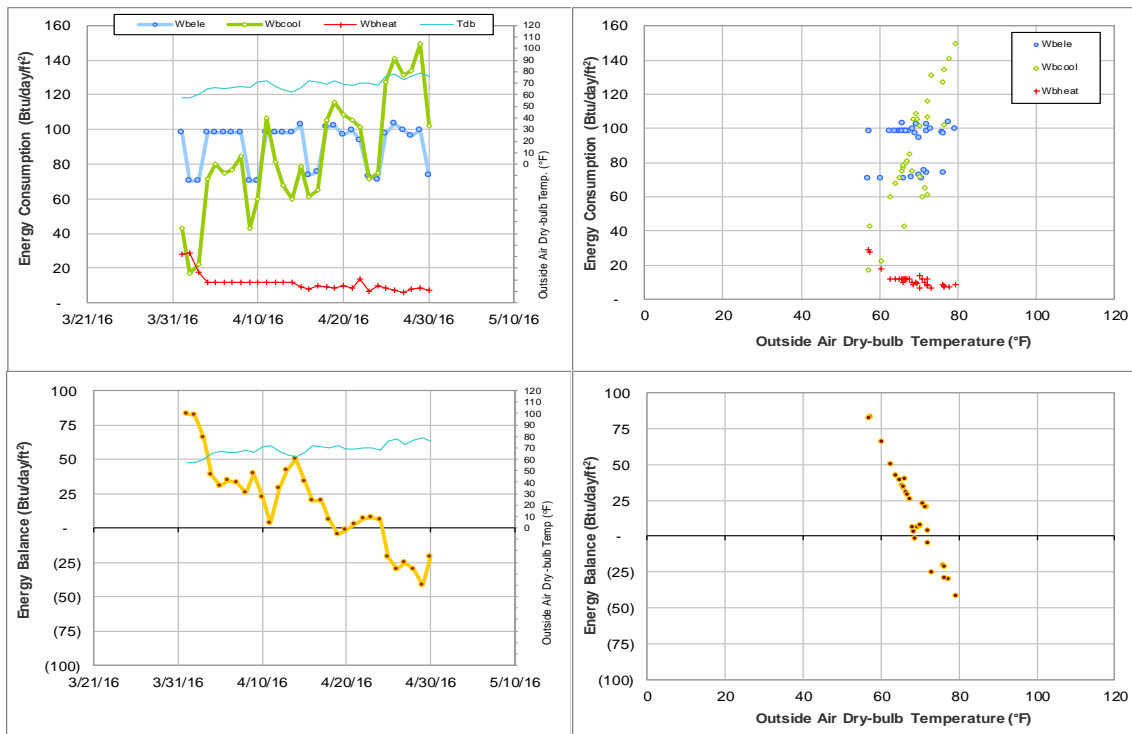


Figure V-6 Thompson Hall TAMU BLDG # 483 Energy Balance Plot during April 2016

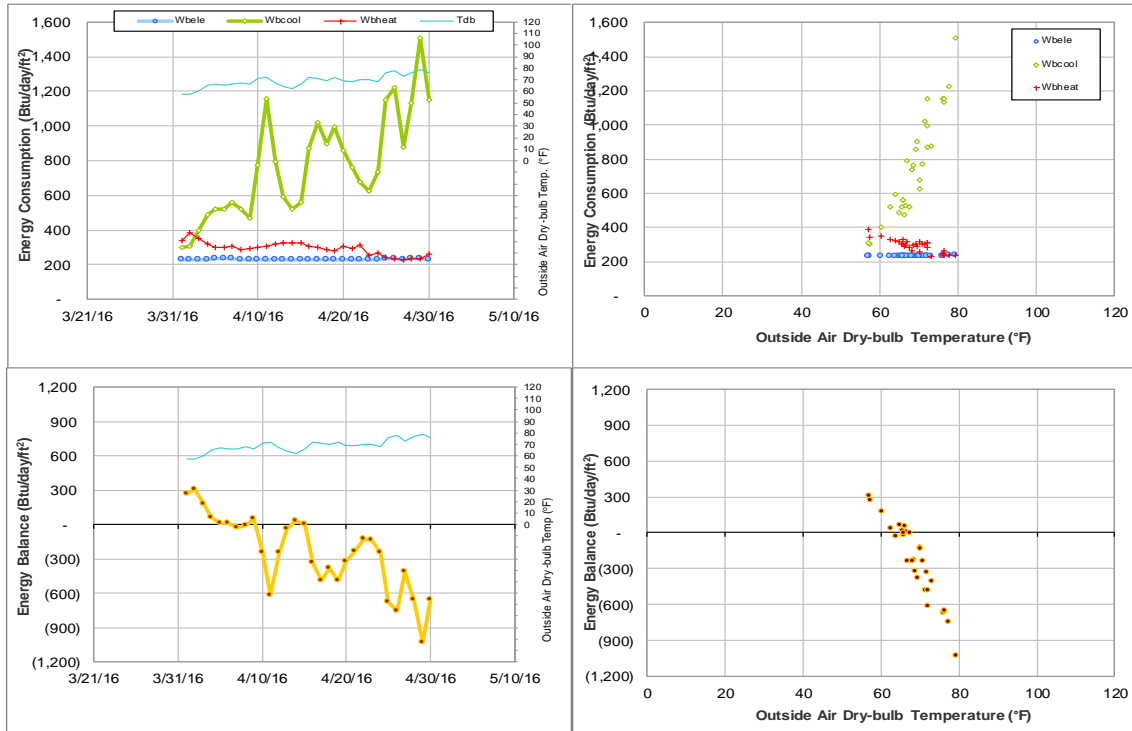


Figure V-7 Chemistry Building TAMU BLDG # 484 Energy Balance Plot during April 2016

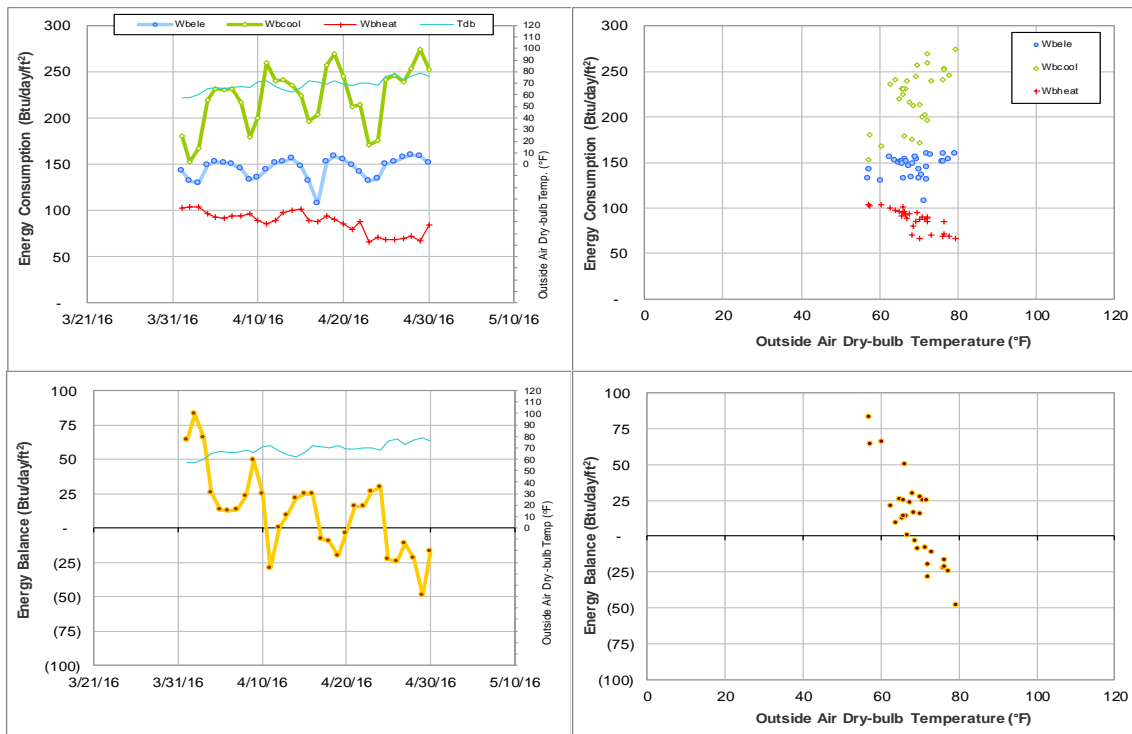


Figure V-8 Civil Engineering Building TAMU BLDG # 492 Energy Balance Plot during April 2016

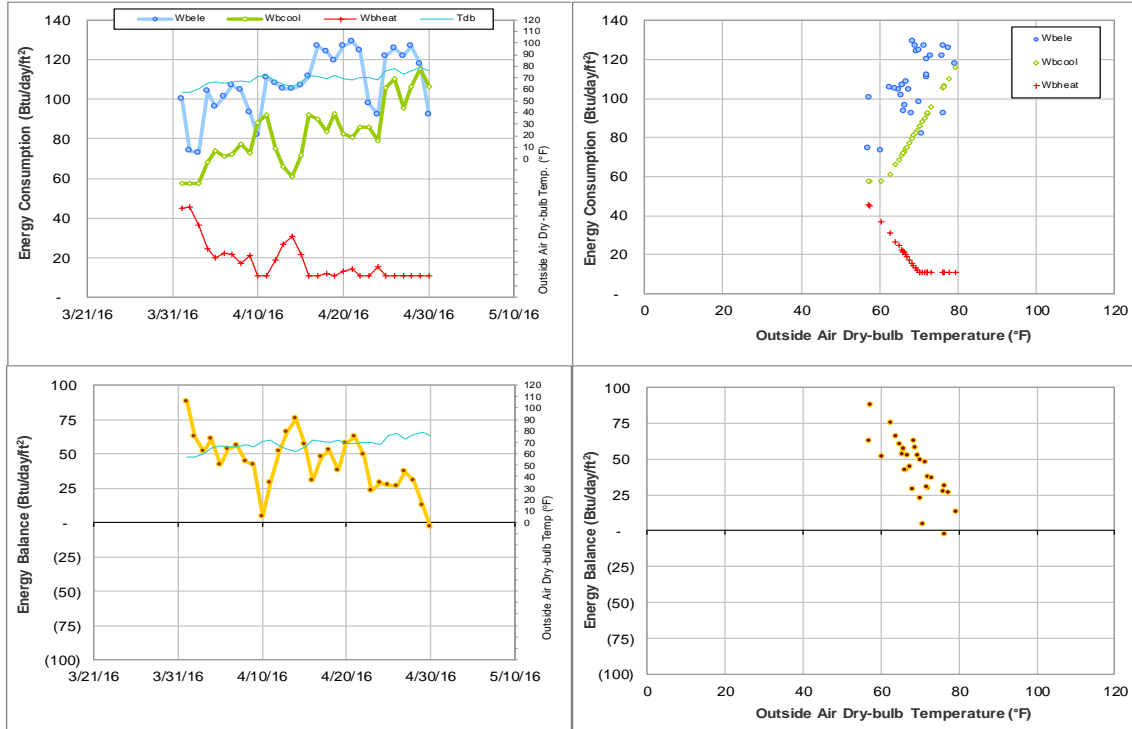


Figure V-9 Engineering Innovation Center TAMU BLDG # 499 Energy Balance Plot during April 2016

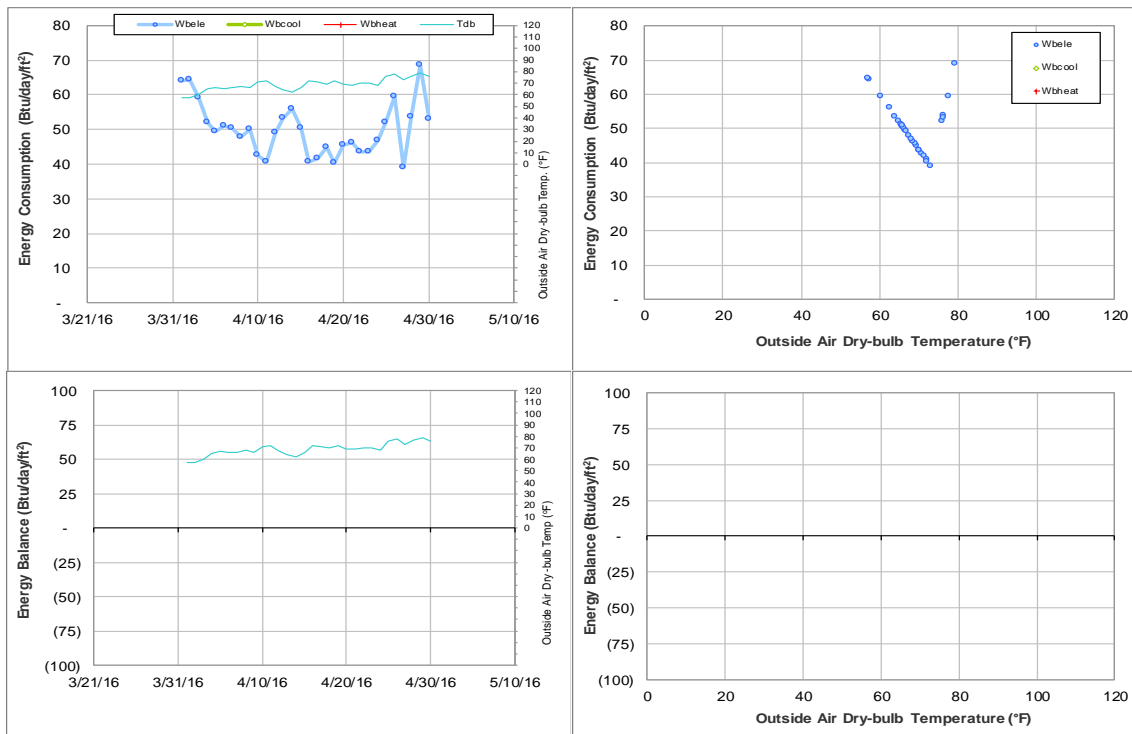


Figure V-10 Concrete Materials Laboratory TAMU BLDG # 501 Energy Balance Plot during April 2016

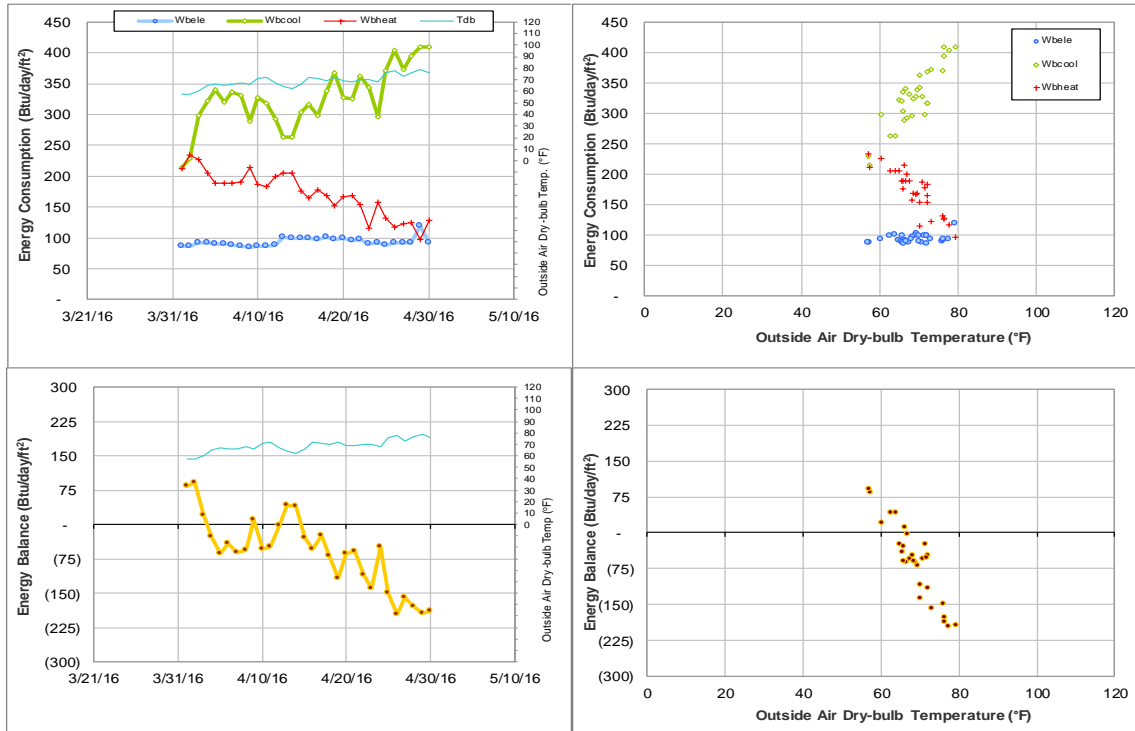


Figure V-11 All Faiths Chapel TAMU BLDG # 512 Energy Balance Plot during April 2016

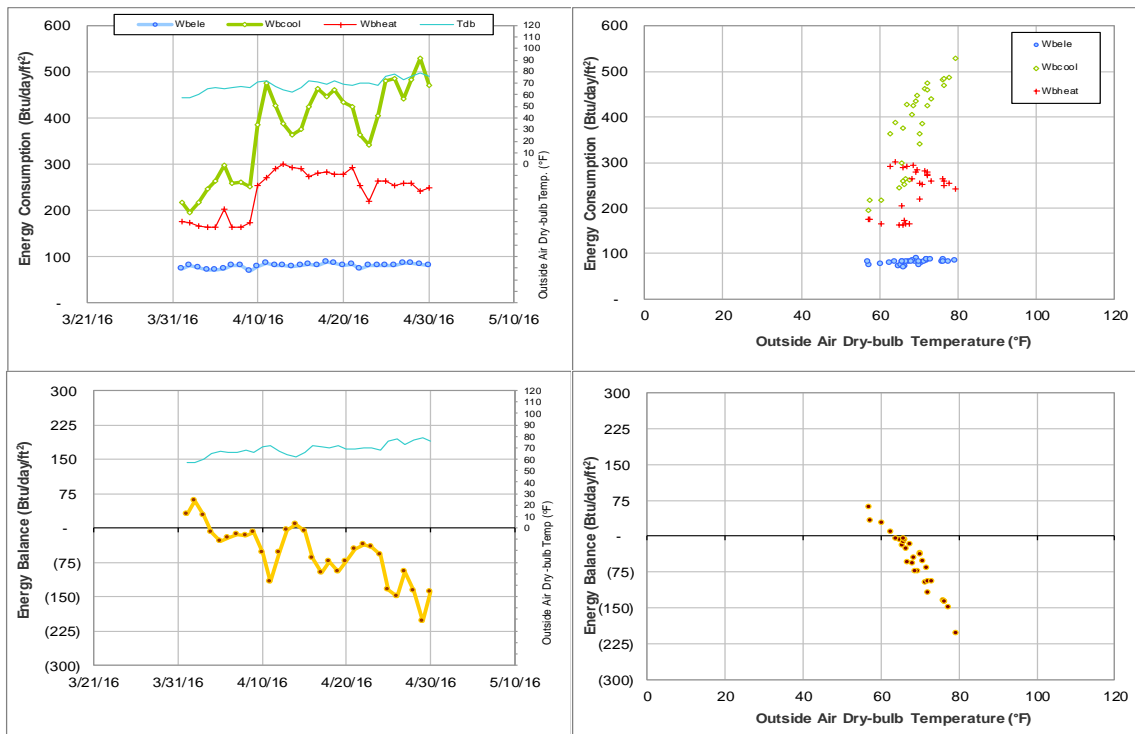


Figure V-12 Haas Residence Hall TAMU BLDG # 549 Energy Balance Plot during April 2016

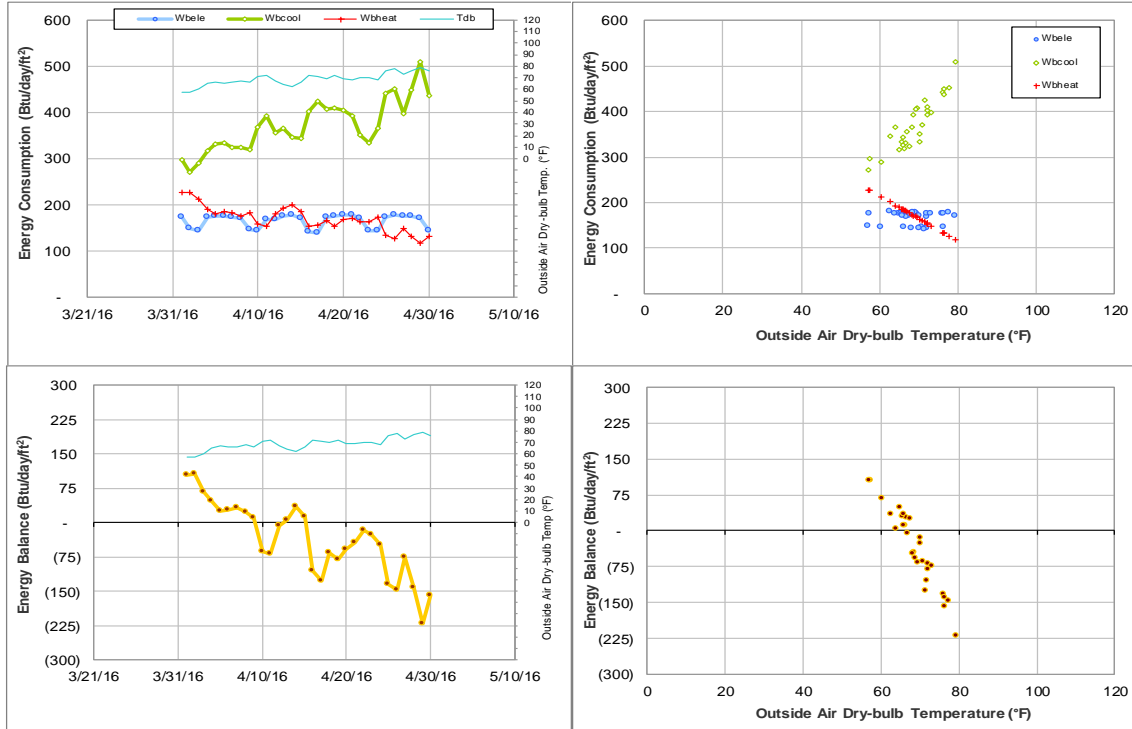


Figure V-13 Veterinary Medicine Administration TAMU BLDG # 1026 Energy Balance Plot during April 2016

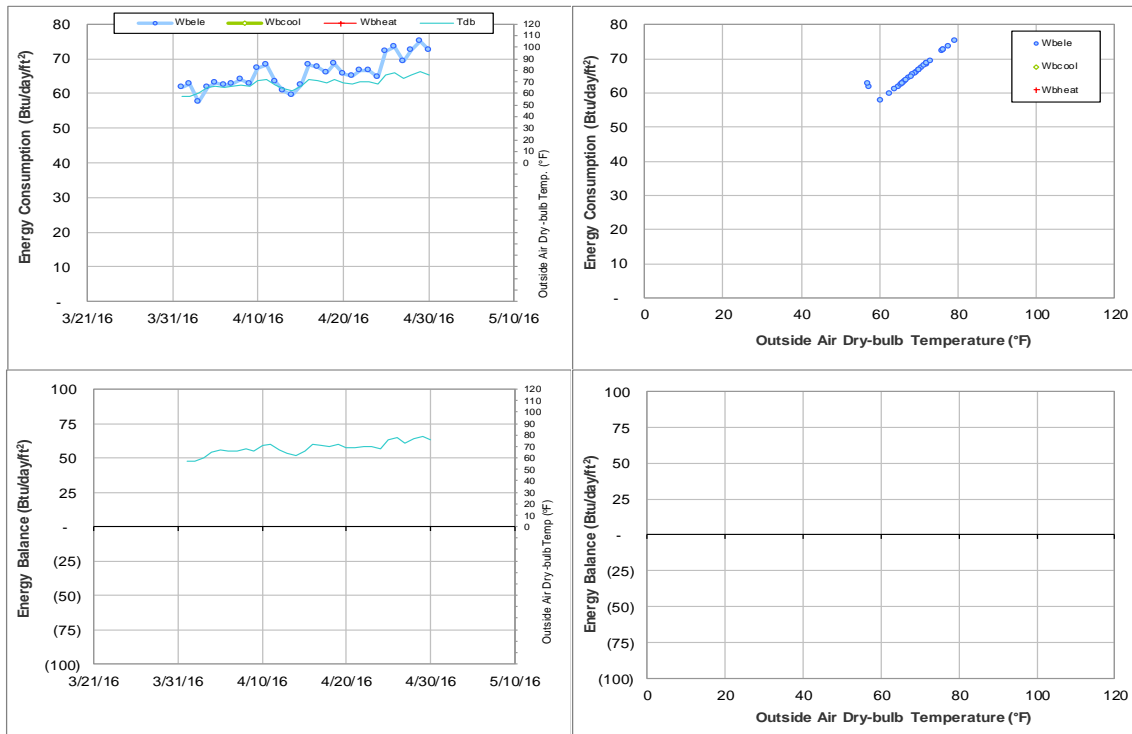


Figure V-14 University Apartments - The Gardens F TAMU BLDG # 1454 Energy Balance Plot during April 2016

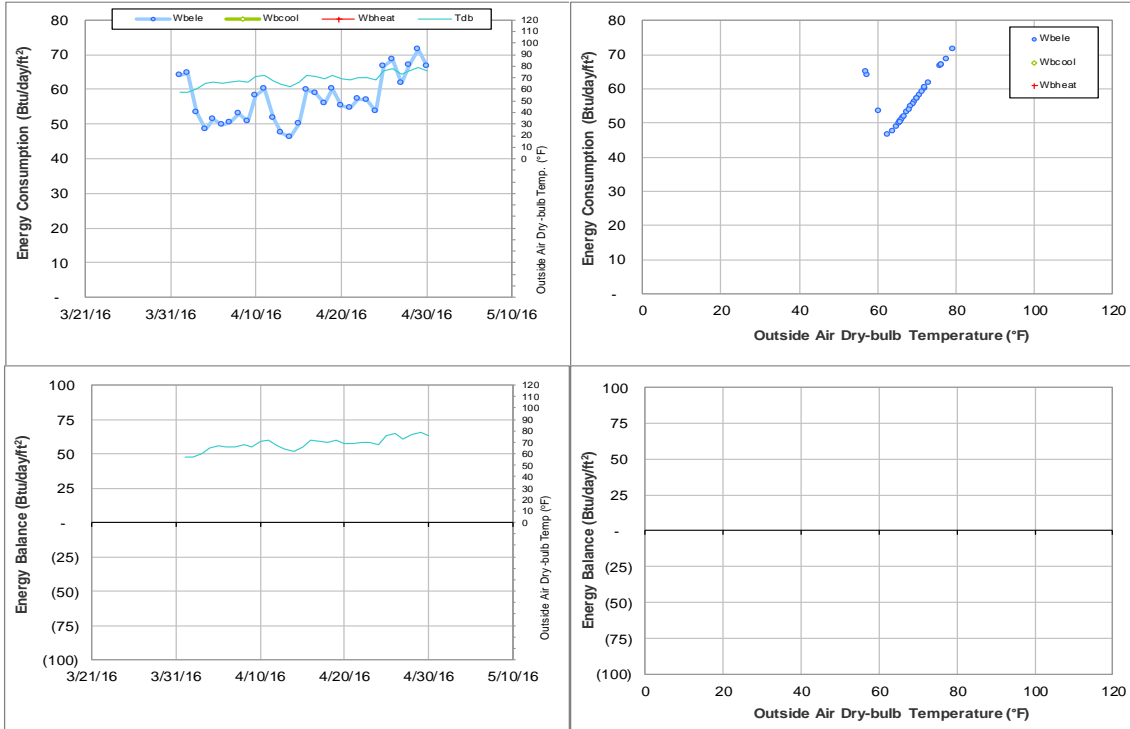


Figure V-15 University Apartments - The Gardens G TAMU BLDG # 1455 Energy Balance Plot during April 2016

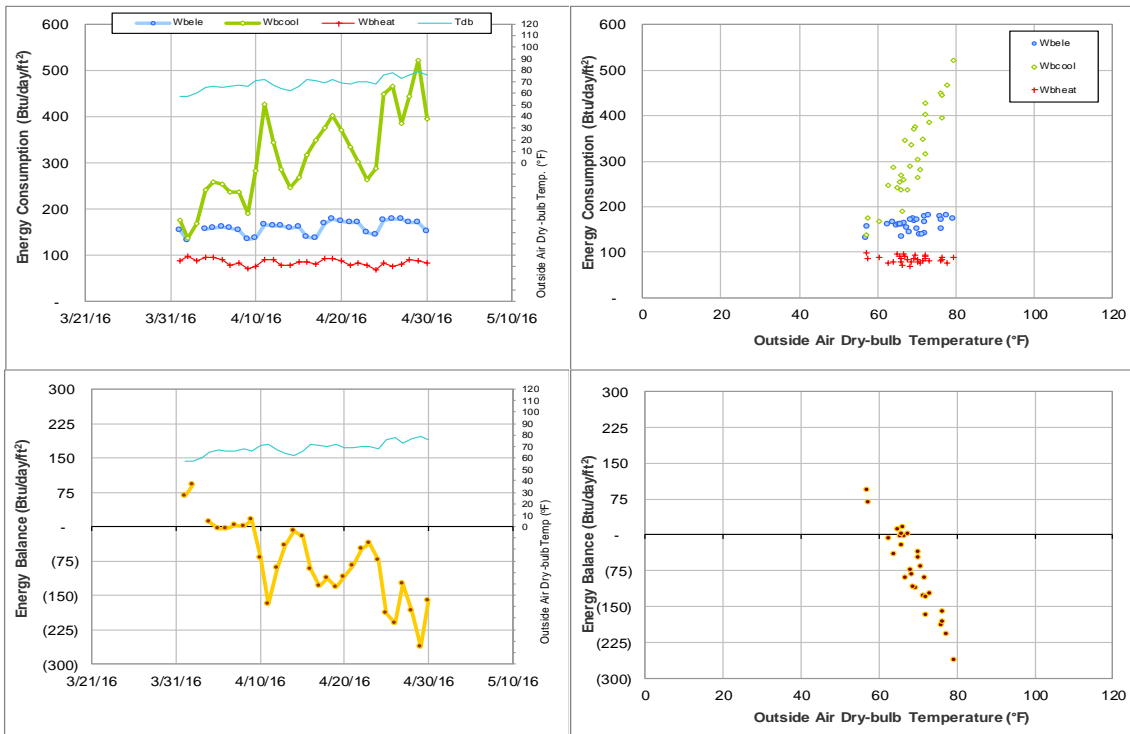


Figure V-16 Reynolds Medical Sciences Building TAMU BLDG # 1504 Energy Balance Plot during April 2016

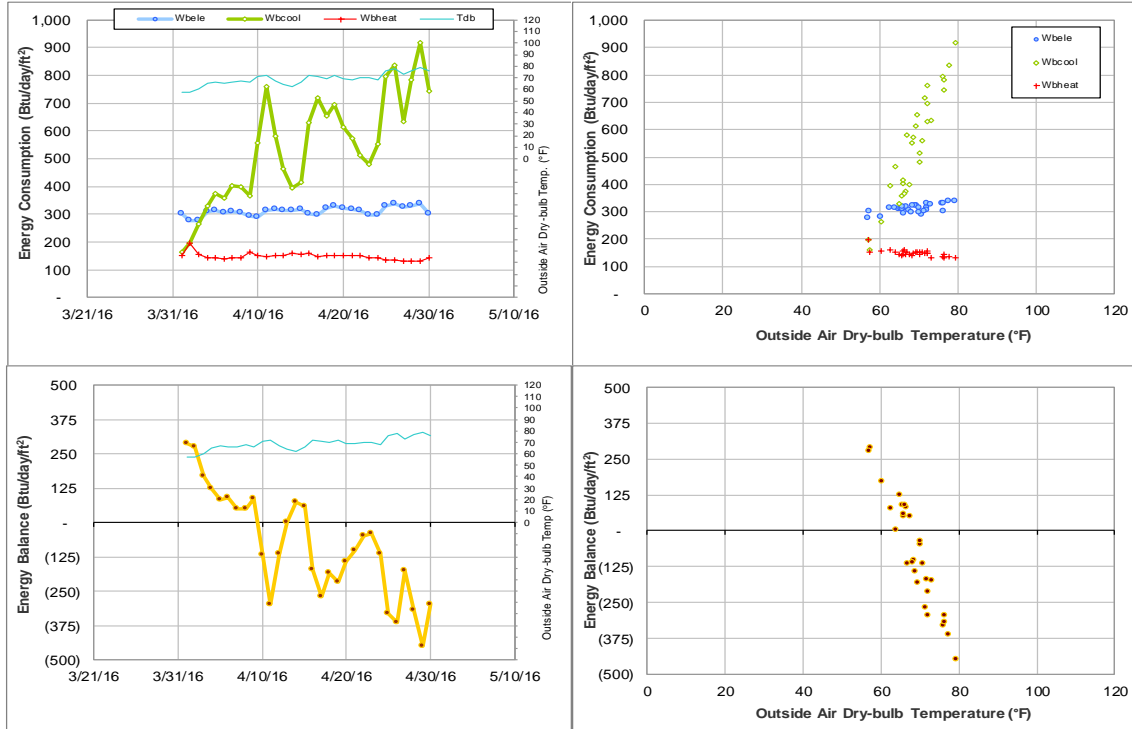


Figure V-17 Interdisciplinary Life Sciences Building TAMU BLDG # 1530 Energy Balance Plot during April 2016

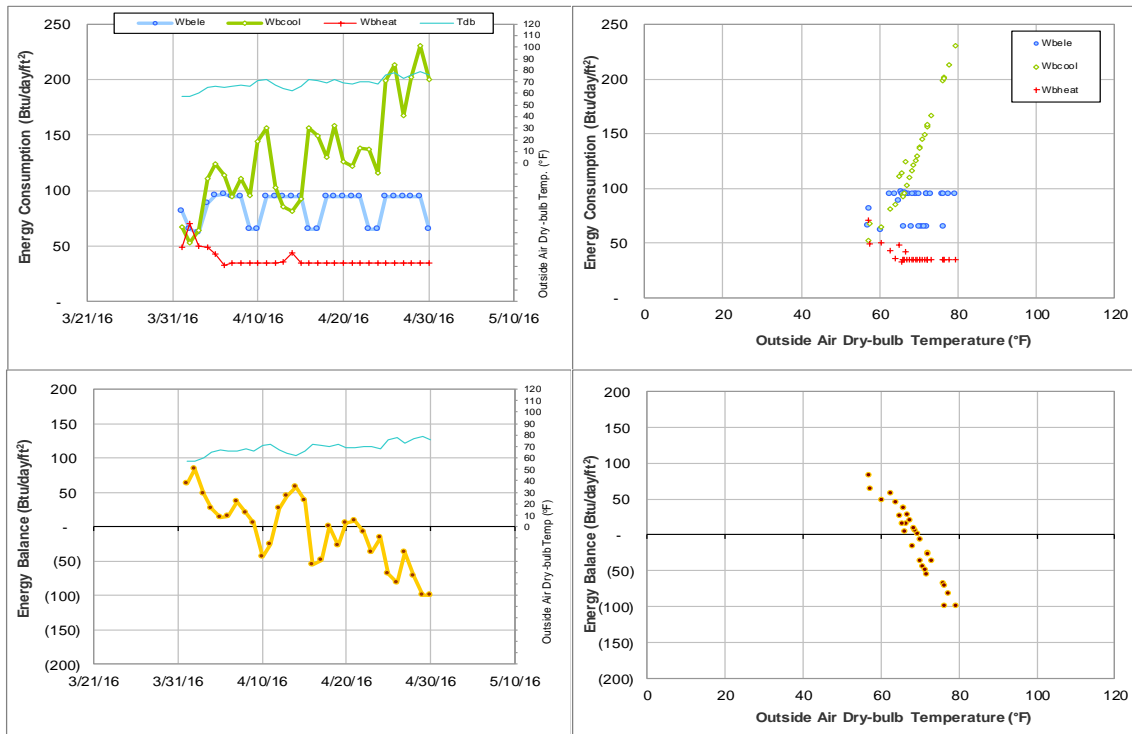


Figure V-18 Gilchrist TTI Building TAMU BLDG # 1600 Energy Balance Plot during April 2016

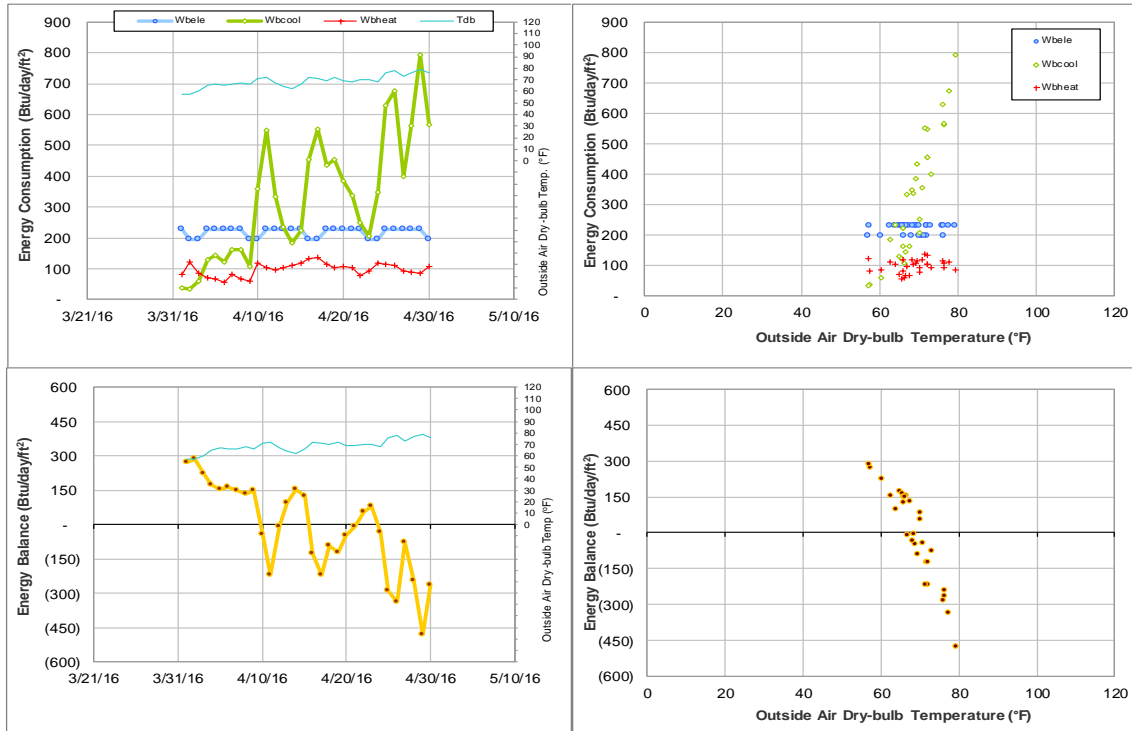


Figure V-19 Office of the State Chemist Building TAMU BLDG # 1810 Energy Balance Plot during April 2016

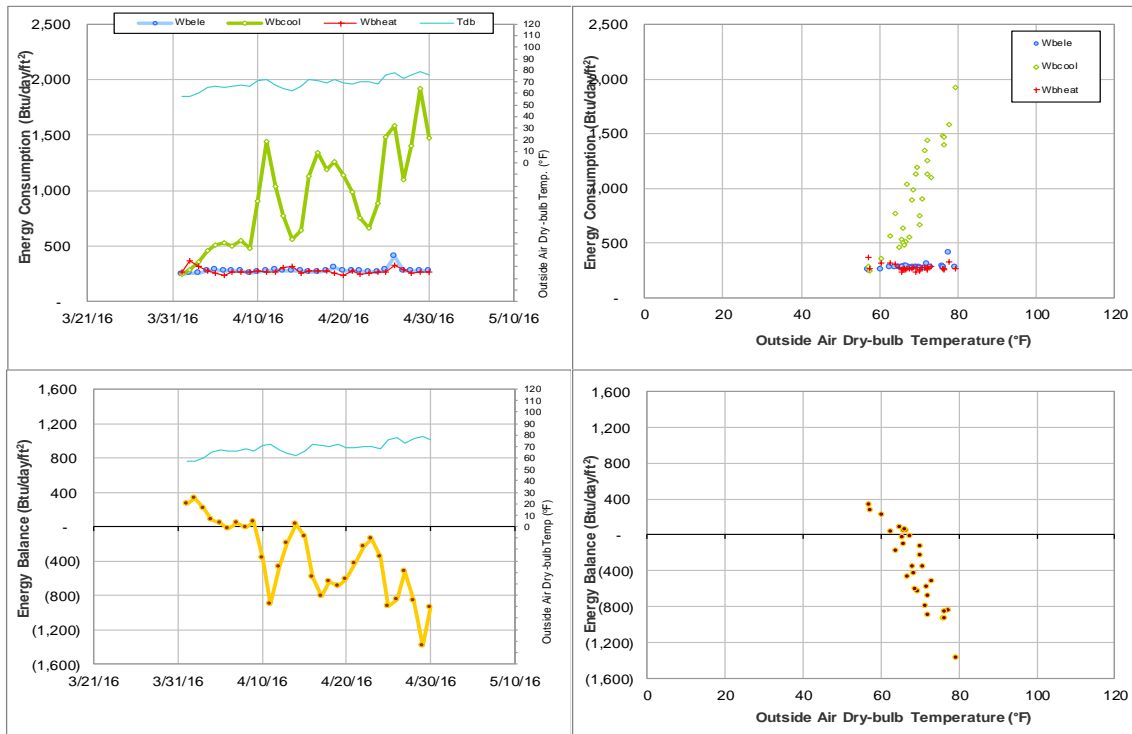


Figure V-20 Texas Institute for Genomic Medicine TAMU BLDG # 1900 Energy Balance Plot during April 2016

VI. Appendix

ENERGY ANALYSIS GROUP



ENERGY SYSTEMS LABORATORY
TEXAS A&M ENGINEERING EXPERIMENT STATION

Project: TAMU: Energy Analysis*
**Report: Energy Consumption Data Quality Assurance/Quality Control
Assessment Report for the Month of April 2016**

Prepared for:

Utility & Energy Services
Division of Administration
Texas A&M University

Authors: Xiaoli Li, Yifu Sun, Kimberly Jones
Dr. Juan-Carlos Baltazar, and Dr. David Claridge

Date: May 2016

* For information on TAMU project please contact the Team Manager Dr. Juan-Carlos Baltazar