

TAMU Project

**Energy Consumption Data Quality Assurance/Quality
Control Assessment Report for the
Month of April 2017**

Prepared for

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

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Acknowledgements

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Executive Summary

This report analyzes the energy use data collected from 595 meters in 206 buildings and complexes (approximately 20,468,000 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 2017 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	186,451	kWh	
0270	Emerging Technologies Building	305,316	007470	ELE	45,678	kWh	
0270	Emerging Technologies Building	305,316	007471	CHW	1,765,259	mBtu	
0270	Emerging Technologies Building	305,316	007475	HHW	240,472	mBtu	
0275	Liberal Arts and Arts & Humanities Building	107,500	007715	ELE	50,656	kWh	
0275	Liberal Arts and Arts & Humanities Building	107,500	007716	CHW	354,086	mBtu	
0275	Liberal Arts and Arts & Humanities Building	107,500	007717	HHW	67,314	mBtu	#, (1), (2)
0290	Wells Residence Hall	67,283	006870	ELE	40,038	kWh	
0290	Wells Residence Hall	67,283	001984	CHW	728,431	mBtu	(2)
0290	Wells Residence Hall	67,283	001988	HHW	421,050	mBtu	(2)
0291	Rudder Residence Hall	67,283	000351	ELE	48,480	kWh	
0291	Rudder Residence Hall	67,283	002132	CHW	745,362	mBtu	(2)
0291	Rudder Residence Hall	67,283	002136	HHW	382,289	mBtu	(2)
0292	Eppright Residence Hall	67,283	000002	ELE	46,188	kWh	
0292	Eppright Residence Hall	67,283	002262	CHW	381,444	mBtu	
0292	Eppright Residence Hall	67,283	002266	HHW	125,291	mBtu	
0293	Appelt Residence Hall	82,767	000003	ELE	57,370	kWh	
0293	Appelt Residence Hall	82,767	002062	CHW	741,178	mBtu	(2)
0293	Appelt Residence Hall	82,767	002066	HHW	297,342	mBtu	(2)
0294	Lechner Residence Hall	59,541	000004	ELE	48,028	kWh	
0294	Lechner Residence Hall	59,541	002285	CHW	624,450	mBtu	
0294	Lechner Residence Hall	59,541	002289	HHW	439,949	mBtu	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006536	ELE	125,298	kWh	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006537	ELE	110,413	kWh	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006534	CHW	968,788	mBtu	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006535	HHW	223,441	mBtu	
0353	Bright Aerospace Building	148,837	001569	ELE	164,082	kWh	
0353	Bright Aerospace Building	148,837	002746	CHW	1,212,730	mBtu	(2)
0353	Bright Aerospace Building	148,837	002757	HHW	43,500	mBtu	
0358	Davis Football Player Development Center	20,026	007699	ELE	29,208	kWh	
0358	Davis Football Player Development Center	20,026	007701	CHW	166,539	mBtu	
0358	Davis Football Player Development Center	20,026	007702	HHW	3,776	mBtu	
0361	Bright Football Complex	124,971	008461	ELE	191,010	kWh	
0361	Bright Football Complex	124,971	002547	CHW	999,458	mBtu	
0361	Bright Football Complex	124,971	002551	HHW	143,404	mBtu	
0367	Kyle Field	489,000	000336	ELE	142,771	kWh	
0367	Kyle Field	489,000	008861	ELE	85,841	kWh	
0367	Kyle Field	489,000	008862	ELE	91,664	kWh	
0367	Kyle Field	489,000	008863	ELE	172,841	kWh	
0367	Kyle Field	489,000	008864	ELE	173,115	kWh	
0367	Kyle Field	489,000	008865	ELE	56,465	kWh	
0367	Kyle Field	489,000	008866	ELE	128,362	kWh	
0367	Kyle Field	489,000	008867	ELE	195,705	kWh	
0367	Kyle Field	489,000	008868	ELE	100,511	kWh	
0367	Kyle Field	489,000	008852	CHW	1,614,630	mBtu	
0367	Kyle Field	489,000	008026	CHW	3,304,770	mBtu	
0367	Kyle Field	489,000	008856	HHW	60,831	mBtu	
0367	Kyle Field	489,000	008027	HHW	1,197,327	mBtu	
0376	Chemistry Building Addition	115,797	006229	ELE	175,375	kWh	
0376	Chemistry Building Addition	115,797	006230	ELE	118,941	kWh	
0376	Chemistry Building Addition	115,797	007115	CHW	2,342,705	mBtu	
0376	Chemistry Building Addition	115,797	007119	HHW	603,443	mBtu	
0383	Koldus Building	110,272	001488	ELE	157,663	kWh	
0383	Koldus Building	110,272	002863	CHW	485,335	mBtu	
0383	Koldus Building	110,272	002874	HHW	151,695	mBtu	#, (1)
0384	Sanders Corps of Cadets Center	19,363	001554	ELE	23,732	kWh	
0384	Sanders Corps of Cadets Center	19,363	002583	CHW	188,774	mBtu	
0384	Sanders Corps of Cadets Center	19,363	002587	HHW	89,331	mBtu	
0325-0385	CE TTI Office & Lab Building	157,844	009122	ELE	165,294	kWh	
0325-0385	CE TTI Office & Lab Building	157,844	009123	CHW	1,021,086	mBtu	#, (1)
0325-0385	CE TTI Office & Lab Building	157,844	009124	HHW	102,440	mBtu	
0386	Jack E. Brown Chemical Engineering Building	205,000	001428	ELE	147,955	kWh	
0386	Jack E. Brown Chemical Engineering Building	205,000	001429	ELE	339,604	kWh	
0386	Jack E. Brown Chemical Engineering Building	205,000	002250	CHW	3,062,210	mBtu	
0386	Jack E. Brown Chemical Engineering Building	205,000	006871	CHW	106,320	mBtu	
0386	Jack E. Brown Chemical Engineering Building	205,000	002254	HHW	530,134	mBtu	
0387	Richardson Petroleum Engineering Building	113,700	005870	ELE	83,427	kWh	
0387	Richardson Petroleum Engineering Building	113,700	005872	ELE	103,692	kWh	
0387	Richardson Petroleum Engineering Building	113,700	005805	CHW	1,068,122	mBtu	
0387	Richardson Petroleum Engineering Building	113,700	005809	HHW	206,869	mBtu	
0391-0392	James J. Cain '51 and Mechanical Engineering Office Building	173,481	001573	ELE	209,971	kWh	
0391-0392	James J. Cain '51 and Mechanical Engineering Office Building	173,481	002906	CHW	1,433,400	mBtu	
0391-0392	James J. Cain '51 and Mechanical Engineering Office Building	173,481	002910	HHW	283,111	mBtu	

Table I-1 April 2017 Monthly Consumption for TAMU Buildings (Continued)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
0394	Underwood Residence Hall	81,730	000014	ELE	62,908	kWh	
0394	Underwood Residence Hall	81,730	002117	CHW	486,874	mBtu	(2)
0394	Underwood Residence Hall	81,730	002121	HHW	140,348	mBtu	(2)
0398	Langford Architecture Center Building A	116,619	003806	ELE	111,425	kWh	
0398	Langford Architecture Center Building A	116,619	003951	CHW	794,682	mBtu	(2)
0398	Langford Architecture Center Building A	116,619	003955	HHW	321,997	mBtu	(2)
0400-0402-1405	Spence Hall, Briggs Hall, and Ash II LLC	108,555	009386	ELE	87,825	kWh	
0400	Spence Hall Dorm 1	38,907	009290	ELE	14,709	kWh	
0400	Spence Hall Dorm 1	38,907	009291	ELE	15,725	kWh	
0400-1405	Spence Hall and Ash II LLC	72,038	009292	CHW	526,049	mBtu	
0400-1405	Spence Hall and Ash II LLC	72,038	009296	HHW	164,581	mBtu	
1405	Ash II LLC	33,131	009387	CHW	231,929	mBtu	
1405	Ash II LLC	33,131	009391	HHW	65,367	mBtu	
0402	Briggs Hall Dorm 3	36,517	009322	ELE	16,166	kWh	
0402	Briggs Hall Dorm 3	36,517	009323	ELE	12,230	kWh	
0402	Briggs Hall Dorm 3	36,517	009324	CHW	302,831	mBtu	
0402	Briggs Hall Dorm 3	36,517	009328	HHW	71,510	mBtu	
0401-0403-1404	Kiest Hall, Fountain Hall, and Plank LLC	108,752	009370	ELE	87,191	kWh	
0401	Kiest Hall Dorm 2	38,815	009306	ELE	13,882	kWh	
0401	Kiest Hall Dorm 2	38,815	009307	ELE	14,006	kWh	
0401-1404	Kiest Hall, and Plank LLC	72,052	009308	CHW	618,660	mBtu	
0401-1404	Kiest Hall, and Plank LLC	72,052	009312	HHW	205,684	mBtu	
1404	Plank LLC	33,237	009372	CHW	333,195	mBtu	
1404	Plank LLC	33,237	009376	HHW	94,669	mBtu	
0403	Fountain Hall Dorm 4	36,700	009338	ELE	14,796	kWh	
0403	Fountain Hall Dorm 4	36,700	009339	ELE	12,437	kWh	
0403	Fountain Hall Dorm 4	36,700	009340	CHW	279,320	mBtu	
0403	Fountain Hall Dorm 5	36,700	009344	HHW	68,345	mBtu	
0404-0406-1403	Gainer Hall, Leonard Hall and Ash LLC	90,072	009401	ELE	71,504	kWh	
0406-1403	Leonard Hall - Dorm 7 and Ash LLC	53,508	007982	CHW	423,688	mBtu	
0406-1403	Leonard Hall - Dorm 7 and Ash LLC	53,508	007983	HHW	79,271	mBtu	
0406	Leonard Hall - Dorm 7	36,222	008011	ELE	12,971	kWh	
0406	Leonard Hall - Dorm 7	36,222	008012	ELE	14,214	kWh	
1403	H. Grady Ash, Jr. '58 Leadership Learning Center	17,286	008005	CHW	130,515	mBtu	
1403	H. Grady Ash, Jr. '58 Leadership Learning Center	17,286	008006	HHW	10,581	mBtu	
0404	Gainer Hall Dorm 5	36,564	009354	ELE	13,202	kWh	
0404	Gainer Hall Dorm 5	36,564	009355	ELE	12,266	kWh	
0404	Gainer Hall Dorm 5	36,564	009356	CHW	296,661	mBtu	
0404	Gainer Hall Dorm 5	36,564	009360	HHW	70,547	mBtu	
0405-0407-1402	Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center	91,310	007721	ELE	75,089	kWh	
0407-1402	Harrell Hall - Dorm 8 and Buzbee LLC	54,443	007722	CHW	406,957	mBtu	
0407-1402	Harrell Hall - Dorm 8 and Buzbee LLC	54,443	007723	HHW	62,033	mBtu	
0405	Lacy Hall - Dorm 6	36,867	007922	ELE	29,164	kWh	
0405	Lacy Hall - Dorm 6	36,867	007918	CHW	313,645	mBtu	
0405	Lacy Hall - Dorm 6	36,867	007919	HHW	97,277	mBtu	
0407	Harrell Hall - Dorm 8	36,943	007729	ELE	27,872	kWh	
1402	Buzbee Leadership Learning Center	17,500	007725	CHW	168,273	mBtu	
1402	Buzbee Leadership Learning Center	17,500	007726	HHW	8,371	mBtu	
0412	Moses Residence Hall	40,828	000027	ELE	37,712	kWh	
0412	Moses Residence Hall	40,828	002384	CHW	517,103	mBtu	
0412	Moses Residence Hall	40,828	002395	HHW	186,319	mBtu	
0415	Davis-Gary Residence Hall	40,828	000030	ELE	34,420	kWh	
0415	Davis-Gary Residence Hall	40,828	002532	CHW	408,781	mBtu	
0415	Davis-Gary Residence Hall	40,828	002543	HHW	204,909	mBtu	
0419	Leggett Residence Hall	45,134	000031	ELE	17,220	kWh	(2)
0419	Leggett Residence Hall	45,134	002218	CHW	277,083	mBtu	(2)
0419	Leggett Residence Hall	45,134	002222	HHW	86,495	mBtu	(2)
0420	Milner Hall	48,268	009144	ELE	25,281	kWh	
0420	Milner Hall	48,268	009145	CHW	157,902	mBtu	
0420	Milner Hall	48,268	009146	HHW	41,642	mBtu	
0422	Walton Residence Hall	51,494	000378	ELE	76,063	kWh	
0422	Walton Residence Hall	51,494	002364	HHW	63,263	mBtu	
0424	Hotard Hall	18,500	000032	ELE	13,423	kWh	
0424	Hotard Hall	18,500	002657	CHW	149,708	mBtu	
0424	Hotard Hall	18,500	002668	HHW	70,609	mBtu	#, (1)
0425	Henderson Hall	22,185	001553	ELE	13,627	kWh	
0425	Henderson Hall	22,185	002607	CHW	143,729	mBtu	
0425	Henderson Hall	22,185	002611	HHW	59,990	mBtu	
0426-0427-0428	FHK Complex	154,349	000331	ELE	115,397	kWh	
0426-0427-0428	FHK Complex	154,349	002848	CHW	1,158,783	mBtu	
0426-0427-0428	FHK Complex	154,349	002859	HHW	488,316	mBtu	
0430	Schumacher Residence Hall	38,957	000034	ELE	32,802	kWh	
0430	Schumacher Residence Hall	38,957	002015	CHW	322,258	mBtu	
0430	Schumacher Residence Hall	38,957	002030	HHW	102,167	mBtu	

Table I-1 April 2017 Monthly Consumption for TAMU Buildings (Continued)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
0359	Architecture Building B	28,545	005518	ELE	22,241	kWh	
0432	Architecture Building C	73,020	005584	ELE	87,006	kWh	
0359-0432	Architecture Building B&C	101,565	006419	CHW	682,315	mBtu	
0359-0432	Architecture Building B&C	101,565	006423	HHW	239,668	mBtu	
0434	Luedecke Building (Cyclotron)	80,646	005555	ELE	173,789	kWh	
0434	Luedecke Building (Cyclotron)	80,646	005558	ELE	1,073,151	kWh	
0434	Luedecke Building (Cyclotron)	80,646	006664	CHW	1,678,162	mBtu	*, (2)
0434	Luedecke Building (Cyclotron)	80,646	006668	HHW	136,856	mBtu	*, (2)
0435	Harrington Education Center Office Tower	130,844	001546	ELE	118,081	kWh	
0435	Harrington Education Center Office Tower	130,844	002792	CHW	796,728	mBtu	
0435	Harrington Education Center Office Tower	130,844	002796	HHW	346,621	mBtu	
0436	Reed-McDonald Building	77,435	006868	ELE	84,725	kWh	
0436	Reed-McDonald Building	77,435	002419	CHW	1,000,708	mBtu	
0436	Reed-McDonald Building	77,435	002423	HHW	298,204	mBtu	
0438	Harrington Education Center Classroom Building	61,860	003630	ELE	38,304	kWh	
0438	Harrington Education Center Classroom Building	61,860	002784	CHW	232,723	mBtu	
0438	Harrington Education Center Classroom Building	61,860	002788	HHW	900	mBtu	
0433-0440-0441-0442-0447	Mosher Commons Krueger Dunn Aston	577,584	009099	ELE	368,579	kWh	
0433	Mosher Residence Hall	155,430	009083	ELE	102,246	kWh	(2)
0433	Mosher Residence Hall	155,430	002485	CHW	1,709,872	mBtu	(2)
0433	Mosher Residence Hall	155,430	002489	HHW	594,554	mBtu	(2)
0440-0441	Commons Krueger	196,633	009833	ELE	85,398	kWh	*
0440	Commons Hall	84,500	009237	CHW	477,963	mBtu	
0440	Commons Hall	84,500	009238	HHW	120,749	mBtu	
0441	Krueger Residence Hall	112,133	009091	ELE	79,779	kWh	
0441	Krueger Residence Hall	112,133	009828	ELE	24,305	kWh	*
0441	Krueger Residence Hall	112,133	002504	CHW	682,012	mBtu	
0441	Krueger Residence Hall	112,133	002500	HHW	251,533	mBtu	
0442	Dunn Residence Hall	112,133	009095	ELE	116,885	kWh	
0442	Dunn Residence Hall	112,133	002519	CHW	826,925	mBtu	
0442	Dunn Residence Hall	112,133	002515	HHW	356,079	mBtu	
0447	Aston Residence Hall	113,388	009087	ELE	69,322	kWh	
0447	Aston Residence Hall	113,388	002474	CHW	1,025,990	mBtu	#, (1)
0447	Aston Residence Hall	113,388	002470	HHW	559,091	mBtu	
0443	Oceanography & Meteorology Building	180,316	005322	ELE	171,197	kWh	
0443	Oceanography & Meteorology Building	180,316	005323	ELE	63,927	kWh	
0443	Oceanography & Meteorology Building	180,316	006388	CHW	973,989	mBtu	#, (1), (2)
0443	Oceanography & Meteorology Building	180,316	006392	HHW	228,746	mBtu	(2)
0444	Peterson Building	84,831	004714	ELE	154,351	kWh	
0444	Peterson Building	84,831	002922	CHW	1,069,082	mBtu	
0444	Peterson Building	84,831	006435	HHW	268,473	mBtu	
0445-0517	Teague Research Center and DPC Annex	89,735	003948	ELE	29,454	kWh	
0445-0517	Teague Research Center and DPC Annex	89,735	004719	ELE	50,925	kWh	
0445	Teague Research Center	63,515	006411	CHW	297,020	mBtu	
0445	Teague Research Center	63,515	006415	HHW	28,199	mBtu	#, (1)
0517	DPC Annex	26,220	006563	CHW	462,420	mBtu	
0517	DPC Annex	26,220	006567	HHW	130,310	mBtu	(2)
0446	Rudder Theatre Complex	209,293	002977	ELE	99,924	kWh	#, (1)
0446	Rudder Theatre Complex	209,293	002980	ELE	32,053	kWh	#, (1)
0446	Rudder Theatre Complex	209,293	004297	CHW	1,597,932	mBtu	#, (1)
0446	Rudder Theatre Complex	209,293	004309	HHW	915,009	mBtu	#, (1)
0446	Rudder Tower	92,947	001550	ELE	29,031	kWh	
0446	Rudder Tower	92,947	001551	ELE	55,824	kWh	*
0446	Rudder Tower	92,947	002455	CHW	567,793	mBtu	
0446	Rudder Tower	92,947	002459	HHW	102,554	mBtu	
0448	Adams Band Hall	55,248	000978	ELE	61,282	kWh	
0448	Adams Band Hall	55,248	002555	CHW	493,084	mBtu	
0448	Adams Band Hall	55,248	002566	HHW	294,351	mBtu	
0449	Biological Sciences Building - West	96,038	003978	ELE	181,684	kWh	
0449	Biological Sciences Building - West	96,038	003981	CHW	1,205,850	mBtu	
0449	Biological Sciences Building - West	96,038	003985	HHW	310,944	mBtu	
0450	Duncan Dining Hall	128,482	000300	ELE	102,945	kWh	
0450	Duncan Dining Hall	128,482	002998	CHW	551,076	mBtu	
0450	Duncan Dining Hall	128,482	003009	HHW	31,419	mBtu	
0454	MSC (East Main)	392,000	007600	ELE	287,593	kWh	
0454	MSC (West Main)	392,000	007601	ELE	213,590	kWh	
0454	MSC BOR	392,000	008047	ELE	19,852	kWh	
0454	MSC	392,000	007584	CHW	2,352,842	mBtu	
0454	MSC BOR	392,000	004184	CHW	390,683	mBtu	
0454	MSC	392,000	007585	HHW	272,103	mBtu	
0454	MSC BOR	392,000	004196	HHW	241,883	mBtu	

Table I-1 April 2017 Monthly Consumption for TAMU Buildings (Continued)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
0456	Military Sciences Building	43,808	006939	CHW	438,327	mBtu	*
0456	Military Sciences Building	43,808	006943	HHW	194,180	mBtu	*
0457	TAES Annex Building	16,364	005863	ELE	14,069	kWh	
0457	TAES Annex Building	16,364	005913	CHW	66,862	mBtu	(1)
0457	TAES Annex Building	16,364	005917	HHW	21,410	mBtu	(1)
0461	Coke Building	24,466	004008	ELE	26,433	kWh	
0461	Coke Building	24,466	005307	CHW	82,337	mBtu	
0461	Coke Building	24,466	004023	HHW	3,765	mBtu	
0462	Academic Building	82,555	005861	ELE	20,021	kWh	
0462	Academic Building	82,555	005903	ELE	37,261	kWh	
0462	Academic Building	82,555	005905	CHW	559,234	mBtu	
0462	Academic Building	82,555	005909	HHW	304,888	mBtu	
0463	Psychology Building	48,215	001575	ELE	41,481	kWh	
0463	Psychology Building	48,215	002941	CHW	487,034	mBtu	(1) (2)
0463	Psychology Building	48,215	002945	HHW	45,091	mBtu	(2)
0464	State Chemist Building	20,027	005839	ELE	7,264	kWh	
0464	State Chemist Building	20,027	005837	ELE	7,386	mBtu	(1)
0464	State Chemist Building	20,027	005841	HHW	22,096	mBtu	
0465	Butler Hall	29,699	003997	ELE	32,211	kWh	
0465	Butler Hall	29,699	004000	CHW	237,262	mBtu	
0465	Butler Hall	29,699	004004	HHW	89,152	mBtu	
0467	Biological Sciences Building - East	62,273	001543	ELE	181,796	kWh	
0467	Biological Sciences Building - East	62,273	003851	CHW	740,039	mBtu	(1)
0467	Biological Sciences Building - East	62,273	003862	HHW	132,495	mBtu	
0468	Evans Library	712,093	000304	ELE	249,242	kWh	
0468	Evans Library	712,093	000318	ELE	138,790	kWh	
0468	Evans Library	712,093	000319	ELE	94,415	kWh	*
0468	Evans Library	712,093	000320	ELE	82,410	kWh	
0468	Evans Library	712,093	006429	ELE	94,292	kWh	
0468	Evans Library	712,093	003701	CHW	1,280,495	mBtu	
0468	Evans Library	712,093	003895	CHW	1,220,162	mBtu	
0468	Evans Library	712,093	003903	CHW	258,824	mBtu	
0468	Evans Library	712,093	003911	CHW	1,152,830	mBtu	*
0468	Evans Library	712,093	003712	HHW	177,652	mBtu	
0468	Evans Library	712,093	003899	HHW	122,703	mBtu	
0468	Evans Library	712,093	003907	HHW	89,694	mBtu	
0468	Evans Library	712,093	003922	HHW	94,428	mBtu	*
0468	Evans Library	712,093	005303	HHW	34,213	mBtu	
0469	Central Campus Parking Garage	251,304	000306	ELE	44,827	kWh	
0469	Central Campus Parking Garage	2,844	003716	CHW	34,131	mBtu	
0469	Central Campus Parking Garage	2,844	003720	HHW	6,140	mBtu	
0470	Glasscock History Bldg	39,887	006407	ELE	18,725	kWh	
0470	Glasscock History Bldg	39,887	006638	CHW	142,655	mBtu	
0470	Glasscock History Bldg	39,887	006642	HHW	14,566	mBtu	
0471	Pavilion	40,062	001455	ELE	36,280	kWh	
0471	Pavilion	40,062	002769	CHW	211,979	mBtu	
0471	Pavilion	40,062	002780	HHW	12,726	mBtu	
0472	Animal Industries	44,856	009042	ELE	53,380	kWh	
0472	Animal Industries	44,856	009109	CHW	373,047	mBtu	
0472	Animal Industries	44,856	009113	HHW	88,938	mBtu	
0473	Williams Administration Building	69,898	007945	ELE	45,199	kWh	
0473	Williams Administration Building	69,898	007946	CHW	322,569	mBtu	
0473	Williams Administration Building	69,898	007947	HHW	72,442	mBtu	
0474	YMCA Building	36,035	007524	ELE	22,620	kWh	
0474	YMCA Building	36,035	007525	CHW	122,411	mBtu	
0474	YMCA Building	36,035	007526	HHW	11,119	mBtu	
0476	Francis Hall	36,850	008015	ELE	33,309	kWh	
0476	Francis Hall	36,850	008033	CHW	270,337	mBtu	
0476	Francis Hall	36,850	008034	HHW	6,078	mBtu	
0477	Anthropology Building	51,592	001558	ELE	33,703	kWh	
0477	Anthropology Building	51,592	003664	CHW	307,850	mBtu	
0477	Anthropology Building	51,592	003668	HHW	46,261	mBtu	
0478	Scoates Hall	62,228	007961	ELE	53,827	kWh	
0478	Scoates Hall	62,228	007968	CHW	349,241	mBtu	
0478	Scoates Hall	62,228	007969	HHW	73,343	mBtu	
0480	Bolton Hall	39,686	006845	ELE	33,101	kWh	
0480	Bolton Hall	39,686	007012	CHW	195,024	mBtu	(1)
0480	Bolton Hall	39,686	007016	HHW	58,968	mBtu	
0481	Heaton Hall	13,640	005712	ELE	NA	kWh	*
0481	Heaton Hall	13,640	007531	CHW	256,490	mBtu	(1)
0481	Heaton Hall	13,640	007535	HHW	193,172	mBtu	(1)
0482	Fermier Hall	19,074	005779	ELE	15,758	kWh	
0482	Fermier Hall	19,074	005878	CHW	106,136	mBtu	(2)
0482	Fermier Hall	19,074	005881	HHW	10,460	mBtu	(2)

Table I-1 April 2017 Monthly Consumption for TAMU Buildings (Continued)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
0483	Thompson Hall	81,404	003688	ELE	73,707	kWh	
0483	Thompson Hall	81,404	003887	CHW	343,722	mBtu	(1)
0483	Thompson Hall	81,404	003891	HHW	19,565	mBtu	(1)
0484	Chemistry Building	205,393	007152	ELE	95,898	kWh	
0484	Chemistry Building	205,393	007556	ELE	11,357	kWh	
0484	Chemistry Building	205,393	007557	ELE	25,745	kWh	(2)
0484	Chemistry Building	205,393	007559	ELE	163,939	kWh	
0484	Chemistry Building	205,393	007223	CHW	2,705,087	mBtu	
0484	Chemistry Building	205,393	007028	CHW	750,074	mBtu	*
0484	Chemistry Building	205,393	007227	HHW	818,636	mBtu	
0484	Chemistry Building	205,393	007032	HHW	246,255	mBtu	*(1)
0490	Halbouty Geosciences Building	120,874	006691	ELE	63,477	kWh	
0490	Halbouty Geosciences Building	120,874	006695	ELE	94,123	kWh	
0490	Halbouty Geosciences Building	120,874	006896	CHW	1,088,110	mBtu	
0490	Halbouty Geosciences Building	120,874	006913	CHW	599,388	mBtu	
0490	Halbouty Geosciences Building	120,874	006900	HHW	323,950	mBtu	(1)
0490	Halbouty Geosciences Building	120,874	006917	HHW	216,242	mBtu	(1)
0492	Civil Engineering Building	56,537	005783	ELE	55,129	kWh	
0492	Civil Engineering Building	56,537	005950	CHW	269,050	mBtu	(2)
0492	Civil Engineering Building	56,537	005954	HHW	46,908	mBtu	(2)
0495	Sbisa Dining Hall	94,233	000352	ELE	144,728	kWh	*
0495	Sbisa Dining Hall	94,233	000353	ELE	128,724	kWh	
0495	Sbisa Dining Hall	94,233	001951	CHW	1,139,888	mBtu	
0495	Sbisa Dining Hall	94,233	001957	HHW	99,004	mBtu	
0496	Utilities & Energy Services Central Office	46,110	007706	ELE	12,643	kWh	(2)
0496	Utilities & Energy Services Central Office	46,110	006929	CHW	124,112	mBtu	(2)
0496	Utilities & Energy Services Central Office	46,110	006933	HHW	18,005	mBtu	(2)
0499	Engineering Innovation Center	28,339	001561	ELE	24,789	kWh	
0499	Engineering Innovation Center	28,339	002672	CHW	72,403	mBtu	(2)
0499	Engineering Innovation Center	28,339	002683	HHW	26,705	mBtu	
0501	Concrete Materials Laboratory	9,600	005791	ELE	8,997	kWh	
0506	Nagle Hall	32,306	001484	ELE	11,889	kWh	(2)
0506	Nagle Hall	32,306	003619	CHW	265,681	mBtu	(2)
0506	Nagle Hall	32,306	003623	HHW	25,215	mBtu	(2)
0507	Veterinary Medical Science Building	69,367	003013	ELE	75,152	kWh	
0507	Veterinary Medical Science Building	69,367	003640	CHW	1,049,449	mBtu	
0507	Veterinary Medical Science Building	69,367	003644	HHW	390,514	mBtu	
0508	Veterinary Teaching Hospital	96,416	003022	ELE	86,502	kWh	
0508-1026	Veterinary Teaching Hospital and Veterinary Medicine Administration	191,096	004166	CHW	1,683,720	mBtu	
0508-1026	Veterinary Teaching Hospital and Veterinary Medicine Administration	191,096	009694	HHW	512,091	mBtu	
0511	Heep Laboratory Building	40,476	005787	ELE	54,722	kWh	
0511	Heep Laboratory Building	40,476	005821	CHW	474,012	mBtu	(1)
0511	Heep Laboratory Building	40,476	005825	HHW	184,660	mBtu	
0512	All Faiths Chapel	8,999	004340	ELE	7,418	kWh	*
0512	All Faiths Chapel	8,999	004288	CHW	85,174	mBtu	*(1)
0512	All Faiths Chapel	8,999	004293	HHW	39,882	mBtu	*(1)
0513	Doherty Building	42,336	000299	ELE	51,228	kWh	
0513	Doherty Building	42,336	002898	CHW	660,610	mBtu	
0513	Doherty Building	42,336	002902	HHW	328,244	mBtu	
0514	Munnerlyn Astronomy & Space Sciences Engineering	22,134	007558	ELE	12,455	kWh	
0514	Munnerlyn Astronomy & Space Sciences Engineering	22,134	007487	CHW	70,187	mBtu	
0514	Munnerlyn Astronomy & Space Sciences Engineering	22,134	007491	HHW	2,558	mBtu	
0516	Computing Services Center	30,014	005259	ELE	483,294	kWh	
0516	Computing Services Center	30,014	003959	CHW	1,567,342	mBtu	
0516	Computing Services Center	30,014	003963	HHW	0	mBtu	
0520	Beutel Health Center	63,318	003785	ELE	68,546	kWh	
0520	Beutel Health Center	63,318	003933	CHW	454,374	mBtu	
0520	Beutel Health Center	63,318	003944	HHW	115,253	mBtu	(2)
0521	Heldenfels Hall	104,949	001547	ELE	105,031	kWh	
0521	Heldenfels Hall	104,949	002962	CHW	911,008	mBtu	
0521	Heldenfels Hall	104,949	002973	HHW	102,398	mBtu	
0524	Blocker Building	257,953	001545	ELE	192,850	kWh	
0524	Blocker Building	257,953	002914	CHW	1,016,668	mBtu	
0524	Blocker Building	257,953	002918	HHW	113,570	mBtu	(1)(2)
0548	Clements Residence Hall	62,156	000048	ELE	38,931	kWh	
0548	Clements Residence Hall	62,156	002729	CHW	846,158	mBtu	
0548	Clements Residence Hall	62,156	002740	HHW	395,233	mBtu	

Table I-1 April 2017 Monthly Consumption for TAMU Buildings (Continued)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
0549	Haas Residence Hall	69,668	001398	ELE	48,677	kWh	
0549	Haas Residence Hall	69,668	002983	CHW	806,370	mBtu	
0549	Haas Residence Hall	69,668	002994	HHW	530,828	mBtu	
0550	McFadden Residence Hall	62,156	000339	ELE	41,630	kWh	
0550	McFadden Residence Hall	62,156	002188	CHW	785,956	mBtu	
0550	McFadden Residence Hall	62,156	002192	HHW	465,813	mBtu	
0652	Neeley Residence Hall	69,668	000056	ELE	46,657	kWh	
0652	Neeley Residence Hall	69,668	002147	CHW	504,126	mBtu	
0652	Neeley Residence Hall	69,668	002151	HHW	244,908	mBtu	
0653	Hobby Residence Hall	62,156	000057	ELE	53,582	kWh	
0653	Hobby Residence Hall	62,156	002401	CHW	691,681	mBtu	
0653	Hobby Residence Hall	62,156	002405	HHW	321,124	mBtu	
0682	Wisnaker Engineering Research Center	177,704	005246	ELE	213,342	kWh	
0682	Wisnaker Engineering Research Center	177,704	003879	CHW	1,453,017	mBtu	
0682	Wisnaker Engineering Research Center	177,704	003883	HHW	258,675	mBtu	
0740	McNew Laboratory	20,904	005874	ELE	50,997	kWh	(2)
0740	McNew Laboratory	20,904	005974	CHW	440,133	mBtu	(1) (2)
0740	McNew Laboratory	20,904	005968	HHW	31,845	mBtu	(1) (2)
0806	Soil Testing Labs	5,544	006875	ELE	17,987	kWh	
0815	Entomology Research Lab	17,618	005799	ELE	29,439	kWh	(1)
0815	Entomology Research Lab	17,618	006043	CHW	170,233	mBtu	(2)
0880	TVMC-Small Animal Building	3,260	005958	CHW	29,392	mBtu	
0880	TVMC-Small Animal Building	3,260	005962	HHW	15	mBtu	(2)
0972	Laboratory Animal Care Building	52,178	007063	ELE	131,422	kWh	*
0972	Laboratory Animal Care Building	52,178	007067	ELE	48,254	kWh	
0972	Laboratory Animal Care Building	52,178	007071	CHW	2,001,006	mBtu	
0972	Laboratory Animal Care Building	52,178	006991	HHW	315,691	mBtu	
1020	Vivarium III	12,234	005857	ELE	23,130	kWh	
1020	Vivarium III	12,234	005997	CHW	218,121	mBtu	(1)
1020	Vivarium III	12,234	006001	HHW	82,566	mBtu	(1)
1026	Veterinary Medicine Administration	94,680	006072	ELE	123,140	kWh	
1026	Veterinary Medicine Administration	94,680	006049	CHW	1,055,746	mBtu	
1026	Veterinary Medicine Administration	98,680	006053	HHW	524,919	mBtu	*
1041	Texas Vet Med Diagnostic Lab	55,169	001466	ELE	70,865	kWh	
1041	Texas Vet Med Diagnostic Lab	55,169	001539	ELE	50,334	kWh	*
1041	Texas Vet Med Diagnostic Lab	55,169	003817	CHW	718,399	mBtu	*
1041	Texas Vet Med Diagnostic Lab	55,169	004137	CHW	1,065,351	mBtu	*
1041	Texas Vet Med Diagnostic Lab	55,169	003821	HHW	124,866	mBtu	*
1041	Texas Vet Med Diagnostic Lab	55,169	004130	HHW	165,699	mBtu	*
1042	Forest Science Laboratory Building	9,632	006036	ELE	23,456	kWh	
1085	Veterinary Small Animal Hospital	103,440	004136	ELE	224,011	kWh	
1085	Veterinary Small Animal Hospital	103,440	003656	CHW	1,486,673	mBtu	
1085	Veterinary Small Animal Hospital	103,440	003660	HHW	395,674	mBtu	
1089	Utilities Energy Office Annex	2,937	006964	ELE	5,029	kWh	
1146	Biological Control Facility	13,492	005795	ELE	33,646	kWh	
1146	Biological Control Facility	13,492	005887	CHW	146,478	mBtu	(2)
1146	Biological Control Facility	13,492	005891	HHW	48,251	mBtu	
1156	Physical Plant Administration & Shops	101,704	007483	ELE	111,785	kWh	
1156	Physical Plant Administration & Shops	101,704	007679	CHW	227,291	mBtu	(2)
1156	Physical Plant Administration & Shops	101,704	007683	HHW	84,384	mBtu	
1184	Veterinary Anatomic Pathology	17,223	001445	ELE	51,859	kWh	
1184	Veterinary Anatomic Pathology	17,223	006995	CHW	274,706	mBtu	
1184	Veterinary Anatomic Pathology	17,223	006999	HHW	77,972	mBtu	
1194	Veterinary Large Animal Hospital	140,865	005256	ELE	99,323	kWh	
1194	Veterinary Large Animal Hospital	140,865	003016	ELE	67,381	kWh	
1194	Veterinary Large Animal Hospital	140,865	007455	ELE	42,069	kWh	
1194	Veterinary Large Animal Hospital	140,865	003648	CHW	1,696,425	mBtu	
1194	Veterinary Large Animal Hospital	140,865	007456	CHW	248,180	mBtu	
1194	Veterinary Large Animal Hospital	140,865	003652	HHW	642,932	mBtu	
1194	Veterinary Large Animal Hospital	140,865	007457	HHW	47,943	mBtu	
1197	Veterinary Research Building	114,666	006355	ELE	69,938	kWh	(2)
1197	Veterinary Research Building	114,666	006359	ELE	34,773	kWh	(2)
1197	Veterinary Research Building	114,666	006062	CHW	1,791,561	mBtu	
1197	Veterinary Research Building	114,666	006066	HHW	329,290	mBtu	
1416	Hullabaloo Residence Hall	253,452	007845	ELE	189,973	kWh	
1416	Hullabaloo Residence Hall	253,452	007846	CHW	1,128,615	mBtu	
1416	Hullabaloo Residence Hall	253,452	007847	HHW	121,886	mBtu	

Table I-1 April 2017 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
1450	University Apartments - Laundry at the Gardens	1,428	006885	ELE	5,625	kWh	
1451	University Apartments - The Gardens J	33,535	006981	ELE	16,992	kWh	
1452	University Apartments - The Gardens K	33,535	006979	ELE	15,423	kWh	
1453	University Apartments - The Gardens L	33,535	006884	ELE	16,711	kWh	
1454	University Apartments - The Gardens F	33,535	006980	ELE	19,613	kWh	*
1455	University Apartments - The Gardens G	33,535	006882	ELE	16,916	kWh	*
1456	University Apartments - The Gardens H	33,535	007962	ELE	15,241	kWh	
1457	University Apartments - The Gardens M	33,535	007503	ELE	24,801	kWh	
1458	University Apartments - The Gardens N	33,535	007504	ELE	19,555	kWh	
1459	University Apartments - The Gardens P	33,535	007505	ELE	22,292	kWh	
1460	University Apartments - The Gardens Q	33,535	007506	ELE	16,845	kWh	
1497	Utilities & Energy Services Business Office	3,480	007082	ELE	4,770	kWh	
1497	Utilities & Energy Services Business Office	3,480	006341	CHW	23,385	mBtu	
1497	Utilities & Energy Services Business Office	3,480	006345	HHW	1,444	mBtu	
1501	Kleberg Center	165,031	007449	ELE	254,508	kWh	
1501	Kleberg Center	165,031	002624	CHW	1,373,169	mBtu	
1501	Kleberg Center	165,031	002628	HHW	664,901	mBtu	
1502	Heep Center	158,979	001556	ELE	253,887	kWh	#, (1)
1502	Heep Center	158,979	002599	CHW	1,572,299	mBtu	*, #, (1)
1502	Heep Center	158,979	002603	HHW	254,507	mBtu	*, #, (1)
1503	Cater-Mattil Hall	27,958	007977	ELE	83,540	kWh	
1503	Cater-Mattil Hall	27,958	008001	CHW	406,710	mBtu	
1504	Reynolds Medical Sciences Building	169,859	003975	ELE	276,517	kWh	(2)
1504	Reynolds Medical Sciences Building	169,859	003989	CHW	2,129,938	mBtu	(2)
1504	Reynolds Medical Sciences Building	169,859	003993	HHW	681,375	mBtu	(2)
1505	Rosenthal Meat Science & Technology Center	30,889	003627	ELE	131,475	kWh	
1505	Rosenthal Meat Science & Technology Center	30,889	002573	CHW	163,236	mBtu	
1505	Rosenthal Meat Science & Technology Center	30,889	002577	HHW	71,277	mBtu	(1)
1506	Horticulture-Forest Science Building	118,648	001544	ELE	153,806	kWh	*
1506	Horticulture-Forest Science Building	118,648	003967	CHW	590,067	mBtu	
1506	Horticulture-Forest Science Building	118,648	003971	HHW	110,907	mBtu	
1507	Biochemistry-Biophysics Building	166,079	001459	ELE	165,014	kWh	
1507	Biochemistry-Biophysics Building	166,079	001460	ELE	167,351	kWh	
1507	Biochemistry-Biophysics Building	166,079	003025	CHW	1,645,581	mBtu	
1507	Biochemistry-Biophysics Building	166,079	003029	HHW	702,578	mBtu	
1508	Price Hobgood Ag. Engineering Research Lab	27,666	005638	ELE	24,778	kWh	
1508	Price Hobgood Ag. Engineering Research Lab	27,666	006005	CHW	137,247	mBtu	
1508	Price Hobgood Ag. Engineering Research Lab	27,666	006009	HHW	13,665	mBtu	
1509	Medical Sciences Library	84,183	000350	ELE	87,509	kWh	
1509	Medical Sciences Library	84,183	003777	CHW	647,946	mBtu	(1)
1509	Medical Sciences Library	84,183	003781	HHW	87,597	mBtu	#, (1)
1510	Wehner Building	259,681	006849	ELE	208,095	kWh	
1510	Wehner Building	259,681	006685	ELE	241,409	kWh	
1510	Wehner Building	259,681	002687	CHW	1,659,746	mBtu	
1510	Wehner Building	259,681	002691	HHW	247,512	mBtu	
1511	West Campus Library Facility	68,125	004342	ELE	90,264	kWh	
1511	West Campus Library Facility	68,125	004313	CHW	587,482	mBtu	
1511	West Campus Library Facility	68,125	004318	HHW	96,836	mBtu	
1512	Southern Crop Improvement Greenhouse	48,154	005931	ELE	90,481	kWh	#, (1)
1513	Borlaug Center for Southern Crop Improvement	68,739	005802	ELE	289,346	kWh	
1513	Borlaug Center for Southern Crop Improvement	68,739	005936	CHW	1,009,228	mBtu	
1513	Borlaug Center for southern Crop Improvement	68,739	005895	HHW	175,831	mBtu	
1518	TX School of Rural Public Health A	69,079	005273	ELE	70,124	kWh	
1519	TX School of Rural Public Health B	24,761	005274	ELE	51,330	kWh	#, (1)
1520	TX School of Rural Public Health C	13,264	005275	ELE	105,971	kWh	#, (1)
1518-1519-1520	TX School of Rural Public Health A,B,C	107,104	005294	CHW	1,082,034	mBtu	
1518-1519-1520	TX School of Rural Public Health A,B,C	107,104	005298	HHW	238,218	mBtu	
1525	Nuclear Magnetic Resonance Facility	37,282	006718	ELE	84,996	kWh	
1525	Nuclear Magnetic Resonance Facility	37,282	006715	CHW	828,936	mBtu	
1525	Nuclear Magnetic Resonance Facility	37,282	006716	HHW	448,736	mBtu	(2)
1530	Interdisciplinary Life Sciences Building	218,540	006286	ELE	390,676	kWh	
1530	Interdisciplinary Life Sciences Building	218,540	006288	ELE	212,612	kWh	
1530	Interdisciplinary Life Sciences Building	218,540	006290	CHW	3,442,161	mBtu	
1530	Interdisciplinary Life Sciences Building	218,540	006294	HHW	930,361	mBtu	
1535	Agriculture and Life Sciences Building	168,353	007205	ELE	115,459	kWh	
1535	Agriculture and Life Sciences Building	168,353	007206	CHW	564,626	mBtu	
1535	Agriculture and Life Sciences Building	168,353	007207	HHW	26,619	mBtu	
1536	AgriLife Services Building	80,907	007571	ELE	43,771	kWh	
1536	AgriLife Services Building	80,907	007572	CHW	196,391	mBtu	
1536	AgriLife Services Building	80,907	007573	HHW	18,180	mBtu	

Table I-1 April 2017 Monthly Consumption for TAMU Buildings (Continued)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
1537	Agriculture Public Building	78,480	009620	ELE	47,451	kWh	
1537	Agriculture Public Building	78,480	009621	ELE	66,584	kWh	
1537	Agriculture Public Building	78,480	009622	CHW	798,438	mBtu	*, (2)
1537	Agriculture Public Building	78,480	009623	HHW	325,217	mBtu	*, (2)
1538	Agriculture Program Visitors Center	12,923	007209	ELE	12,799	kWh	
1538	Agriculture Program Visitors Center	12,923	007210	CHW	65,805	mBtu	
1538	Agriculture Program Visitors Center	12,923	007211	HHW	8,454	mBtu	
1540	Physical Education Activity Program Building	116,900	007881	ELE	73,505	kWh	
1540	Physical Education Activity Program Building	116,900	007878	CHW	462,232	mBtu	
1540	Physical Education Activity Program Building	116,900	007879	HHW	105,640	mBtu	
1542	Human Clinical Research Building	22,052	009693	ELE	51,490	kWh	*
1542	Human Clinical Research Building	22,052	009683	CHW	280,111	mBtu	*
1542	Human Clinical Research Building	22,052	009687	HHW	149,401	mBtu	*
1544	Cain Garage	498,425	009824	ELE	41,441	kWh	
1550	Olsen Field at Bluebell Park	60,537	007560	ELE	115,527	kWh	
1554	Reed Arena	230,000	007582	ELE	136,835	kWh	
1554	Reed Arena	230,000	006243	ELE	718	kWh	*
1554	Reed Arena	230,000	006244	ELE	85,716	kWh	*
1554-1558	Reed Arena and Cox-McFerrin Center	328,185	007576	CHW	2,077,529	mBtu	
1554-1558	Reed Arena and Cox-McFerrin Center	328,185	007578	HHW	661,453	mBtu	
1558	Cox-McFerrin Center for Aggie Basketball	98,185	007581	ELE	64,608	kWh	
1558	Cox-McFerrin Center for Aggie Basketball	98,185	007575	CHW	345,915	mBtu	
1558	Cox-McFerrin Center for Aggie Basketball	98,185	007577	HHW	127,799	mBtu	(2)
1559	West Campus Parking Garage	1,541,457	001453	ELE	154,796	kWh	*
1559	West Campus Parking Garage	13,000	004322	CHW	51,955	mBtu	(1)
1559	West Campus Parking Garage	13,000	004327	HHW	7,657	mBtu	
1560	Student Recreation Center	334,642	000363	ELE	353,639	kWh	
1560	Student Recreation Center	334,642	000366	ELE	387,626	kWh	
1560	Student Recreation Center	334,642	002933	CHW	4,300,045	mBtu	
1560	Student Recreation Center	334,642	002937	HHW	1,401,426	mBtu	
1589-1590	White Creek Apartment 1 and White Creek Apts Activity Center	176,454	009197	ELE	104,544	kWh	
1589-1590	White Creek Apartment 1 and White Creek Apts Activity Center	176,454	009198	CHW	493,851	mBtu	
1589-1590	White Creek Apartment 1 and White Creek Apts Activity Center	176,454	009199	HHW	55,899	mBtu	
1591	White Creek Apartment 2	179,467	008528	ELE	118,273	kWh	
1591	White Creek Apartment 2	179,467	008529	CHW	470,206	mBtu	
1591	White Creek Apartment 2	179,467	008533	HHW	58,397	mBtu	
1592	White Creek Apartment 3	179,467	008538	ELE	114,172	kWh	
1592	White Creek Apartment 3	179,467	008539	CHW	530,281	mBtu	
1592	White Creek Apartment 3	179,467	008543	HHW	48,793	mBtu	
1600	Gilchrist TTI Building	67,143	005286	ELE	46,368	kWh	
1600	Gilchrist TTI Building	67,143	002649	CHW	250,752	mBtu	
1600	Gilchrist TTI Building	67,143	002653	HHW	37,650	mBtu	
1601	International Ocean Discovery Building	86,576	006351	ELE	112,426	kWh	(2)
1601	International Ocean Discovery Building	86,576	006382	CHW	215,032	mBtu	(2)
1601	International Ocean Discovery Building	86,576	008144	CHW	48,400	mBtu	(2)
1601	International Ocean Discovery Building	86,576	008145	HHW	16,473	mBtu	(2)
1601	International Ocean Discovery Building	86,576	009829	HHW	53,923	mBtu	(2)
1604	Offshore Technology Research Center	40,014	006659	ELE	93,005	kWh	
1604	Offshore Technology Research Center	40,014	006660	ELE	192	kWh	(2)
1604	Offshore Technology Research Center	40,014	008142	CHW	499,940	mBtu	(2)
1604	Offshore Technology Research Center	40,014	008143	HHW	175,076	mBtu	(2)
1606	George Bush Presidential Library & Museum	121,678	000244	ELE	104,439	kWh	
1606	George Bush Presidential Library & Museum	121,678	002808	CHW	1,025,307	mBtu	
1606	George Bush Presidential Library & Museum	121,678	002812	HHW	280,257	mBtu	
1607	Allen Building	133,327	000243	ELE	95,096	kWh	
1607	Allen Building	133,327	002800	CHW	467,609	mBtu	
1607	Allen Building	133,327	002804	HHW	42,994	mBtu	
1608	Annenberg Presidential Conference Center	65,688	000245	ELE	69,714	kWh	
1608	Annenberg Presidential Conference Center	65,688	002761	CHW	647,293	mBtu	
1608	Annenberg Presidential Conference Center	65,688	002765	HHW	248,026	mBtu	
1609	TTI Headquarters	66,707	006495	ELE	47,955	kWh	
1609	TTI Headquarters	66,707	006496	CHW	253,723	mBtu	(2)
1609	TTI Headquarters	66,707	006497	HHW	24,682	mBtu	(2)
1611	Engineering Research Building	68,807	008462	ELE	158,363	kWh	
1611	Engineering Research Building	68,807	008463	CHW	1,271,332	mBtu	
1611	Engineering Research Building	68,807	008467	HHW	425,405	mBtu	
1800	General Services Complex	203,369	005441	ELE	170,059	kWh	
1800	General Services Complex	203,369	005468	CHW	771,185	mBtu	
1800	General Services Complex	203,369	005472	HHW	44,336	mBtu	
1809	New TVMDL	90,000	009652	ELE	NA	kWh	*
1809	New TVMDL	90,000	009653	ELE	NA	mBtu	*
1809	New TVMDL	90,000	009647	CHW	2,205,179	mBtu	

Table I-1 April 2017 Monthly Consumption for TAMU Buildings (*Continued*)

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
1810	Office of the State Chemist Building	31,735	009073	ELE	59,697	kWh	
1810	Office of the State Chemist Building	31,735	005460	CHW	316,884	mBtu	
1810	Office of the State Chemist Building	31,735	005464	HHW	67,244	mBtu	
1811	Vet Med Research Bldg Addition	52,993	006705	ELE	219,761	kWh	
1811	Vet Med Research Bldg Addition	52,993	006706	CHW	1,094,208	mBtu	
1811	Vet Med Research Bldg Addition	52,993	006707	HHW	397,407	mBtu	
1812-1813	Veterinary Medicine Building 1 and 2	138,460	009404	ELE	192,501	kWh	
1813	Veterinary Medicine Building 2	116,492	009418	ELE	3,240	kWh	
1814	Veterinary Medicine Building 3	135,470	009405	ELE	268,322	kWh	
1812-1813-1814	Veterinary Medicine Building 1, 2 and 3	390,422	009676	CHW	3,115,250	mBtu	
1812-1813-1814	Veterinary Medicine Building 1, 2 and 3	390,422	009410	HHW	709,209	mBtu	
1900	Texas Institute for Genomic Medicine	34,120	005548	ELE	79,199	kWh	
1900	Texas Institute for Genomic Medicine	34,120	005545	CHW	996,288	mBtu	
1900	Texas Institute for Genomic Medicine	34,120	005546	HHW	355,198	mBtu	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006364	ELE	210,811	kWh	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006365	CHW	1,549,447	mBtu	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006366	HHW	460,565	mBtu	
1910	National Center for Therapeutics Manufacturing	149,924	007517	ELE	192,168	kWh	
1910	National Center for Therapeutics Manufacturing	149,924	007518	ELE	182,180	kWh	
1910	National Center for Therapeutics Manufacturing	149,924	007519	CHW	3,886,434	mBtu	
1910	National Center for Therapeutics Manufacturing	149,924	007520	HHW	1,355,311	mBtu	(2)
1911	Multi-Species Research Building	21,000	009138	ELE	26,610	kWh	
1911	Multi-Species Research Building	21,000	009129	CHW	353,240	mBtu	
1911	Multi-Species Research Building	21,000	009133	HHW	166,596	mBtu	
10226	NCTM Manufacturing Building	113,397	007648	CHW	3,348,270	mBtu	
10226	NCTM Manufacturing Building	113,397	007649	HHW	1,011,513	mBtu	
10226	NCTM Manufacturing Building	113,397	008133	HHW	274,698	mBtu	

1 mBtu = 1 000 Btu

NA: Not available
 #monthly consumption in blue: measured 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

II-1 Meters with Missing Energy Consumption Data

During the month of April 2017, 39 meters in 23 buildings and complexes have missing daily data. The missing data have been filled in using consumption models based on the past data if available or using linear interpolation or some sort of average, and the monthly consumption has been estimated with the filled-in daily consumption. Table II-1 is the list of meters with missing data.

Table II-1 Meters with missing data during April 2017

Building No.	Building Name	MeterID	Type	Unit	Original Monthly Consumption	Estimated Monthly Consumption	# of Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
0434	Luedecke Building (Cyclotron)	006664	CHW	mBtu	NA	1,678,162	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M			
0434	Luedecke Building (Cyclotron)	006668	HHW	mBtu	NA	136,856	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
440-441	Commons Krueger	009833	ELE	kWh	15,062	85,398	25	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
0441	Krueger Residence Hall	009828	ELE	kWh	13,665	24,305	13	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
0446	Rudder Tower	001551	ELE	kWh	NA	55,824	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M			
456	Military Science Building	006930	CHW	mBtu	NA	438,327	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
456	Military Science Building	006943	HHW	mBtu	NA	194,180	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
468	Evans Library	000319	ELE	kWh	94,415	*	5																																		
468	Evans Library	003911	CHW	mBtu	741,316	1,152,830	11																				M	M	M	M	M	M	M	M	M	M	M	M	M		
468	Evans Library	003922	HHW	mBtu	64,529	94,428	11																					M	M	M	M	M	M	M	M	M	M	M	M	M	
481	Heaton Hall	005712	ELE	kWh	NA	***	30																																		
484	Chemistry Building	007028	CHW	mBtu	694,549	750,074	7				M	M	M	M	M	M	M																								
484	Chemistry Building	007032	HHW	mBtu	3,504,287	**	7				M	M	M	M	M	M	M																								
495	Sbsa Dining Hall	000352	ELE	kWh	144,728	*	1																																		
512	All Faiths Chapel	004340	ELE	kWh	1,251	7,418	25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M			
512	All Faiths Chapel	004288	CHW	mBtu	17,582	**	25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
512	All Faiths Chapel	004293	HHW	mBtu	7,885	**	25	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
972	Laboratory Animal Care Building	007063	ELE	kWh	131,422	*	1																																		
1026	Veterinary Medicine Administration	006053	HHW	mBtu	NA	524,919	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
1041	Texas Vet Med Diagnostic Lab	001539	ELE	kWh	26,845	64,488	14	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
1041	Texas Vet Med Diagnostic Lab	003817	CHW	mBtu	NA	718,399	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
1041	Texas Vet Med Diagnostic Lab	004137	CHW	mBtu	NA	1,065,351	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
1041	Texas Vet Med Diagnostic Lab	003821	HHW	mBtu	NA	124,866	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
1041	Texas Vet Med Diagnostic Lab	004130	HHW	mBtu	NA	165,699	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
1454	University Apartments - The Gardens F	006980	ELE	kWh	NA	19,613	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
1455	University Apartments - The Gardens G	006882	ELE	kWh	NA	16,916	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
1502	Heep Center	001599	CHW	mBtu	(208,013,255)	**	3																																		
1502	Heep Center	002603	HHW	mBtu	(23,475,049)	**	3																																		
1506	Horticulture-Forest Science Building	001544	ELE	kWh	153,806	*	1																																		
1537	Agriculture Public Building	009622	CHW	mBtu	502,618	798,438	13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
1537	Agriculture Public Building	009623	HHW	mBtu	182,757	325,217	13	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
1542	Human Clinical Research Building	009693	ELE	kWh	NA	51,490	30	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
1542	Human Clinical Research Building	009683	CHW	mBtu	NA	280,111	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
1542	Human Clinical Research Building	009687	HHW	mBtu	NA	149,401	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
1554	Reed Arena	006243	ELE	kWh	NA	718	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
1554	Reed Arena	006244	ELE	kWh	NA	85,716	30	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
1559	West Campus Parking Garage	001453	ELE	kWh	134,157	154,796	4	A	A	A	A																														
1809	New TVMDL	009552	ELE	kWh	NA	***	30																																		
1809	New TVMDL	009553	ELE	kWh	NA	***	30																																		

* Monthly consumption evaluated from the cumulative data is not affected by the missing data.
 ** See Table II-2 for the estimated consumption.
 *** Consumption is not estimated because reliable consumption model is not available.
 NA: Not available

Liberal Arts and Arts & Humanities Building (TAMU Bldg #275)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	007717	30	4/1/2017 – 4/30/2017	Model

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

Data Type	Description of data behaviors	Period
HHW	The consumption level is lower than the level during the past year.	4/1/2017 – 4/30/2017

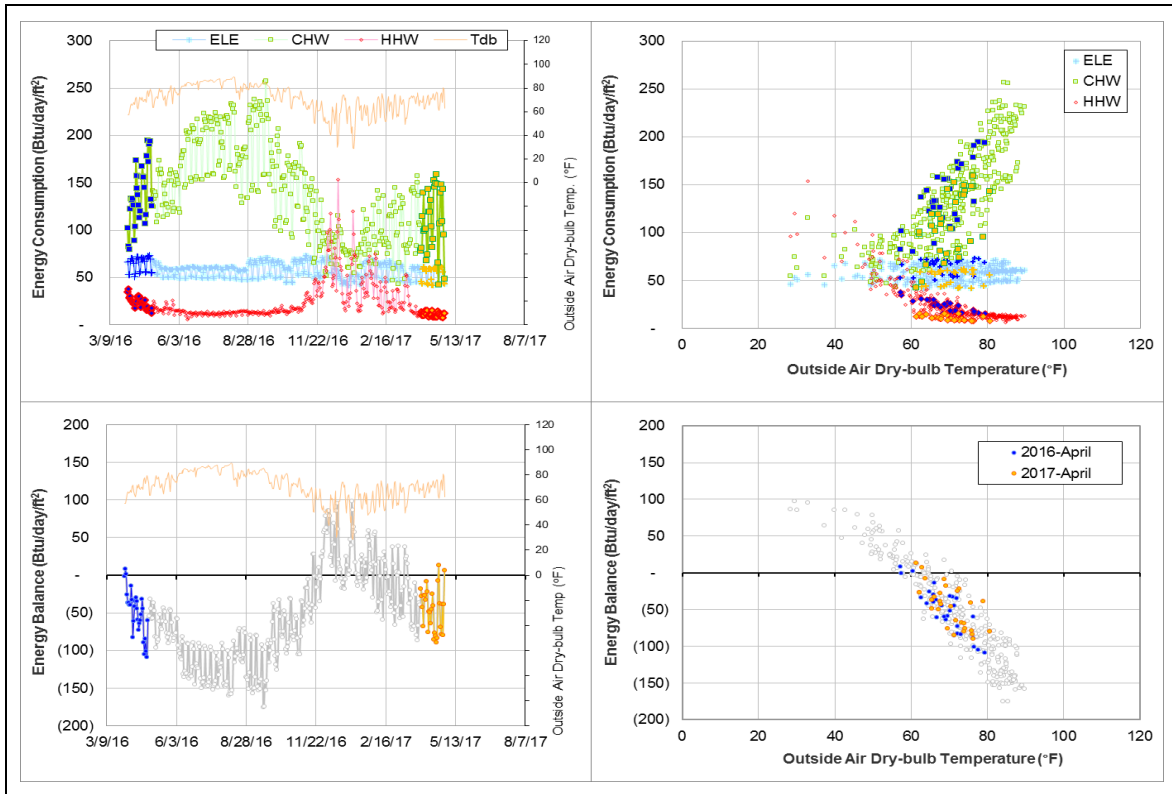
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	007717	4/1/2017 – 4/30/2017	Flow rate	Decreased

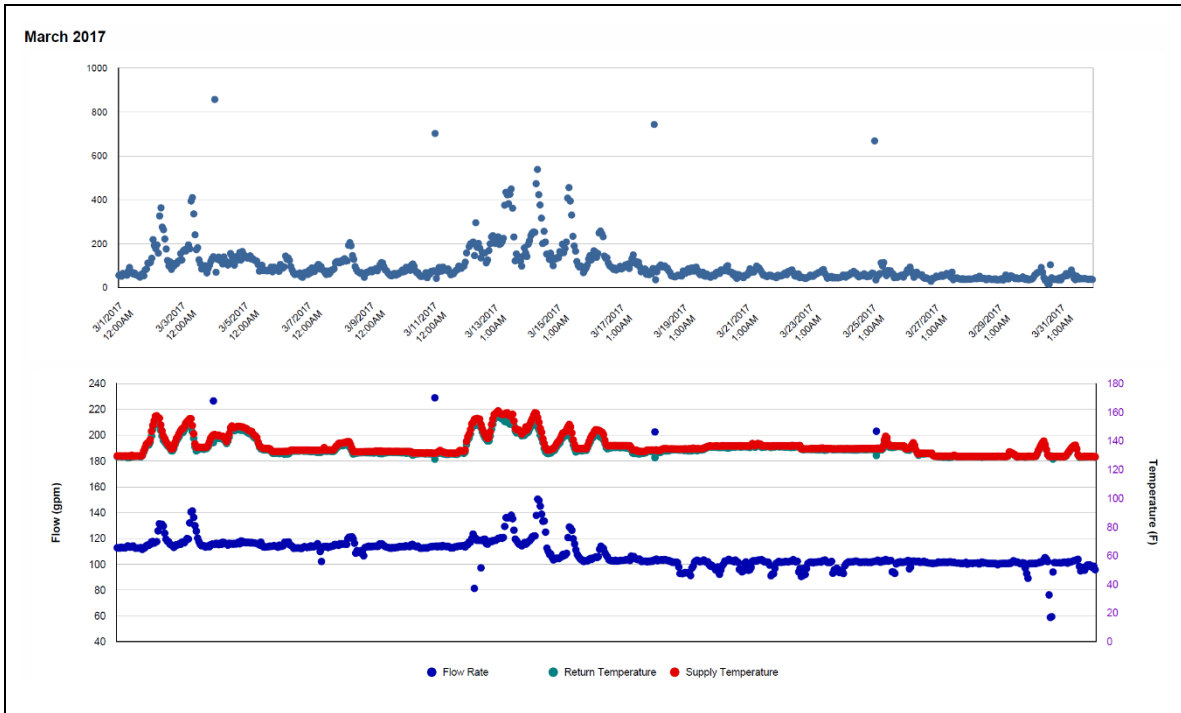
Quantitative descriptions and comments

The HHW flow rate is consistently around 120 gpm however on 3/15/2017 the flow rate decreased to about 100 gpm. In April the flow rate dropped to 80 gpm on 4/11/2017 and to 60 gpm on 4/14/2017. The delta-T seems to be too small. The whole month is estimated using a model. See also section II-3.

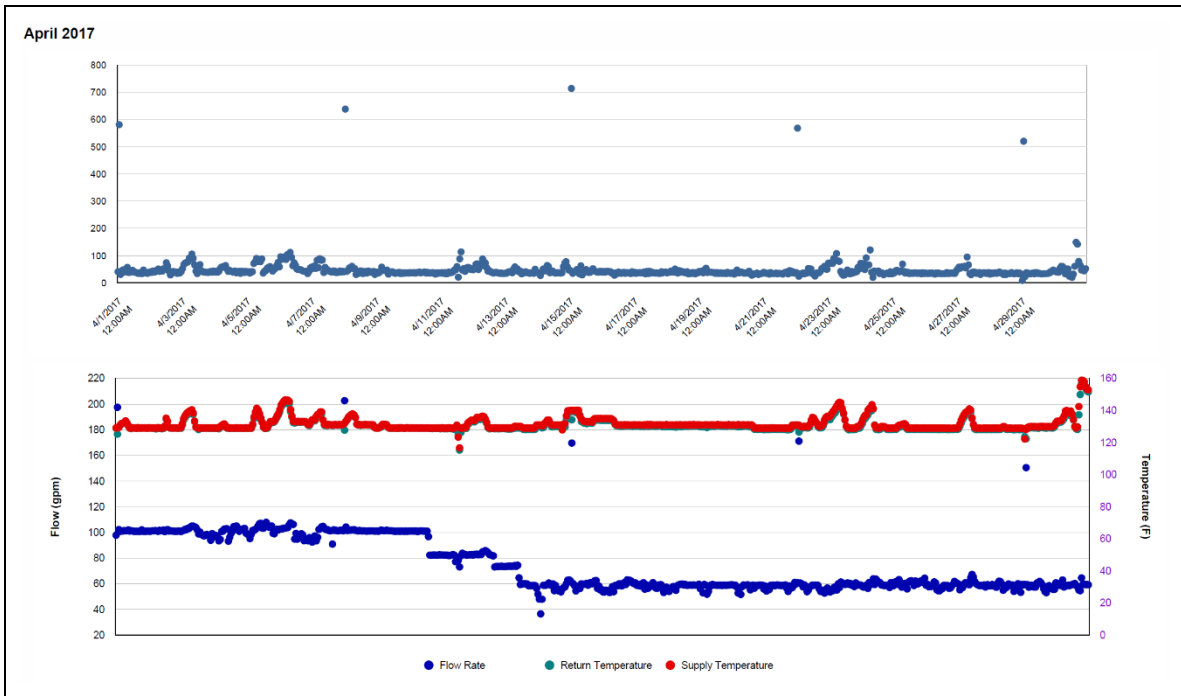
Explanatory Figure: 13 months energy balance plot with original data.



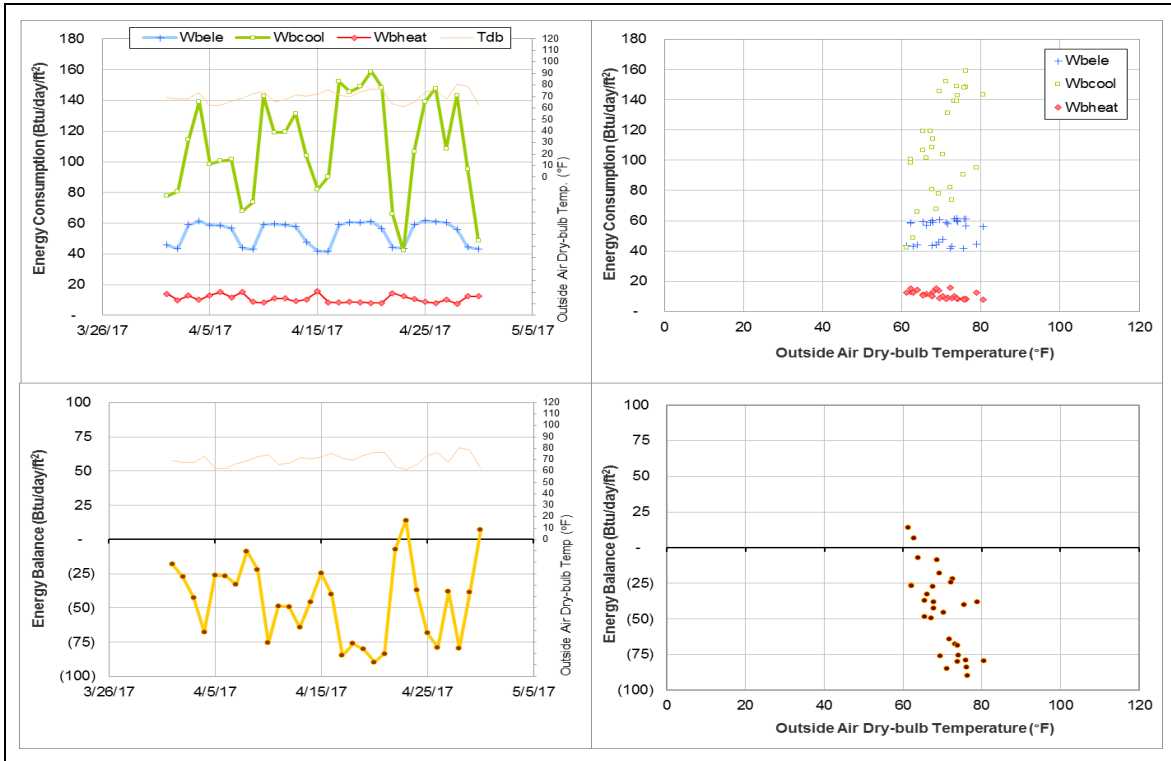
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during March 2017)



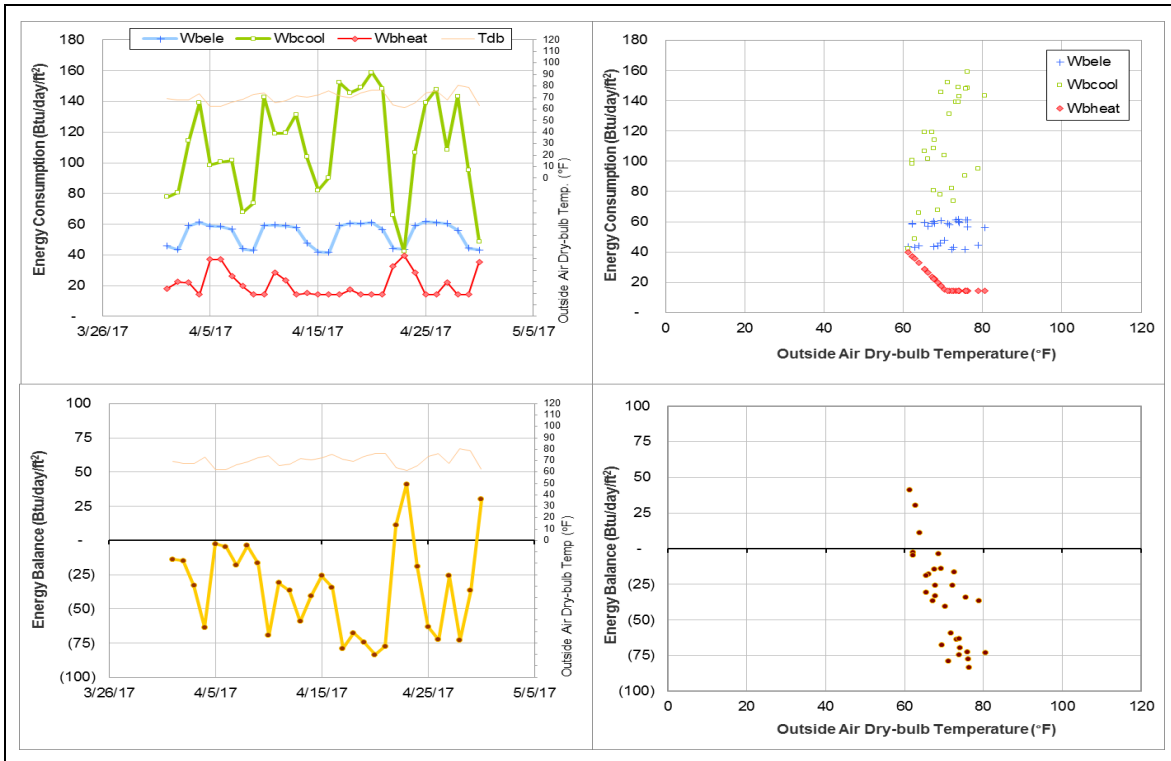
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during April 2017)



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.



CE TTI Office & Lab Building (TAMU Bldg #325-385)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	009123	30	4/1/2017 – 4/30/2017	Model

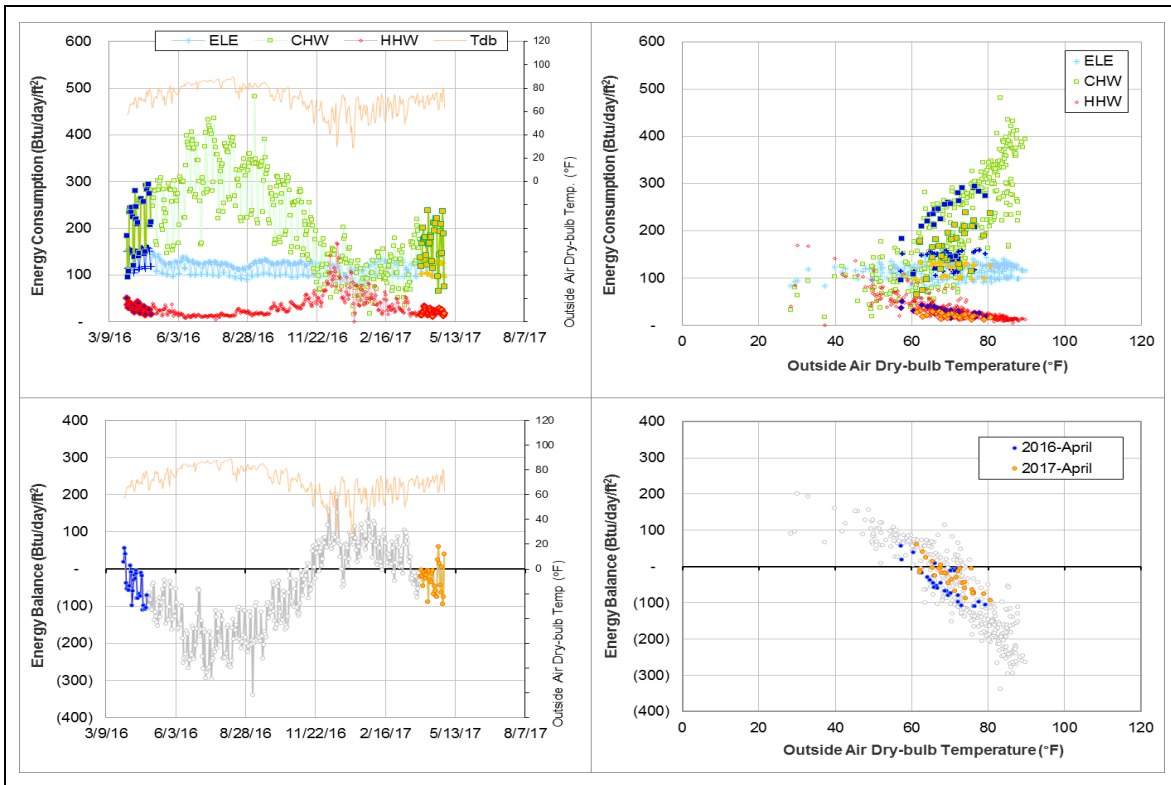
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level is lower than the level during the past year.	1/1/2017 – Ongoing

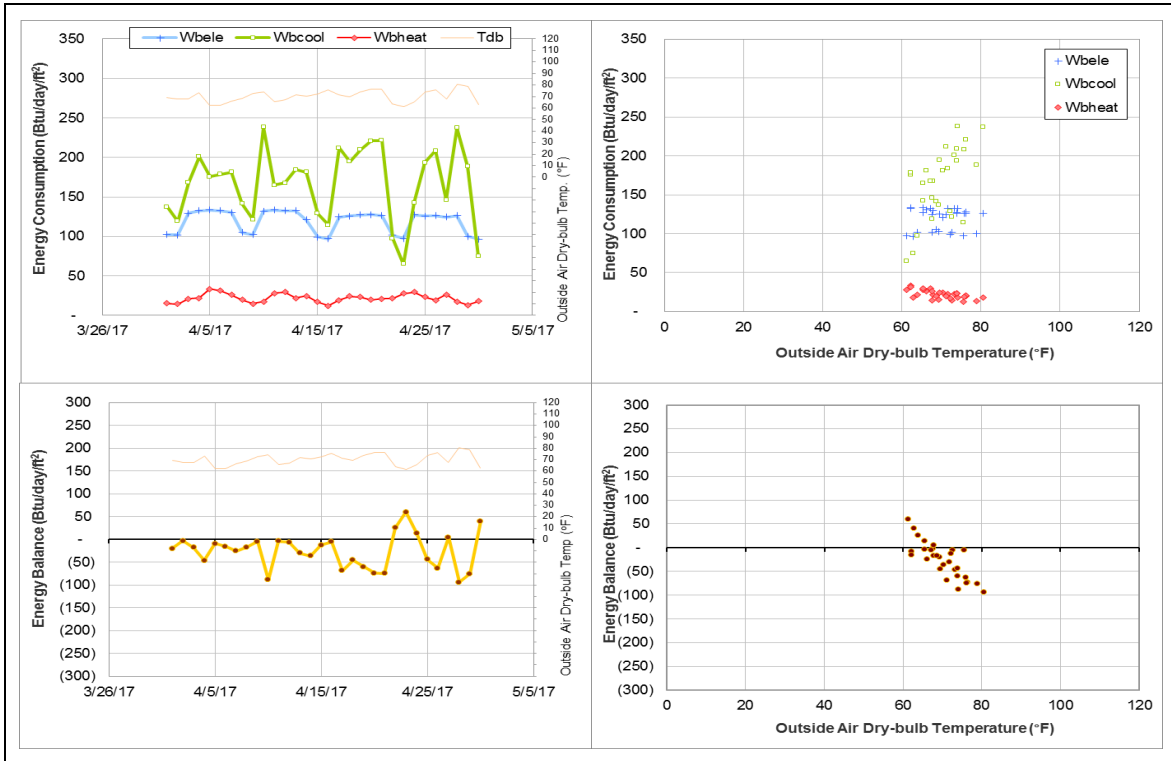
Quantitative descriptions and comments

CHW consumption gradually dropped to a level that is lower than the past year by 50 – 75 Btu/day/ft². No obvious sensor reading behavior anomaly is observed. The whole month is estimated using a model.

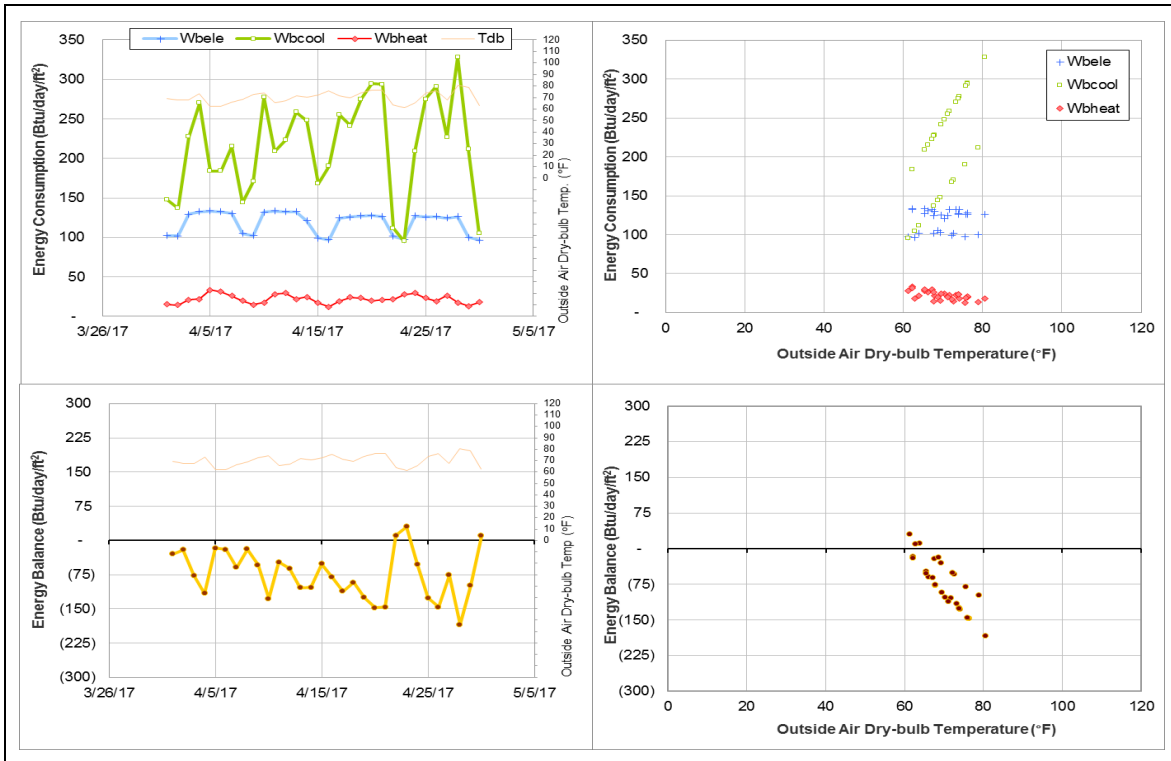
Explanatory Figure: 13 months energy balance plot with original data.



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.



Koldus Building (TAMU Bldg #383)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	002874	30	4/1/2017 – 4/30/2017	Model

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

Data Type	Description of data behaviors	Period
HHW	The metered value appears to be faulty.	3/8/2017, 3/12/2017 – 4/30/2017

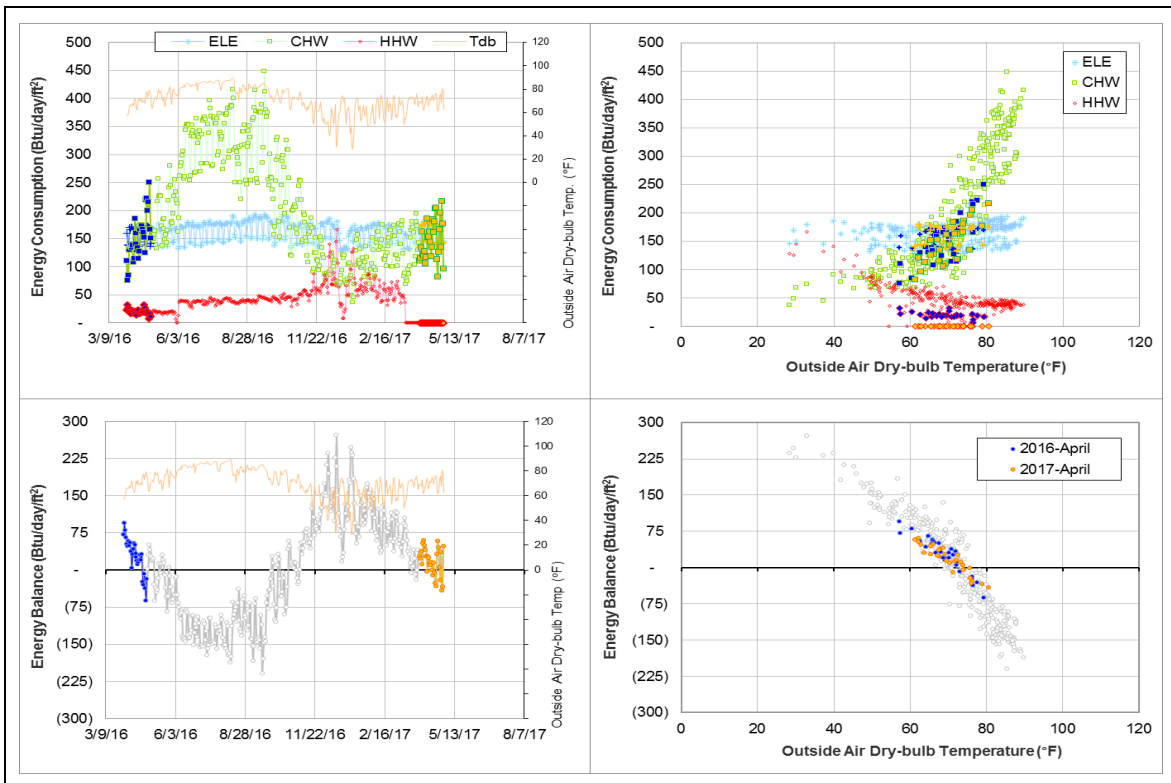
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	002874	3/8/2017, 3/12/2017 – 4/30/2017	Flow rate	Near zero
		3/14/2017 – 4/13/2017, 4/21/2017 – 4/30/2017	Delta-T	Zero

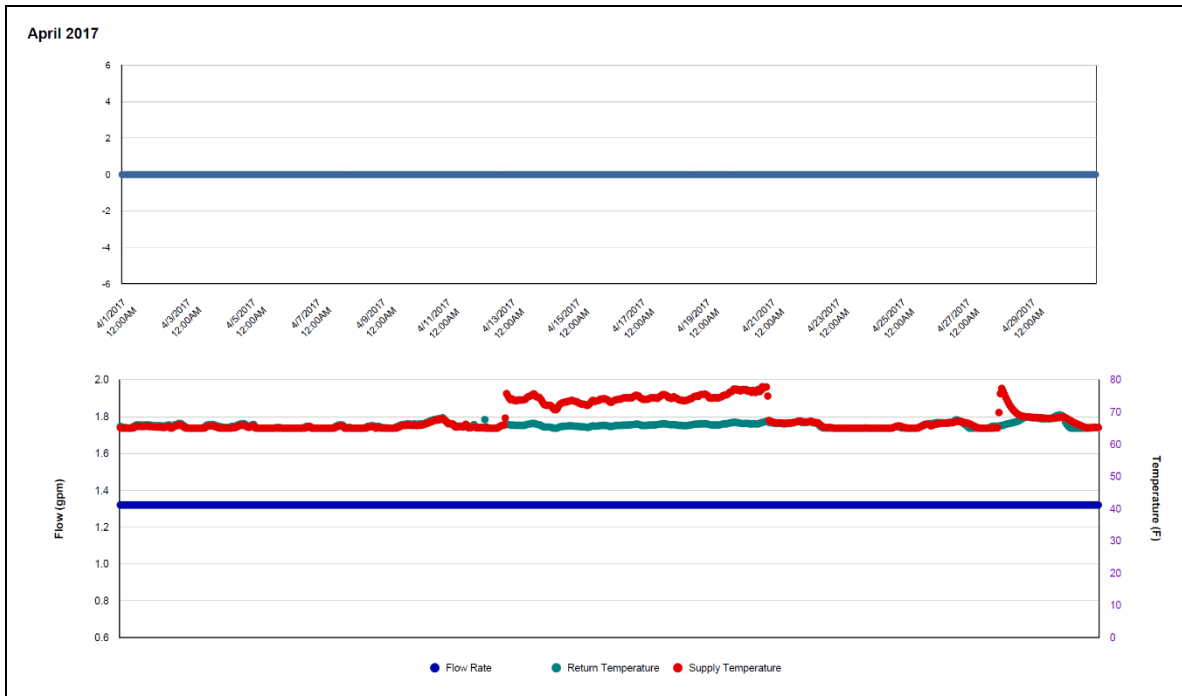
Quantitative descriptions and comments

The HHW consumption dropped to zero on part of 3/8/2017 as well as 3/12/2017 – 4/30/2017 due to a flow rate near zero and a delta-T of zero. The consumption was estimated by model for the whole month of April.

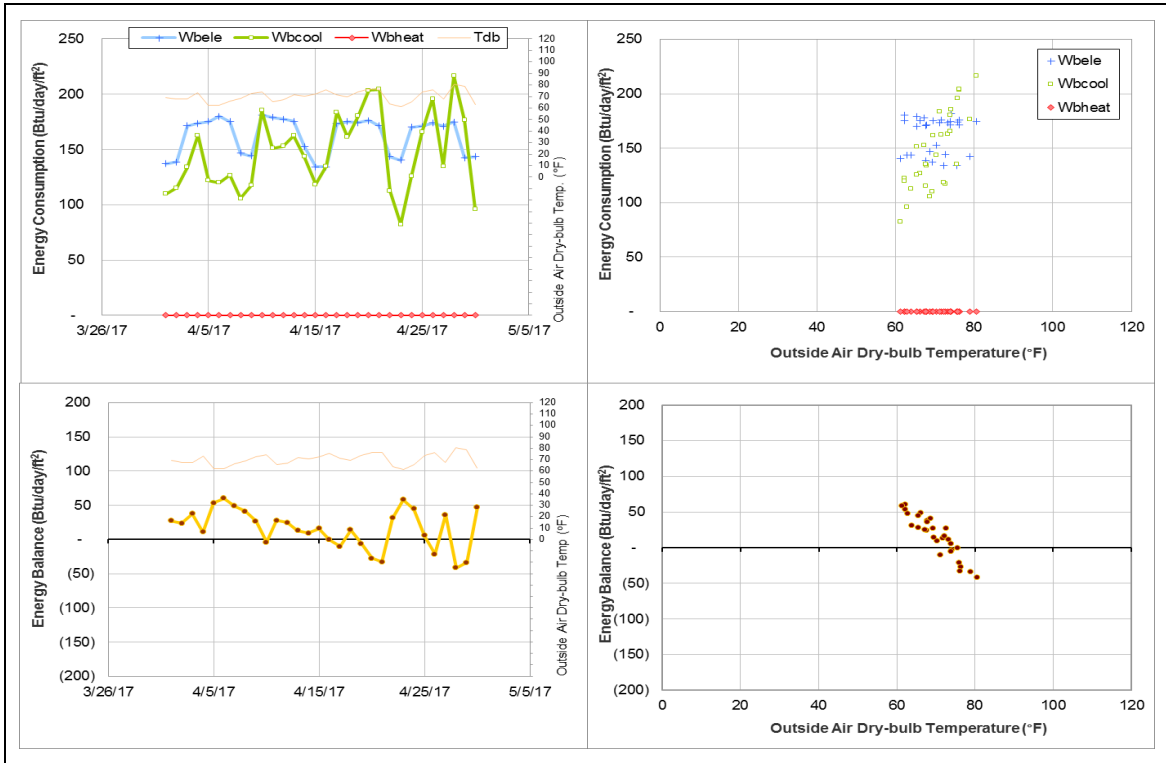
Explanatory Figure: 13 months energy balance plot with original data.



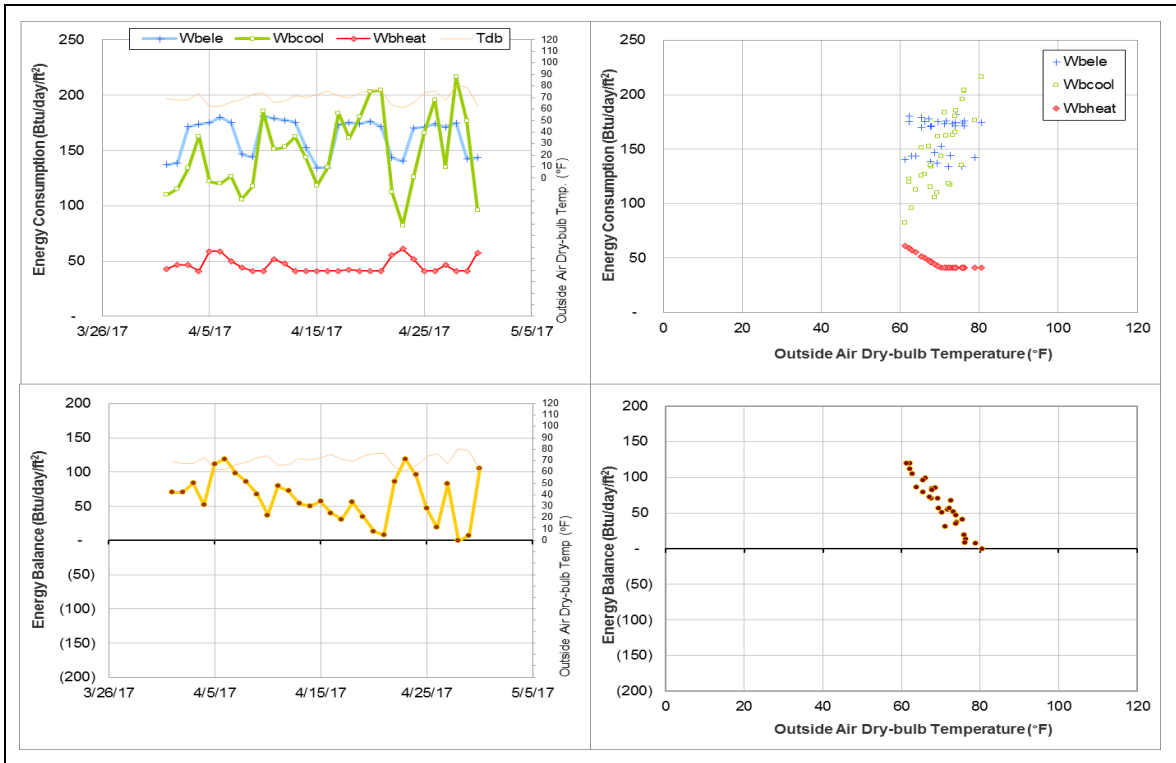
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during April 2017)



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.



Hotard Hall (TAMU Bldg #424)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	002668	7	4/19/2017 – 4/25/2017	Model

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

Data Type	Description of data behaviors	Period
HHW	The consumption dropped for a short period.	4/19/2017 – 4/25/2017

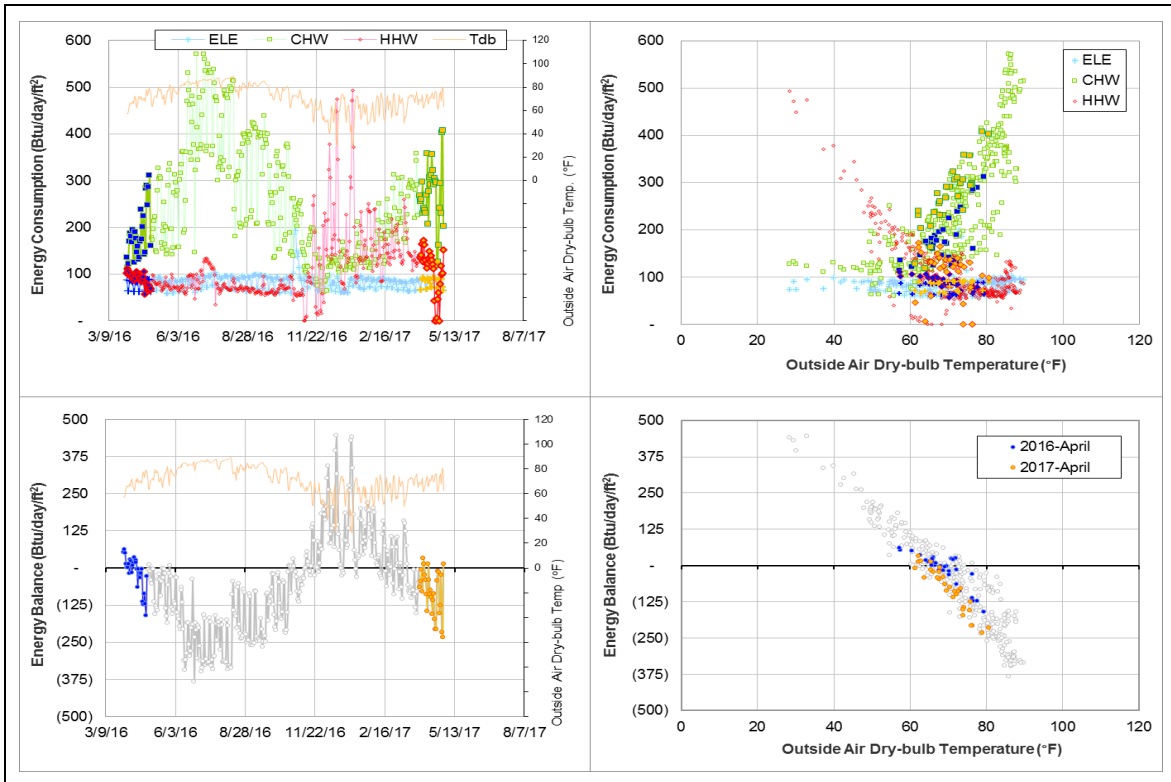
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	002668	4/19/2017 – 4/25/2017	Flow rate	Near zero

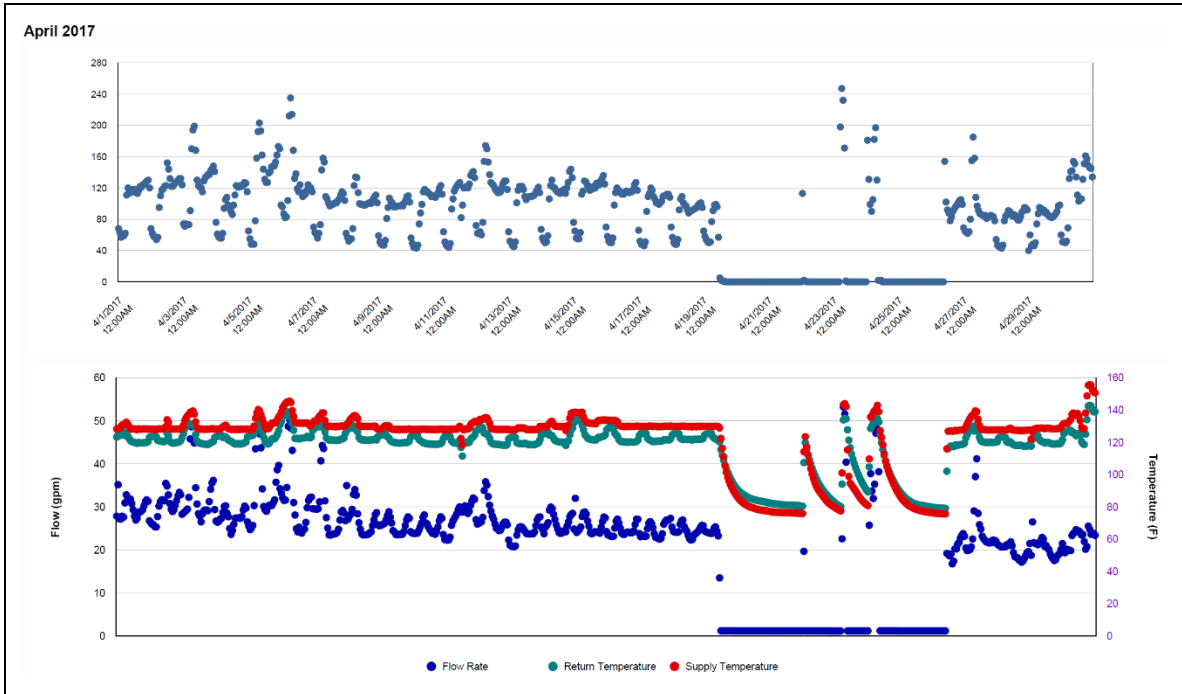
Quantitative descriptions and comments

The HHW consumption dropped from 4/19/2017 to 4/25/2017 due to a near zero flow rate. These days are estimated by a model.

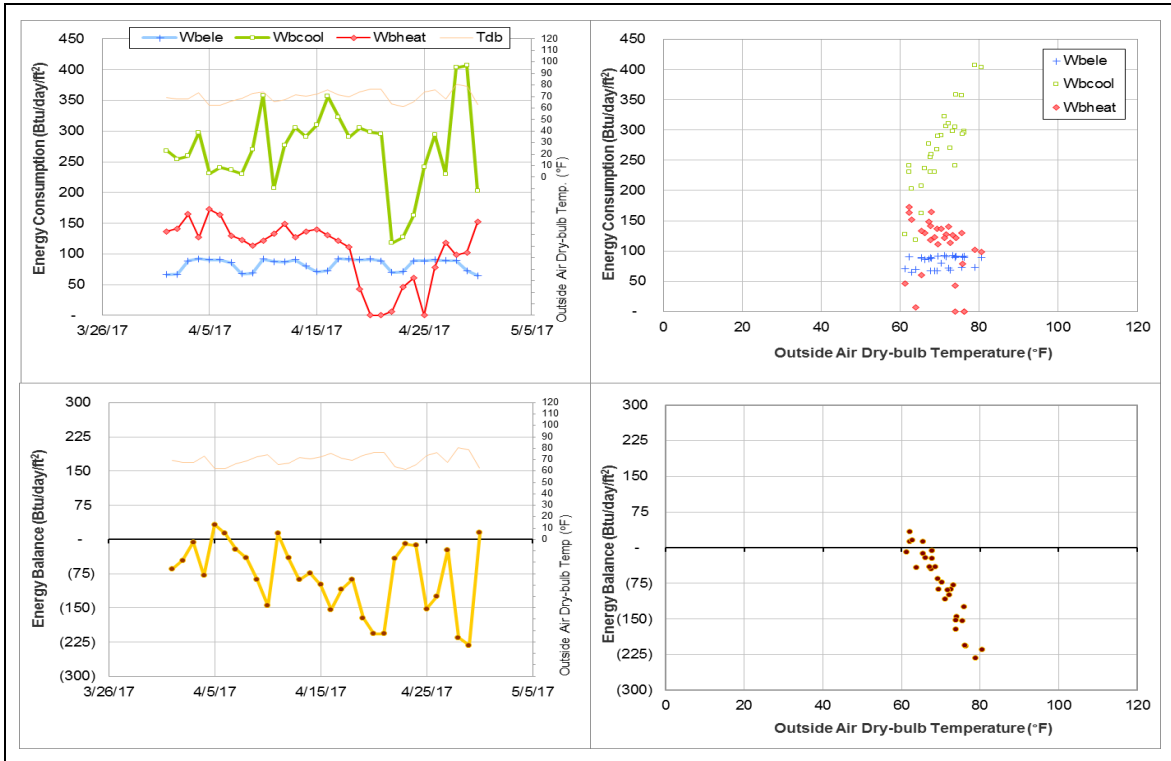
Explanatory Figure: 13 months energy balance plot with original data.



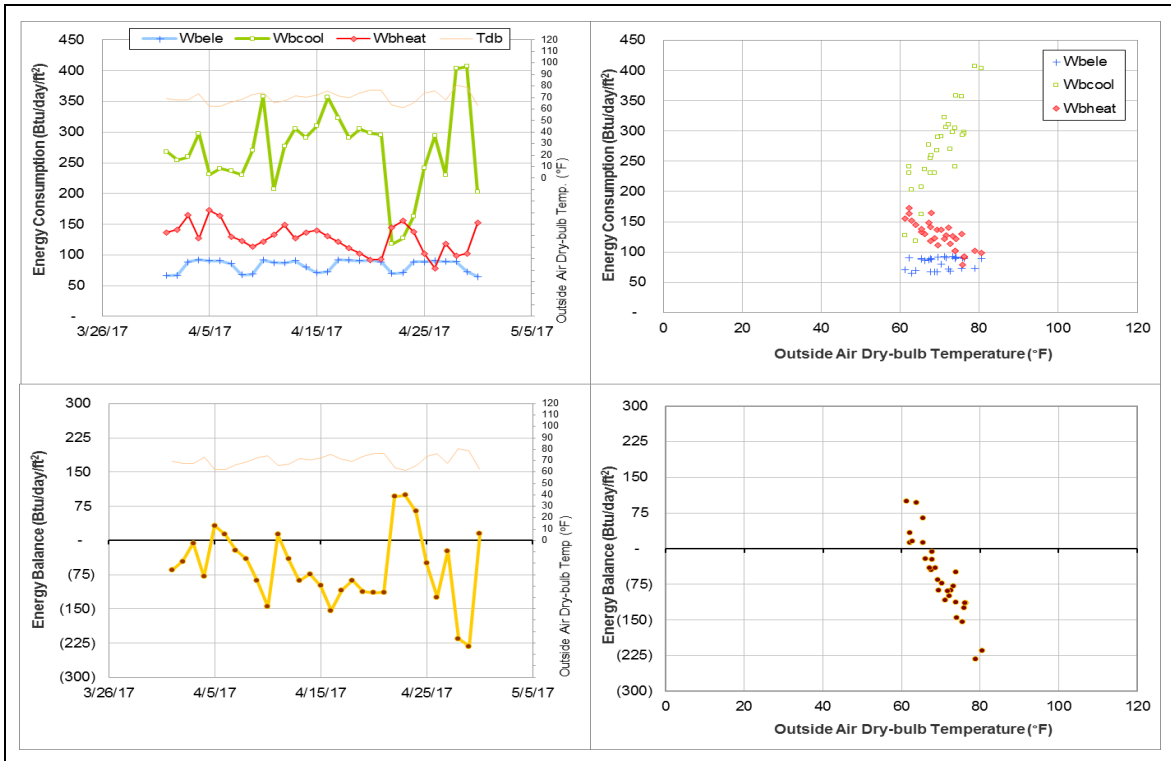
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during April 2017)



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.



Aston Residence Hall (TAMU Bldg #447)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002474	30	4/1/2017 – 4/30/2017	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.	11/18/2016 – 1/31/2017
	The consumption is higher than that of last year.	2/1/2017 – Ongoing

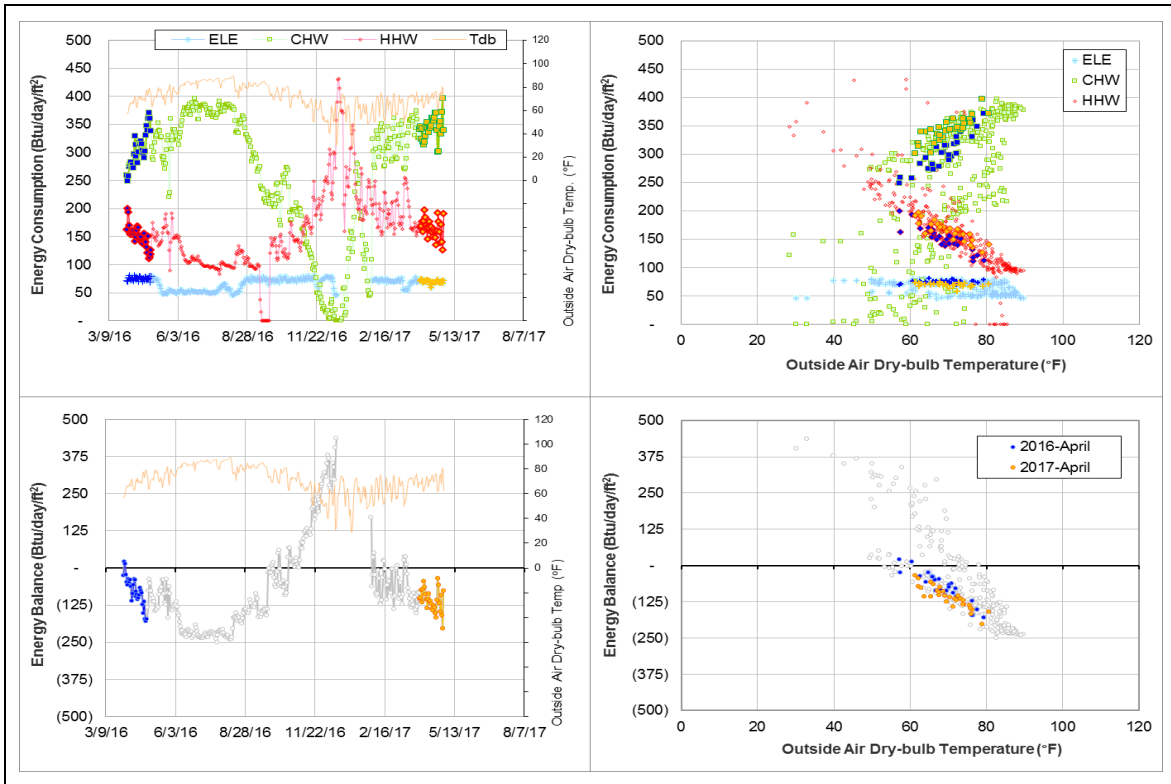
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002474	11/18/2016 – 1/31/2017	Delta-T	Low and occasionally negative
		12/1/2016 – ongoing	Flow rate	High

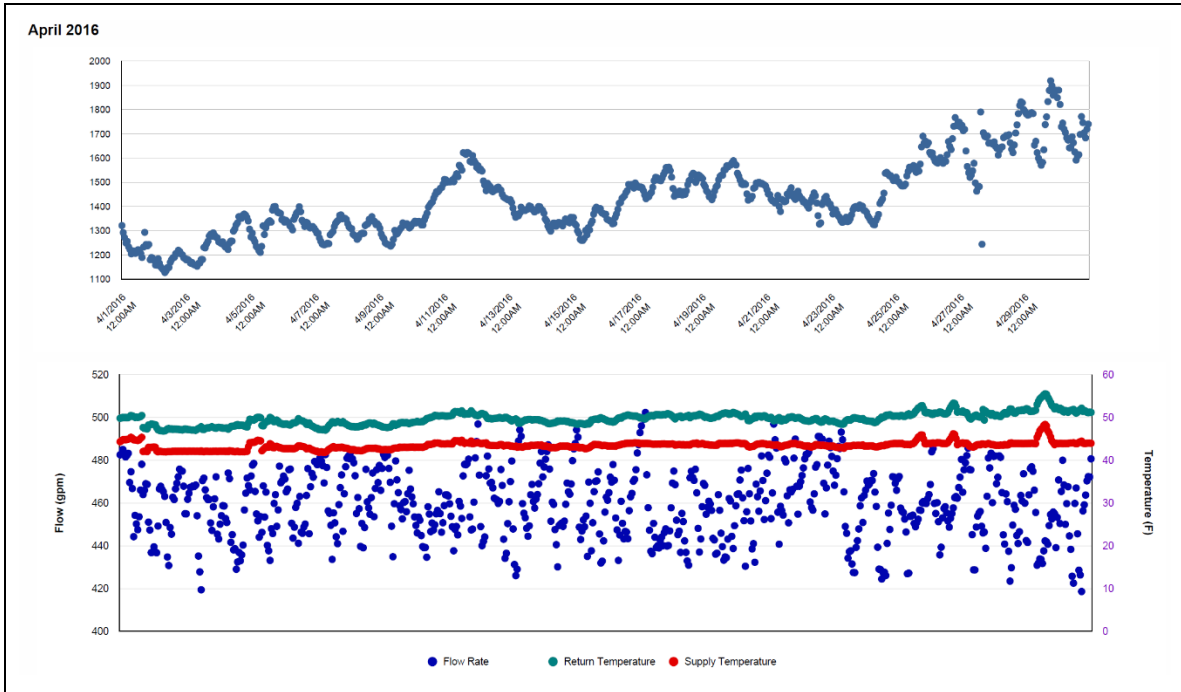
Quantitative descriptions and comments

Delta-T of CHW decreased significantly and consumption dropped to a very low level since 11/18/2016, and negative values of Delta-T appeared occasionally. Delta-T significantly increased on 1/31/2017 and the consumption went higher than the previous years. The flow rate has been at least 200 gpm higher than the previous year since 12/1/2016. The cross-point temperature of energy balance moved to low temperature range, less than 60°F because of the increase of CHW use. The whole month is estimated by a model using the period from 2/15/2016 – 8/31/2016.

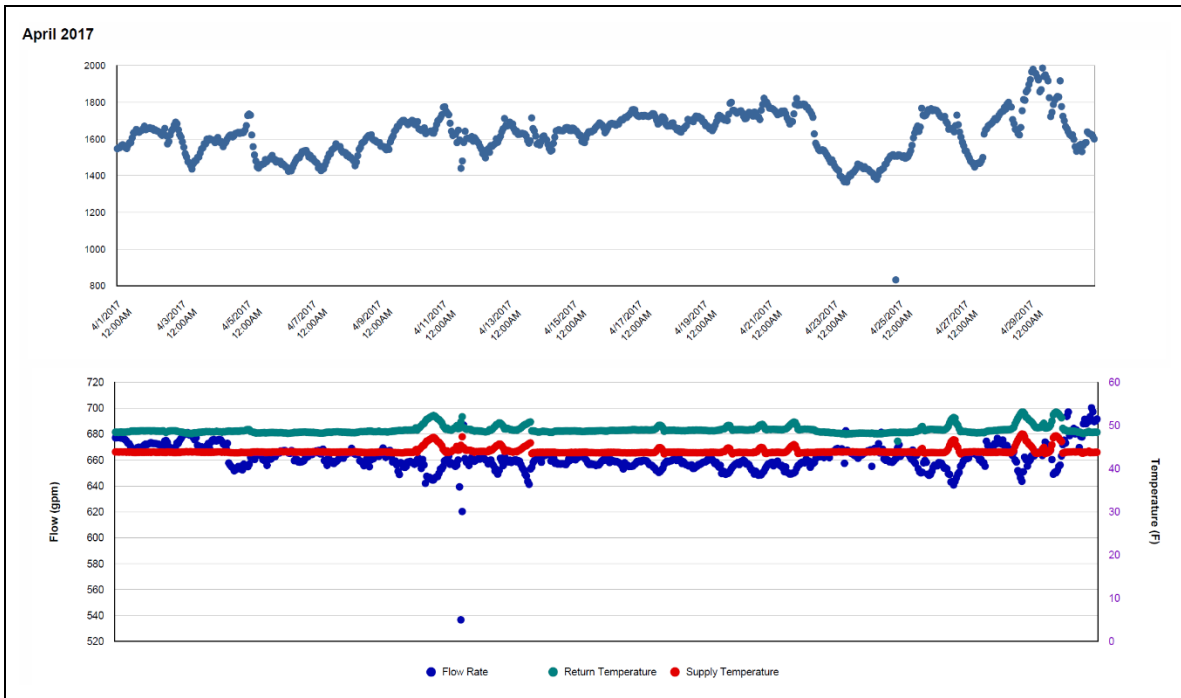
Explanatory Figure: 13 months energy balance plot with original data.



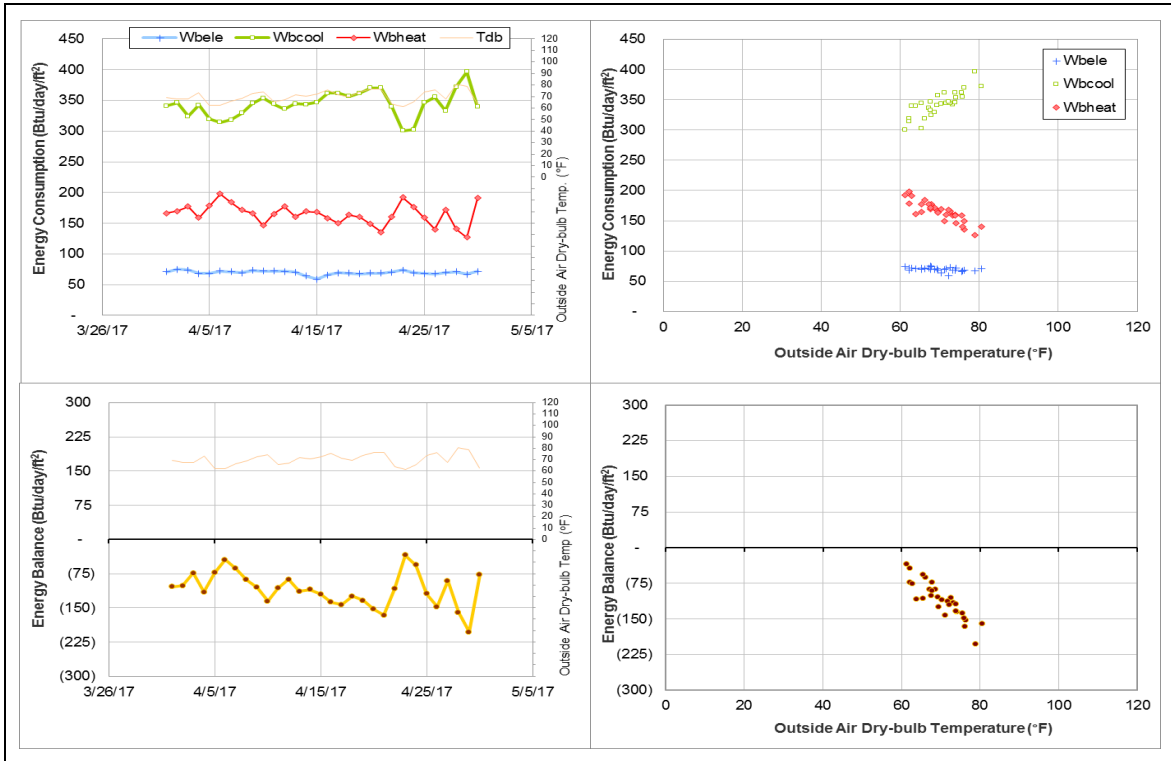
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during April 2016)



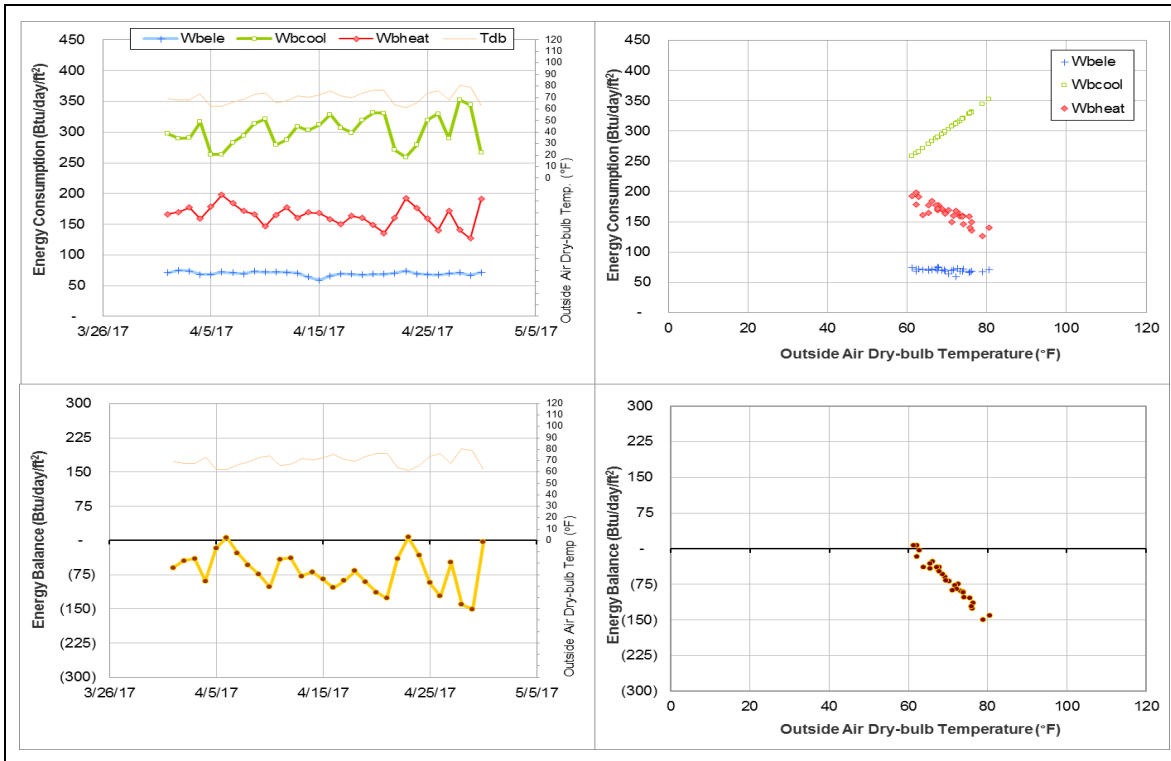
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during April 2017)



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.



Oceanography & Meteorology Building (TAMU Bldg #443)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	006388	30	4/1/2017 – 4/30/2017	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.	10/21/2016 – 10/25/2016 11/5/2016 – 11/22/2016
	The consumption level is higher than the level during the past year.	11/23/2016 – Ongoing

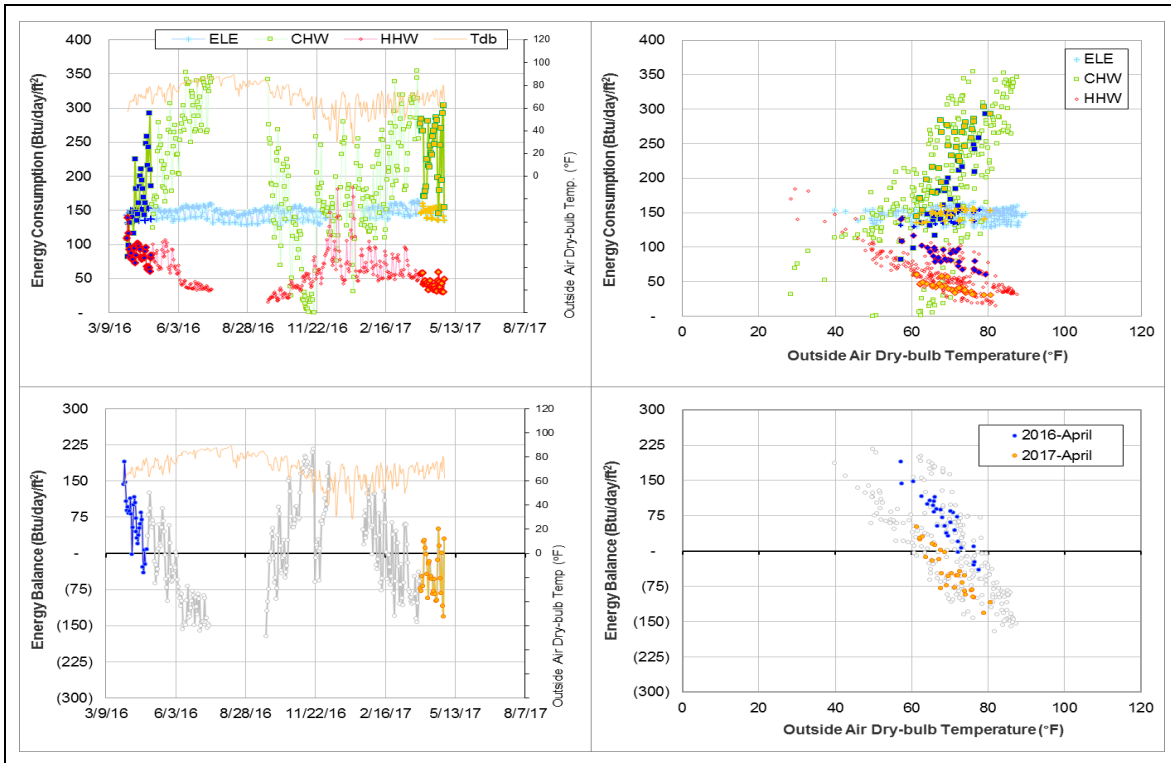
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	006388	10/21/2016 – 10/25/2016	Delta-T	Contains negative
		11/5/2016 – 11/22/2016		
		11/1/2016 – Ongoing	Flow rate	High

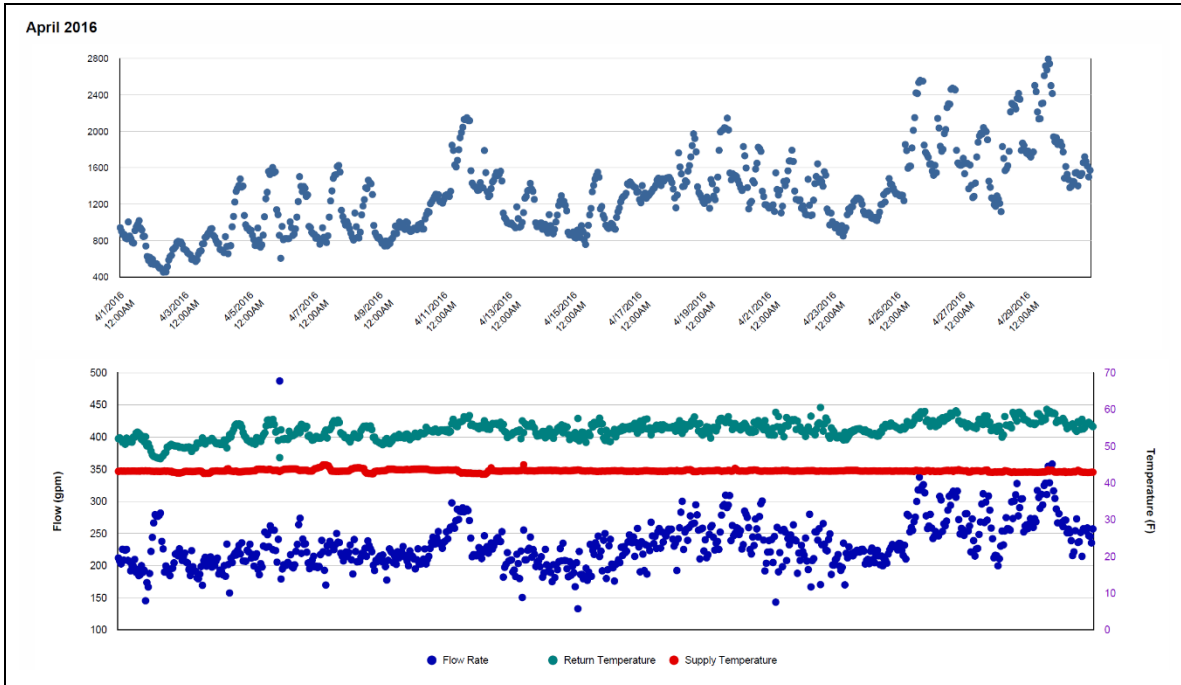
Quantitative descriptions and comments

There are negative CHW Delta-T values during 10/21/2016 – 10/25/2016 and 11/5/2016 – 11/22/2016. Starting 11/22/2016, Delta-T became positive but the consumption and energy balance are still off-pattern, and the consumption is appreciably higher than the past 5 years. The cross-point of EB has changed from 75°F to 62°F because of this increase. The whole month is estimated by a model. See also section II-3.

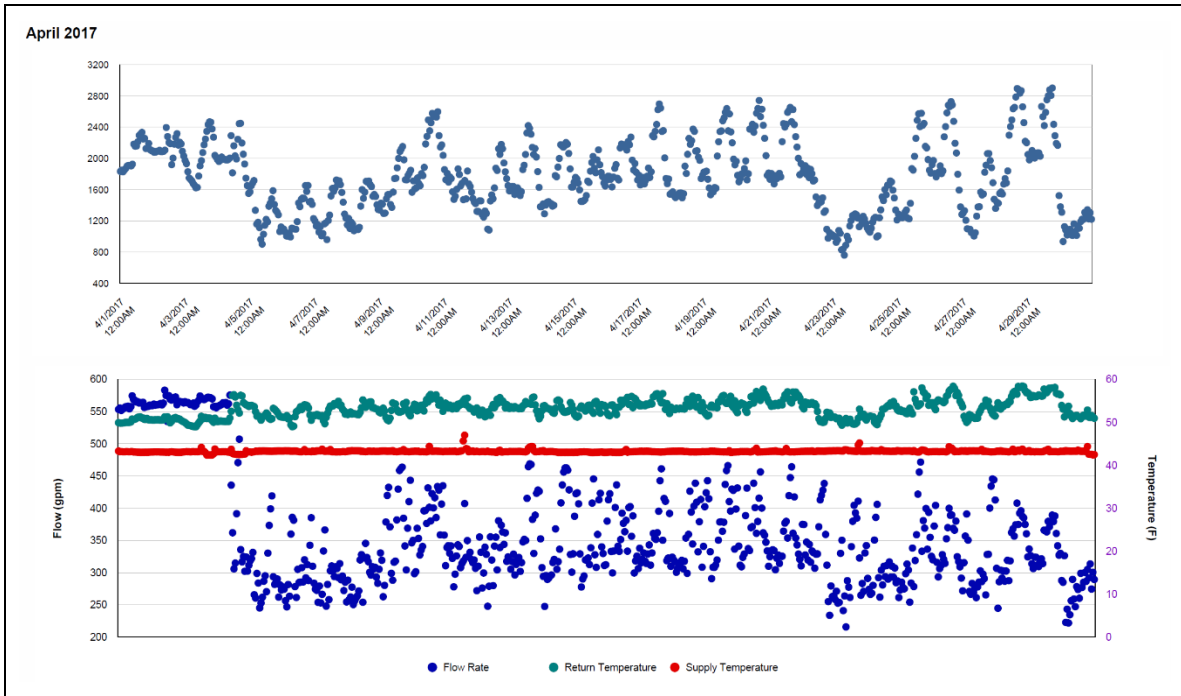
Explanatory Figure: 13 months energy balance plot with original data.



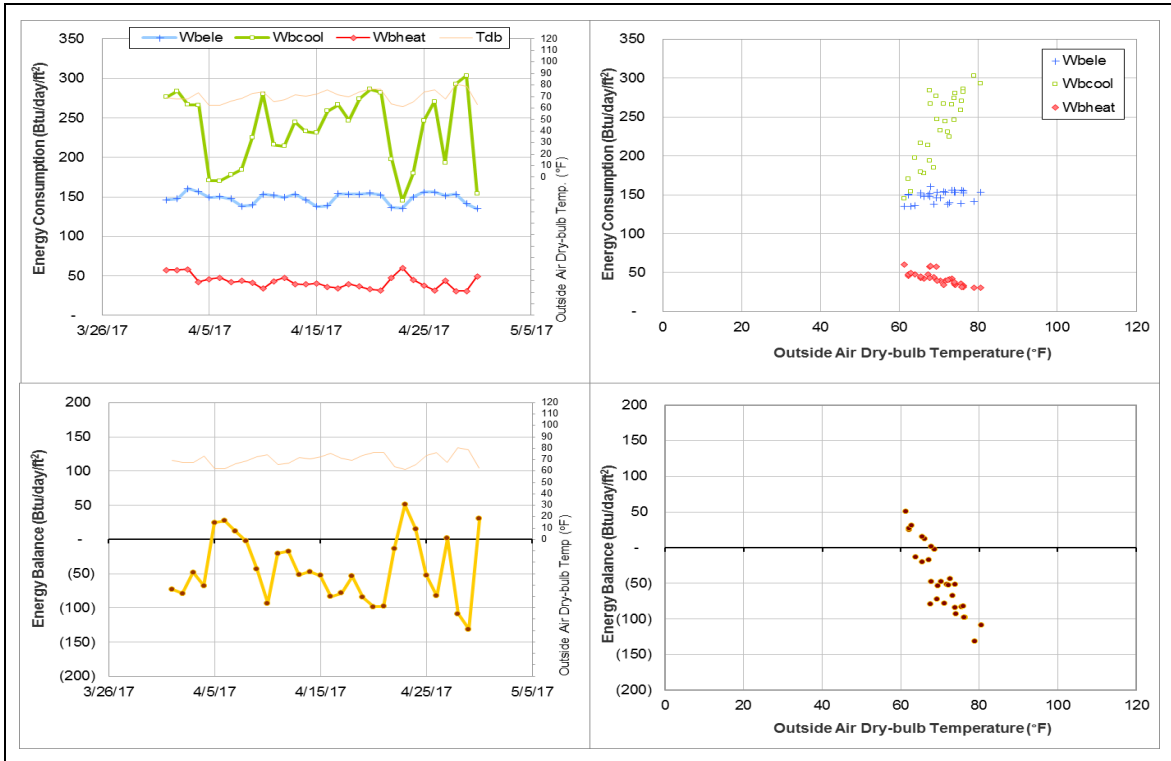
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during April 2016)



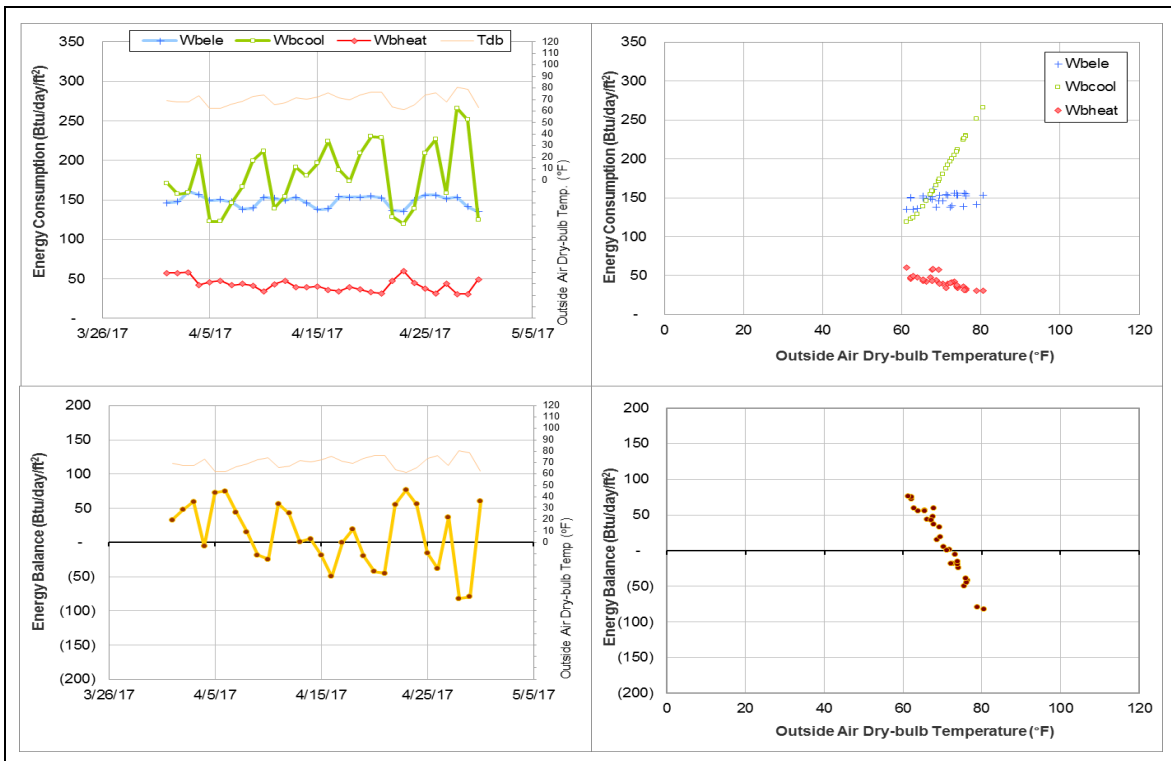
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during April 2017)



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.



Teague Research Center (TAMU Bldg #445)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	006415	30	4/1/2017 – 4/30/2017	Model

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

Data Type	Description of data behaviors	Period
HHW	The consumption level is higher than the level during the past year.	12/8/2016 – Ongoing

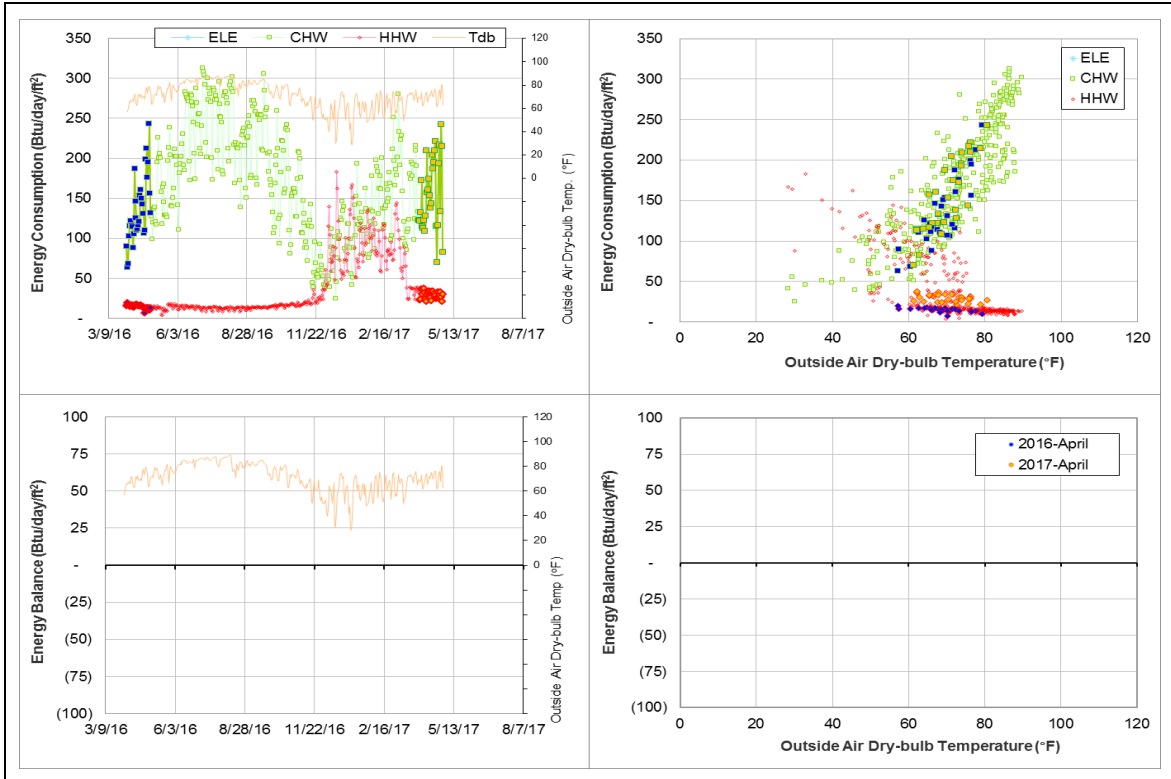
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	006415	12/8/2016 – Ongoing	Delta-T	High
		12/8/2016 – 3/15/2017	Flow Rate	High

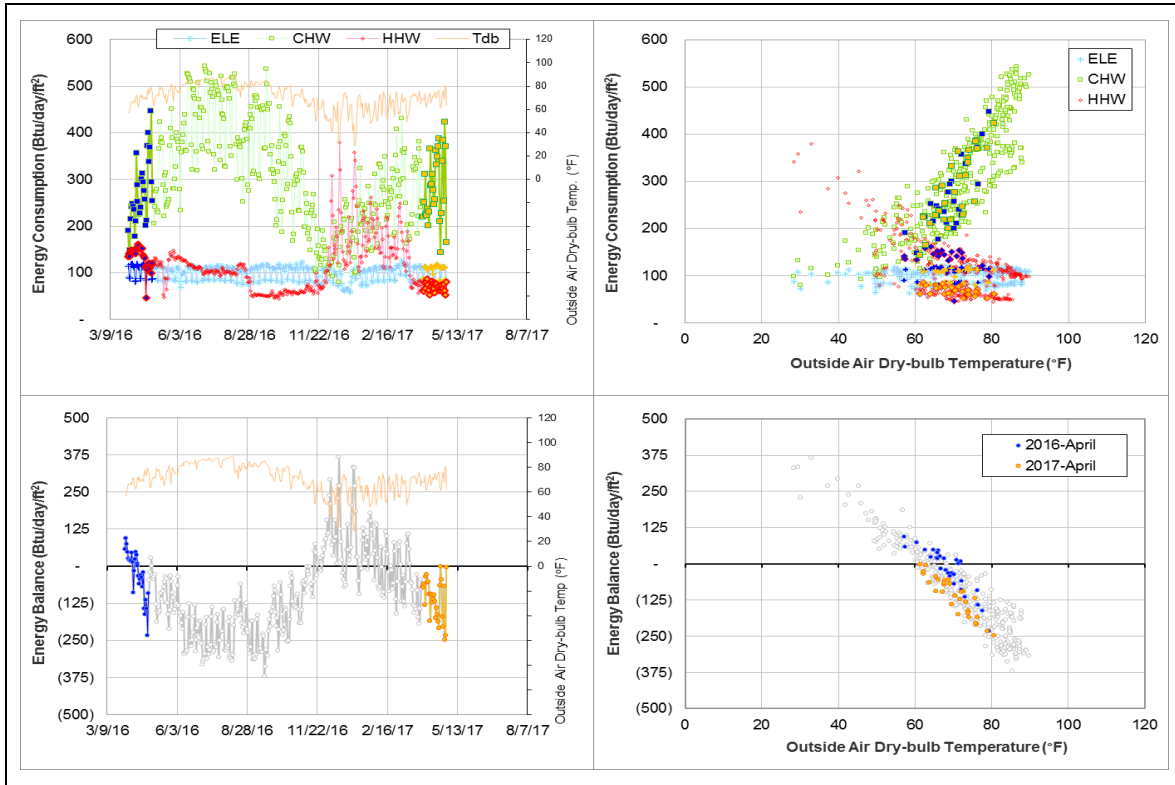
Quantitative descriptions and comments

In December 2016, HHW had an increase in both flow rate (from 15 gpm to 30 gpm) and Delta-T causing an increase of consumption and brought scatter to the data. Around 3/3/2017 the flow rate increased again to ~48 gpm then decreased gradually back to 15 gpm by 3/15/2017. The Delta-T has remained high. The whole month is estimated by a model.

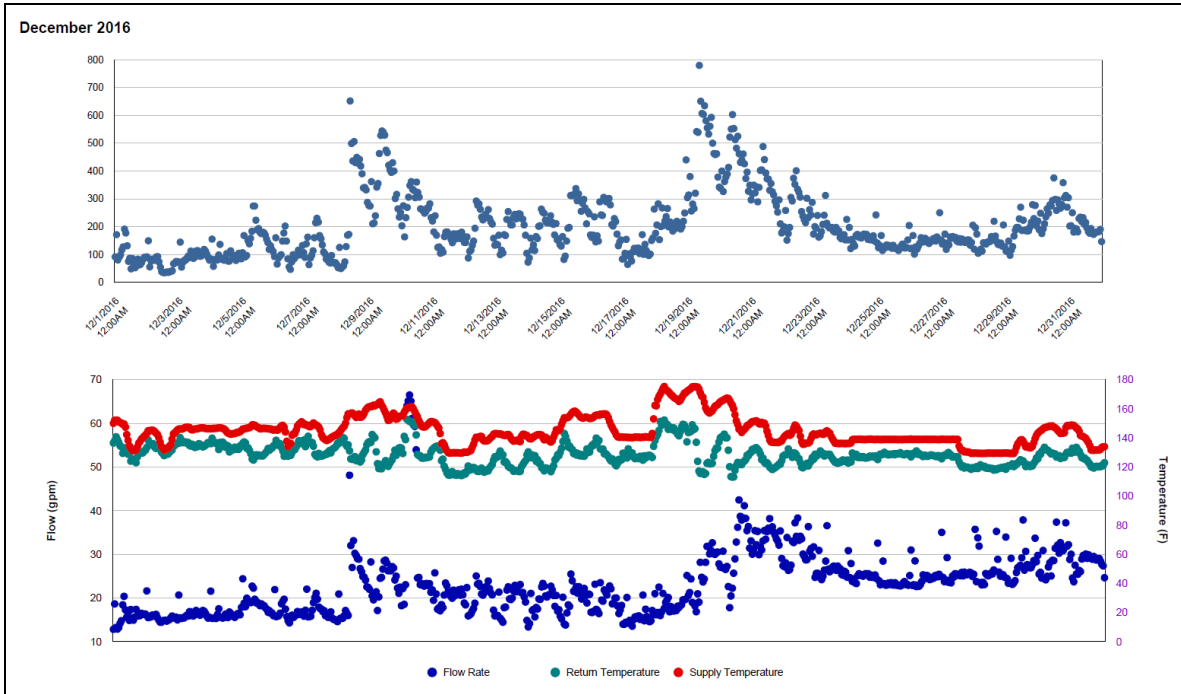
Explanatory Figure: 13 months energy balance plot with original data for #445 only



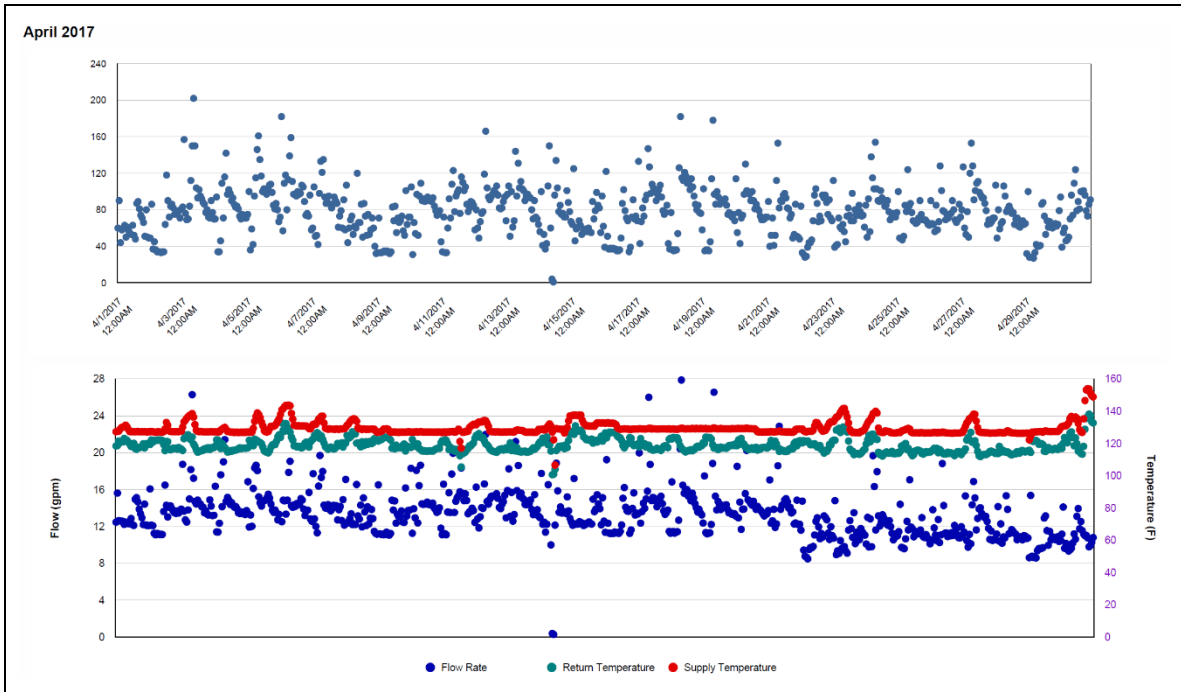
Explanatory Figure: 13 months energy balance plot with original data for total of #445 and #517



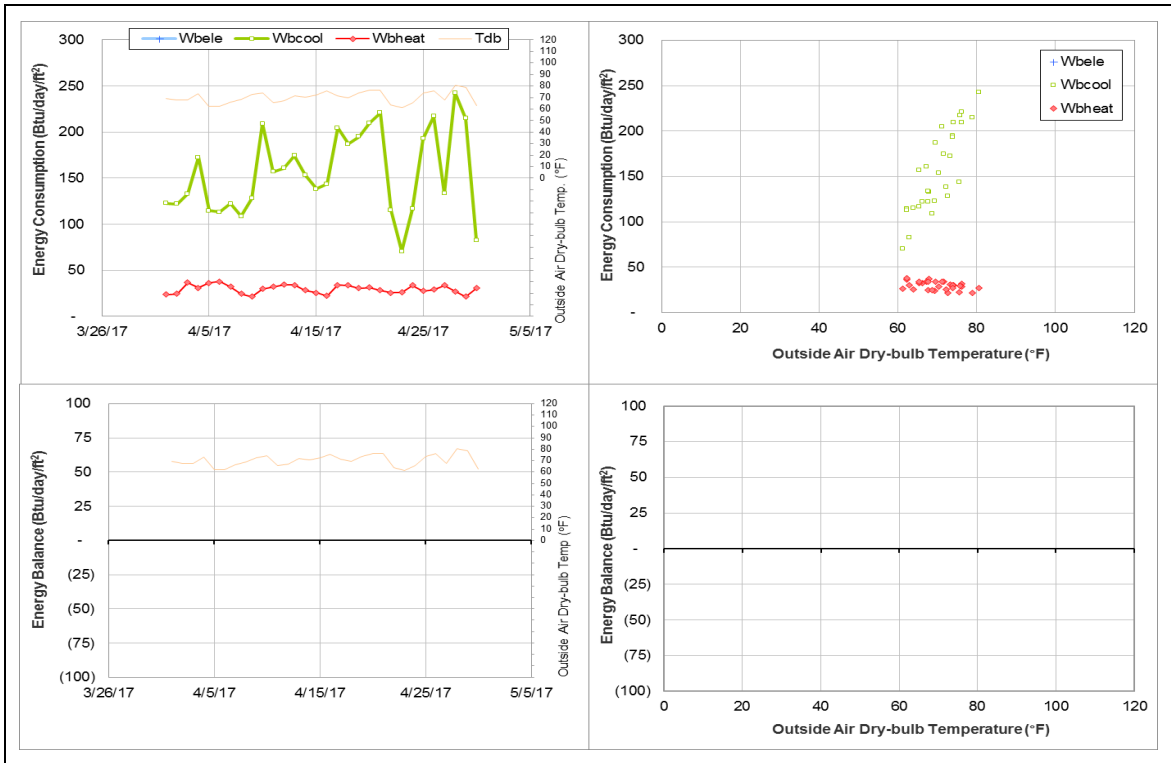
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during December 2016)



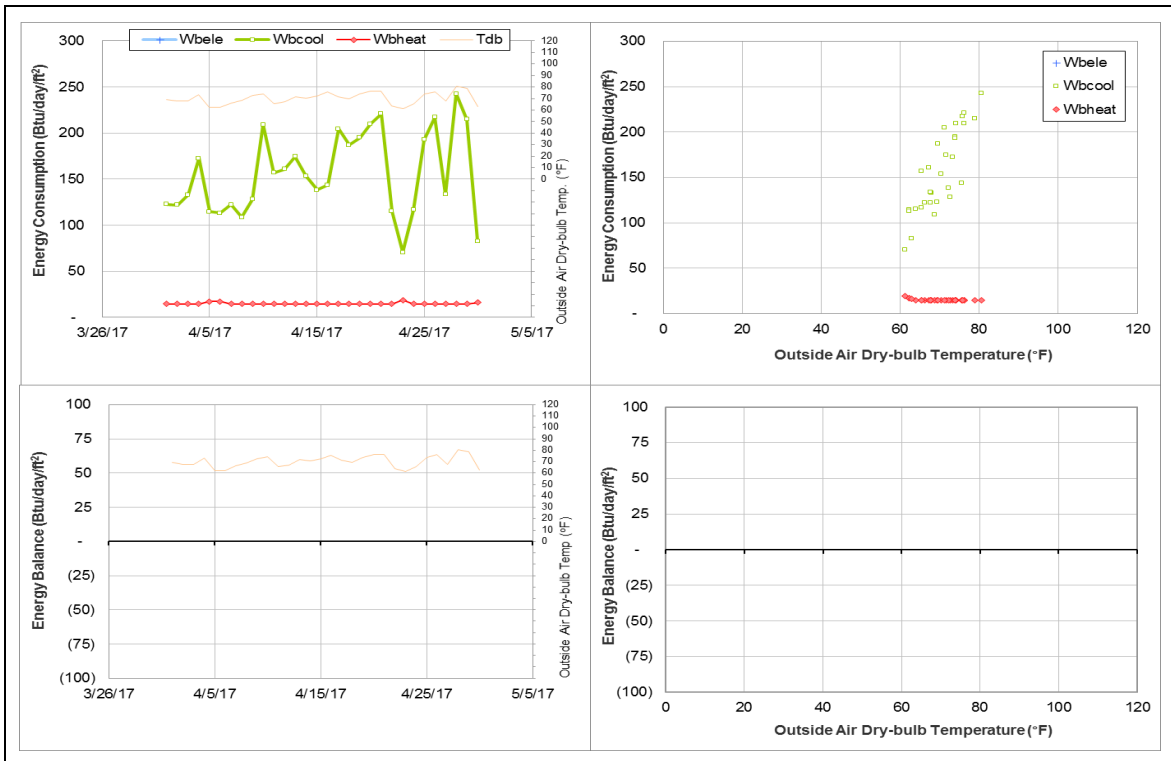
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during April 2017)



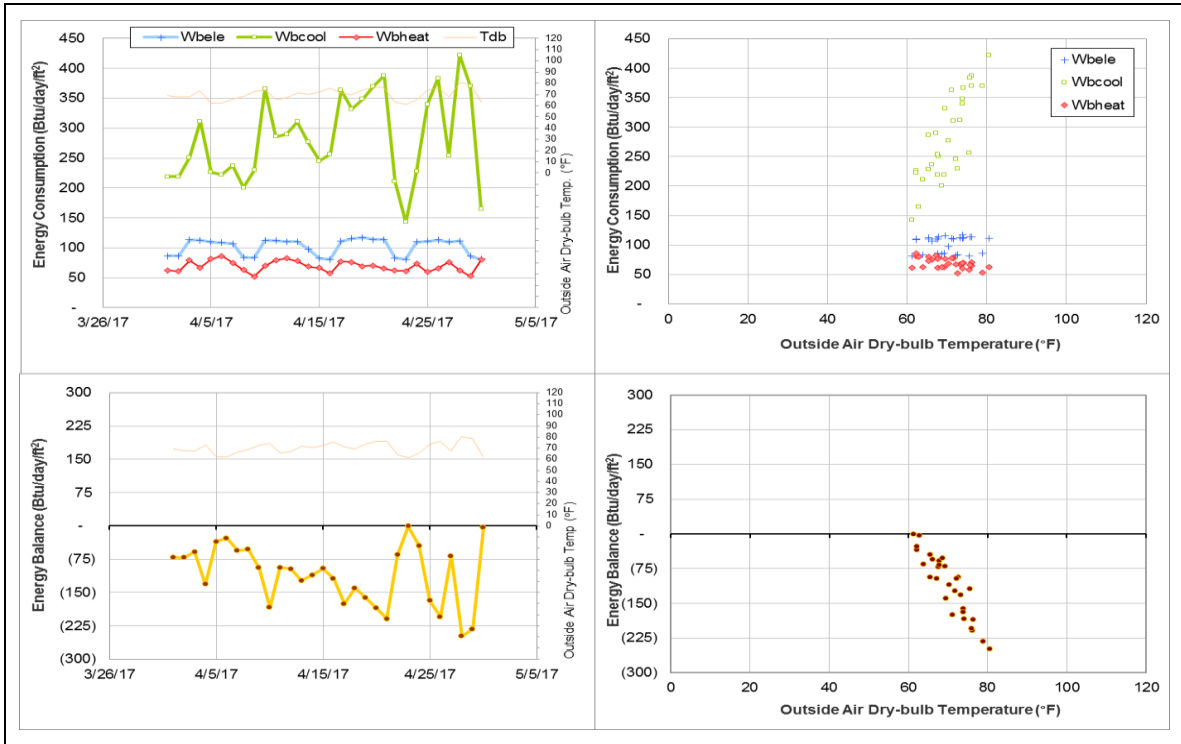
Energy balance plot using the original data for the month of analysis for #445 only



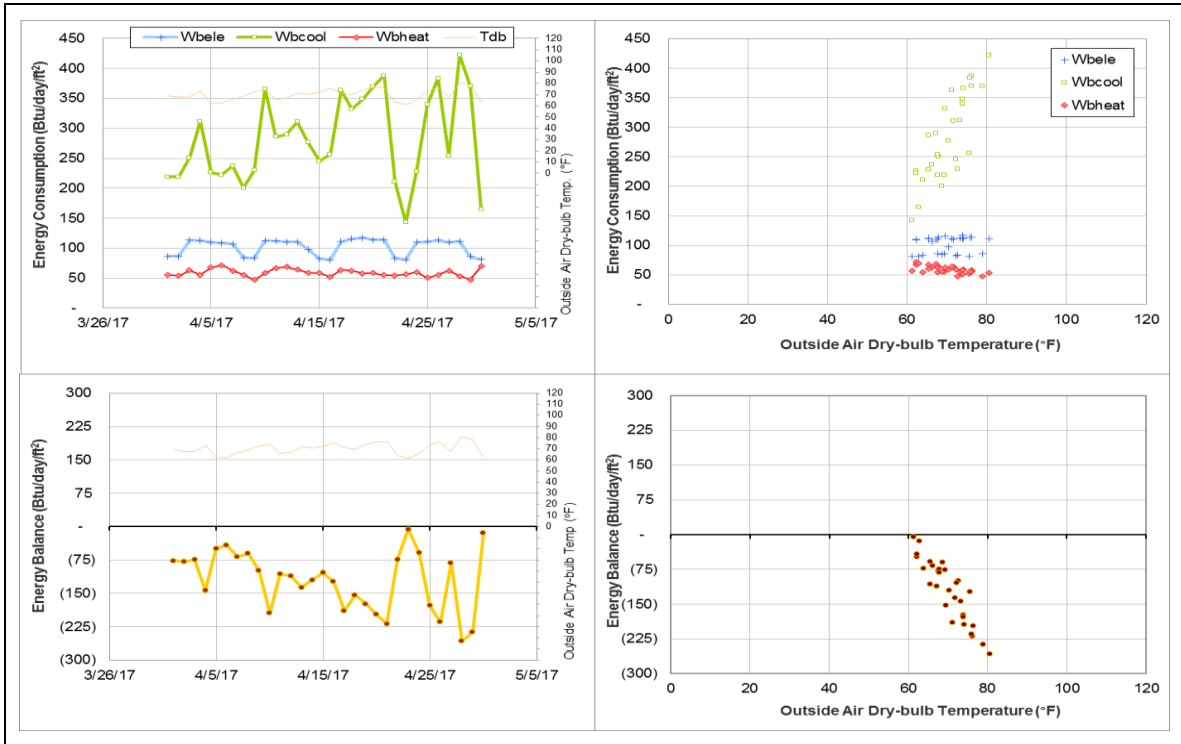
Energy balance plot using the estimated data for the month of analysis for #445 only



Energy balance plot using the original data for the month of analysis for total of #445 and #517



Energy balance plot using the estimated data for the month of analysis for total of #445 and #517



Rudder Theatre Complex (TAMU Bldg #446)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	002977	30	4/1/2017 – 4/30/2017	Model
ELE	002980	30	4/1/2017 – 4/30/2017	Model
CHW	004297	30	4/1/2017 – 4/30/2017	Model
HHW	004309	30	4/1/2017 – 4/30/2017	Model

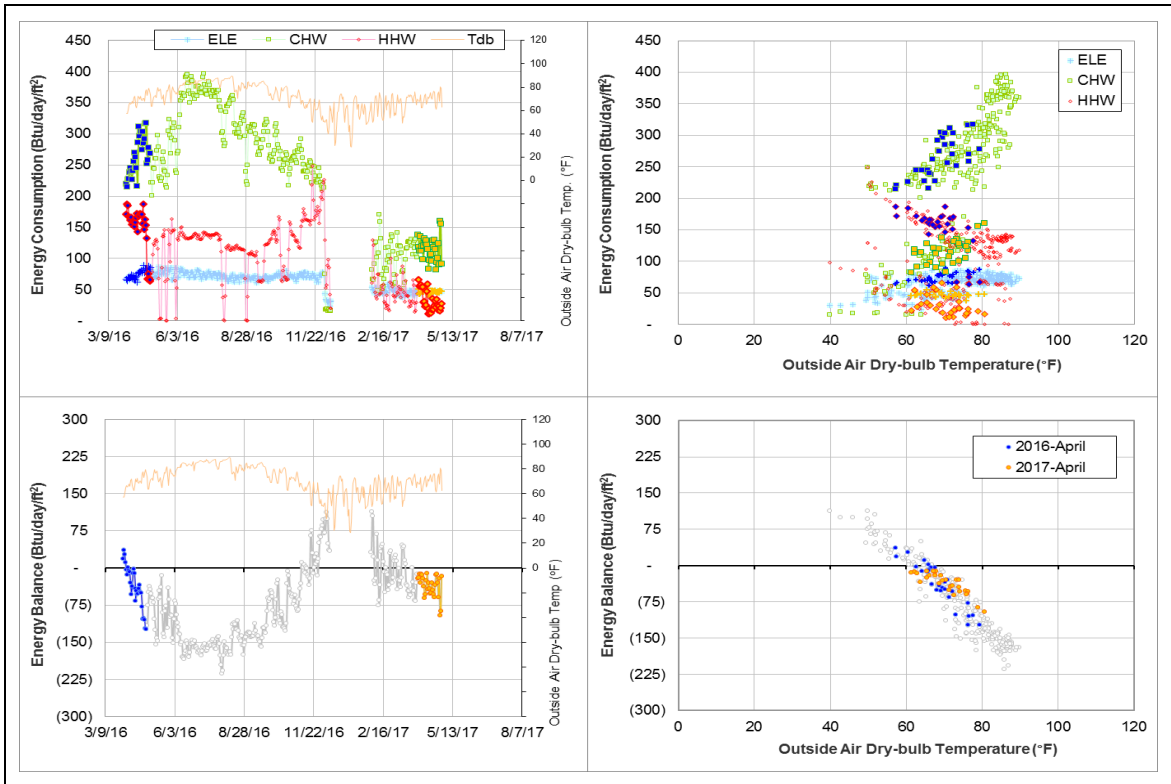
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE (002977)	The consumption level is lower than the level during the past year.	2/1/2017 – Ongoing
ELE (002980)	The consumption level is lower than the level during the past year.	2/1/2017 – Ongoing
CHW	The consumption level is lower than the level during the past year.	2/1/2017 – Ongoing
HHW	The consumption level is lower than the level during the past year.	2/1/2017 – Ongoing

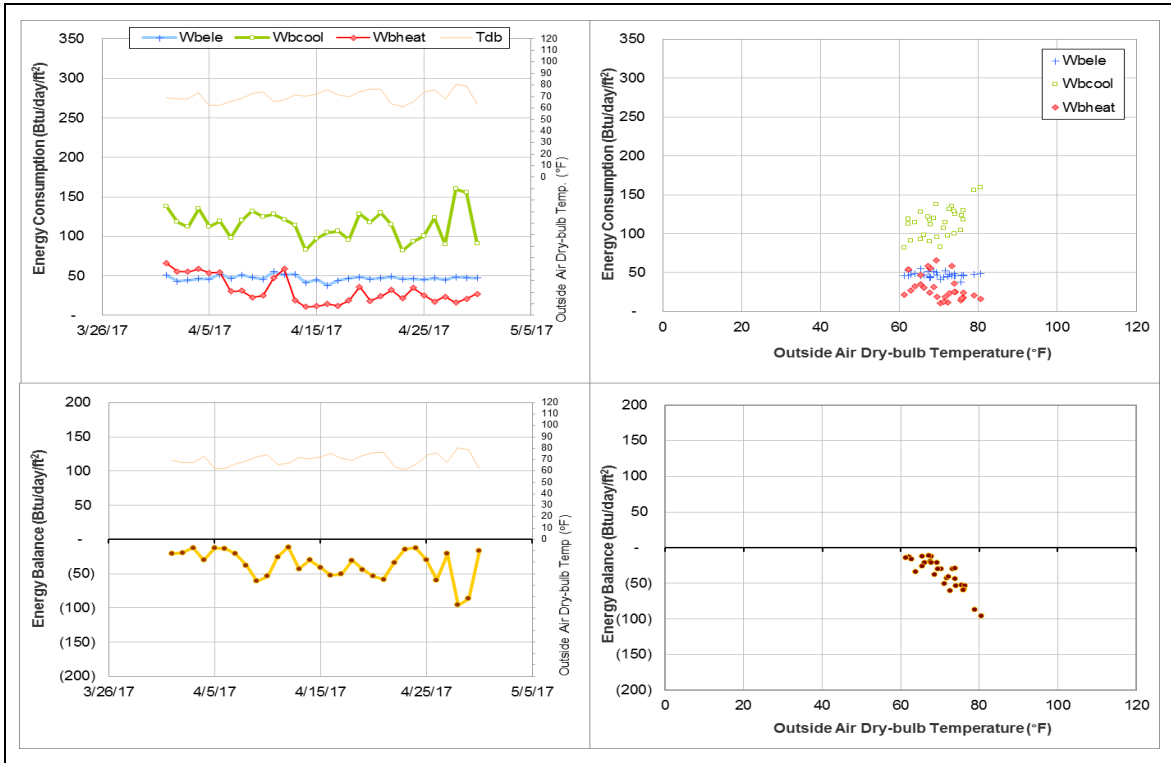
Quantitative descriptions and comments

ELE, CHW, and HHW consumption dropped during the winter break of last year. The similar phenomena occurred in the winter break in 2015. This is not suspected to be a meter malfunction. Data from last year suggest that the consumption went back to the normal level near Monday 1/25/2016. Data of the current year have not yet recovered to the normal level at the end of April. EB of this building does not show separate patterns of these two levels. The whole month is estimated using a model.

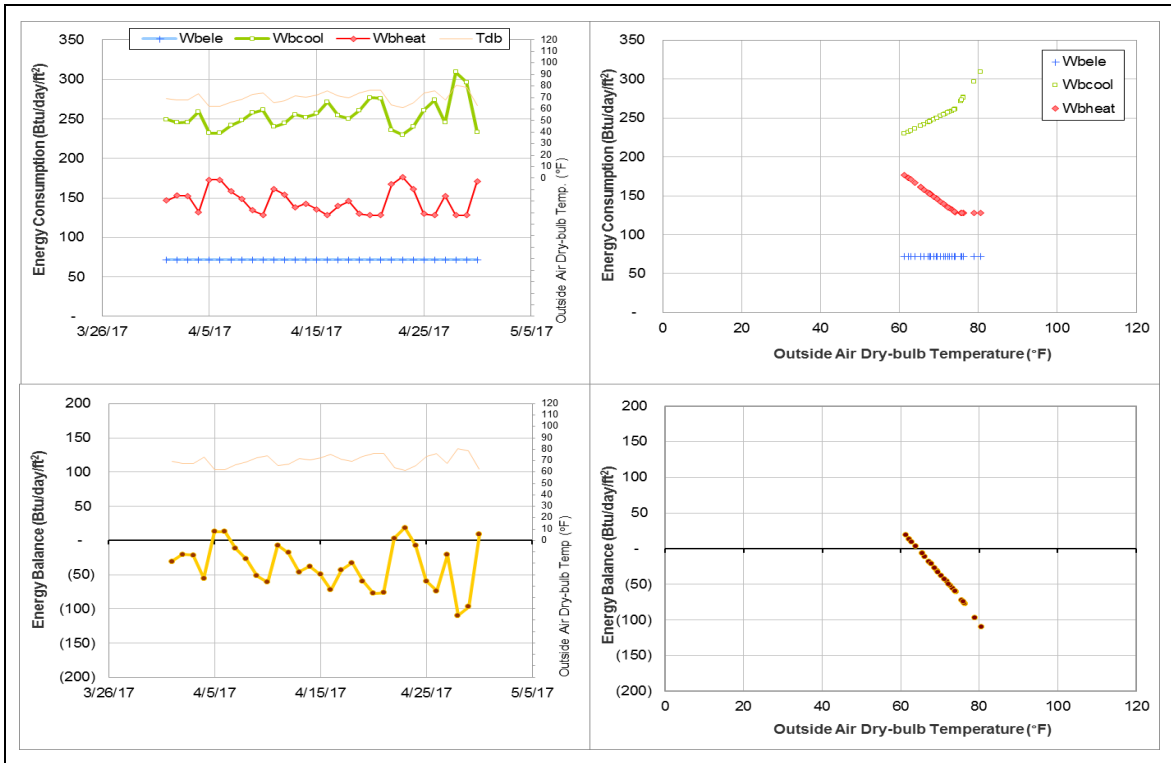
Explanatory Figure: 13 months energy balance plot with original data.



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.



TAES Annex Building (TAMU Bldg #457)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	005913	9	4/22/2017 – 4/30/2017	Model
HHW	005917	3	4/23/2017 – 4/25/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The CHW consumption decreased suddenly for a short period.	4/22/2017 – 4/30/2017
HHW	The HHW consumption decreased suddenly for a short period.	4/23/2017 – 4/25/2017

Changes in sensor readings related to the detected issues

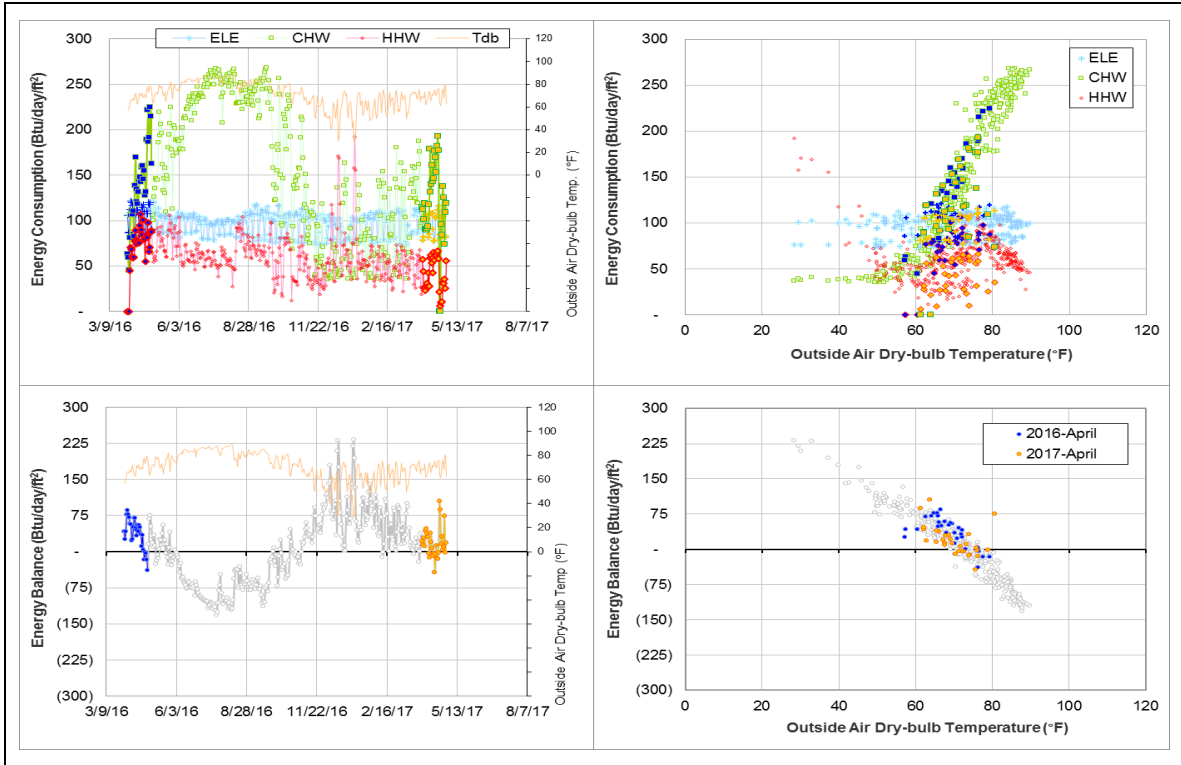
Energy Type	Meter ID	Period	Type	Description
CHW	005913	4/22/2017 – Ongoing	Flow Rate	Sudden decrease to zero
HHW	005917	4/23/2017 – 4/25/2017	Flow Rate	Sudden decrease
			Supply Temperature	Sudden decrease

Quantitative descriptions and comments

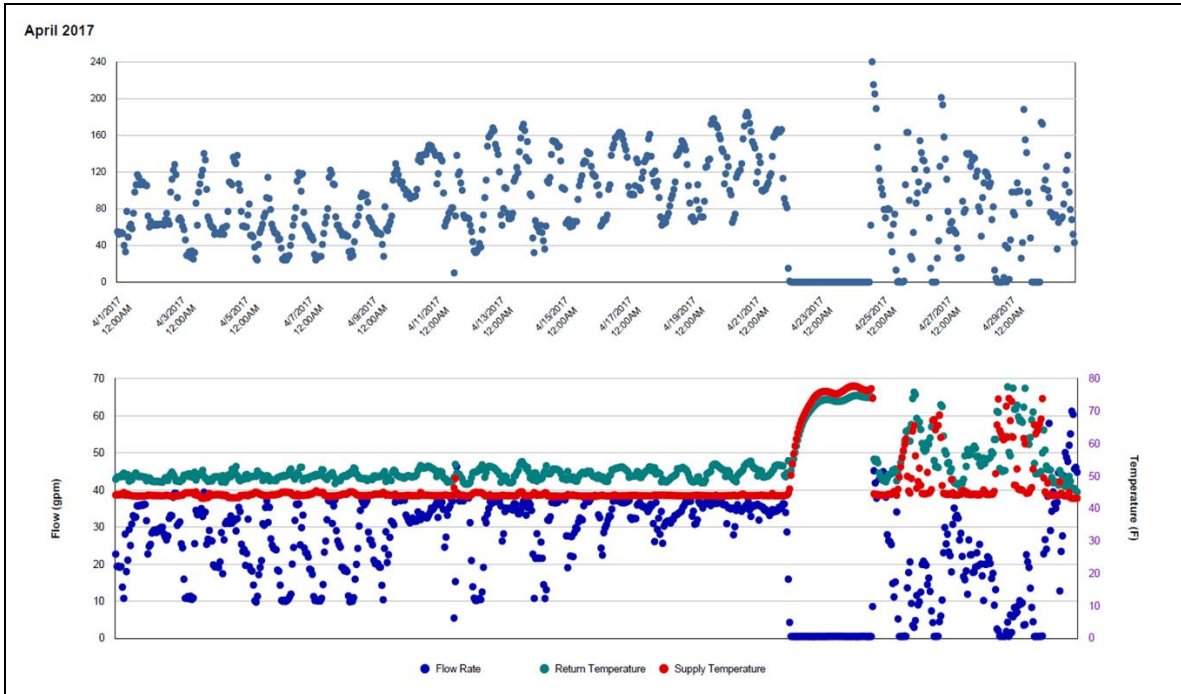
The CHW consumption decreased below the 13-month pattern for the period of 4/22/2017 – 4/30/2017. During this period, the CHW flow rate appears to decrease and reach zero or near zero values periodically. These nine days were estimated by model.

The HHW consumption suddenly decreased for the period of 4/23/2017 – 4/25/2017. During this period the HHW flow rate and supply temperature both, appear to have decreased for a short period. These three days were estimated by model.

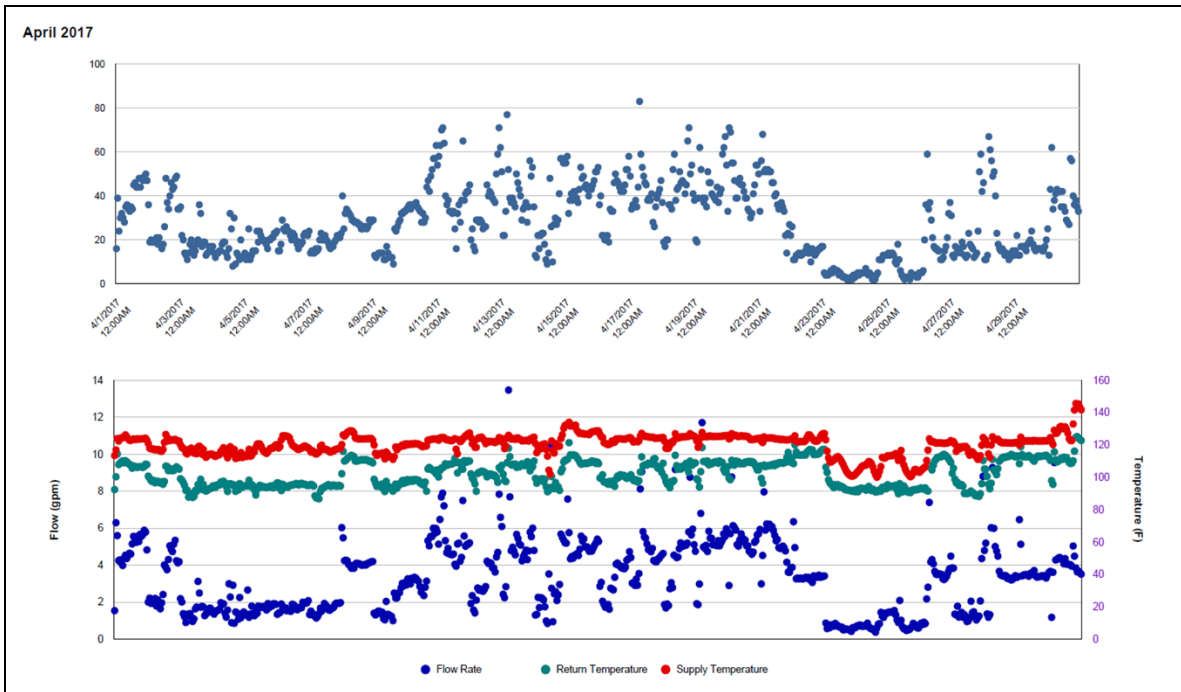
Explanatory Figure: 13 months energy balance plot with original data



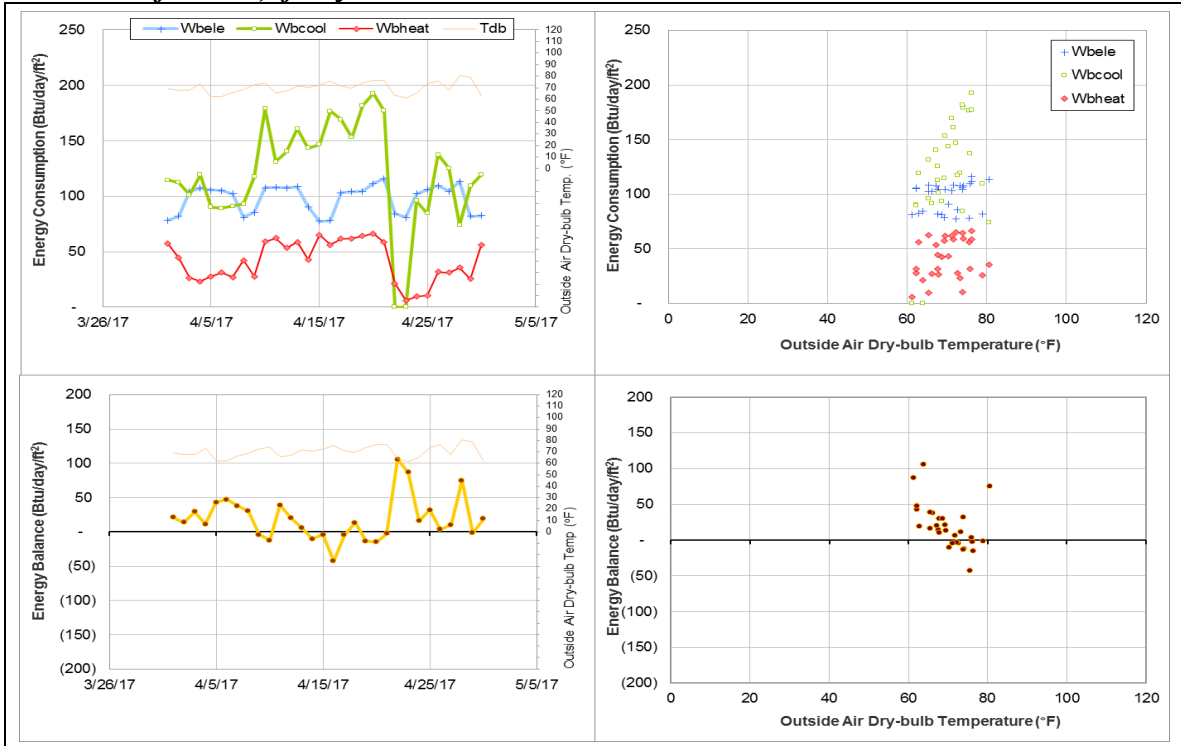
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from utilities office. (April 2017)



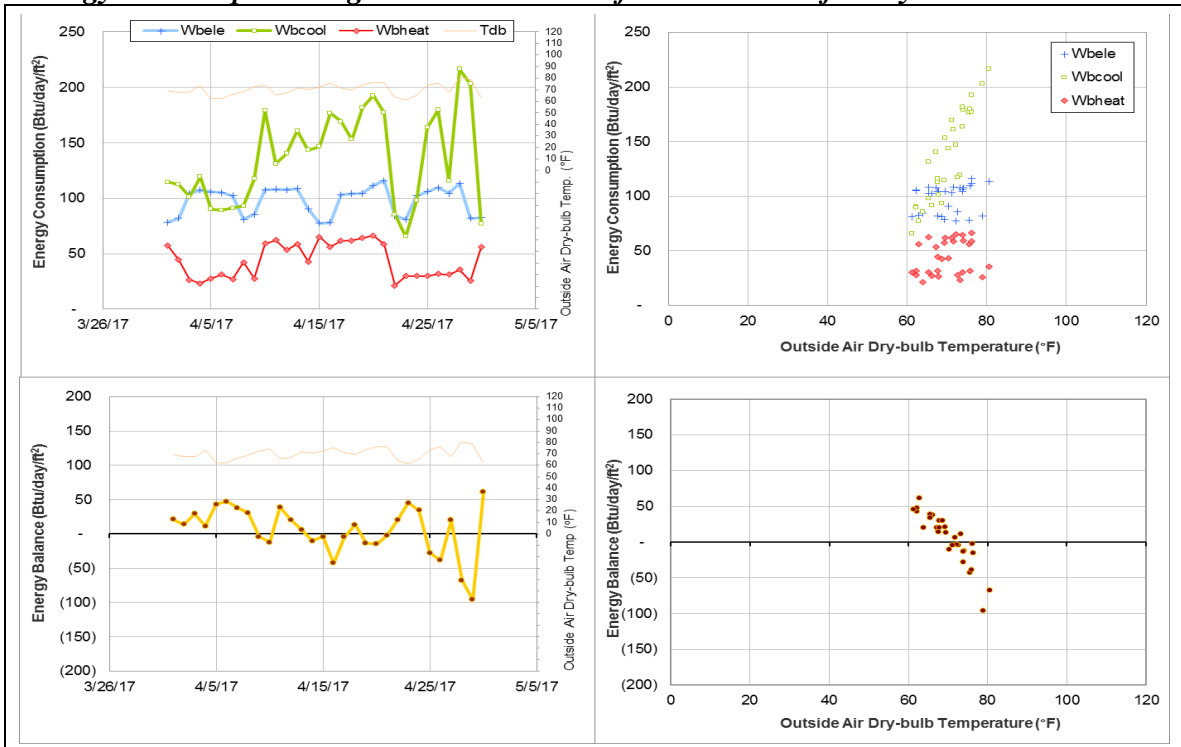
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (April 2017)



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



Psychology Building (TAMU Bldg #463)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002941	5	4/4/2017 – 4/5/2017 4/16/2017 – 4/17/2017 4/20/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The CHW consumption increased suddenly for short periods.	4/4/2017 – 4/5/2017 4/16/2017 – 4/17/2017 4/20/2017

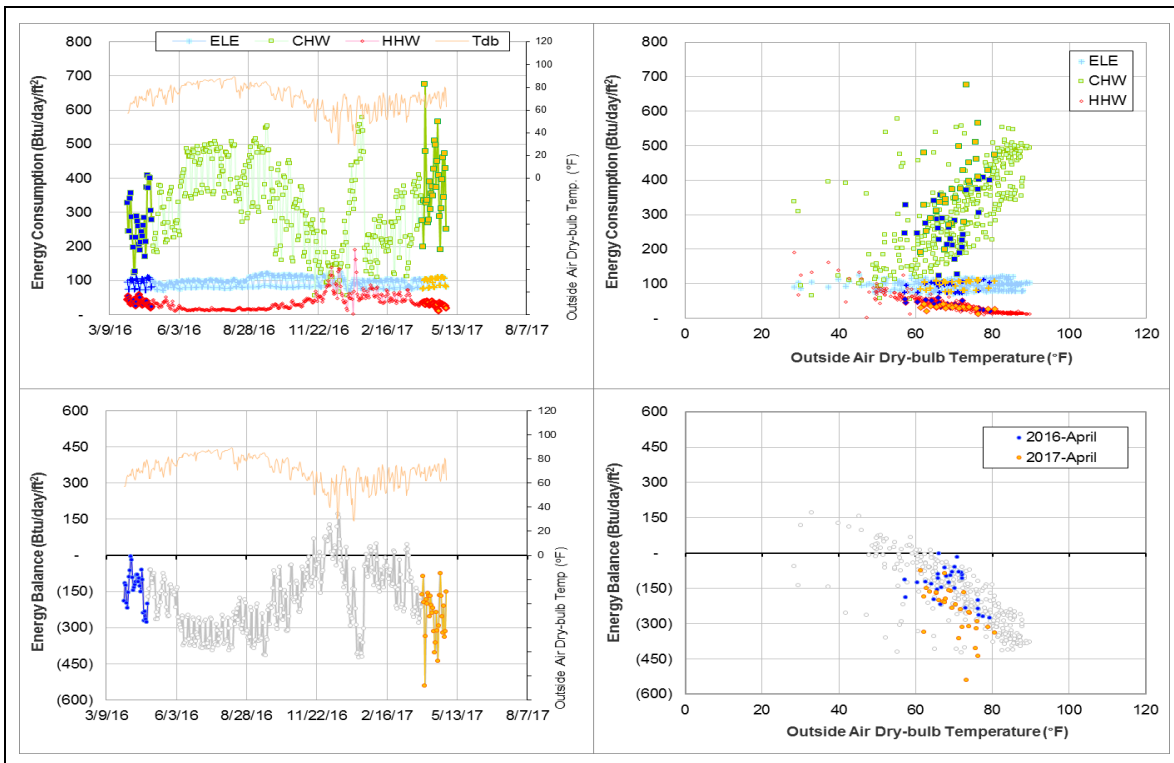
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002941	4/4/2017 – 4/5/2017 4/16/2017 – 4/17/2017 4/20/2017	Flow Rate	Increased

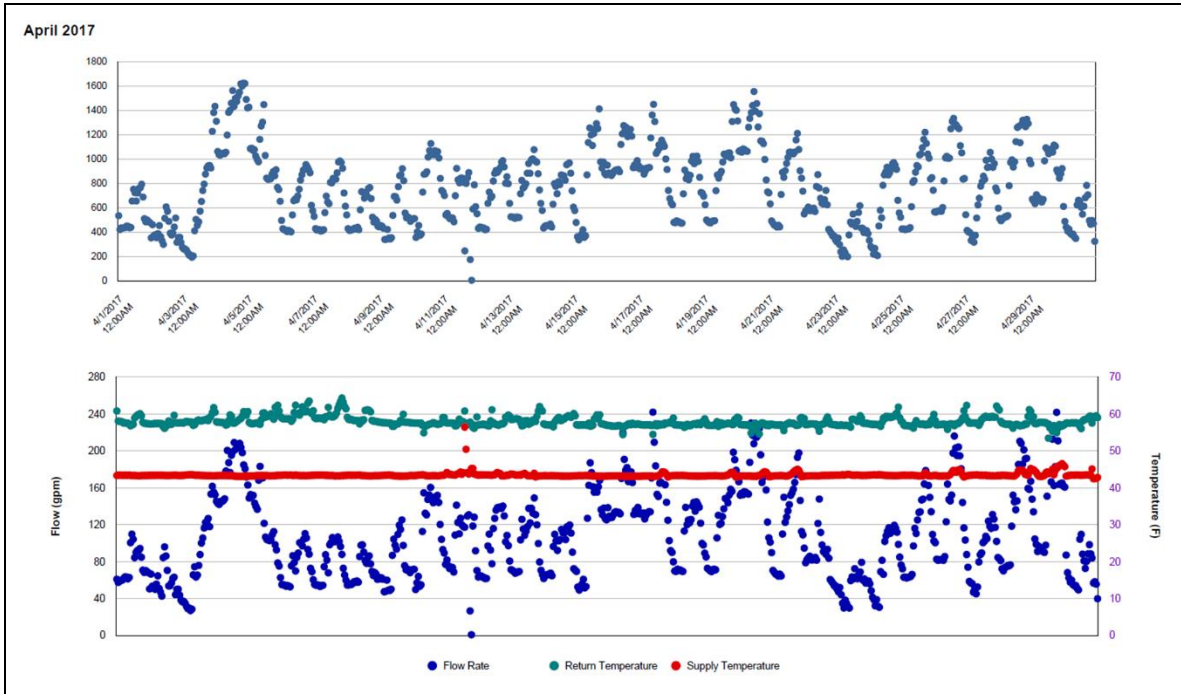
Quantitative descriptions and comments

The CHW consumption increased above the 13-month pattern suddenly for the periods 4/4/2017 – 4/5/2017, 4/16/2017 – 4/17/2017, and 4/20/2017. During these periods, the CHW flow rate appears to have increased. The CHW was estimated for these five days by model.

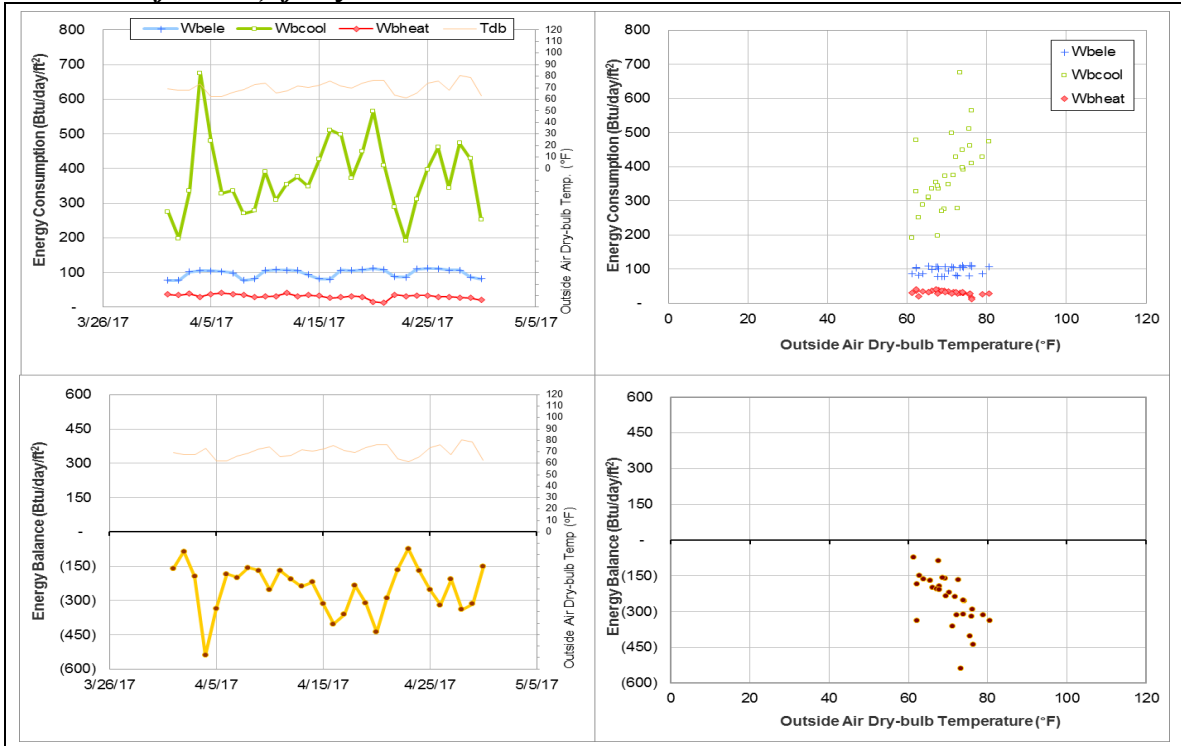
Explanatory Figure: 13 months energy balance plot with original data



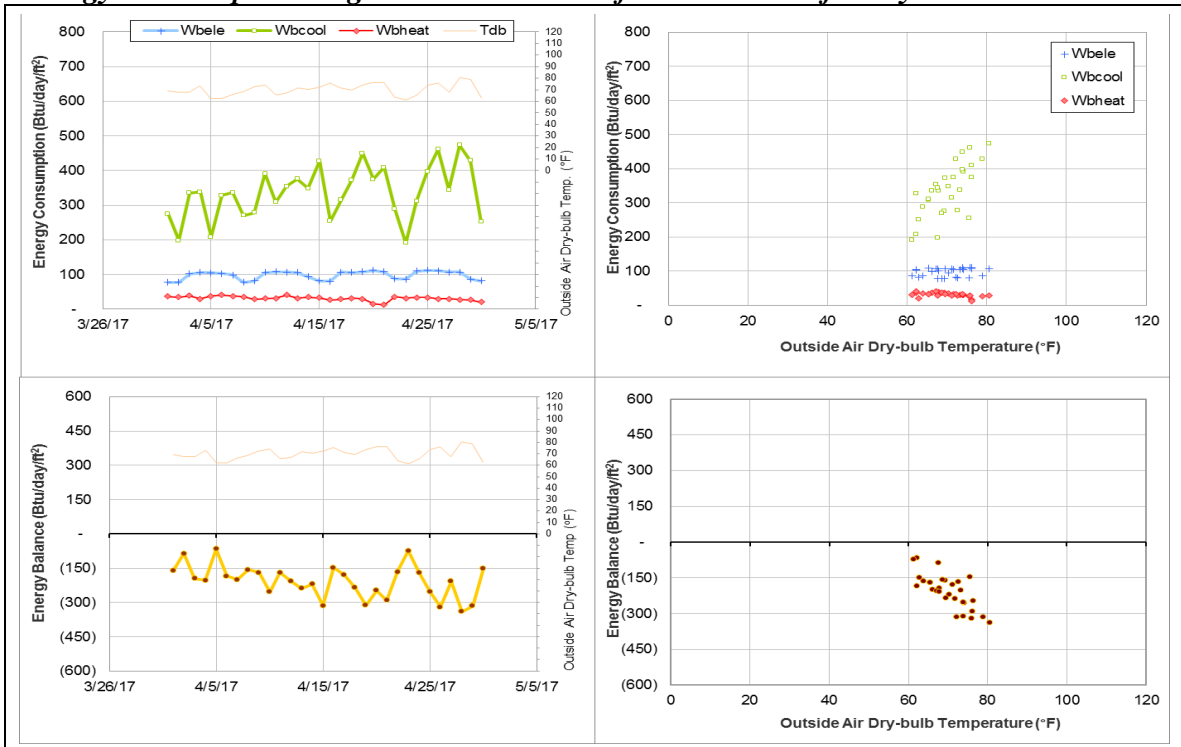
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from utilities office. (April 2017)



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



State Chemist Building (TAMU Bldg #464)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	005837	30	4/1/2017 – 4/30/2017	Model

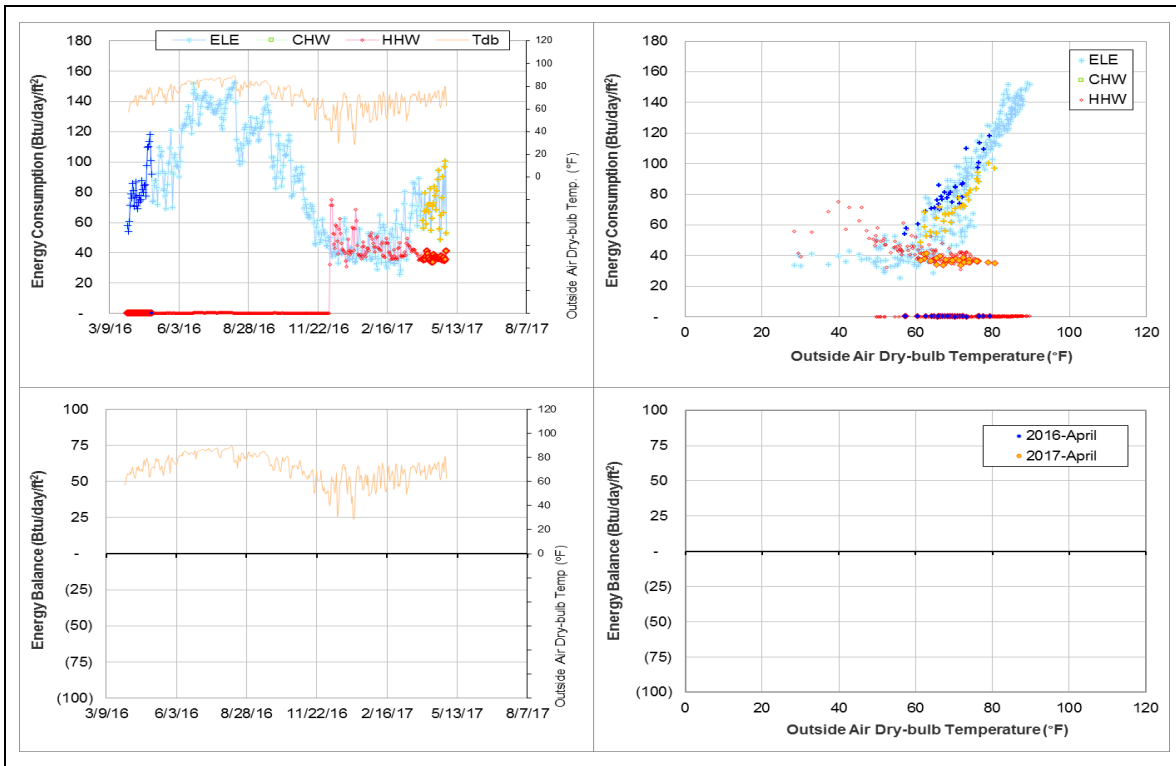
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption level is lower than the level during the past year	11/20/2016 – Ongoing

Quantitative descriptions and comments

There are two ELE meters (#005827 and #005839) for this building. Starting in November 2016, one of them (#005837) level has decreased and the data appears scattered. Compared to April 2016, the average daily kWh for April 2017 has decreased by ~60 kWh. Explanatory figures showing the change before and after November 2016 are provided below. The month of April was estimated by model.

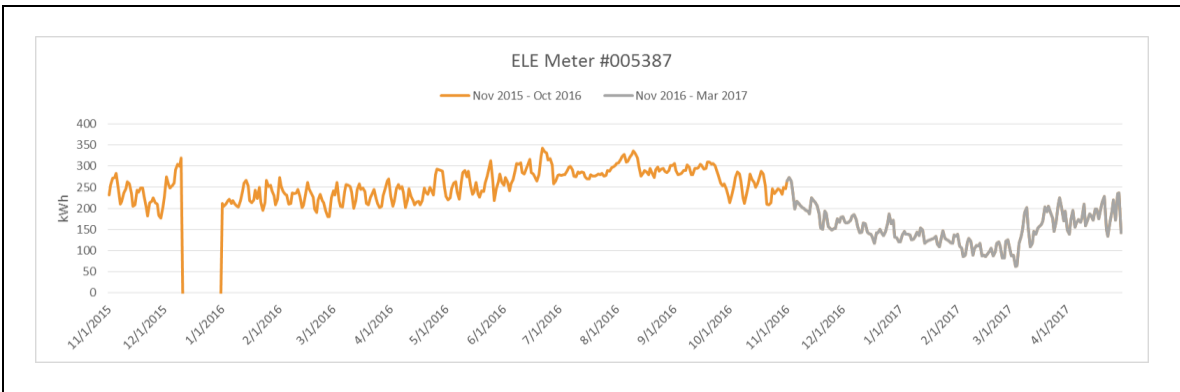
Explanatory Figure: 13 months energy balance plot with original data



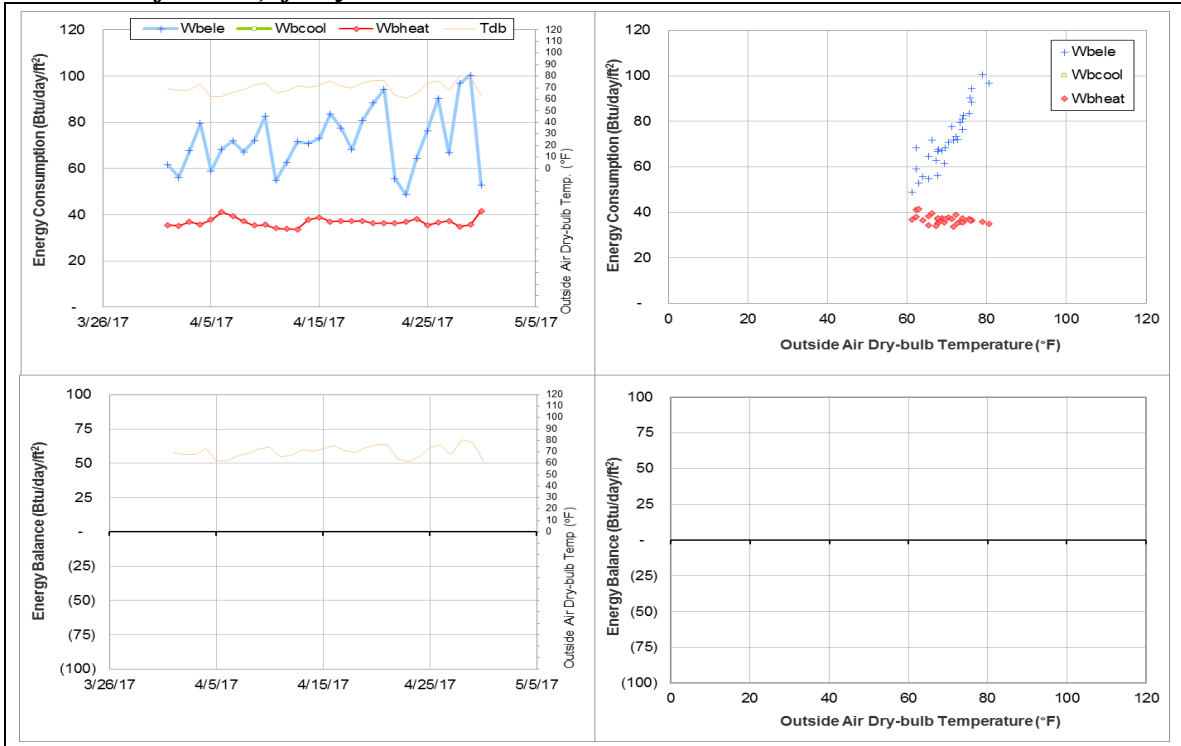
Explanatory Figure: Scatter plot of daily ELE energy consumption for meter #005837 versus outside dry-bulb temperature. The series in grey represents the recent data from November 2015 through April 2017.



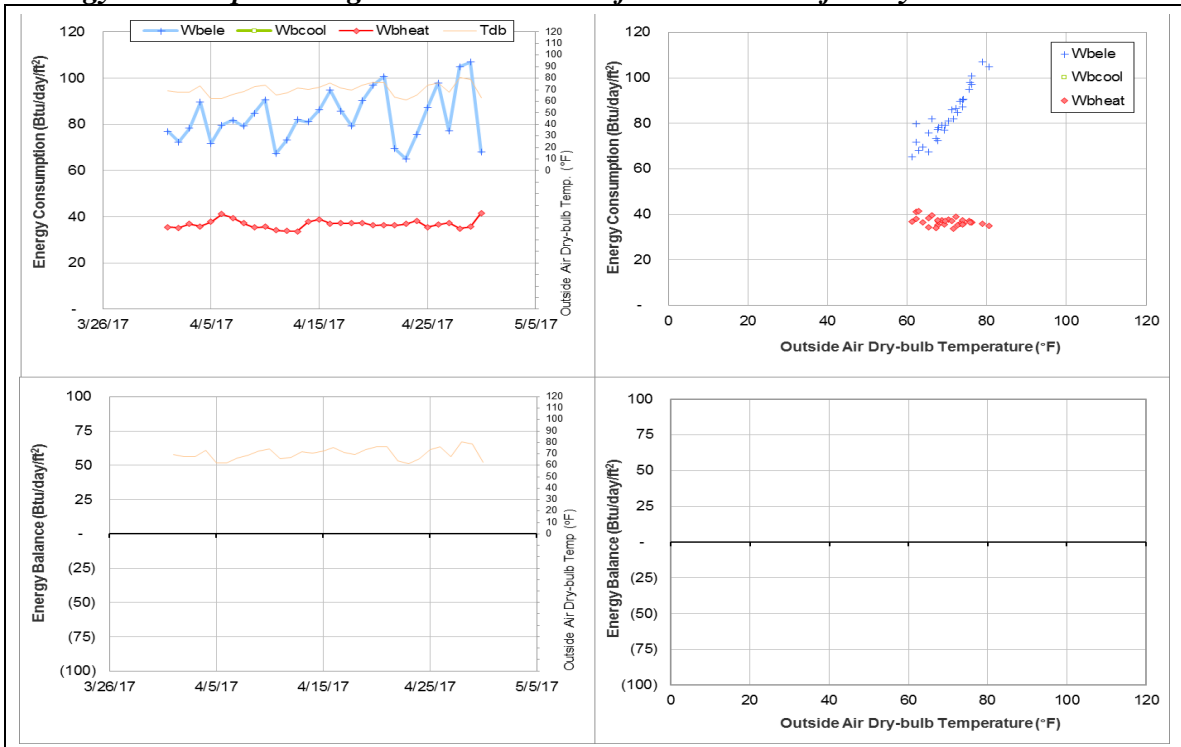
Explanatory Figure: Times series plot of hourly ELE energy consumption for meter #005837. The series in grey represents the recent data from November 2016 through April 2017.



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



Biological Sciences Building – East (TAMU Bldg #467)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	003851	30	4/1/2017 – 4/30/2017	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.	8/6/2016 – Ongoing

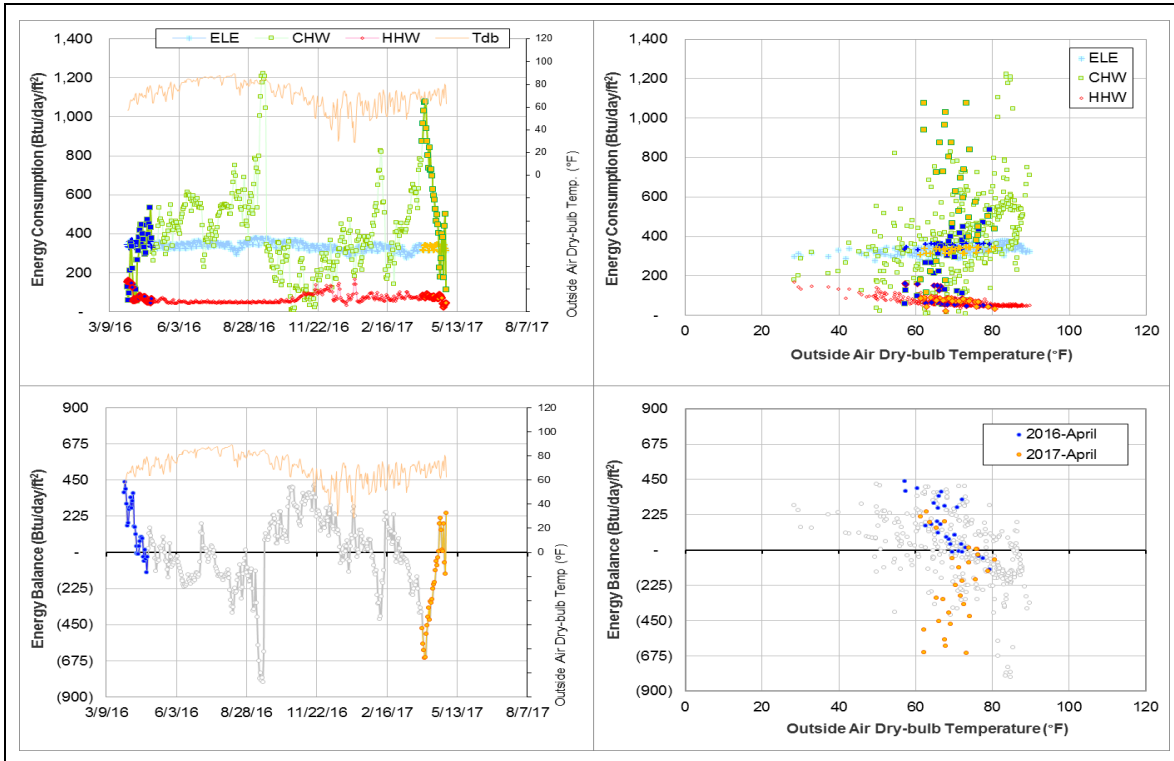
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	003851	8/6/2016 – Ongoing	Supply Temp	Faulty

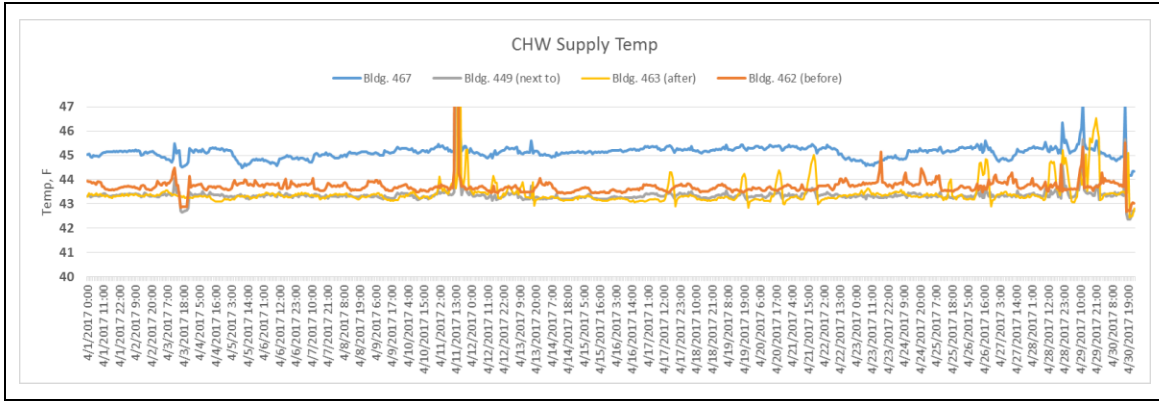
Quantitative descriptions and comments

The CHW supply temp readings for this building started to decrease on 8/6/2016 while all adjacent buildings have stable supply temperature at around 42°F. The supply temperature had a period of obviously erroneous values of 20°F during 9/10 – 9/20/2016, and then increased to 45°F range. The explanatory figure below shows the supply temperature for Bldg. #467 and the surrounding Bldgs. #462, #449, and #463. The temperature sensor for Bldg. #467 shows to be almost two degrees higher than its neighboring buildings. The CHW for the month of April was estimated by model based on the data during 6/1/2015 - 6/30/2016.

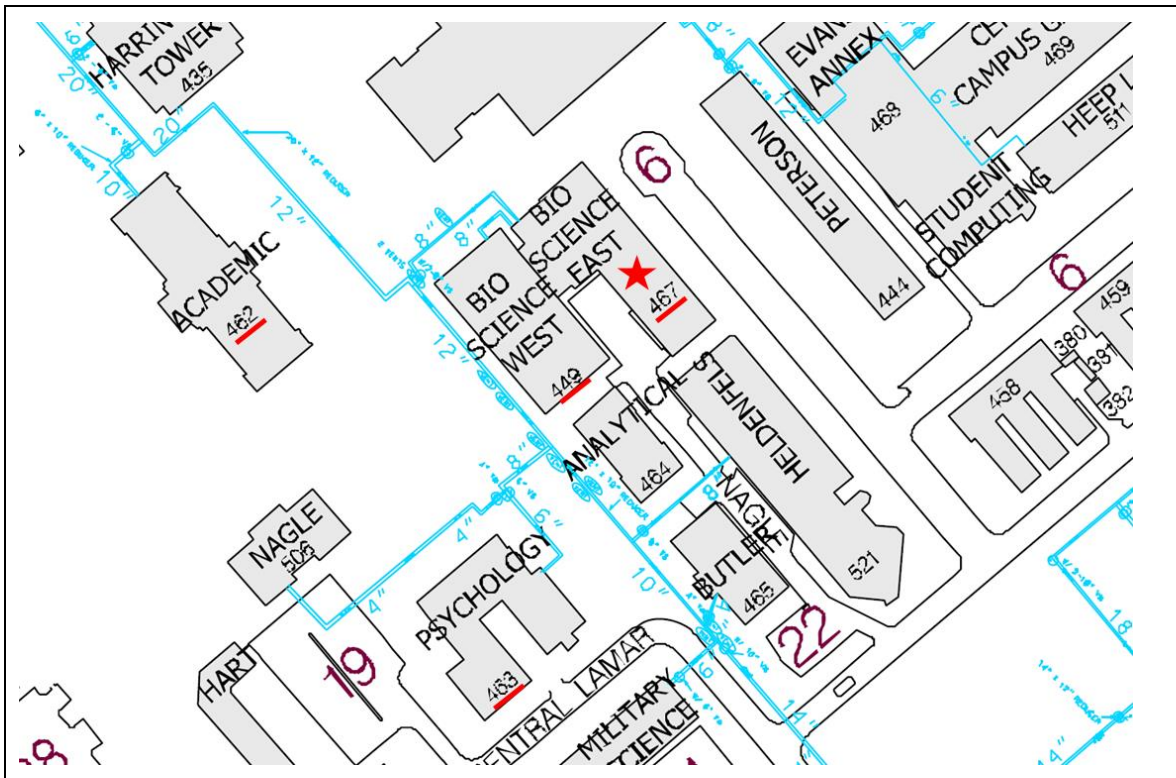
Explanatory Figure: 13 months energy balance plot with original data.



Explanatory Figure: Time series plot of hourly average CHW supply temperature for Bldgs. #467 Biological Sciences East, #462 Academic, #449 Biological Sciences West, and #463 Psychology. (April 2017)

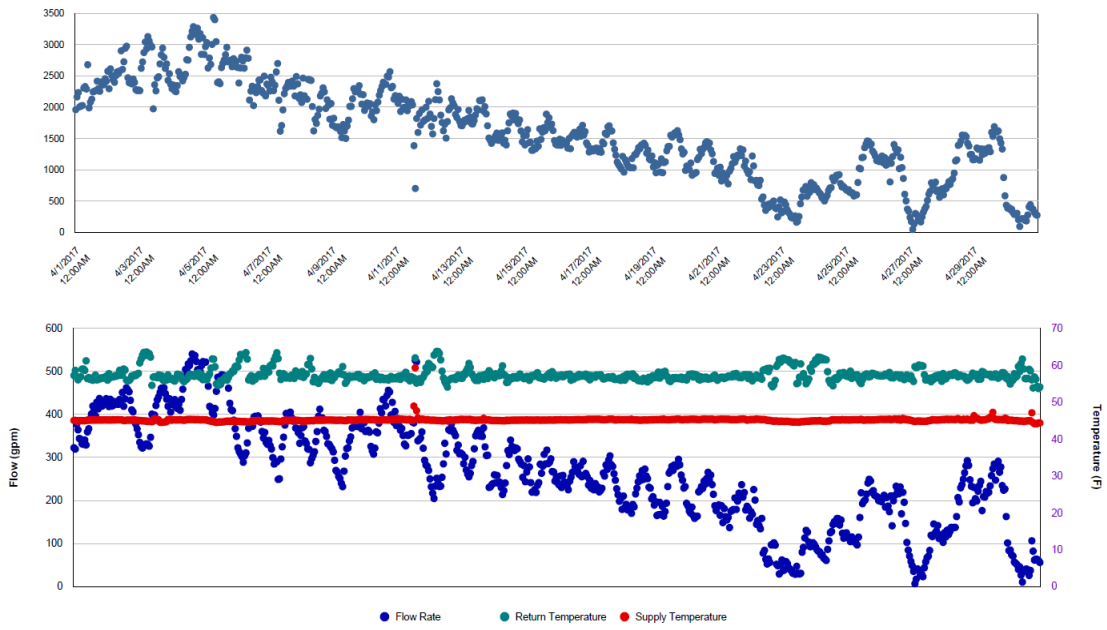


Explanatory Figure: CHW distribution with Bldgs. #467 Biological Sciences East, #462 Academic, #449 Biological Sciences West, and #463 Psychology highlighted.

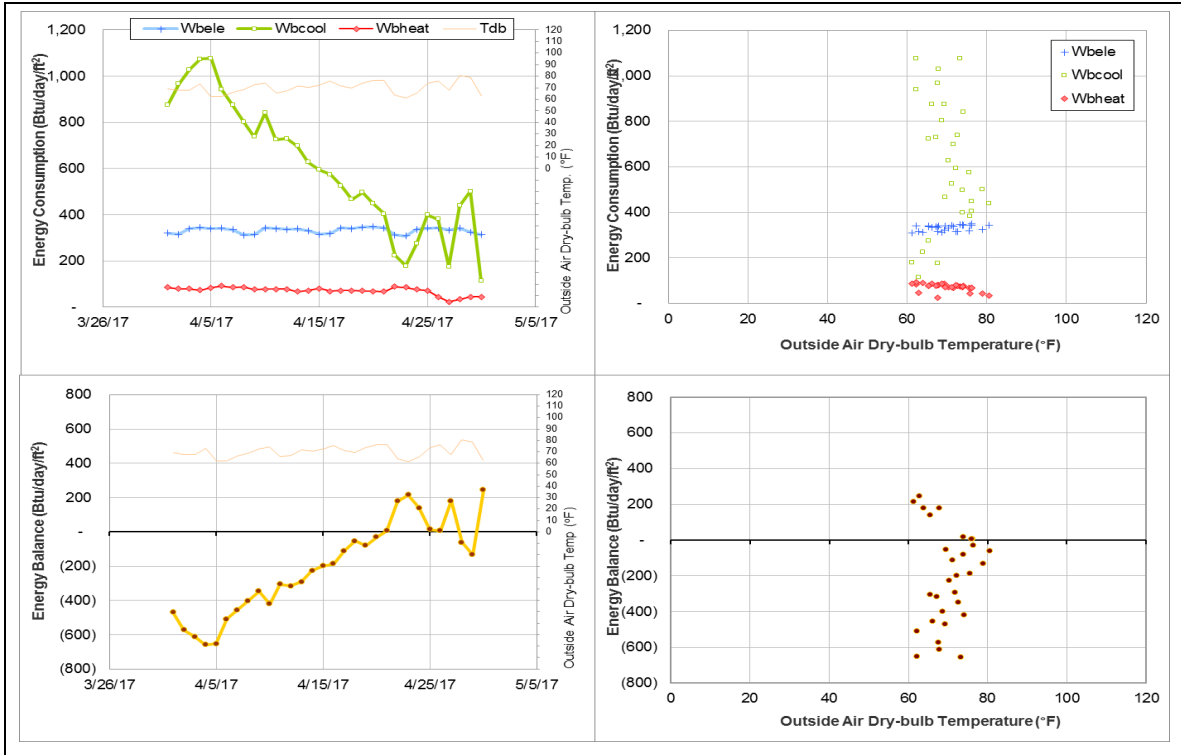


Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from utilities office. (April 2017)

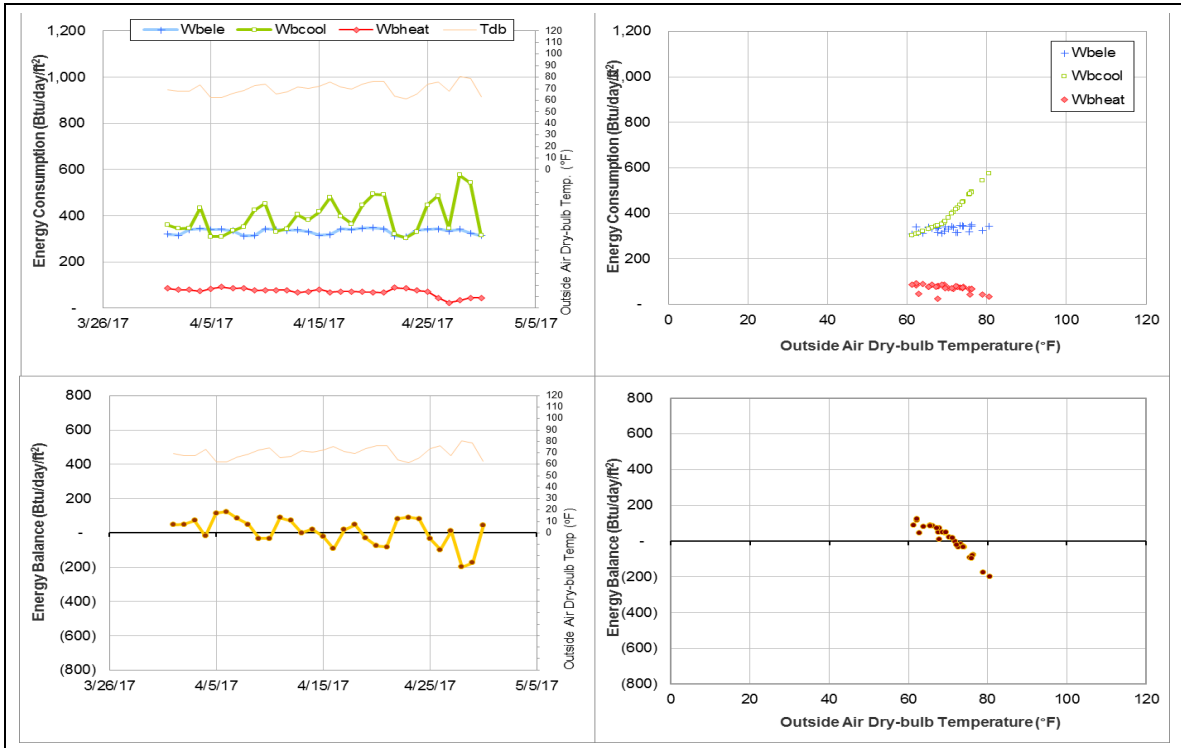
April 2017



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



Bolton Hall (TAMU Bldg #480)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	007012	3	4/25/2017 – 4/27/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The CHW consumption decreased to zero for short period.	4/25/2017 – 4/27/2017

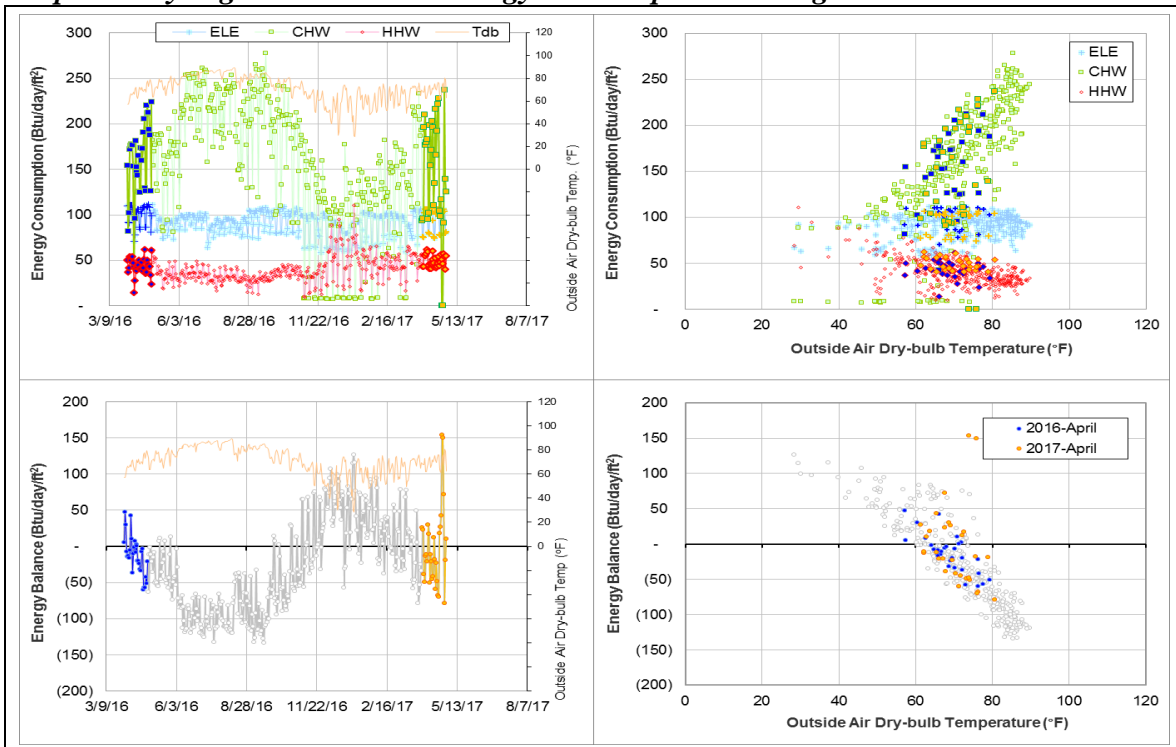
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	007012	4/25/2017 – 4/27/2017	Return Temperature	Faulty, constant value

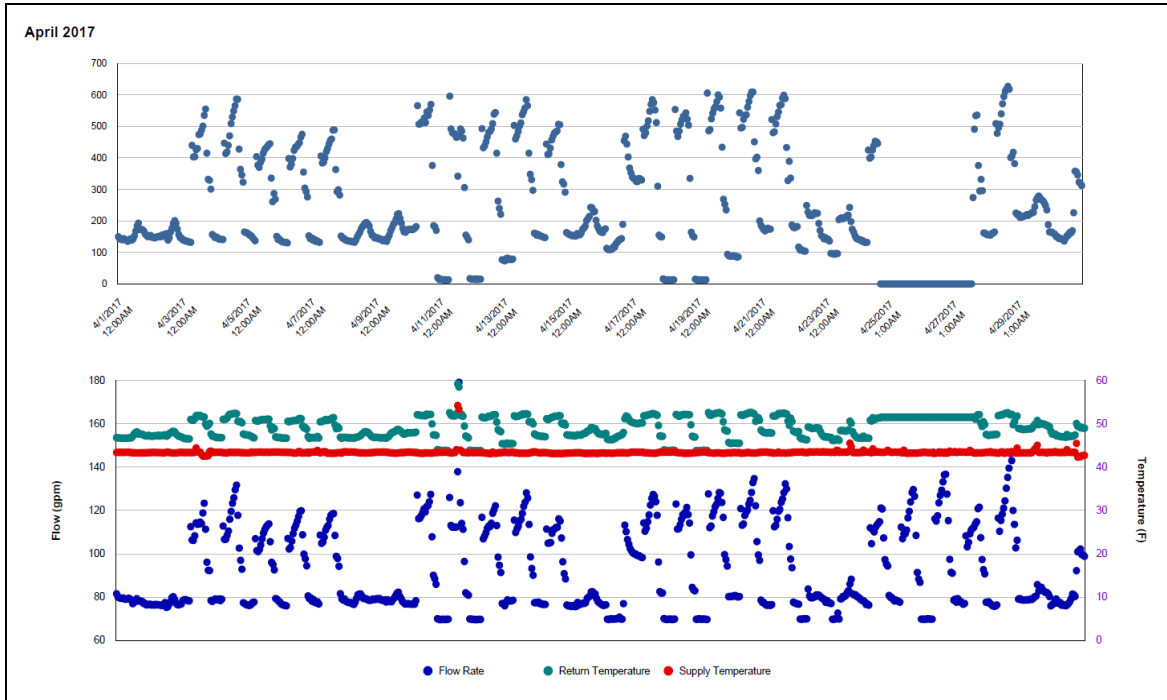
Quantitative descriptions and comments

The CHW consumption decreased to zero during the period 4/25/2017 – 4/27/2017. The return temperature sensor appears to be faulty, reporting a constant value. The CHW was estimated by model for these three days.

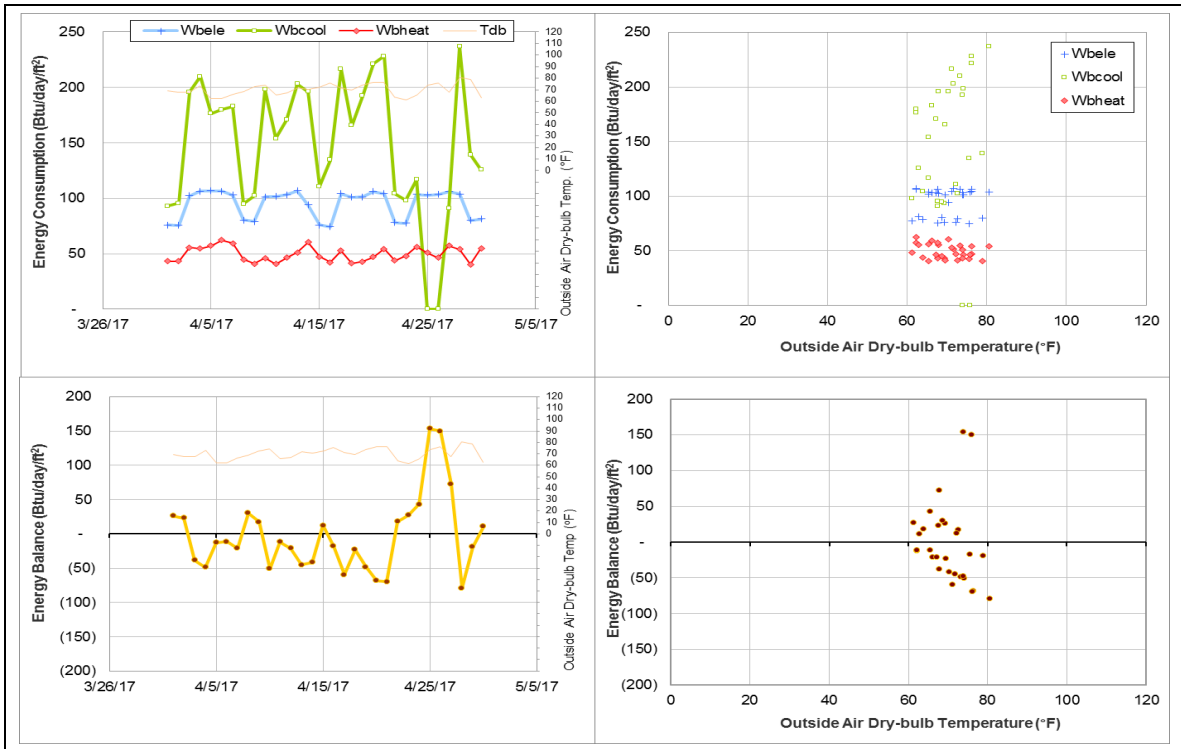
Explanatory Figure: 13 months energy balance plot with original data.



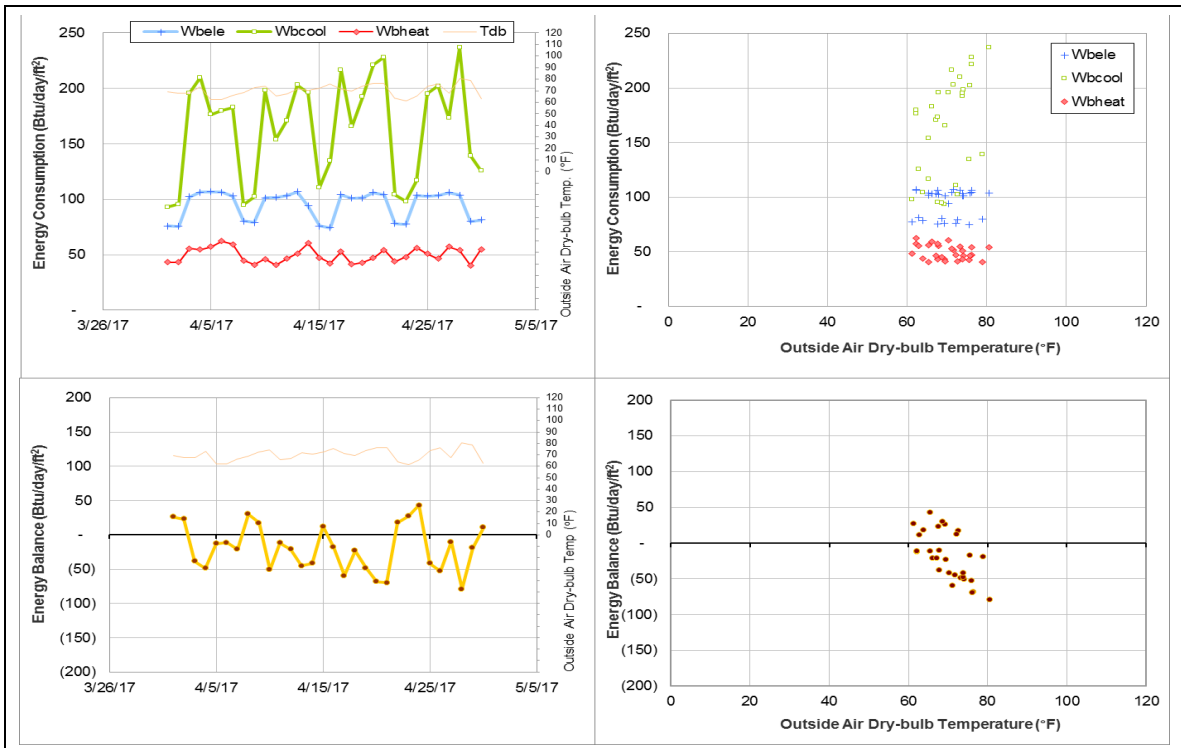
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (April 2017)



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



Heaton Hall (TAMU Bldg #481)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	007531	30	4/1/2017 – 4/30/2017	Model
HHW	007535	30	4/1/2017 – 4/30/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The CHW consumption decreased largely.	2/1/2017 – Ongoing
HHW	The HHW consumption decreased largely.	2/1/2017 – Ongoing

Changes in sensor readings related to the detected issues

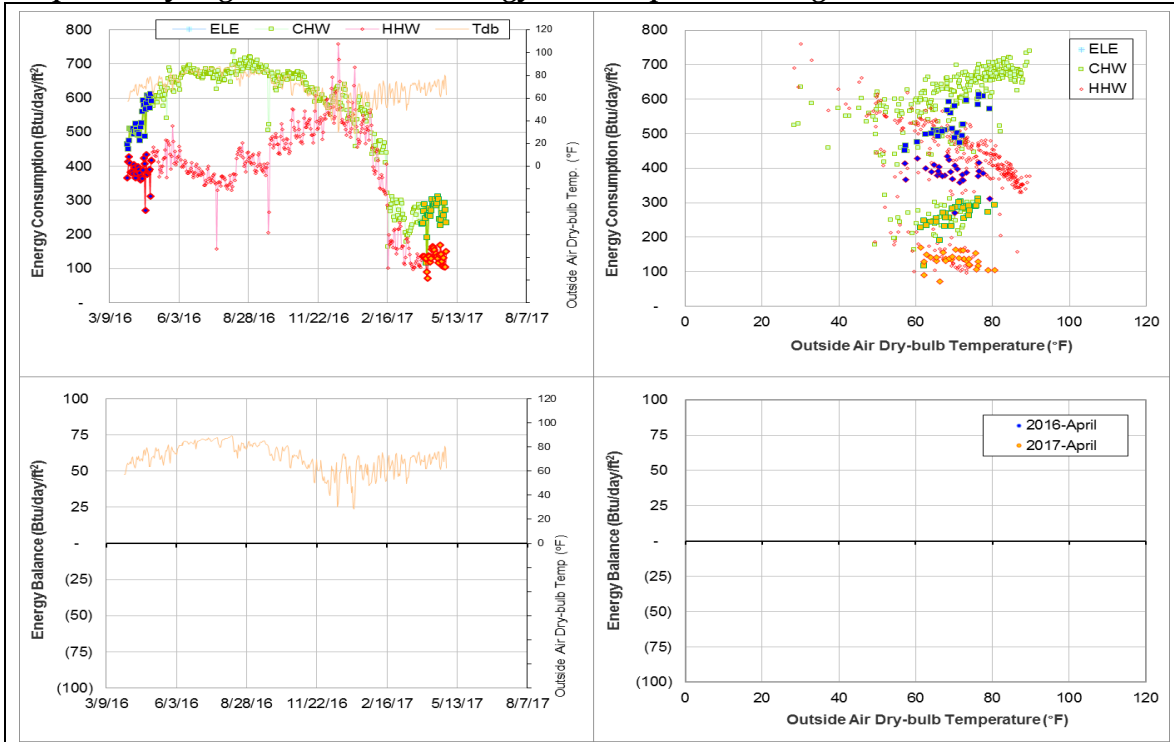
Energy Type	Meter ID	Period	Type	Description
CHW	007531	2/1/2017 – Ongoing	Flow rate	Decreased
HHW	007535	2/1/2017 – Ongoing	Flow rate	Decreased

Quantitative descriptions and comments

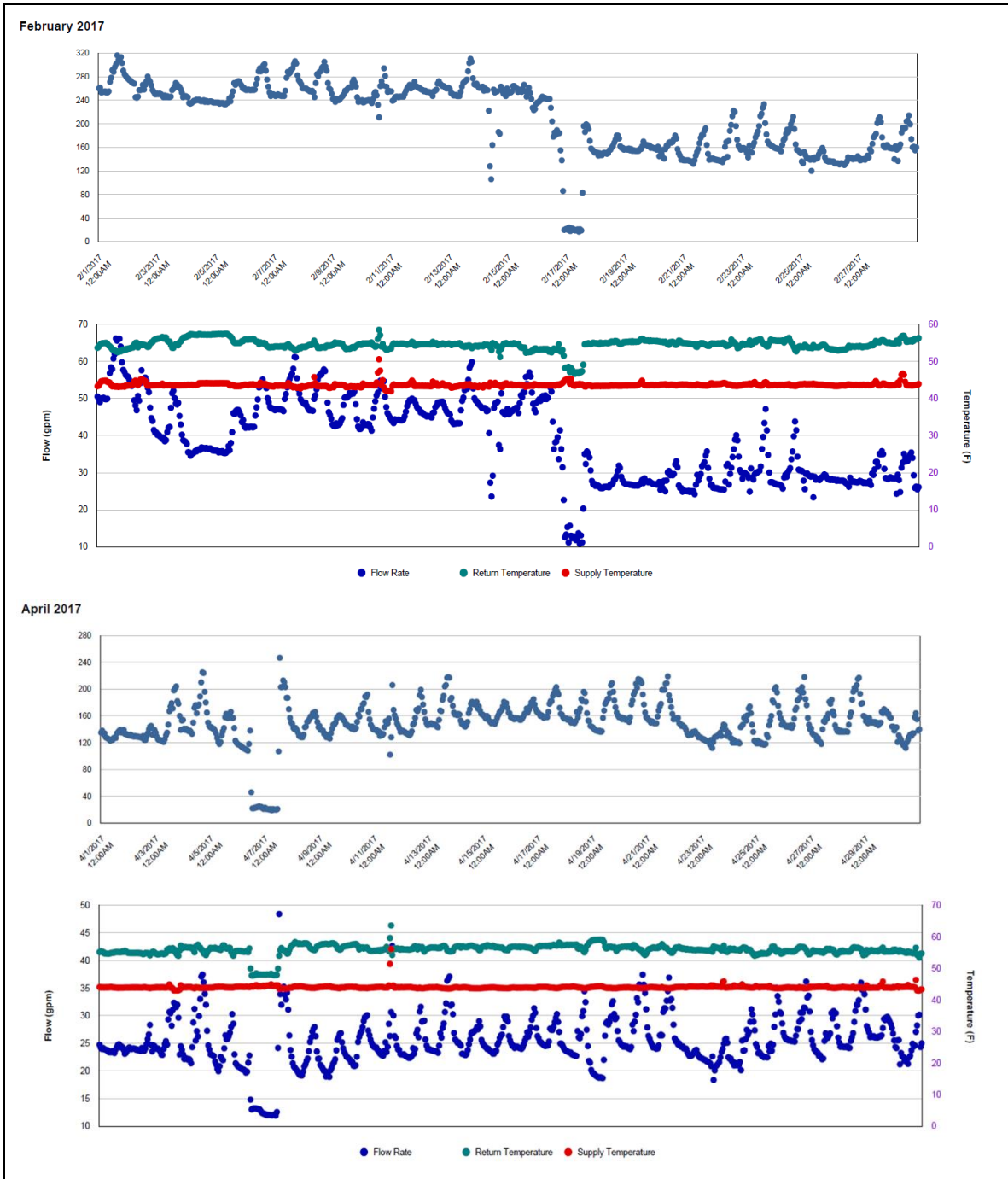
The CHW consumption decreased by about 100 Btu/day/ft² at the beginning of February 2017 and continued to decrease further by about 200 Btu/day/ft² around 2/17/2017. The CHW still maintains this lower level through April. When compared to the same month as last year, the flow rate appears to have reduced by half. The CHW was estimated by model for the month of April.

The HHW also decreased at the same time as CHW by a similar amount. The flow rate seems to have reduced to half of what was used in the same month last year. The HHW was estimated for the month of April by model.

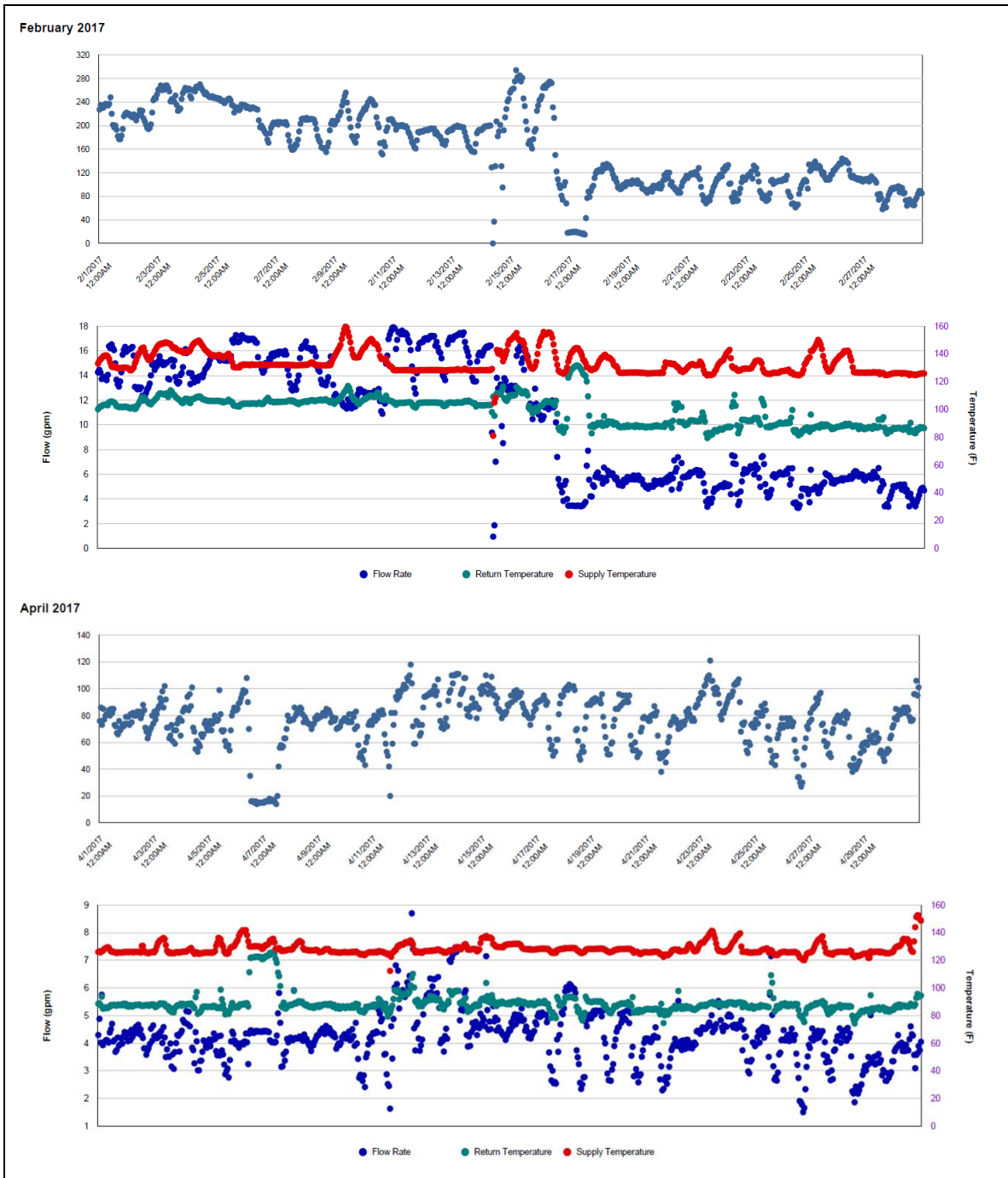
Explanatory Figure: 13 months energy balance plot with original data.



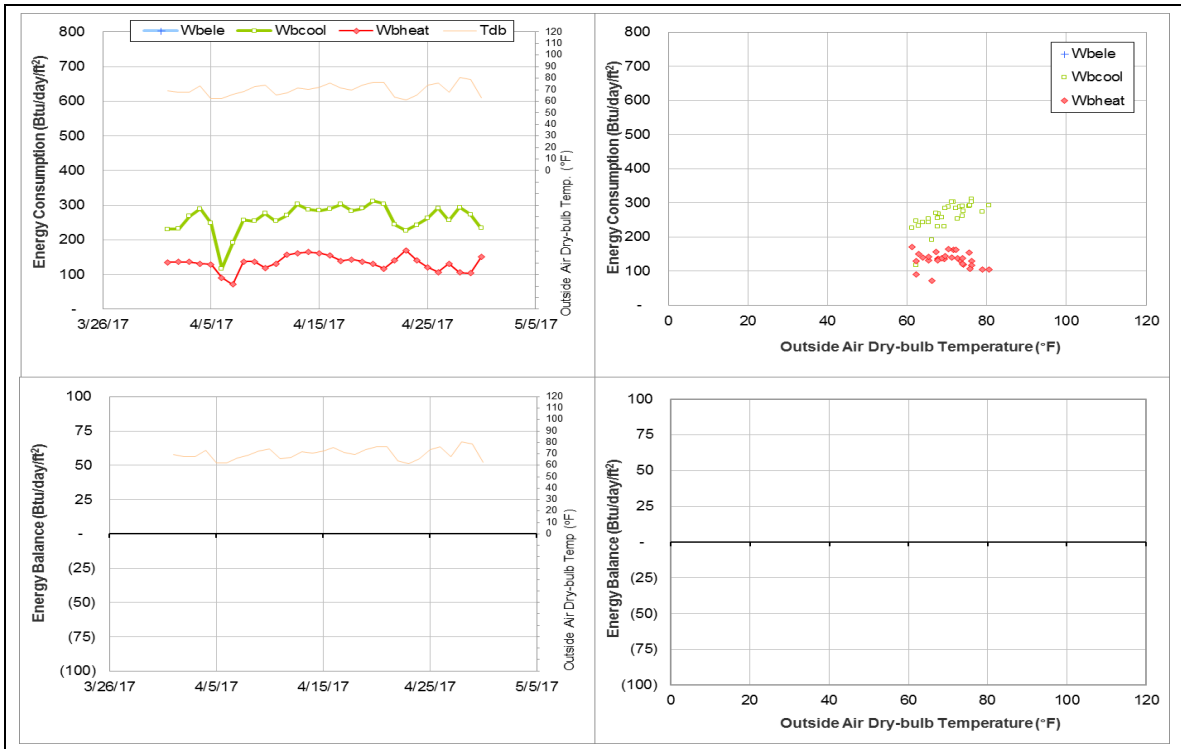
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (Top: February; Bottom: April 2017)



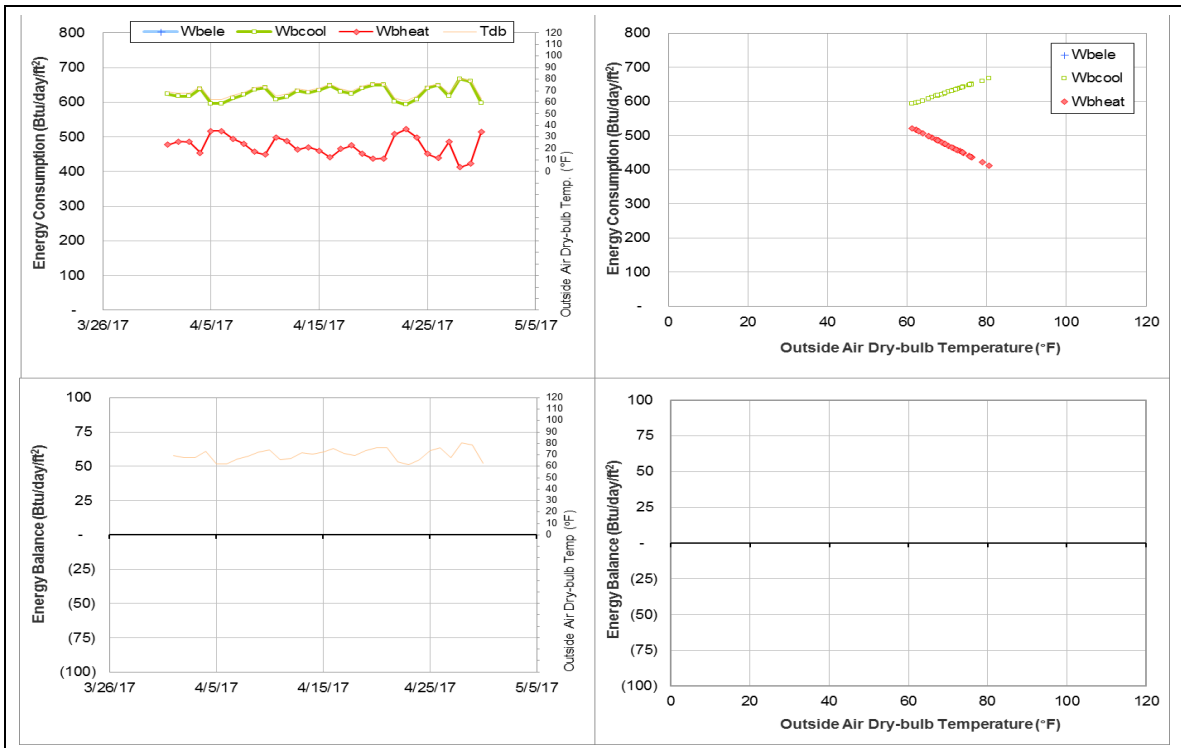
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (Top: February 2017; Bottom: April 2017)



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



Thompson Hall (TAMU Bldg #483)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	003887	1	4/23/2017	Model
HHW	003891	2	4/23/2017 – 4/24/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The CHW consumption increased suddenly for a short period.	4/23/2017
HHW	The HHW consumption increased suddenly for a short period.	4/23/2017 – 4/24/2017

Changes in sensor readings related to the detected issues

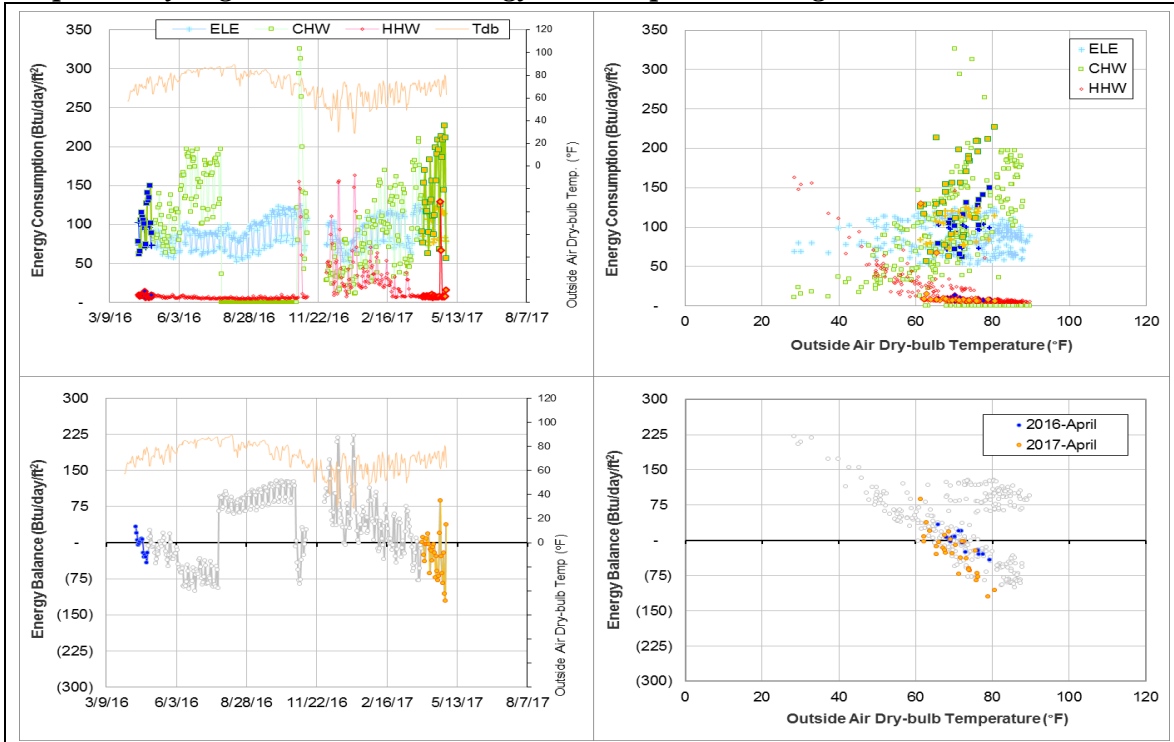
Energy Type	Meter ID	Period	Type	Description
CHW	003887	4/23/2017	Flow Rate	Increased
HHW	003891	4/23/2017 – 4/24/2017	Flow Rate	Increased

Quantitative descriptions and comments

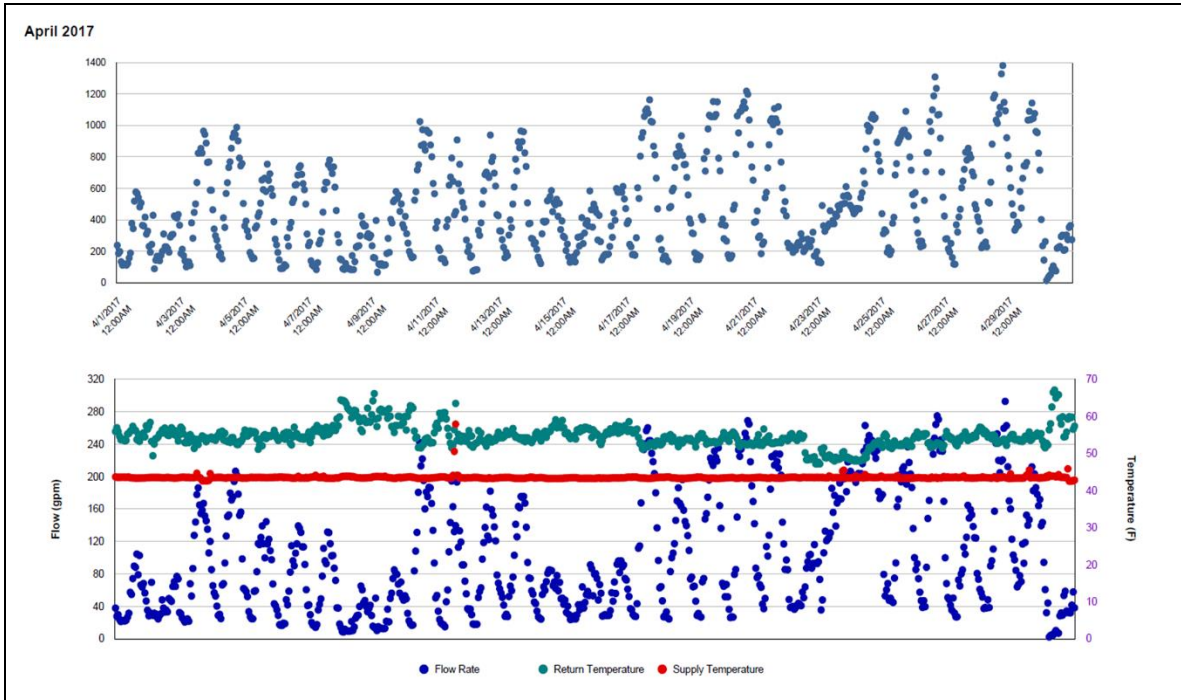
The CHW consumption increased by about 85 Btu/day/ft² on 4/23/2017. The CHW flow rate appears to have increased on this day. The CHW was estimated by model for this day.

The HHW consumption also experienced an increase for 4/23/2017 – 4/24/2017. The HHW flow rate shows a large increase for the period. The HHW was estimated by model for these two days.

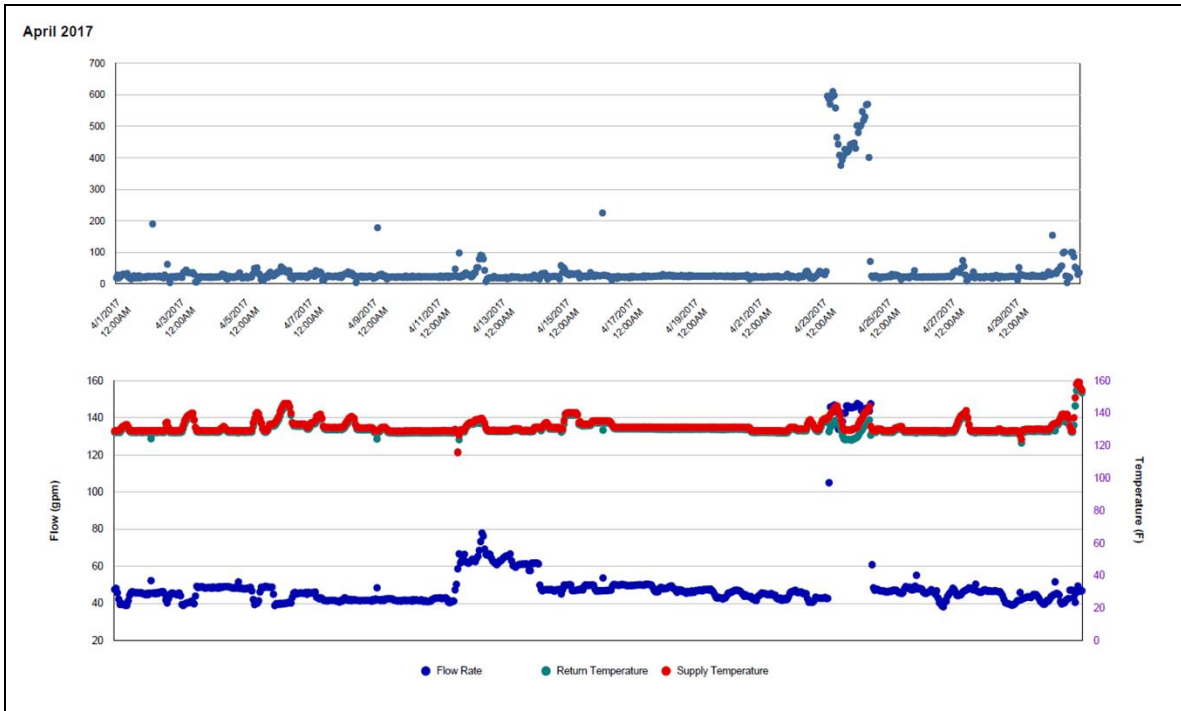
Explanatory Figure: 13 months energy balance plot with original data.



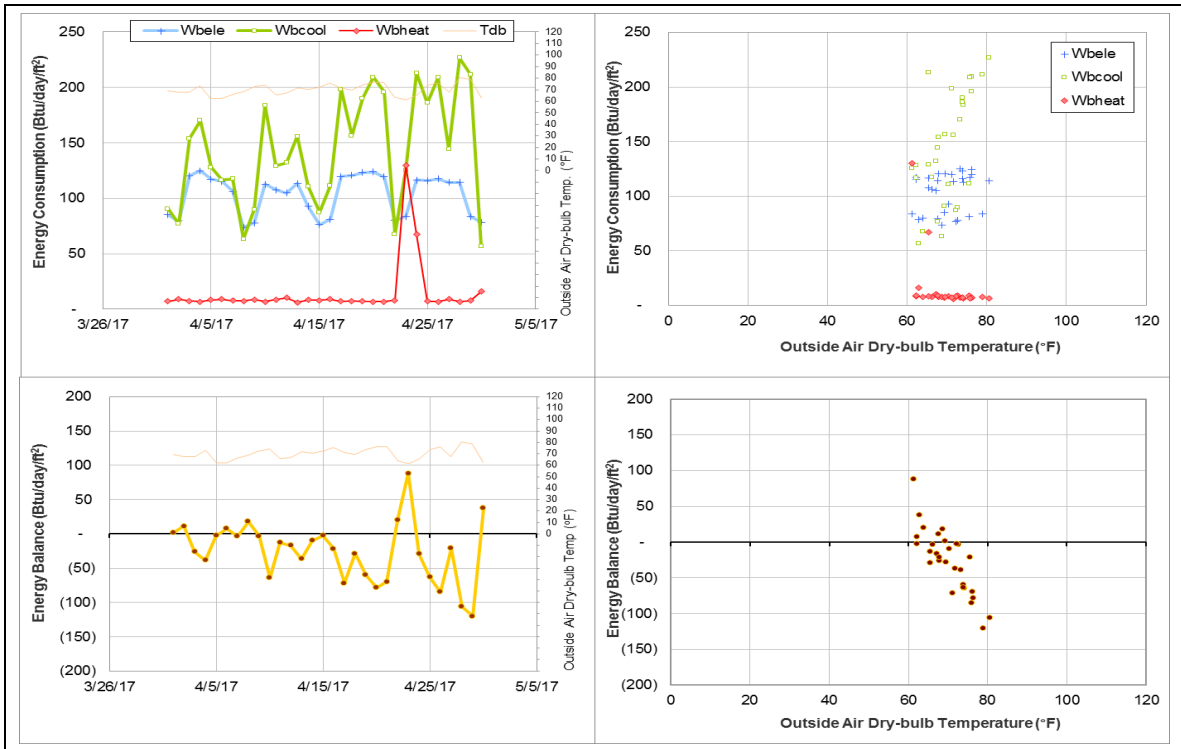
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (April 2017)



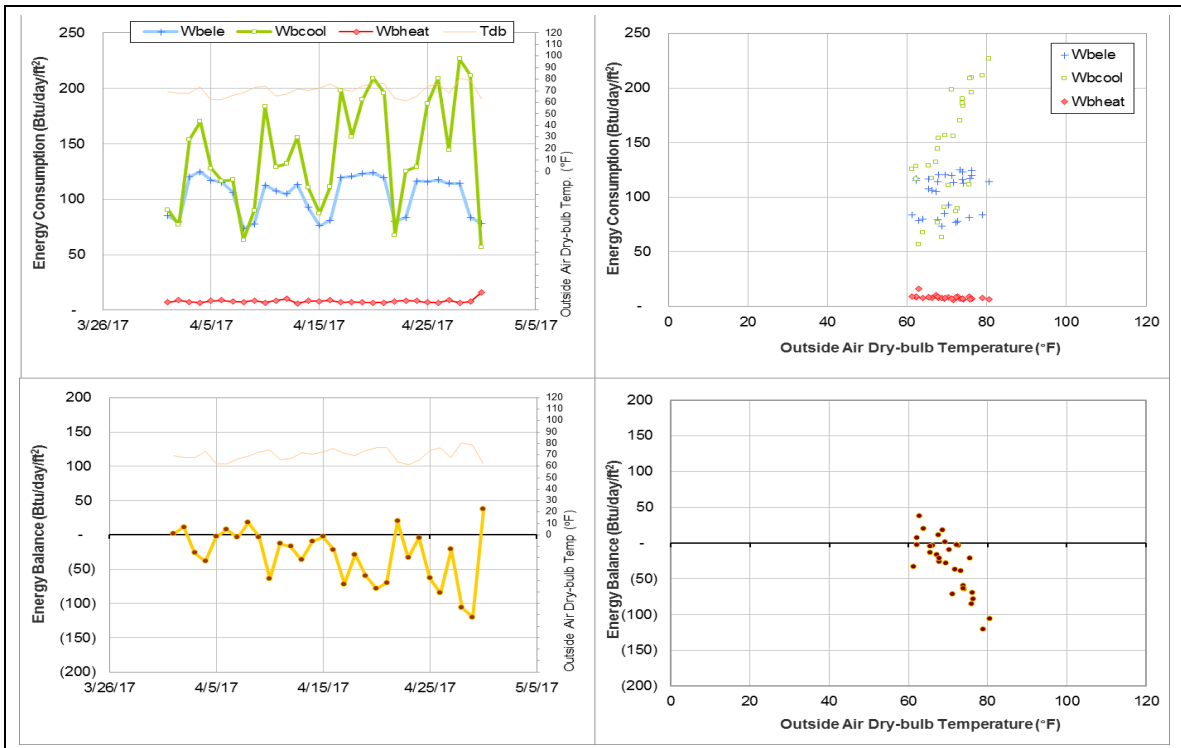
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (April 2017)



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



Chemistry Building (TAMU Bldg #484)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	007032	20	4/11/2017 – 4/30/2017	Model

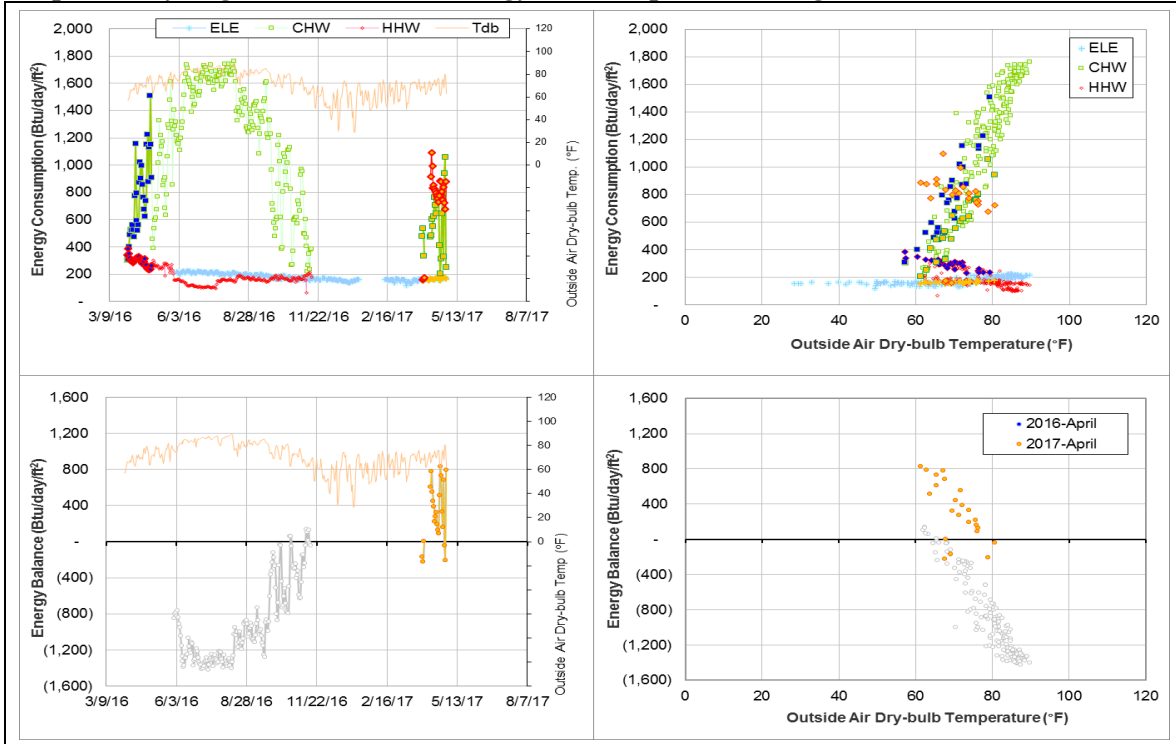
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The HHW consumption increased largely.	4/11/2017 – Ongoing

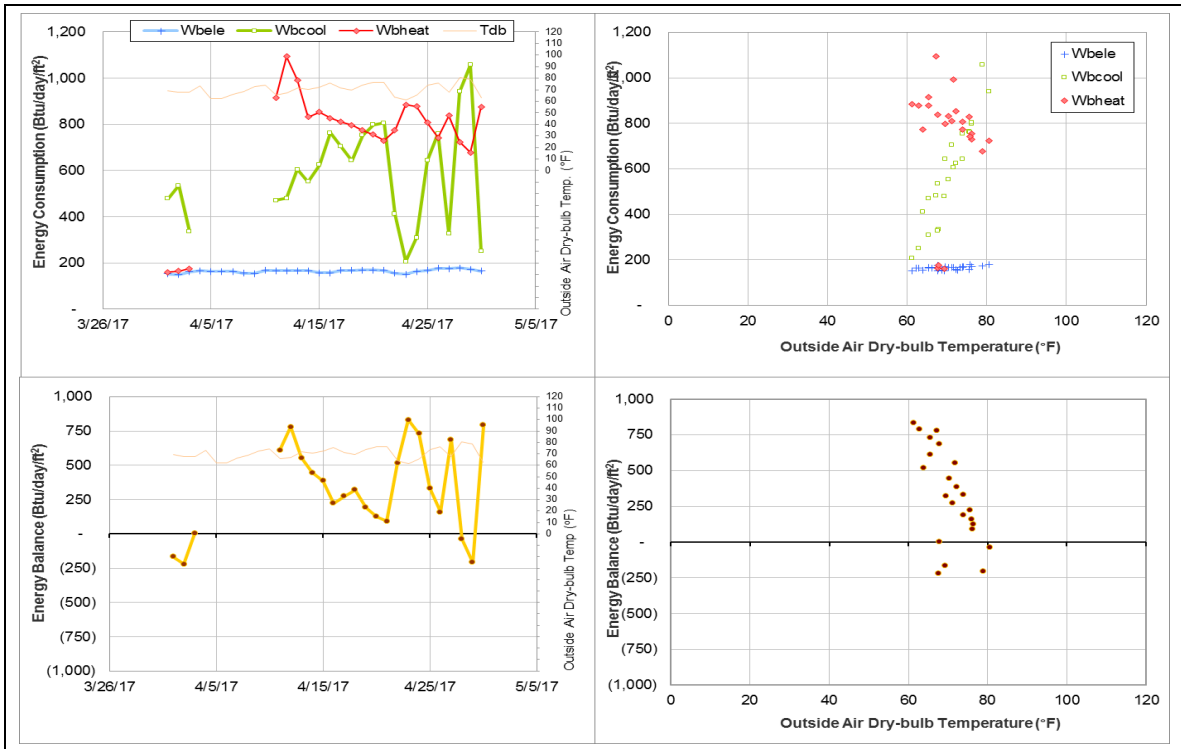
Quantitative descriptions and comments

This building has two HHW meters. The HHW consumption for meter #007032 increased by about 650 Btu/day/ft² starting on 4/11/2017. We are not able to identify a potential cause for this change due to the unavailability of the April energy profile for this meter. The HHW was estimated by model for this period.

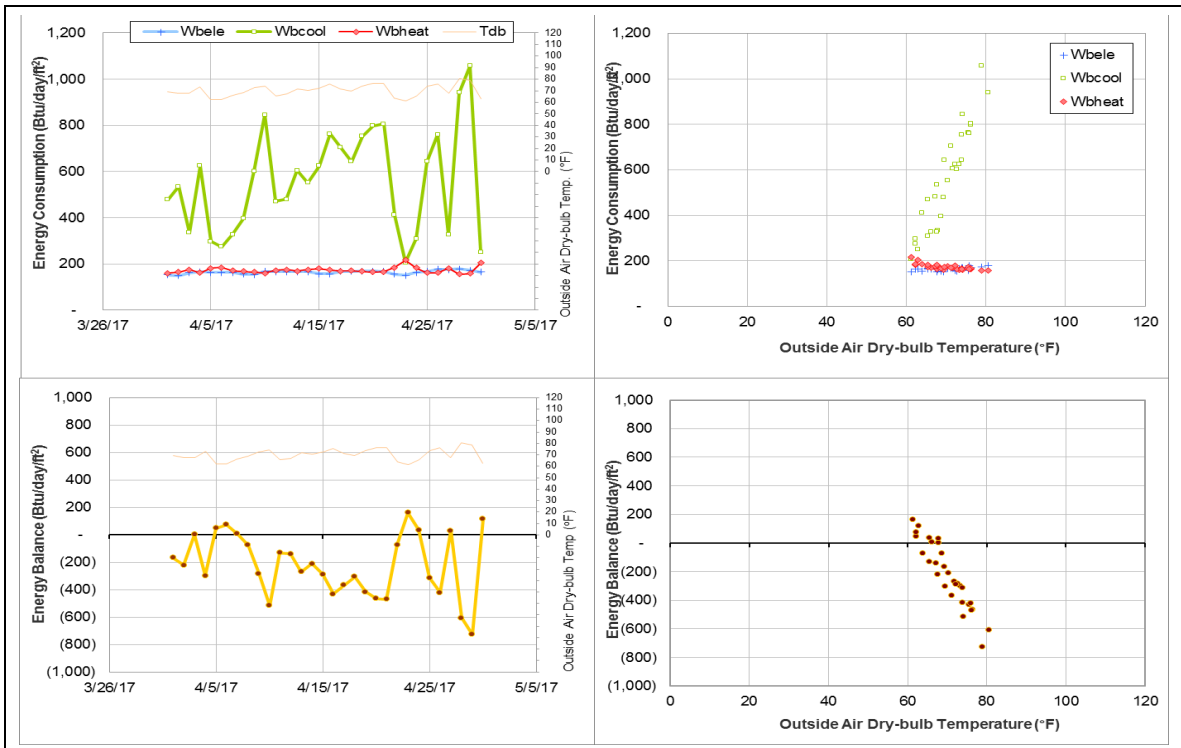
Explanatory Figure: 13 months energy balance plot with original data.



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



Halbouty Geosciences Building (TAMU Bldg #490)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	006900	5	4/1/2017 – 4/5/2017	Model
	006917	30	4/1/2017 – 4/30/2017	Model

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

Data Type	Description of data behaviors	Period
HHW	The HHW consumption decreased to zero. The metered value seems to be faulty (#006900).	12/19/2016 – 4/5/2017
	The HHW consumption decreased suddenly (#006917).	3/28/2017 – 4/4/2017

Changes in sensor readings related to the detected issues

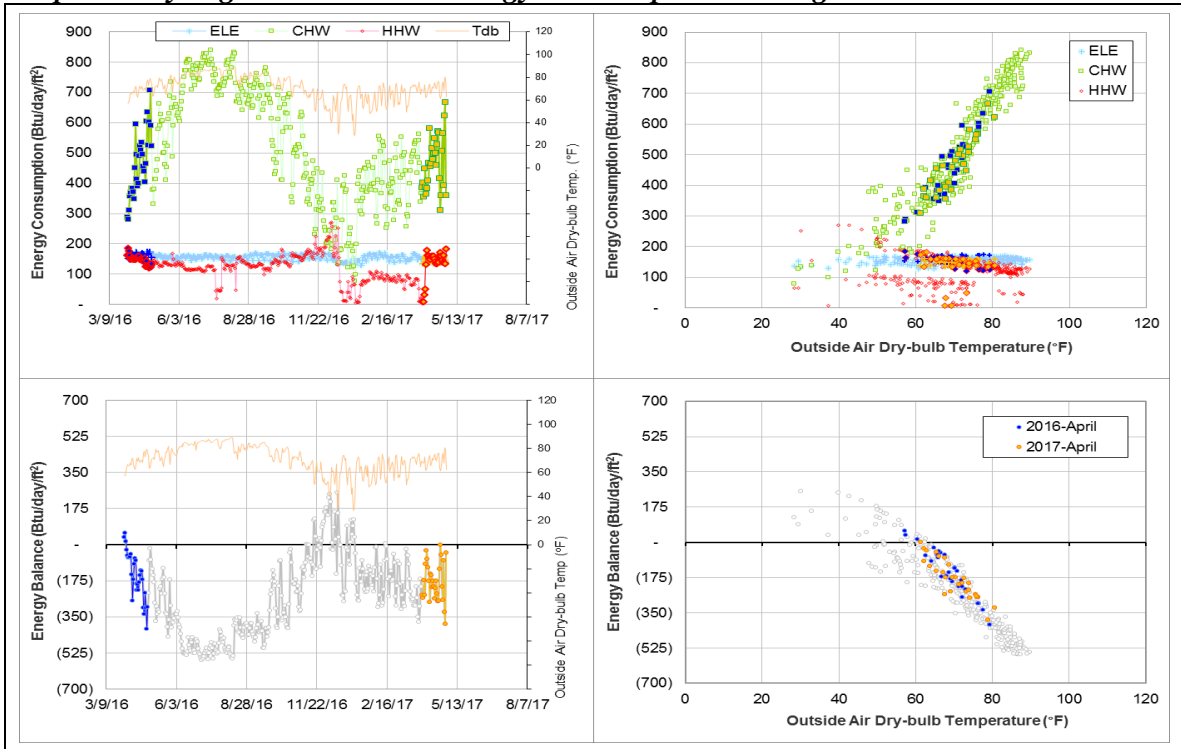
Energy Type	Meter ID	Period	Type	Description
HHW	006900	12/19/2017 – 1/13/2017	Flow Rate	Faulty, Constant value
		12/19/2017 – 4/5/2017	Supply Temperature	Faulty, Constant value
	Return Temperature		Faulty, Constant value	
	006917	2/1/2017 – Ongoing	Flow Rate	Gradually increasing
3/28/2017 – 4/4/2017		Delta-T	Near zero values	

Quantitative descriptions and comments

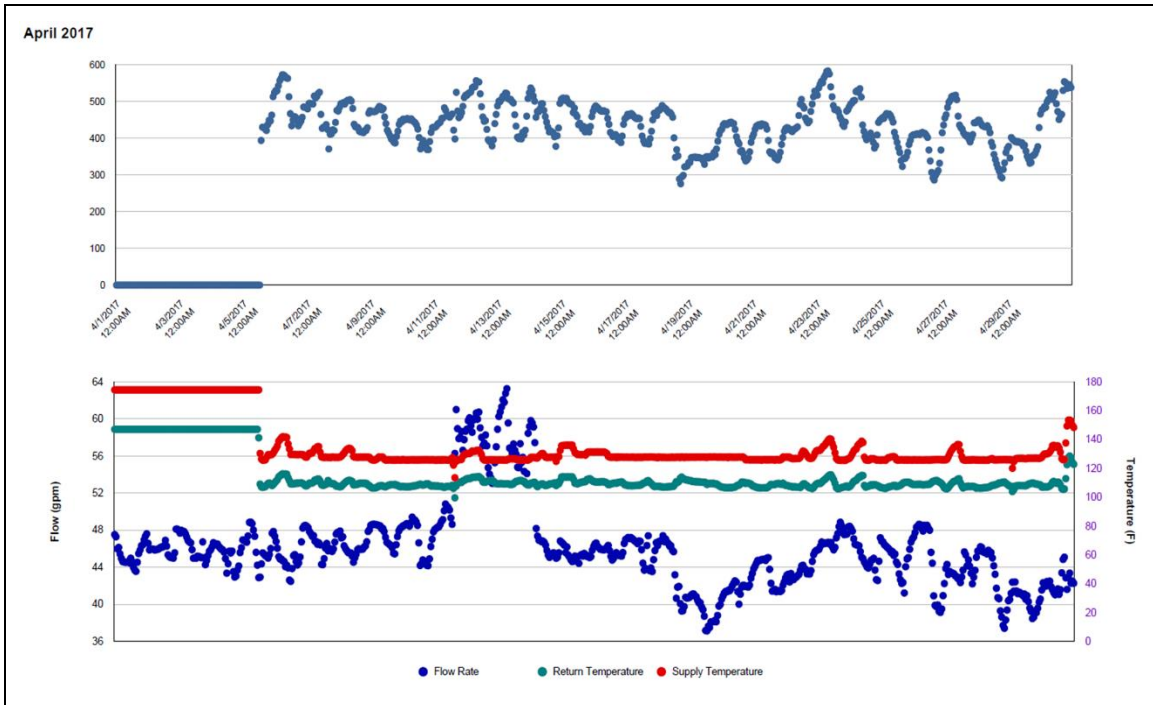
There are two HHW meters (#006900 and #006917) for this building. Starting 12/19/2016, for HHW meter #006900, the consumption suddenly decreased and remained at zero caused by faulty flow rate and constant supply and return temperature values (supply 174°F, return 147°F). The flow rate returned on 1/13/2017 and the temperature sensors returned on 4/6/2017. The HHW for the first five days of April was estimated by model for this meter.

The HHW consumption pattern for meter #006917 has shown an increase in consumption starting Feb 2017. The increase is more apparent during the warmer temperatures. The HHW flow rate appears to be gradually increasing. Starting 3/28/2017 a second issue appeared; the Delta-T was reduced to around 0-2°F. However, starting 4/5/2017, the Delta-T increased to around 5-9°F and appears to be resolved. After the return of the Delta-T, the energy consumption pattern is higher than the 13-month pattern. The HHW consumption was estimated by model for the month of April for this meter.

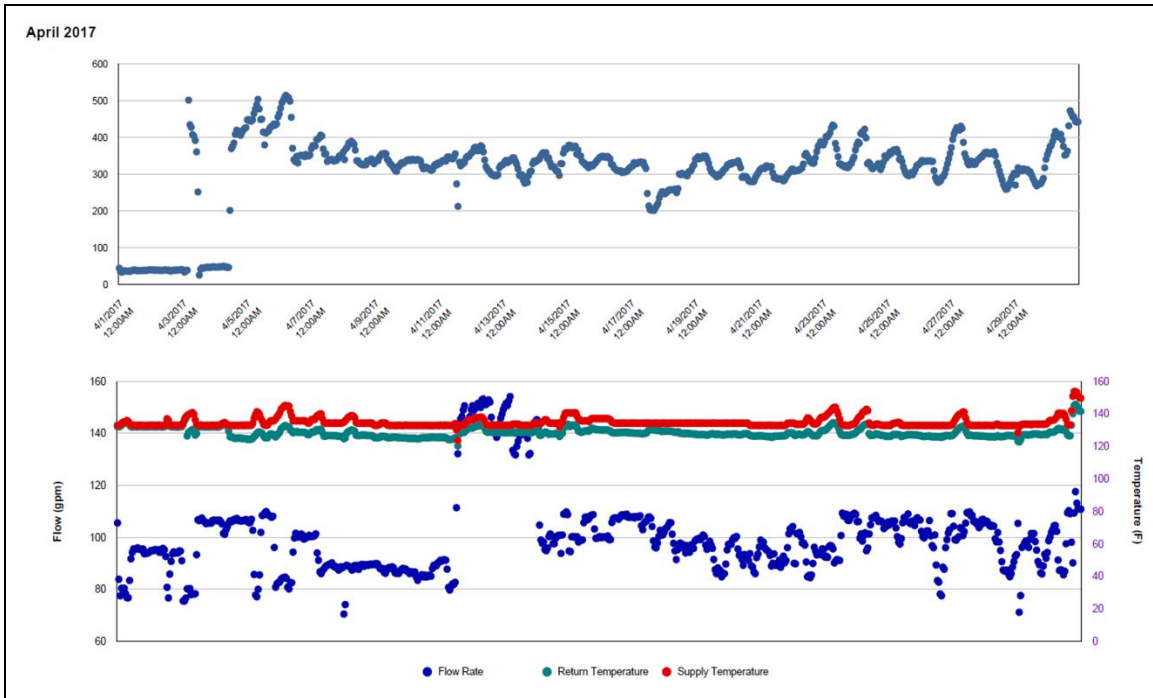
Explanatory Figure: 13 months energy balance plot with original data.



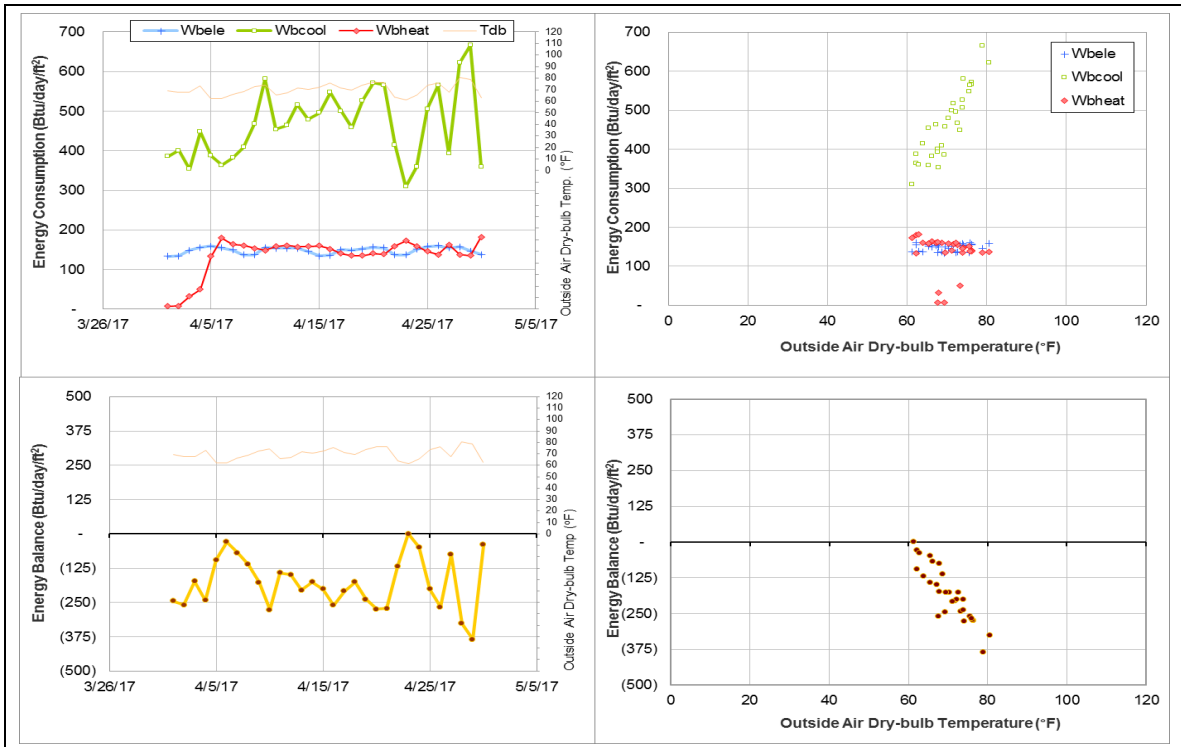
Explanatory Figure: Time series plots of MID 006900 hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (April 2017)



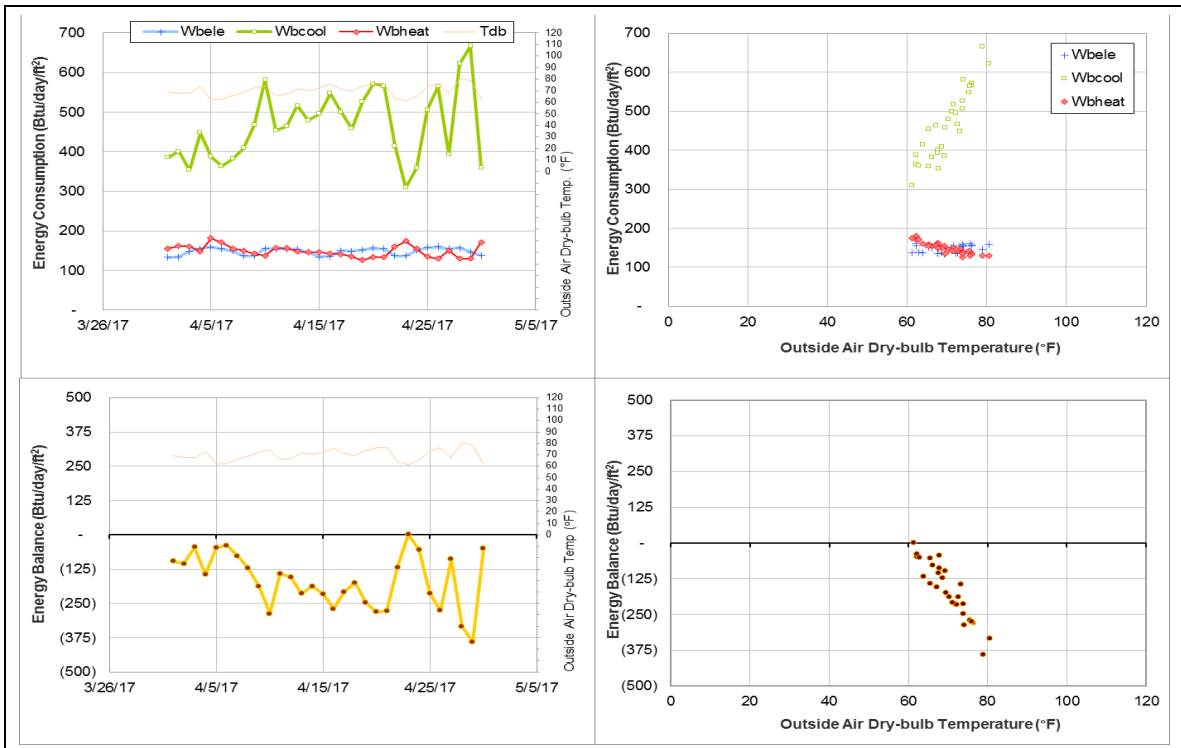
Explanatory Figure: Time series plots of MID 006917 hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (April 2017)



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



Heep Laboratory Building (TAMU Bldg #511)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	005821	27	4/1/2017 – 4/27/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The CHW consumption increased largely.	4/1/2017 – 4/27/2017

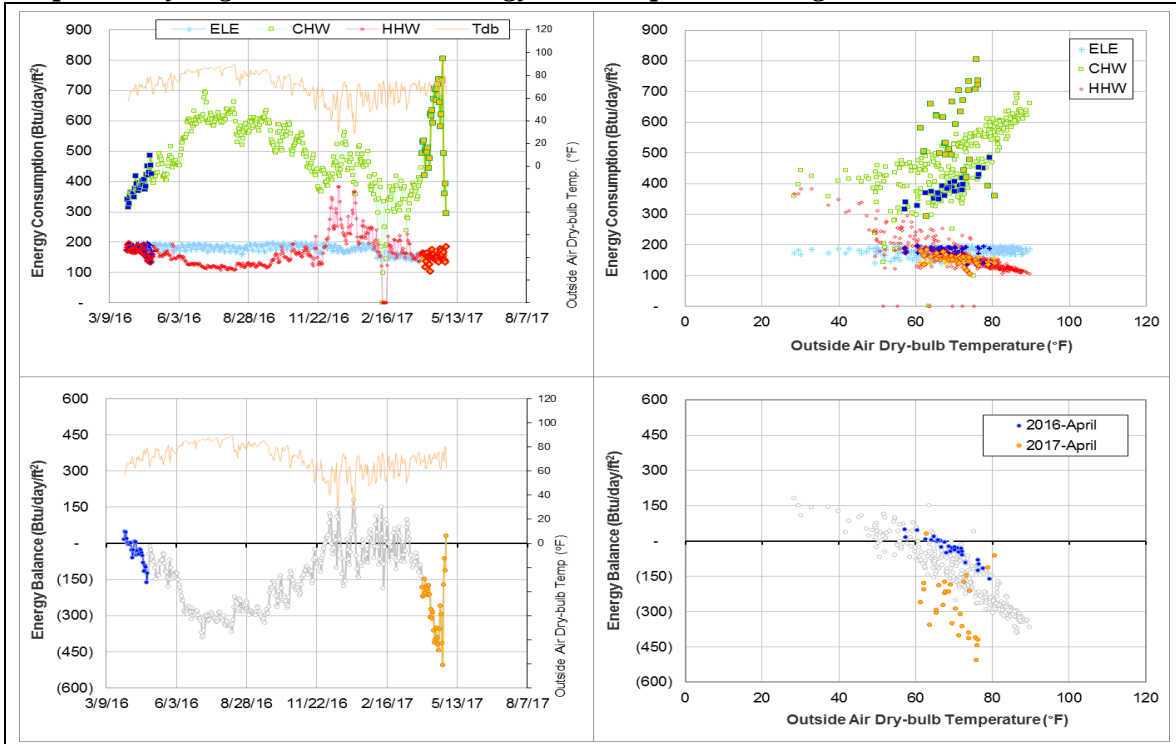
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	005821	4/1/2017 – 4/27/2017	Supply Temperature	Faulty, gradual decrease

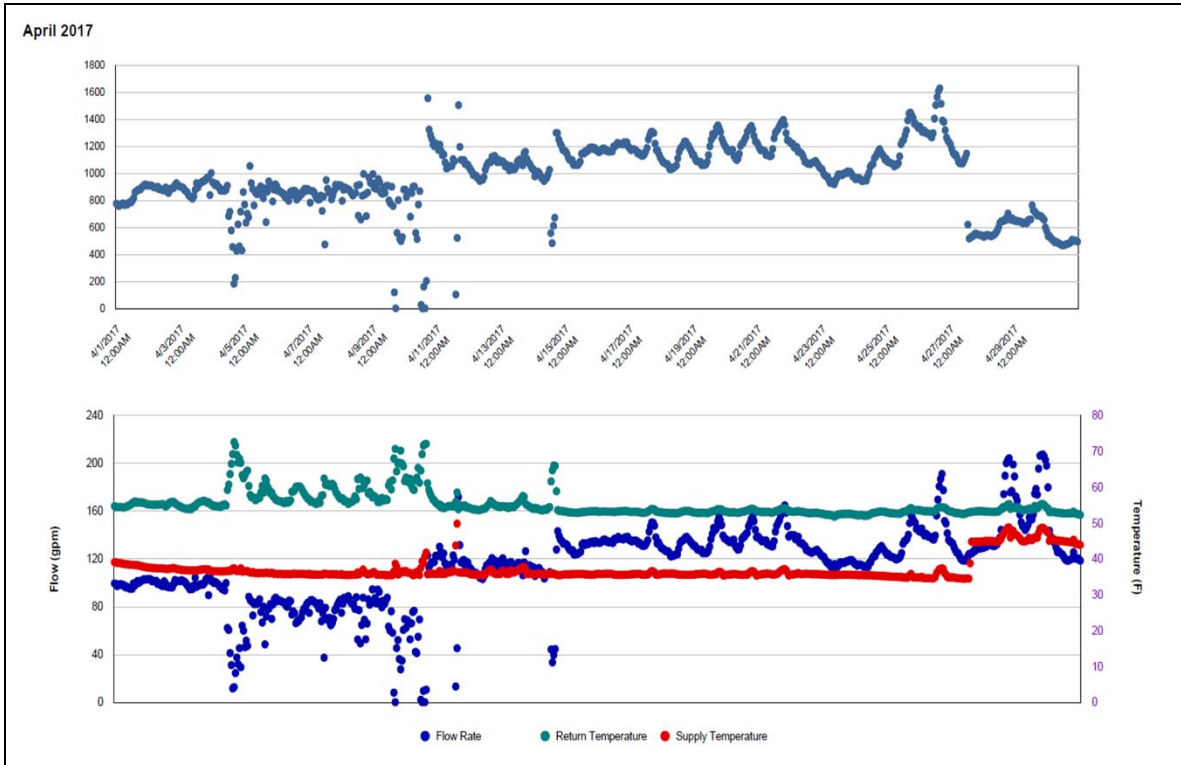
Quantitative descriptions and comments

The CHW consumption increased by about 340 Btu/day/ft² during 4/1/2017 – 4/27/2017. The supply temperature sensor appears to be faulty, gradually decreasing to around 35°F. On 4/27/2017, the sensor appears to be fixed, showing a temperature around 44°F. The CHW for this period was estimated by model.

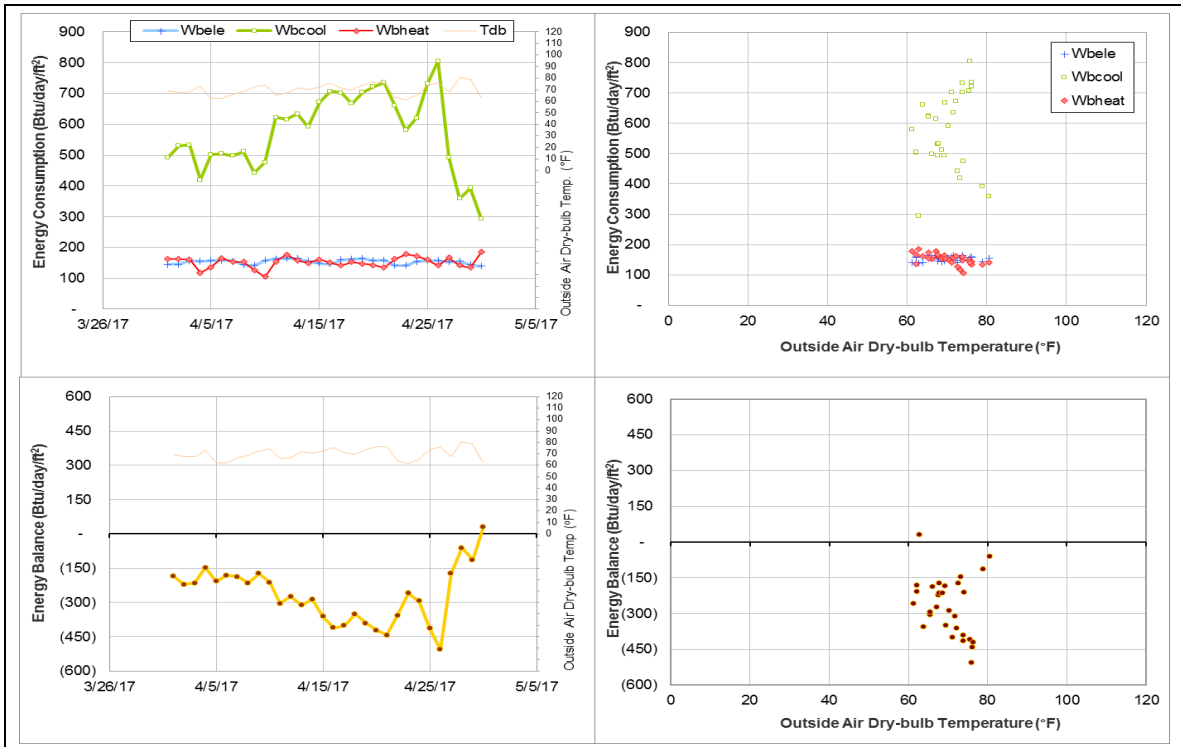
Explanatory Figure: 13 months energy balance plot with original data.



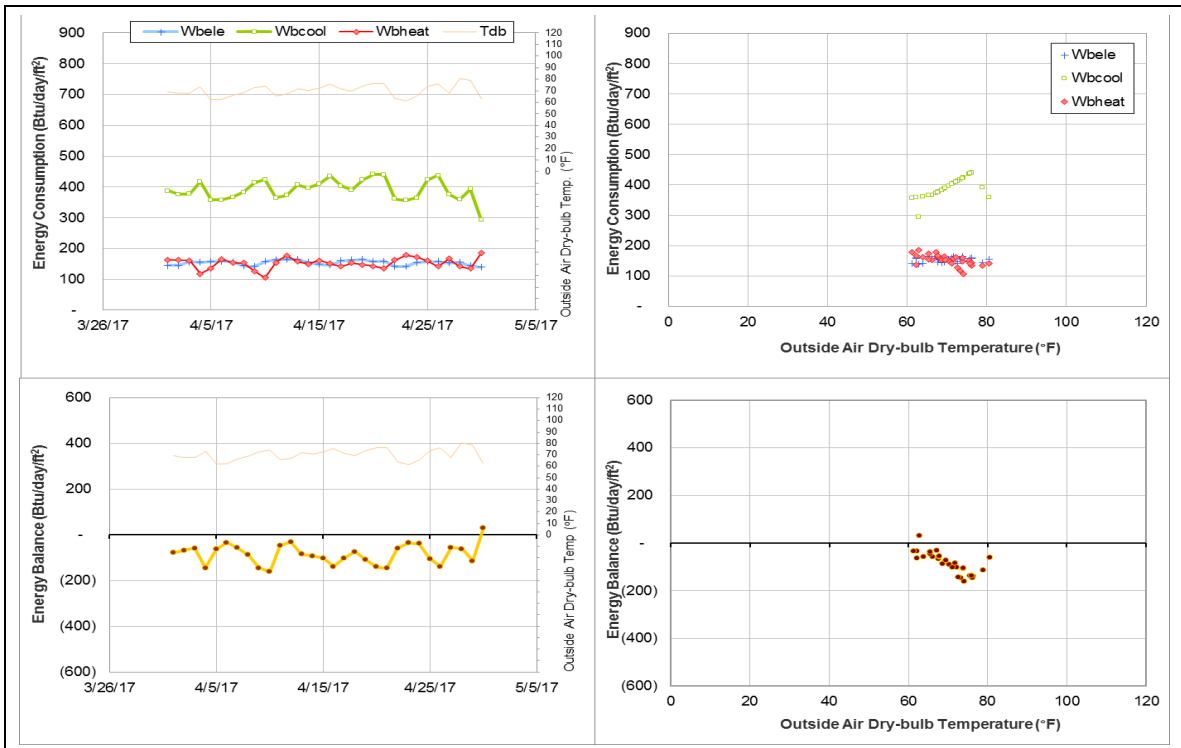
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (April 2017)



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



All Faiths Chapel (TAMU Bldg #512)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	004288	4	4/26/2017 – 4/29/2017	Model
HHW	004293	3	4/26/2017 – 4/28/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The CHW consumption increased.	4/26/2017 – 4/29/2017
HHW	The HHW consumption increased.	4/26/2017 – 4/28/2017

Changes in sensor readings related to the detected issues

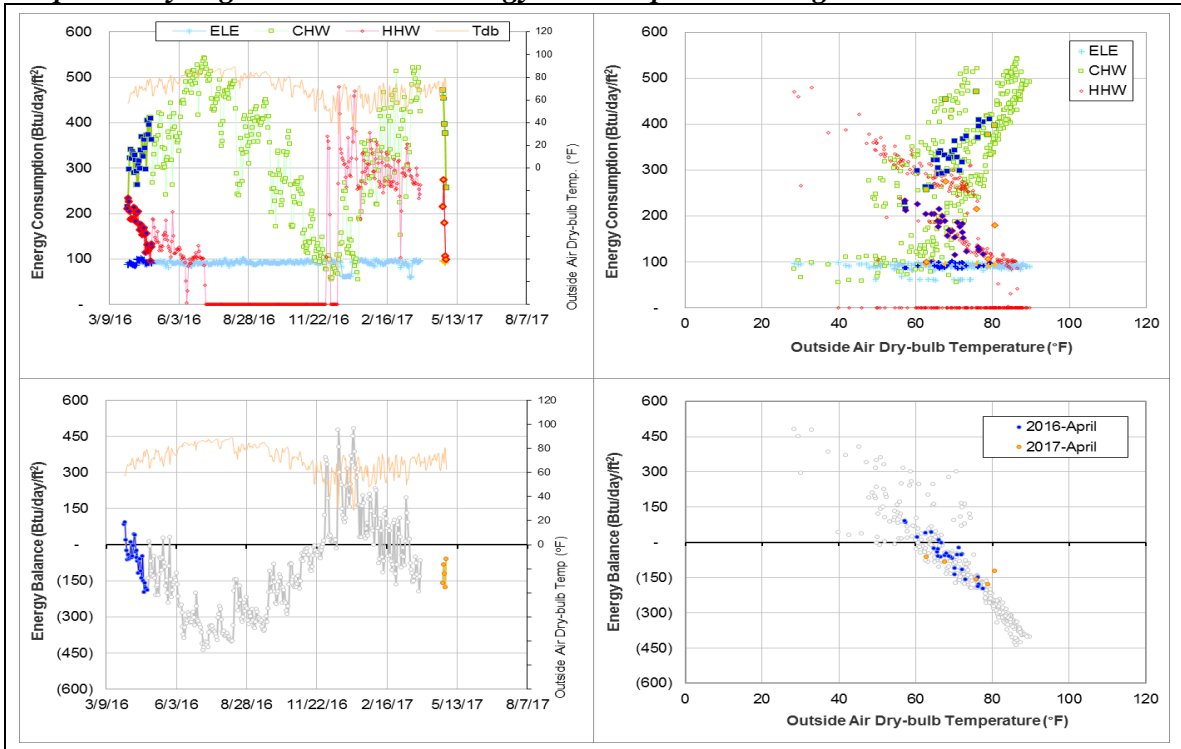
Energy Type	Meter ID	Period	Type	Description
CHW	004288	1/12/2017 – 3/31/2017 4/26/2017 – 4/29/2017	Delta-T	Sudden increase
HHW	004293	12/19/2016 – 3/31/2017 4/26/2017 – 4/28/2017	Flow rate	Increased

Quantitative descriptions and comments

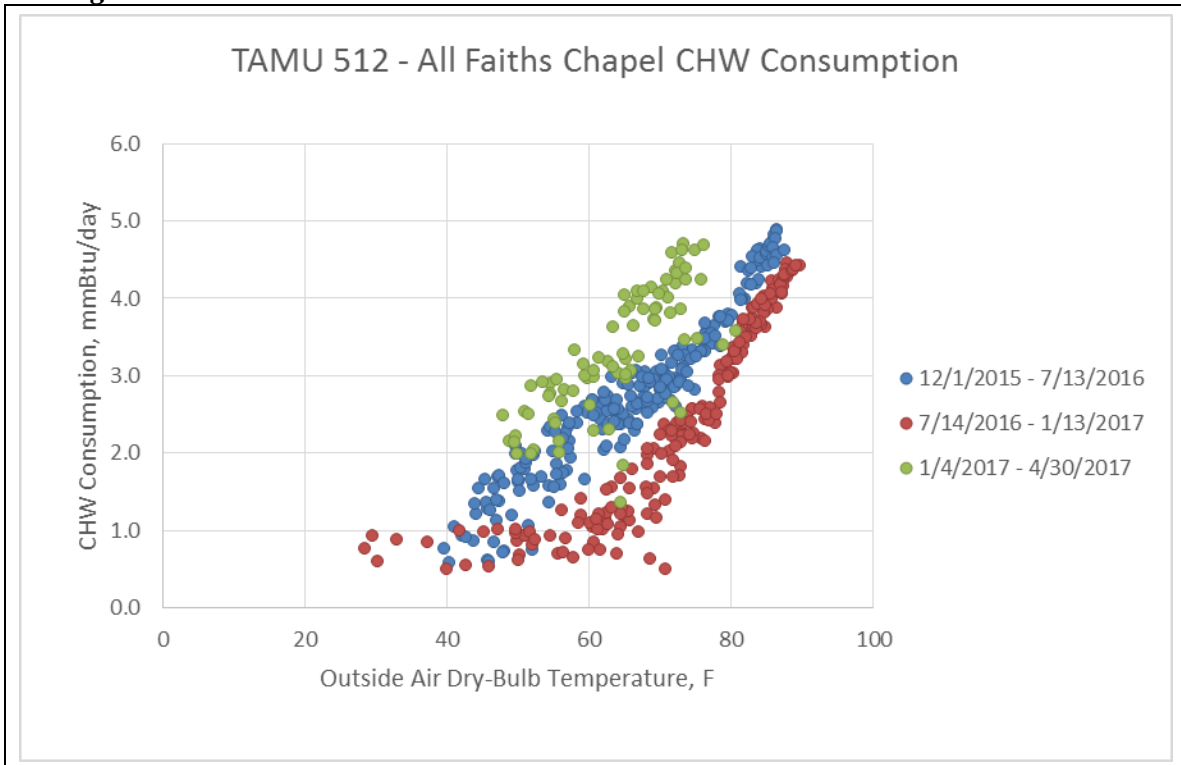
The CHW consumption from 7/14/2016 to 1/13/2017 decreased dropping out of the main pattern, possibly related with the zero use of HHW. Then on 1/14/2017, the CHW Delta-T increased creating a higher consumption pattern. The consumption data is missing for 4/1/2017 – 4/25/2017, so this issue is only noted for 4/26/2017 – 4/29/2017. The CHW Delta-T decreased on 4/30/2017, we will need to monitor this change to see if it will continue. The CHW was estimated by model based on the data during 5/1/2015 – 5/31/2016.

The HHW consumption suddenly decreased to zero on 7/14/2016 due to a zero reading of flow rate. Starting 12/19/2016, the HHW consumption level is higher than the previous trend; an increase in flow rate is the suspected cause. On 4/29/2017, the HHW flow rate decreased. The consumption data is missing for most of April, so this issue is only noted for 4/26/2017 – 4/28/2017. The HHW was estimated by model based on the data during 5/1/2015 – 5/31/2016.

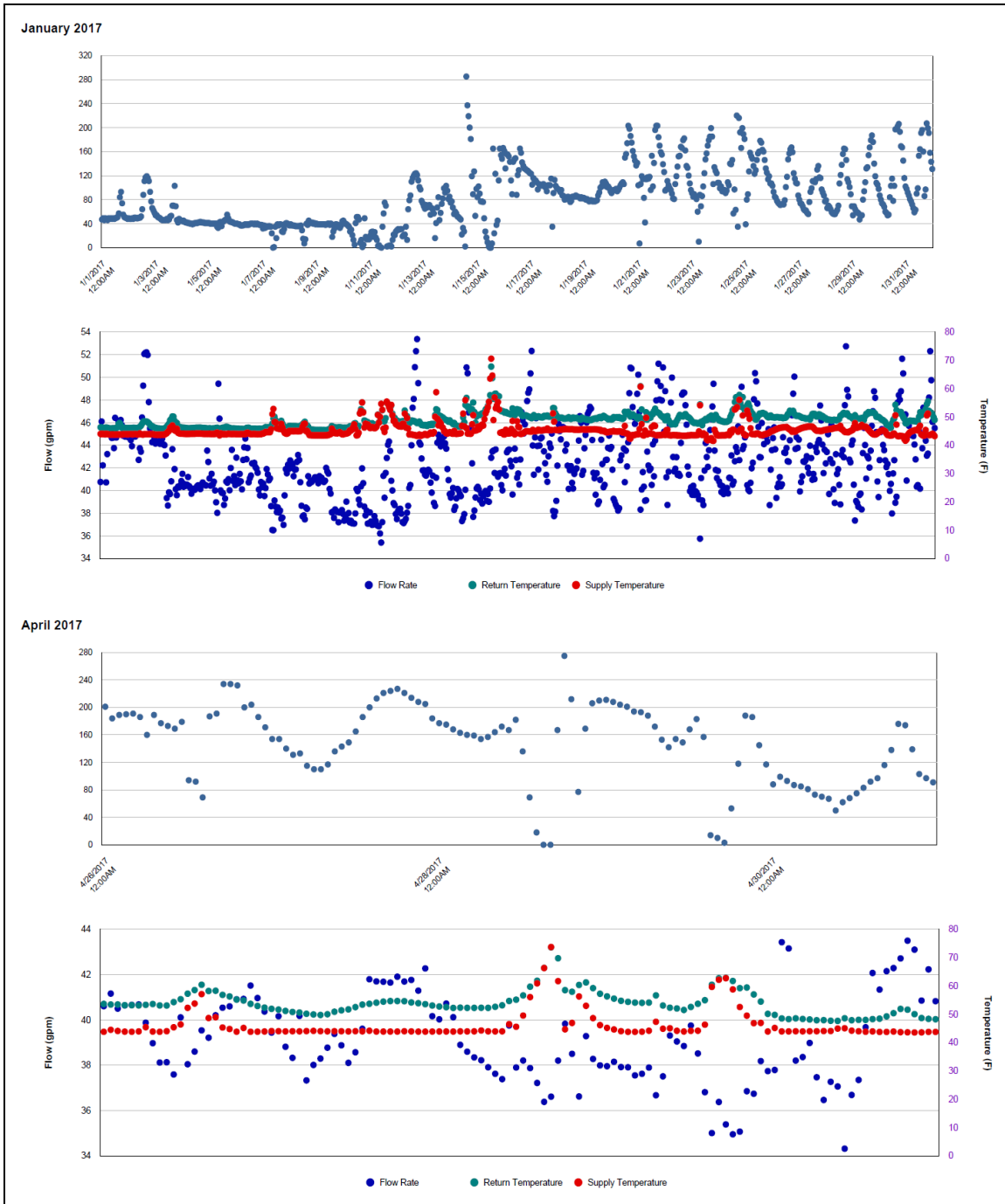
Explanatory Figure: 13 months energy balance plot with original data.



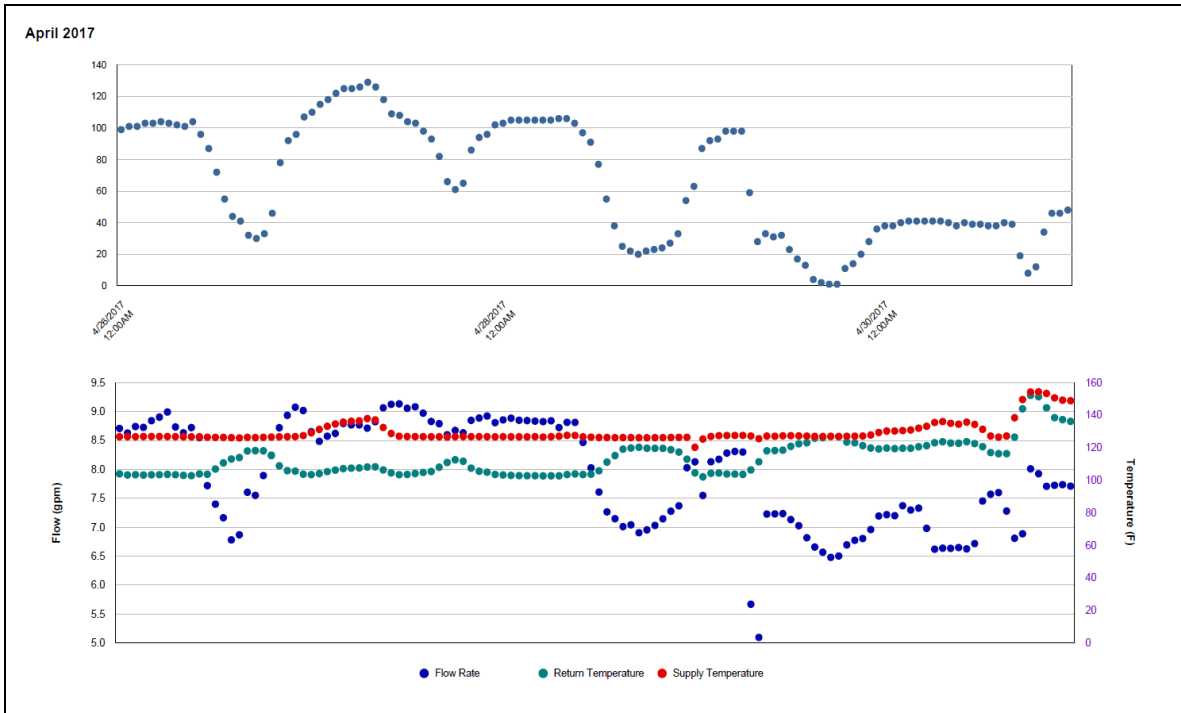
Explanatory Figure: CHW consumption versus outside air dry-bulb temperature during 12/1/2015 – 4/30/2017



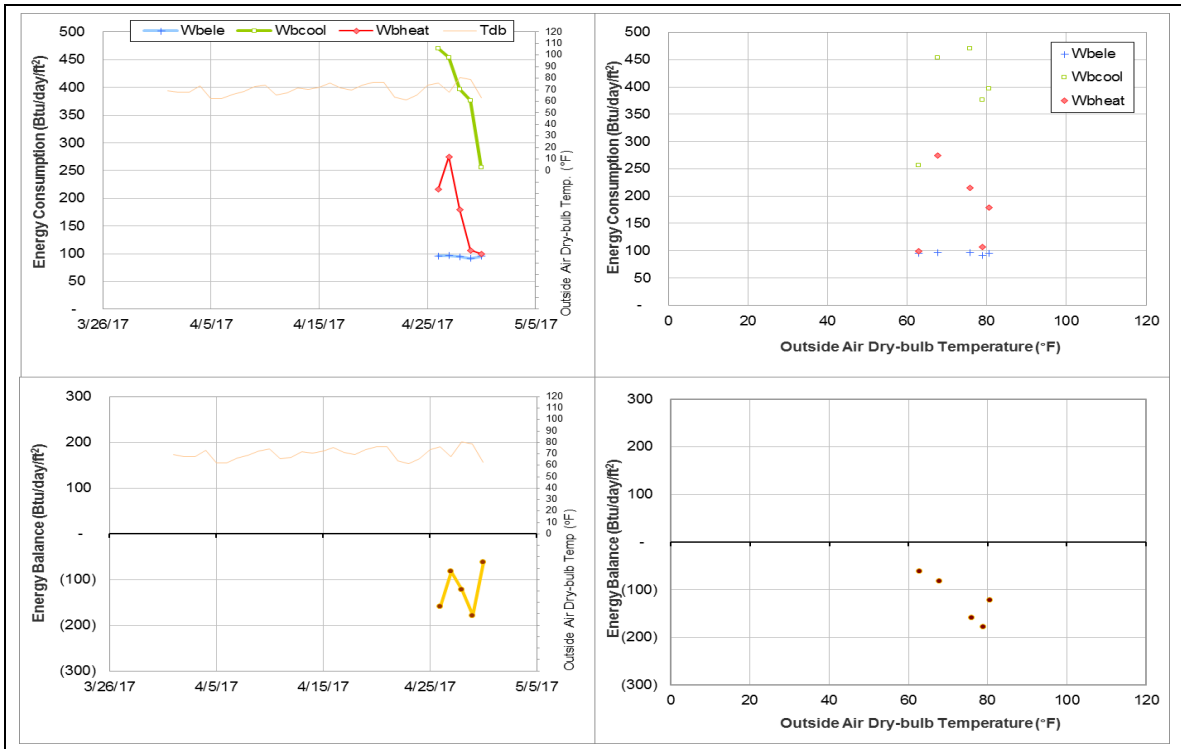
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (Top: January 2017, Bottom: April 2017)



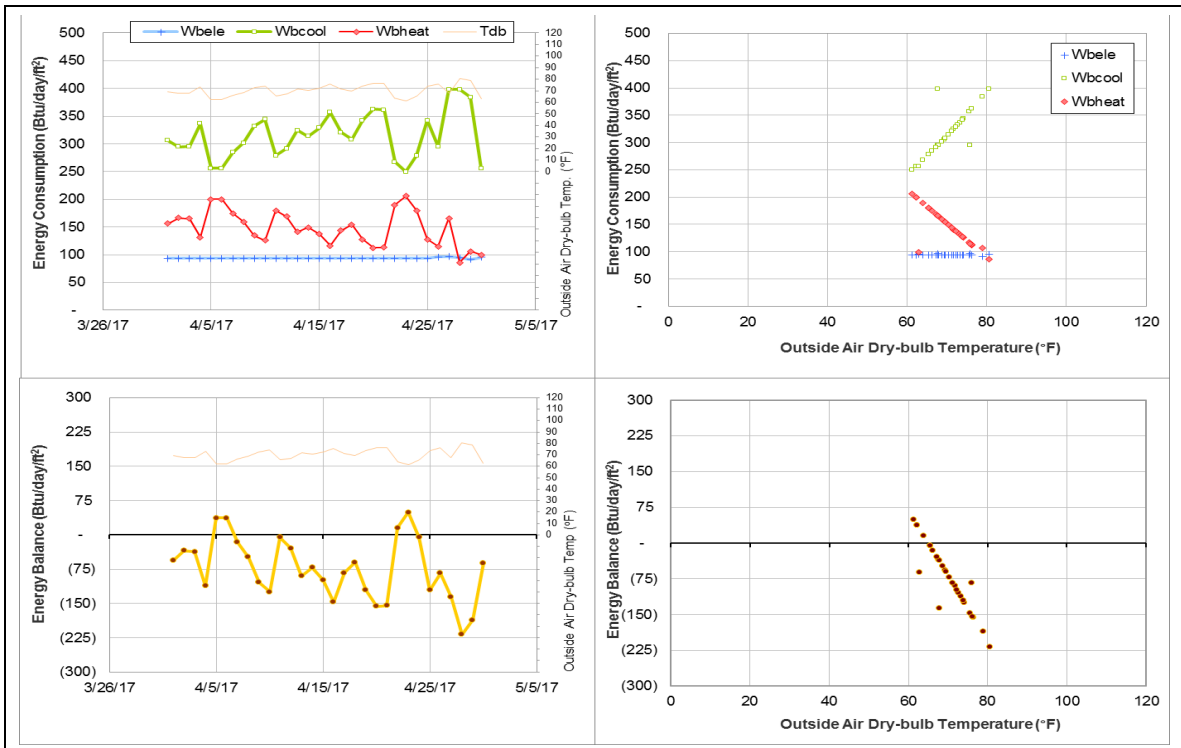
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (April 2017)



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



Blocker Building (TAMU Bldg #524)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	002918	5	4/26/2017 – 4/30/2017	Model

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

Data Type	Description of data behaviors	Period
HHW	The HHW consumption decreased to zero.	4/26/2017 – Ongoing

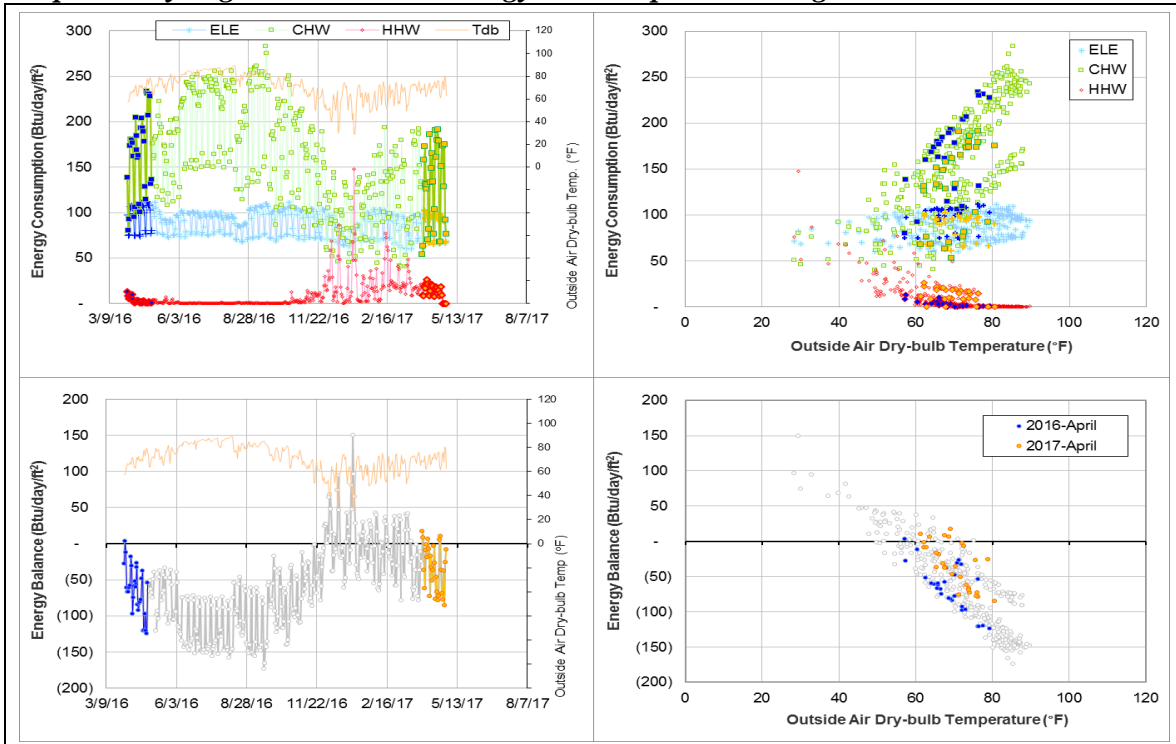
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	002918	4/26/2017 – Ongoing	Flow rate	Decreased to zero
			Delta-T	Decreased to near zero

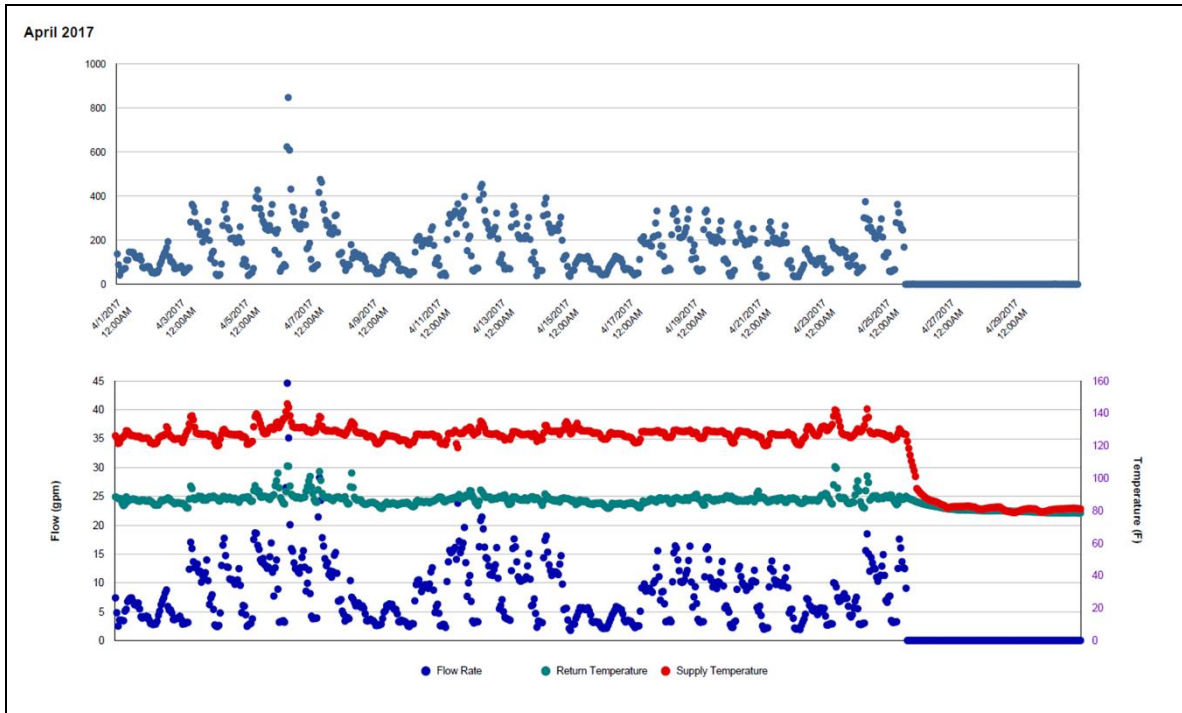
Quantitative descriptions and comments

The HHW consumption decreased to zero for 4/26/2017 – 4/30/2017. Both the HHW flow rate and Delta-T reduced to zero or near zero values during this period. The HHW was estimated for these five days by model.

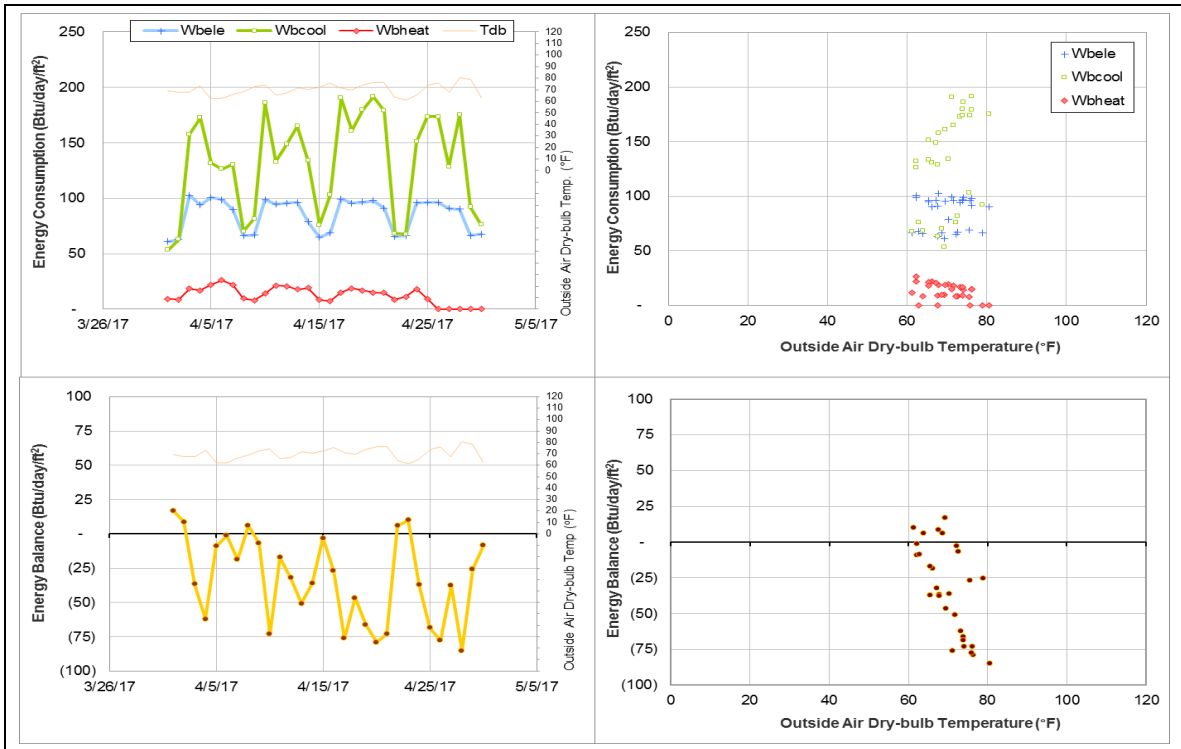
Explanatory Figure: 13 months energy balance plot with original data.



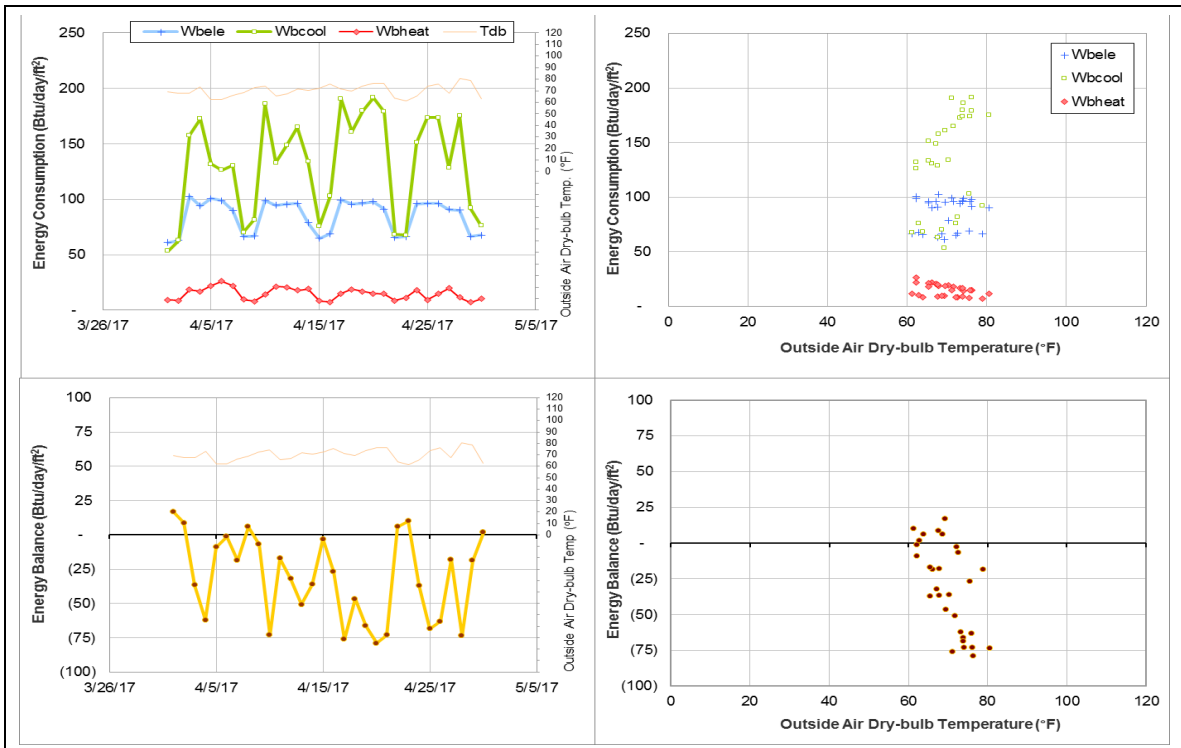
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (April 2017)



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



McNew Laboratory (TAMU Bldg #740)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	005974	30	4/1/2017 – 4/30/2017	Model
HHW	005968	30	4/1/2017 – 4/30/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The CHW consumption level increased.	2/1/2017 – Ongoing
HHW	The HHW consumption pattern is zero or low.	5/1/2016– Ongoing

Changes in sensor readings related to the detected issues

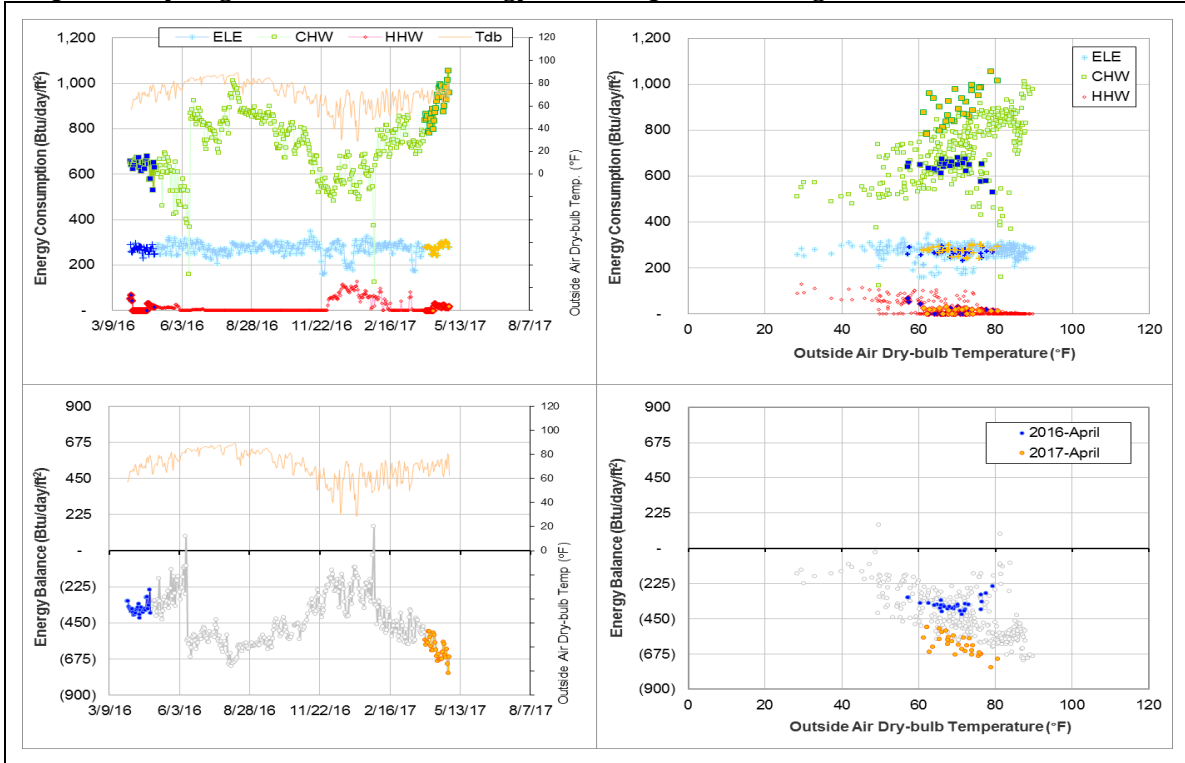
Energy Type	Meter ID	Period	Type	Description
CHW	005974	2/1/2017 – Ongoing	Supply Temperature	Faulty, Gradually decreasing
HHW	005968	5/31/2016 – 12/9/2017	Flow rate	Decrease to near zero values
		2/7/2017 – 2/9/2017		
		2/14/2017 – 4/11/2017	Delta-T	Decrease to near zero values
12/9/2016 – Ongoing				

Quantitative descriptions and comments

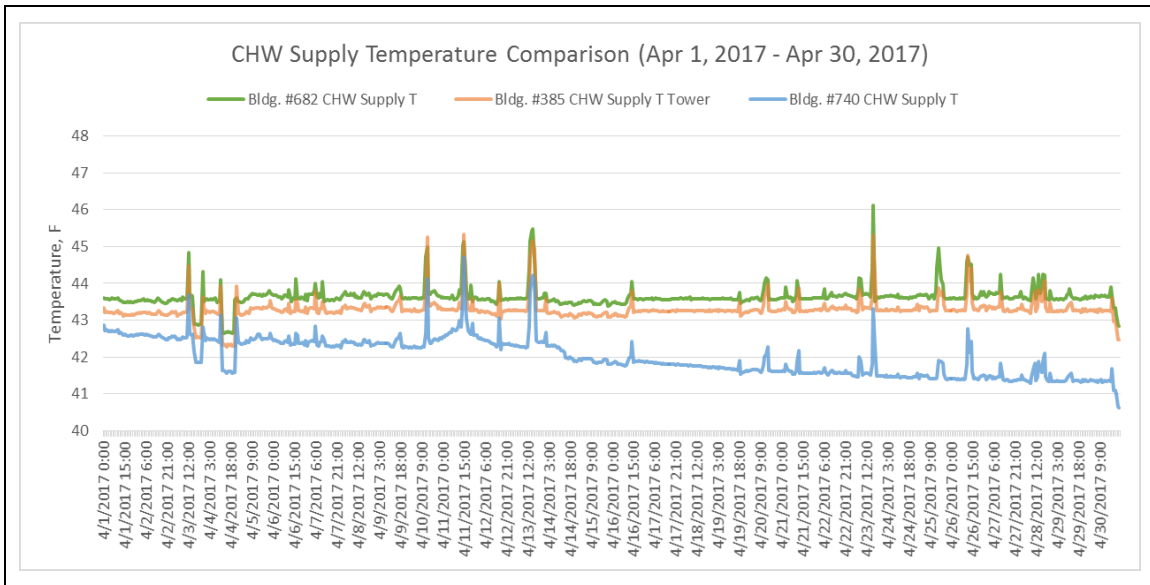
The CHW consumption level increased by about 150 Btu/day/ft² since Jan 2017. The CHW supply temperature sensor seems to be drifting gradually down and is currently 2°F lower than its neighboring buildings (Bldg. #682 Wisenbaker and Bldg. #385 CE/TTI Office). The explanatory figures below shows the temperature comparison of the three buildings and their location on the CHW distribution line. The CHW was estimated by model for the month.

From May 2016 through the beginning of December 2016 and several days in February 2017, the HHW consumption has been near zero. On 12/9/2016, the HHW consumption increased to a range of 56 – 128 Btu/day/ft². On 4/11/2017, the flow rate increased to around 80 gpm and the HHW consumption increased to a range of 11 – 30 Btu/day/ft². Also, the HHW Delta-T decreased to near zero values starting 12/9/2016 and continues to stay low. The HHW was estimated by model based on the data during 1/1/2015 – 12/31/2015.

Explanatory Figure: 13 months energy balance plot with original data



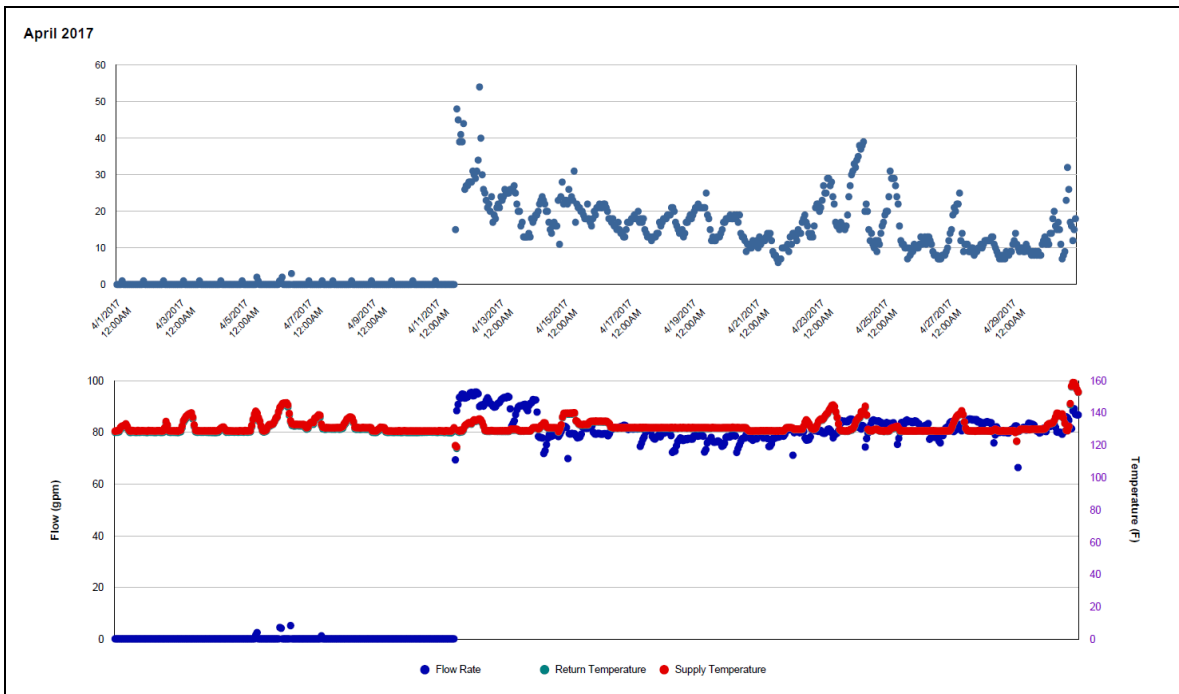
Explanatory Figure: Time series plot of hourly CHW supply temperatures comparison for Bldgs. #740 McNew Laboratory, #682 Wisenbaker, and #385 CE/TTI Office during Apr 1, 2017 – Apr 30, 2017.



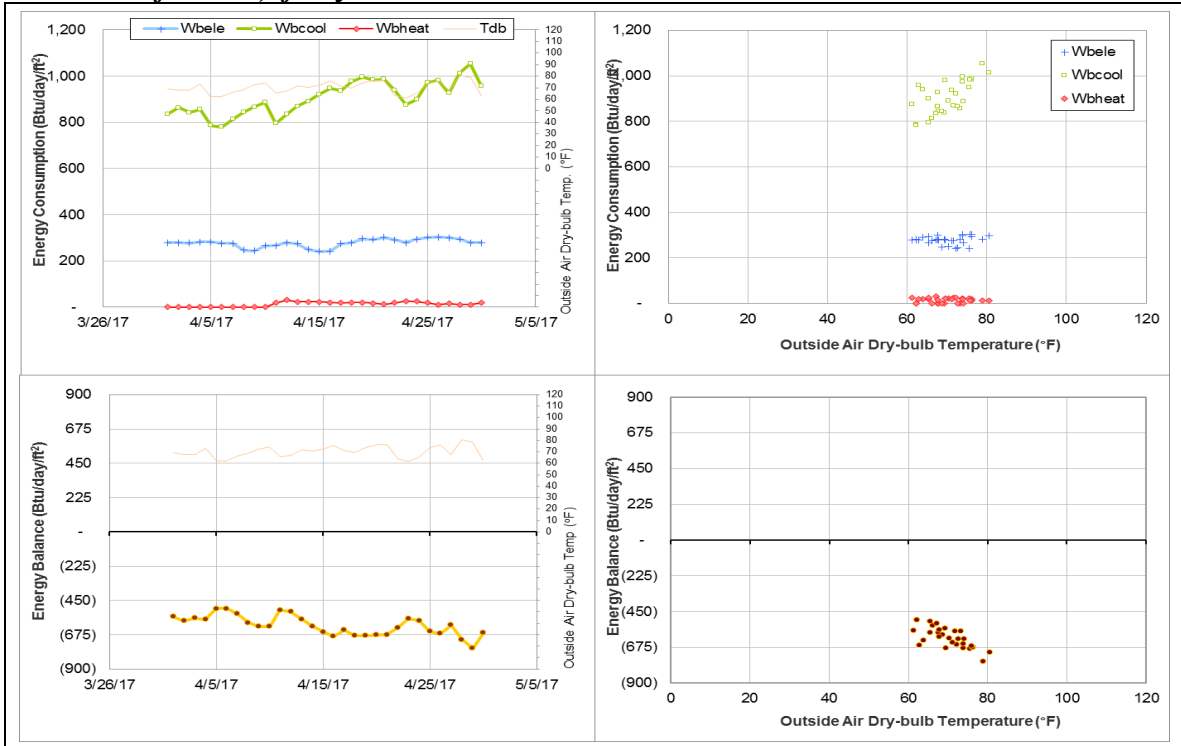
Explanatory Figure: CHW distribution with Bldgs. #740 McNew Laboratory, #682 Wisenbaker, and #385 CE/TTI Office during highlighted.



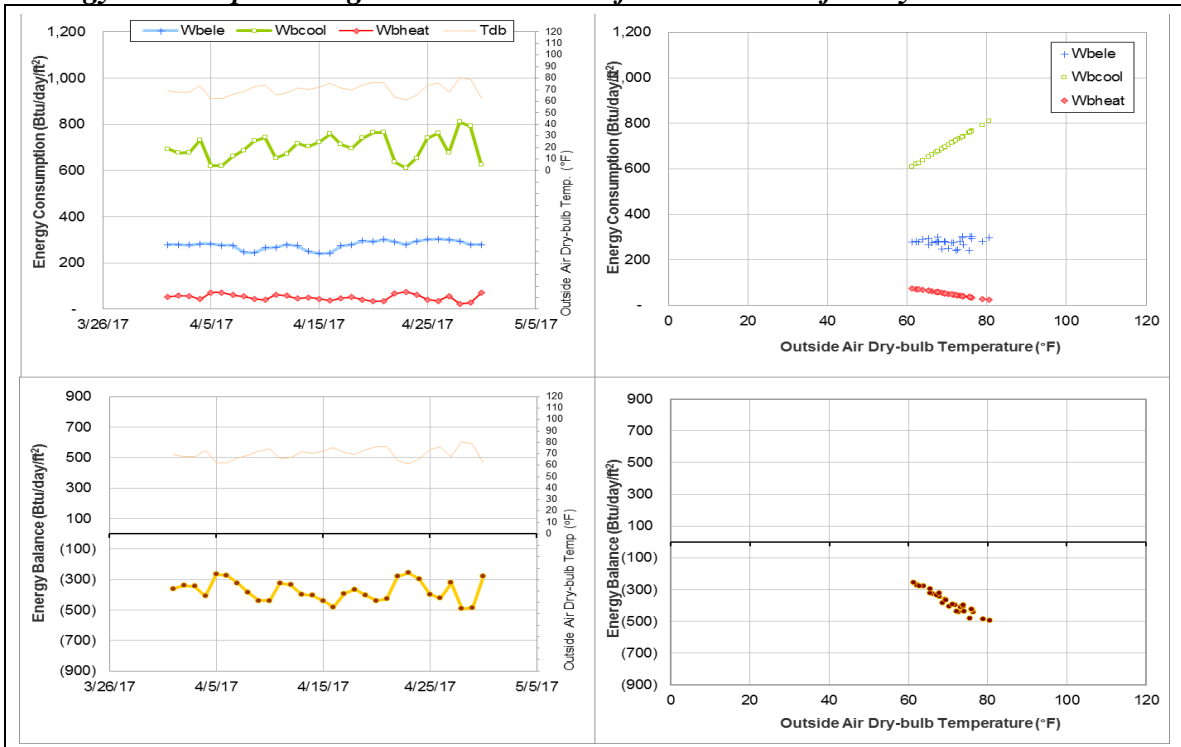
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (April 2017)



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



Entomology Research Lab (TAMU Bldg #815)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	005799	23	4/1/2017 – 4/22/2017	Model

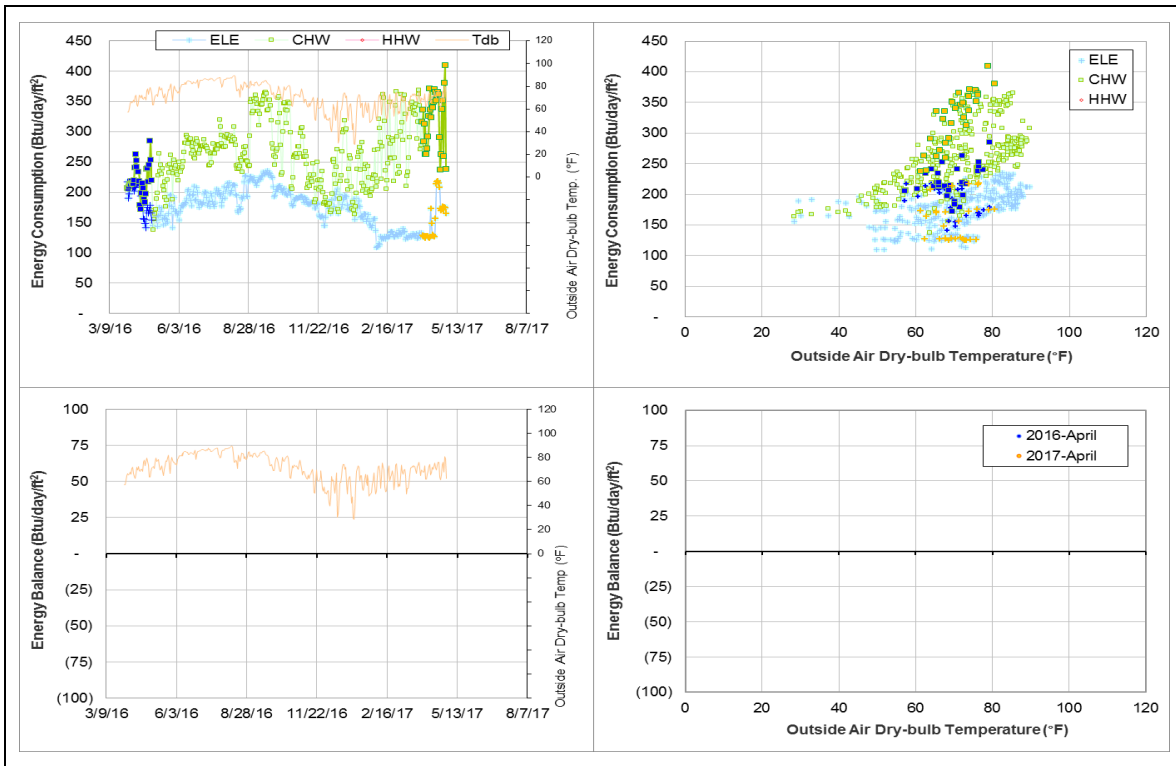
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption level has decreased suddenly.	2/2/2017 – 4/17/2017
	The consumption level has decreased suddenly.	4/18/2017 – 4/22/2017

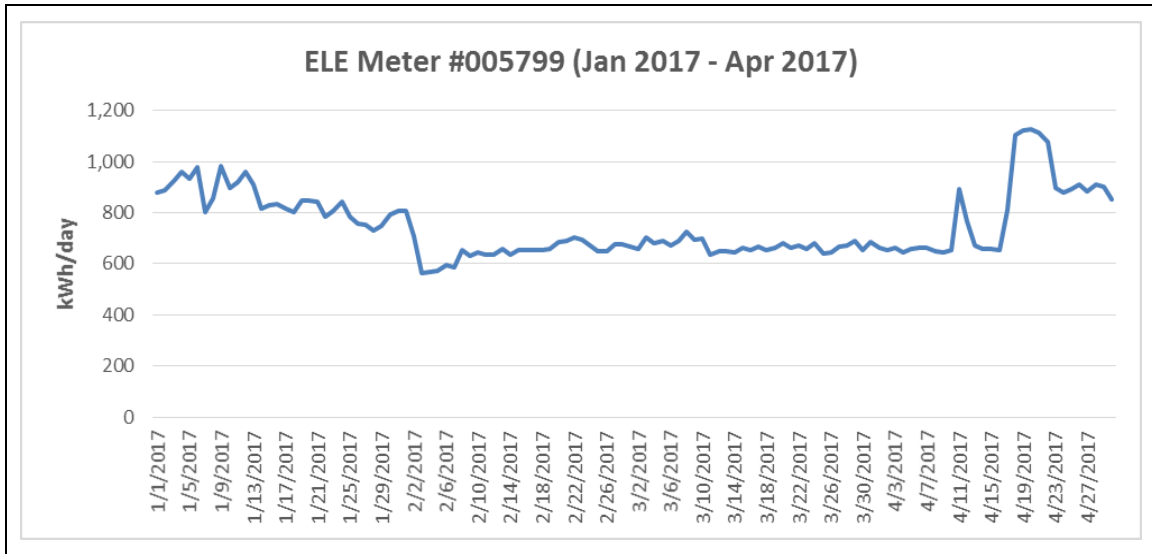
Quantitative descriptions and comments

The ELE consumption level suddenly dropped on 2/2/2017 by approximately 10 kWh/h (~30%). After that, no clear temperature dependence was observed. On 4/17/2017, the ELE consumption increased suddenly for five days and then on 4/24/2017 returned to its previous consumption level. The ELE was estimated by model for this period.

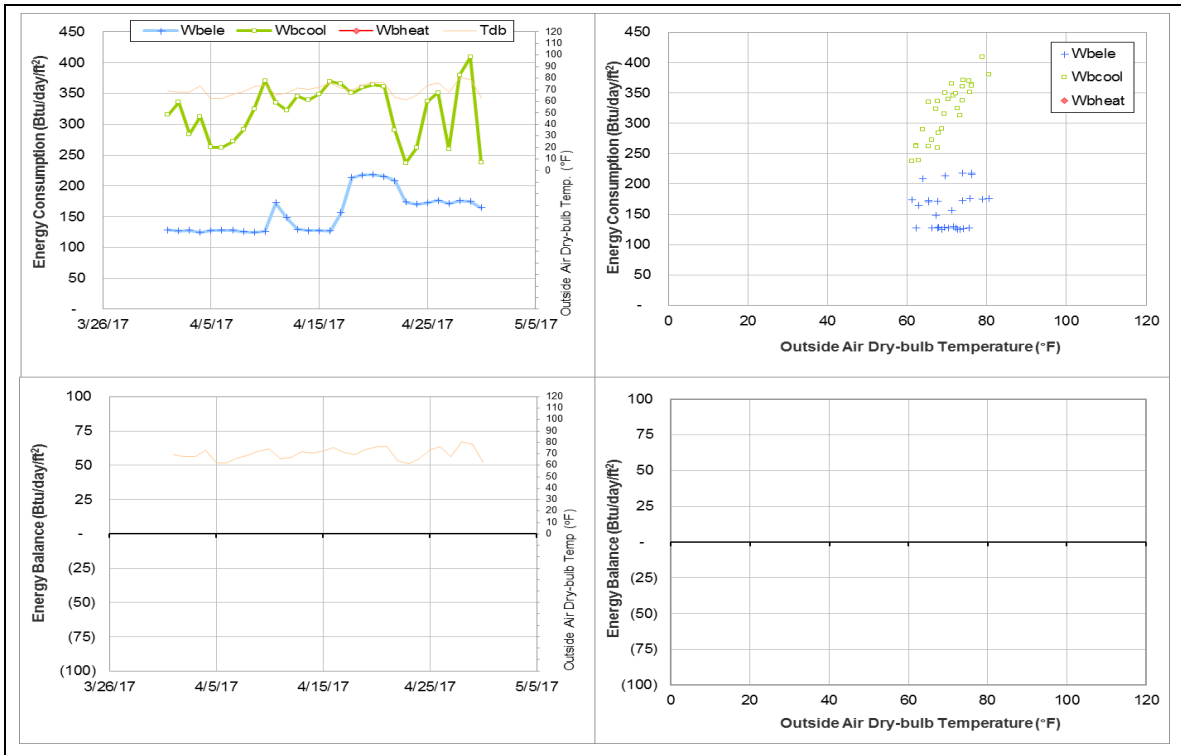
Explanatory Figure: 13 months energy balance plot with original data.



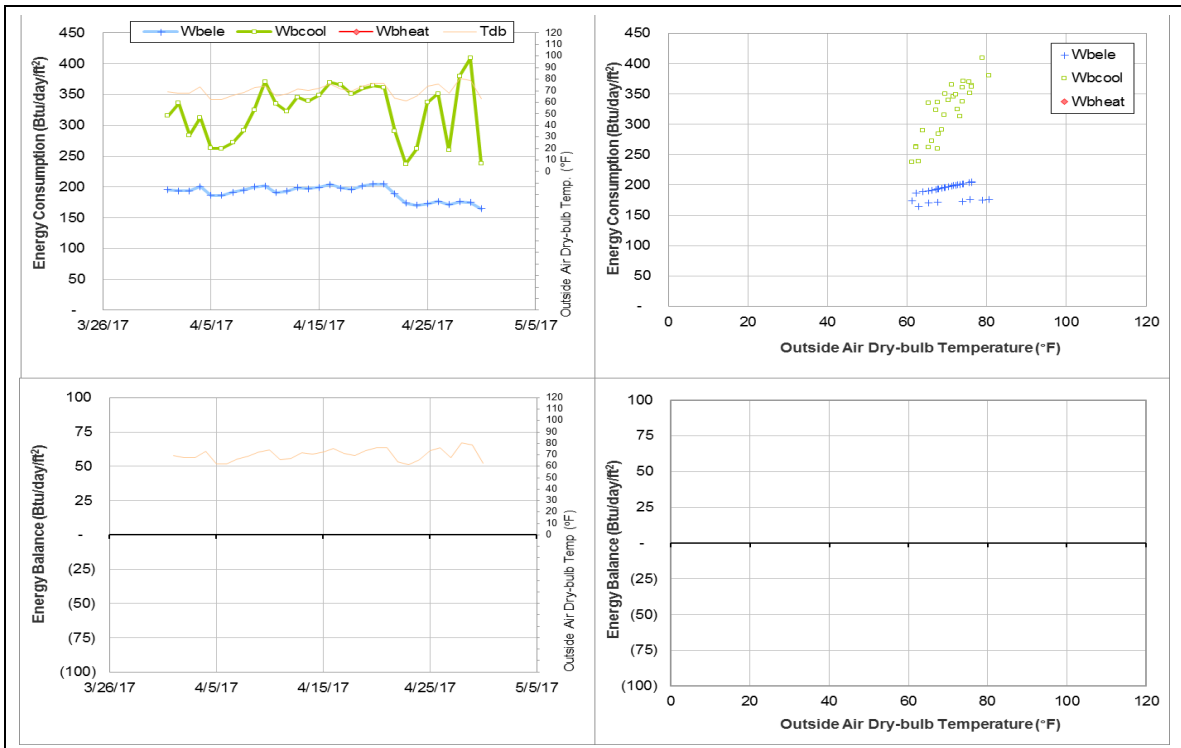
Explanatory Figure: Time series plot of hourly ELE consumption for meter #005799.



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	29	4/1/2017 – 4/29/2017	Model
HHW	006001	27	4/1/2017 – 4/27/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The CHW consumption pattern level has increased and flattened out at cooler temperatures.	1/14/2016 – 4/29/2017
HHW	The HHW consumption is too low.	12/1/2015 – 4/27/2017
Energy Balance	The energy balance is too low.	12/1/2015 – 4/29/2017

Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	005997	12/1/2016 – 4/27/2017	Delta-T	Increased
HHW	006001	12/1/2015 – 4/29/2017	Flow rate	Periods of near zero

Quantitative descriptions and comments

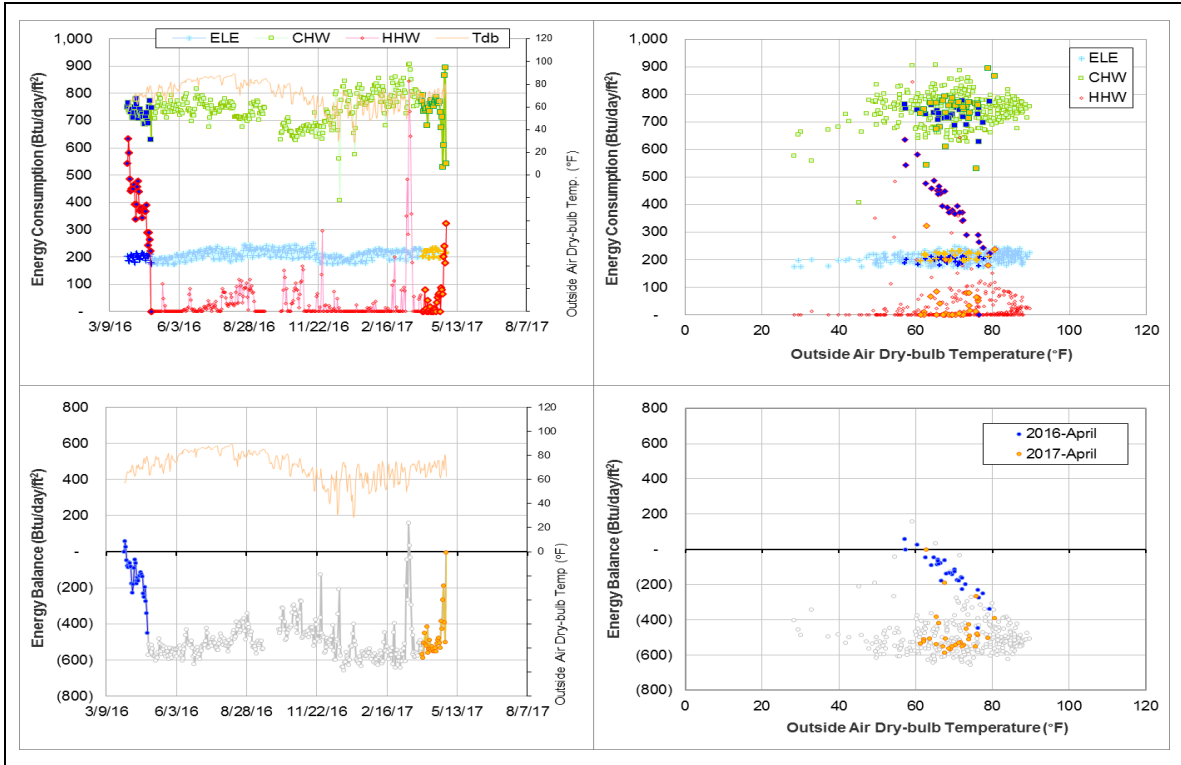
The CHW consumption pattern has increased and flattened out at cooler temperatures starting 1/14/2016. On this day, the CHW Delta-T increased and continued to remain at this higher value until 4/27/2017. This was to a long-term issue resulting in CHW estimates since January 2016 with the exception of the summer period June 2016 – August 2016. May consumption data will help to determine if this improvement is stable.

In addition, the HHW consumption has been lower than expected for this building up until 4/27/2017. The flow rate is near zero for most of the month. This has been a long-term issue over the past 14 months resulting in HHW estimates. The exceptions being May, which had a flow rate range of 25-65 gpm, and a few days in March 2017. Another exception, the summer period of June 2016 – August 2016, where we would expect low consumption.

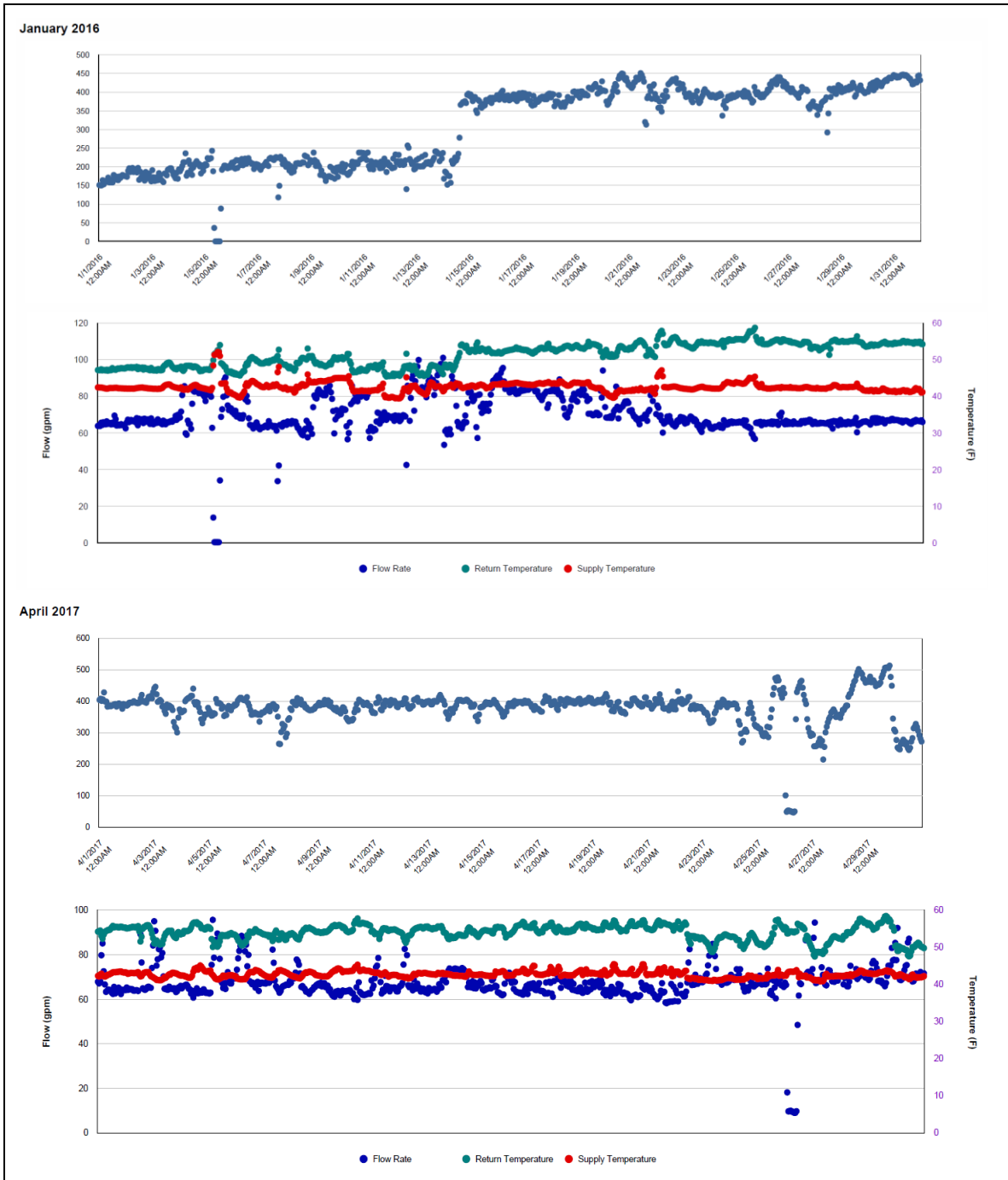
The resulting energy balance with the past high CHW consumption and low HHW consumption was too low and did not reach a zero balance at any outside temperature. However, the last day of April is showing a cross-point temperature around 62°F.

Both CHW and HHW consumption were estimated by model.

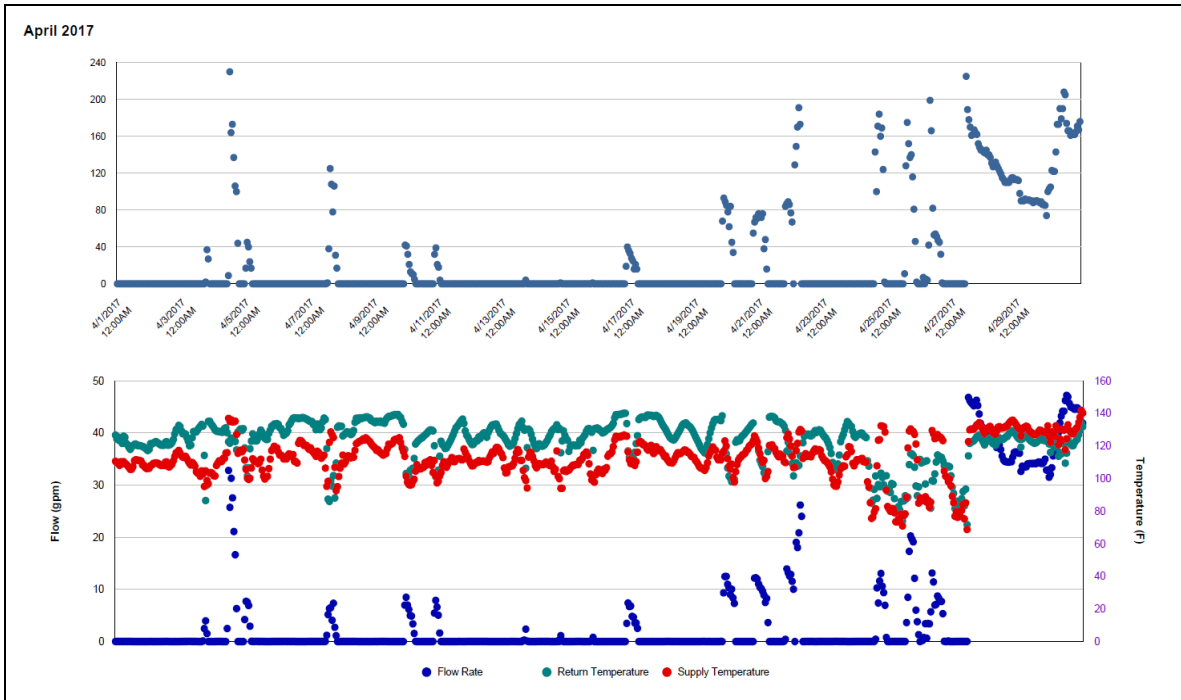
Explanatory Figure: 13 months energy balance plot with original data



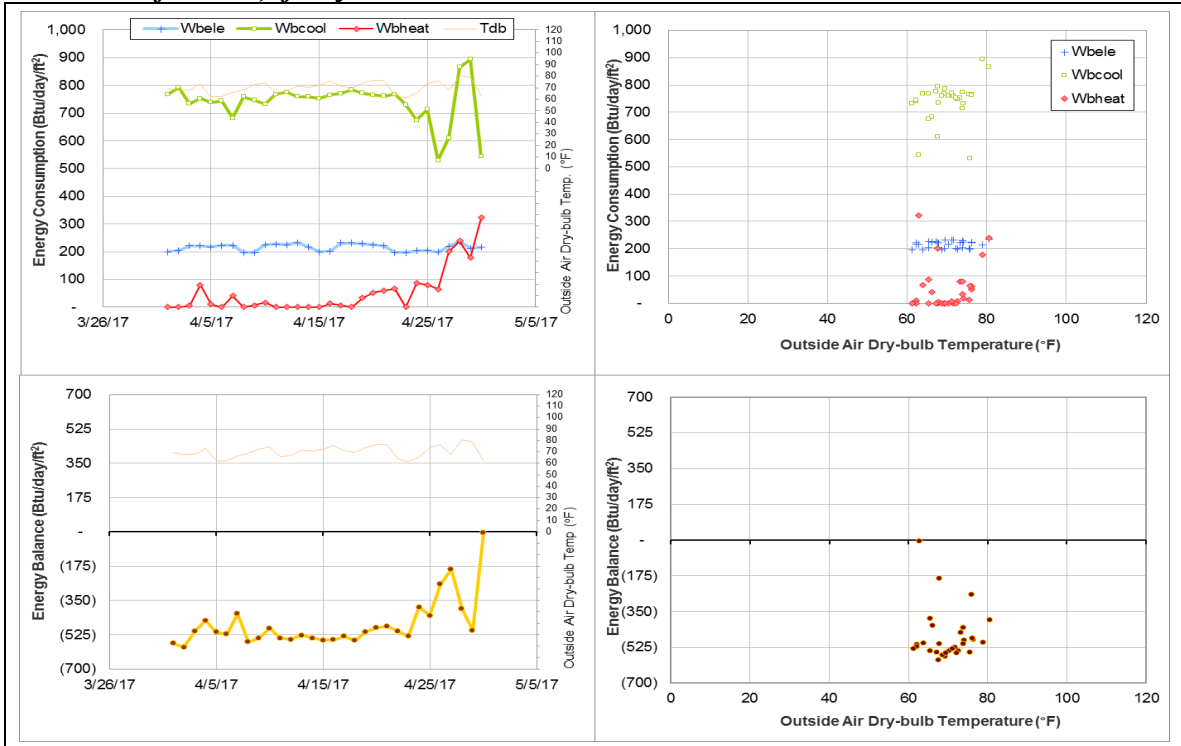
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from utilities office. (Top: January 2016, Bottom: April 2017)



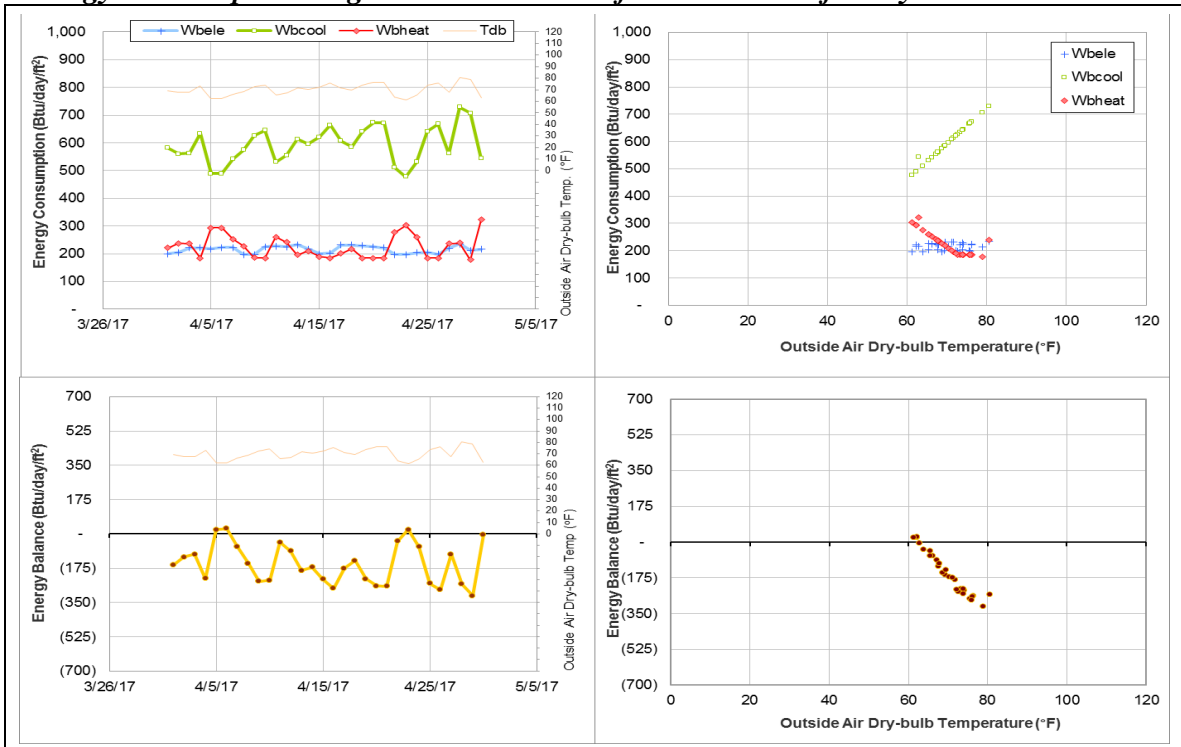
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (April 2017)



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



Heep Center (TAMU Bldg #1502)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	001556	12	4/19/2017 – 4/30/2017	Model
CHW	002599	6	4/14/2017 – 4/19/2017	Model
HHW	002603	6	4/14/2017 – 4/19/2017	Model

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

Data Type	Description of data behaviors	Period
ELE	The consumption level has decreased suddenly. The metered values appear to be faulty.	4/19/2017 – Ongoing
CHW	The metered values appear to be faulty.	4/14/2017 – 4/19/2017
HHW	The metered values appear to be faulty.	4/14/2017 – 4/19/2017

Changes in sensor readings related to the detected issues

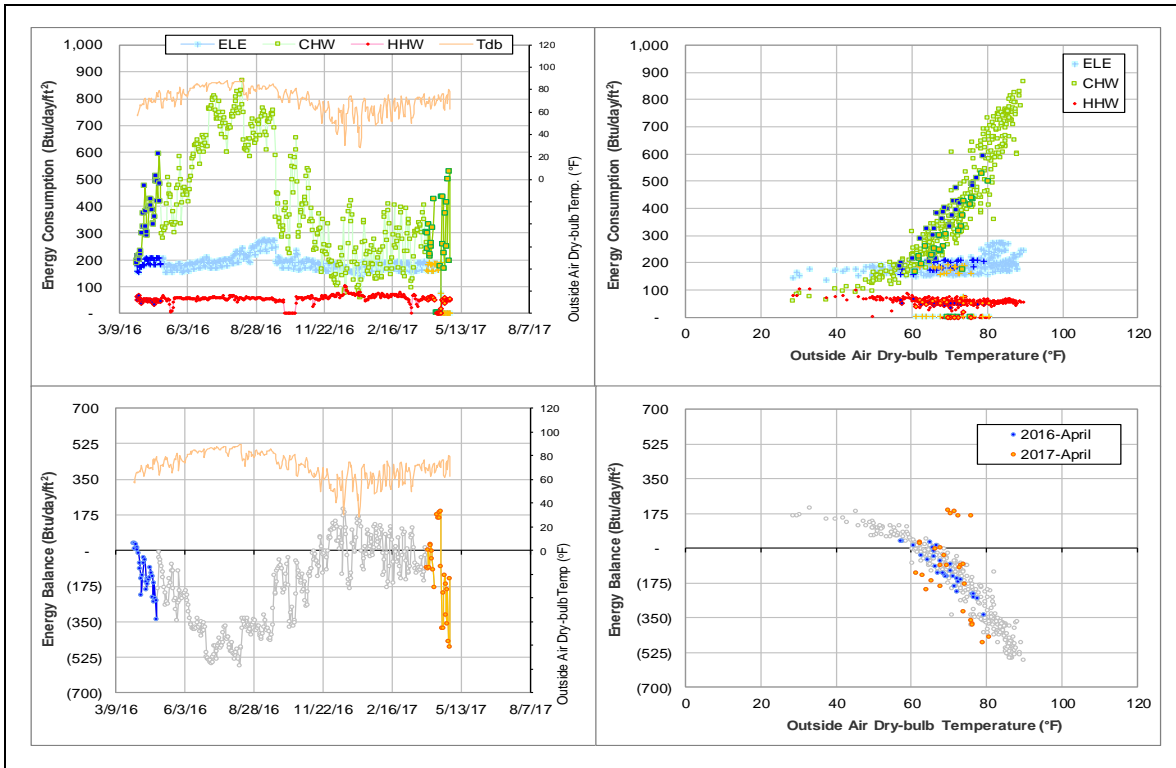
Energy Type	Meter ID	Period	Type	Description
ELE	001556	4/19/2017 – Ongoing	Consumption	Zero
CHW	002599	4/11/2017 – 4/19/2017	Flow rate, supply temp, return temp	Faulty, constant
HHW	002603	4/11/2017 – 4/19/2017	Flow rate, supply temp, return temp	Faulty, constant

Quantitative descriptions and comments

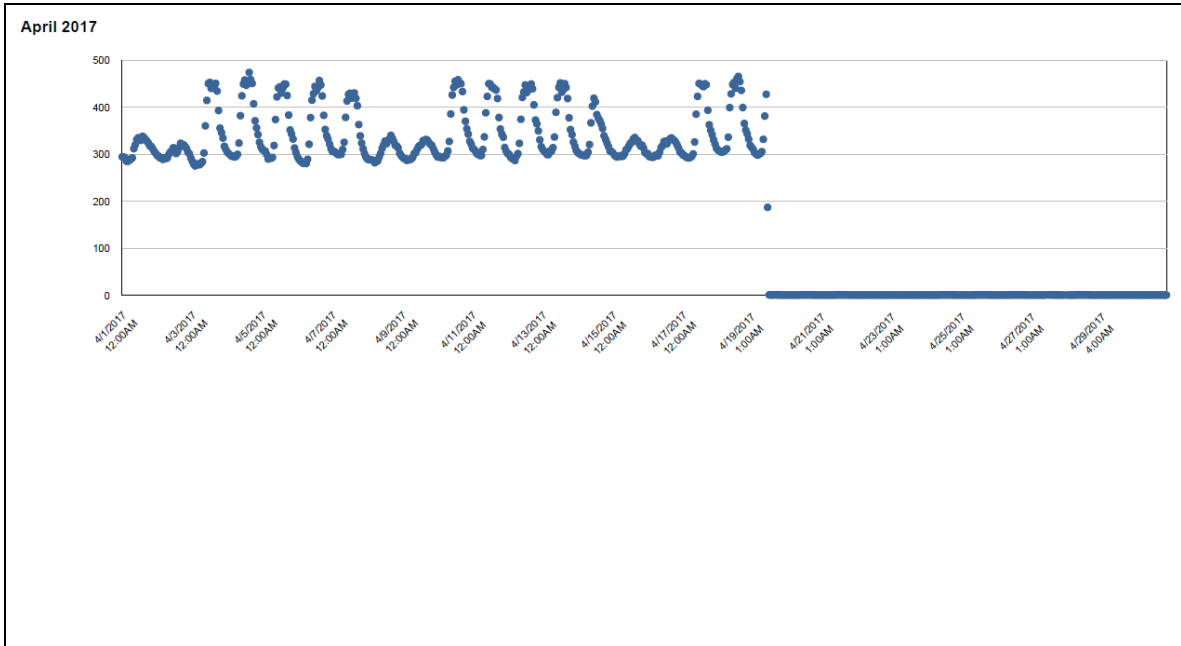
ELE readings dropped to zero with occasional positive readings starting on 4/19/2017. The days affected are estimated using a model.

Both CHW and HHW meters' all readings remained constant on 4/11/2017 – 4/19/2017. The daily consumption on 4/11 – 4/13 are missing and on 4/14 – 4/19 are zero. These days are estimated using a model.

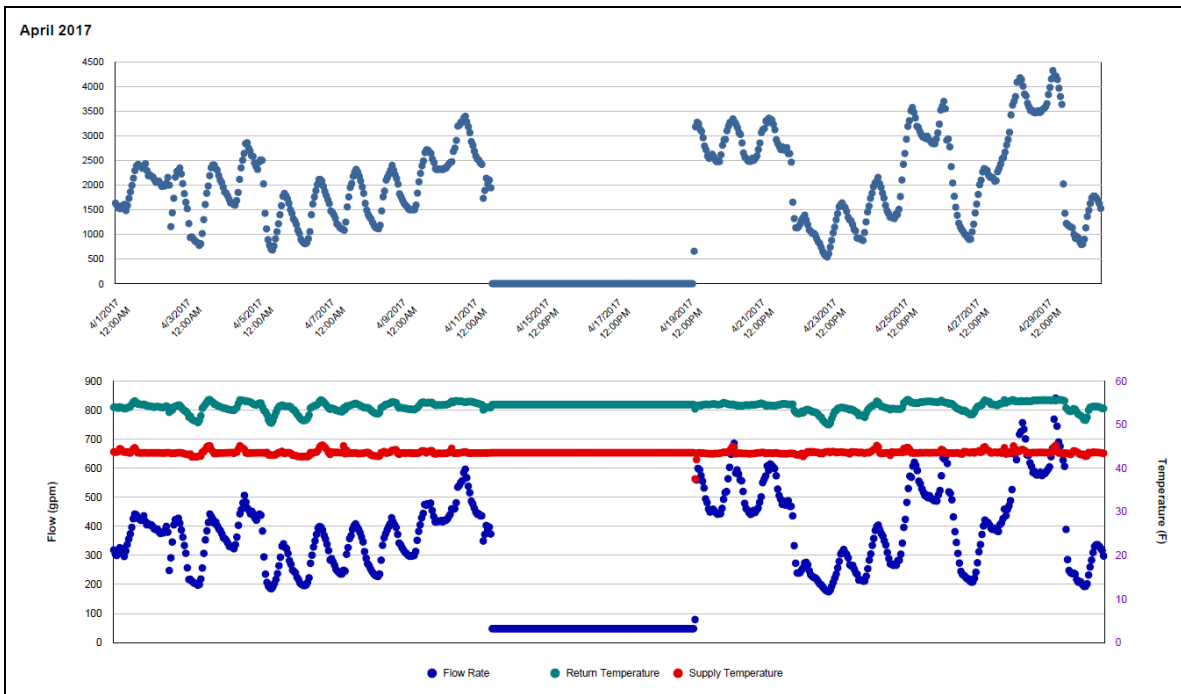
Explanatory Figure: 13 months energy balance plot with original data.



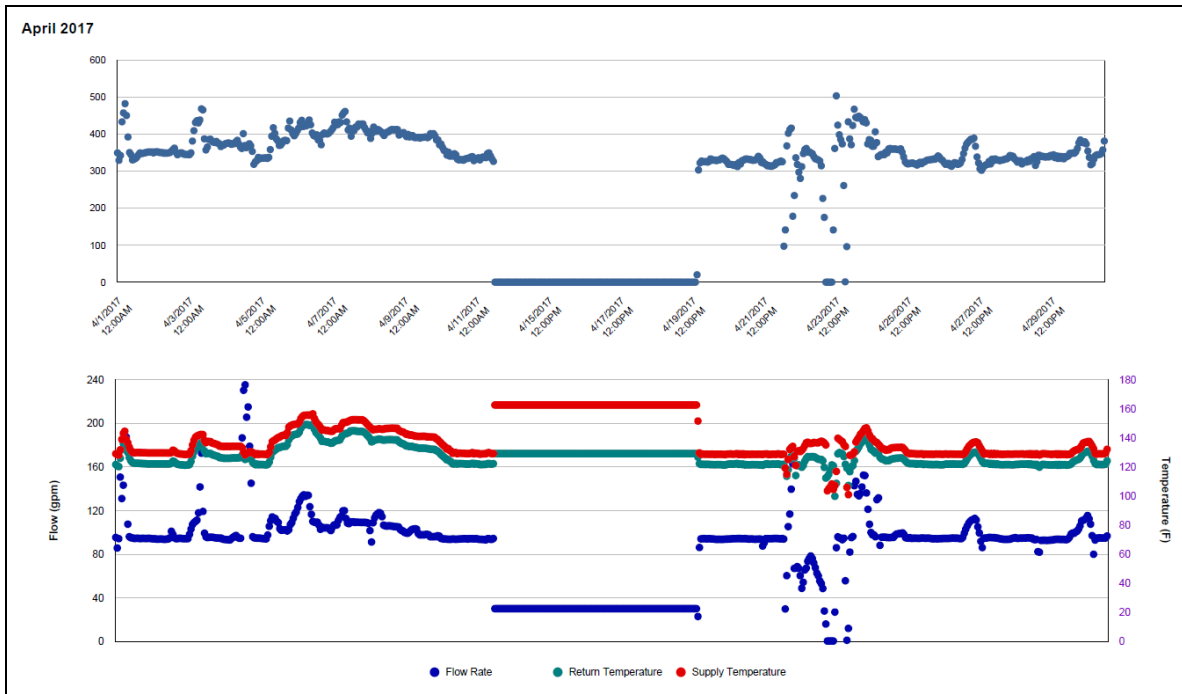
Explanatory Figure: Time series plots of hourly energy consumption from the utilities office (ELE during April 2017)



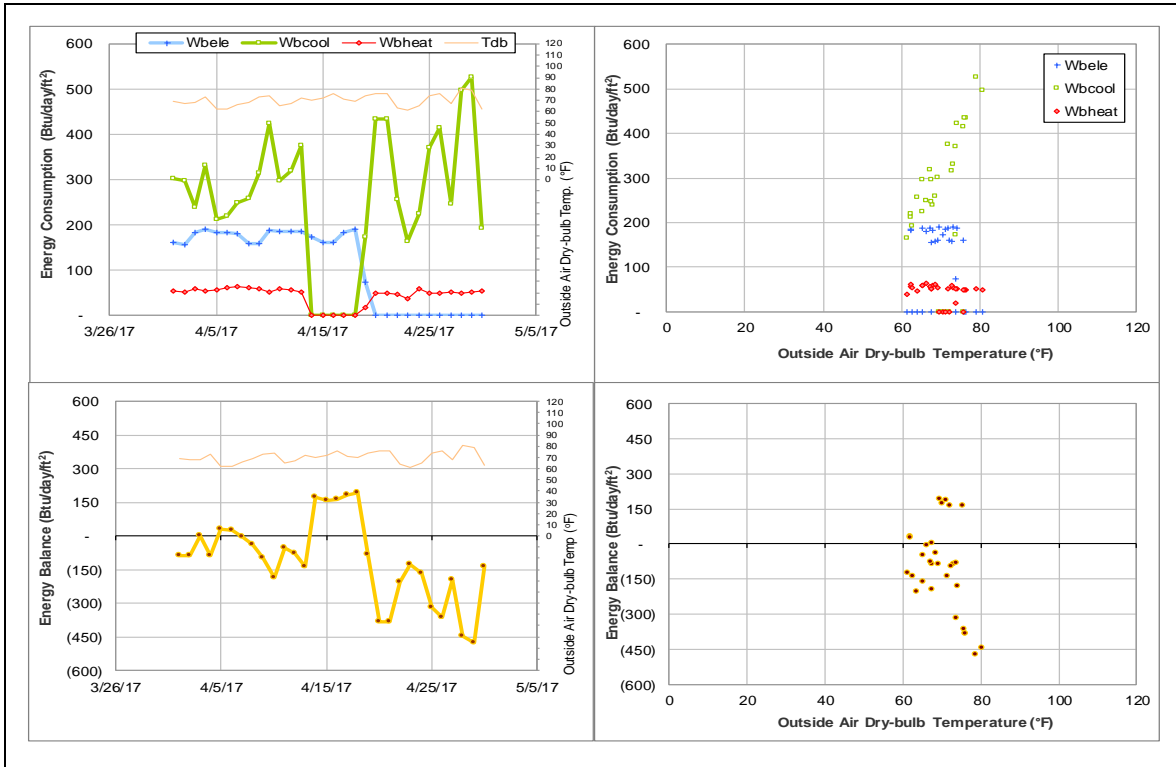
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during April 2017)



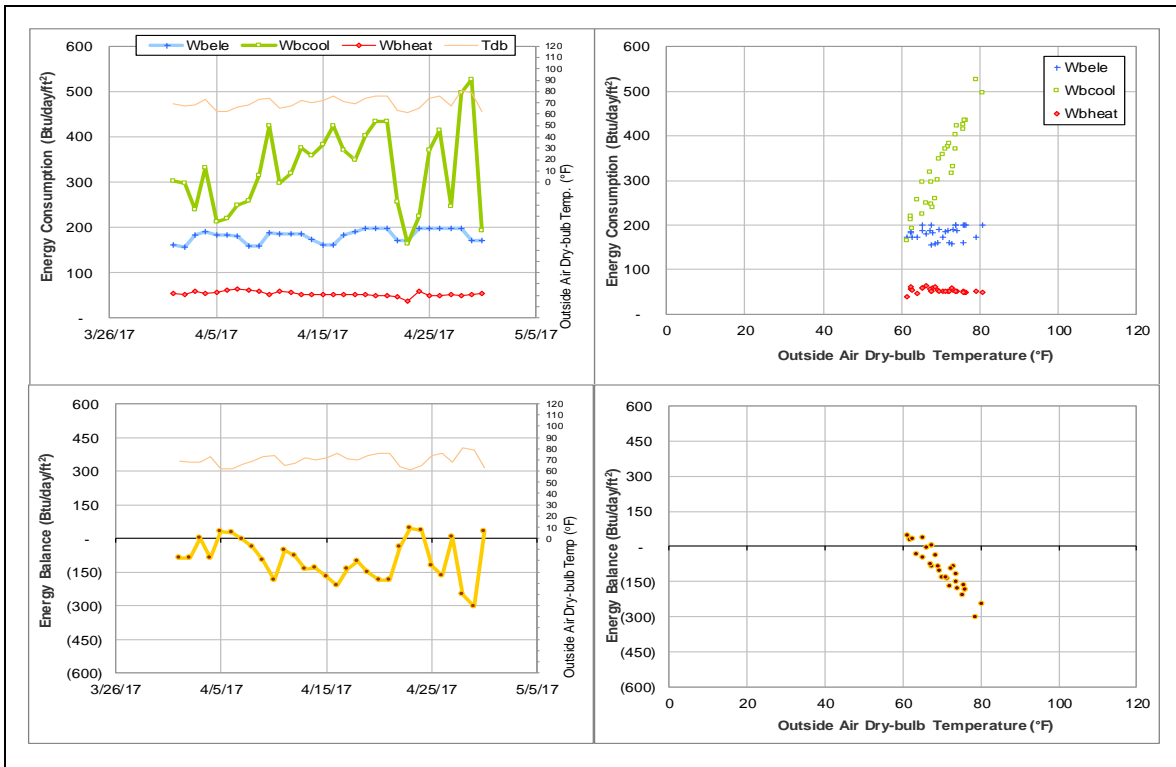
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during April 2017)



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.



Rosenthal Meat Science & Technology Center (TAMU Bldg #1505)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	002577	30	4/1/2017 – 4/30/2017	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.	3/15/2017 – Ongoing

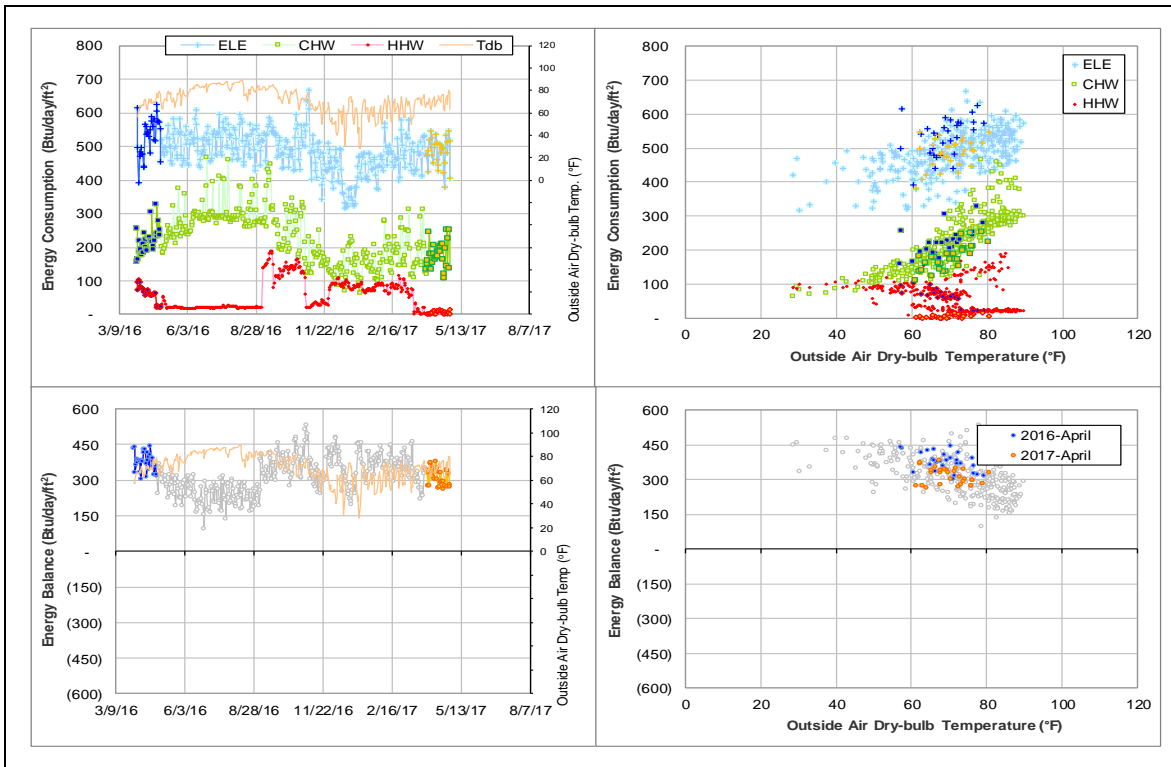
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	002577	3/15/2017 – Ongoing	Flow rate	Zero or scatter

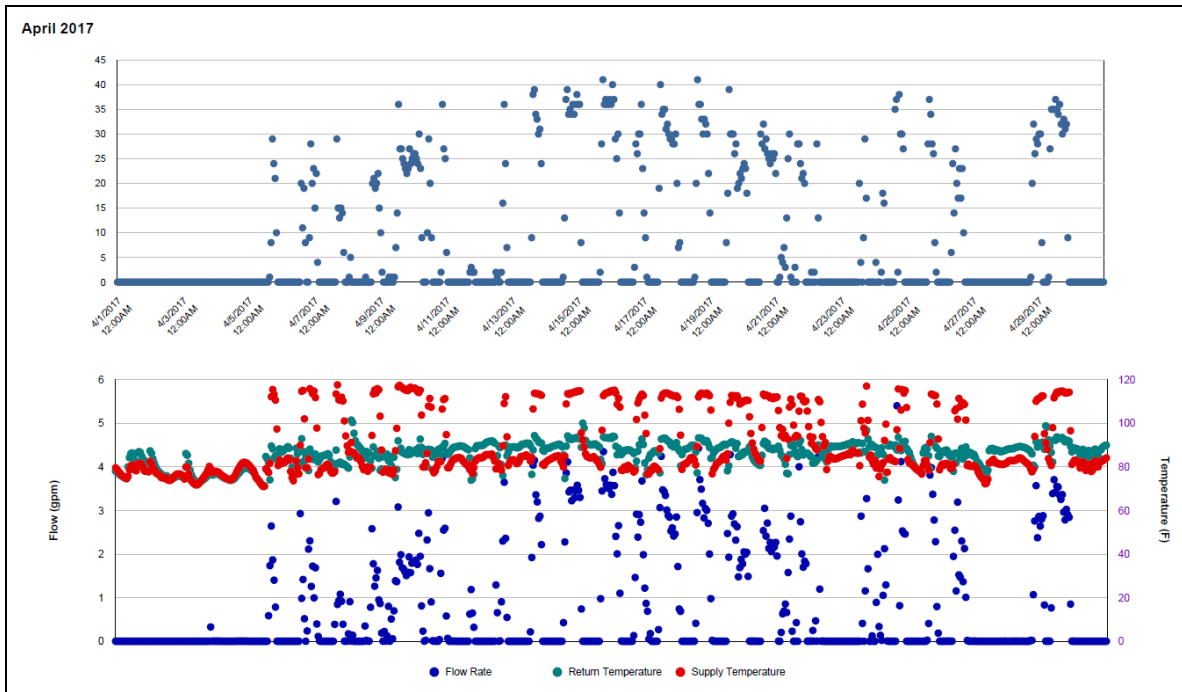
Quantitative descriptions and comments

Flow rate of HHW dropped to very low or zero since 3/15/2017. The readings and the consumption show great scatter since then. CHW decreased slightly during this period, but the meter readings do not seem problematic. This period of HHW are estimated using a model.

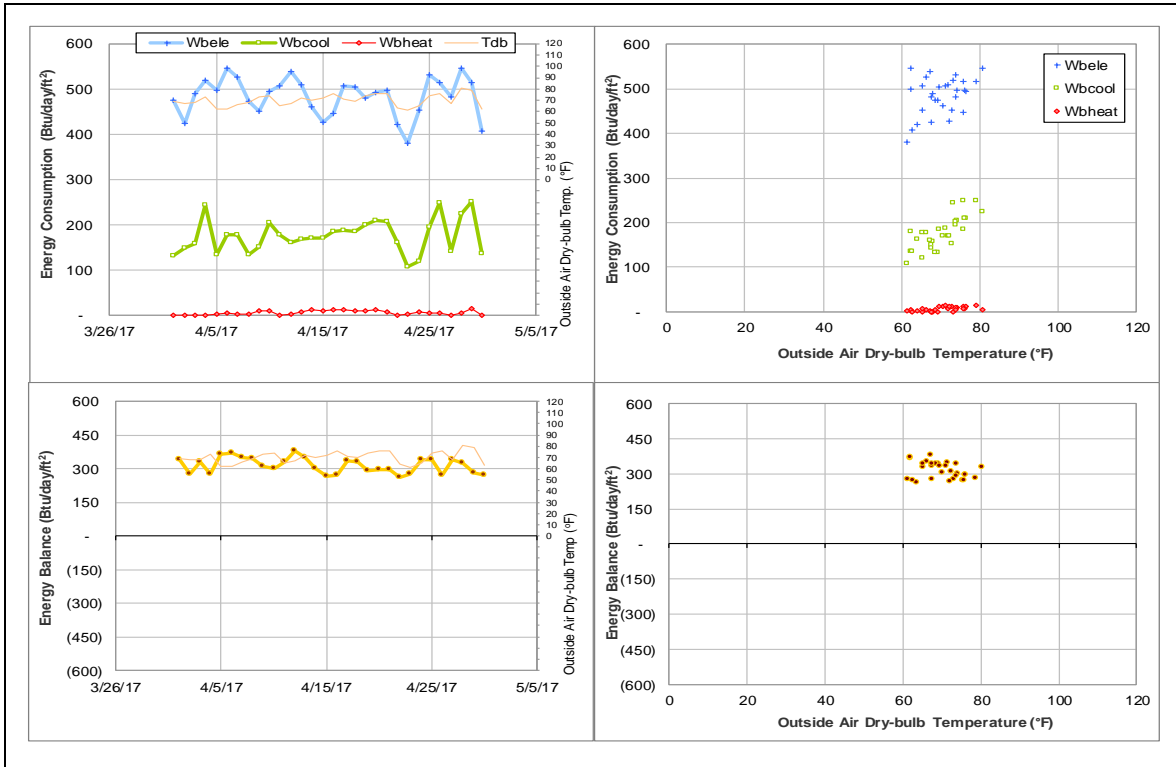
Explanatory Figure: 13 months energy balance plot with original data.



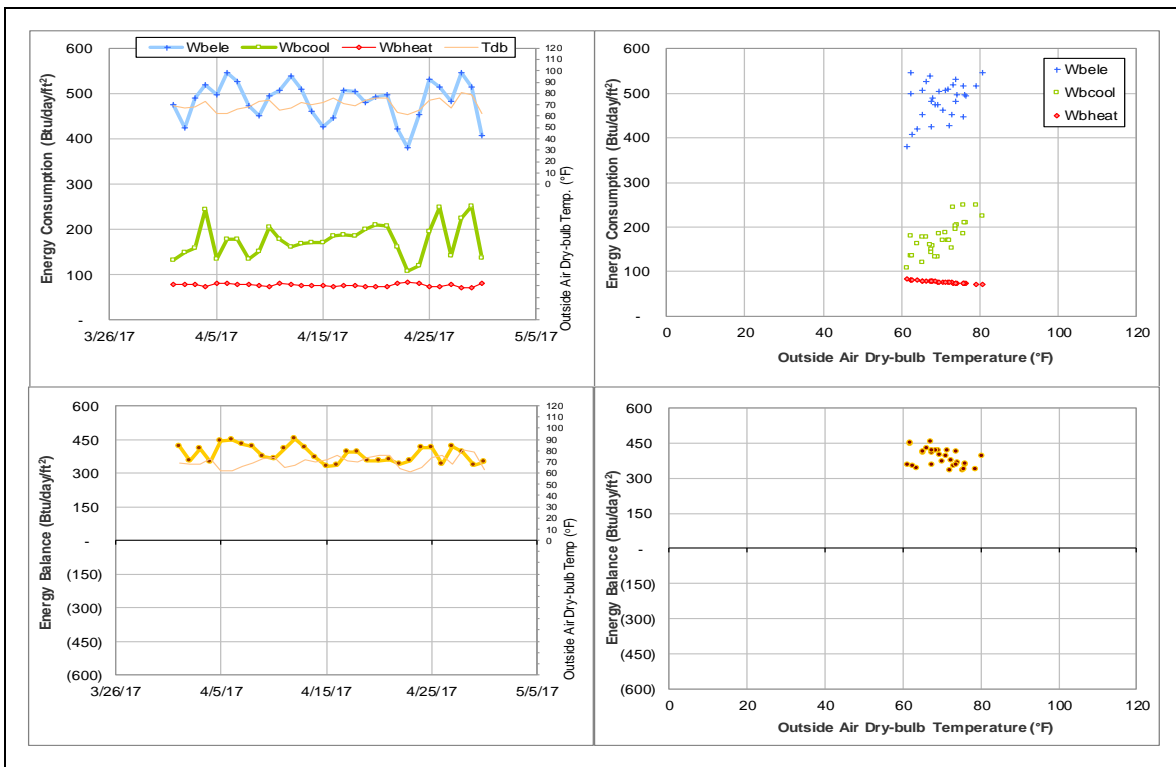
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during April 2017)



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	30	4/1/2017 – 4/30/2017	Model
HHW	003781	30	4/1/2017 – 4/30/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The consumption level has decreased suddenly.	3/24/2017 – Ongoing
HHW	The consumption level has decreased suddenly. The metered values appear to be faulty.	3/13/2017 – Ongoing

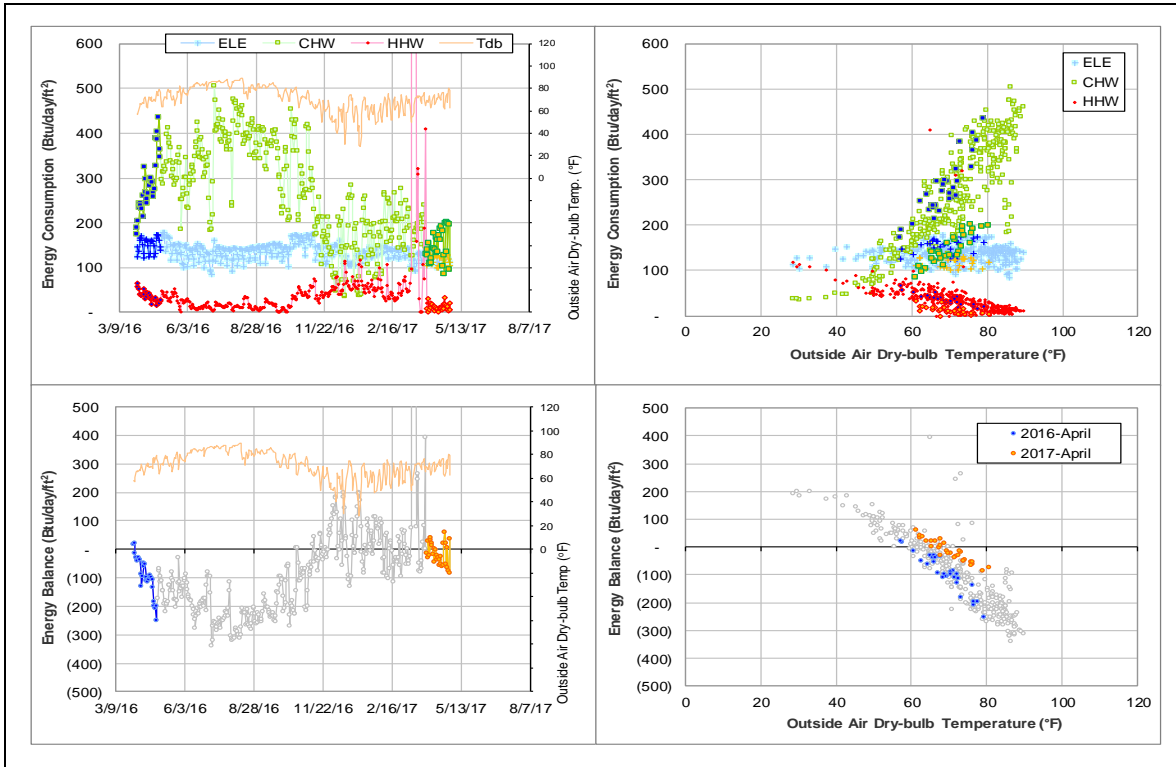
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	003777	3/24/2017 – Ongoing	Flow rate	Low
HHW	003781	3/19/2017 – Ongoing	Flow rate	Zero or scatter

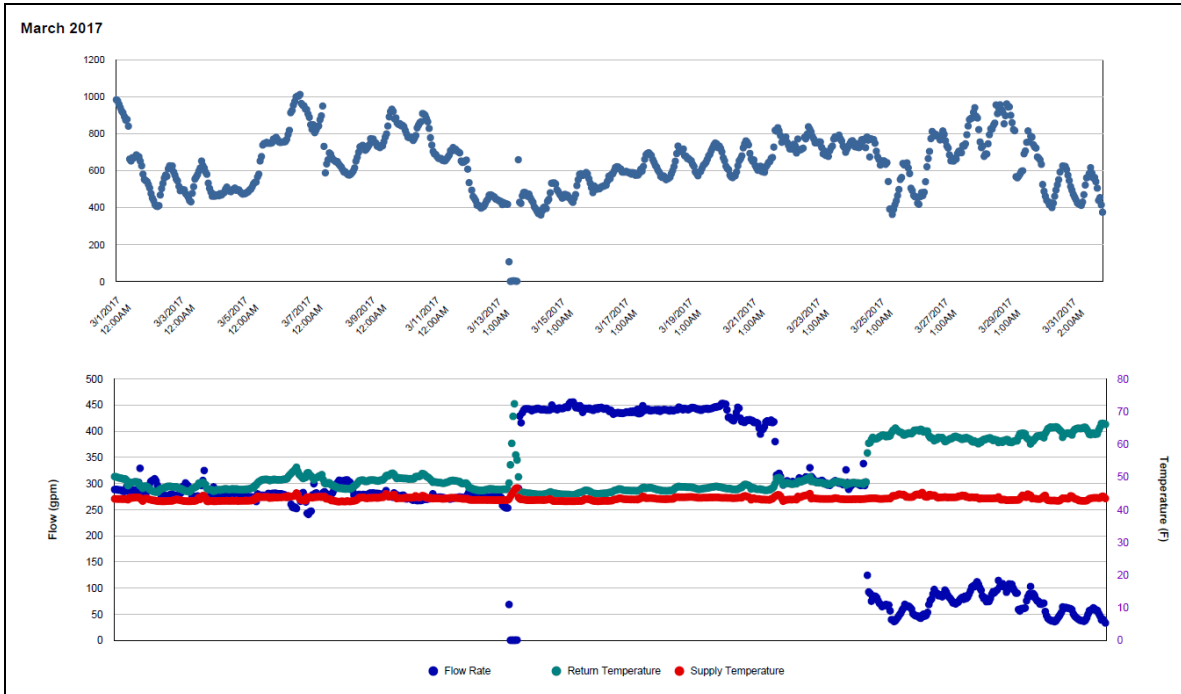
Quantitative descriptions and comments

HHW flow rate dropped to zero since 3/19/2017 and has been largely scattering. CHW flow rate has been unstable for a long time. On 3/24/2017, the flow rate dropped to and remained at the 20 – 80 gpm level, which is significantly lower than the beginning of Mar 2017 at near 300 gpm. The CHW consumption thus has a considerable decrease this month. Both CHW and HHW are estimated for this whole month.

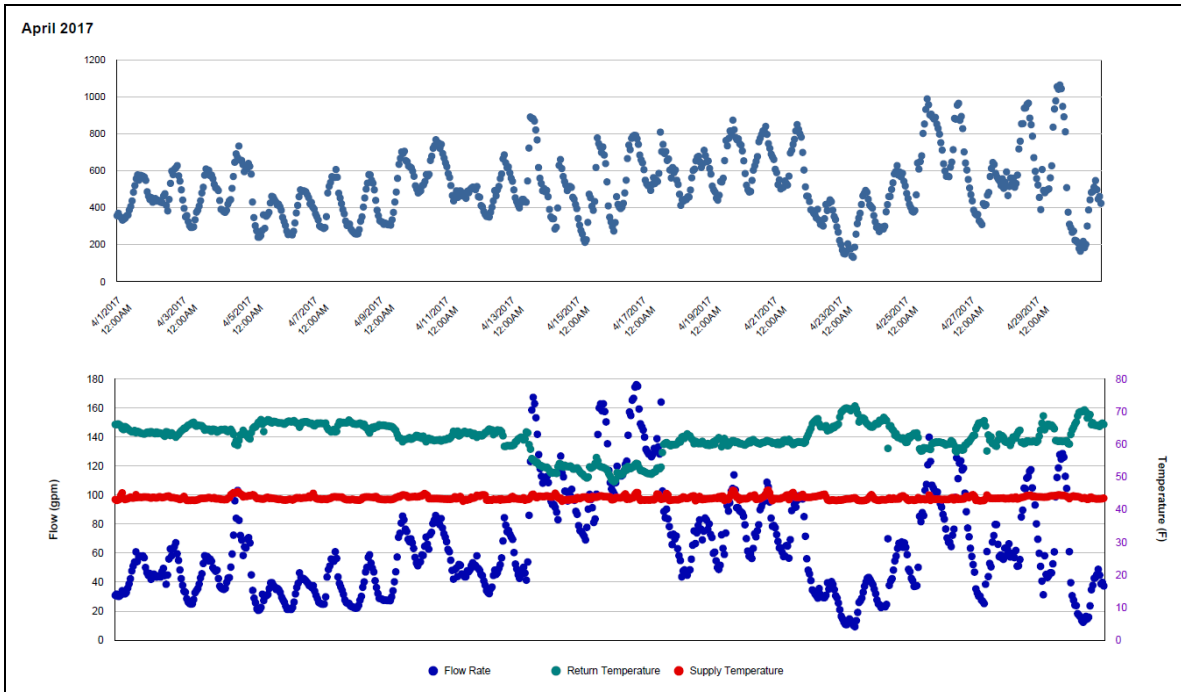
Explanatory Figure: 13 months energy balance plot with original data. (The plots are rescaled to remove spikes.)



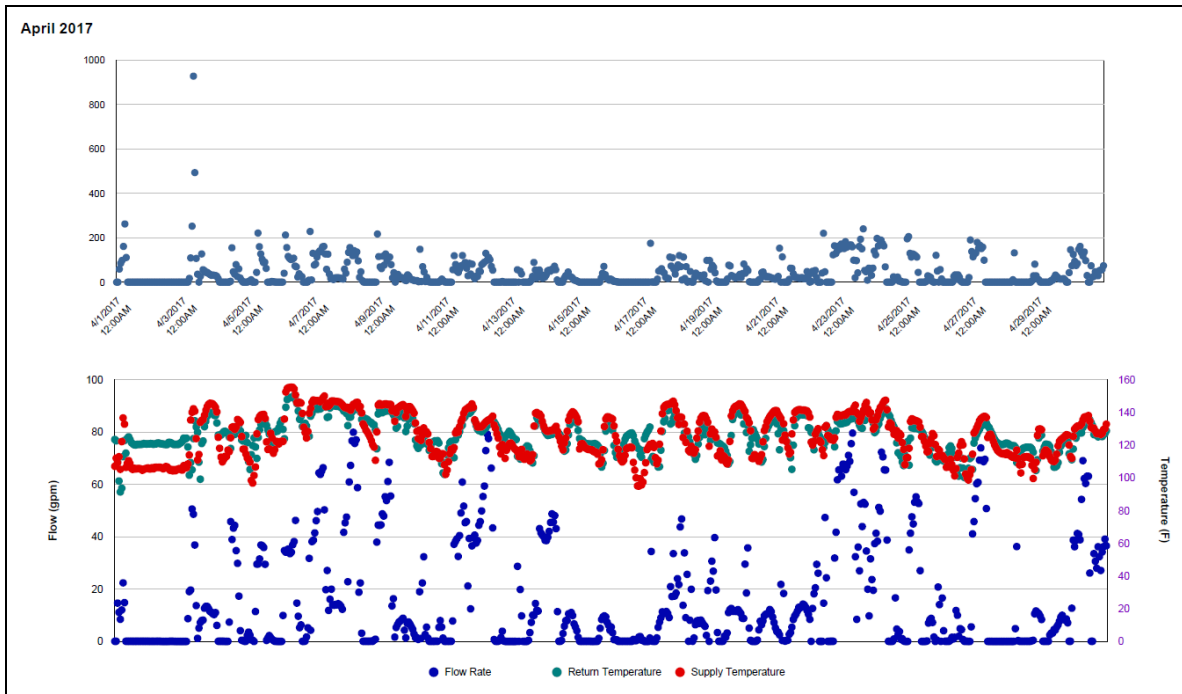
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during March 2017)



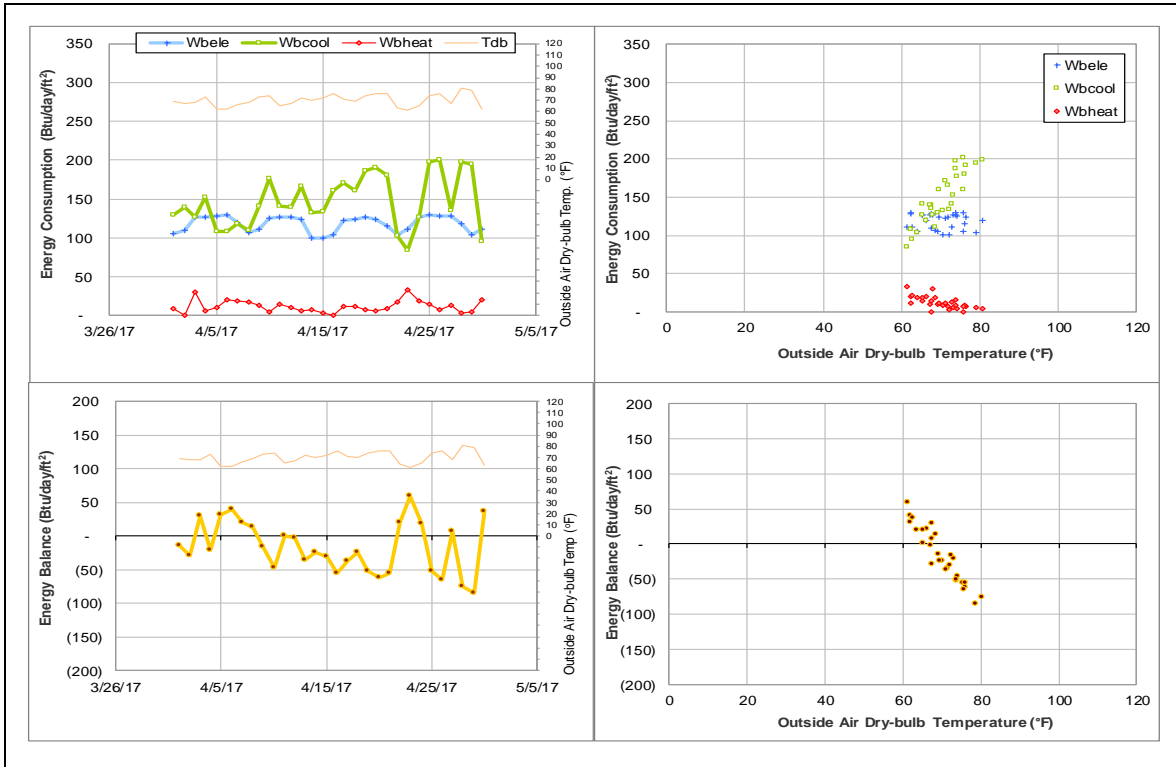
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during April 2017)



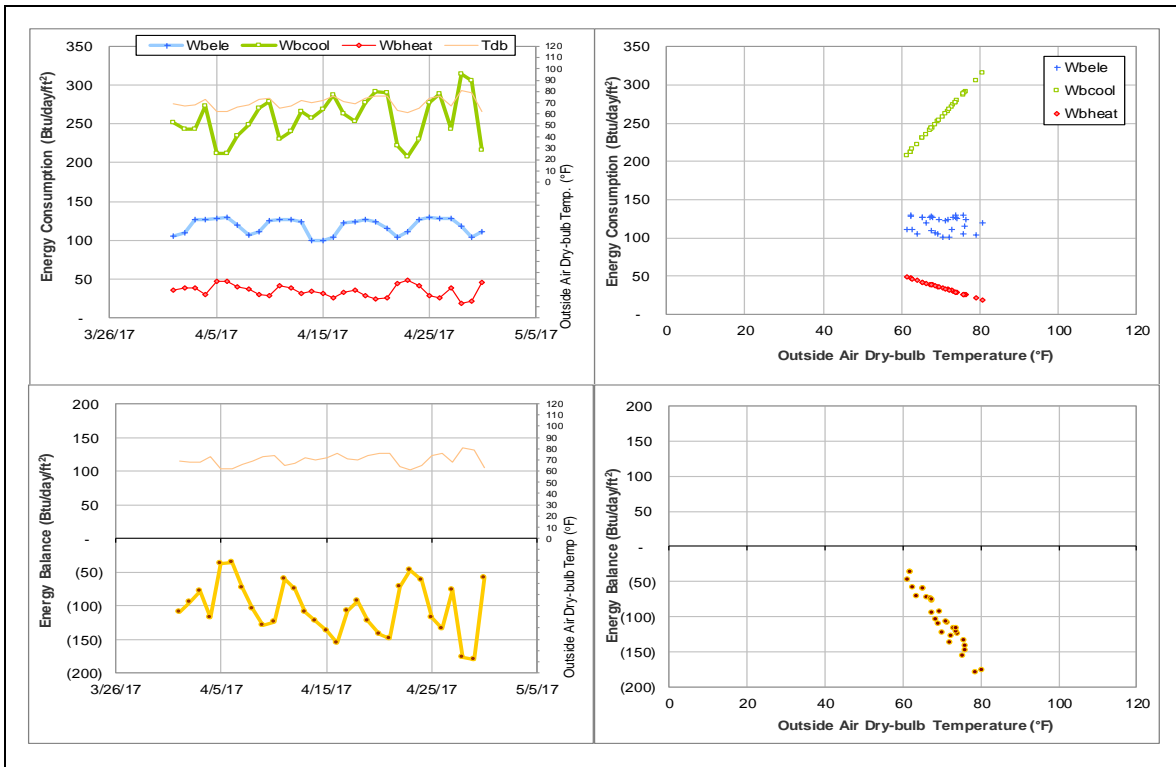
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during April 2017)



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	4/1/2017 – 4/30/2017	Model

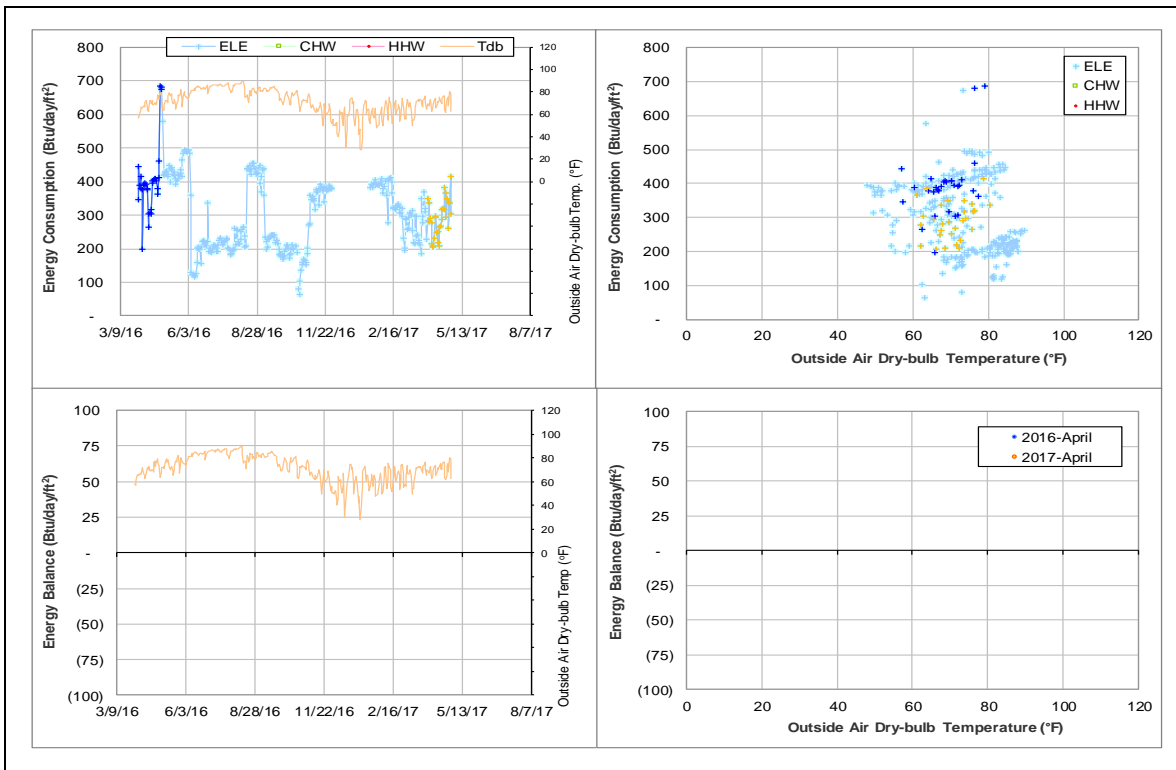
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The ELE consumption increased.	1/19/2017 – Ongoing

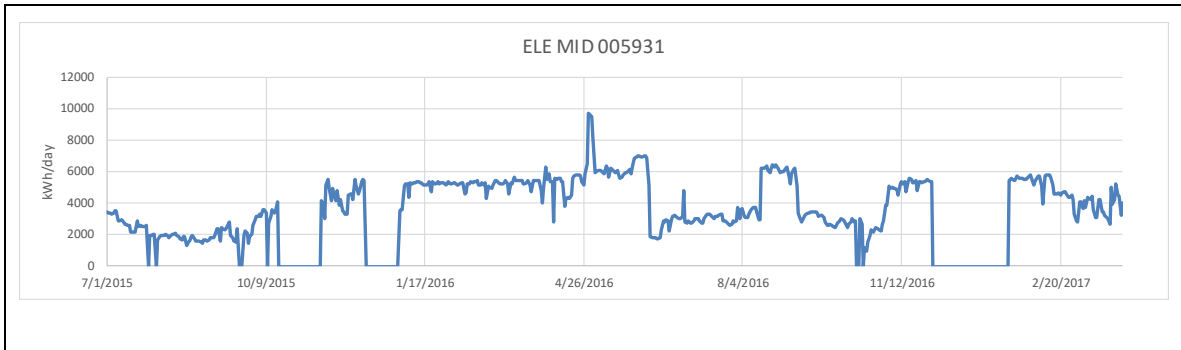
Quantitative descriptions and comments

The ELE consumption level has changed frequently since July 2015 as shown in the time series plot below (see explanatory figure). During the period of 1/22/2017 – 2/15/2017 it increased to the higher consumption pattern but then dropped again. The ELE consumption is estimated using a model based on data during 7/1/2014 – 6/30/2015 when the consumption was stable.

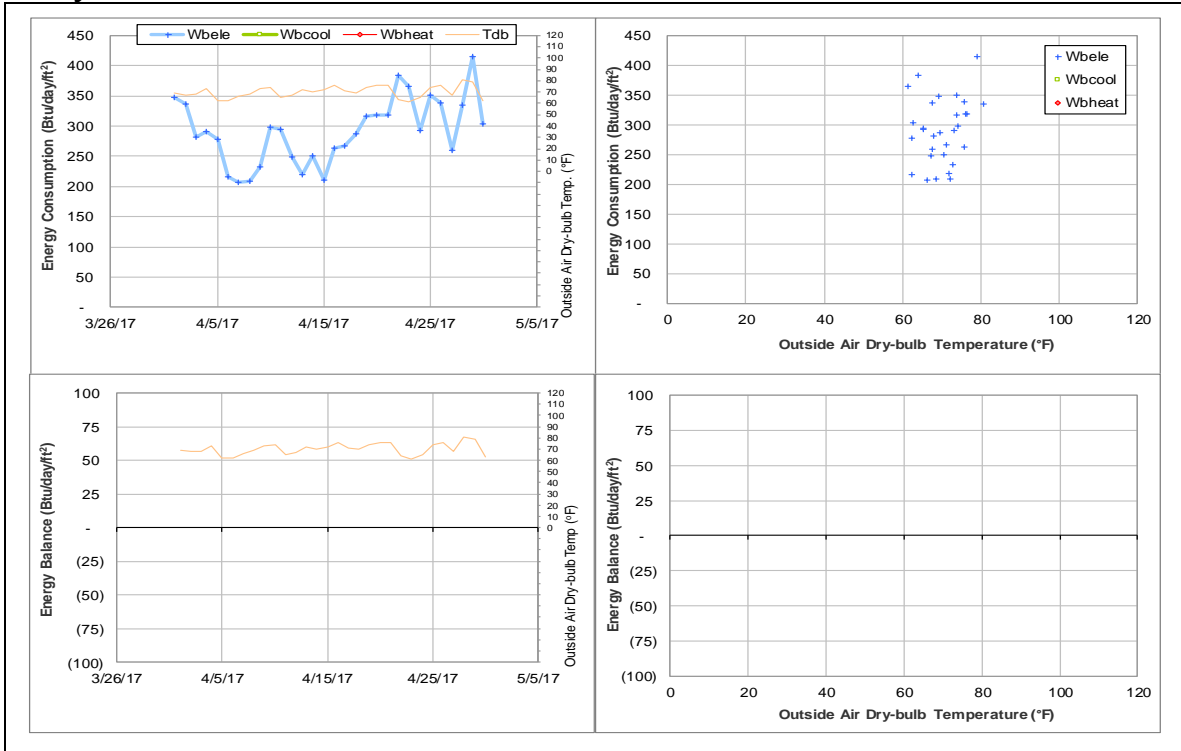
Explanatory Figure: 13 months energy balance plot with original data



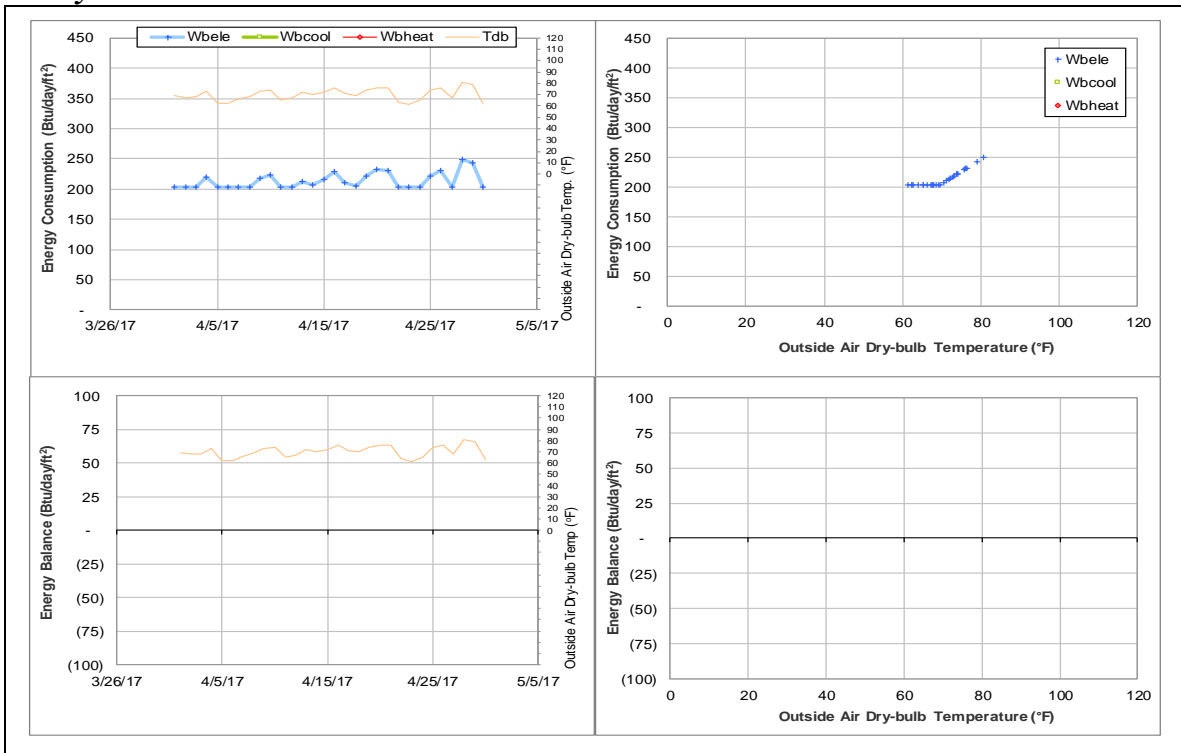
Explanatory Figure: Time series plot using ELE meter #005931 for 7/1/2015 – 2/28/2017. Note the several changes in electricity pattern over the period.



Energy balance plot using the original ELE, CHW and HHW data for the month of analysis.



Energy balance plot using the estimated ELE, CHW and HHW data for the month of analysis.



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

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	005274	30	4/1/2017 – 4/30/2017	Switch with 005275
ELE	005275	30	4/1/2017 – 4/30/2017	Switch with 005274

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 serves 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 had a sudden change on 8/14/2015. The consumption level for meter ID# 005274 increased by approximate 80 kWh/h (~ 100%) and the consumption level for meter ID# 005275 decreased by around 80 kWh/h (~50%). The change observed on 8/14/2015 12:00 AM (see below explanatory figure) suggests that the two meters were switched and may need to be investigated.

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	2930984.013	84.262	005274	08/13/2015 12:00:00 PM	4741958.002	170.658	005275
08/13/2015 01:00:00 PM	2930968.589	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	4742483.983	180.129	005275
08/13/2015 04:00:00 PM	2931240.505	93.706	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	4743462.097	156.197	005275
08/13/2015 10:00:00 PM	2931672.706	59.4	005274	08/13/2015 10:00:00 PM	4743610.221	148.124	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	2932023.869	56.803	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	2932319.162	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	4745793.945	154.505	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	2932777.373	72.65	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	4746270.303	160.957	005274	08/14/2015 04:00:00 PM	2932920.525	74.617	005275
08/14/2015 05:00:00 PM	4746431.347	160.044	005274	08/14/2015 05:00:00 PM	2932996.635	76.31	005275
08/14/2015 06:00:00 PM	4746586.415	155.068	005274	08/14/2015 06:00:00 PM	2933065.518	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

West Campus Parking Garage (TAMU Bldg #1559)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	004322	30	4/1/2017 – 4/30/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The consumption level has decreased suddenly.	3/10/2017 – Ongoing

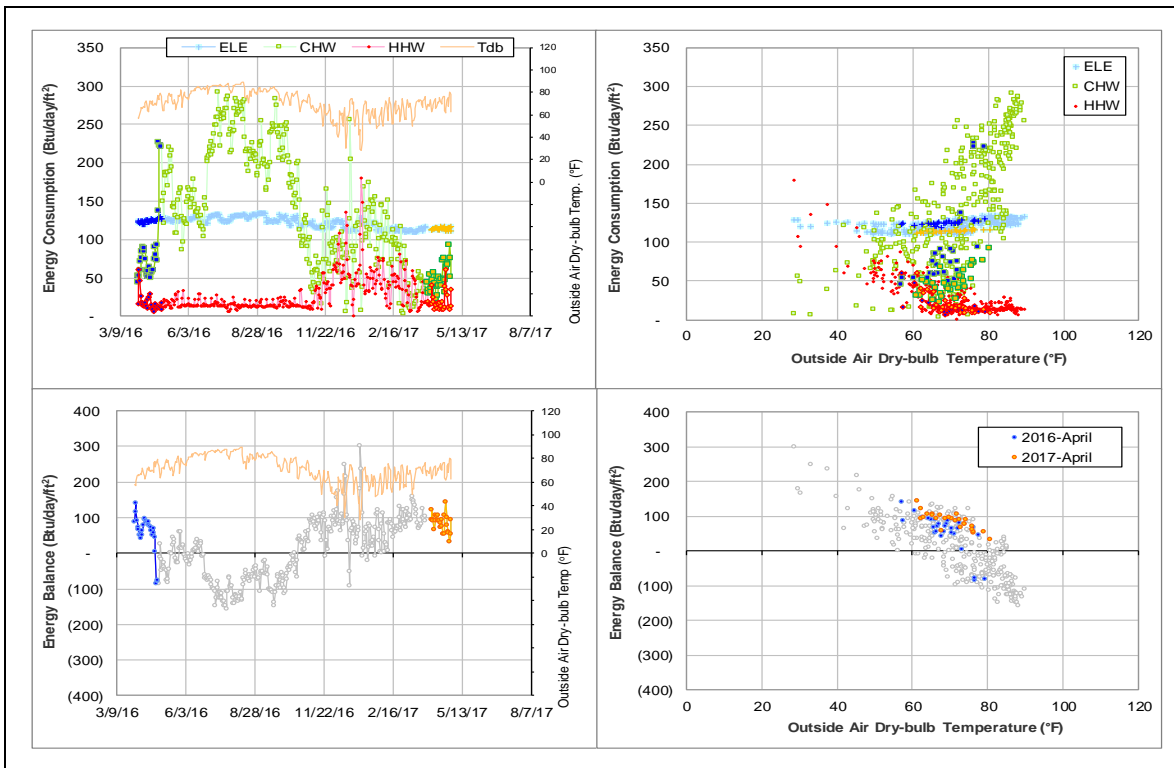
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	004322	3/10/2017 – Ongoing	Flow rate	Low

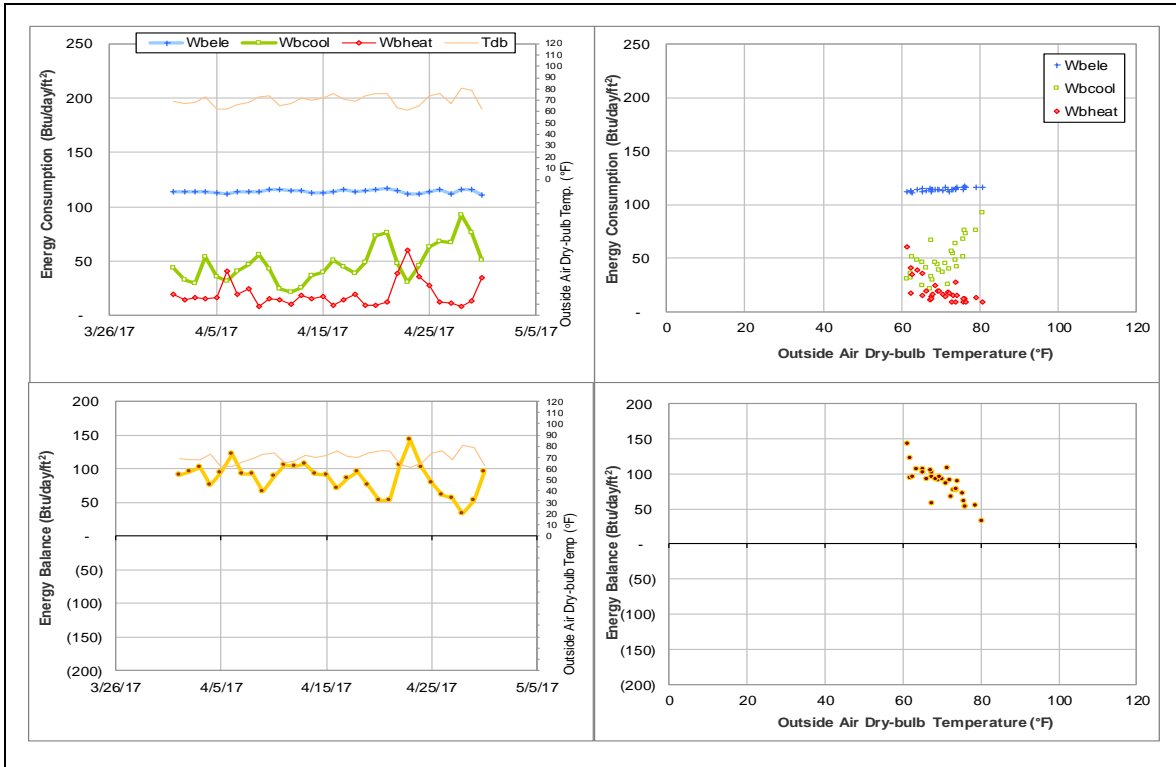
Quantitative descriptions and comments

The CHW flow rate had been severely scattered during 11/6/2016 – 3/9/2017. The flow rate also dropped from 10 – 20 gpm range before the scattering period to 8 – 12 gpm after the period. Since February 2017, CHW has not shown clear temperature dependence. The consumption of this month is estimated using a model based on 6/1/2015 – 5/31/2016 data.

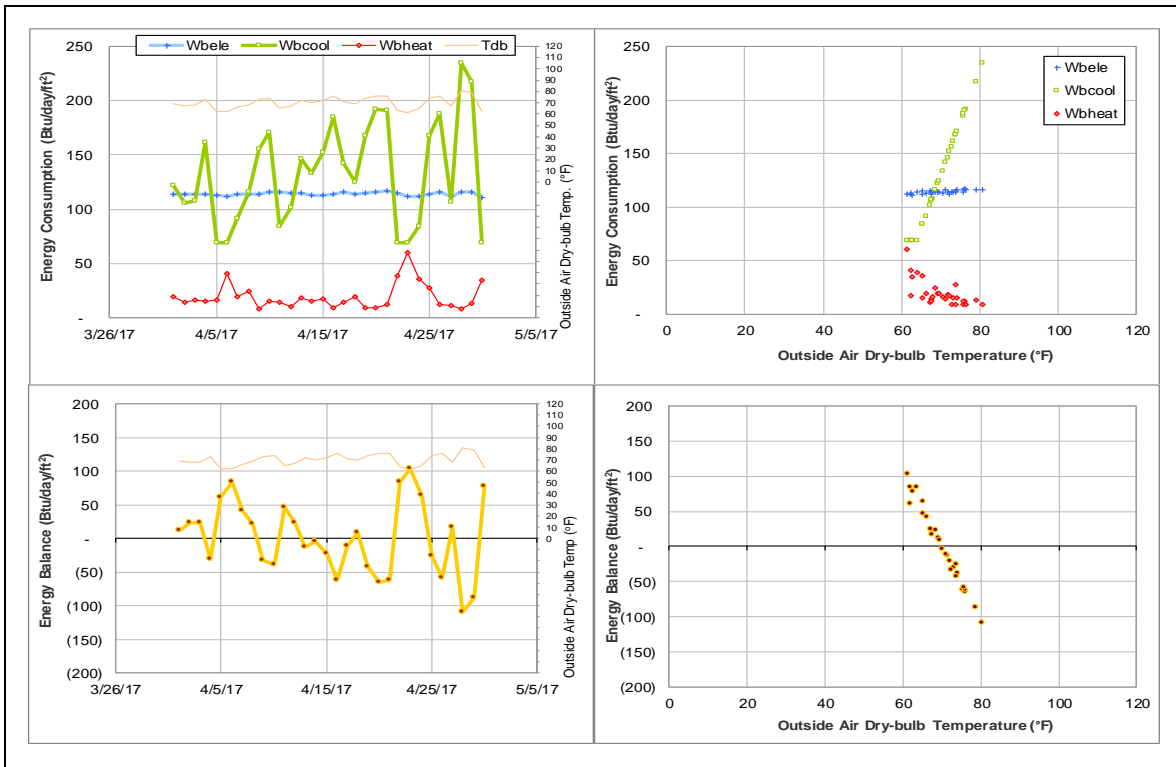
Explanatory Figure: 13 months energy balance plot with original data



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.



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 2017

Building No.	Building Name	MeterID	Type
0275	Liberal Arts and Arts & Humanities Building	007717	HHW
0290	Wells Residence Hall	001984	CHW
		001988	HHW
0291	Rudder Residence Hall	002132	CHW
		002136	HHW
0293	Appelt Residence Hall	002062	CHW
		002066	HHW
0353	Bright Aerospace Building	002746	CHW
0394	Underwood Residence Hall	002117	CHW
		002121	HHW
0398	Langford Architecture Center Building A	003951	CHW
		003955	HHW
0419	Legett Residence Hall	000031	ELE
		002218	CHW
		002222	HHW
0434	Luedecke Building (Cyclotron)	006664	CHW
		006668	HHW
0433	Mosher Residence Hall	009083	ELE
		002485	CHW
		002489	HHW
0443	Oceanography & Meteorology Building	006388	CHW
		006392	HHW
0517	DPC Annex	006563	CHW
463	Psychology Building	001575	ELE
		002941	CHW
		002945	HHW
482	Fermier Hall	005878	CHW
		005881	HHW
484	Chemistry Building	007557	ELE
492	Civil Engineering Building	005950	CHW
		005954	HHW
496	Utilities & Energy Services Central Offices	007706	ELE
		006929	CHW
		006933	HHW

Building No.	Building Name	MeterID	Type
499	Engineering Innovation Center	002672	CHW
506	Nagle Hall	001484	ELE
		003619	CHW
		003623	HHW
520	Beutel Health Center	003944	HHW
524	Blocker Building	002918	HHW
740	McNew Laboratory	005874	ELE
		005974	CHW
		005968	HHW
815	Entomology Research Building	006043	CHW
880	TVMC-Small Animal Building	005962	HHW
1146	Biological Control Facility	005887	CHW
1156	Physical Plant Administration & Shops	007679	CHW
1197	Veterinary Research Building	006355	ELE
		006359	ELE
1504	Reynolds Medical Sciences Building	003975	ELE
		003989	CHW
		003993	HHW
1525	Nuclear Magnetic Resonance Facility	006716	HHW
1537	Agriculture Public Building	009622	CHW
		009623	HHW
1558	Cox-McFerrin Center for Aggie Basketball	007577	HHW
1601	International Ocean Discovery Building	006351	ELE
		006382	CHW
		008144	CHW
		008145	HHW
		009829	HHW
1604	Offshore Technology Research Center	006660	ELE
		008142	CHW
		008143	HHW
1609	Oceanography & Meteorology Building	006496	CHW
		006497	HHW
1910	National Center for Therapeutics Manufacturing	007520	HHW

Liberal Arts and Arts & Humanities (TAMU Bldg #275)

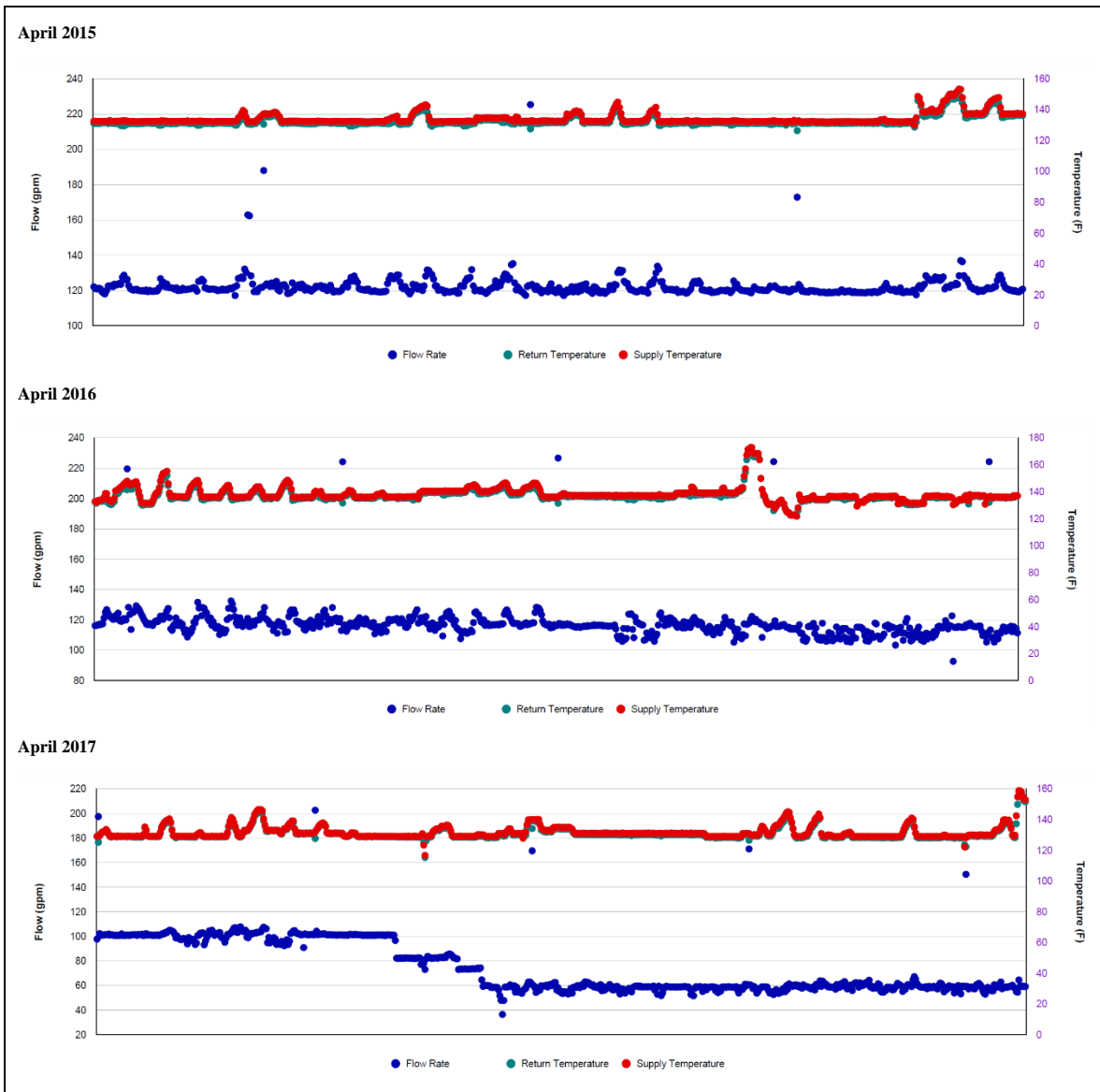
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	Low delta-T.	Since data became available

Comments

The HHW has had a low delta-T since the data became available.

Explanatory Figure: Time series plots of hourly flow rate, and supply and return temperatures from the utilities office



Wells Residence Hall (TAMU Bldg #290)

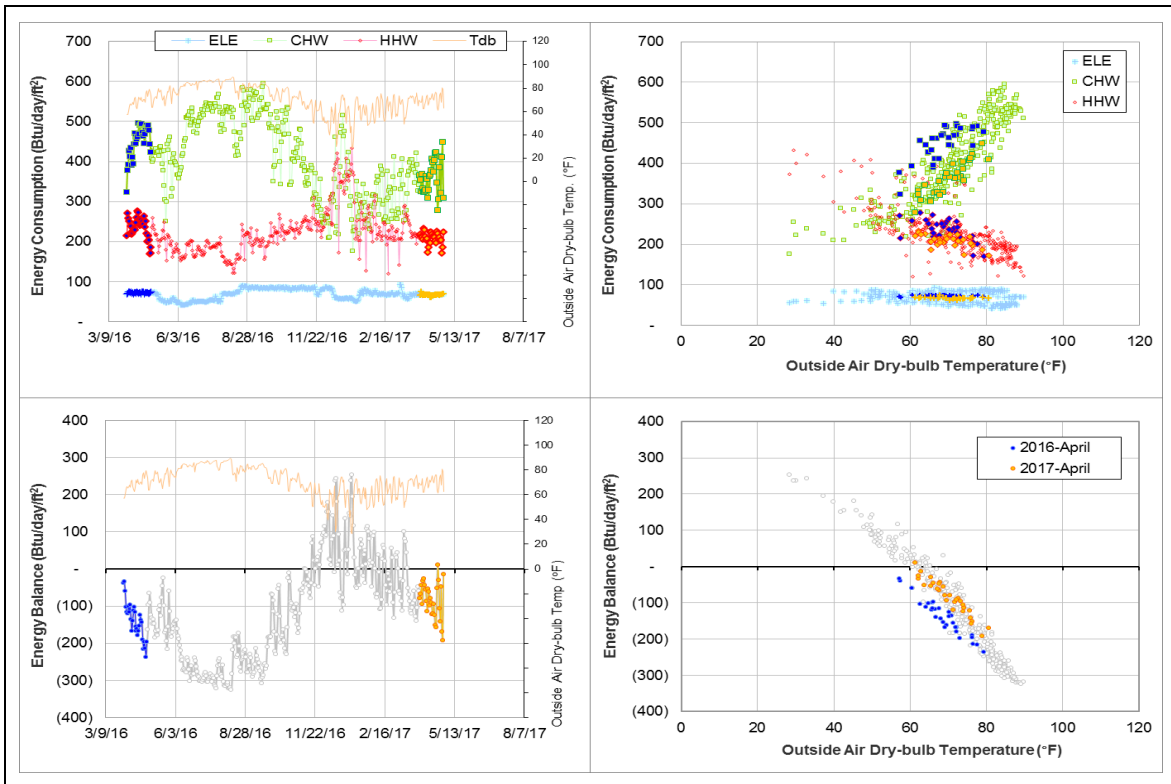
Detected issues in the energy balance and/or the consumption data

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. The low E_{BL} level suggests an 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 Residence Hall (TAMU Bldg #291)

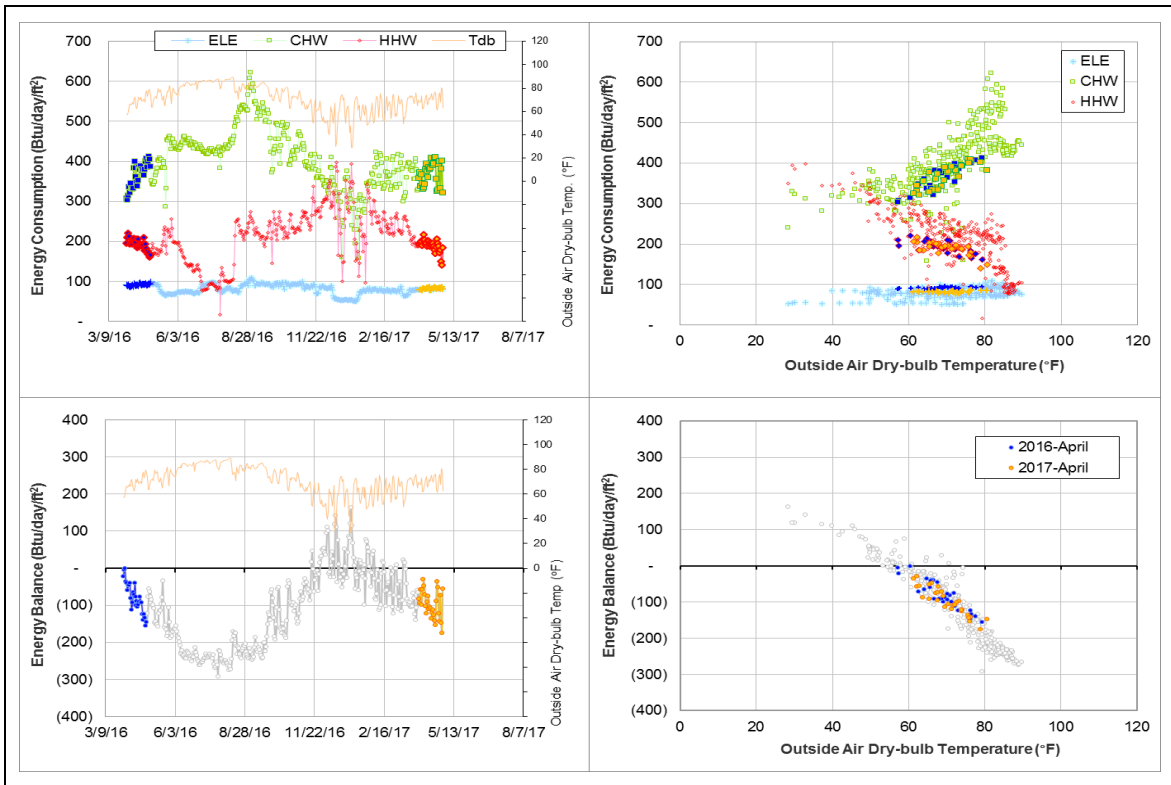
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	Sudden increase by 150 Btu/day/ft ² .	Since August 2016
HHW	Sudden increase by 100 Btu/day/ft ² . The consumption is unstable.	Since August 2016
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 years. The low E_{BL} level suggests an 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)

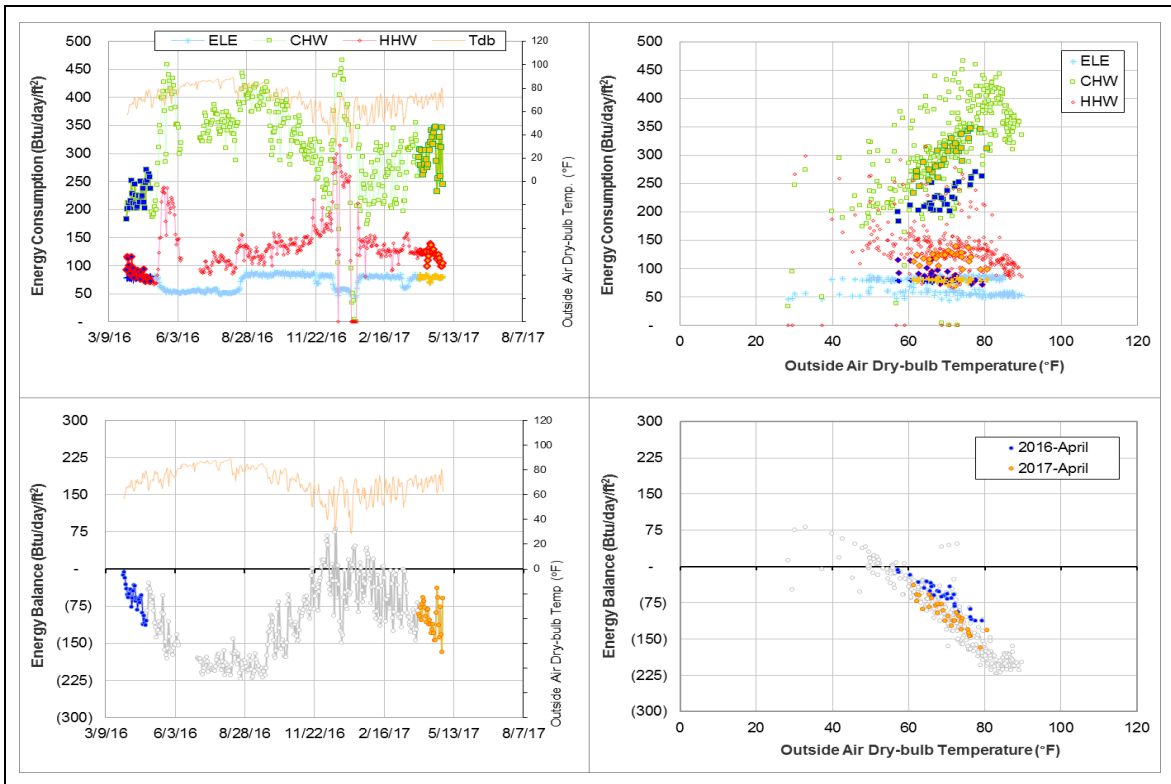
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW and HHW	The consumption level changes frequently	Since December 2014
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 been unstable and changing frequently. The energy balance load was low with the cross-point temperature around 55°F. The low E_{BL} level suggests an 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)

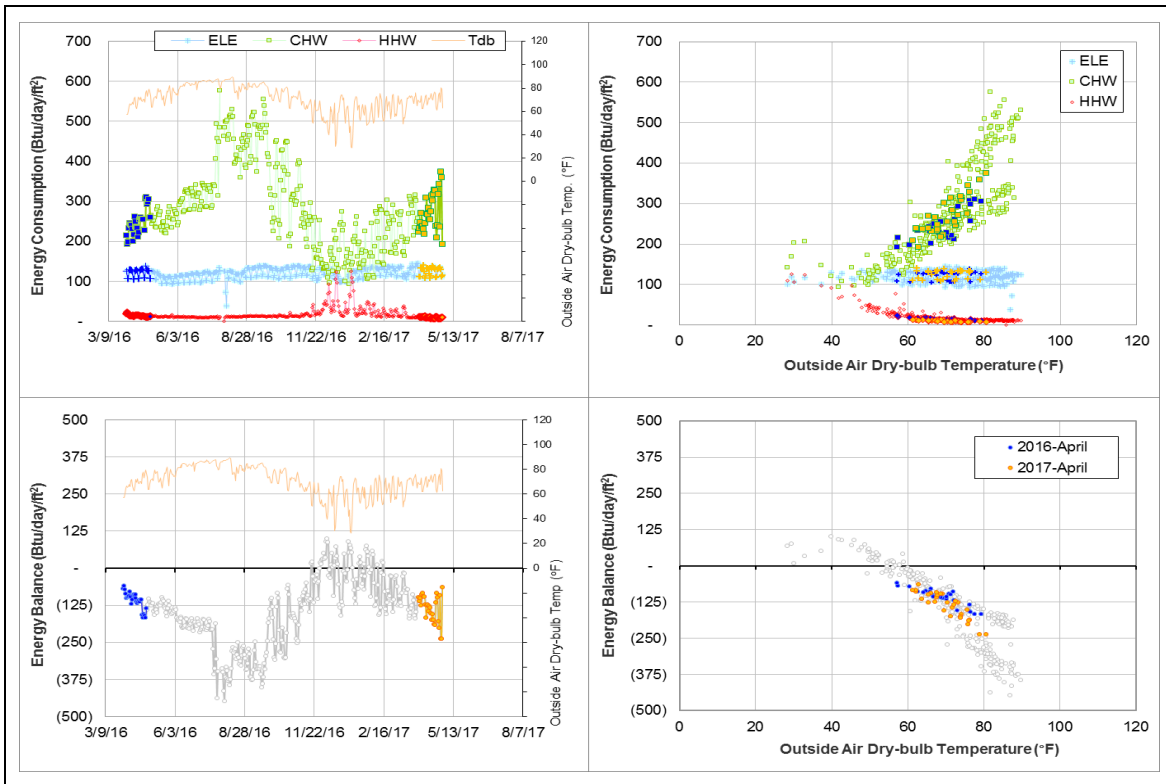
Detected issues in the energy balance and/or the consumption data

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
CHW	The consumption pattern changed.	Since July 2016

Comments

The energy balance load (E_{BL}) of this building has varied but always been low (the cross-point temperature was between 40°F and 70°F) for years. CHW consumption increased greatly on 7/21/2016 and switched to a new pattern with a steeper slope.

Explanatory Figure: 13 months energy balance plot with original data



Underwood Residence Hall (TAMU Bldg #394)

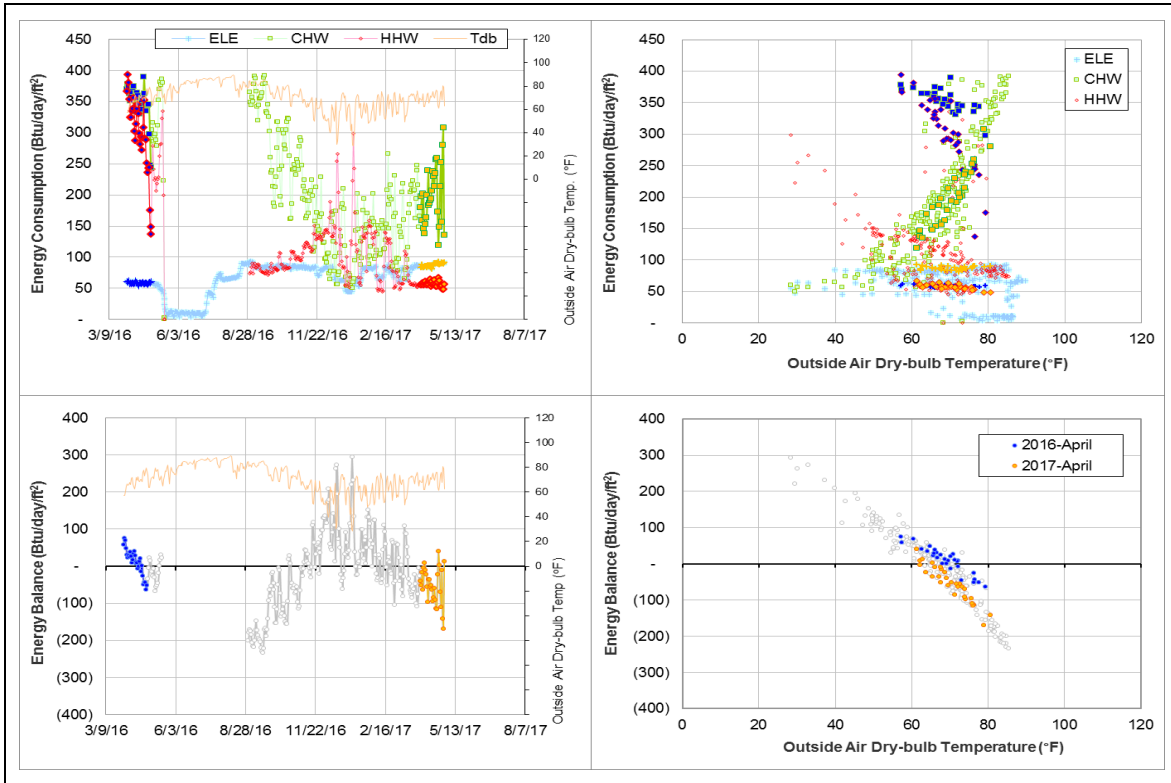
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption pattern is unstable.	9/1/2016 - ongoing
HHW	The consumption pattern is unstable.	9/1/2016 - ongoing

Comments

The CHW and HHW consumption has decreased since the data return in September 2016. There seem to be two different patterns forming. More data is needed to see how the pattern develops.

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



Langford Architecture Center Building A (TAMU BLDG # 398)

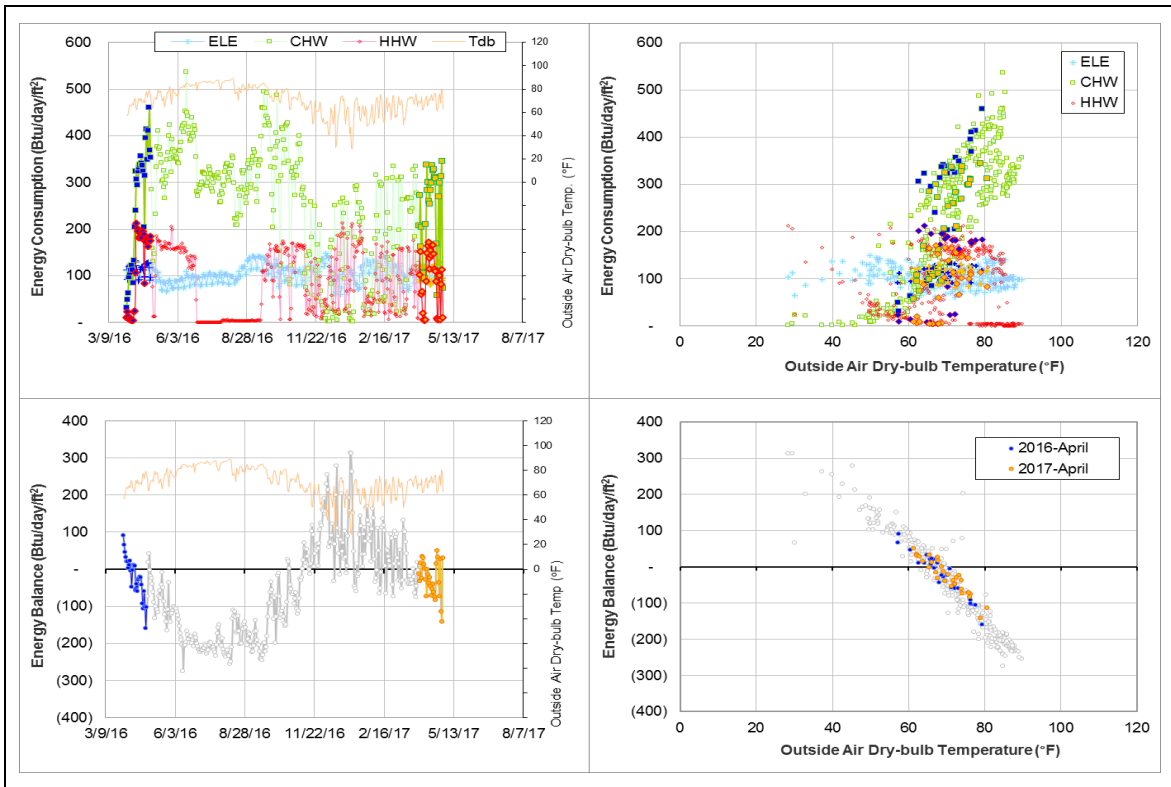
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW and HHW	The consumption has been fluctuating greatly.	For several years

Comments

CHW and HHW consumption has been unstable for several years. HHW flow rate can be seen going up and down between a maximum level and a very low level. The energy balance, however, is not disturbed during these fluctuations.

Explanatory Figure: 13 months energy balance plot with original data



Legett Residence Hall (TAMU BLDG # 419)

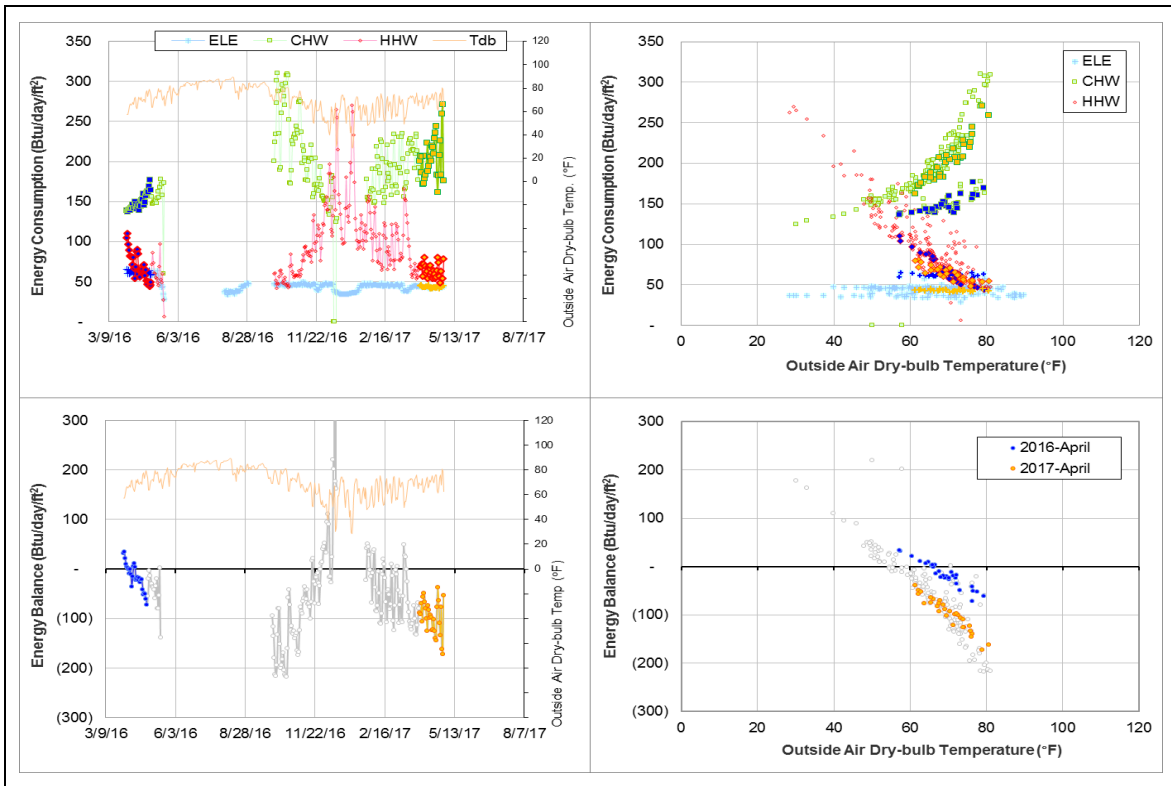
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The consumption decreased after the missing period.	Since October 2016
CHW	The consumption increased after the missing period.	Since October 2016
HHW	The consumption decreased after the missing period.	Since October 2016
EB	The cross-point moved from 68°F to 55°F.	Since October 2016

Comments

After the missing period from May to October 2016, ELE and HHW consumption decreased and CHW consumption increased. EB cross-point moved from 68°F to 55°F since then.

Explanatory Figure: 13 months energy balance plot with original data (The plot is rescaled to remove the spikes.)



Luedecke Building (Cyclotron) (TAMU BLDG # 434)

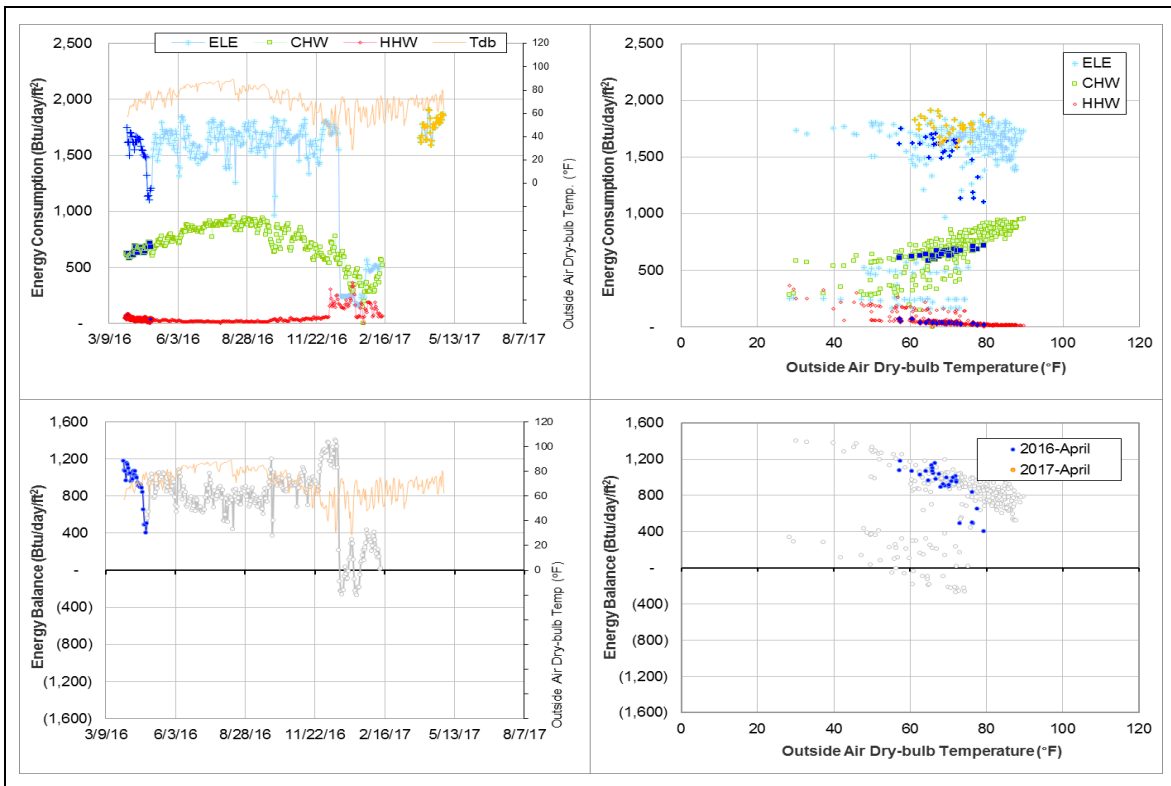
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW and HHW	Did not rise back to normal level.	Starting February 2017

Comments

The consumption of all utilities of this building drops to a very low level in December and gradually rises back to normal in February each year. The meter readings went missing on 2/13/2017. But the consumption had not increased back to normal by then as expected. The missing consumption after 2/13/2017 was estimated by models based on the data with higher levels. The ELE consumption returned in April 2017 at the higher level.

Explanatory Figure: 13 months energy balance plot with original data



Mosher Residence Hall (TAMU BLDG # 433)

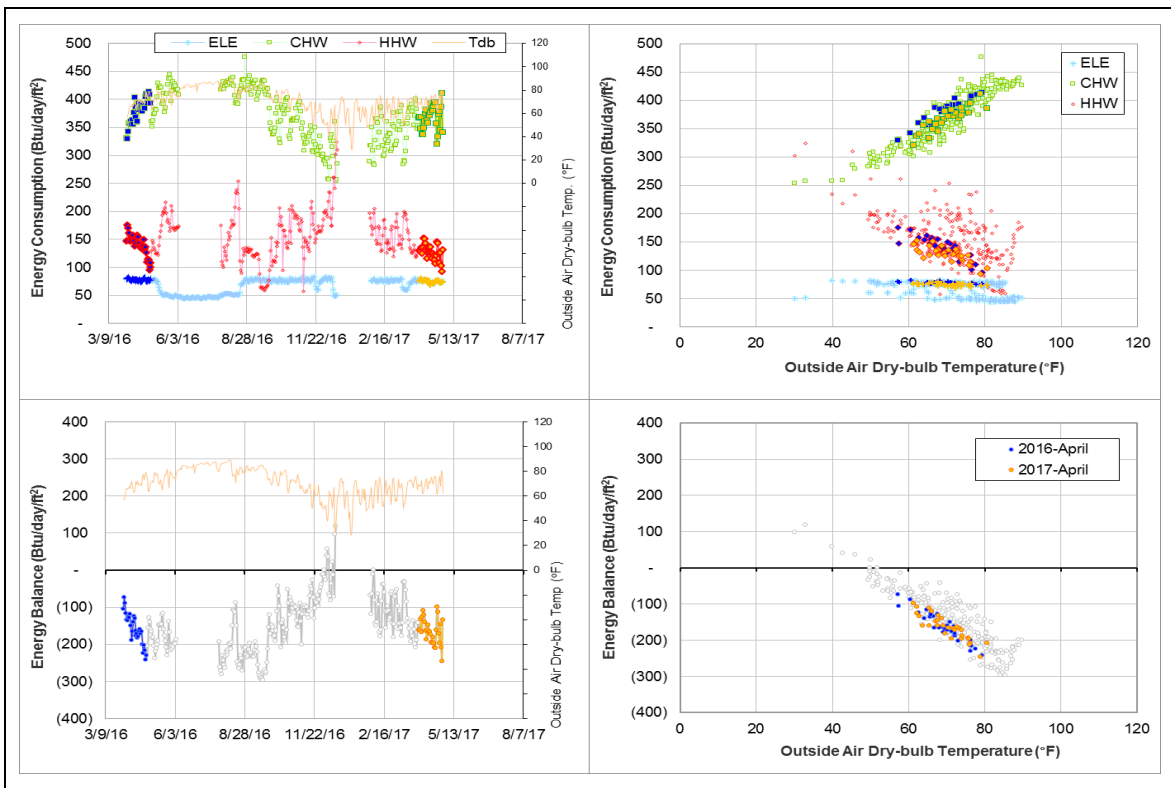
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption level gradually increased.	Since 2015
HHW	The consumption level gradually decreased.	Since 2015
ELE	The consumption level suddenly decreased.	Since January 2016
Energy Balance	The cross-point temperature is lower than 50°F.	Since 2015

Comments

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%). At near 40°F compared to 11/2014, CHW increased slightly by about 25 Btu/day/ft² and HHW decreased slightly by about 25 Btu/day/ft². HHW started to scatter since 5/2016 (shortly before the missing period). The cross-point temperature decreased further from near 55°F to lower than 50°F now. It is suggested to investigate these meters.

Explanatory Figure: 13 months energy balance plot with original data



Oceanography & Meteorology Building (TAMU Bldg #443)

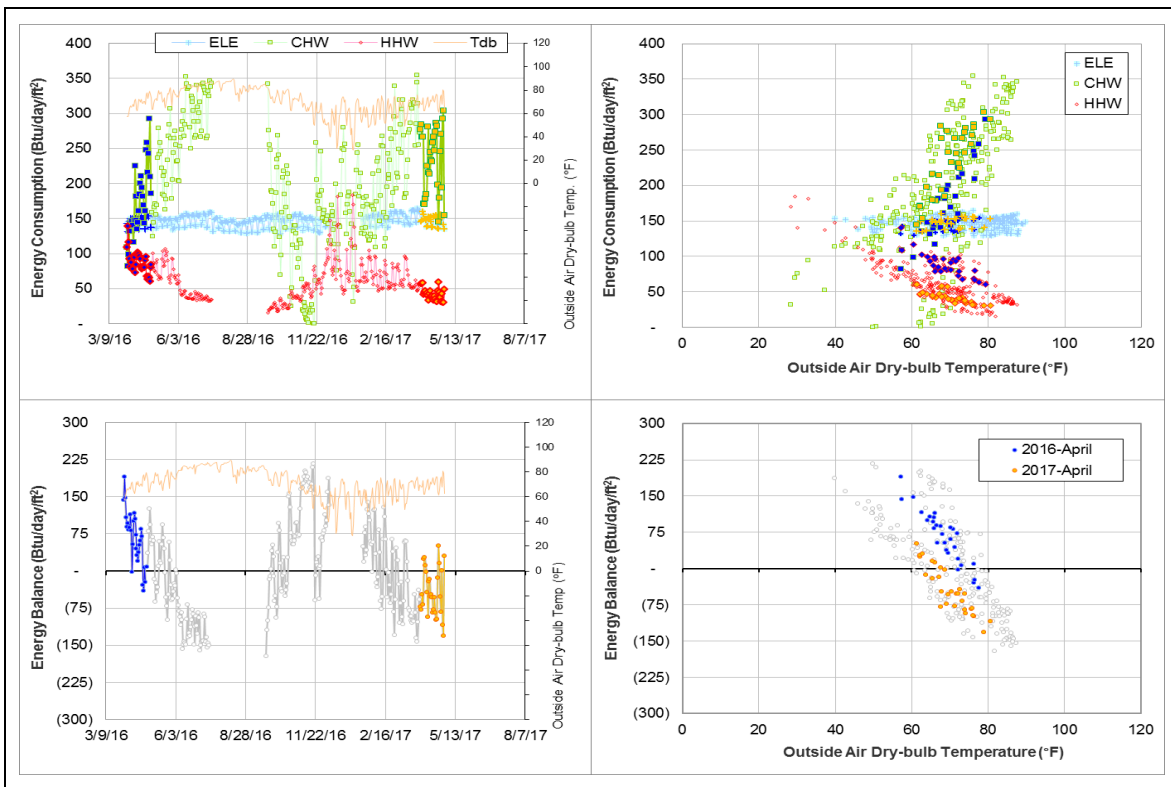
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The consumption significantly decreased after a missing period.	Since September 2016
	The consumption increased suddenly.	Since November 2016
HHW	The consumption significantly decreased after a missing period.	Since September 2016
EB	The cross-point temperature moved from 75°F to 62°F.	Since November 2016

Comments

Both CHW and HHW consumption decreased significantly in September 2016 due to changes in Delta-T including negative values for CHW Delta-T. Starting 11/22/2016, the CHW Delta-T became positive but the consumption showed a sharp increase causing the EB cross-point temperature to move from 75°F to 62°F. See also section II-2.

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



DPC Annex (TAMU BLDG # 517)

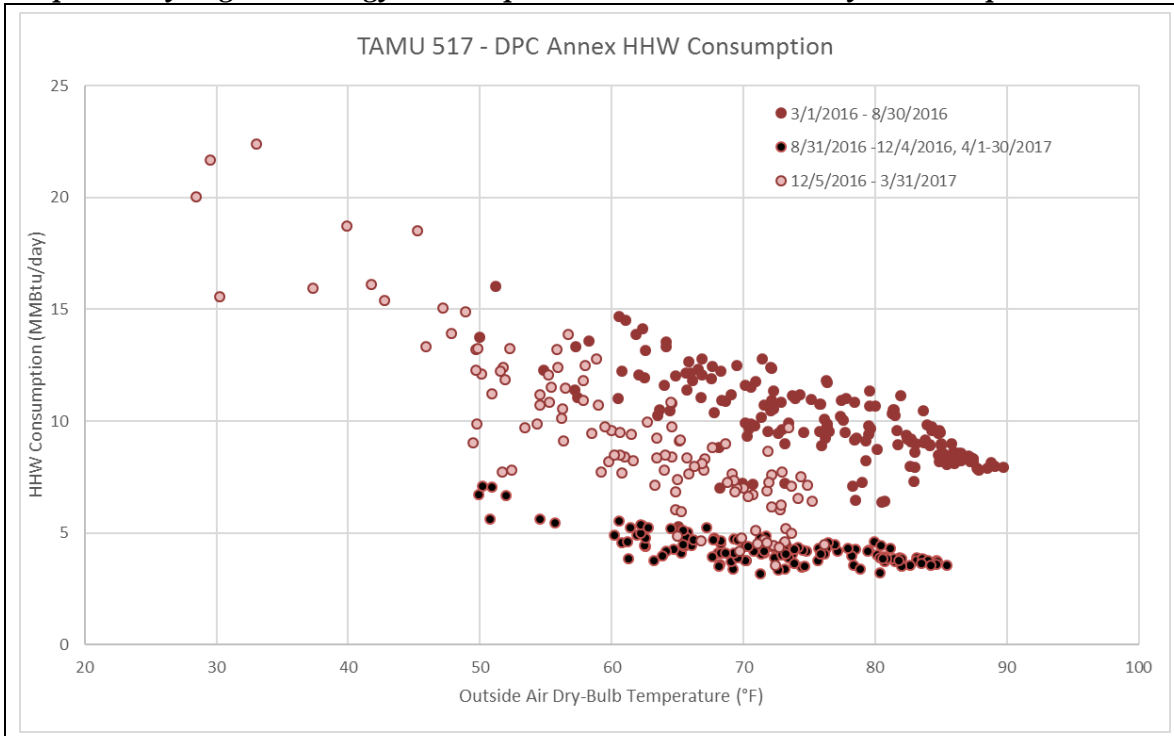
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The HHW consumption level decreased.	8/31/2016 – Ongoing

Comments

Starting 8/31/2016, the HHW consumption level decreased dropping clearly below the main pattern until 12/4/2016. The data from 12/5/2016 to 3/31/2017 appears between the main pattern and the lower pattern. However the data for April 2017 returned to the lower pattern. This does not appear to be a meter issue. More data is needed to see how the pattern continues.

Explanatory Figure: Energy consumption versus outside air dry-bulb temperature.



Psychology Building (TAMU Bldg #463)

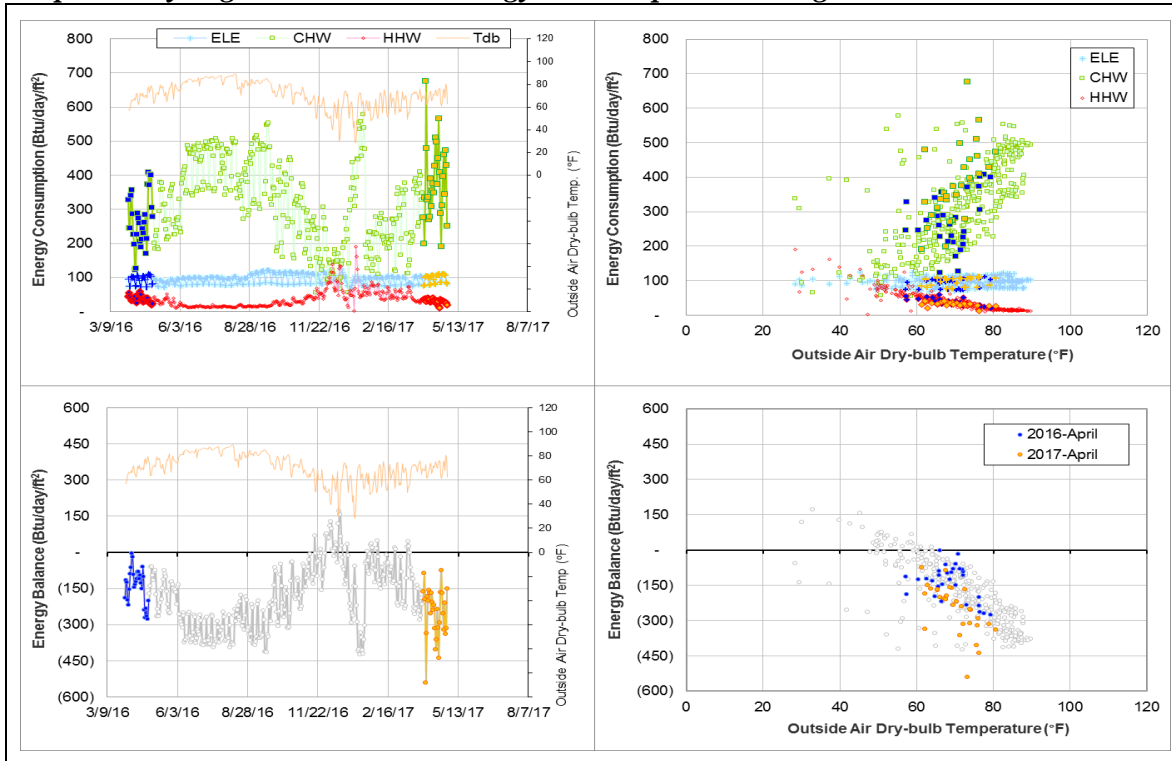
Detected issues in the energy balance and/or the consumption data

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

Comments

The CHW consumption pattern versus ambient temperature started to scatter after ESCO implementation in 2011. The CHW consumption level is high with a CHW temperature differential around 20°F, which is high for an office building with conventional HVAC systems. 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.



Fermier Hall (TAMU Bldg #482)

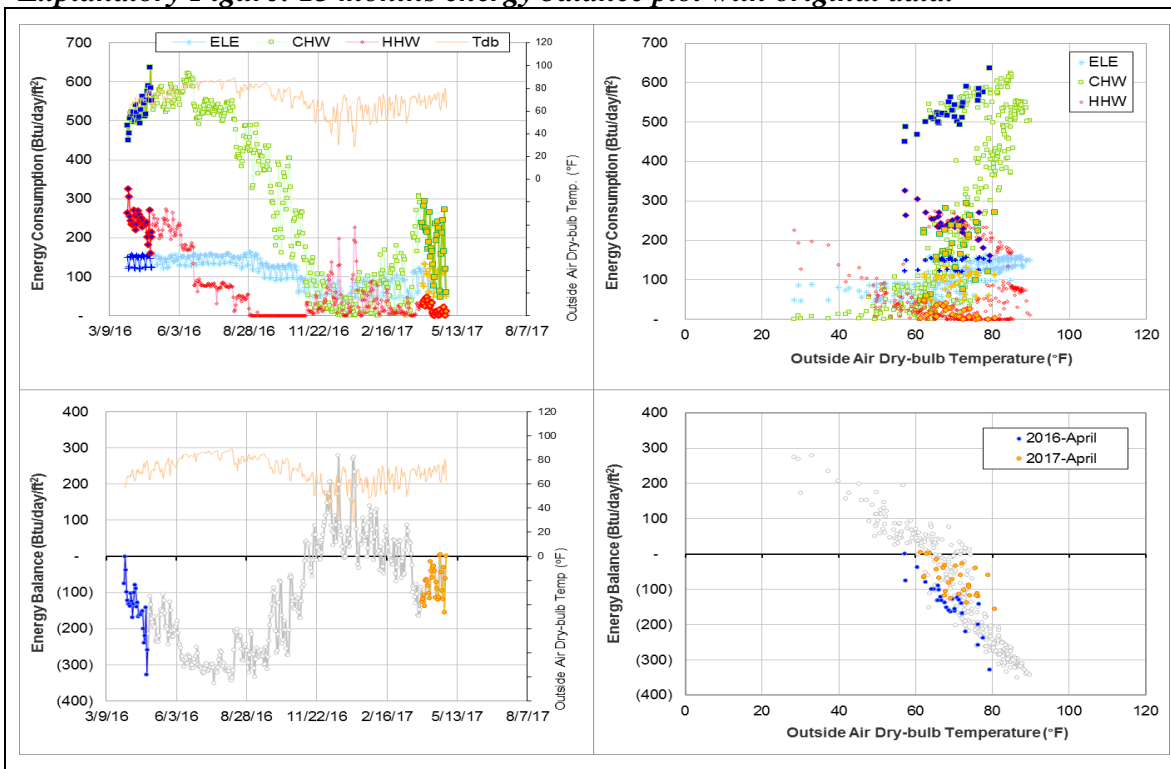
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW/HHW	The consumption level has significantly decreased.	6/24/2016 – Ongoing

Comments

CHW and HHW of this building decreased significantly in steps since 6/24/2016. Since the energy balance plot has retained its pattern up to 12/23/2016, the drop may be due to a decrease in usage. The CHW consumption during winter break (12/23/2016 – 12/31/2016) is lower than the recent pattern but does not appear to be a meter issue. This building is in ESCO list. This change might be related with it.

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



Chemistry Building (TAMU Bldg #484)

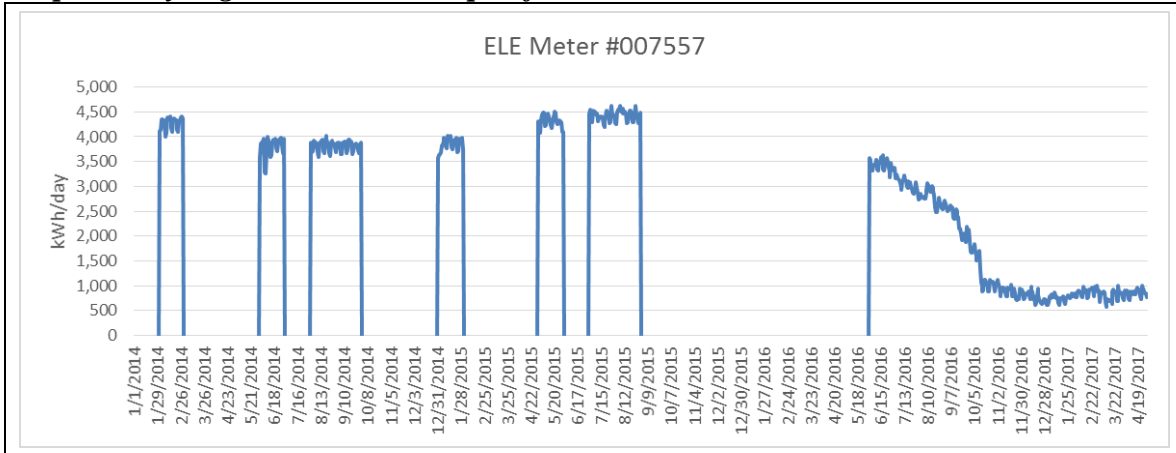
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The ELE consumption level has decreased significantly.	6/1/2016 – ongoing

Comments

There are four ELE meters for this building. The consumption for one of them (MID #007557) decreased gradually from 6/1/2016 to 8/31/2016 then more significantly in September and October 2016. This change appears to relate to building renovations.

Explanatory Figure: Times series plot for meter #007557



Civil Engineering Building (TAMU Bldg #492)

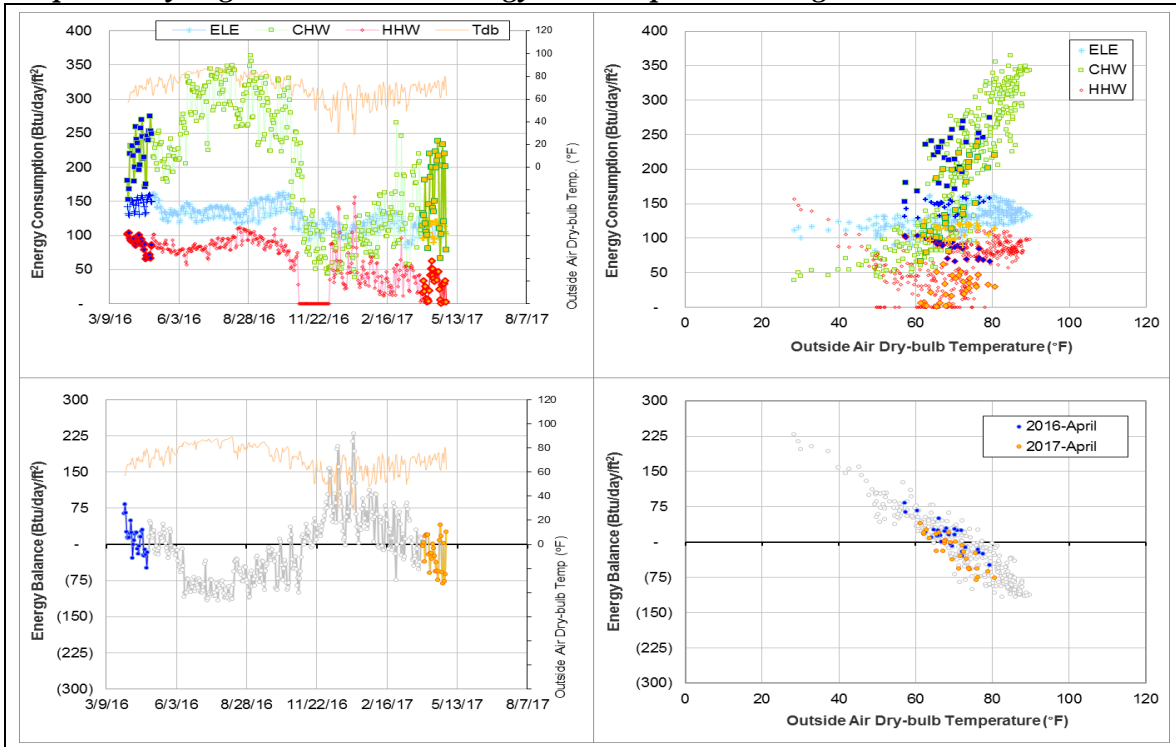
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW/HHW	The consumption level decreased.	10/29/2016 – Ongoing.

Comments

Starting 10/29/2016, the CHW and HHW consumption levels decreased and continued to remain low. Excluding HHW meter issue from 10/29/2016 – 12/7/2016 (zero flow rate and near zero delta-T), the lower consumption levels may be due to ESCO.

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



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

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

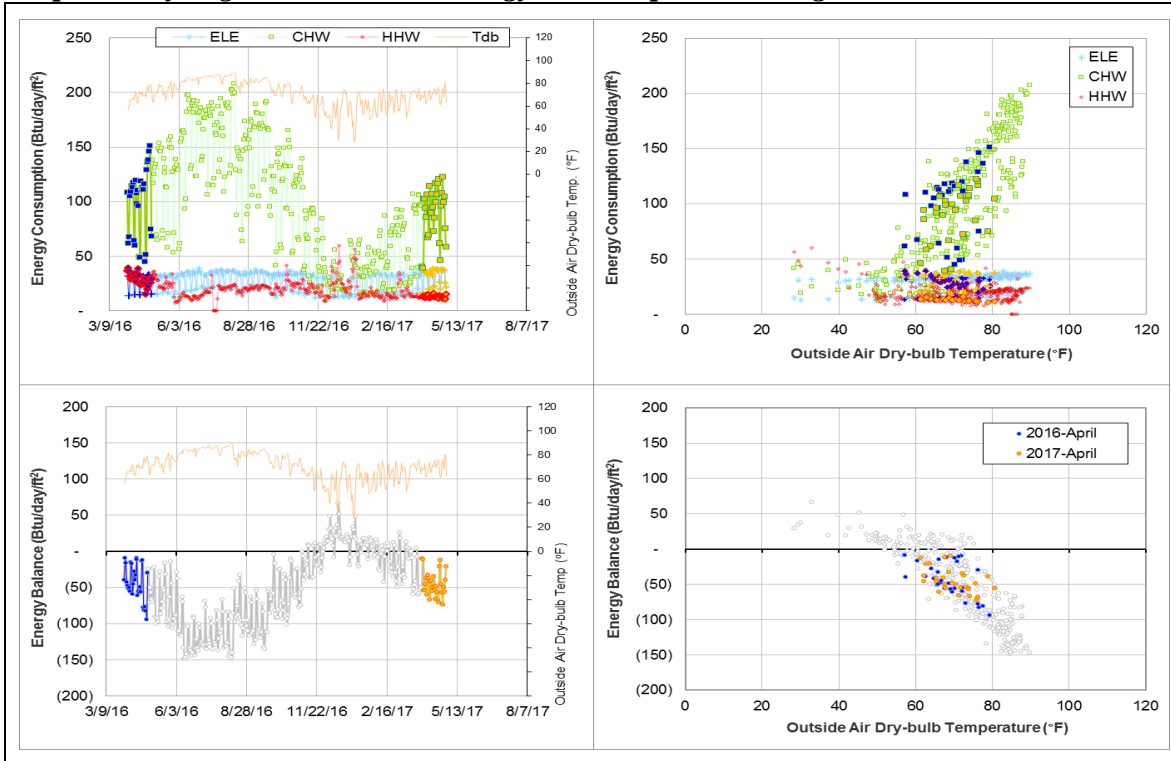
Data Type	Description of data behaviors	Period
ELE, CHW, and HHW	The energy use per unit floor area is low compared to other buildings.	Since the data became available on 7/1/2012

Comments

The peak electric 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 seems to be small for years. The CHW and HHW consumption per the unit floor area also seem to be low. It is possible that the GSF we have (46,110 ft²) includes substantial unoccupied space. The CHW consumption during the winter break period (12/23/2016 – 12/31/2016) is lower than previous winter break periods but does not appear to be a meter issue.

The energy balance scatter is due to the consumption level changes for CHW and HHW, the cross-point temperature of the energy balance was in the range of 50 to 70°F.

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



Engineering Innovation Center (TAMU Bldg # 499)

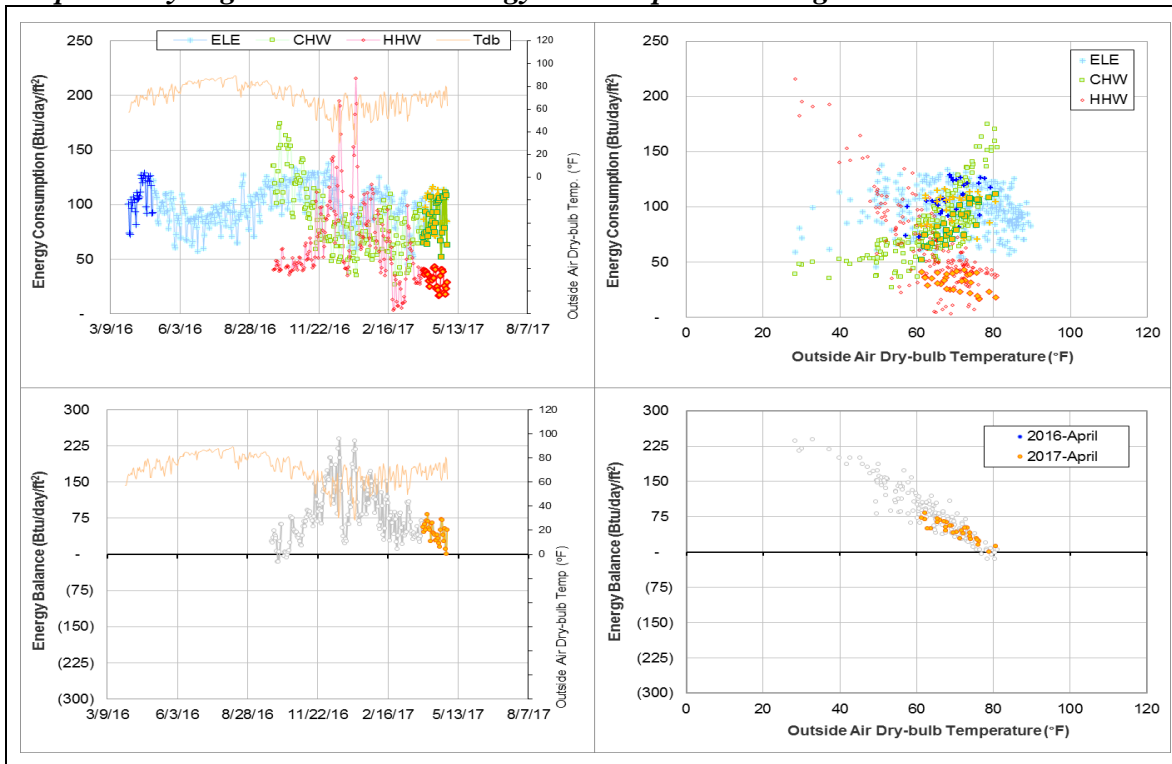
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The cross-point temperature is high, around 80 °F.	For years
CHW	The consumption level is low compared to the ELE and HHW consumption.	For years

Comments

The CHW consumption is relatively low when compared to the ELE and HHW consumption and could be the reason for the high cross-point temperature of energy balance for this building.

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



Nagle Hall (TAMU Bldg #506)

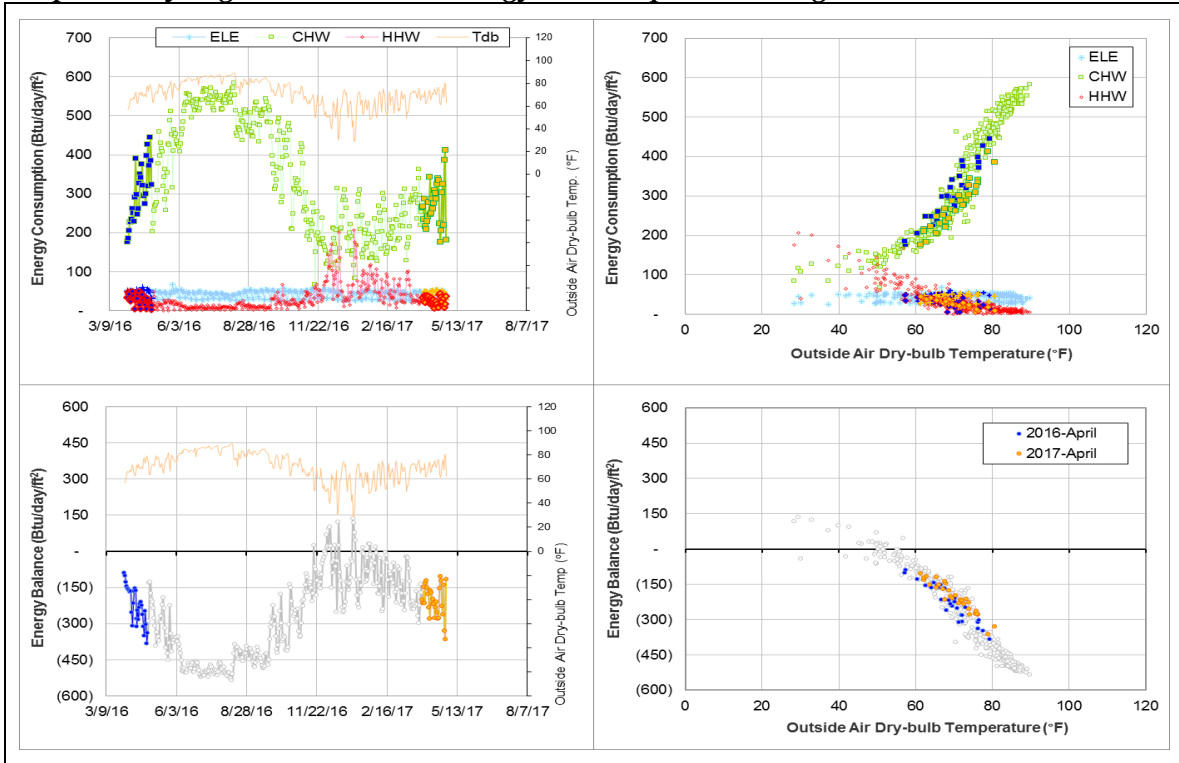
Detected issues in the energy balance and/or the consumption data

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 further 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. 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



Beutel Health Center (TAMU Bldg #520)

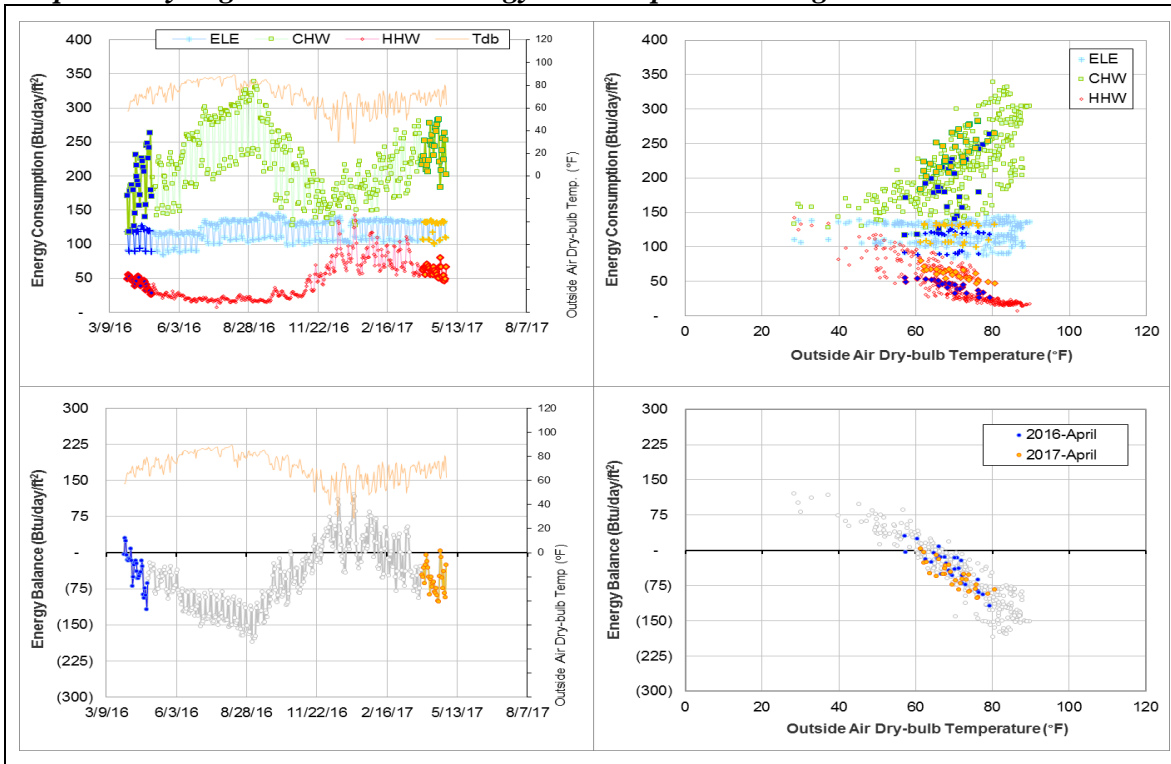
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The consumption level increased.	December 2016 – Ongoing

Comments

Starting from December 2016, the HHW flow rate has increased creating a higher consumption pattern (15 - 40 Btu/day/ft²), especially in the cooler temperature range. There is also a slight increase in the ELE and CHW patterns. The energy balance is showing little change. This increase does not appear to be a meter issue.

Explanatory Figure: 13 months energy balance plot with original data



Blocker Building (TAMU Bldg #524)

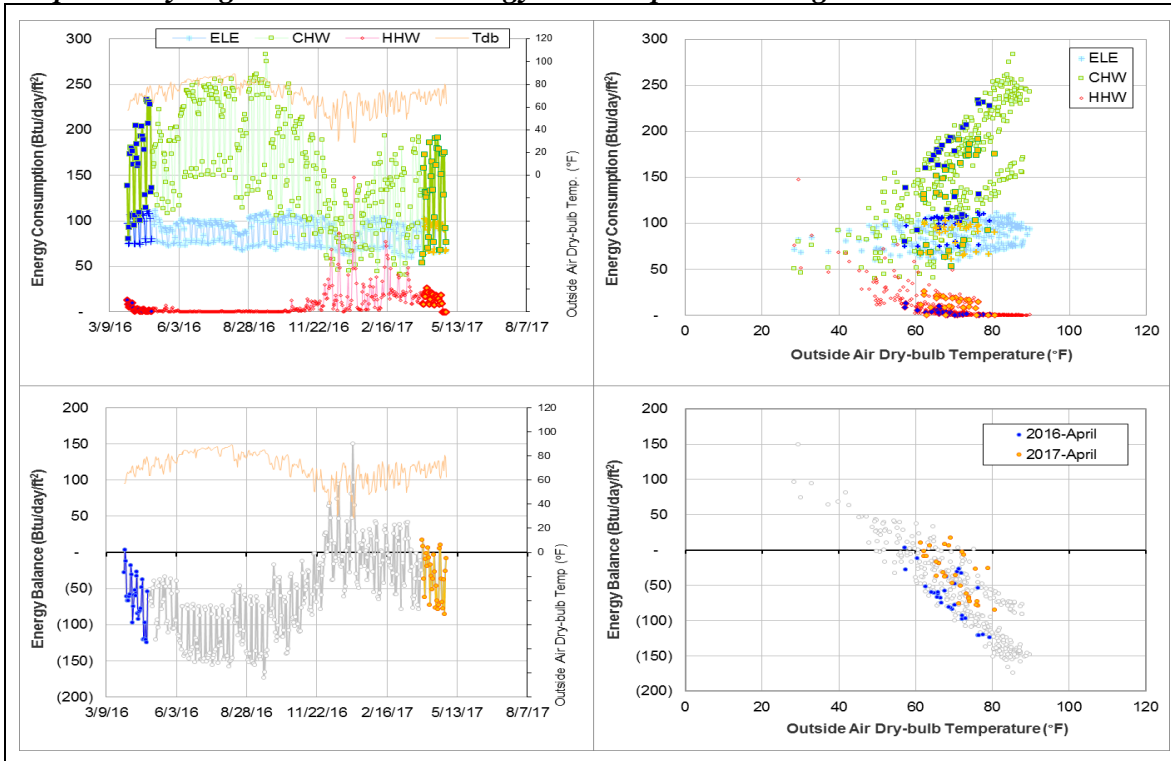
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy balance	The level was low and the cross-point temperature was 50 - 60°F.	For years
HHW	The consumption level might be low.	Past several years

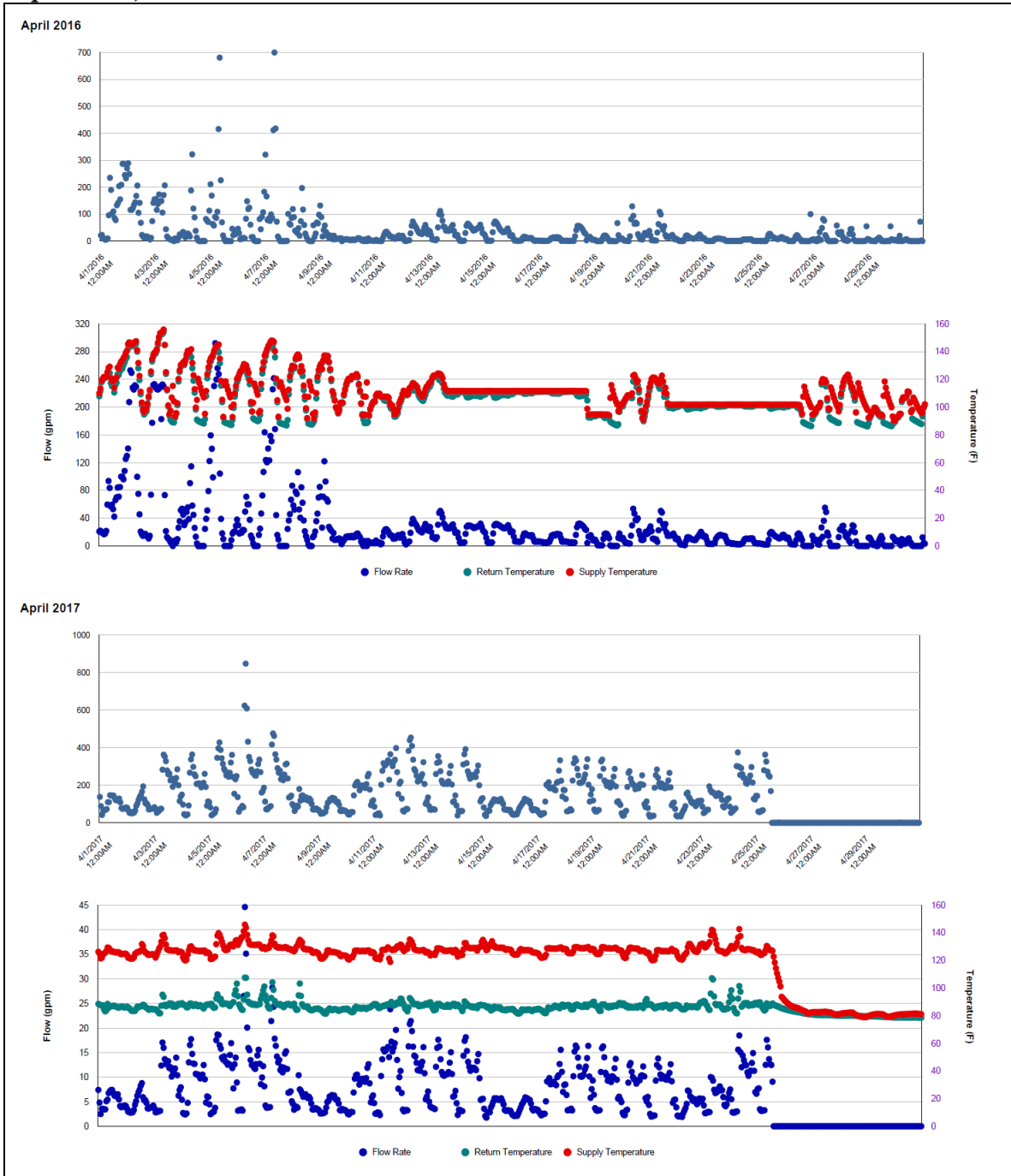
Comments

The cross-point of temperature of energy balance has been low for years. The delta-T and consumption level for HHW seems low for the past couple of years. However, there has been a recent change. Starting in February 2017, there has been significant increase in Delta-T. The explanatory figures below show the change in Delta-T from April 2016 and April 2017. With this increase in HHW consumption, the energy balance is showing improvement with a cross-point temperature of 65-72 °F. More information is needed to see if this new trend will continue.

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. (Top: April 2016; Bottom: April 2017)



McNew Laboratory (TAMU Bldg #740)

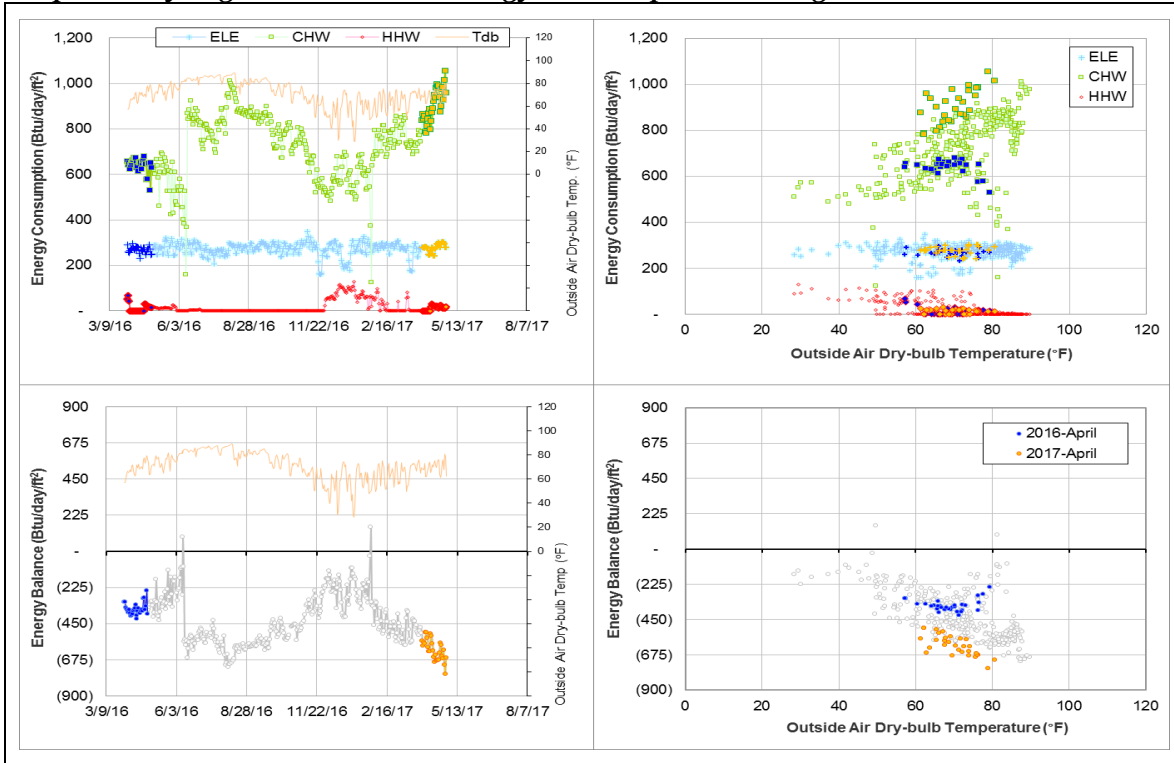
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The energy balance pattern level is low.	Past several years
HHW	The consumption level might be low.	Past several years

Comments

The energy balance level has consistently been low and does not even reach a cross-point temperature. Since 2013, there has been a large decrease in HHW use. After that, HHW consumption decreased gradually year by year. Since May 2016, the majority days have zero/nearly zero consumption. Recently, the CHW has increased starting February 2017, causing the energy balance to reduce even more. More information is needed to help identify the reason causing the low energy balance for this building.

Explanatory Figure: 13 months energy balance plot with original data



Entomology Research Lab (TAMU Bldg #815)

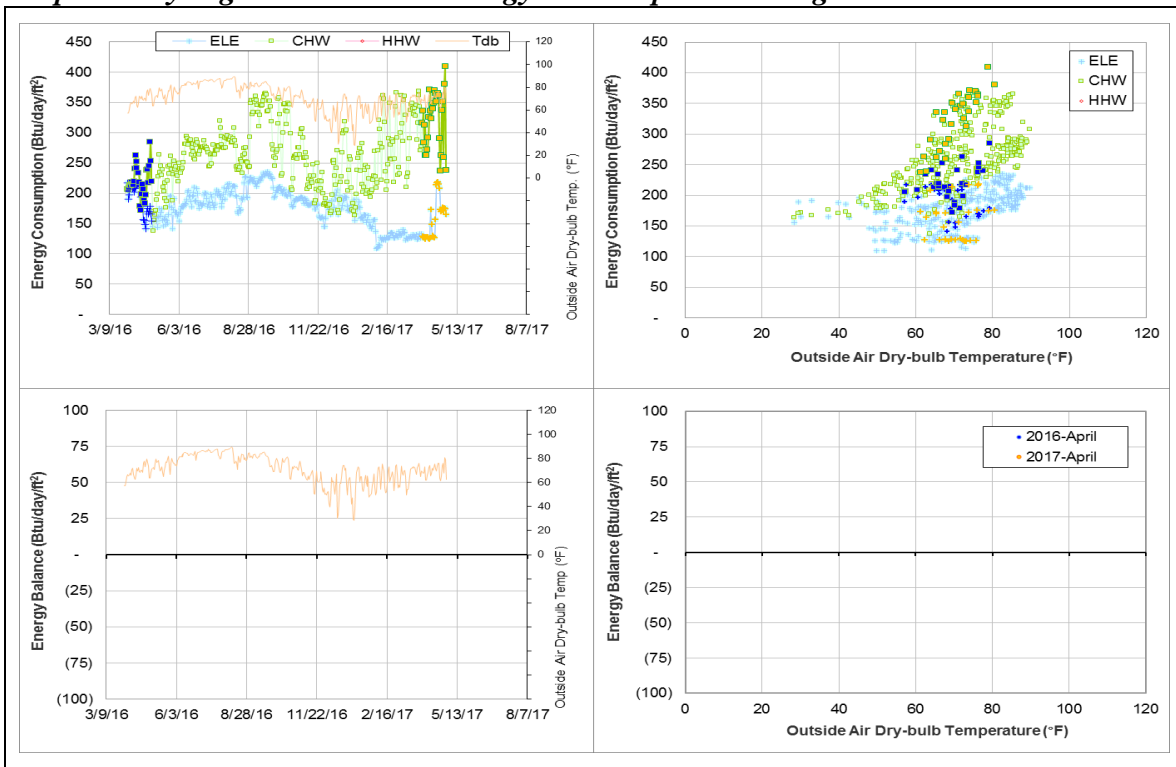
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	Change in energy consumption pattern	September 2016 – Ongoing

Comments

Starting September 2016, the CHW energy consumption pattern appears to be becoming steeper. Consumption levels have increased at higher temperatures compared to that of previous months. Since there is no HHW for this building, an energy balance chart cannot be created to check the change in CHW with the overall building balance.

Explanatory Figure: 13 months energy balance plot with original data



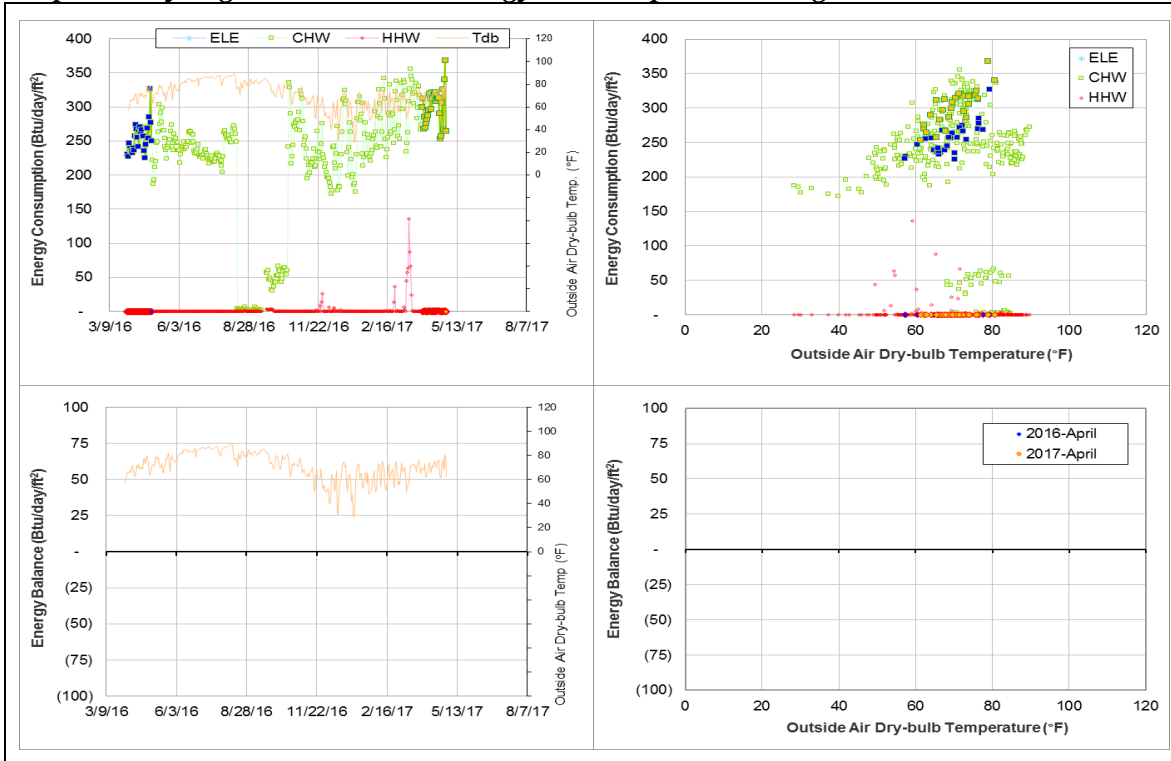
TVMC-Small Animal Building (TAMU Bldg# 880)

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



Biological Control Facility (TAMU Bldg# 1146)

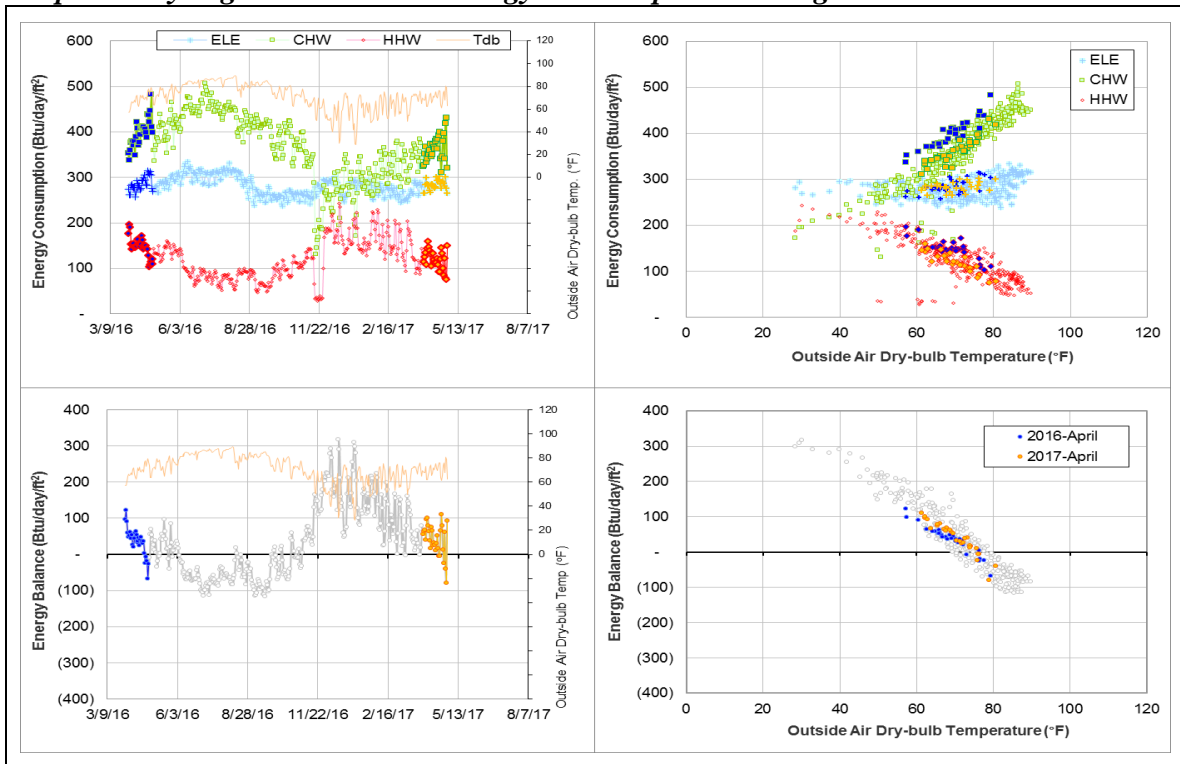
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	Decrease in energy consumption pattern.	December 2016 – Ongoing
Energy Balance	Increase in energy balance pattern.	December 2016 – Ongoing

Comments

Starting in December 2016, the CHW consumption pattern seems to have decreased, especially in higher temperatures. The energy balance pattern is also showing an increase. We will continue to monitor data to see if this is a new pattern emerging.

Explanatory Figure: 13 months energy balance plot with original data



Physical Plant Administration & Shops (TAMU Bldg# 1156)

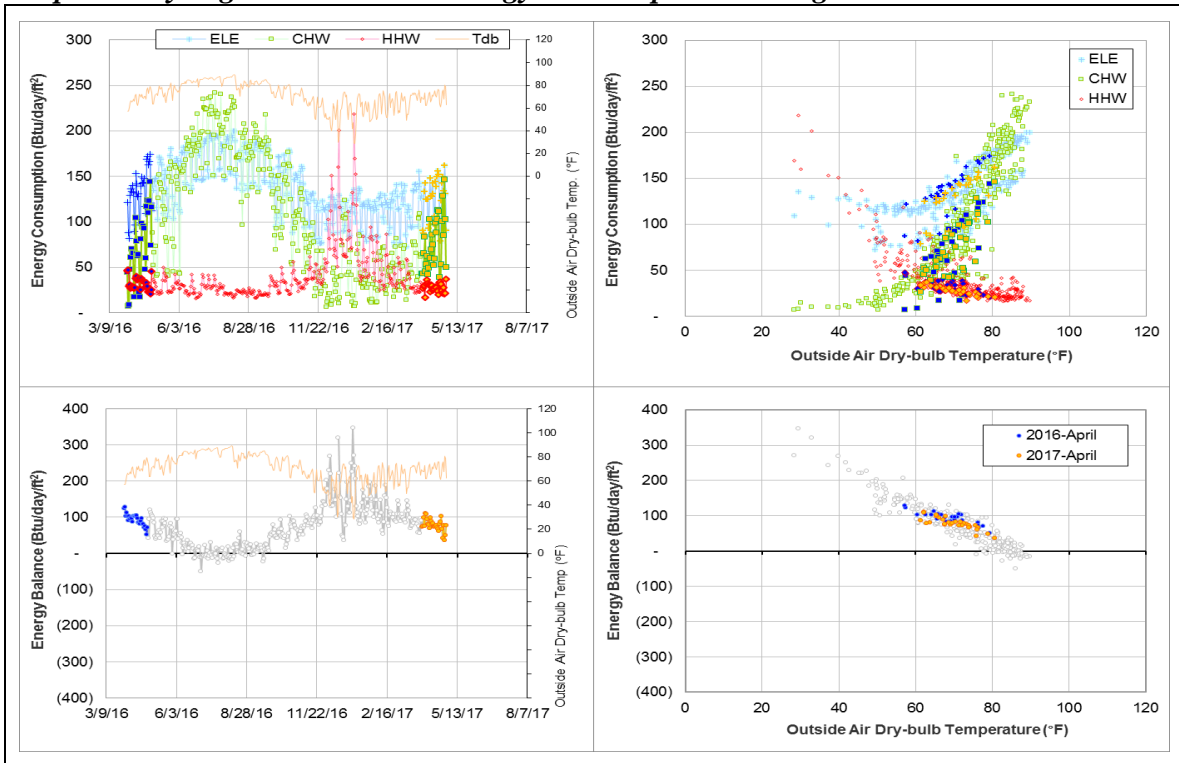
Detected issues in the energy balance and/or the consumption data

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 when 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 is needed to help identify which type energy causes the high cross-point temperature. One question, how much of the 101,704 ft² of space is conditioned?

Explanatory Figure: 13 months energy balance plot with original data



Veterinary Research Building (TAMU Bldg# 1197)

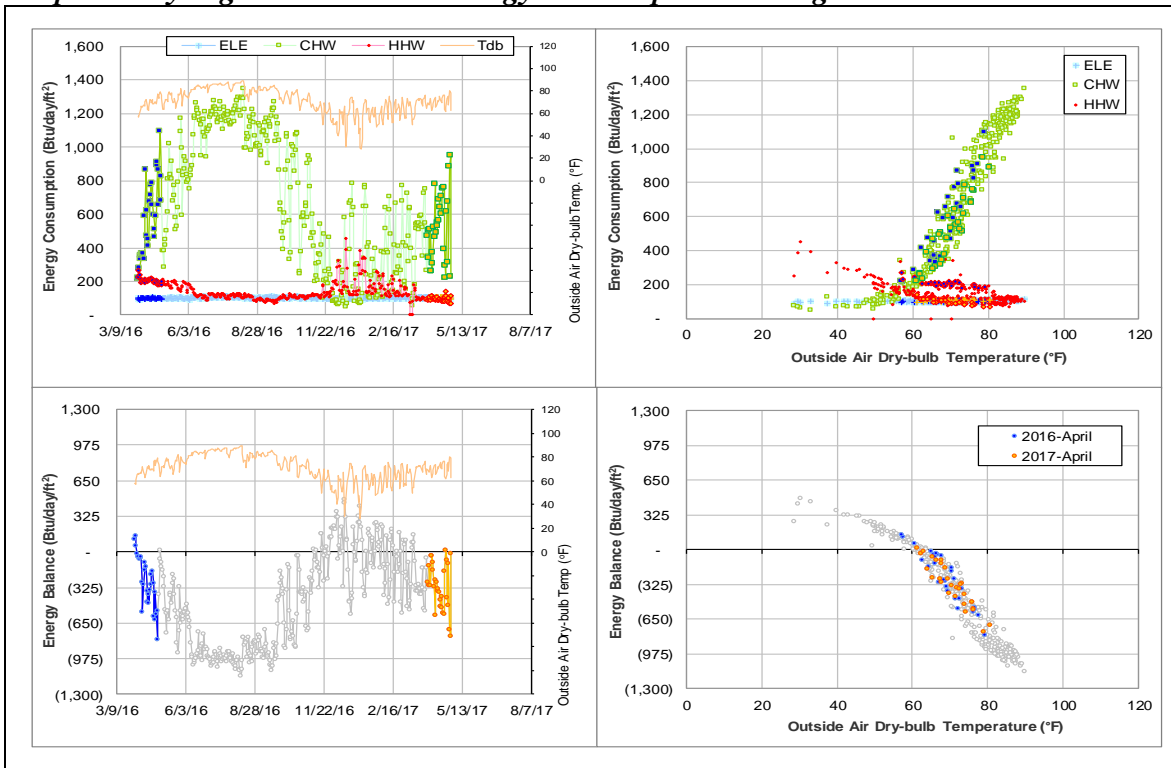
Detected issues in the energy balance and/or the consumption data

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 120 kWh to 160 kWh (1.05 W/ft² to 1.40 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. See also Section II-2.

Explanatory Figure: 13 months energy balance plot with original data



Reynolds Medical Sciences Building (TAMU Bldg# 1504)

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

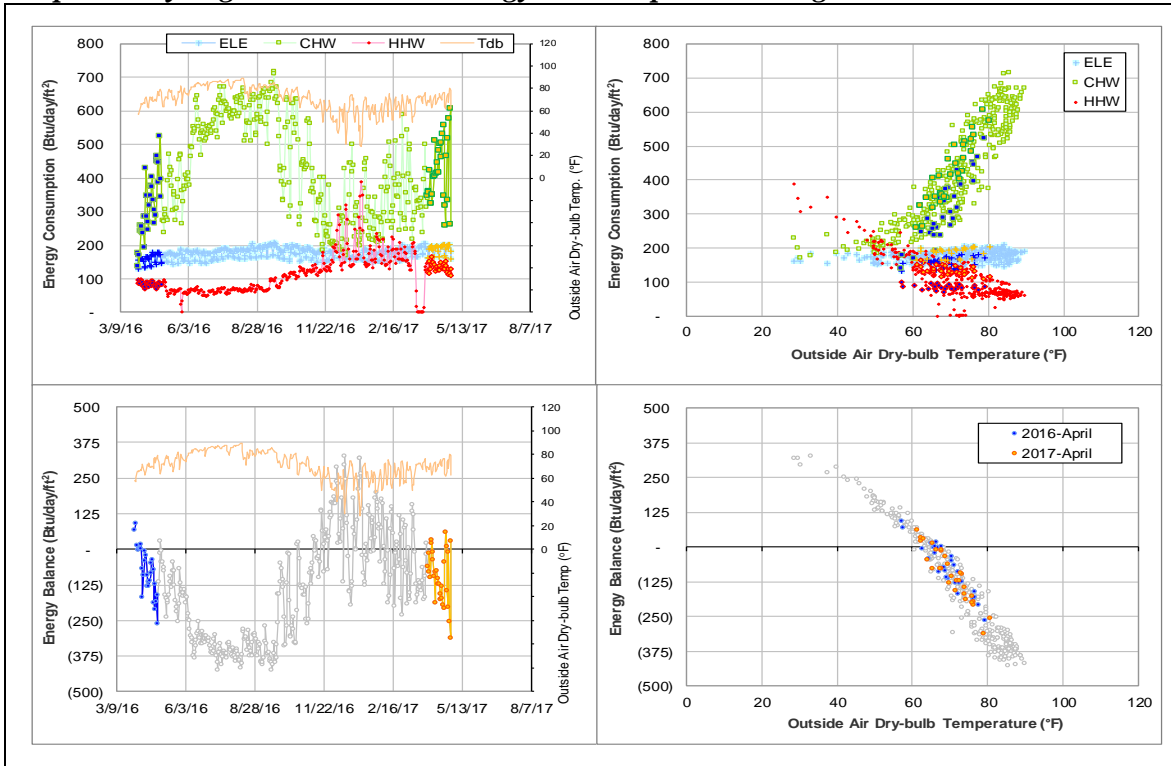
Data Type	Description of data behaviors	Period
ELE	Increase in energy consumption pattern.	September 2016 – Ongoing
CHW	Slight increase in energy consumption pattern.	September 2016 – Ongoing
HHW	Increase in energy consumption pattern	September 2016 – Ongoing

Comments

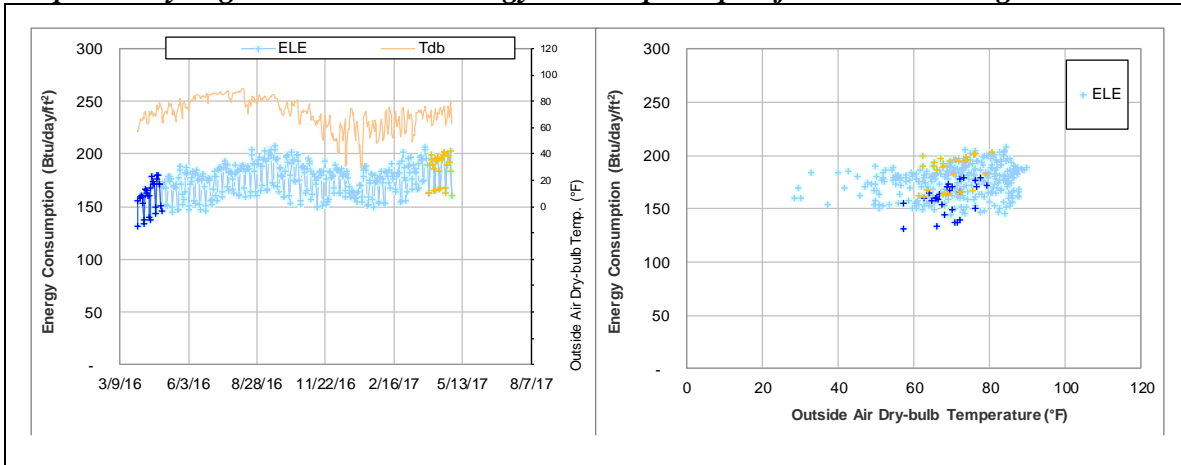
The HHW energy consumption pattern has increased by approximately 40 Btu/day/ft² starting in September 2016. Around the same time, the CHW and ELE energy consumption also shows a slight increase. Even though the energy consumption has increased, the energy balance for the building is still within the range of the previous months. It does not seem to be a metering problem.

Recently in December 2016, the increase in ELE consumption pattern has been more significant, especially in the lower temperature range. Please see explanatory figure below for a plot of just the ELE consumption pattern.

Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: 13 months energy consumption plot for ELE with original data



Nuclear Magnetic Resonance Facility (TAMU Bldg# 1525)

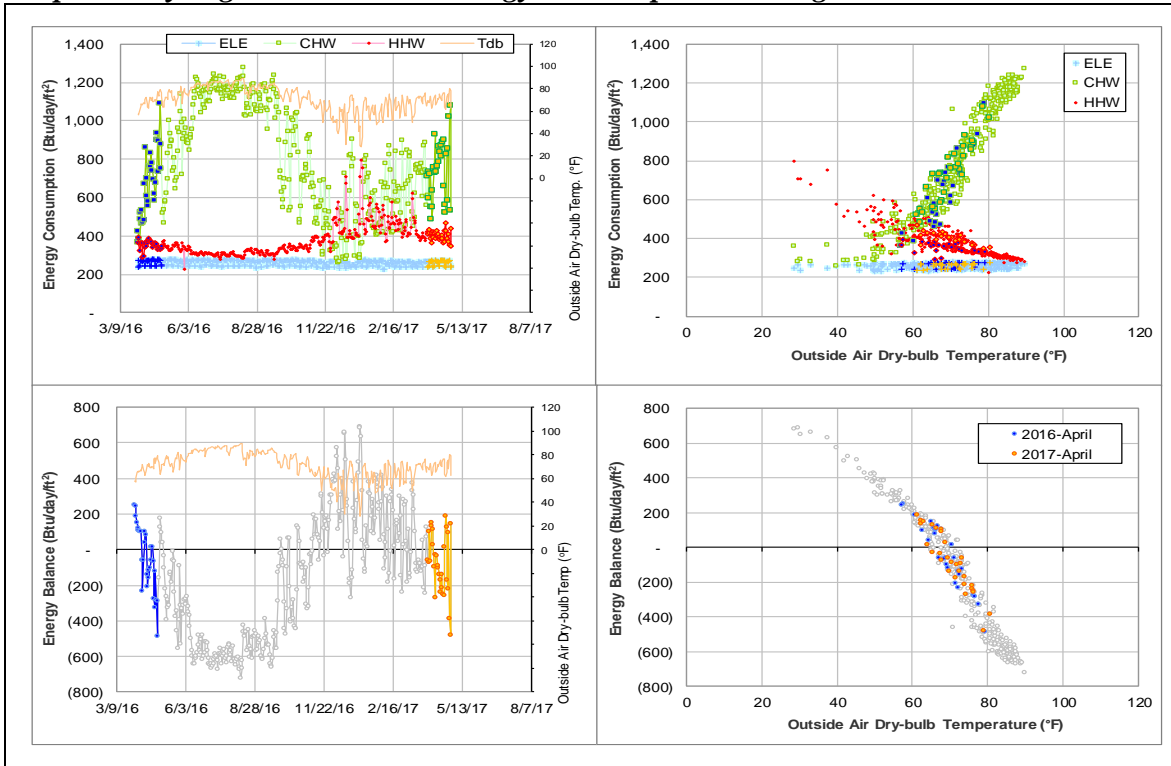
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	Increase in energy consumption pattern.	December 2016 – Ongoing

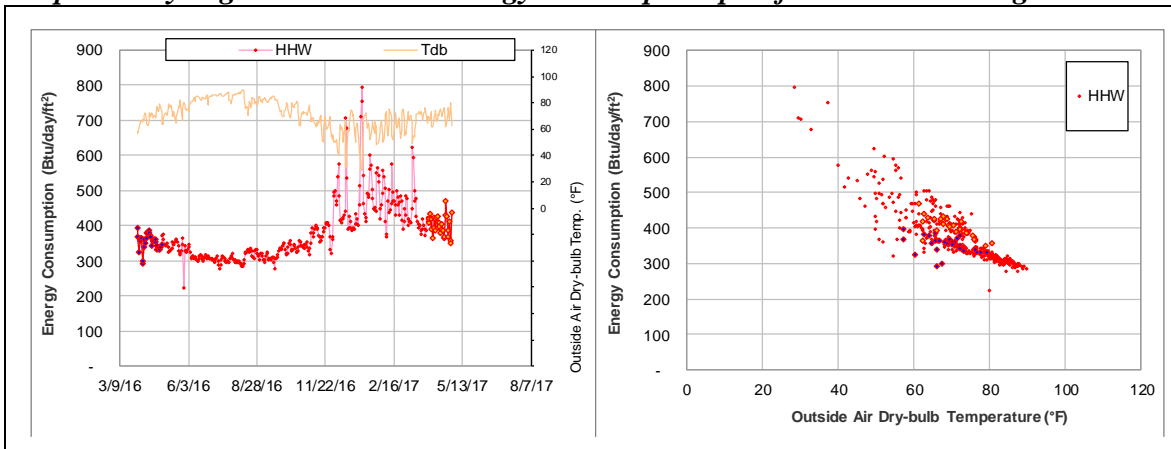
Comments

Recently in December 2016, the HHW pattern has started to increase by about 70-100 Btu/day/ft² with the larger difference appearing in warmer temperatures. However, the energy balance has maintained the same pattern, so it does not appear to be metering problem.

Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: 13 months energy consumption plot for HHW with original data



Agriculture Public Building (TAMU Bldg# 1537)

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

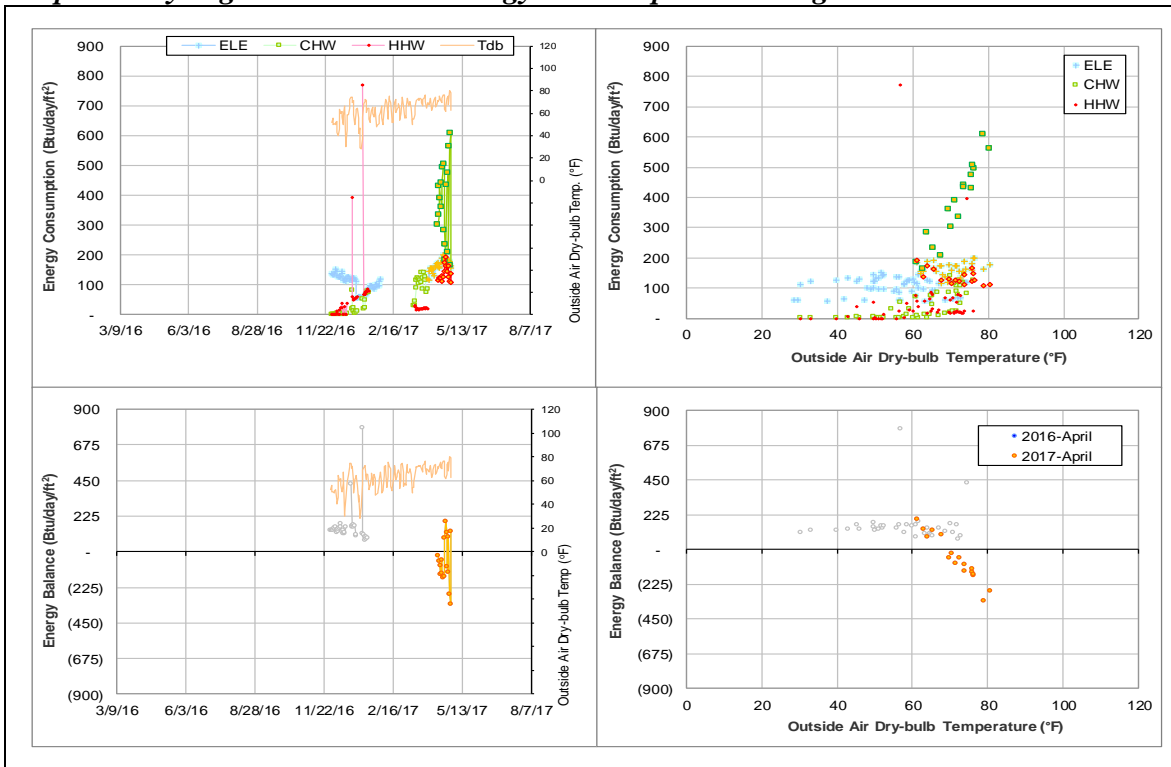
Data Type	Description of data behaviors	Period
ELE, CHW, HHW	Limited data available for baseline period.	February 2017

Comments

The Agriculture Public Building is a new building that was still under construction in January 2017. The ELE, CHW, and HHW data only recently became available. Due to the construction, the consumption levels during these months is not steady but continues to increase.

Temporary models for CHW and HHW are built using data of 4/14/2017 – 4/30/2017 for estimation of missing days.

Explanatory Figure: 13 months energy balance plot with original data



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

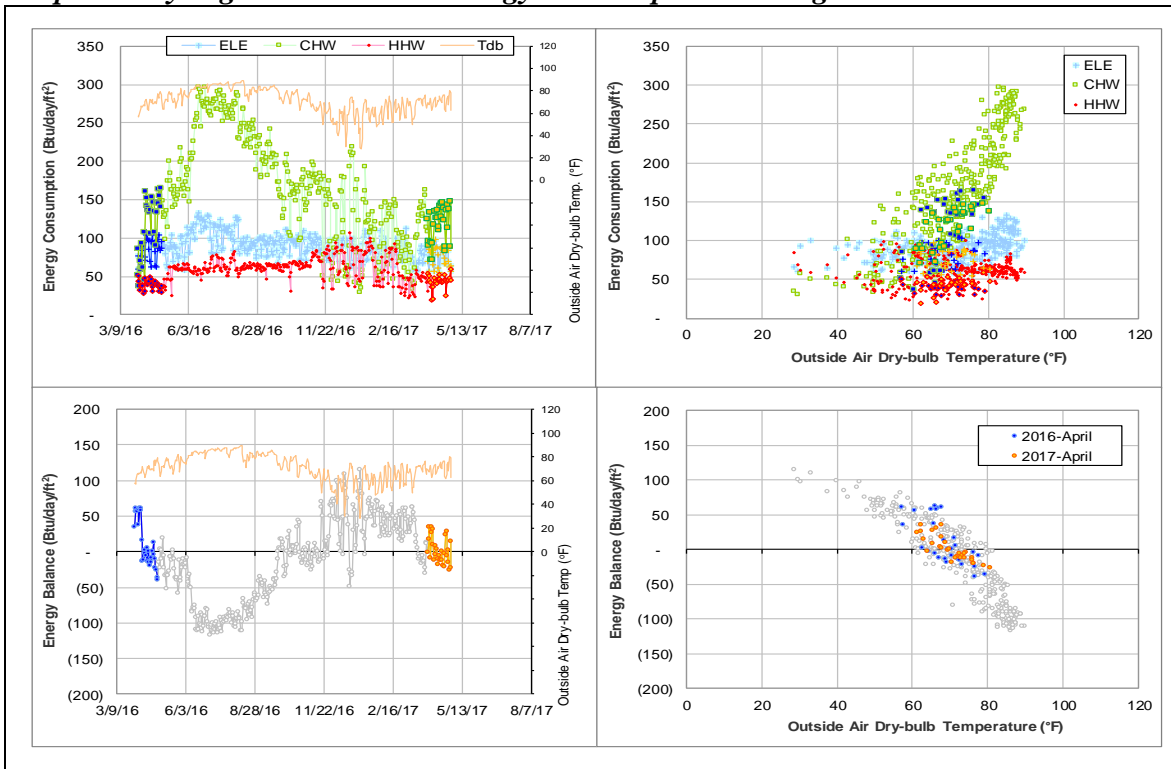
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	Consumption pattern is not weather dependent.	11/5/2016 – Ongoing

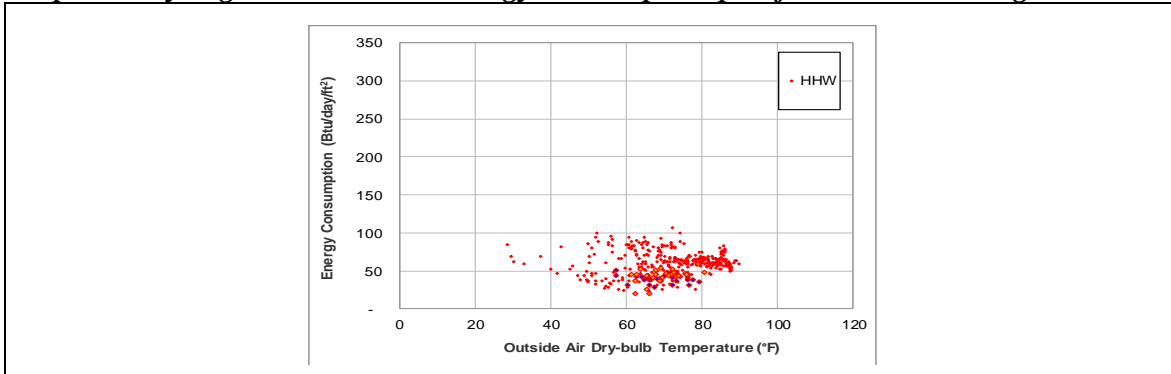
Comments

On 11/5/2016, the CHW and HHW energy consumption patterns appeared to be shifting to a higher level. The CHW consumption showed an increase in warmer temperatures by about 40 Btu/day/ft², and the HHW consumption showed an increase of 10 – 15 Btu/day/ft². In January 2017, the CHW pattern appears to be shifting back to its previous pattern. However, the HHW pattern still remains scattered and does not appear to be weather dependent.

Explanatory Figure: 13 months energy balance plot with original data



Explanatory Figure: 13 months energy consumption plot for HHW with original data



International Ocean Discovery Building (TAMU Bldg# 1601)

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

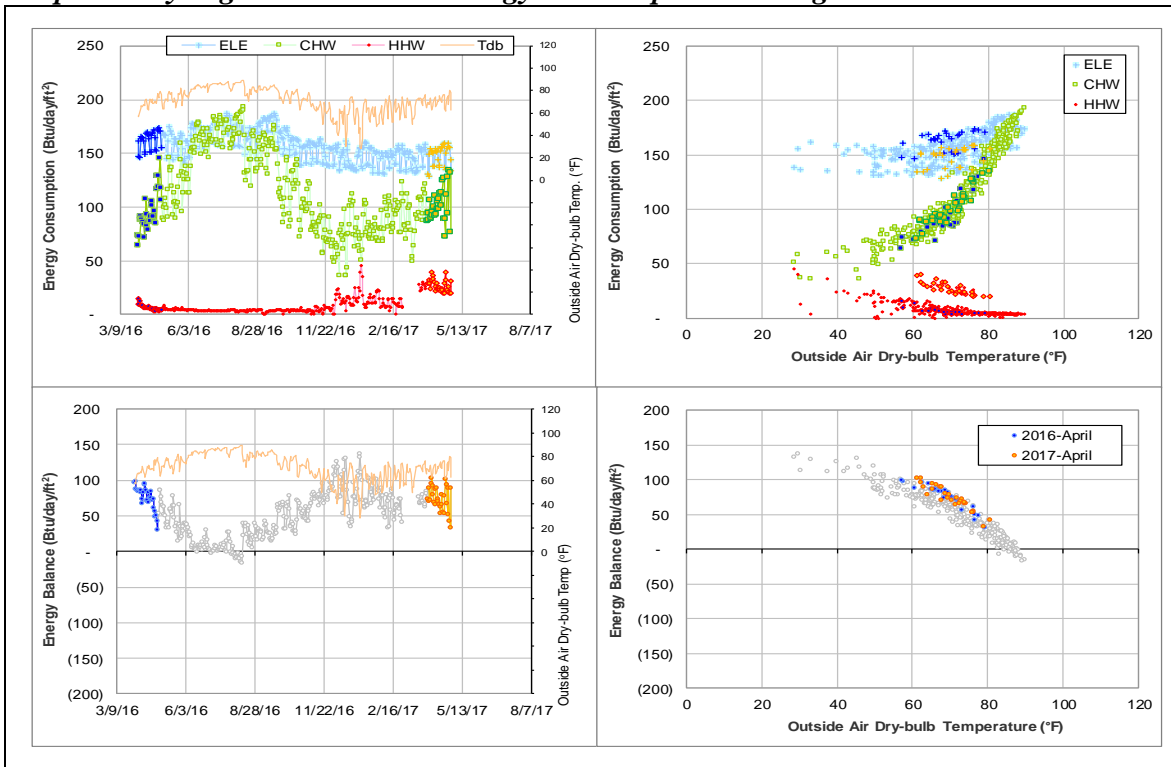
Data Type	Description of data behaviors	Period
Energy Balance	The cross-point is high, around 85°F.	Since data became available in Feb 2015
HHW	A new MID 009829 is discovered.	3/21/2017

Comments

The cross-point temperature is high for this building, around 85°F. The daily CHW consumption for last year is 36 – 200 Btu/day/ft². The CHW consumption level is low compared to ELE and HHW levels. This building might have its own chillers.

A new MID 009829 for HHW was discovered on 3/21/2017 and it has been making significant contribution to the HHW consumption.

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

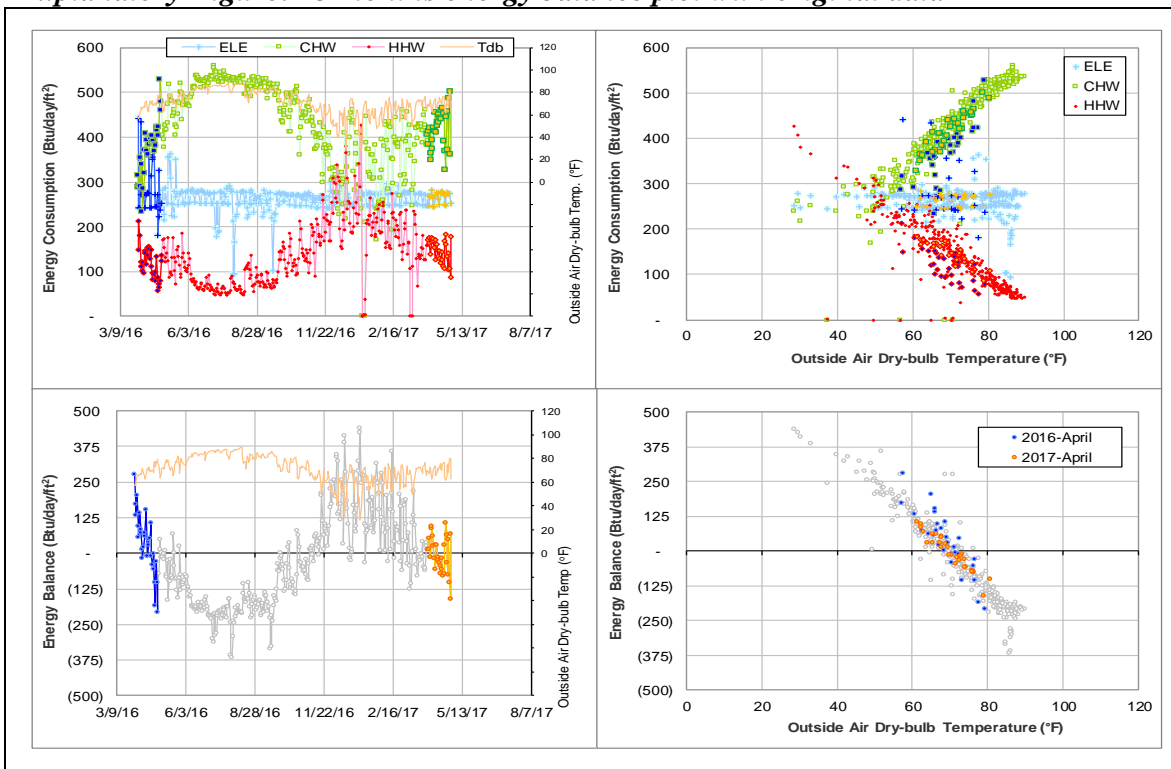
Data Type	Description of data behaviors	Period
ELE #006660	Consumption is zero for most of the time.	2/1/2015 – Ongoing
CHW and HHW	The consumption level is higher than that of last year.	5/1/2016 – Ongoing

Comments

The electric consumption for meter #006660 has been zero for most of the time it has been available since 2/1/2015. This meter is suspected to measure consumption for a specific piece of equipment that only runs occasionally.

New consumption patterns appear to be developing starting May 2016. The CHW consumption level is showing an overall increase, most notably in the warmer months. The HHW consumption level is also showing an increase for warmer temperatures. However, the energy balance maintained the same pattern. It does not appear to be metering problem.

Explanatory Figure: 13 months energy balance plot with original data



TTI Headquarters (TAMU Bldg# 1609)

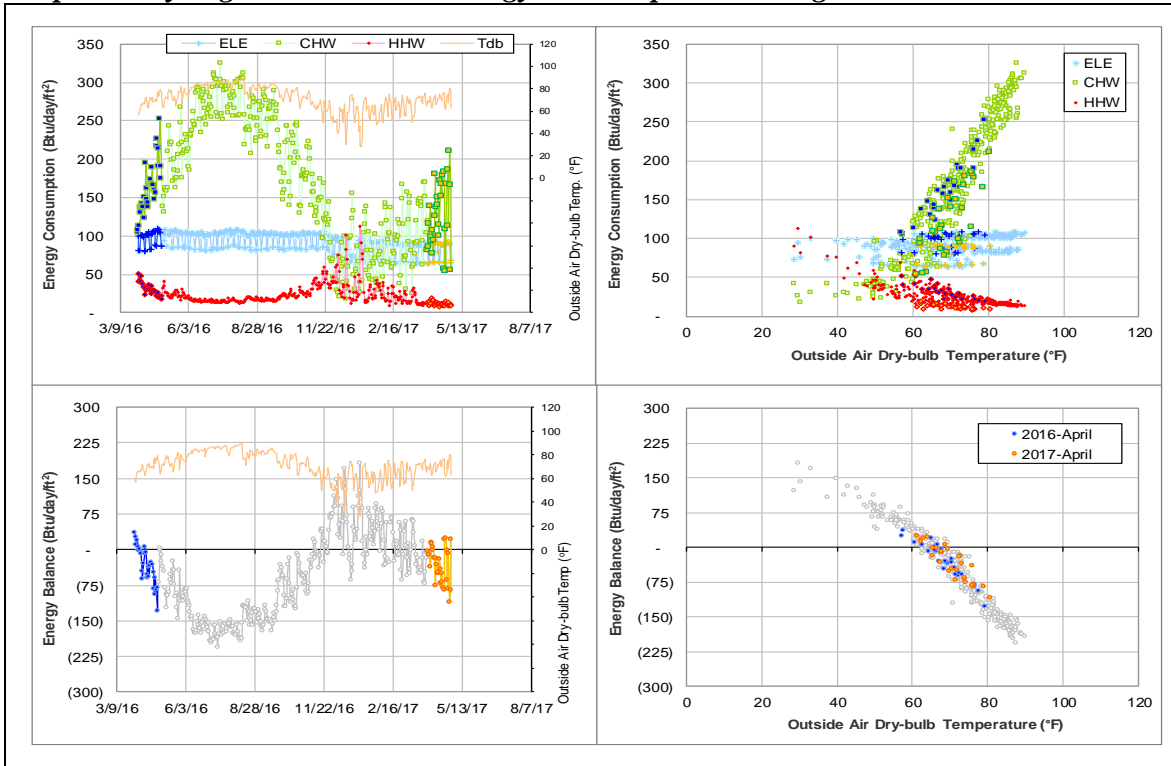
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW, HHW	Decrease in energy consumption pattern.	February 2017

Comments

The CHW and HHW consumption are showing a decrease compared to the past months. Both CHW and HHW have a very clear pattern. CHW is even showing weekday/weekend pattern. This building is listed as an ESCO building.

Explanatory Figure: 13 months energy balance plot with original data



National Center for Therapeutics Manufacturing (TAMU Bldg# 1910)

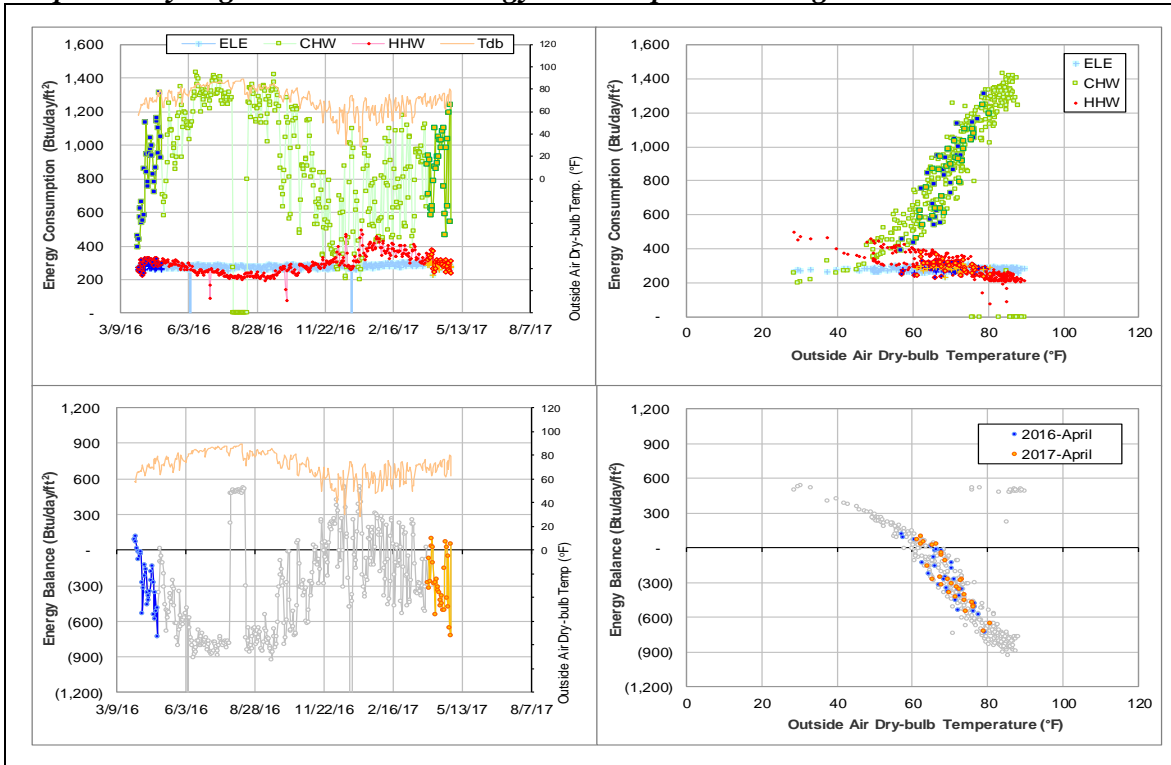
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	Increase in energy consumption pattern.	February 2017

Comments

The HHW is showing an increase in consumption by about 80-100 Btu/day/ft². Even with the increase, the energy balance has not changed. It does not appear to be a meter issue.

Explanatory Figure: 13 months energy balance plot with original data



III. Time Series Plots for April 2017 Consumption

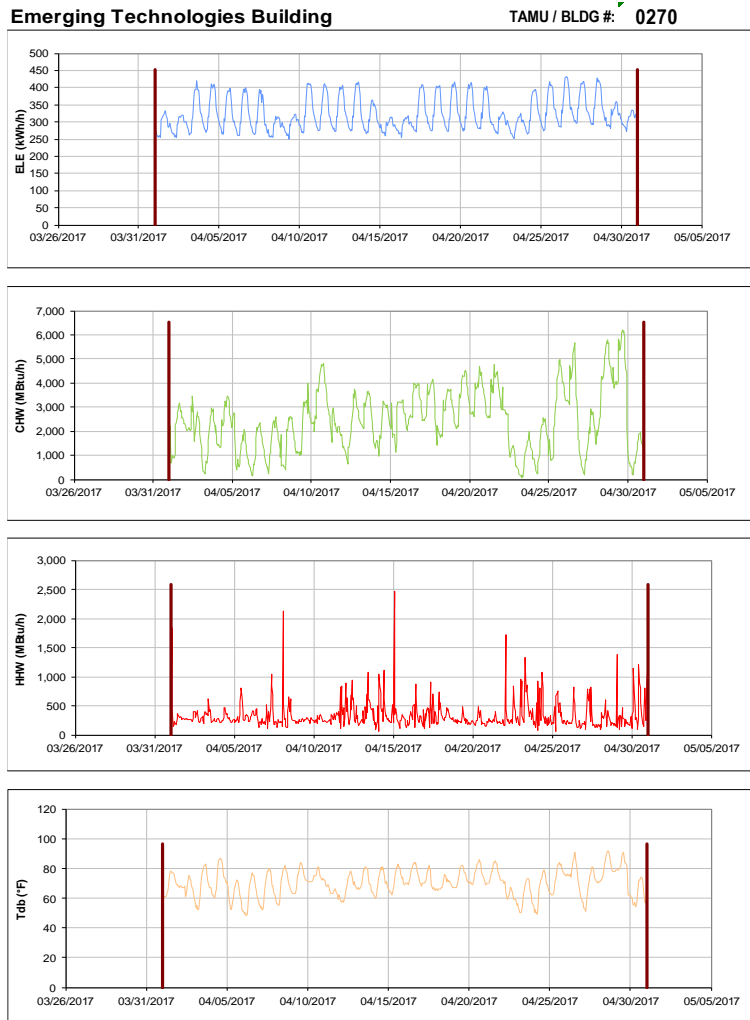


Figure III-1 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Emerging Technologies Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

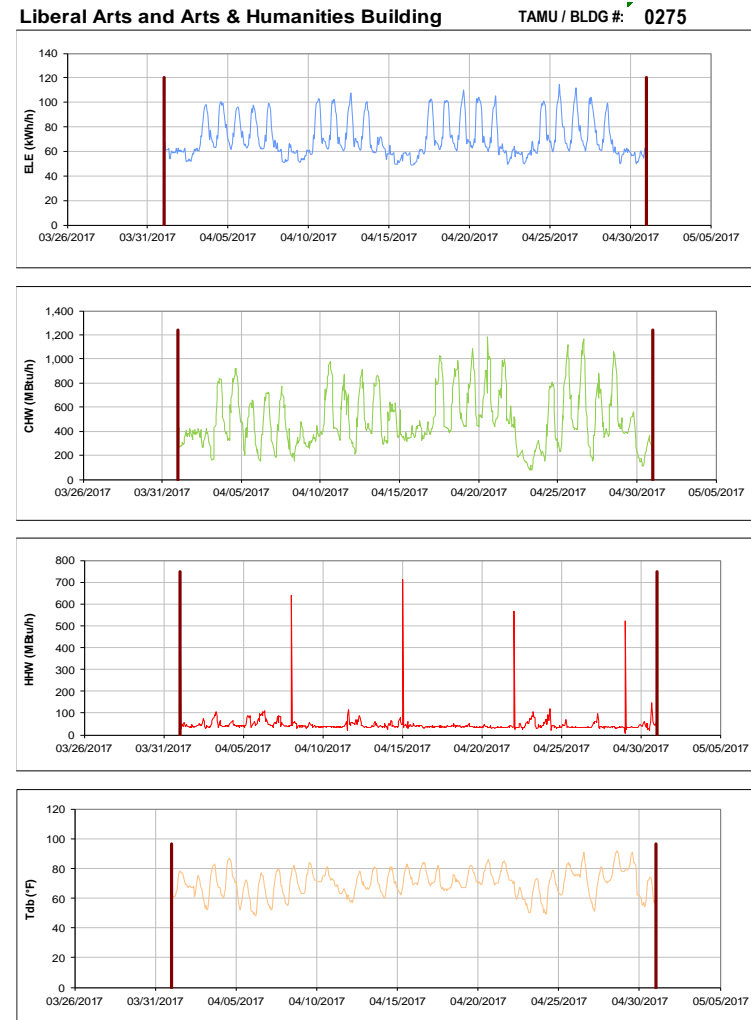


Figure III-2 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Liberal Arts and Arts & Humanities Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-3 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wells Residence Hall during the Month of April 2017 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 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

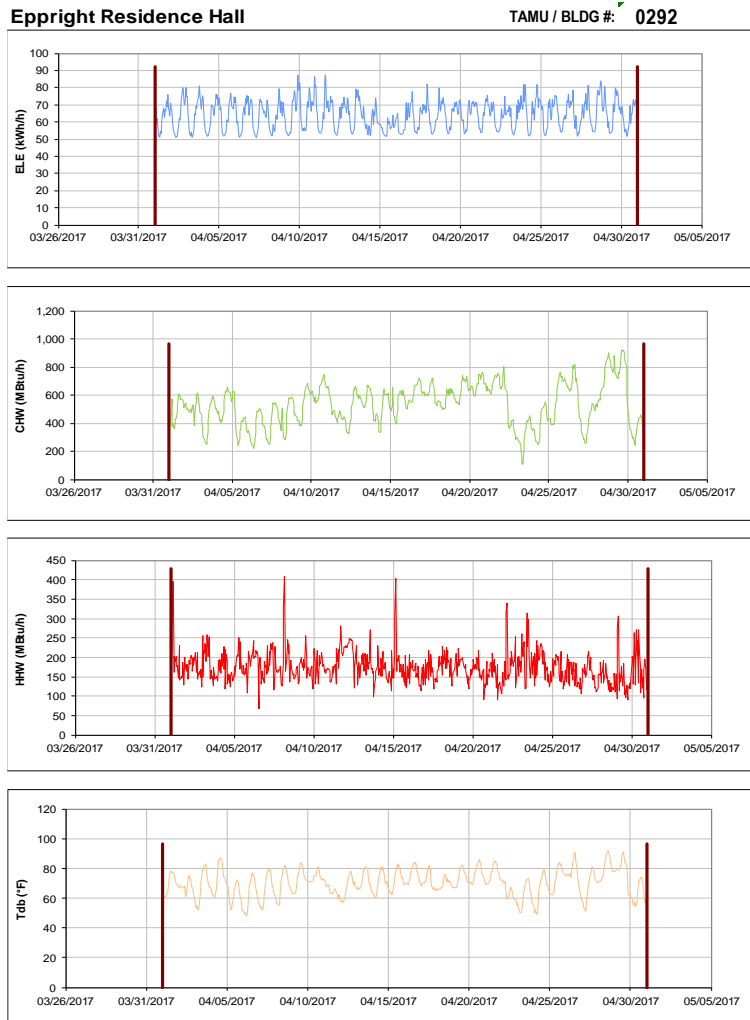


Figure III-5 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Eppright Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

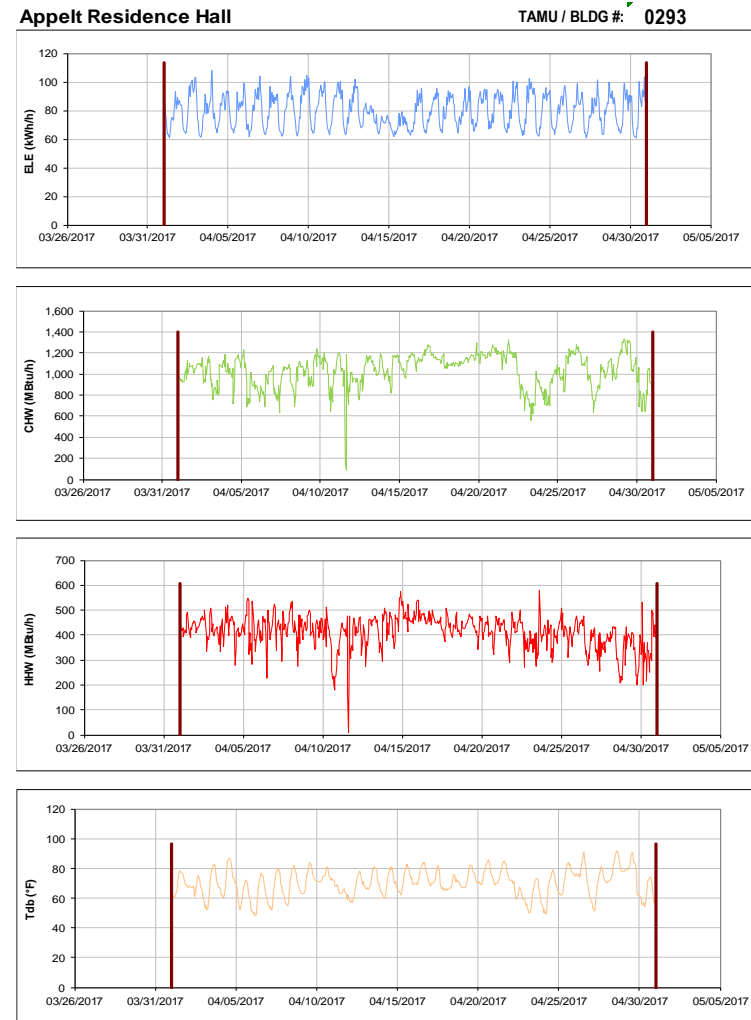


Figure III-6 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Appelt Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-7 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lechner Residence Hall during the Month of April 2017 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 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

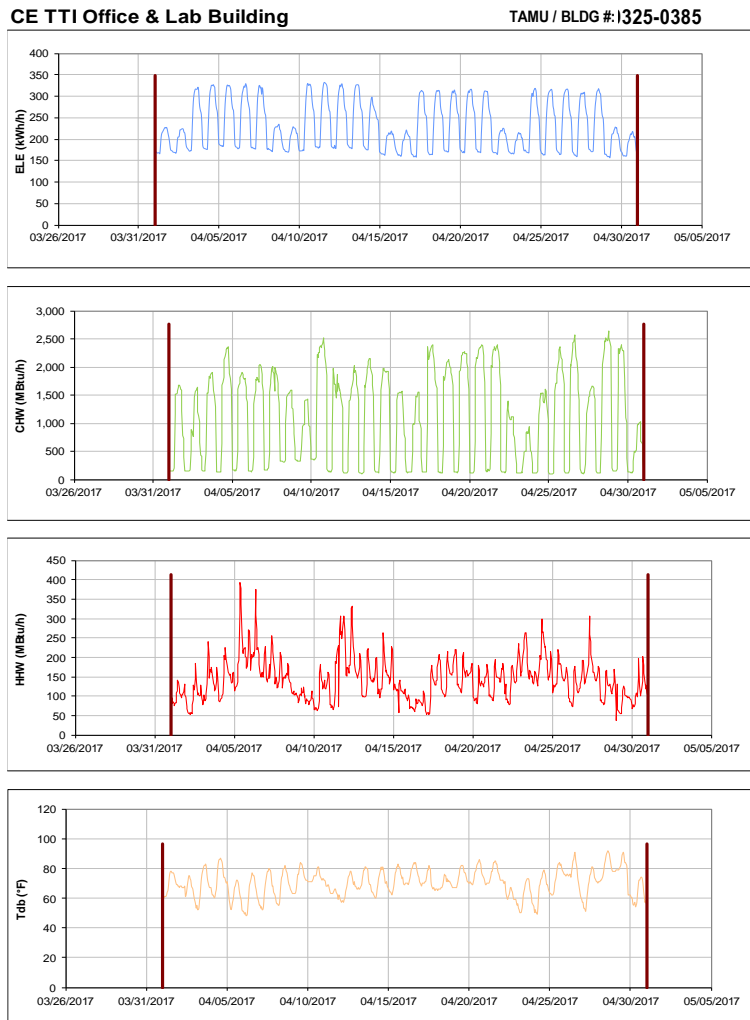


Figure III-9 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for CE TTI Office & Lab Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-10 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bright Aerospace Building during the Month of April 2017 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 2017 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 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

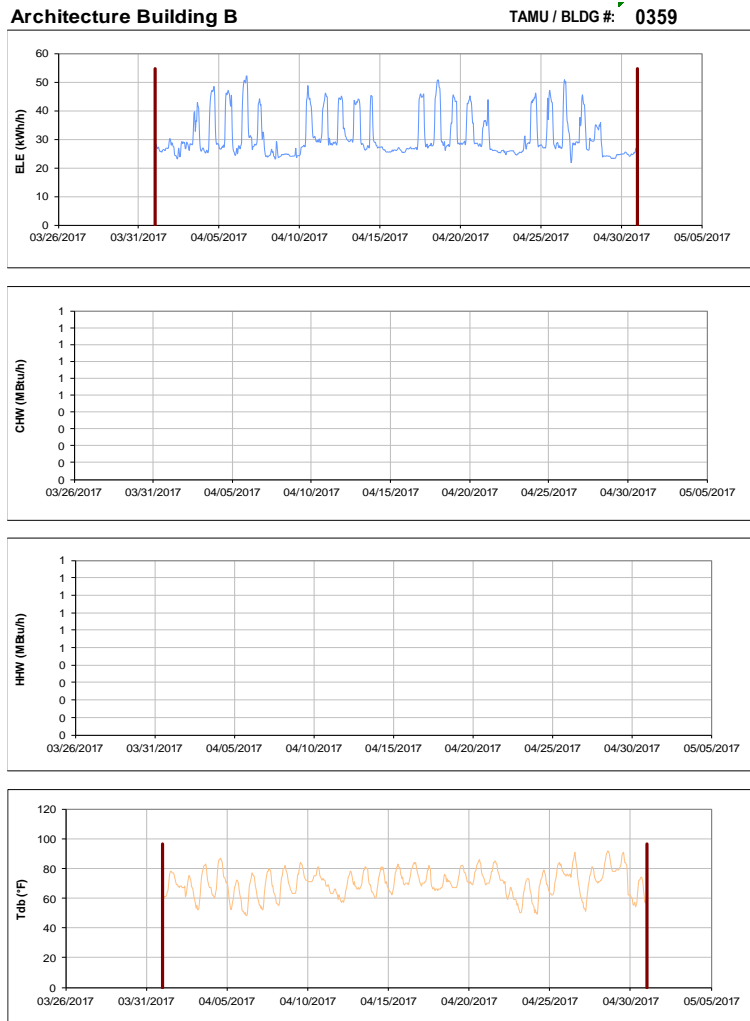


Figure III-13 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building B during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

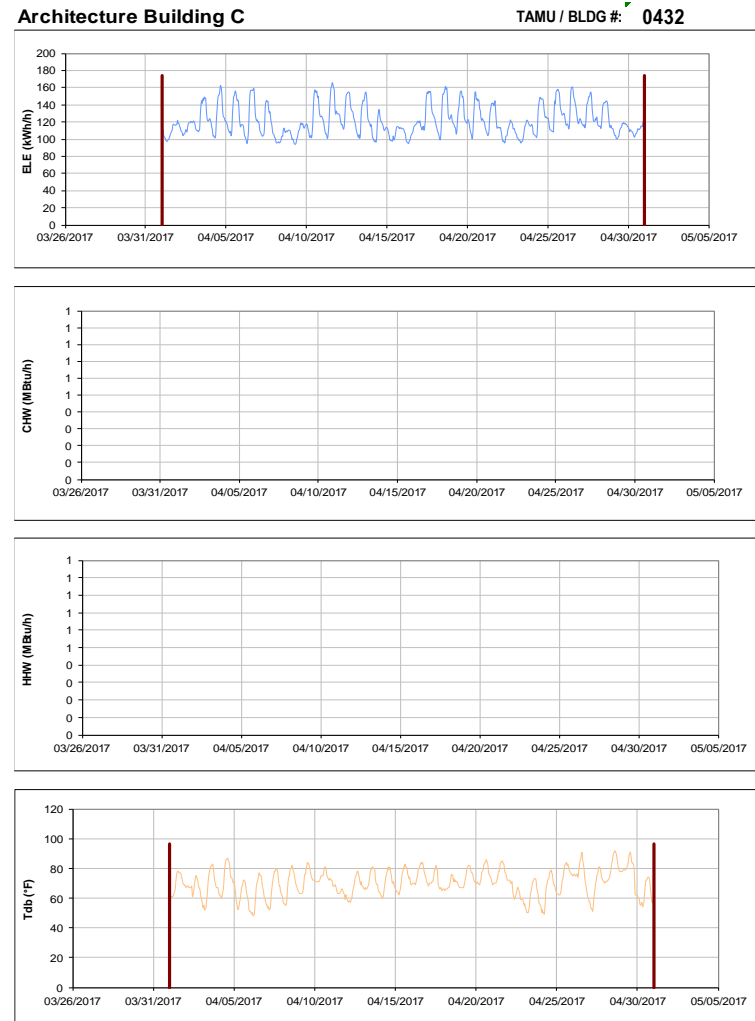


Figure III-14 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building C during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-15 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bright Football Complex during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

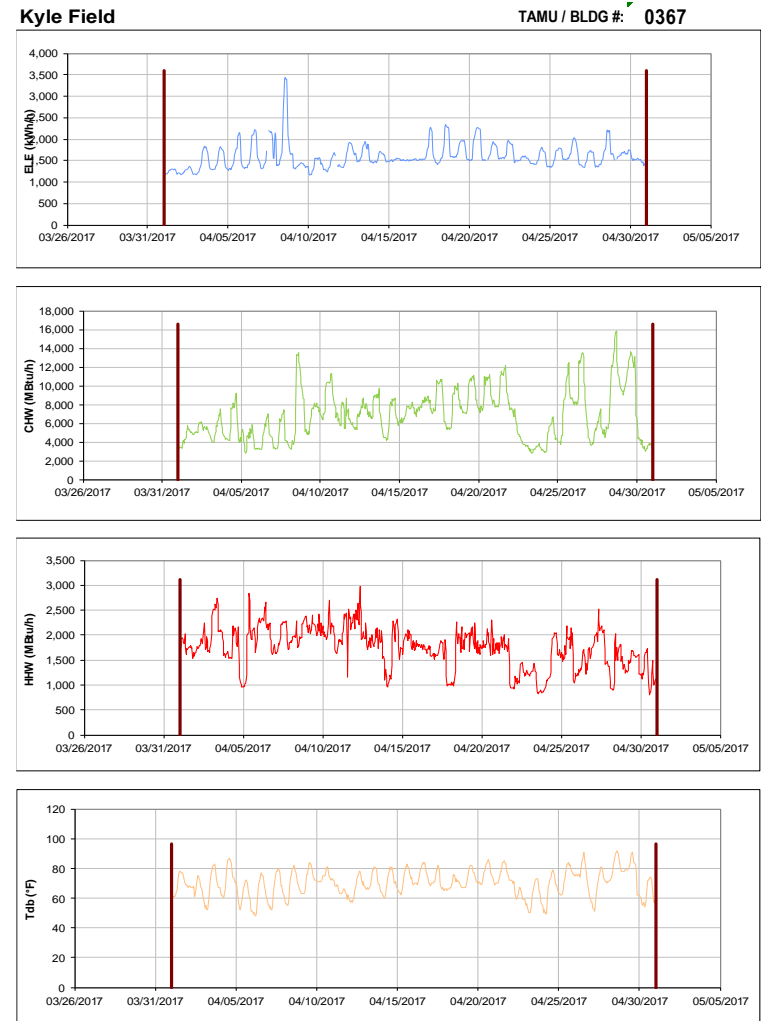


Figure III-16 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kyle Field during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Chemistry Building Addition

TAMU / BLDG #: 0376

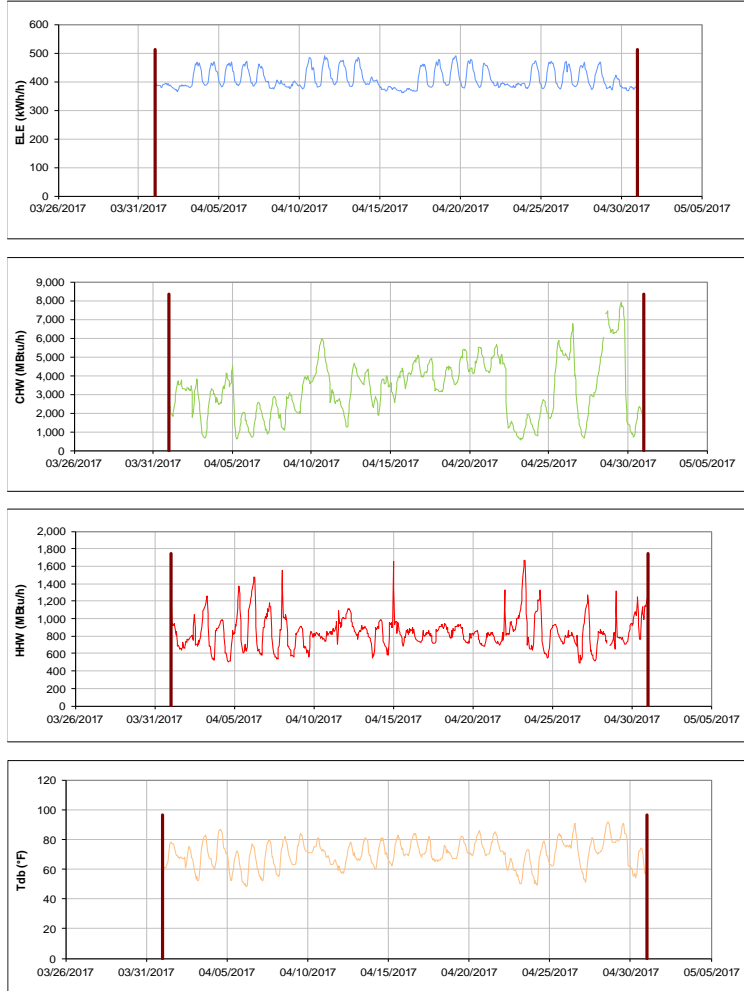


Figure III-17 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Chemistry Building Addition during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Koldus Building

TAMU / BLDG #: 0383

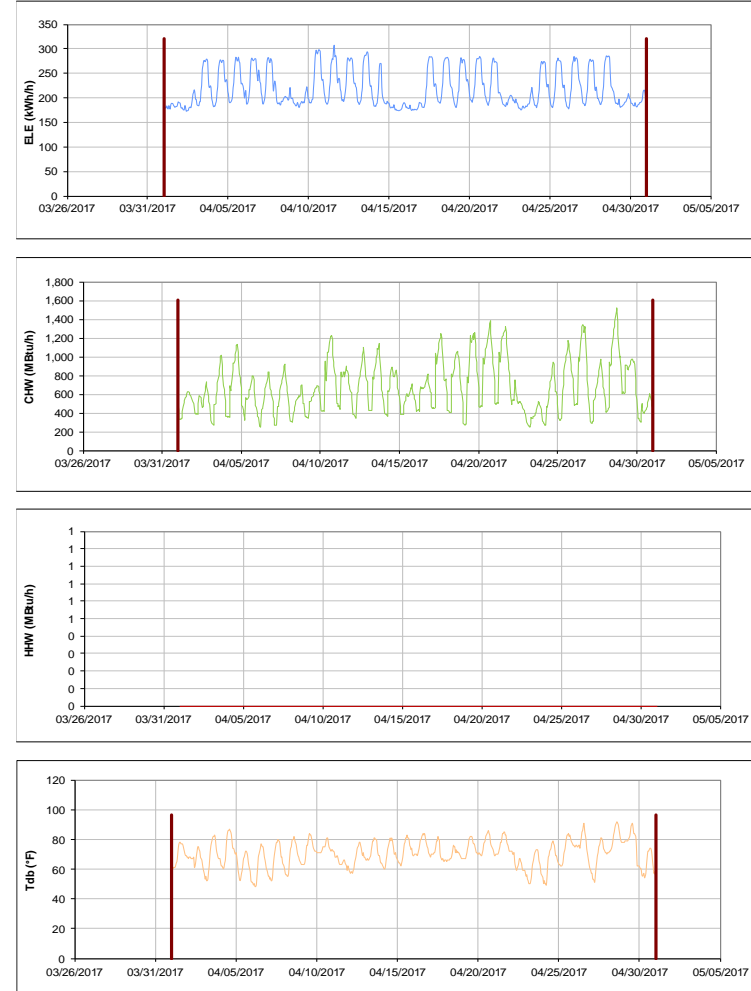


Figure III-18 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Koldus Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-19 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Sanders Corps of Cadets Center during the Month of April 2017 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 Jack E. Brown Chemical Engineering Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Richardson Petroleum Engineering Building TAMU / BLDG #: 0387

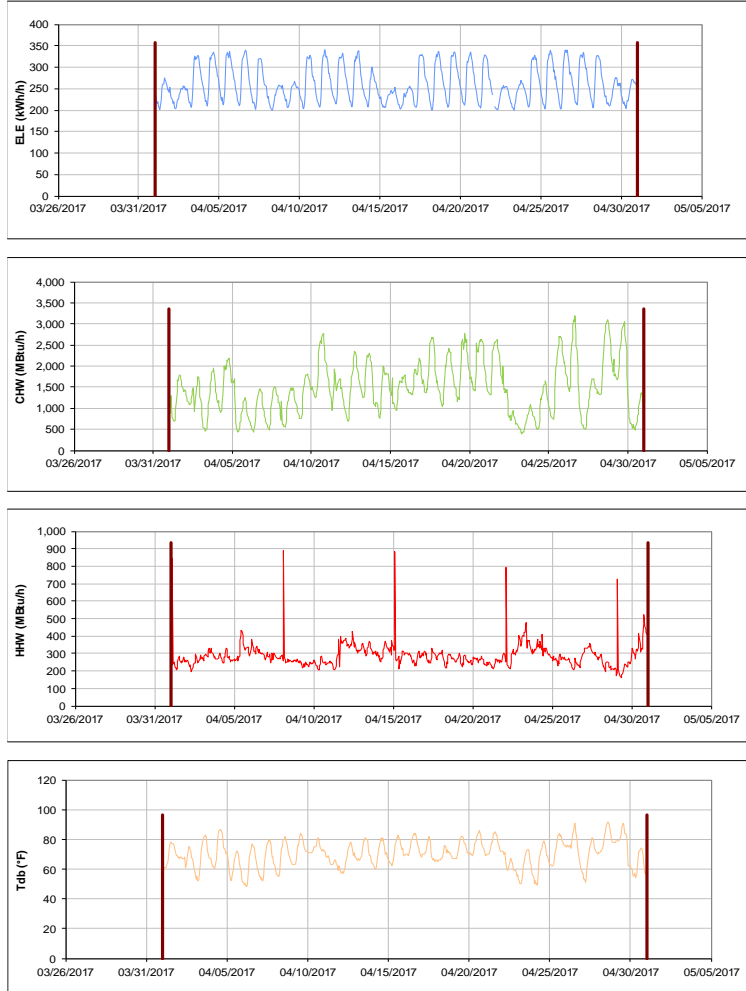


Figure III-21 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Richardson Petroleum Engineering Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

James J. Cain'51 and Mechanical Engineering Office Building TAMU / BLDG #: 1391-0392



Figure III-22 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 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-23 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Underwood Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

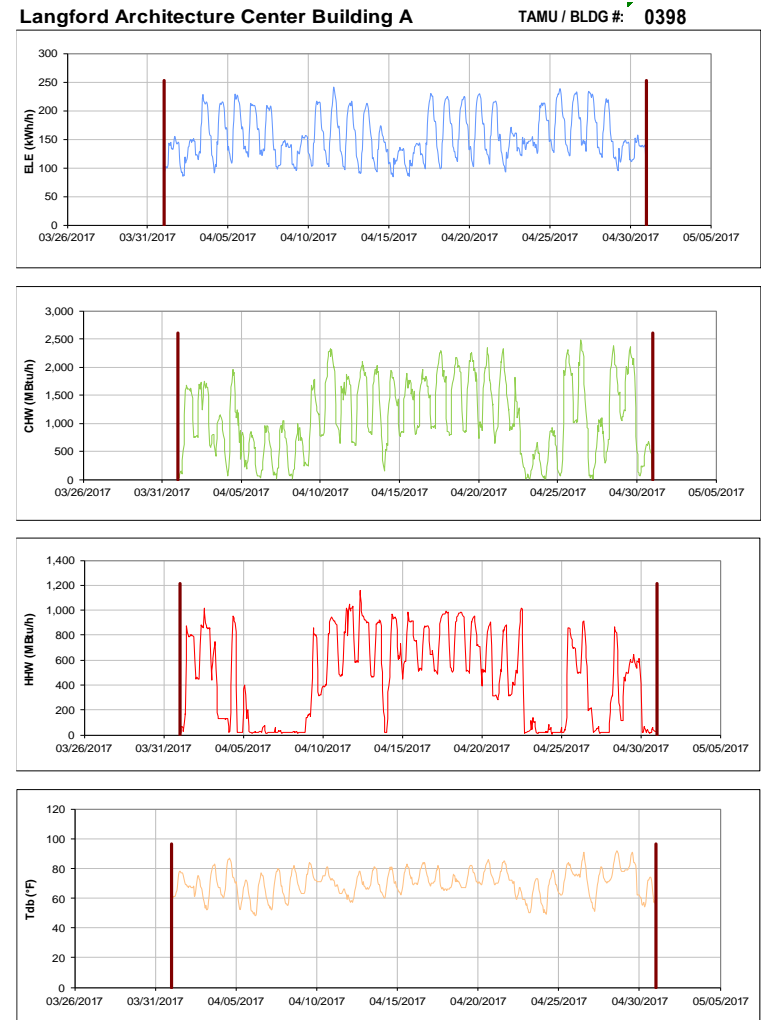


Figure III-24 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Langford Architecture Center Building A during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Spence Hall, Briggs Hall, and Ash II LLC TAMU / BLDG #: 0-0402-1405

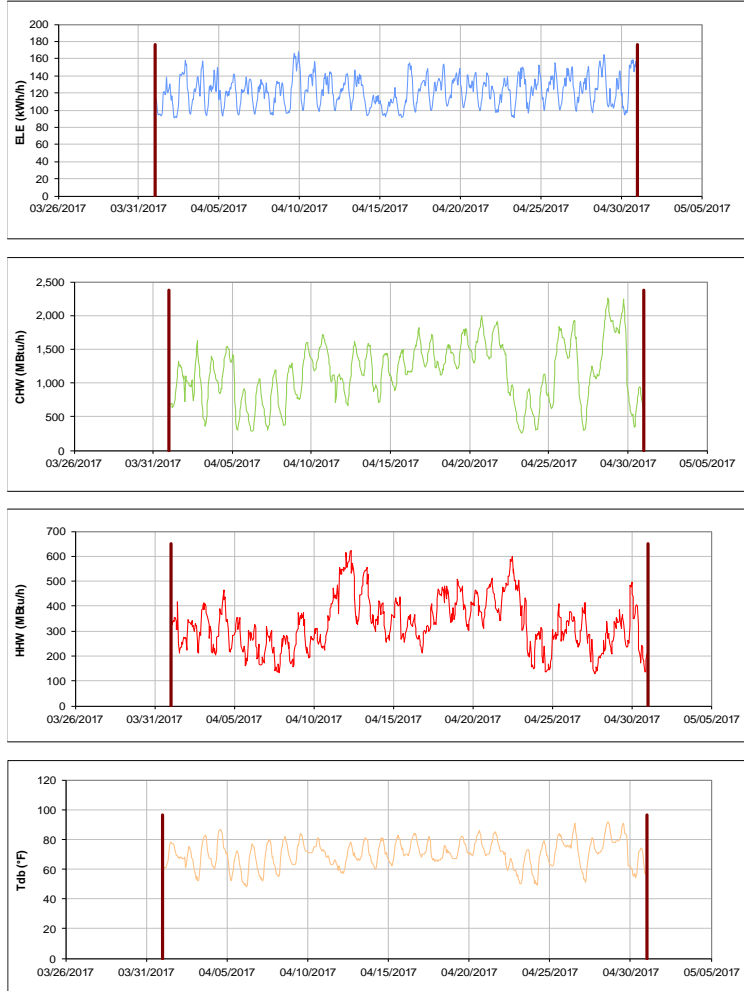


Figure III-25 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Spence Hall, Briggs Hall, and Ash II LLC during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Spence Hall Dorm 1 TAMU / BLDG #: 0400

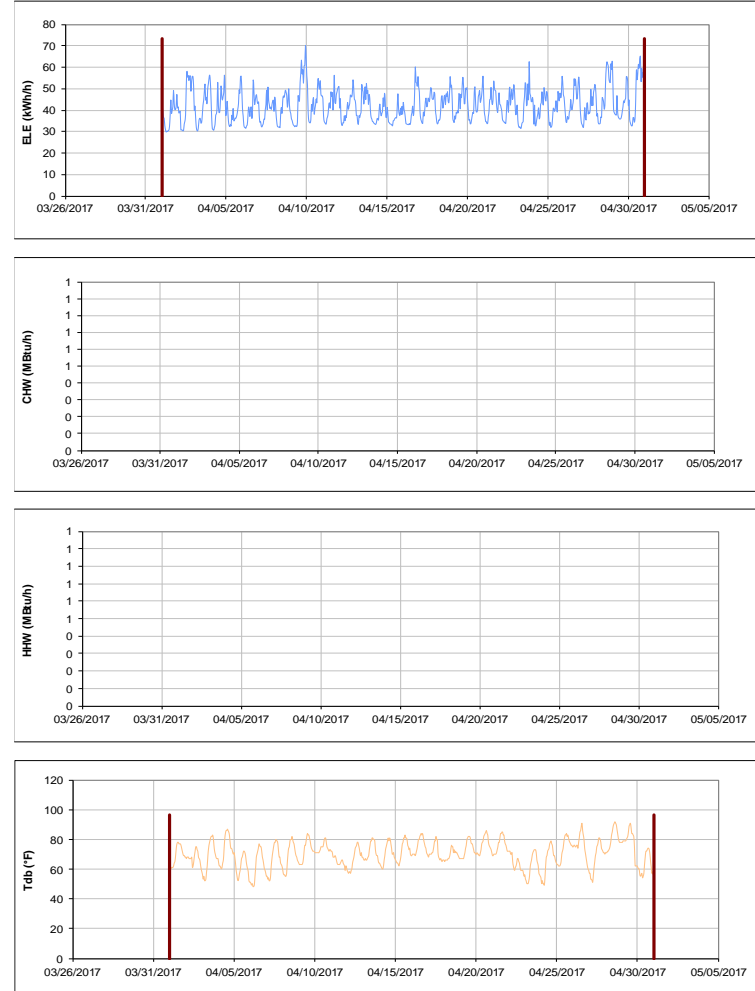


Figure III-26 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Spence Hall Dorm 1 during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Briggs Hall Dorm 3

TAMU / BLDG #: 0402



Figure III-27 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Briggs Hall Dorm 3 during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Ash II LLC

TAMU / BLDG #: 1405

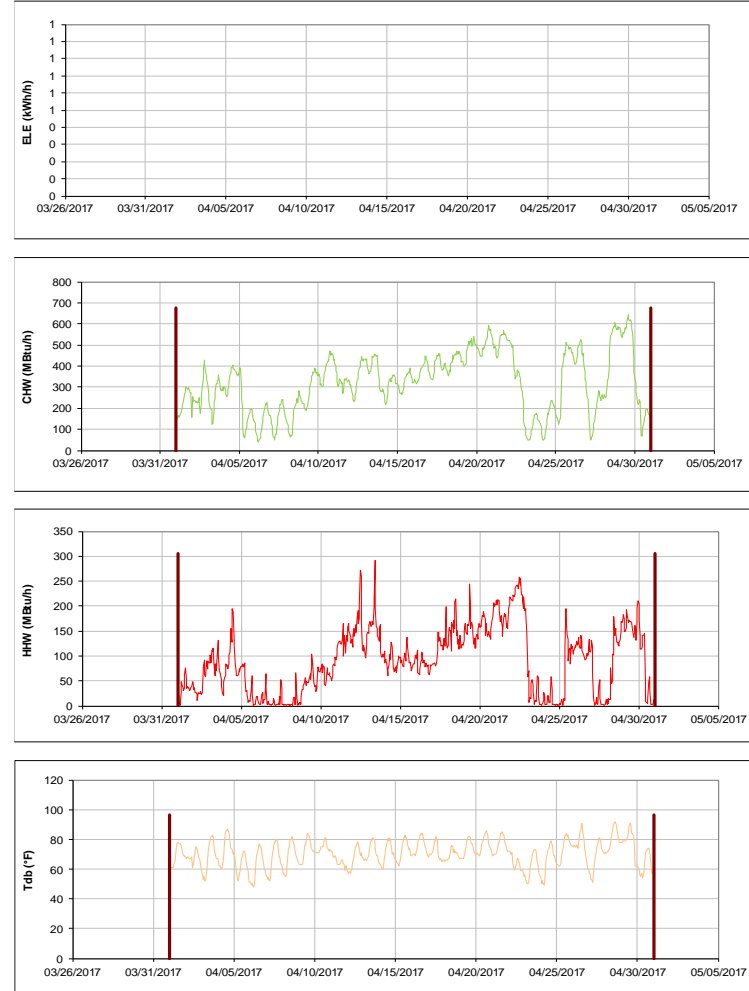


Figure III-28 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Ash II LLC during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Kiest Hall, Fountain Hall, and Plank LLC TAMU / BLDG #: 1-0403-1404



Figure III-29 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kiest Hall, Fountain Hall, and Plank LLC during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Kiest Hall Dorm 2 TAMU / BLDG #: 0401

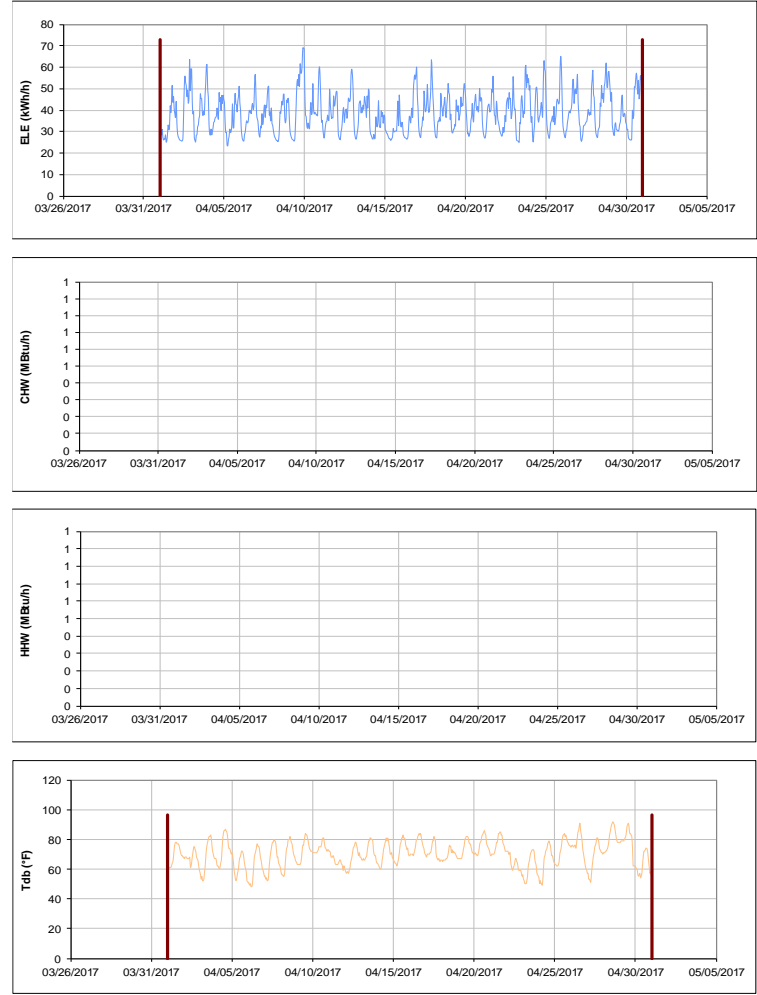


Figure III-30 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kiest Hall Dorm 2 during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

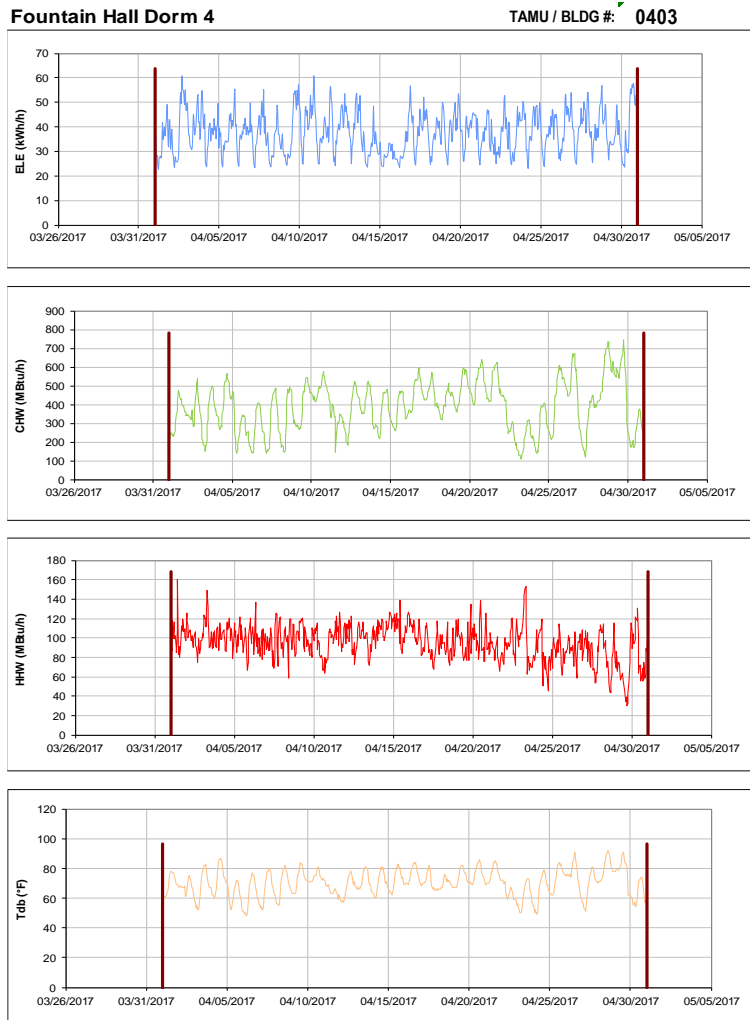


Figure III-31 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Fountain Hall Dorm 4 during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

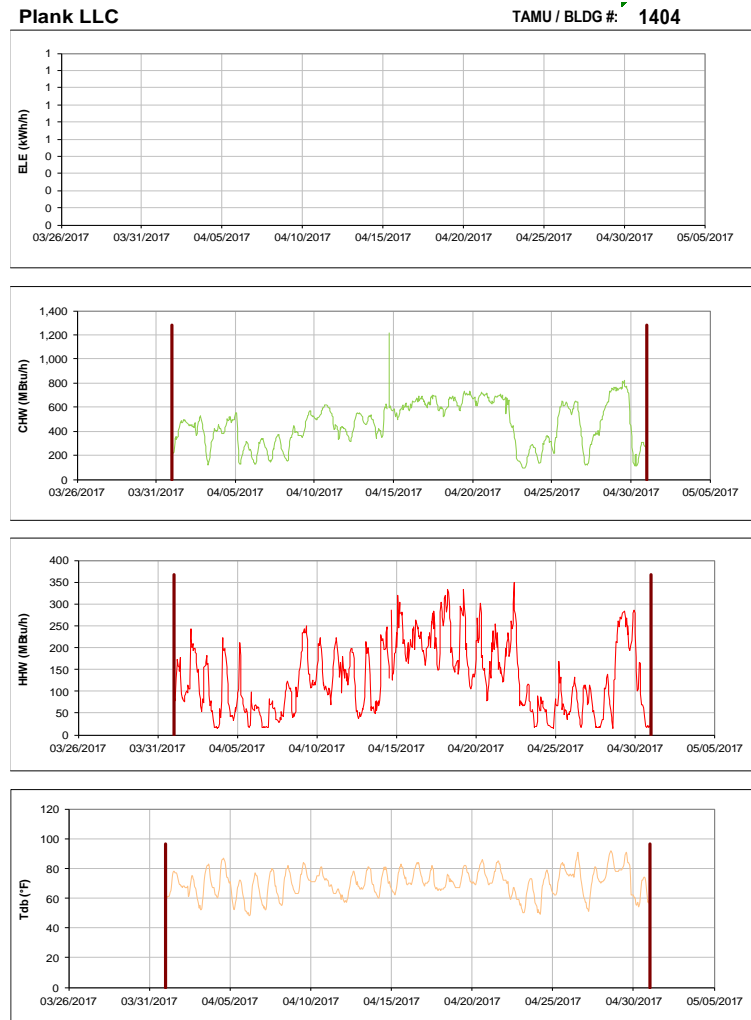


Figure III-32 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Plank LLC during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

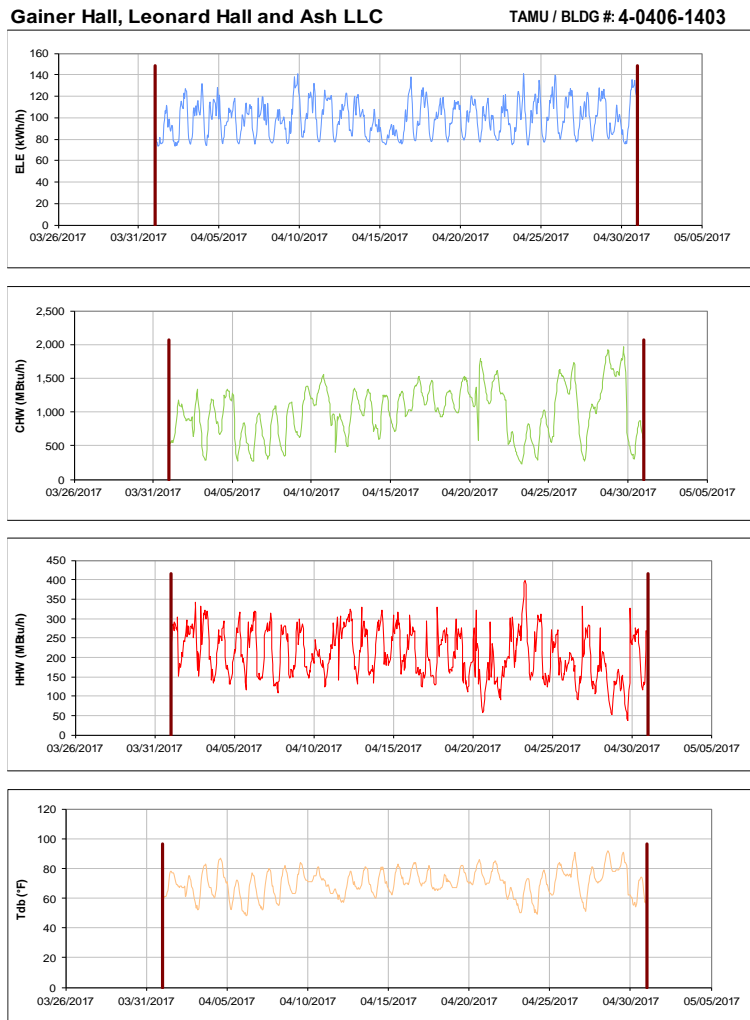


Figure III-33 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gainer Hall, Leonard Hall and Ash LLC during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

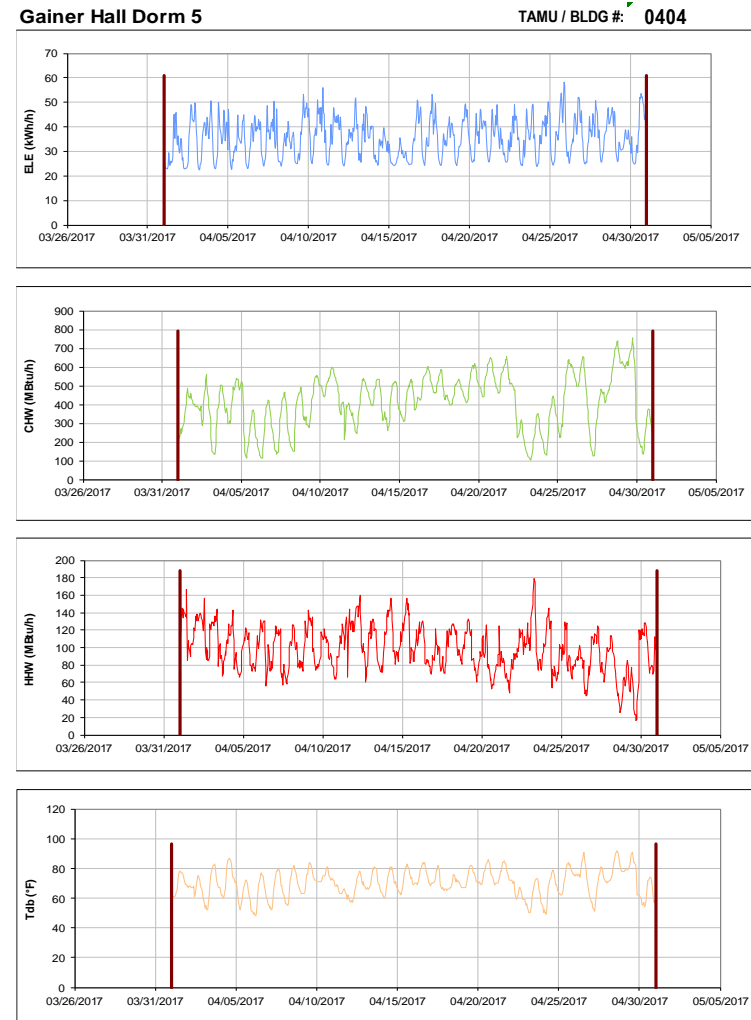


Figure III-34 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gainer Hall Dorm 5 during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

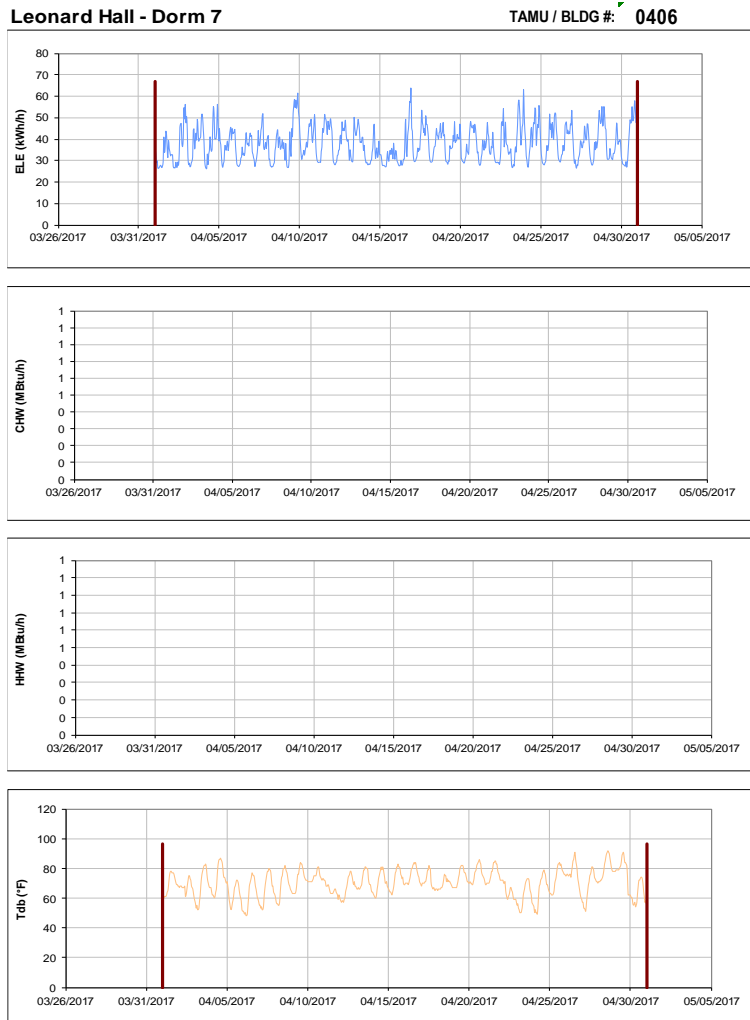


Figure III-35 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Leonard Hall - Dorm 7 during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

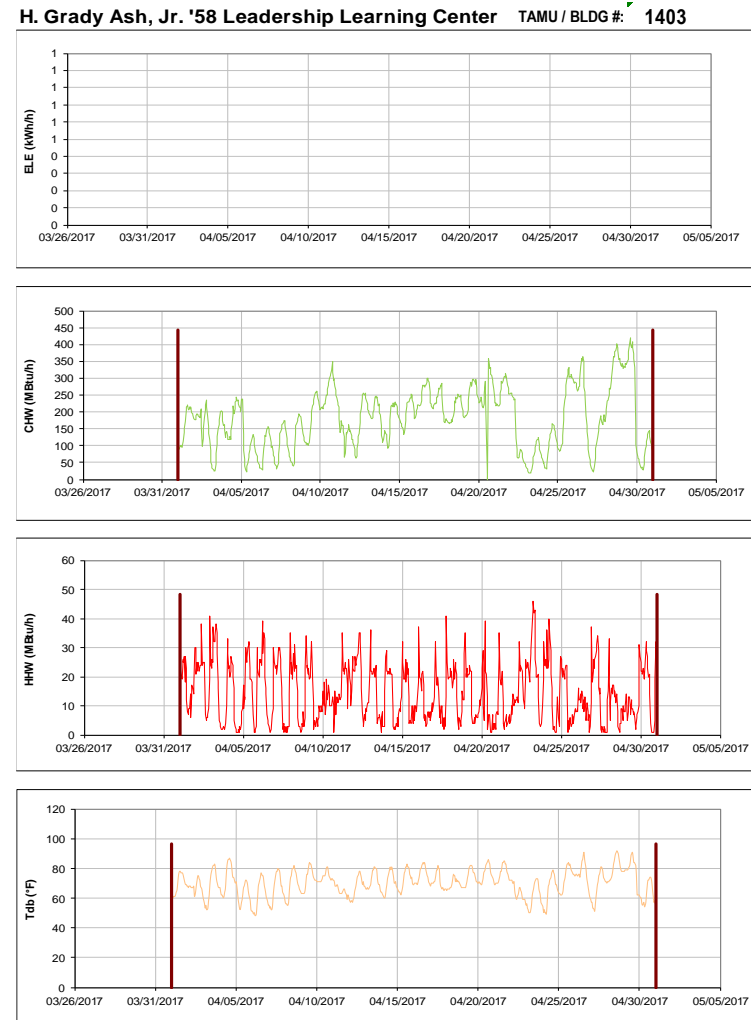


Figure III-36 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for H. Grady Ash, Jr. '58 Leadership Learning Center during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

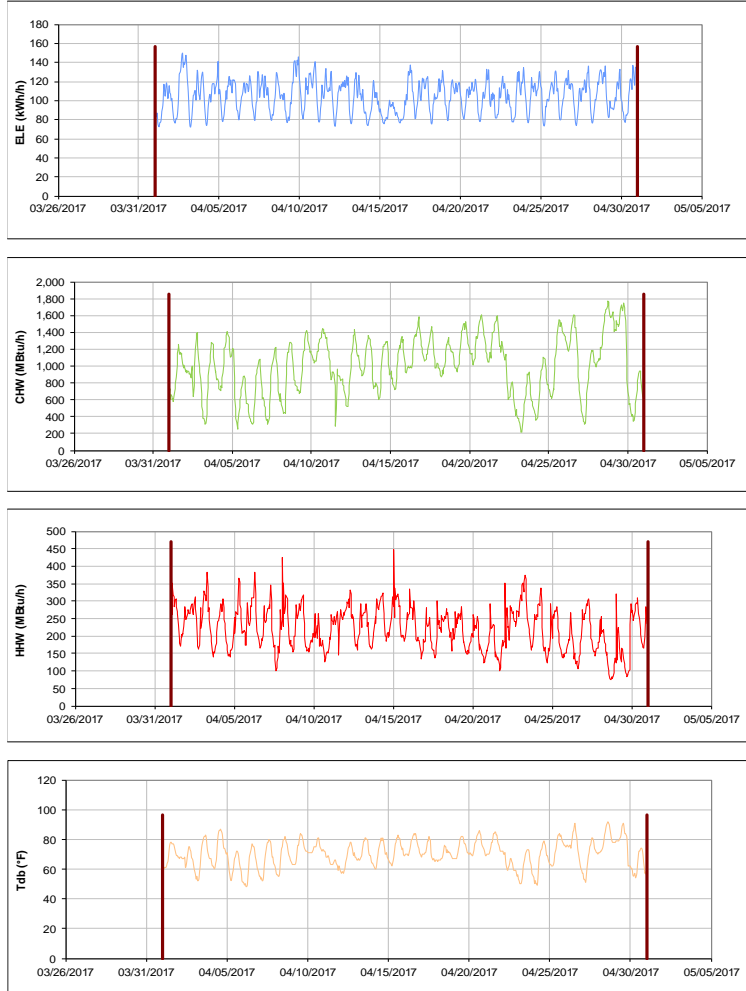


Figure III-37 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Lacy Hall - Dorm 6 TAMU / BLDG #: 0405

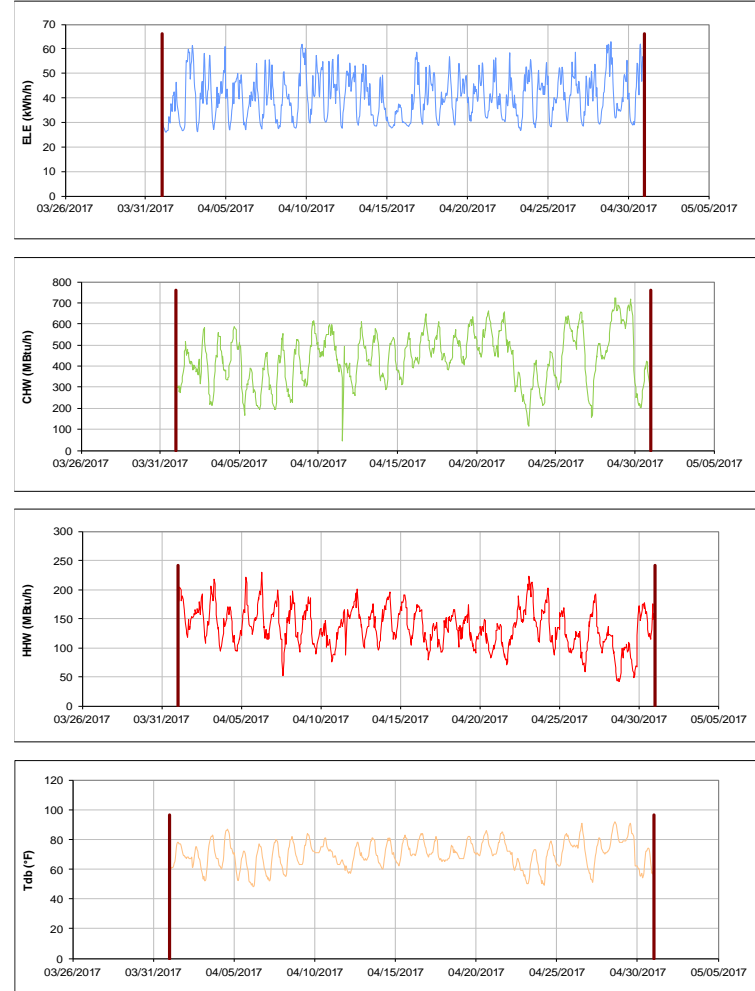


Figure III-38 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lacy Hall - Dorm 6 during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Harrell Hall - Dorm 8

TAMU / BLDG #: 0407

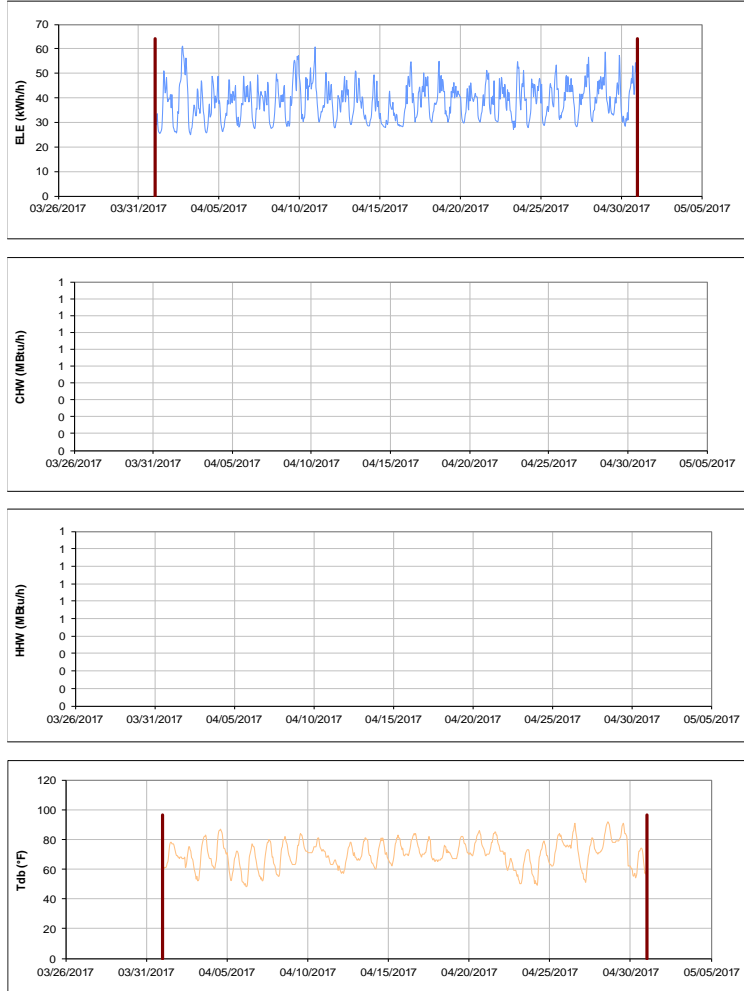


Figure III-39 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrell Hall - Dorm 8 during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Buzbee Leadership Learning Center

TAMU / BLDG #: 1402



Figure III-40 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Buzbee Leadership Learning Center during the Month of April 2017 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 Moses Residence Hall during the Month of April 2017 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 Davis-Gary Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

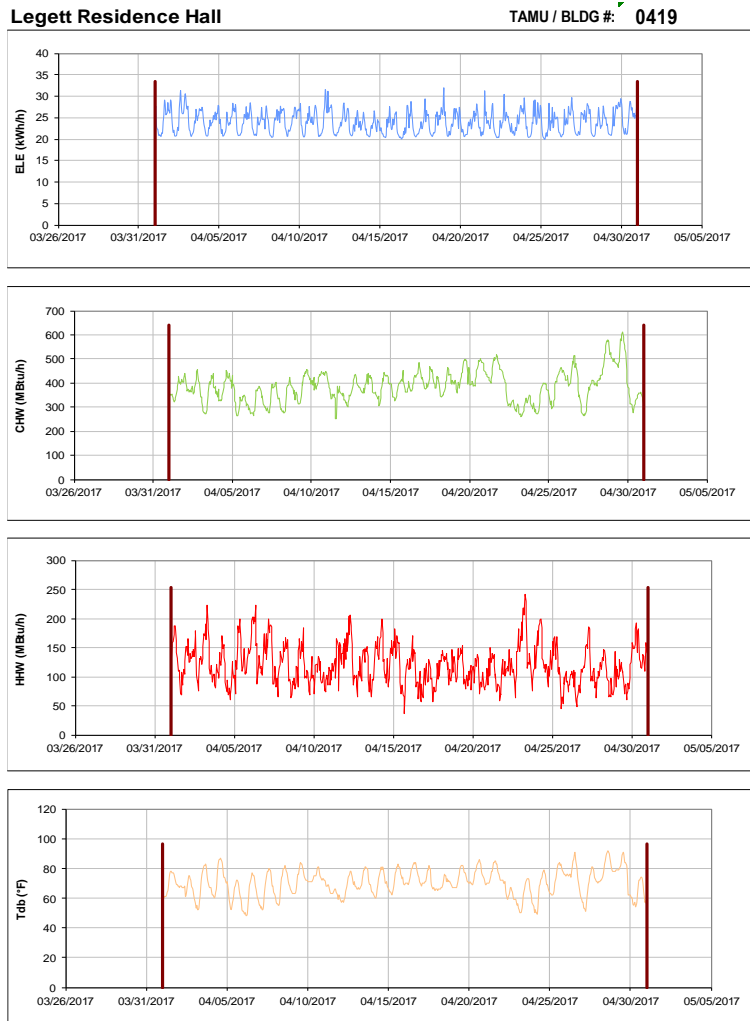


Figure III-43 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Legett Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

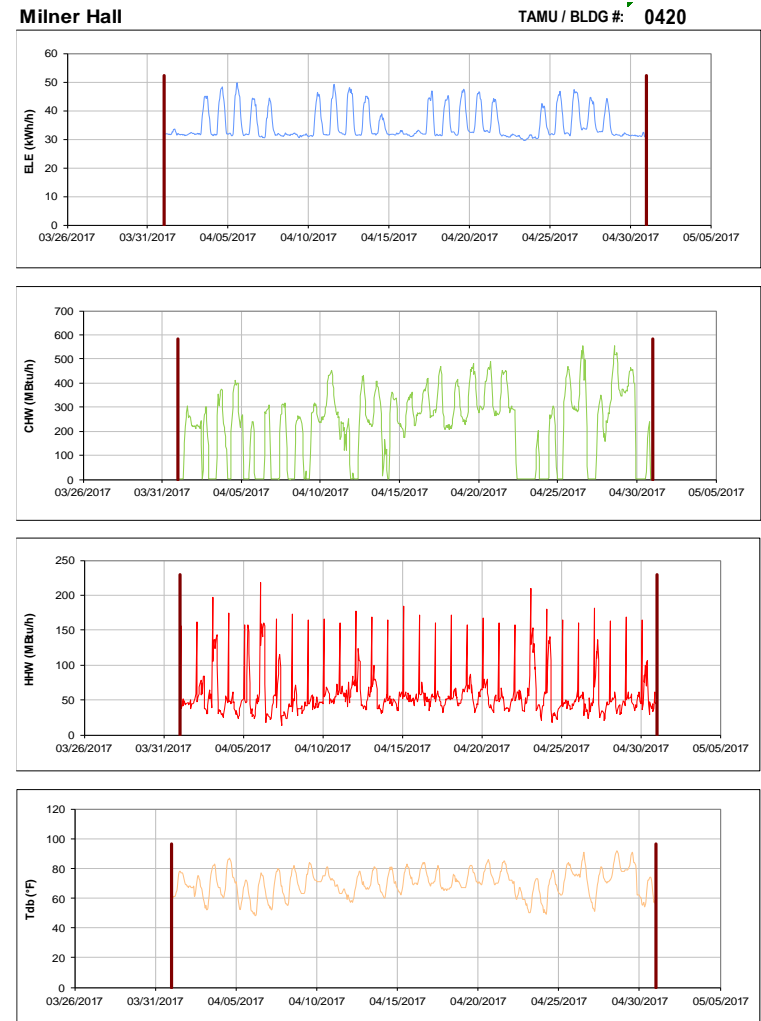


Figure III-44 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Milner Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

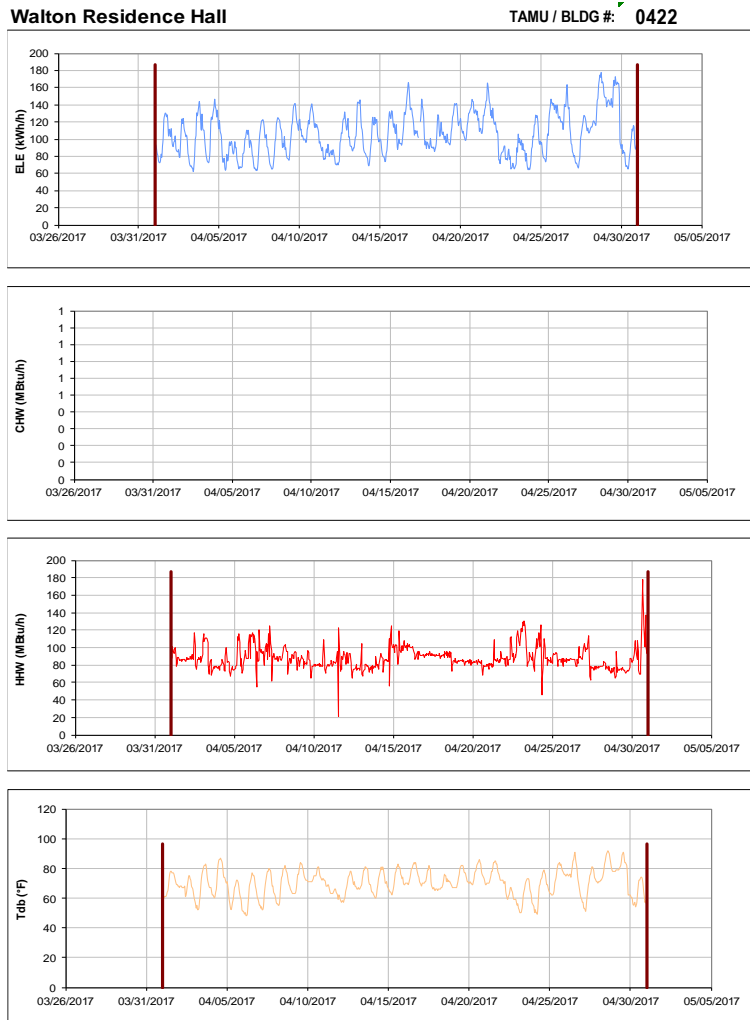


Figure III-45 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Walton Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-46 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hotard Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-47 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Henderson Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

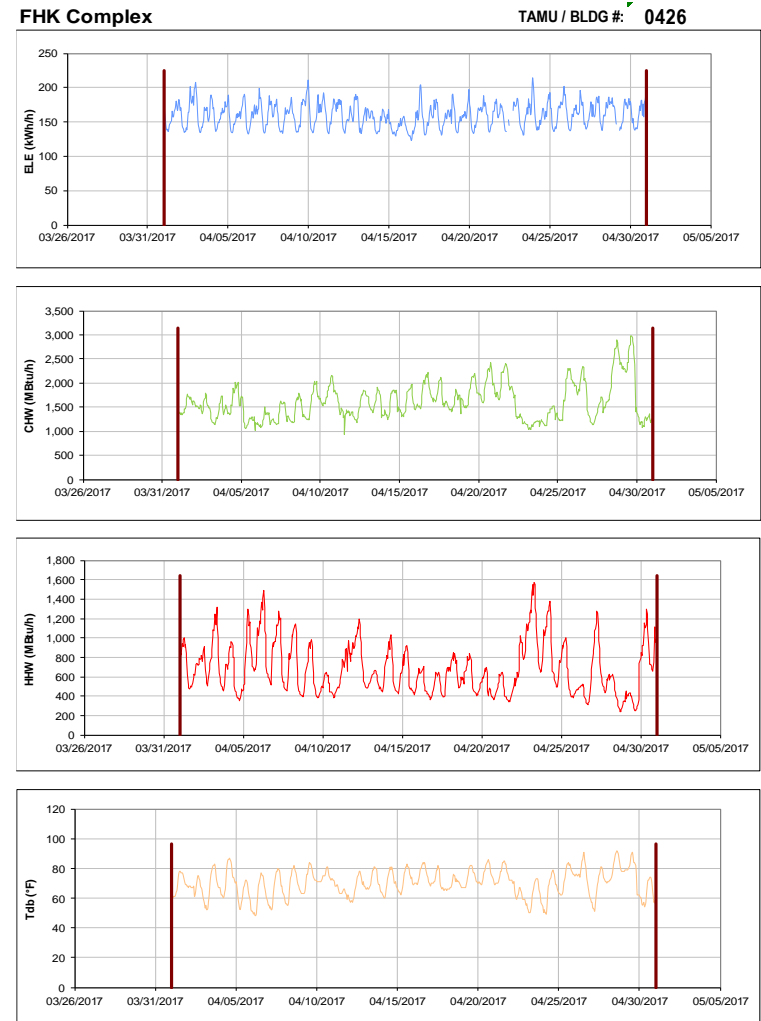


Figure III-48 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for FHK Complex during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Schumacher Residence Hall

TAMU / BLDG #: 0430

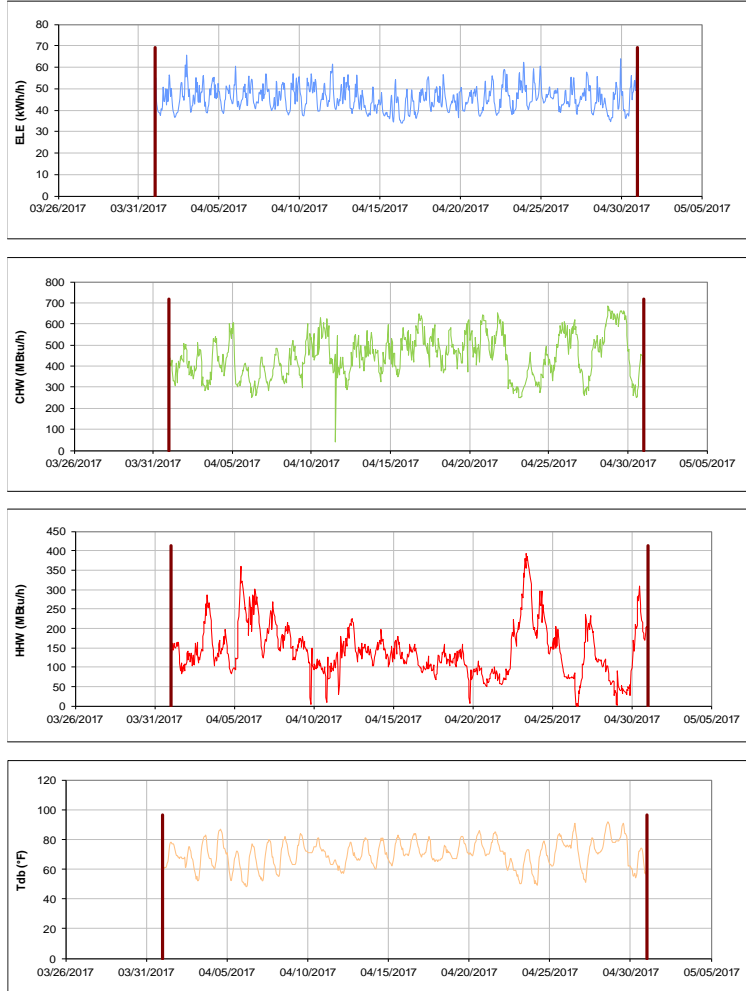


Figure III-49 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Schumacher Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Mosher Commons Krueger Dunn Aston

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



Figure III-50 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mosher Commons Krueger Dunn Aston during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

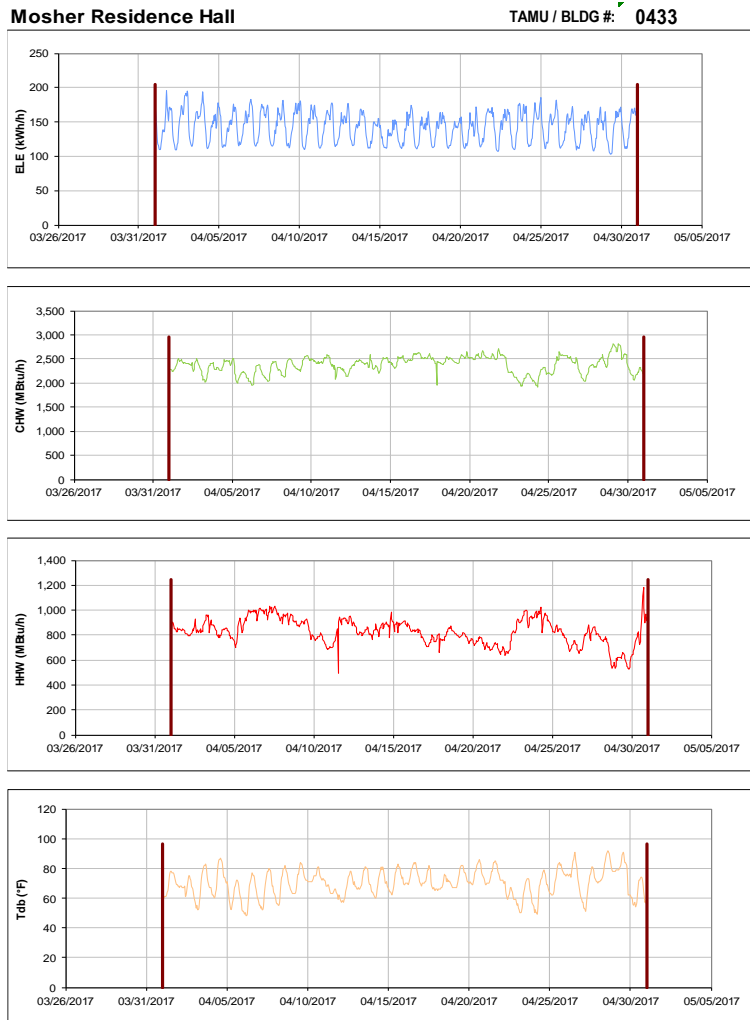


Figure III-51 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mosher Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-52 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Commons Krueger during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

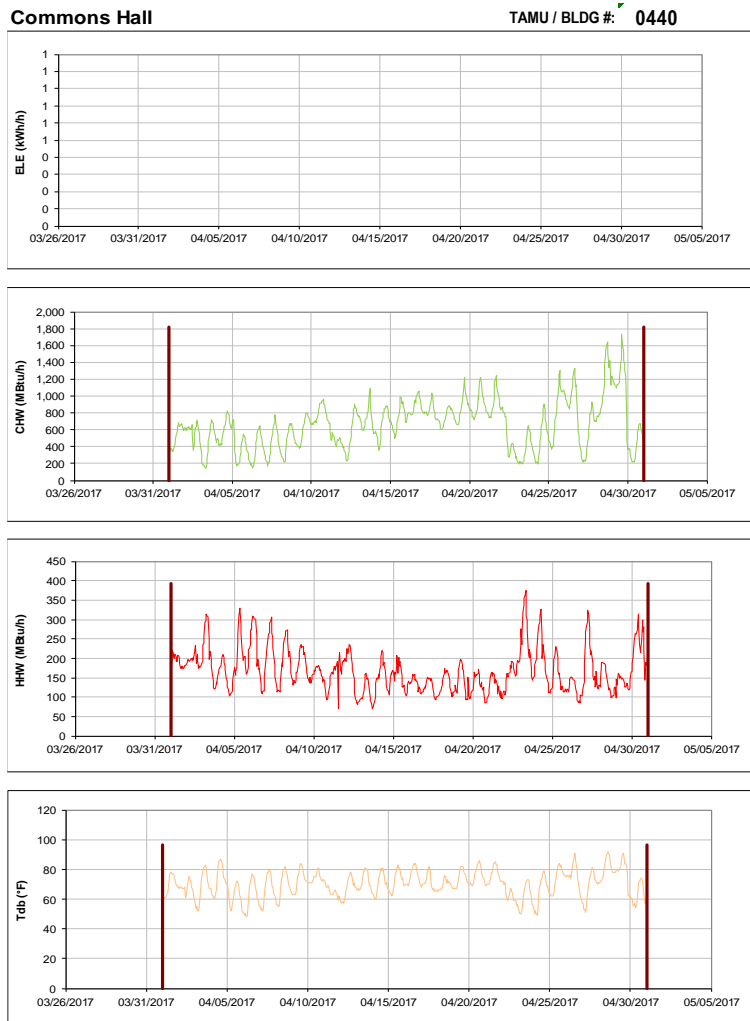


Figure III-53 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Commons Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

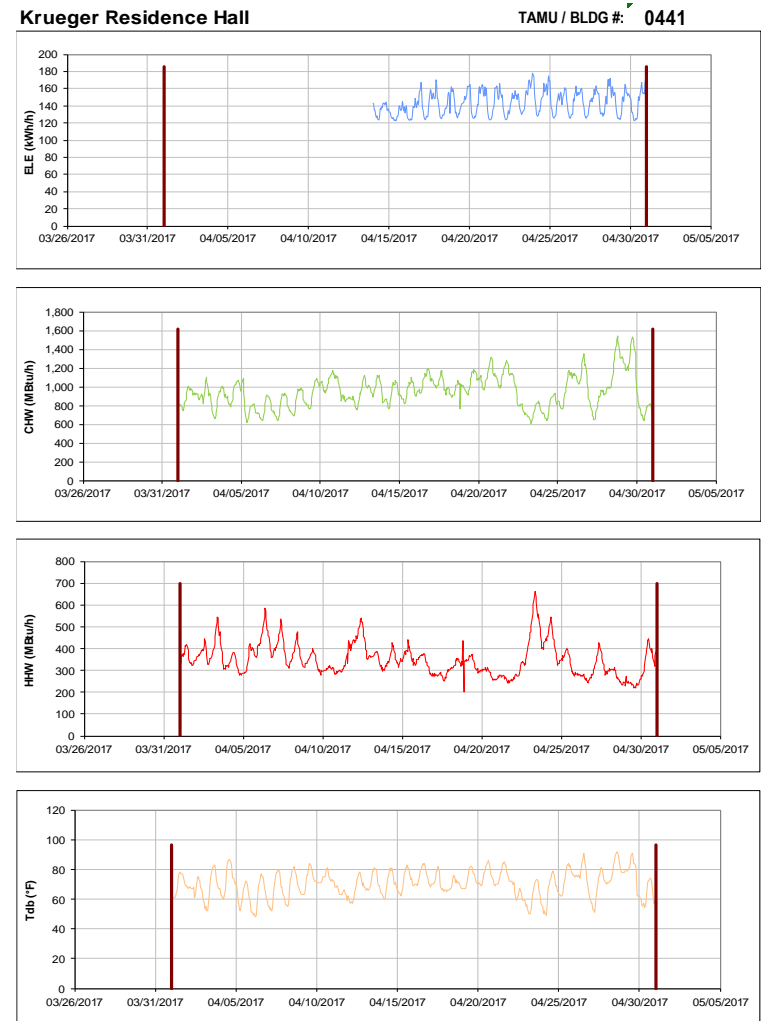


Figure III-54 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Krueger Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-55 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Dunn Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

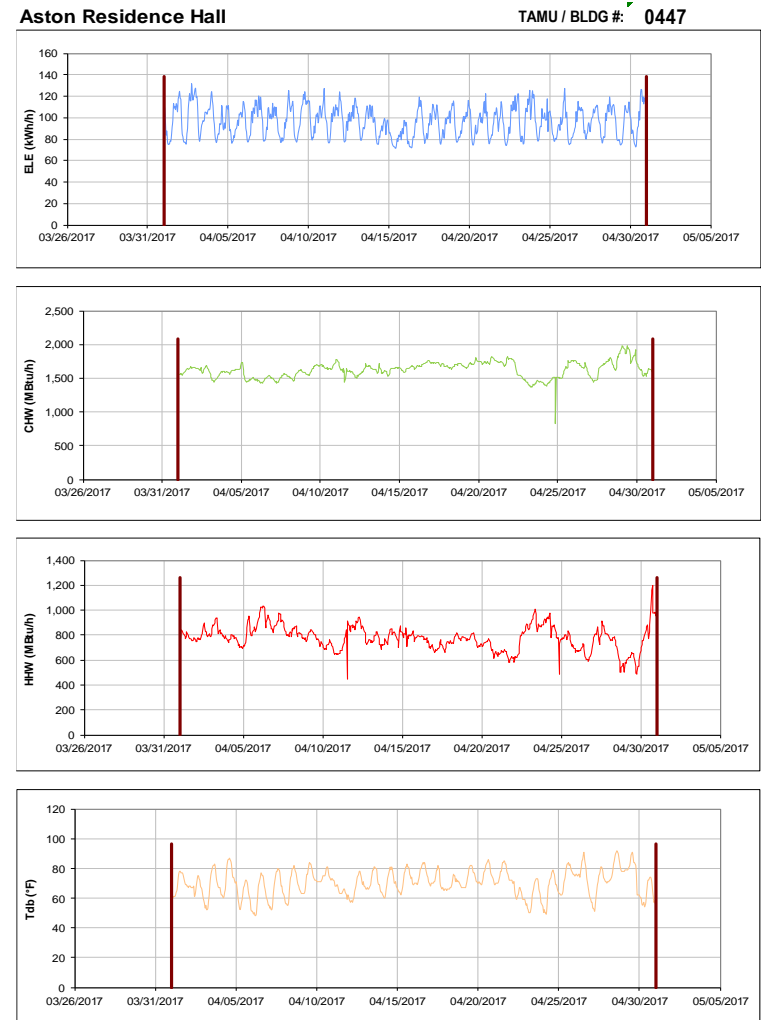


Figure III-56 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Aston Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

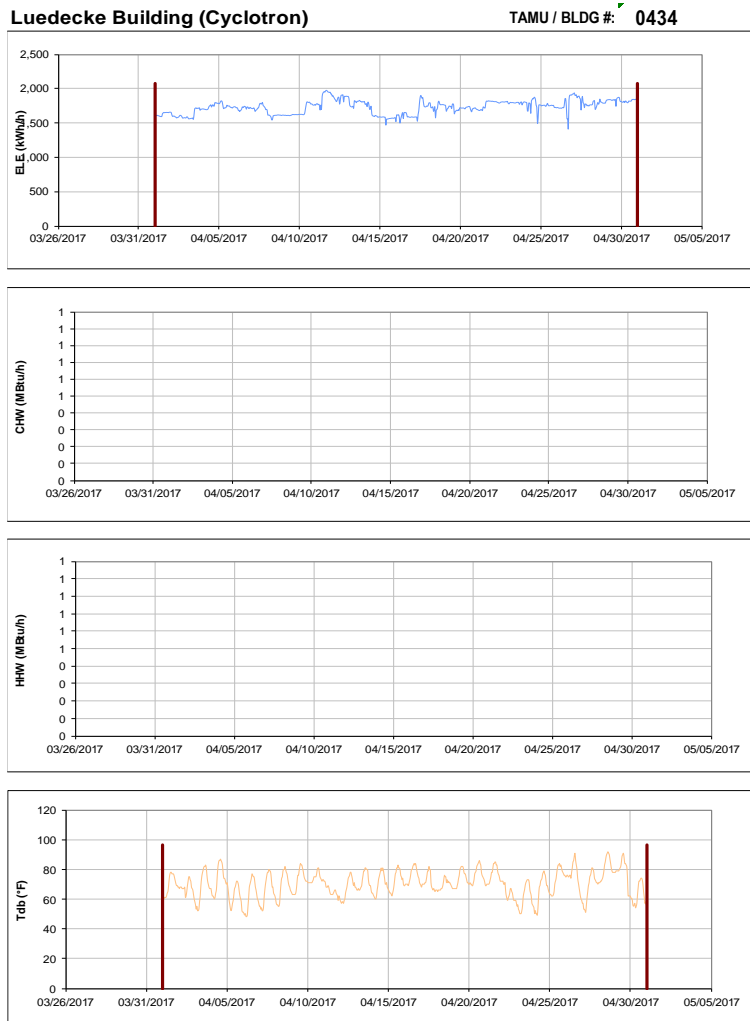


Figure III-57 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Luedecke Building (Cyclotron) during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

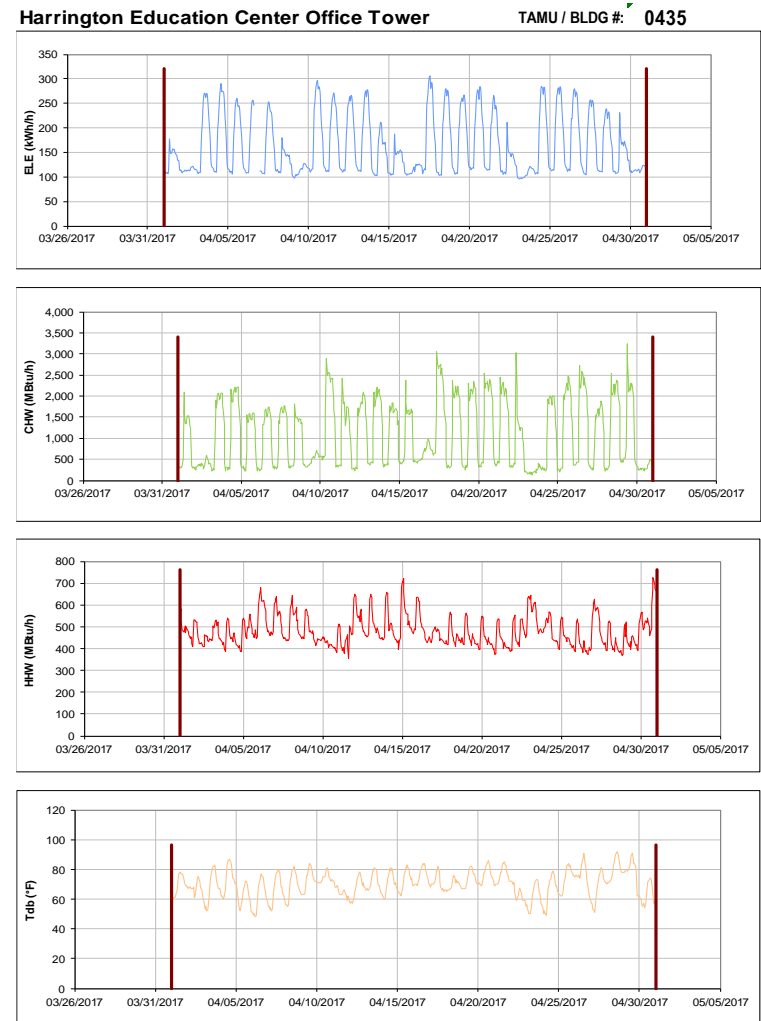


Figure III-58 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrington Education Center Office Tower during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Reed-McDonald and Engineering Innovation Center TAMU / BLDG #: 1436-0499

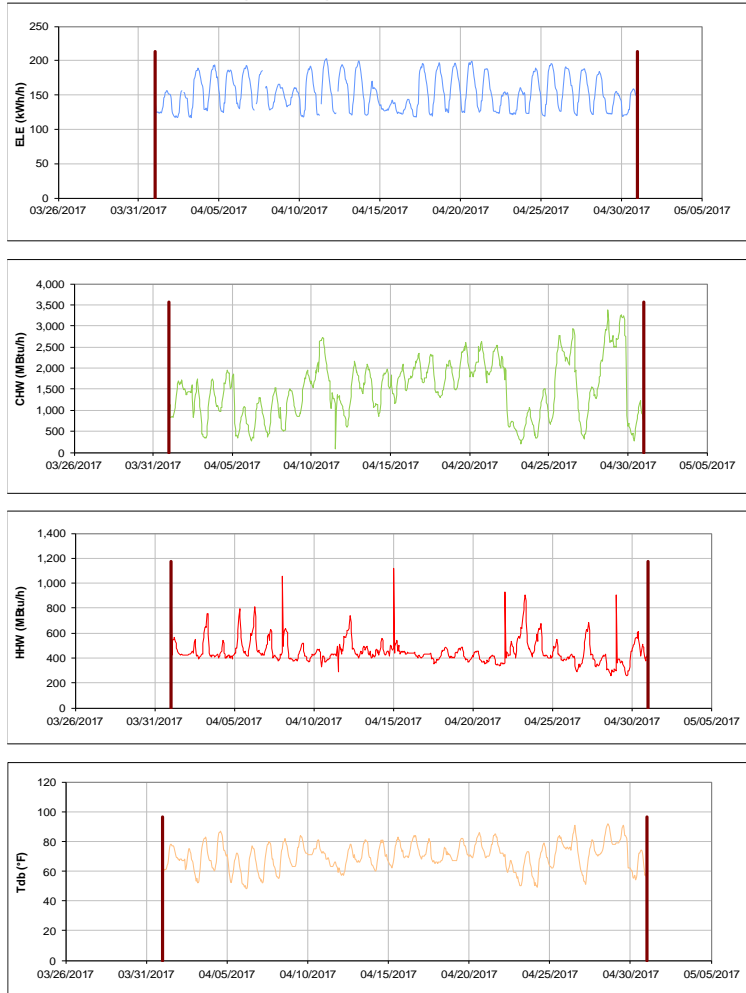


Figure III-59 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed-McDonald and Engineering Innovation Center during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Reed-McDonald Building

TAMU / BLDG #: 0436

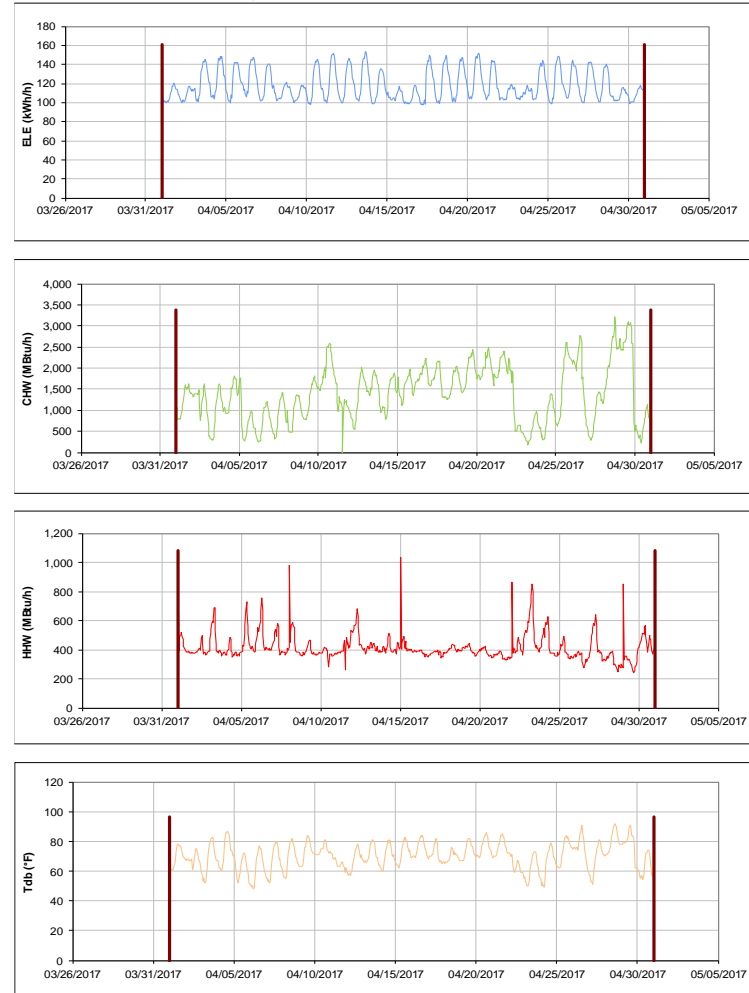


Figure III-60 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed-McDonald Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

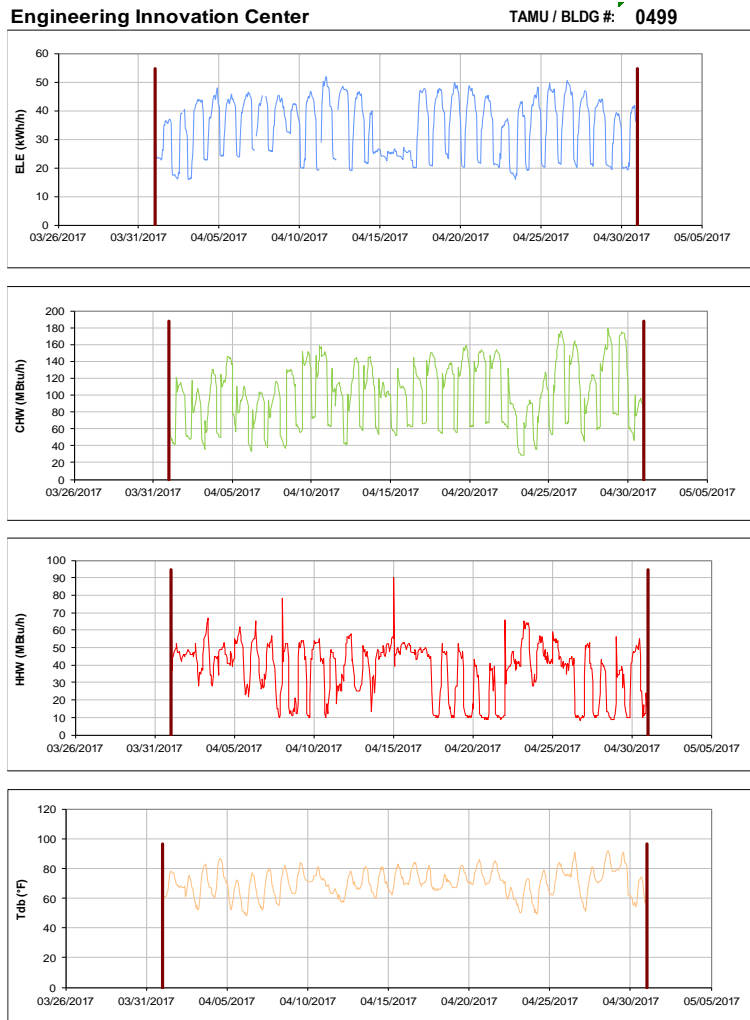


Figure III-61 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Engineering Innovation Center during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-62 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrington Education Center Classroom Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-63 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Oceanography & Meteorology Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-64 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Peterson Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-65 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Teague Research Center and DPC Annex during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

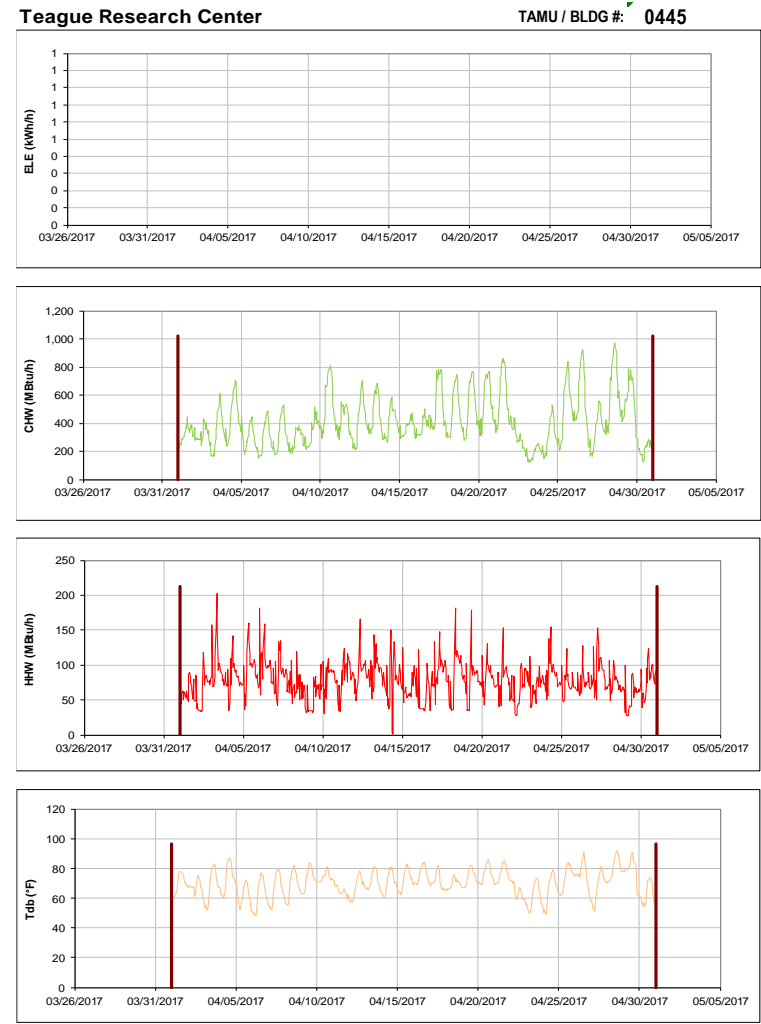


Figure III-66 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Teague Research Center during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-67 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for DPC Annex during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

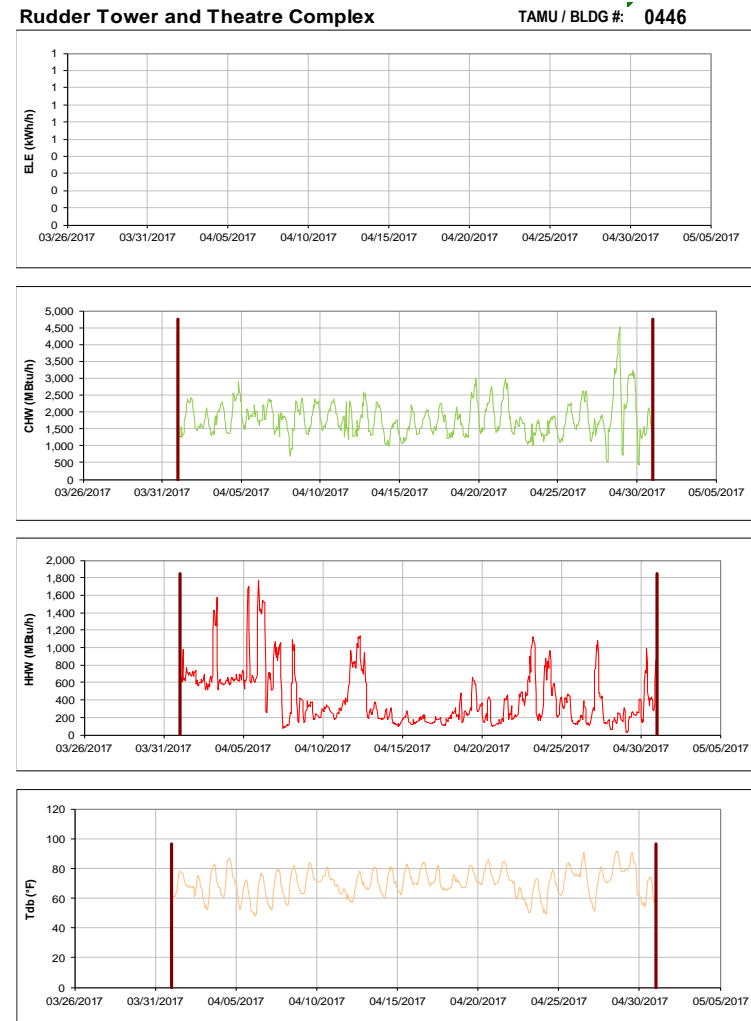


Figure III-68 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Tower and Theatre Complex during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Rudder Theatre Complex

TAMU / BLDG #: 0446-A

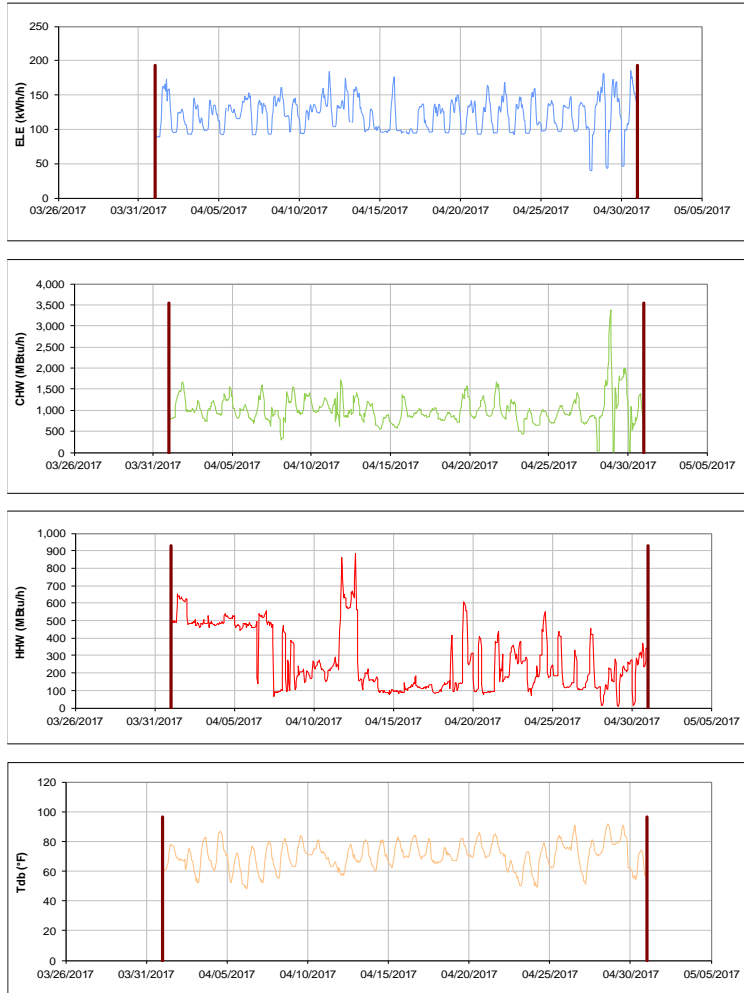


Figure III-69 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Theatre Complex during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Rudder Tower

TAMU / BLDG #: 0446-B

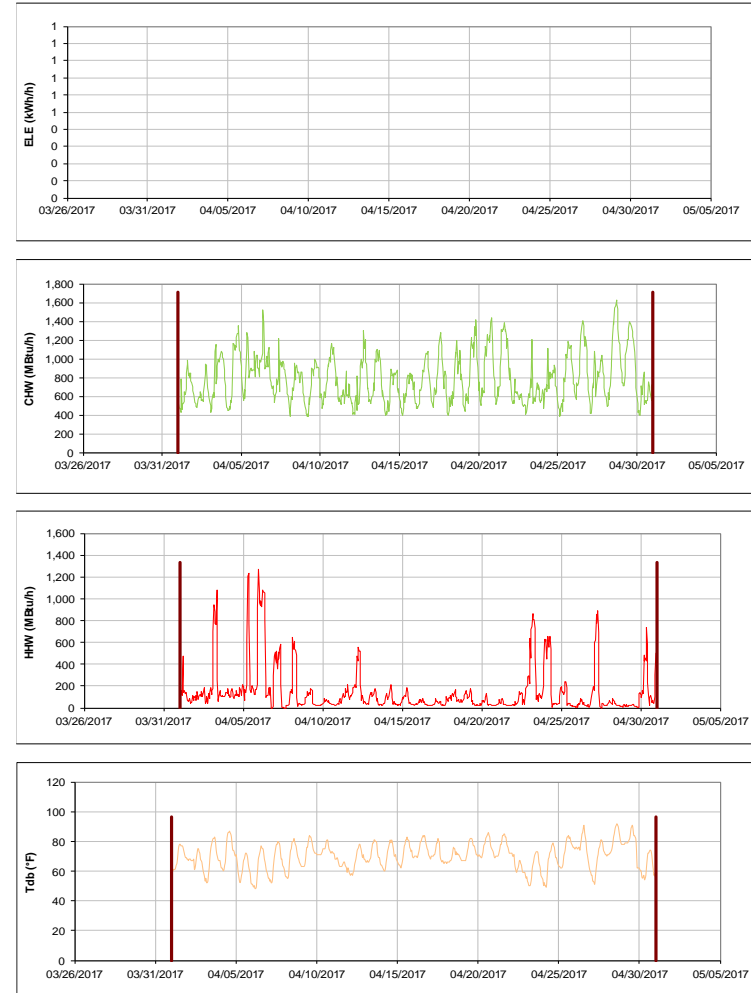


Figure III-70 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Tower during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

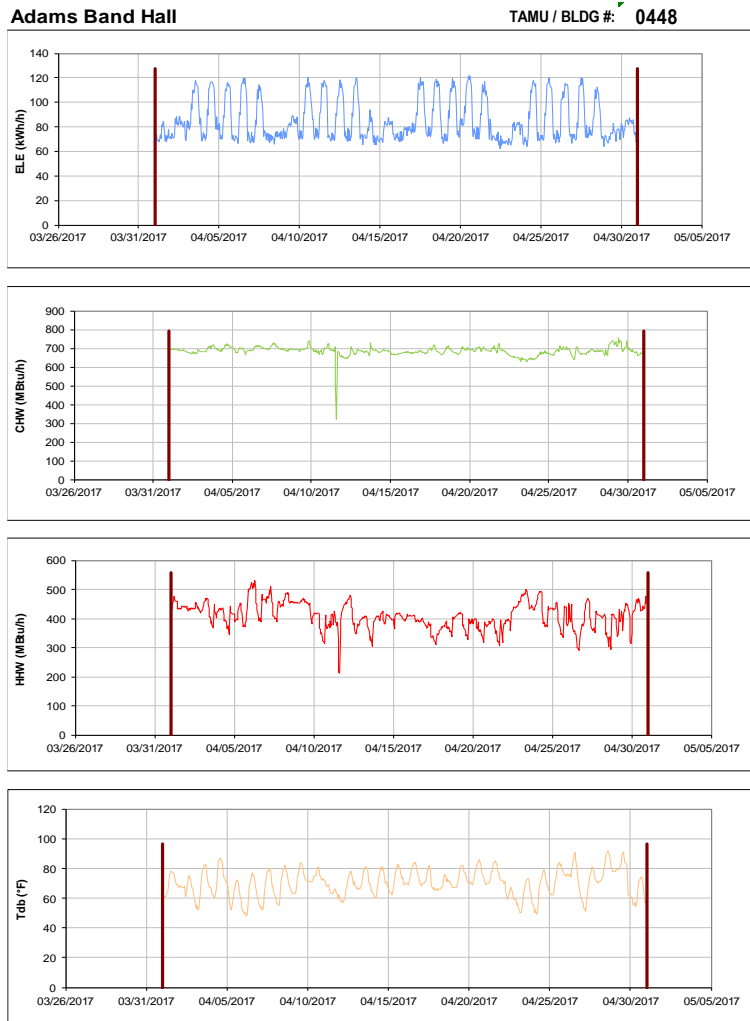


Figure III-71 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Adams Band Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-72 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Sciences Building - West during the Month of April 2017 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 Duncan Dining Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

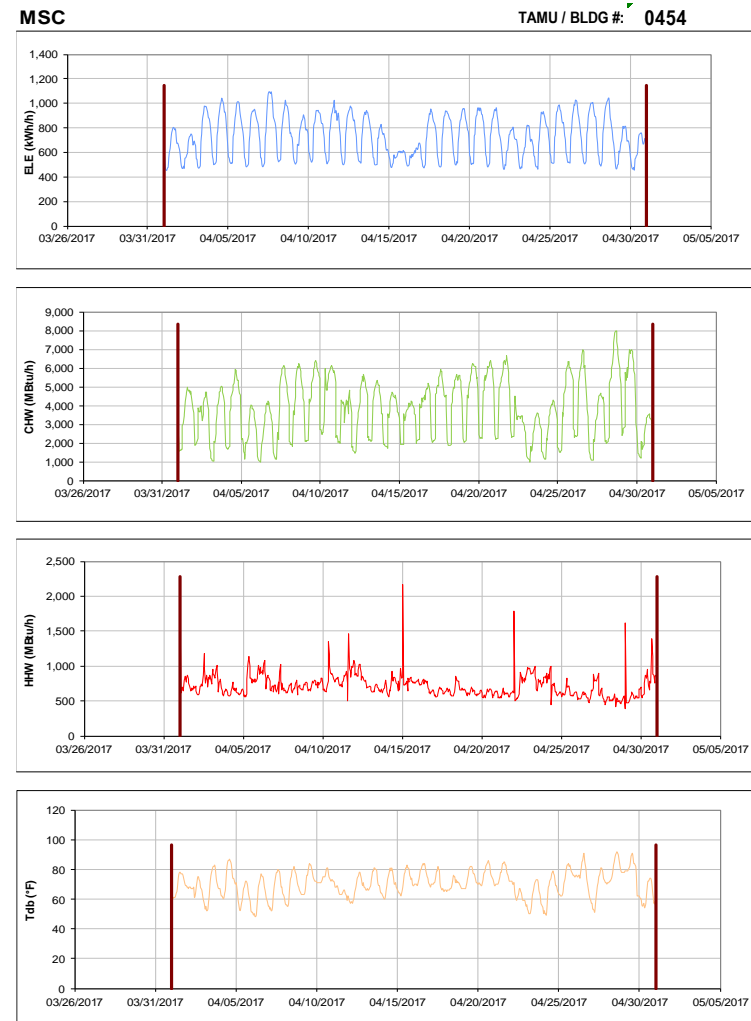


Figure III-74 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for MSC during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Military Sciences Building

TAMU / BLDG #: 0456



Figure III-75 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Military Sciences Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

TAES Annex Building

TAMU / BLDG #: 0457

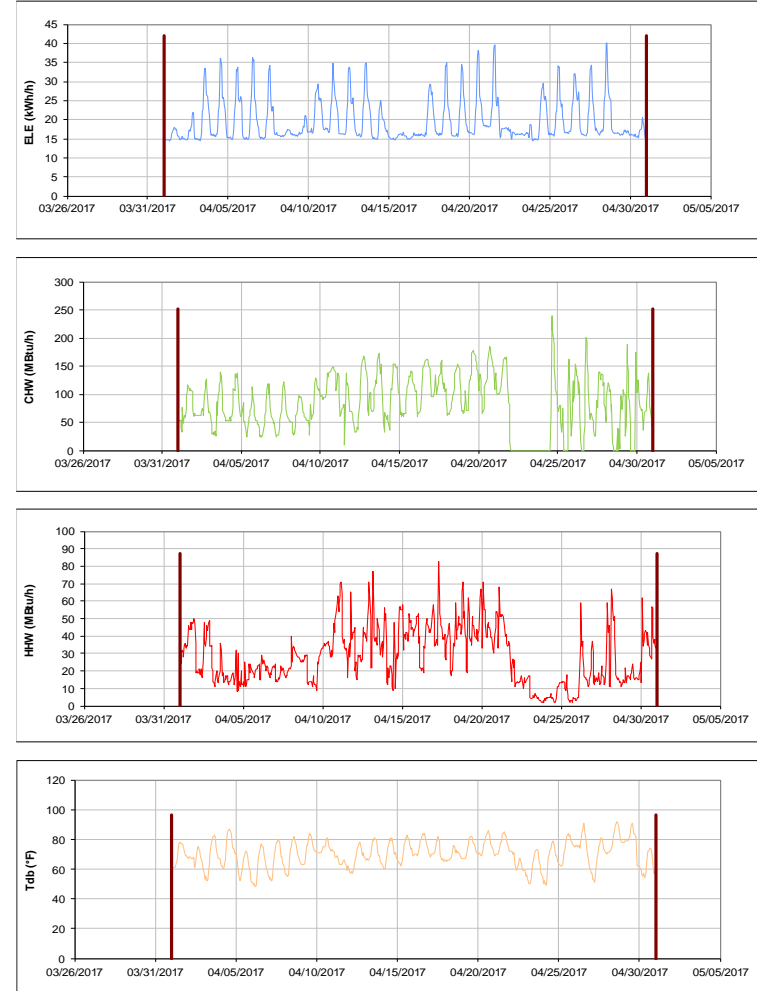


Figure III-76 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TAES Annex Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

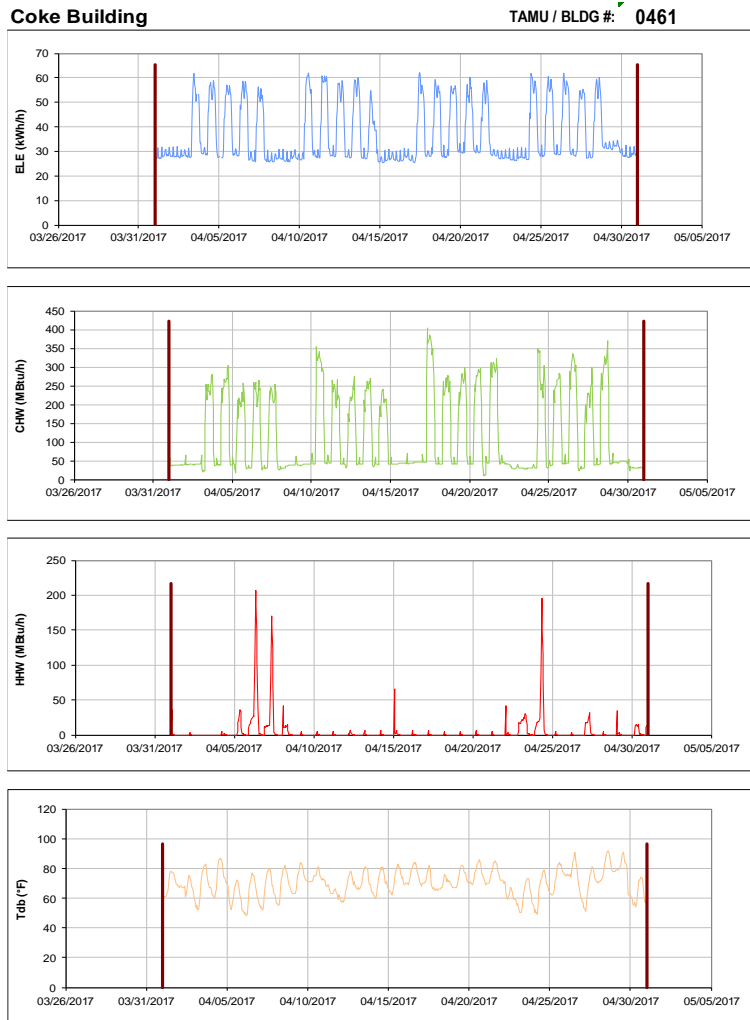


Figure III-77 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Coke Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

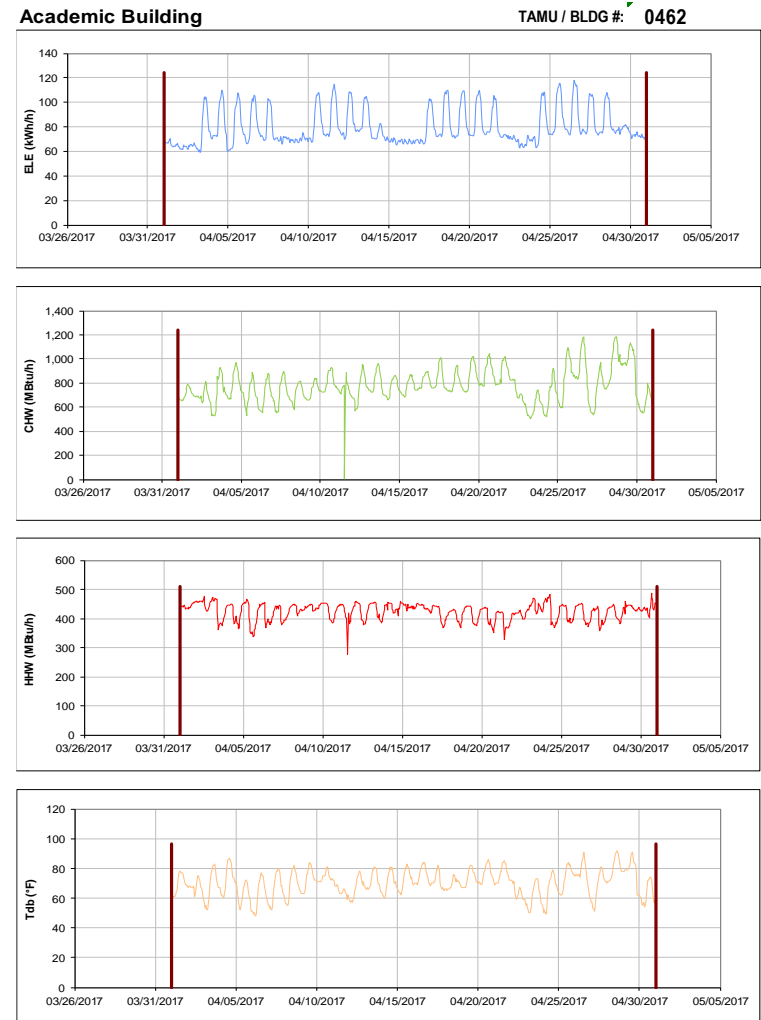


Figure III-78 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Academic Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

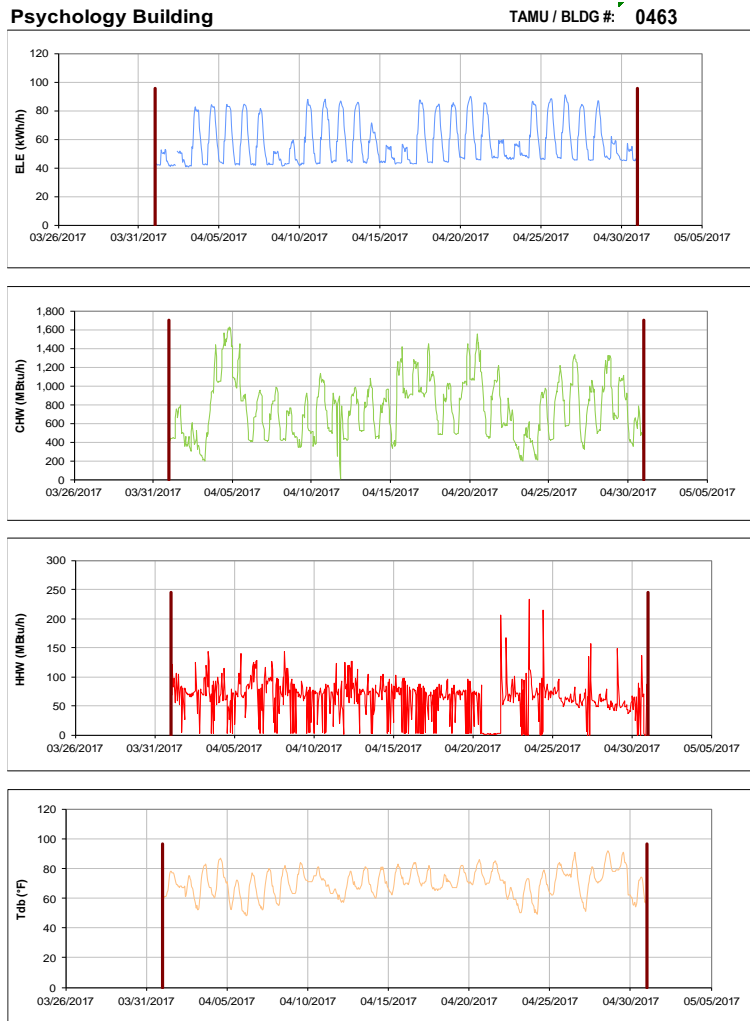


Figure III-79 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Psychology Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

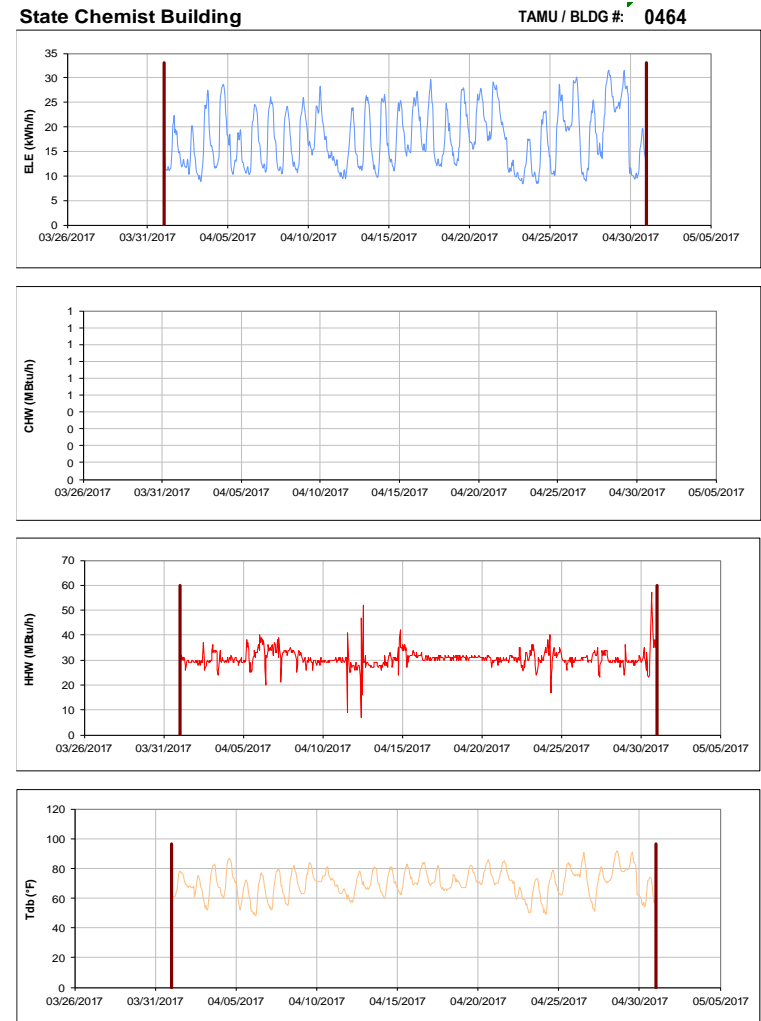


Figure III-80 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for State Chemist Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

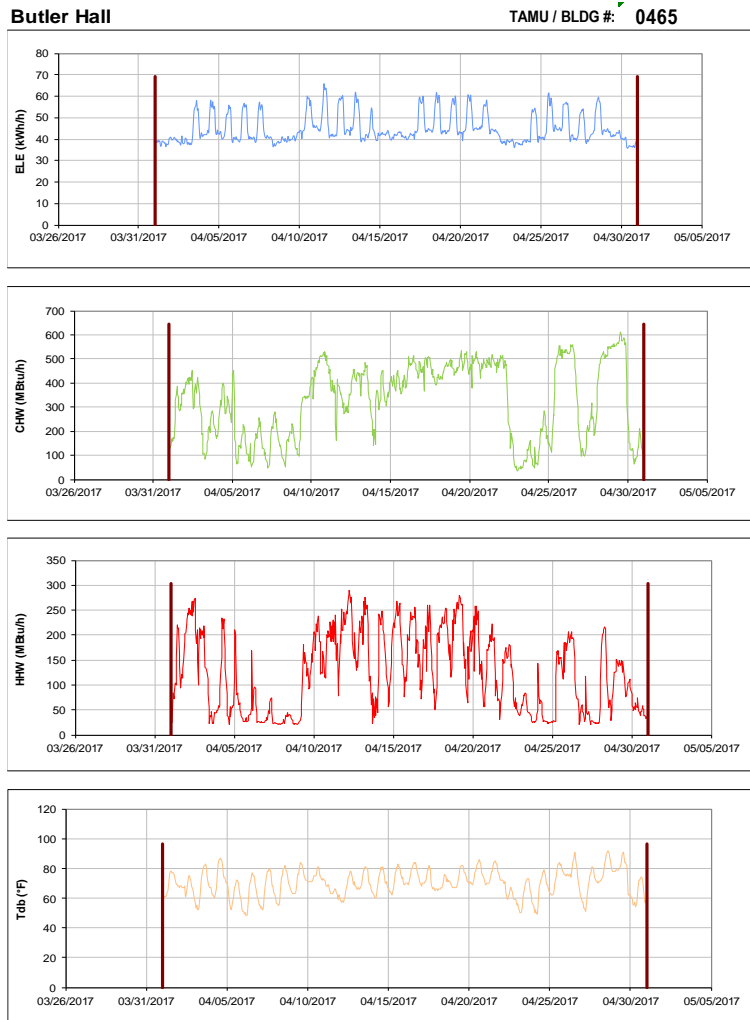


Figure III-81 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Butler Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

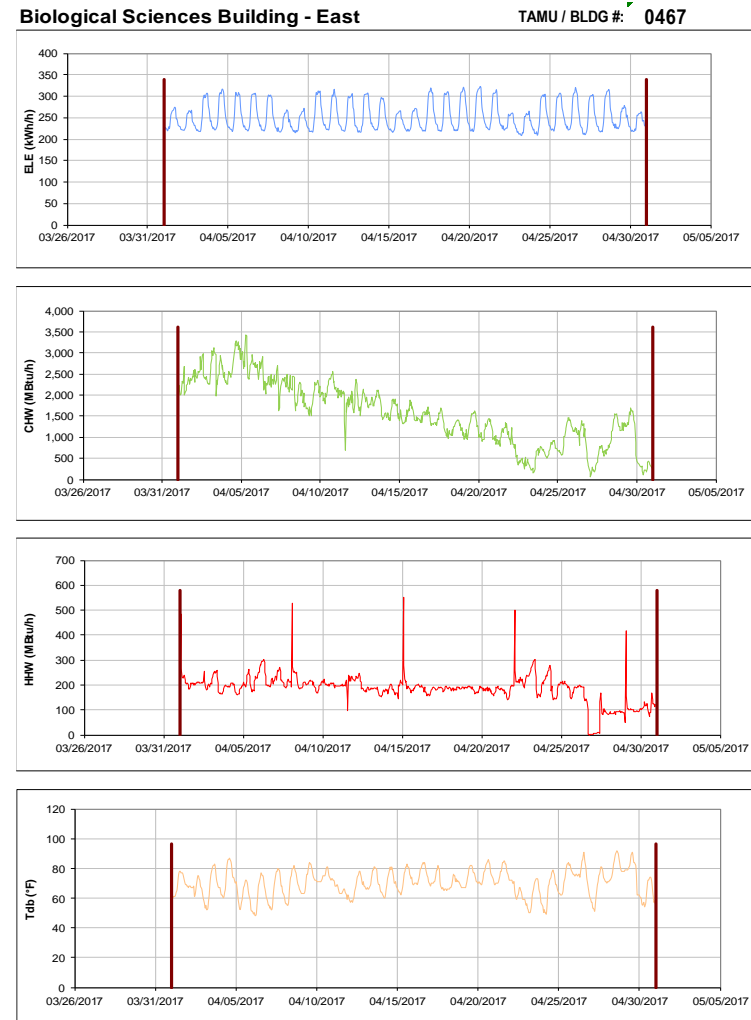


Figure III-82 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Sciences Building - East during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

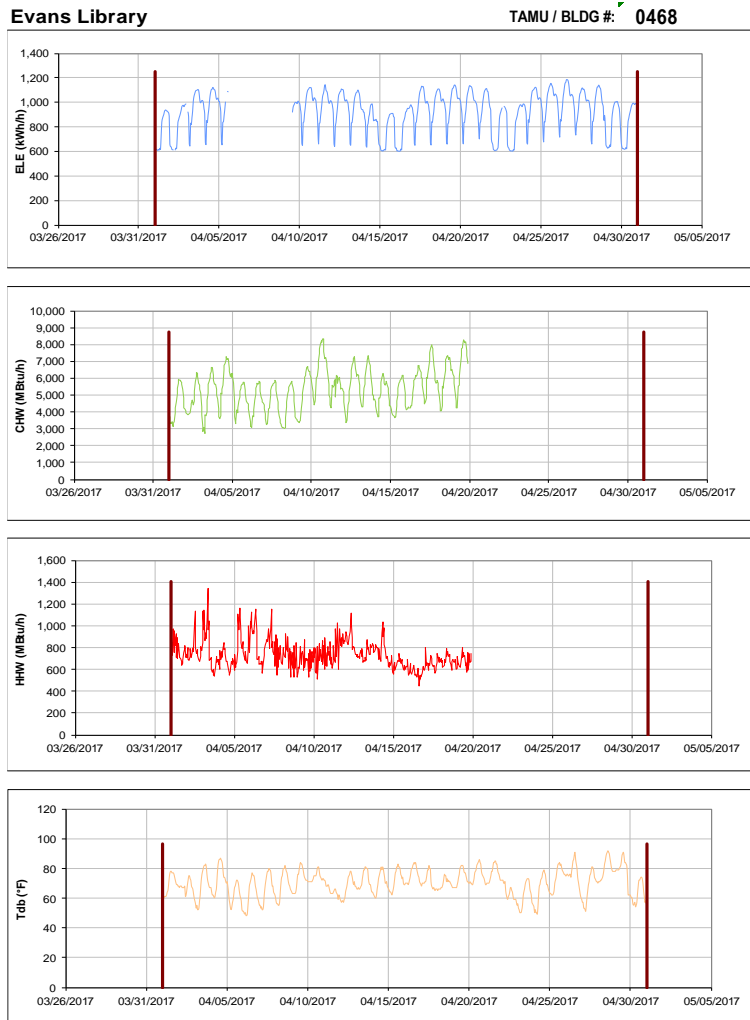


Figure III-83 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Evans Library during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

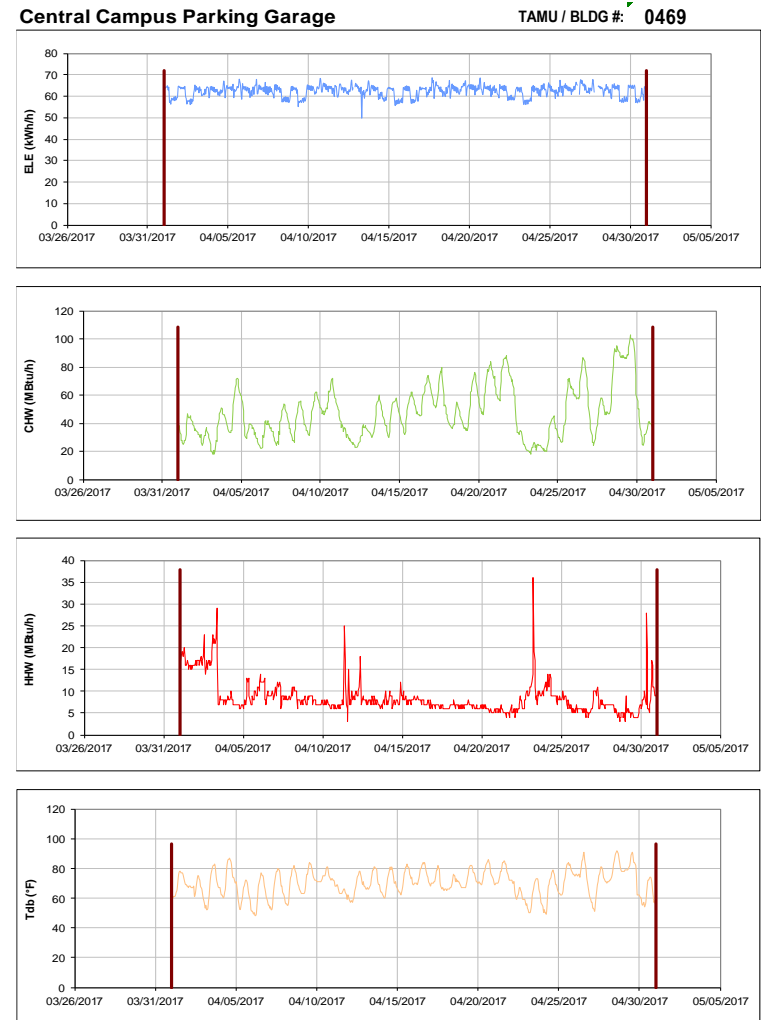


Figure III-84 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Central Campus Parking Garage during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

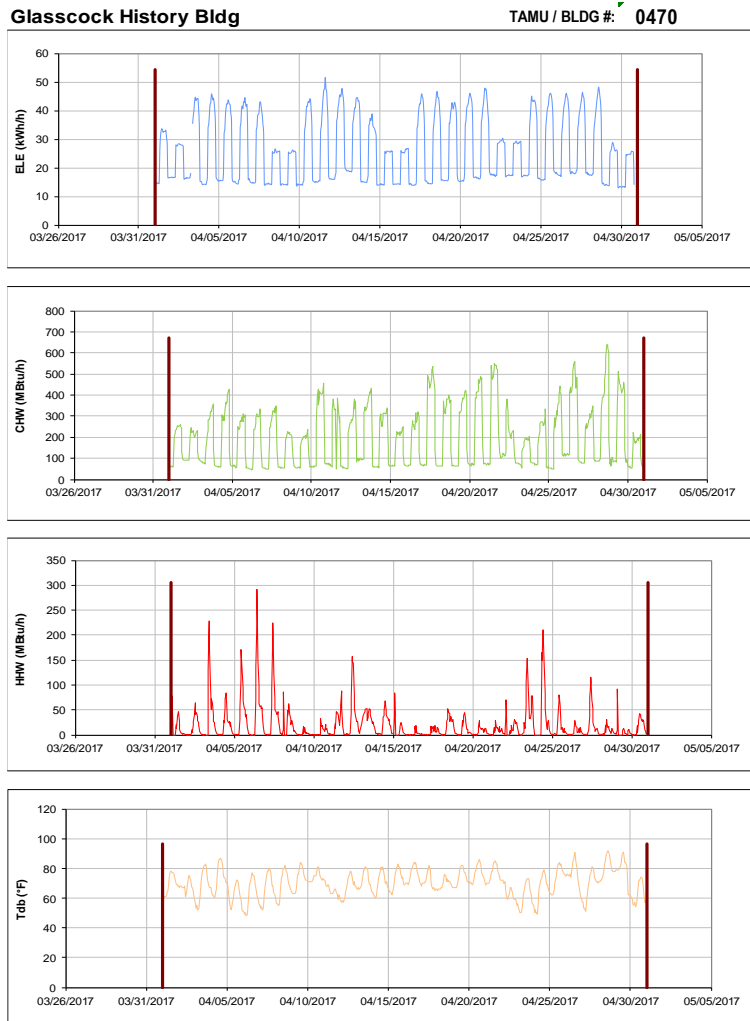


Figure III-85 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Glasscock History Bldg during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-86 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Pavilion during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Animal Industries

TAMU / BLDG #: 0472

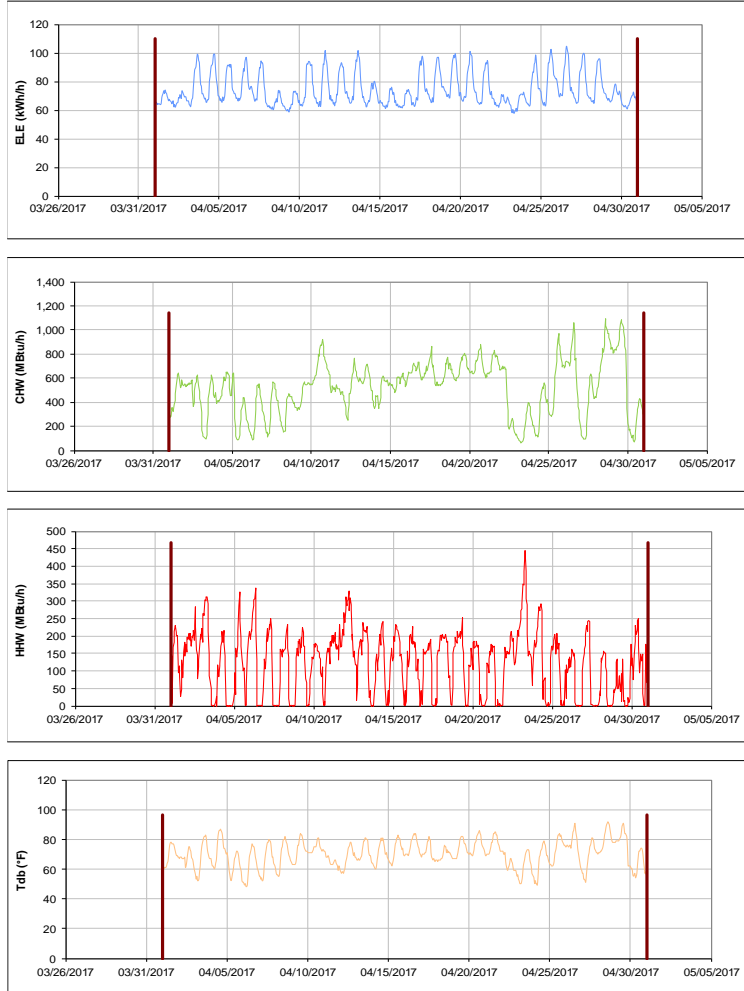


Figure III-87 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Animal Industries during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Williams Administration Building

TAMU / BLDG #: 0473

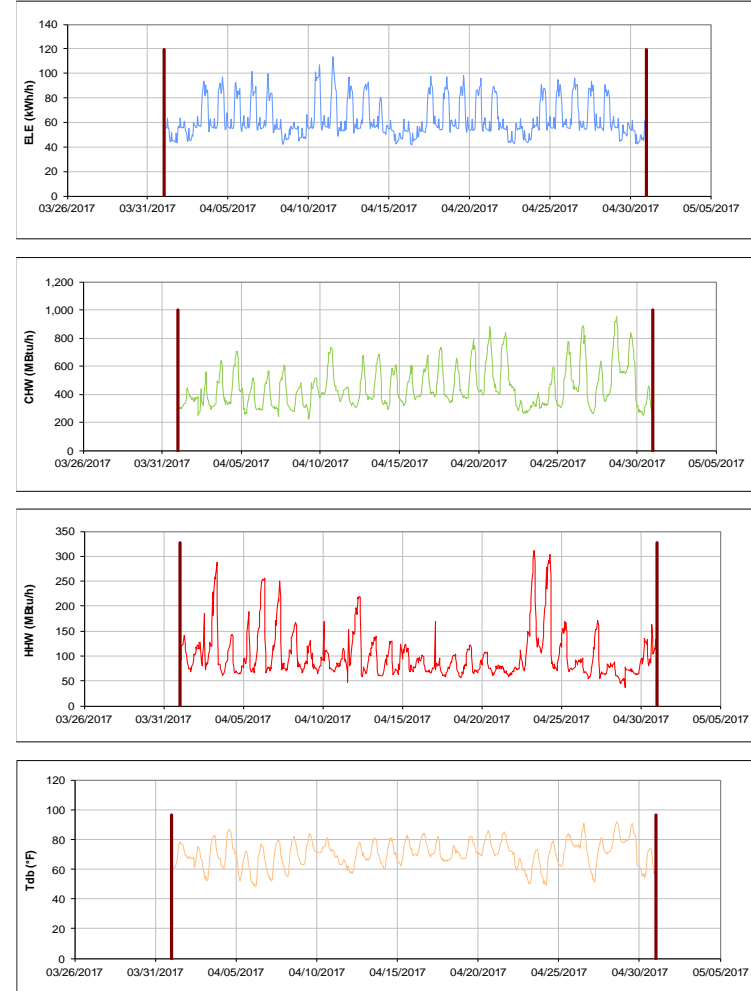


Figure III-88 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Williams Administration Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-89 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for YMCA Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

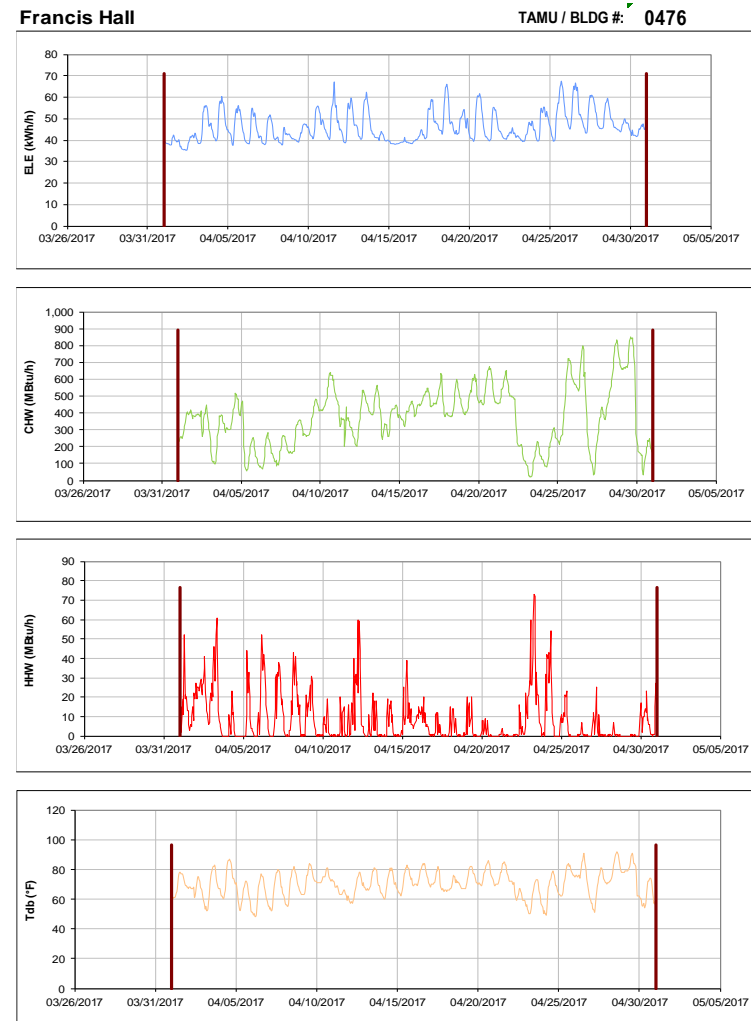


Figure III-90 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Francis Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Anthropology Building

TAMU / BLDG #: 0477

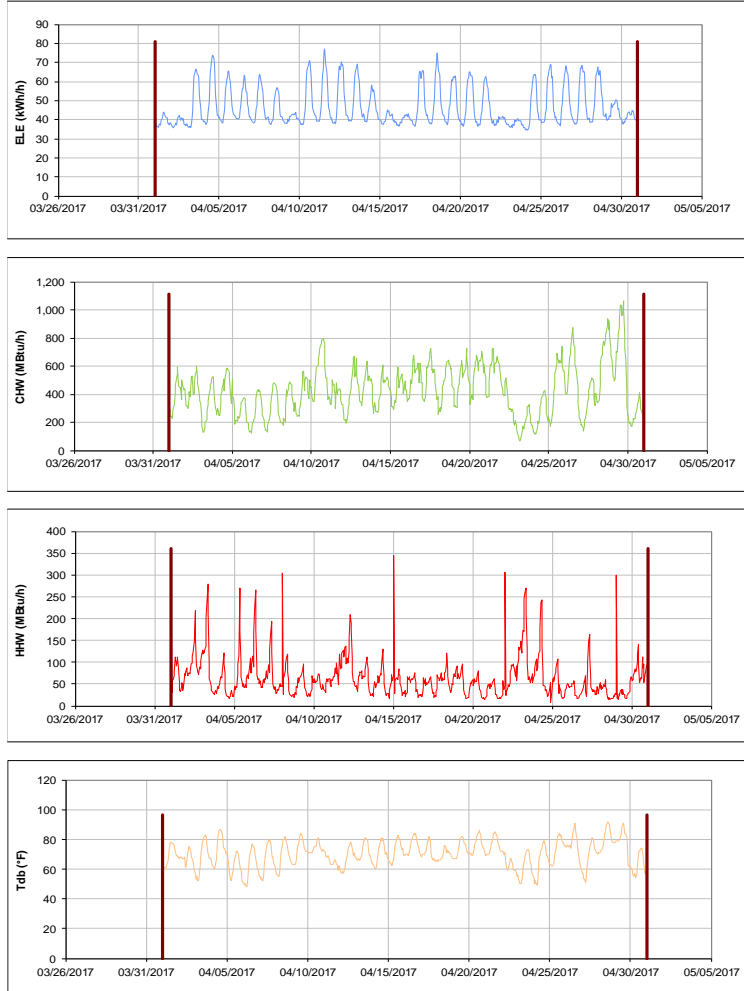


Figure III-91 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Anthropology Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Scoates Hall

TAMU / BLDG #: 0478

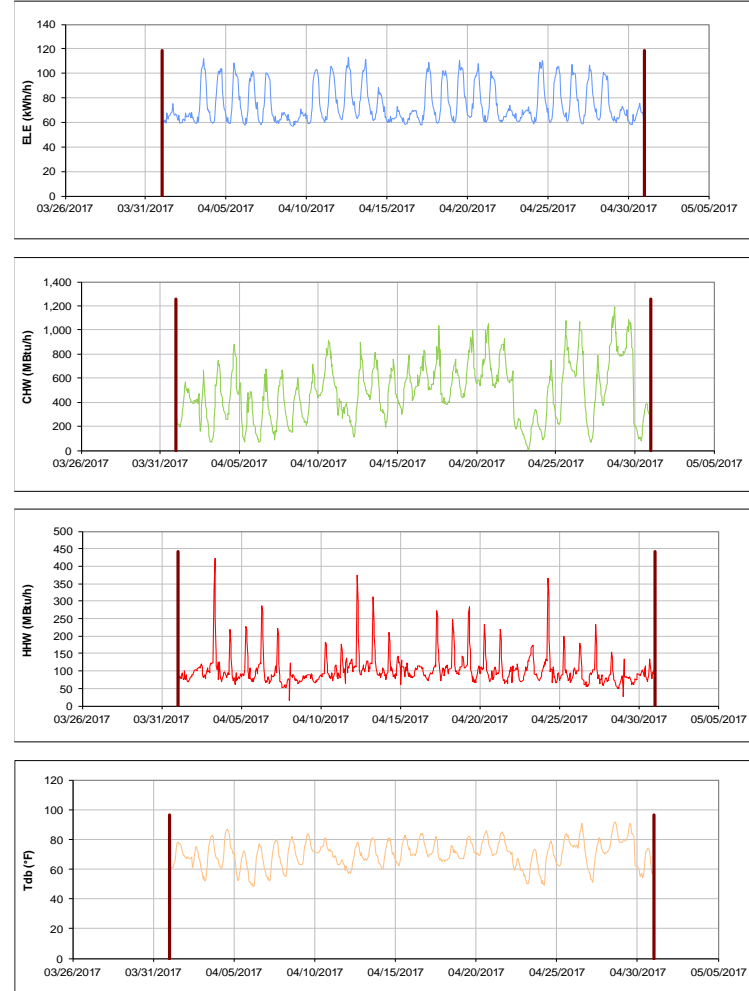


Figure III-92 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Scoates Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

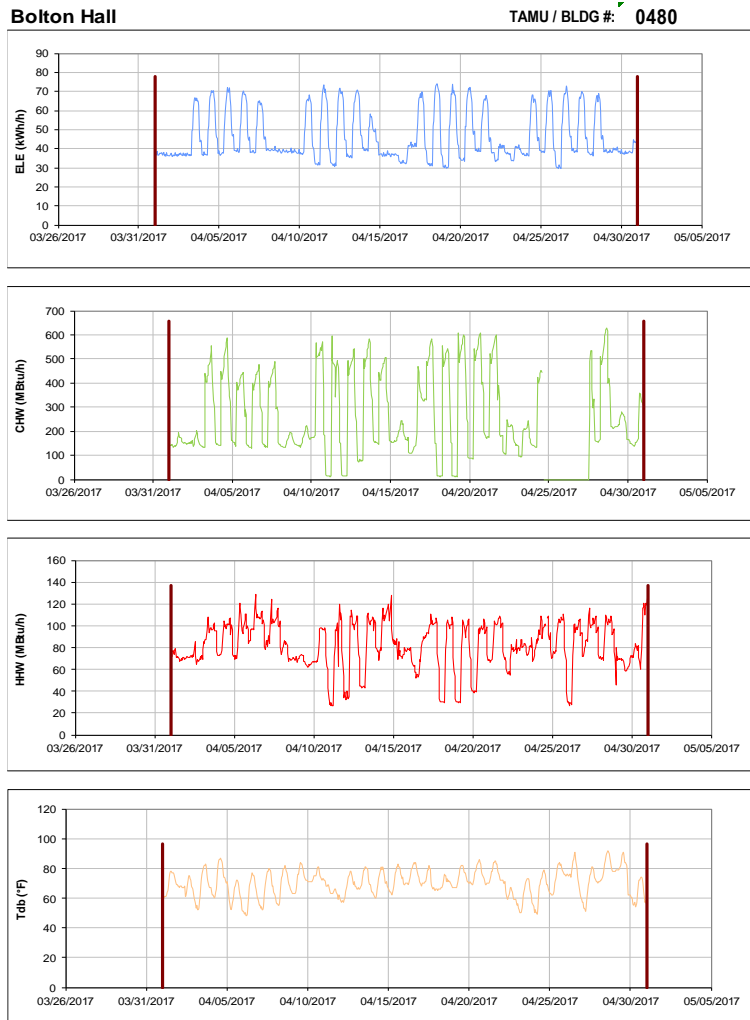


Figure III-93 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bolton Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

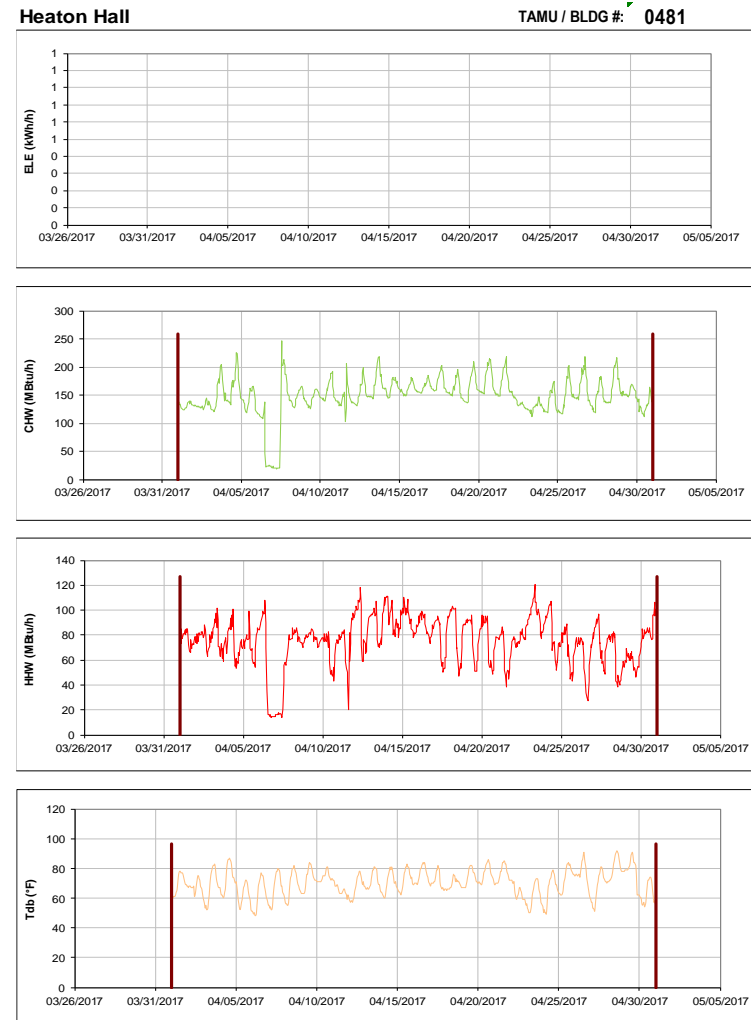


Figure III-94 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heaton Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

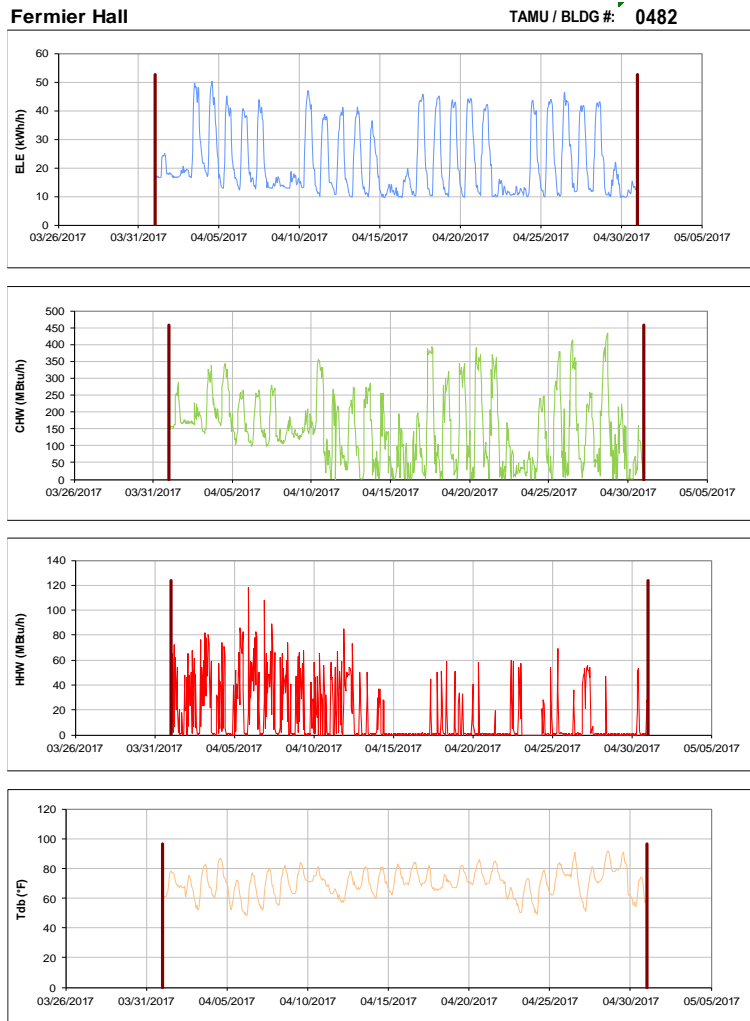


Figure III-95 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Fermier Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-96 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Thompson Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

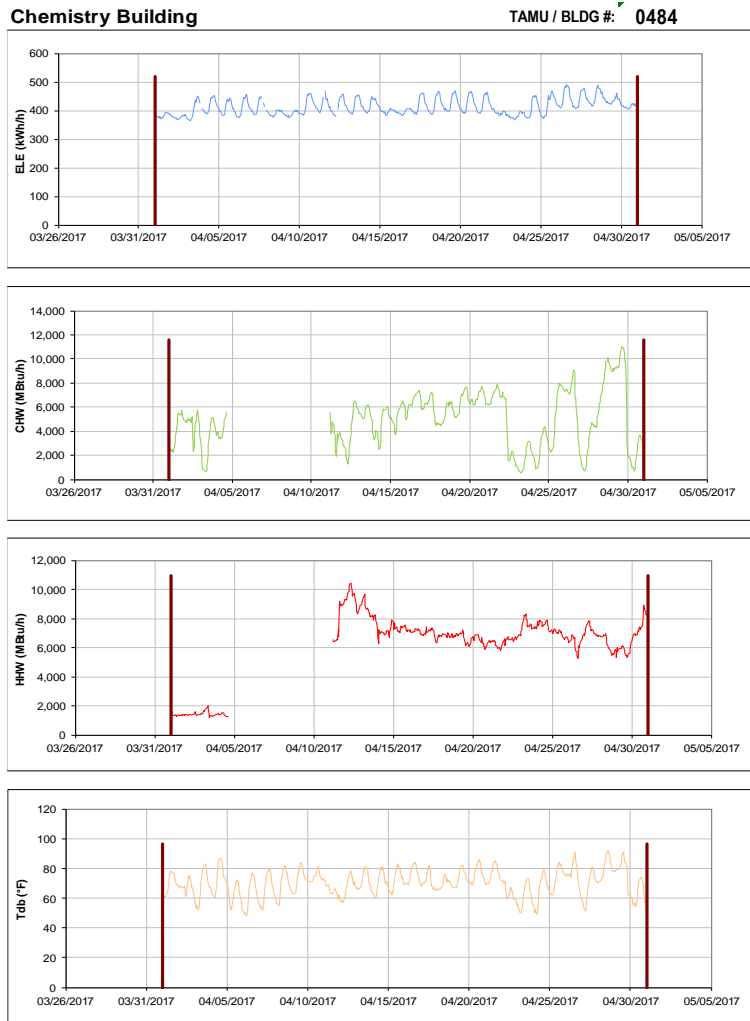


Figure III-97 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Chemistry Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-98 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Halbouty Geosciences Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Civil Engineering Building

TAMU / BLDG #: 0492

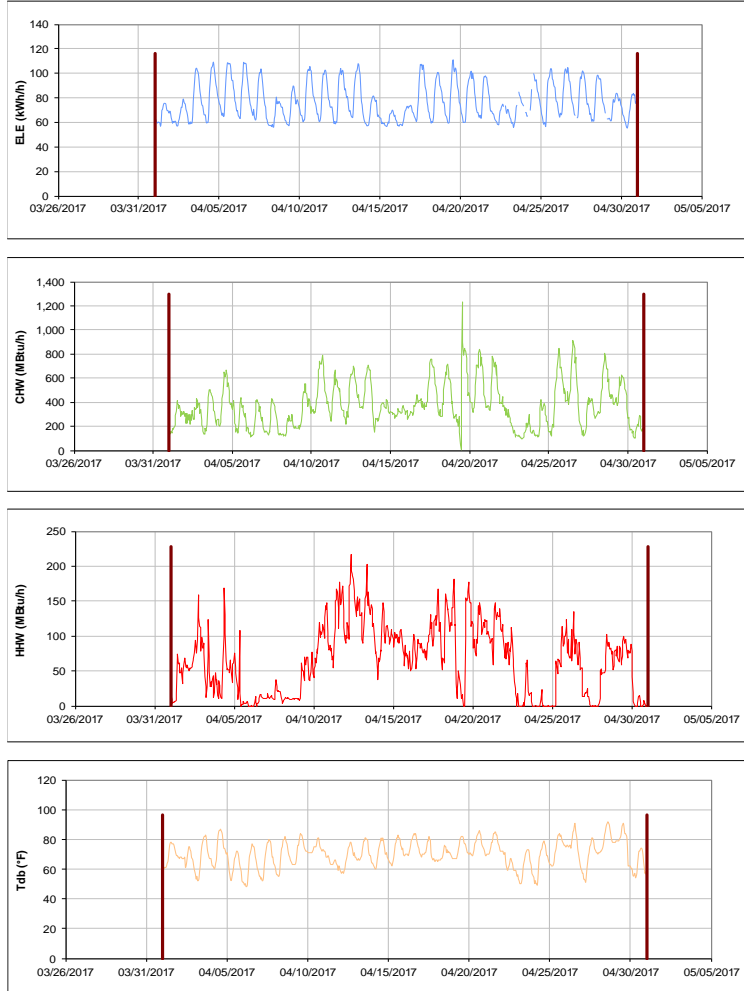


Figure III-99 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Civil Engineering Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Sbisa Dining Hall

TAMU / BLDG #: 0495

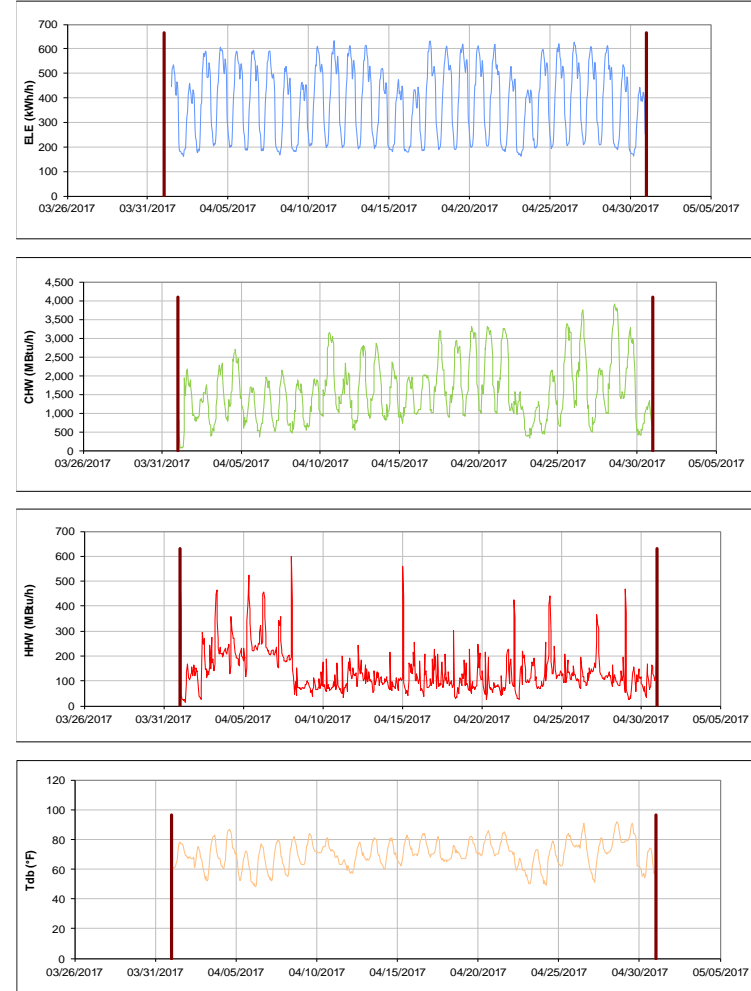


Figure III-100 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Sbisa Dining Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

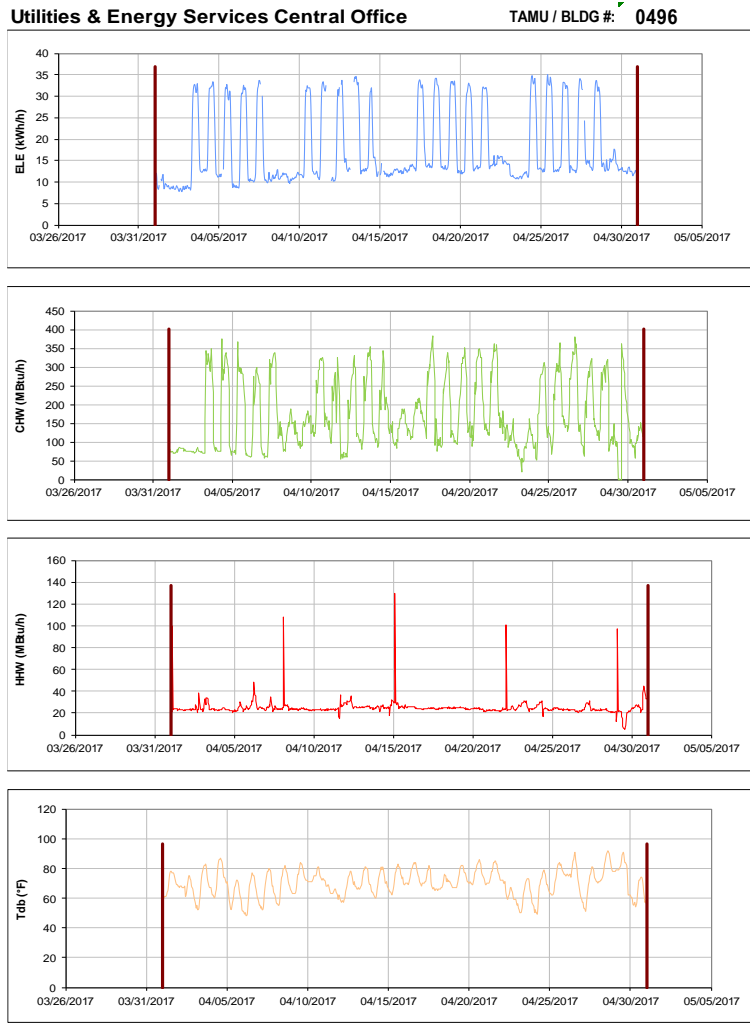


Figure III-101 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities & Energy Services Central Office during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

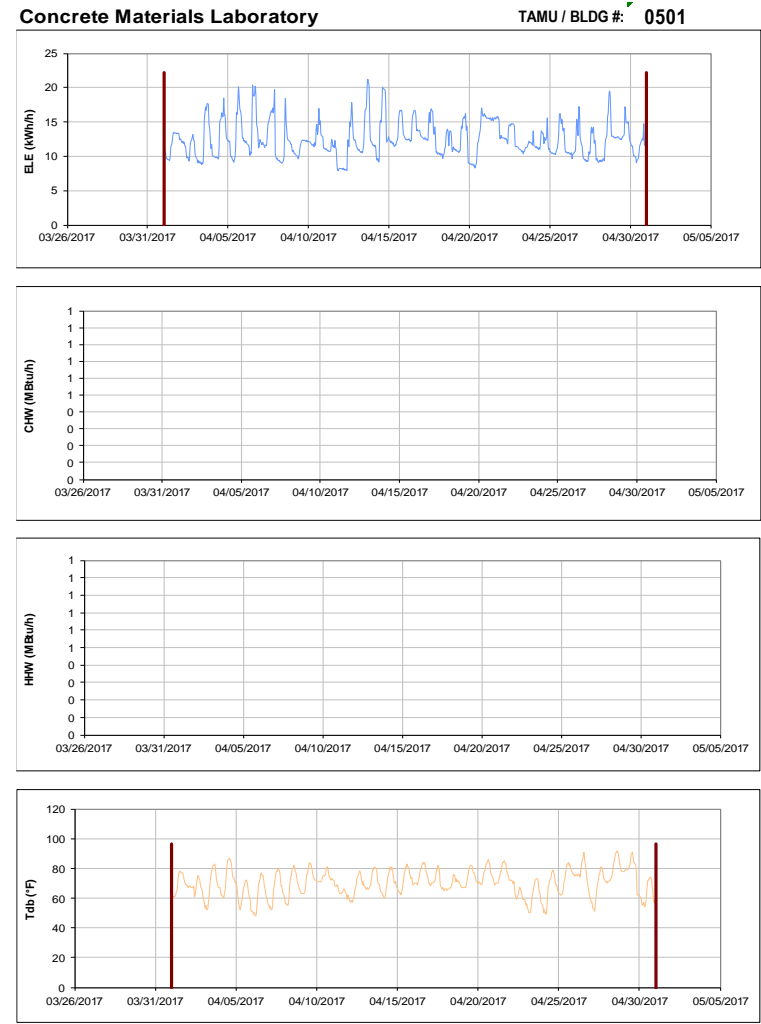


Figure III-102 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Concrete Materials Laboratory during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-103 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Nagle Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

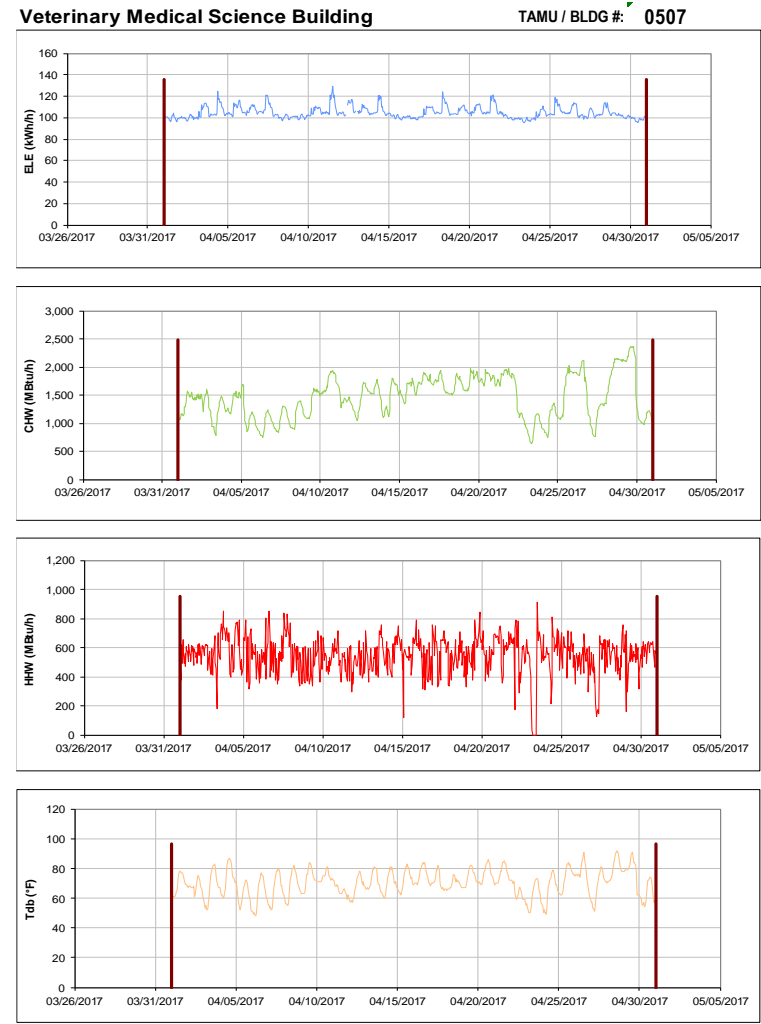


Figure III-104 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medical Science Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

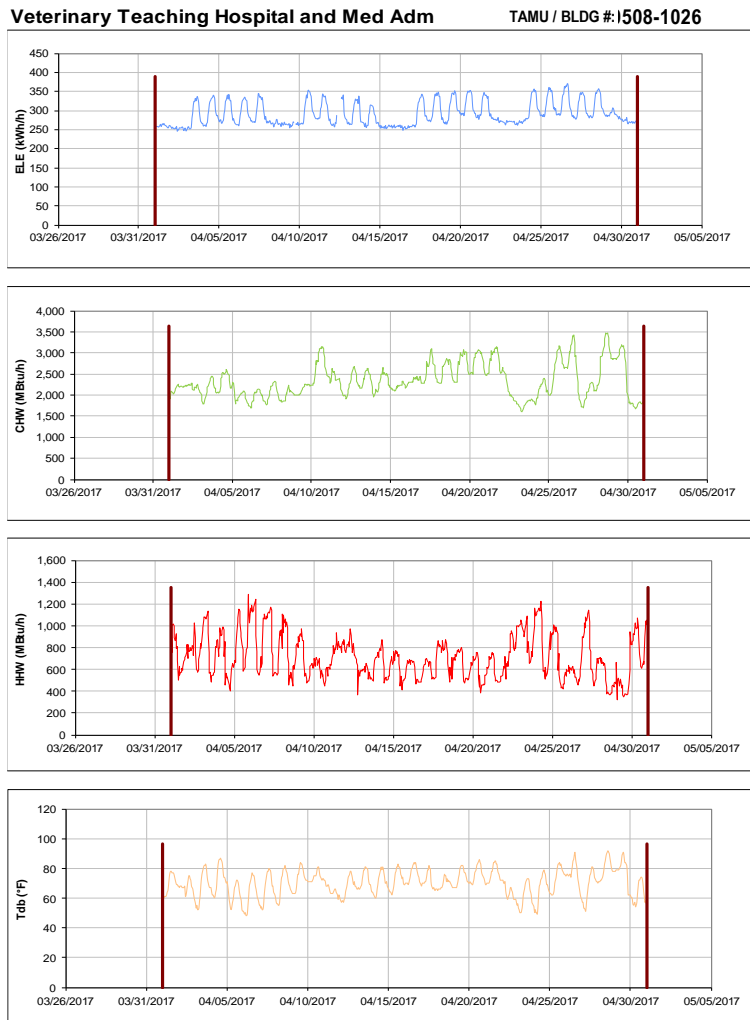


Figure III-105 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Teaching Hospital and Med Adm during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

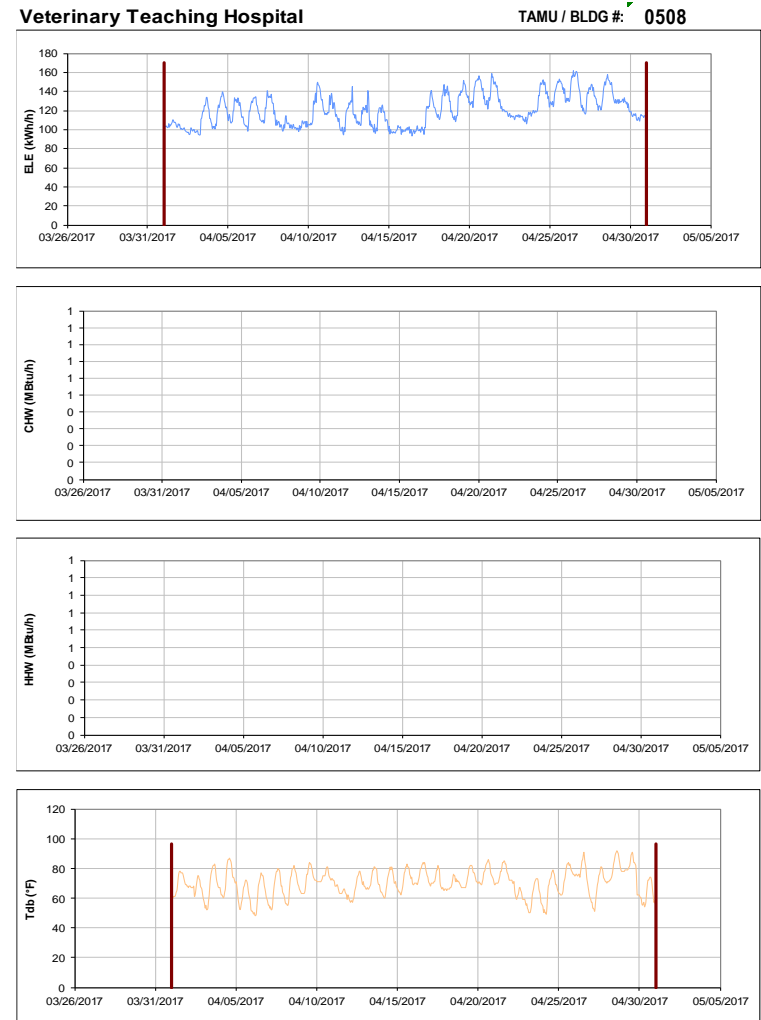


Figure III-106 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Teaching Hospital during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-107 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medicine Administration during the Month of April 2017 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 Heep Laboratory Building during the Month of April 2017 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 All Faiths Chapel during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

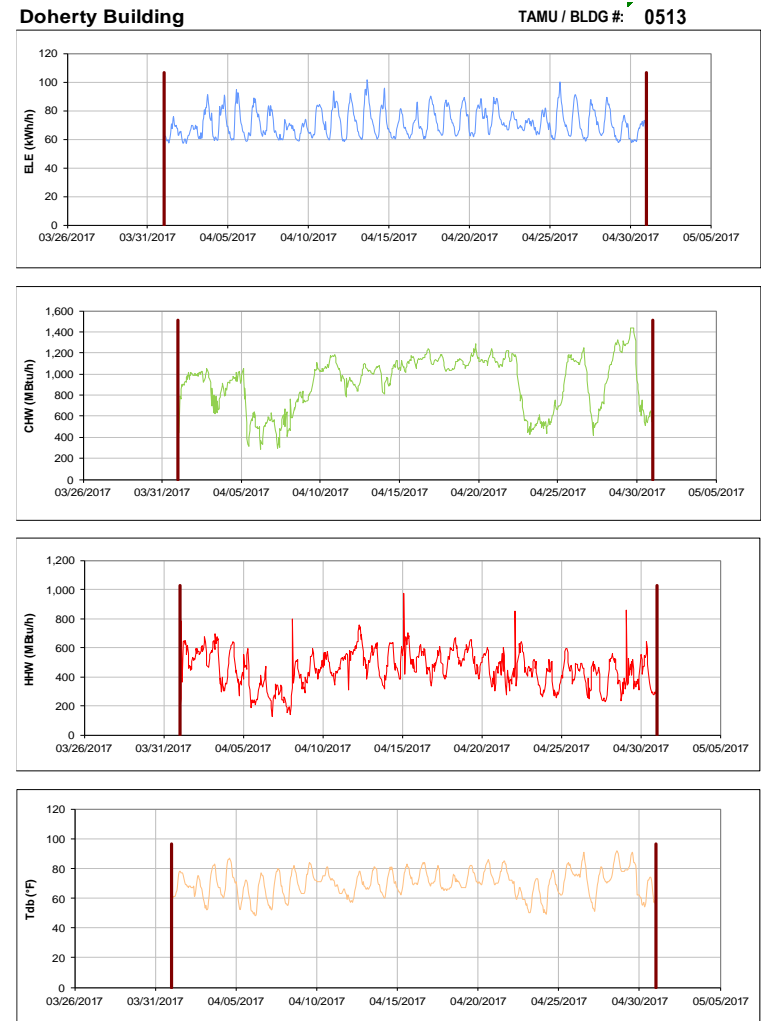


Figure III-110 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Doherty Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Munnerlyn Astronomy & Space Sciences Engineering BLDG #: 0514

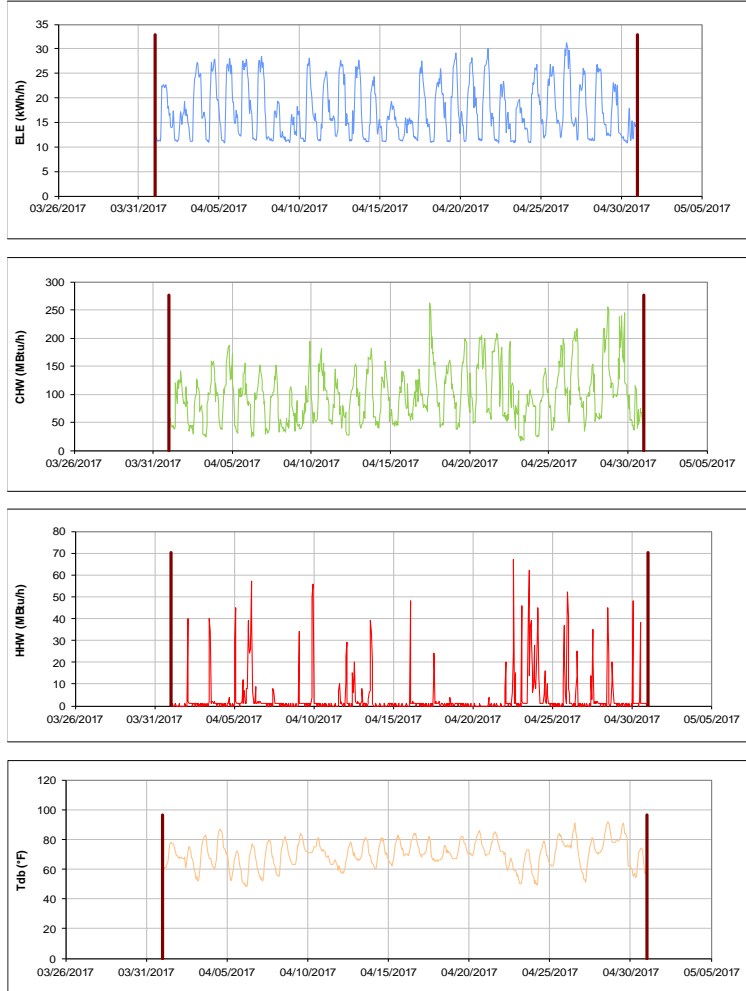


Figure III-111 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Munnerlyn Astronomy & Space Sciences Engineering during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Computing Services Center TAMU / BLDG #: 0516

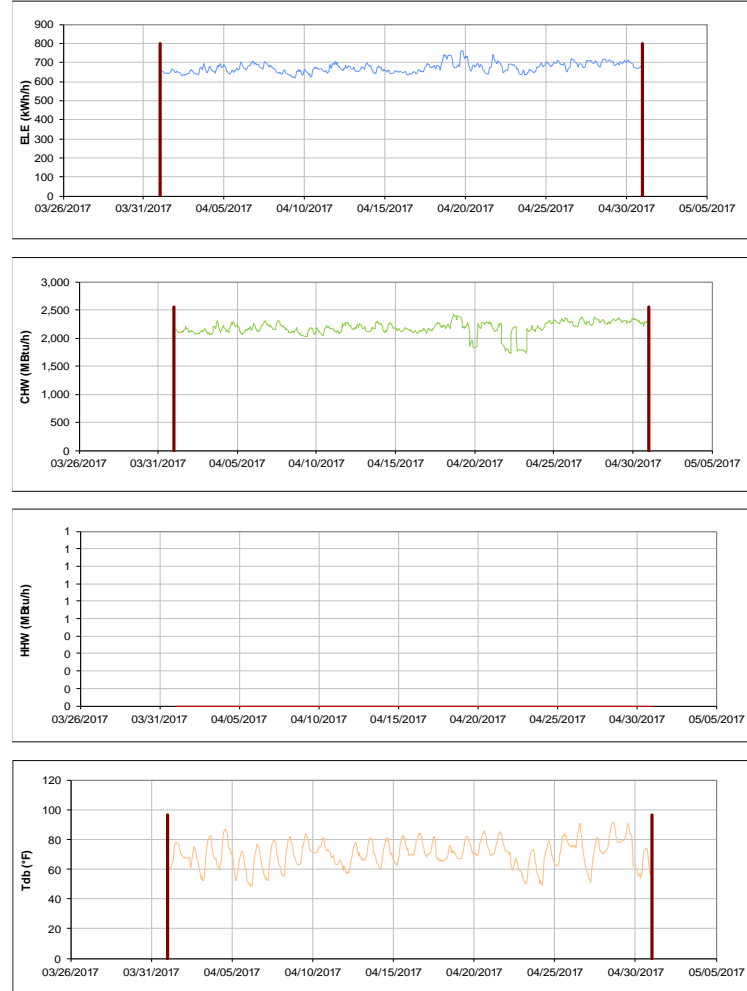


Figure III-112 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Computing Services Center during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

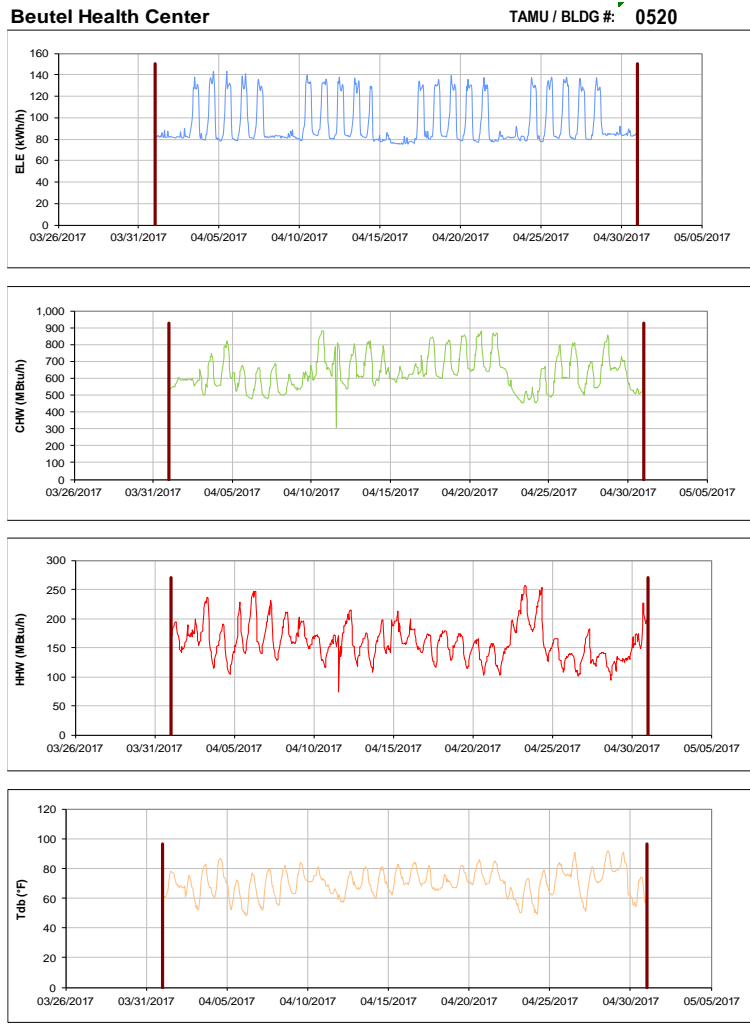


Figure III-113 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Beutel Health Center during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

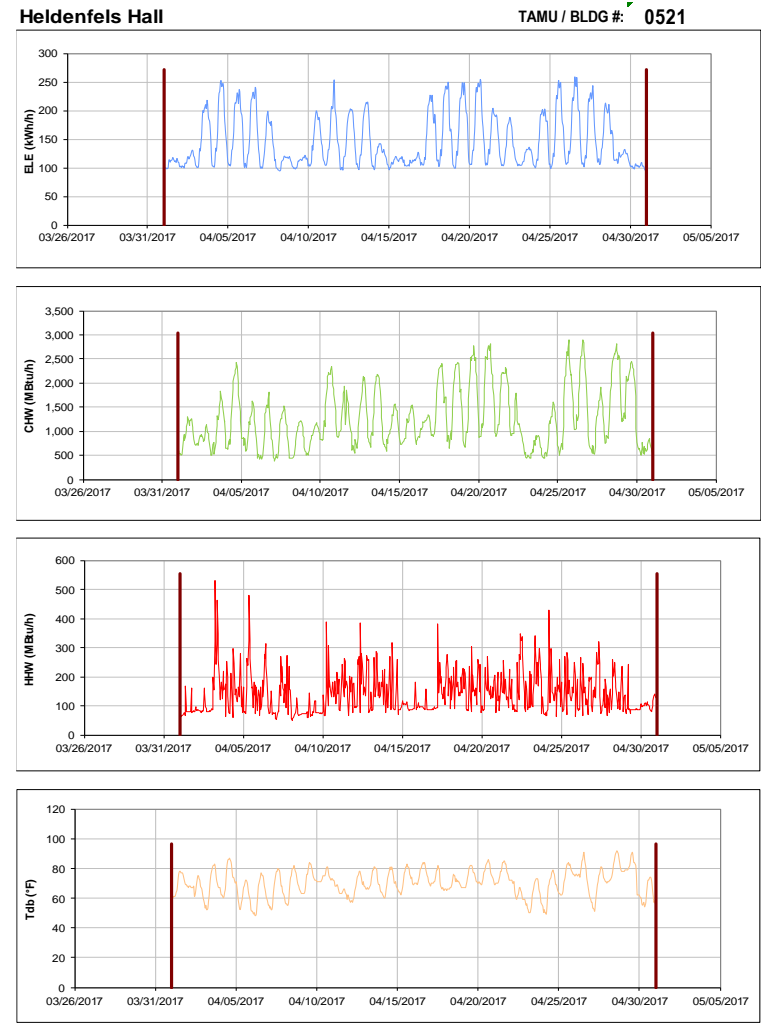


Figure III-114 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heldenfels Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-115 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Blocker building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

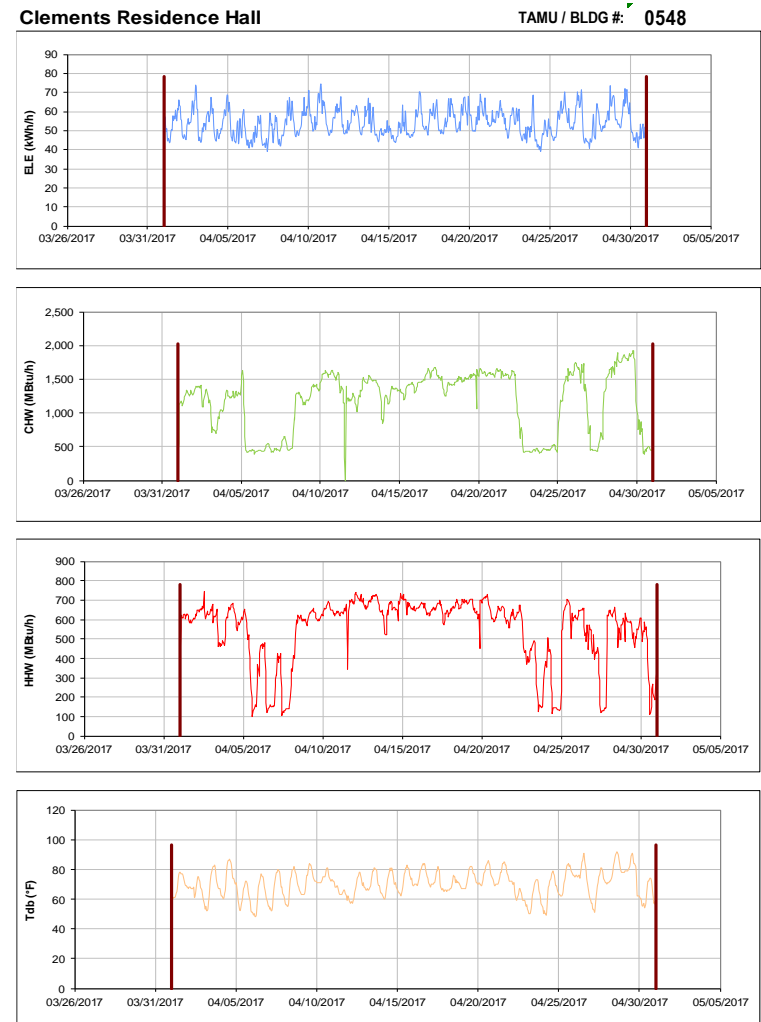


Figure III-116 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Clements Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

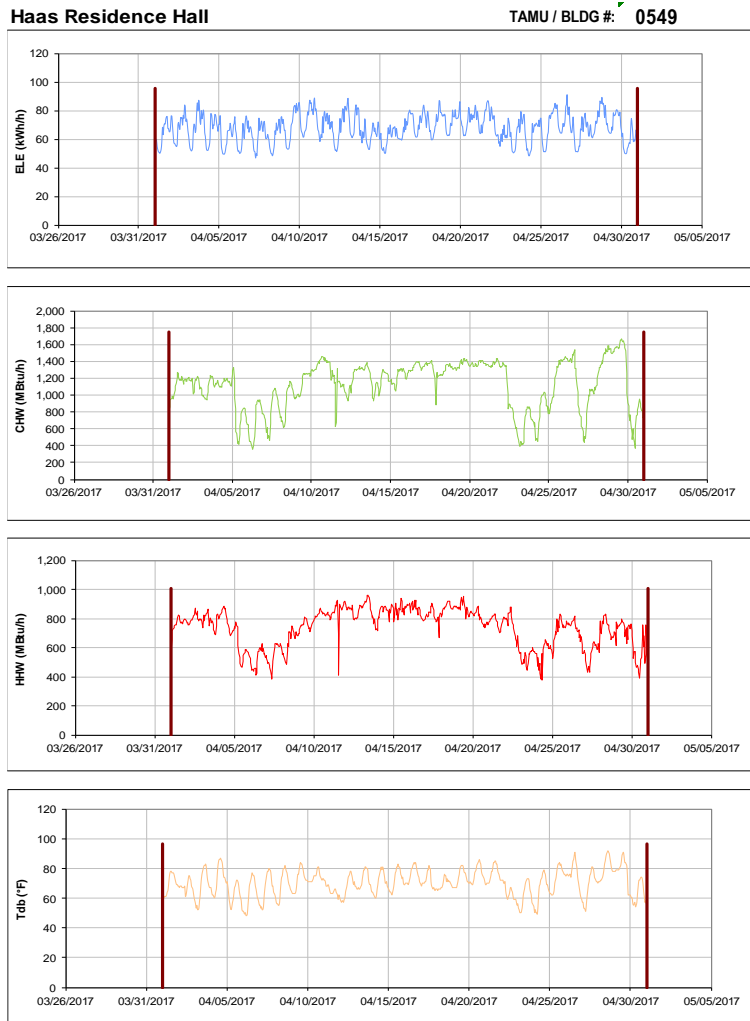


Figure III-117 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Haas Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

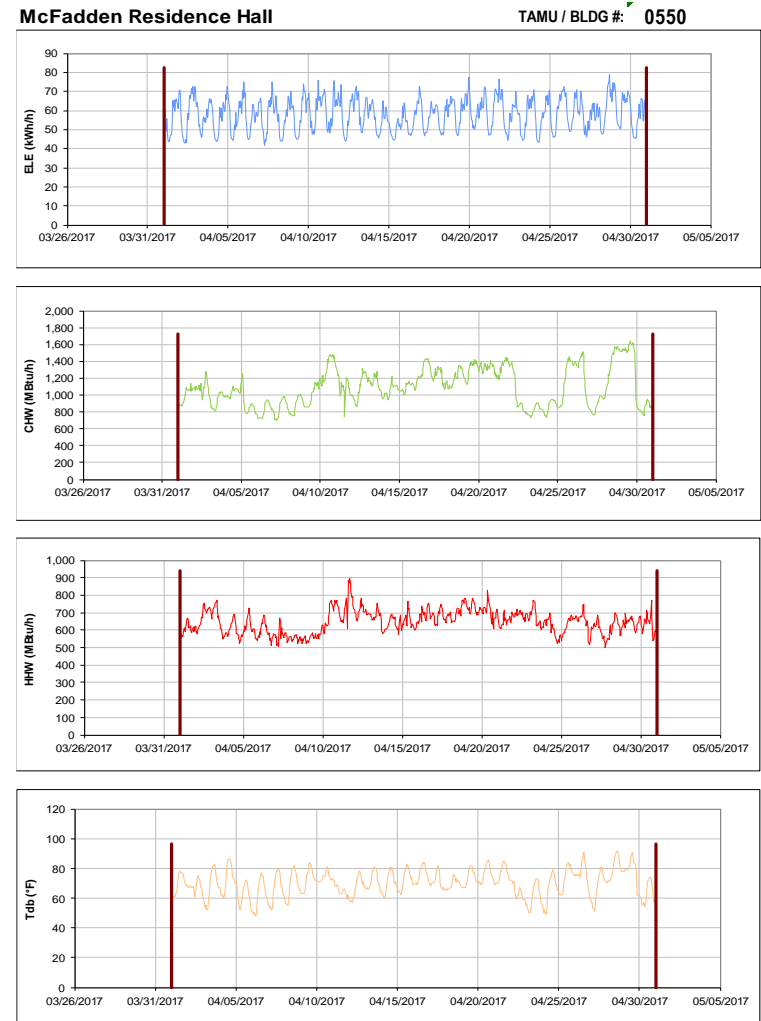


Figure III-118 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for McFadden Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

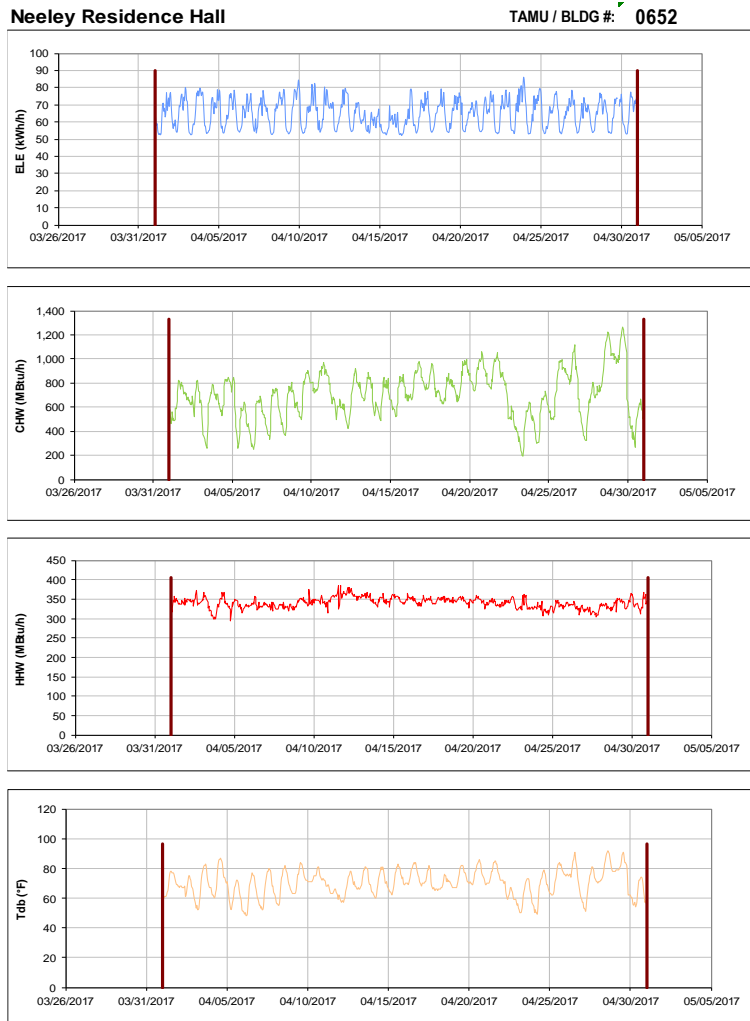


Figure III-119 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Neeley Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

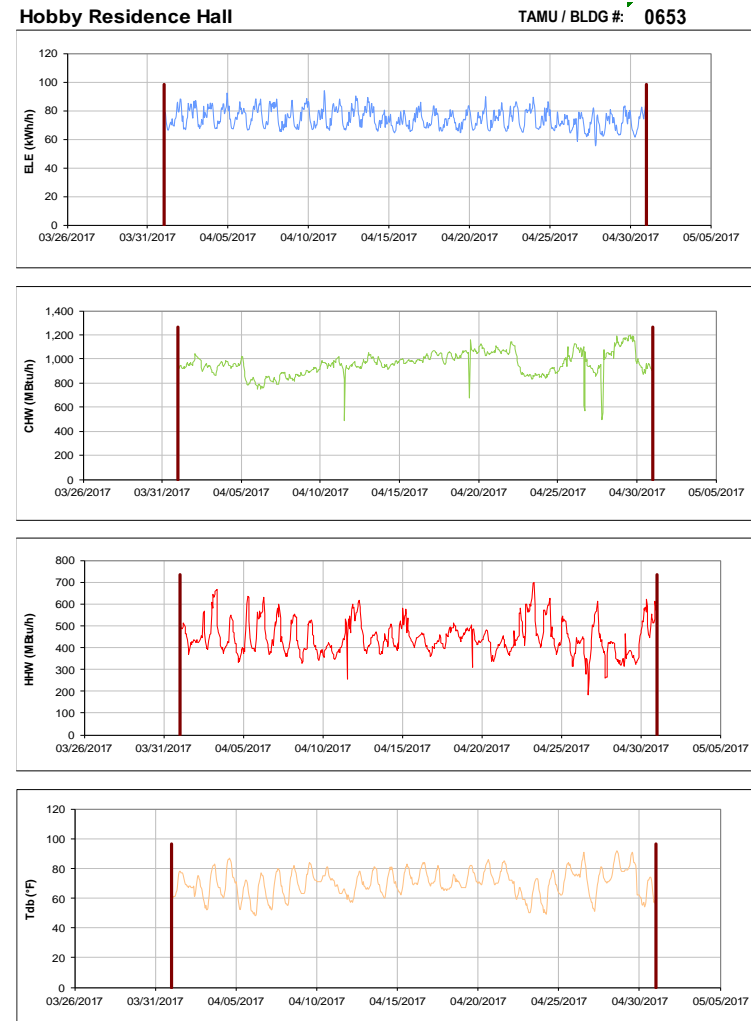


Figure III-120 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hobby Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

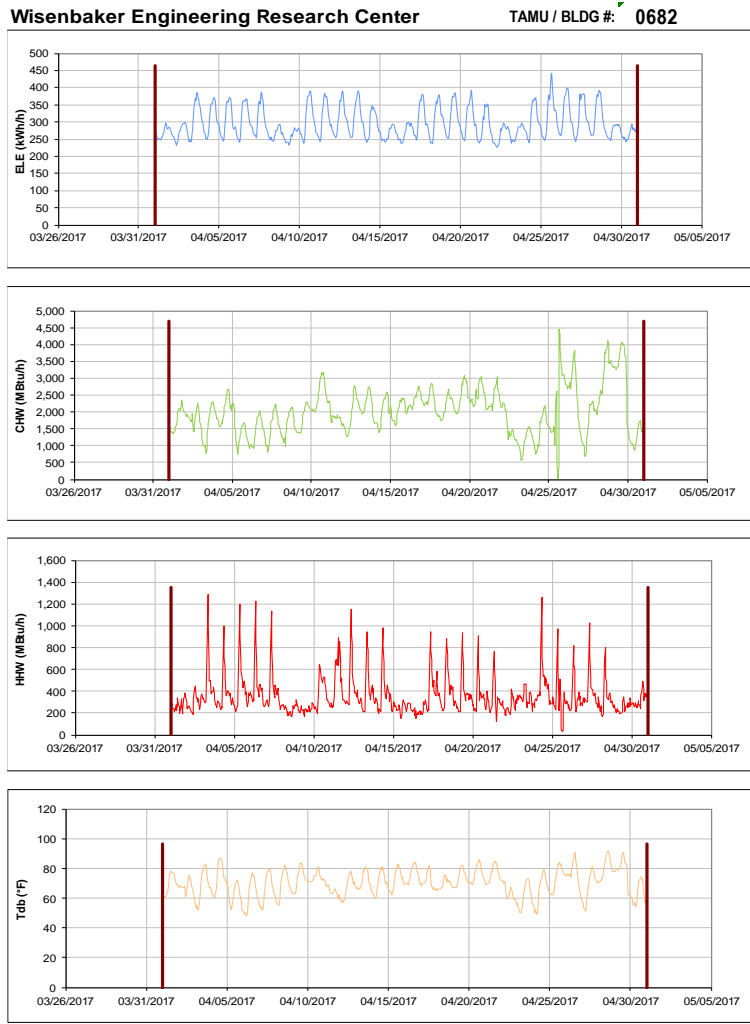


Figure III-121 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wisembaker Engineering Research Center during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

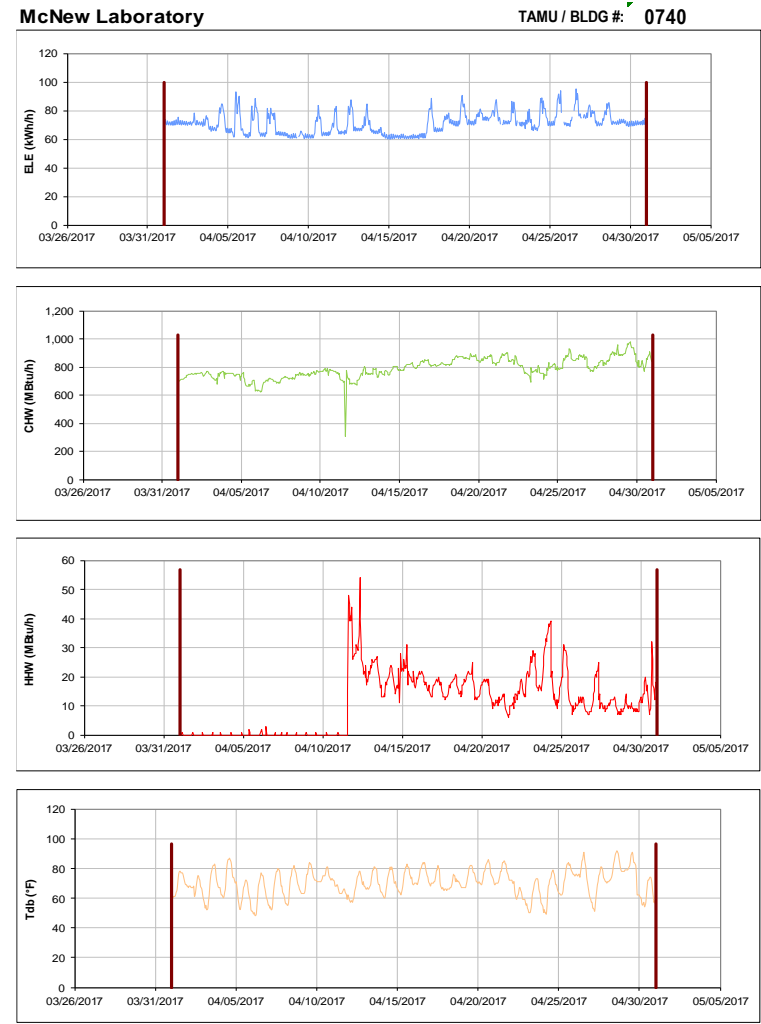


Figure III-122 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for McNew Laboratory during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Soil Testing Labs

TAMU / BLDG #: 0806

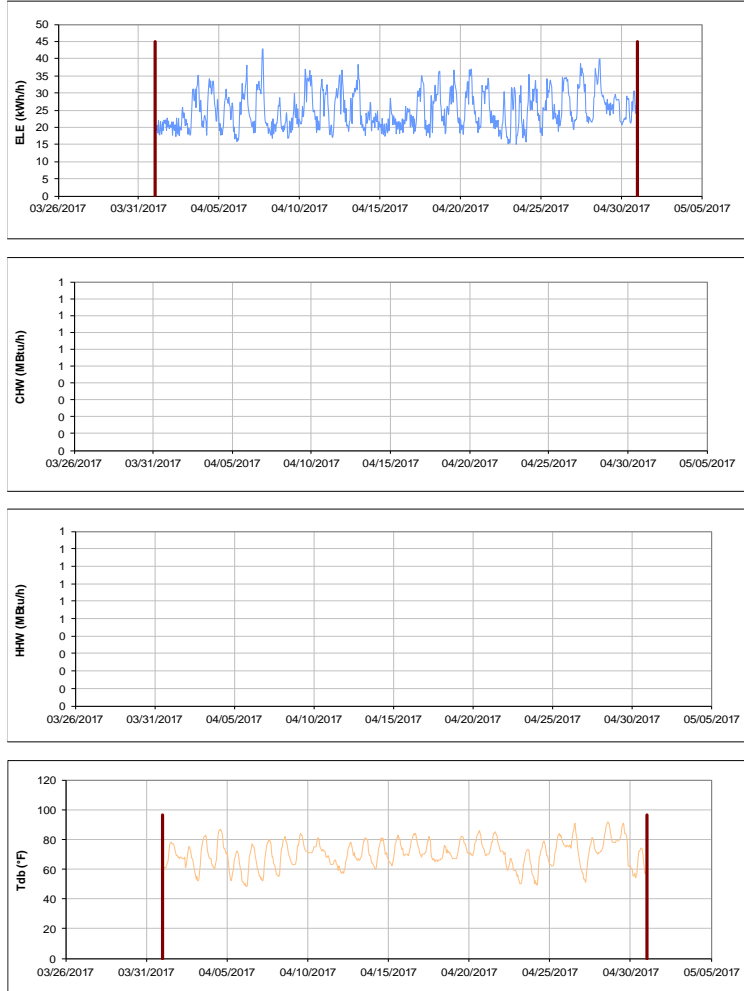


Figure III-123 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Soil Testing Labs during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Entomology Research Lab

TAMU / BLDG #: 0815

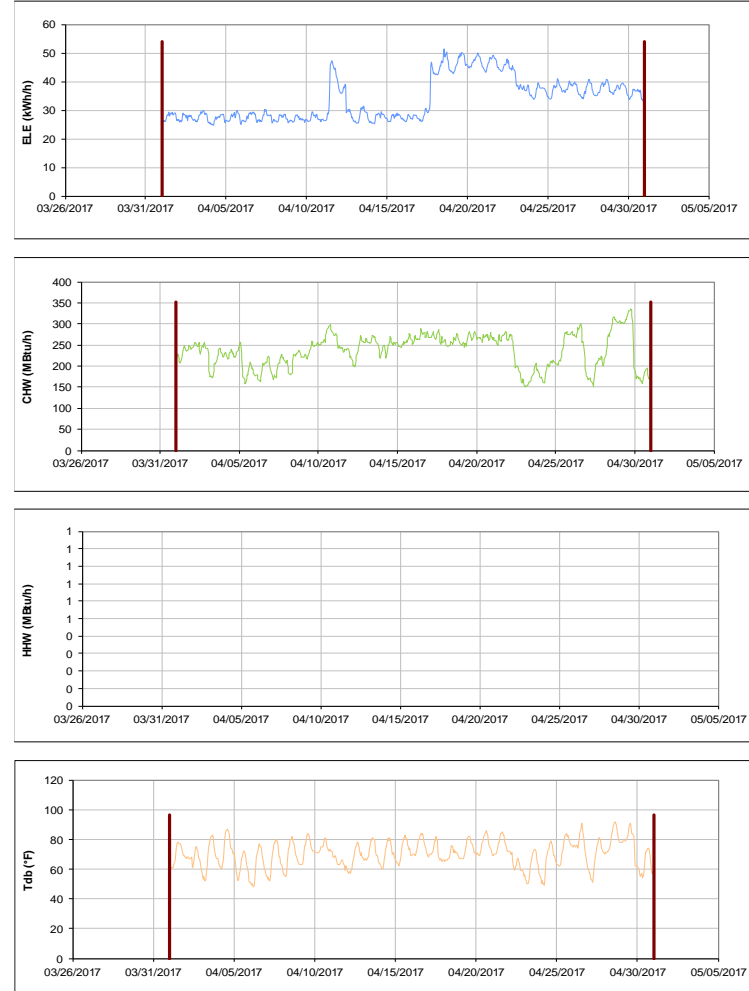


Figure III-124 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Entomology Research Lab during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

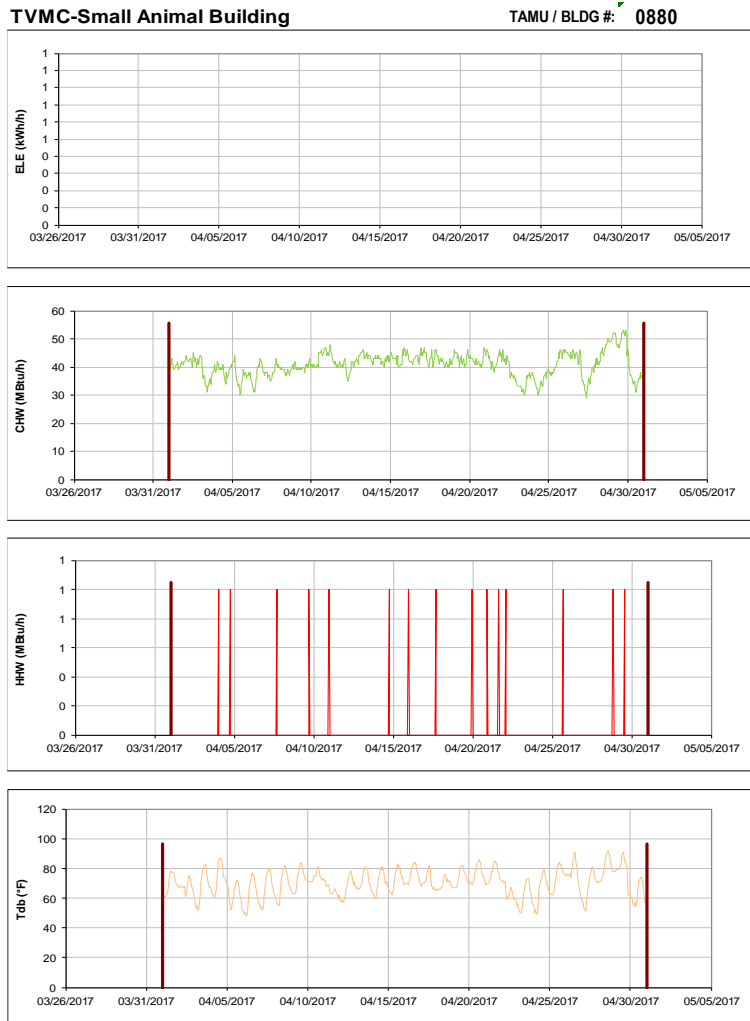


Figure III-125 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TVMC-Small Animal Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

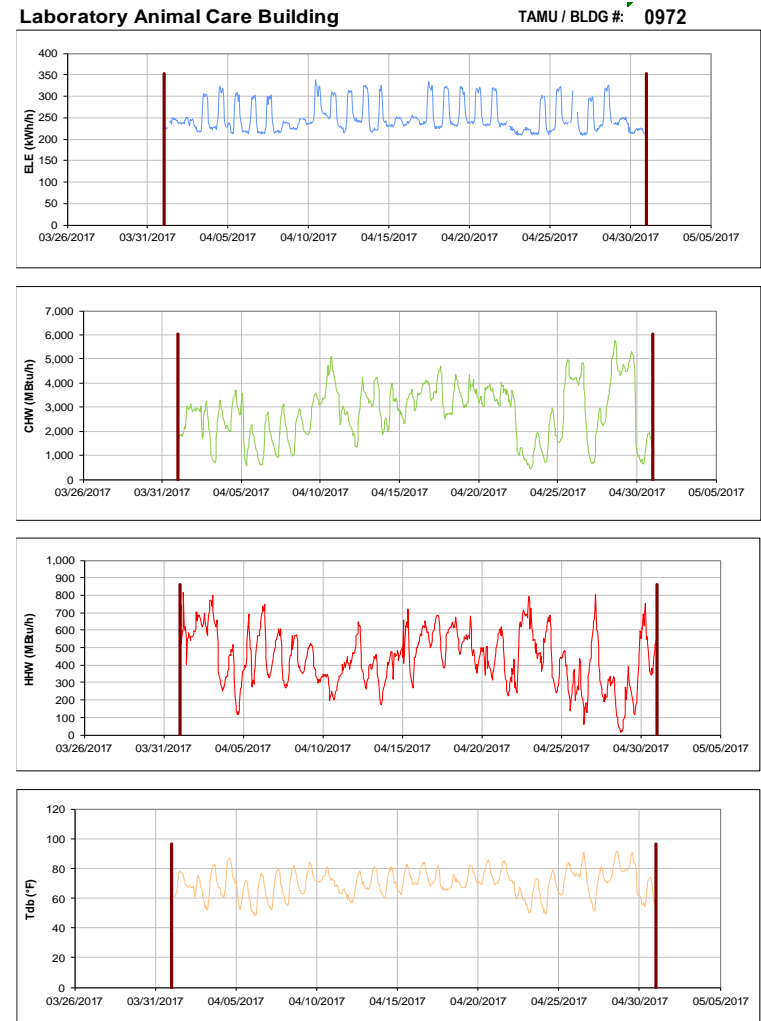


Figure III-126 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Laboratory Animal Care Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-127 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Vivarium III during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

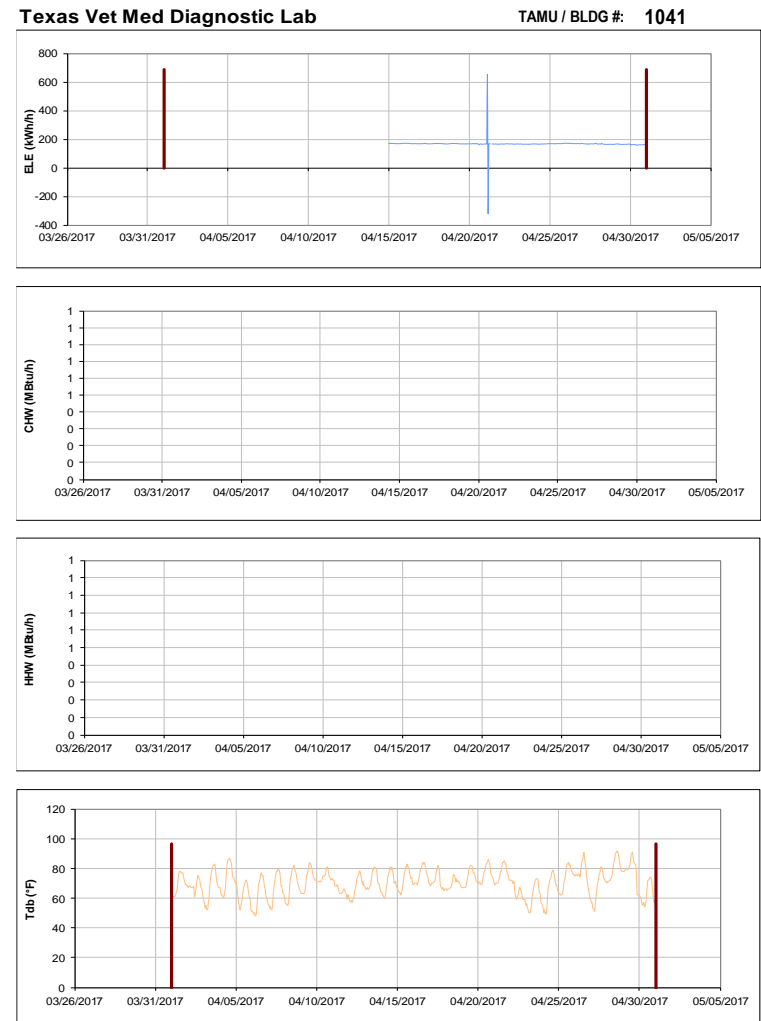


Figure III-128 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas Vet Med Diagnostic Lab during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

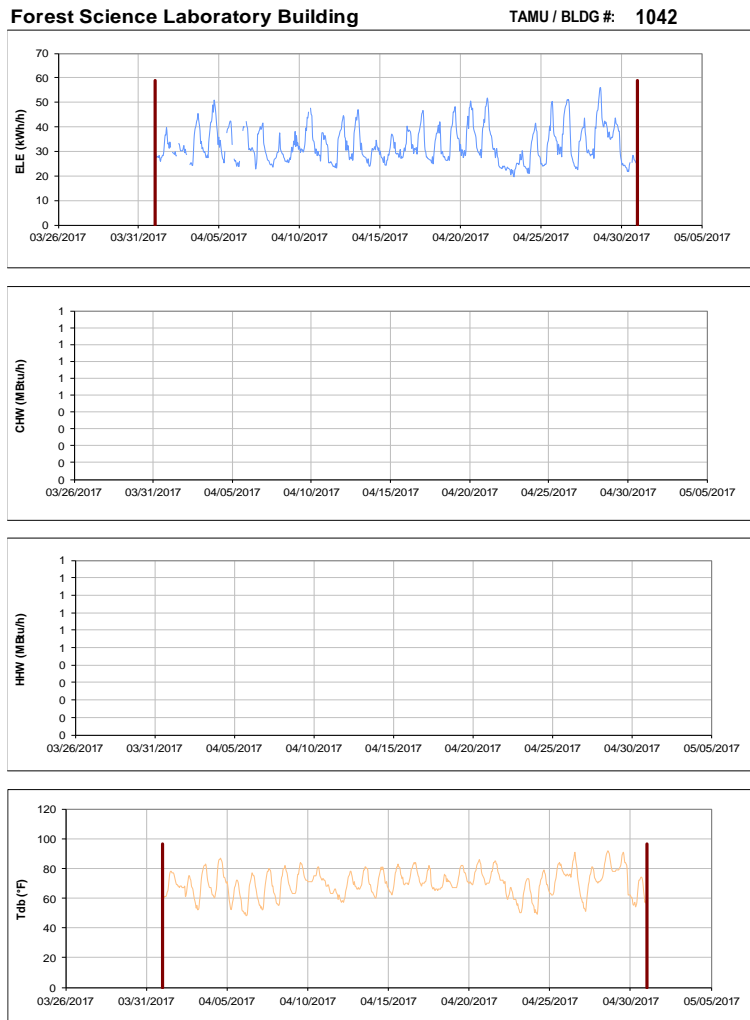


Figure III-129 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Forest Science Laboratory Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-130 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Small Animal Hospital during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Utilities Energy Office Annex

TAMU / BLDG #: 1089

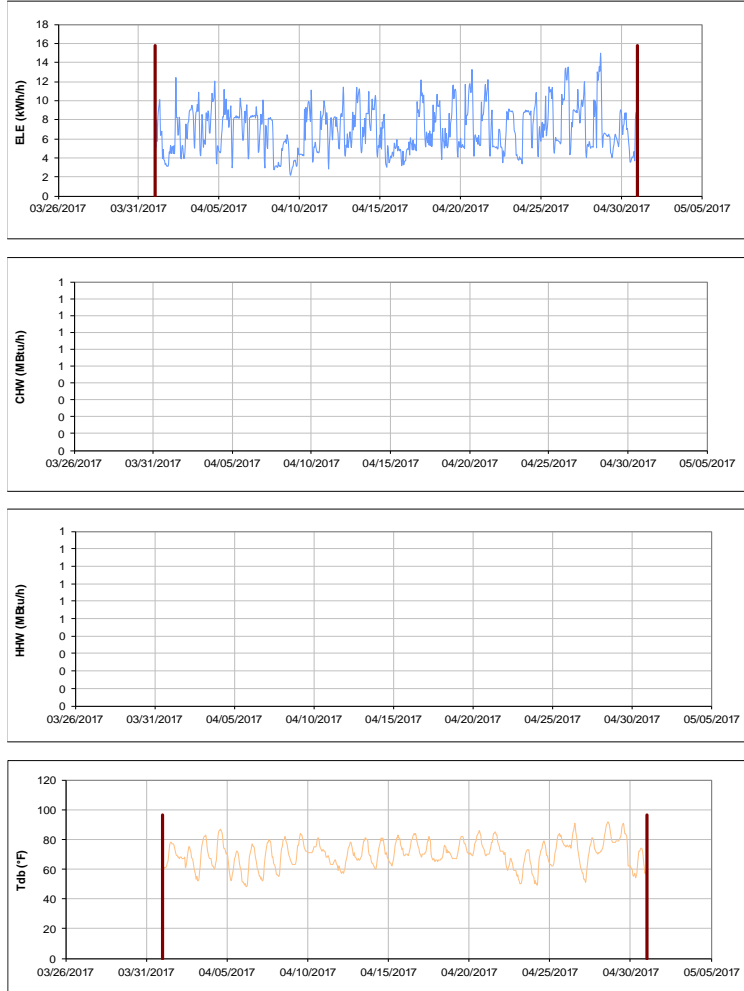


Figure III-131 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities Energy Office Annex during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Biological Control Facility

TAMU / BLDG #: 1146



Figure III-132 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Control Facility during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-133 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Physical Plant Administration & Shops during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

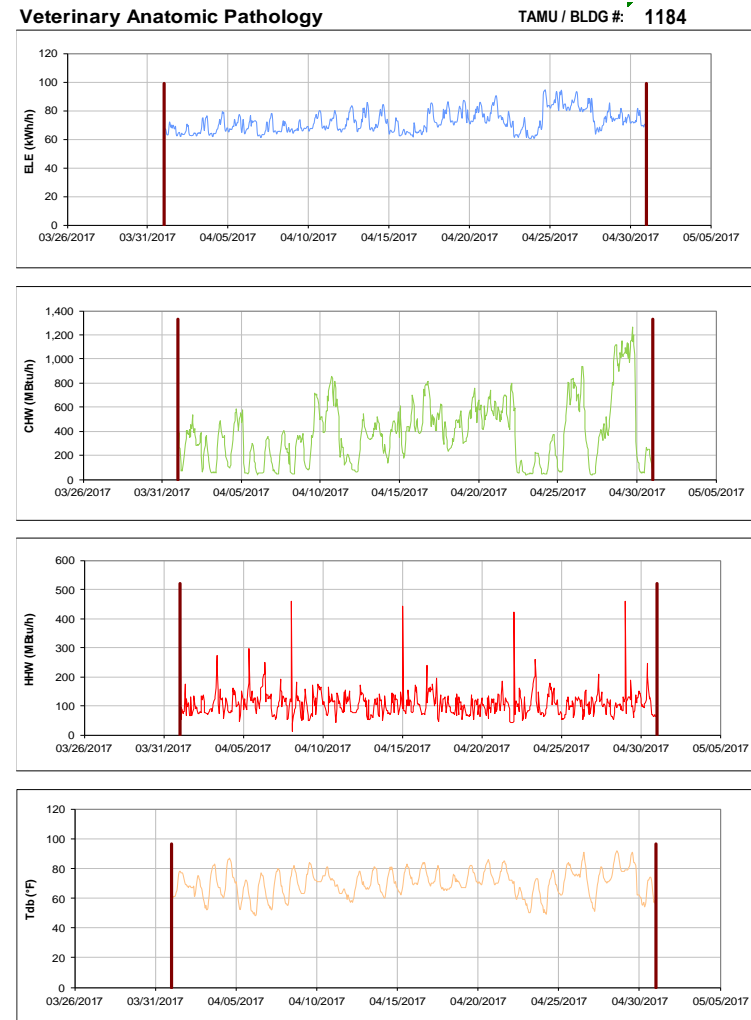


Figure III-134 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Anatomic Pathology during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-135 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Large Animal Hospital during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

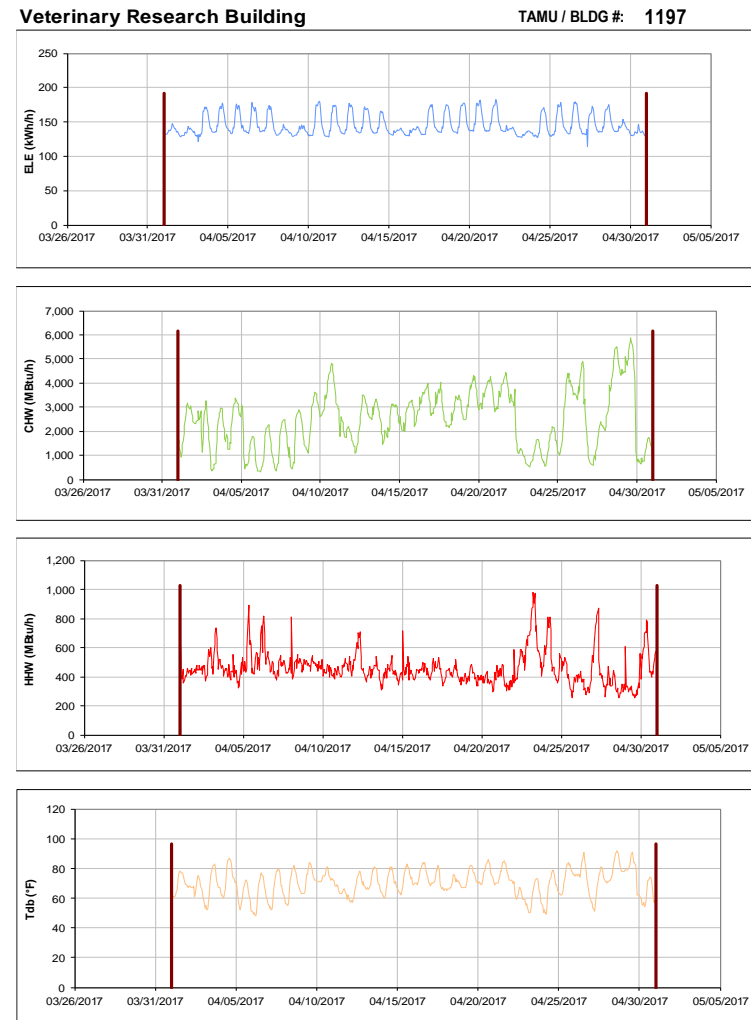


Figure III-136 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Research Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

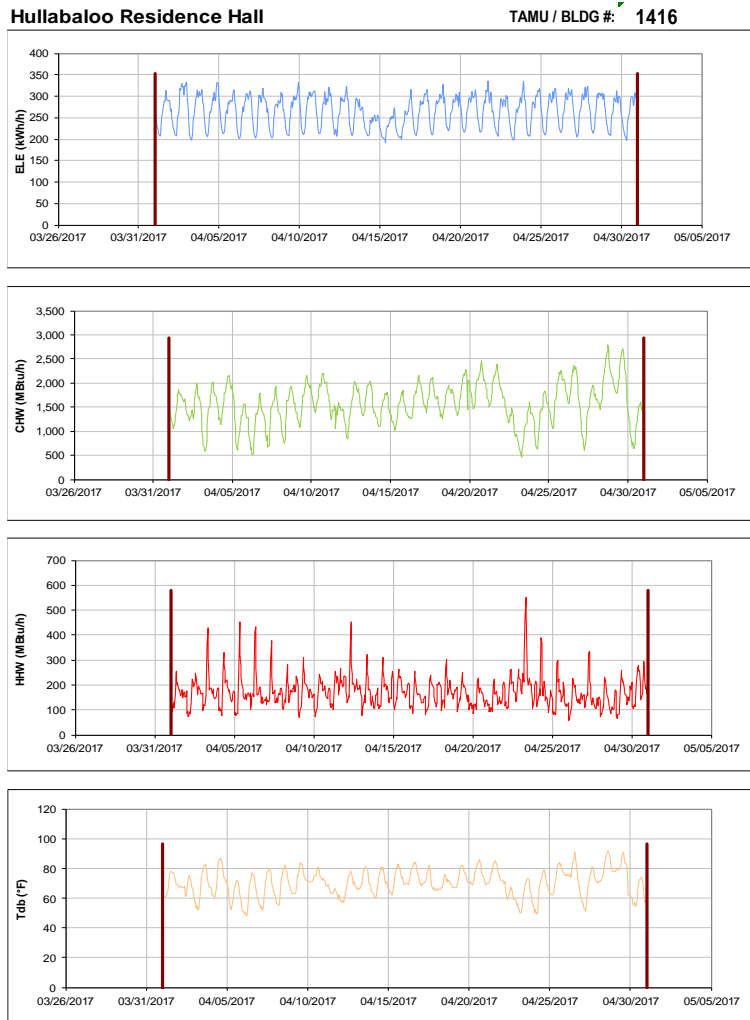


Figure III-137 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hullabaloo Residence Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

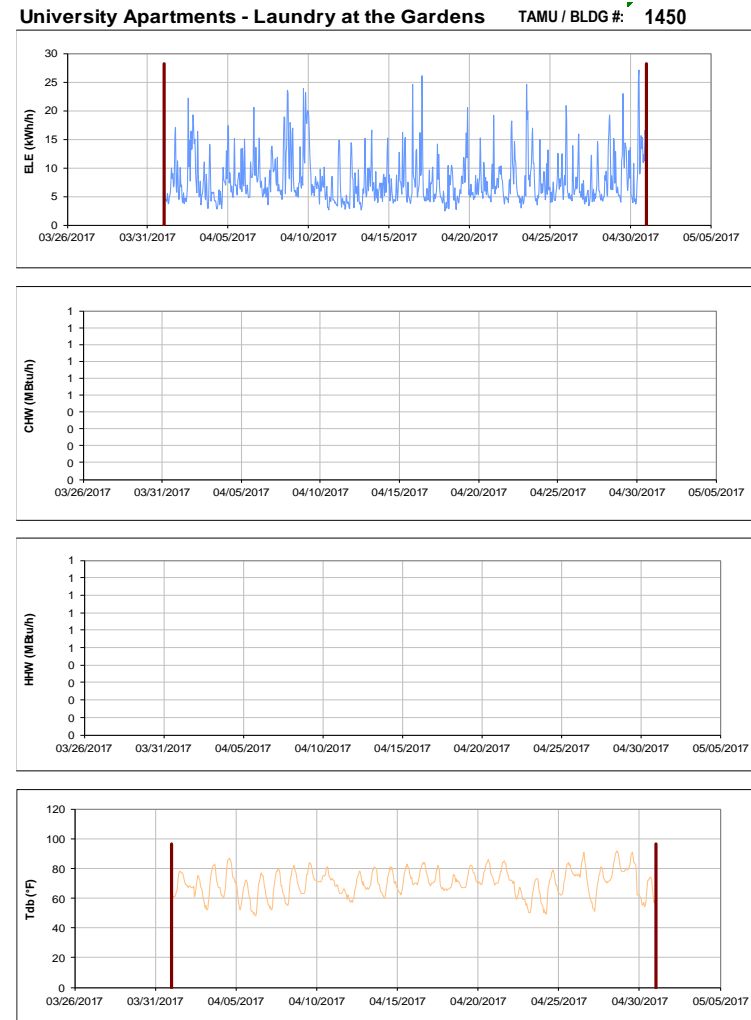


Figure III-138 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - Laundry at the Gardens during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

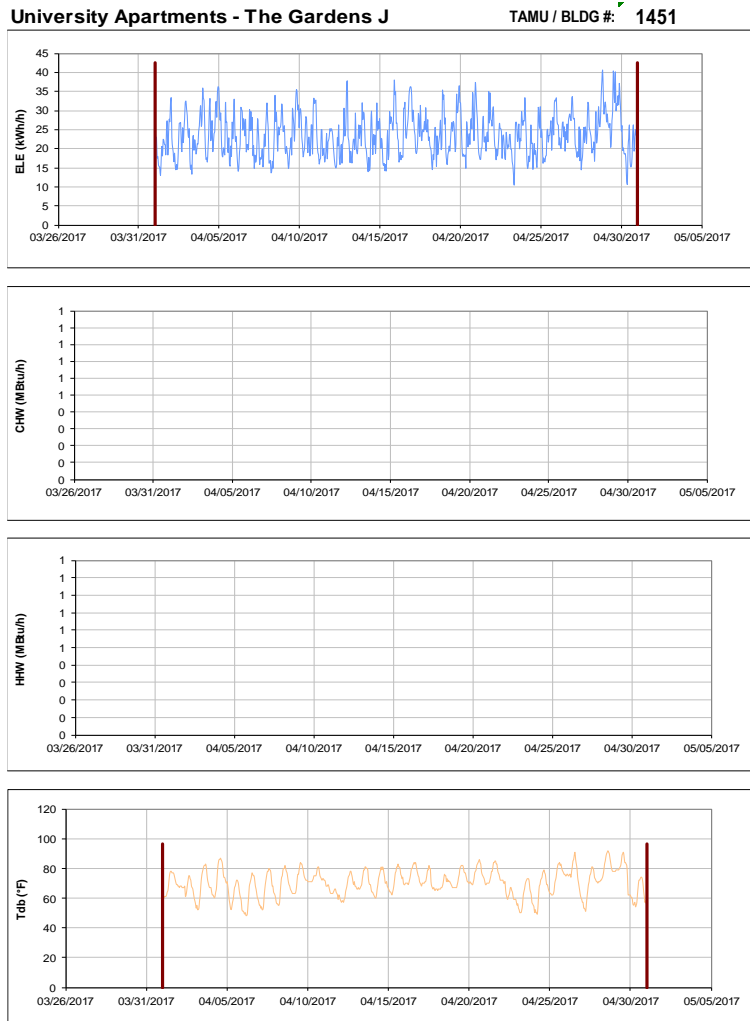


Figure III-139 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens J during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

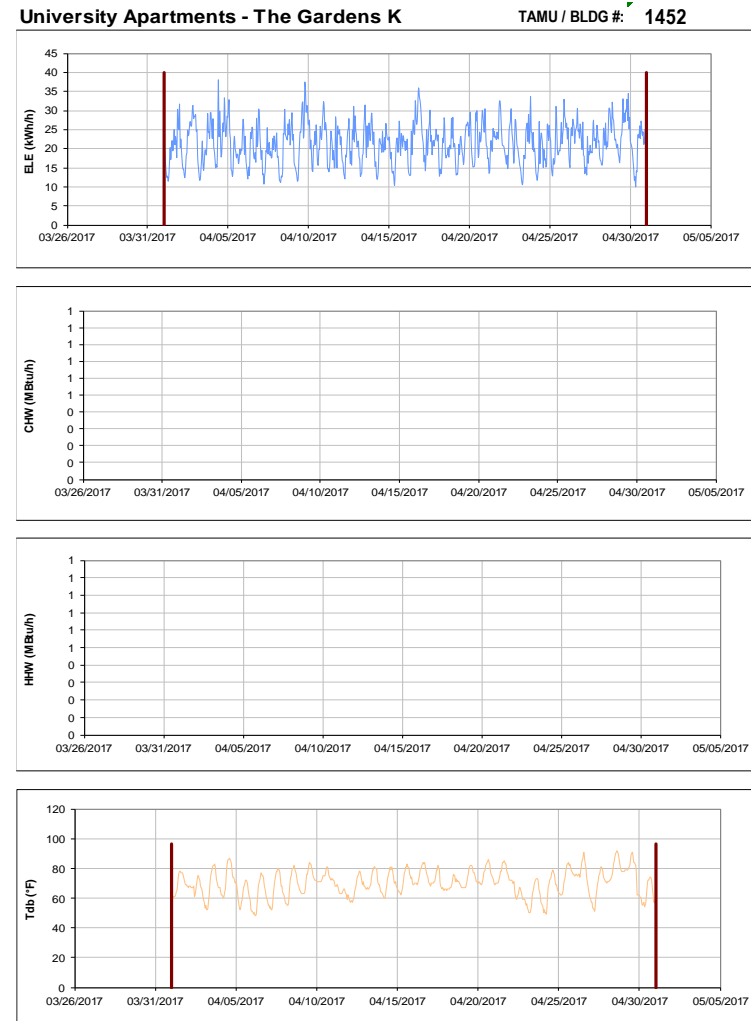


Figure III-140 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens K during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

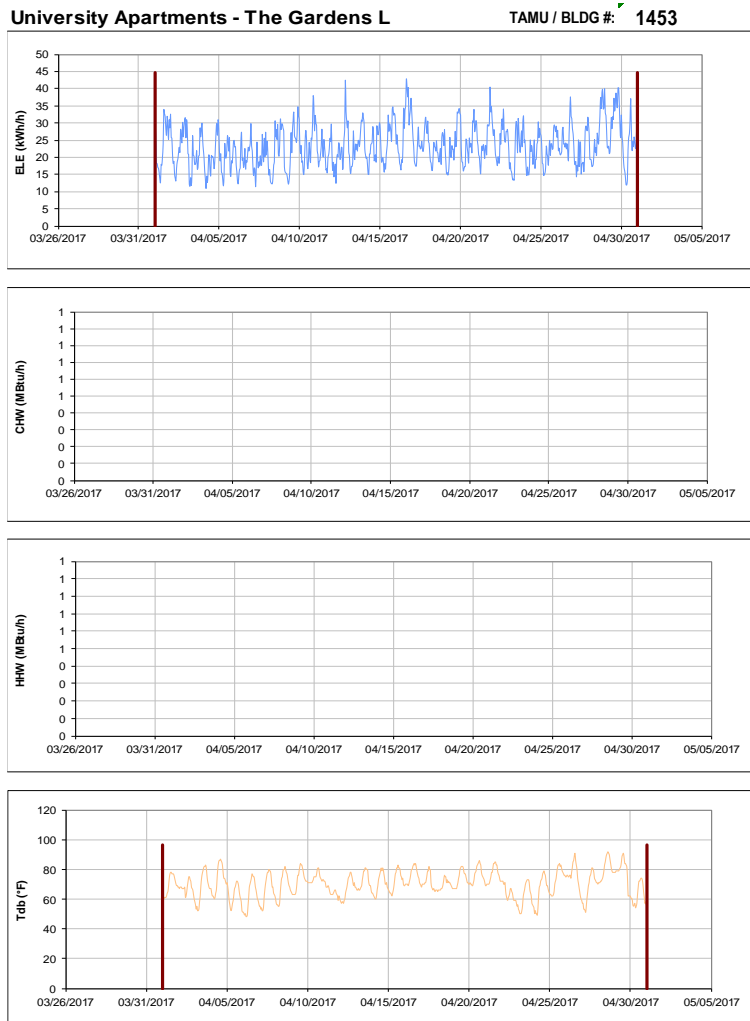


Figure III-141 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens L during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

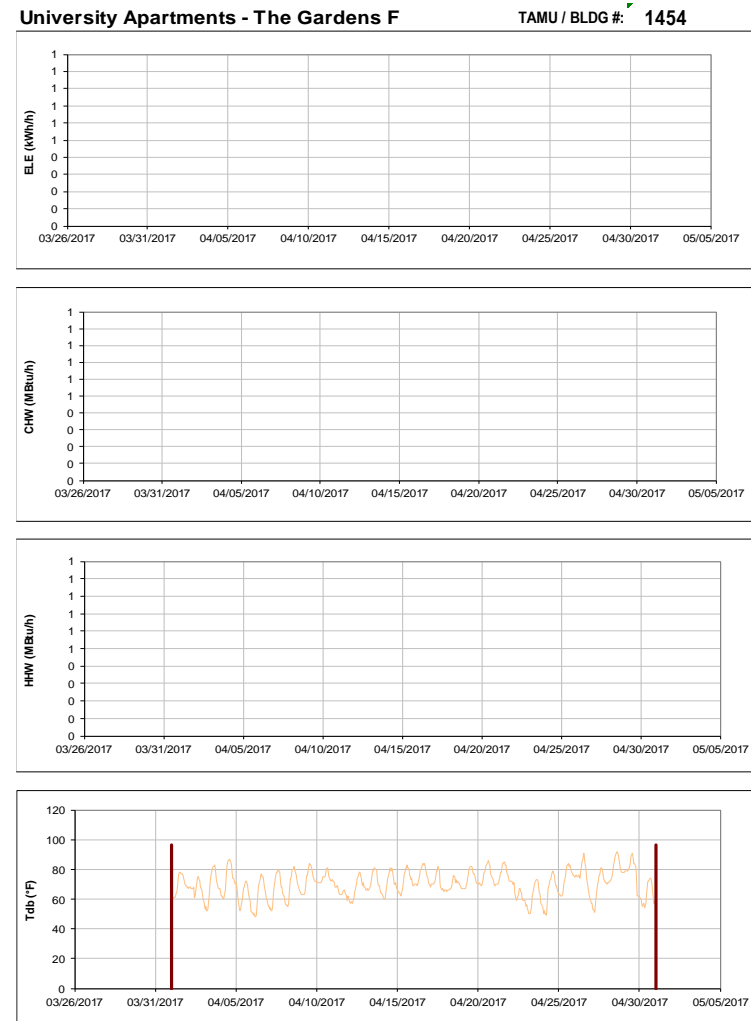


Figure III-142 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens F during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

University Apartments - The Gardens G TAMU / BLDG #: 1455

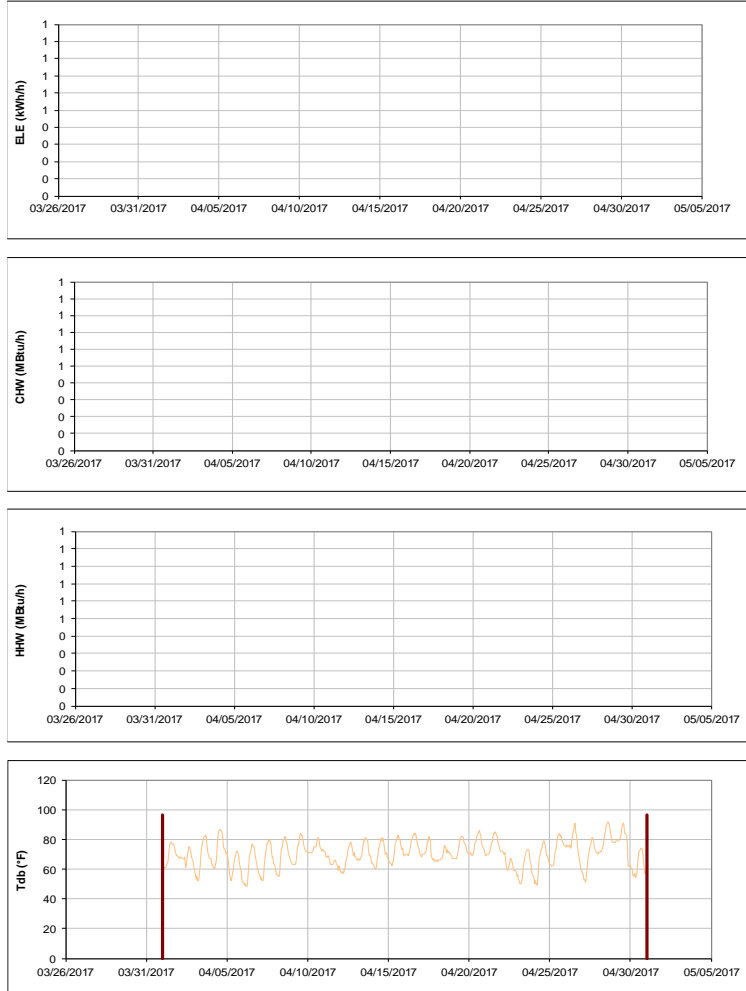


Figure III-143 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens G during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

University Apartments - The Gardens H TAMU / BLDG #: 1456

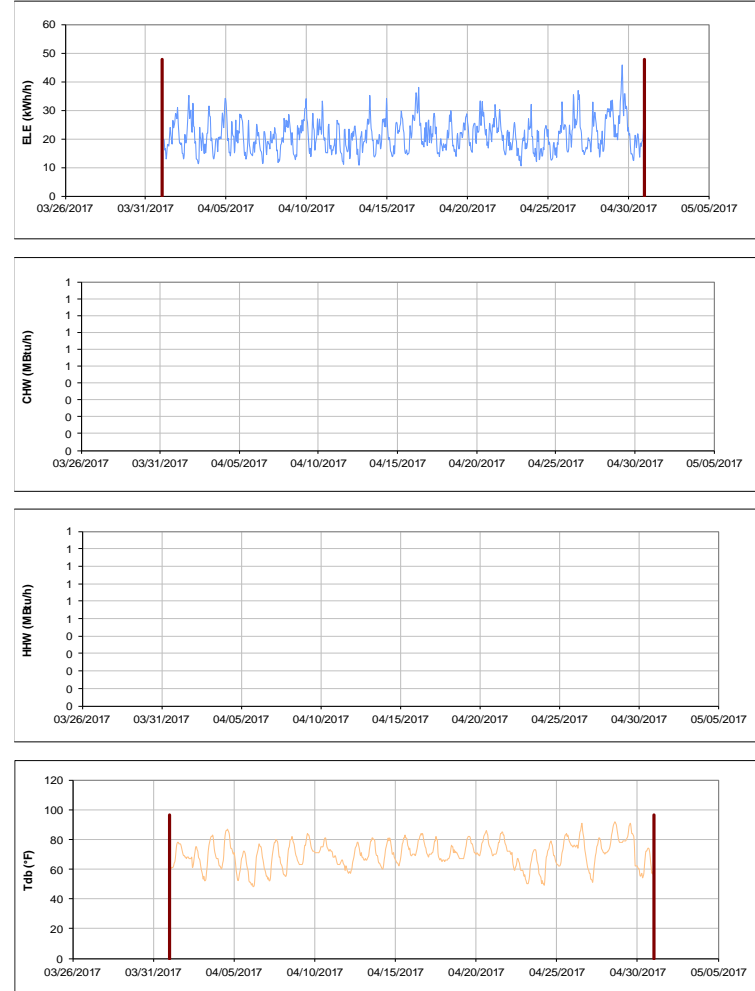


Figure III-144 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens H during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

University Apartments - The Gardens M TAMU / BLDG #: 1457

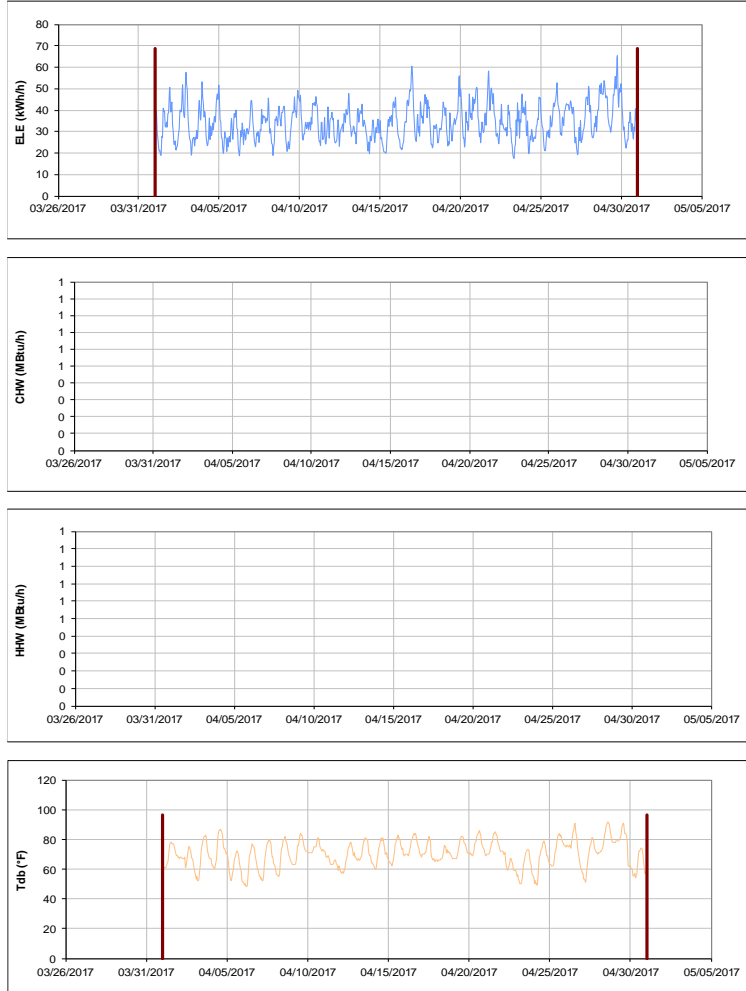


Figure III-145 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens M during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

University Apartments - The Gardens N TAMU / BLDG #: 1458

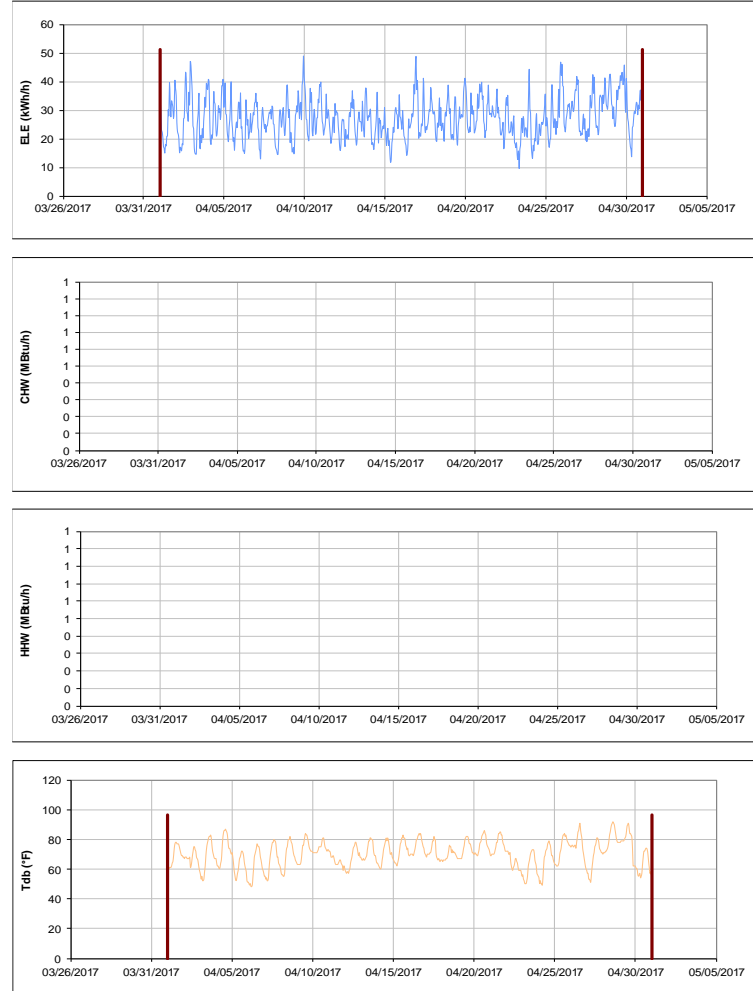


Figure III-146 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens N during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

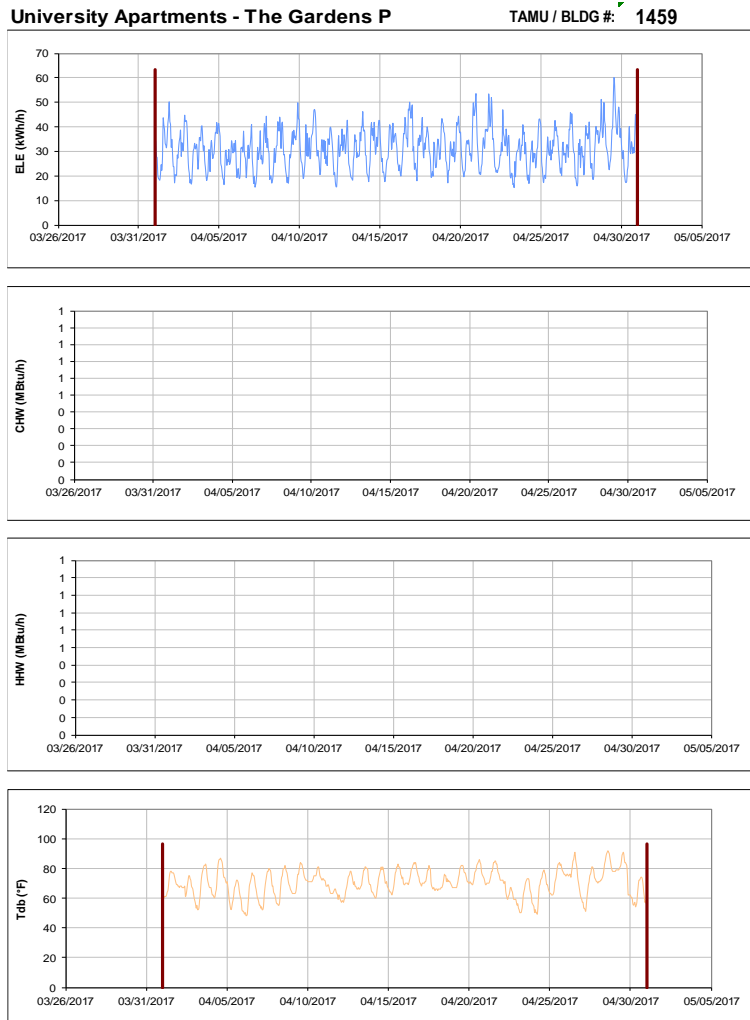


Figure III-147 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens P during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

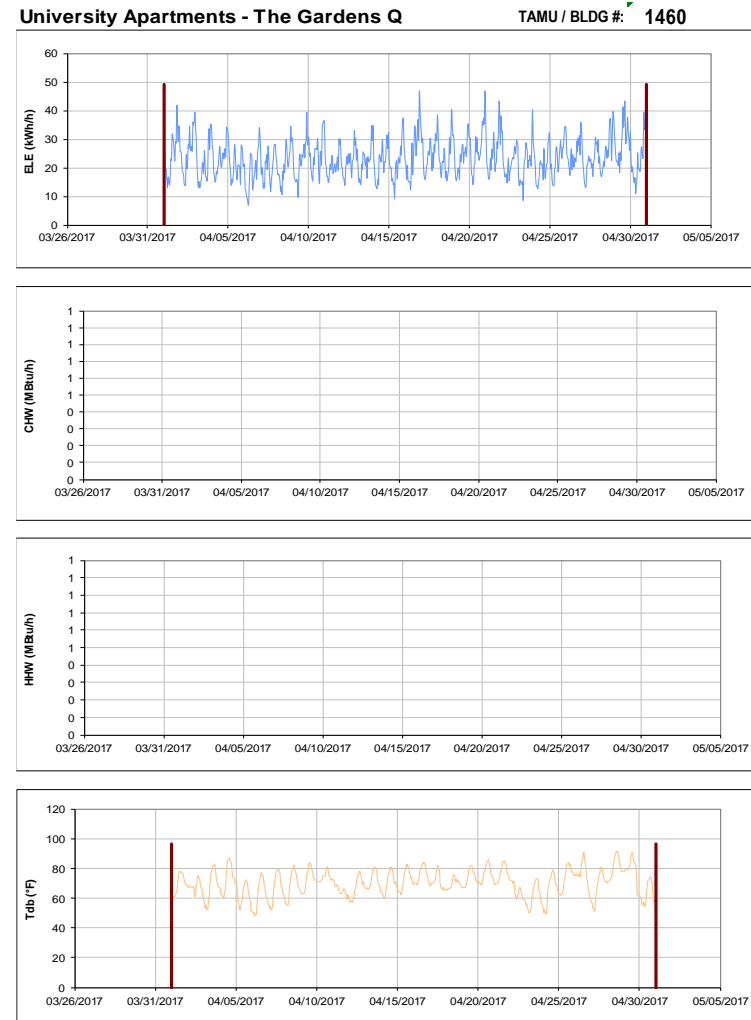


Figure III-148 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens Q during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

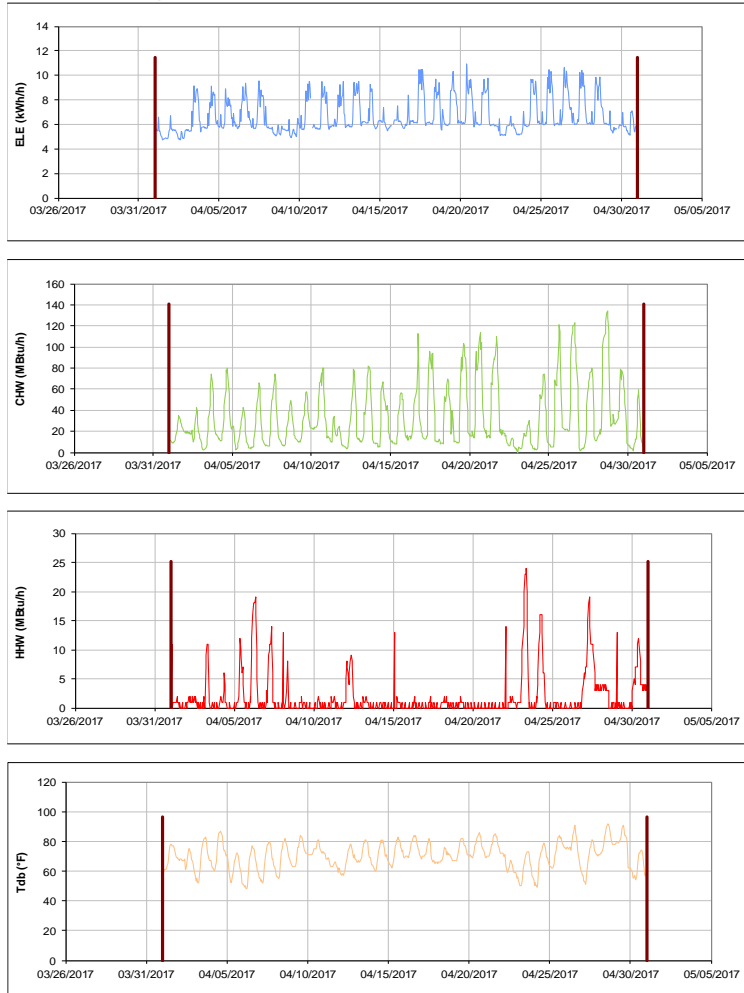


Figure III-149 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities & Energy Services Business Office during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Kleberg Center TAMU / BLDG #: 1501

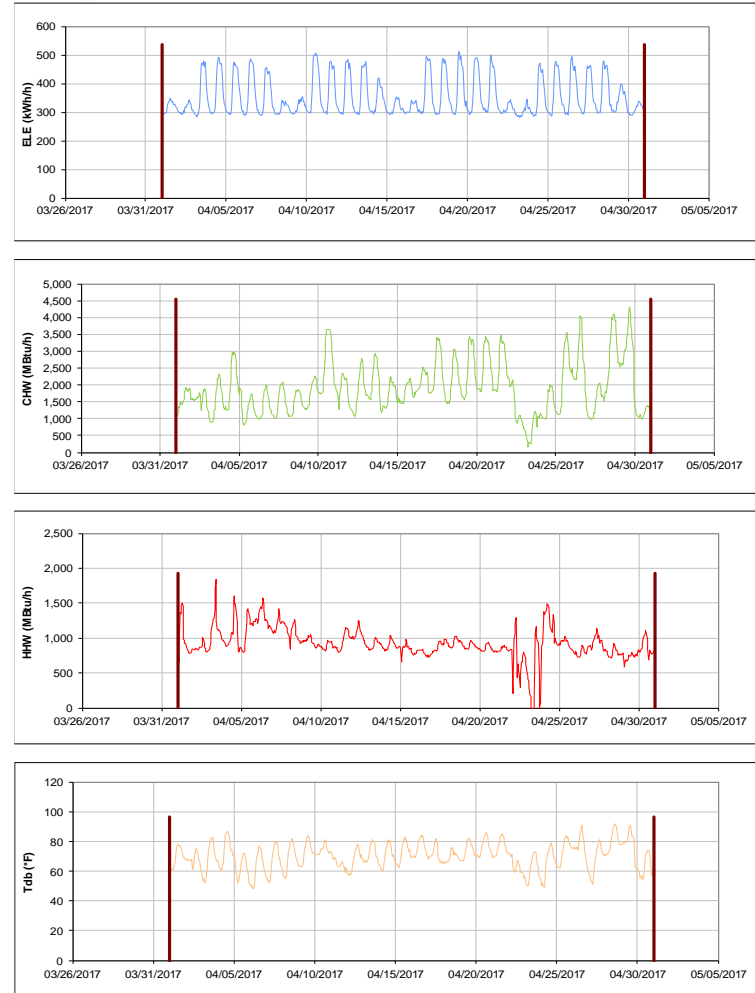


Figure III-150 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kleberg Center during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-151 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heep Center during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

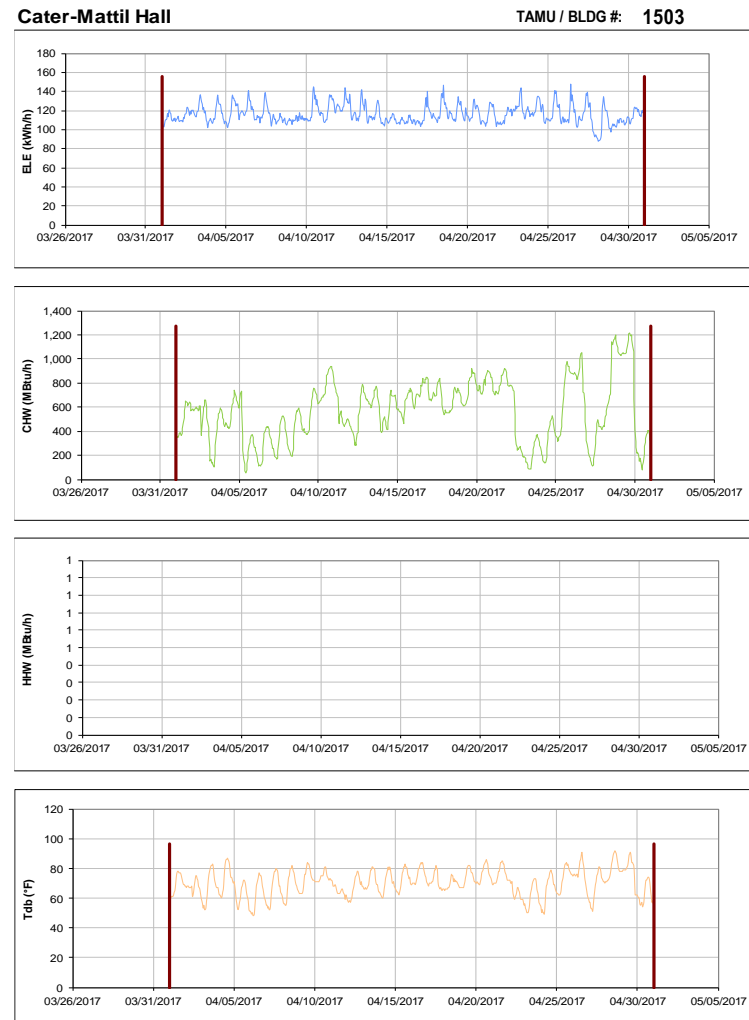


Figure III-152 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cater-Mattil Hall during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-153 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reynolds Medical Sciences Building during the Month of April 2017 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 Rosenthal Meat Science & Technology Center during the Month of April 2017 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 Horticulture-Forest Science Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

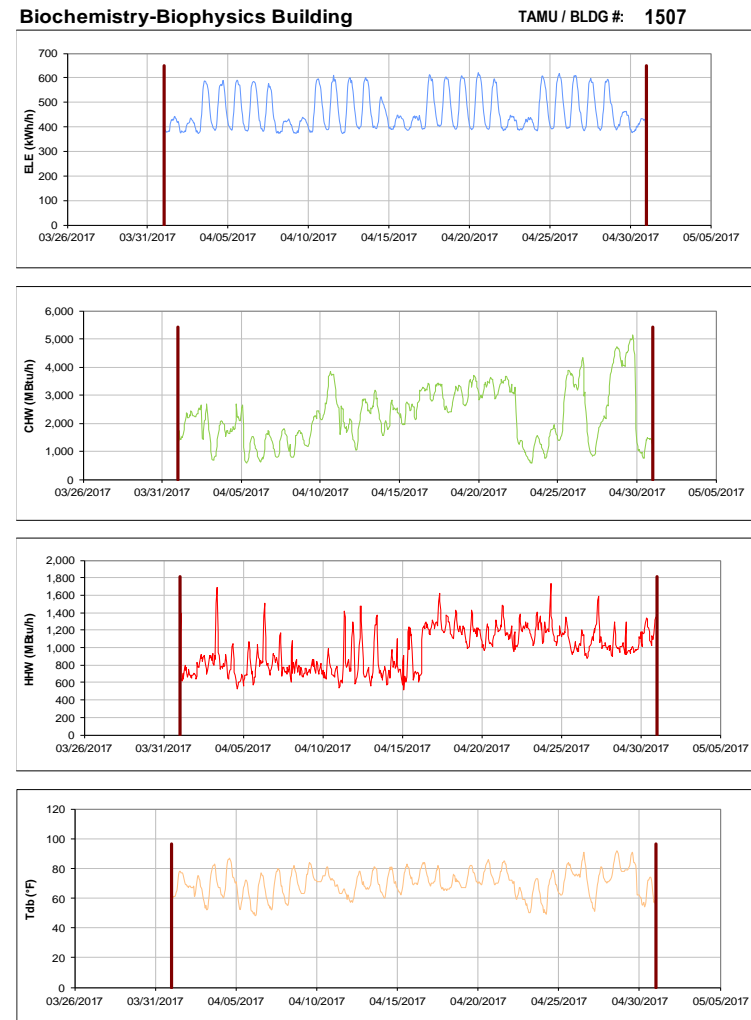


Figure III-156 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biochemistry-Biophysics Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

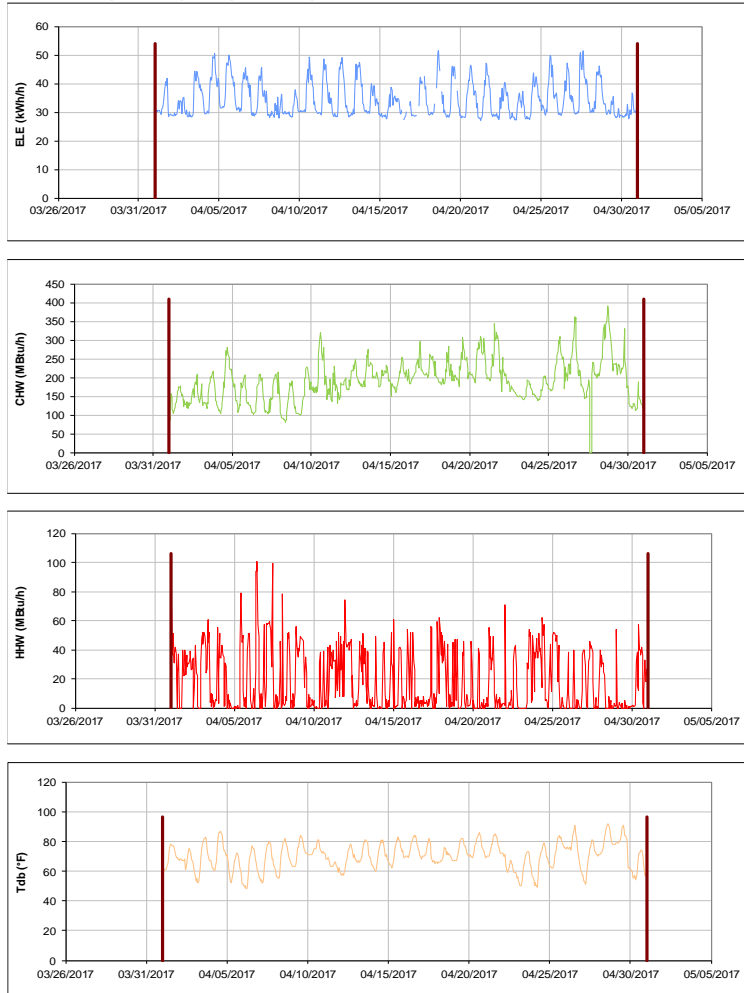


Figure III-157 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Price Hobgood Ag. Engineering Research Lab during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Medical Sciences Library TAMU / BLDG #: 1509



Figure III-158 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Medical Sciences Library during the Month of April 2017 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 Wehner Building during the Month of April 2017 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 West Campus Library Facility during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

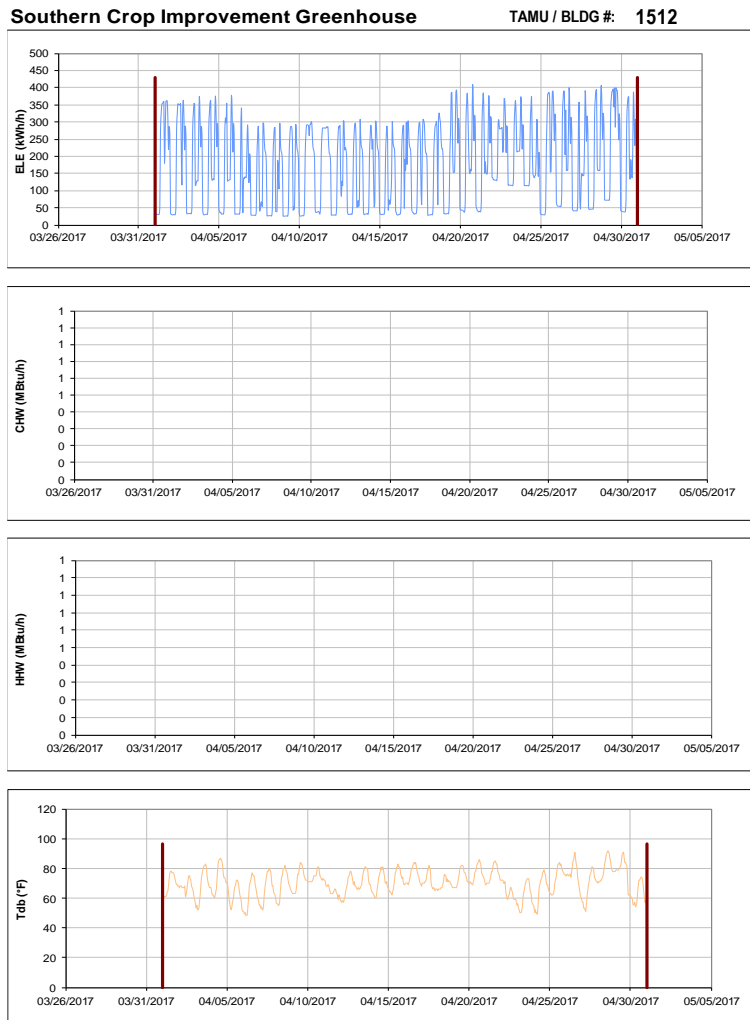


Figure III-161 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Southern Crop Improvement Greenhouse during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

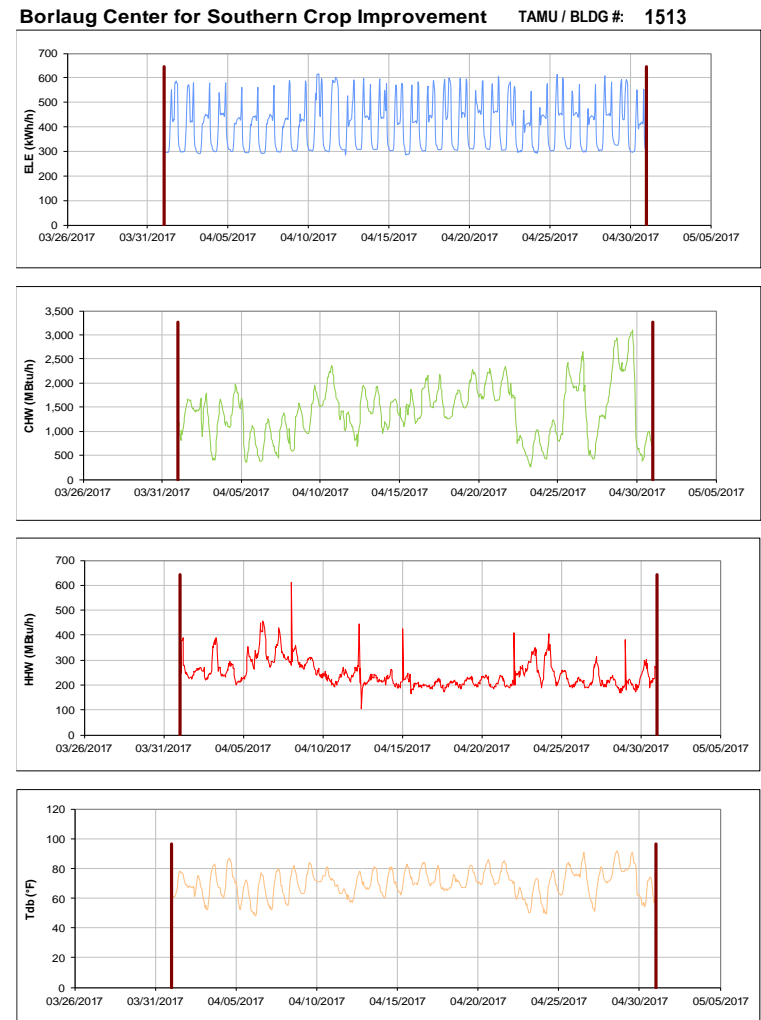


Figure III-162 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Borlaug Center for Southern Crop Improvement during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-163 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TX School of Rural Public Health during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-164 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Nuclear Magnetic Resonance Facility during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-165 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Interdisciplinary Life Sciences Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-166 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture and Life Sciences Building during the Month of April 2017 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 AgriLife Services Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

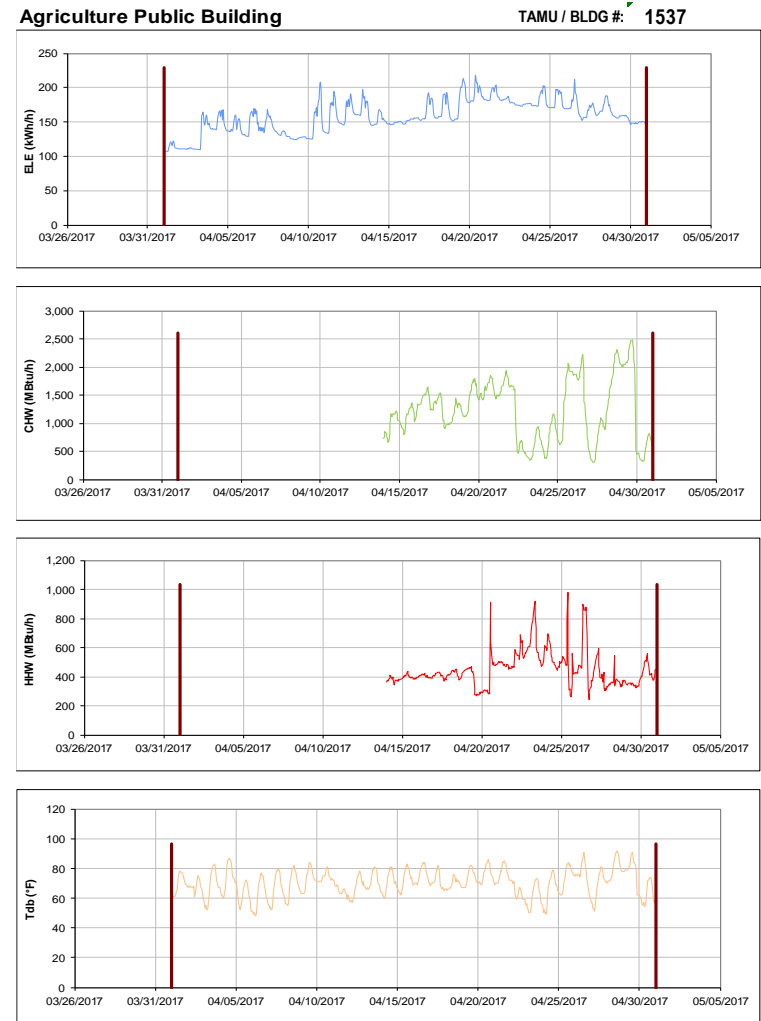


Figure III-168 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture Public Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-169 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture Program Visitors Center during the Month of April 2017 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 Physical Education Activity Program Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Human Clinical Research Building

TAMU / BLDG #: 1542



Figure III-171 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Human Clinical Research Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Cain Garage

TAMU / BLDG #: 1544

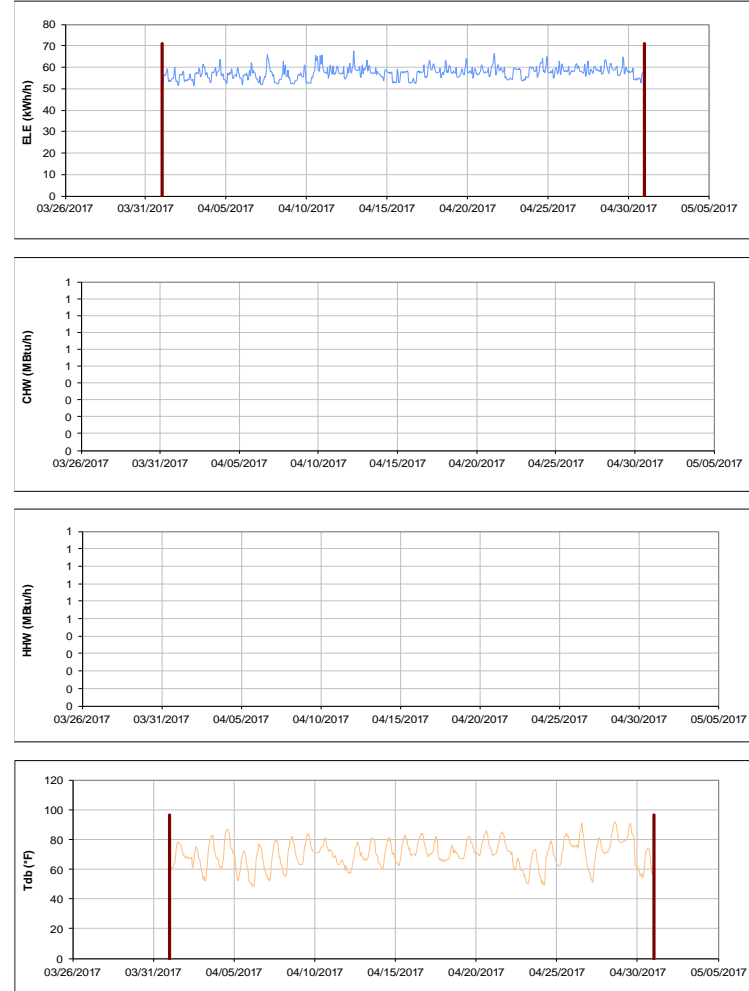


Figure III-172 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cain Garage during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Olsen Field at Bluebell Park

TAMU / BLDG #: 1550

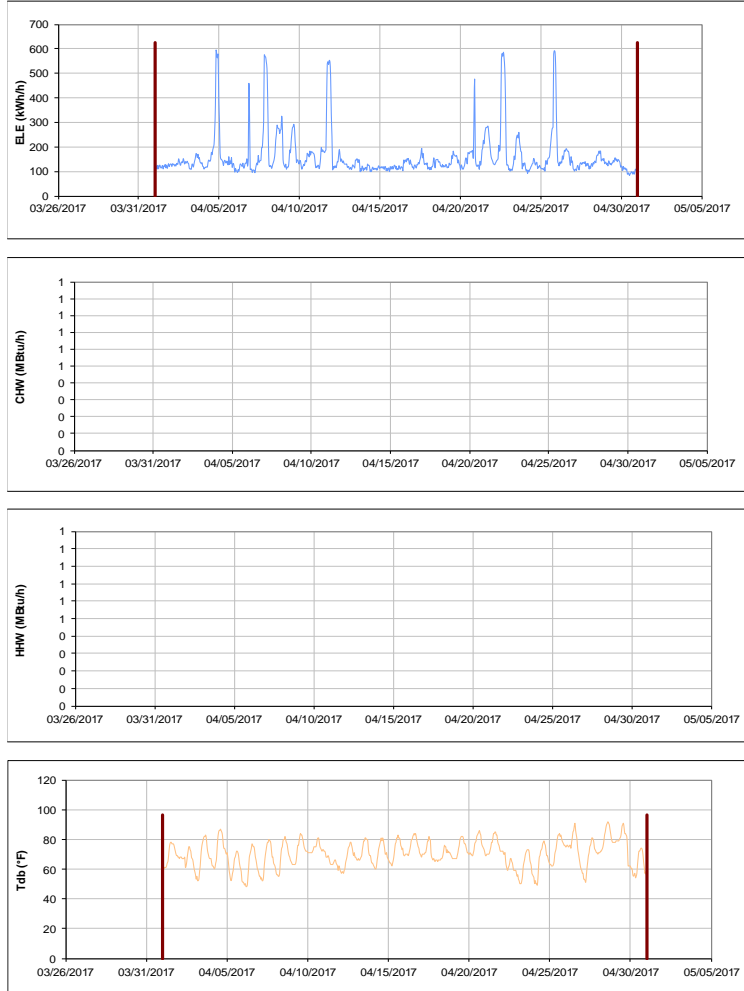


Figure III-173 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Olsen Field at Bluebell Park during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Reed Arena and Cox-McFerrin Center

TAMU / BLDG #: 554-1558

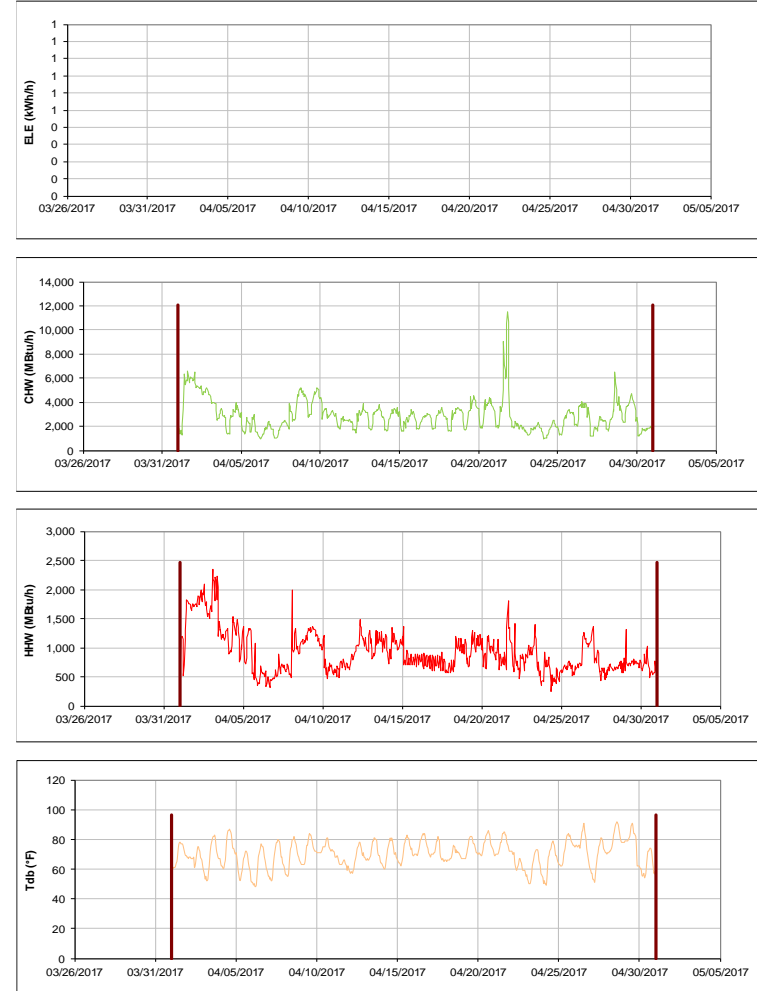


Figure III-174 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed Arena and Cox-McFerrin Center during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

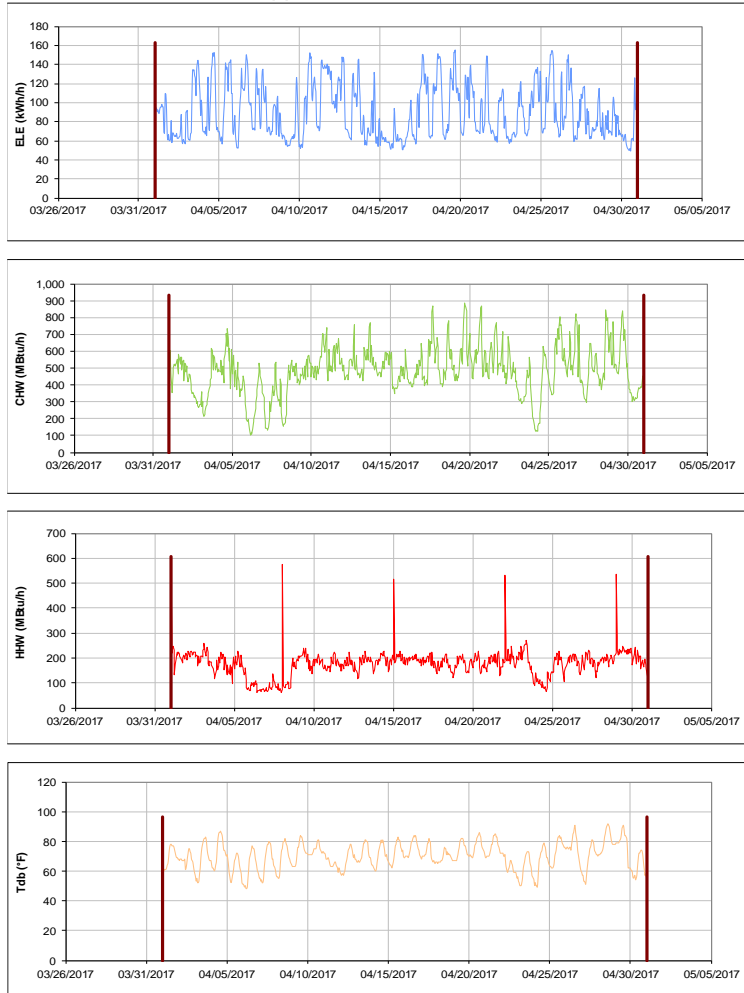


Figure III-175 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cox-McFerrin Center for Aggie Basketball during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

West Campus Parking Garage TAMU / BLDG #: 1559

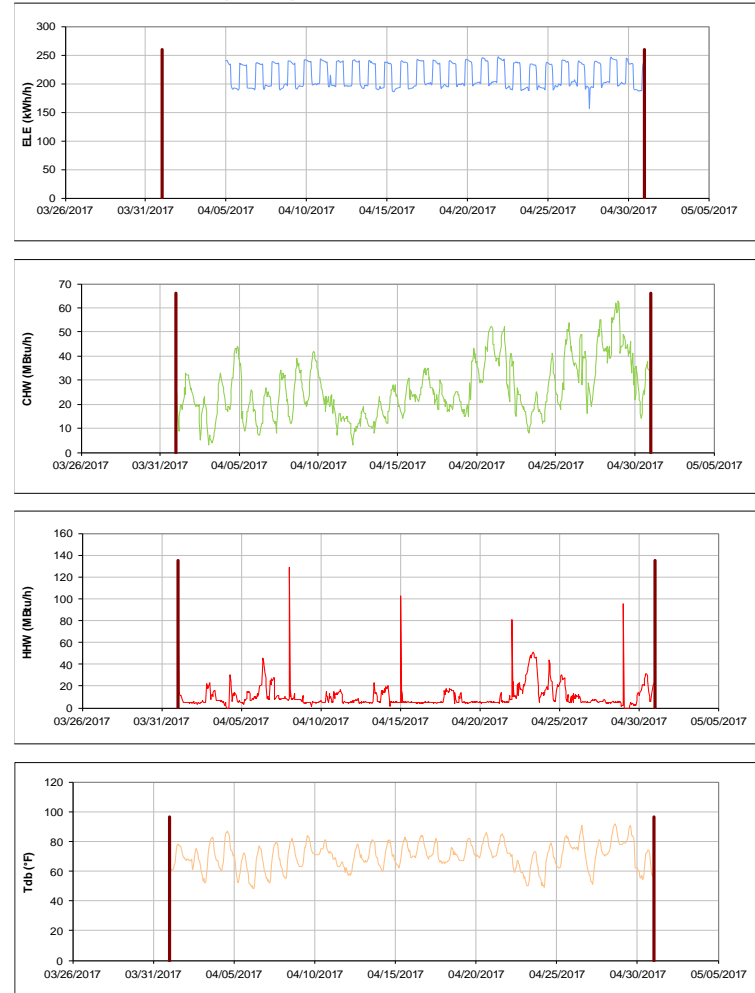


Figure III-176 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for West Campus Parking Garage during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-177 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Student Recreation Center during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

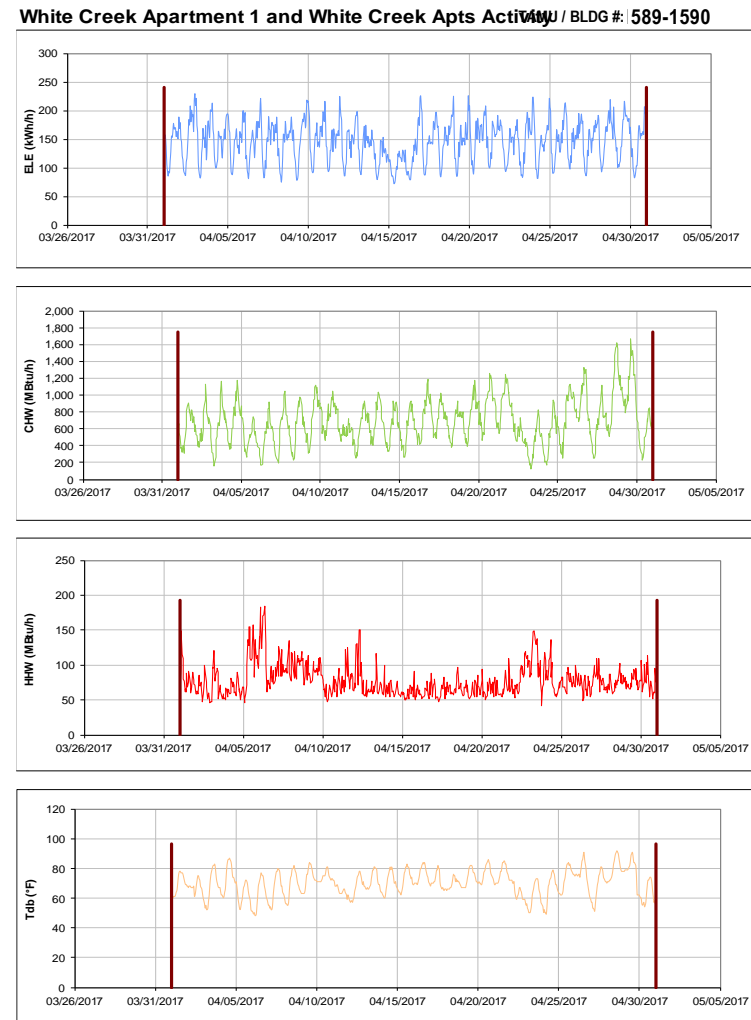


Figure III-178 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 1 and White Creek Apts Activity Center during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

White Creek Apartment 2

TAMU / BLDG #: 1591



Figure III-179 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 2 during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

White Creek Apartment 3

TAMU / BLDG #: 1592

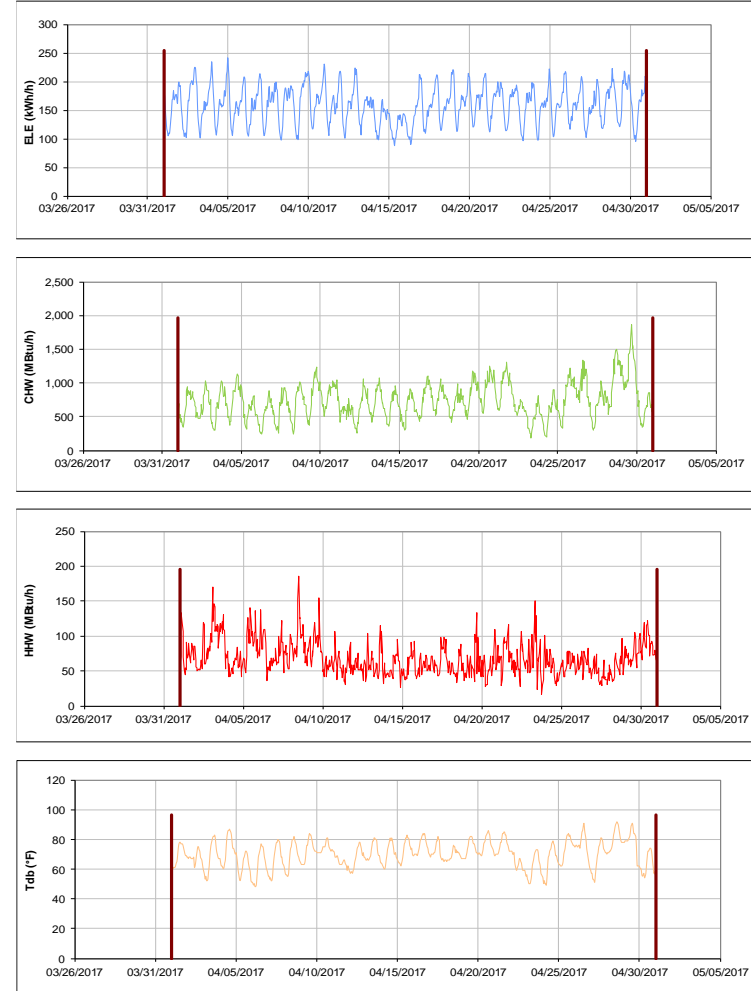


Figure III-180 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 3 during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

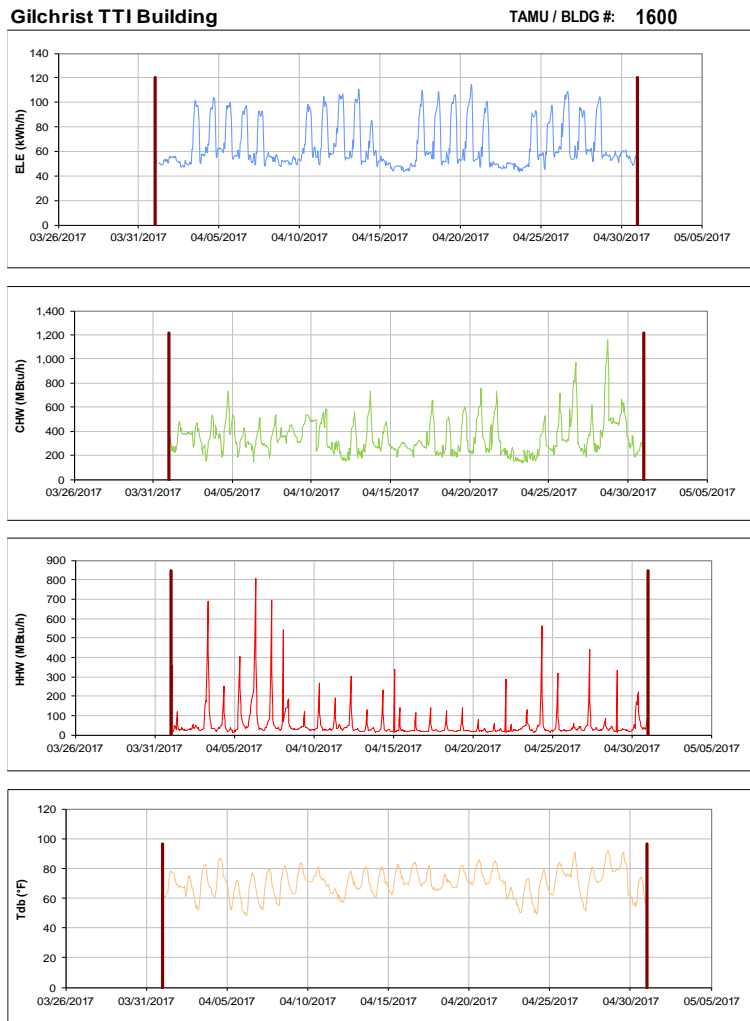


Figure III-181 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gilchrist TTI Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-182 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for International Ocean Discovery Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

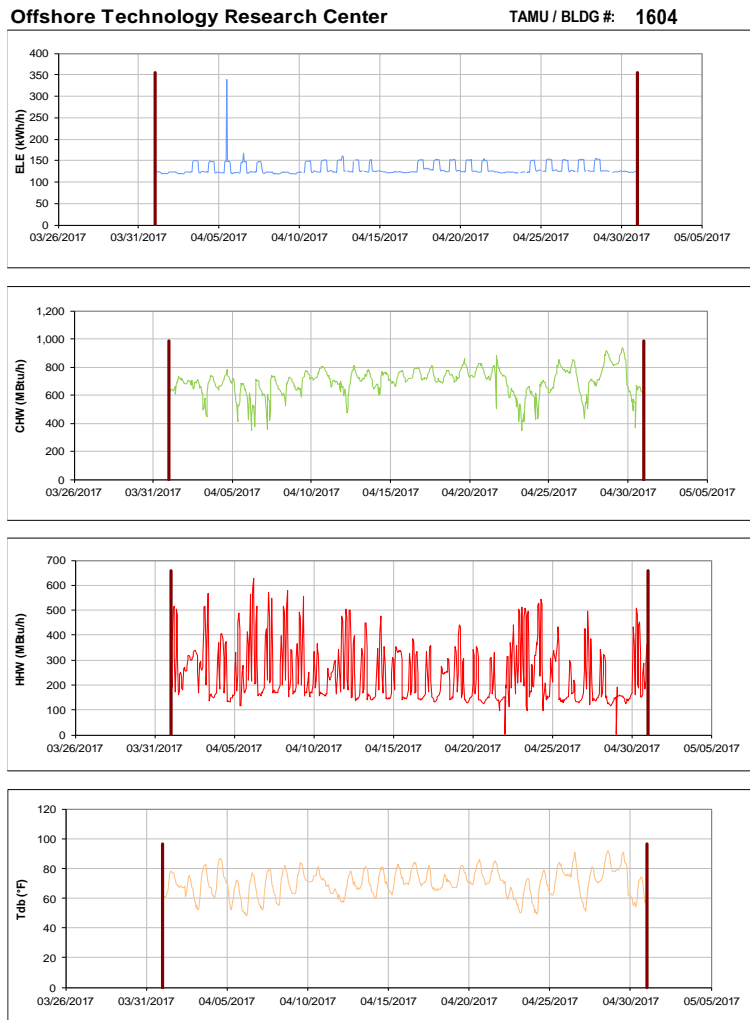


Figure III-183 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Offshore Technology Research Center during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

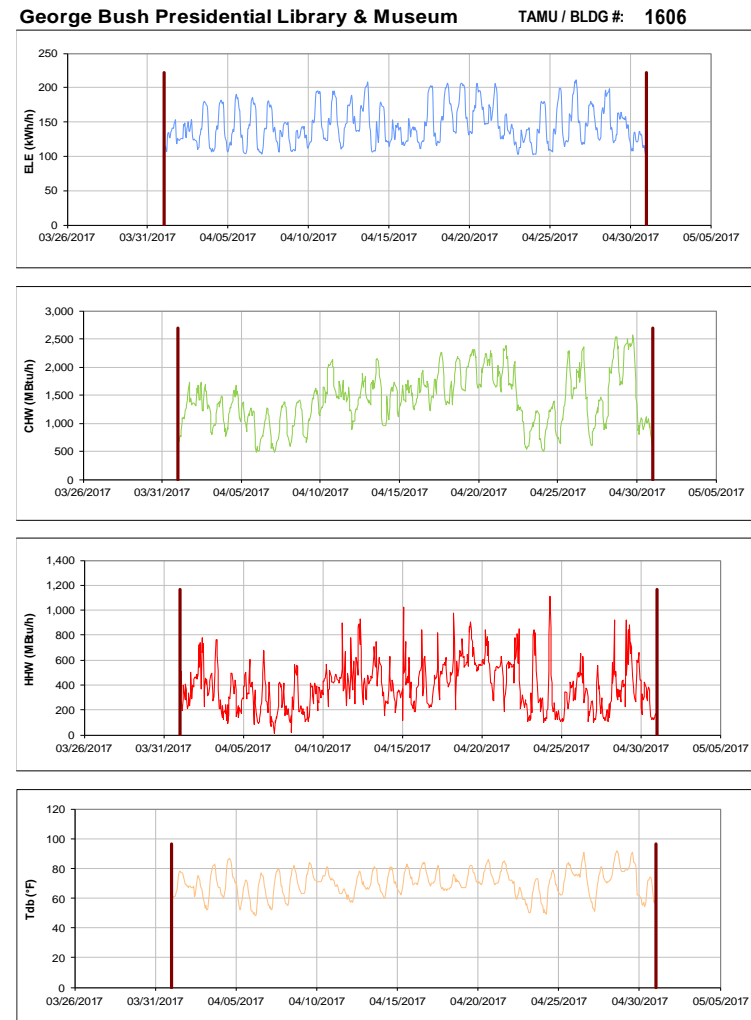


Figure III-184 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for George Bush Presidential Library & Museum during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-185 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Allen Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

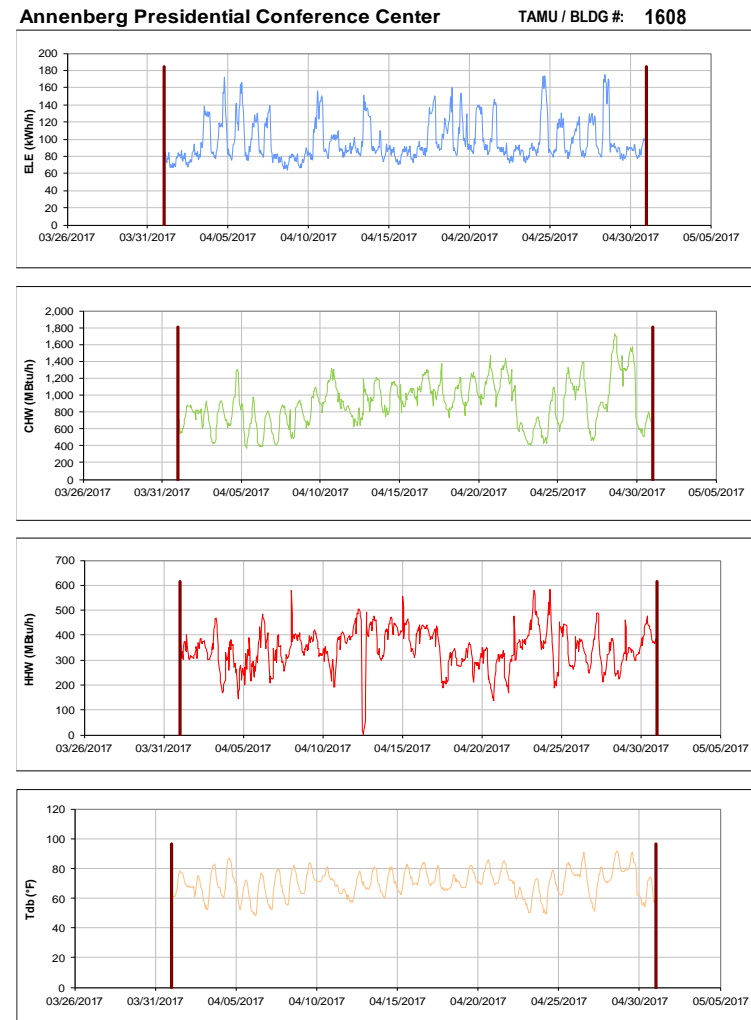


Figure III-186 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Annenberg Presidential Conference Center during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

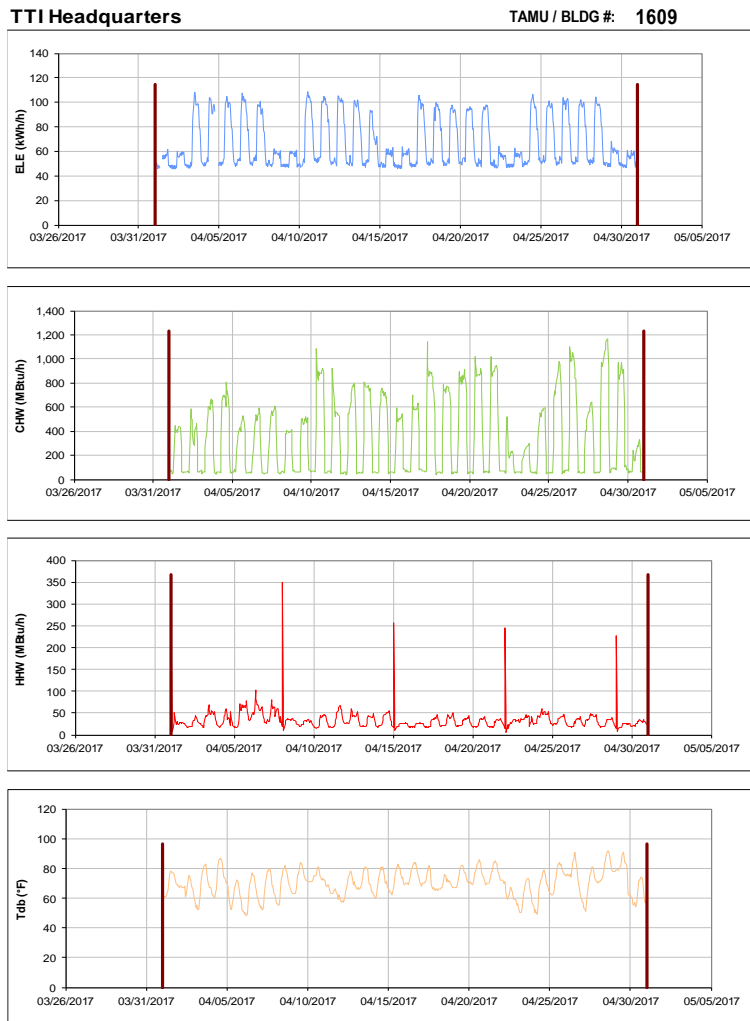


Figure III-187 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TTI Headquarters during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-188 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Engineering Research Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-189 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for General Services Complex during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

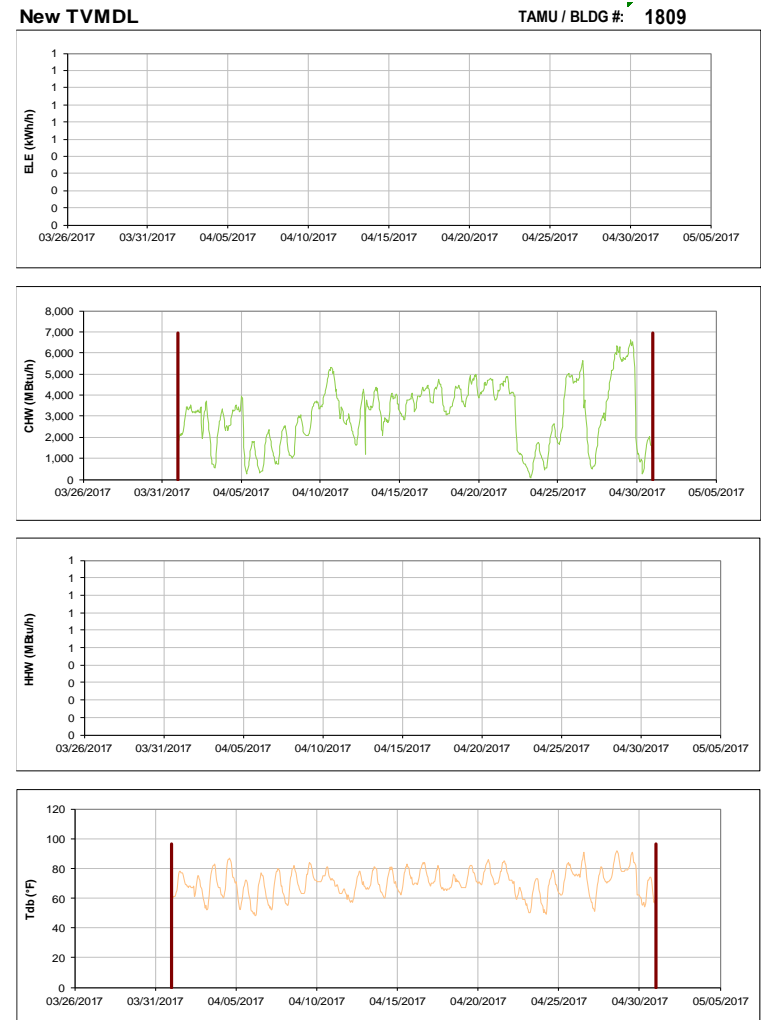


Figure III-190 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for New TVMDL during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

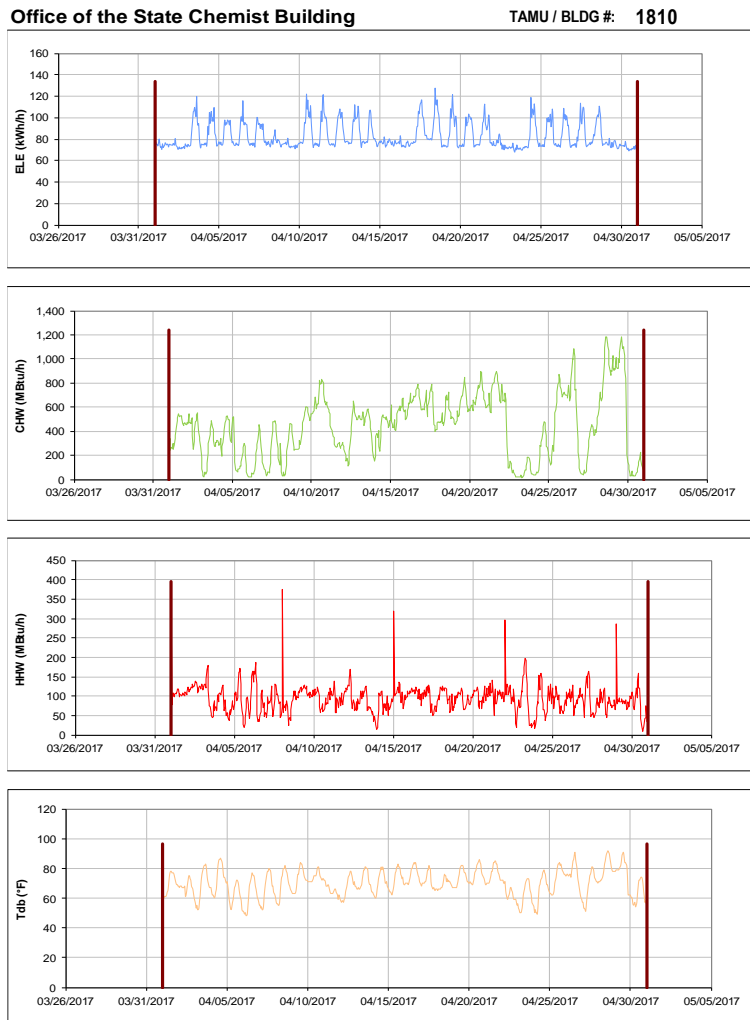


Figure III-191 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Office of the State Chemist Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

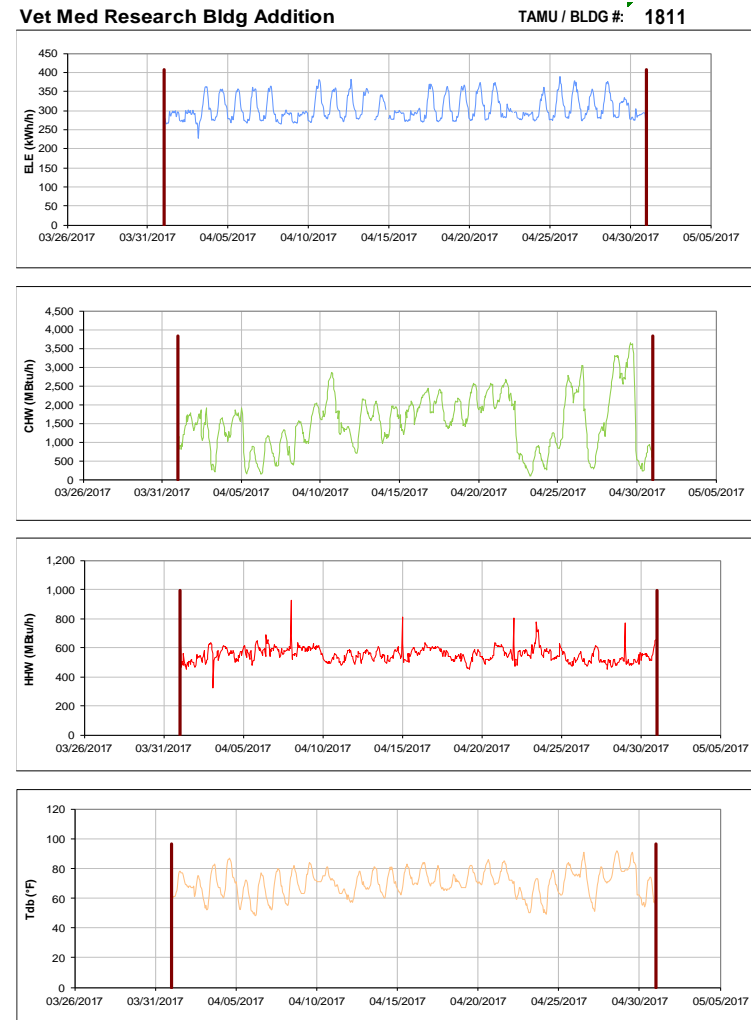


Figure III-192 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Vet Med Research Bldg Addition during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Veterinary Medicine Building 1, 2, and 3 TAMU / BLDG #: 2-1813-1814



Figure III-193 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medicine Building 1, 2, and 3 during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Texas Institute for Genomic Medicine TAMU / BLDG #: 1900

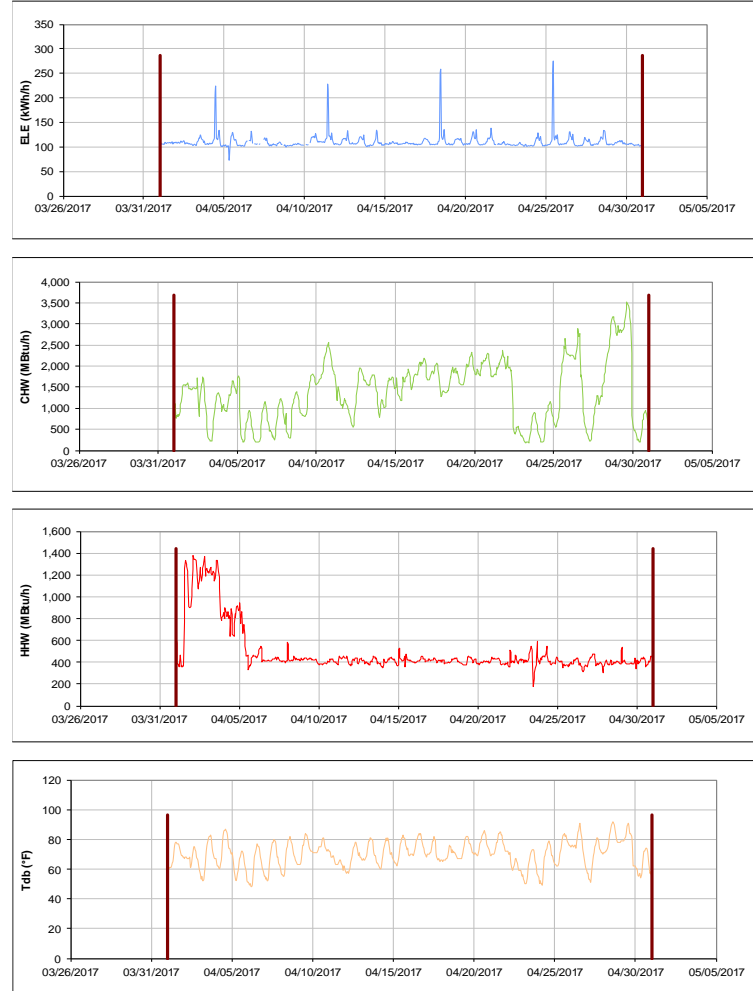


Figure III-194 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas Institute for Genomic Medicine during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Texas A&M Institute for Preclinical Studies A TAMU / BLDG #: 1904

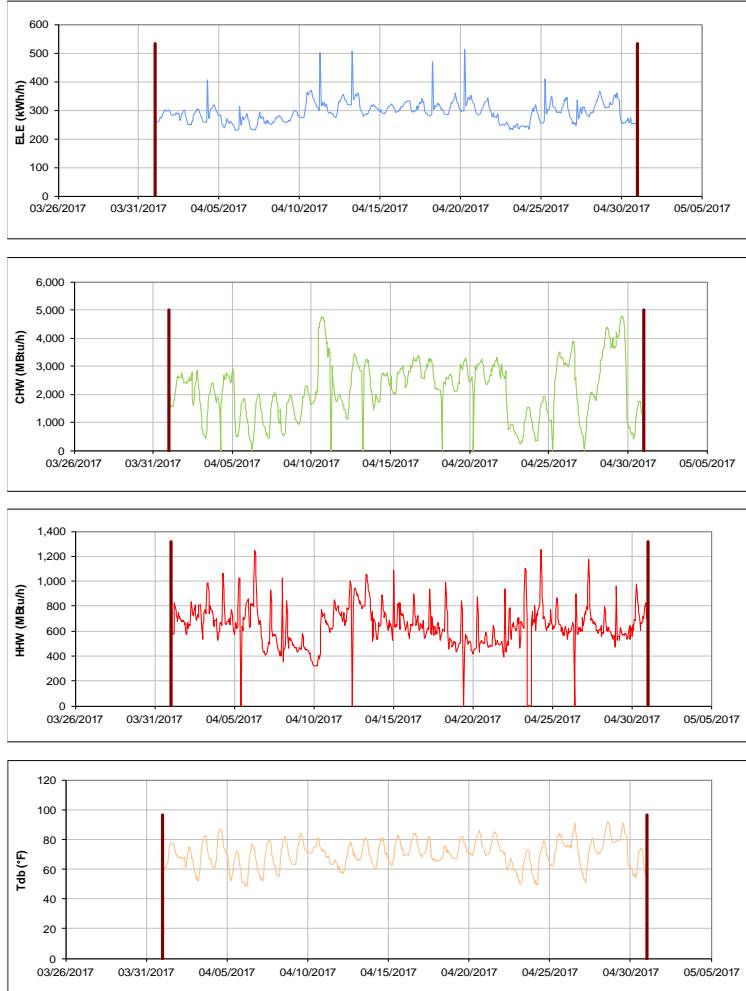


Figure III-195 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas A&M Institute for Preclinical Studies A during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

National Center for Therapeutics Manufacturing TAMU / BLDG #: 1910

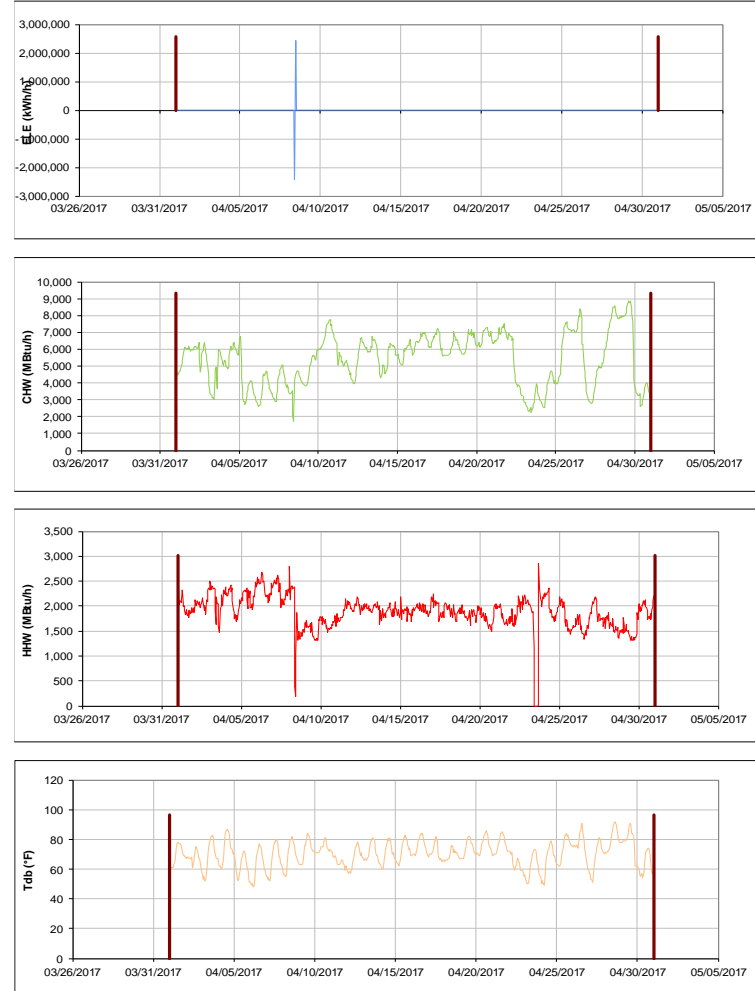


Figure III-196 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for National Center for Therapeutics Manufacturing during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

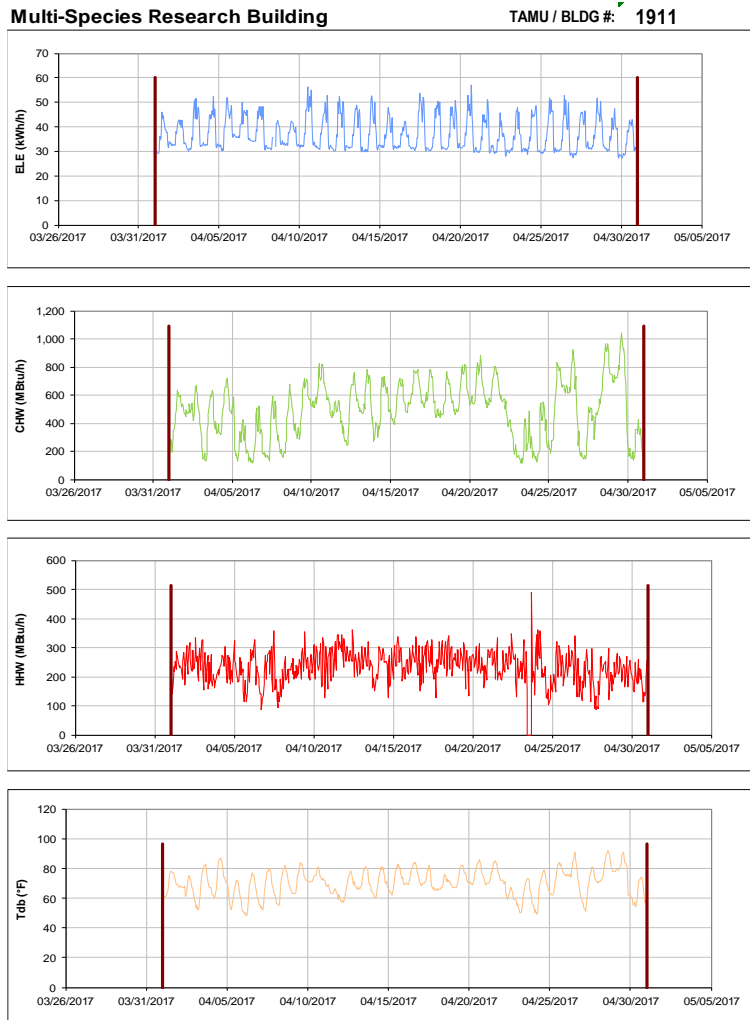


Figure III-197 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Multi-Species Research Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

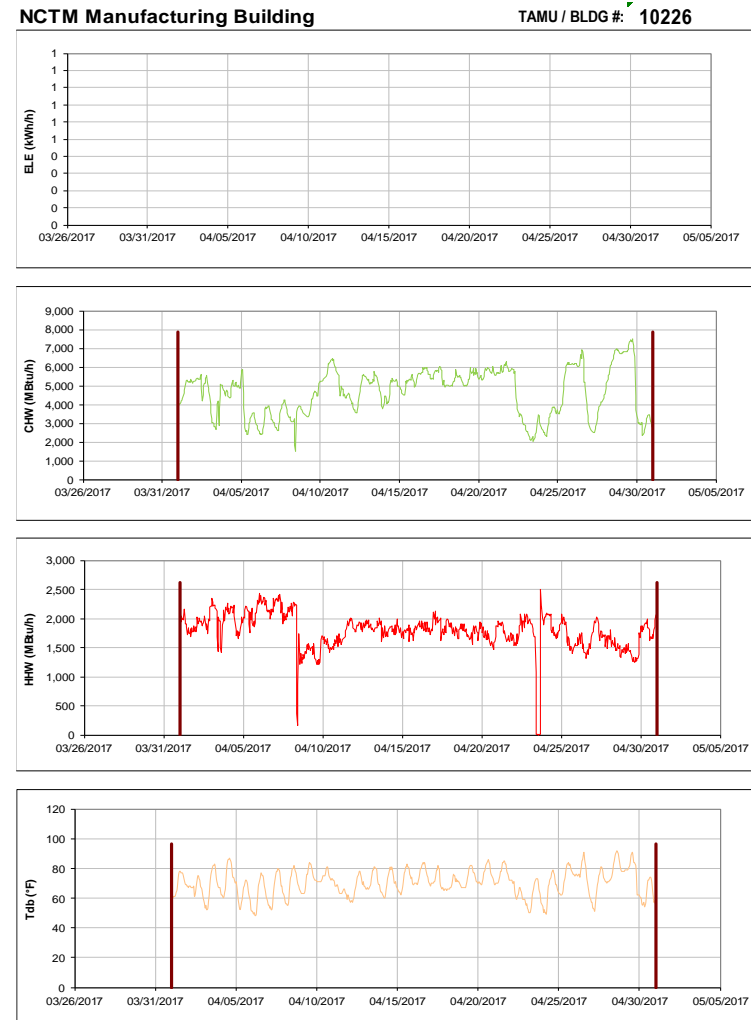


Figure III-198 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for NCTM Manufacturing Building during the Month of April 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

IV. Energy Balance Plots for April 2017 Consumption

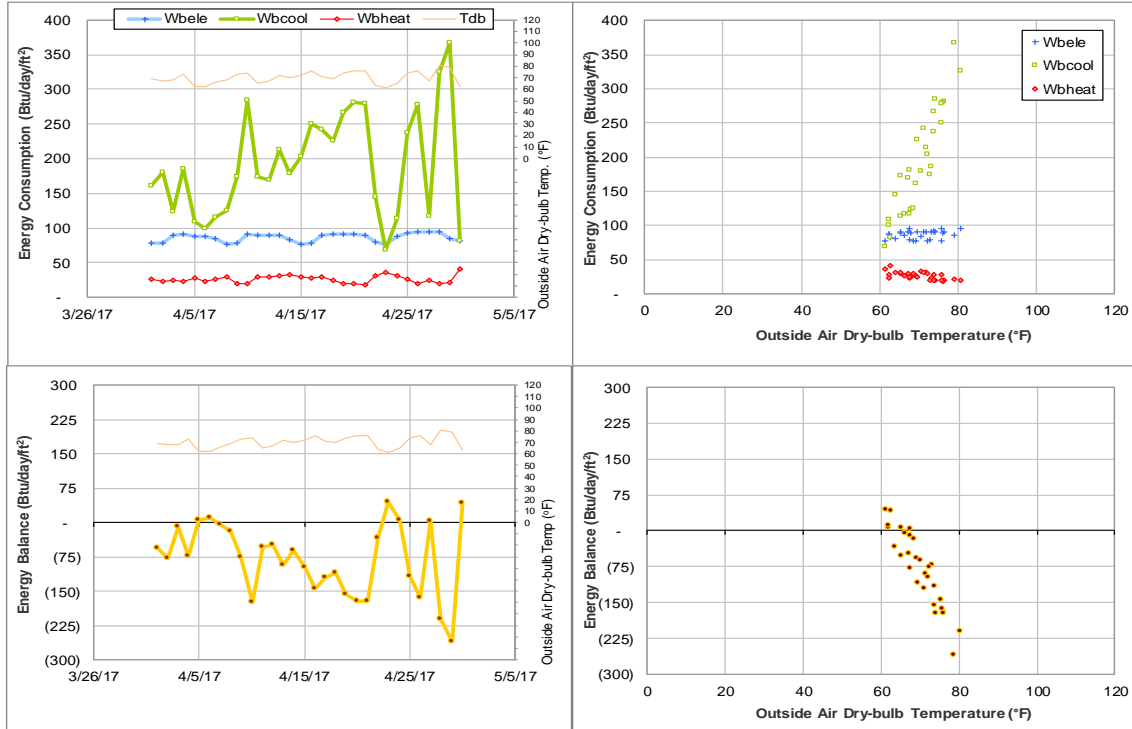


Figure IV-1 Emerging Technologies Building TAMU BLDG # 270 Energy Balance Plot during April 2017

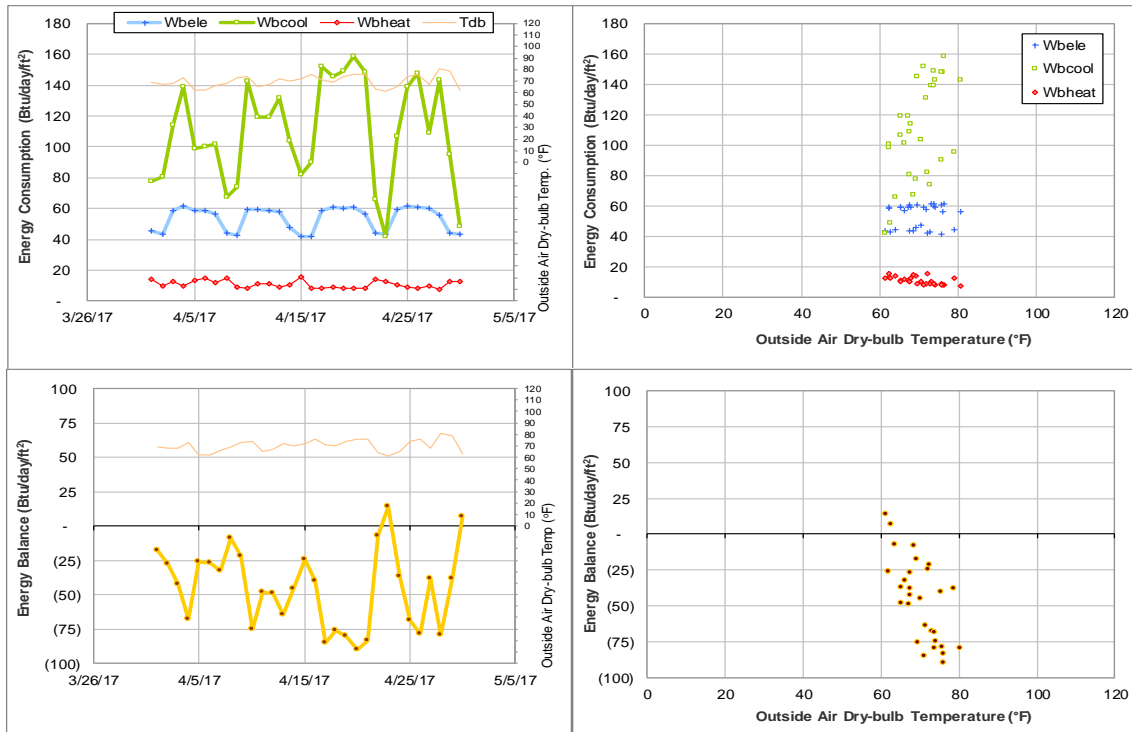


Figure IV-2 Liberal Arts and Arts & Humanities Building TAMU BLDG # 275 Energy Balance Plot during April 2017

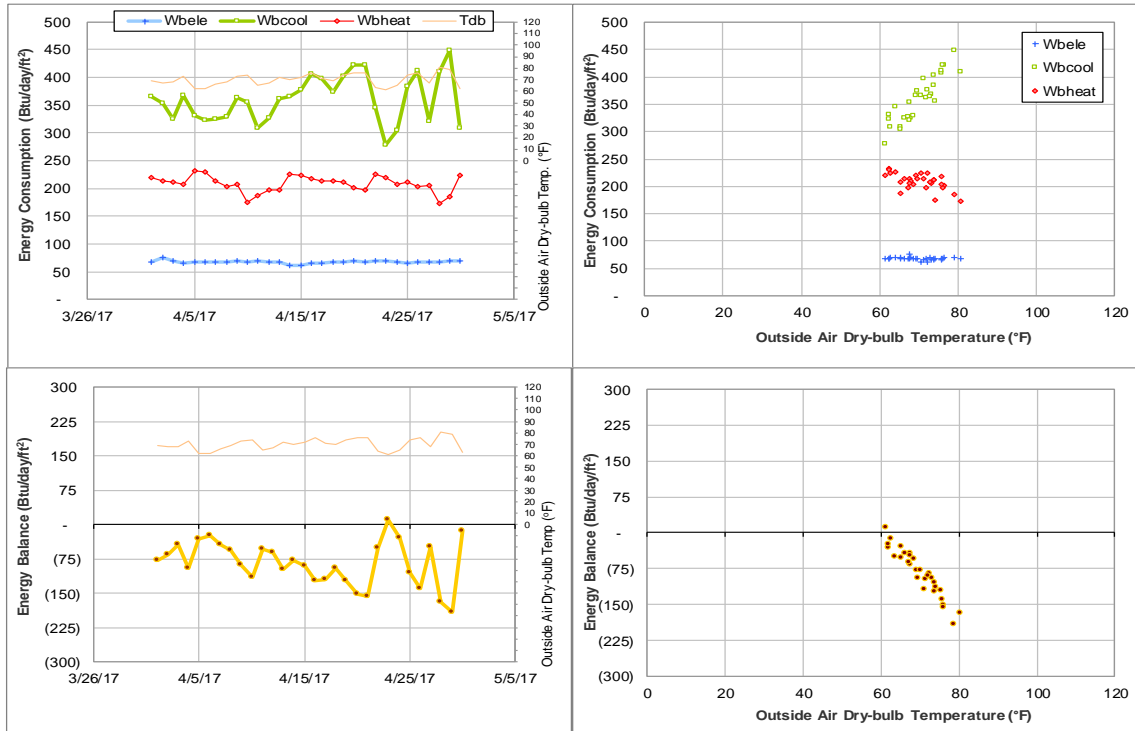


Figure IV-3 Wells Residence Hall TAMU BLDG # 290 Energy Balance Plot during April 2017

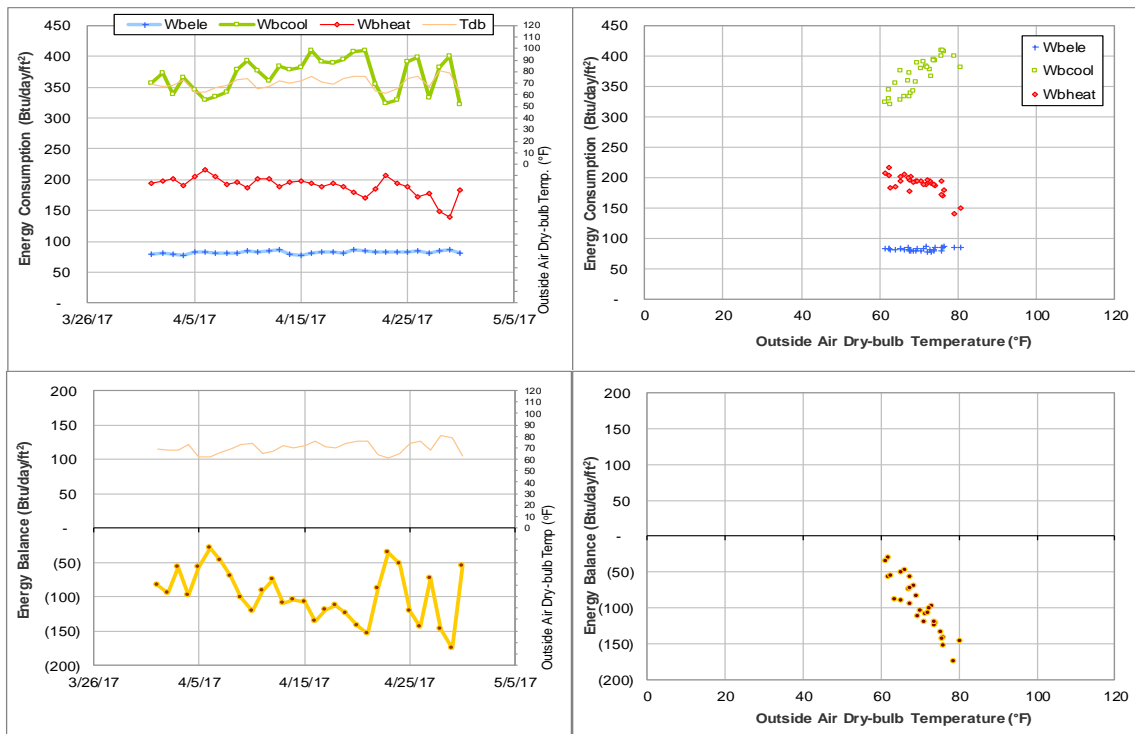


Figure IV-4 Rudder Residence Hall TAMU BLDG # 291 Energy Balance Plot during April 2017

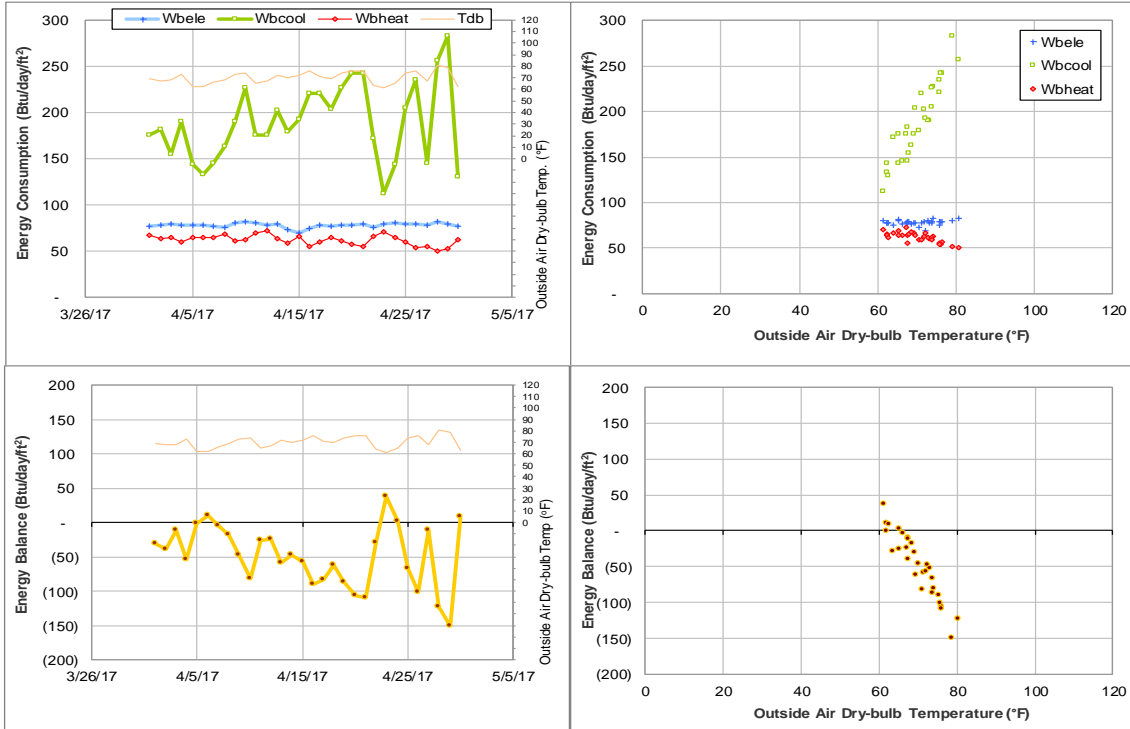


Figure IV-5 Eppright Residence Hall TAMU BLDG # 292 Energy Balance Plot during April 2017

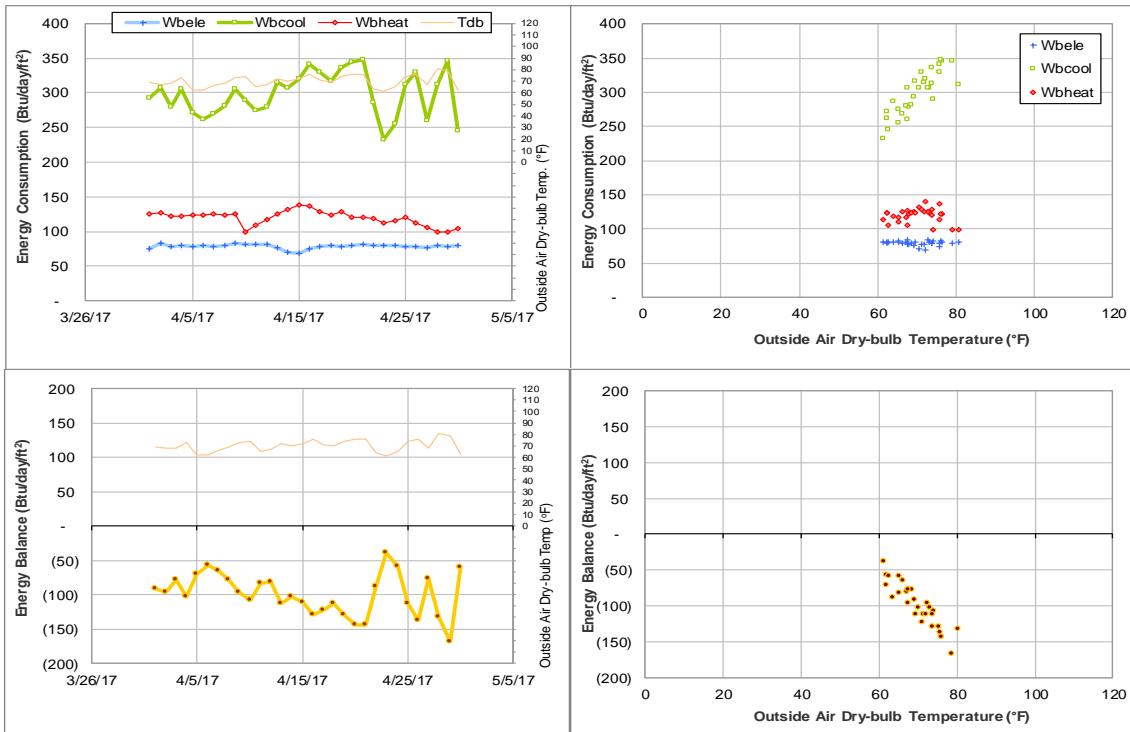


Figure IV-6 Appelt Residence Hall TAMU BLDG # 293 Energy Balance Plot during April 2017

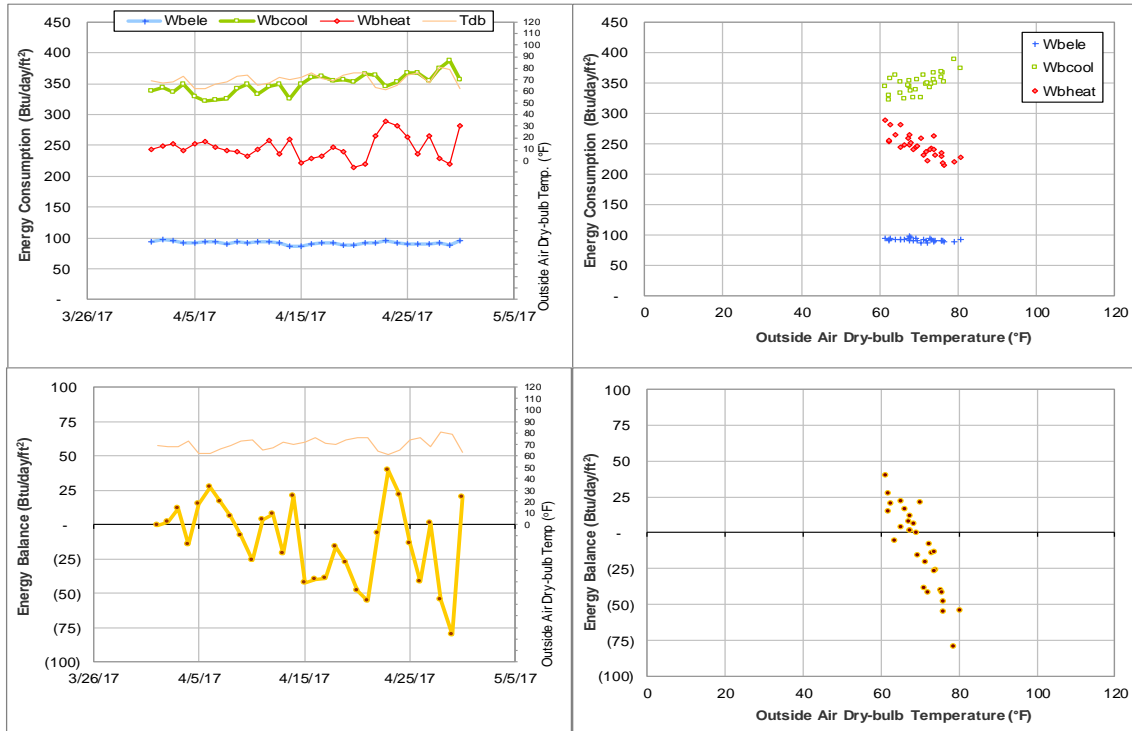


Figure IV-7 Lechner Residence Hall TAMU BLDG # 294 Energy Balance Plot during April 2017

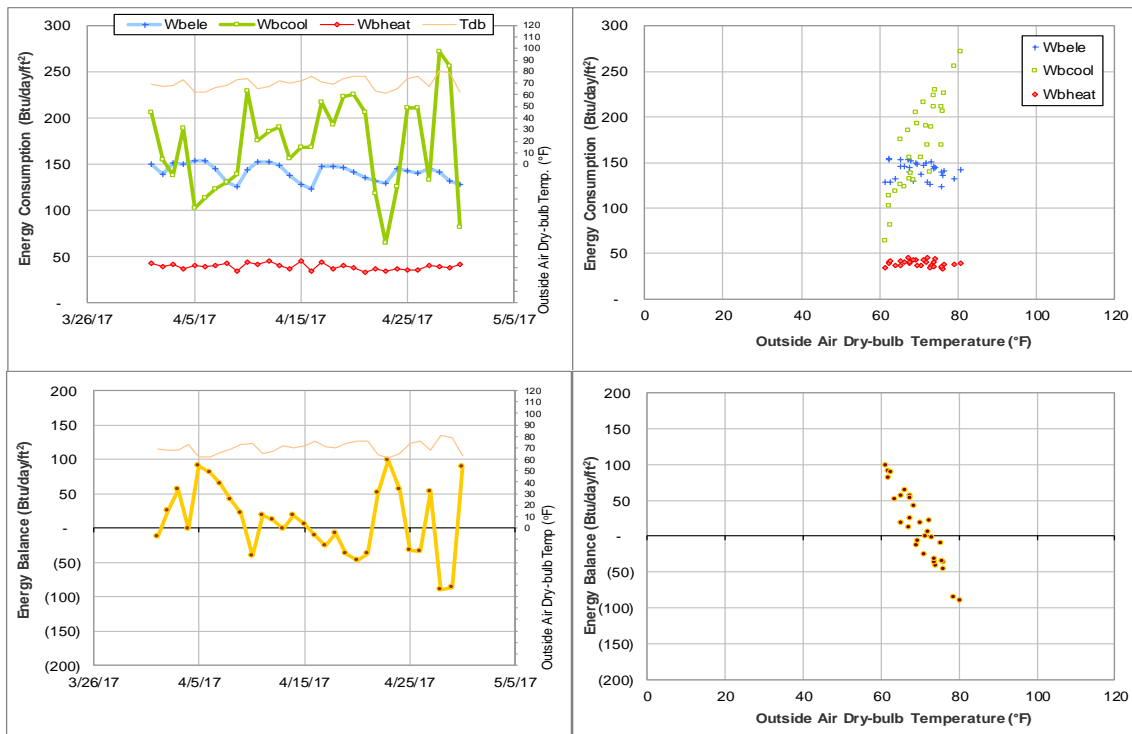


Figure IV-8 Mitchell Inst. for Fundamental Phys & Astronomy TAMU BLDG # 296 Energy Balance Plot during April 2017

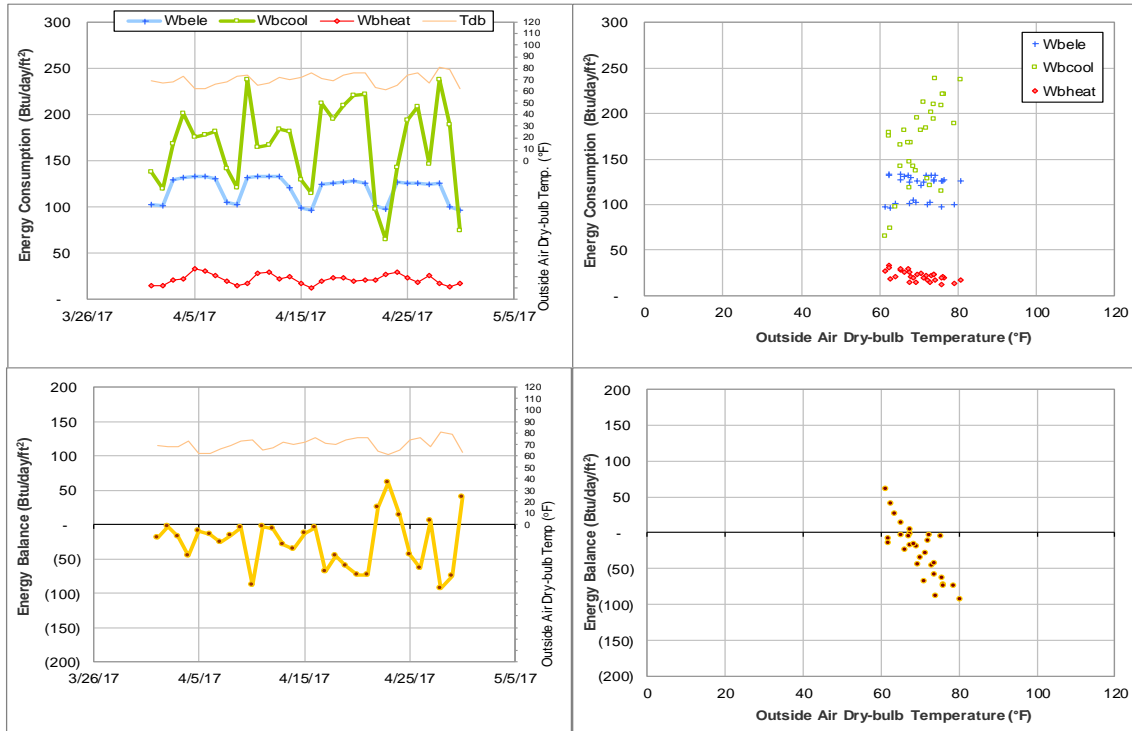


Figure IV-9 CE TTI Office & Lab Building TAMU BLDG # 325 Energy Balance Plot during April 2017

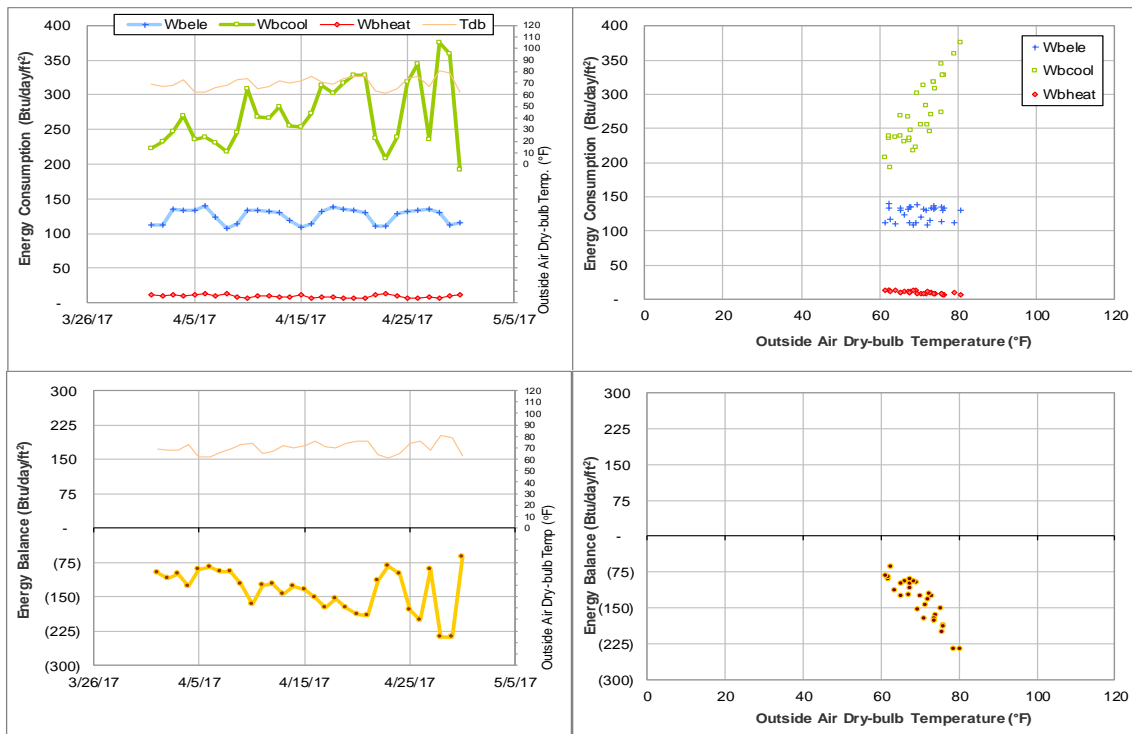


Figure IV-10 Bright Aerospace Building TAMU BLDG # 353 Energy Balance Plot during April 2017

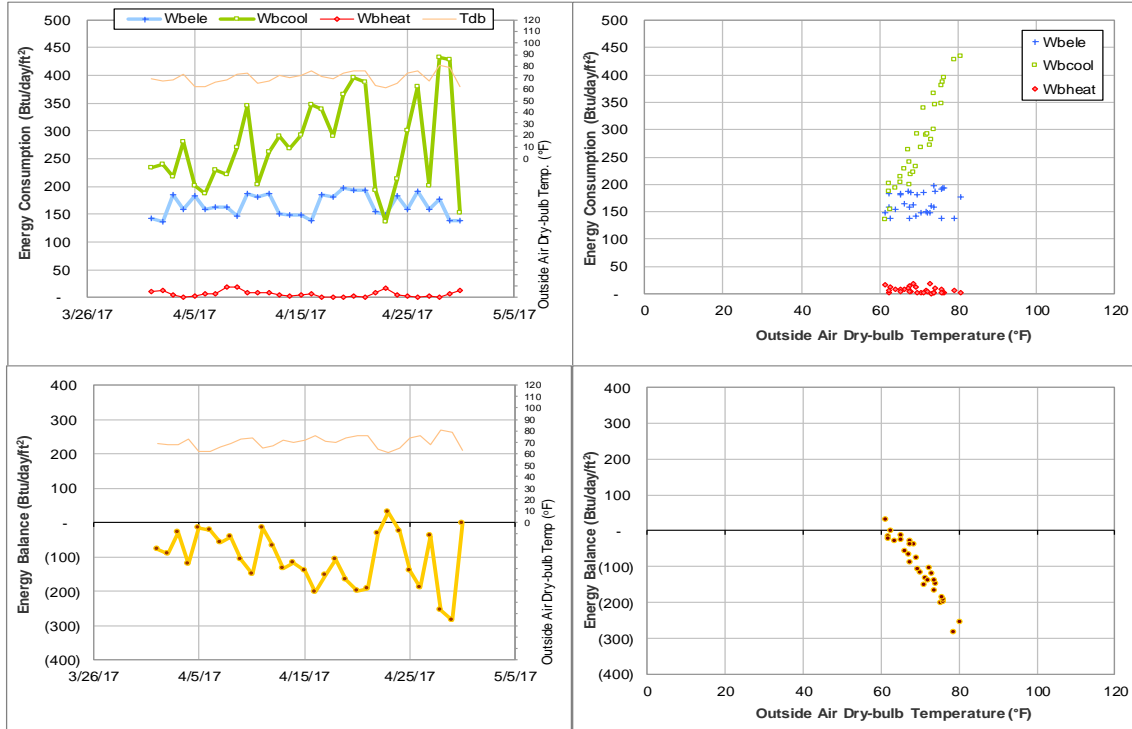


Figure IV-11 Davis Football Player Development Center TAMU BLDG # 358 Energy Balance Plot during April 2017

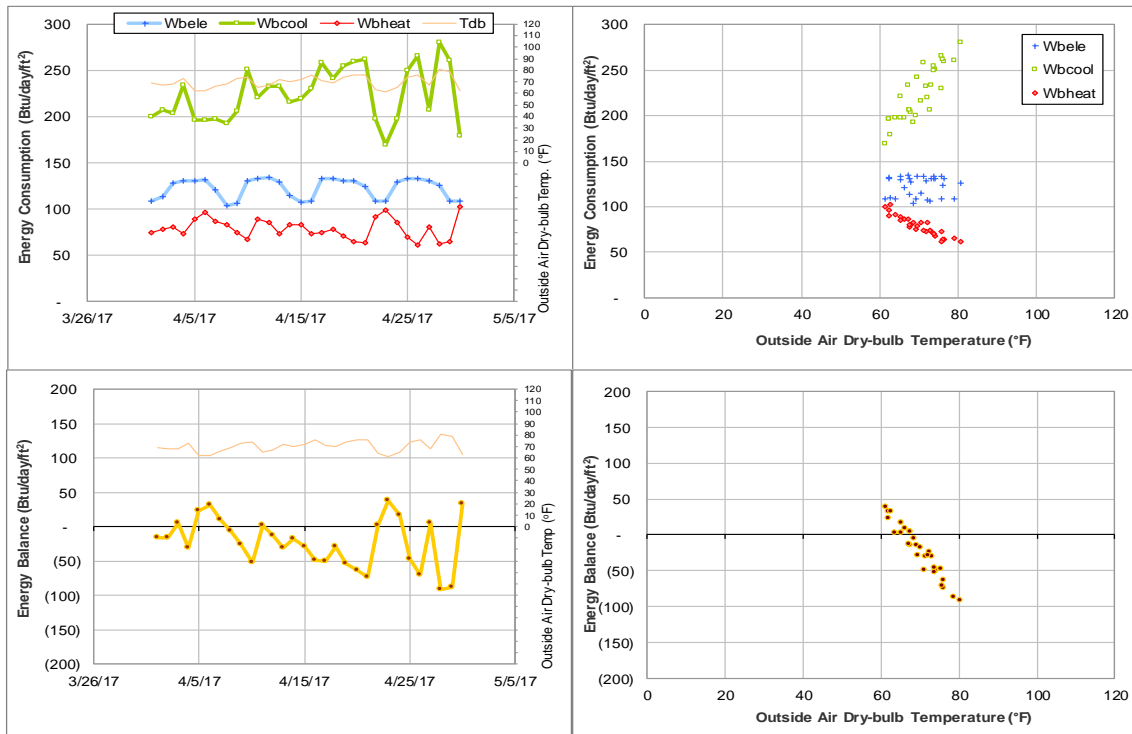


Figure IV-12 Architecture Building B&C TAMU BLDG # 359 and #432 Energy Balance Plot during April 2017

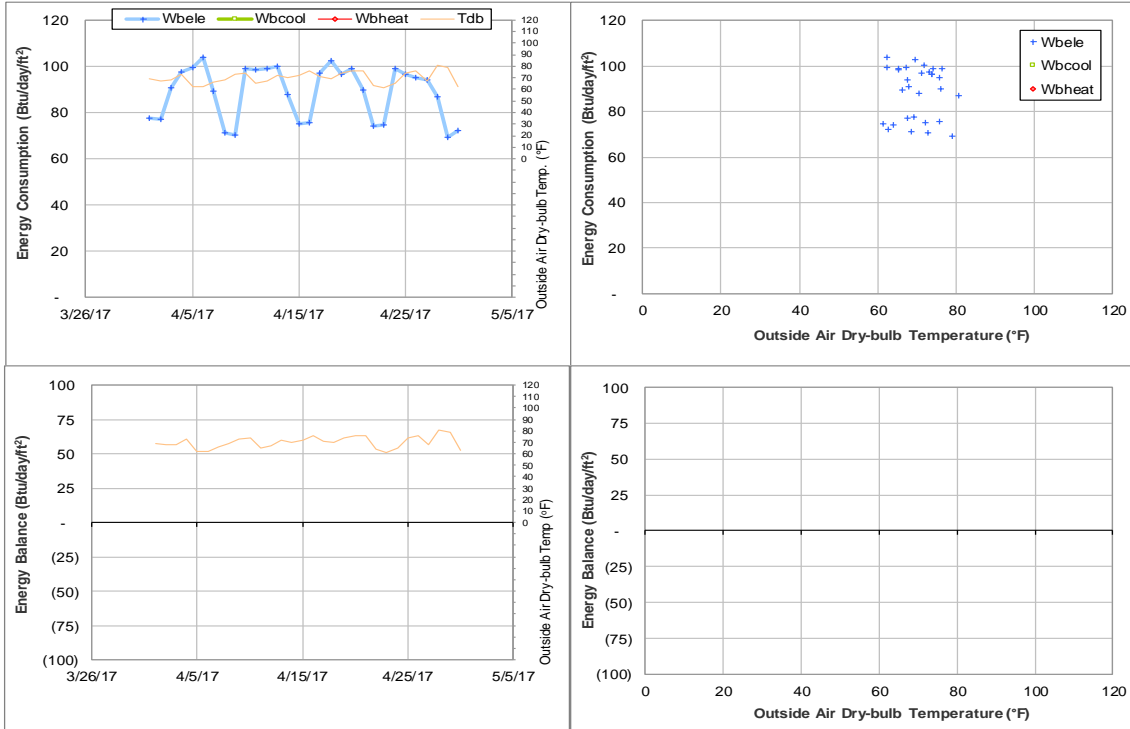


Figure IV-13 Architecture Building B TAMU BLDG # 359 Energy Balance Plot during April 2017

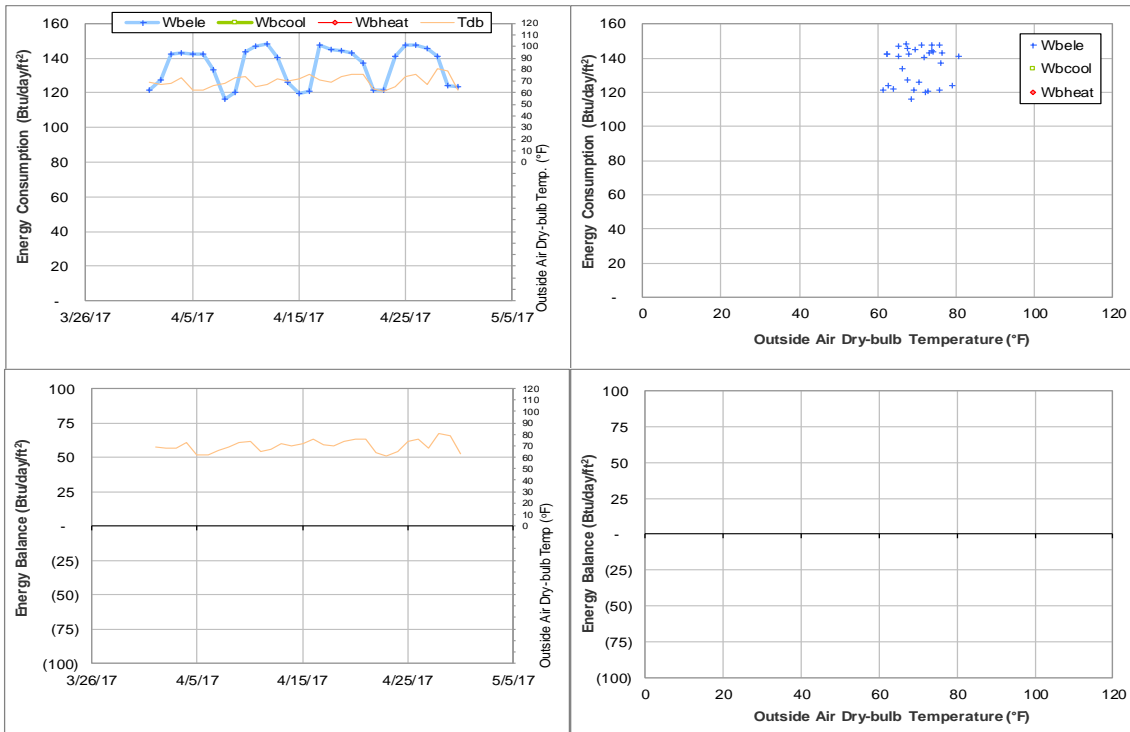


Figure IV-14 Architecture Building C TAMU BLDG # 432 Energy Balance Plot during April 2017

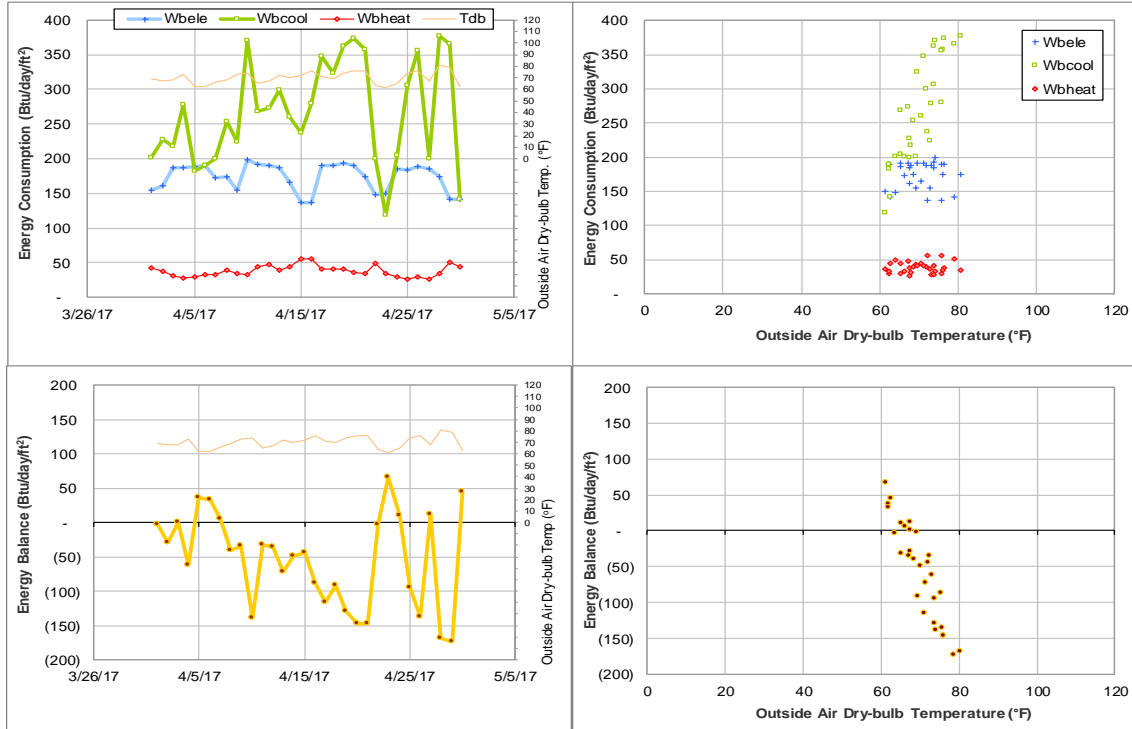


Figure IV-15 Bright Football Complex TAMU BLDG # 361 Energy Balance Plot during April 2017

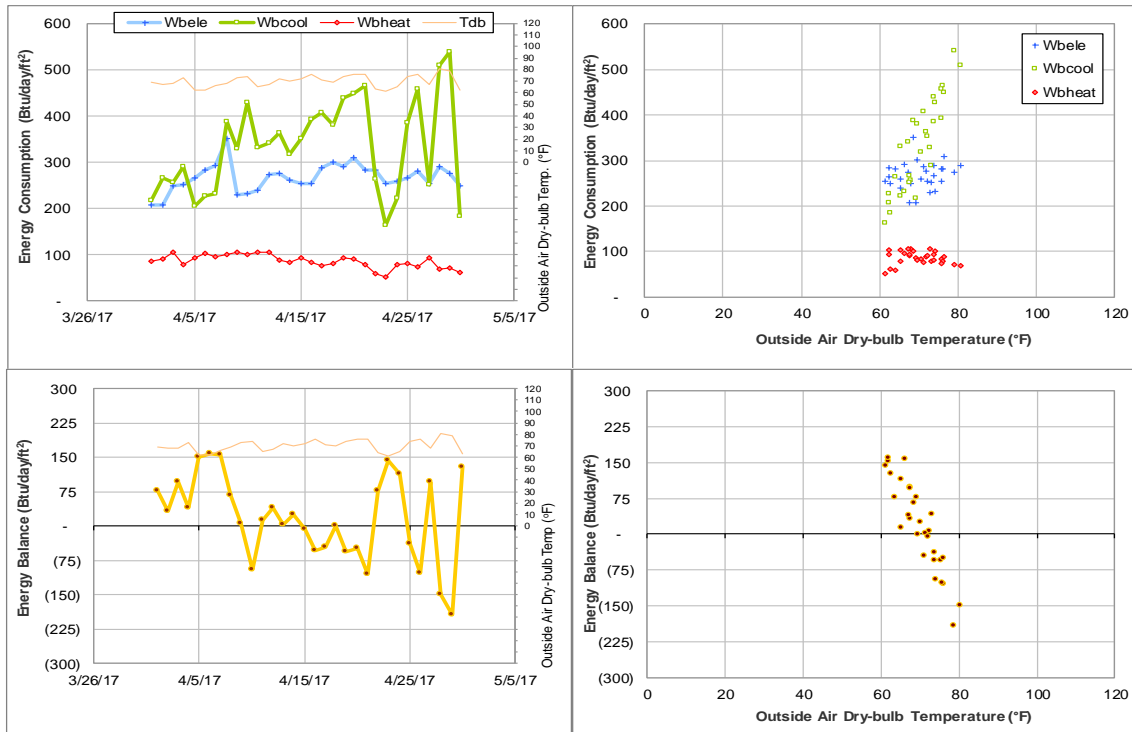


Figure IV-16 Kyle Field TAMU BLDG # 367 Energy Balance Plot during April 2017

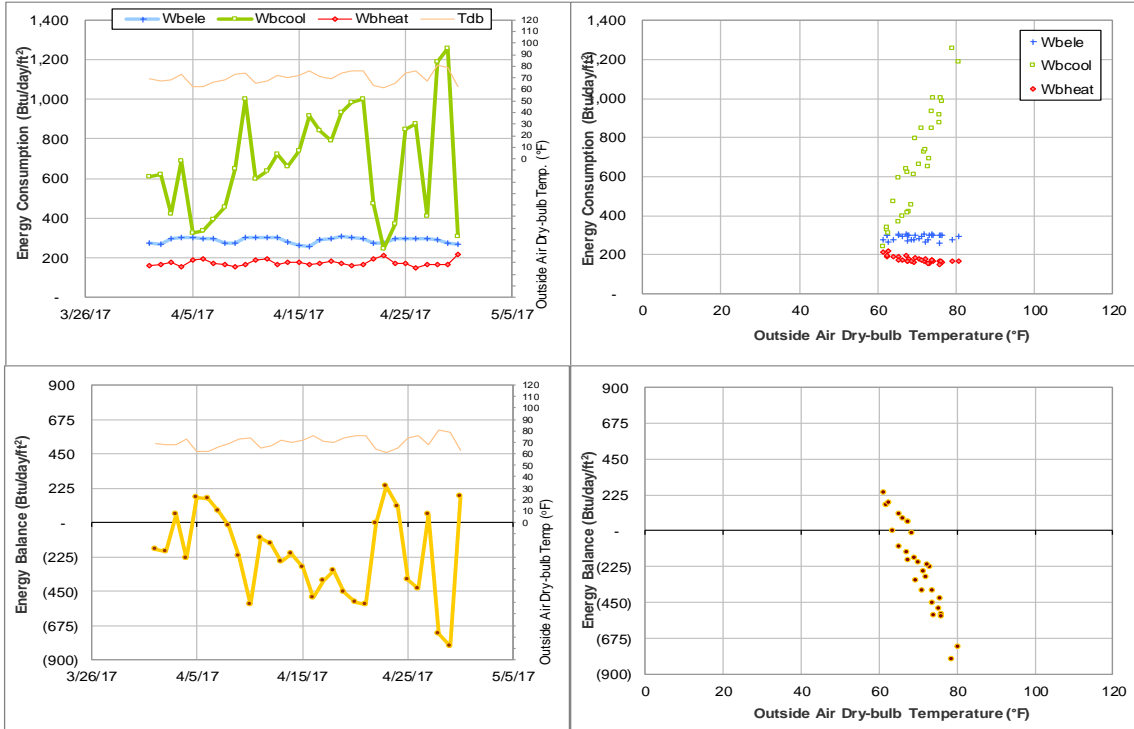


Figure IV-17 Chemistry Building Addition TAMU BLDG # 376 Energy Balance Plot during April 2017

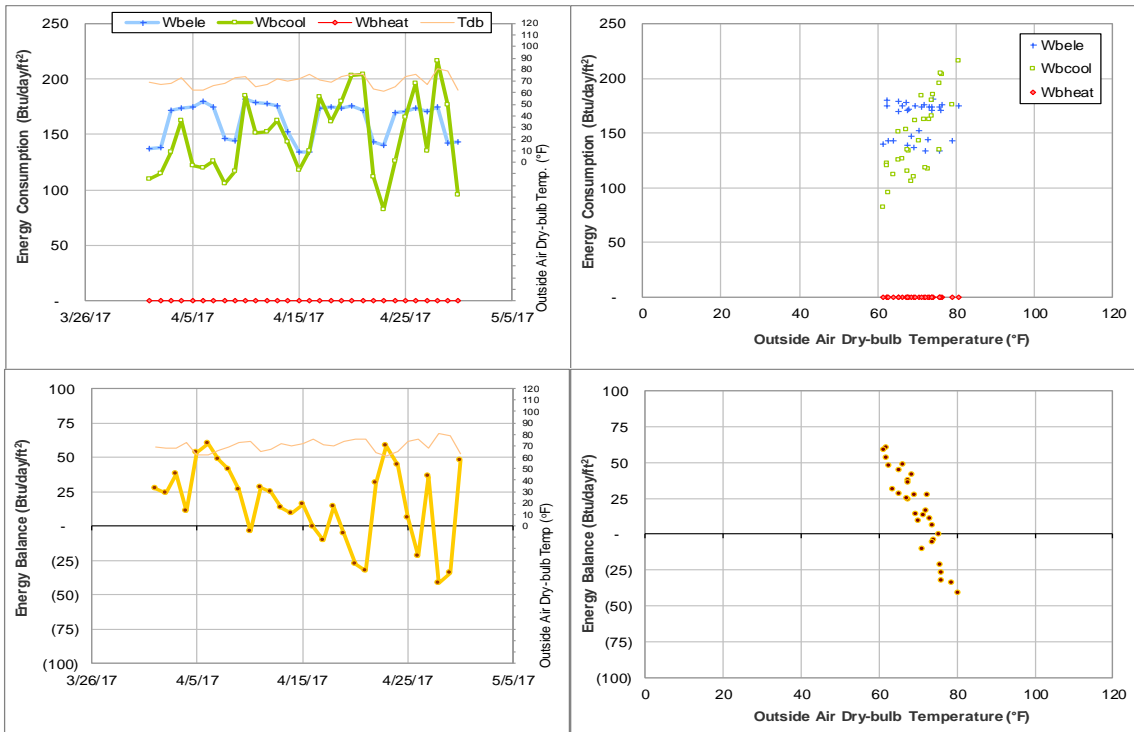


Figure IV-18 Koldus Building TAMU BLDG # 383 Energy Balance Plot during April 2017

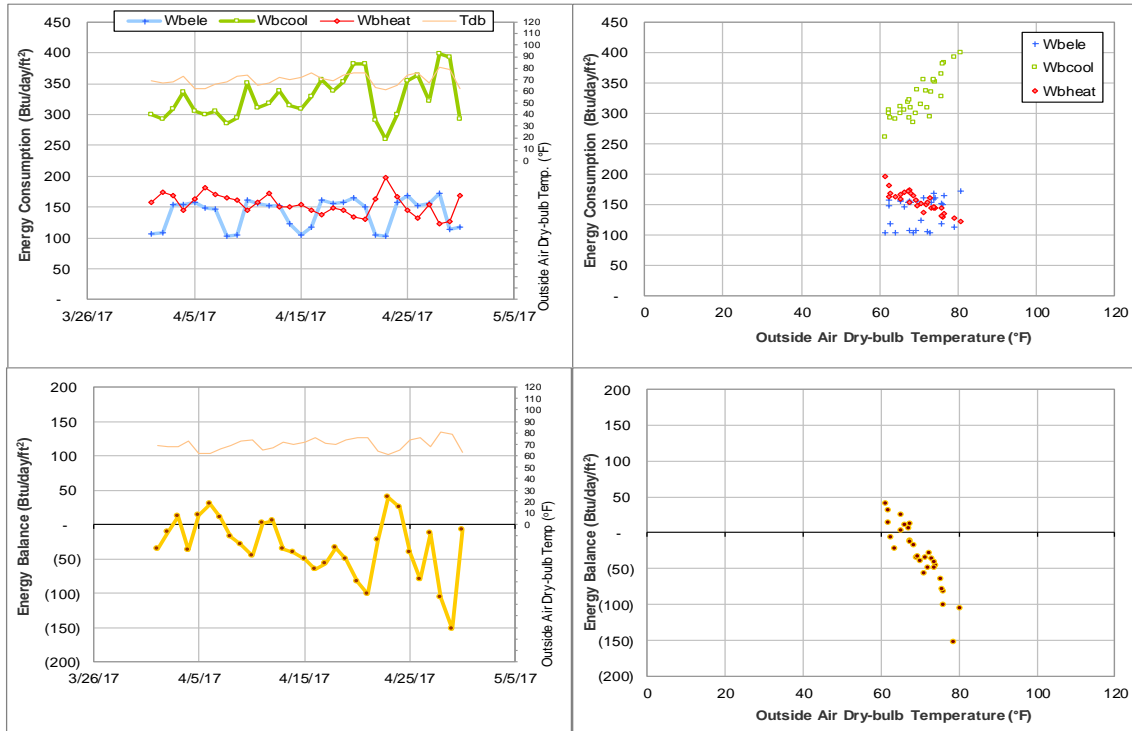


Figure IV-19 Sanders Corps of Cadets Center TAMU BLDG # 384 Energy Balance Plot during April 2017

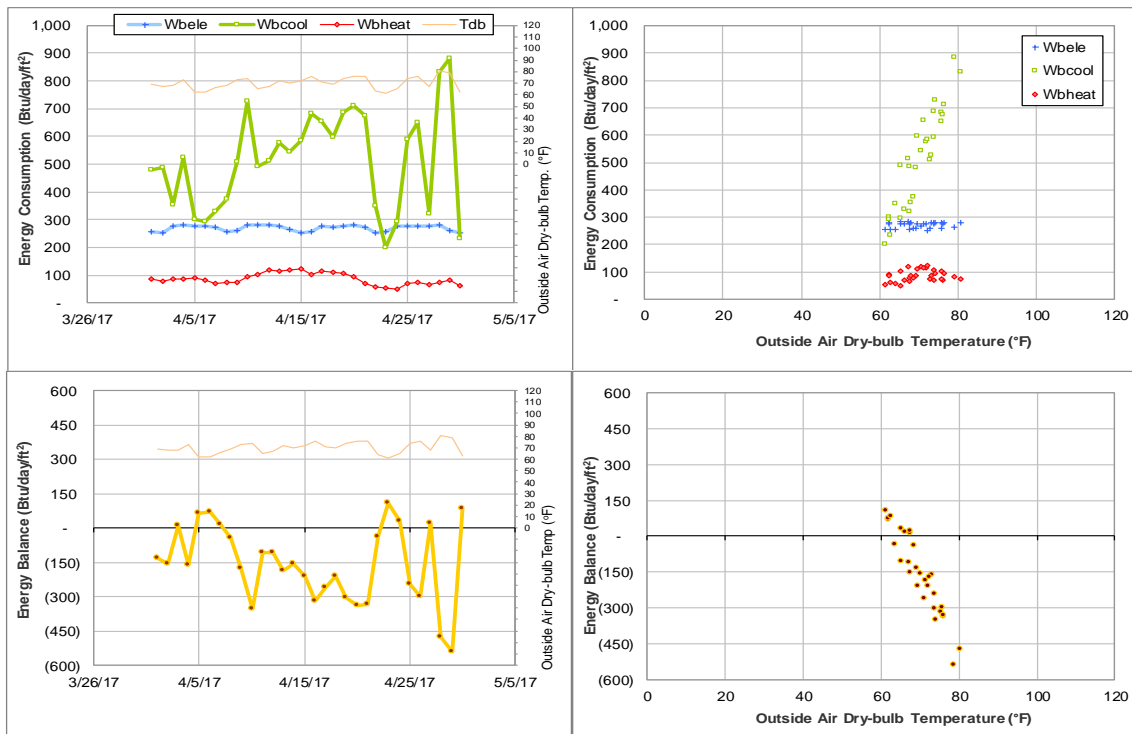


Figure IV-20 Jack E. Brown Chemical Engineering Building TAMU BLDG # 386 Energy Balance Plot during April 2017

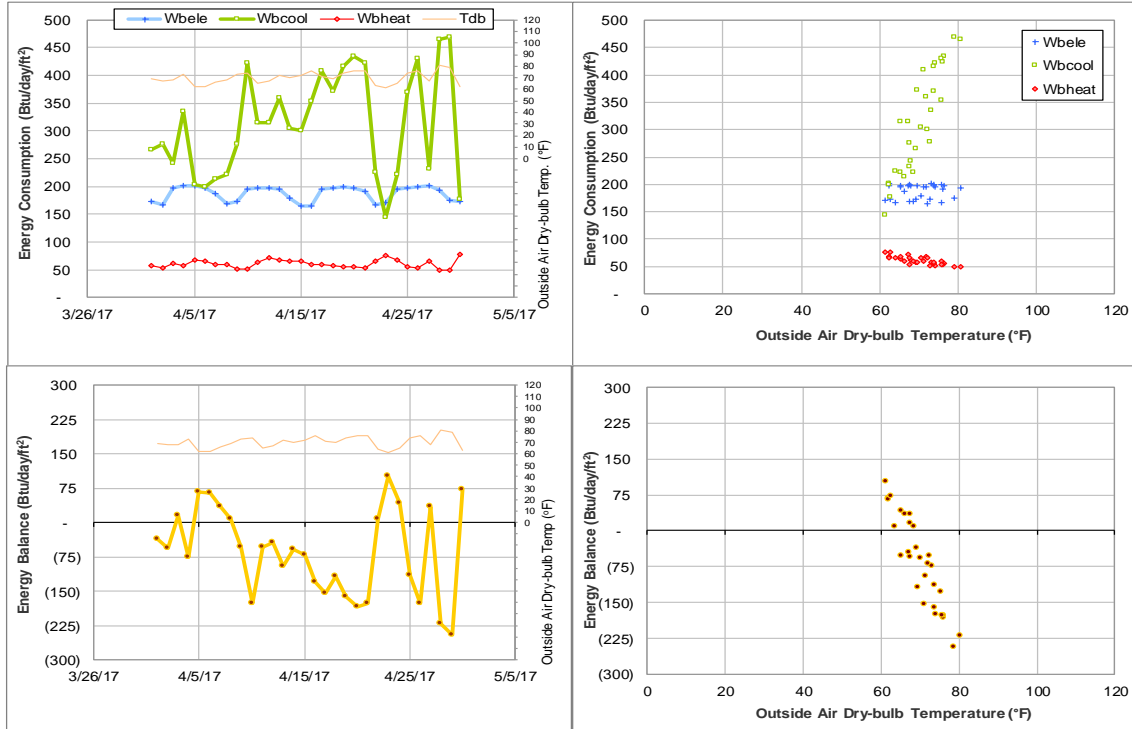


Figure IV-21 Richardson Petroleum Engineering Building TAMU BLDG # 387 Energy Balance Plot during April 2017

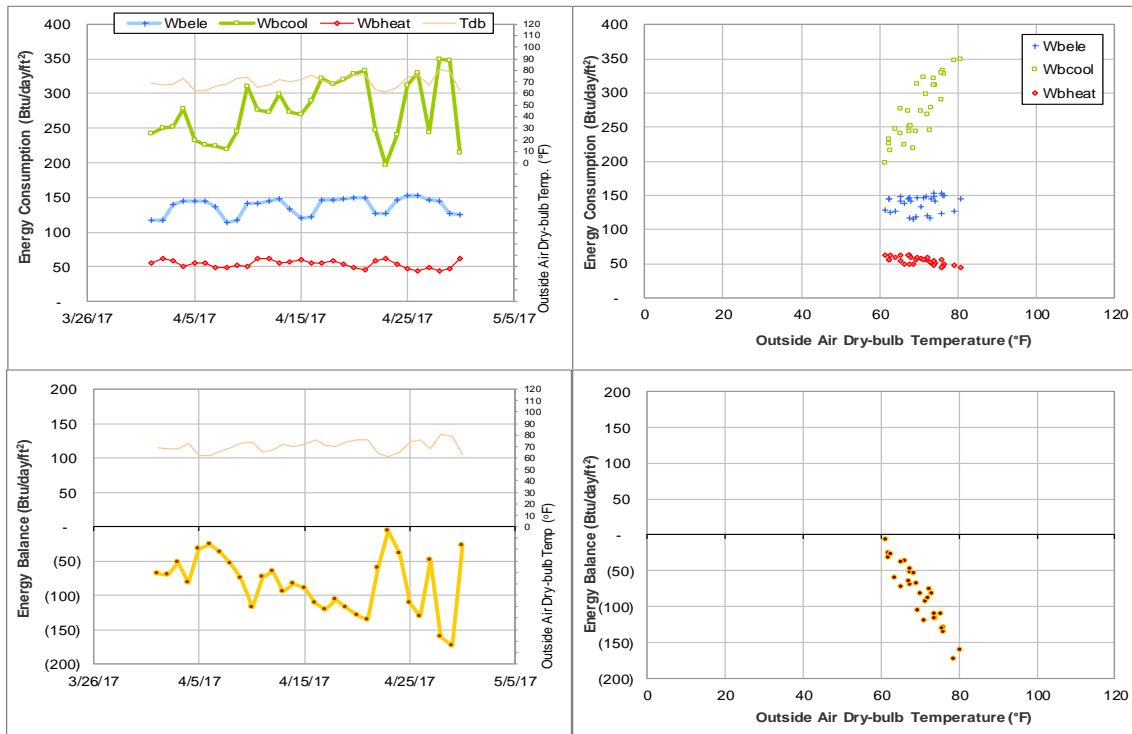


Figure IV-22 James J. Cain'51 and Mechanical Engineering Office Building TAMU BLDG # 391 Energy Balance Plot during April 2017

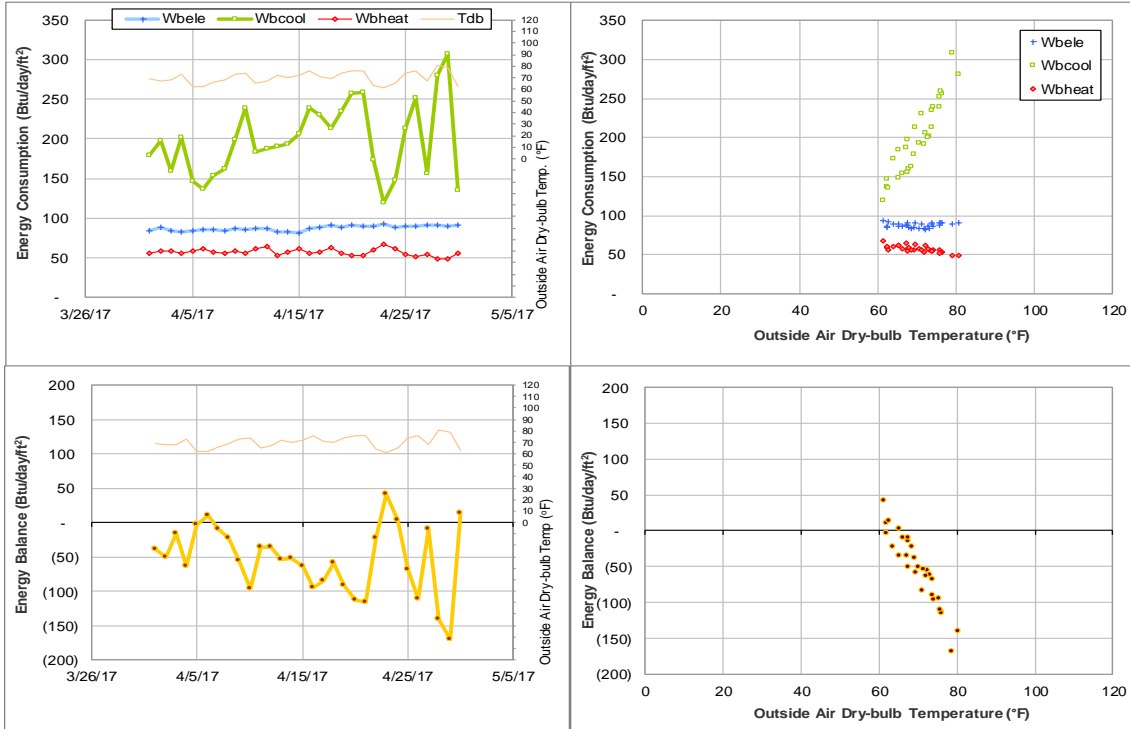


Figure IV-23 Underwood Residence Hall TAMU BLDG # 394 Energy Balance Plot during April 2017

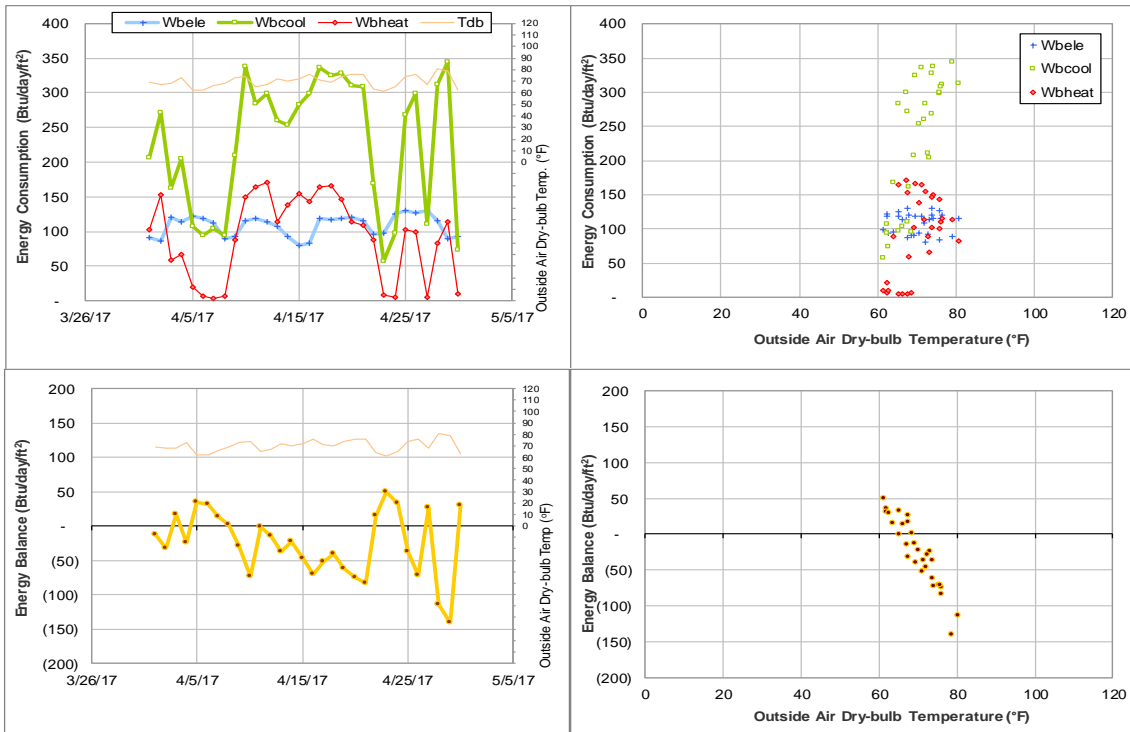


Figure IV-24 Langford Architecture Center Building A TAMU BLDG # 398 Energy Balance Plot during April 2017

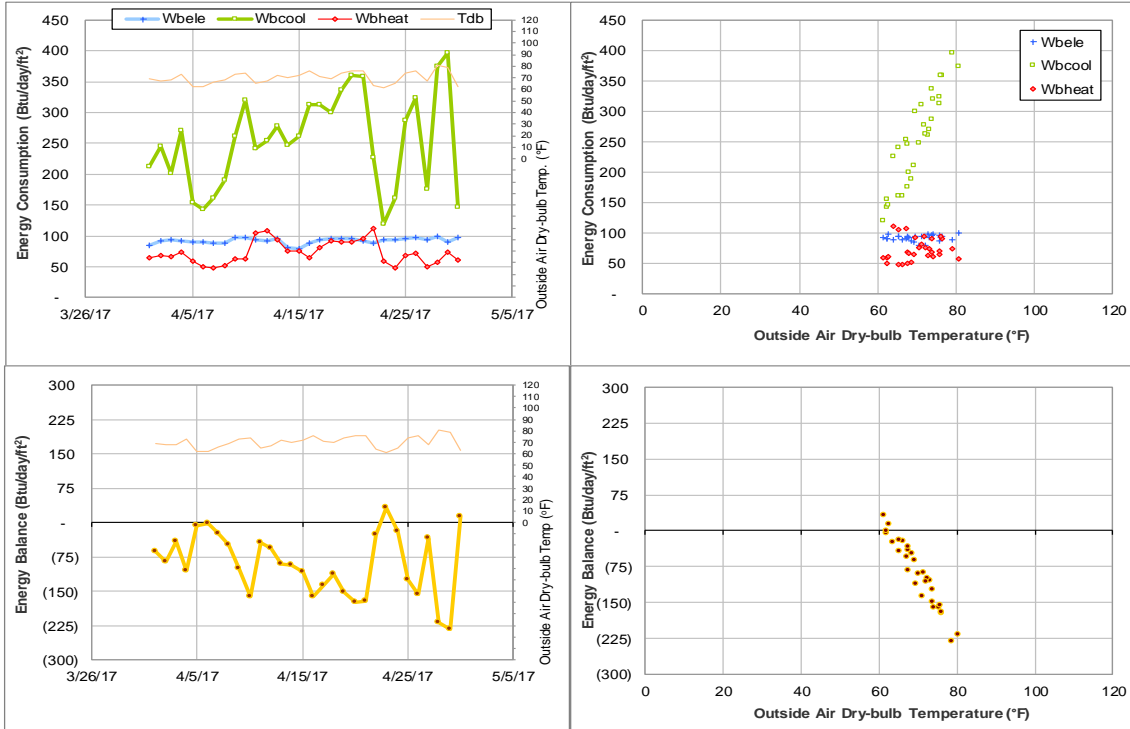


Figure IV-25 Spence Hall, Briggs Hall, and Ash II LLC TAMU BLDG # 400, #402, and #1405 Energy Balance Plot during April 2017

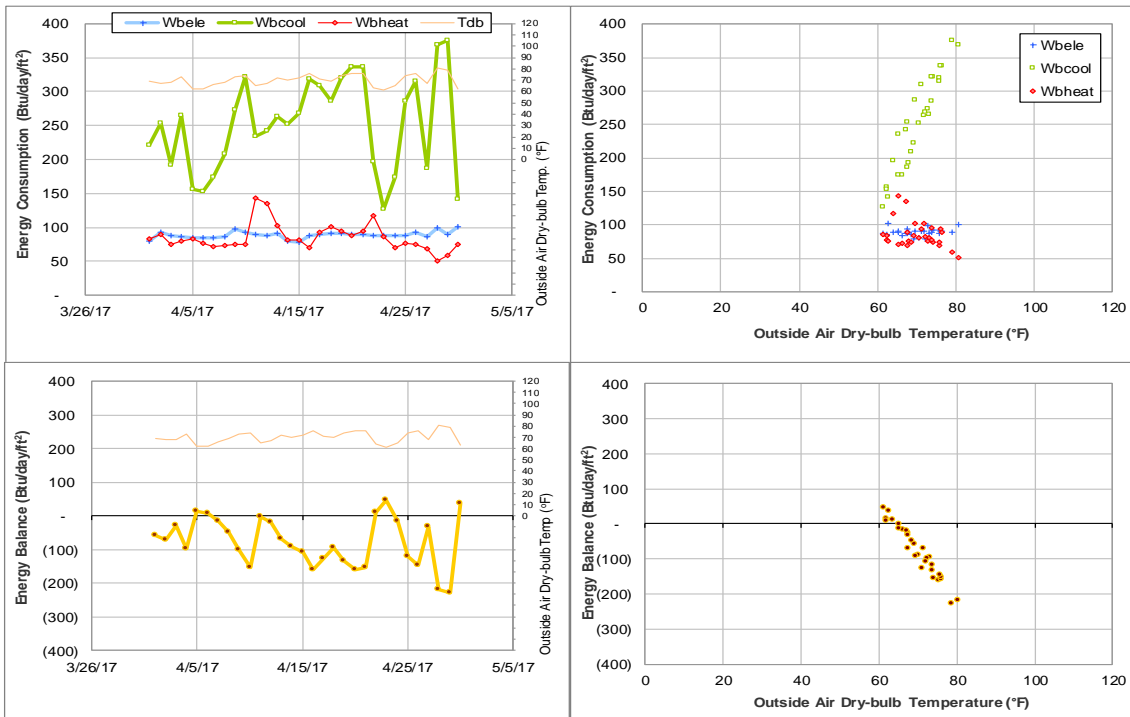


Figure IV-26 Spence Hall Dorm 1 TAMU BLDG # 400 Energy Balance Plot during April 2017

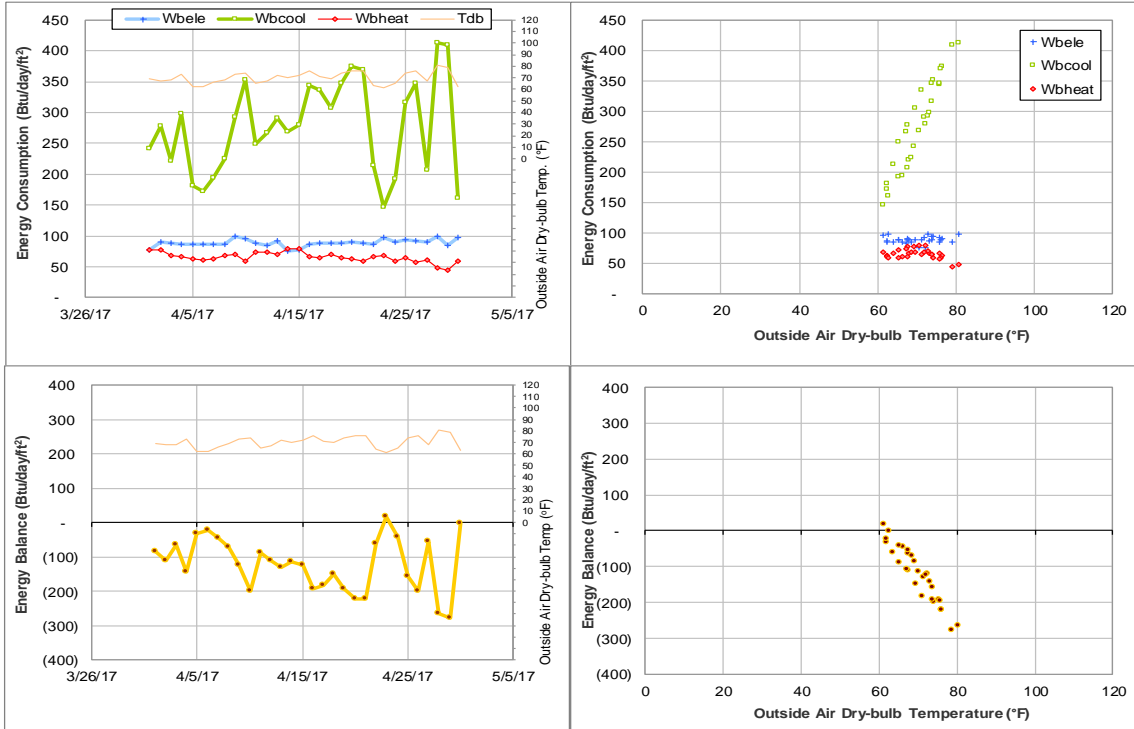


Figure IV-27 Briggs Hall Dorm 3 TAMU BLDG # 402 Energy Balance Plot during April 2017

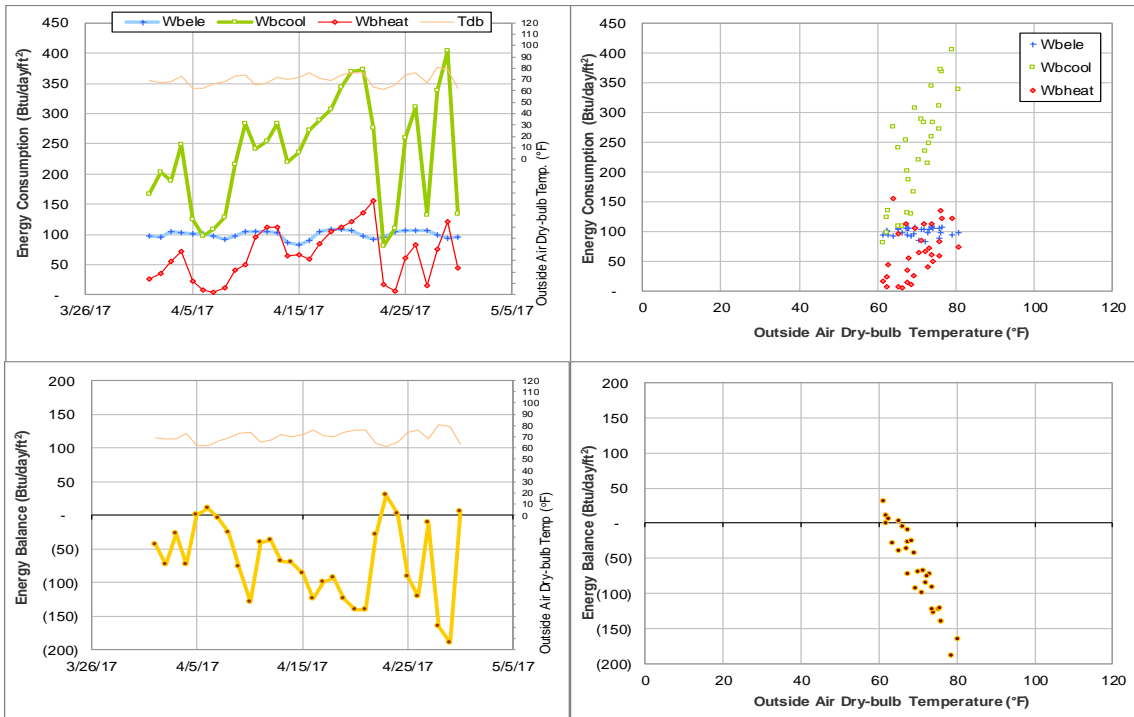


Figure IV-28 Ash II LLC TAMU BLDG # 1405 Energy Balance Plot during April 2017

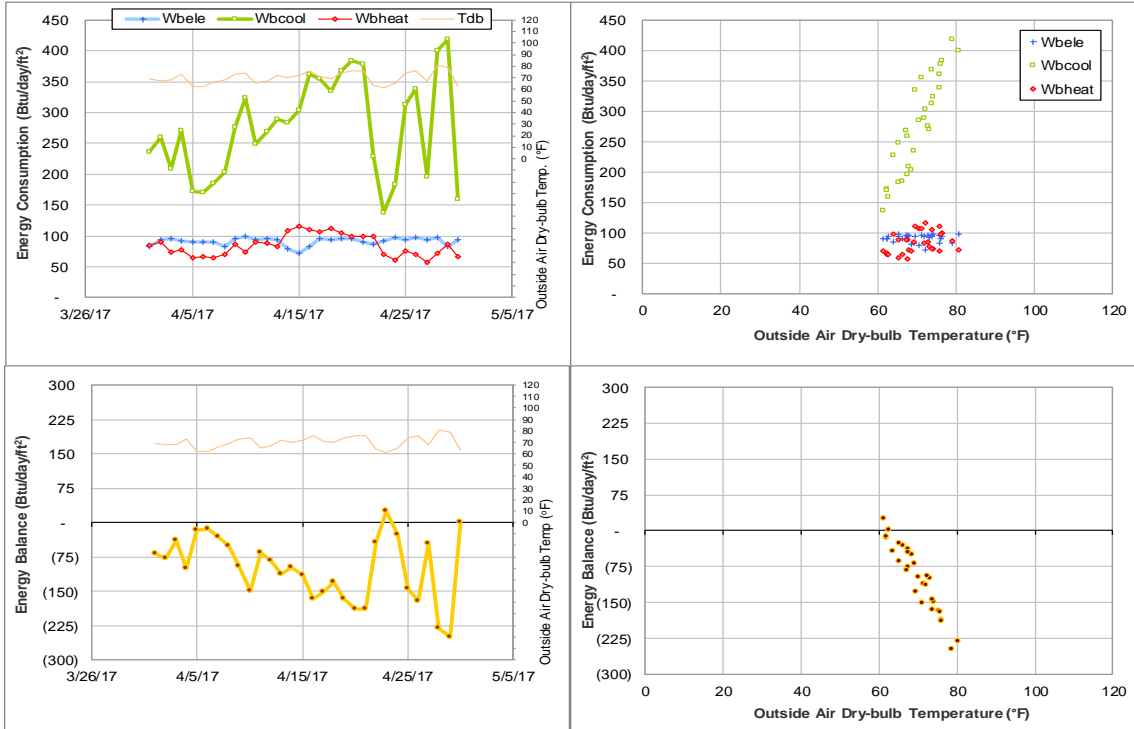


Figure IV-29 Kiest Hall, Fountain Hall, and Plank LLC TAMU BLDG # 401, #403, and #1404 Energy Balance Plot during April 2017

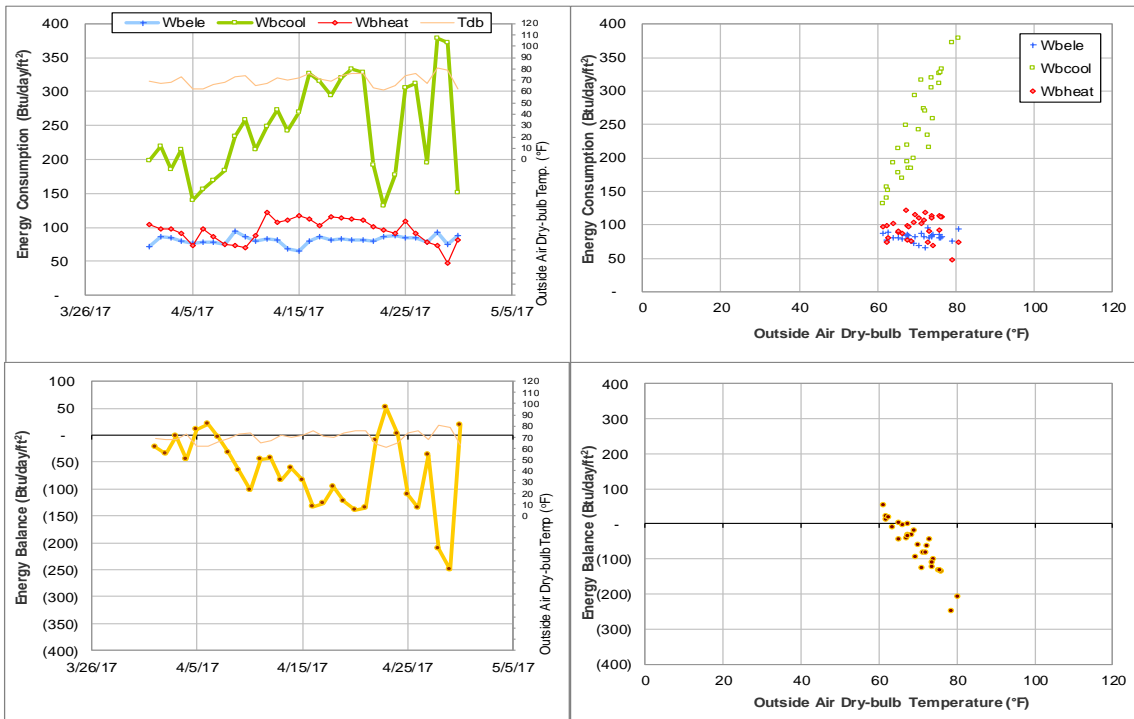


Figure IV-30 Kiest Hall Dorm 2 TAMU BLDG # 401 Energy Balance Plot during April 2017

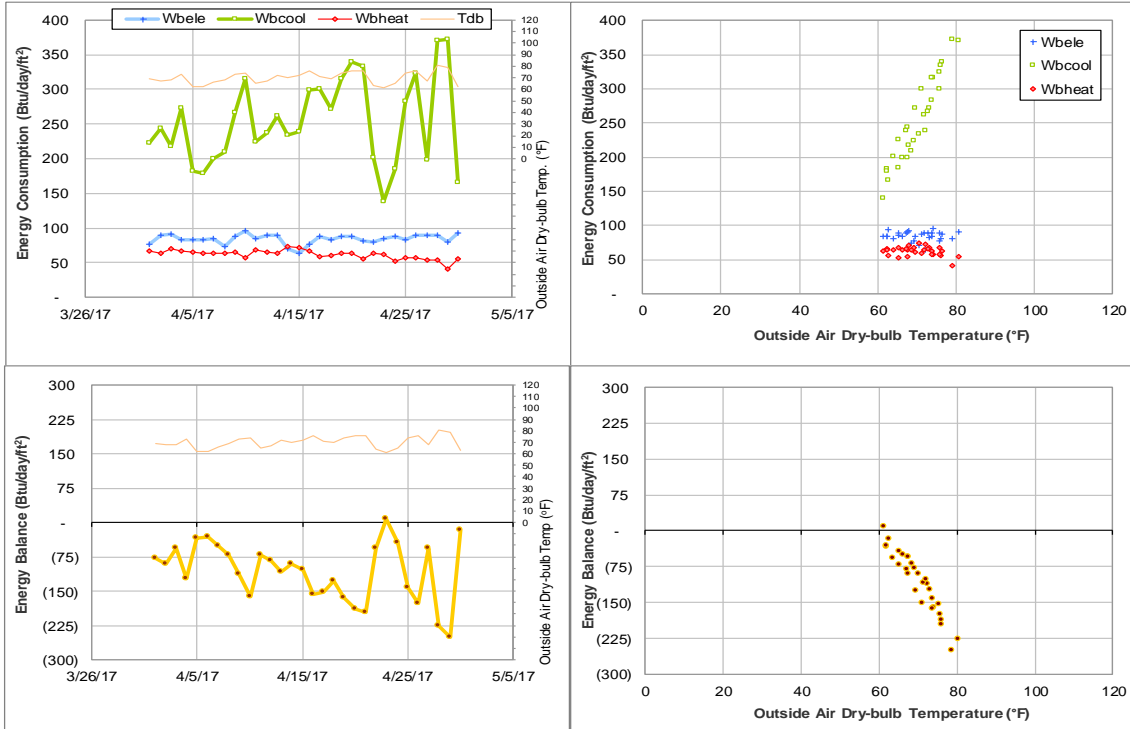


Figure IV-31 Fountain Hall Dorm 4 TAMU BLDG # 403 Energy Balance Plot during April 2017

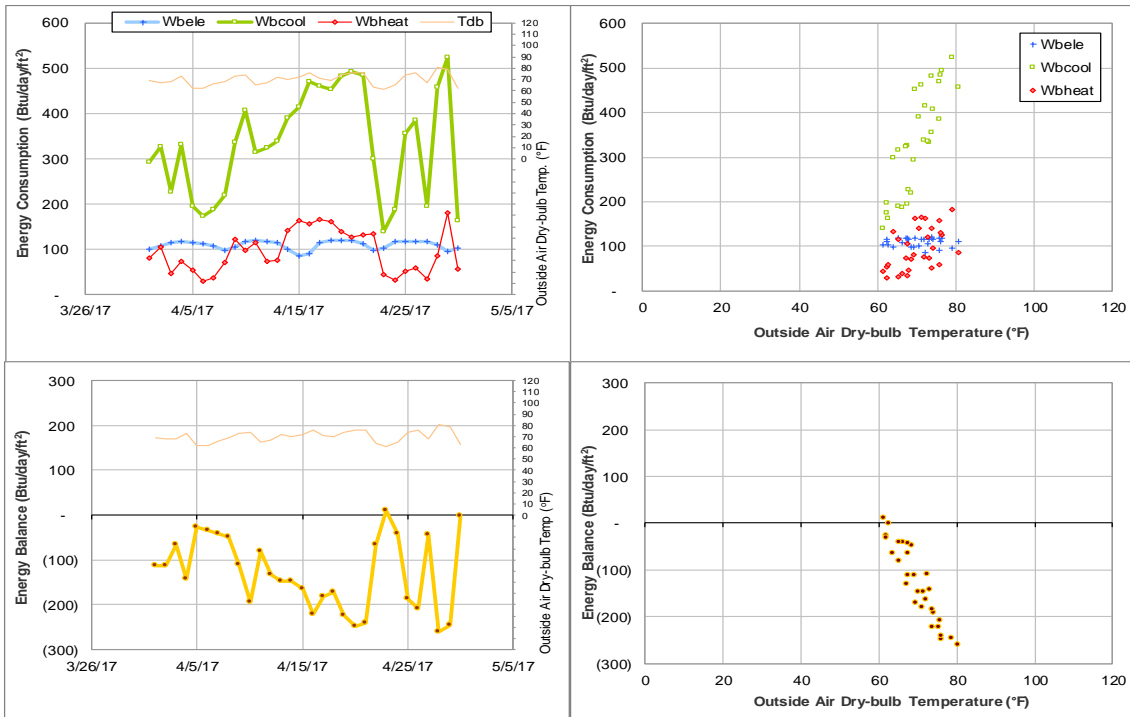


Figure IV-32 Plank LLC TAMU BLDG # 1404 Energy Balance Plot during April 2017

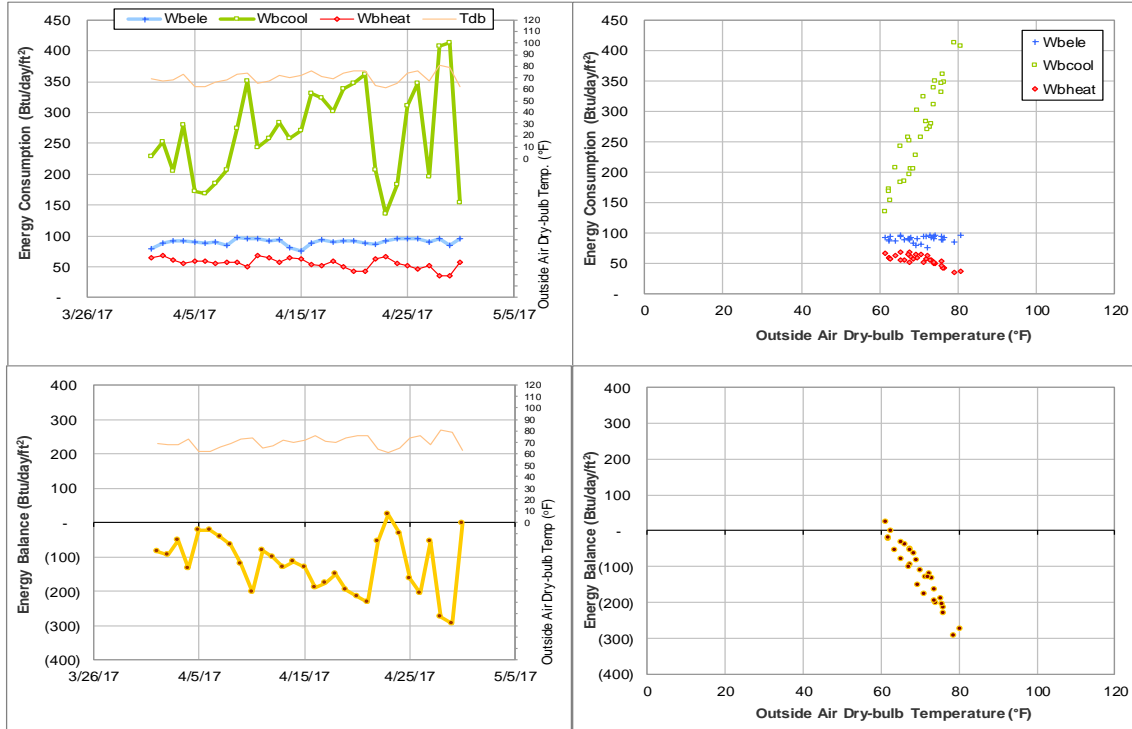


Figure IV-33 Gainer Hall, Leonard Hall and Ash LLC TAMU BLDG # 404, #406, and #1403 Energy Balance Plot during April 2017

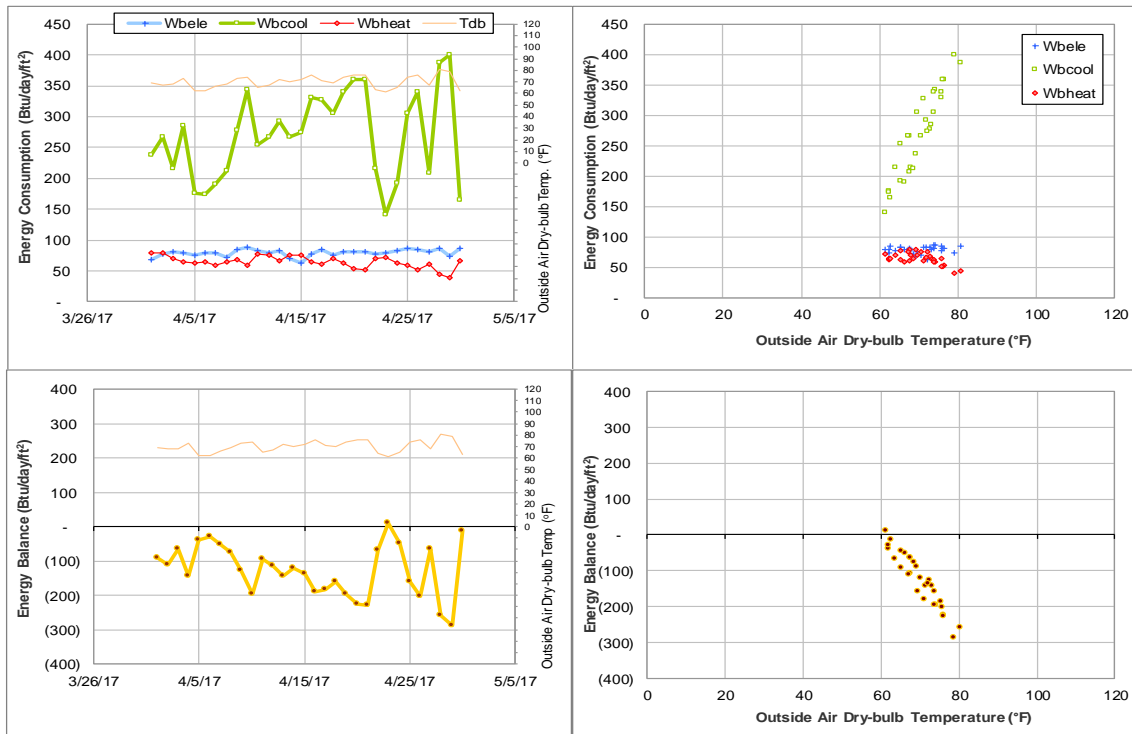


Figure IV-34 Gainer Hall Dorm 5 TAMU BLDG # 404 Energy Balance Plot during April 2017

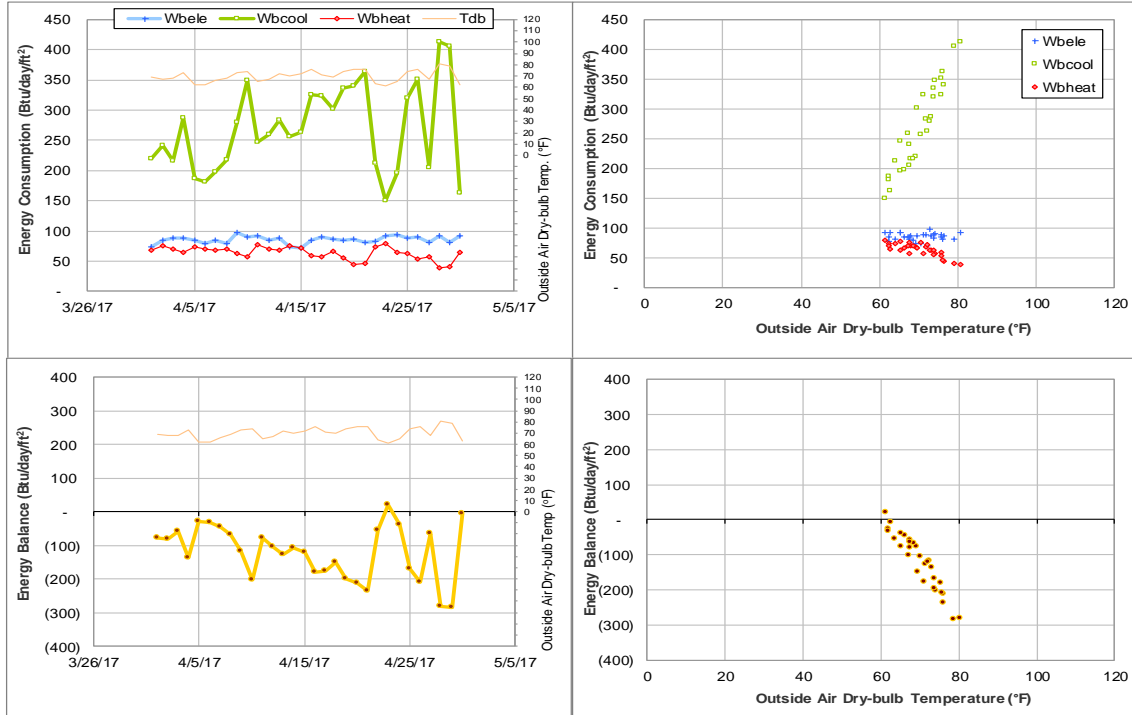


Figure IV-35 Leonard Hall - Dorm 7 TAMU BLDG # 406 Energy Balance Plot during April 2017

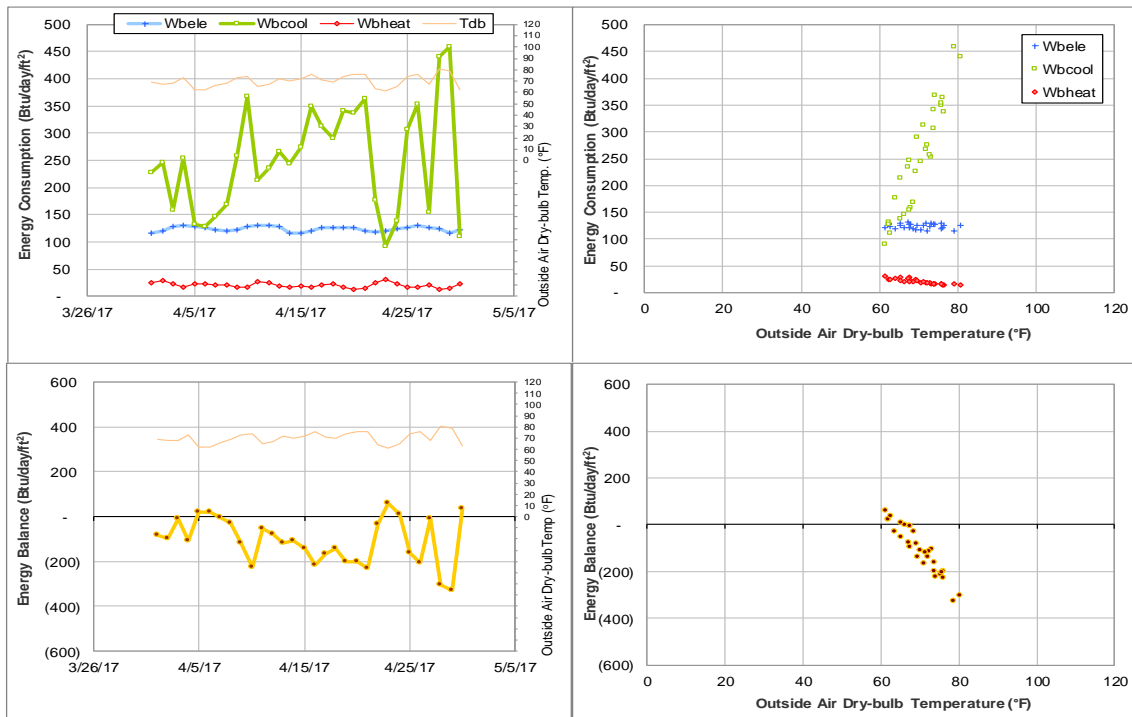


Figure IV-36 H. Grady Ash, Jr. '58 Leadership Learning Center TAMU BLDG # 1403 Energy Balance Plot during April 2017

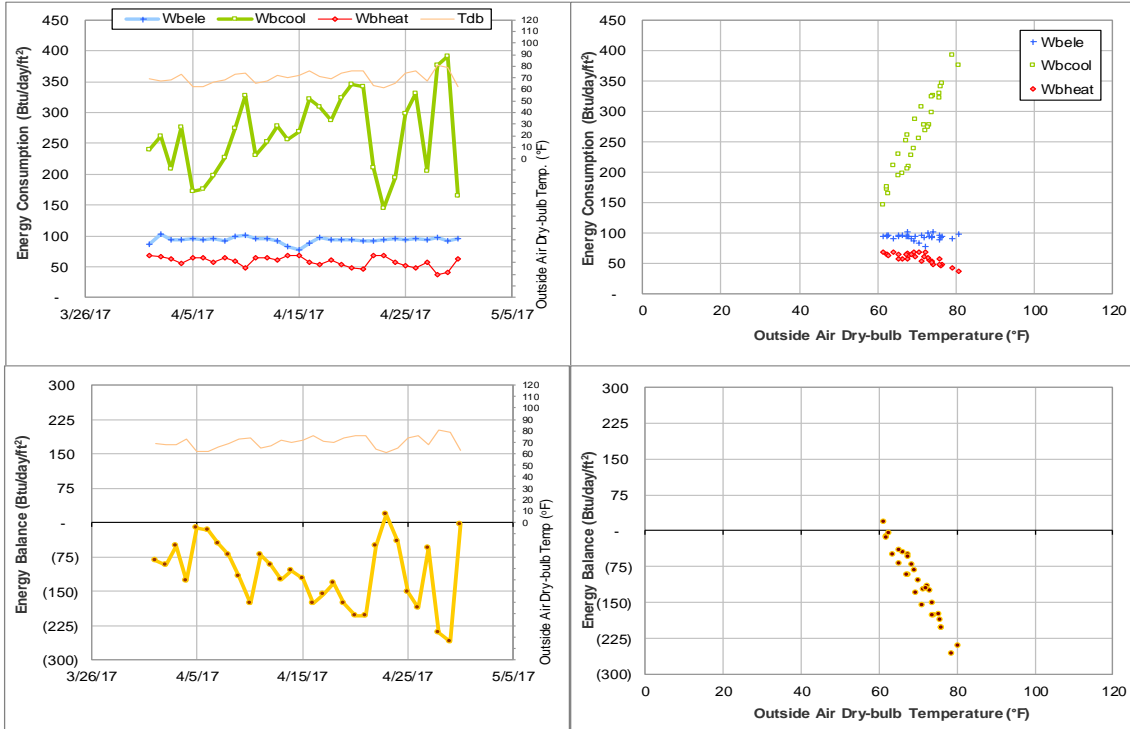


Figure IV-37 Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center TAMU BLDG # 405, #407, #1402 Energy Balance Plot during April 2017

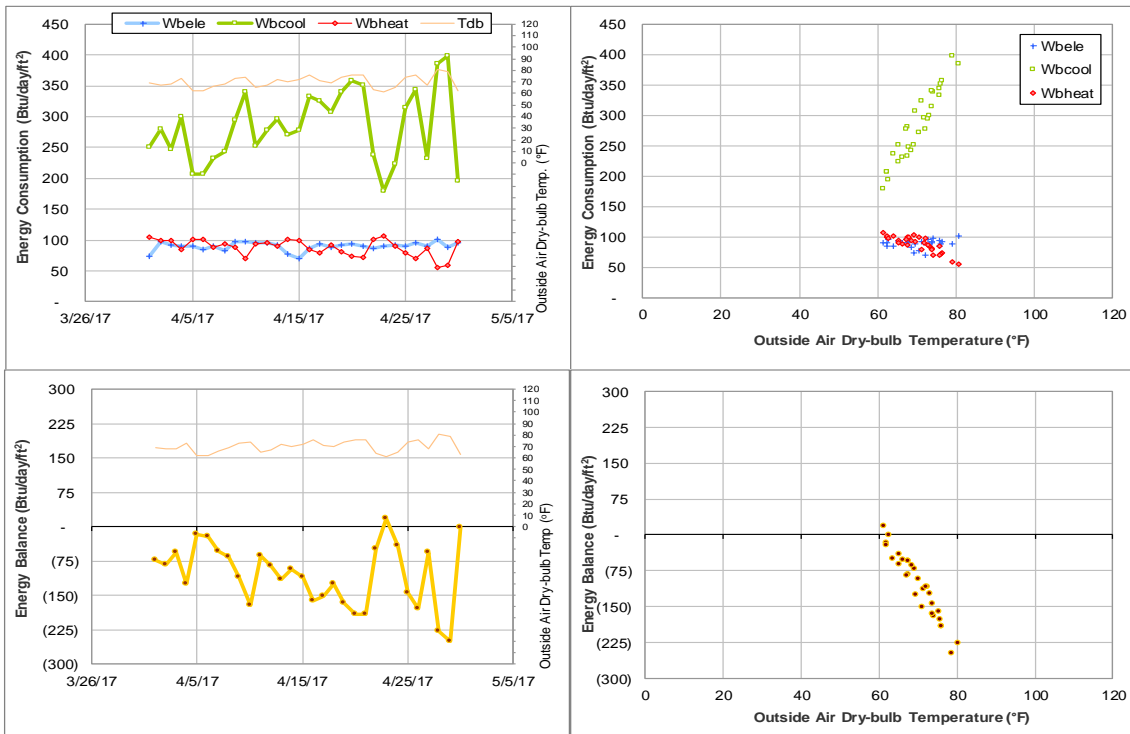


Figure IV-38 Lacy Hall - Dorm 6 TAMU BLDG # 405 Energy Balance Plot during April 2017



Figure IV-39 Harrell Hall - Dorm 8 TAMU BLDG # 407 Energy Balance Plot during April 2017

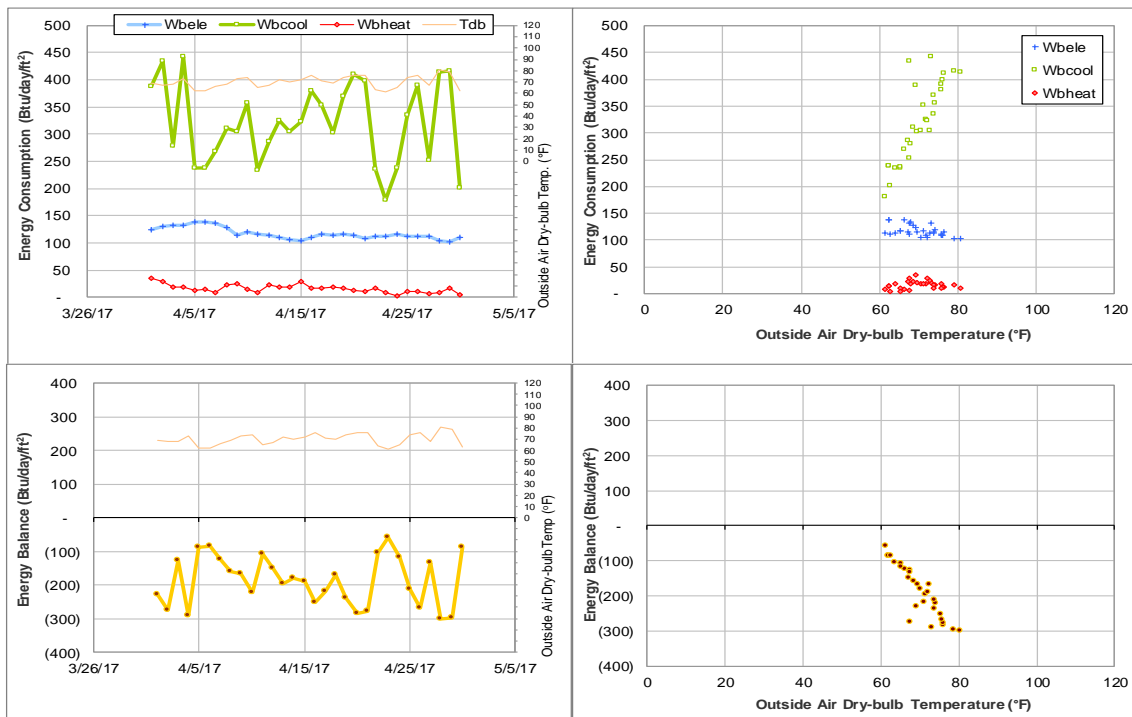


Figure IV-40 Buzbee Leadership Learning Center TAMU BLDG # 1402 Energy Balance Plot during April 2017

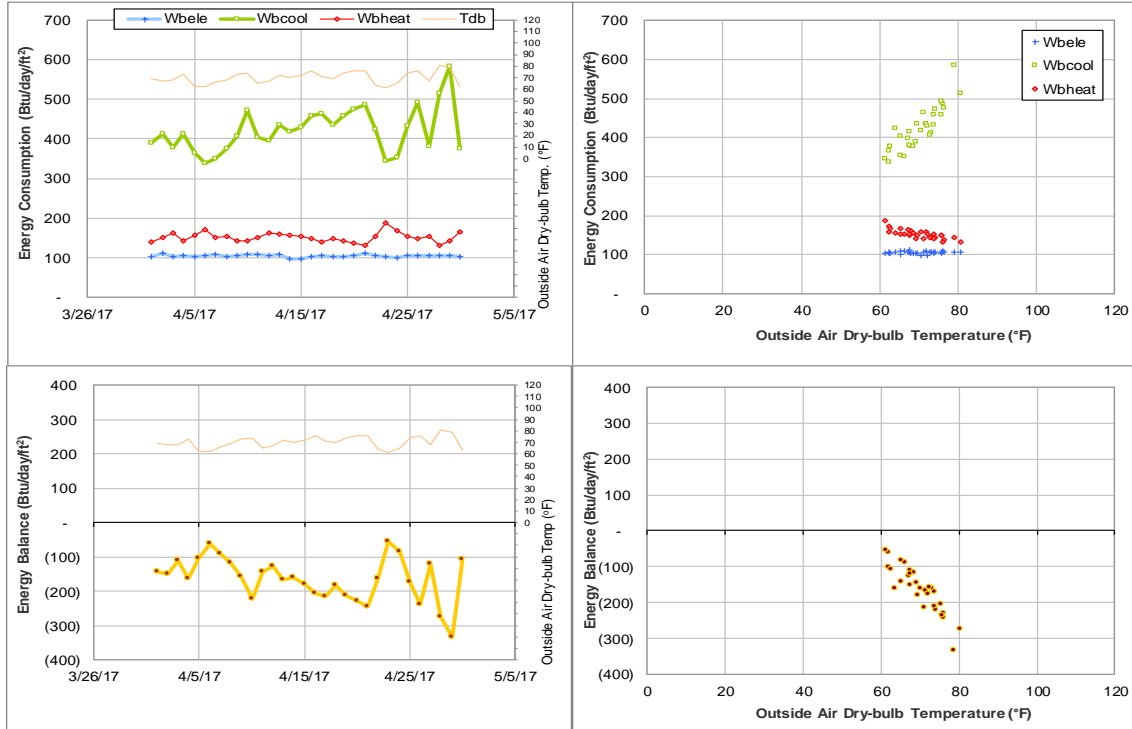


Figure IV-41 Moses Residence Hall TAMU BLDG # 412 Energy Balance Plot during April 2017

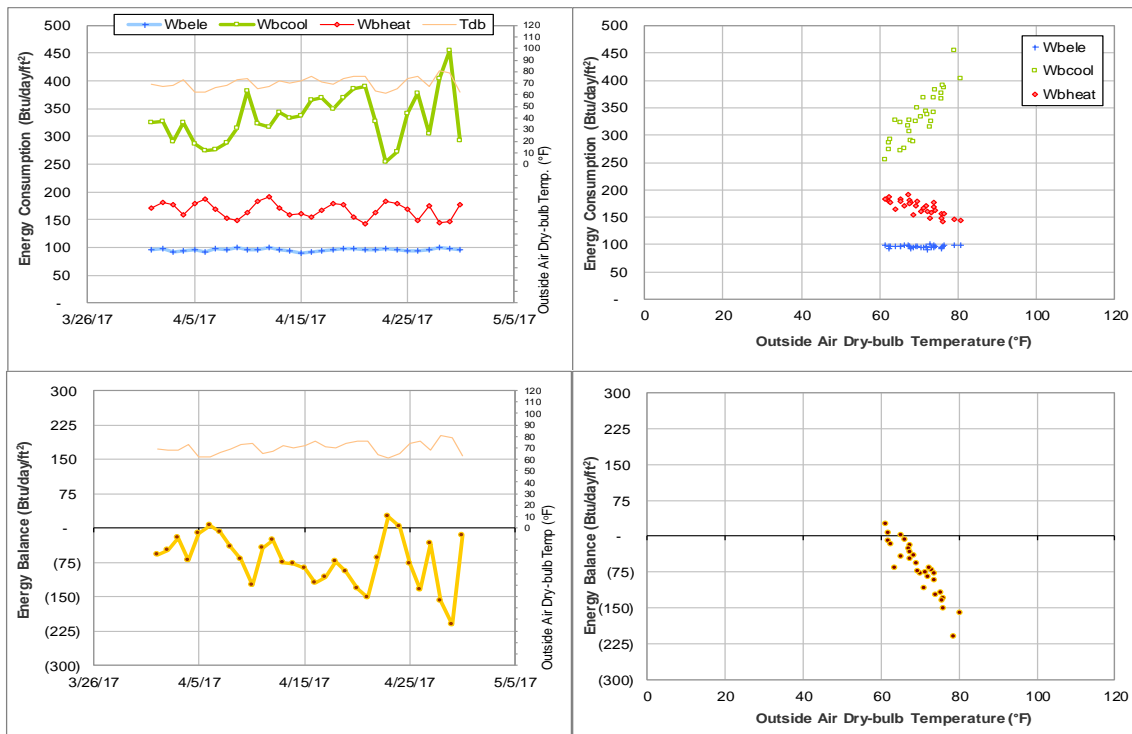


Figure IV-42 Davis-Gary Residence Hall TAMU BLDG # 415 Energy Balance Plot during April 2017

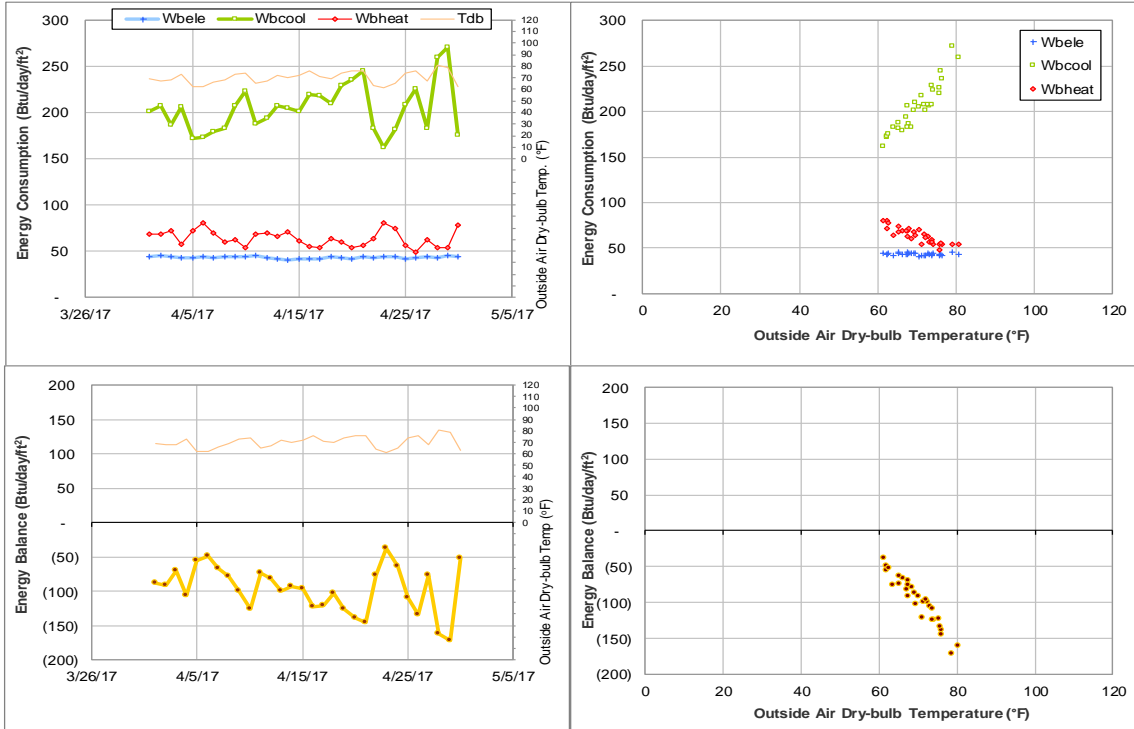


Figure IV-43 Leggett Residence Hall TAMU BLDG # 419 Energy Balance Plot during April 2017

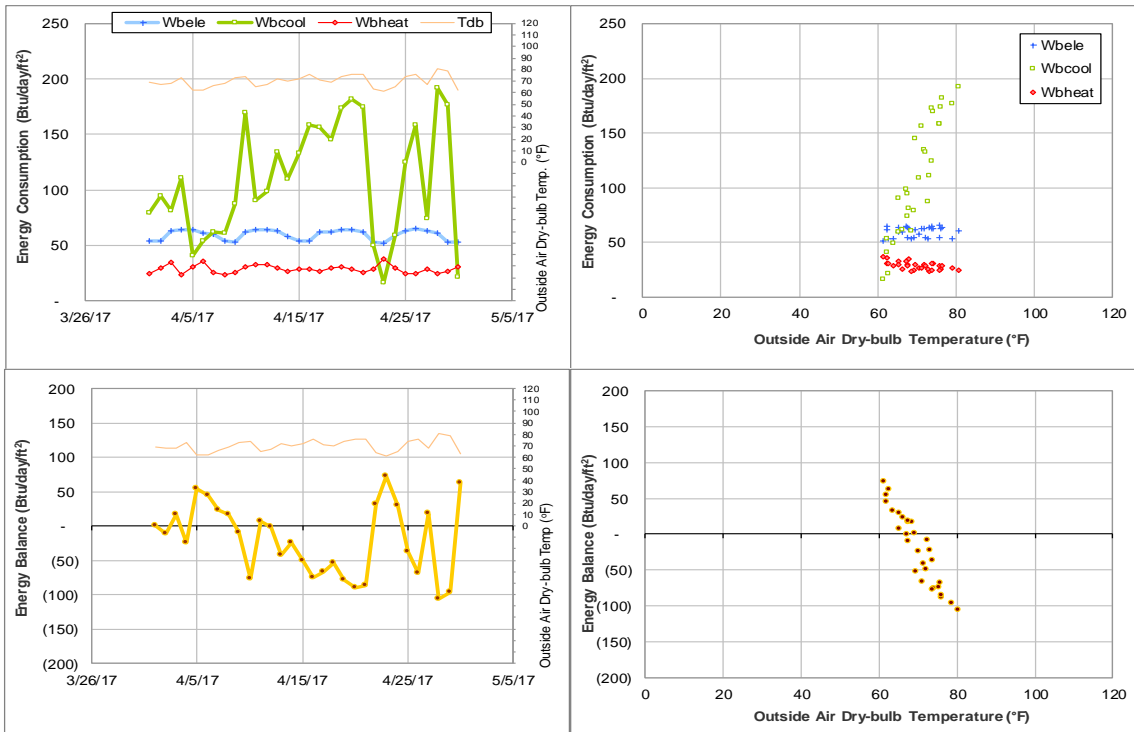


Figure IV-44 Milner Hall TAMU BLDG # 420 Energy Balance Plot during April 2017

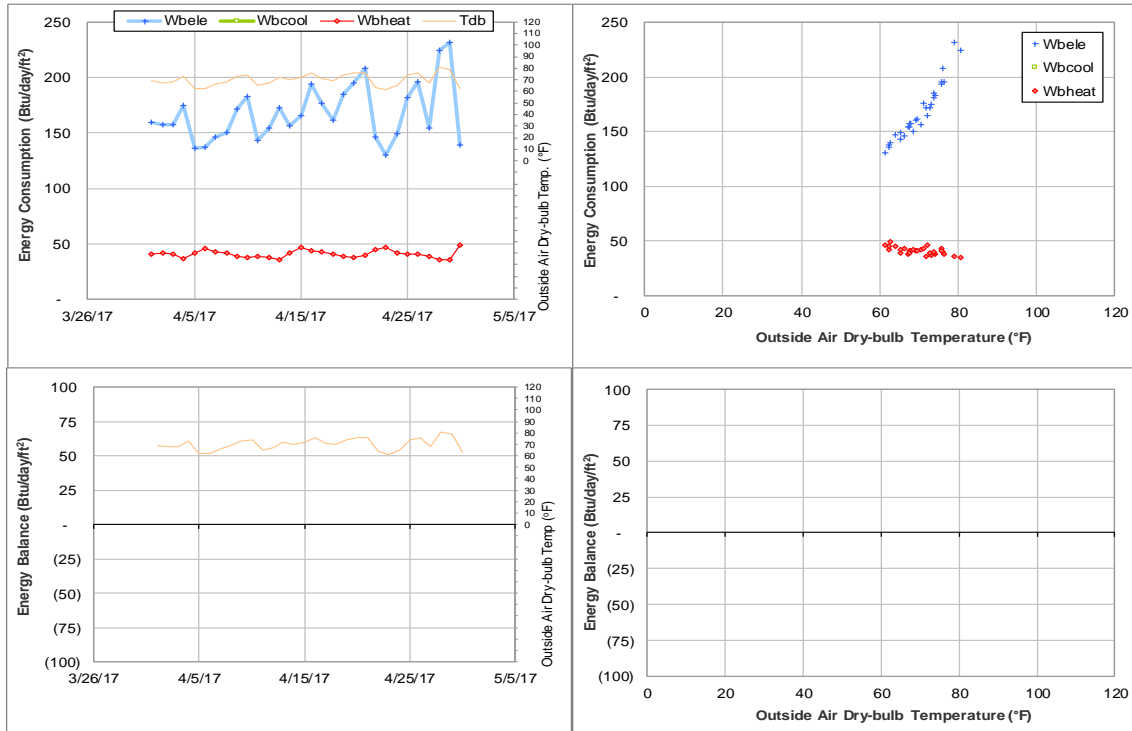


Figure IV-45 Walton Residence Hall TAMU BLDG # 422 Energy Balance Plot during April 2017

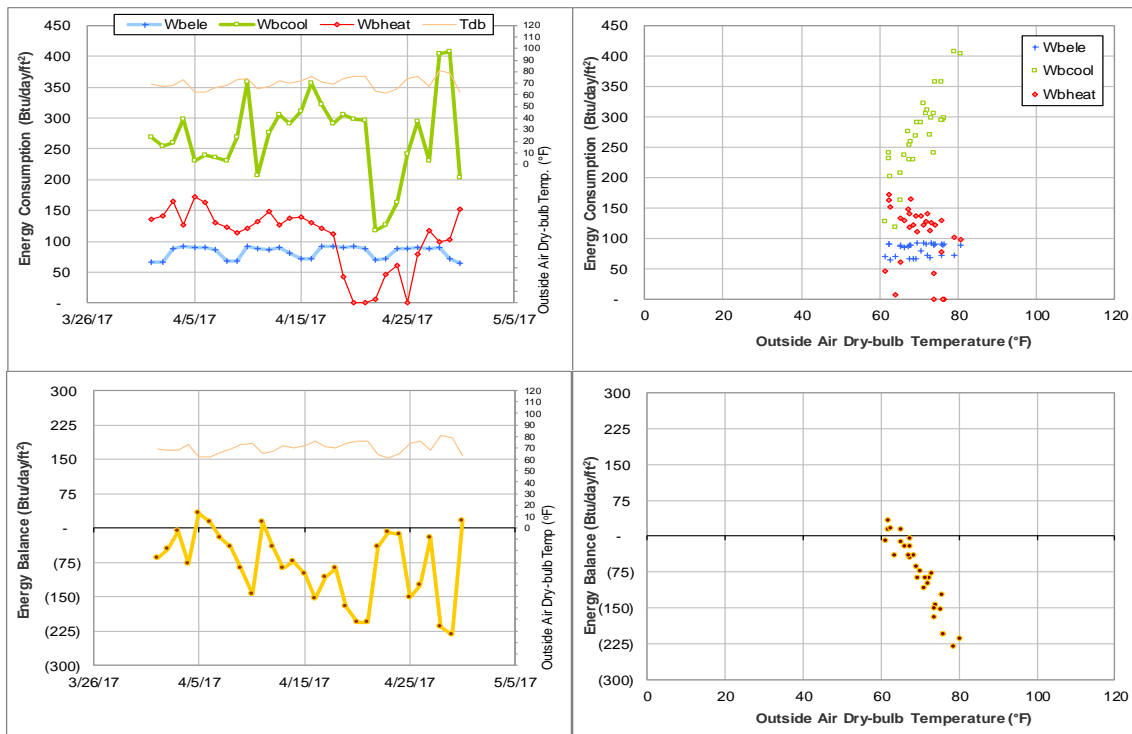


Figure IV-46 Hotard Hall TAMU BLDG # 424 Energy Balance Plot during April 2017

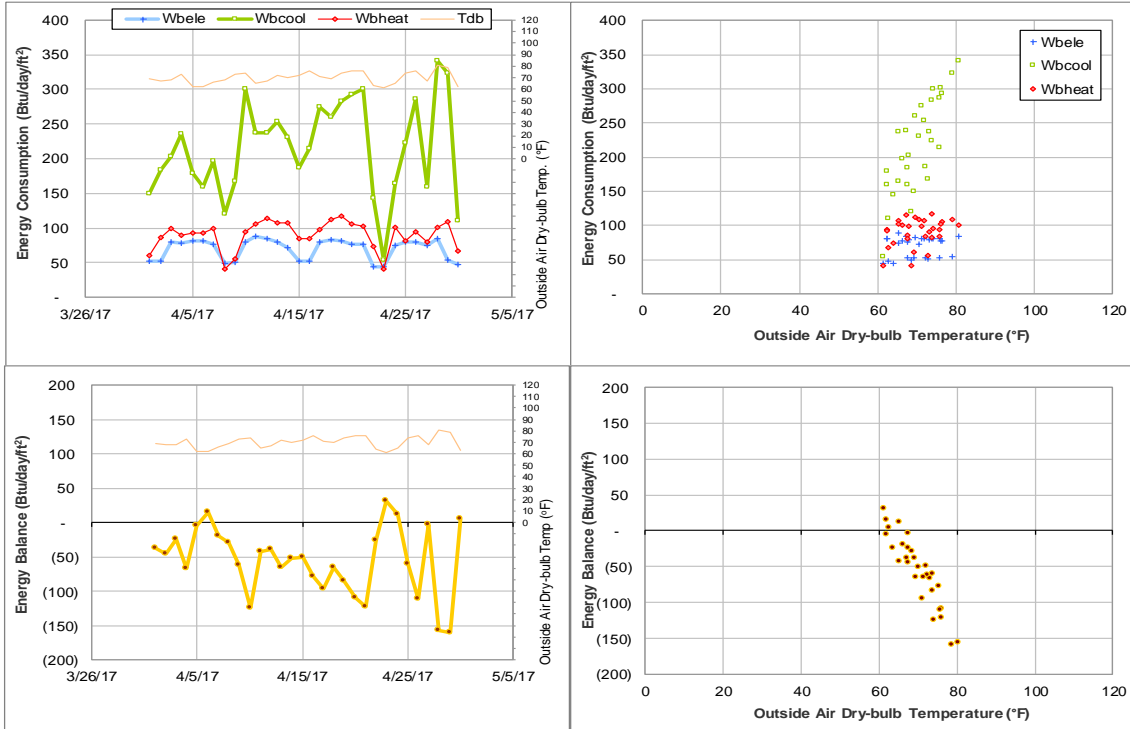


Figure IV-47 Henderson Hall TAMU BLDG # 425 Energy Balance Plot during April 2017

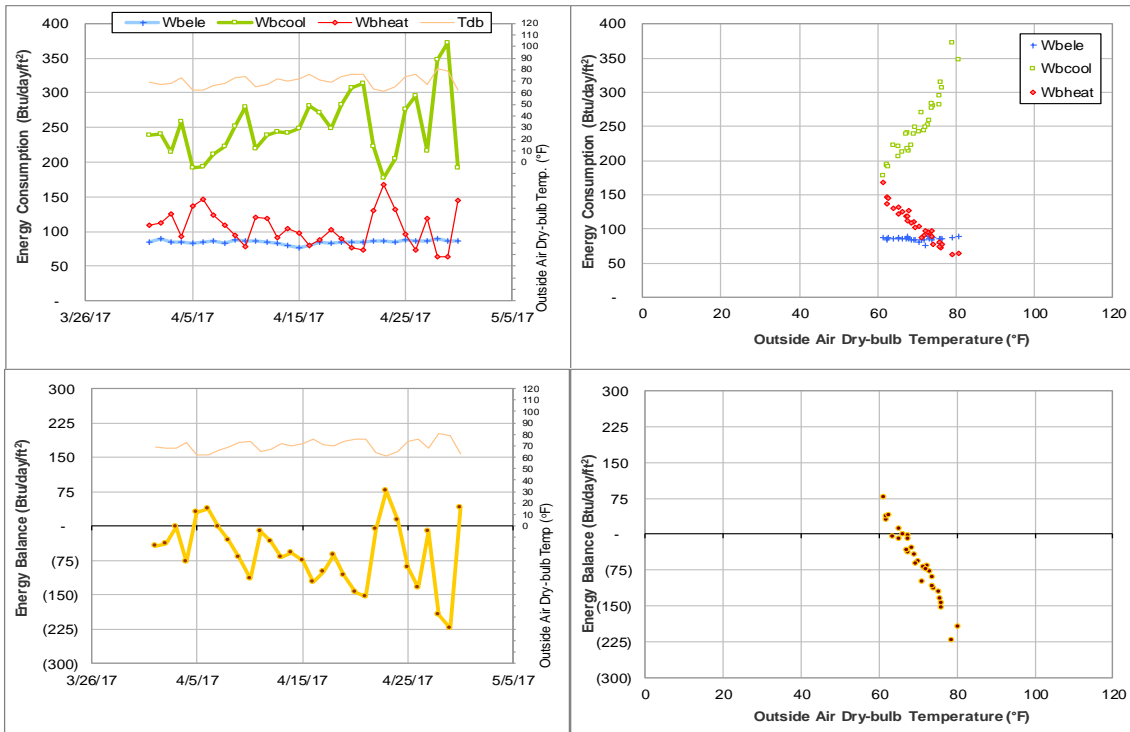


Figure IV-48 FHK Complex TAMU BLDG # 426 Energy Balance Plot during April 2017

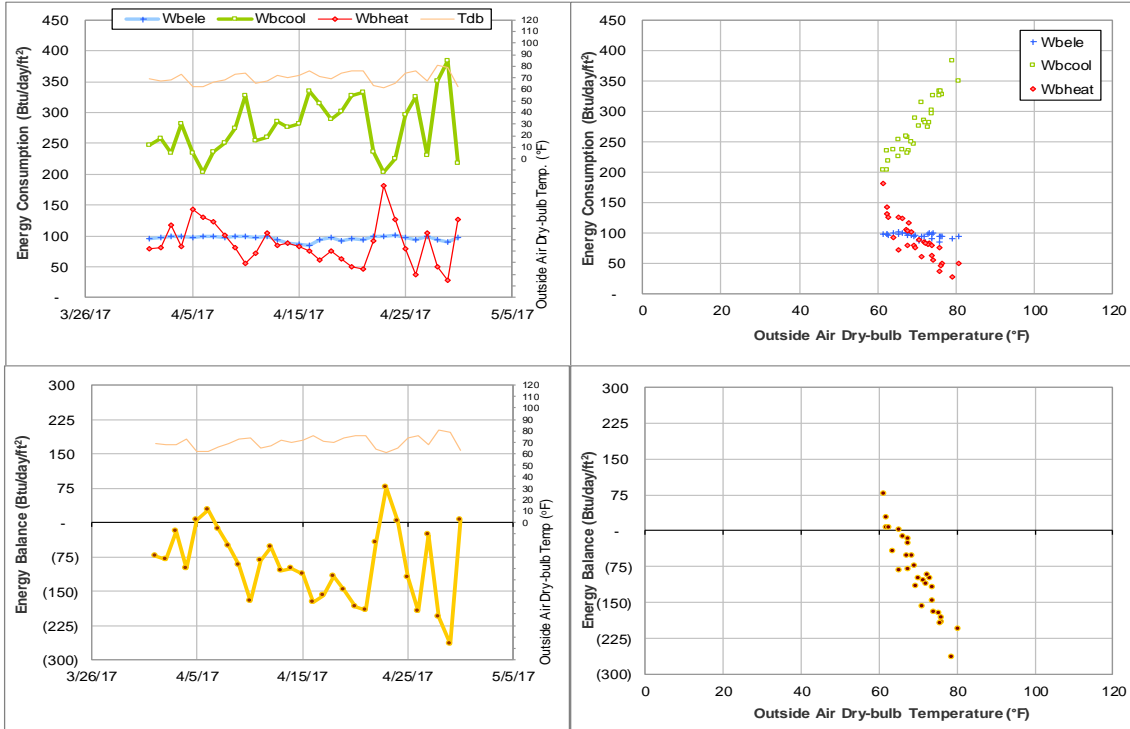


Figure IV-49 Schumacher Residence Hall TAMU BLDG # 430 Energy Balance Plot during April 2017

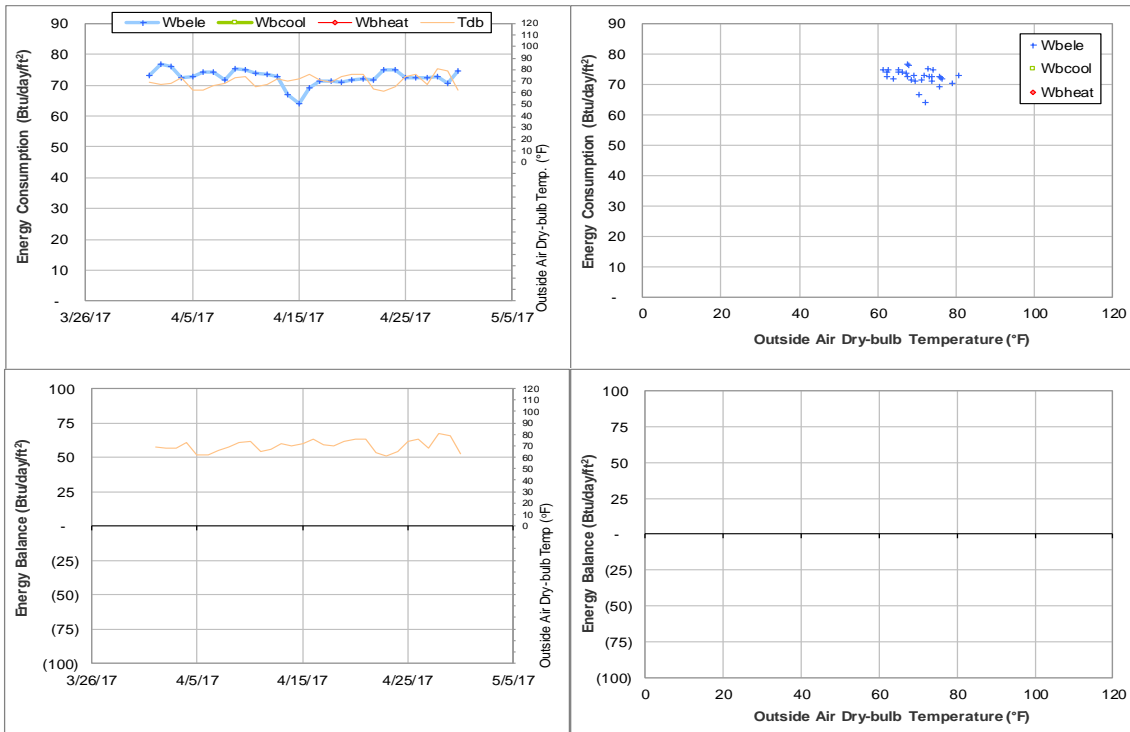


Figure IV-50 Mosher Commons Krueger Dunn Aston TAMU BLDG # 433, #440, #441, #442, and #447 Energy Balance Plot during April 2017

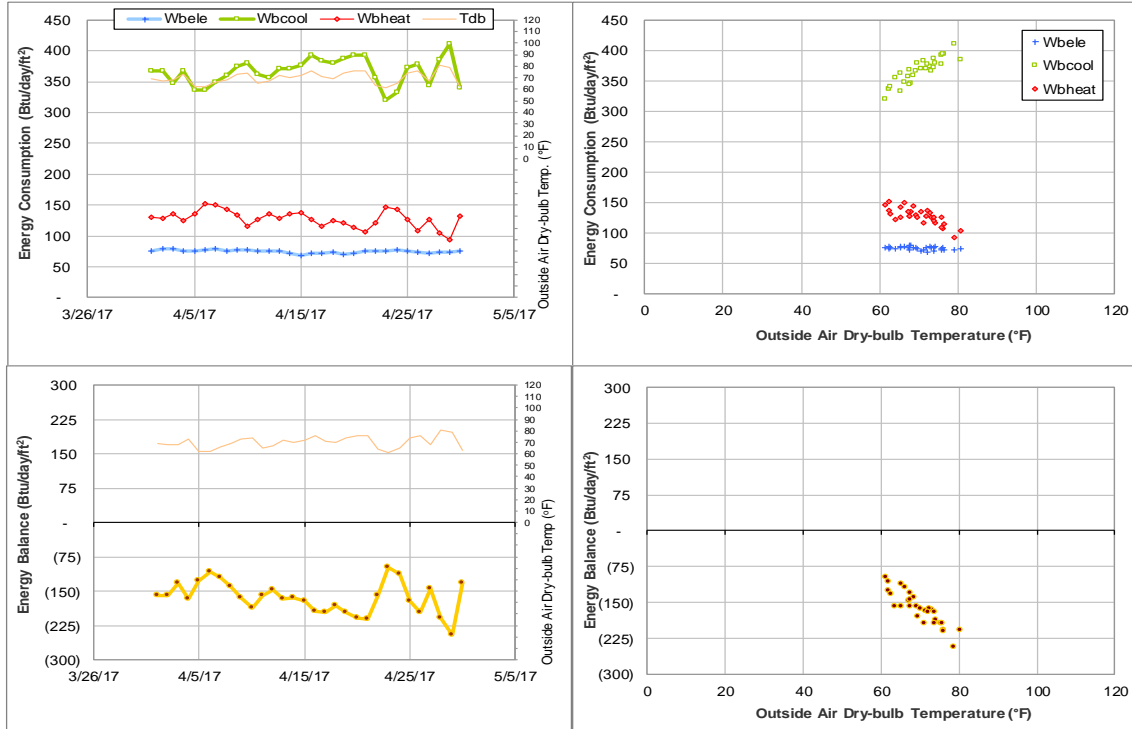


Figure IV-51 Mosher Residence Hall TAMU BLDG # 433 Energy Balance Plot during April 2017

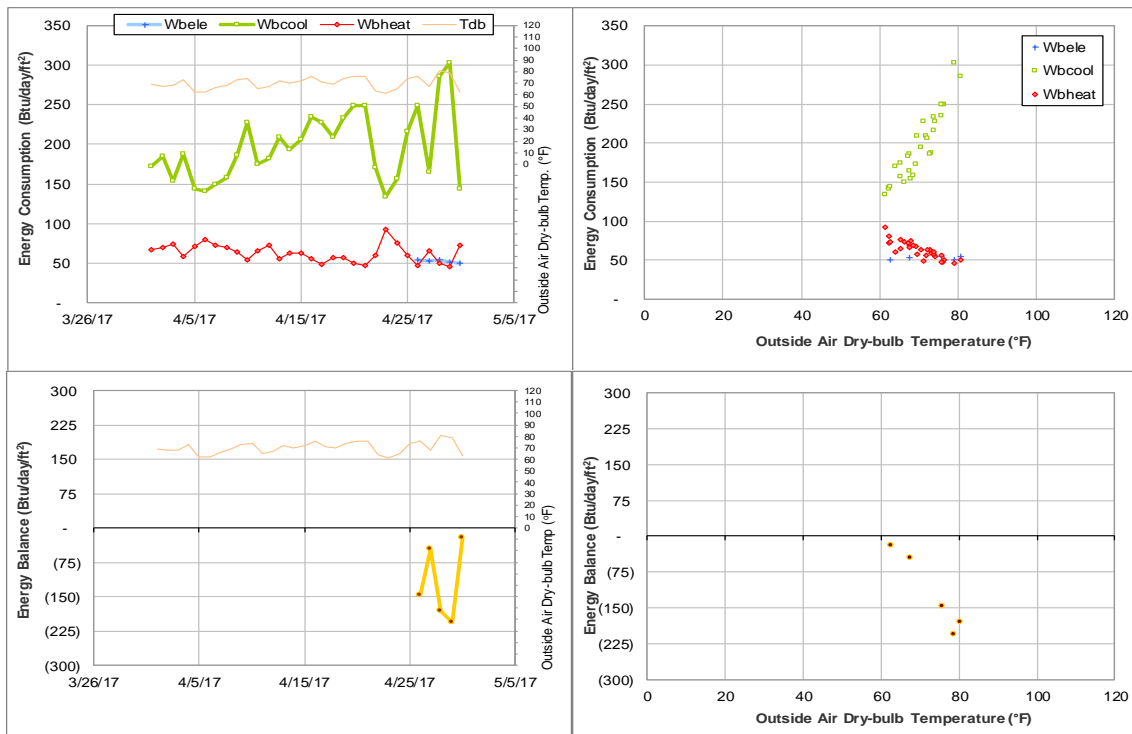


Figure IV-52 Commons Krueger TAMU BLDG # 440 and #441 Energy Balance Plot during April 2017

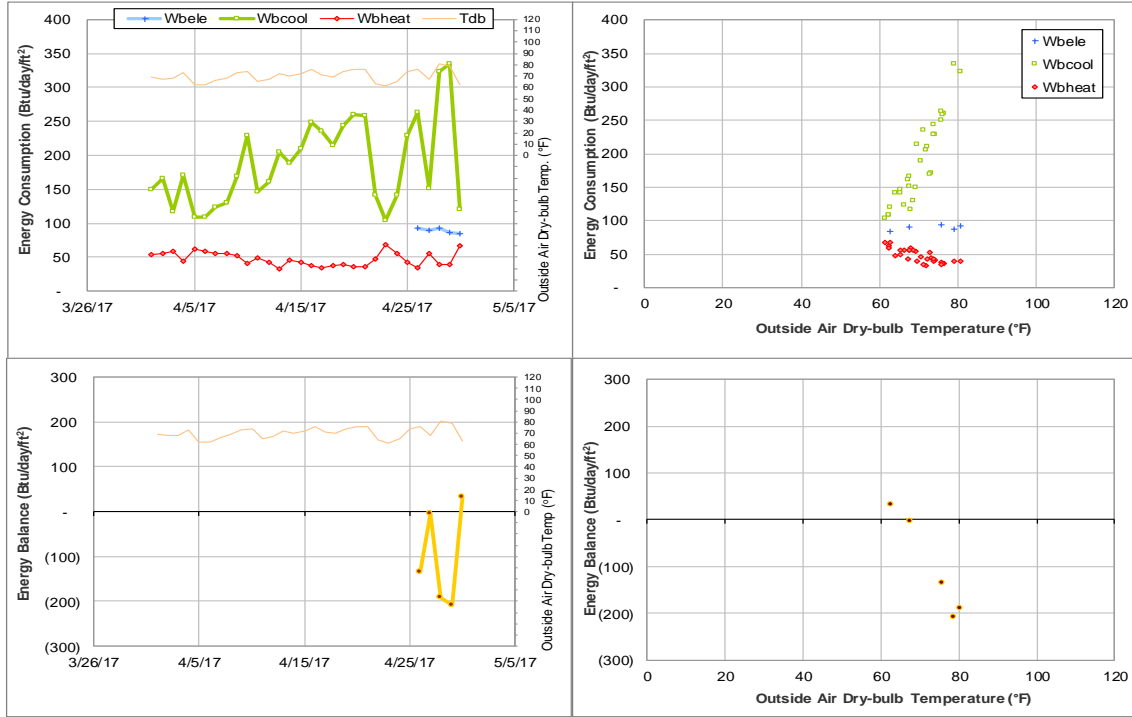


Figure IV-53 Commons Hall TAMU BLDG # 440 Energy Balance Plot during April 2017

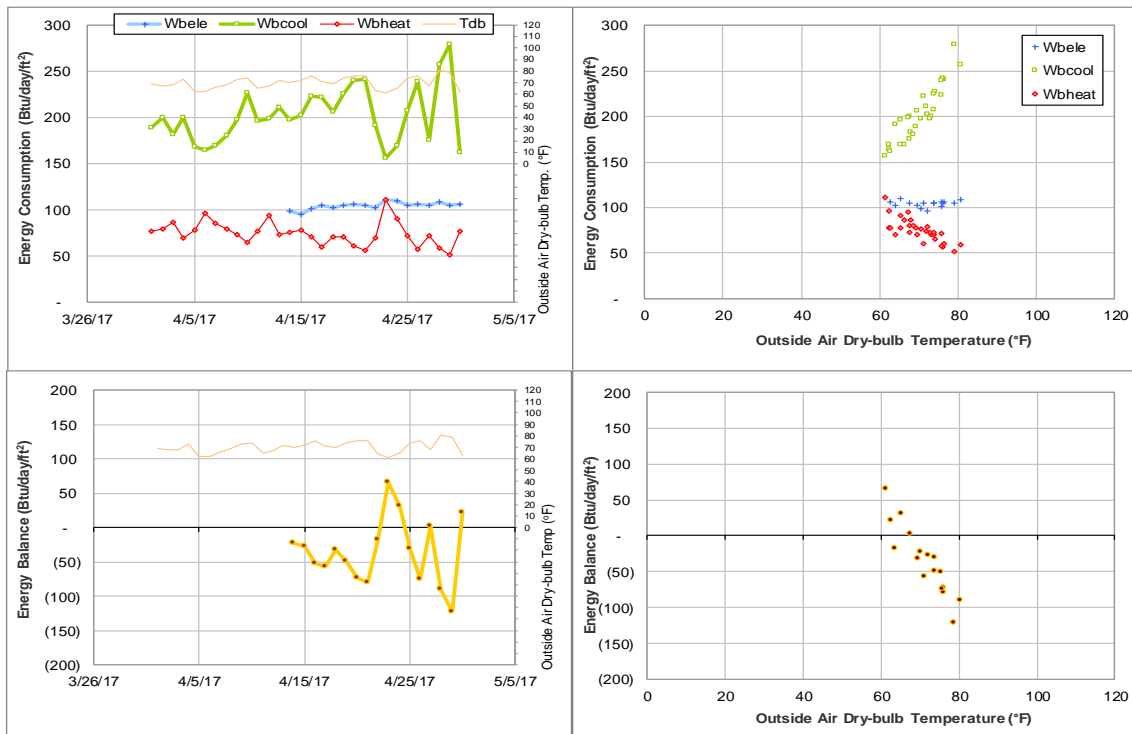


Figure IV-54 Krueger Residence Hall TAMU BLDG # 441 Energy Balance Plot during April 2017

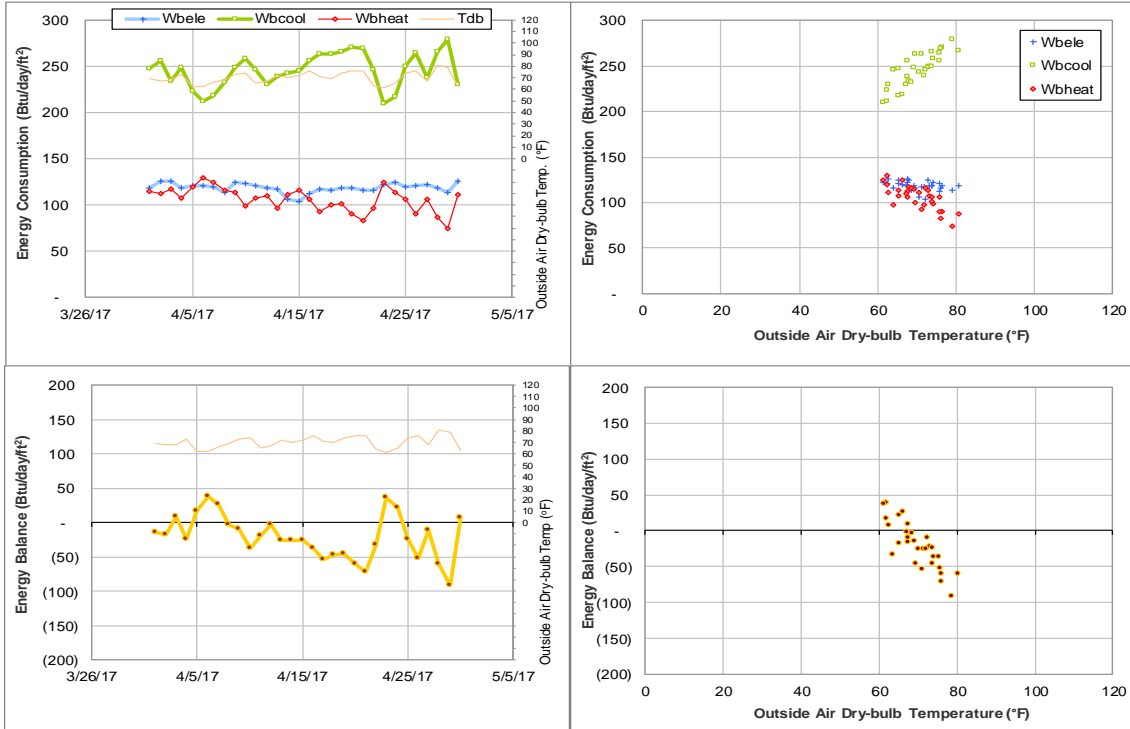


Figure IV-55 Dunn Residence Hall TAMU BLDG # 442 Energy Balance Plot during April 2017

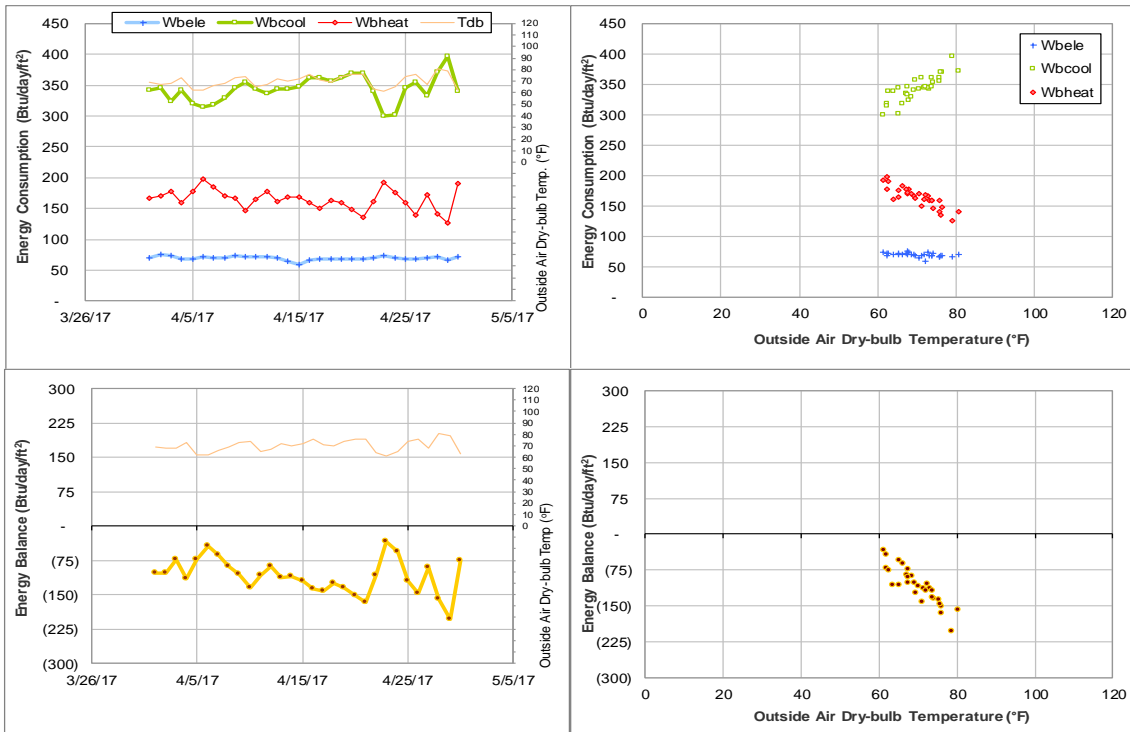


Figure IV-56 Aston Residence Hall TAMU BLDG # 447 Energy Balance Plot during April 2017

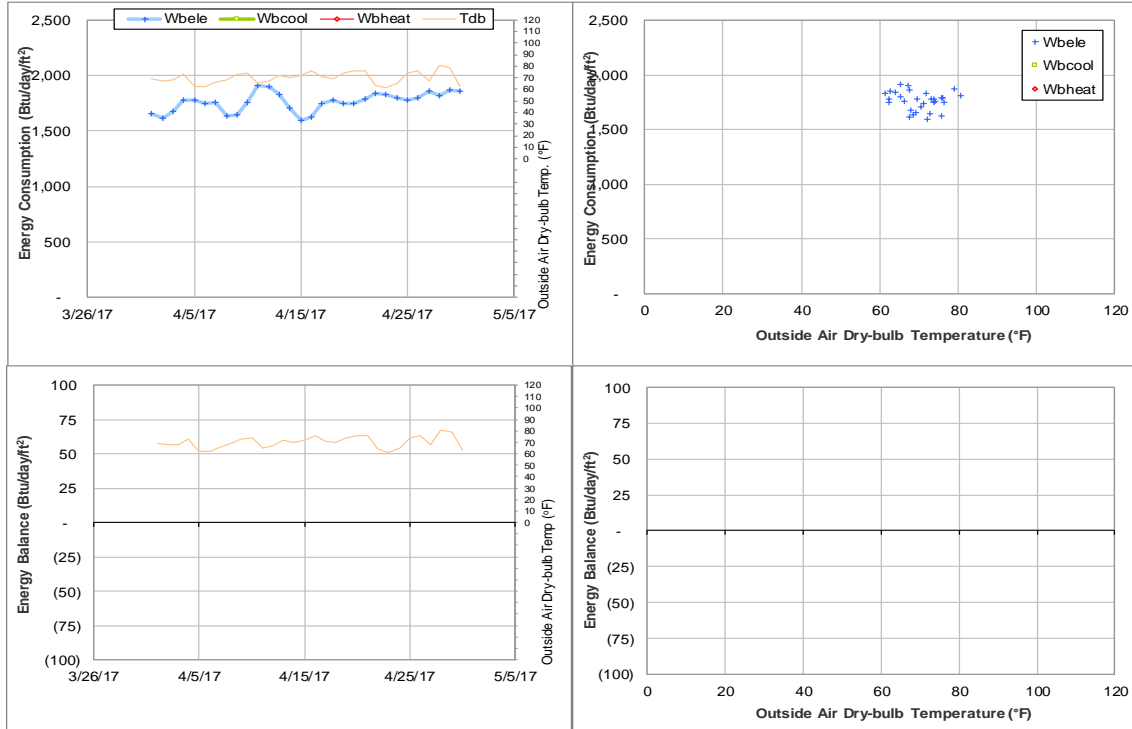


Figure IV-57 Luedcke Building (Cyclotron) TAMU BLDG # 434 Energy Balance Plot during April 2017

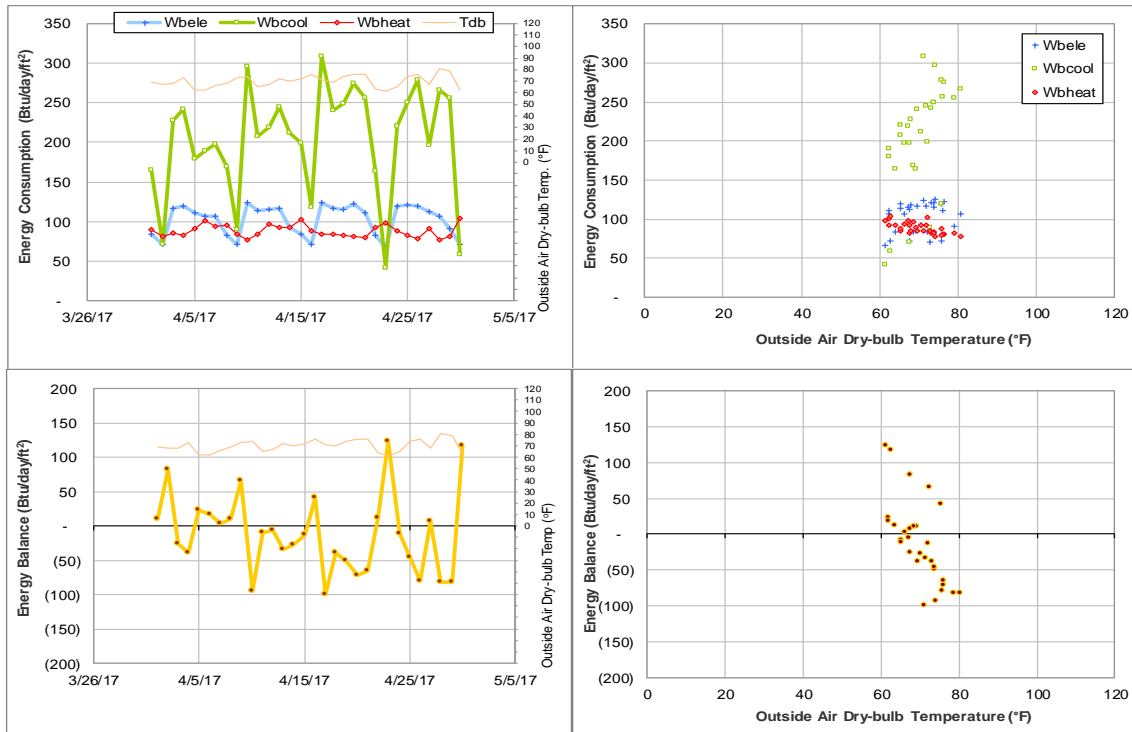


Figure IV-58 Harrington Education Center Office Tower TAMU BLDG # 435 Energy Balance Plot during April 2017

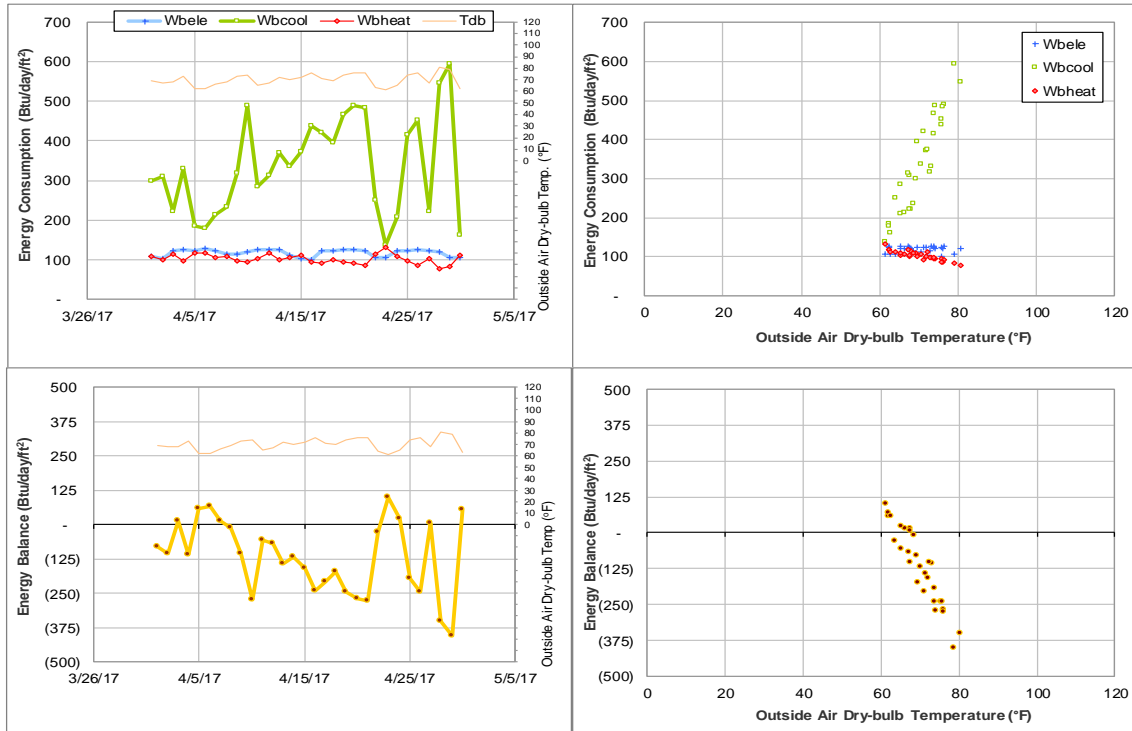


Figure IV-59 Reed-McDonald and Engineering Innovation Center TAMU BLDG # 436 and #499 Energy Balance Plot during April 2017

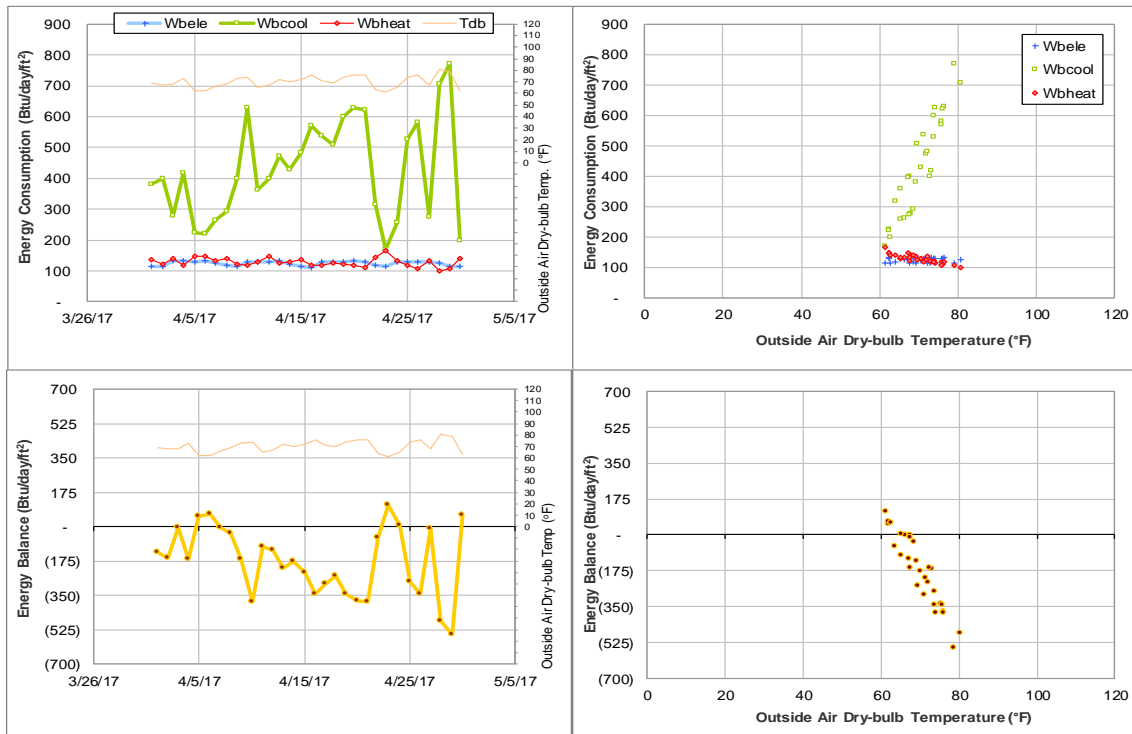


Figure IV-60 Reed-McDonald Building TAMU BLDG # 436 Energy Balance Plot during April 2017

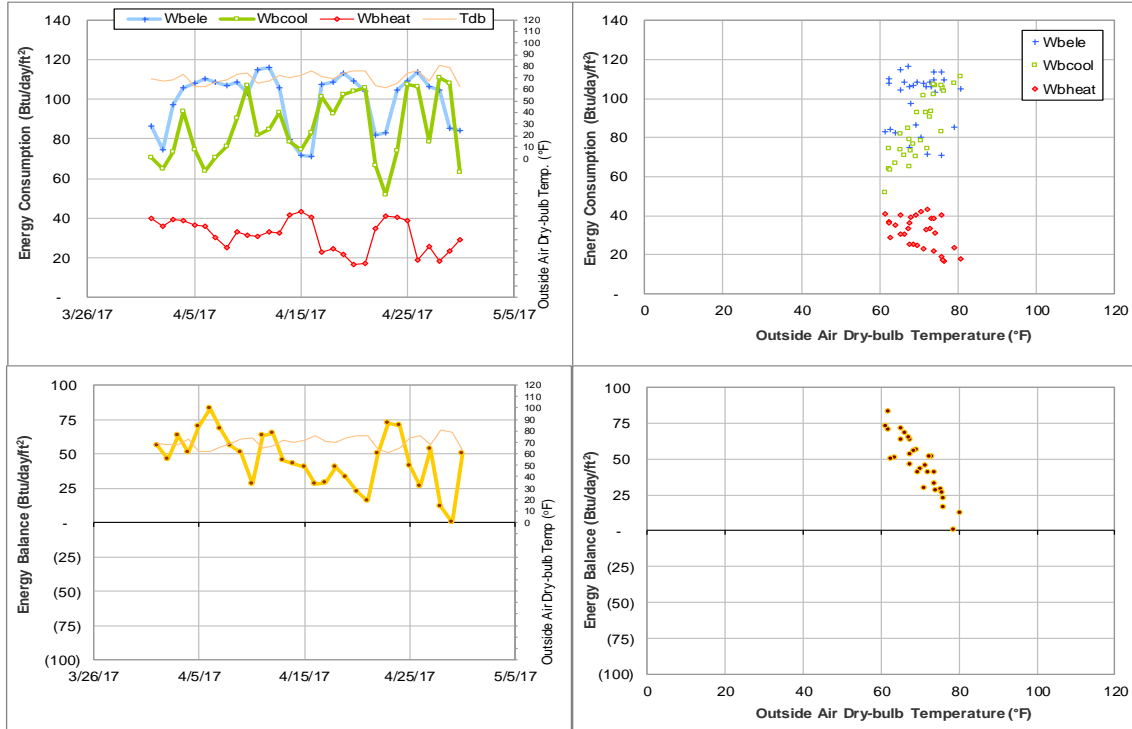


Figure IV-61 Engineering Innovation Center TAMU BLDG # 499 Energy Balance Plot during April 2017

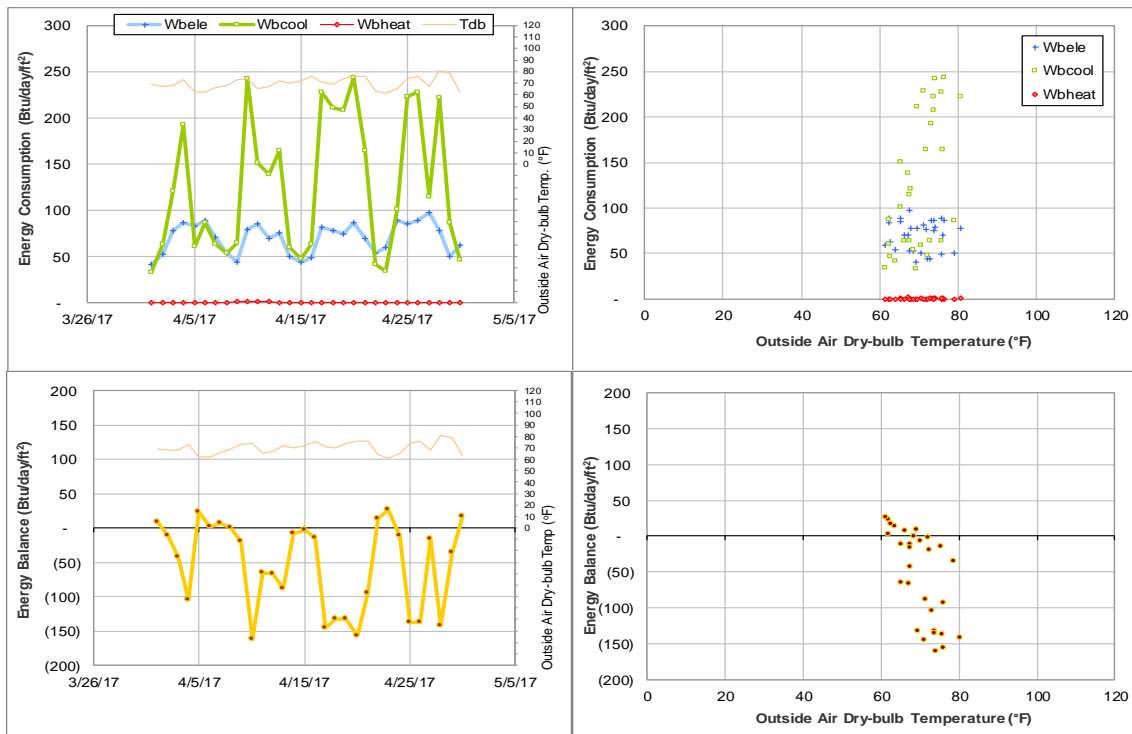


Figure IV-62 Harrington Education Center Classroom Building TAMU BLDG # 438 Energy Balance Plot during April 2017

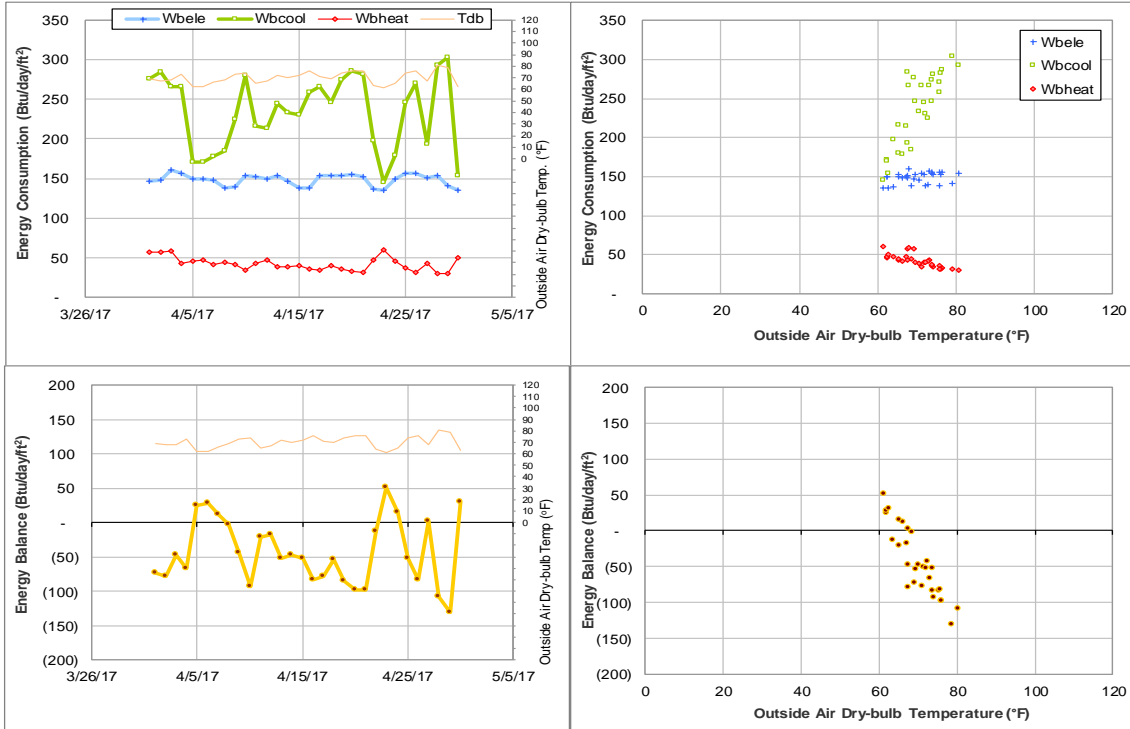


Figure IV-63 Oceanography & Meteorology Building TAMU BLDG # 443 Energy Balance Plot during April 2017

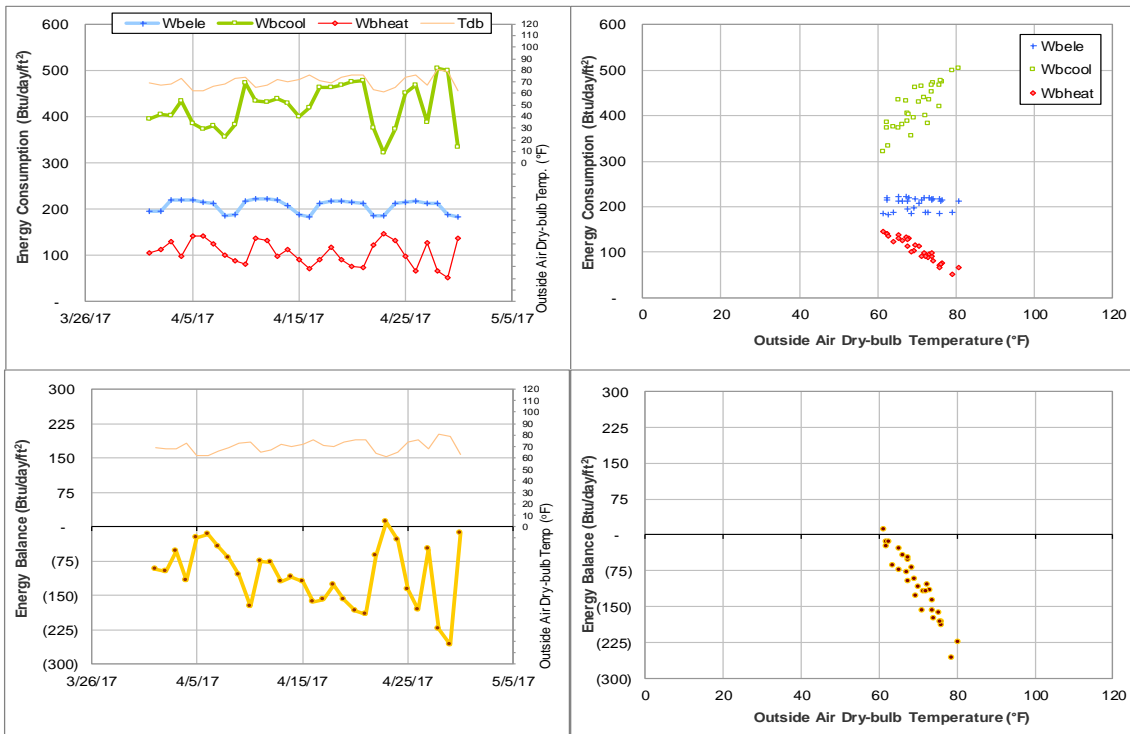


Figure IV-64 Peterson Building TAMU BLDG # 444 Energy Balance Plot during April 2017

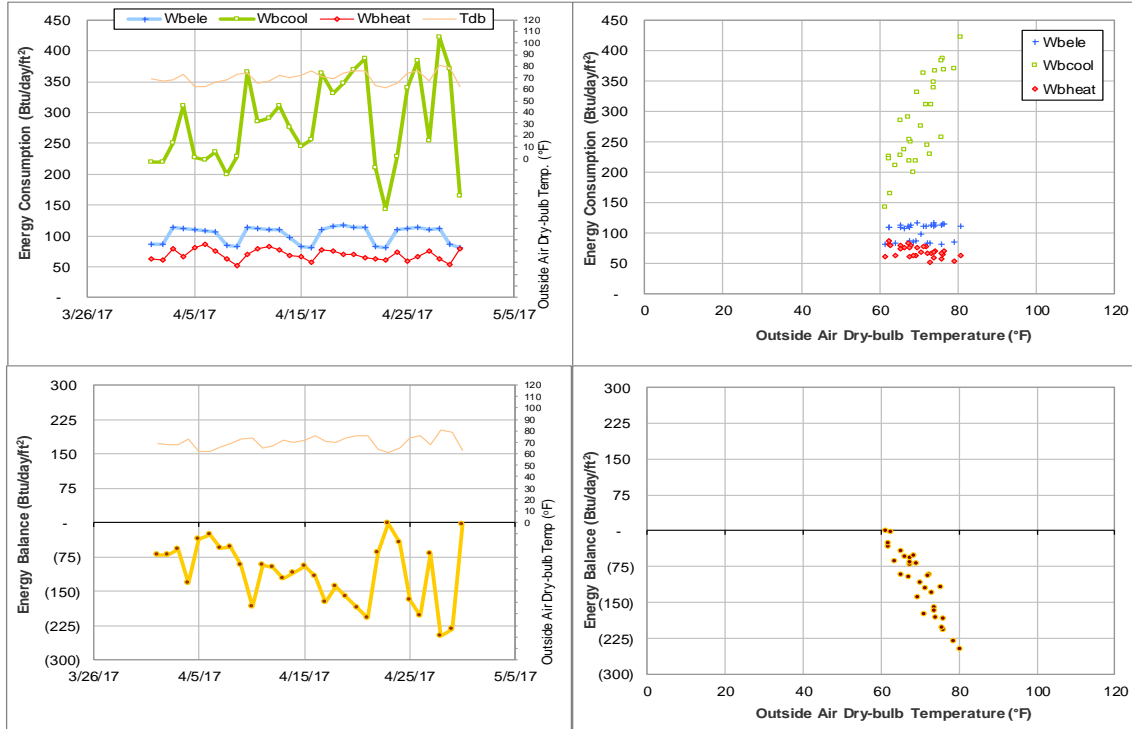


Figure IV-65 Teague Research Center and DPC Annex TAMU BLDG # 445 and #517 Energy Balance Plot during April 2017

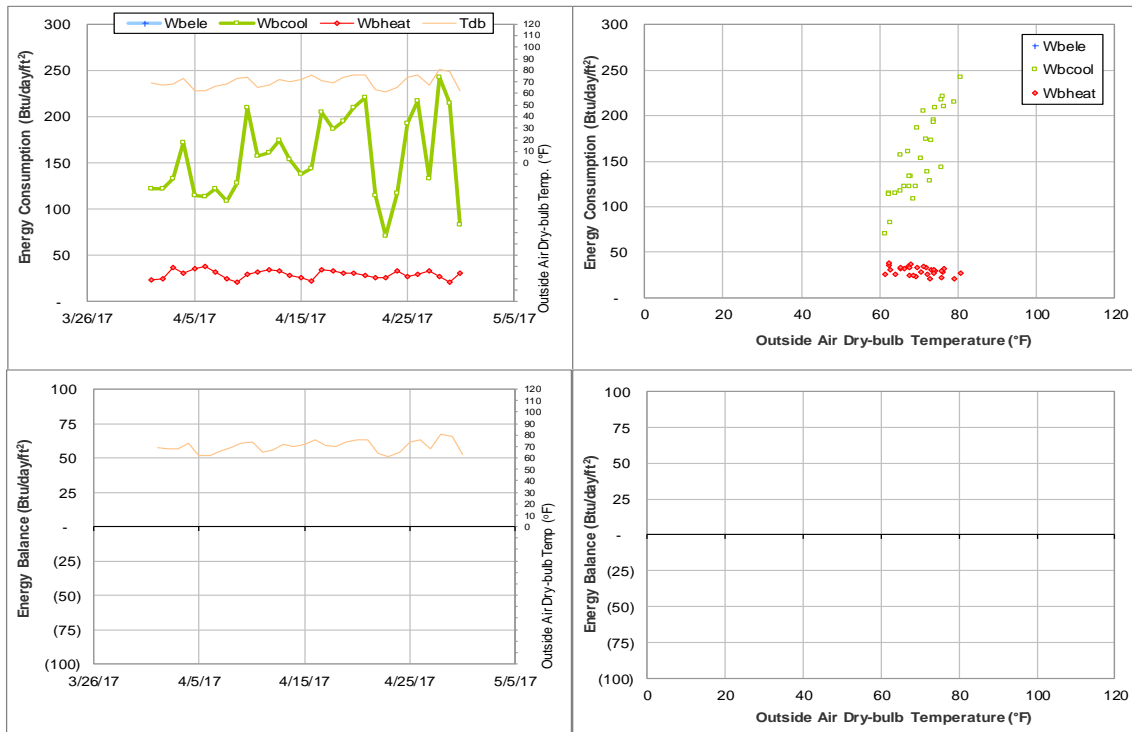


Figure IV-66 Teague Research Center TAMU BLDG # 445 Energy Balance Plot during April 2017

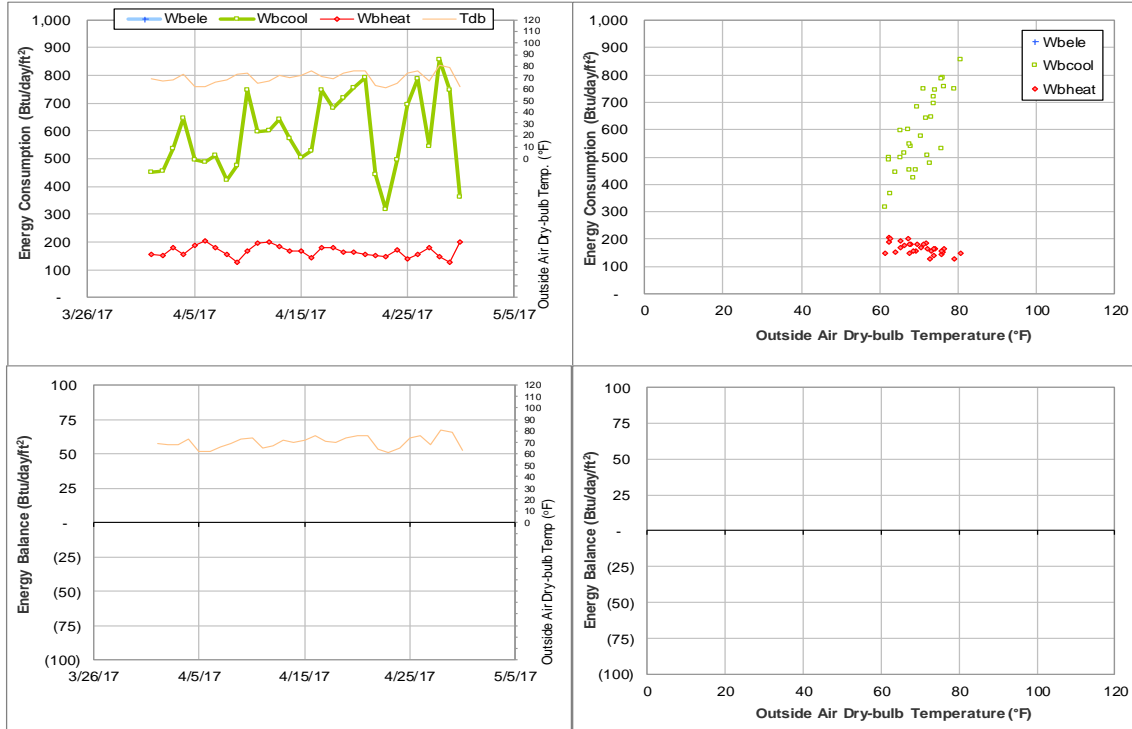


Figure IV-67 DPC Annex TAMU BLDG # 517 Energy Balance Plot during April 2017

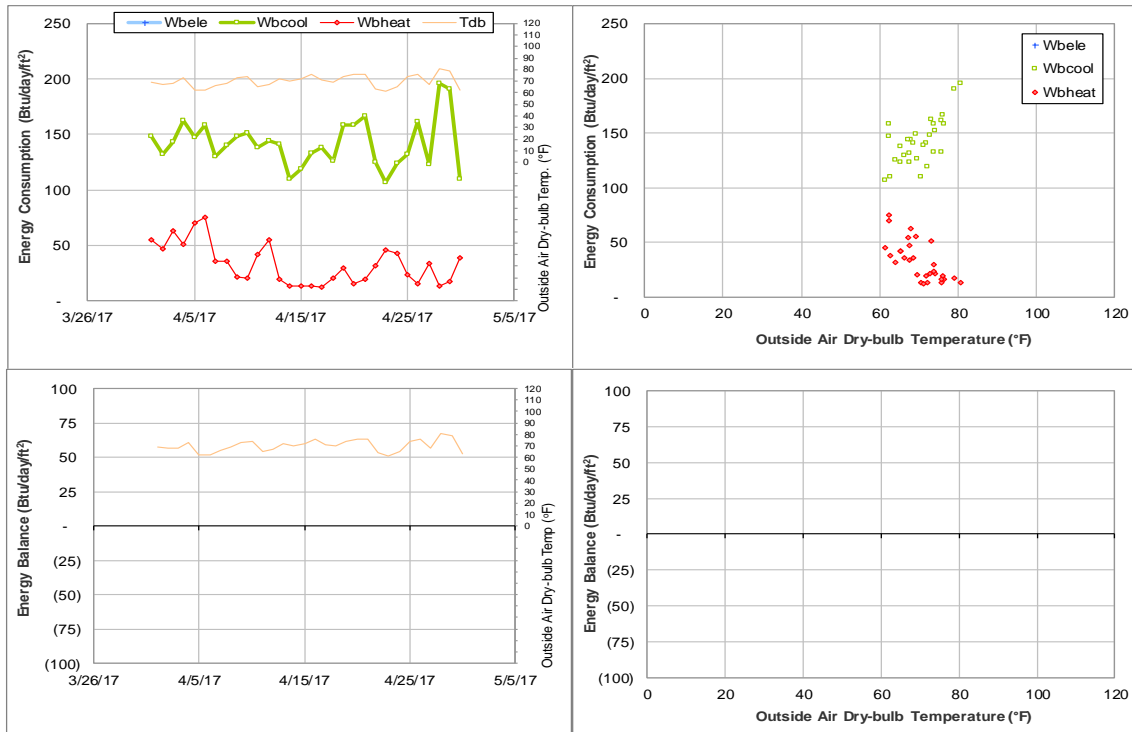


Figure IV-68 Rudder Tower and Theatre Complex TAMU BLDG # 446 Energy Balance Plot during April 2017

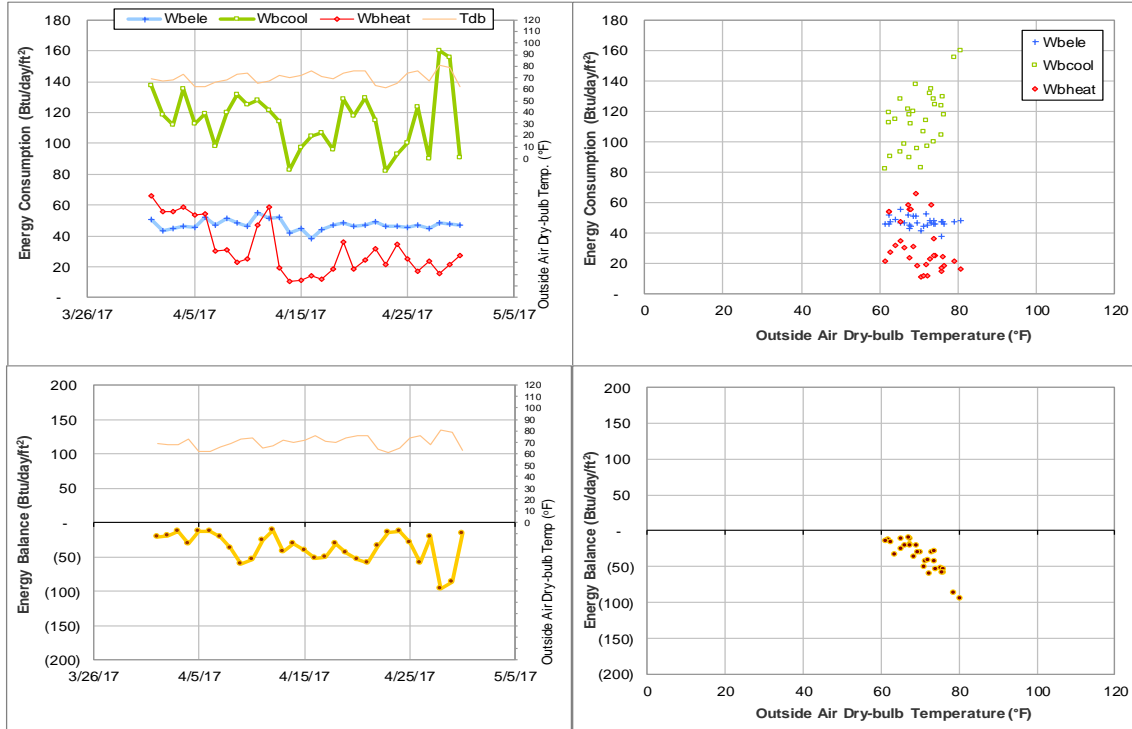


Figure IV-69 Rudder Theatre Complex TAMU BLDG # 446 Energy Balance Plot during April 2017

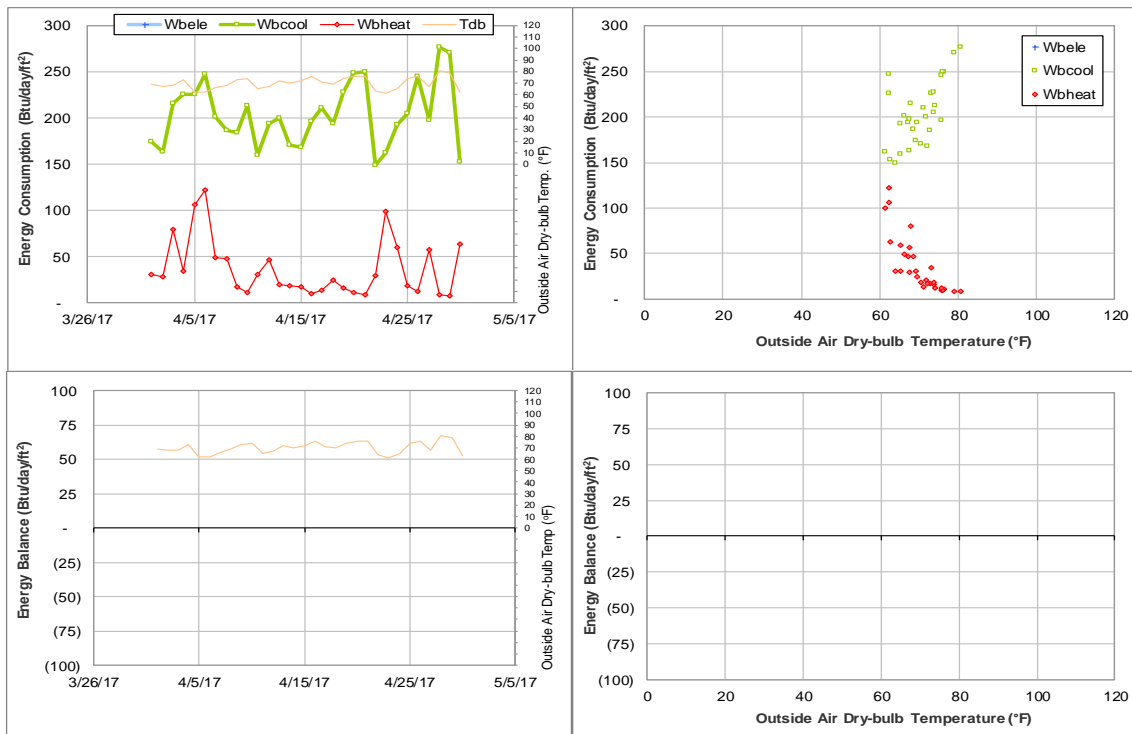


Figure IV-70 Rudder Tower TAMU BLDG # 446 Energy Balance Plot during April 2017

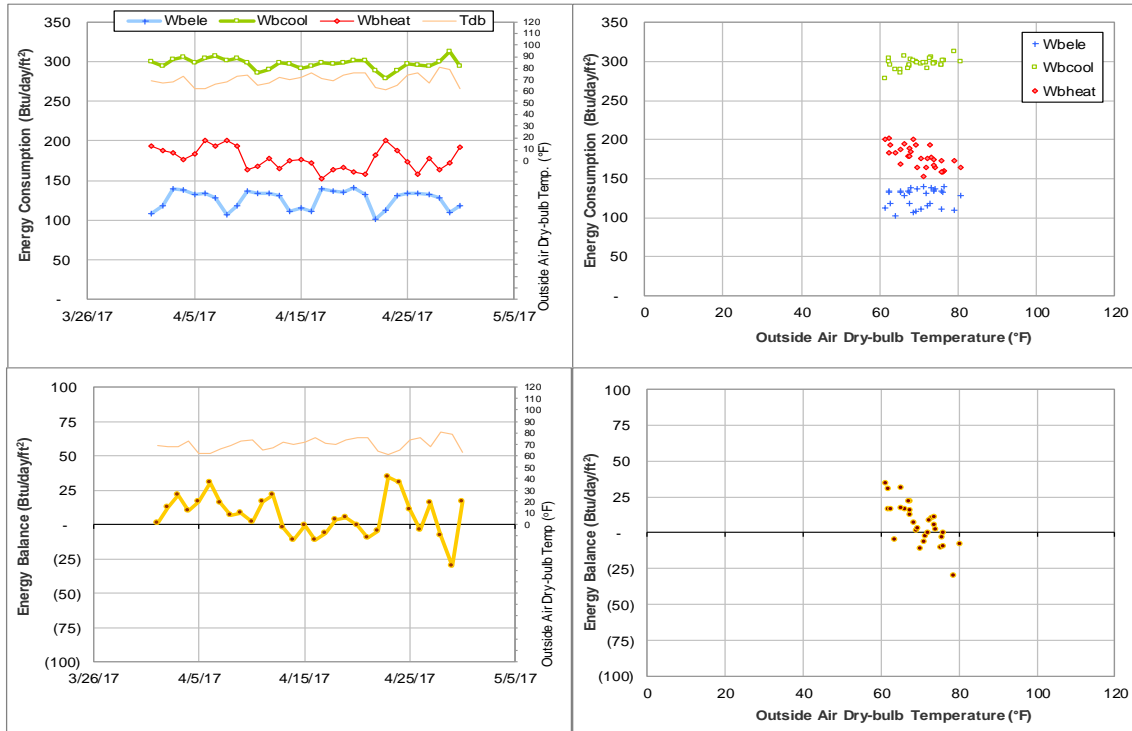


Figure IV-71 Adams Band Hall TAMU BLDG # 448 Energy Balance Plot during April 2017

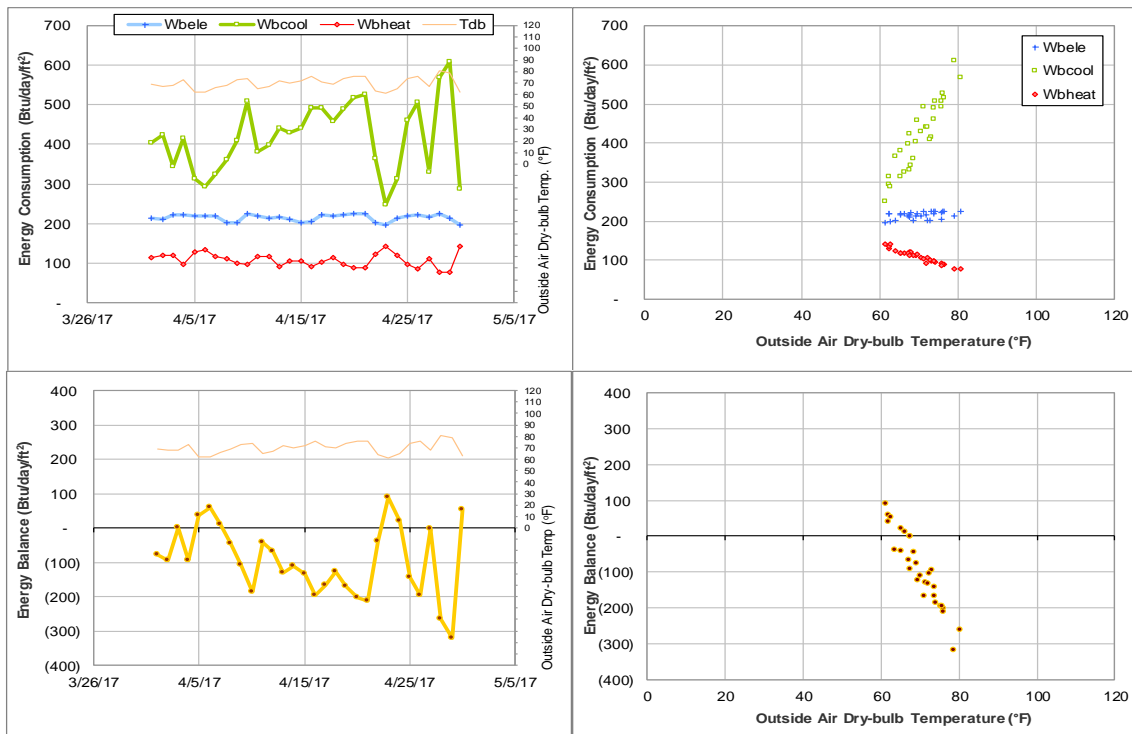


Figure IV-72 Biological Sciences Building - West TAMU BLDG # 449 Energy Balance Plot during April 2017

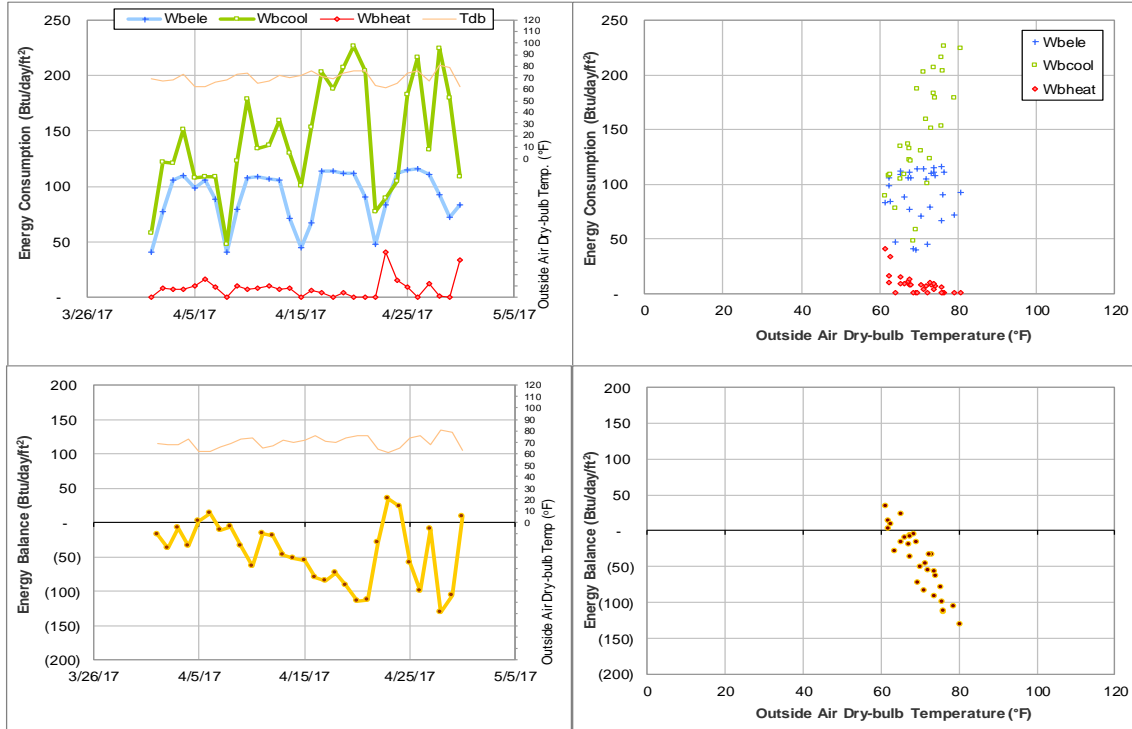


Figure IV-73 Duncan Dining Hall TAMU BLDG # 450 Energy Balance Plot during April 2017

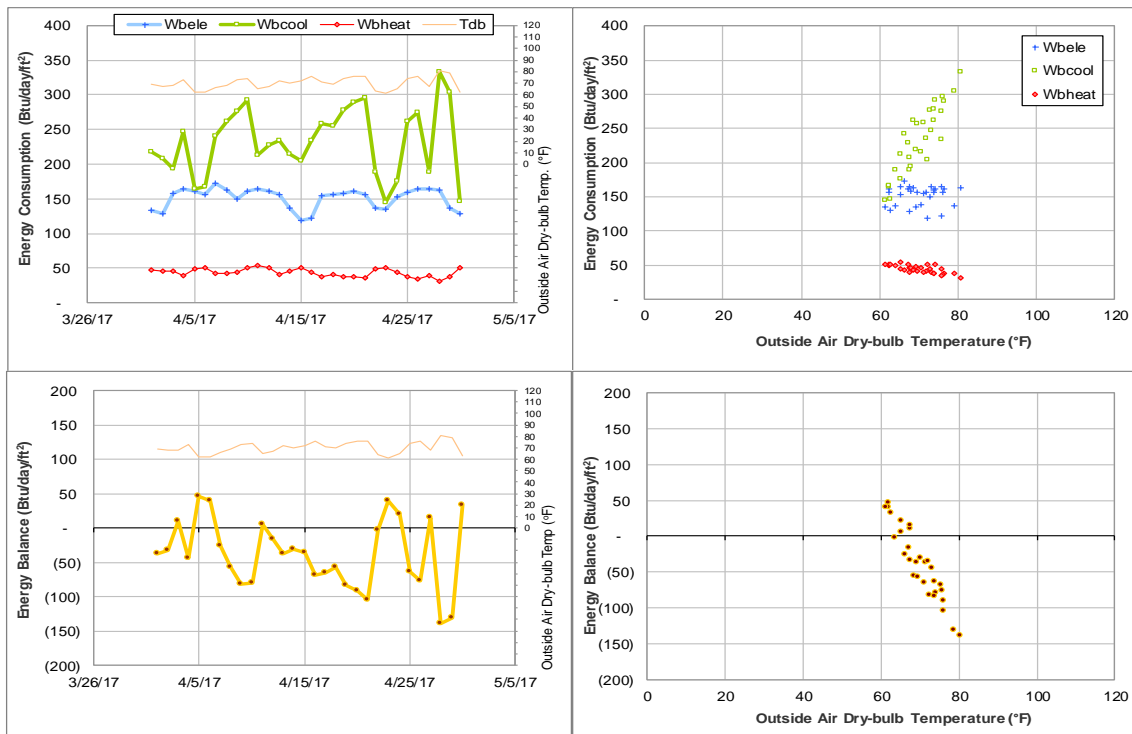


Figure IV-74 MSC TAMU BLDG # 454 Energy Balance Plot during April 2017

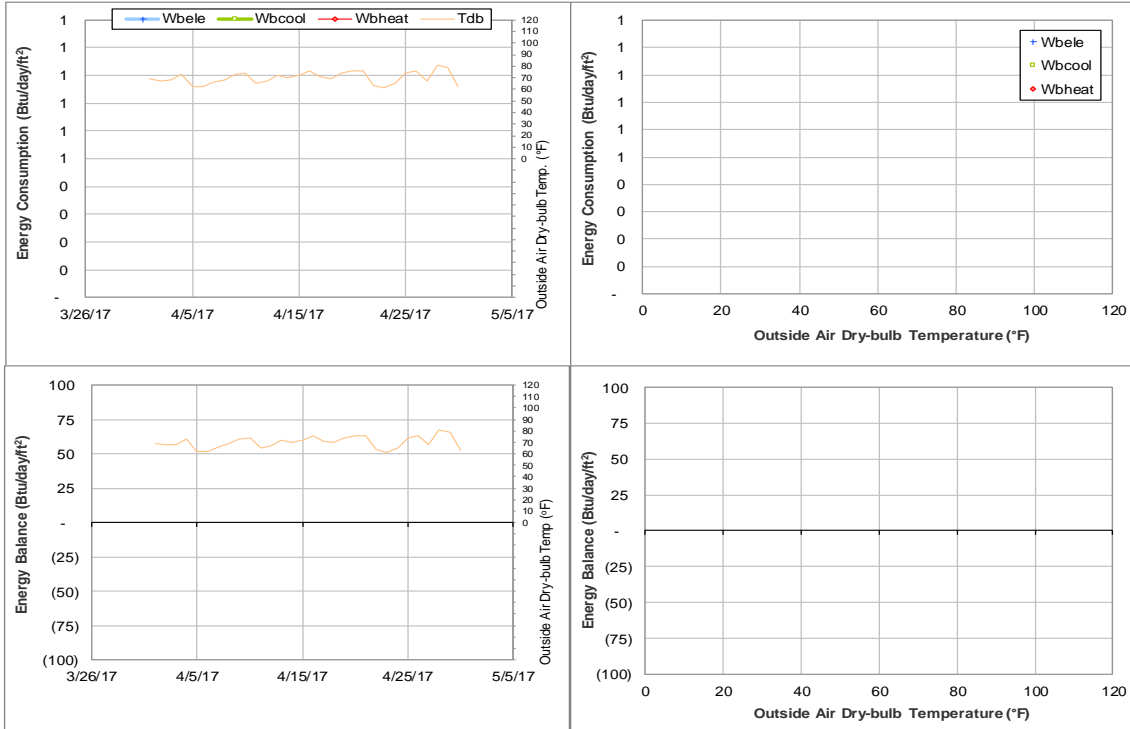


Figure IV-75 Military Sciences Building TAMU BLDG # 456 Energy Balance Plot during April 2017



Figure IV-76 TAES Annex Building TAMU BLDG # 457 Energy Balance Plot during April 2017

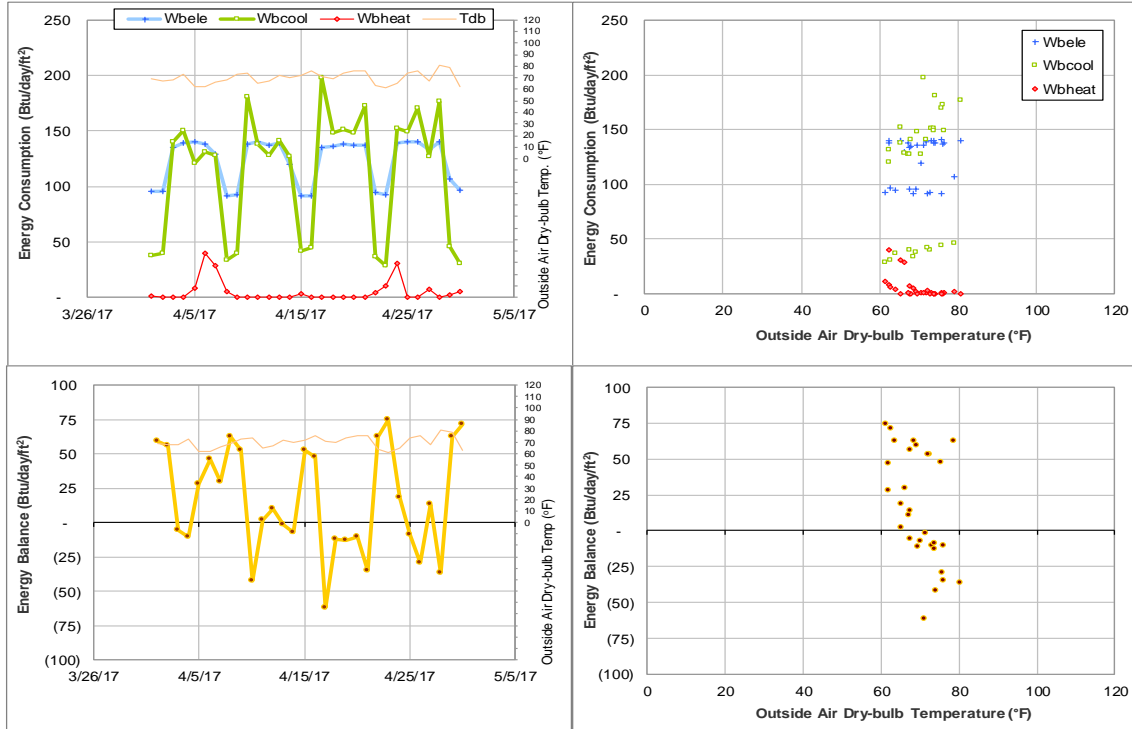


Figure IV-77 Coke Building TAMU BLDG # 461 Energy Balance Plot during April 2017

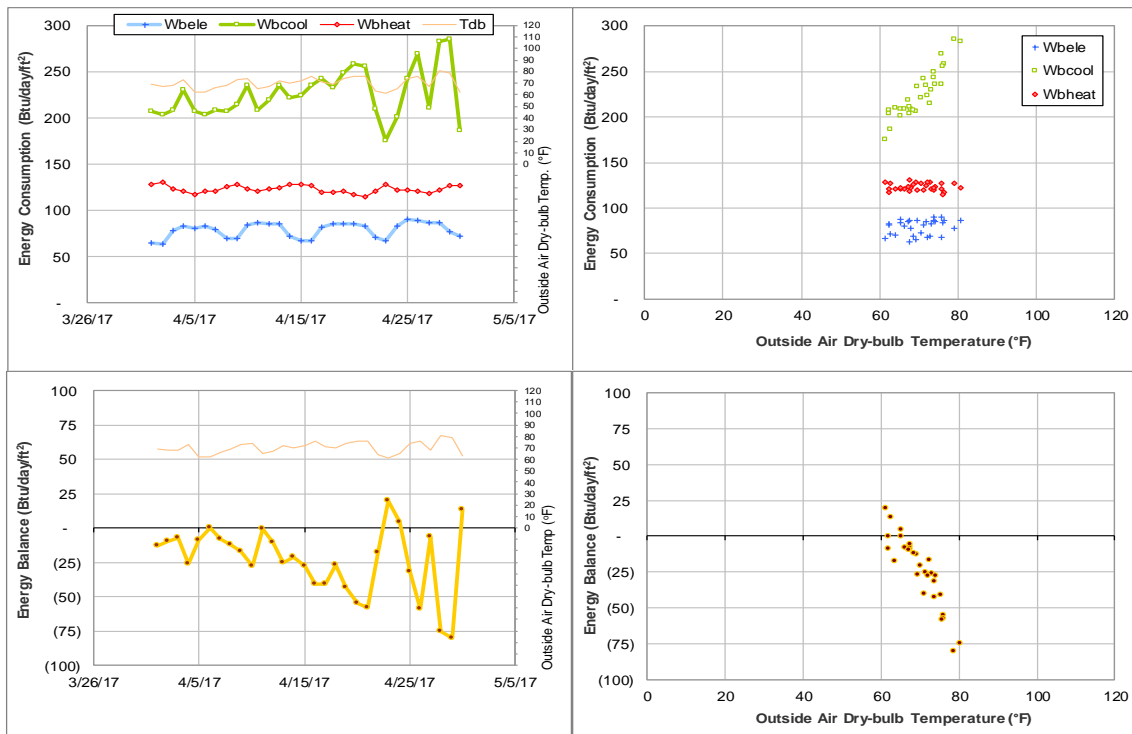


Figure IV-78 Academic Building TAMU BLDG # 462 Energy Balance Plot during April 2017

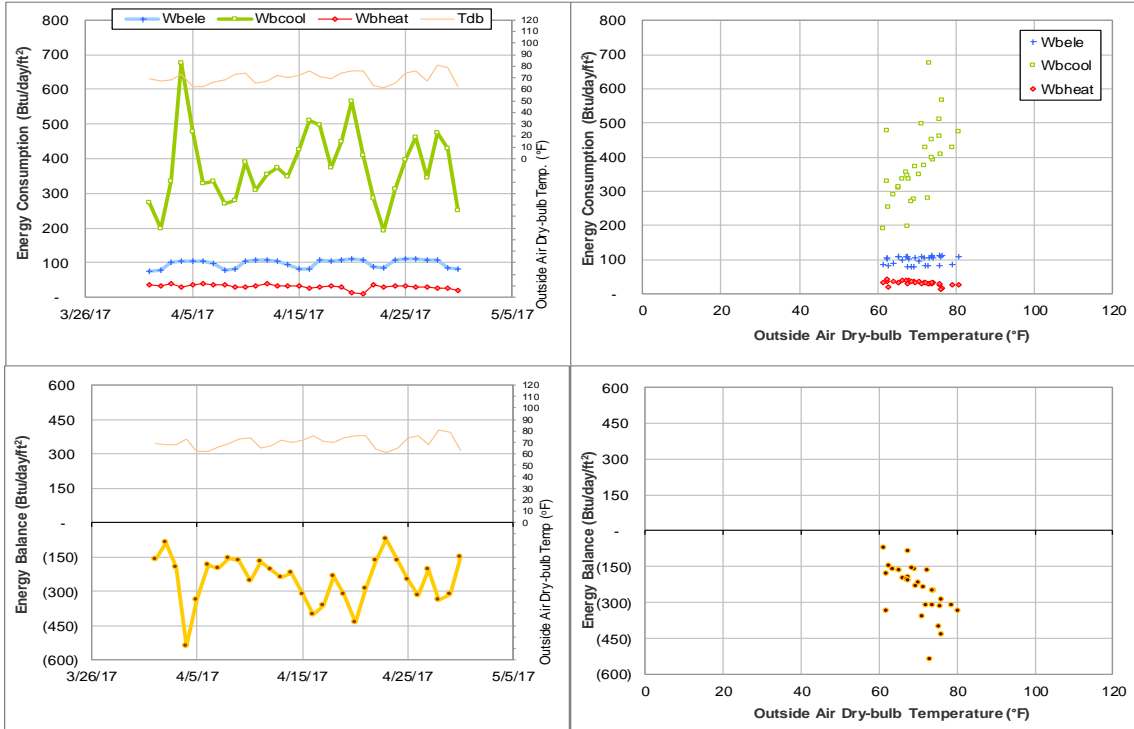


Figure IV-79 Psychology Building TAMU BLDG # 463 Energy Balance Plot during April 2017

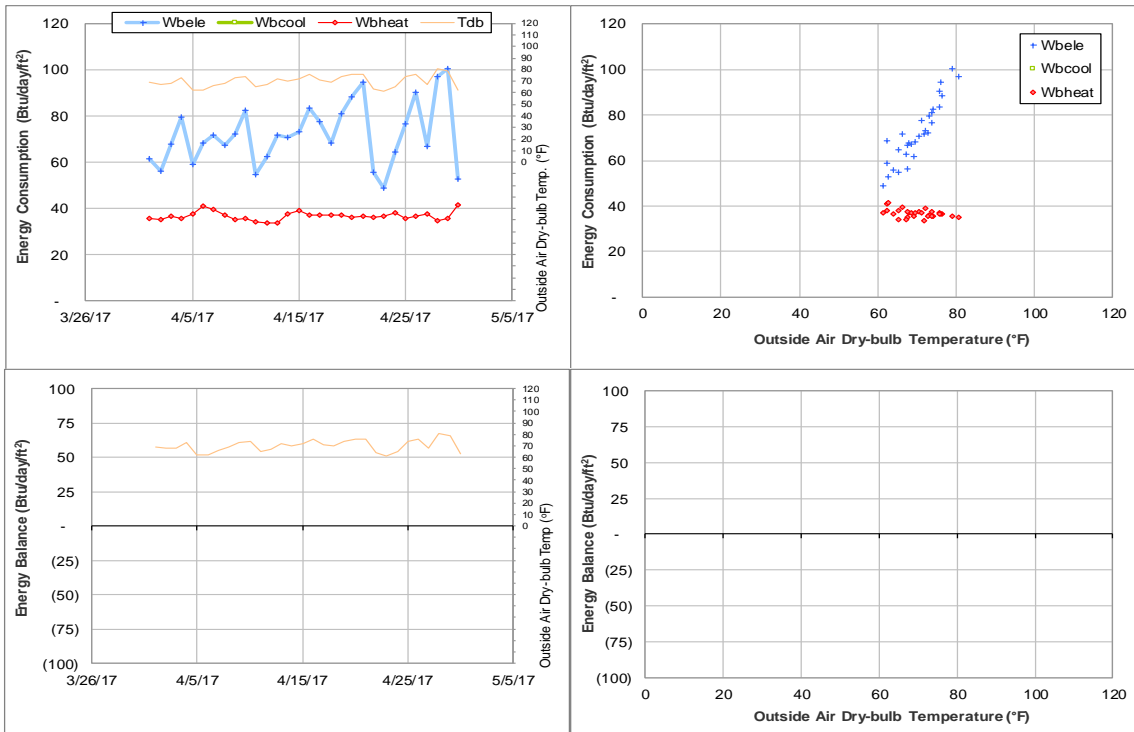


Figure IV-80 State Chemist Building TAMU BLDG # 464 Energy Balance Plot during April 2017

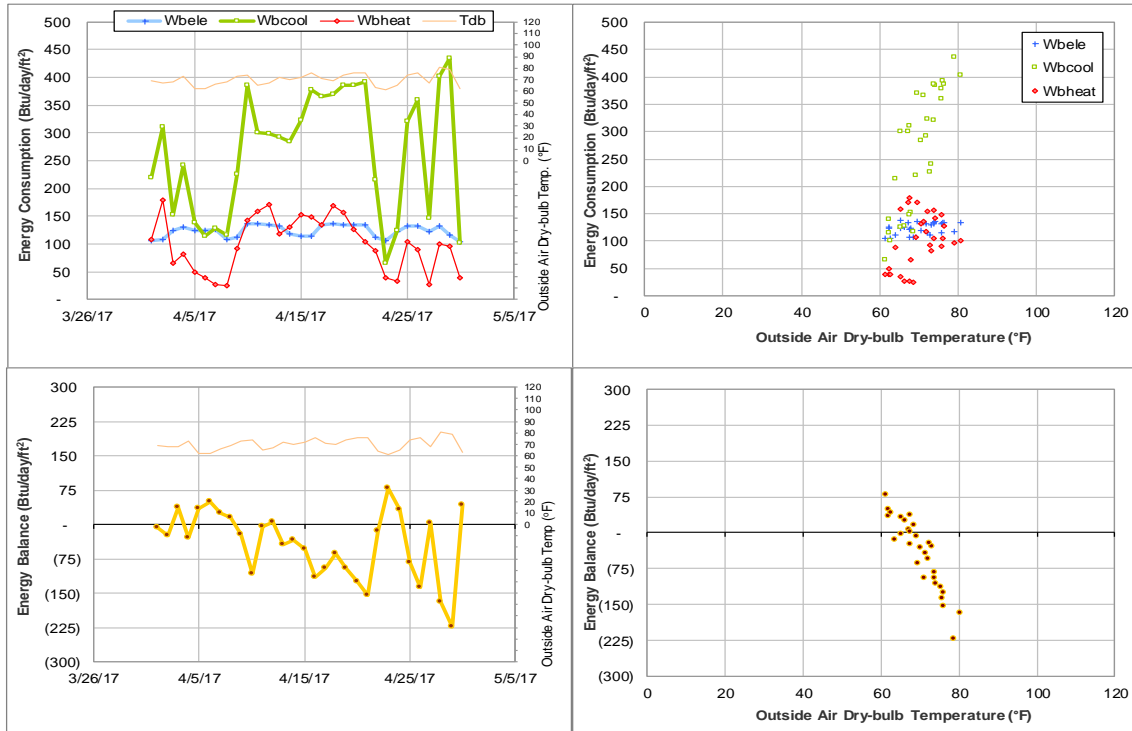


Figure IV-81 Butler Hall TAMU BLDG # 465 Energy Balance Plot during April 2017

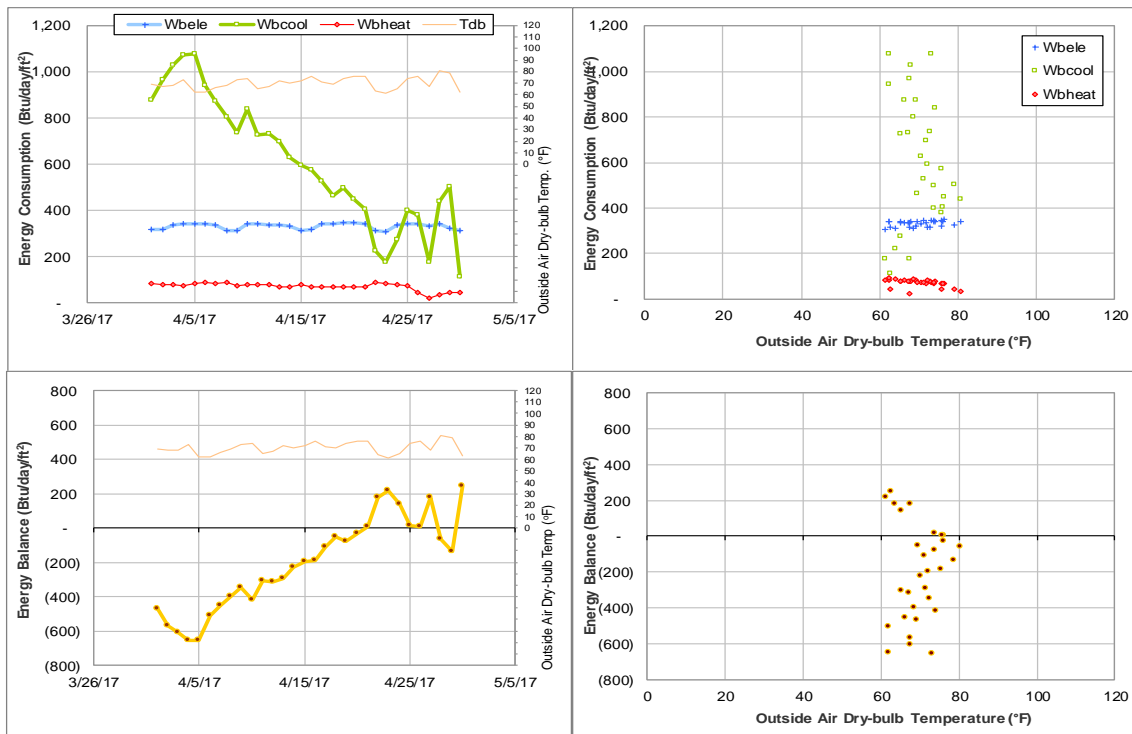


Figure IV-82 Biological Sciences Building - East TAMU BLDG # 467 Energy Balance Plot during April 2017

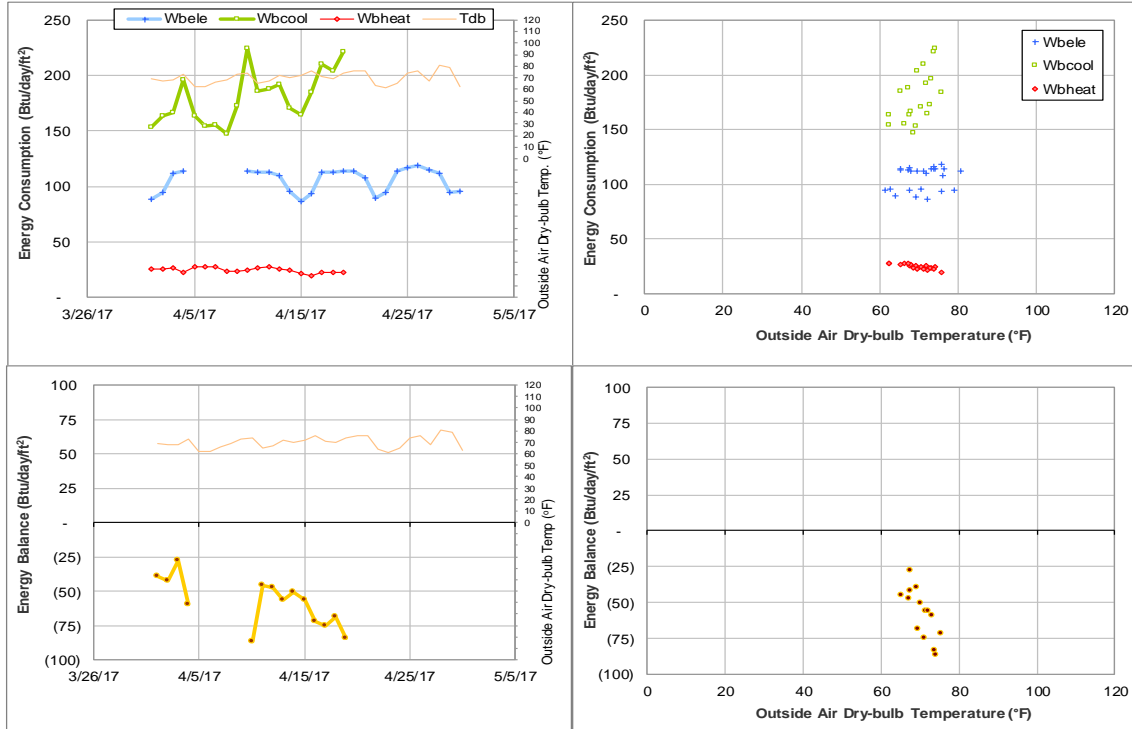


Figure IV-83 Evans Library TAMU BLDG # 468 Energy Balance Plot during April 2017

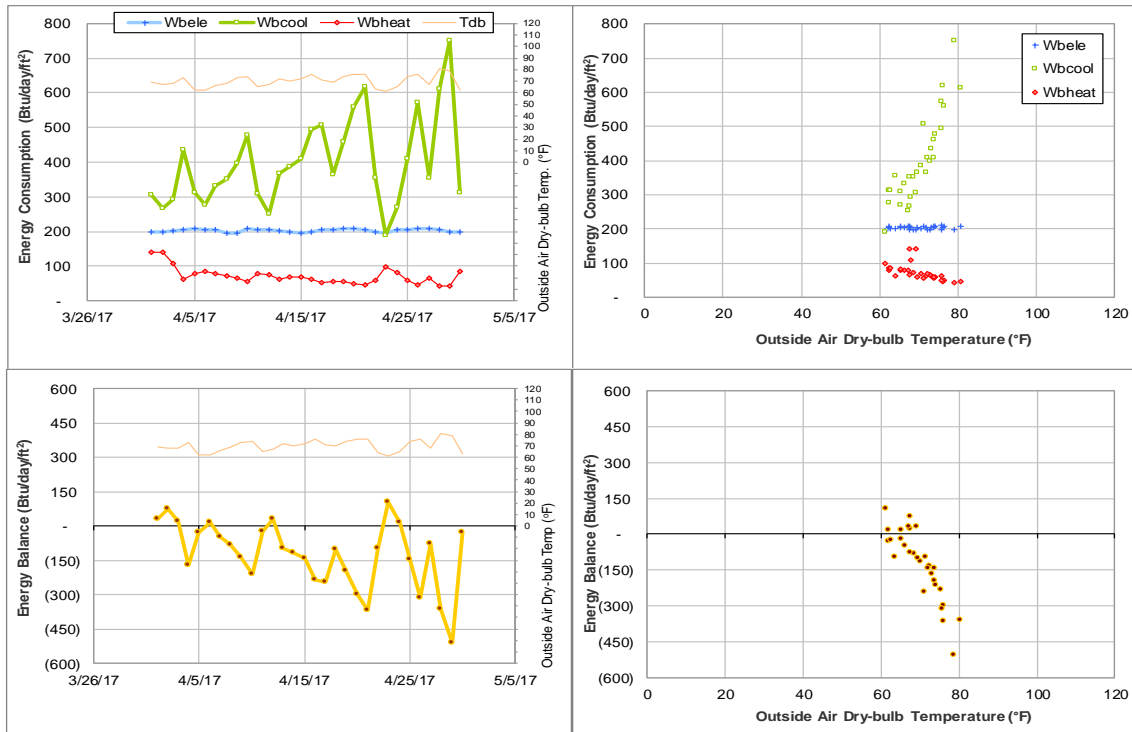


Figure IV-84 Central Campus Parking Garage TAMU BLDG # 469 Energy Balance Plot during April 2017

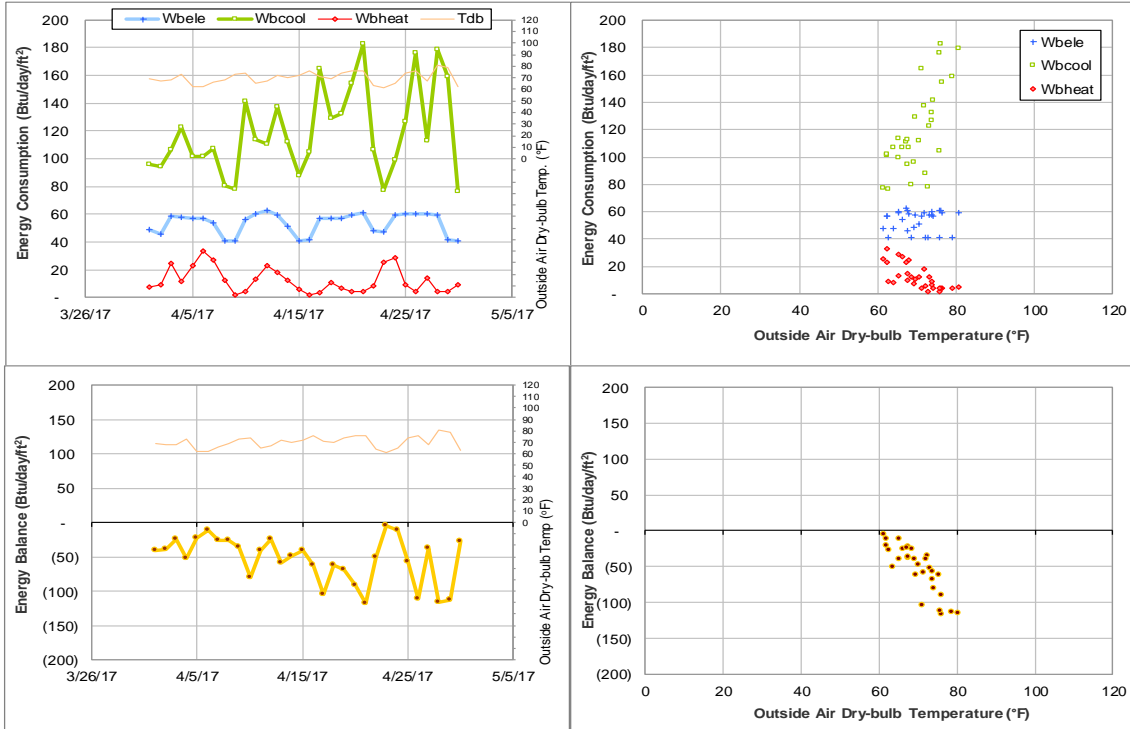


Figure IV-85 Glasscock History Bldg TAMU BLDG # 470 Energy Balance Plot during April 2017

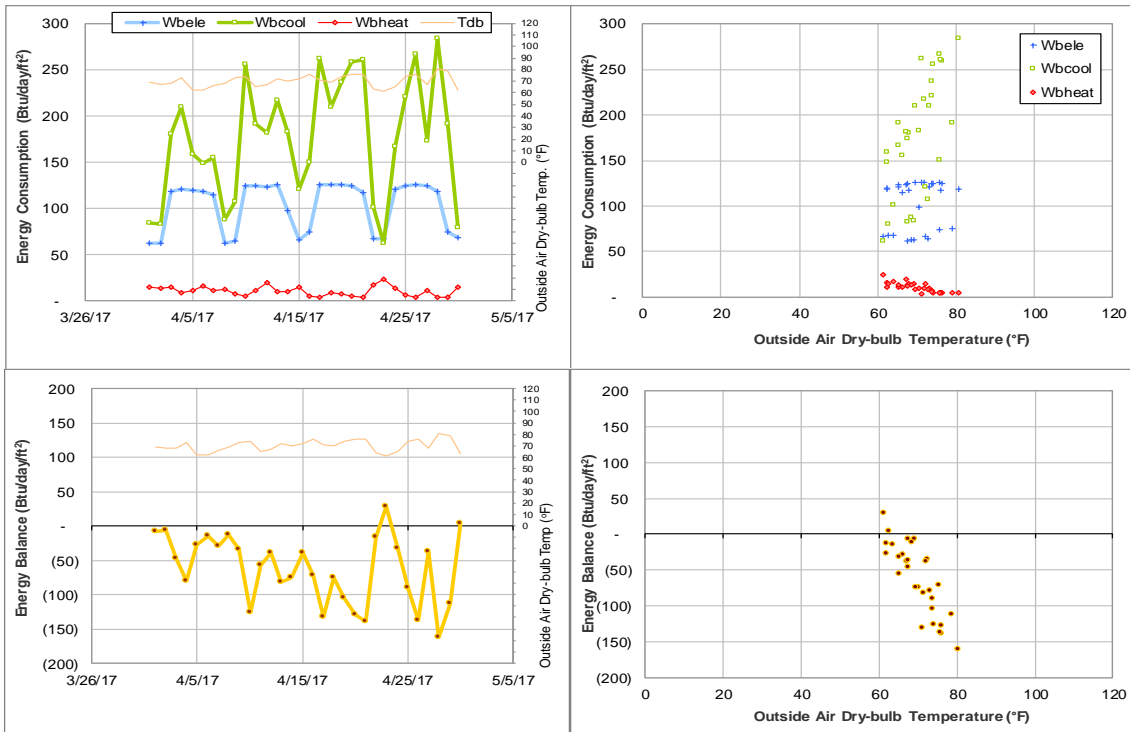


Figure IV-86 Pavilion TAMU BLDG # 471 Energy Balance Plot during April 2017

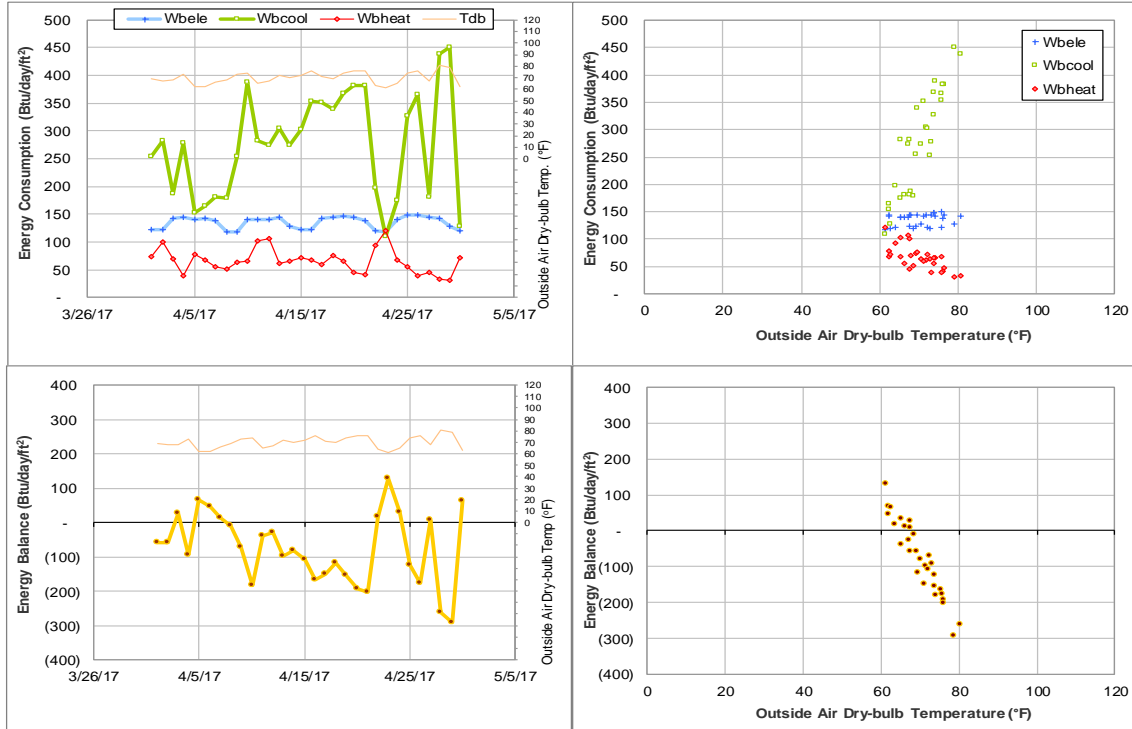


Figure IV-87 Animal Industries TAMU BLDG # 472 Energy Balance Plot during April 2017

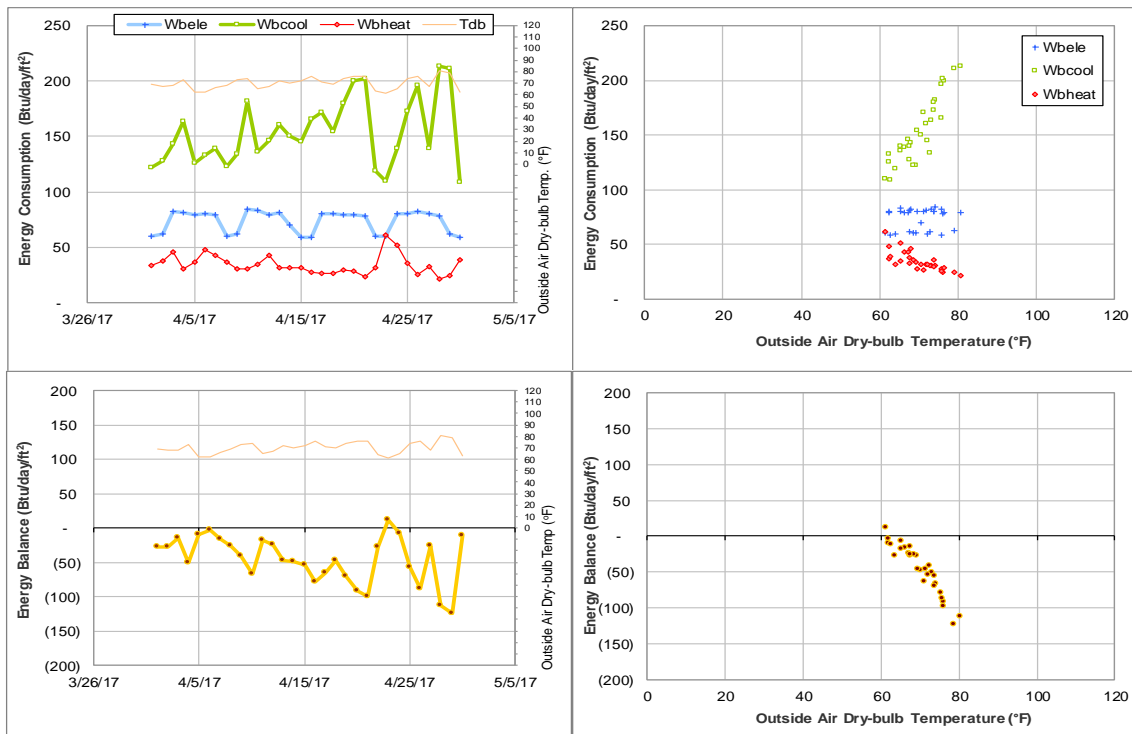


Figure IV-88 Williams Administration Building TAMU BLDG # 473 Energy Balance Plot during April 2017

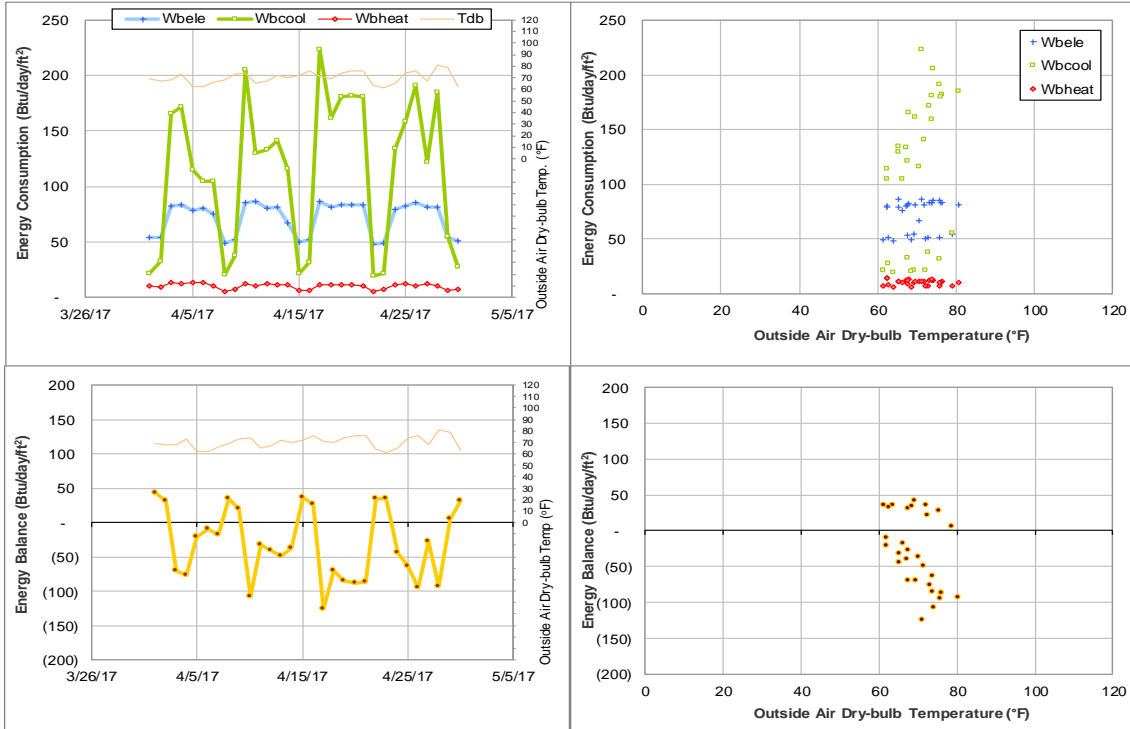


Figure IV-89 YMCA Building TAMU BLDG # 474 Energy Balance Plot during April 2017

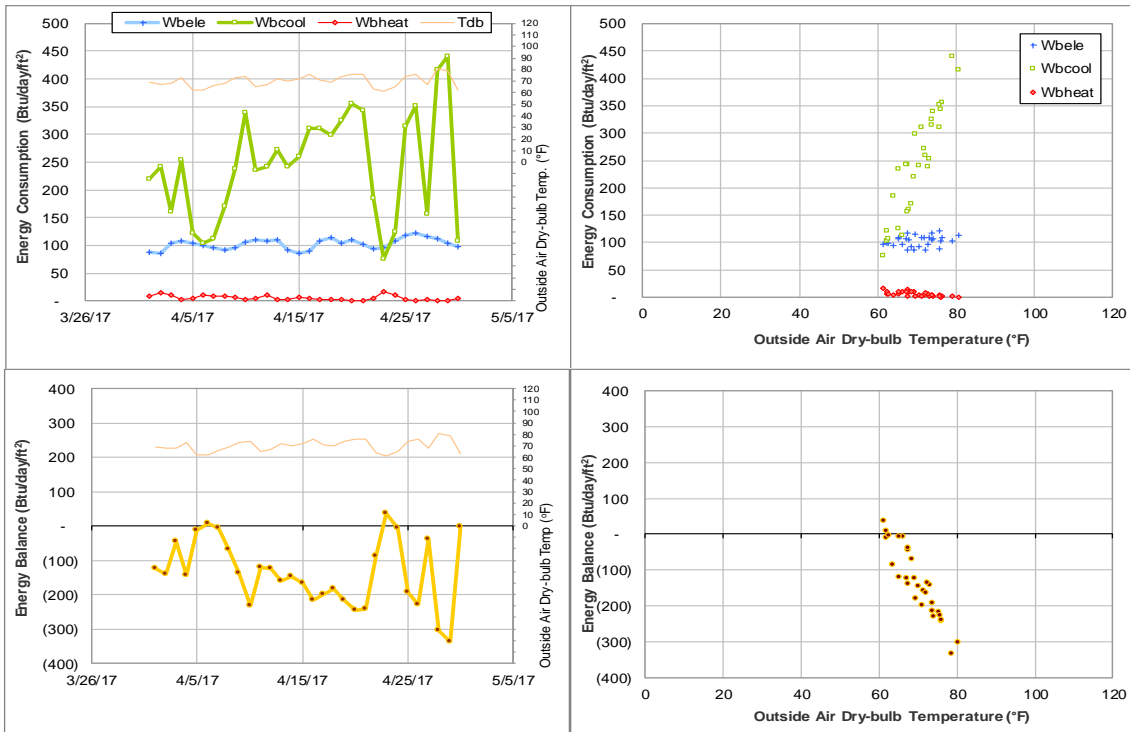


Figure IV-90 Francis Hall TAMU BLDG # 476 Energy Balance Plot during April 2017

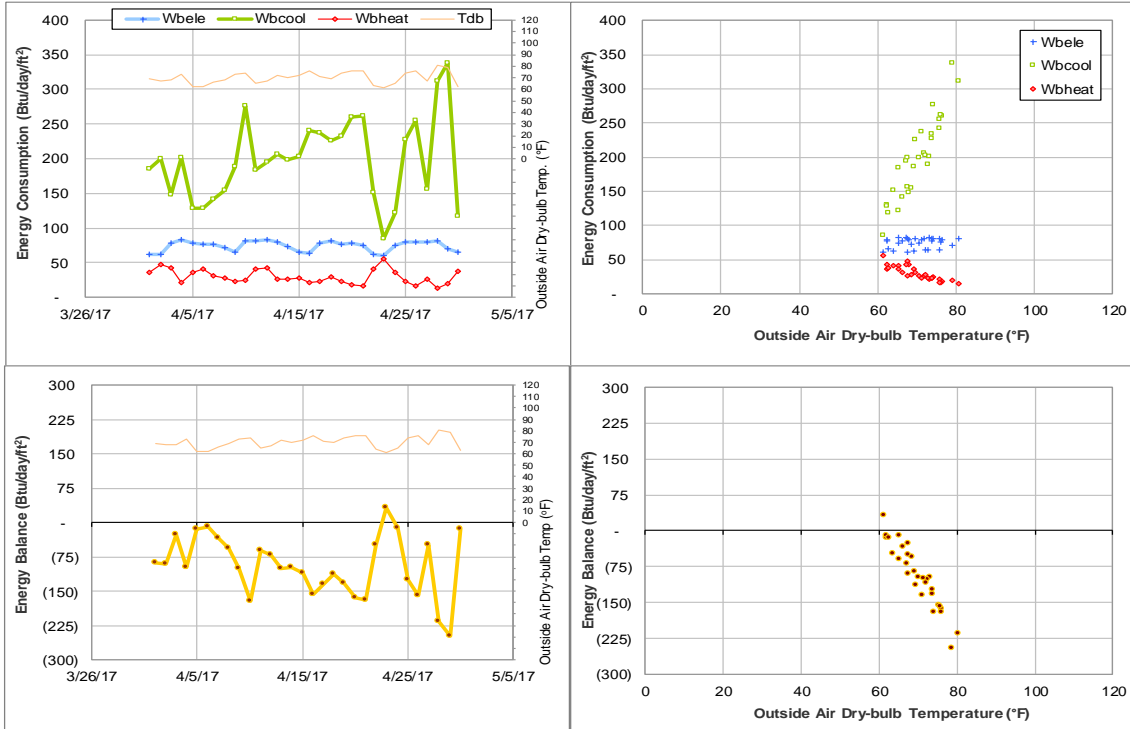


Figure IV-91 Anthropology Building TAMU BLDG # 477 Energy Balance Plot during April 2017

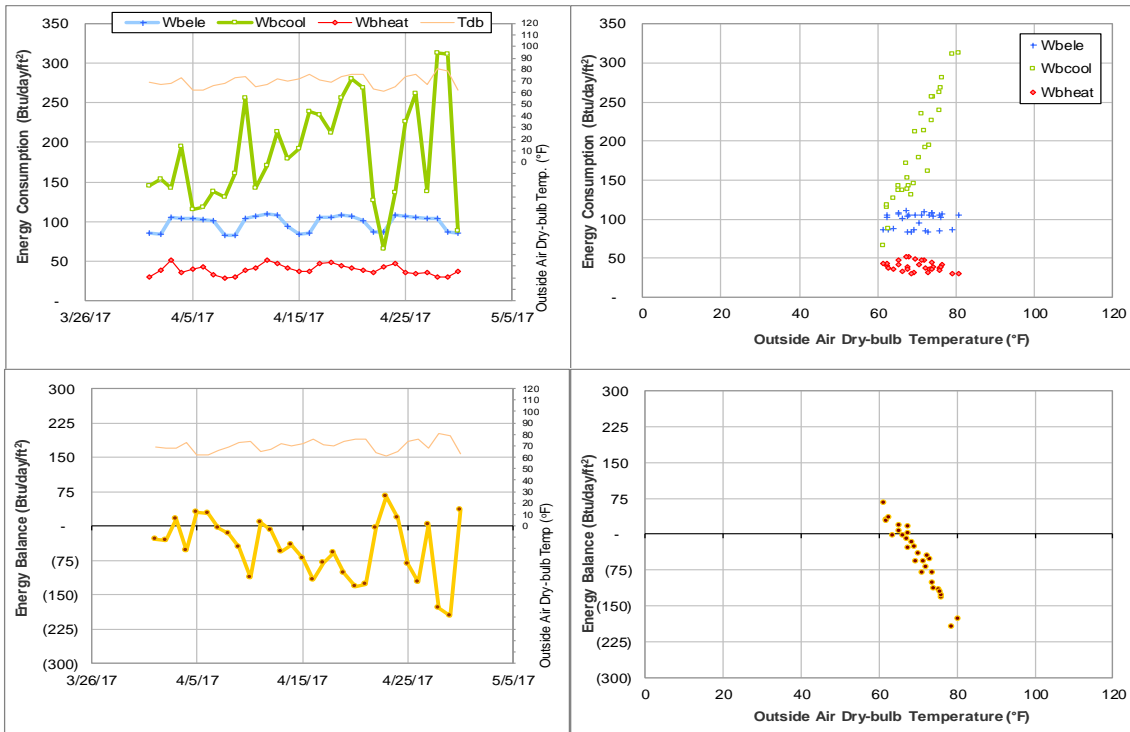


Figure IV-92 Scoates Hall TAMU BLDG # 478 Energy Balance Plot during April 2017

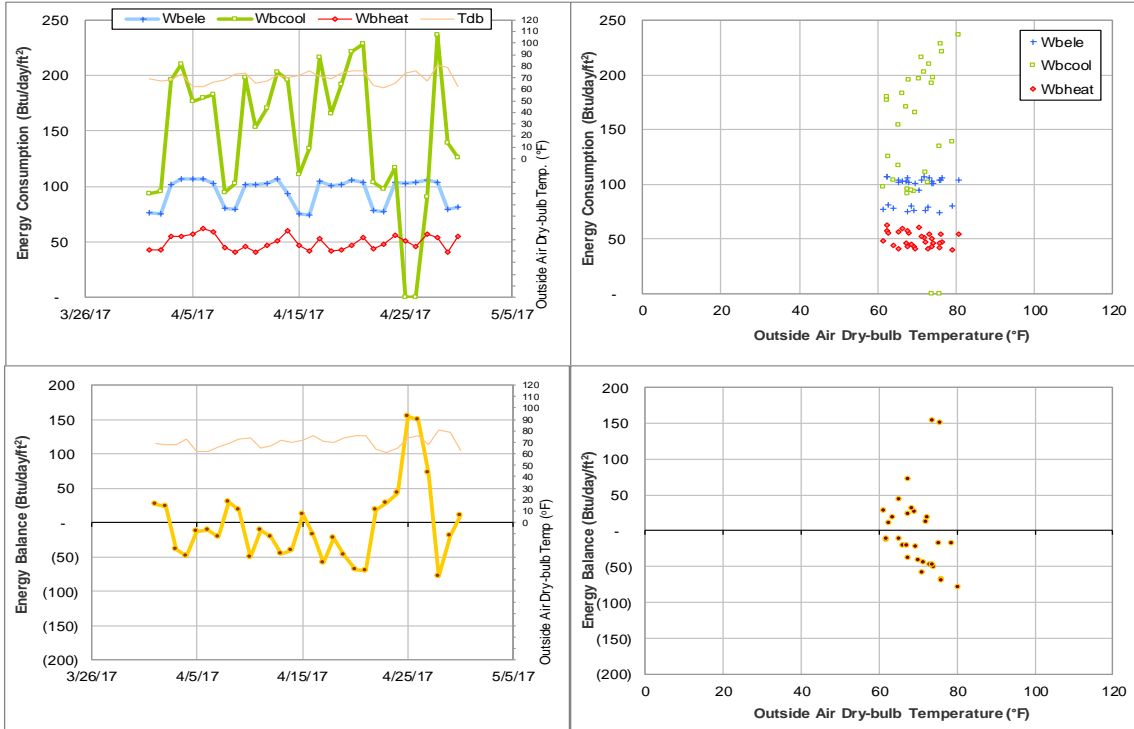


Figure IV-93 Bolton Hall TAMU BLDG # 480 Energy Balance Plot during April 2017

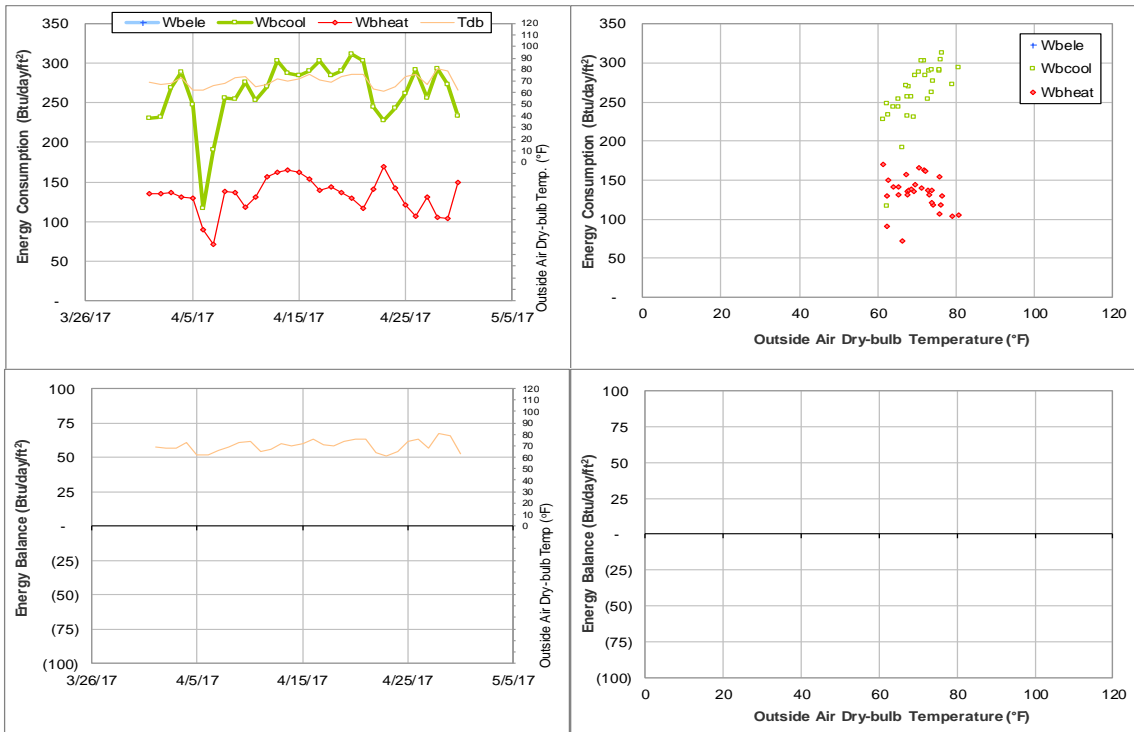


Figure IV-94 Heaton Hall TAMU BLDG # 481 Energy Balance Plot during April 2017

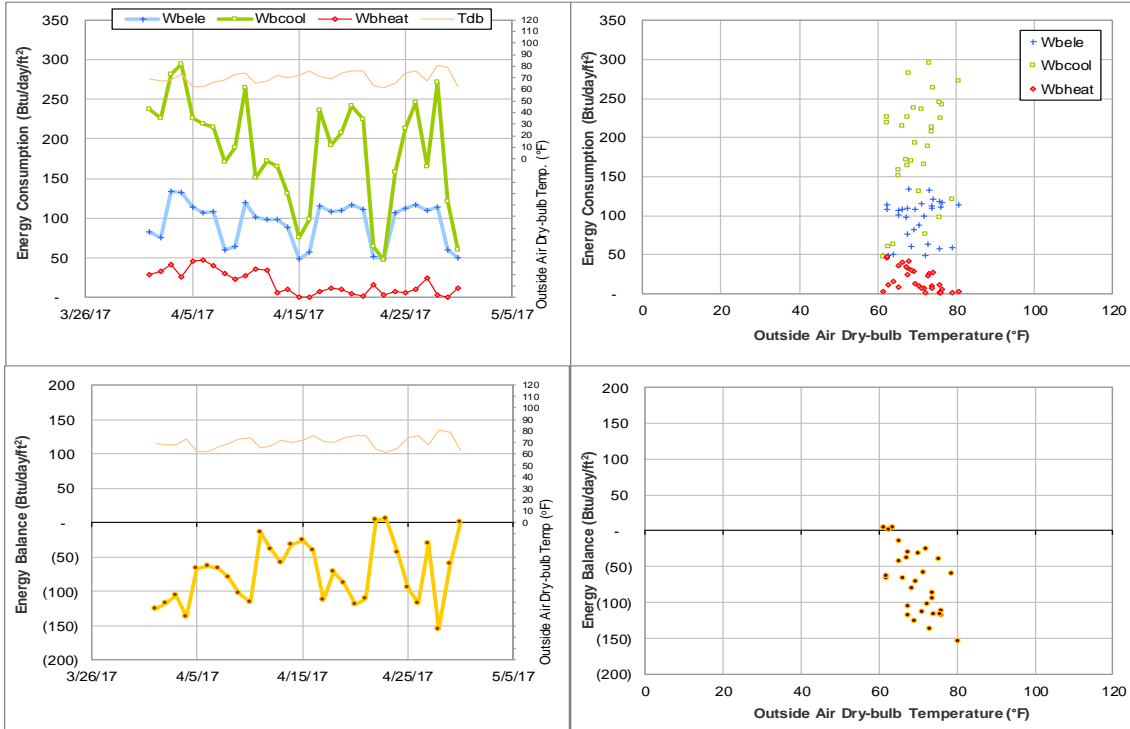


Figure IV-95 Fermier Hall TAMU BLDG # 482 Energy Balance Plot during April 2017

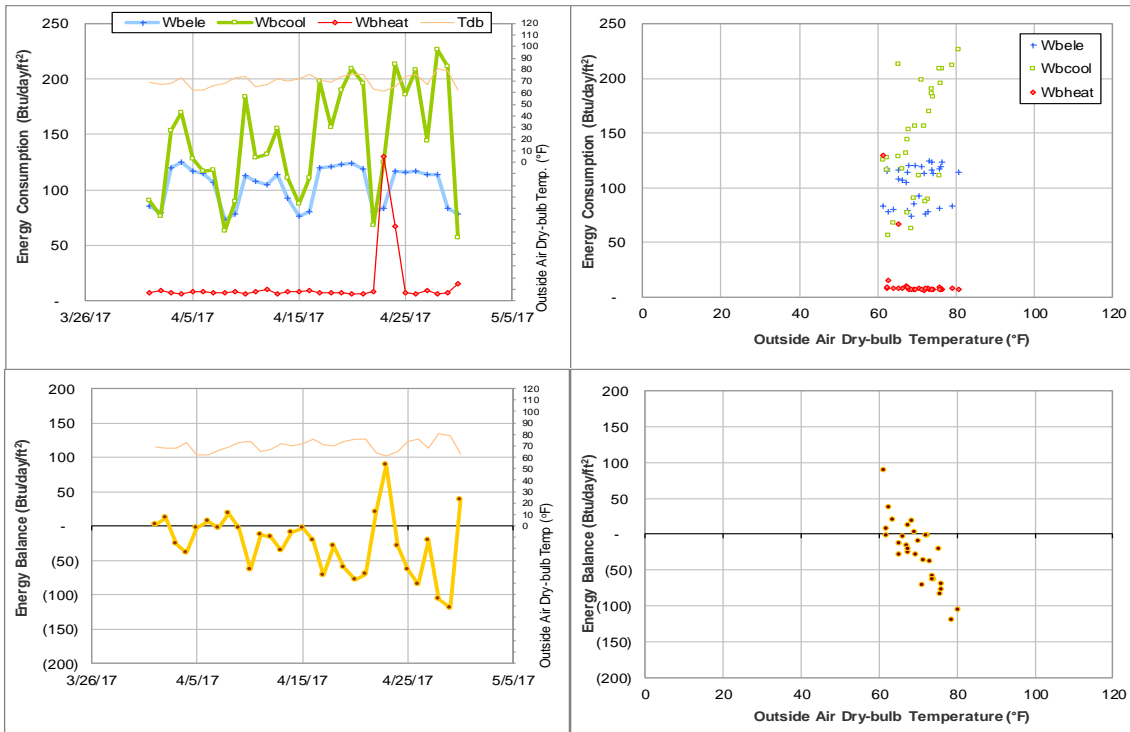


Figure IV-96 Thompson Hall TAMU BLDG # 483 Energy Balance Plot during April 2017

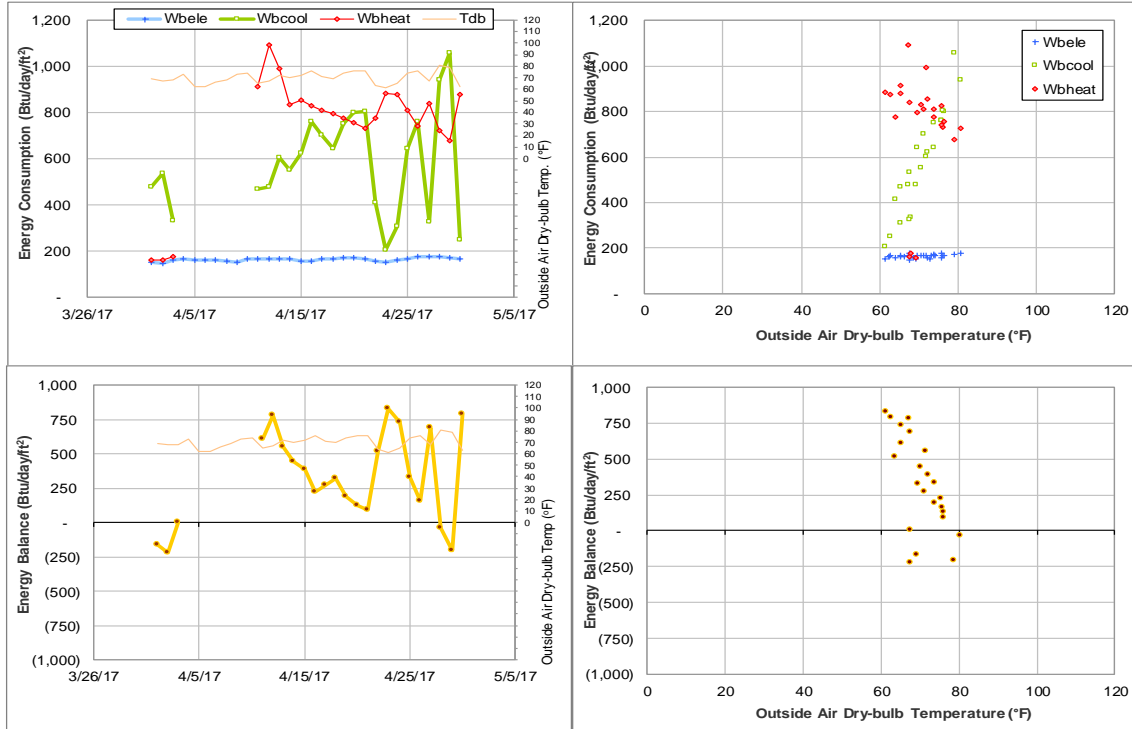


Figure IV-97 Chemistry Building TAMU BLDG # 484 Energy Balance Plot during April 2017

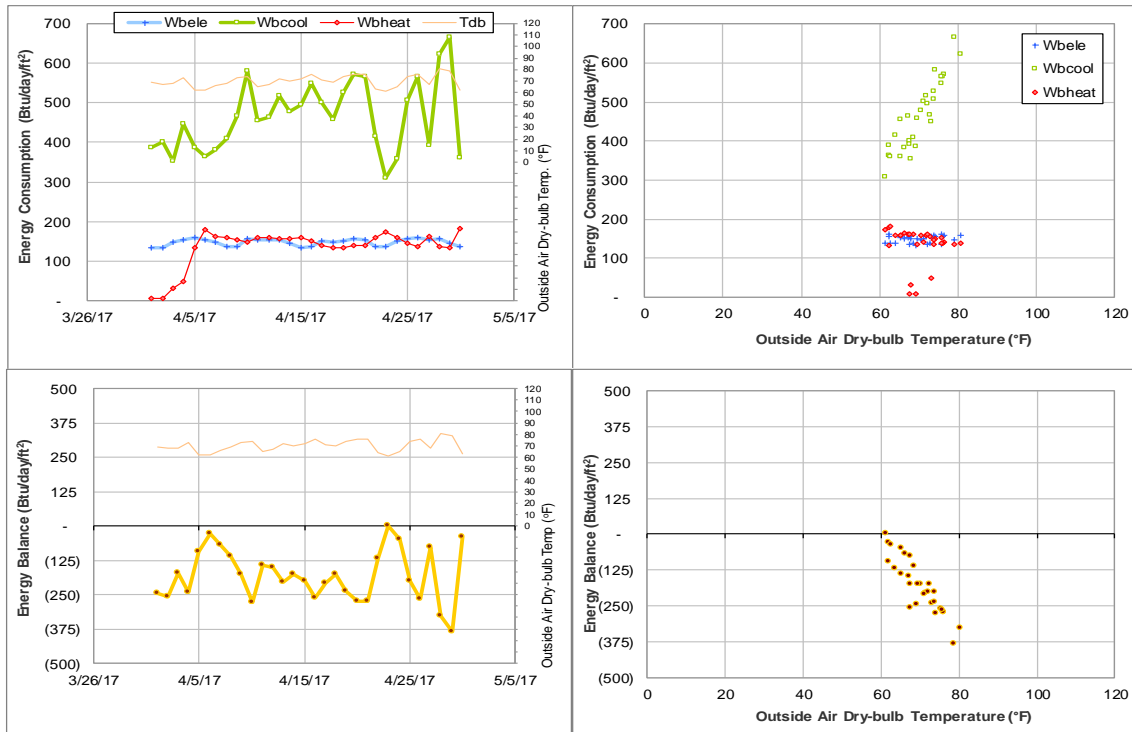


Figure IV-98 Halbouty Geosciences Building TAMU BLDG # 490 Energy Balance Plot during April 2017

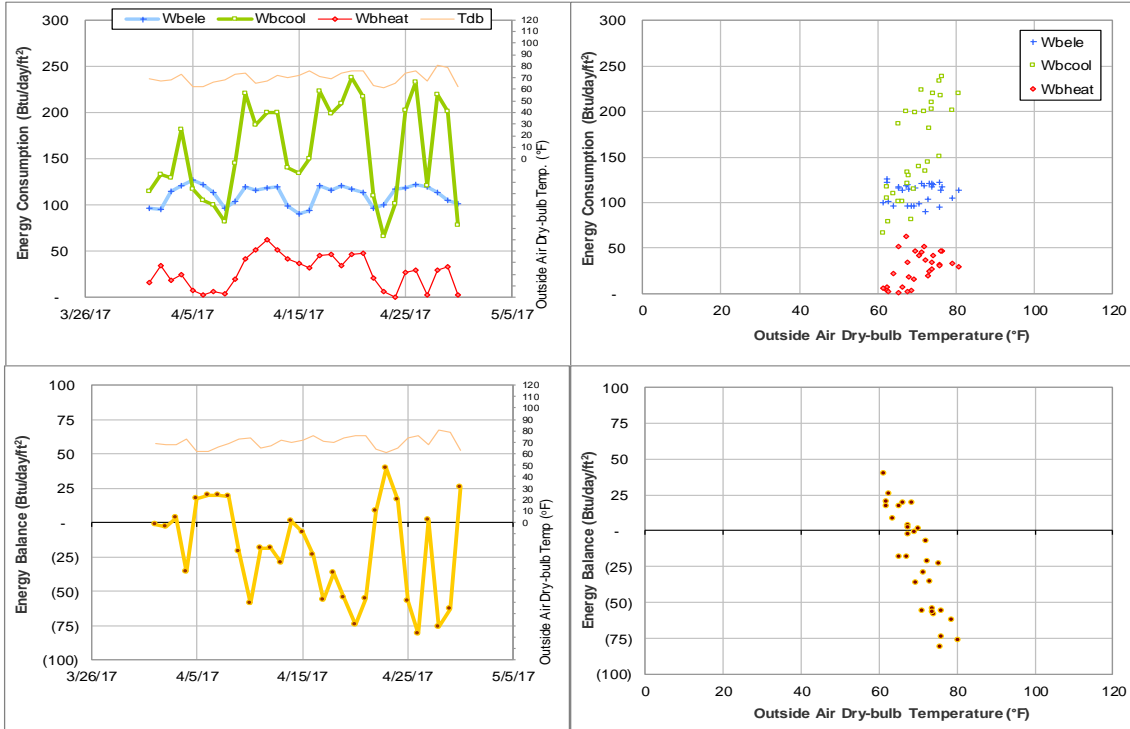


Figure IV-99 Civil Engineering Building TAMU BLDG # 492 Energy Balance Plot during April 2017

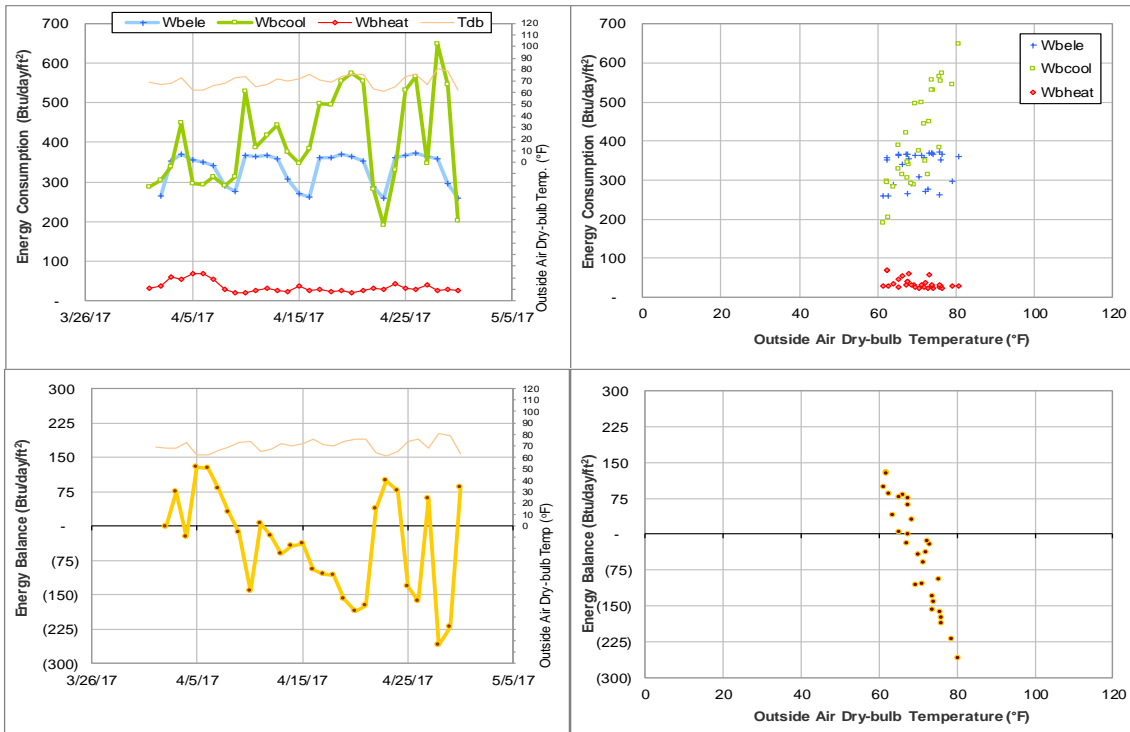


Figure IV-100 Sbisa Dining Hall TAMU BLDG # 495 Energy Balance Plot during April 2017

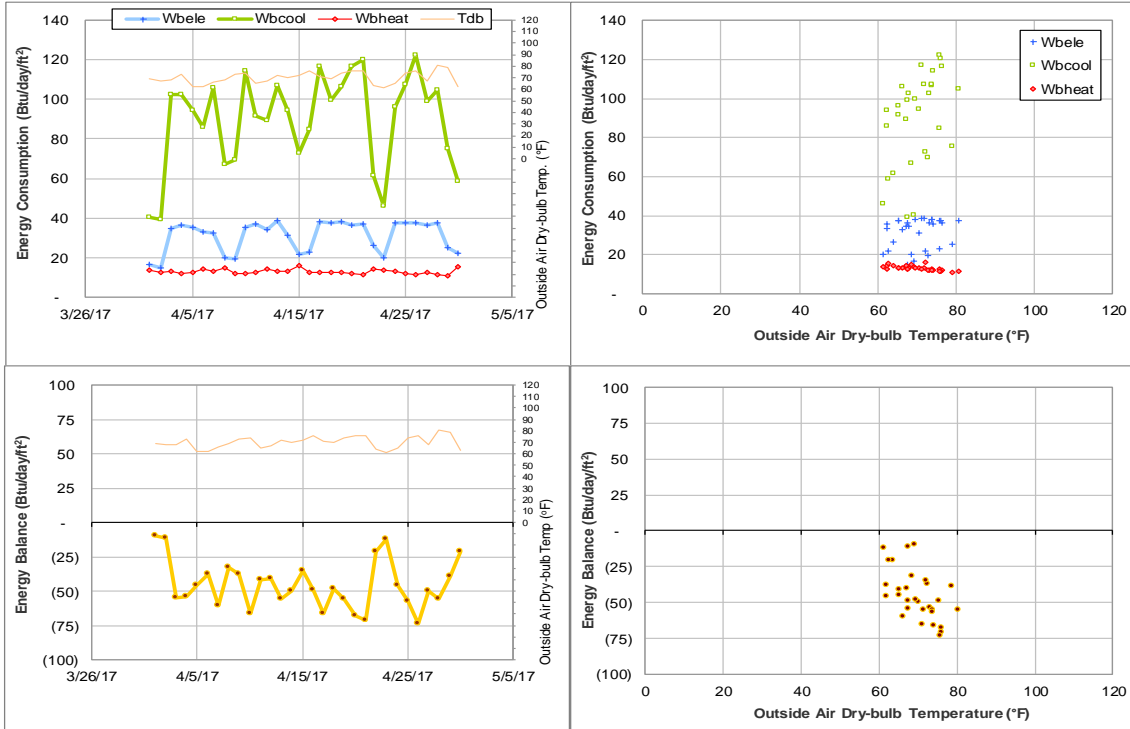


Figure IV-101 Utilities & Energy Services Central Office TAMU BLDG # 496 Energy Balance Plot during April 2017

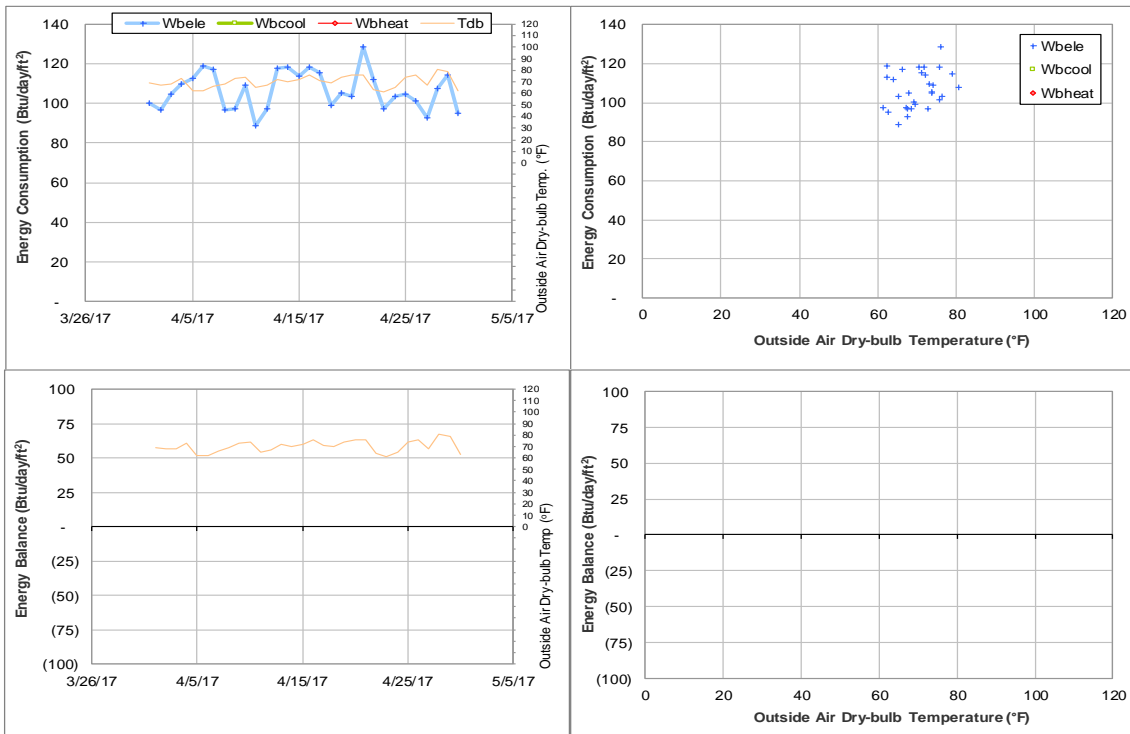


Figure IV-102 Concrete Materials Laboratory TAMU BLDG # 501 Energy Balance Plot during April 2017

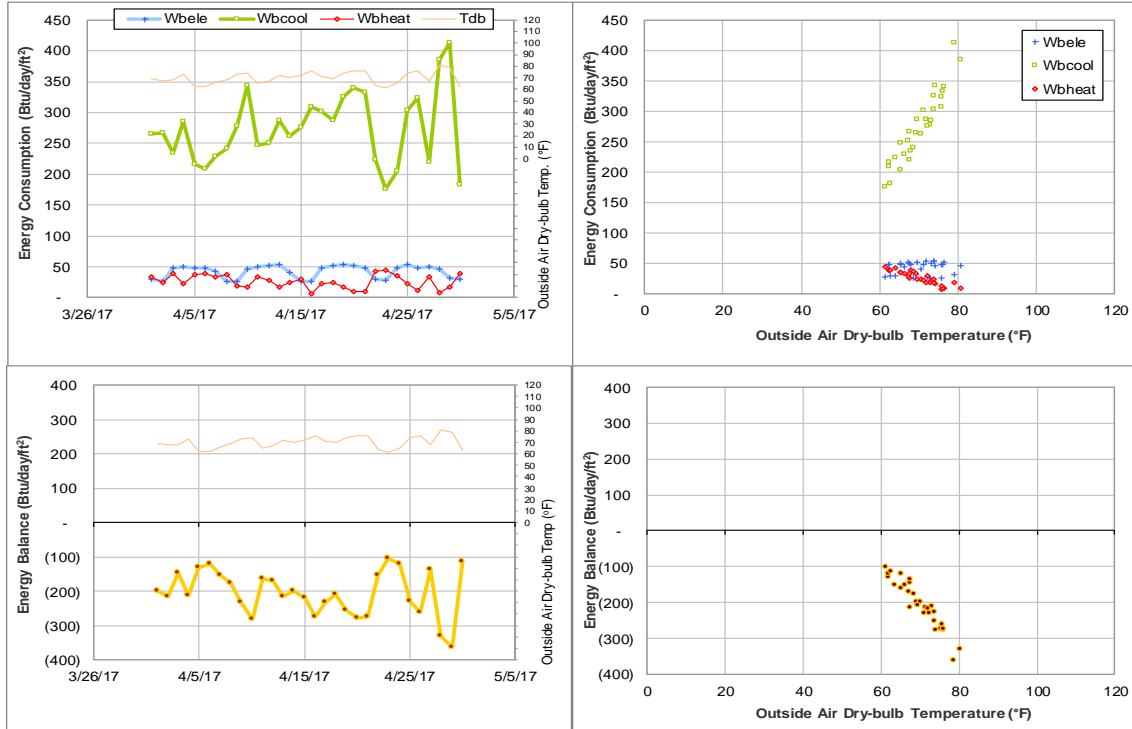


Figure IV-103 Nagle Hall TAMU BLDG # 506 Energy Balance Plot during April 2017

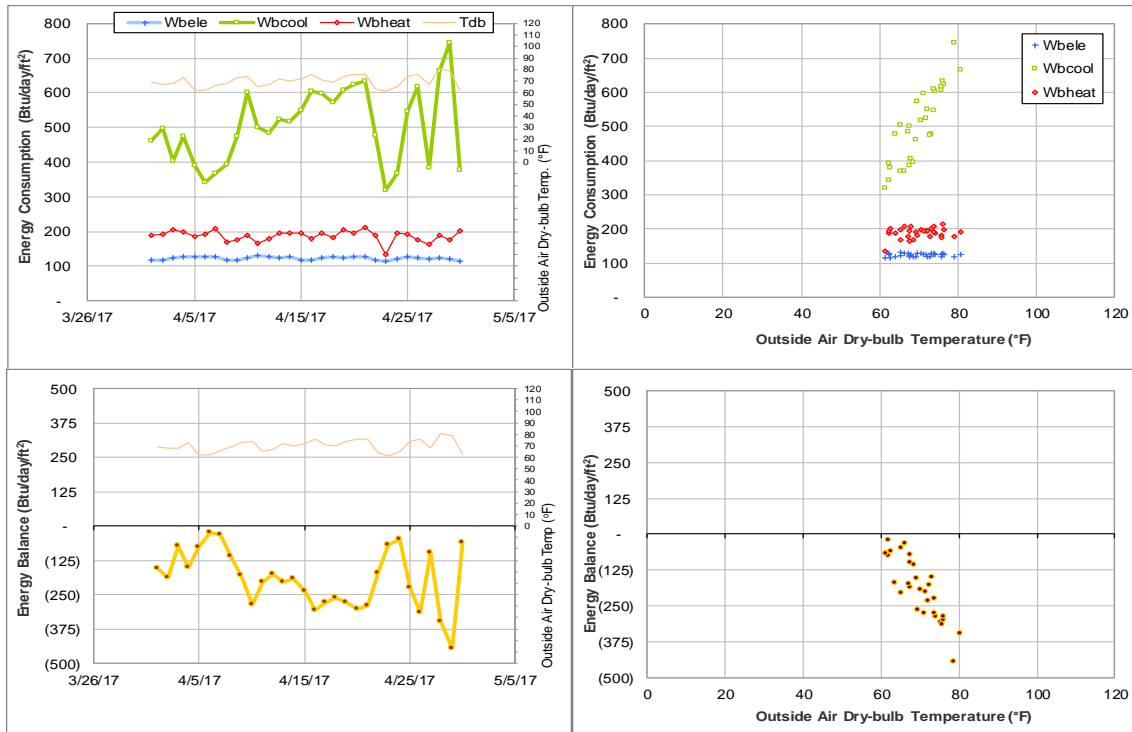


Figure IV-104 Veterinary Medical Science Building TAMU BLDG # 507 Energy Balance Plot during April 2017

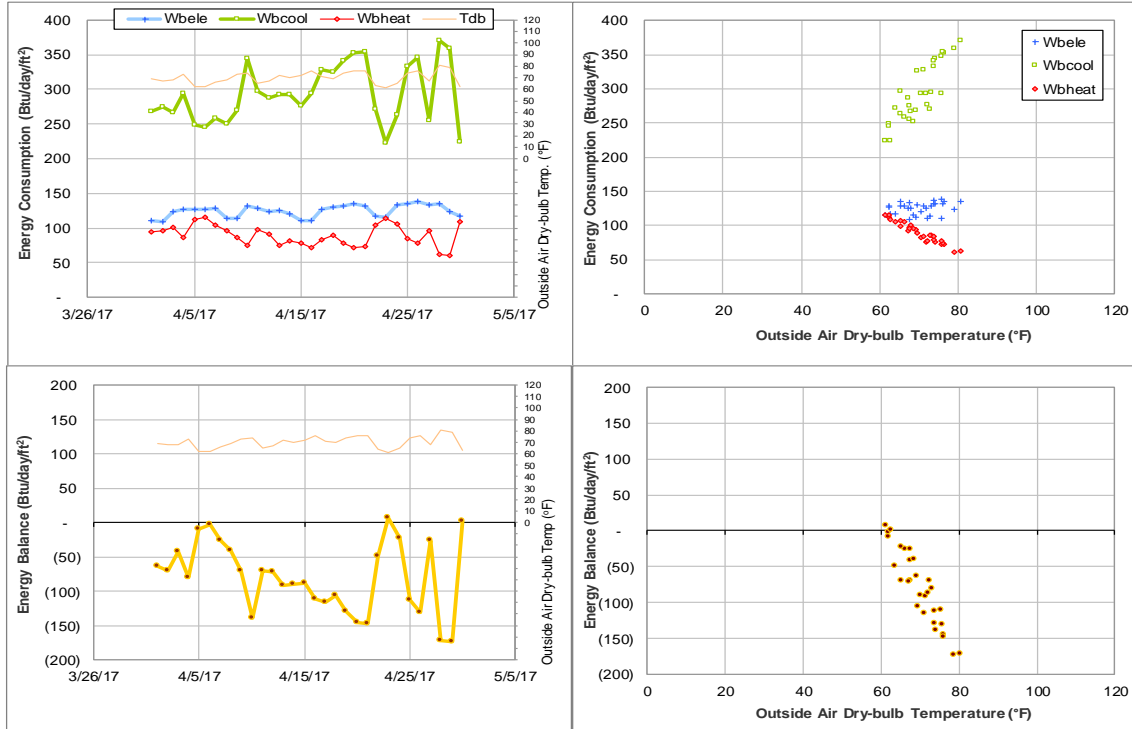


Figure IV-105 Veterinary Teaching Hospital and Med Adm TAMU BLDG # 508 and #1026 Energy Balance Plot during April 2017

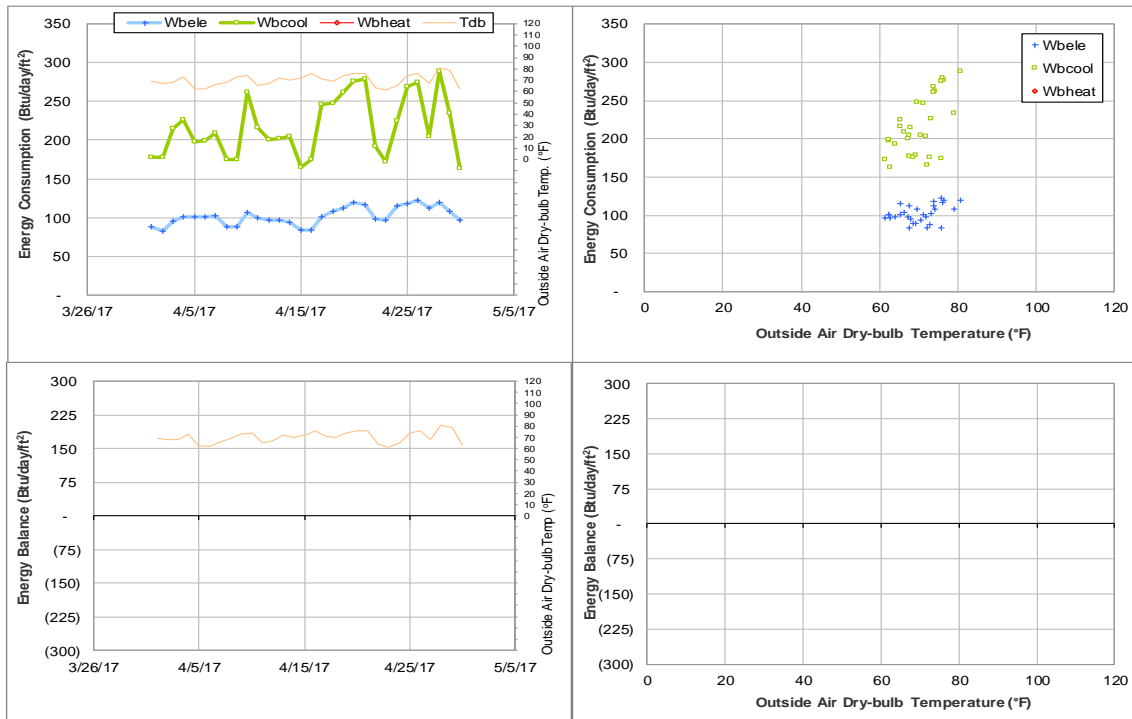


Figure IV-106 Veterinary Teaching Hospital TAMU BLDG # 508 Energy Balance Plot during April 2017

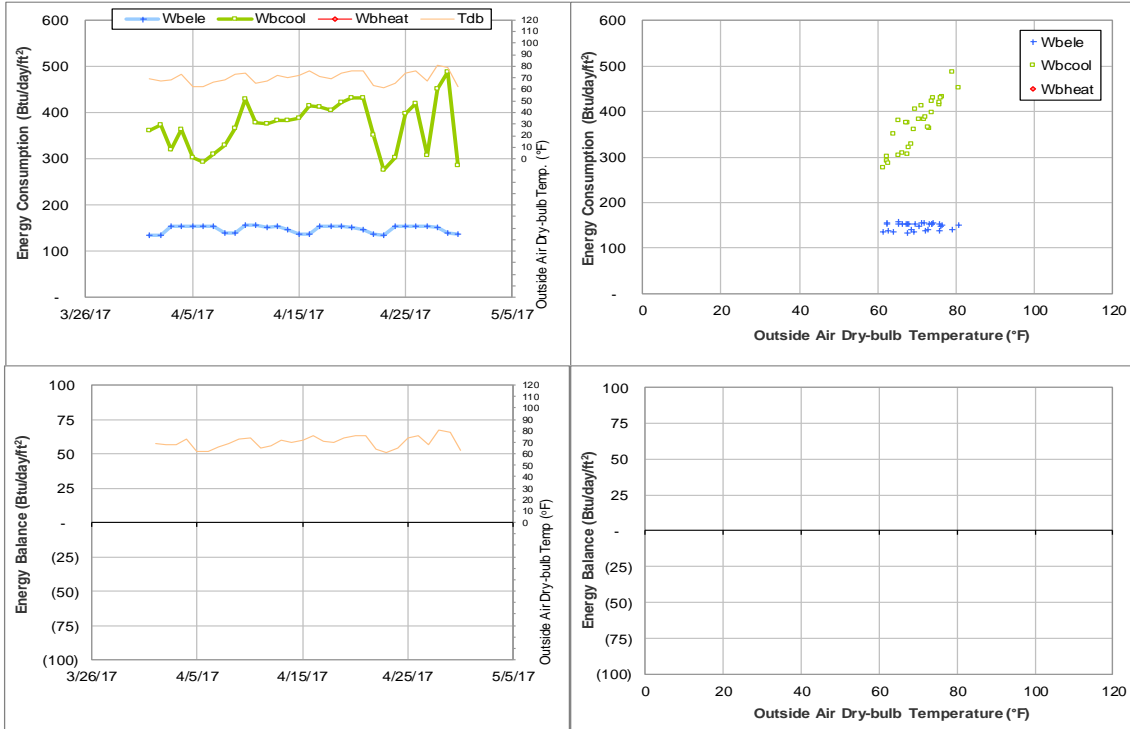


Figure IV-107 Veterinary Medicine Administration TAMU BLDG # 1026 Energy Balance Plot during April 2017

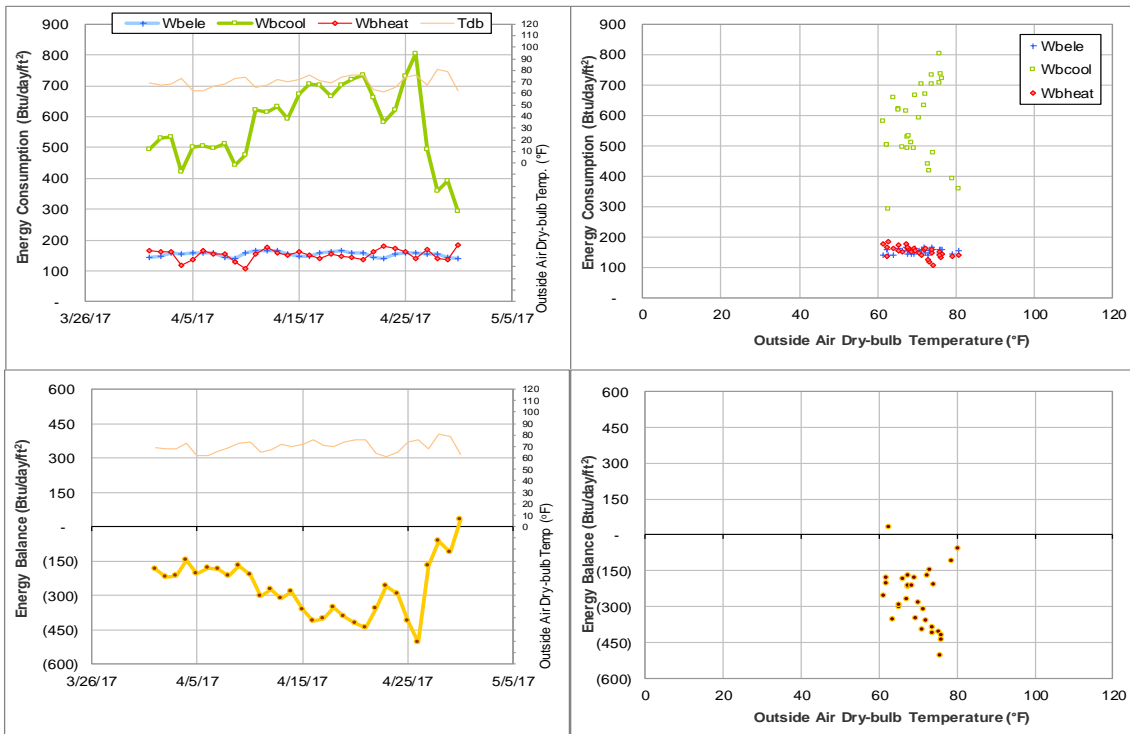


Figure IV-108 Heep Laboratory Building TAMU BLDG # 511 Energy Balance Plot during April 2017

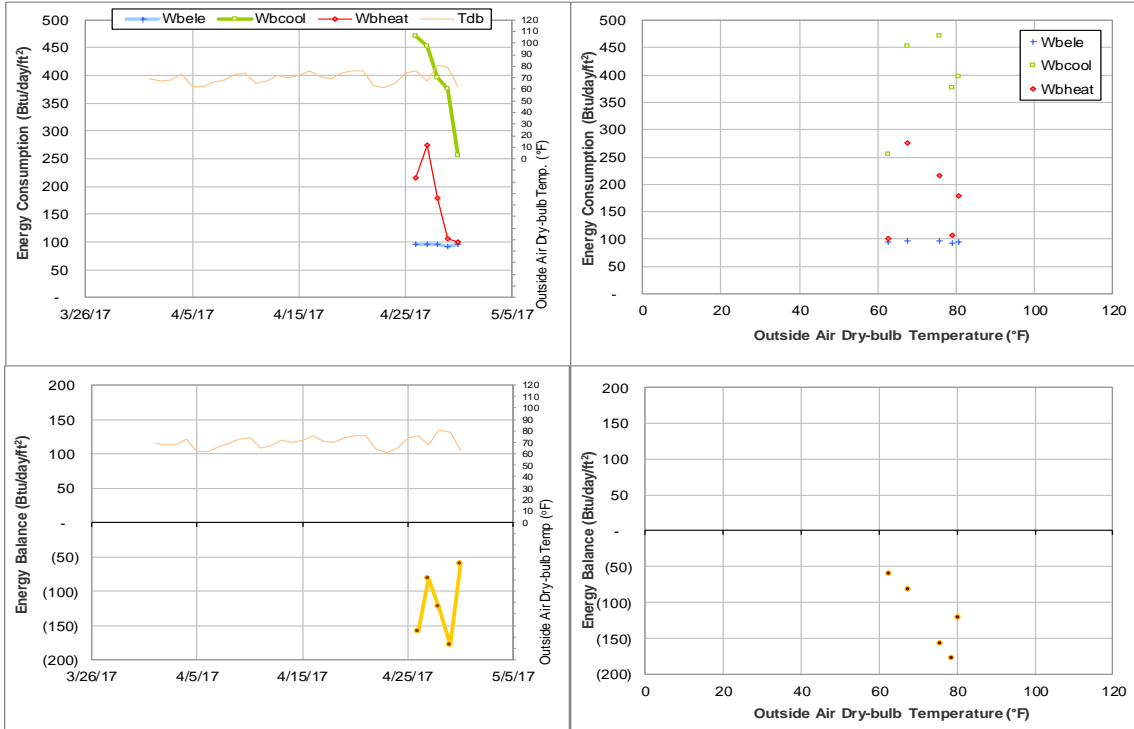


Figure IV-109 All Faiths Chapel TAMU BLDG # 512 Energy Balance Plot during April 2017

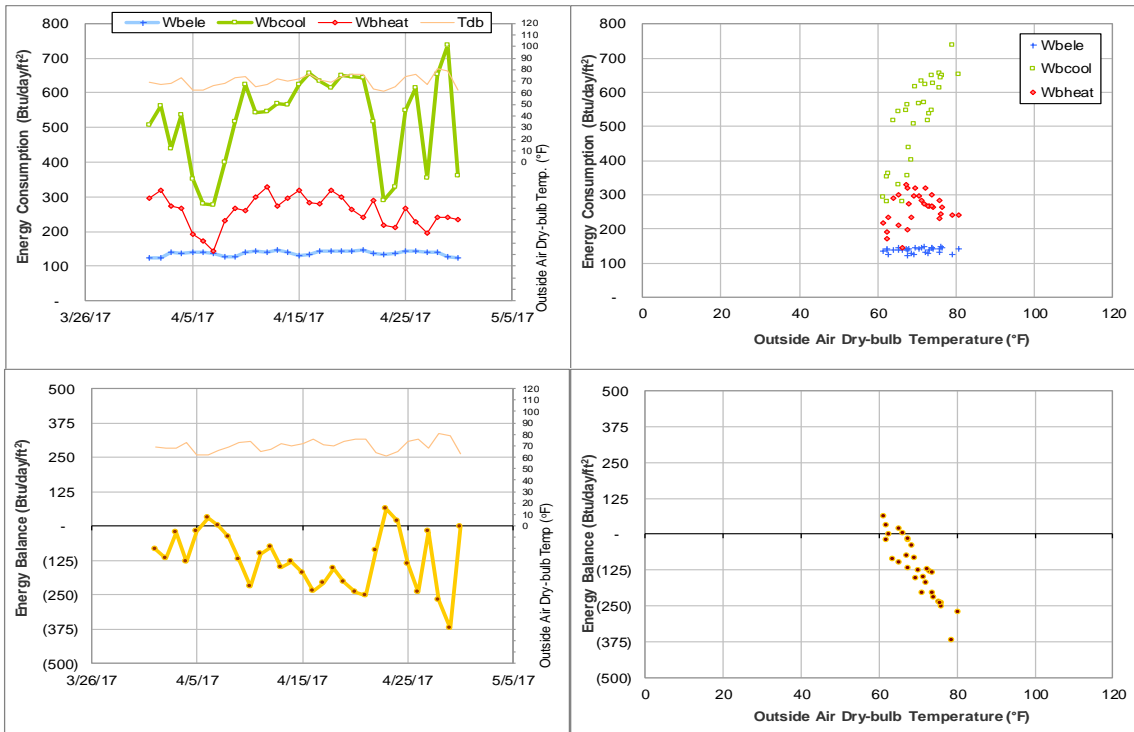


Figure IV-110 Doherty Building TAMU BLDG # 513 Energy Balance Plot during April 2017

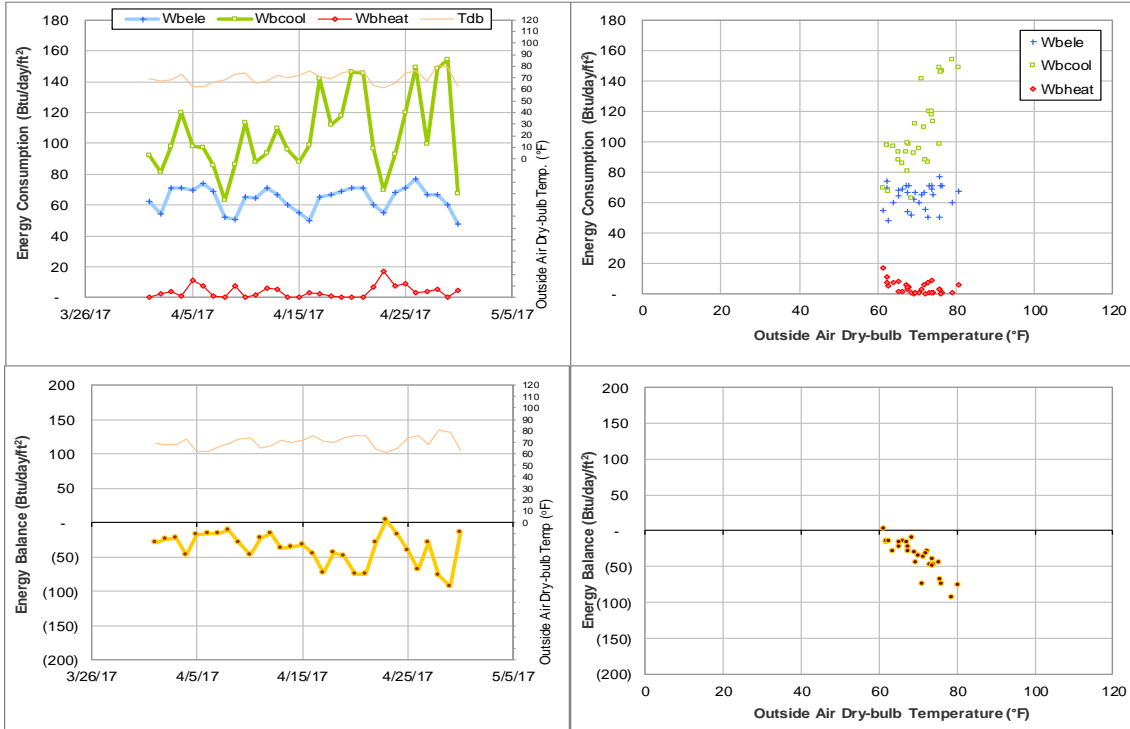


Figure IV-111 Munneryn Astronomy & Space Sciences Engineering TAMU BLDG # 514 Energy Balance Plot during April 2017

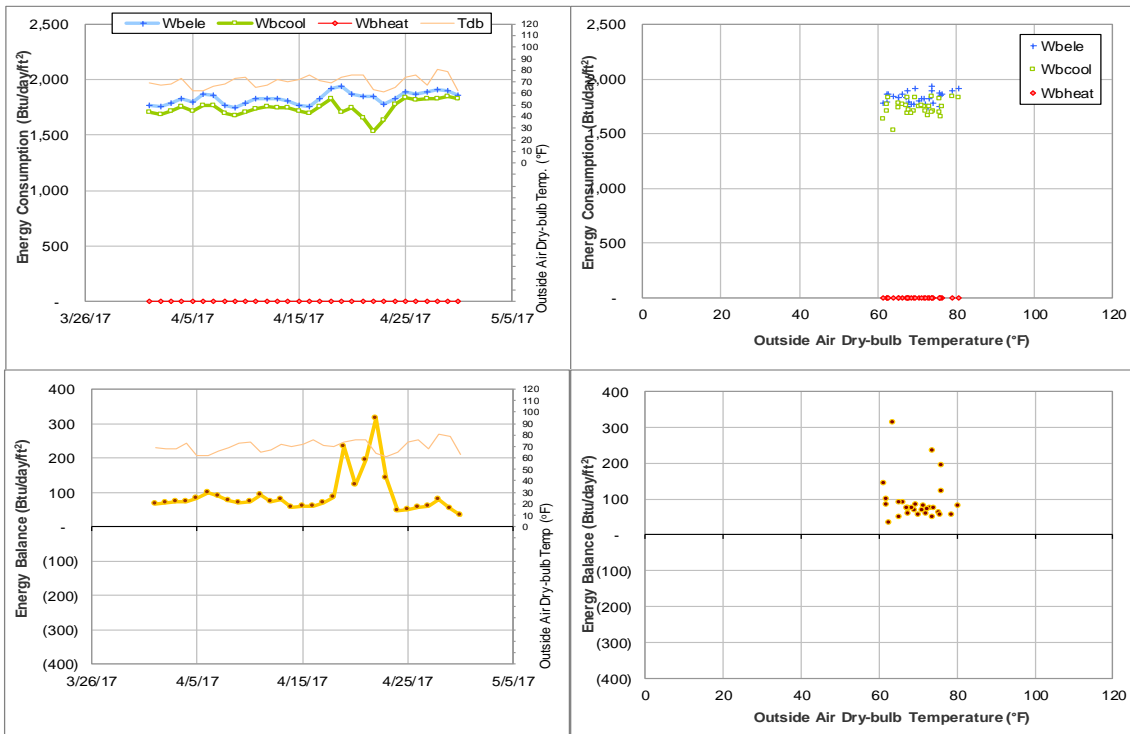


Figure IV-112 Computing Services Center TAMU BLDG # 516 Energy Balance Plot during April 2017

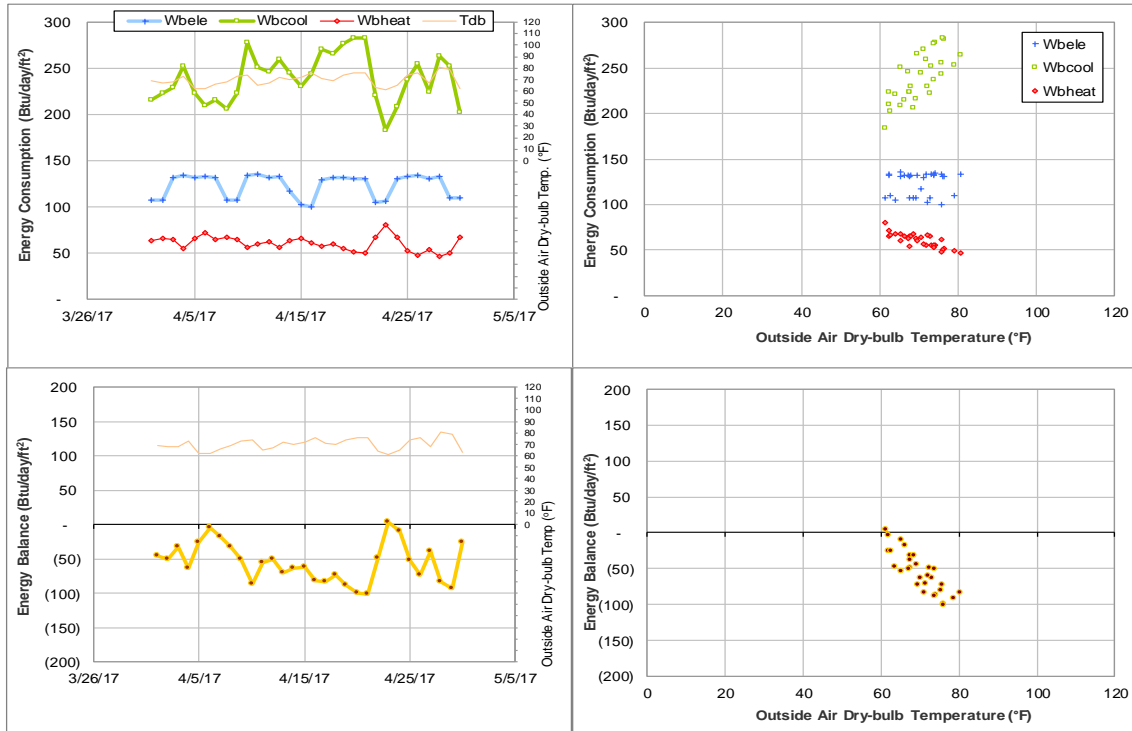


Figure IV-113 Beutel Health Center TAMU BLDG # 520 Energy Balance Plot during April 2017

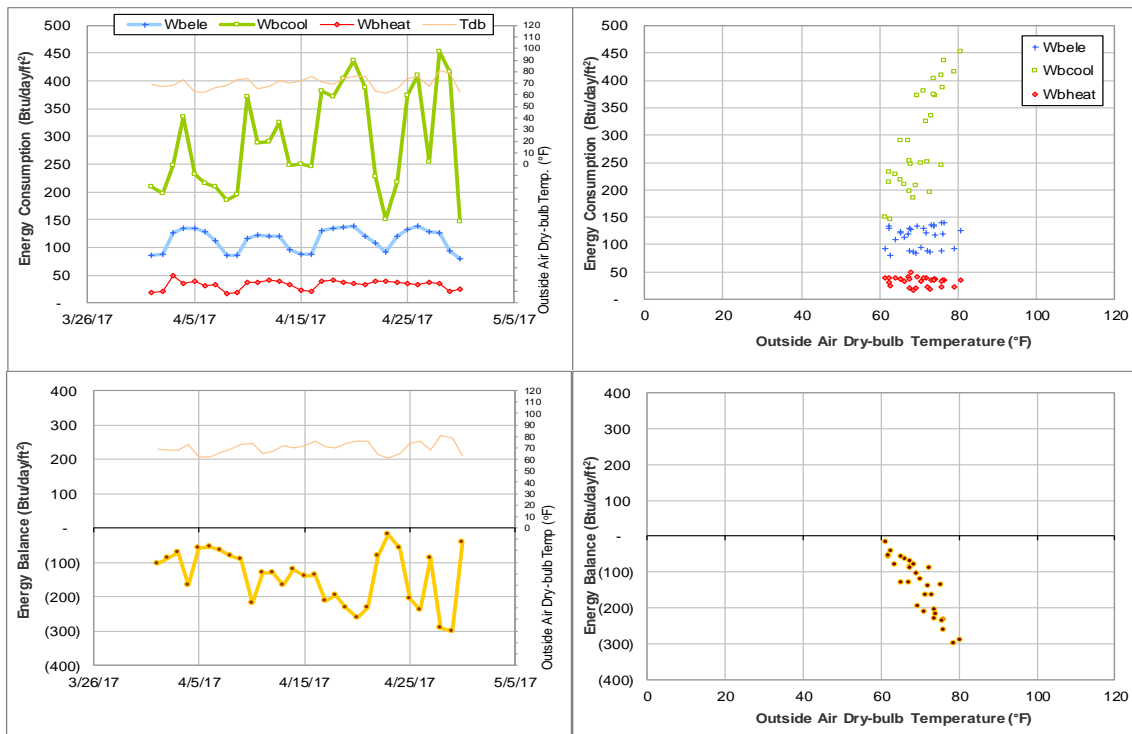


Figure IV-114 Heldenfels Hall TAMU BLDG # 521 Energy Balance Plot during April 2017

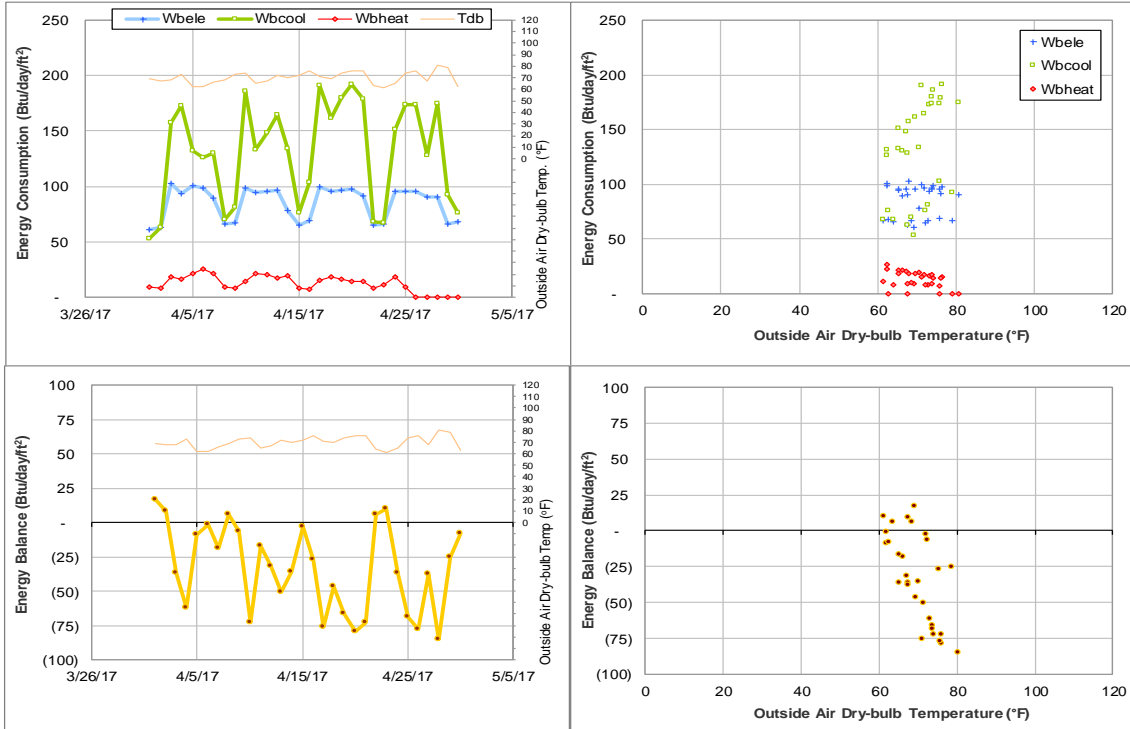


Figure IV-115 Blocker building TAMU BLDG # 524 Energy Balance Plot during April 2017

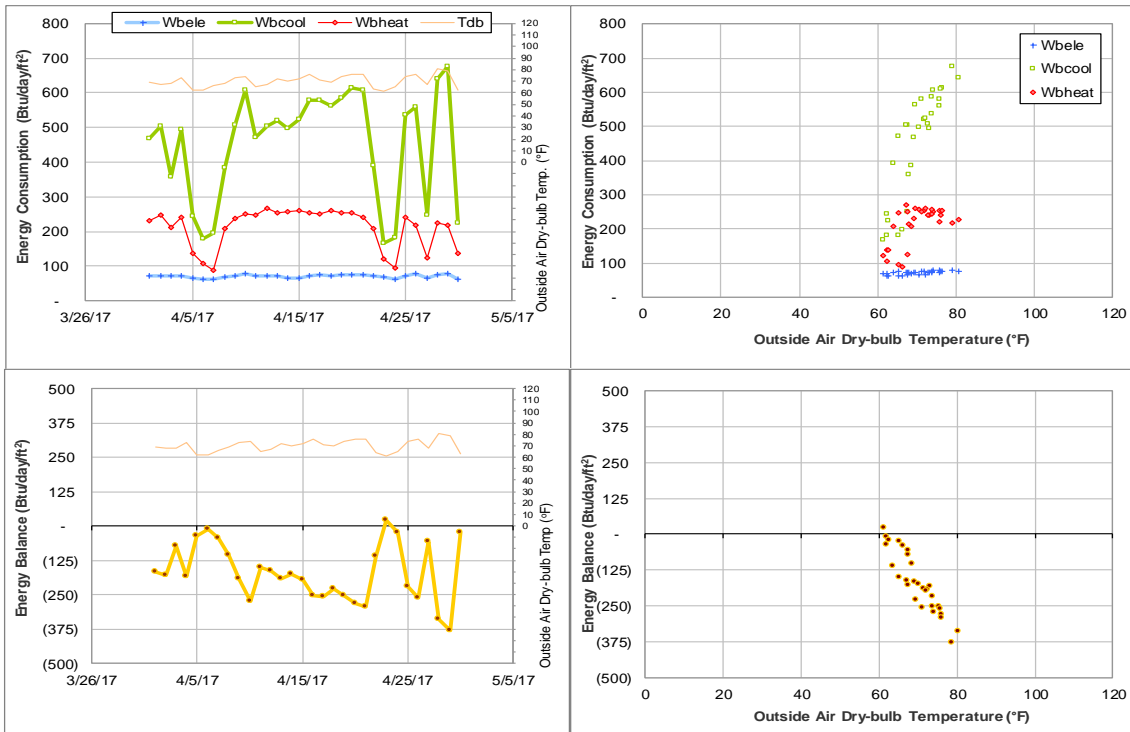


Figure IV-116 Clements Residence Hall TAMU BLDG # 548 Energy Balance Plot during April 2017

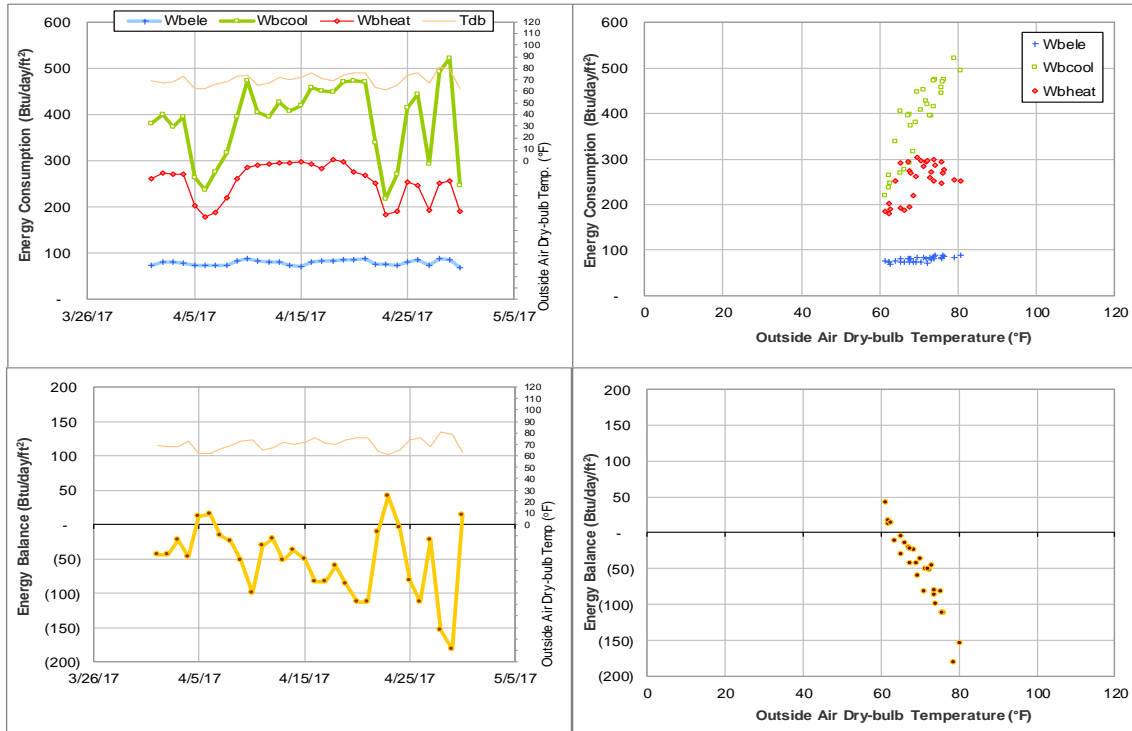


Figure IV-117 Haas Residence Hall TAMU BLDG # 549 Energy Balance Plot during April 2017

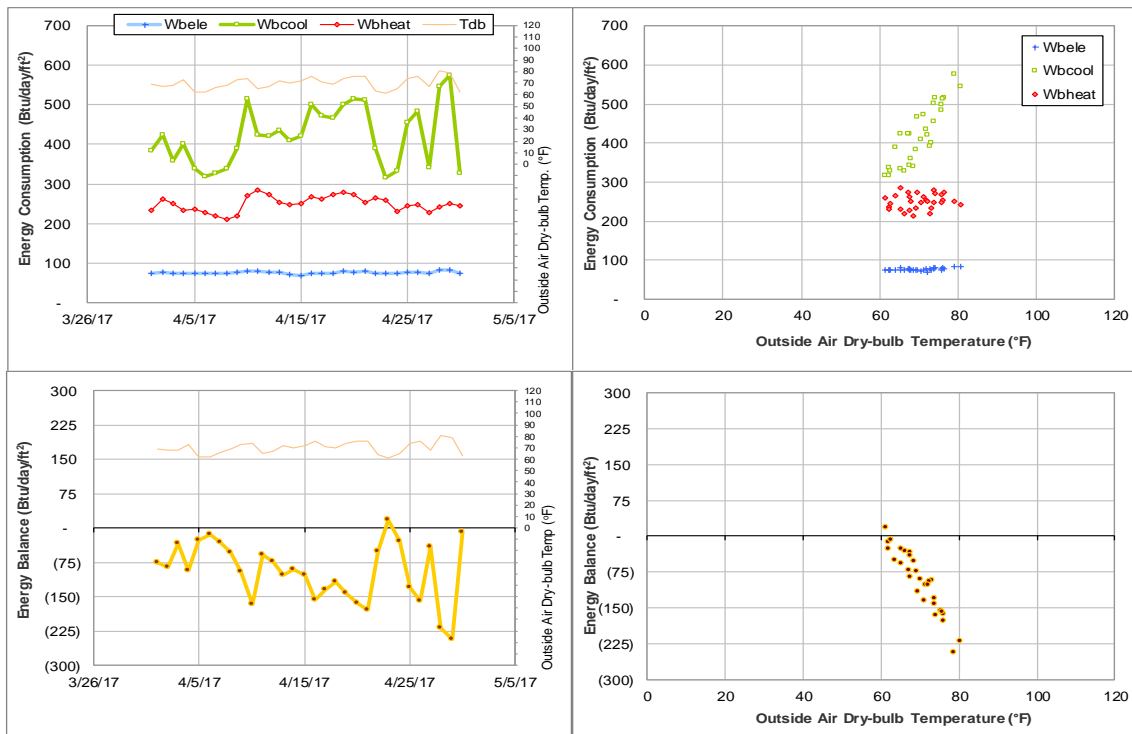


Figure IV-118 McFadden Residence Hall TAMU BLDG # 550 Energy Balance Plot during April 2017

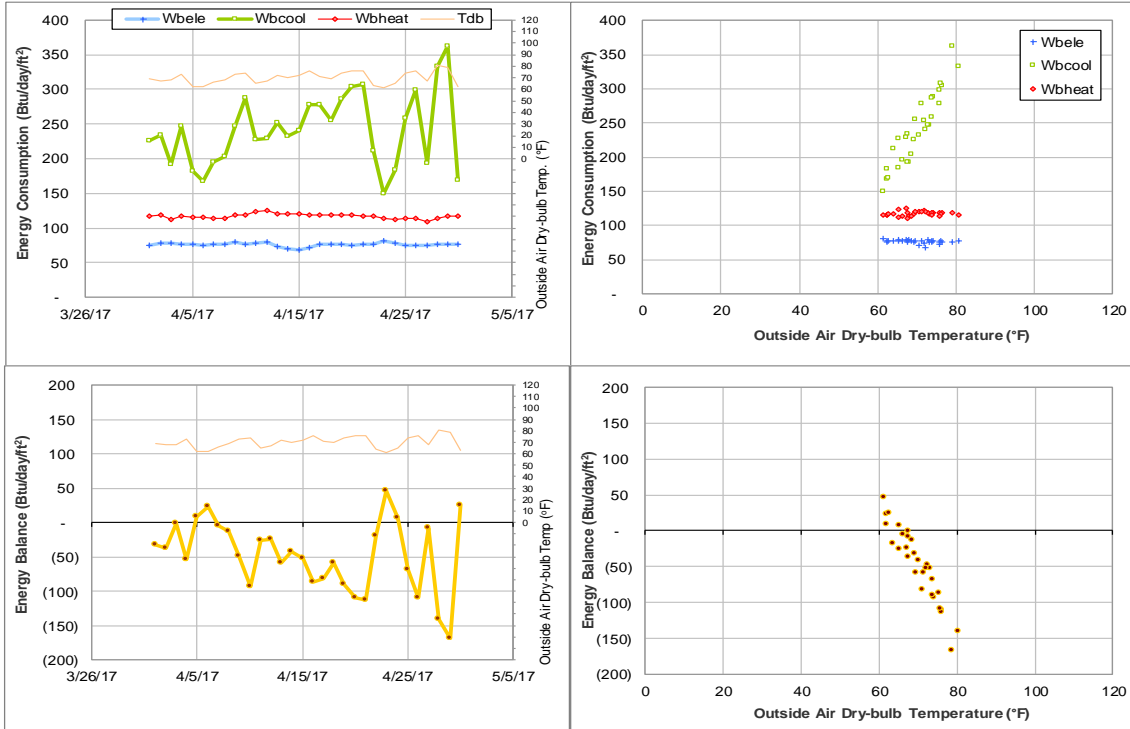


Figure IV-119 Neeley Residence Hall TAMU BLDG # 652 Energy Balance Plot during April 2017

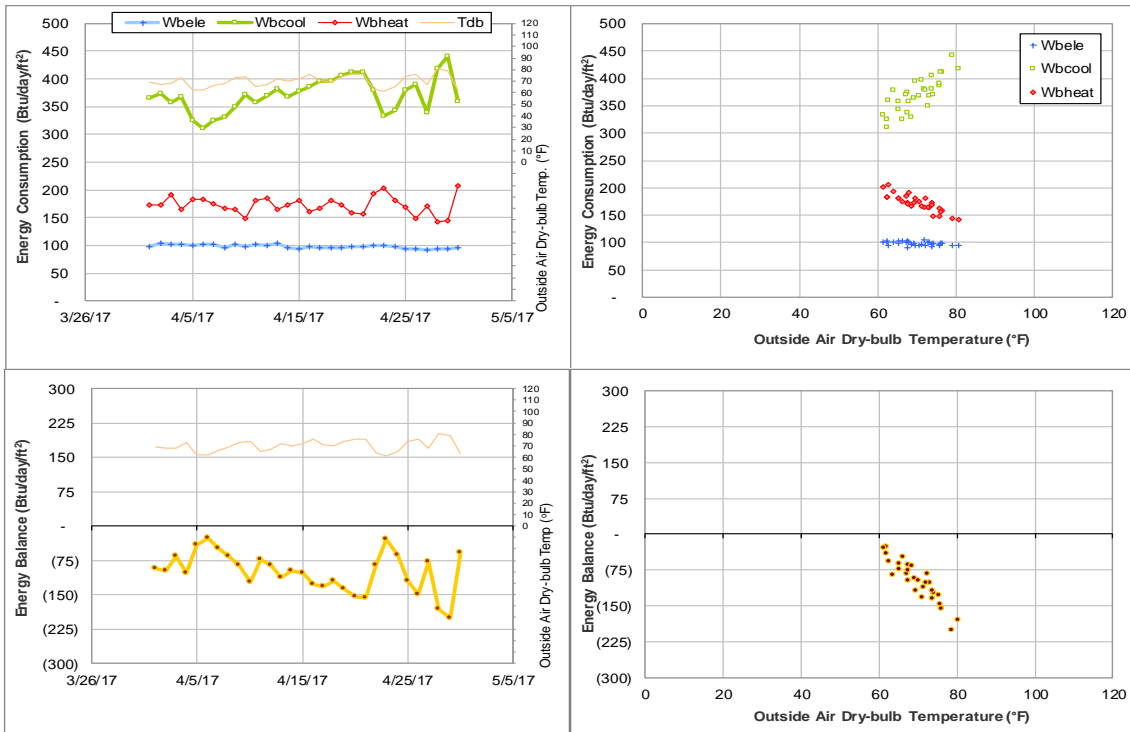


Figure IV-120 Hobby Residence Hall TAMU BLDG # 653 Energy Balance Plot during April 2017

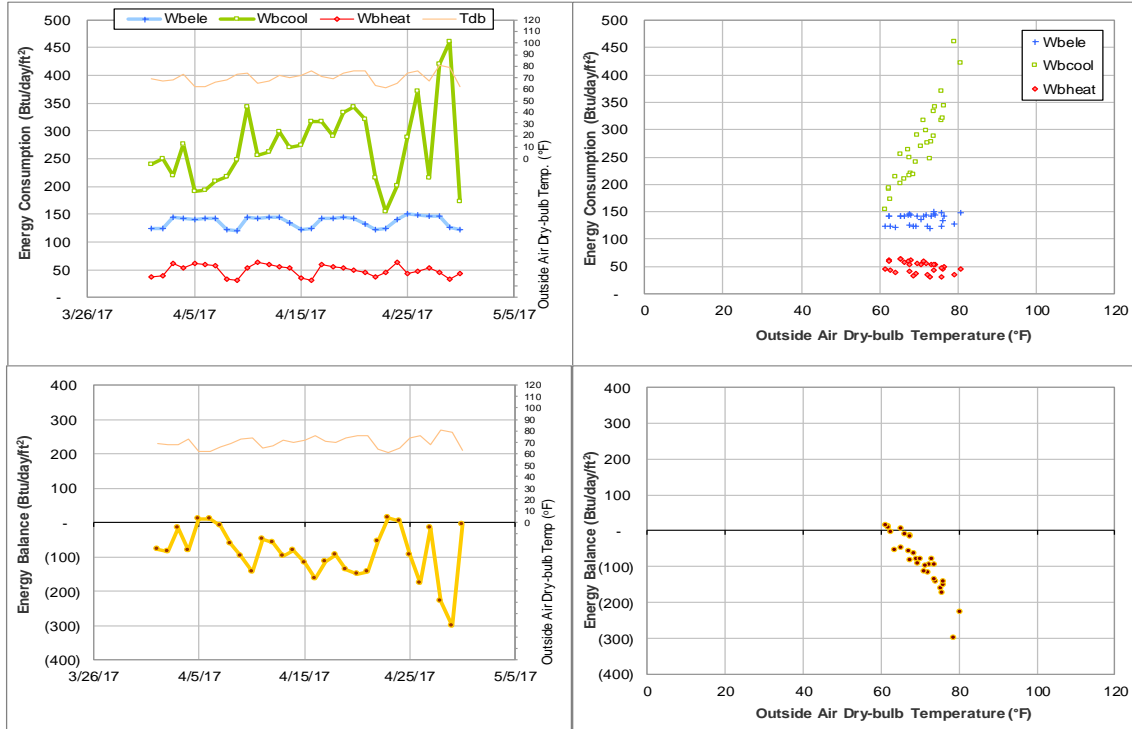


Figure IV-121 Wisnaker Engineering Research Center TAMU BLDG # 682 Energy Balance Plot during April 2017

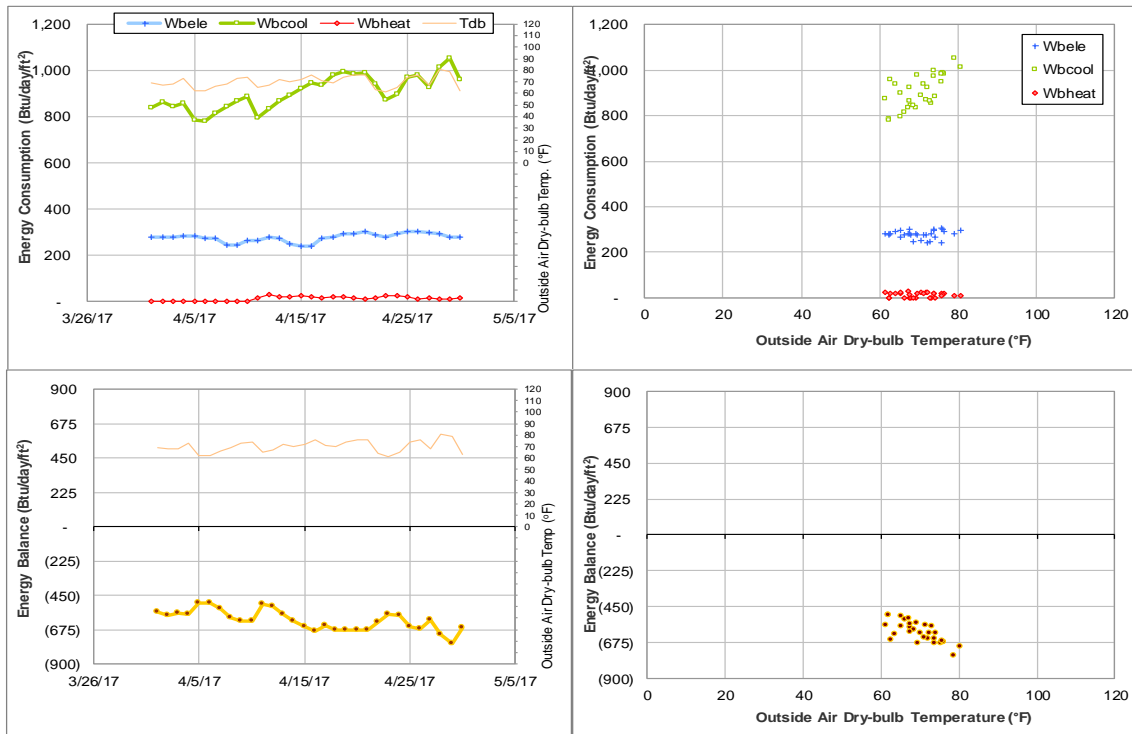


Figure IV-122 McNew Laboratory TAMU BLDG # 740 Energy Balance Plot during April 2017

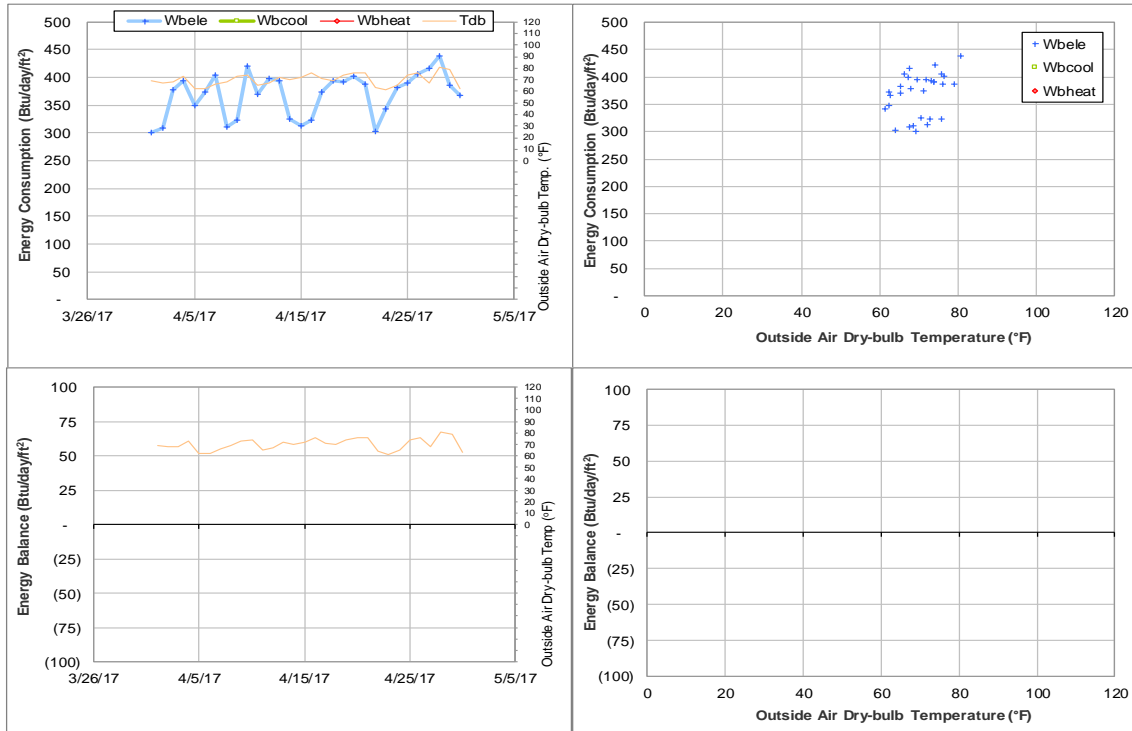


Figure IV-123 Soil Testing Labs TAMU BLDG # 806 Energy Balance Plot during April 2017

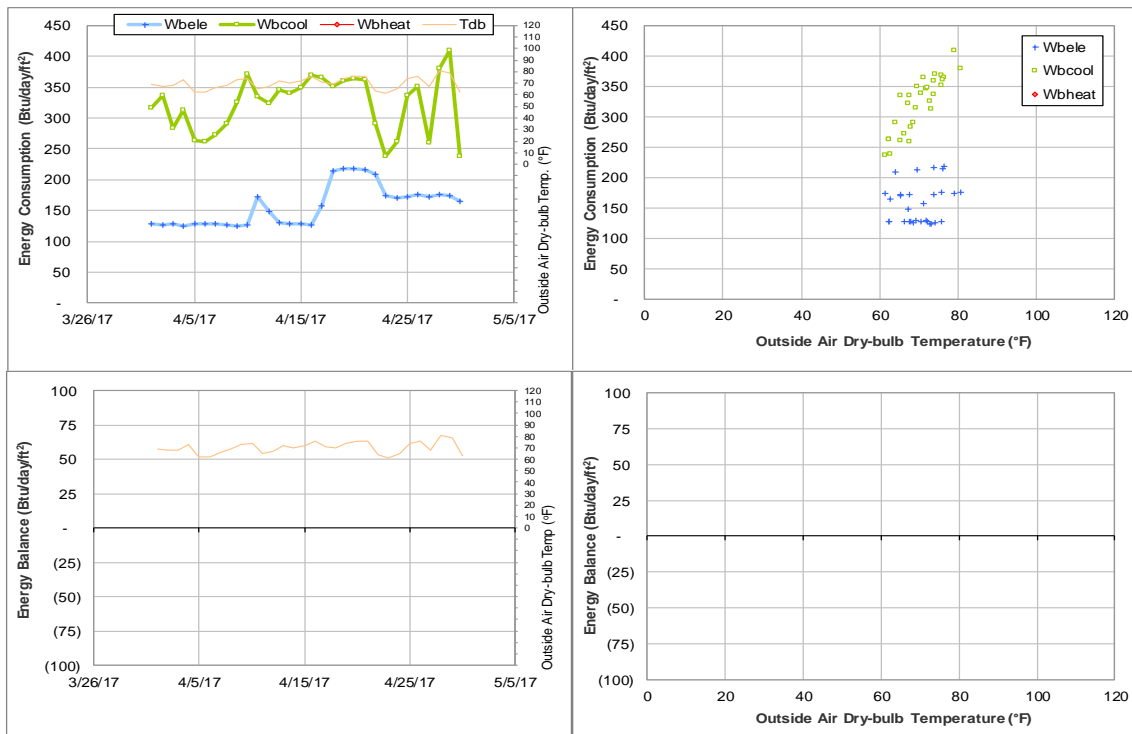


Figure IV-124 Entomology Research Lab TAMU BLDG # 815 Energy Balance Plot during April 2017

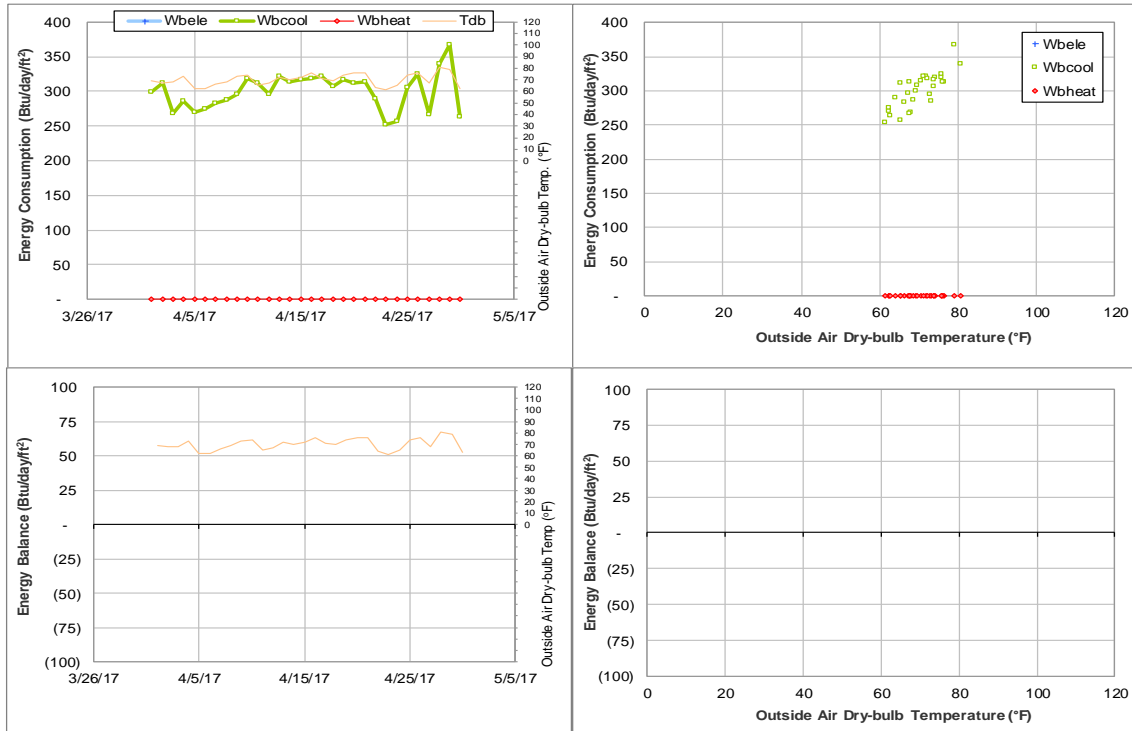


Figure IV-125 TVMC-Small Animal Building TAMU BLDG # 880 Energy Balance Plot during April 2017

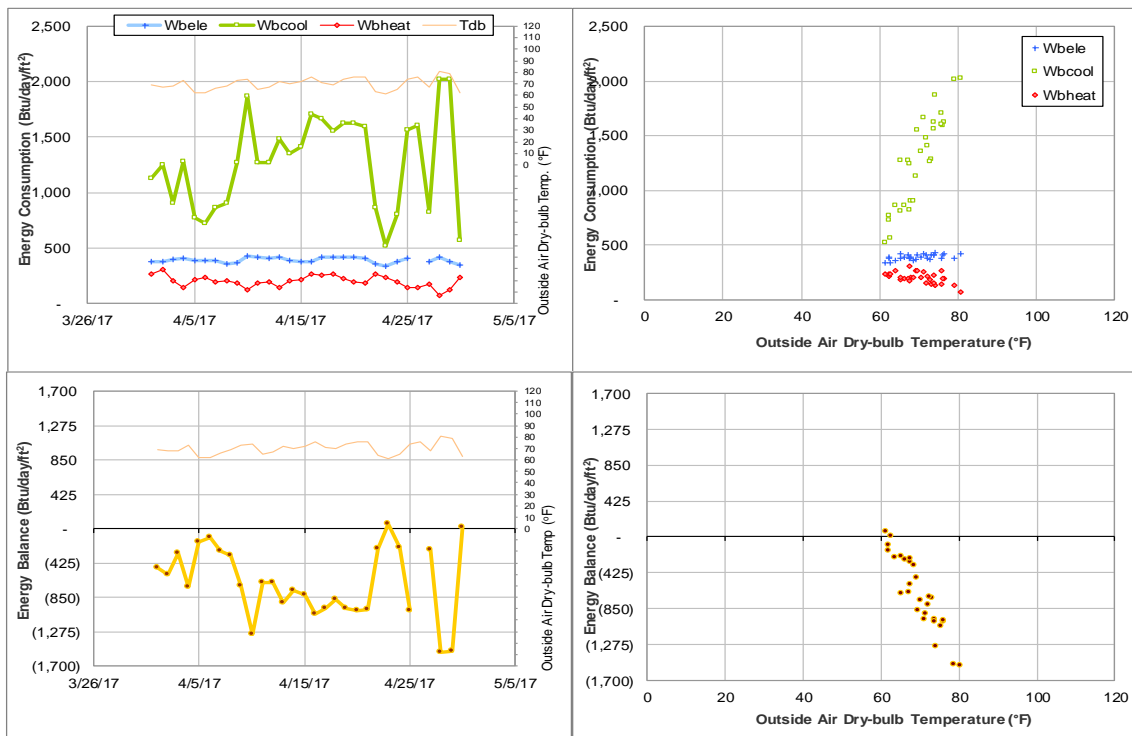


Figure IV-126 Laboratory Animal Care Building TAMU BLDG # 972 Energy Balance Plot during April 2017

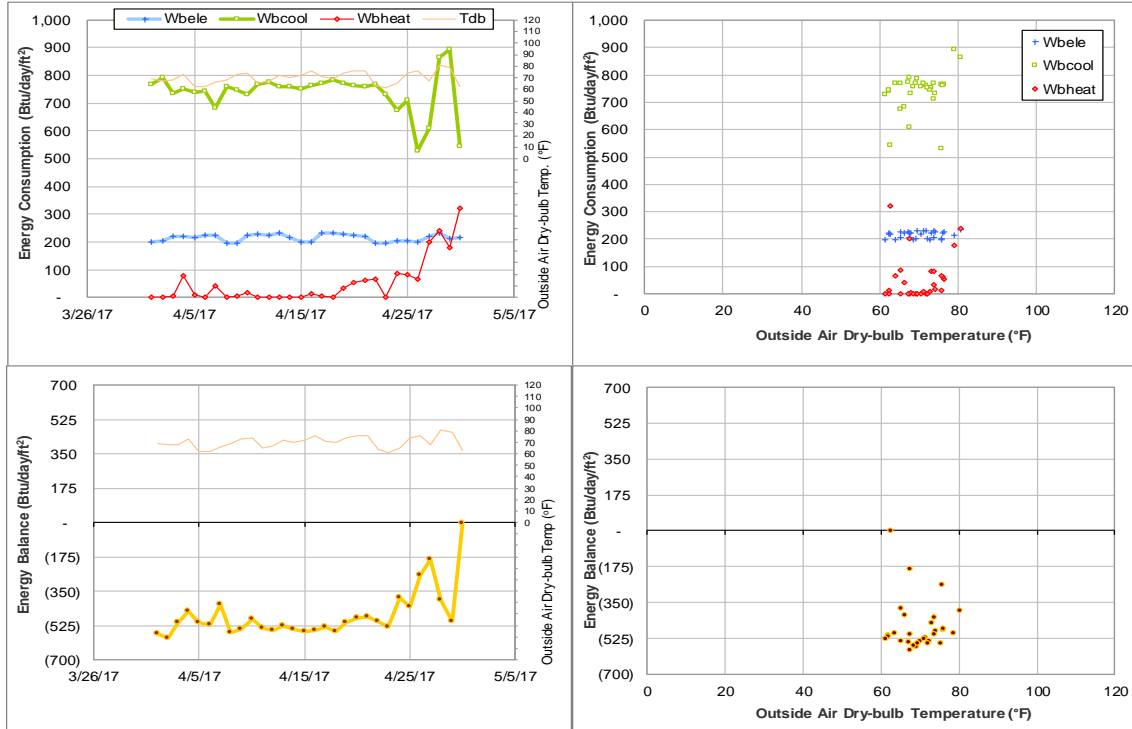


Figure IV-127 Vivarium III TAMU BLDG # 1020 Energy Balance Plot during April 2017

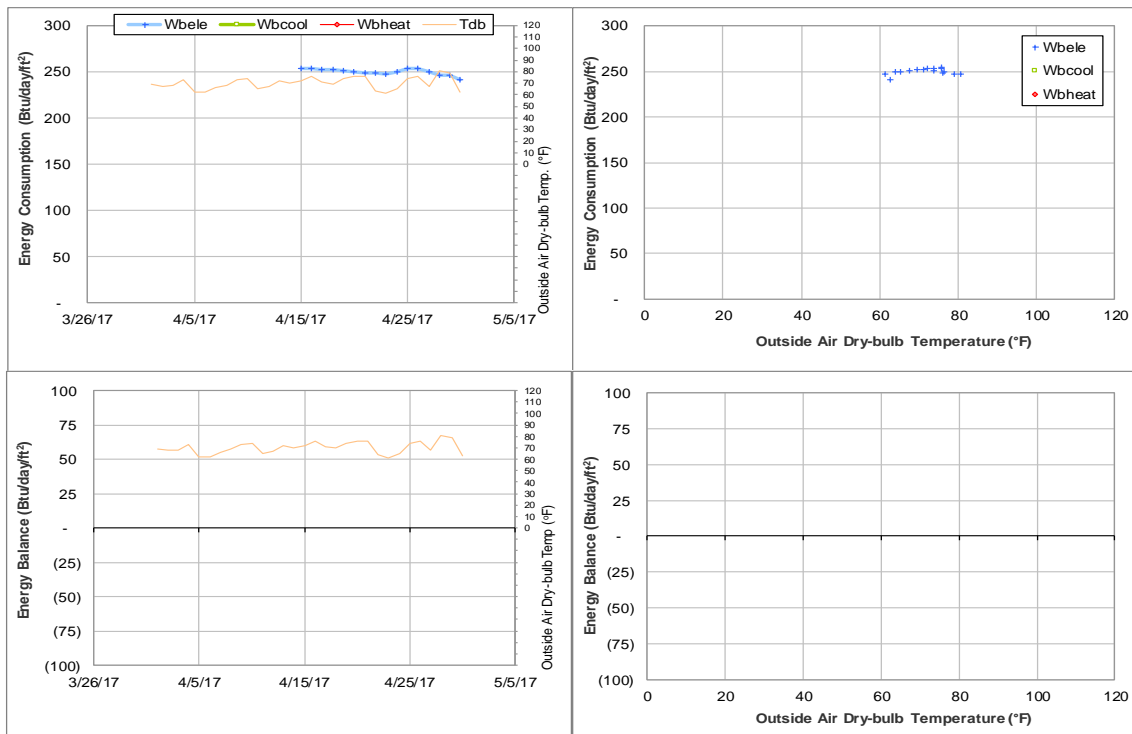


Figure IV-128 Texas Vet Med Diagnostic Lab TAMU BLDG # 1041 Energy Balance Plot during April 2017

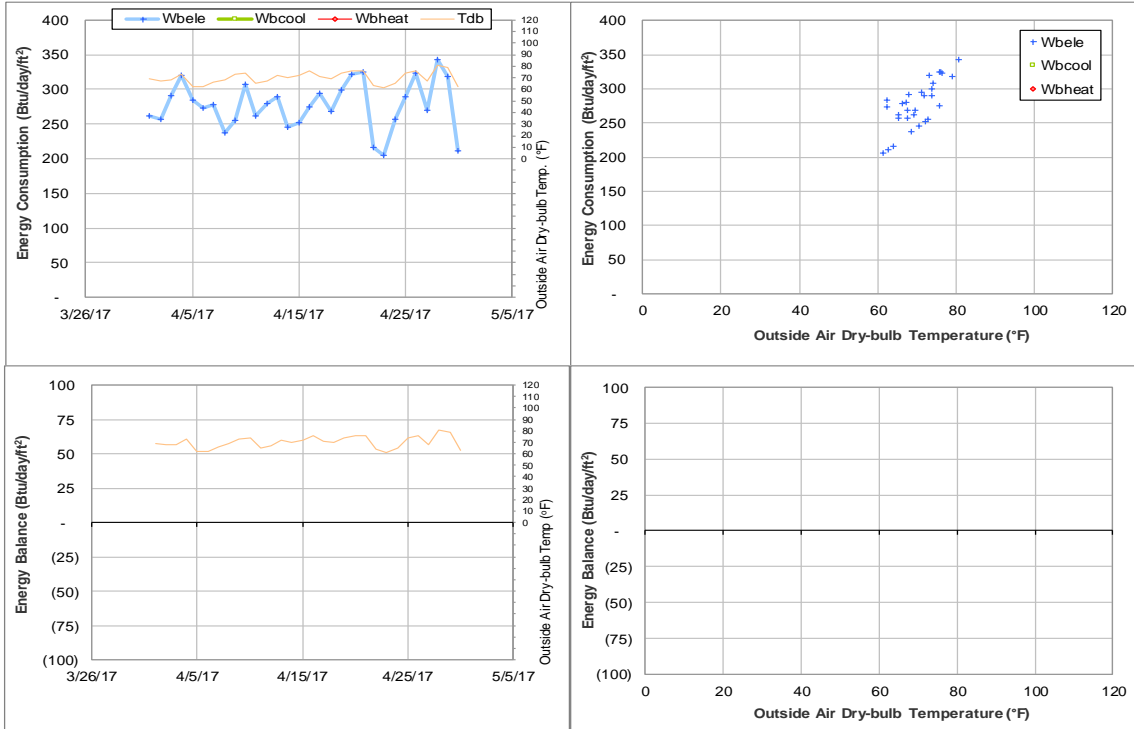


Figure IV-129 Forest Science Laboratory Building TAMU BLDG # 1042 Energy Balance Plot during April 2017

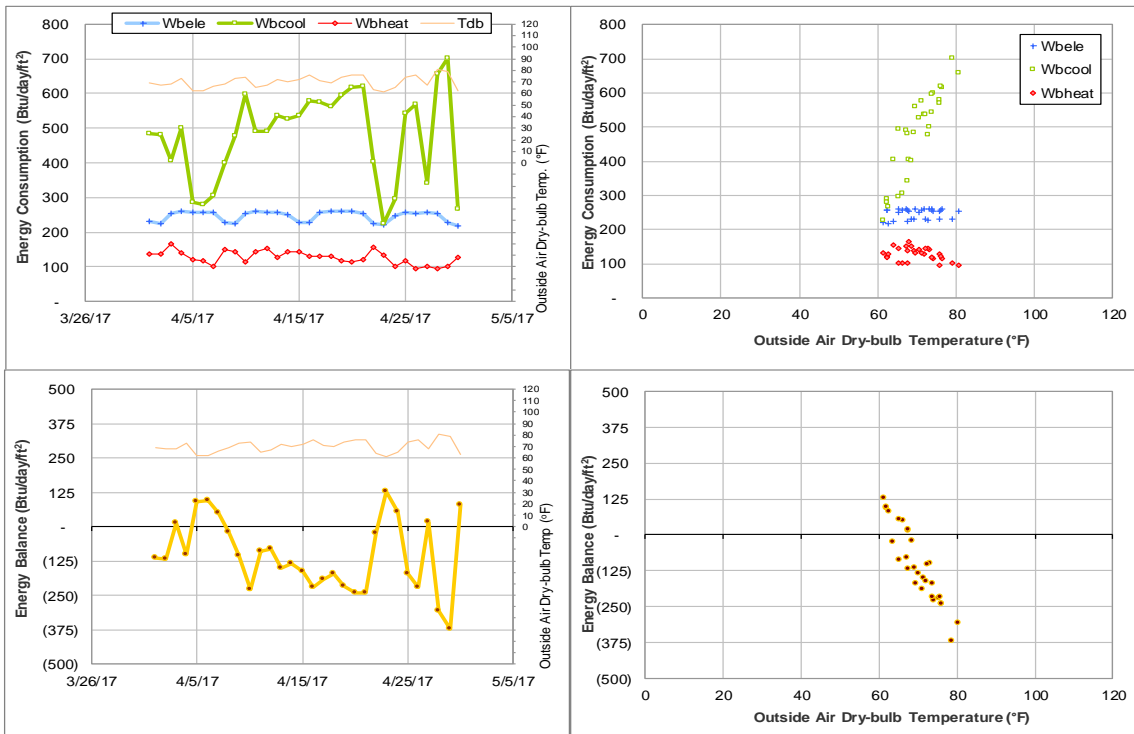


Figure IV-130 Veterinary Small Animal Hospital TAMU BLDG # 1085 Energy Balance Plot during April 2017

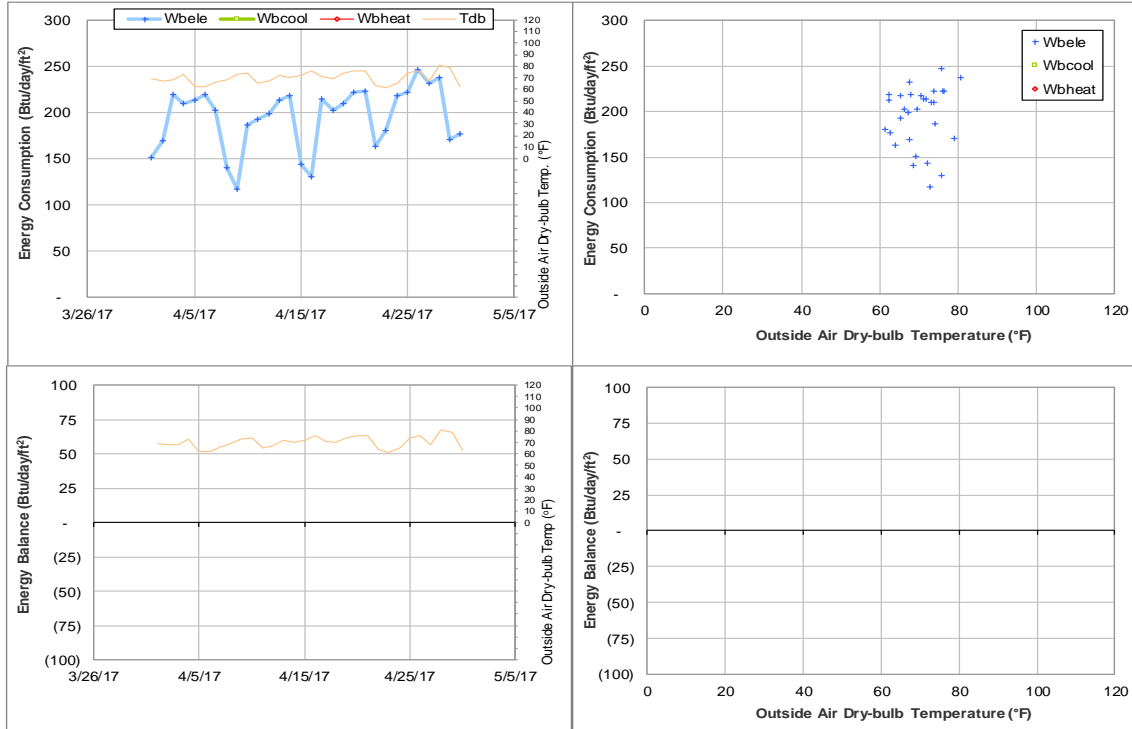


Figure IV-131 Utilities Energy Office Annex TAMU BLDG # 1089 Energy Balance Plot during April 2017

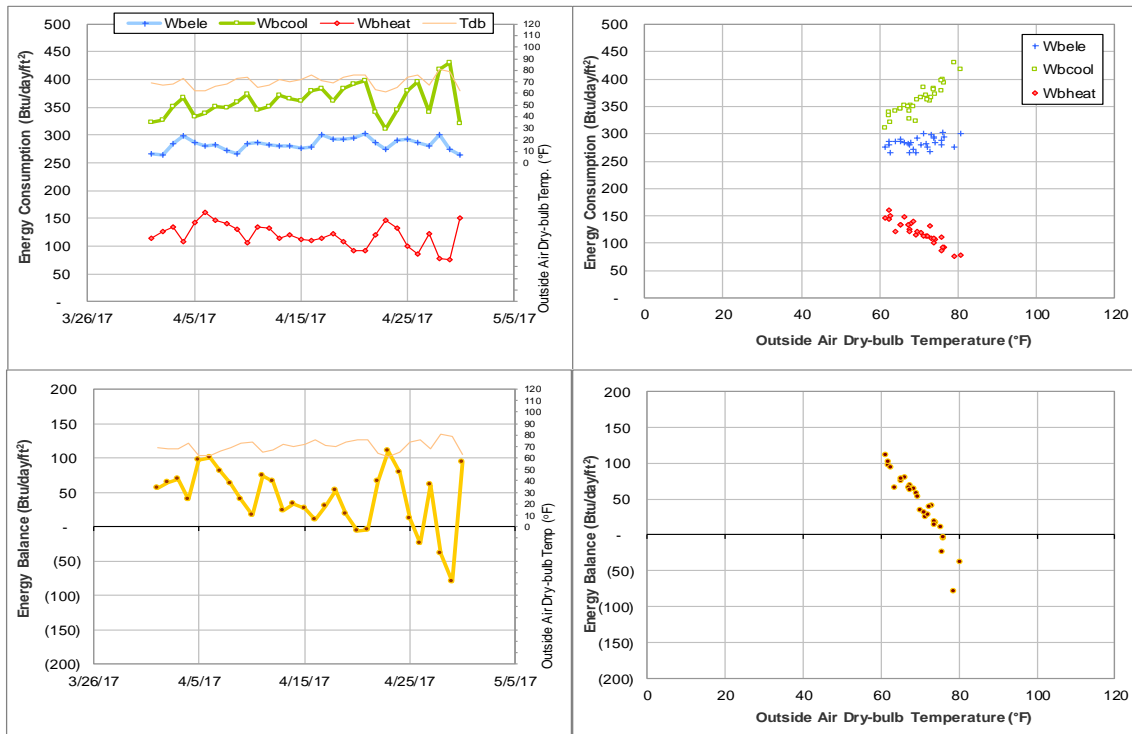


Figure IV-132 Biological Control Facility TAMU BLDG # 1146 Energy Balance Plot during April 2017

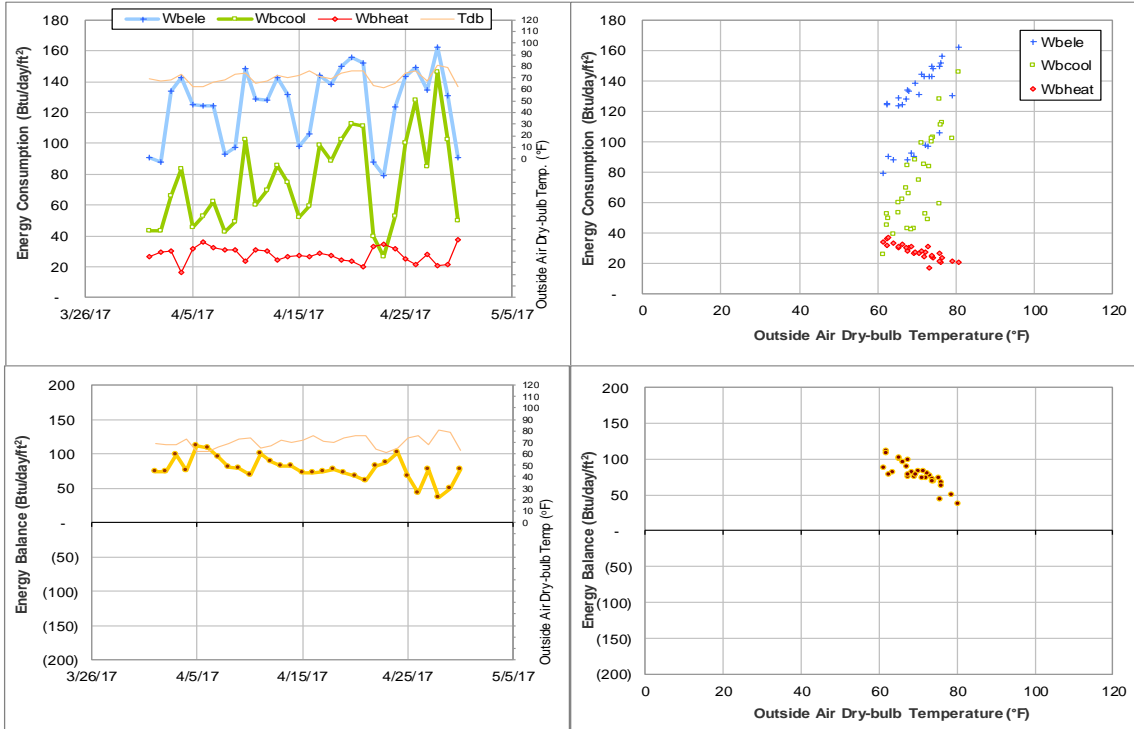


Figure IV-133 Physical Plant Administration & Shops TAMU BLDG # 1156 Energy Balance Plot during April 2017

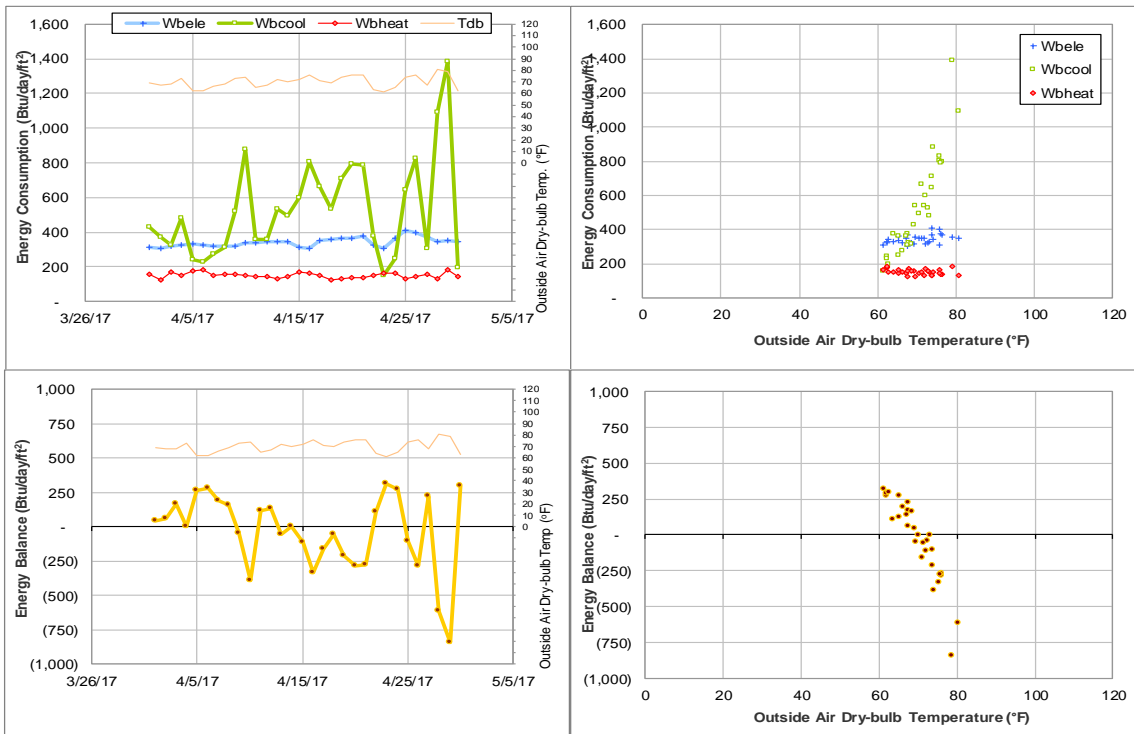


Figure IV-134 Veterinary Anatomic Pathology TAMU BLDG # 1184 Energy Balance Plot during April 2017

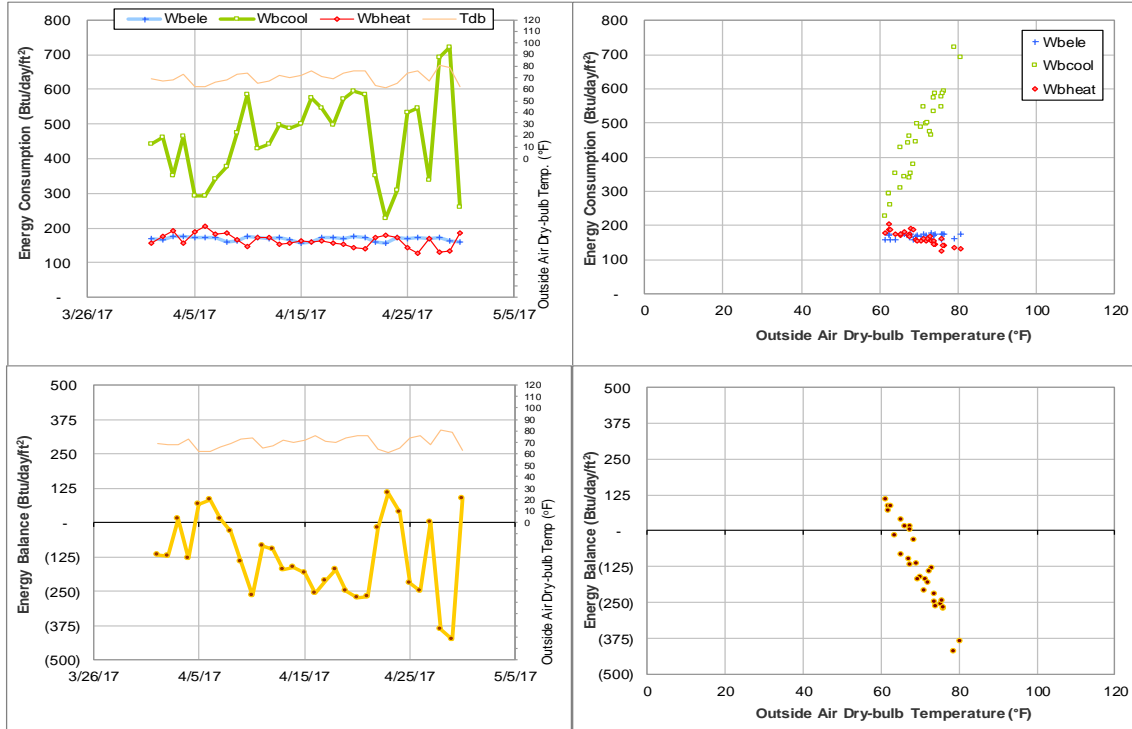


Figure IV-135 Veterinary Large Animal Hospital TAMU BLDG # 1194 Energy Balance Plot during April 2017

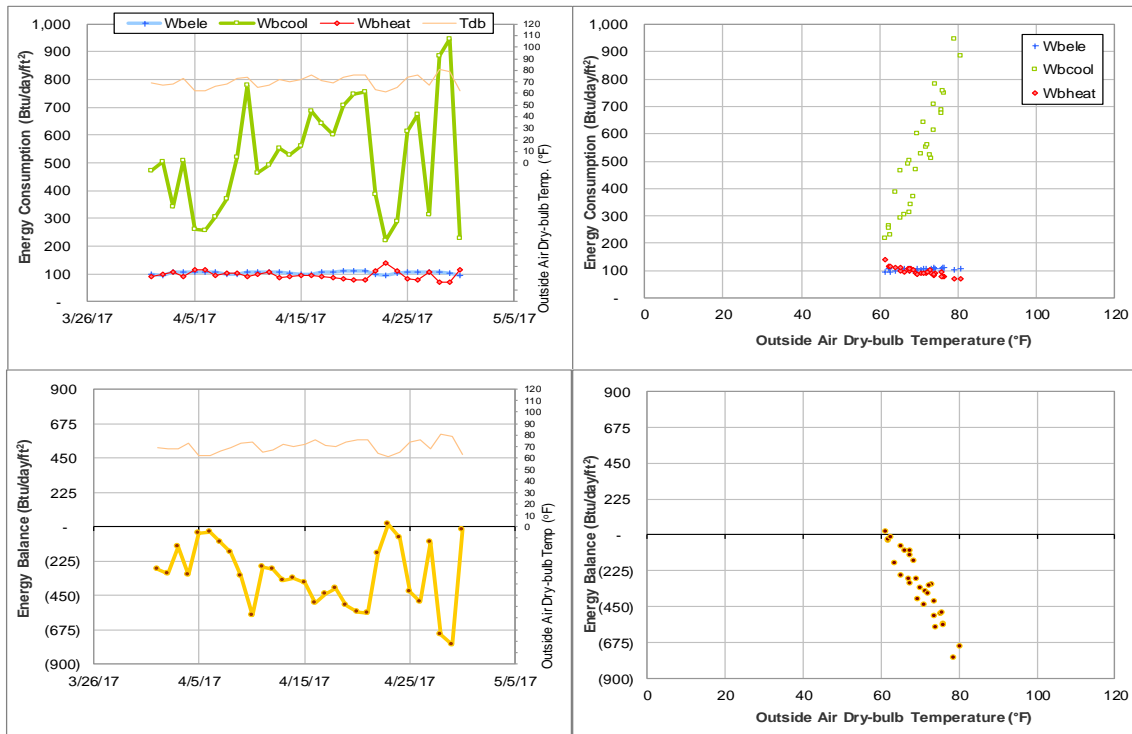


Figure IV-136 Veterinary Research Building TAMU BLDG # 1197 Energy Balance Plot during April 2017

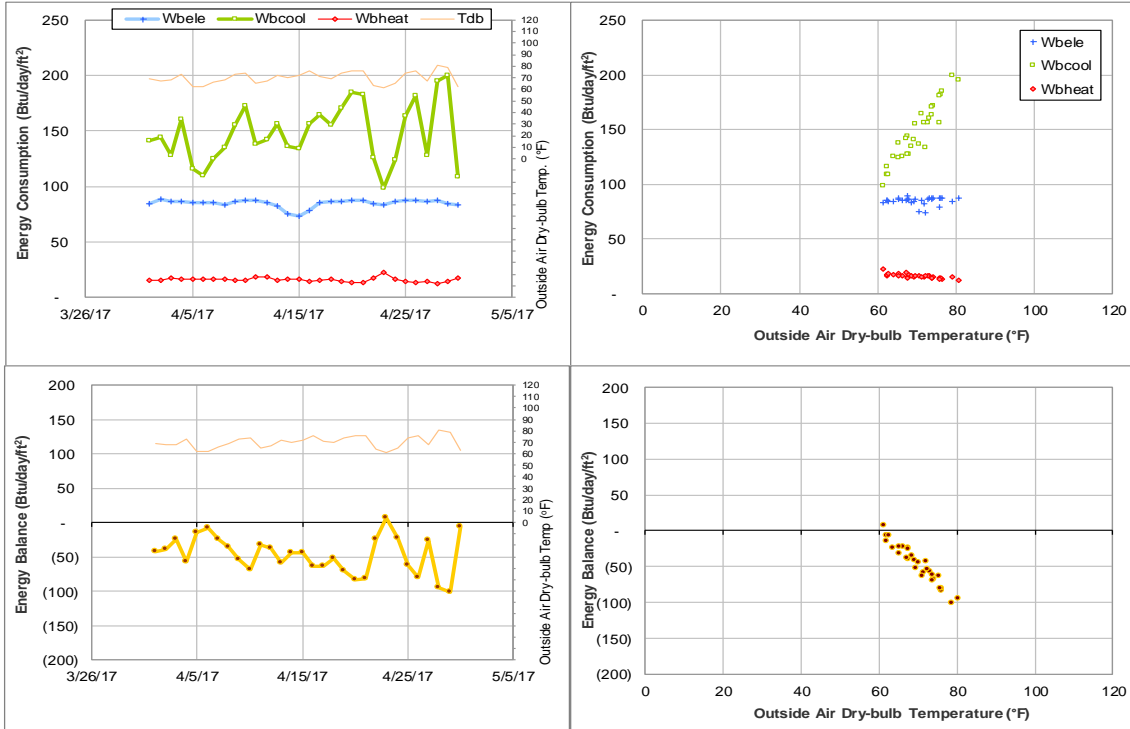


Figure IV-137 Hullabaloo Residence Hall TAMU BLDG # 1416 Energy Balance Plot during April 2017

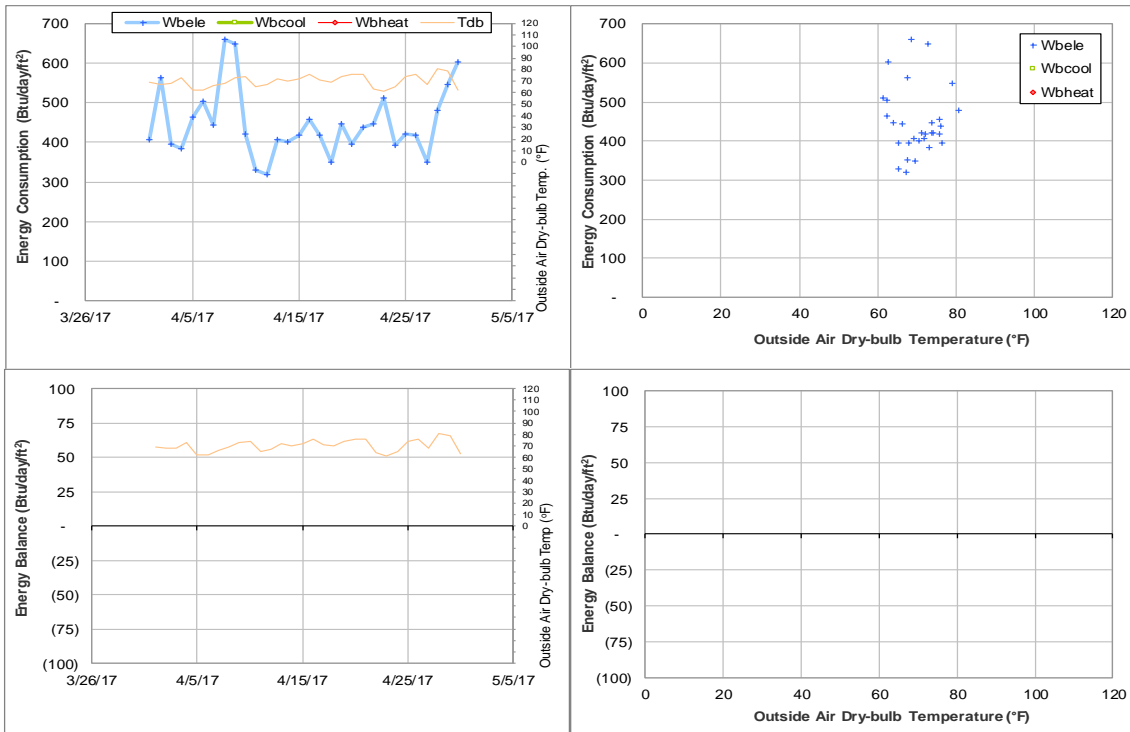


Figure IV-138 University Apartments - Laundry at the Gardens TAMU BLDG # 1450 Energy Balance Plot during April 2017

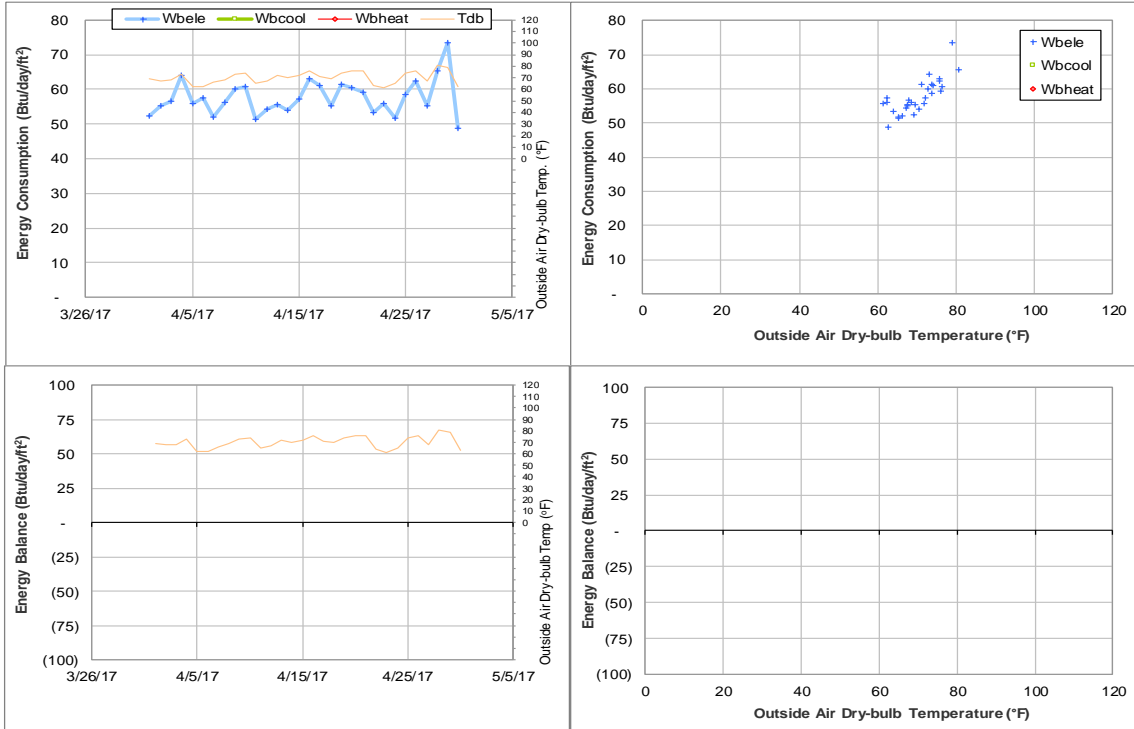


Figure IV-139 University Apartments - The Gardens J TAMU BLDG # 1451 Energy Balance Plot during April 2017

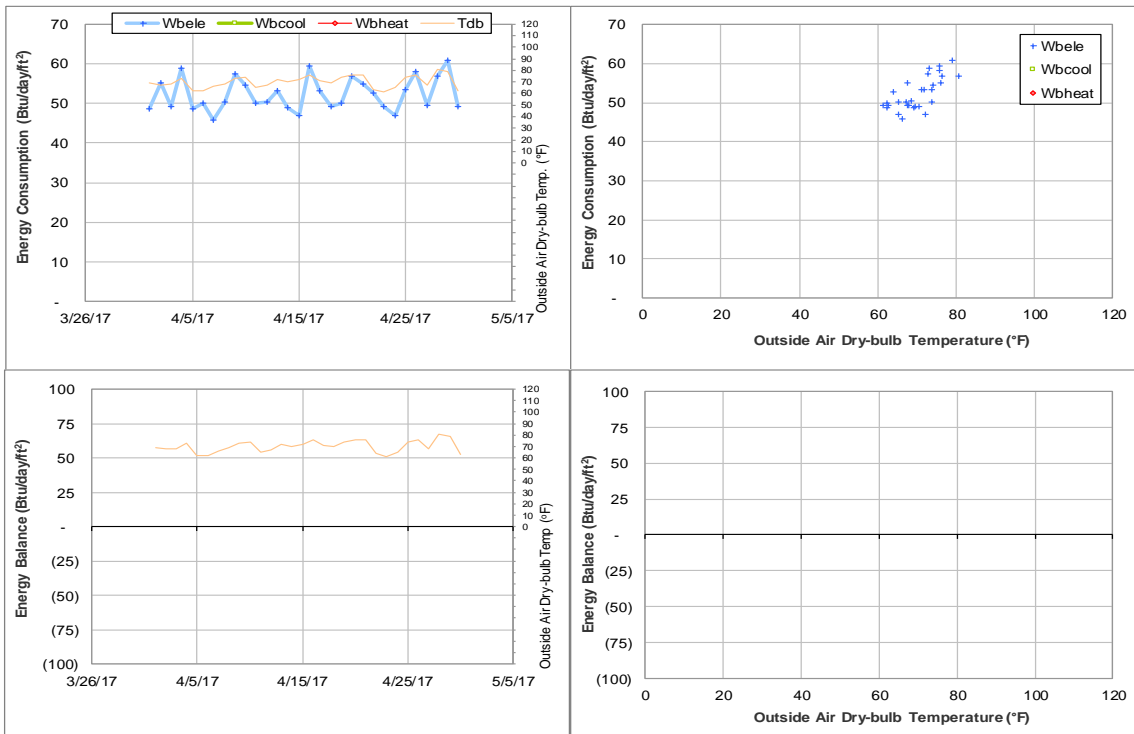


Figure IV-140 University Apartments - The Gardens K TAMU BLDG # 1452 Energy Balance Plot during April 2017

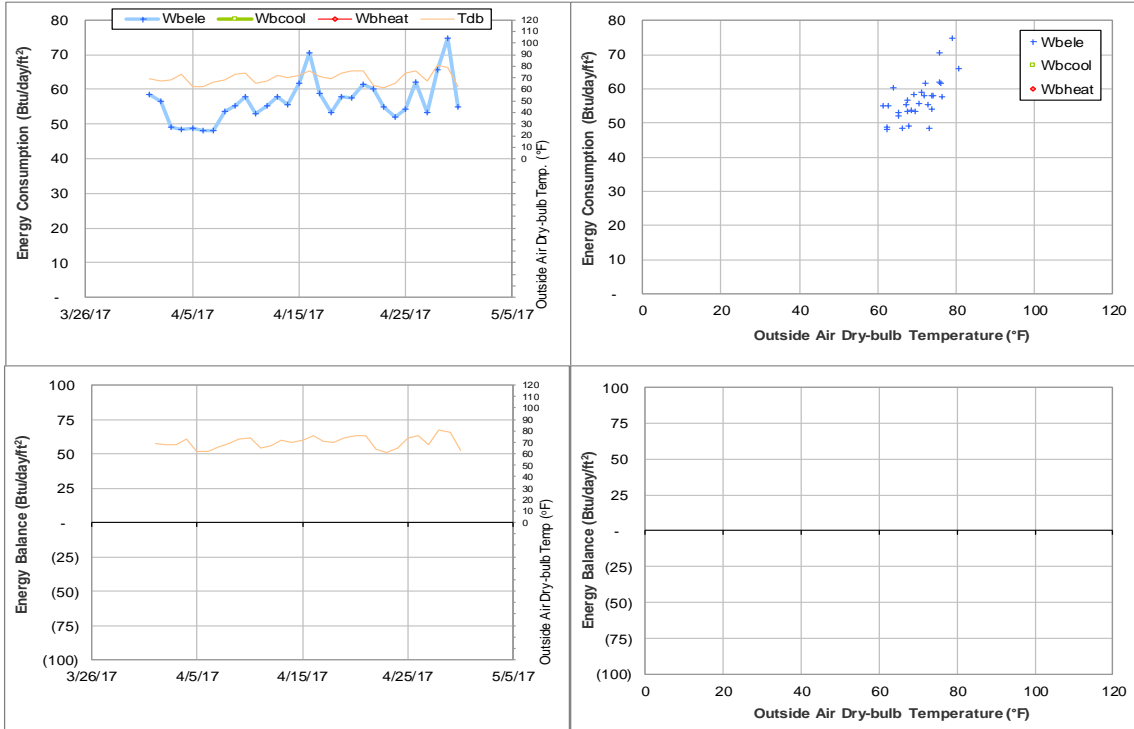


Figure IV-141 University Apartments - The Gardens L TAMU BLDG # 1453 Energy Balance Plot during April 2017

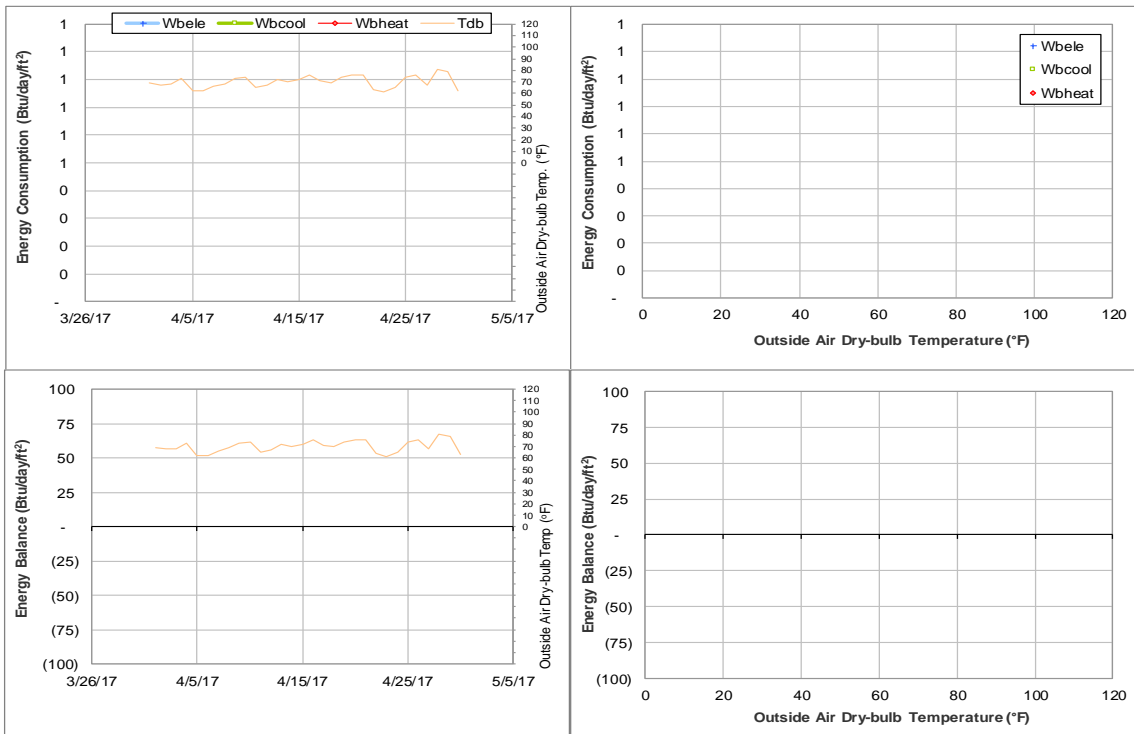


Figure IV-142 University Apartments - The Gardens F TAMU BLDG # 1454 Energy Balance Plot during April 2017

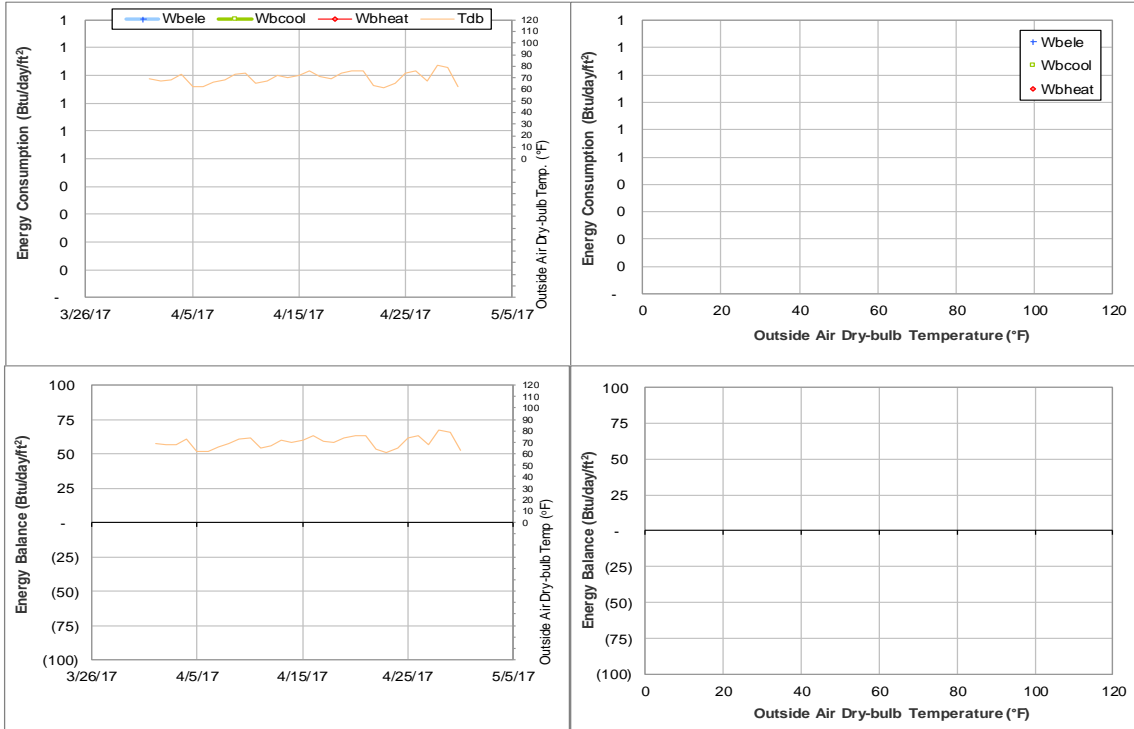


Figure IV-143 University Apartments - The Gardens G TAMU BLDG # 1455 Energy Balance Plot during April 2017

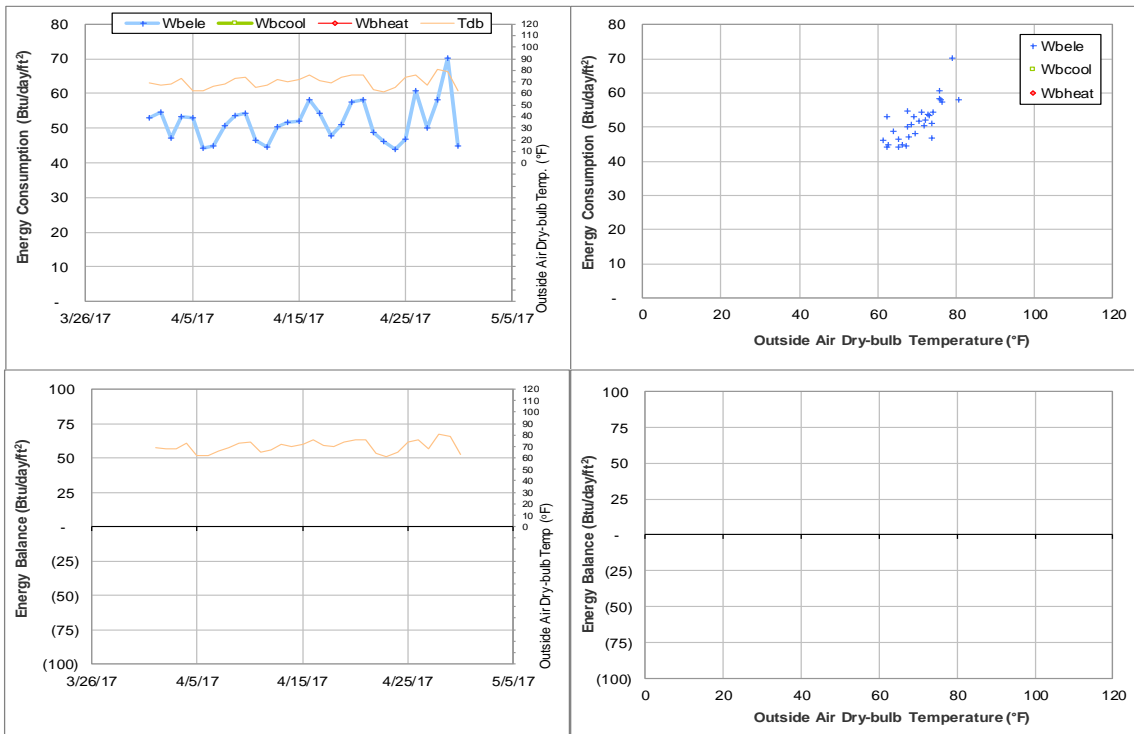


Figure IV-144 University Apartments - The Gardens H TAMU BLDG # 1456 Energy Balance Plot during April 2017

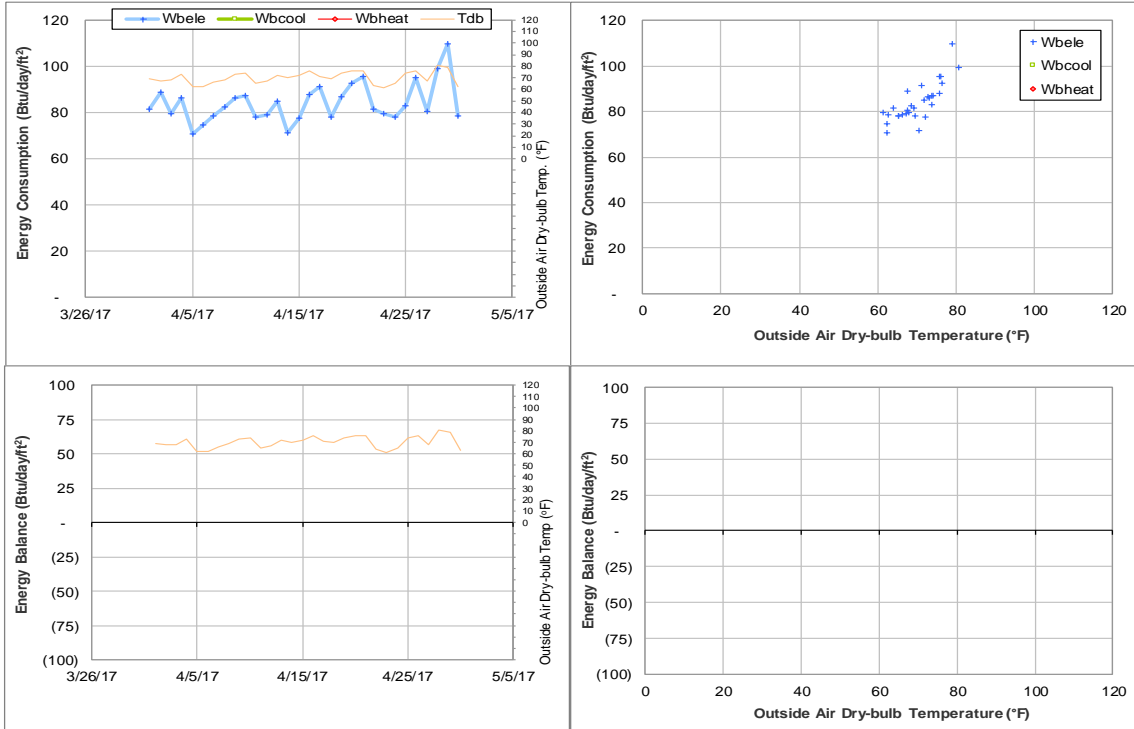


Figure IV-145 University Apartments - The Gardens M TAMU BLDG # 1457 Energy Balance Plot during April 2017

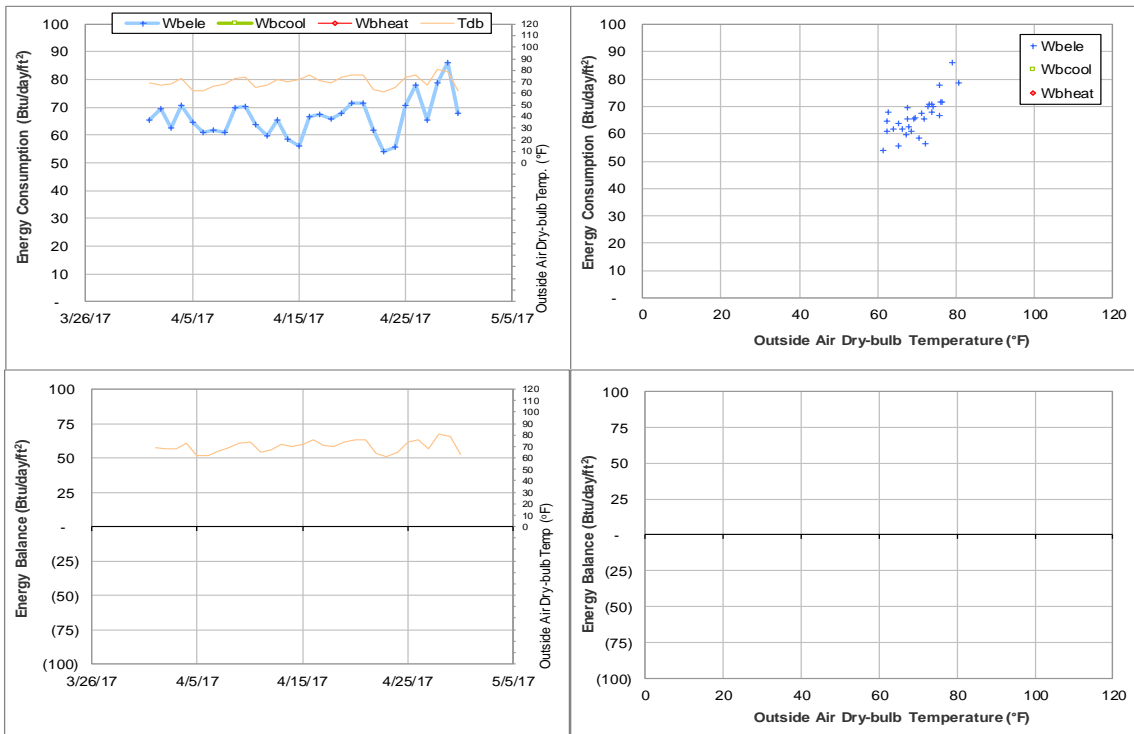


Figure IV-146 University Apartments - The Gardens N TAMU BLDG # 1458 Energy Balance Plot during April 2017

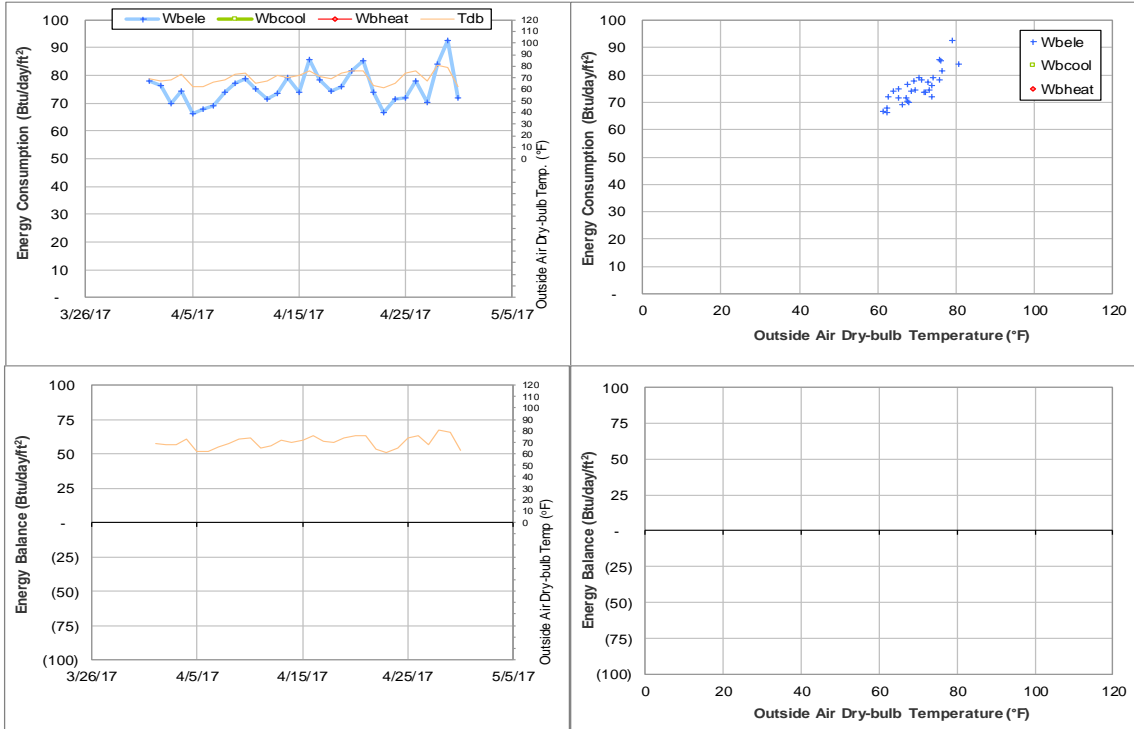


Figure IV-147 University Apartments - The Gardens P TAMU BLDG # 1459 Energy Balance Plot during April 2017

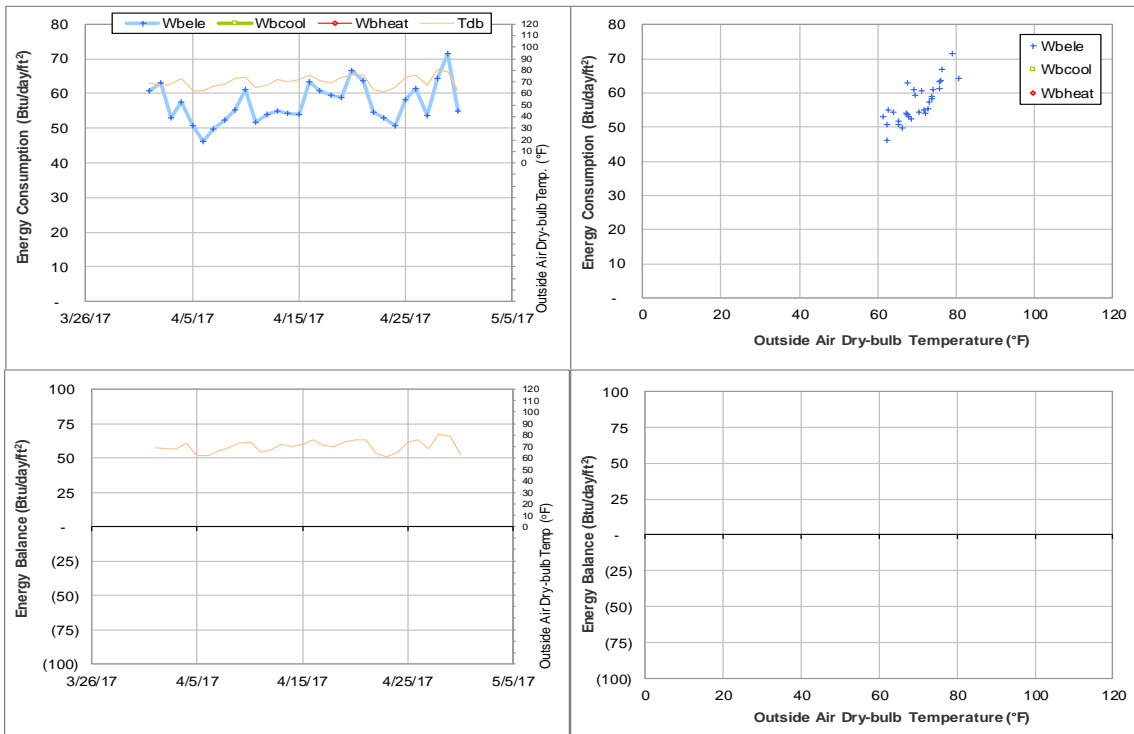


Figure IV-148 University Apartments - The Gardens Q TAMU BLDG # 1460 Energy Balance Plot during April 2017

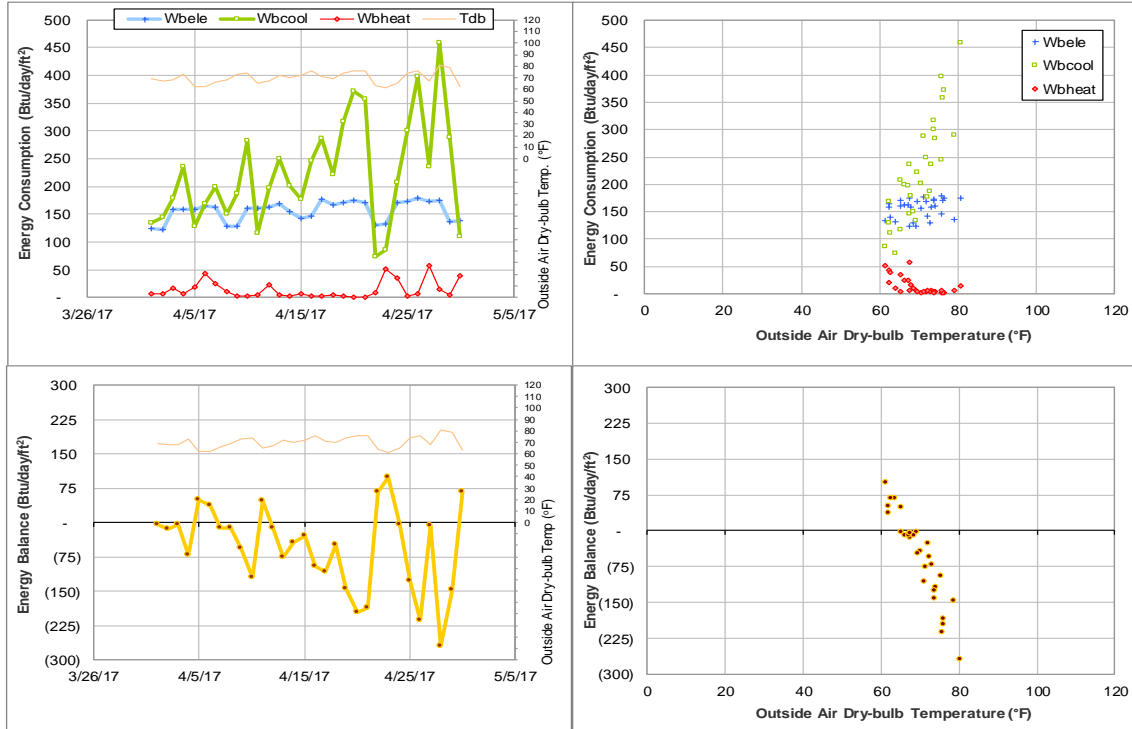


Figure IV-149 Utilities & Energy Services Business Office TAMU BLDG # 1497 Energy Balance Plot during April 2017

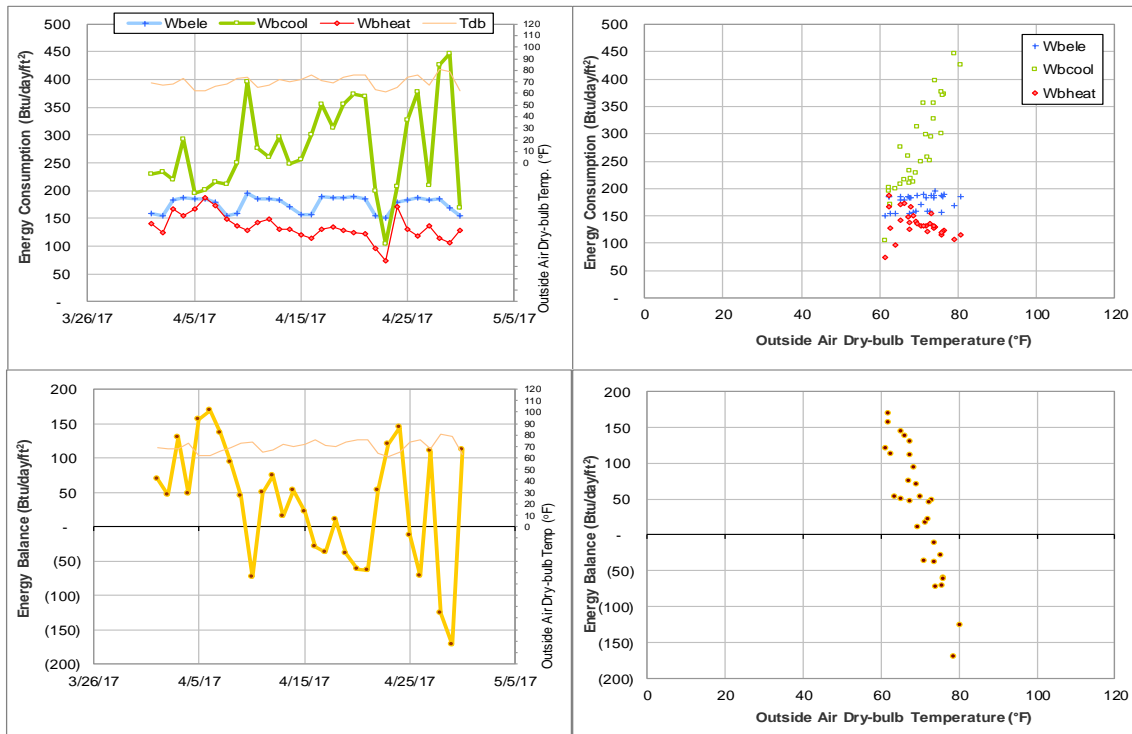


Figure IV-150 Kleberg Center TAMU BLDG # 1501 Energy Balance Plot during April 2017

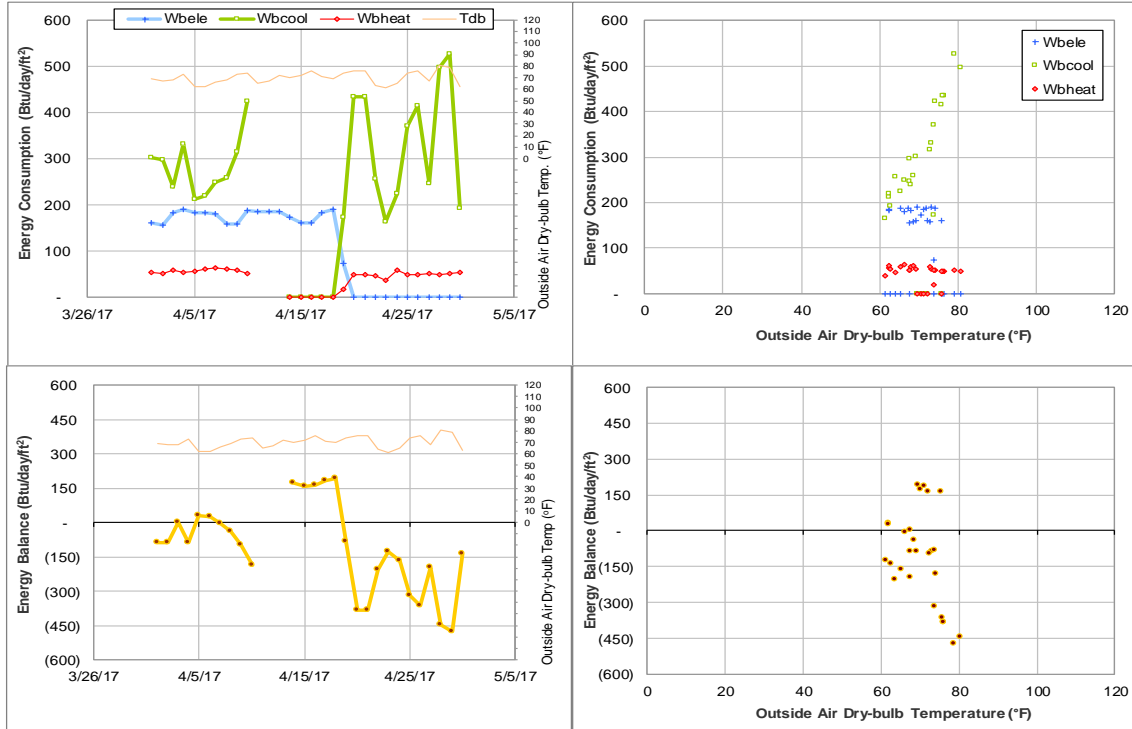


Figure IV-151 Heep Center TAMU BLDG # 1502 Energy Balance Plot during April 2017

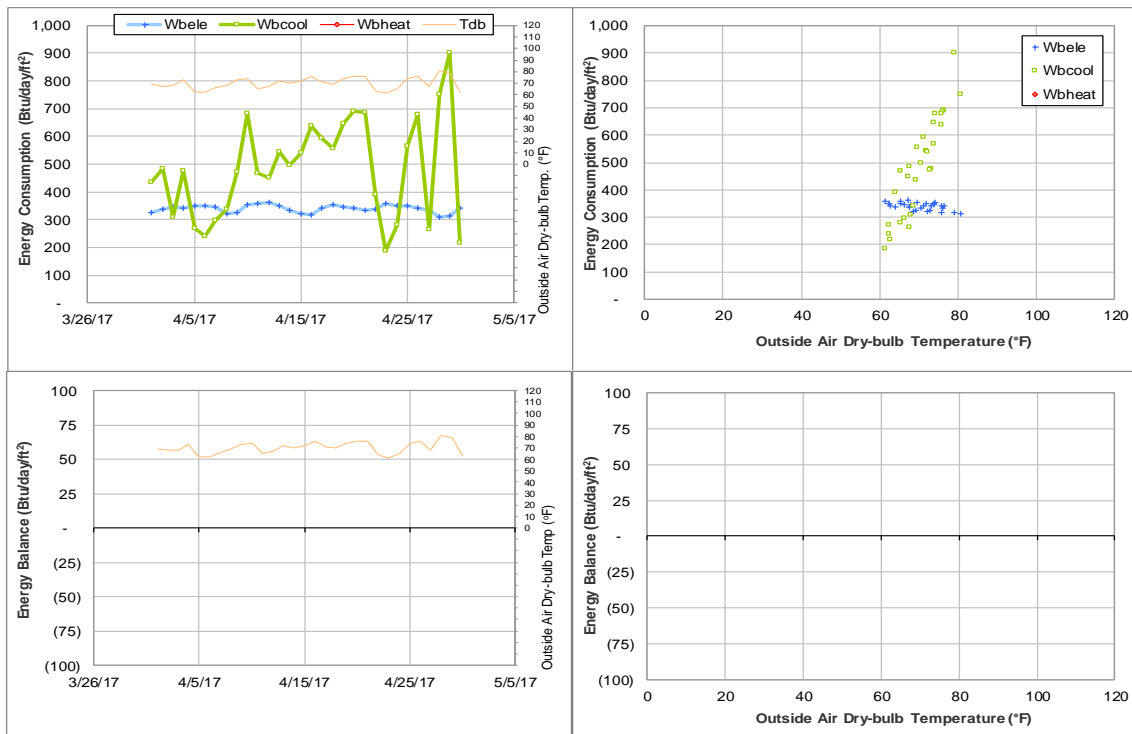


Figure IV-152 Cater-Mattil Hall TAMU BLDG # 1503 Energy Balance Plot during April 2017

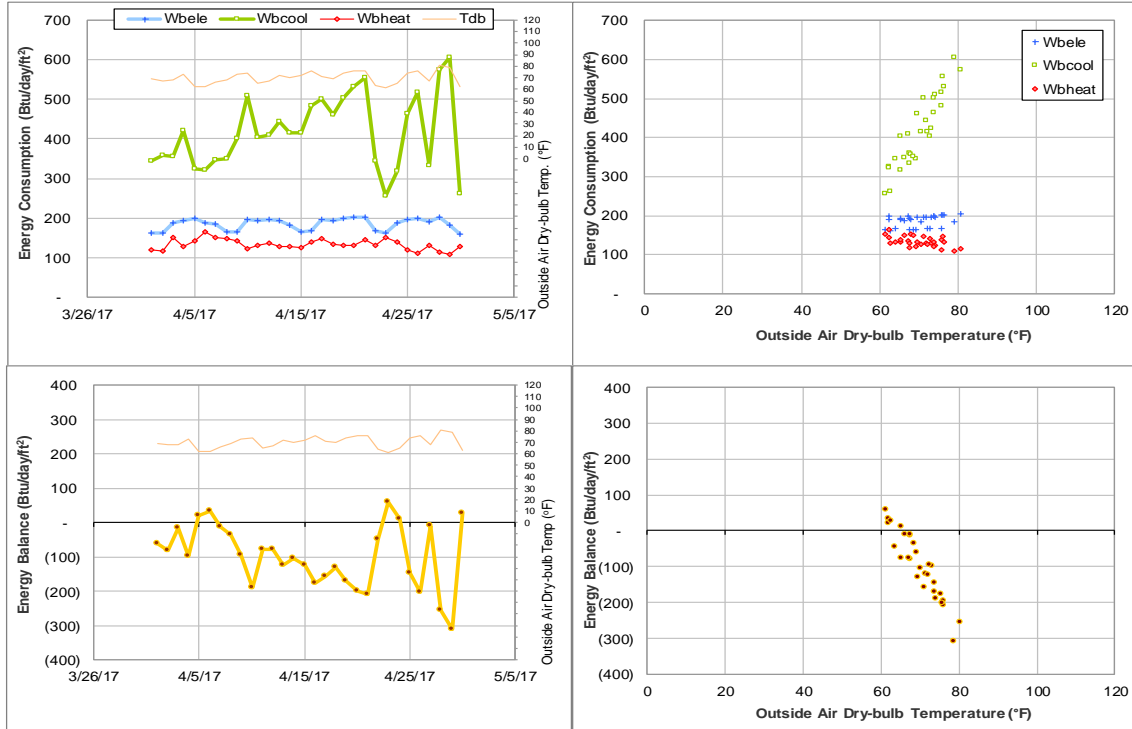


Figure IV-153 Reynolds Medical Sciences Building TAMU BLDG # 1504 Energy Balance Plot during April 2017

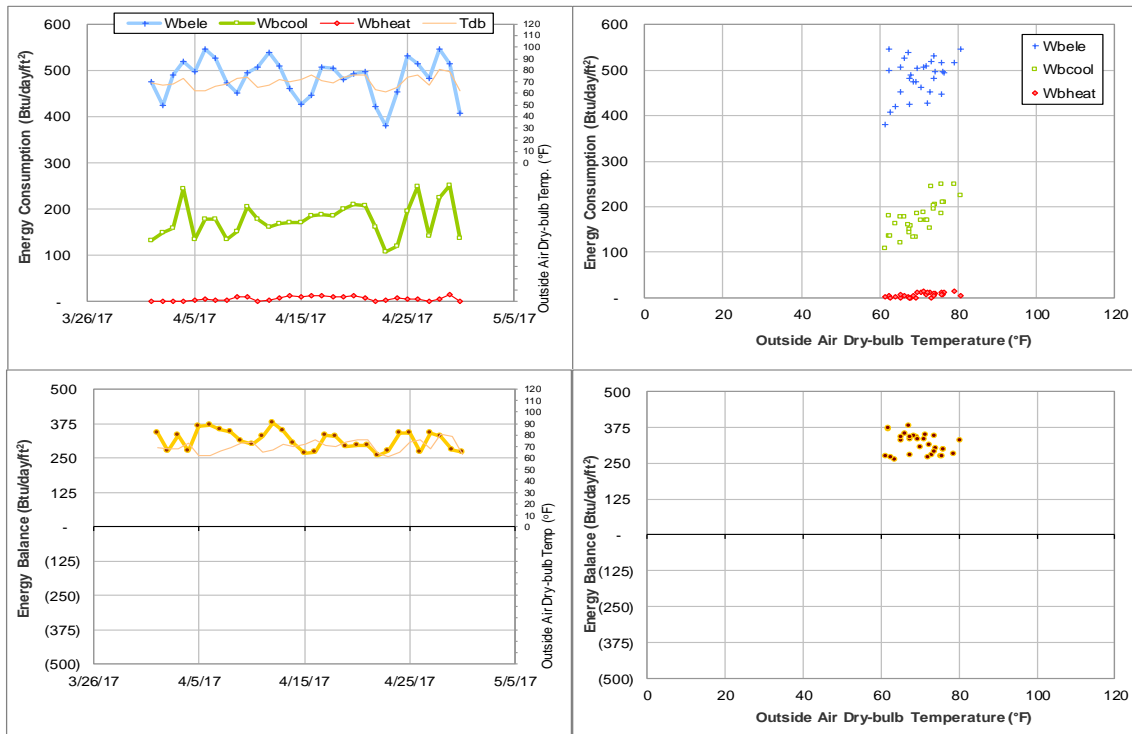


Figure IV-154 Rosenthal Meat Science & Technology Center TAMU BLDG # 1505 Energy Balance Plot during April 2017

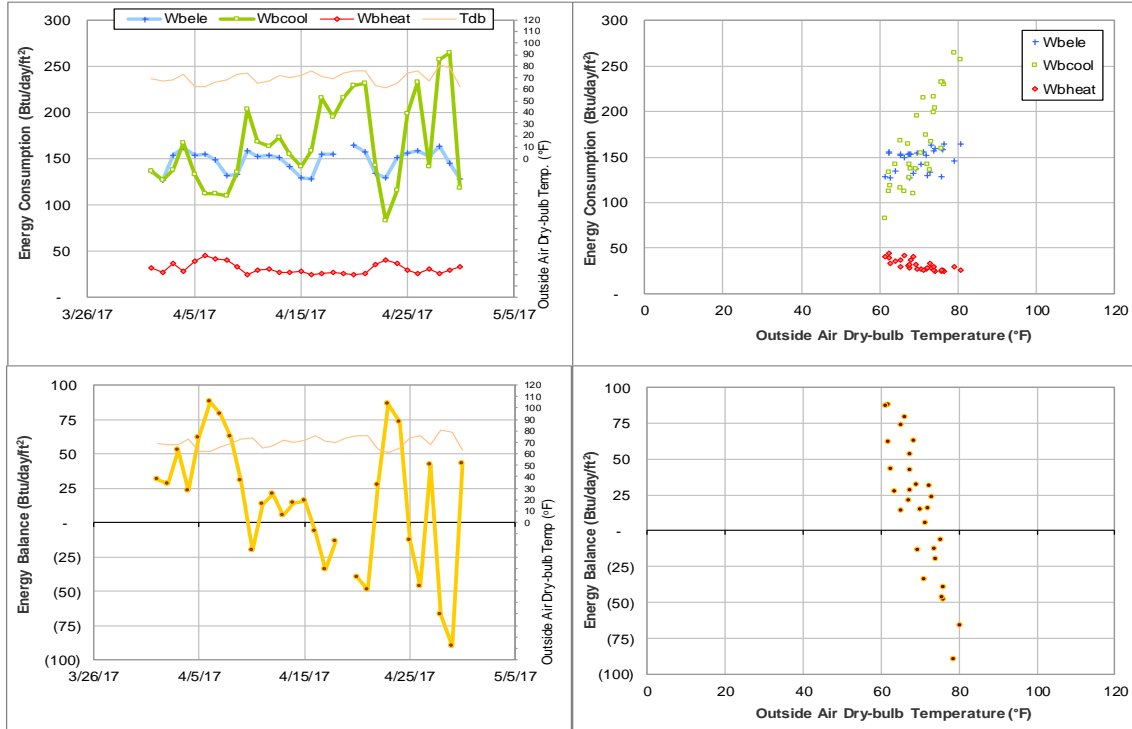


Figure IV-155 Horticulture-Forest Science Building TAMU BLDG # 1506 Energy Balance Plot during April 2017

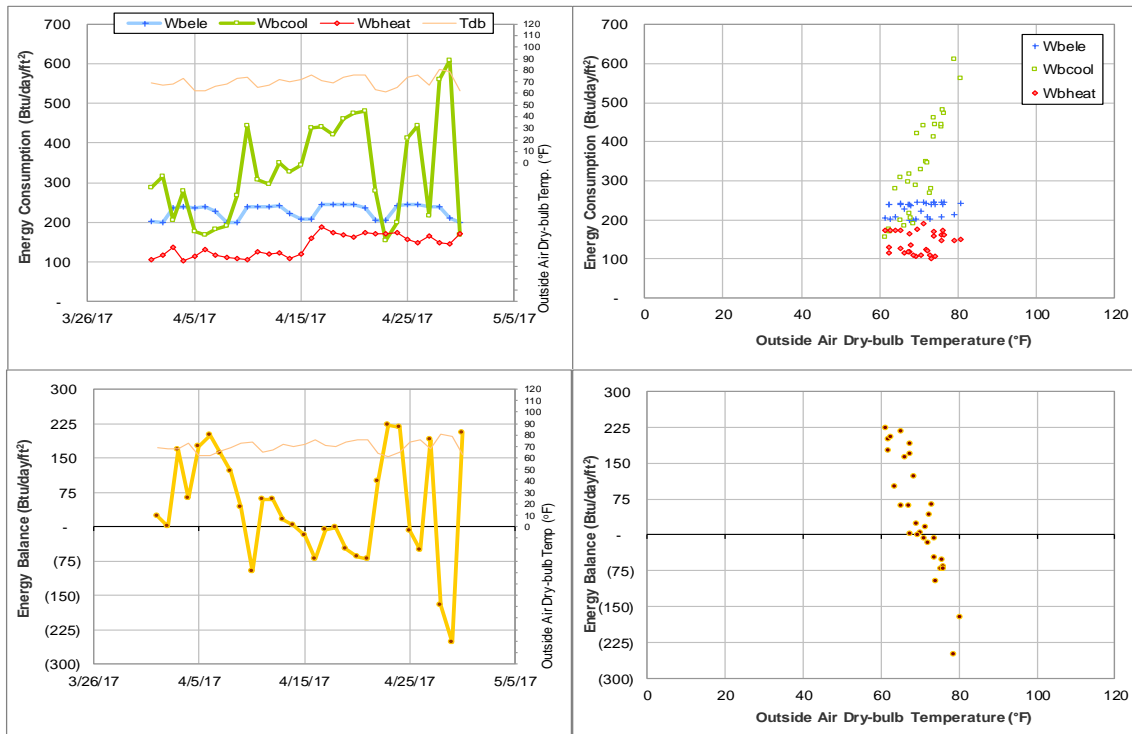


Figure IV-156 Biochemistry-Biophysics Building TAMU BLDG # 1507 Energy Balance Plot during April 2017

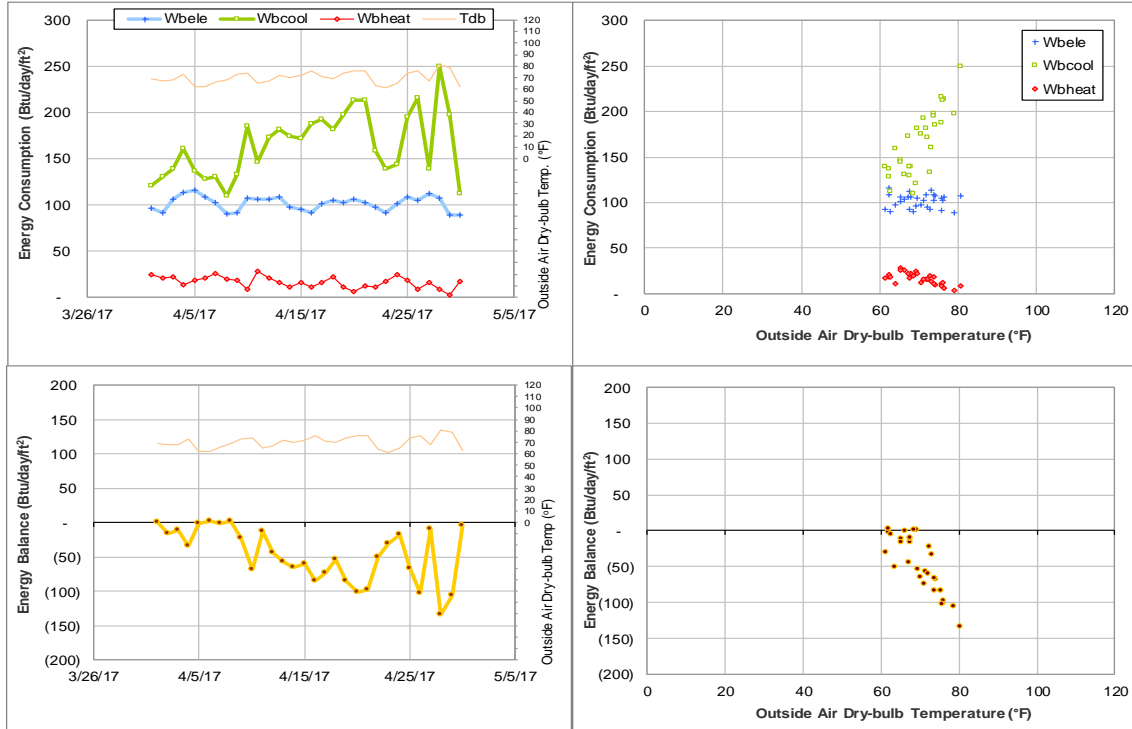


Figure IV-157 Price Hobgood Ag. Engineering Research Lab TAMU BLDG # 1508 Energy Balance Plot during April 2017

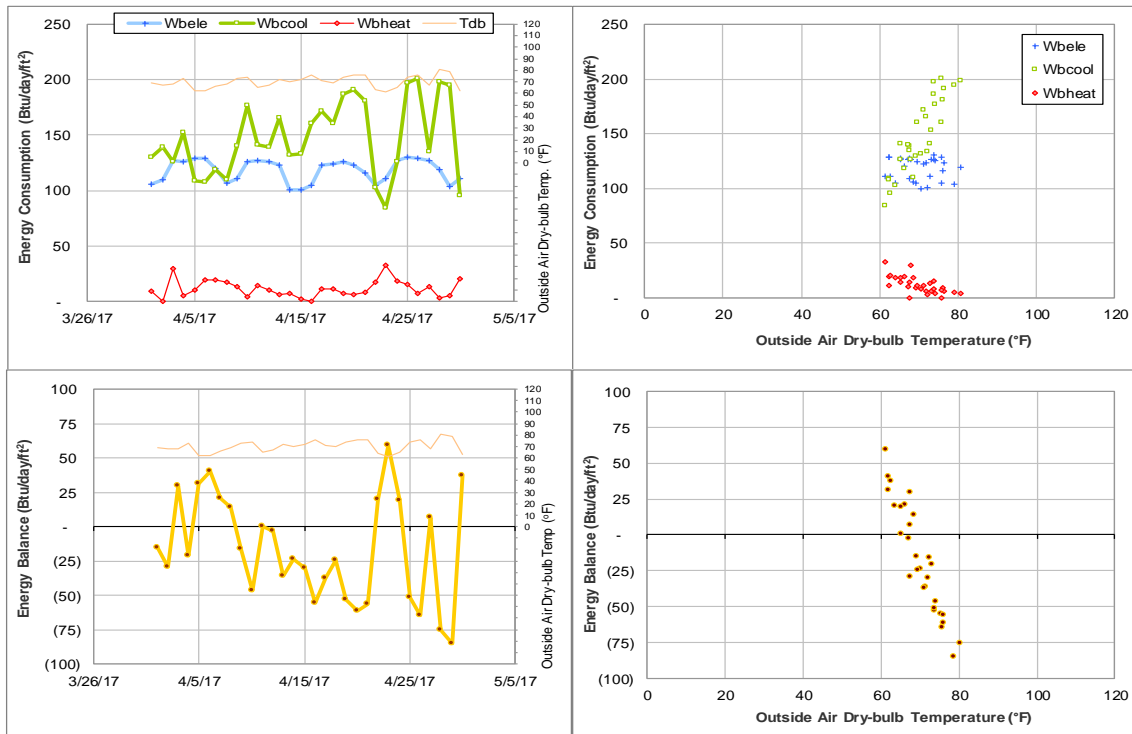


Figure IV-158 Medical Sciences Library TAMU BLDG # 1509 Energy Balance Plot during April 2017

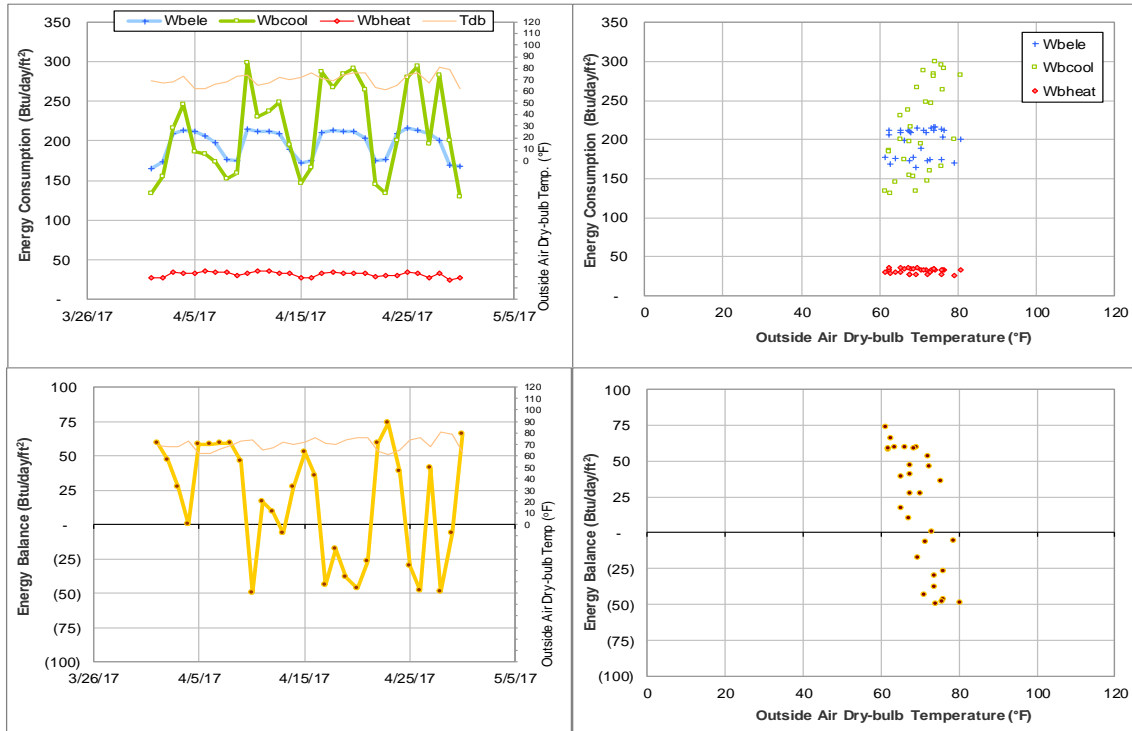


Figure IV-159 Wehner Building TAMU BLDG # 1510 Energy Balance Plot during April 2017

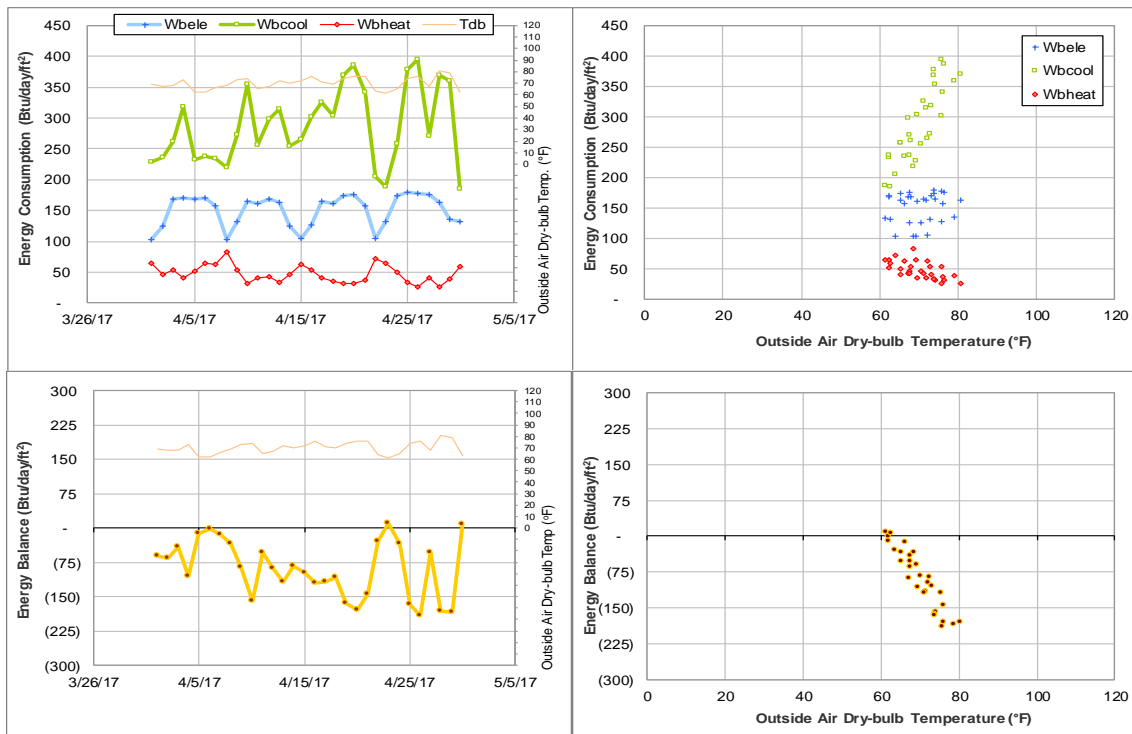


Figure IV-160 West Campus Library Facility TAMU BLDG # 1511 Energy Balance Plot during April 2017

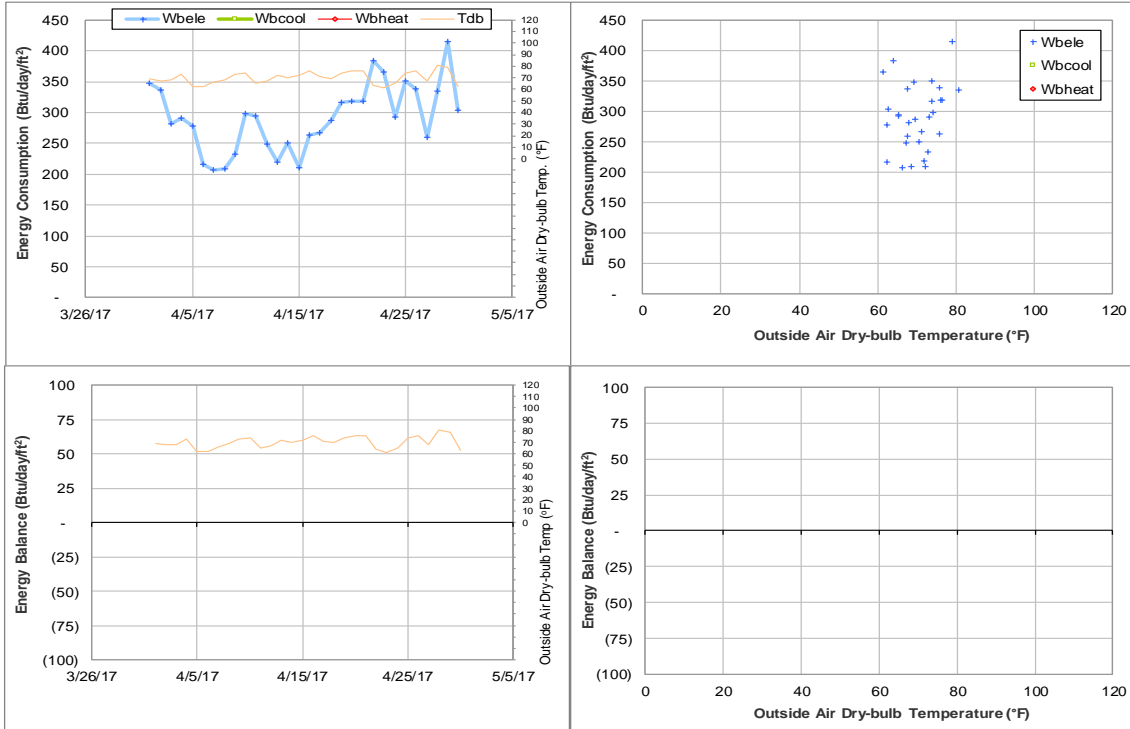


Figure IV-161 Southern Crop Improvement Greenhouse TAMU BLDG # 1512 Energy Balance Plot during April 2017

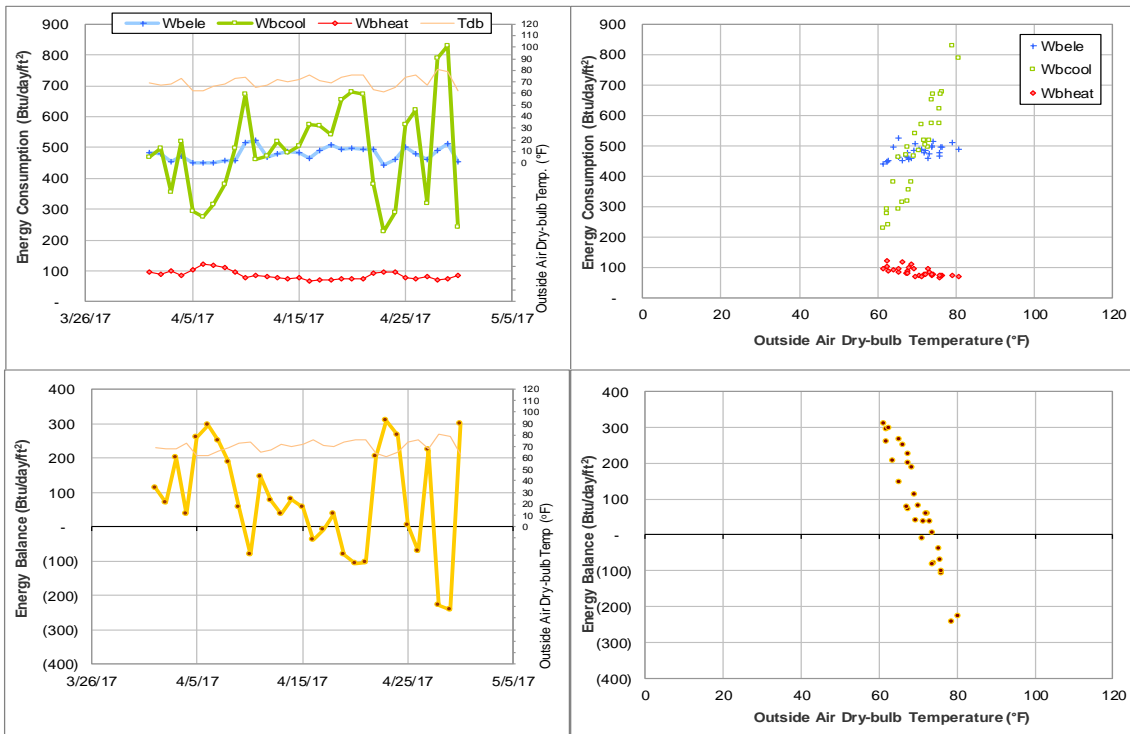


Figure IV-162 Borlaug Center for Southern Crop Improvement TAMU BLDG # 1513 Energy Balance Plot during April 2017

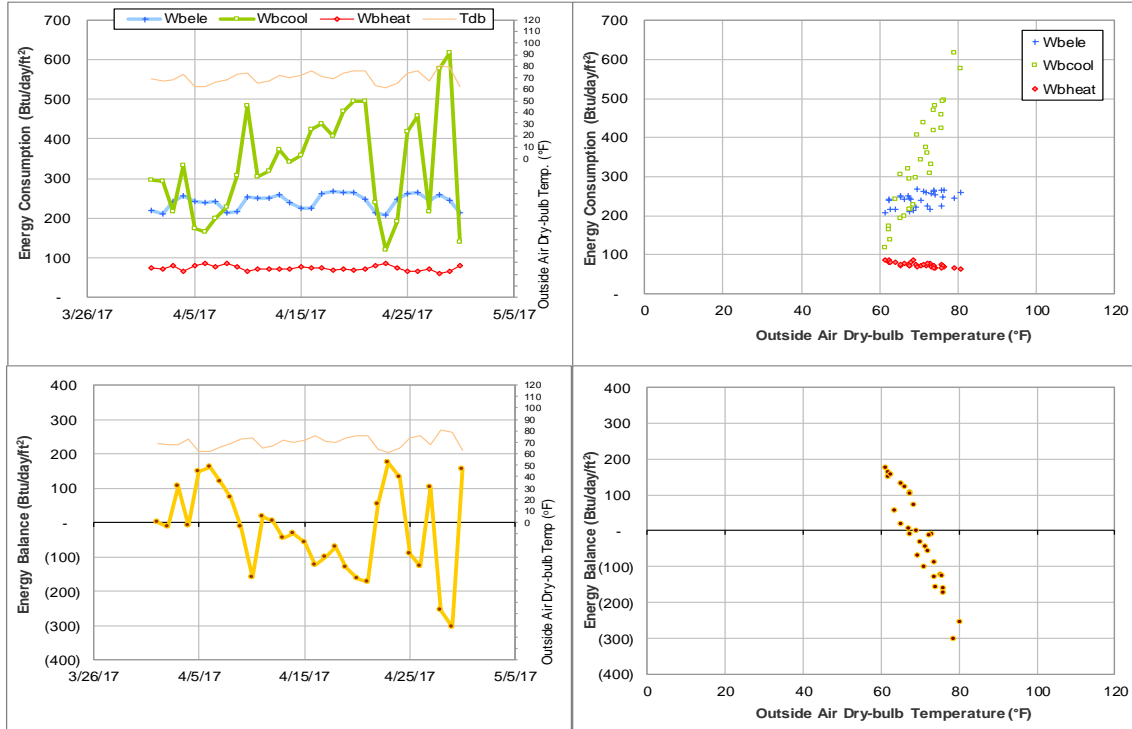


Figure IV-163 TX School of Rural Public Health TAMU BLDG # 1518 Energy Balance Plot during April 2017

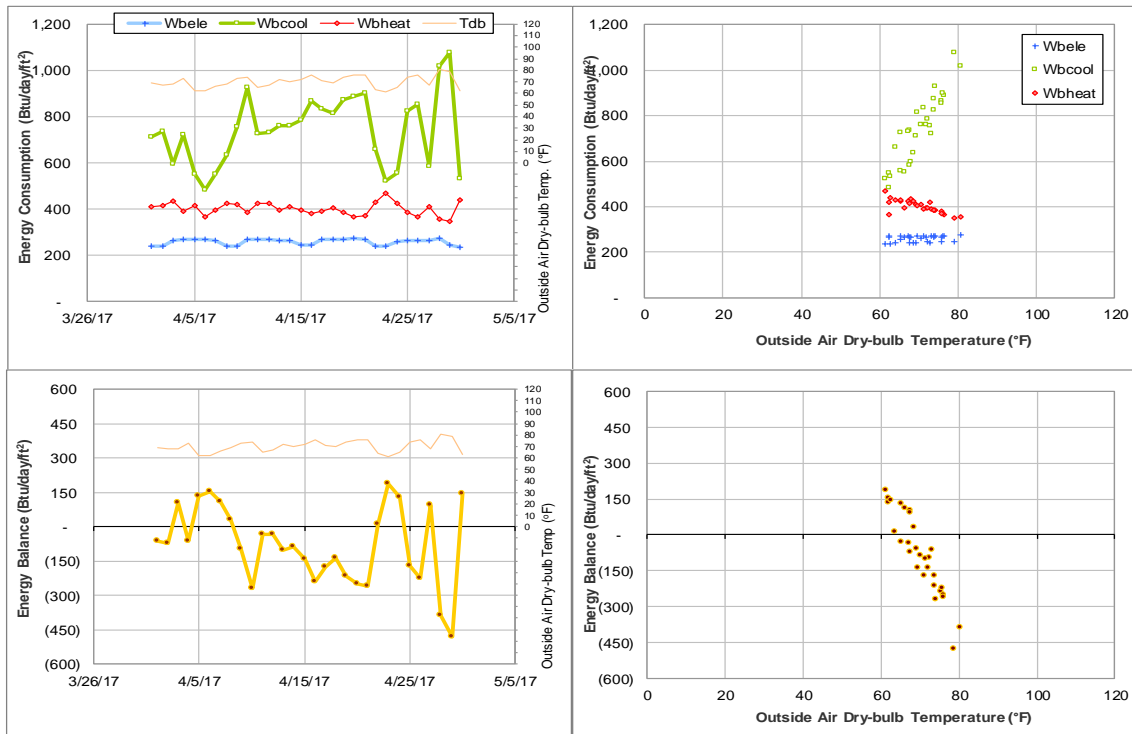


Figure IV-164 Nuclear Magnetic Resonance Facility TAMU BLDG # 1525 Energy Balance Plot during April 2017

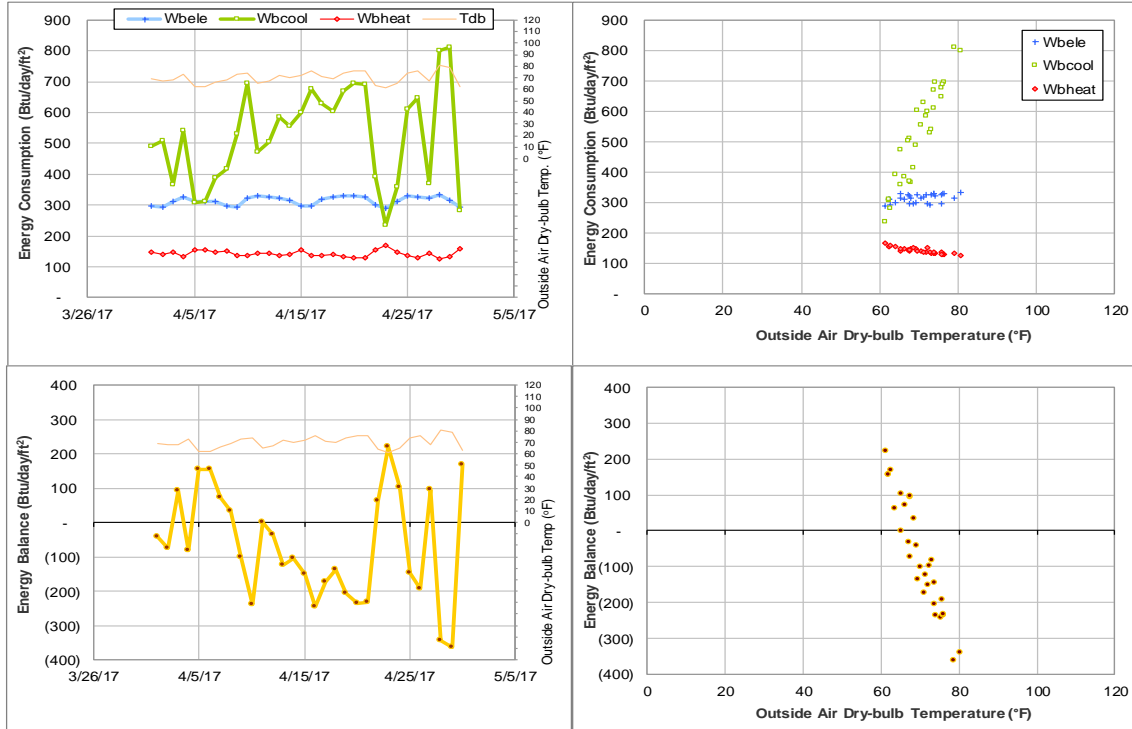


Figure IV-165 Interdisciplinary Life Sciences Building TAMU BLDG # 1530 Energy Balance Plot during April 2017

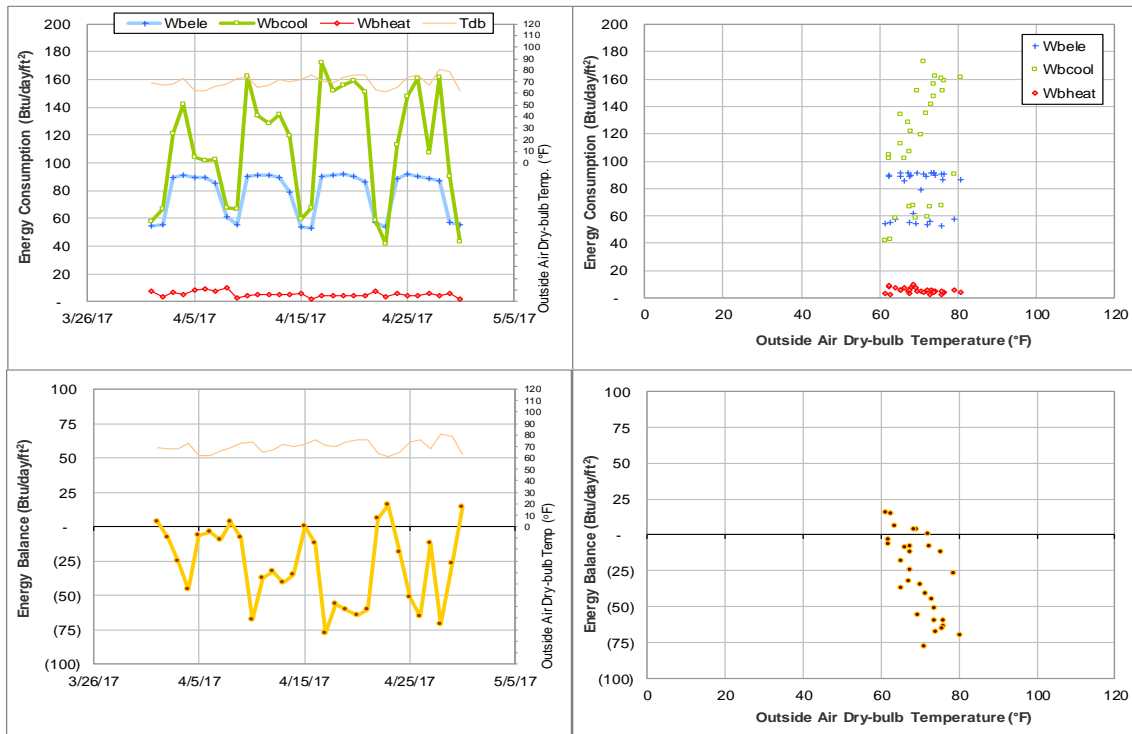


Figure IV-166 Agriculture and Life Sciences Building TAMU BLDG # 1535 Energy Balance Plot during April 2017

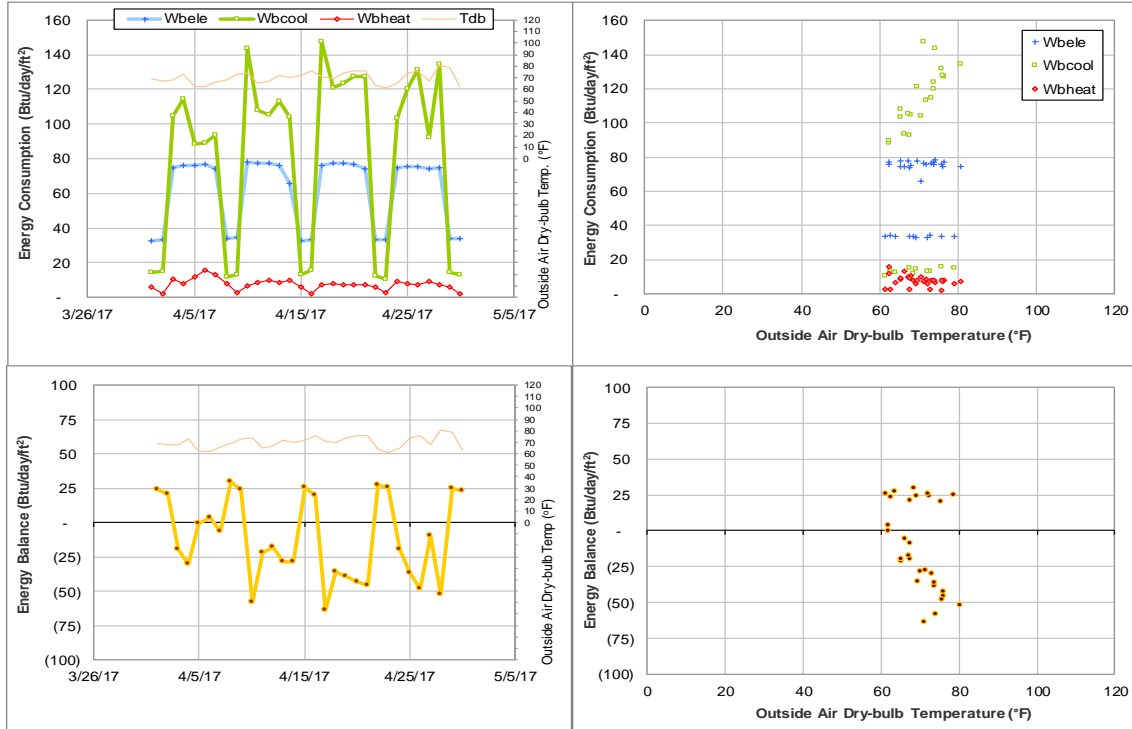


Figure IV-167 AgriLife Services Building TAMU BLDG # 1536 Energy Balance Plot during April 2017

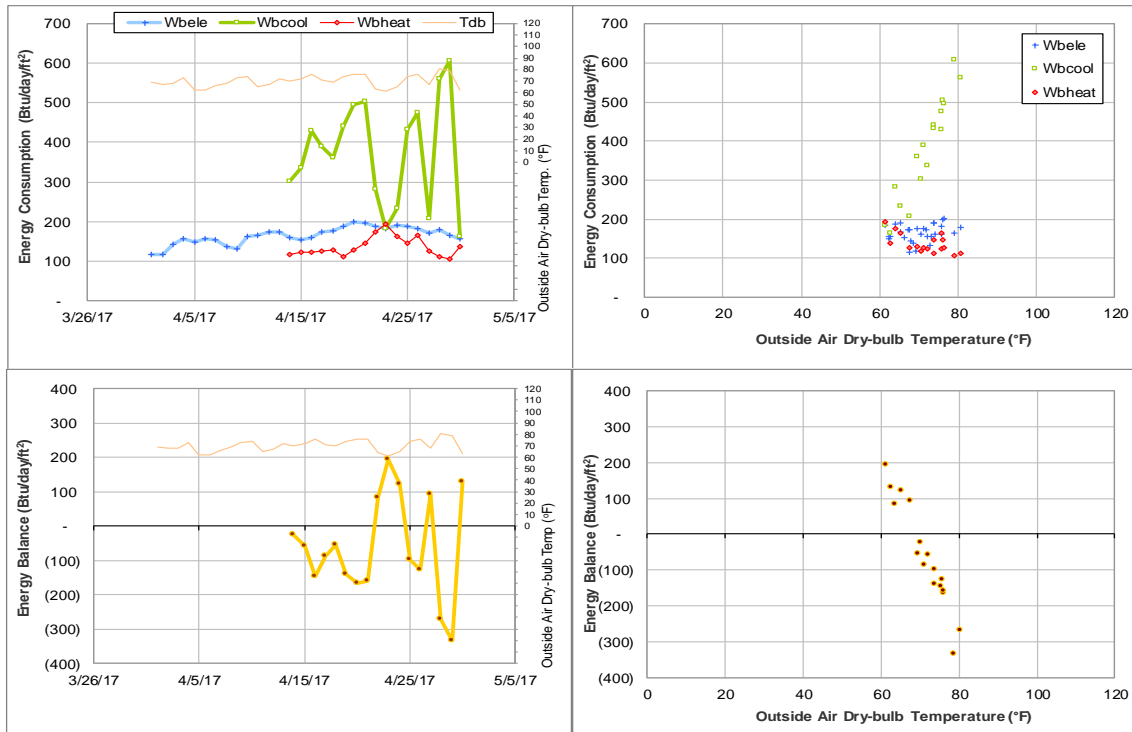


Figure IV-168 Agriculture Public Building TAMU BLDG # 1537 Energy Balance Plot during April 2017

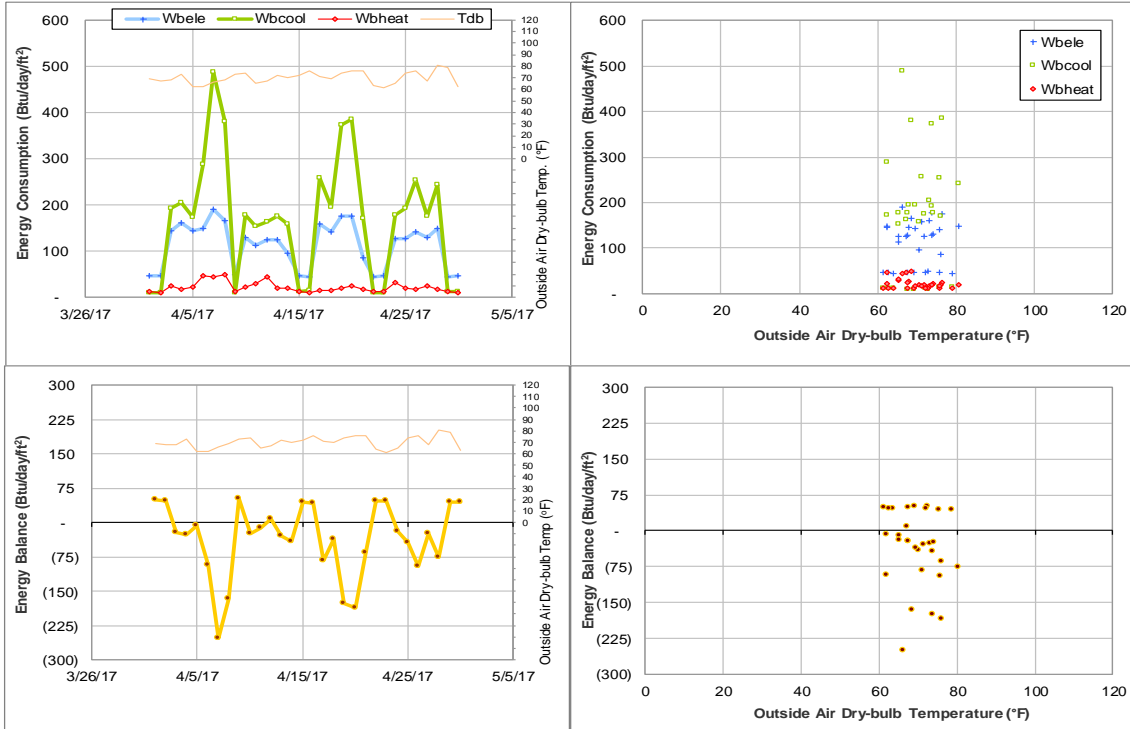


Figure IV-169 Agriculture Program Visitors Center TAMU BLDG # 1538 Energy Balance Plot during April 2017

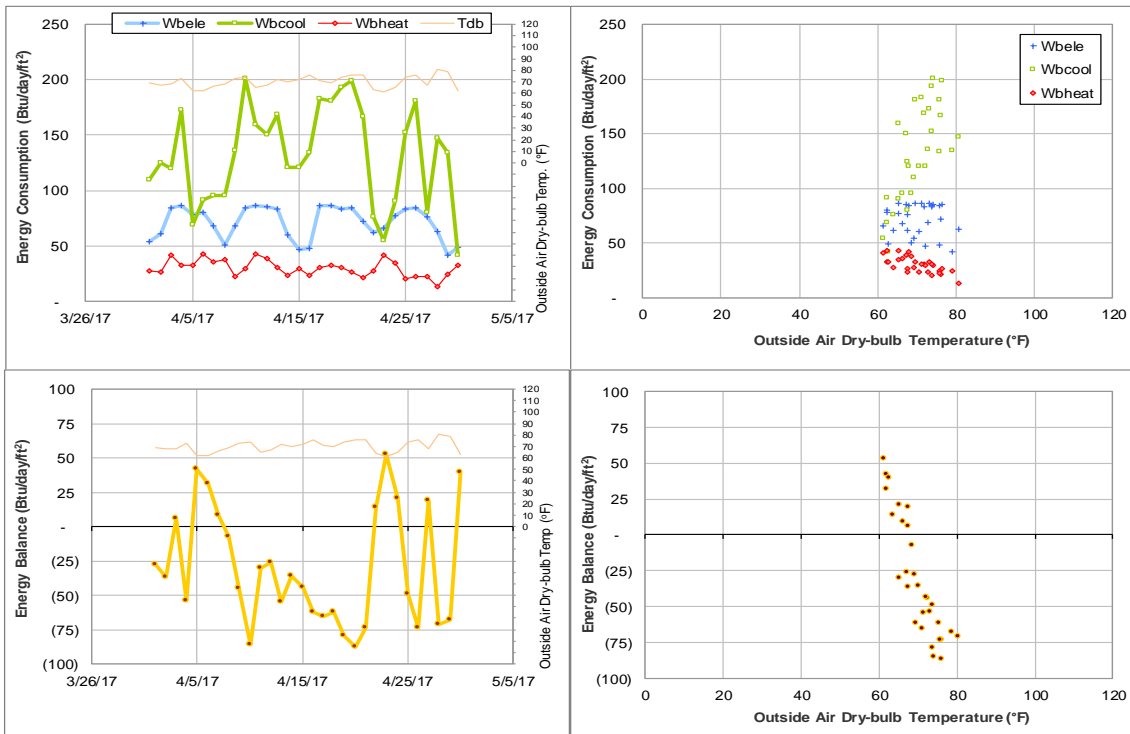


Figure IV-170 Physical Education Activity Program Building TAMU BLDG # 1540 Energy Balance Plot during April 2017

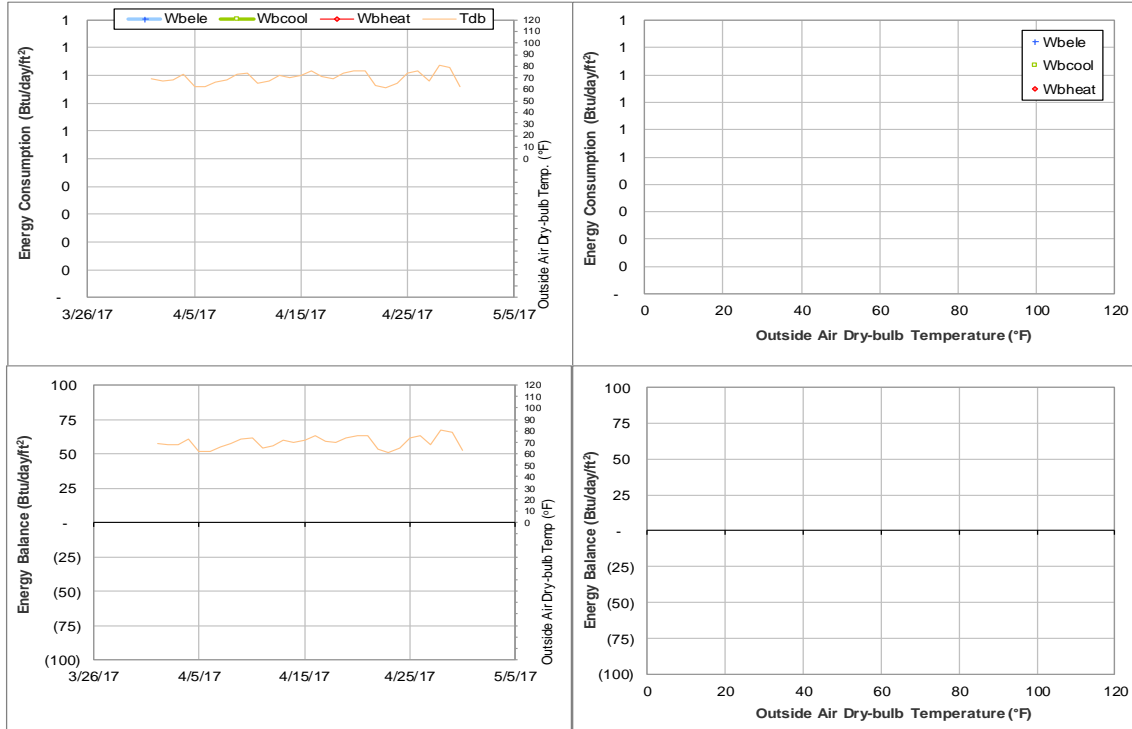


Figure IV-171 Human Clinical Research Building TAMU BLDG # 1542 Energy Balance Plot during April 2017

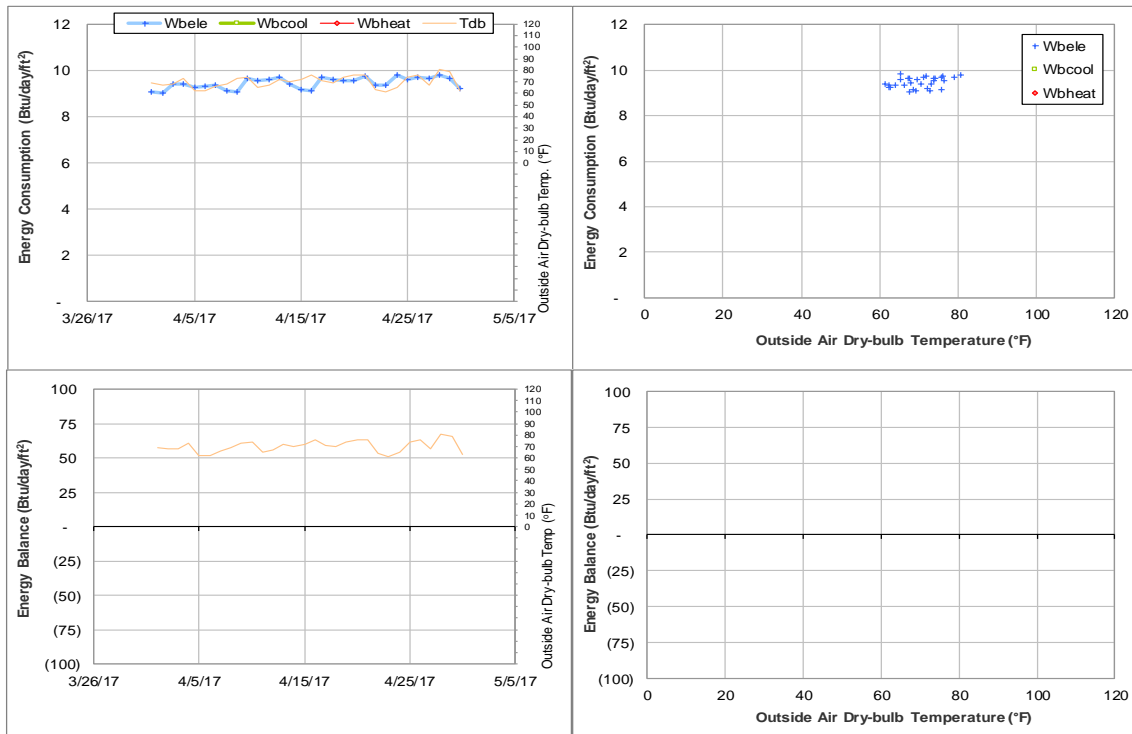


Figure IV-172 Cain Garage TAMU BLDG # 1544 Energy Balance Plot during April 2017

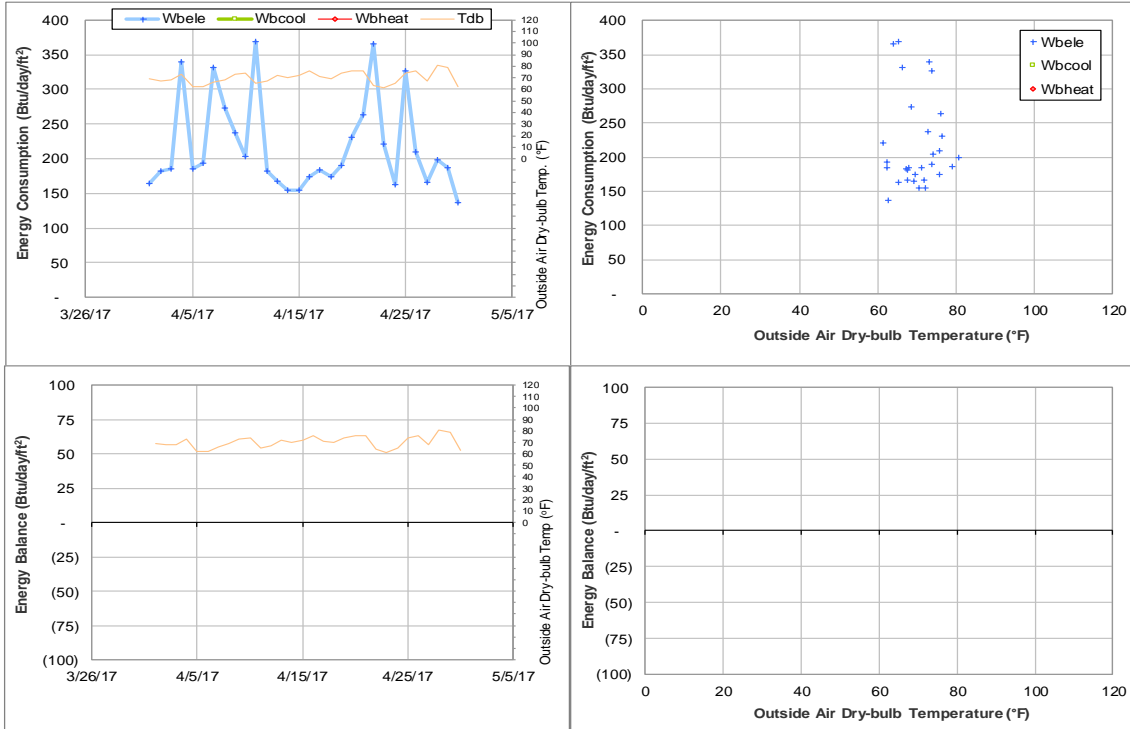


Figure IV-173 Olsen Field at Bluebell Park TAMU BLDG # 1550 Energy Balance Plot during April 2017

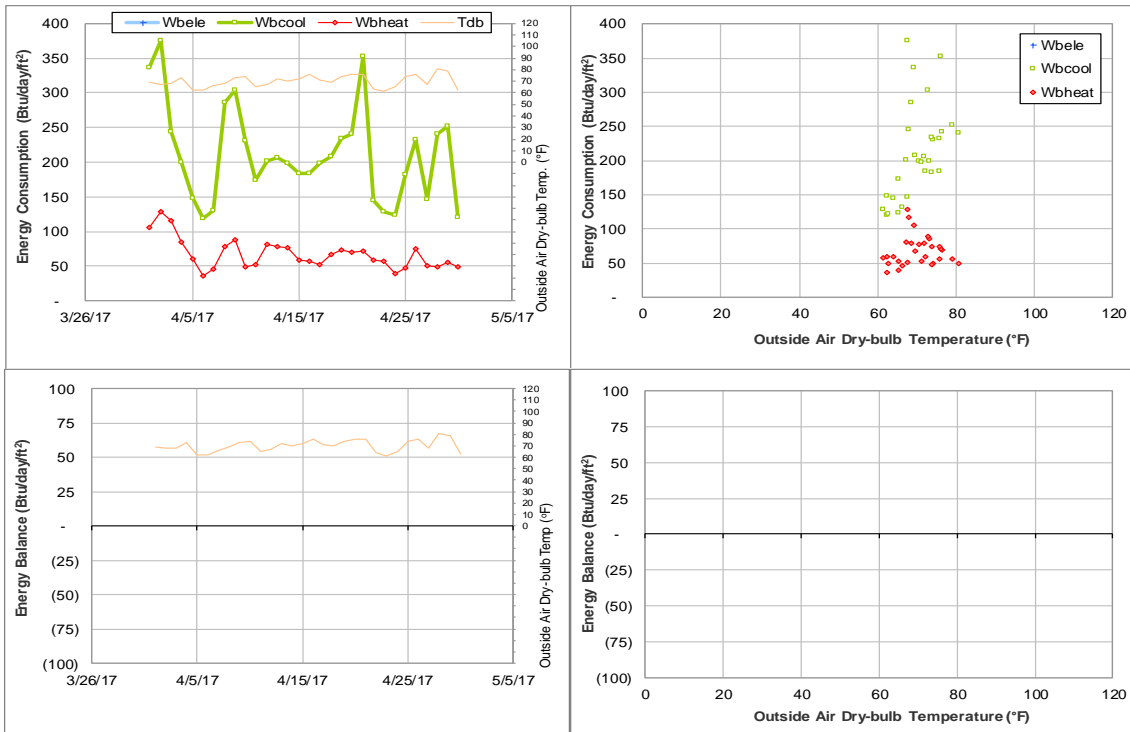


Figure IV-174 Reed Arena and Cox-McFerrin Center TAMU BLDG # 1554 and #1558 Energy Balance Plot during April 2017

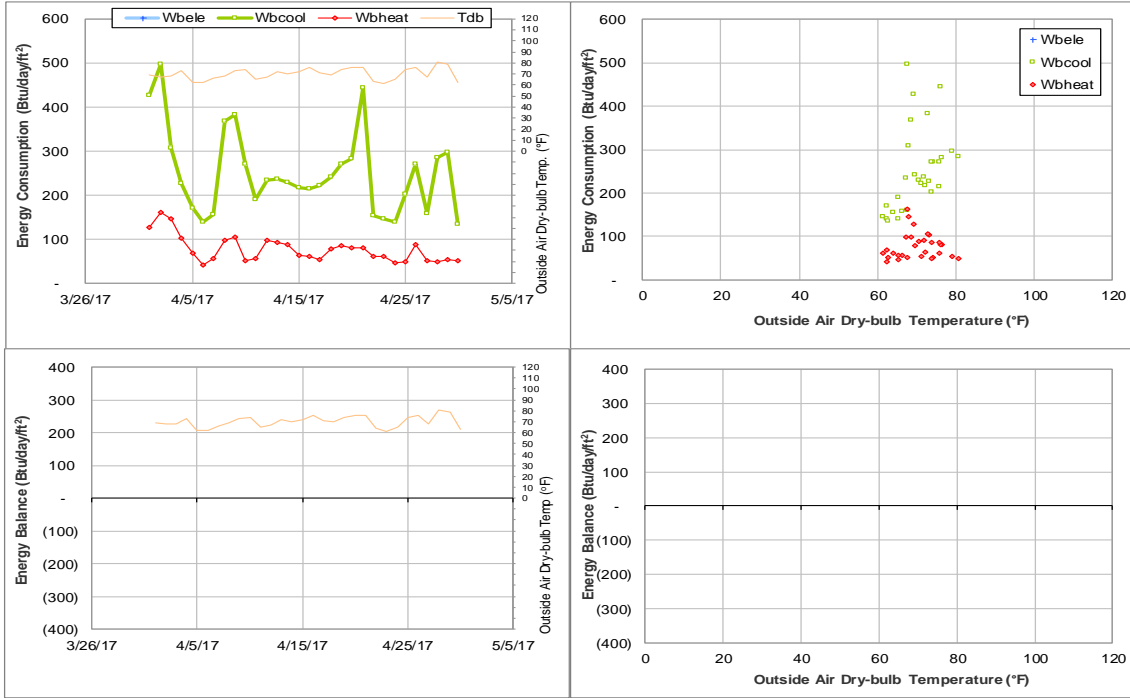


Figure IV-175 Reed Arena TAMU BLDG # 1554 Energy Balance Plot during April 2017

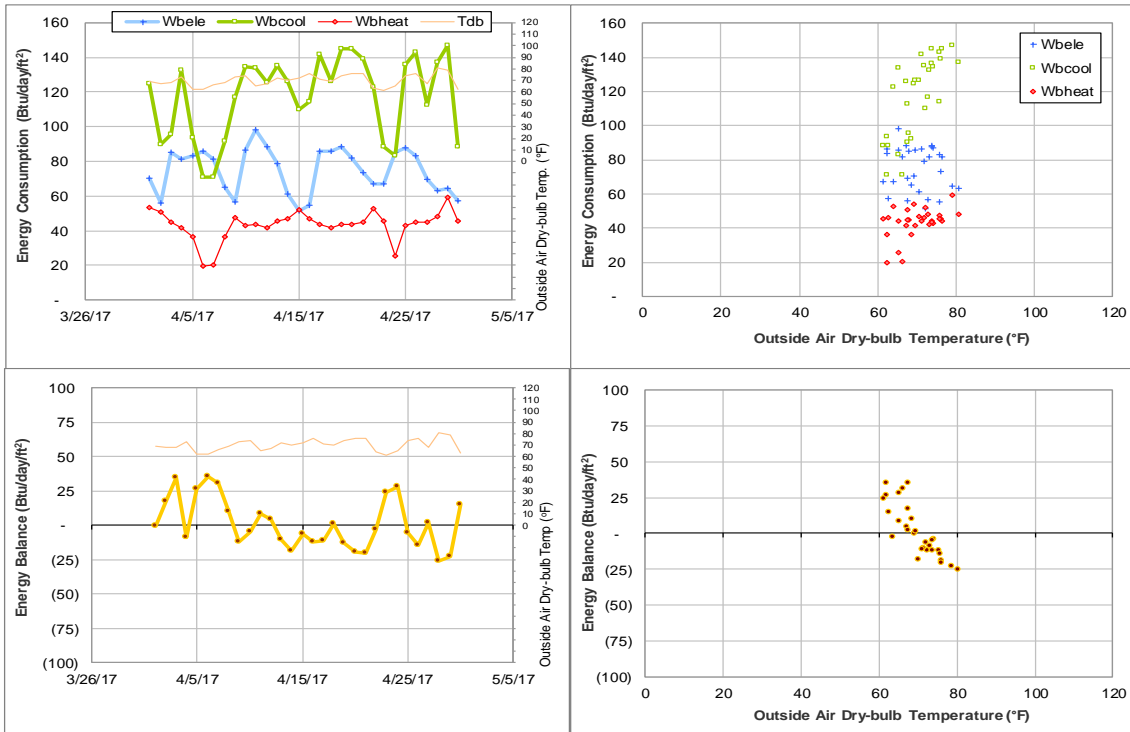


Figure IV-176 Cox-McFerrin Center for Aggie Basketball TAMU BLDG # 1558 Energy Balance Plot during April 2017

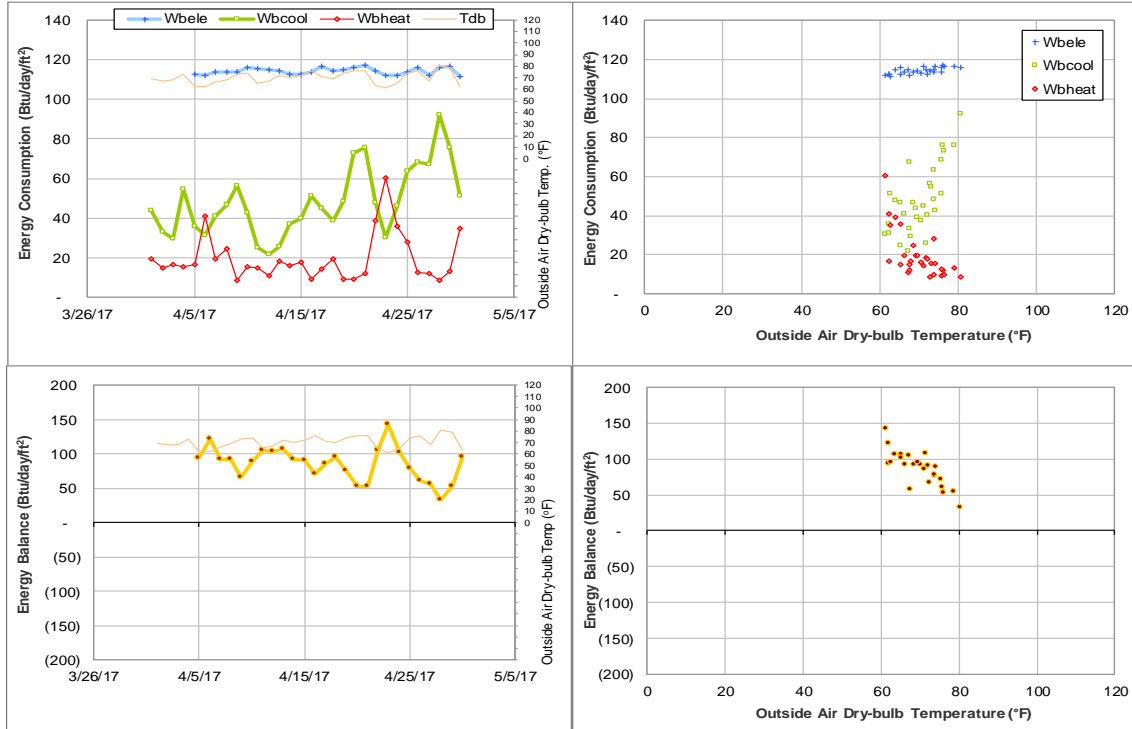


Figure IV-177 West Campus Parking Garage TAMU BLDG # 1559 Energy Balance Plot during April 2017

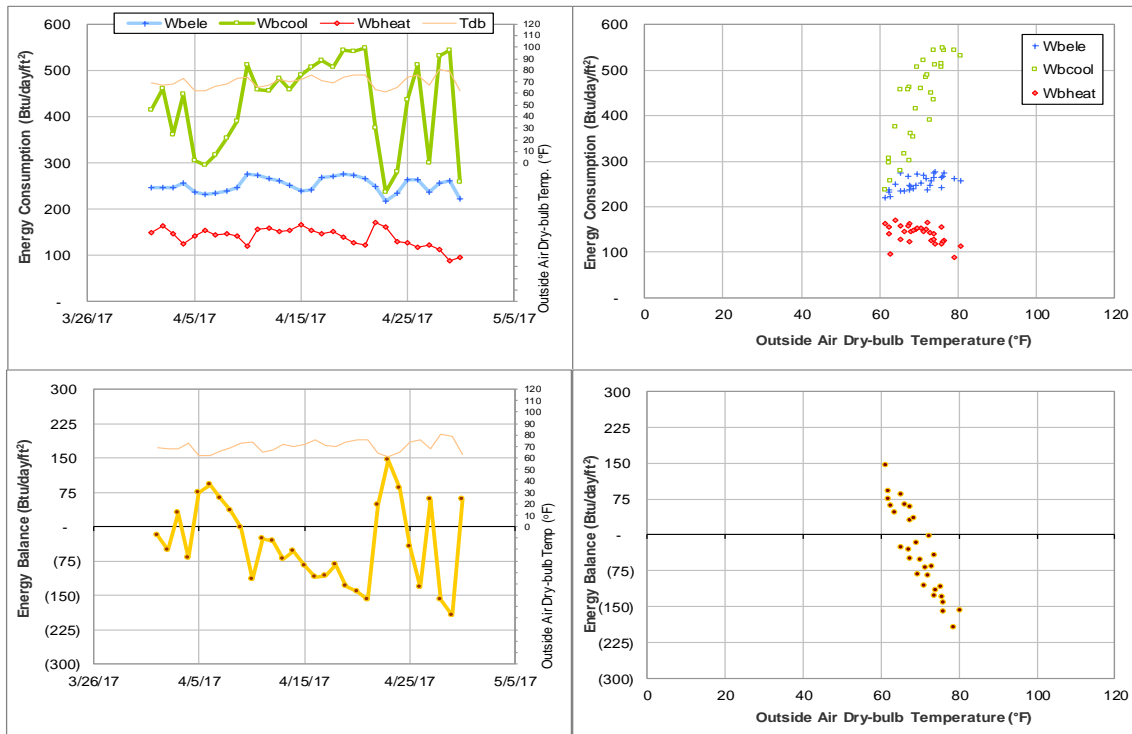


Figure IV-178 Student Recreation Center TAMU BLDG # 1560 Energy Balance Plot during April 2017

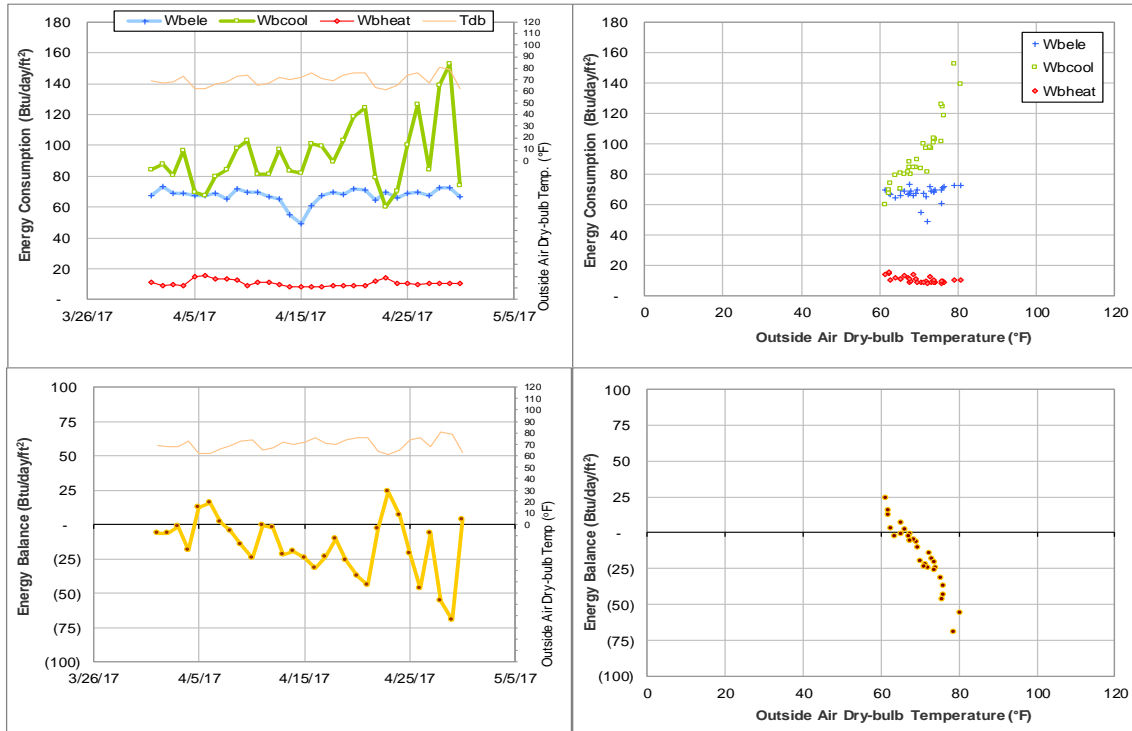


Figure IV-179 White Creek Apartment 1 and White Creek Apts Activity Center TAMU BLDG # 1589 Energy Balance Plot during April 2017

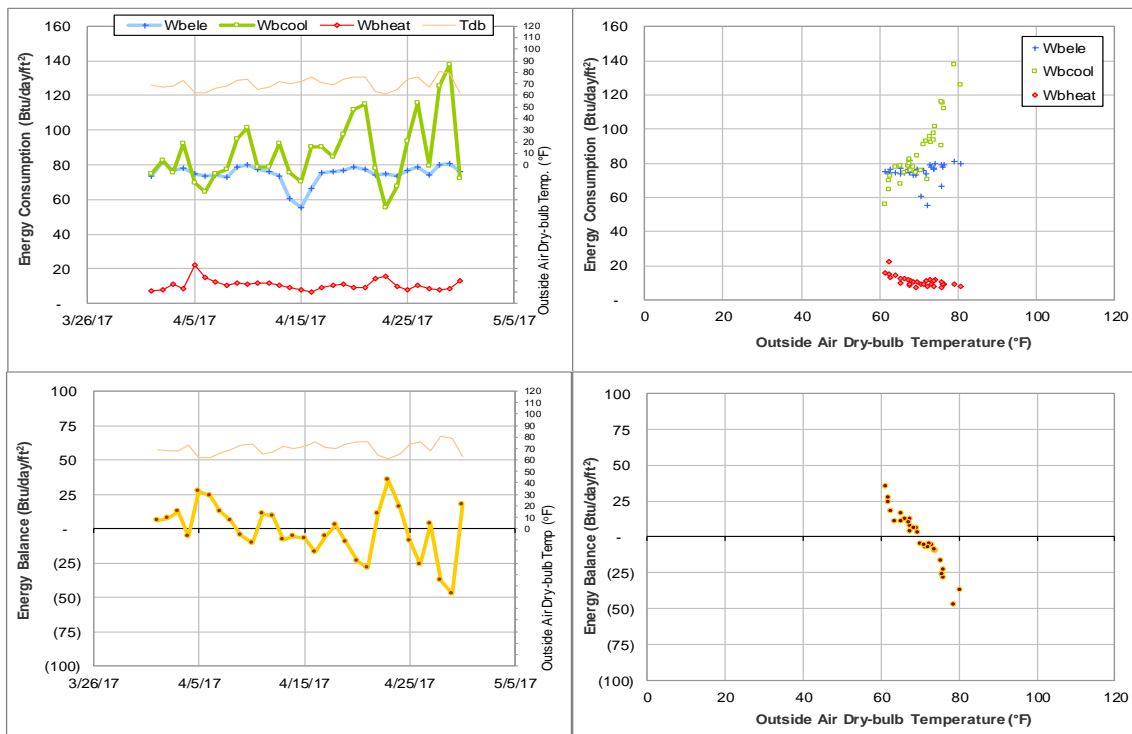


Figure IV-180 White Creek Apartment 2 TAMU BLDG # 1591 Energy Balance Plot during April 2017

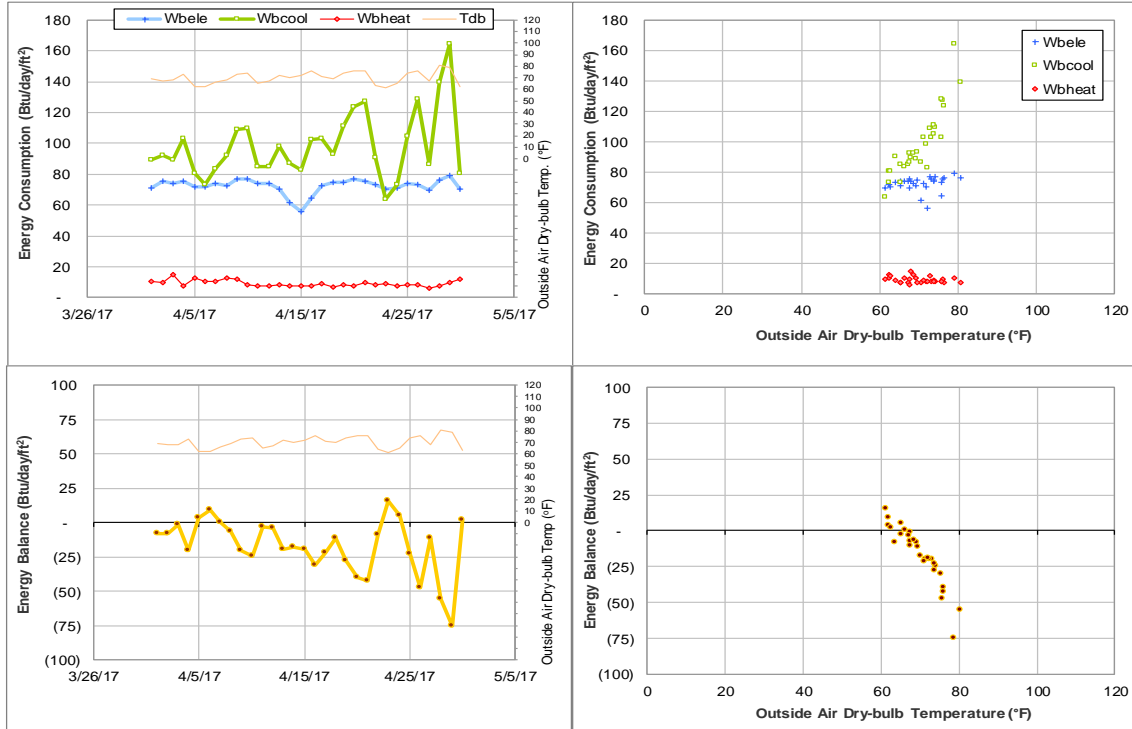


Figure IV-181 White Creek Apartment 3 TAMU BLDG # 1592 Energy Balance Plot during April 2017

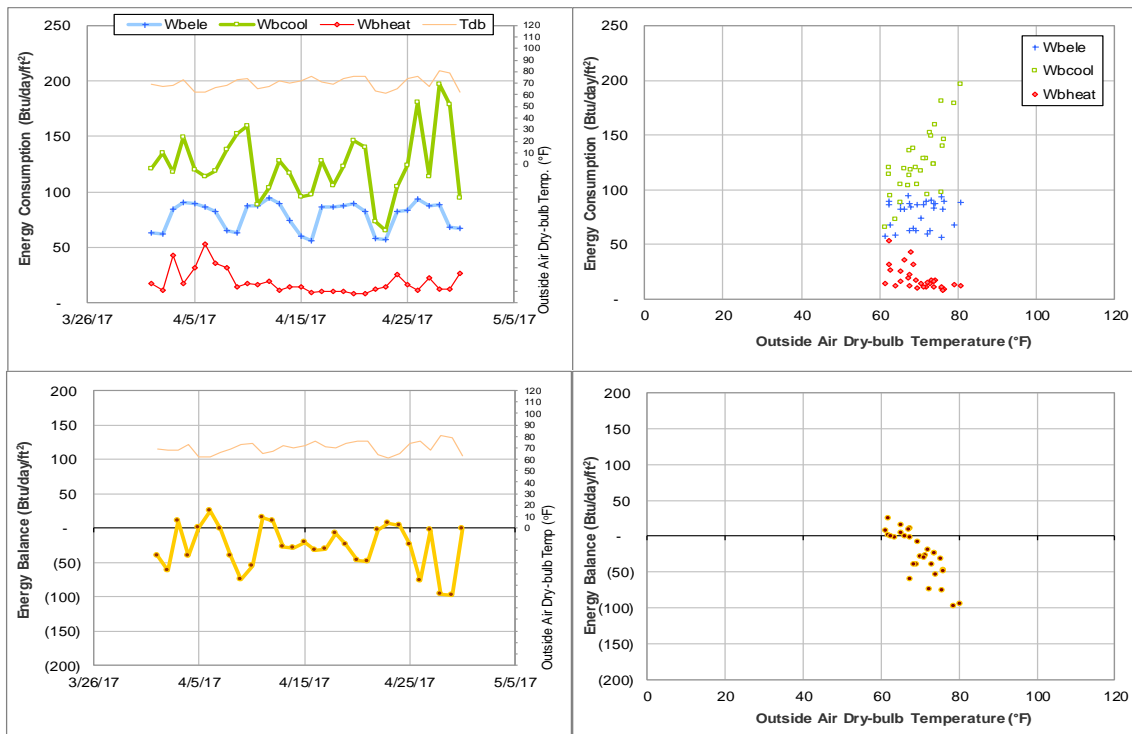


Figure IV-182 Gilchrist TTI Building TAMU BLDG # 1600 Energy Balance Plot during April 2017

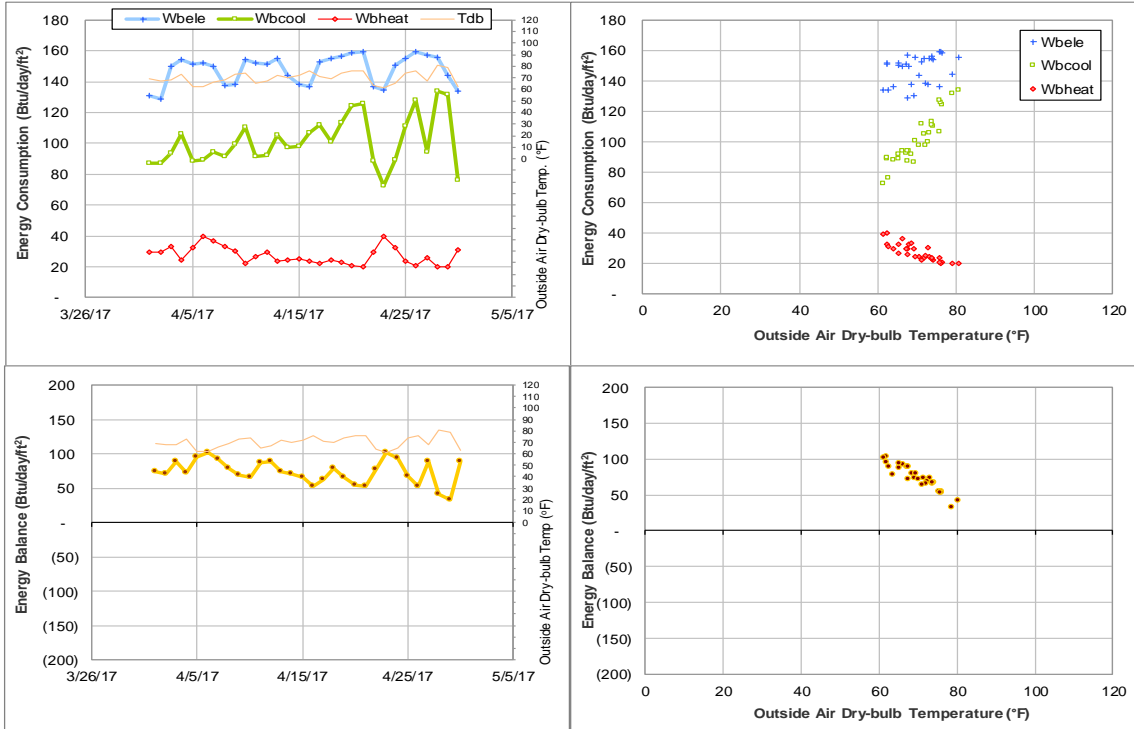


Figure IV-183 International Ocean Discovery Building TAMU BLDG # 1601 Energy Balance Plot during April 2017

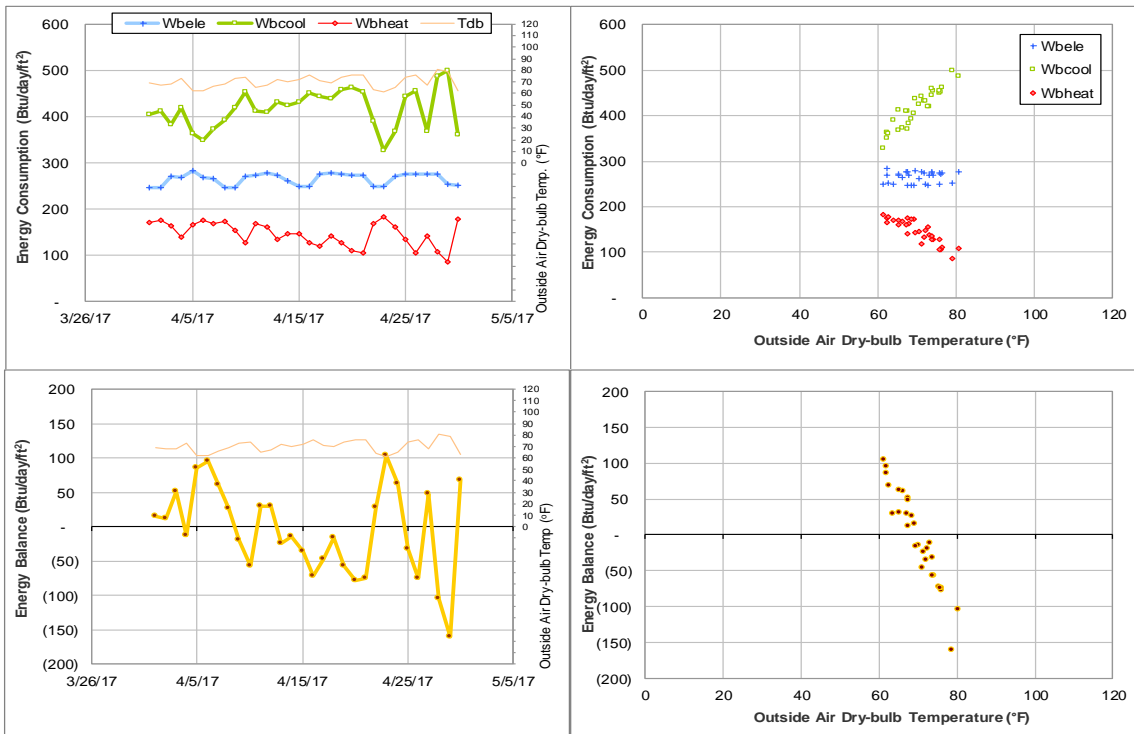


Figure IV-184 Offshore Technology Research Center TAMU BLDG # 1604 Energy Balance Plot during April 2017

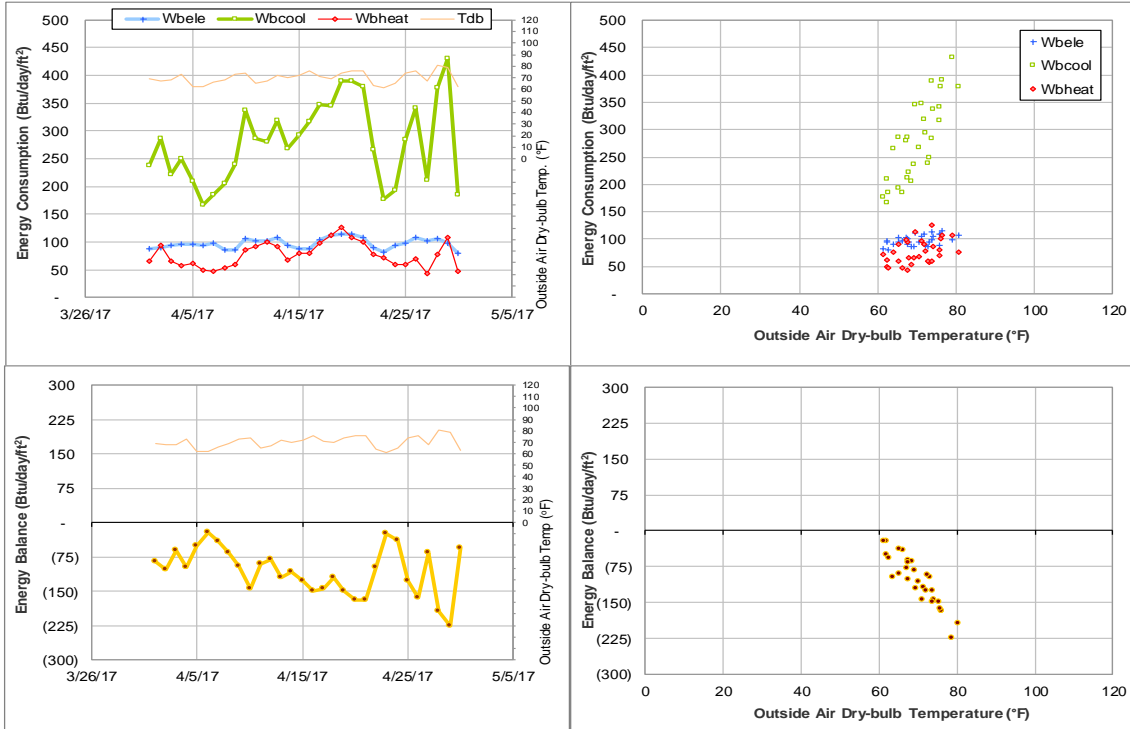


Figure IV-185 George Bush Presidential Library & Museum TAMU BLDG # 1606 Energy Balance Plot during April 2017

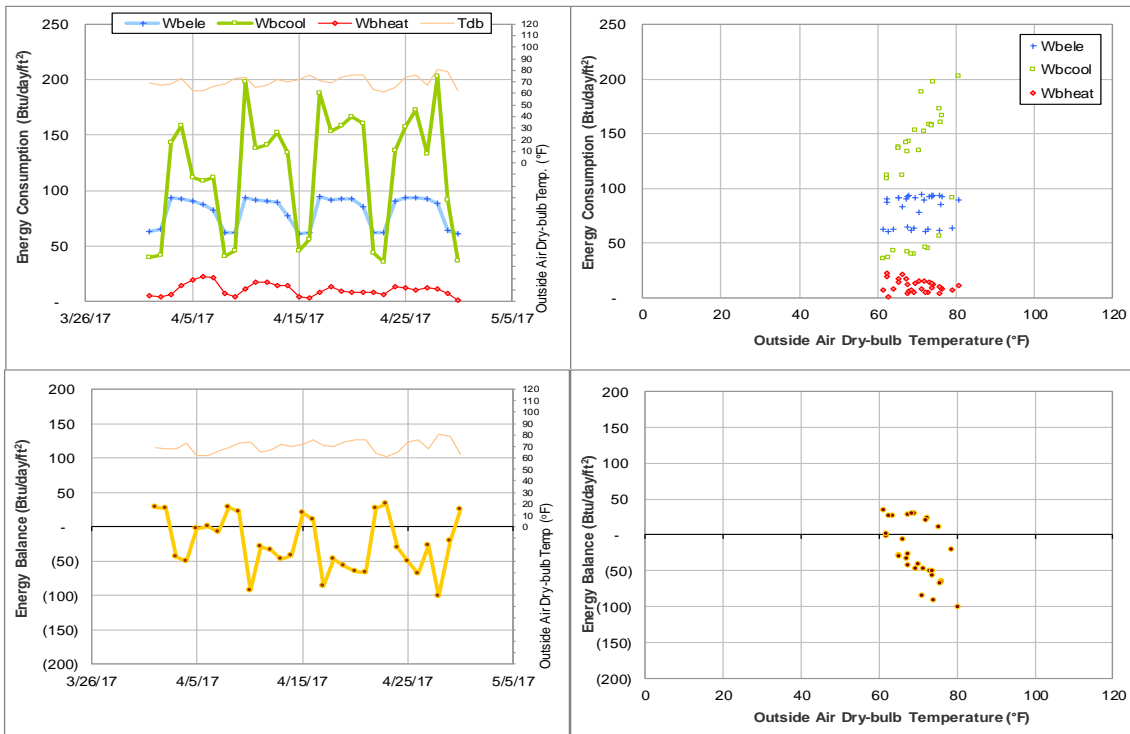


Figure IV-186 Allen Building TAMU BLDG # 1607 Energy Balance Plot during April 2017

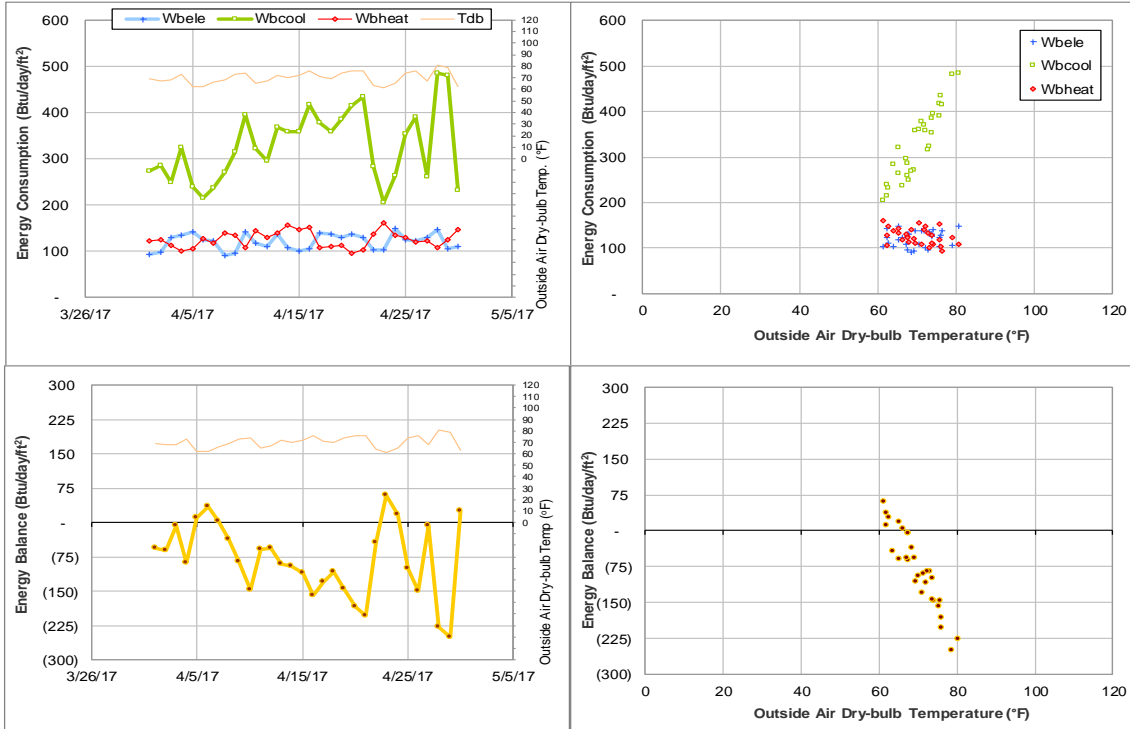


Figure IV-187 Annenberg Presidential Conference Center TAMU BLDG # 1608 Energy Balance Plot during April 2017

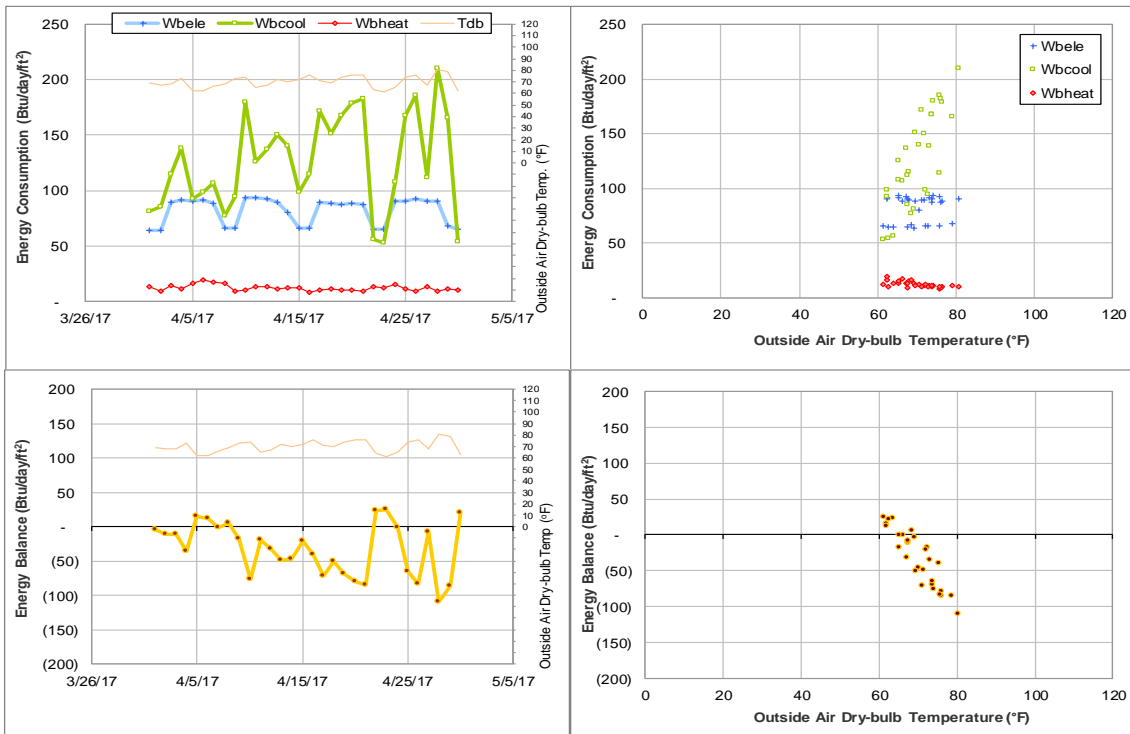


Figure IV-188 TTI Headquarters TAMU BLDG # 1609 Energy Balance Plot during April 2017

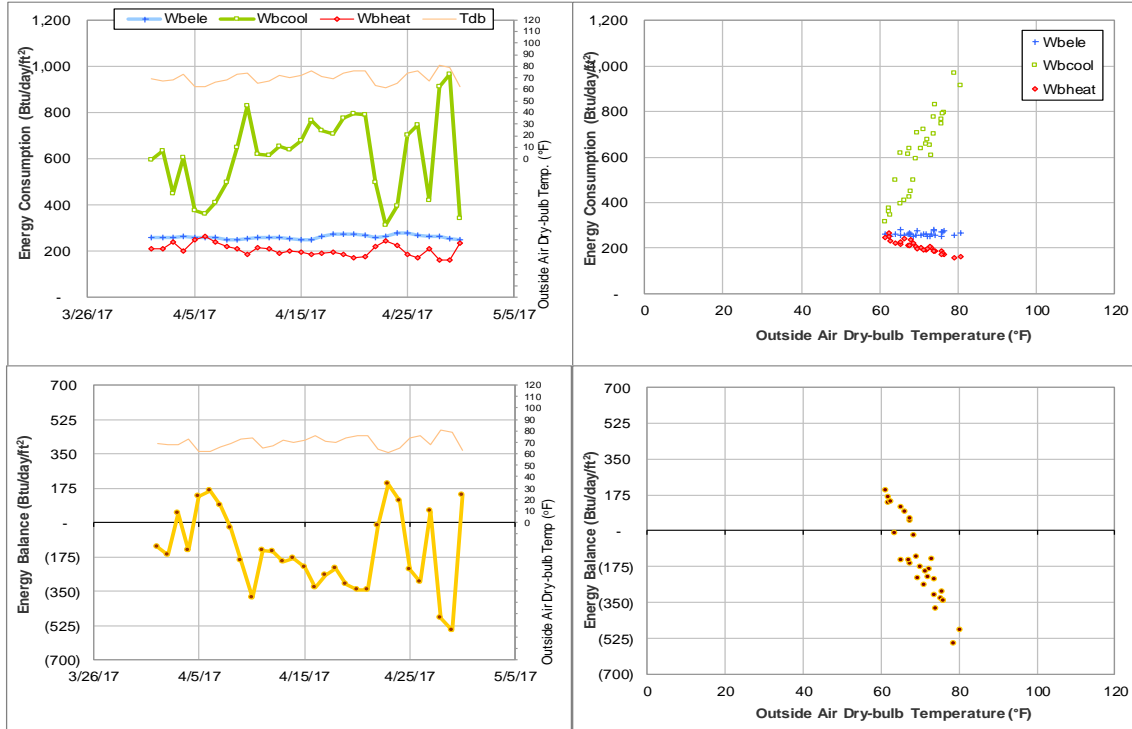


Figure IV-189 Engineering Research Building TAMU BLDG # 1611 Energy Balance Plot during April 2017

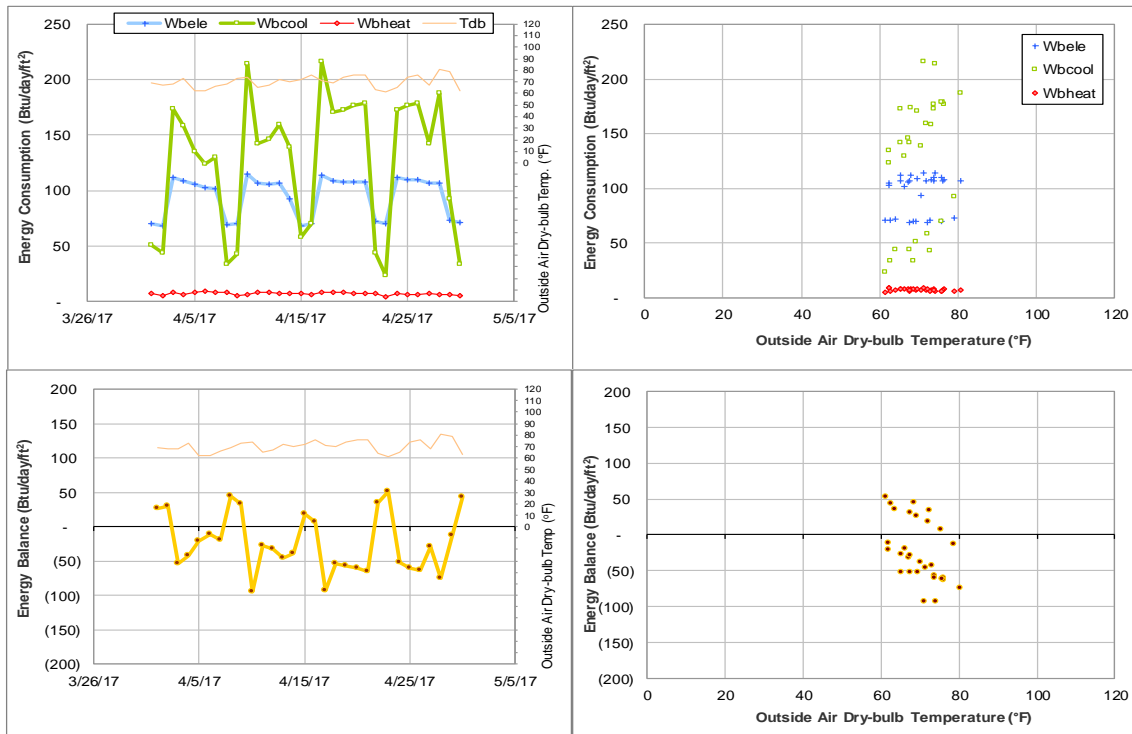


Figure IV-190 General Services Complex TAMU BLDG # 1800 Energy Balance Plot during April 2017

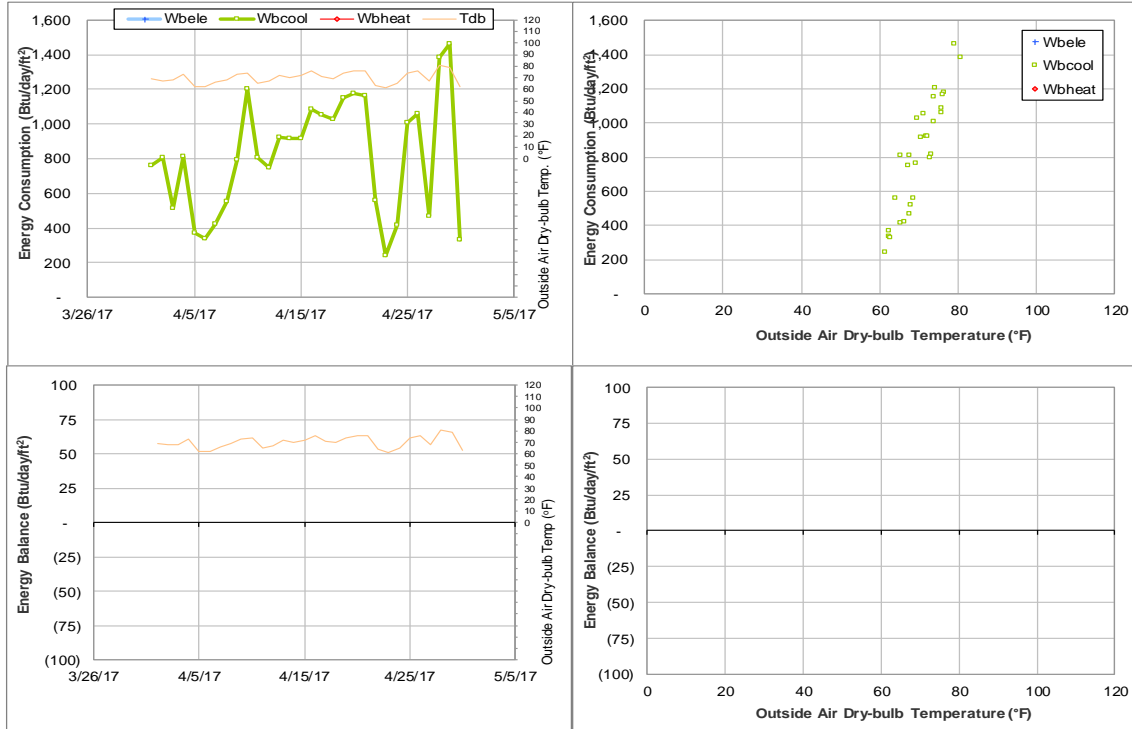


Figure IV-191 New TVMDL TAMU BLDG # 1809 Energy Balance Plot during April 2017

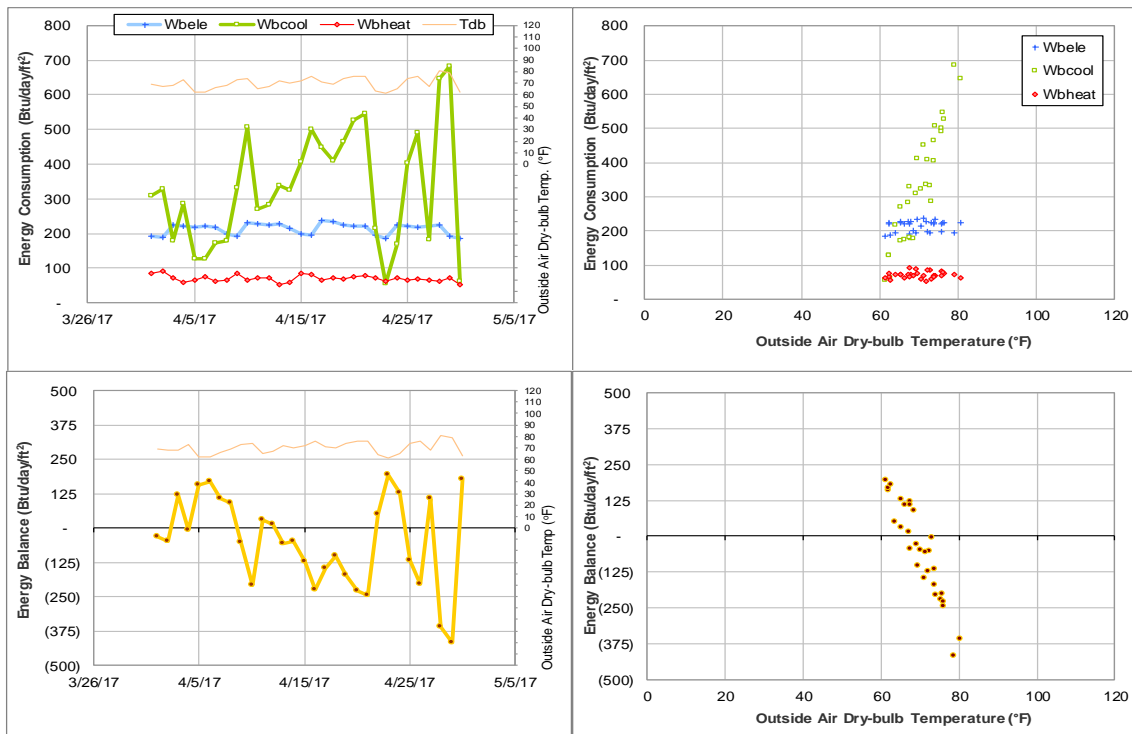


Figure IV-192 Office of the State Chemist Building TAMU BLDG # 1810 Energy Balance Plot during April 2017

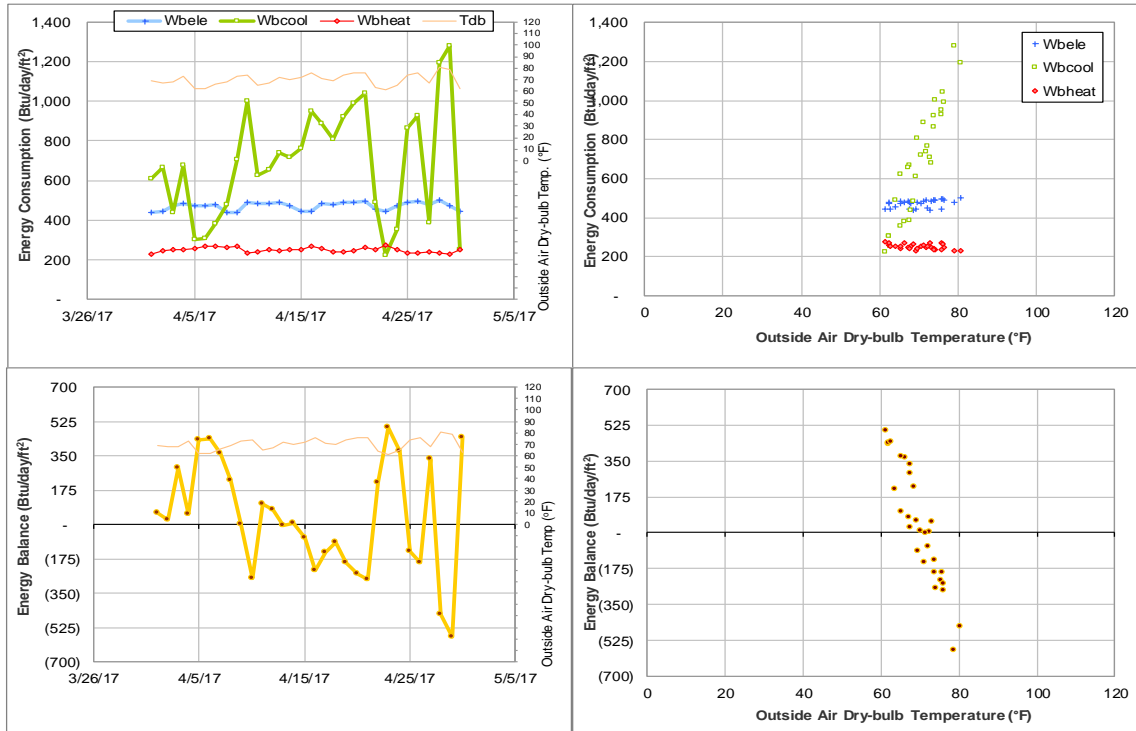


Figure IV-193 Vet Med Research Bldg Addition TAMU BLDG # 1811 Energy Balance Plot during April 2017

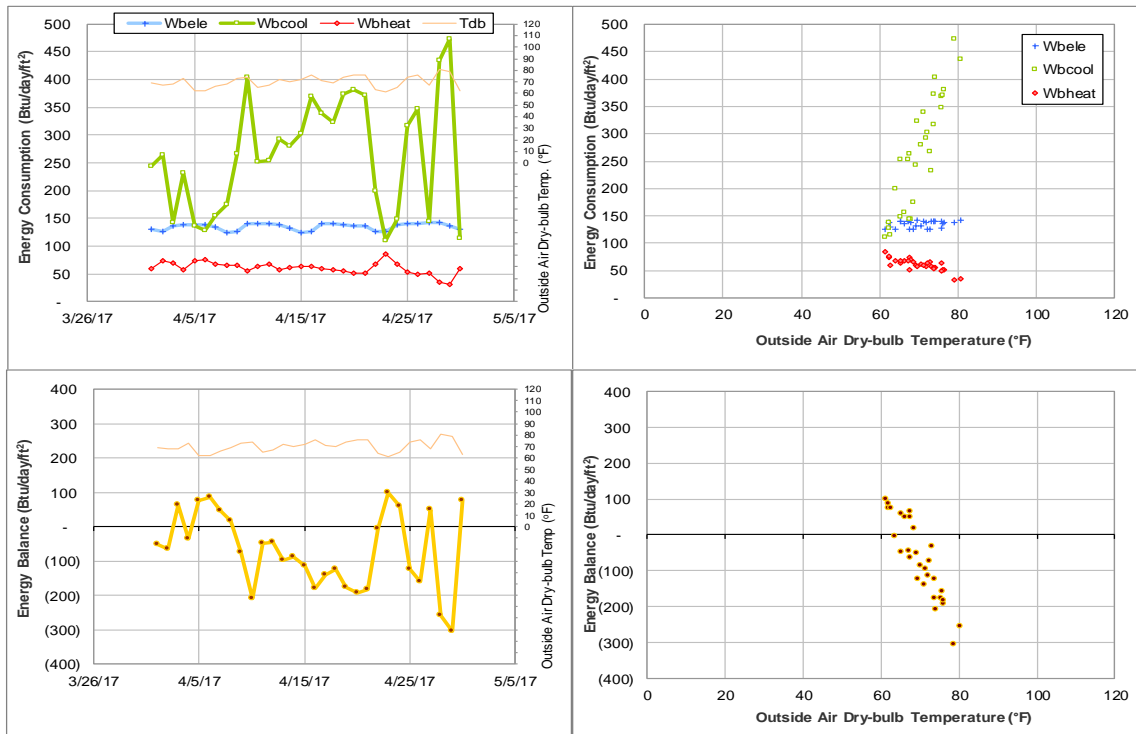


Figure IV-194 Veterinary Medicine Building 1, 2, and 3 TAMU BLDG # 1812 Energy Balance Plot during April 2017

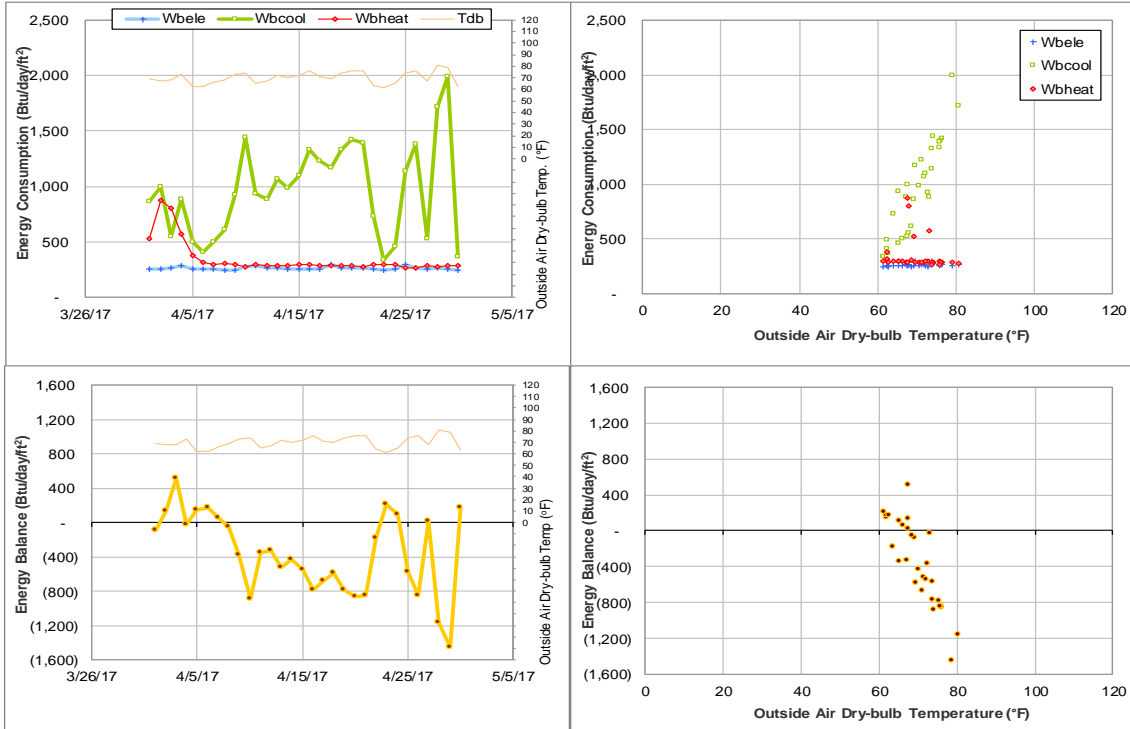


Figure IV-195 Texas Institute for Genomic Medicine TAMU BLDG # 1900 Energy Balance Plot during April 2017

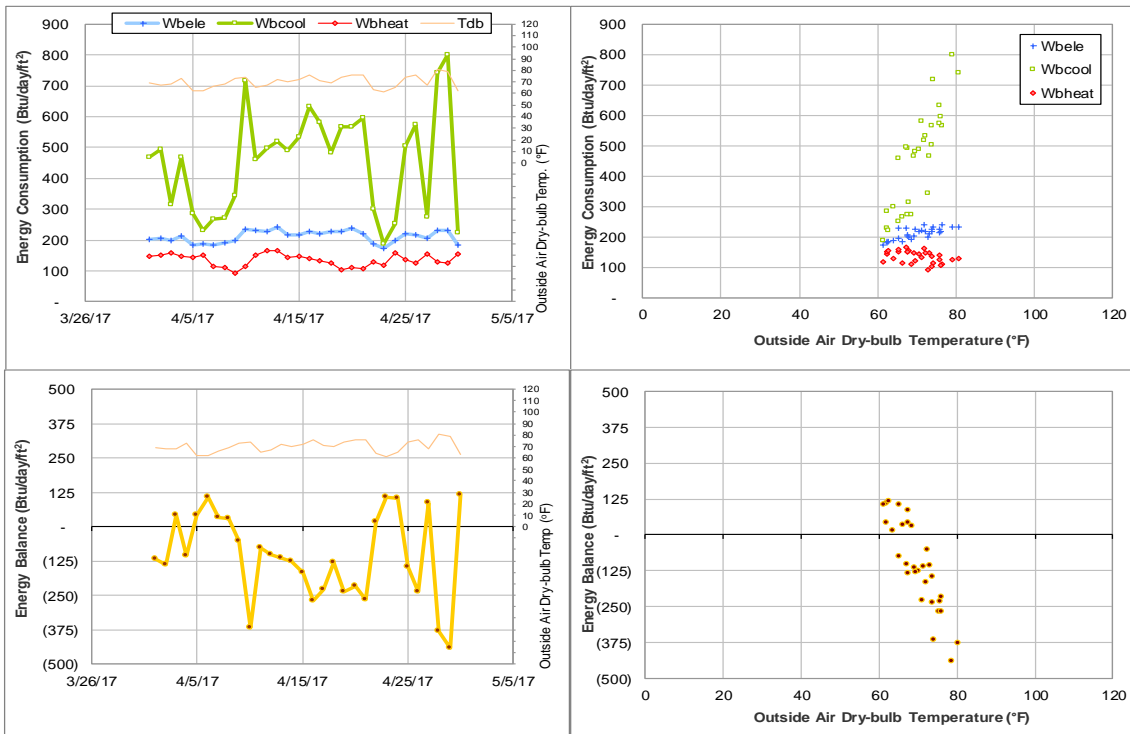


Figure IV-196 Texas A&M Institute for Preclinical Studies A TAMU BLDG # 1904 Energy Balance Plot during April 2017

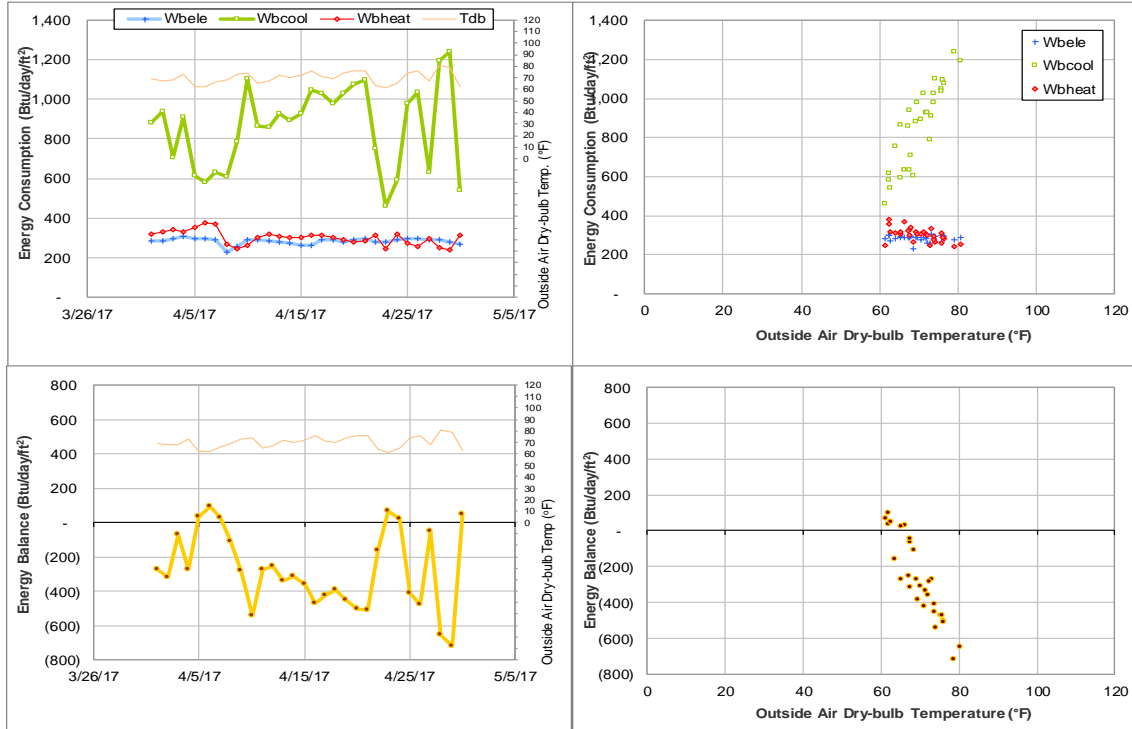


Figure IV-197 National Center for Therapeutics Manufacturing TAMU BLDG # 1910 Energy Balance Plot during April 2017

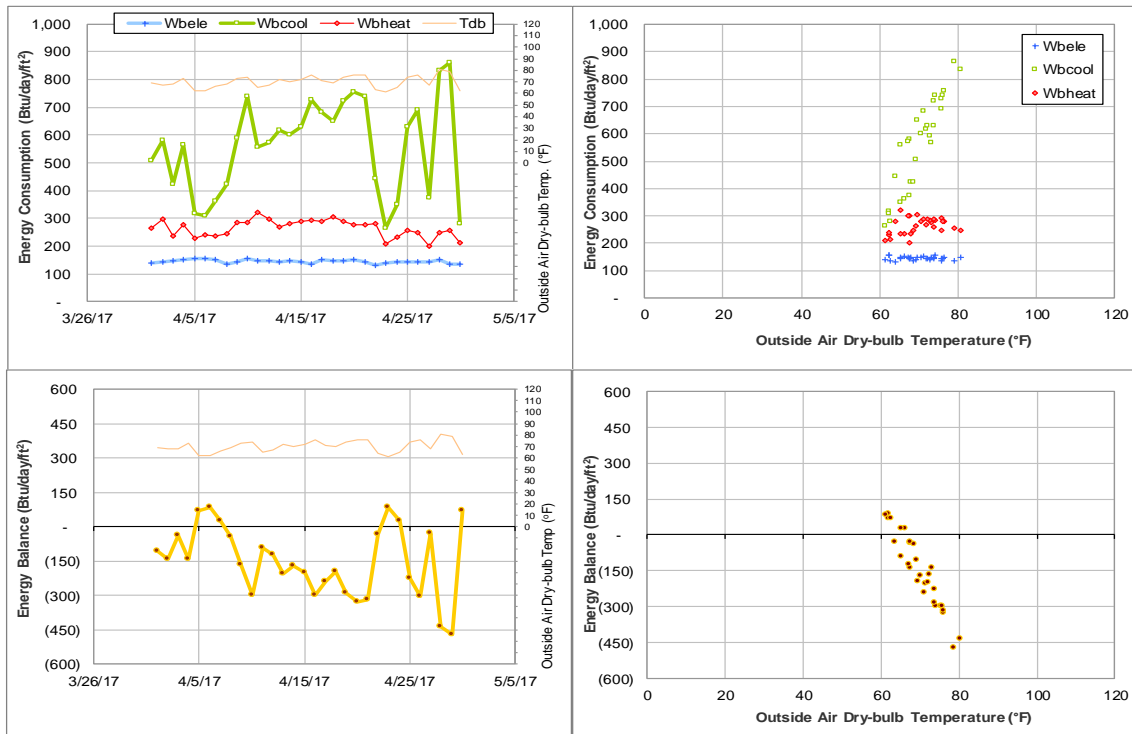


Figure IV-198 Multi-Species Research Building TAMU BLDG # 1911 Energy Balance Plot during April 2017

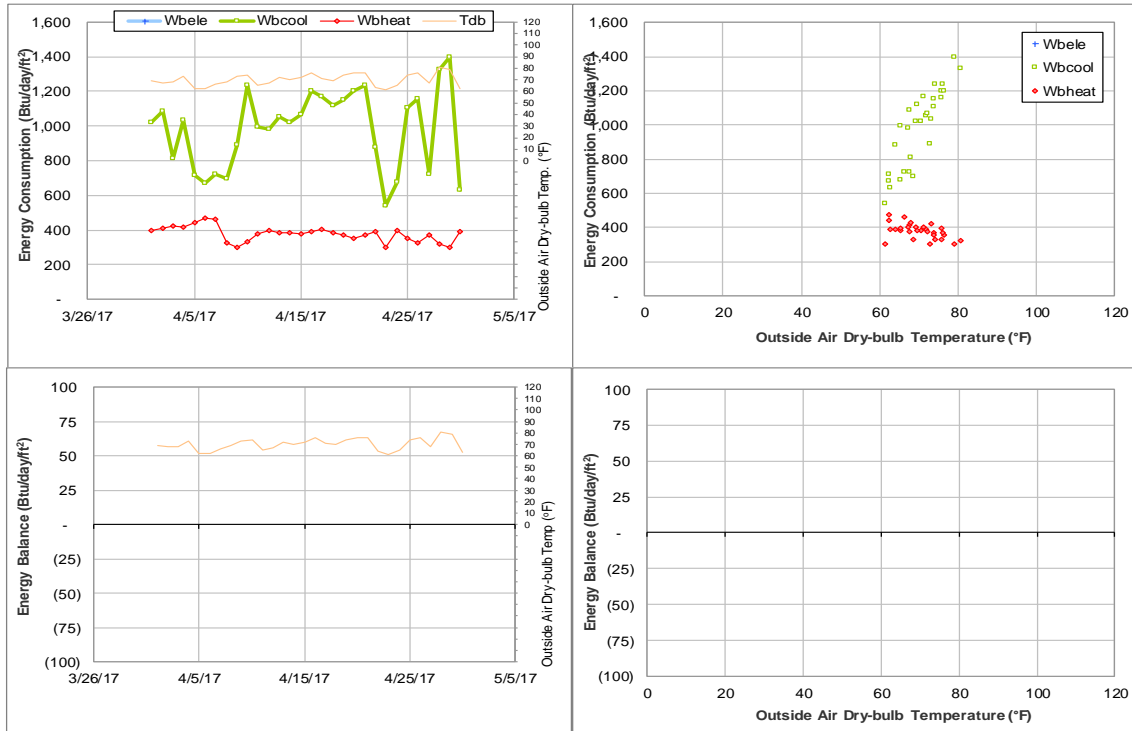


Figure IV-199 NCTM Manufacturing Building TAMU BLDG # 10226 Energy Balance Plot during April 2017

**V. Energy Balance Plots with Filled-in data for
April 2017 Consumption**

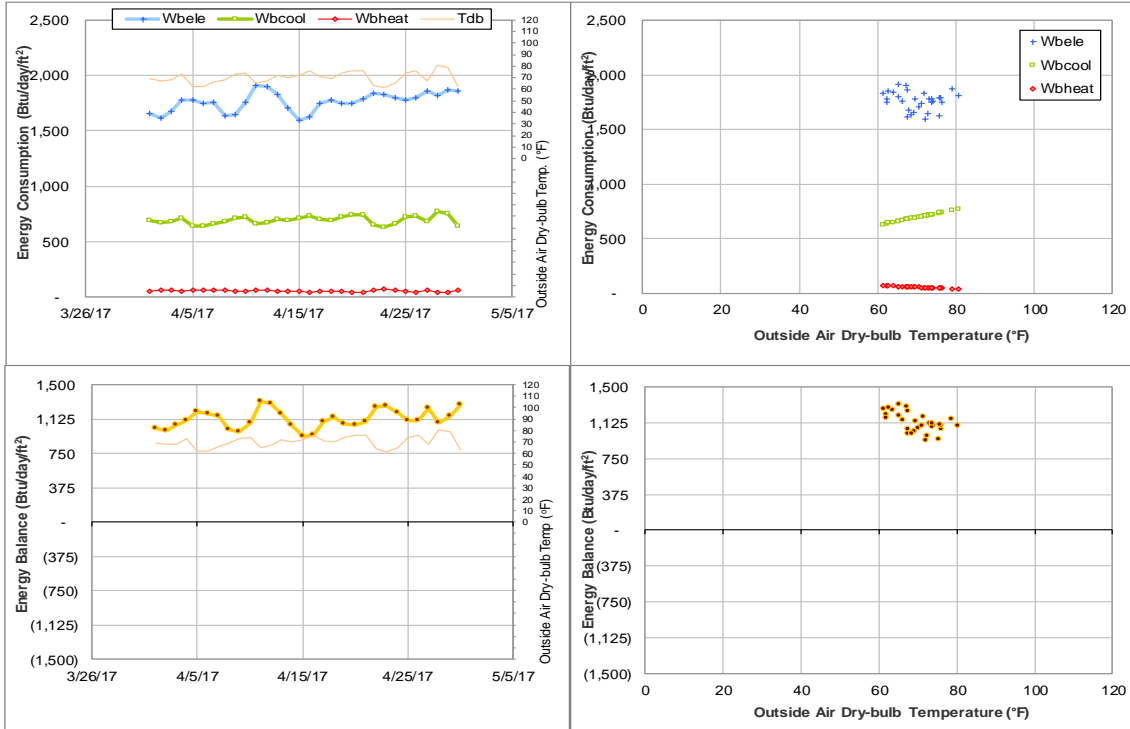


Figure V-1 Luedcke Building (Cyclotron) TAMU BLDG # 434 Energy Balance Plot during April 2017

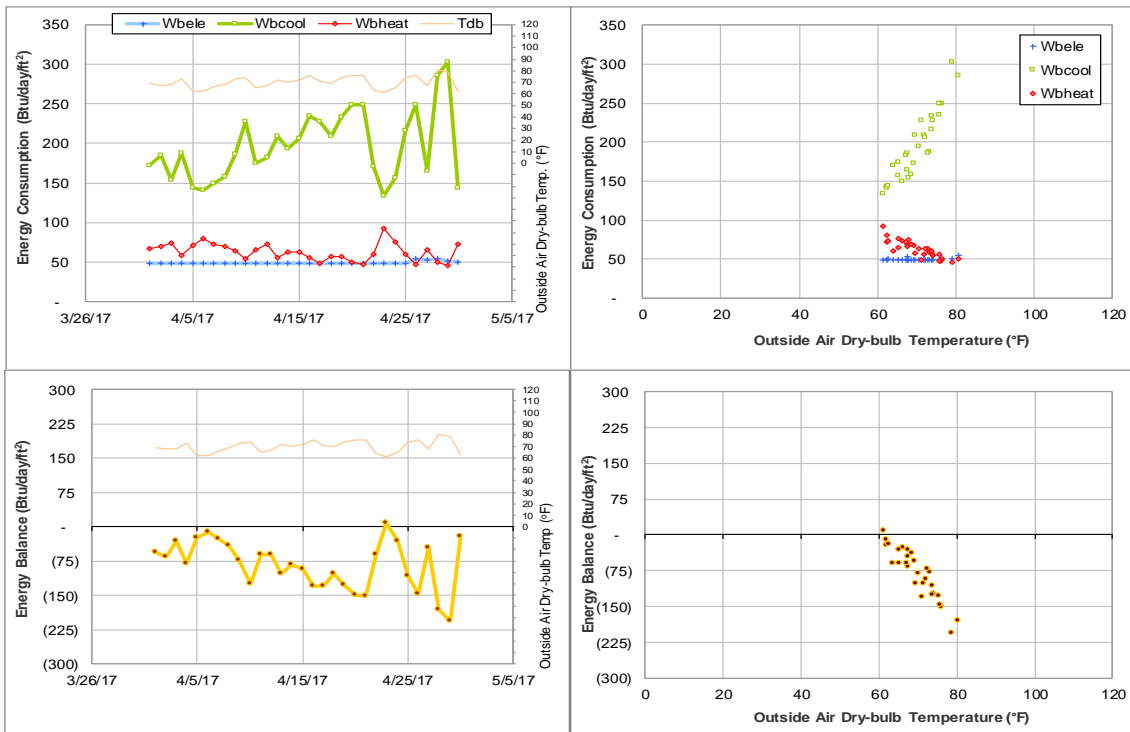


Figure V-2 Commons Krueger TAMU BLDG # 440 Energy Balance Plot during April 2017

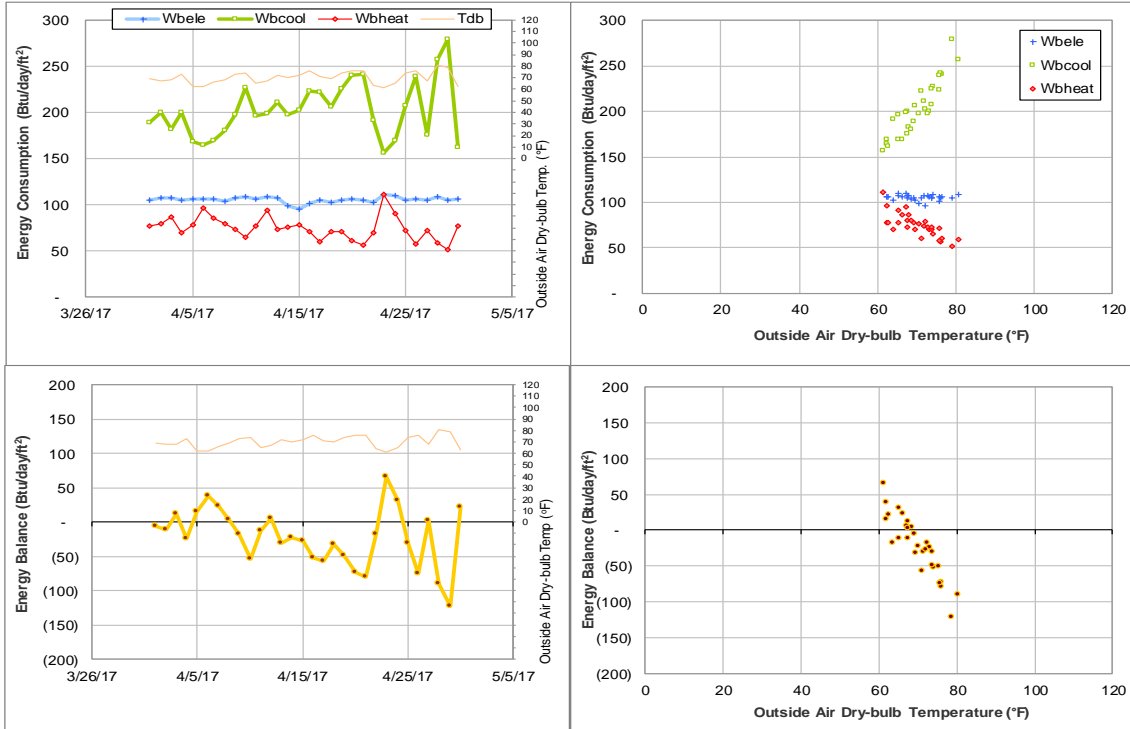


Figure V-3 Krueger Residence Hall TAMU BLDG # 441 Energy Balance Plot during April 2017

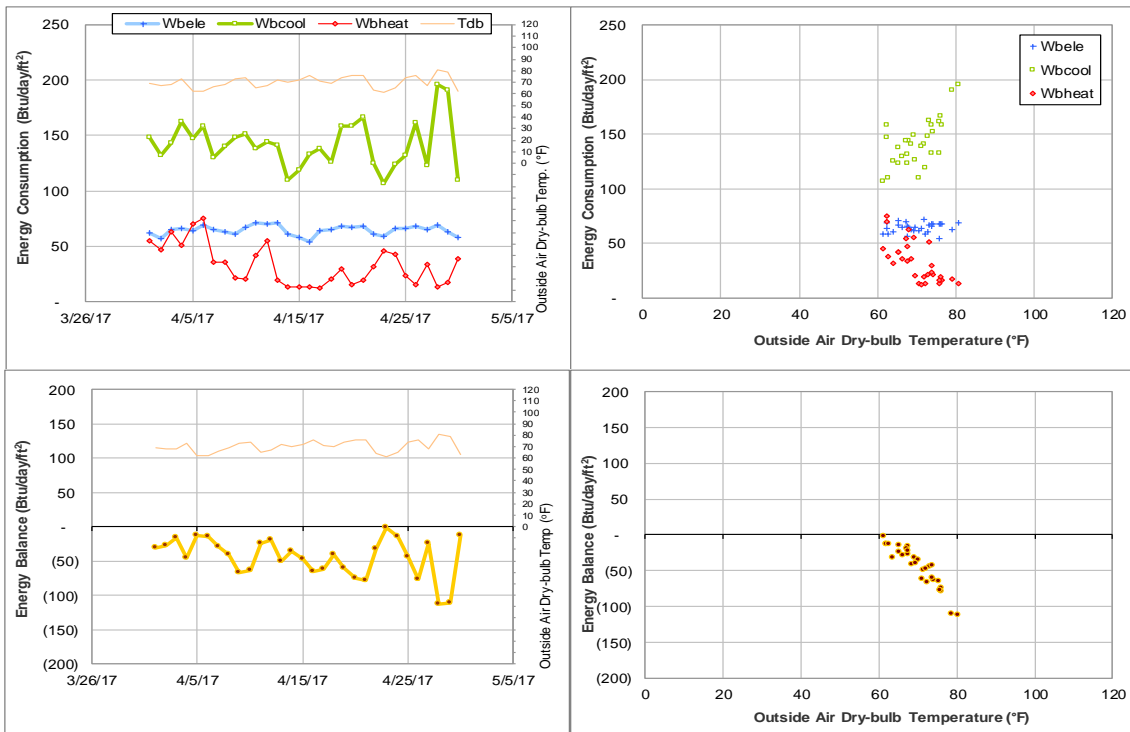


Figure V-4 Rudder Tower and Theatre Complex TAMU BLDG # 446 Energy Balance Plot during April 2017

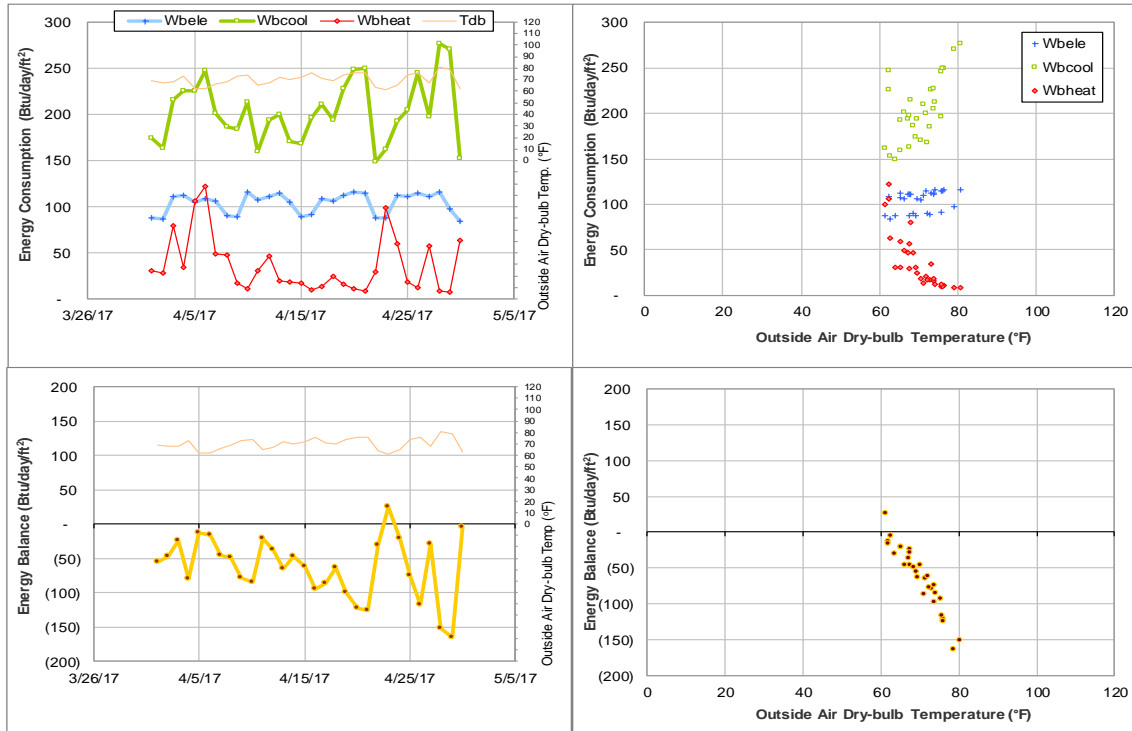


Figure V-5 Rudder Tower TAMU BLDG # 446 Energy Balance Plot during April 2017

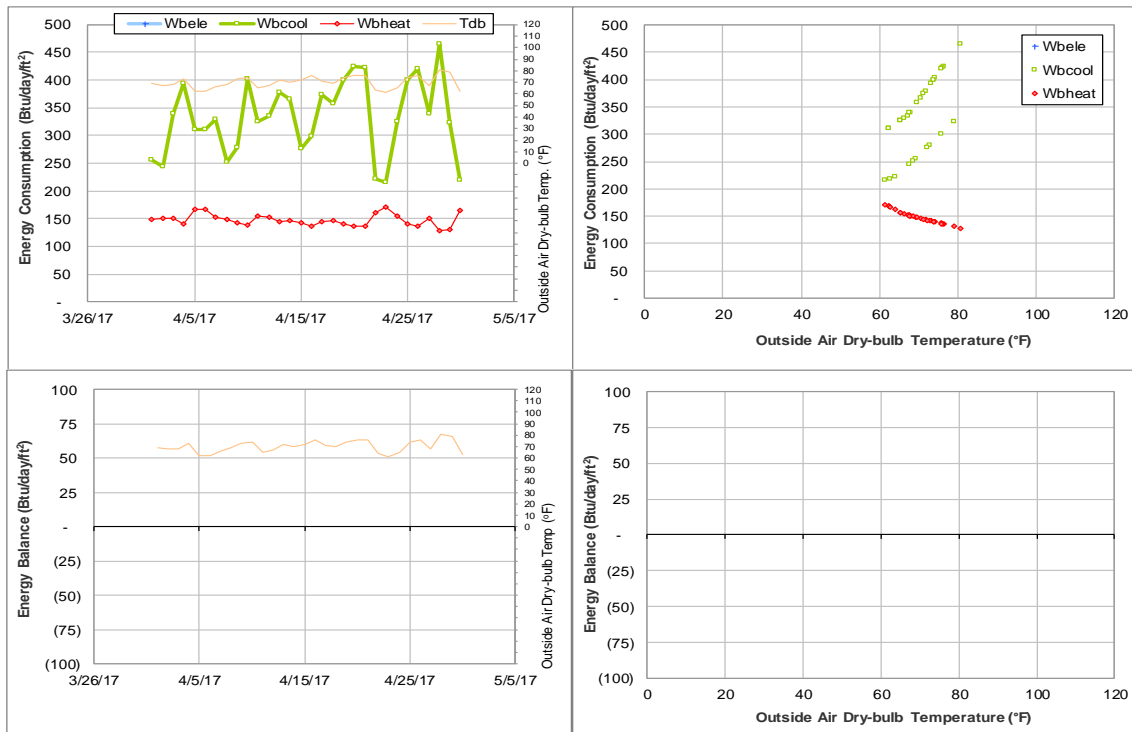


Figure V-6 Military Sciences Building TAMU BLDG # 456 Energy Balance Plot during April 2017

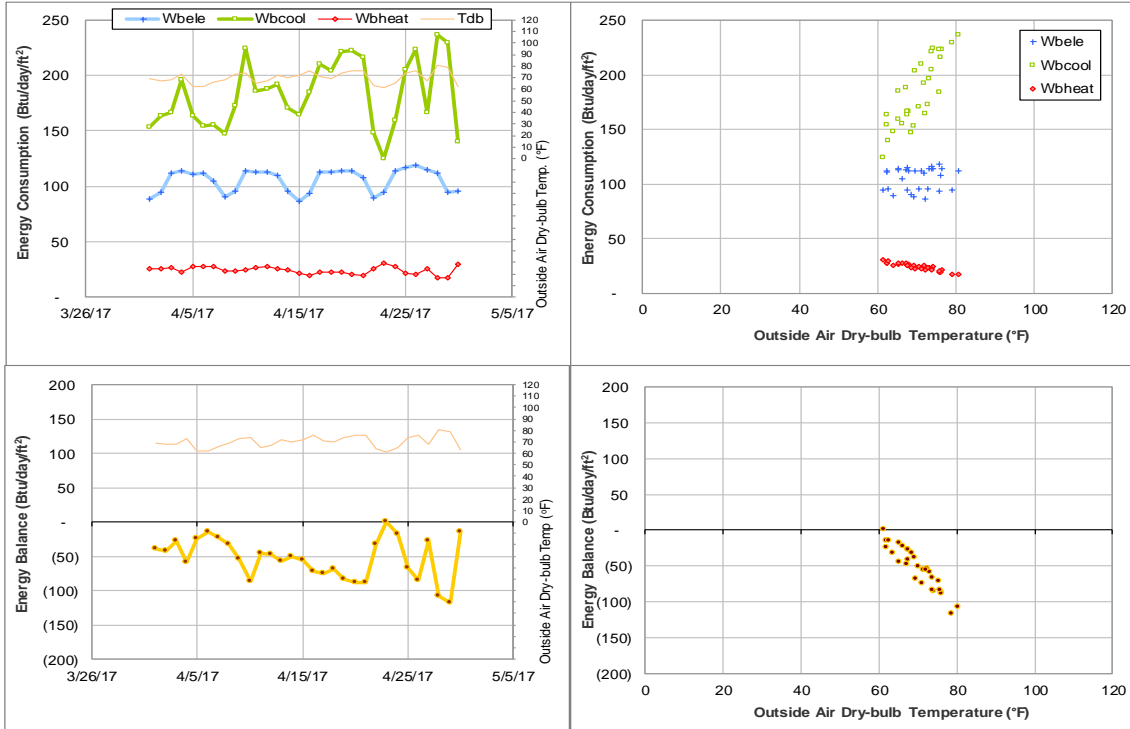


Figure V-7 Evans Library TAMU BLDG # 468 Energy Balance Plot during April 2017

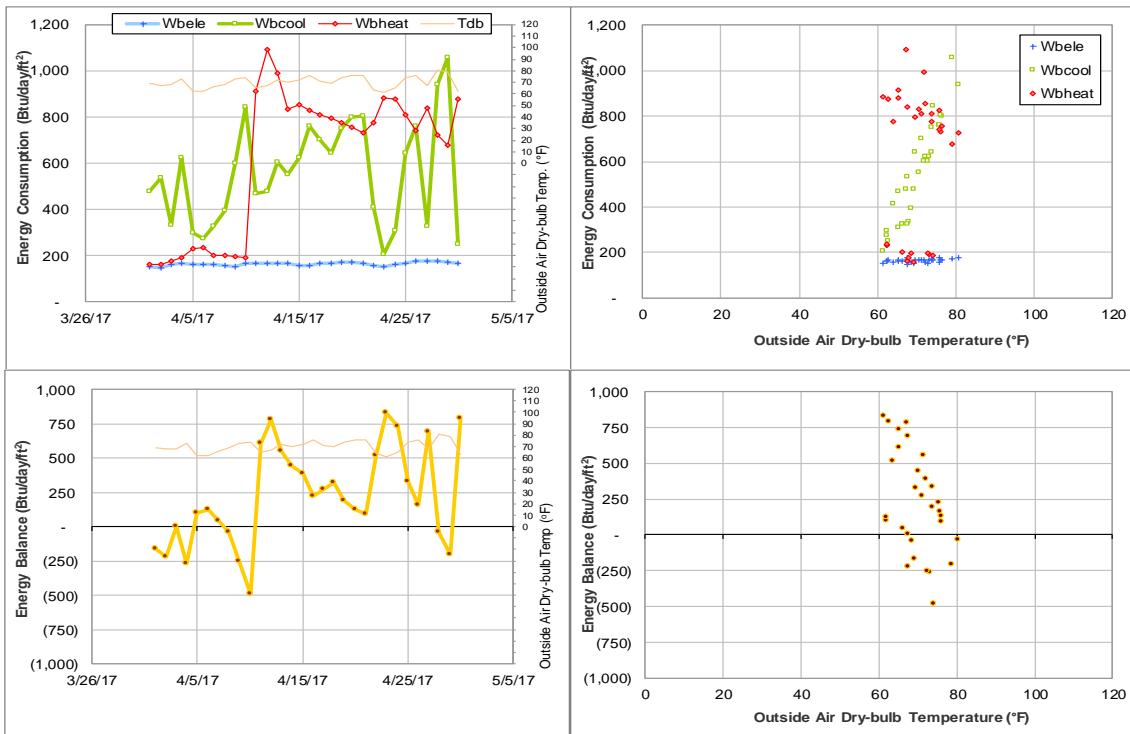


Figure V-8 Chemistry Building TAMU BLDG # 484 Energy Balance Plot during April 2017

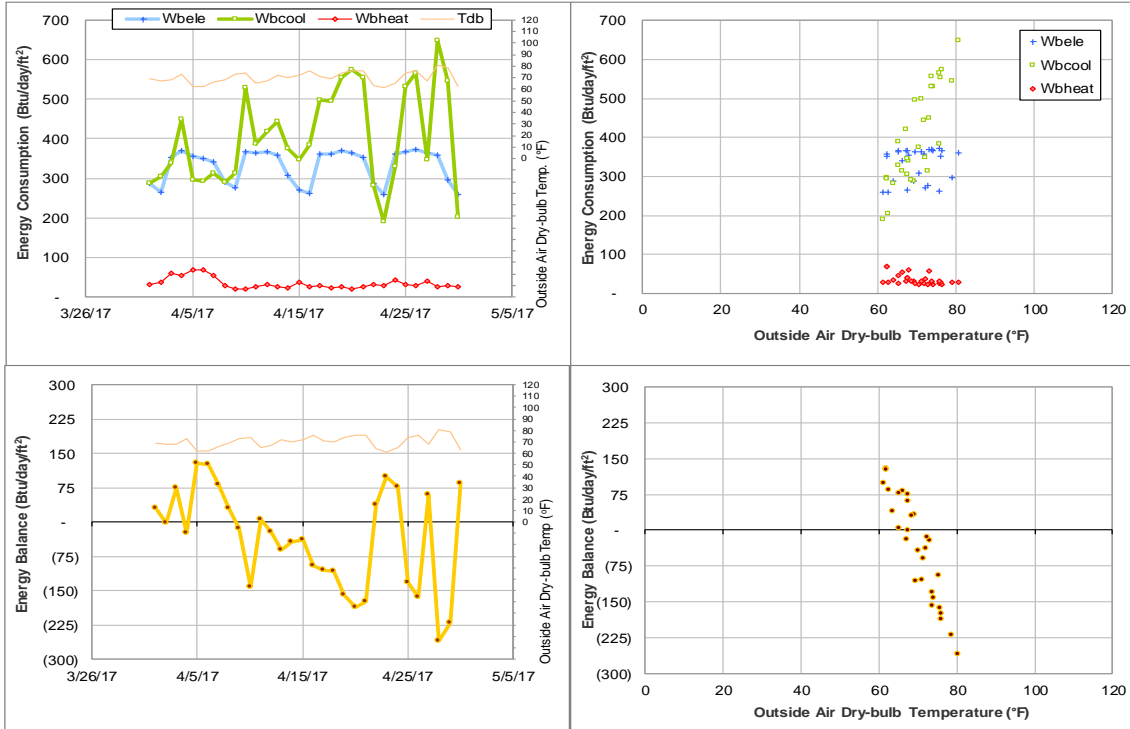


Figure V-9 Sbisa Dining Hall TAMU BLDG # 495 Energy Balance Plot during April 2017

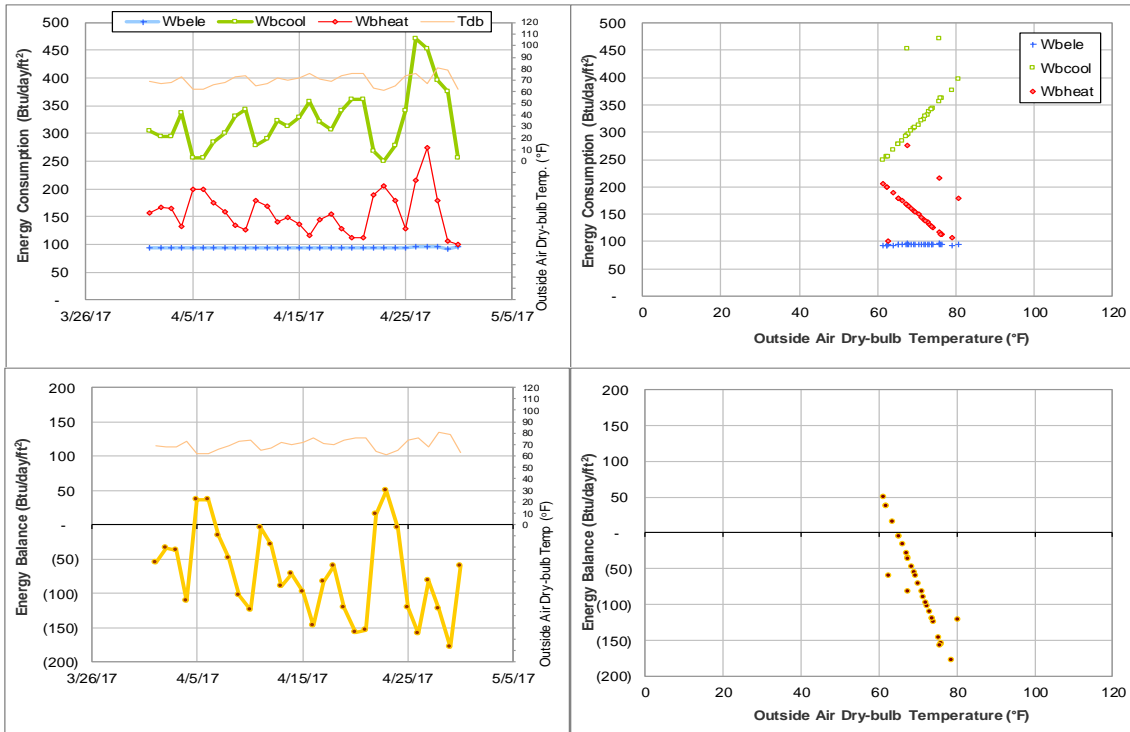


Figure V-10 All Faiths Chapel TAMU BLDG # 512 Energy Balance Plot during April 2017

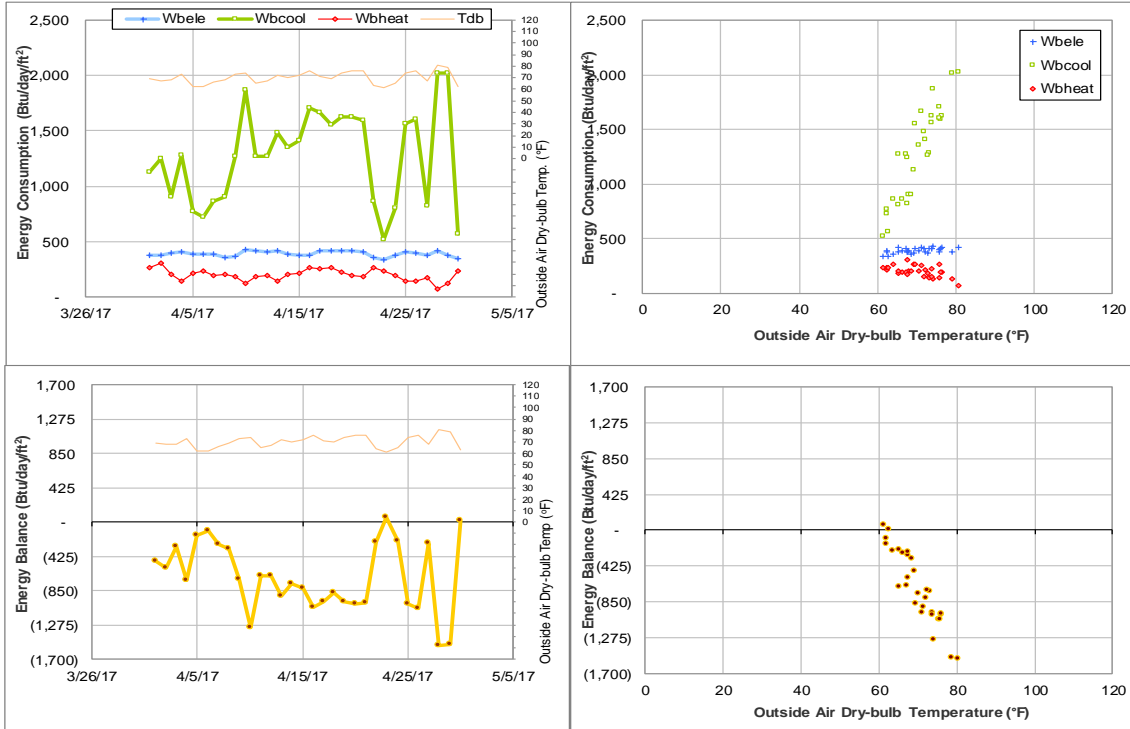


Figure V-11 Laboratory Animal Care Building TAMU BLDG # 972 Energy Balance Plot during April 2017

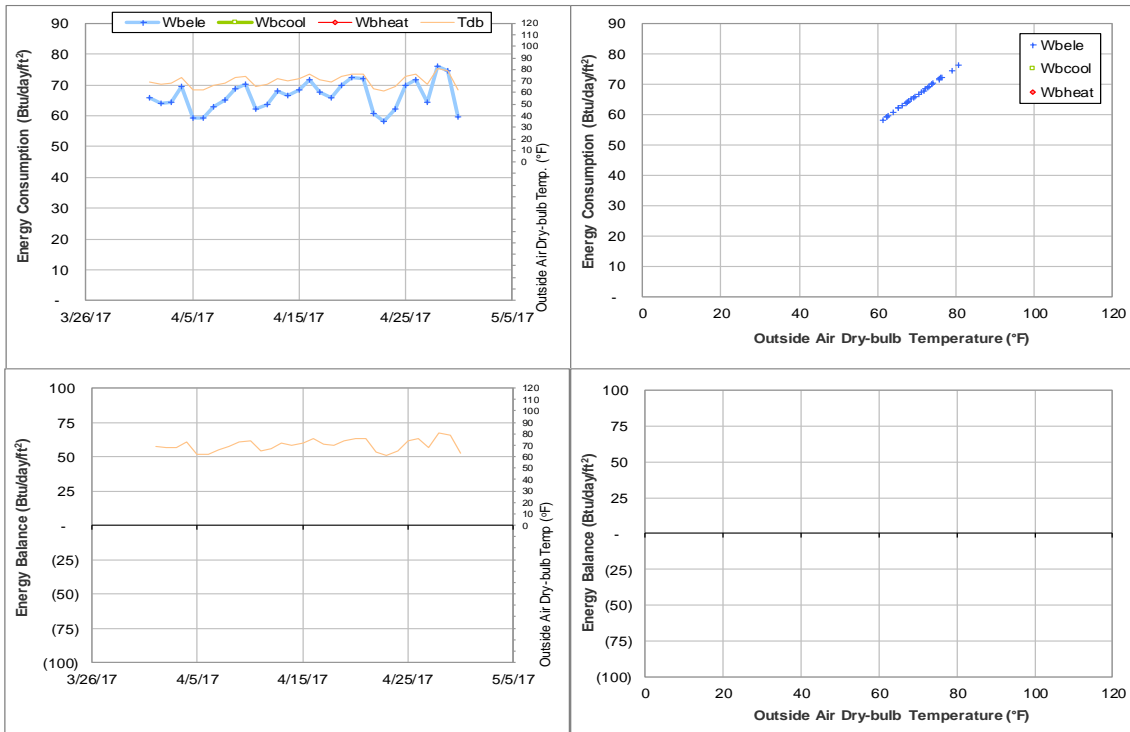


Figure V-12 University Apartments - The Gardens F TAMU BLDG # 1454 Energy Balance Plot during April 2017

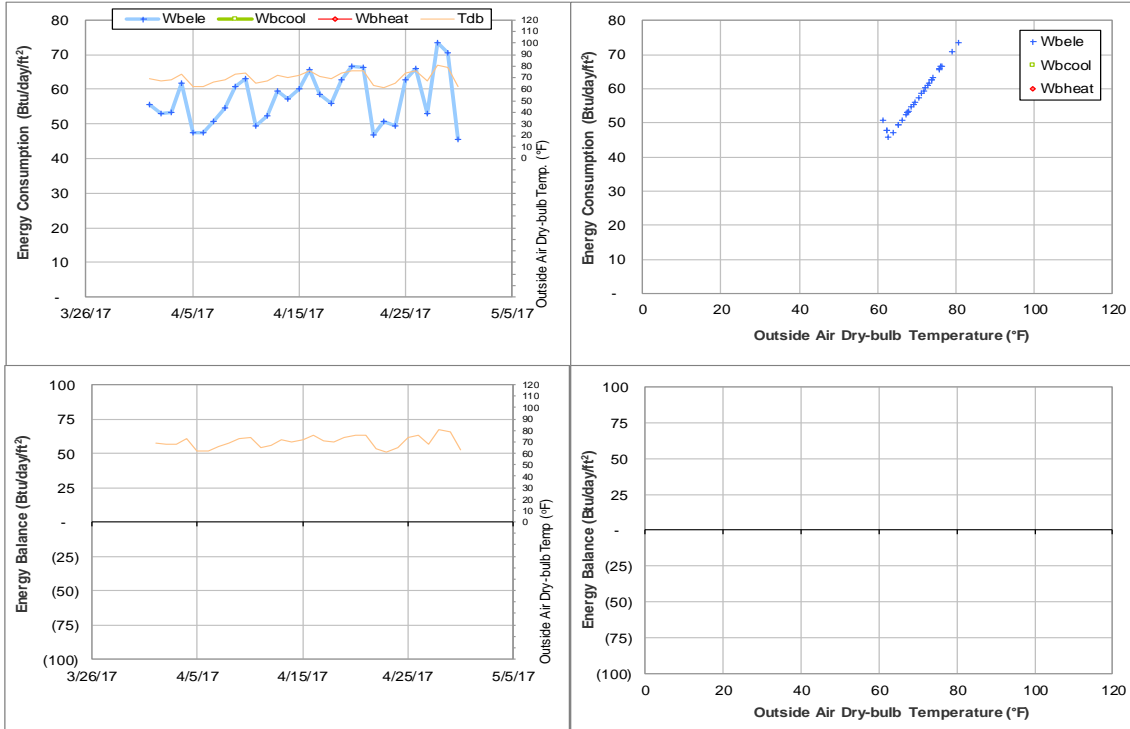


Figure V-13 University Apartments - The Gardens G TAMU BLDG # 1455 Energy Balance Plot during April 2017

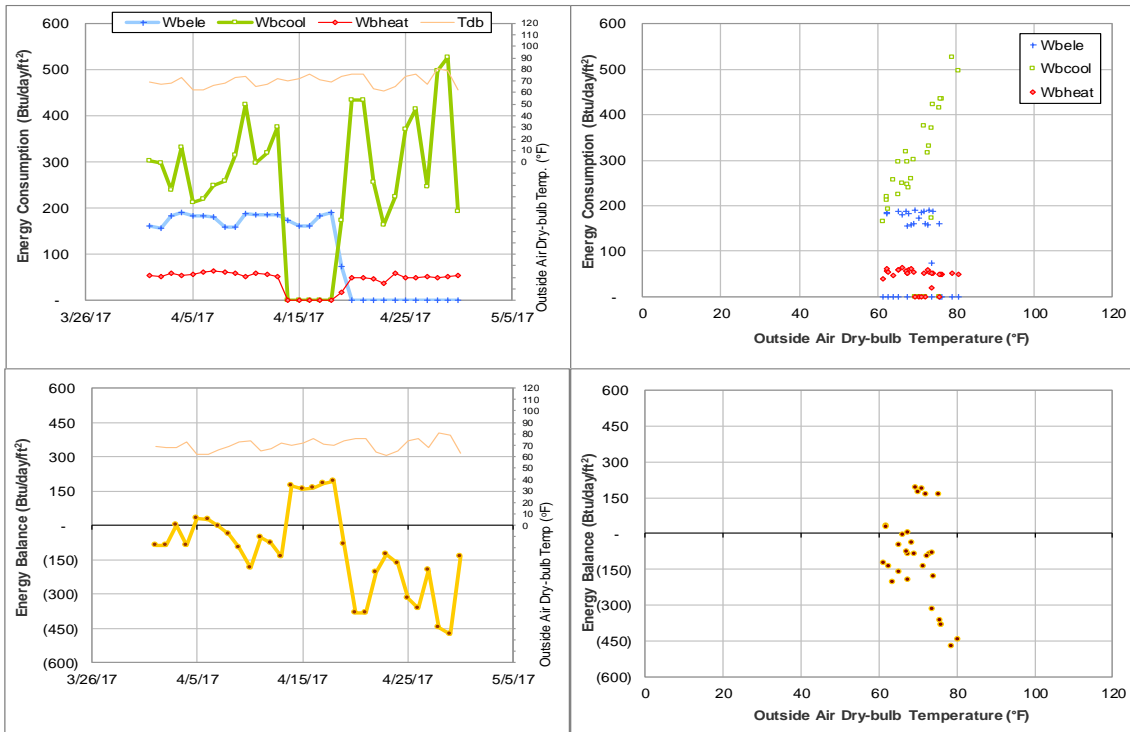


Figure V-14 Heep Center TAMU BLDG # 1502 Energy Balance Plot during April 2017

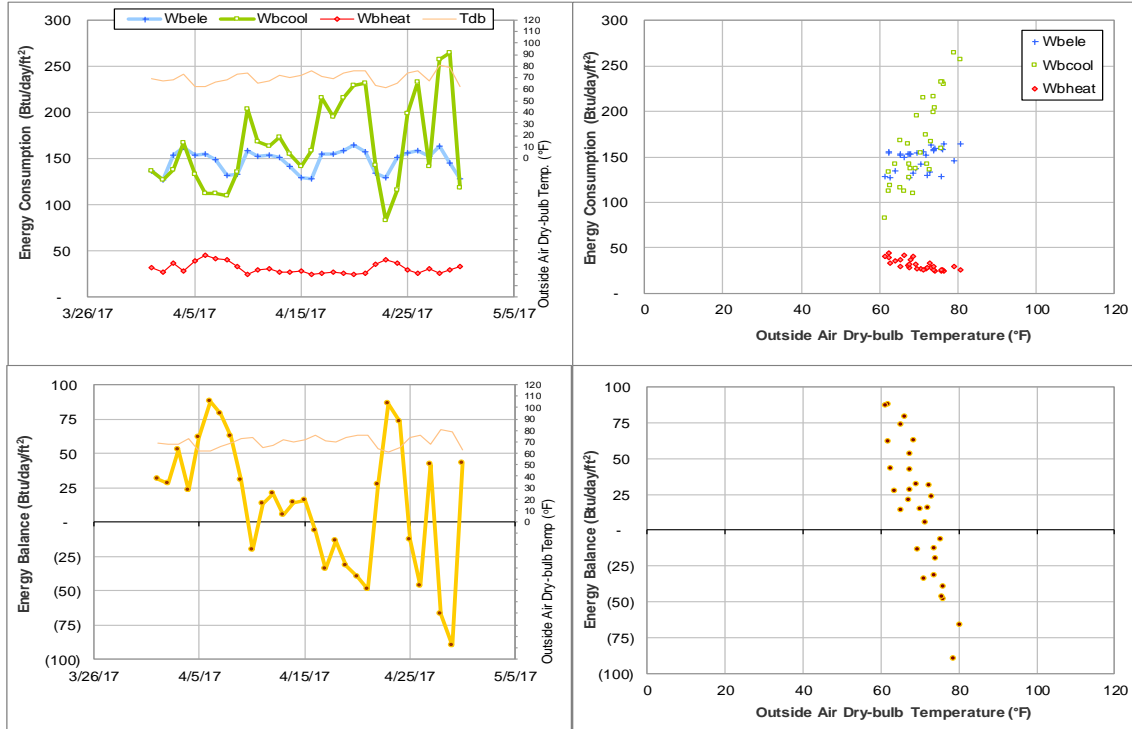


Figure V-15 Horticulture-Forest Science Building TAMU BLDG # 1506 Energy Balance Plot during April 2017

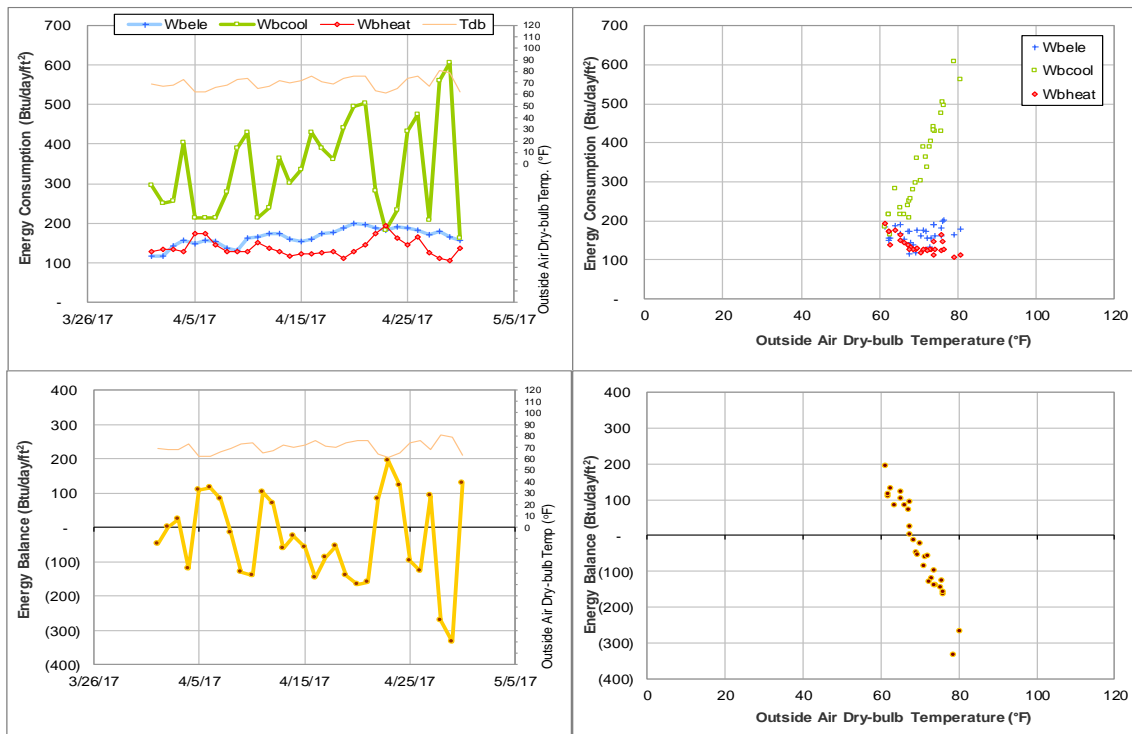


Figure V-16 Agriculture Public Building TAMU BLDG # 1537 Energy Balance Plot during April 2017

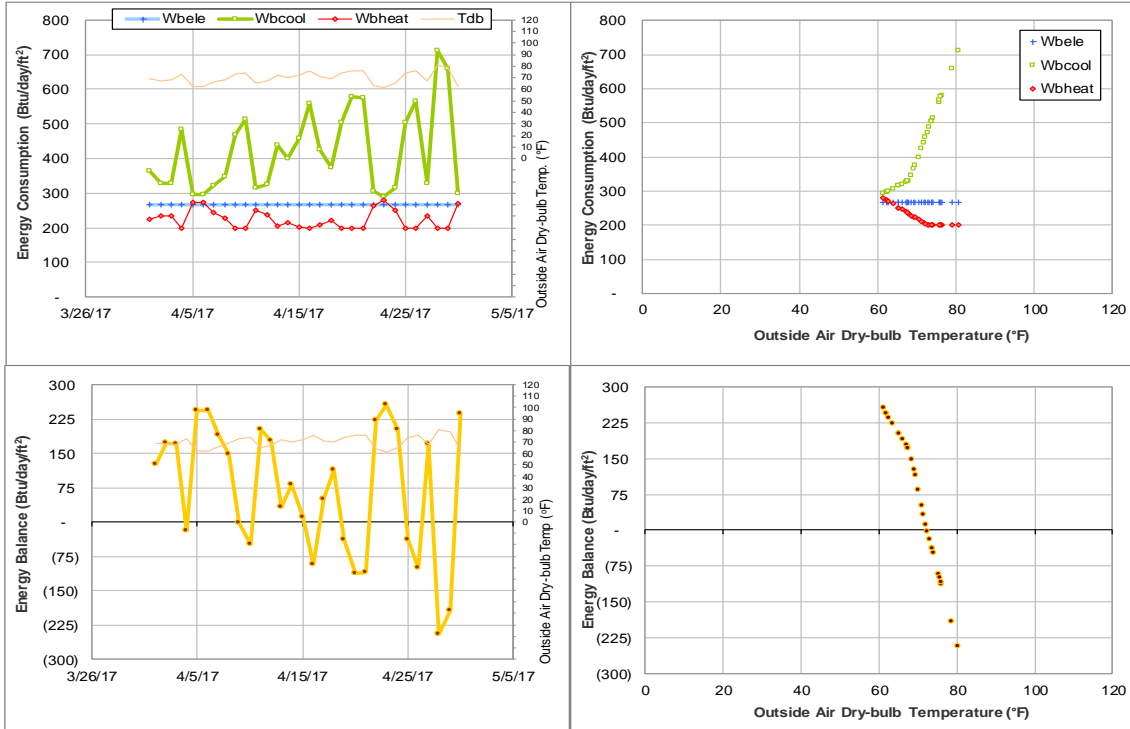


Figure V-17 Human Clinical Research Building TAMU BLDG # 1542 Energy Balance Plot during April 2017

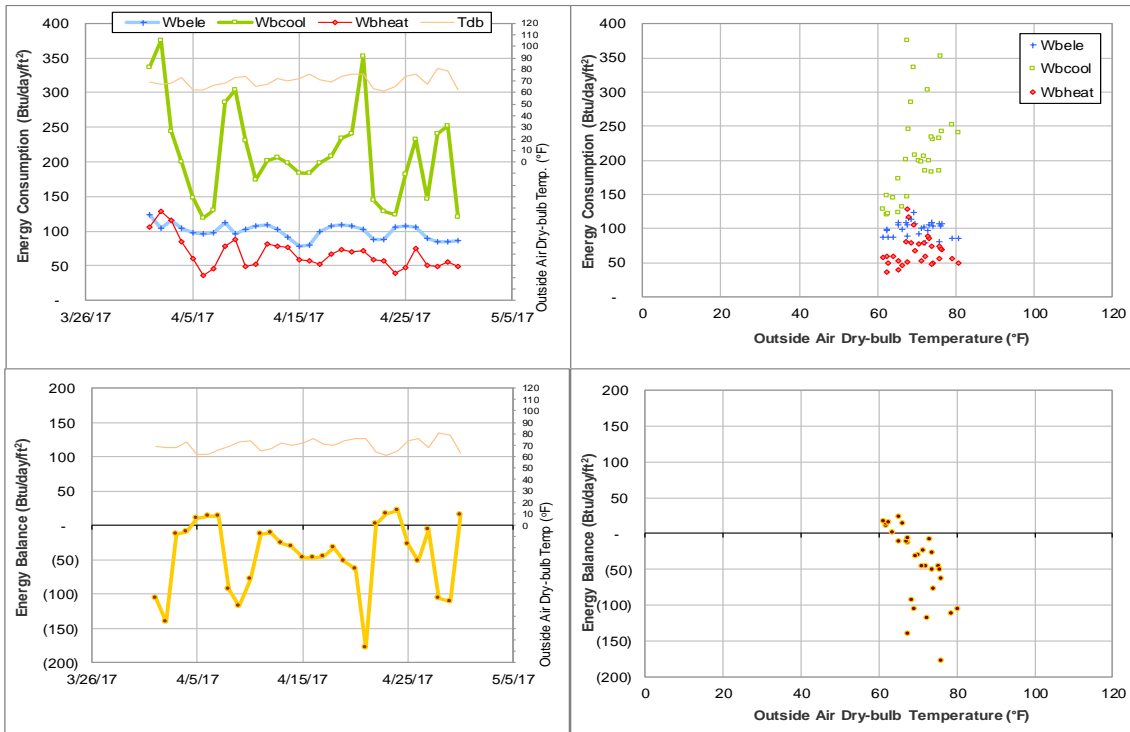


Figure V-18 Reed Arena and Cox-McFerrin Center TAMU BLDG # 1554 Energy Balance Plot during April 2017

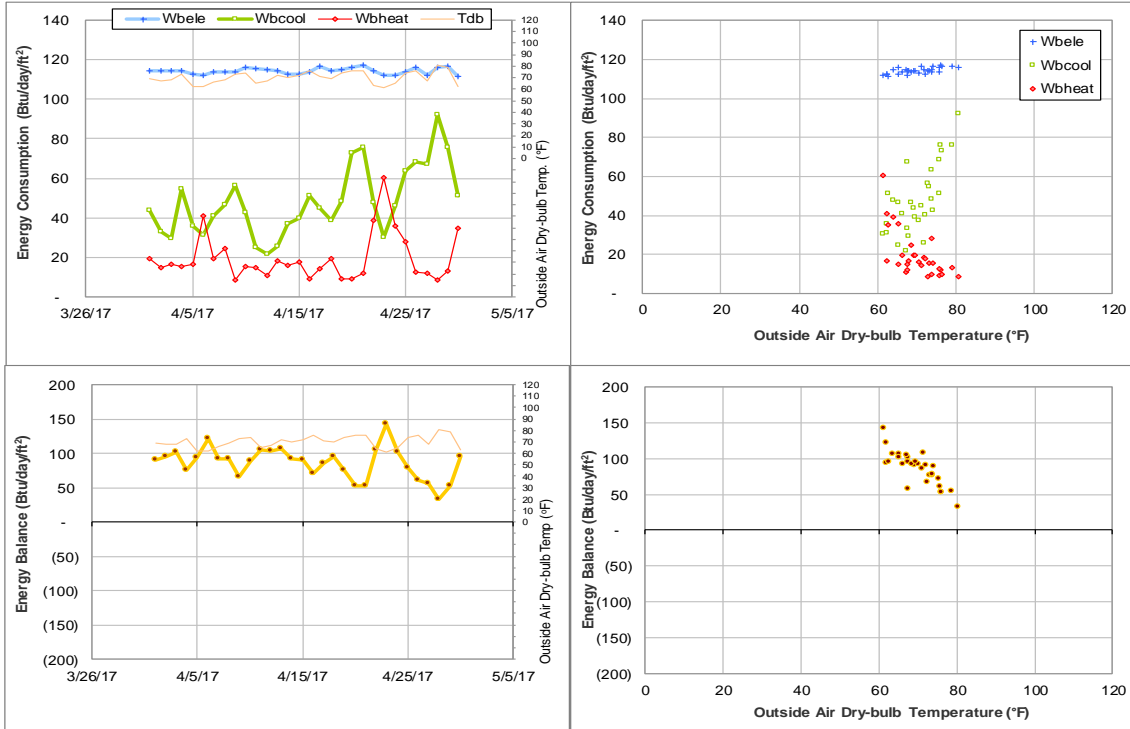


Figure V-19 West Campus Parking Garage TAMU BLDG # 1559 Energy Balance Plot during April 2017

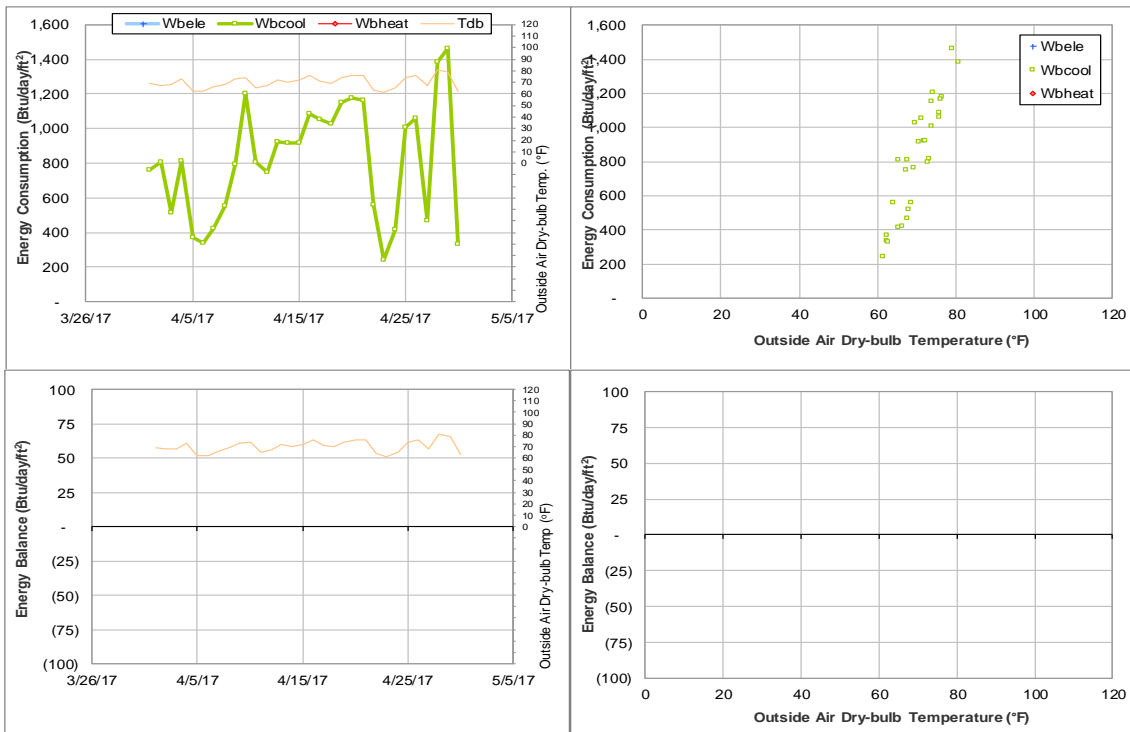


Figure V-20 New TVMDL TAMU BLDG # 1809 Energy Balance Plot during April 2017

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 2017**

Prepared for:

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

**Authors: Xiaoli Li, Kimberly Jones, Hongxiang Fu, Alaina Ruffin
Dr. Juan-Carlos Baltazar, and Dr. David Claridge**

Date: May 2017

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