

## **TAMU Project**

**Energy Consumption Data Quality Assurance/Quality  
Control Assessment Report for the  
Month of January 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 584 meters in 202 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 January 2017 Monthly Consumption for TAMU Buildings

TAMU#	Building Name	Area (ft <sup>2</sup> )	MeterID	Type	Monthly Consumption	Units	Comments
0270	Emerging Technologies Building	305,316	007469	ELE	179,952	kWh	
0270	Emerging Technologies Building	305,316	007470	ELE	49,022	kWh	
0270	Emerging Technologies Building	305,316	007471	CHW	748,057	mBtu	
0270	Emerging Technologies Building	305,316	007475	HHW	742,330	mBtu	
0275	Liberal Arts and Arts & Humanities Building	107,500	007715	ELE	54,081	kWh	
0275	Liberal Arts and Arts & Humanities Building	107,500	007716	CHW	267,478	mBtu	
0275	Liberal Arts and Arts & Humanities Building	107,500	007717	HHW	152,758	mBtu	
0290	Wells Residence Hall	67,283	006870	ELE	39,996	kWh	
0290	Wells Residence Hall	67,283	001984	CHW	594,036	mBtu	(2)
0290	Wells Residence Hall	67,283	001988	HHW	572,698	mBtu	(2)
0291	Rudder Residence Hall	67,283	000351	ELE	40,234	kWh	
0291	Rudder Residence Hall	67,283	002132	CHW	691,872	mBtu	(1), (2)
0291	Rudder Residence Hall	67,283	002136	HHW	532,394	mBtu	(1), (2)
0292	Eppright Residence Hall	67,283	000002	ELE	40,186	kWh	
0292	Eppright Residence Hall	67,283	002262	CHW	242,528	mBtu	
0292	Eppright Residence Hall	67,283	002266	HHW	274,649	mBtu	
0293	Appelt Residence Hall	82,767	000003	ELE	50,822	kWh	
0293	Appelt Residence Hall	82,767	002062	CHW	629,121	mBtu	(1), (2)
0293	Appelt Residence Hall	82,767	002066	HHW	391,729	mBtu	(1), (2)
0294	Lechner Residence Hall	59,541	000004	ELE	44,828	kWh	
0294	Lechner Residence Hall	59,541	002285	CHW	604,414	mBtu	(1)
0294	Lechner Residence Hall	59,541	002289	HHW	599,649	mBtu	(1)
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006536	ELE	128,147	kWh	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006537	ELE	124,836	kWh	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006534	CHW	540,966	mBtu	
0296-0297	Mitchell Inst. For Fundamental Phys & Astronomy	189,617	006535	HHW	379,757	mBtu	
0353	Bright Aerospace Building	148,837	001569	ELE	161,909	kWh	
0353	Bright Aerospace Building	148,837	002746	CHW	755,962	mBtu	(2)
0353	Bright Aerospace Building	148,837	002757	HHW	180,607	mBtu	
0358	Davis Football Player Development Center	20,026	007699	ELE	29,064	kWh	
0358	Davis Football Player Development Center	20,026	007701	CHW	90,406	mBtu	
0358	Davis Football Player Development Center	20,026	007702	HHW	35,439	mBtu	
0361	Bright Football Complex	124,971	008461	ELE	181,360	kWh	
0361	Bright Football Complex	124,971	002547	CHW	487,032	mBtu	
0361	Bright Football Complex	124,971	002551	HHW	289,912	mBtu	
0367	Kyle Field	489,000	000336	ELE	150,685	kWh	
0367	Kyle Field	489,000	008861	ELE	113,365	kWh	*
0367	Kyle Field	489,000	008862	ELE	104,716	kWh	
0367	Kyle Field	489,000	008863	ELE	173,639	kWh	
0367	Kyle Field	489,000	008864	ELE	212,100	kWh	
0367	Kyle Field	489,000	008865	ELE	58,918	kWh	
0367	Kyle Field	489,000	008866	ELE	170,973	kWh	
0367	Kyle Field	489,000	008867	ELE	192,713	kWh	
0367	Kyle Field	489,000	008868	ELE	97,798	kWh	
0367	Kyle Field	489,000	008852	CHW	1,202,057	mBtu	
0367	Kyle Field	489,000	008026	CHW	1,705,748	mBtu	#, (1)
0367	Kyle Field	489,000	008856	HHW	337,801	mBtu	
0367	Kyle Field	489,000	008027	HHW	1,861,910	mBtu	(1)
0376	Chemistry Building Addition	115,797	006229	ELE	176,342	kWh	
0376	Chemistry Building Addition	115,797	006230	ELE	121,757	kWh	
0376	Chemistry Building Addition	115,797	007115	CHW	1,076,437	mBtu	
0376	Chemistry Building Addition	115,797	007119	HHW	1,577,063	mBtu	
0383	Koldus Building	110,272	001488	ELE	158,119	kWh	
0383	Koldus Building	110,272	002863	CHW	331,930	mBtu	
0383	Koldus Building	110,272	002874	HHW	250,435	mBtu	
0384	Sanders Corps of Cadets Center	19,363	001554	ELE	25,006	kWh	
0384	Sanders Corps of Cadets Center	19,363	002583	CHW	139,473	mBtu	
0384	Sanders Corps of Cadets Center	19,363	002587	HHW	126,842	mBtu	
0325-0385	CE TTI Office & Lab Building	157,844	009122	ELE	150,990	kWh	
0325-0385	CE TTI Office & Lab Building	157,844	009123	CHW	406,587	mBtu	
0325-0385	CE TTI Office & Lab Building	157,844	009124	HHW	281,754	mBtu	
0386	Jack E. Brown Chemical Engineering Building	205,000	001428	ELE	153,289	kWh	
0386	Jack E. Brown Chemical Engineering Building	205,000	001429	ELE	335,611	kWh	
0386	Jack E. Brown Chemical Engineering Building	205,000	002250	CHW	1,548,535	mBtu	
0386	Jack E. Brown Chemical Engineering Building	205,000	006871	CHW	113,263	mBtu	
0386	Jack E. Brown Chemical Engineering Building	205,000	002254	HHW	915,208	mBtu	

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

TAMU#	Building Name	Area (ft <sup>2</sup> )	MeterID	Type	Monthly Consumption	Units	Comments
0387	Richardson Petroleum Engineering Building	113,700	005870	ELE	80,796	kWh	
0387	Richardson Petroleum Engineering Building	113,700	005872	ELE	100,486	kWh	
0387	Richardson Petroleum Engineering Building	113,700	005805	CHW	438,135	mBtu	
0387	Richardson Petroleum Engineering Building	113,700	005809	HHW	280,220	mBtu	
0391-0392	James J. Cain'51 and Mechanical Engineering Office Building	173,481	001573	ELE	182,375	kWh	
0391-0392	James J. Cain'51 and Mechanical Engineering Office Building	173,481	002906	CHW	919,287	mBtu	
0391-0392	James J. Cain'51 and Mechanical Engineering Office Building	173,481	002910	HHW	465,518	mBtu	
0394	Underwood Residence Hall	81,730	000014	ELE	49,444	kWh	
0394	Underwood Residence Hall	81,730	002117	CHW	294,414	mBtu	
0394	Underwood Residence Hall	81,730	002121	HHW	319,269	mBtu	
0398	Langford Architecture Center Building A	116,619	003806	ELE	108,046	kWh	
0398	Langford Architecture Center Building A	116,619	003951	CHW	451,148	mBtu	(2)
0398	Langford Architecture Center Building A	116,619	003955	HHW	412,824	mBtu	(2)
0400-0402-1405	Spence Hall, Briggs Hall, and Ash II LLC	108,555	009386	ELE	78,580	kWh	
0400	Spence Hall Dorm 1	38,907	009290	ELE	12,295	kWh	
0400	Spence Hall Dorm 1	38,907	009291	ELE	13,865	kWh	
0400-1405	Spence Hall and Ash II LLC	72,038	009292	CHW	240,589	mBtu	
0400-1405	Spence Hall and Ash II LLC	72,038	009296	HHW	221,102	mBtu	
1405	Ash II LLC	33,131	009387	CHW	108,559	mBtu	
1405	Ash II LLC	33,131	009391	HHW	56,155	mBtu	
0402	Briggs Hall Dorm 3	36,517	009322	ELE	14,955	kWh	
0402	Briggs Hall Dorm 3	36,517	009323	ELE	10,280	kWh	
0402	Briggs Hall Dorm 3	36,517	009324	CHW	156,218	mBtu	
0402	Briggs Hall Dorm 3	36,517	009328	HHW	139,273	mBtu	
0401-0403-1404	Kiest Hall, Fountain Hall, and Plank LLC	108,752	009370	ELE	74,878	kWh	
0401	Kiest Hall Dorm 2	38,815	009306	ELE	11,984	kWh	
0401	Kiest Hall Dorm 2	38,815	009307	ELE	11,865	kWh	
0401-1404	Kiest Hall, and Plank LLC	72,052	009308	CHW	282,966	mBtu	
0401-1404	Kiest Hall, and Plank LLC	72,052	009312	HHW	237,052	mBtu	
1404	Plank LLC	33,237	009372	CHW	141,511	mBtu	
1404	Plank LLC	33,237	009376	HHW	69,749	mBtu	
0403	Fountain Hall Dorm 4	36,700	009338	ELE	12,846	kWh	
0403	Fountain Hall Dorm 4	36,700	009339	ELE	10,475	kWh	
0403	Fountain Hall Dorm 4	36,700	009340	CHW	151,967	mBtu	
0403	Fountain Hall Dorm 5	36,700	009344	HHW	138,119	mBtu	
0404-0406-1403	Gainer Hall, Leonard Hall and Ash LLC	90,072	009401	ELE	63,514	kWh	
0406-1403	Leonard Hall - Dorm 7 and Ash LLC	53,508	007982	CHW	219,279	mBtu	
0406-1403	Leonard Hall - Dorm 7 and Ash LLC	53,508	007983	HHW	204,353	mBtu	
0406	Leonard Hall - Dorm 7	36,222	008011	ELE	11,973	kWh	
0406	Leonard Hall - Dorm 7	36,222	008012	ELE	12,618	kWh	
1403	H. Grady Ash, Jr. '58 Leadership Learning Center	17,286	008005	CHW	57,350	mBtu	
1403	H. Grady Ash, Jr. '58 Leadership Learning Center	17,286	008006	HHW	54,726	mBtu	
0404	Gainer Hall Dorm 5	36,564	009354	ELE	9,795	kWh	
0404	Gainer Hall Dorm 5	36,564	009355	ELE	9,921	kWh	
0404	Gainer Hall Dorm 5	36,564	009356	CHW	124,819	mBtu	
0404	Gainer Hall Dorm 5	36,564	009360	HHW	114,410	mBtu	
0405-0407-1402	Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center	91,310	007721	ELE	68,000	kWh	
0407-1402	Harrell Hall - Dorm 8 and Buzbee LLC	54,443	007722	CHW	207,689	mBtu	
0407-1402	Harrell Hall - Dorm 8 and Buzbee LLC	54,443	007723	HHW	178,437	mBtu	
0405	Lacy Hall - Dorm 6	36,867	007922	ELE	23,781	kWh	
0405	Lacy Hall - Dorm 6	36,867	007918	CHW	184,059	mBtu	
0405	Lacy Hall - Dorm 6	36,867	007919	HHW	177,110	mBtu	
0407	Harrell Hall - Dorm 8	36,943	007729	ELE	23,963	kWh	
1402	Buzbee Leadership Learning Center	17,500	007725	CHW	103,227	mBtu	
1402	Buzbee Leadership Learning Center	17,500	007726	HHW	40,829	mBtu	
0412	Moses Residence Hall	40,828	000027	ELE	30,522	kWh	
0412	Moses Residence Hall	40,828	002384	CHW	413,842	mBtu	
0412	Moses Residence Hall	40,828	002395	HHW	311,539	mBtu	
0415	Davis-Gary Residence Hall	40,828	000030	ELE	29,862	kWh	
0415	Davis-Gary Residence Hall	40,828	002532	CHW	315,624	mBtu	
0415	Davis-Gary Residence Hall	40,828	002543	HHW	333,500	mBtu	
0419	Leggett Residence Hall	45,134	000031	ELE	17,022	kWh	
0419	Leggett Residence Hall	45,134	002218	CHW	237,029	mBtu	*
0419	Leggett Residence Hall	45,134	002222	HHW	193,262	mBtu	
0420	Milner Hall	48,268	009144	ELE	23,763	kWh	
0420	Milner Hall	48,268	009145	CHW	50,889	mBtu	
0420	Milner Hall	48,268	009146	HHW	104,822	mBtu	

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

TAMU#	Building Name	Area (ft <sup>2</sup> )	MeterID	Type	Monthly Consumption	Units	Comments
0422	Walton Residence Hall	51,494	000378	ELE	45,215	kWh	
0422	Walton Residence Hall	51,494	002364	HHW	96,155	mBtu	
0424	Hotard Hall	18,500	000032	ELE	13,862	kWh	
0424	Hotard Hall	18,500	002657	CHW	76,514	mBtu	
0424	Hotard Hall	18,500	002668	HHW	112,209	mBtu	
0425	Henderson Hall	22,185	001553	ELE	15,273	kWh	
0425	Henderson Hall	22,185	002607	CHW	96,002	mBtu	
0425	Henderson Hall	22,185	002611	HHW	107,580	mBtu	
0426-0427-0428	FHK Complex	154,349	000331	ELE	106,979	kWh	*
0426-0427-0428	FHK Complex	154,349	002848	CHW	796,220	mBtu	
0426-0427-0428	FHK Complex	154,349	002859	HHW	1,074,395	mBtu	
0430	Schumacher Residence Hall	38,957	000034	ELE	31,825	kWh	
0430	Schumacher Residence Hall	38,957	002015	CHW	170,025	mBtu	
0430	Schumacher Residence Hall	38,957	002030	HHW	224,801	mBtu	
0359	Architecture Building B	28,545	005518	ELE	20,611	kWh	
0432	Architecture Building C	73,020	005584	ELE	80,347	kWh	
0359-0432	Architecture Building B&C	101,565	006419	CHW	392,700	mBtu	
0359-0432	Architecture Building B&C	101,565	006423	HHW	318,990	mBtu	
0434	Luedecke Building (Cyclotron)	80,646	005555	ELE	43,034	kWh	
0434	Luedecke Building (Cyclotron)	80,646	005558	ELE	169,132	kWh	
0434	Luedecke Building (Cyclotron)	80,646	006664	CHW	845,716	mBtu	
0434	Luedecke Building (Cyclotron)	80,646	006668	HHW	381,986	mBtu	
0435	Harrington Education Center Office Tower	130,844	001546	ELE	102,271	kWh	
0435	Harrington Education Center Office Tower	130,844	002792	CHW	440,253	mBtu	
0435	Harrington Education Center Office Tower	130,844	002796	HHW	520,587	mBtu	
0436	Reed-McDonald Building	77,435	006868	ELE	88,630	kWh	
0436	Reed-McDonald Building	77,435	002419	CHW	426,382	mBtu	
0436	Reed-McDonald Building	77,435	002423	HHW	572,450	mBtu	
0438	Harrington Education Center Classroom Building	61,860	003630	ELE	35,303	kWh	
0438	Harrington Education Center Classroom Building	61,860	002784	CHW	52,953	mBtu	
0438	Harrington Education Center Classroom Building	61,860	002788	HHW	17,433	mBtu	
0433-0440-0441-0442-0447	Mosher Commons Krueger Dunn Aston	577,584	009099	ELE	336,914	kWh	*
0433	Mosher Residence Hall	155,430	009083	ELE	91,525	kWh	*, (2)
0433	Mosher Residence Hall	155,430	002485	CHW	1,469,145	mBtu	*, (2)
0433	Mosher Residence Hall	155,430	002489	HHW	1,124,300	mBtu	*, (2)
0440	Commons Hall	84,500	009237	CHW	169,717	mBtu	*
0440	Commons Hall	84,500	009238	HHW	404,173	mBtu	*, (1)
0441	Krueger Residence Hall	112,133	009091	ELE	72,431	kWh	*
0441	Krueger Residence Hall	112,133	002504	CHW	528,168	mBtu	*
0441	Krueger Residence Hall	112,133	002500	HHW	476,035	mBtu	*
0442	Dunn Residence Hall	112,133	009095	ELE	109,793	kWh	*
0442	Dunn Residence Hall	112,133	002519	CHW	603,312	mBtu	*
0442	Dunn Residence Hall	112,133	002515	HHW	535,457	mBtu	*
0447	Aston Residence Hall	113,388	009087	ELE	62,705	kWh	*
0447	Aston Residence Hall	113,388	002474	CHW	477,083	mBtu	#, (1)
0447	Aston Residence Hall	113,388	002470	HHW	844,004	mBtu	*
0443	Oceanography & Meteorology Building	180,316	005322	ELE	175,094	kWh	*
0443	Oceanography & Meteorology Building	180,316	005323	ELE	75,228	kWh	*
0443	Oceanography & Meteorology Building	180,316	006388	CHW	596,604	mBtu	#, (1), (2)
0443	Oceanography & Meteorology Building	180,316	006392	HHW	468,759	mBtu	(2)
0444	Peterson Building	84,831	004714	ELE	157,211	kWh	
0444	Peterson Building	84,831	002922	CHW	862,886	mBtu	
0444	Peterson Building	84,831	006435	HHW	540,606	mBtu	
0445-0517	Teague Research Center and DPC Annex	89,735	003948	ELE	24,789	kWh	
0445-0517	Teague Research Center and DPC Annex	89,735	004719	ELE	52,706	kWh	
0445	Teague Research Center	63,515	006411	CHW	144,265	mBtu	(1), (2)
0445	Teague Research Center	63,515	006415	HHW	59,228	mBtu	(1)
0517	DPC Annex	26,220	006563	CHW	311,416	mBtu	(1), (2)
0517	DPC Annex	26,220	006567	HHW	349,849	mBtu	(2)
0446	Rudder Theatre Complex	209,293	002977	ELE	51,532	kWh	*, (2)
0446	Rudder Theatre Complex	209,293	002980	ELE	37,206	kWh	*, (2)
0446	Rudder Theatre Complex	209,293	004297	CHW	798,963	mBtu	*, (2)
0446	Rudder Theatre Complex	209,293	004309	HHW	766,145	mBtu	*, (2)
0446	Rudder Tower	92,947	001550	ELE	27,182	kWh	
0446	Rudder Tower	92,947	001551	ELE	59,970	kWh	
0446	Rudder Tower	92,947	002455	CHW	270,196	mBtu	(1)
0446	Rudder Tower	92,947	002459	HHW	437,052	mBtu	(1)

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

TAMU#	Building Name	Area (ft <sup>2</sup> )	MeterID	Type	Monthly Consumption	Units	Comments
0448	Adams Band Hall	55,248	000978	ELE	57,410	kWh	
0448	Adams Band Hall	55,248	002555	CHW	436,478	mBtu	
0448	Adams Band Hall	55,248	002566	HHW	336,912	mBtu	
0449	Biological Sciences Building - West	96,038	003978	ELE	183,736	kWh	
0449	Biological Sciences Building - West	96,038	003981	CHW	789,335	mBtu	
0449	Biological Sciences Building - West	96,038	003985	HHW	527,967	mBtu	
0450	Duncan Dining Hall	128,482	000300	ELE	89,450	kWh	
0450	Duncan Dining Hall	128,482	002998	CHW	559,515	mBtu	
0450	Duncan Dining Hall	128,482	003009	HHW	393,549	mBtu	
0454	MSC (East Main)	392,000	007600	ELE	267,380	kWh	
0454	MSC (West Main)	392,000	007601	ELE	208,968	kWh	
0454	MSC BOR	392,000	008047	ELE	15,999	kWh	
0454	MSC	392,000	007584	CHW	1,333,620	mBtu	
0454	MSC BOR	392,000	004184	CHW	289,066	mBtu	
0454	MSC	392,000	007585	HHW	644,397	mBtu	
0454	MSC BOR	392,000	004196	HHW	306,687	mBtu	
0456	Military Sciences Building	43,808	006939	CHW	363,279	mBtu	*
0456	Military Sciences Building	43,808	006943	HHW	259,467	mBtu	*
0457	TAES Annex Building	16,364	005863	ELE	14,010	kWh	
0457	TAES Annex Building	16,364	005913	CHW	33,117	mBtu	
0457	TAES Annex Building	16,364	005917	HHW	33,488	mBtu	
0461	Coke Building	24,466	004008	ELE	32,401	kWh	
0461	Coke Building	24,466	005307	CHW	54,048	mBtu	
0461	Coke Building	24,466	004023	HHW	28,480	mBtu	
0462	Academic Building	82,555	005861	ELE	20,024	kWh	
0462	Academic Building	82,555	005903	ELE	34,363	kWh	
0462	Academic Building	82,555	005905	CHW	365,751	mBtu	
0462	Academic Building	82,555	005909	HHW	346,163	mBtu	
0463	Psychology Building	48,215	001575	ELE	39,700	kWh	
0463	Psychology Building	48,215	002941	CHW	272,123	mBtu	(1)
0463	Psychology Building	48,215	002945	HHW	118,986	mBtu	(1)
0464	State Chemist Building	20,027	005839	ELE	3,319	kWh	
0464	State Chemist Building	20,027	005837	ELE	4,054	mBtu	
0464	State Chemist Building	20,027	005841	HHW	28,200	mBtu	
0465	Butler Hall	29,699	003997	ELE	32,143	kWh	
0465	Butler Hall	29,699	004000	CHW	126,077	mBtu	
0465	Butler Hall	29,699	004004	HHW	126,139	mBtu	
0467	Biological Sciences Building - East	62,273	001543	ELE	179,671	kWh	
0467	Biological Sciences Building - East	62,273	003851	CHW	531,072	mBtu	#, (1)
0467	Biological Sciences Building - East	62,273	003862	HHW	155,571	mBtu	
0468	Evans Library	712,093	000304	ELE	232,773	kWh	
0468	Evans Library	712,093	000318	ELE	118,068	kWh	
0468	Evans Library	712,093	000319	ELE	88,076	kWh	*
0468	Evans Library	712,093	000320	ELE	78,650	kWh	*
0468	Evans Library	712,093	006429	ELE	86,964	kWh	
0468	Evans Library	712,093	003701	CHW	531,291	mBtu	
0468	Evans Library	712,093	003895	CHW	780,893	mBtu	
0468	Evans Library	712,093	003903	CHW	184,666	mBtu	
0468	Evans Library	712,093	003911	CHW	964,477	mBtu	
0468	Evans Library	712,093	003712	HHW	278,533	mBtu	
0468	Evans Library	712,093	003899	HHW	355,809	mBtu	
0468	Evans Library	712,093	003907	HHW	44,993	mBtu	
0468	Evans Library	712,093	003922	HHW	160,847	mBtu	
0468	Evans Library	712,093	005303	HHW	87,683	mBtu	
0469	Central Campus Parking Garage	251,304	000306	ELE	47,025	kWh	
0469	Central Campus Parking Garage	2,844	003716	CHW	11,676	mBtu	
0469	Central Campus Parking Garage	2,844	003720	HHW	21,819	mBtu	
0470	Glasscock History Bldg	39,887	006407	ELE	17,562	kWh	
0470	Glasscock History Bldg	39,887	006638	CHW	87,915	mBtu	
0470	Glasscock History Bldg	39,887	006642	HHW	80,656	mBtu	
0471	Pavilion	40,062	001455	ELE	37,949	kWh	
0471	Pavilion	40,062	002769	CHW	93,809	mBtu	
0471	Pavilion	40,062	002780	HHW	59,210	mBtu	
0472	Animal Industries	44,856	009042	ELE	48,468	kWh	
0472	Animal Industries	44,856	009109	CHW	178,736	mBtu	
0472	Animal Industries	44,856	009113	HHW	263,761	mBtu	
0473	Williams Administration Building	69,898	007945	ELE	54,437	kWh	
0473	Williams Administration Building	69,898	007946	CHW	187,056	mBtu	
0473	Williams Administration Building	69,898	007947	HHW	196,752	mBtu	

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

TAMU#	Building Name	Area (ft <sup>2</sup> )	MeterID	Type	Monthly Consumption	Units	Comments
0474	YMCA Building	36,035	007524	ELE	22,917	kWh	
0474	YMCA Building	36,035	007525	CHW	45,902	mBtu	
0474	YMCA Building	36,035	007526	HHW	21,988	mBtu	
0476	Francis Hall	36,850	008015	ELE	33,628	kWh	
0476	Francis Hall	36,850	008033	CHW	133,607	mBtu	
0476	Francis Hall	36,850	008034	HHW	83,564	mBtu	
0477	Anthropology Building	51,592	001558	ELE	32,844	kWh	
0477	Anthropology Building	51,592	003664	CHW	196,514	mBtu	
0477	Anthropology Building	51,592	003668	HHW	204,648	mBtu	
0478	Scoates Hall	62,228	007961	ELE	55,806	kWh	
0478	Scoates Hall	62,228	007968	CHW	131,957	mBtu	
0478	Scoates Hall	62,228	007969	HHW	161,630	mBtu	
0480	Bolton Hall	39,686	006845	ELE	31,404	kWh	
0480	Bolton Hall	39,686	007012	CHW	111,202	mBtu	
0480	Bolton Hall	39,686	007016	HHW	63,551	mBtu	
0481	Heaton Hall	13,640	005712	ELE	NA	kWh	*
0481	Heaton Hall	13,640	007531	CHW	228,522	mBtu	
0481	Heaton Hall	13,640	007535	HHW	217,265	mBtu	
0482	Fermier Hall	19,074	005779	ELE	11,765	kWh	
0482	Fermier Hall	19,074	005878	CHW	25,713	mBtu	(2)
0482	Fermier Hall	19,074	005881	HHW	35,245	mBtu	(2)
0483	Thompson Hall	81,404	003688	ELE	63,096	kWh	
0483	Thompson Hall	81,404	003887	CHW	156,163	mBtu	
0483	Thompson Hall	81,404	003891	HHW	115,010	mBtu	
0484	Chemistry Building	205,393	007152	ELE	92,073	kWh	*
0484	Chemistry Building	205,393	007556	ELE	12,157	kWh	
0484	Chemistry Building	205,393	007557	ELE	23,296	kWh	(2)
0484	Chemistry Building	205,393	007559	ELE	161,587	kWh	#, (1)
0484	Chemistry Building	205,393	007028	CHW	514,356	mBtu	*
0484	Chemistry Building	205,393	007223	CHW	1,126,853	mBtu	
0484	Chemistry Building	205,393	007032	HHW	350,690	mBtu	*
0484	Chemistry Building	205,393	007227	HHW	1,398,031	mBtu	
0490	Halbouty Geosciences Building	120,874	006691	ELE	61,353	kWh	
0490	Halbouty Geosciences Building	120,874	006695	ELE	101,386	kWh	
0490	Halbouty Geosciences Building	120,874	006896	CHW	631,676	mBtu	#, (1)
0490	Halbouty Geosciences Building	120,874	006913	CHW	381,494	mBtu	
0490	Halbouty Geosciences Building	120,874	006900	HHW	476,947	mBtu	#, (1)
0490	Halbouty Geosciences Building	120,874	006917	HHW	235,008	mBtu	
0492	Civil Engineering Building	56,537	005783	ELE	57,540	kWh	
0492	Civil Engineering Building	56,537	005950	CHW	272,466	mBtu	#, (1)
0492	Civil Engineering Building	56,537	005954	HHW	159,148	mBtu	#, (1)
0495	Sbisa Dining Hall	94,233	000352	ELE	120,940	kWh	
0495	Sbisa Dining Hall	94,233	000353	ELE	97,988	kWh	
0495	Sbisa Dining Hall	94,233	001951	CHW	605,055	mBtu	
0495	Sbisa Dining Hall	94,233	001957	HHW	325,359	mBtu	
0496	Utilities & Energy Services Central Office	46,110	007706	ELE	11,000	kWh	(2)
0496	Utilities & Energy Services Central Office	46,110	006929	CHW	54,980	mBtu	(2)
0496	Utilities & Energy Services Central Office	46,110	006933	HHW	30,652	mBtu	(2)
0499	Engineering Innovation Center	28,339	001561	ELE	23,565	kWh	
0499	Engineering Innovation Center	28,339	002672	CHW	56,320	mBtu	(2)
0499	Engineering Innovation Center	28,339	002683	HHW	91,485	mBtu	
0501	Concrete Materials Laboratory	9,600	005791	ELE	6,424	kWh	
0506	Nagle Hall	32,306	001484	ELE	12,080	kWh	(2)
0506	Nagle Hall	32,306	003619	CHW	184,183	mBtu	(2)
0506	Nagle Hall	32,306	003623	HHW	82,106	mBtu	(2)
0507	Veterinary Medical Science Building	69,367	003013	ELE	76,889	kWh	
0507	Veterinary Medical Science Building	69,367	003640	CHW	721,919	mBtu	
0507	Veterinary Medical Science Building	69,367	003644	HHW	451,444	mBtu	
0508	Veterinary Teaching Hospital	96,416	003022	ELE	76,195	kWh	
0508-1026	Veterinary Teaching Hospital and Veterinary Medicine Administration	191,096	004166	CHW	1,348,129	mBtu	#, (1)
0508-1026	Veterinary Teaching Hospital and Veterinary Medicine Administration	191,096	004170	HHW	862,314	mBtu	#, (1)
0511	Heep Laboratory Building	40,476	005787	ELE	66,893	kWh	
0511	Heep Laboratory Building	40,476	005821	CHW	412,084	mBtu	#, (1)
0511	Heep Laboratory Building	40,476	005825	HHW	260,954	mBtu	#, (1)
0512	All Faiths Chapel	8,999	004340	ELE	7,449	kWh	
0512	All Faiths Chapel	8,999	004288	CHW	35,450	mBtu	#, (1), (2)
0512	All Faiths Chapel	8,999	004293	HHW	67,789	mBtu	#, (1)
0513	Doherty Building	42,336	000299	ELE	53,403	kWh	*
0513	Doherty Building	42,336	002898	CHW	437,951	mBtu	*
0513	Doherty Building	42,336	002902	HHW	429,238	mBtu	*

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

TAMU#	Building Name	Area (ft <sup>2</sup> )	MeterID	Type	Monthly Consumption	Units	Comments
0514	Munnerlyn Astronomy & Space Sciences Engineering	22,134	007558	ELE	10,990	kWh	
0514	Munnerlyn Astronomy & Space Sciences Engineering	22,134	007487	CHW	25,667	mBtu	
0514	Munnerlyn Astronomy & Space Sciences Engineering	22,134	007491	HHW	16,412	mBtu	
0516	Computing Services Center	30,014	005259	ELE	508,419	kWh	
0516	Computing Services Center	30,014	003959	CHW	1,562,882	mBtu	
0516	Computing Services Center	30,014	003963	HHW	1	mBtu	
0520	Beutel Health Center	63,318	003785	ELE	72,337	kWh	
0520	Beutel Health Center	63,318	003933	CHW	348,491	mBtu	
0520	Beutel Health Center	63,318	003944	HHW	175,287	mBtu	
0521	Heldenfels Hall	104,949	001547	ELE	89,860	kWh	
0521	Heldenfels Hall	104,949	002962	CHW	463,444	mBtu	
0521	Heldenfels Hall	104,949	002973	HHW	259,962	mBtu	
0524	Blocker Building	257,953	001545	ELE	196,622	kWh	
0524	Blocker Building	257,953	002914	CHW	783,254	mBtu	
0524	Blocker Building	257,953	002918	HHW	188,345	mBtu	(2)
0548	Clements Residence Hall	62,156	000048	ELE	32,805	kWh	
0548	Clements Residence Hall	62,156	002729	CHW	582,775	mBtu	*
0548	Clements Residence Hall	62,156	002740	HHW	542,375	mBtu	*
0549	Haas Residence Hall	69,668	001398	ELE	40,664	kWh	
0549	Haas Residence Hall	69,668	002983	CHW	527,119	mBtu	
0549	Haas Residence Hall	69,668	002994	HHW	569,170	mBtu	
0550	McFadden Residence Hall	62,156	000339	ELE	36,634	kWh	
0550	McFadden Residence Hall	62,156	002188	CHW	630,400	mBtu	
0550	McFadden Residence Hall	62,156	002192	HHW	619,668	mBtu	
0652	Neeley Residence Hall	69,668	000056	ELE	42,924	kWh	
0652	Neeley Residence Hall	69,668	002147	CHW	239,365	mBtu	(2)
0652	Neeley Residence Hall	69,668	002151	HHW	301,479	mBtu	(2)
0653	Hobby Residence Hall	62,156	000057	ELE	47,891	kWh	
0653	Hobby Residence Hall	62,156	002401	CHW	582,707	mBtu	
0653	Hobby Residence Hall	62,156	002405	HHW	447,958	mBtu	
0682	Wisnabaker Engineering Research Center	177,704	005246	ELE	207,621	kWh	
0682	Wisnabaker Engineering Research Center	177,704	003879	CHW	632,370	mBtu	
0682	Wisnabaker Engineering Research Center	177,704	003883	HHW	376,473	mBtu	
0740	McNew Laboratory	20,904	005874	ELE	53,222	kWh	(2)
0740	McNew Laboratory	20,904	005974	CHW	371,597	mBtu	(2)
0740	McNew Laboratory	20,904	005968	HHW	56,485	mBtu	# (1) (2)
0806	Soil Testing Labs	5,544	006875	ELE	18,245	kWh	
0815	Entomology Research Lab	17,618	005799	ELE	26,340	kWh	
0815	Entomology Research Lab	17,618	006043	CHW	120,609	mBtu	(2)
0880	TVMC-Small Animal Building	3,260	005958	CHW	24,886	mBtu	
0880	TVMC-Small Animal Building	3,260	005962	HHW	3	mBtu	(2)
0972	Laboratory Animal Care Building	52,178	007063	ELE	129,706	kWh	
0972	Laboratory Animal Care Building	52,178	007067	ELE	48,613	kWh	
0972	Laboratory Animal Care Building	52,178	007071	CHW	1,024,177	mBtu	
0972	Laboratory Animal Care Building	52,178	006991	HHW	525,659	mBtu	
1020	Vivarium III	12,234	005857	ELE	22,386	kWh	
1020	Vivarium III	12,234	005997	CHW	177,236	mBtu	# (1)
1020	Vivarium III	12,234	006001	HHW	133,744	mBtu	# (1)
1026	Veterinary Medicine Administration	94,680	006072	ELE	129,400	kWh	
1026	Veterinary Medicine Administration	94,680	006049	CHW	796,660	mBtu	
1026	Veterinary Medicine Administration	98,680	006053	HHW	731,081	mBtu	# (1) (2)
1041	Texas Vet Med Diagnostic Lab	55,169	001466	ELE	100,976	kWh	*
1041	Texas Vet Med Diagnostic Lab	55,169	001539	ELE	83,313	kWh	*(2)
1041	Texas Vet Med Diagnostic Lab	55,169	003817	CHW	358,379	mBtu	*
1041	Texas Vet Med Diagnostic Lab	55,169	004137	CHW	537,924	mBtu	*
1041	Texas Vet Med Diagnostic Lab	55,169	003821	HHW	236,233	mBtu	*
1041	Texas Vet Med Diagnostic Lab	55,169	004130	HHW	175,892	mBtu	*
1042	Forest Science Laboratory Building	9,632	006036	ELE	22,772	kWh	
1085	Veterinary Small Animal Hospital	103,440	004136	ELE	230,736	kWh	
1085	Veterinary Small Animal Hospital	103,440	003656	CHW	906,919	mBtu	
1085	Veterinary Small Animal Hospital	103,440	003660	HHW	662,992	mBtu	
1089	Utilities Energy Office Annex	2,937	006964	ELE	5,538	kWh	
1146	Biological Control Facility	13,492	005795	ELE	34,663	kWh	
1146	Biological Control Facility	13,492	005887	CHW	117,424	mBtu	(2)
1146	Biological Control Facility	13,492	005891	HHW	70,504	mBtu	
1156	Physical Plant Administration & Shops	101,704	007483	ELE	103,513	kWh	
1156	Physical Plant Administration & Shops	101,704	007679	CHW	112,403	mBtu	(2)
1156	Physical Plant Administration & Shops	101,704	007683	HHW	245,192	mBtu	(2)



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

TAMU#	Building Name	Area (ft <sup>2</sup> )	MeterID	Type	Monthly Consumption	Units	Comments
1184	Veterinary Anatomic Pathology	17,223	001445	ELE	53,109	kWh	
1184	Veterinary Anatomic Pathology	17,223	006995	CHW	97,847	mBtu	
1184	Veterinary Anatomic Pathology	17,223	006999	HHW	165,240	mBtu	
1194	Veterinary Large Animal Hospital	140,865	005256	ELE	98,918	kWh	
1194	Veterinary Large Animal Hospital	140,865	003016	ELE	71,497	kWh	
1194	Veterinary Large Animal Hospital	140,865	007455	ELE	41,970	kWh	
1194	Veterinary Large Animal Hospital	140,865	003648	CHW	767,028	mBtu	
1194	Veterinary Large Animal Hospital	140,865	007456	CHW	224,524	mBtu	
1194	Veterinary Large Animal Hospital	140,865	003652	HHW	1,000,958	mBtu	
1194	Veterinary Large Animal Hospital	140,865	007457	HHW	64,326	mBtu	
1197	Veterinary Research Building	114,666	006355	ELE	70,207	kWh	(2)
1197	Veterinary Research Building	114,666	006359	ELE	34,823	kWh	(2)
1197	Veterinary Research Building	114,666	006062	CHW	940,647	mBtu	
1197	Veterinary Research Building	114,666	006066	HHW	651,074	mBtu	# (1)
1416	Hullabaloo Residence Hall	253,452	007845	ELE	165,183	kWh	
1416	Hullabaloo Residence Hall	253,452	007846	CHW	616,812	mBtu	
1416	Hullabaloo Residence Hall	253,452	007847	HHW	315,885	mBtu	# (1)
1450	University Apartments - Laundry at the Gardens	1,428	006885	ELE	5,181	kWh	
1451	University Apartments - The Gardens J	33,535	006981	ELE	21,789	kWh	
1452	University Apartments - The Gardens K	33,535	006979	ELE	21,923	kWh	
1453	University Apartments - The Gardens L	33,535	006884	ELE	21,895	kWh	
1454	University Apartments - The Gardens F	33,535	006980	ELE	20,911	kWh	*
1455	University Apartments - The Gardens G	33,535	006882	ELE	20,324	kWh	*
1456	University Apartments - The Gardens H	33,535	007962	ELE	22,297	kWh	
1457	University Apartments - The Gardens M	33,535	007503	ELE	22,606	kWh	
1458	University Apartments - The Gardens N	33,535	007504	ELE	22,240	kWh	
1459	University Apartments - The Gardens P	33,535	007505	ELE	22,845	kWh	
1460	University Apartments - The Gardens Q	33,535	007506	ELE	20,665	kWh	
1497	Utilities & Energy Services Business Office	3,480	007082	ELE	3,689	kWh	*
1497	Utilities & Energy Services Business Office	3,480	006341	CHW	6,754	mBtu	
1497	Utilities & Energy Services Business Office	3,480	006345	HHW	5,249	mBtu	
1501	Kleberg Center	165,031	007449	ELE	253,285	kWh	
1501	Kleberg Center	165,031	002624	CHW	752,024	mBtu	
1501	Kleberg Center	165,031	002628	HHW	1,000,084	mBtu	
1502	Heep Center	158,979	001556	ELE	248,925	kWh	
1502	Heep Center	158,979	002599	CHW	931,247	mBtu	
1502	Heep Center	158,979	002603	HHW	325,217	mBtu	
1503	Cater-Mattil Hall	27,958	007977	ELE	101,789	kWh	
1503	Cater-Mattil Hall	27,958	008001	CHW	189,357	mBtu	
1504	Reynolds Medical Sciences Building	169,859	003975	ELE	261,403	kWh	(2)
1504	Reynolds Medical Sciences Building	169,859	003989	CHW	1,474,990	mBtu	(2)
1504	Reynolds Medical Sciences Building	169,859	003993	HHW	1,040,772	mBtu	(2)
1505	Rosenthal Meat Science & Technology Center	30,889	003627	ELE	121,479	kWh	
1505	Rosenthal Meat Science & Technology Center	30,889	002573	CHW	134,472	mBtu	
1505	Rosenthal Meat Science & Technology Center	30,889	002577	HHW	76,453	mBtu	
1506	Horticulture-Forest Science Building	118,648	001544	ELE	146,305	kWh	
1506	Horticulture-Forest Science Building	118,648	003967	CHW	302,016	mBtu	
1506	Horticulture-Forest Science Building	118,648	003971	HHW	251,410	mBtu	
1507	Biochemistry-Biophysics Building	166,079	001459	ELE	160,907	kWh	
1507	Biochemistry-Biophysics Building	166,079	001460	ELE	159,197	kWh	
1507	Biochemistry-Biophysics Building	166,079	003025	CHW	877,811	mBtu	
1507	Biochemistry-Biophysics Building	166,079	003029	HHW	1,170,183	mBtu	
1508	Price Hobgood Ag. Engineering Research Lab	27,666	005638	ELE	23,027	kWh	
1508	Price Hobgood Ag. Engineering Research Lab	27,666	006005	CHW	72,002	mBtu	
1508	Price Hobgood Ag. Engineering Research Lab	27,666	006009	HHW	37,270	mBtu	
1509	Medical Sciences Library	84,183	000350	ELE	100,673	kWh	
1509	Medical Sciences Library	84,183	003777	CHW	371,527	mBtu	
1509	Medical Sciences Library	84,183	003781	HHW	164,429	mBtu	
1510	Wehner Building	259,681	006849	ELE	186,733	kWh	
1510	Wehner Building	259,681	006685	ELE	254,268	kWh	
1510	Wehner Building	259,681	002687	CHW	1,029,586	mBtu	
1510	Wehner Building	259,681	002691	HHW	392,445	mBtu	
1511	West Campus Library Facility	68,125	004342	ELE	76,492	kWh	
1511	West Campus Library Facility	68,125	004313	CHW	351,226	mBtu	
1511	West Campus Library Facility	68,125	004318	HHW	244,818	mBtu	
1512	Southern Crop Improvement Greenhouse	48,154	005931	ELE	89,249	kWh	* # (1)
1513	Borlaug Center for Southern Crop Improvement	68,739	005802	ELE	301,712	kWh	
1513	Borlaug Center for Southern Crop Improvement	68,739	005936	CHW	503,692	mBtu	
1513	Borlaug Center for southern Crop Improvement	68,739	005895	HHW	287,185	mBtu	

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

TAMU#	Building Name	Area (ft <sup>2</sup> )	MeterID	Type	Monthly Consumption	Units	Comments
1518	TX School of Rural Public Health A	69,079	005273	ELE	69,419	kWh	
1519	TX School of Rural Public Health B	24,761	005274	ELE	45,680	kWh	# (1)
1520	TX School of Rural Public Health C	13,264	005275	ELE	95,747	kWh	# (1)
1518-1519-1520	TX School of Rural Public Health A,B,C	107,104	005294	CHW	410,089	mBtu	
1518-1519-1520	TX School of Rural Public Health A,B,C	107,104	005298	HHW	404,495	mBtu	
1525	Nuclear Magnetic Resonance Facility	37,282	006718	ELE	88,279	kWh	
1525	Nuclear Magnetic Resonance Facility	37,282	006715	CHW	598,121	mBtu	
1525	Nuclear Magnetic Resonance Facility	37,282	006716	HHW	587,160	mBtu	
1530	Interdisciplinary Life Sciences Building	218,540	006286	ELE	406,948	kWh	
1530	Interdisciplinary Life Sciences Building	218,540	006288	ELE	219,054	kWh	
1530	Interdisciplinary Life Sciences Building	218,540	006290	CHW	1,672,455	mBtu	
1530	Interdisciplinary Life Sciences Building	218,540	006294	HHW	1,747,062	mBtu	
1535	Agriculture and Life Sciences Building	168,353	007205	ELE	115,597	kWh	
1535	Agriculture and Life Sciences Building	168,353	007206	CHW	355,767	mBtu	
1535	Agriculture and Life Sciences Building	168,353	007207	HHW	76,821	mBtu	
1536	AgriLife Services Building	80,907	007571	ELE	45,676	kWh	
1536	AgriLife Services Building	80,907	007572	CHW	144,379	mBtu	
1536	AgriLife Services Building	80,907	007573	HHW	97,941	mBtu	
1537	Agriculture Public Building	78,480	009620	ELE	21,991	kWh	
1537	Agriculture Public Building	78,480	009621	ELE	35,809	kWh	
1537	Agriculture Public Building	78,480	009622	CHW	118,014	mBtu	*
1537	Agriculture Public Building	78,480	009623	HHW	204,233	mBtu	*
1538	Agriculture Program Visitors Center	12,923	007209	ELE	12,864	kWh	
1538	Agriculture Program Visitors Center	12,923	007210	CHW	50,464	mBtu	
1538	Agriculture Program Visitors Center	12,923	007211	HHW	28,879	mBtu	
1540	Physical Education Activity Program Building	116,900	007881	ELE	68,437	kWh	
1540	Physical Education Activity Program Building	116,900	007878	CHW	191,277	mBtu	
1540	Physical Education Activity Program Building	116,900	007879	HHW	224,108	mBtu	
1542	Human Clinical Research Building	22,052	009696	ELE	43,149	kWh	
1542	Human Clinical Research Building	22,052	009683	CHW	177,472	mBtu	* # (1)
1542	Human Clinical Research Building	22,052	009687	HHW	217,814	mBtu	* # (1)
1544	Cain Garage	8,862	009613	ELE	40,502	kWh	*
1550	Olsen Field at Bluebell Park	60,537	007560	ELE	98,743	kWh	
1554	Reed Arena	230,000	007582	ELE	155,427	kWh	
1554	Reed Arena	230,000	006243	ELE	640	kWh	*
1554	Reed Arena	230,000	006244	ELE	89,005	kWh	*
1554-1558	Reed Arena and Cox-McFerrin Center	328,185	007576	CHW	1,373,947	mBtu	
1554-1558	Reed Arena and Cox-McFerrin Center	328,185	007578	HHW	1,011,753	mBtu	
1558	Cox-McFerrin Center for Aggie Basketball	98,185	007581	ELE	75,238	kWh	
1558	Cox-McFerrin Center for Aggie Basketball	98,185	007575	CHW	304,157	mBtu	(2)
1558	Cox-McFerrin Center for Aggie Basketball	98,185	007577	HHW	213,591	mBtu	(2)
1559	West Campus Parking Garage	1,541,457	001453	ELE	168,512	kWh	
1559	West Campus Parking Garage	13,000	004322	CHW	45,039	mBtu	
1559	West Campus Parking Garage	13,000	004327	HHW	23,732	mBtu	
1560	Student Recreation Center	334,642	000363	ELE	340,047	kWh	(2)
1560	Student Recreation Center	334,642	000366	ELE	331,440	kWh	(2)
1560	Student Recreation Center	334,642	002933	CHW	2,369,770	mBtu	(2)
1560	Student Recreation Center	334,642	002937	HHW	2,166,316	mBtu	(2)
1589-1590	White Creek Apartment 1 and White Creek Apts Activity Center	176,454	009197	ELE	93,475	kWh	
1589-1590	White Creek Apartment 1 and White Creek Apts Activity Center	176,454	009198	CHW	206,554	mBtu	
1589-1590	White Creek Apartment 1 and White Creek Apts Activity Center	176,454	009199	HHW	144,008	mBtu	
1591	White Creek Apartment 2	179,467	008528	ELE	105,421	kWh	
1591	White Creek Apartment 2	179,467	008529	CHW	212,477	mBtu	
1591	White Creek Apartment 2	179,467	008533	HHW	156,220	mBtu	
1592	White Creek Apartment 3	179,467	008538	ELE	103,428	kWh	
1592	White Creek Apartment 3	179,467	008539	CHW	261,984	mBtu	
1592	White Creek Apartment 3	179,467	008543	HHW	134,471	mBtu	
1600	Gilchrist TTI Building	67,143	005286	ELE	55,338	kWh	
1600	Gilchrist TTI Building	67,143	002649	CHW	187,626	mBtu	
1600	Gilchrist TTI Building	67,143	002653	HHW	186,965	mBtu	
1601	International Ocean Discovery Building	86,576	006351	ELE	116,300	kWh	* (2)
1601	International Ocean Discovery Building	86,576	006382	CHW	174,458	mBtu	(2)
1601	International Ocean Discovery Building	86,576	008144	CHW	34,398	mBtu	(2)
1601	International Ocean Discovery Building	86,576	008145	HHW	45,275	mBtu	(2)
1604	Offshore Technology Research Center	40,014	006659	ELE	96,867	kWh	
1604	Offshore Technology Research Center	40,014	006660	ELE	0	kWh	(2)
1604	Offshore Technology Research Center	40,014	008142	CHW	401,364	mBtu	# (1)
1604	Offshore Technology Research Center	40,014	008143	HHW	281,963	mBtu	# (1)
1606	George Bush Presidential Library & Museum	121,678	000244	ELE	100,118	kWh	
1606	George Bush Presidential Library & Museum	121,678	002808	CHW	590,473	mBtu	
1606	George Bush Presidential Library & Museum	121,678	002812	HHW	397,942	mBtu	
1607	Allen Building	133,327	000243	ELE	94,288	kWh	
1607	Allen Building	133,327	002800	CHW	297,454	mBtu	
1607	Allen Building	133,327	002804	HHW	185,600	mBtu	

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

TAMU#	Building Name	Area (ft <sup>2</sup> )	MeterID	Type	Monthly Consumption	Units	Comments
1608	Annenberg Presidential Conference Center	65,688	000245	ELE	76,206	kWh	
1608	Annenberg Presidential Conference Center	65,688	002761	CHW	542,325	mBtu	
1608	Annenberg Presidential Conference Center	65,688	002765	HHW	478,935	mBtu	
1609	TTI Headquarters	66,707	006495	ELE	50,692	kWh	
1609	TTI Headquarters	66,707	006496	CHW	139,097	mBtu	
1609	TTI Headquarters	66,707	006497	HHW	71,802	mBtu	
1611	Engineering Research Building	68,807	008462	ELE	160,399	kWh	
1611	Engineering Research Building	68,807	008463	CHW	789,188	mBtu	
1611	Engineering Research Building	68,807	008467	HHW	715,723	mBtu	
1800	General Services Complex	203,369	005441	ELE	171,051	kWh	
1800	General Services Complex	203,369	005468	CHW	520,892	mBtu	
1800	General Services Complex	203,369	005472	HHW	119,001	mBtu	
1809	New TVMDL	90,000	009652	ELE	31,662	kWh	*
1809	New TVMDL	90,000	009653	ELE	68,844	mBtu	*
1809	New TVMDL	90,000	009647	CHW	1,064,096	mBtu	
1810	Office of the State Chemist Building	31,735	009073	ELE	60,288	kWh	
1810	Office of the State Chemist Building	31,735	005460	CHW	109,927	mBtu	
1810	Office of the State Chemist Building	31,735	005464	HHW	149,442	mBtu	
1811	Vet Med Research Bldg Addition	52,993	006705	ELE	222,477	kWh	
1811	Vet Med Research Bldg Addition	52,993	006706	CHW	439,106	mBtu	
1811	Vet Med Research Bldg Addition	52,993	006707	HHW	553,772	mBtu	
1812	Veterinary Medicine Building 1	138,460	009404	ELE	195,952	kWh	
1813	Veterinary Medicine Building 2	116,492	009418	ELE	3,069	kWh	*
1814	Veterinary Medicine Building 3	135,470	009405	ELE	254,725	kWh	
1812-1813-1814	Veterinary Medicine Building 1, 2 and 3	390,422	009676	CHW	1,532,884	mBtu	
1812-1813-1814	Veterinary Medicine Building 1, 2 and 3	390,422	009410	HHW	1,252,534	mBtu	
1900	Texas Institute for Genomic Medicine	34,120	005548	ELE	85,119	kWh	
1900	Texas Institute for Genomic Medicine	34,120	005545	CHW	446,359	mBtu	
1900	Texas Institute for Genomic Medicine	34,120	005546	HHW	472,865	mBtu	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006364	ELE	219,998	kWh	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006365	CHW	1,067,974	mBtu	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006366	HHW	1,043,467	mBtu	
1910	National Center for Therapeutics Manufacturing	149,924	007517	ELE	199,053	kWh	
1910	National Center for Therapeutics Manufacturing	149,924	007518	ELE	182,110	kWh	
1910	National Center for Therapeutics Manufacturing	149,924	007519	CHW	2,806,358	mBtu	
1910	National Center for Therapeutics Manufacturing	149,924	007520	HHW	1,826,614	mBtu	
1911	Multi-Species Research Building	21,000	009138	ELE	29,136	kWh	
1911	Multi-Species Research Building	21,000	009129	CHW	203,581	mBtu	
1911	Multi-Species Research Building	21,000	009133	HHW	208,966	mBtu	
10226	NCTM Manufacturing Building	113,397	007648	CHW	2,457,739	mBtu	
10226	NCTM Manufacturing Building	113,397	007649	HHW	1,347,484	mBtu	
10226	NCTM Manufacturing Building	113,397	008133	HHW	202,591	mBtu	

1 mBtu = 1 000 Btu

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

## **II. Data Analysis: Energy Use Estimation and Observation**





# Rudder Residence Hall (TAMU Bldg #291)

## Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002132	25	1/1/2017 – 1/25/2017	Model
HHW	002136	25	1/1/2017 – 1/25/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The consumption dropped for a short period.	12/15/2016 – 1/25/2017
HHW	The consumption dropped for a short period.	12/15/2016 – 1/25/2017

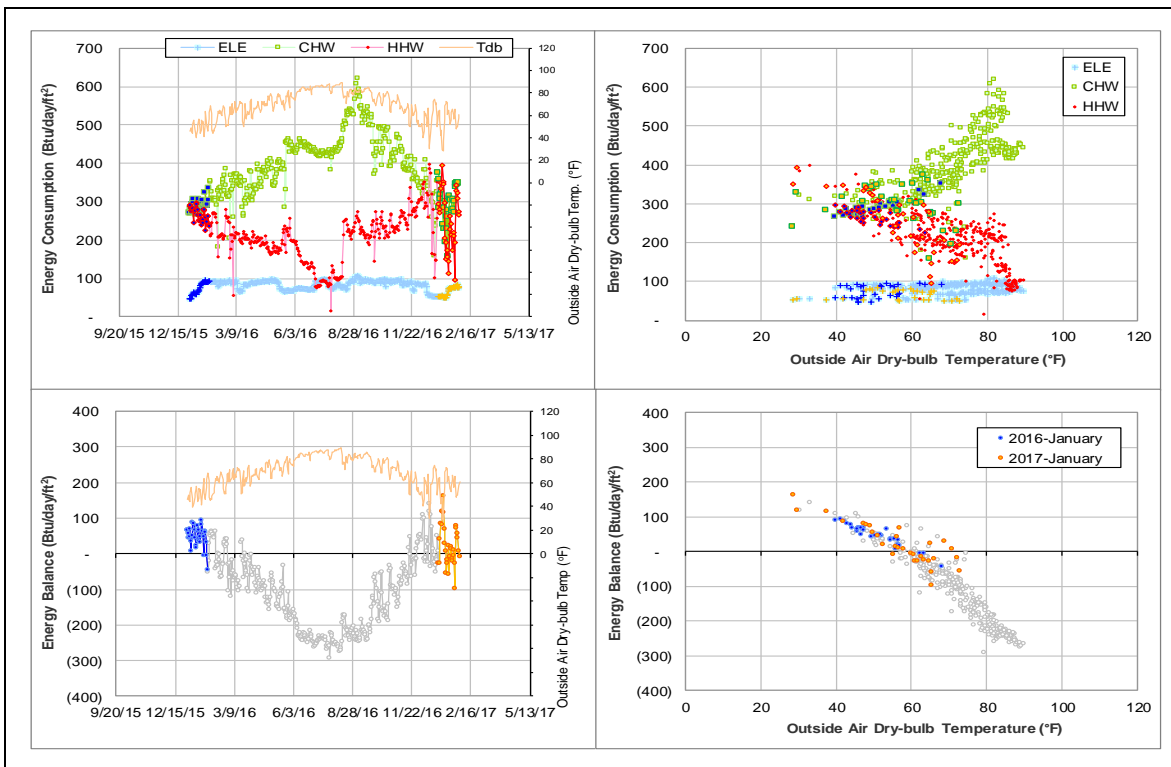
## Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002132	12/15/2016 – 1/25/2017	Flow Rate	Low
HHW	002136	12/15/2016 – 1/25/2017	Flow Rate	Low

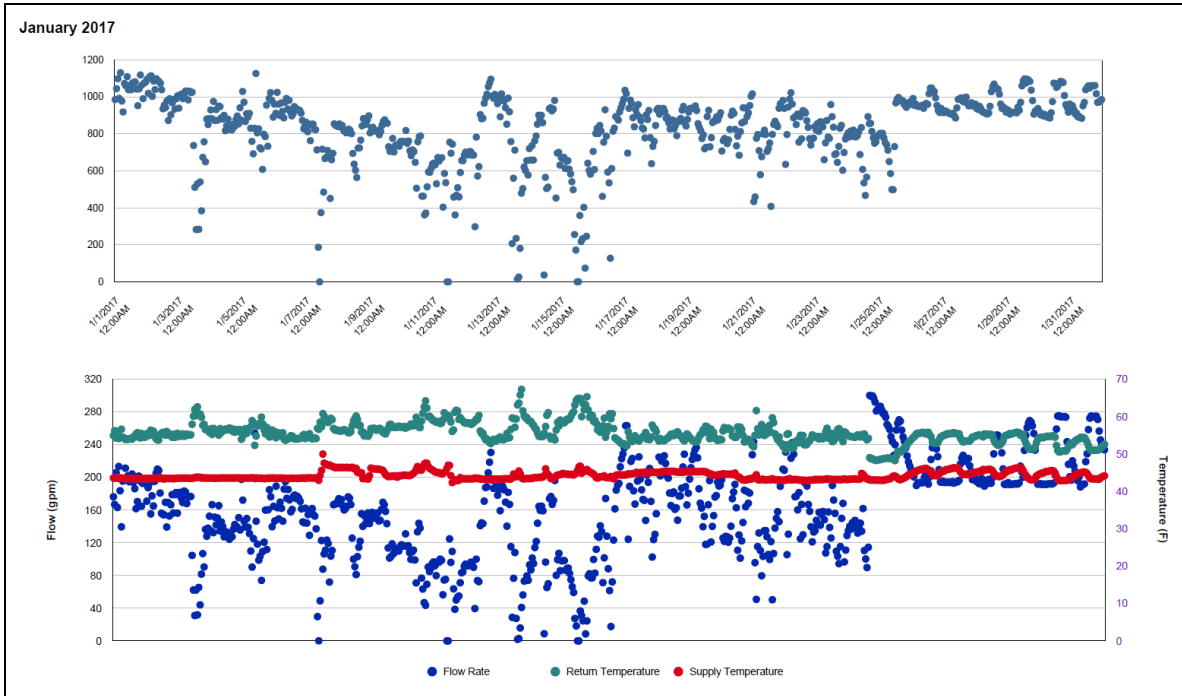
## Quantitative descriptions and comments

Both CHW and HHW had low flow rate on 12/15/2016 – 1/25/2017. It seemed to be a consumption decrease for the break at the beginning but the consumption did not recover as the semester started. CHW flow could hardly reach 200 gpm during the period, and recovered to 200 – 280 gpm range after a fluctuation on 1/25/2017. HHW was at 60 gpm level during the period, and recovered to 90 gpm level after a close-off on 1/25/2017. These days are estimated using a model. See also section II-3.

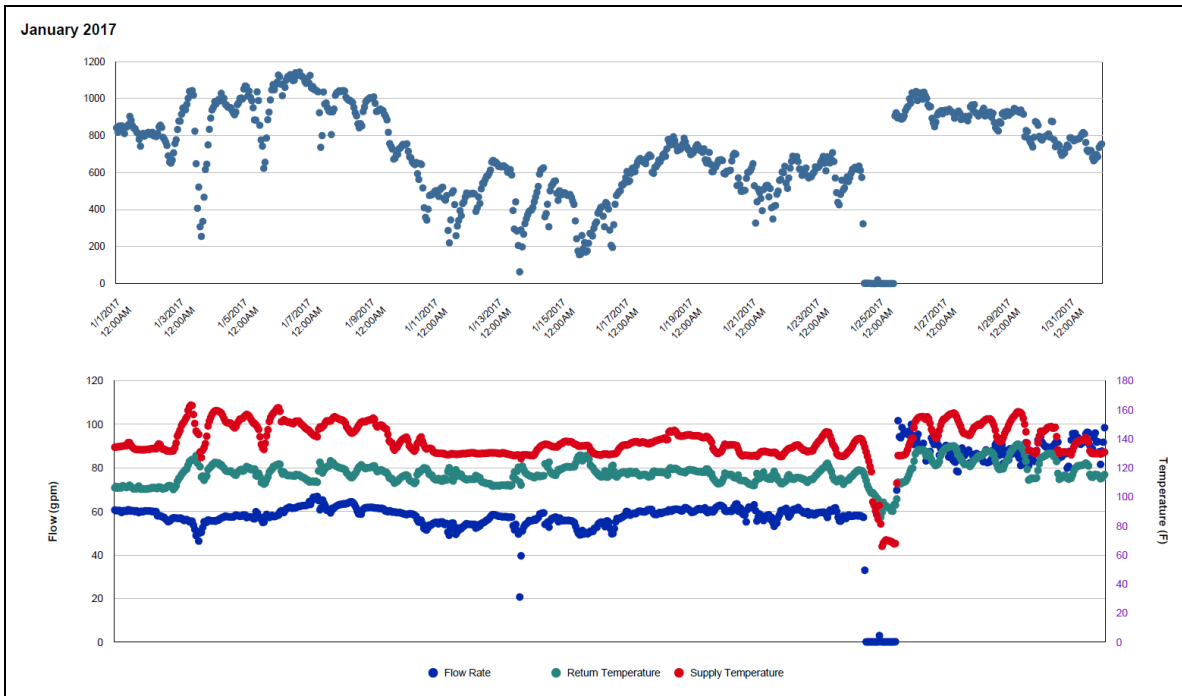
## Explanatory Figure: 13 months energy balance plot with original data



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

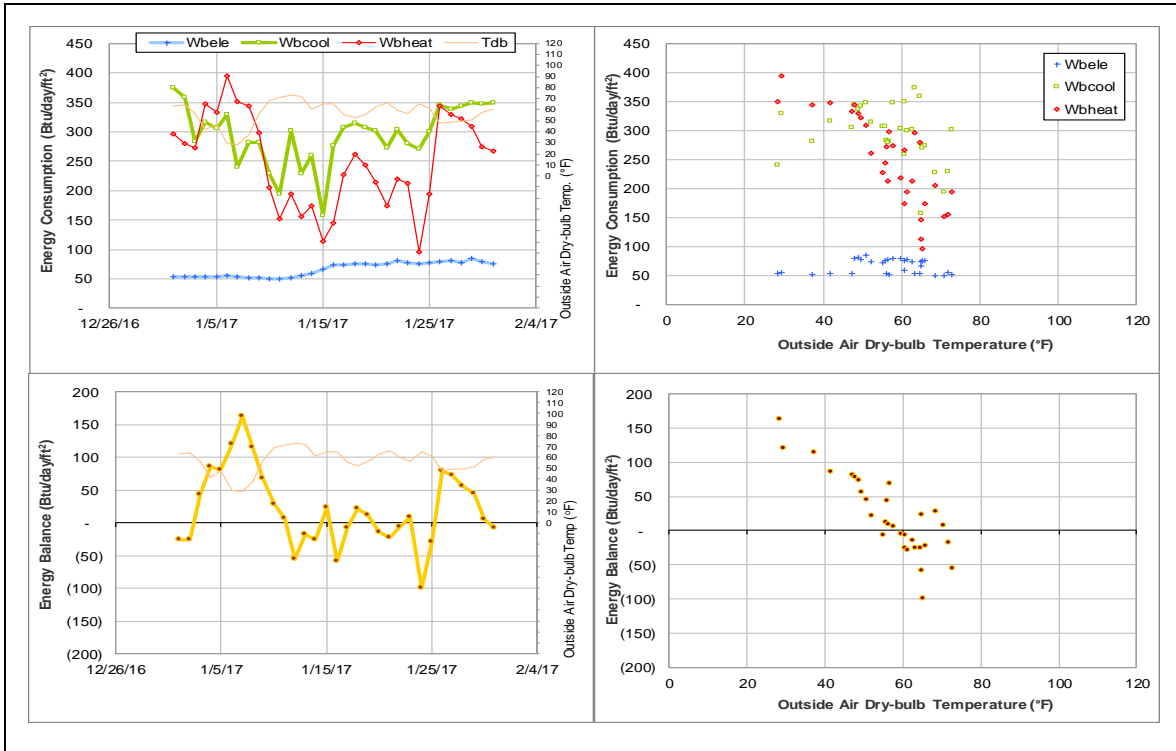


*Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during January 2017)*

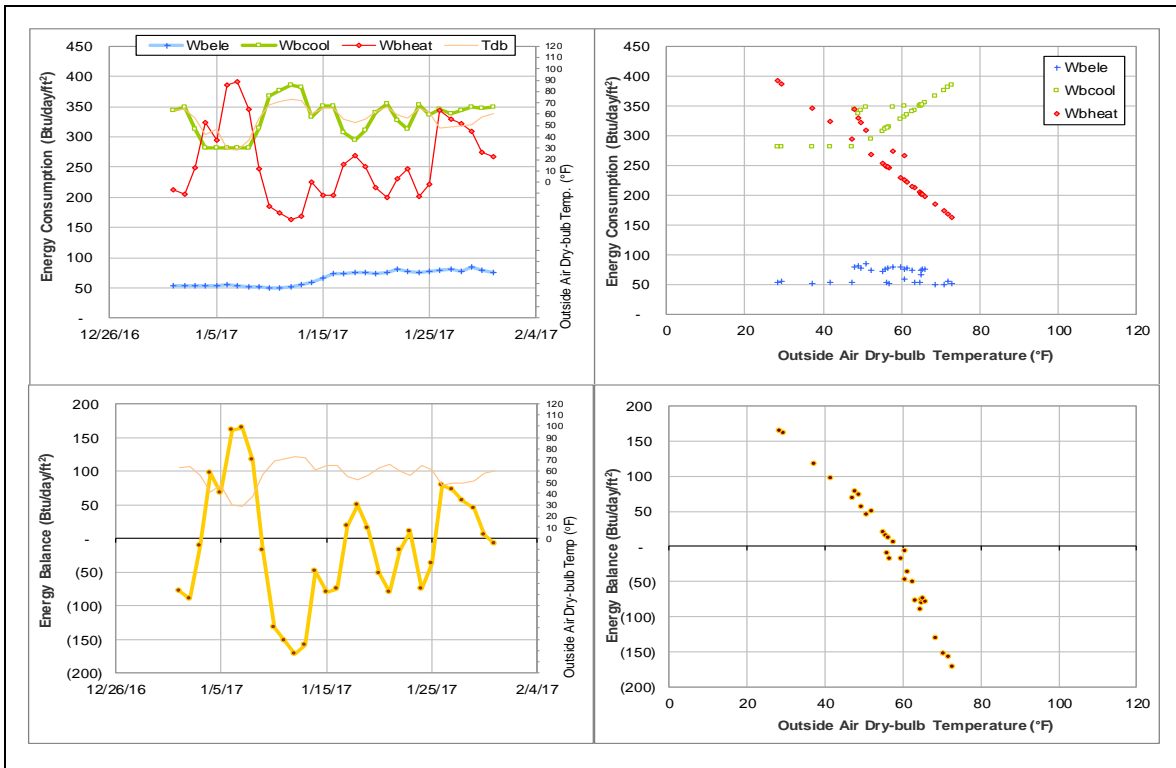




*Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.*



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



## Appelt Residence Hall (TAMU Bldg #293)

### *Estimated data*

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002062	14	1/1/2017 – 1/14/2017	Model
HHW	002066	14	1/1/2017 – 1/14/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The consumption level has increased suddenly.	12/23/2016 – 1/5/2017
	The consumption dropped for a short period.	1/5/2017 – 1/14/2017
HHW	The consumption level has increased suddenly.	12/23/2016 – 1/5/2017
	The consumption dropped for a short period.	1/5/2017 – 1/14/2017

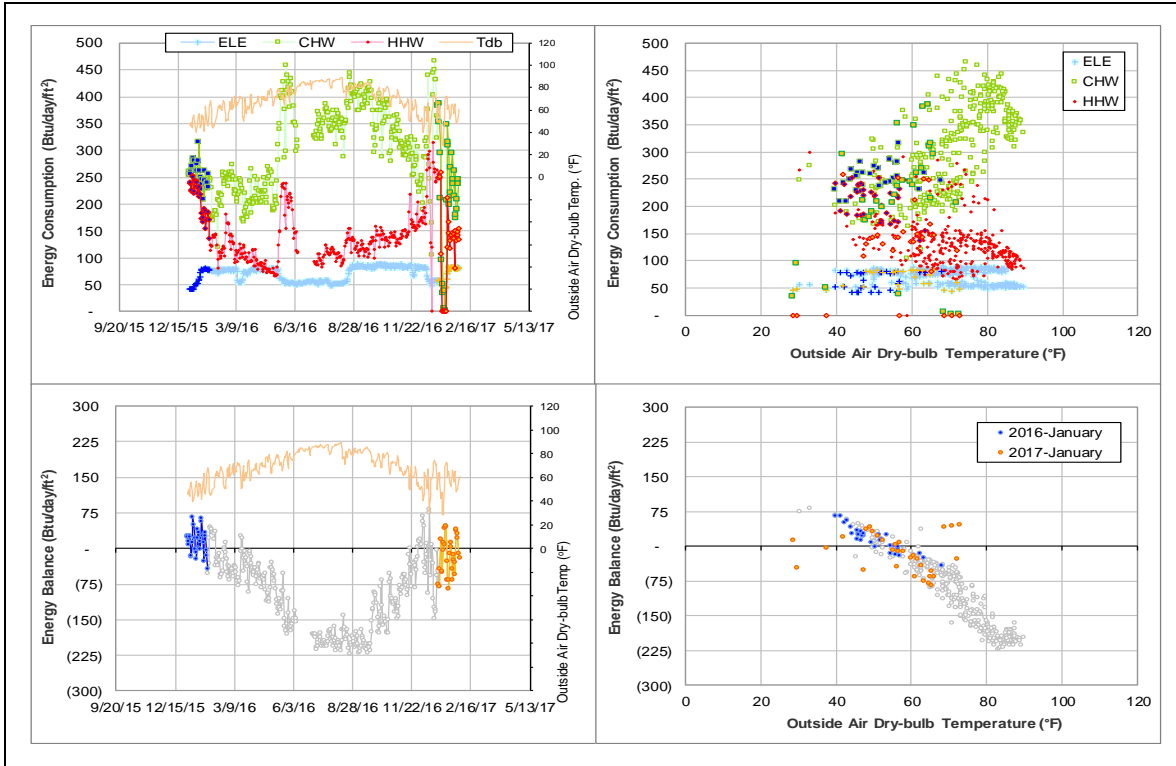
### *Changes in sensor readings related to the detected issues*

Energy Type	Meter ID	Period	Type	Description
CHW	002062	12/23/2016 – 1/5/2017	Flow Rate	High
		1/5/2017 – 1/14/2017	Flow Rate	Low or zero
HHW	002066	12/23/2016 – 1/5/2017	Flow Rate	High
		1/5/2017 – 1/14/2017	Flow Rate	Zero

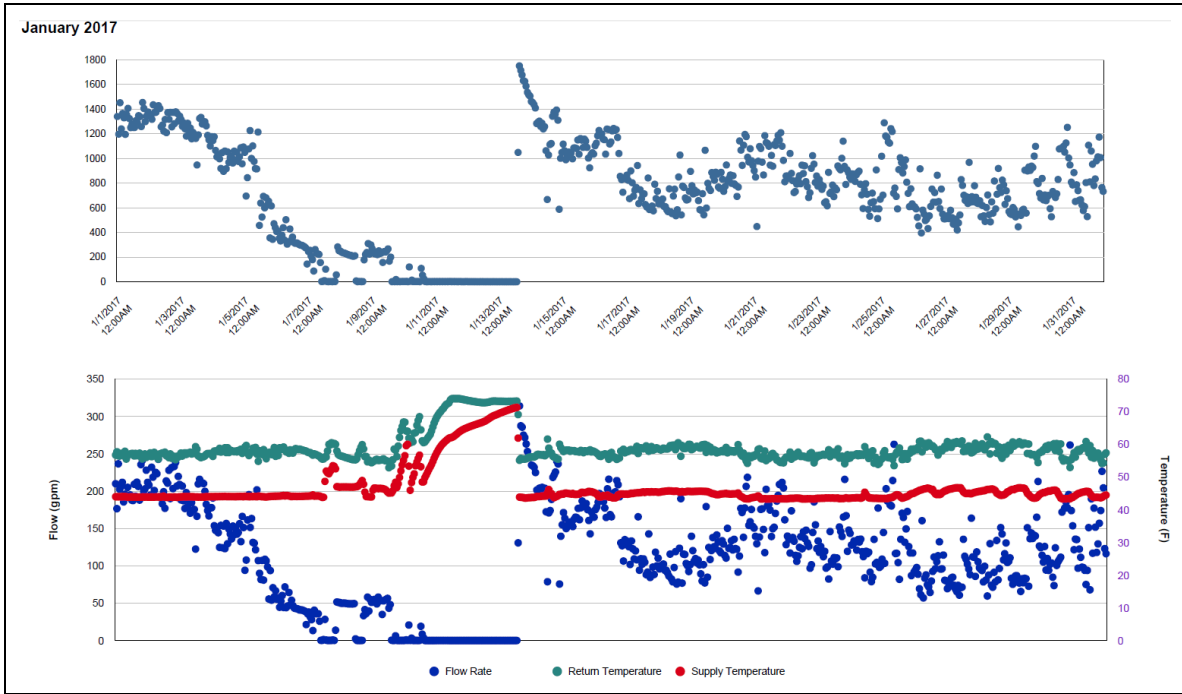
### *Quantitative descriptions and comments*

Both CHW and HHW had high flow rate starting 12/23/2016, and then both dropped significantly on 1/5/2017. CHW flow rate dropped drastically to zero. HHW flow rate dropped immediately to zero. Both of them recovered to regular level on 1/15/2017. These days are estimated using a model. See also section II-3.

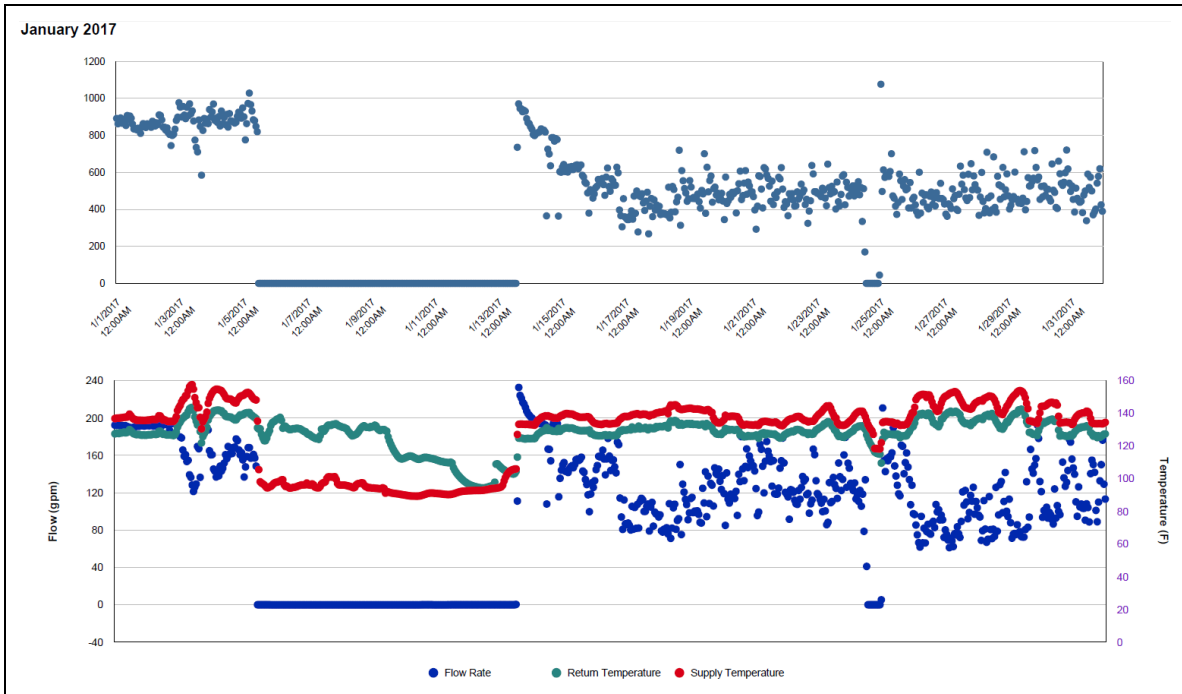
*Explanatory Figure: 13 months energy balance plot with original data*



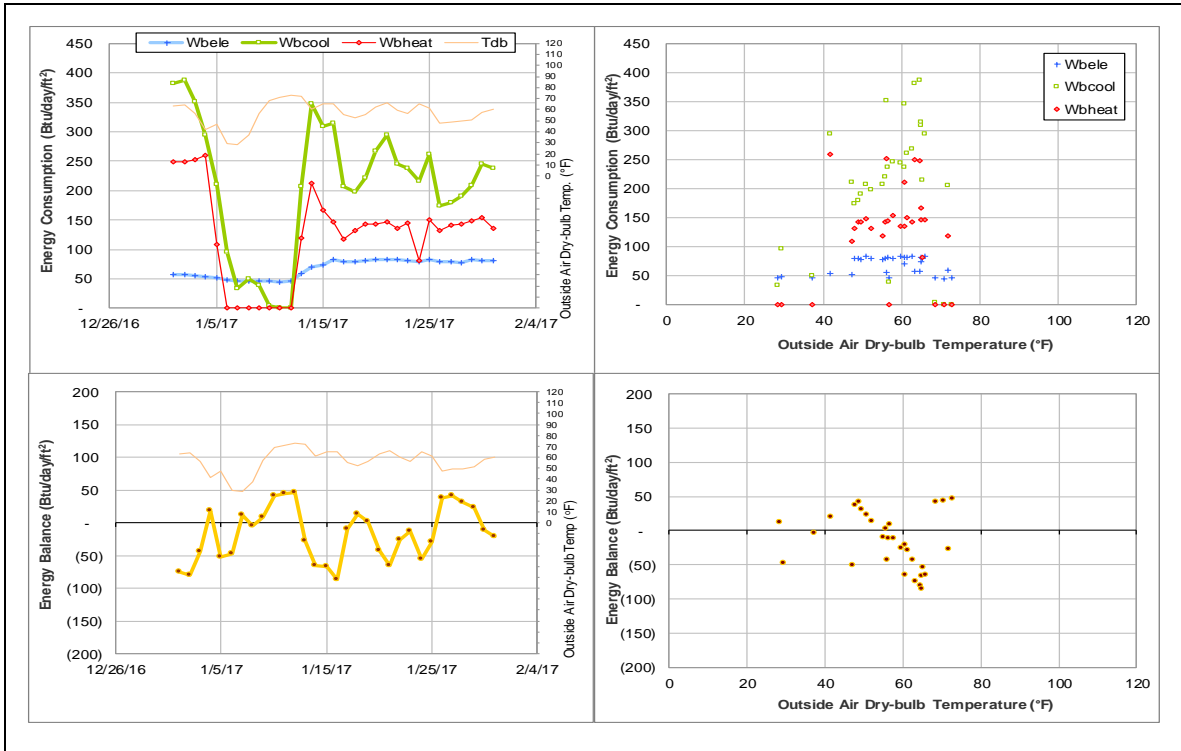
*Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during January 2017)*



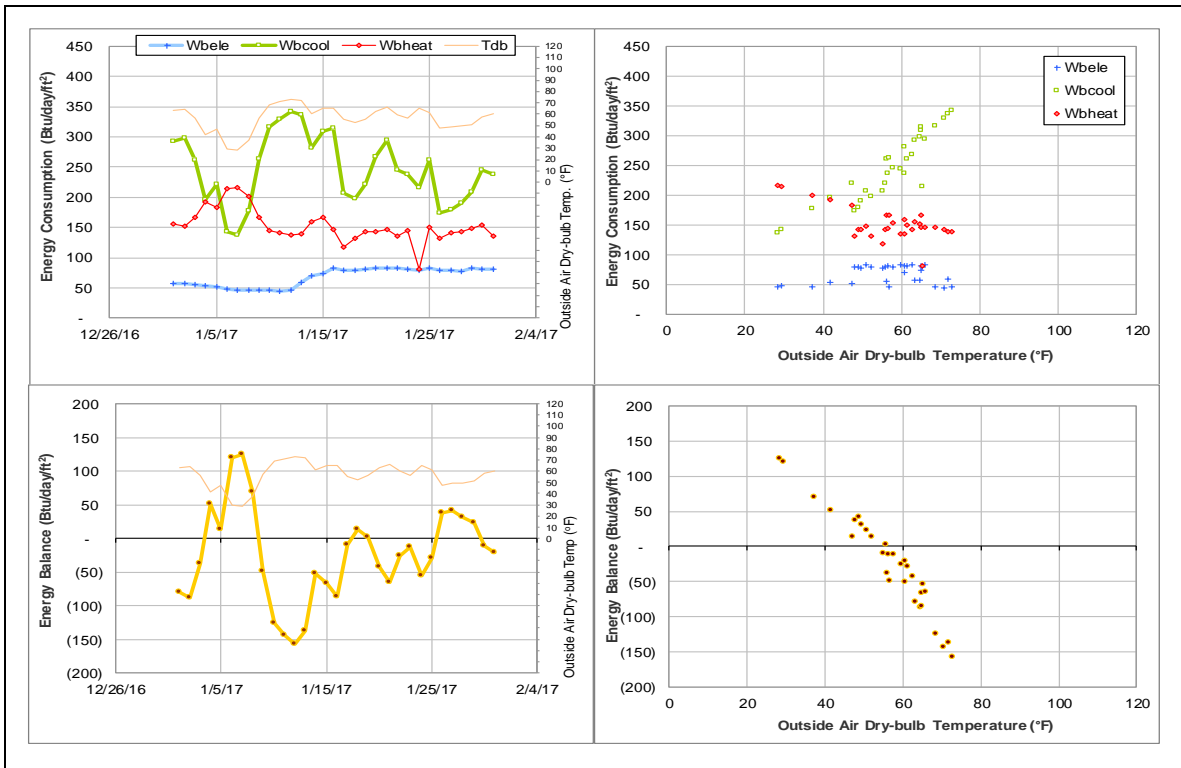
*Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during January 2017)*



**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.**



## Lechner Residence Hall (TAMU Bldg #294)

### *Estimated data*

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002285	6	1/7/2017 – 1/12/2017	Model
HHW	002289	12	1/1/2017 – 1/12/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The consumption dropped for a short period.	1/7/2017 – 1/12/2017
HHW	The consumption level is higher than the level during the past year.	12/14/2016 – 1/6/2017
	The consumption dropped for a short period.	1/7/2017 – 1/12/2017

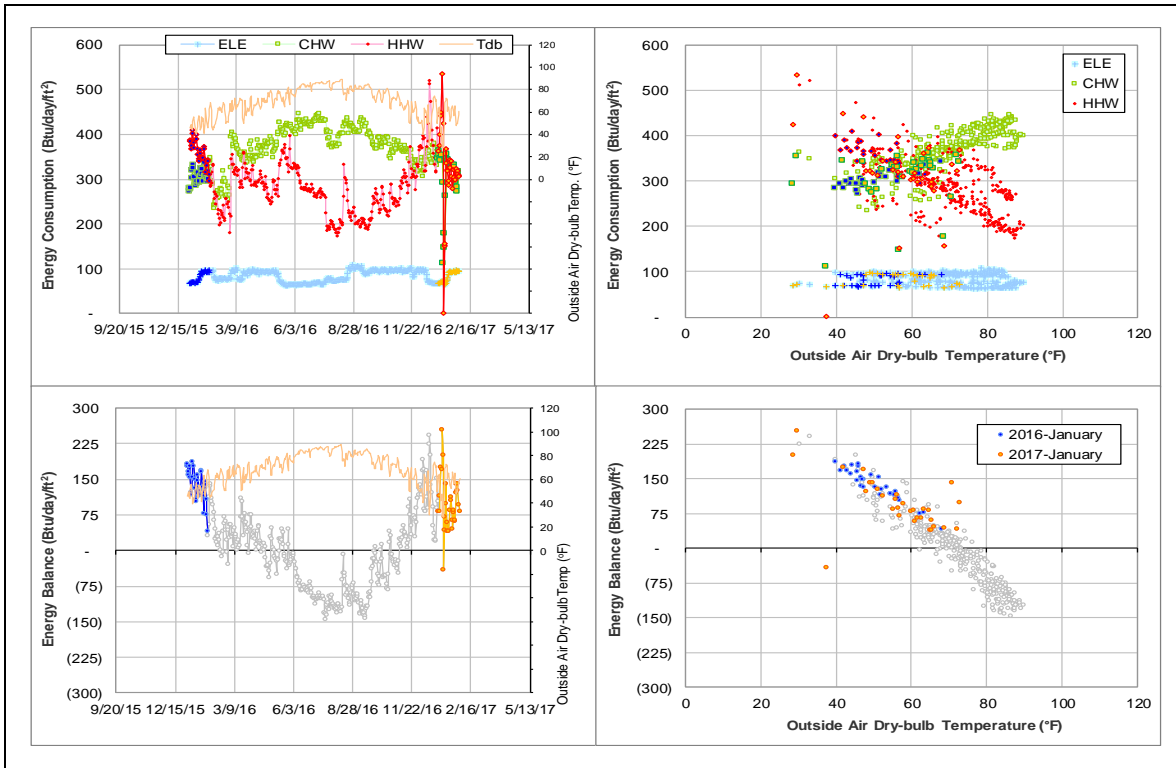
### *Changes in sensor readings related to the detected issues*

Energy Type	Meter ID	Period	Type	Description
CHW	002285	1/7/2017 – 1/12/2017	Delta-T and Flow Rate	Low
HHW	002289	12/14/2016 – 1/6/2017	Delta-T or Flow Rate	High and scatter
		1/7/2017 – 1/12/2017	Temp	Scatter
			Flow Rate	Low or zero

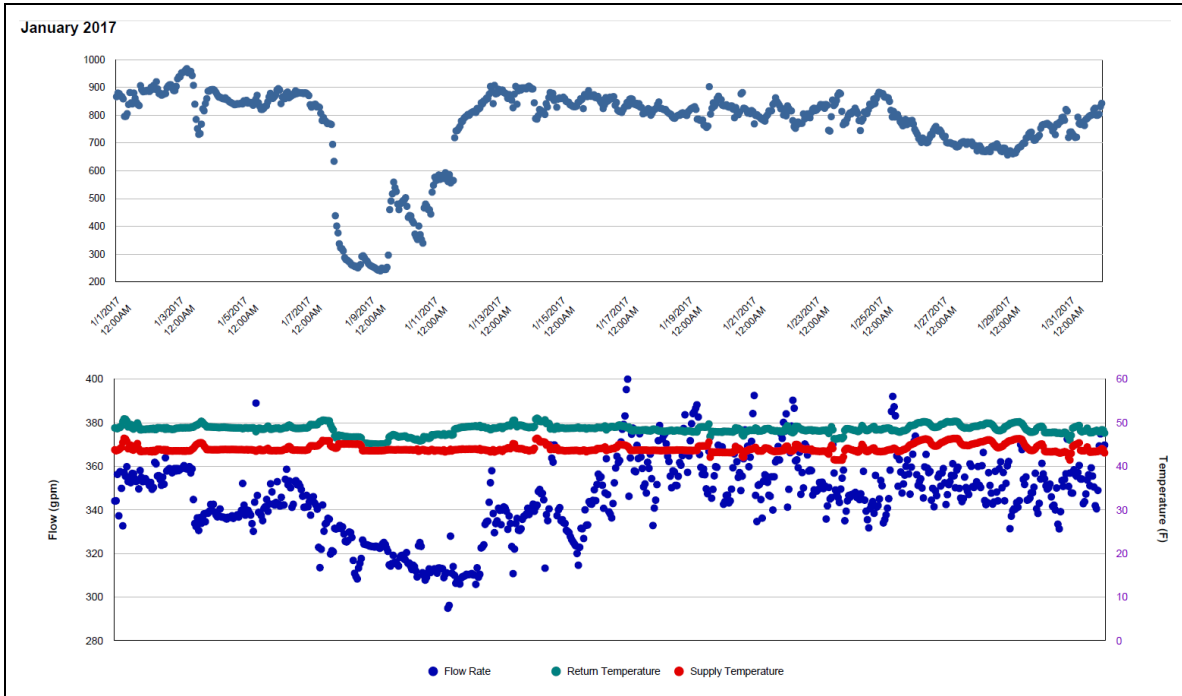
### *Quantitative descriptions and comments*

The consumption of HHW increased to a higher level by circa 80 Btu/day/ft<sup>2</sup> starting 12/14/2016. This increase is maintained by either increased Delta-T or increased flow rate. The flow rate then dropped to zero on 1/7/2017 with severe scatter in temp readings. The consumption level recovered to normal starting 1/13/2017. CHW saw a significant decrease in both Delta-T and flow rate on 1/7/2017 – 1/12/2017 in response to the drop of HHW. These days are estimated using a model.

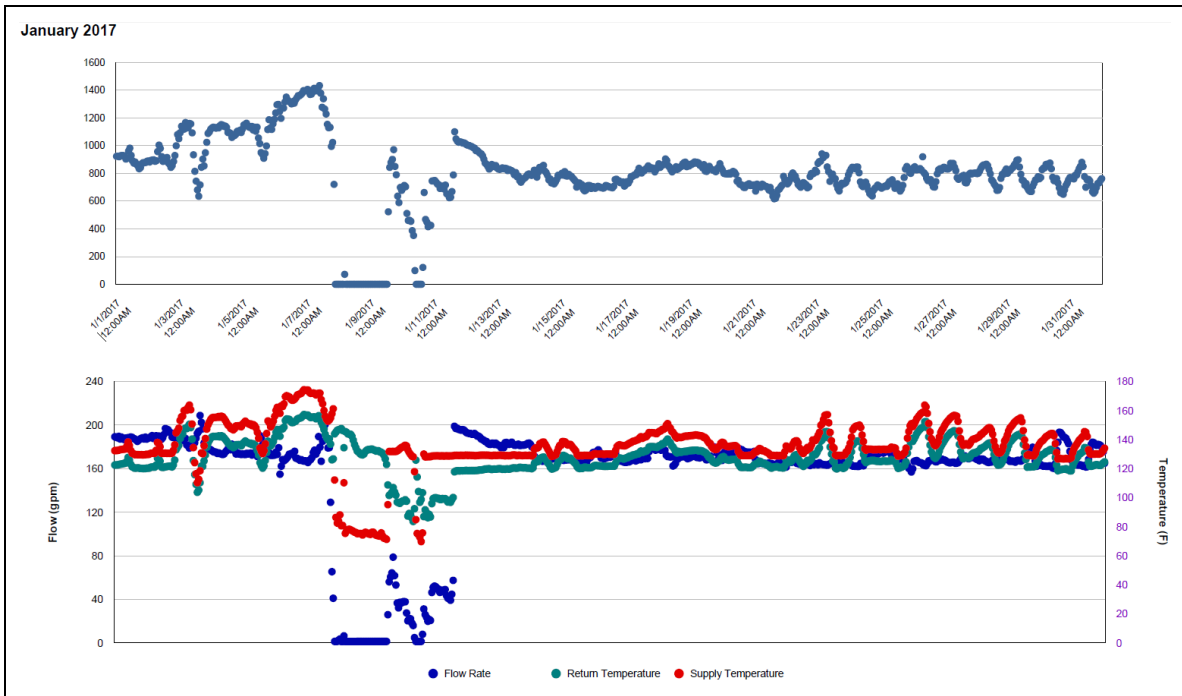
**Explanatory Figure: 13 months energy balance plot with original data**



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

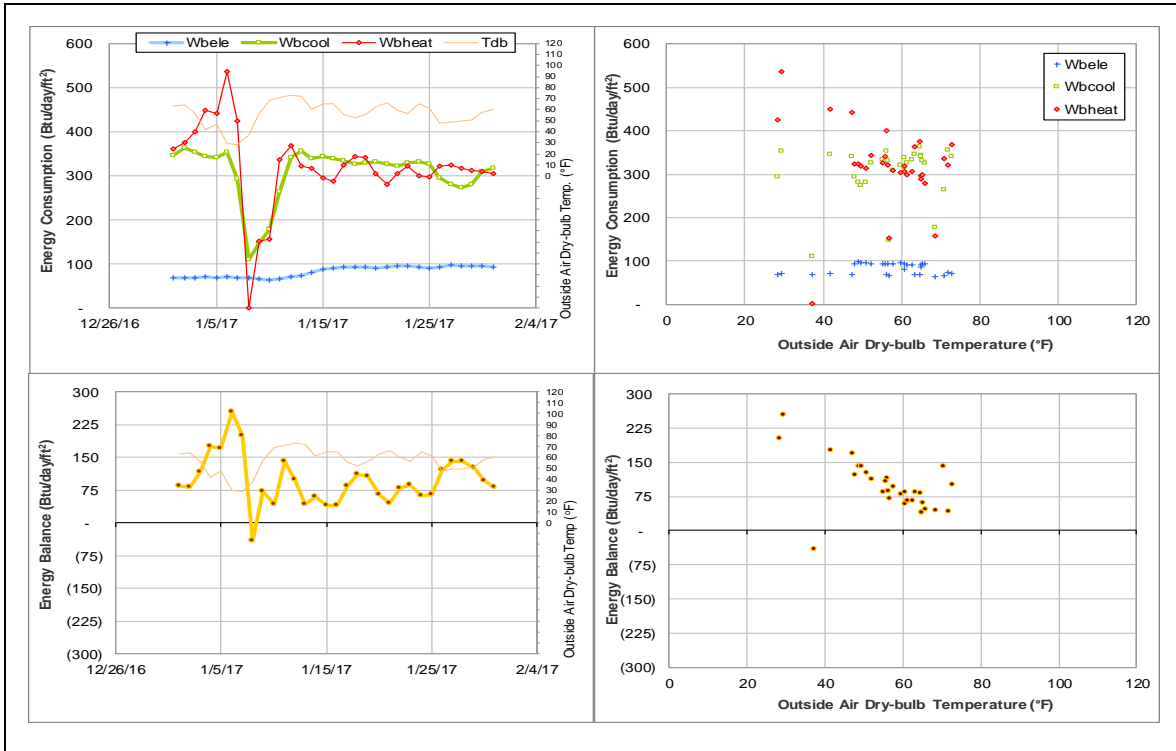


*Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during January 2017)*

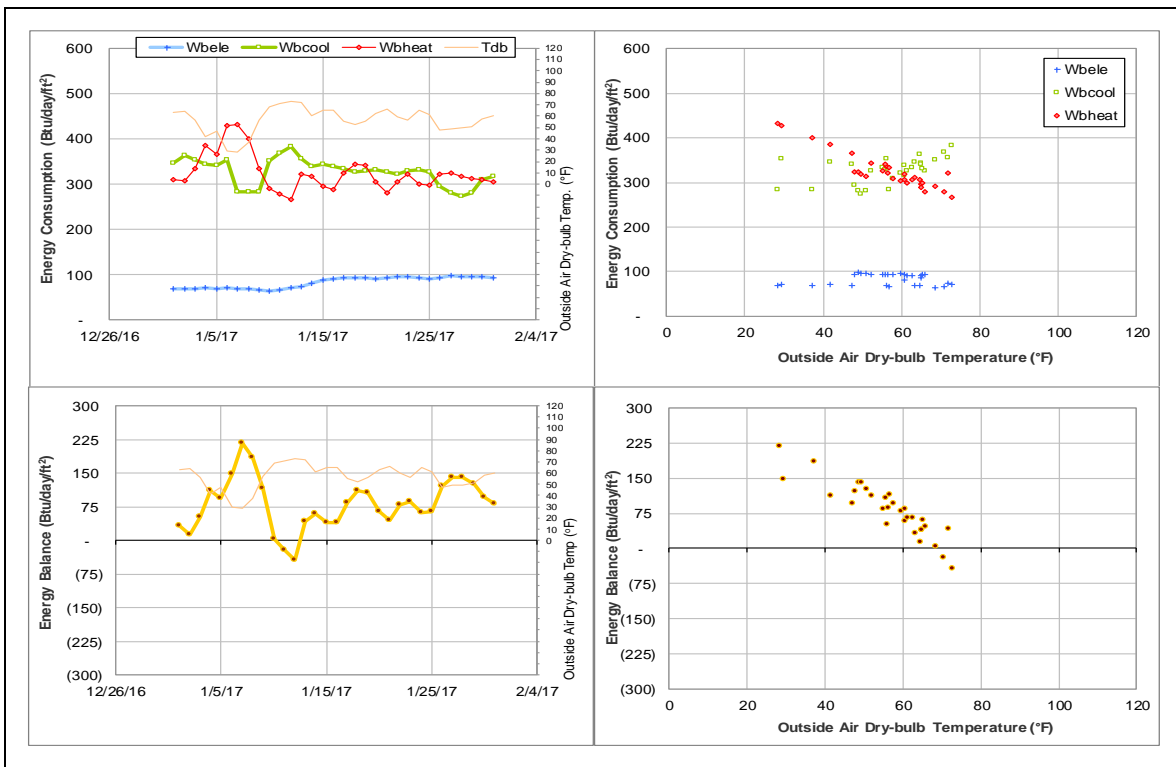




**Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.**



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



# Kyle Field (TAMU Bldg #367)

## Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	008026	8	1/15/2017 – 1/22/2017	Model
HHW	008027	3	1/17/2017 – 1/19/2017	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.	1/15/2017 – 1/22/2017
HHW	The consumption increased for a short period.	1/17/2017 – 1/19/2017

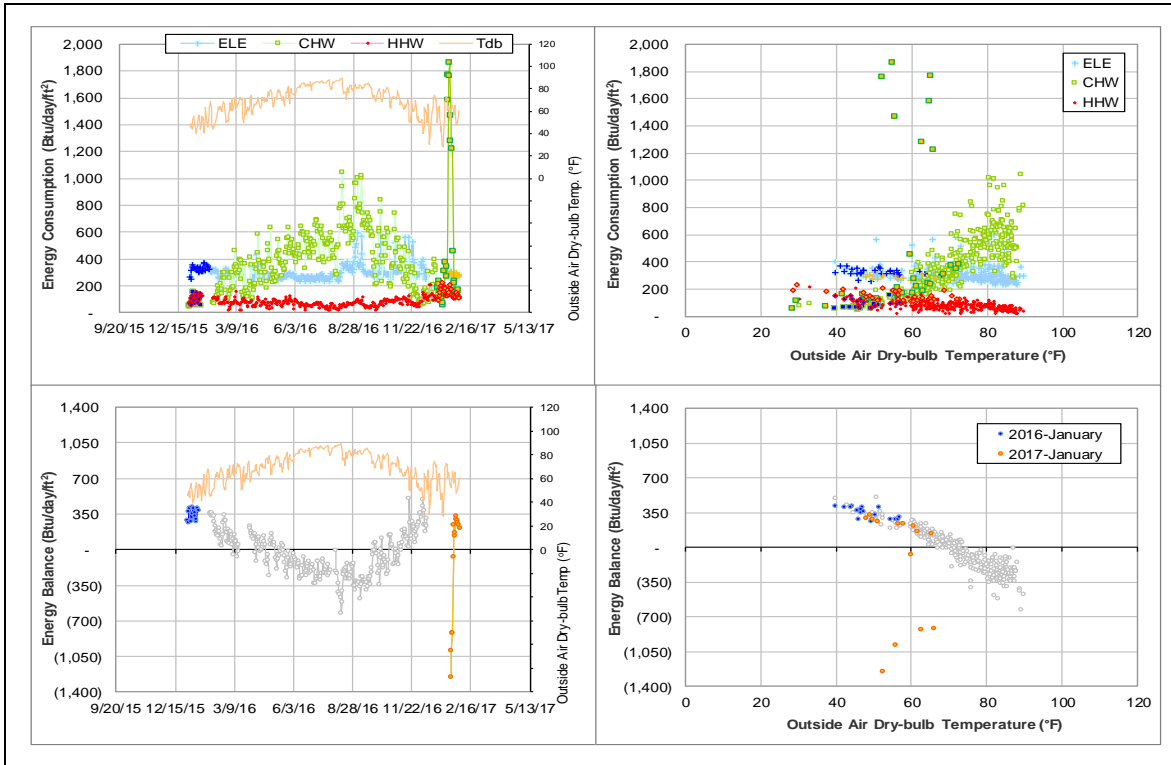
## Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	008026	1/15/2017 – 1/22/2017	Supply Temp	Faulty
HHW	008027	1/17/2017 – 1/19/2017	Flow Rate	High

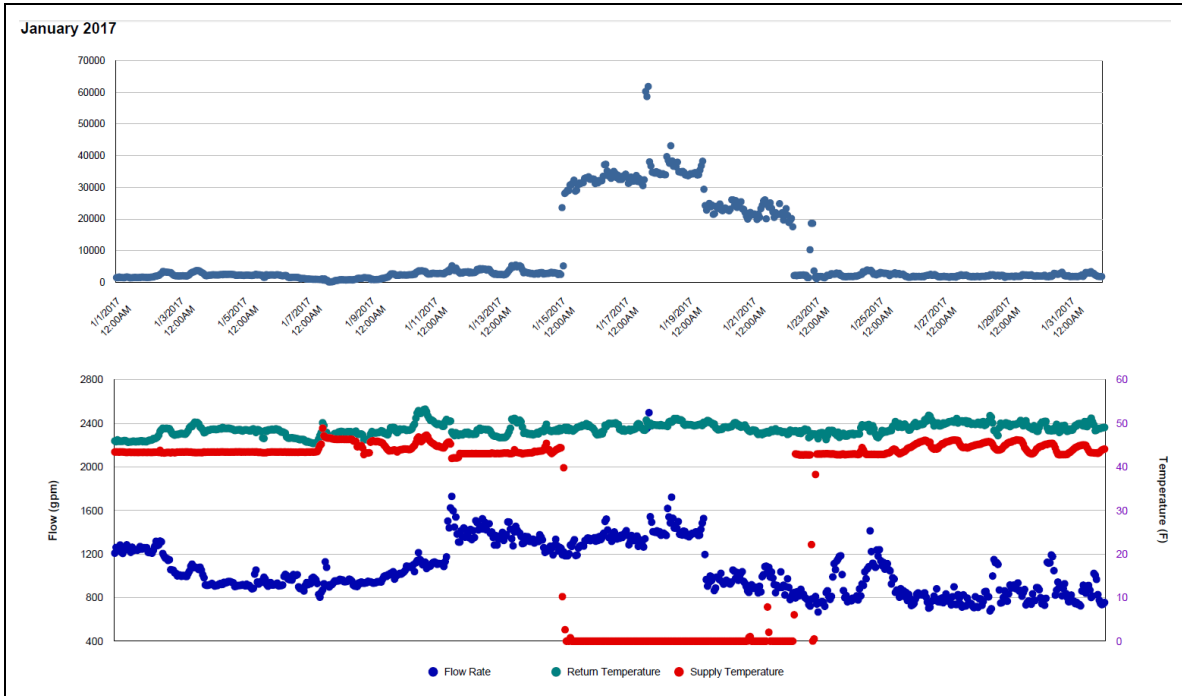
## Quantitative descriptions and comments

CHW 008026 supply temp reading dropped to zero during 1/15/2017 – 1/22/2017 and the consumption calculation was based on these faulty readings. HHW 008027 saw a sharp increase on 1/17/2017 – 1/19/2017 from 500 gpm level to 700 – 950 gpm. These days are estimated by a model.

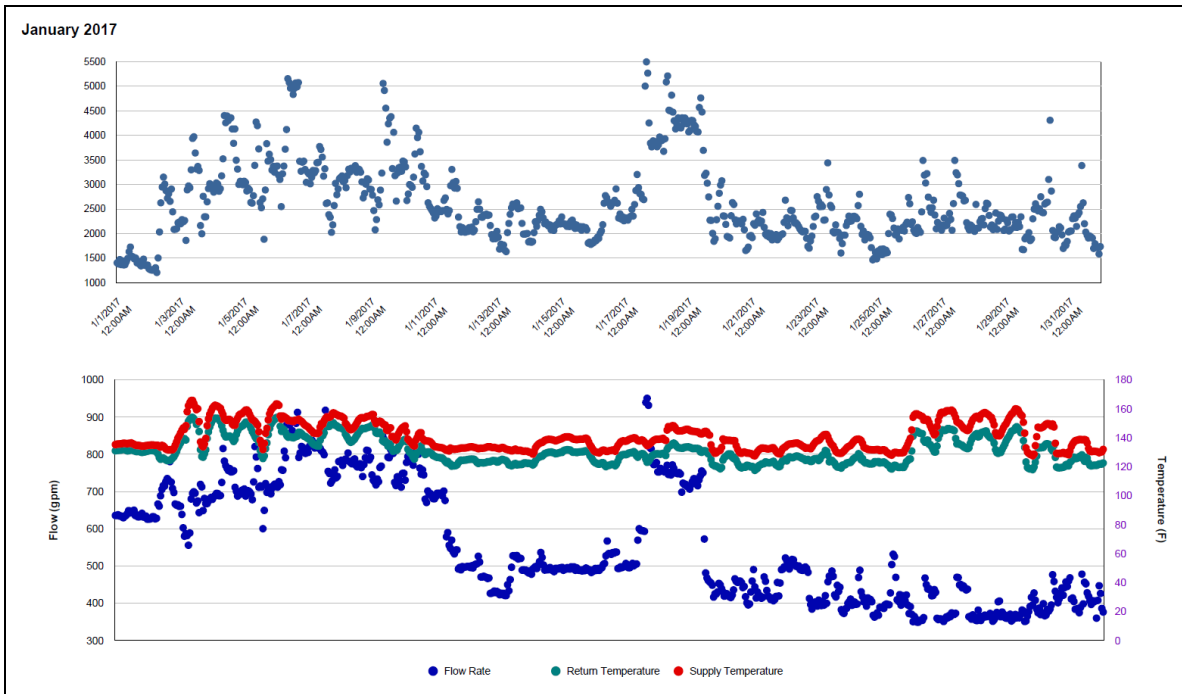
## Explanatory Figure: 13 months energy balance plot with original data



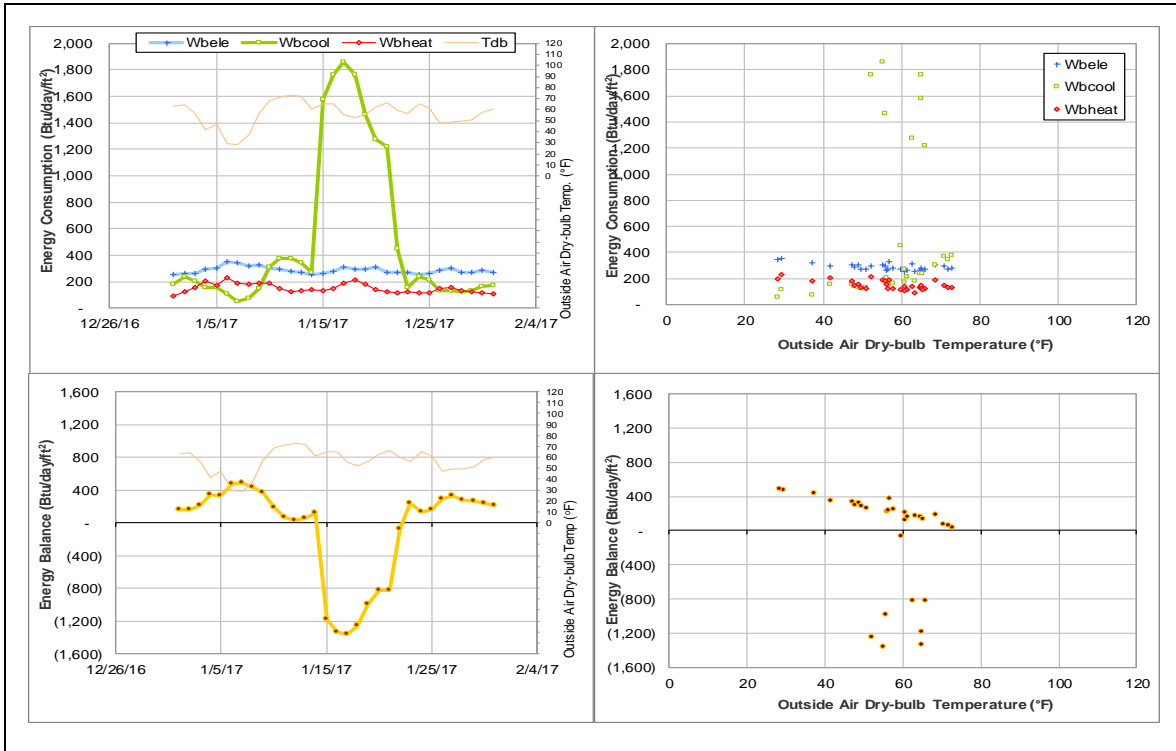
*Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during January 2017)*



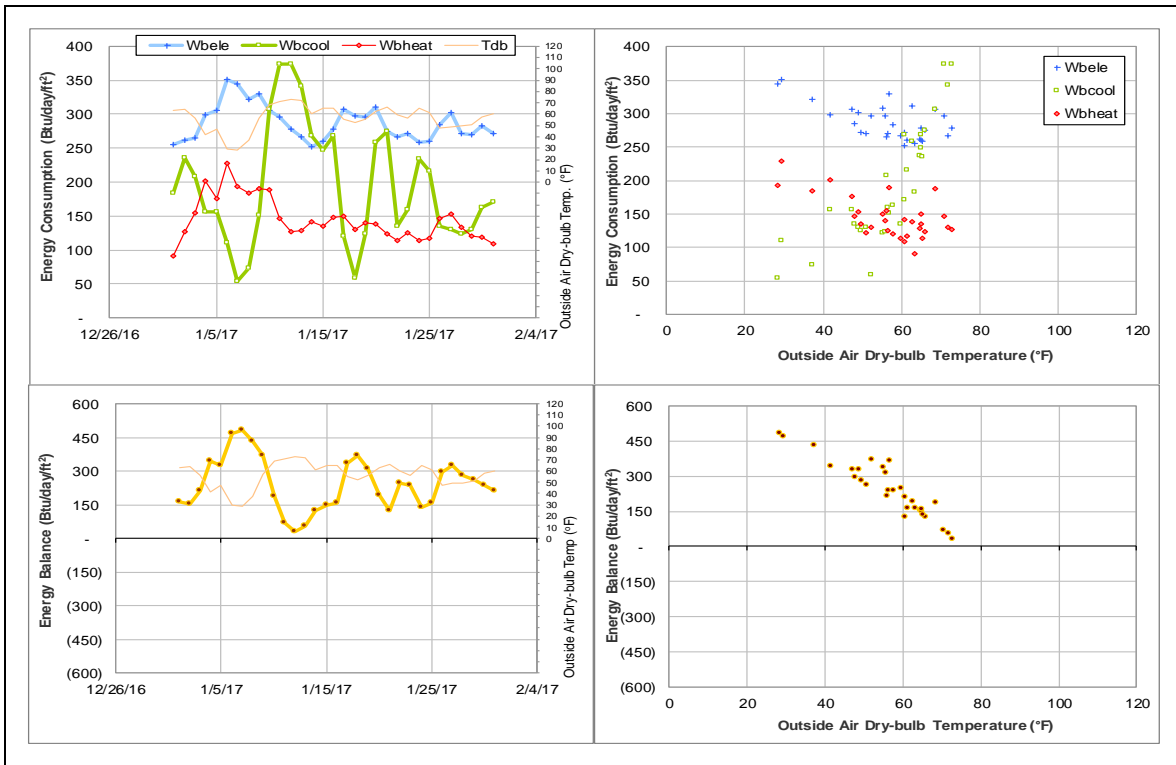
*Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during January 2017)*



**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.**



# Commons Hall (TAMU Bldg #440)

## Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	009238	4	1/28/2017 – 1/31/2017	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.	1/28/2017 – 1/31/2017

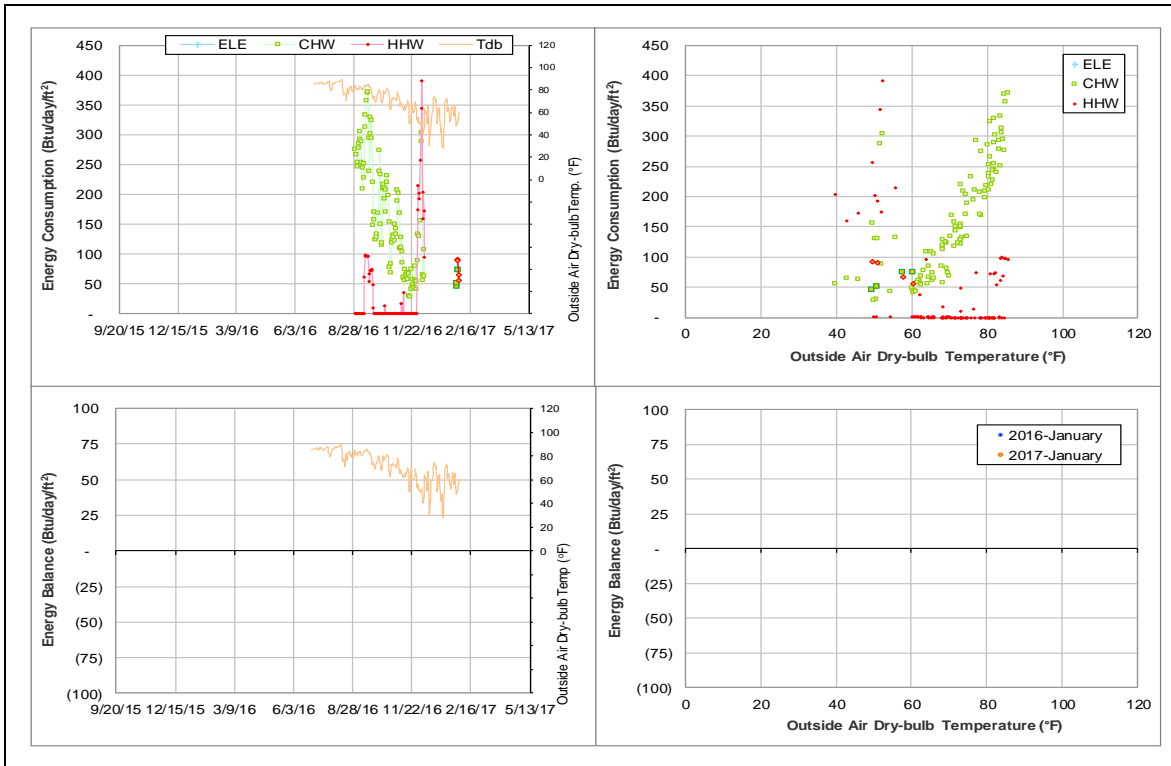
## Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	009238	1/28/2017 – 1/31/2017	Consumption	Low

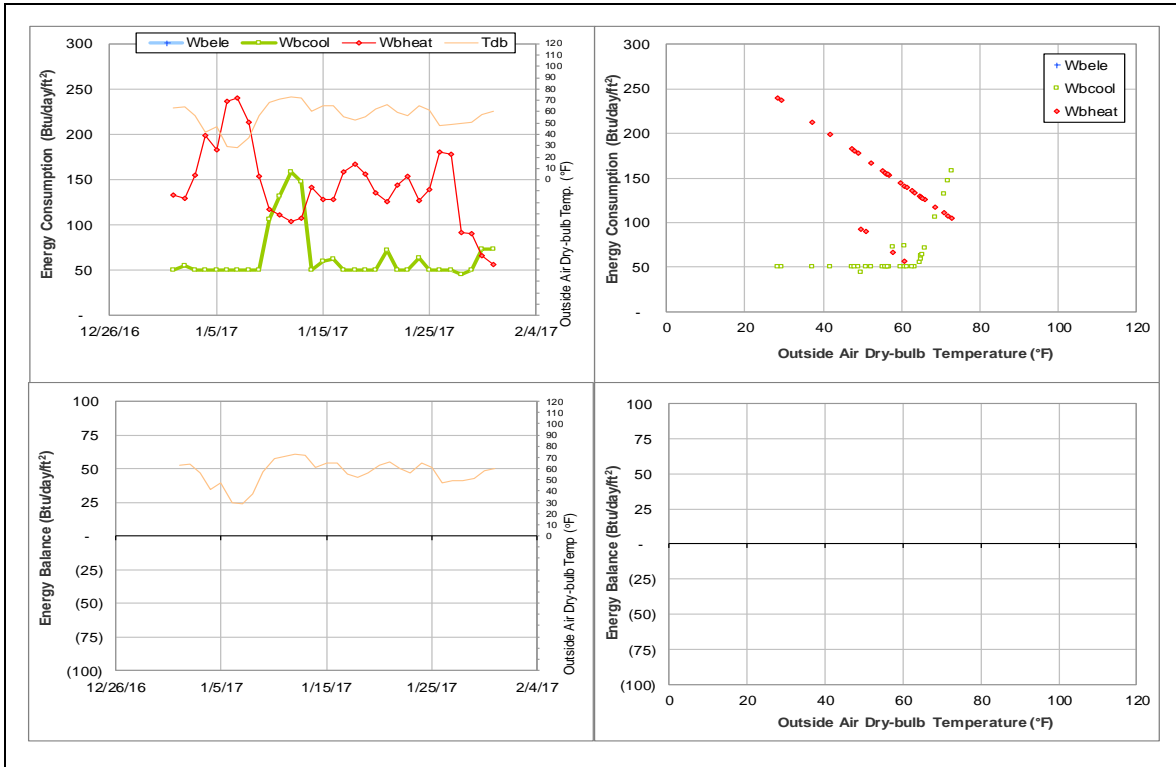
## Quantitative descriptions and comments

Because a reliable recent baseline for HHW is not available, a model is built based on the data before the renovation. The four days with available data are therefore estimated to align with the level of the filled missing days.

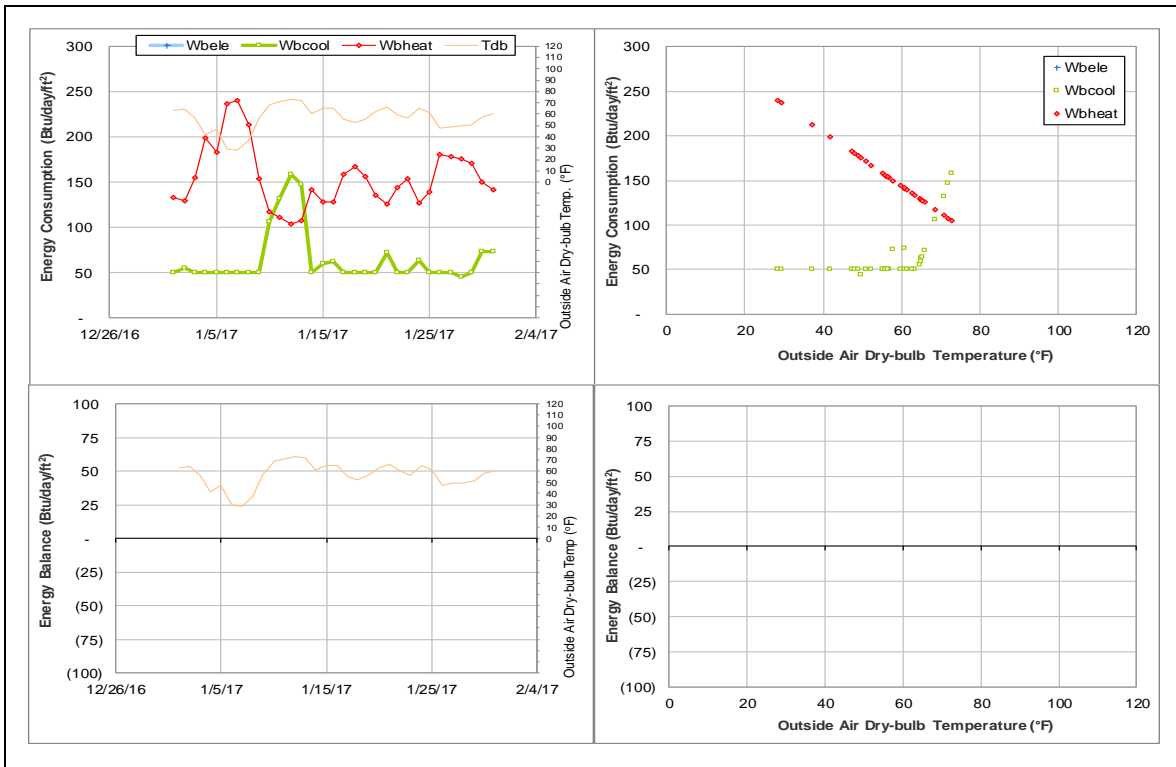
## Explanatory Figure: 13 months energy balance plot with original data.



*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.*



## Aston Residence Hall (TAMU Bldg #447)

### Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002474	31	1/1/2017 – 1/31/2017	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

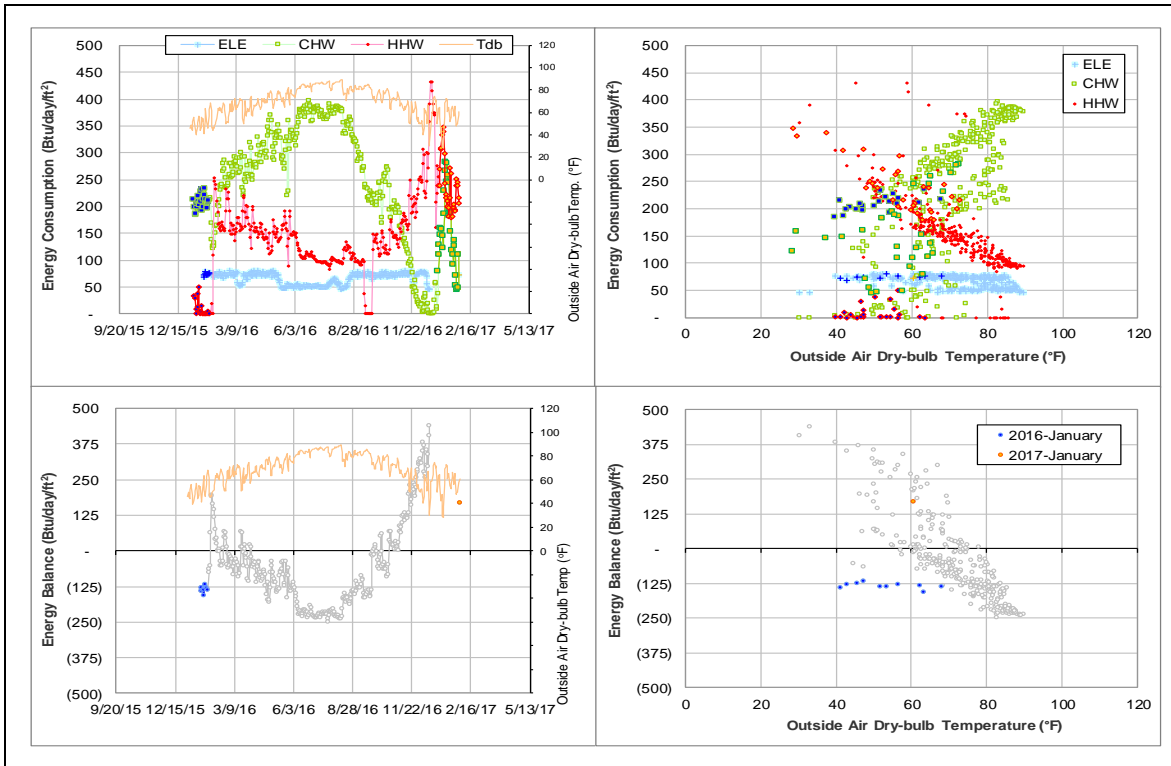
### Changes in sensor readings related to the detected issues

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

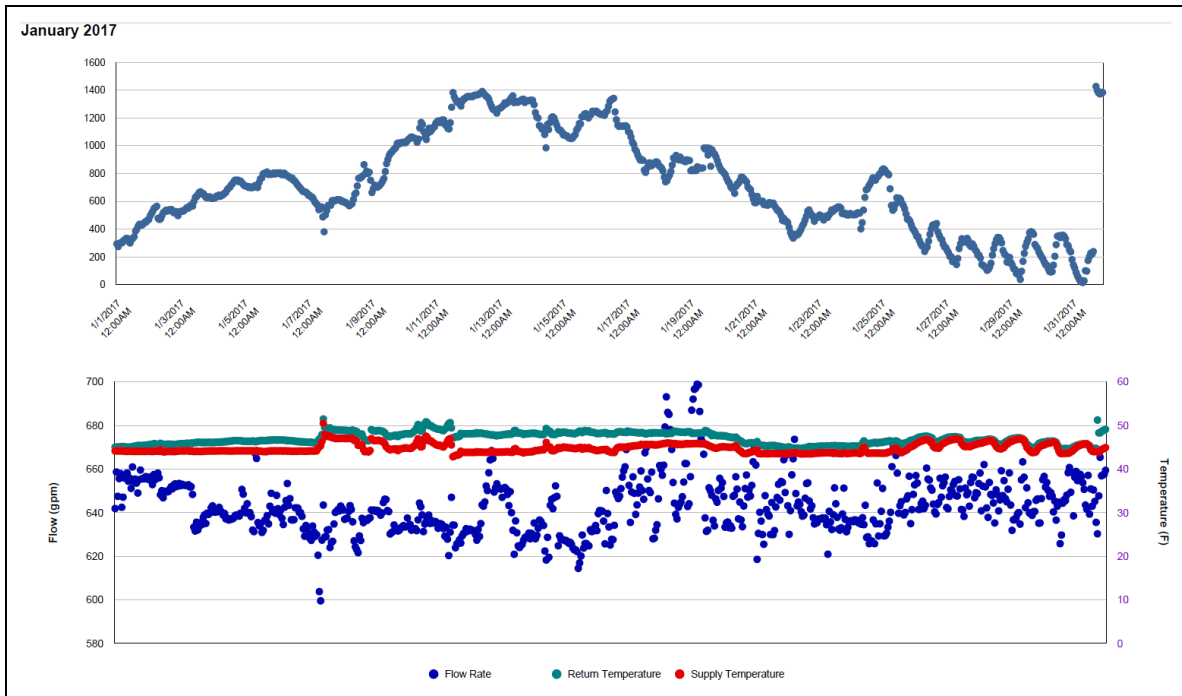
### Quantitative descriptions and comments

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. The reading on the last day hints that it may have been restored. The whole month is estimated by a model.

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

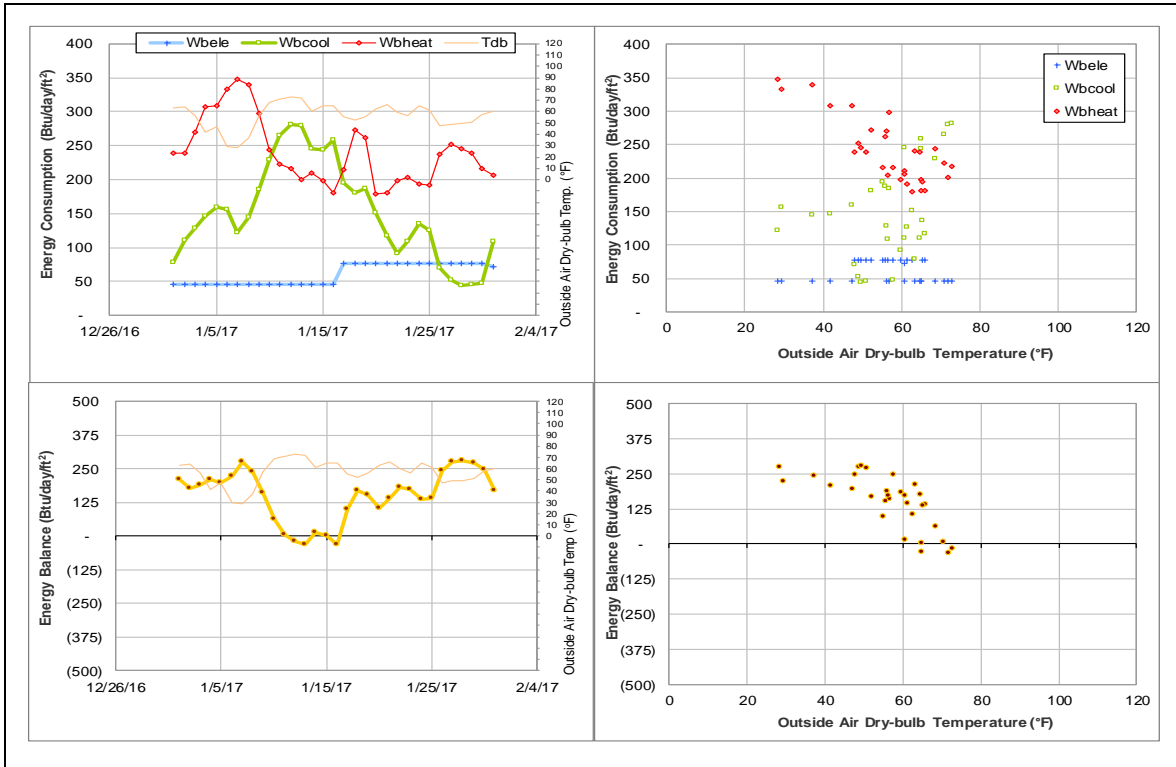


**Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during January 2017)**

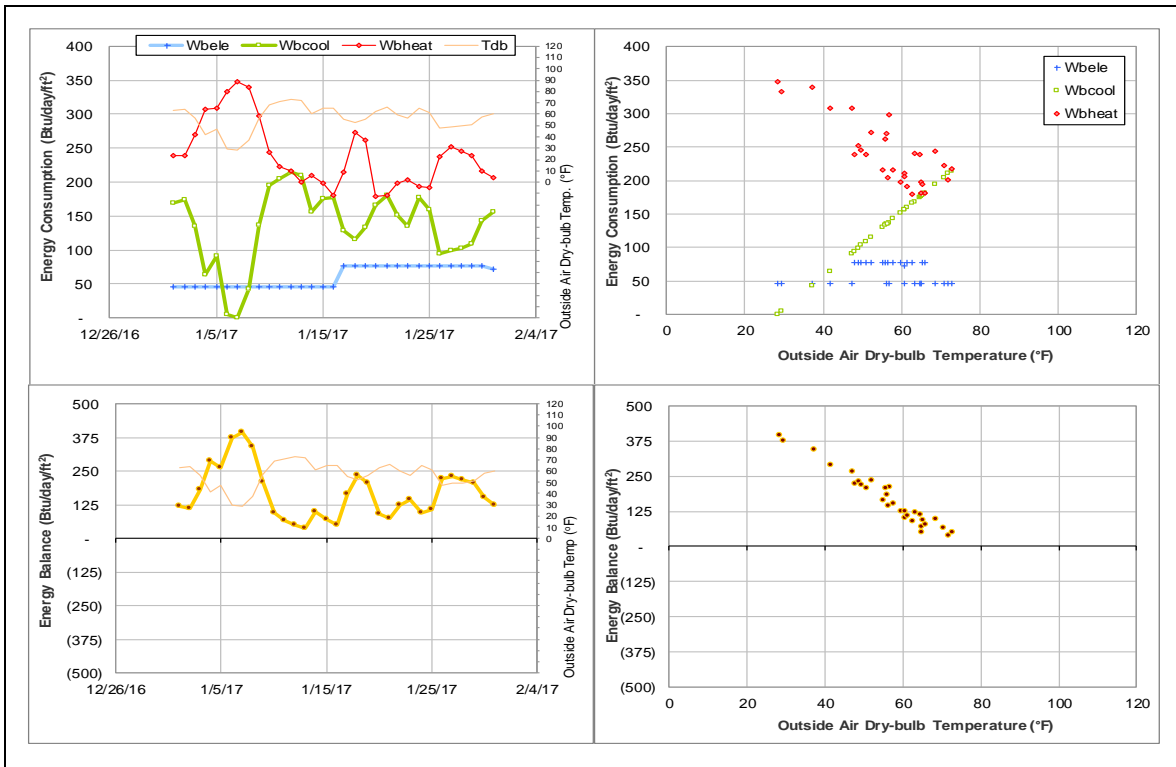




*Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.*



*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	31	1/1/2017 – 1/31/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The consumption level is higher than the level during the past year. The metered values appear to be faulty.	10/1/2016 – Ongoing

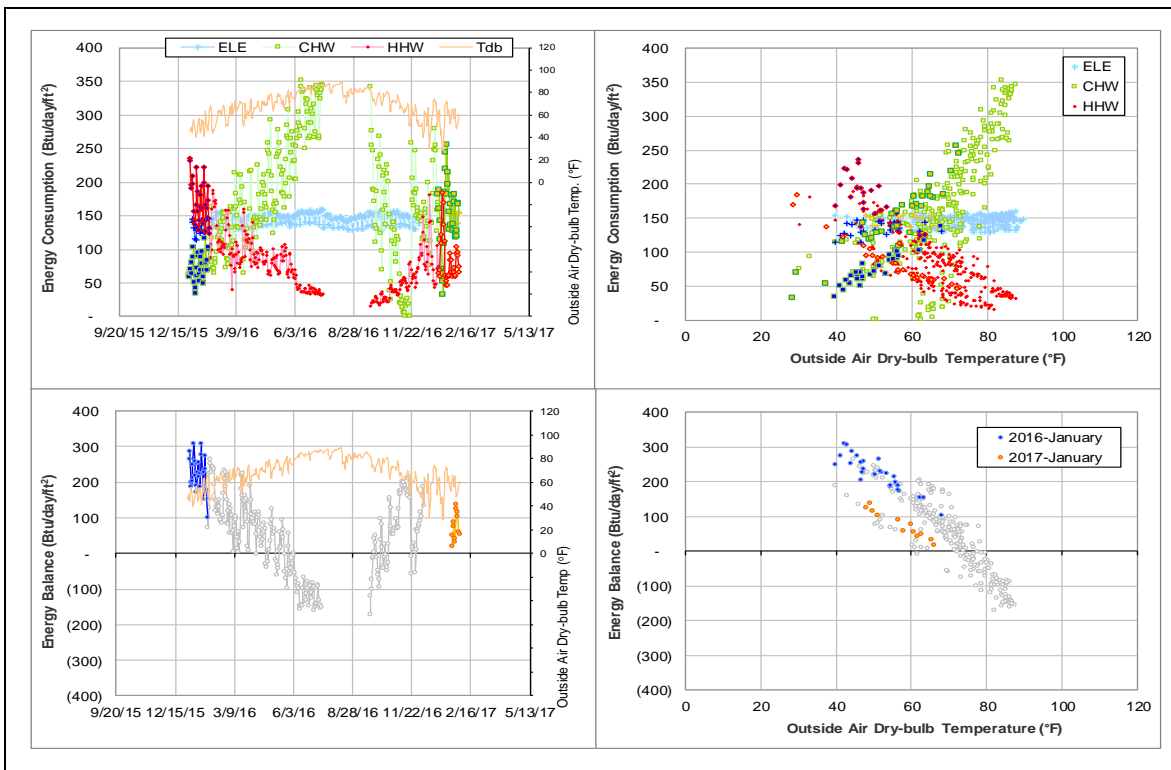
## Changes in sensor readings related to the detected issues

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	Delta-T	
		11/23/2016 – Ongoing	Delta-T	High

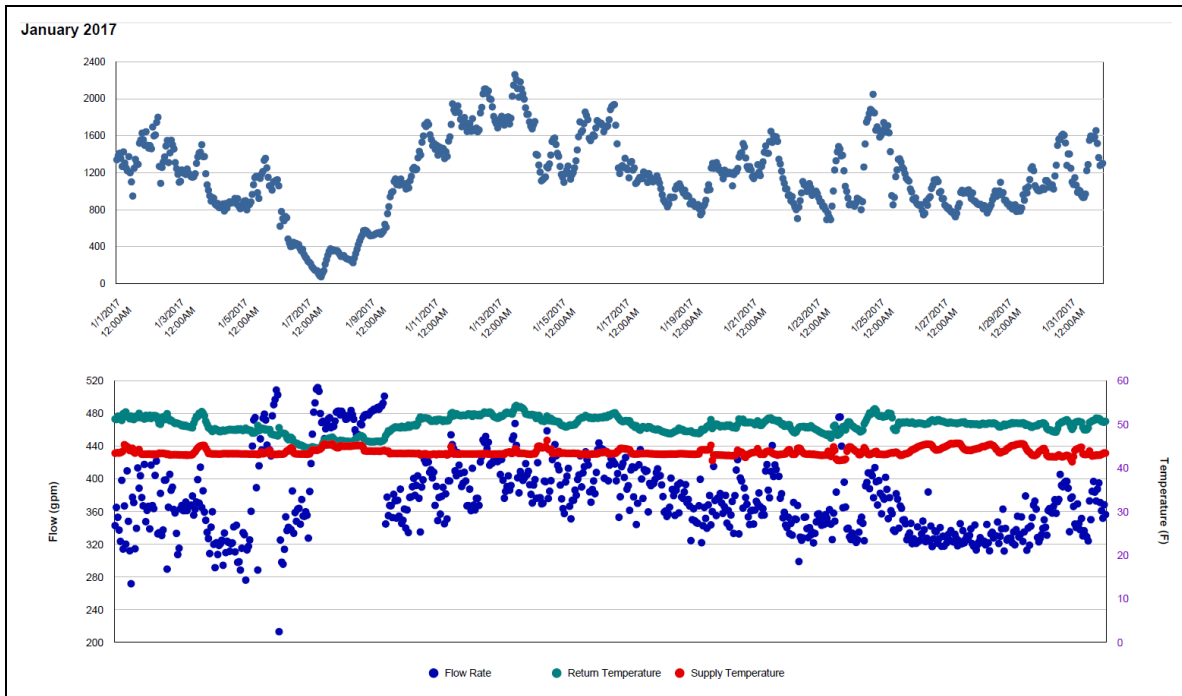
## Quantitative descriptions and comments

CHW temperature readings contain negative values during 10/21 – 10/25/2016 and 11/5 – 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 whole month is estimated by a model. See also section II-3.

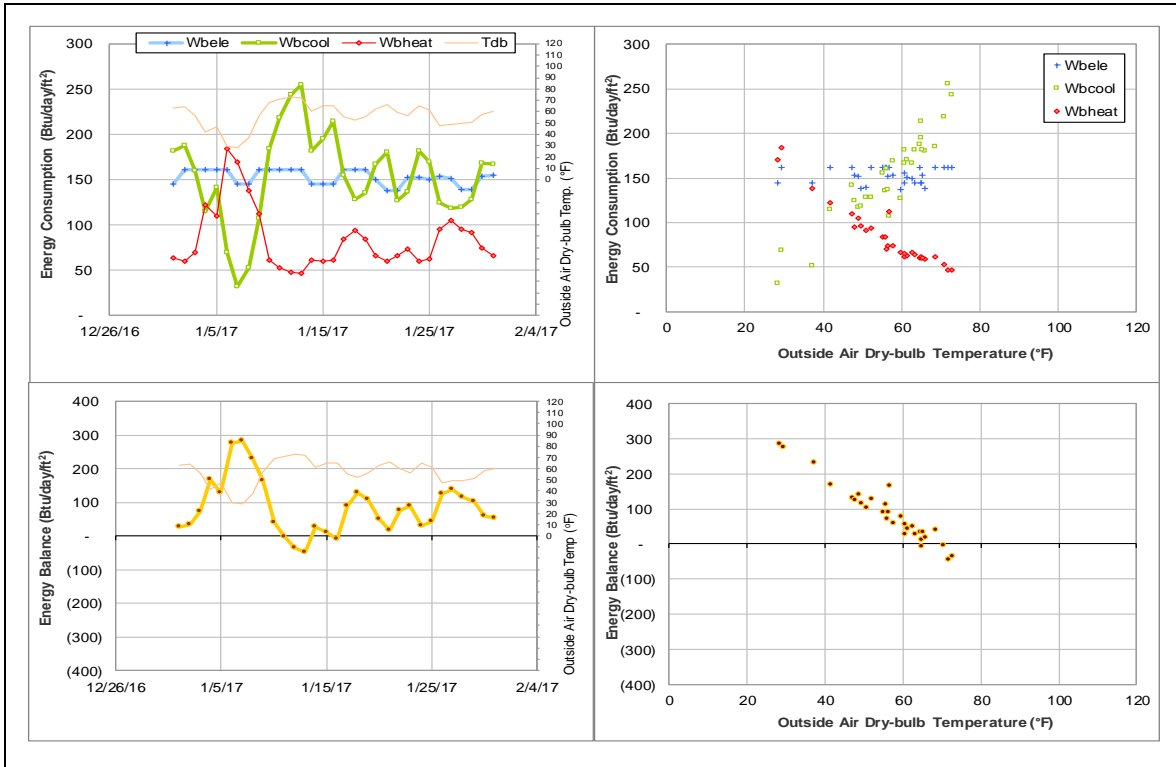
## Explanatory Figure: 13 months energy balance plot with original data.



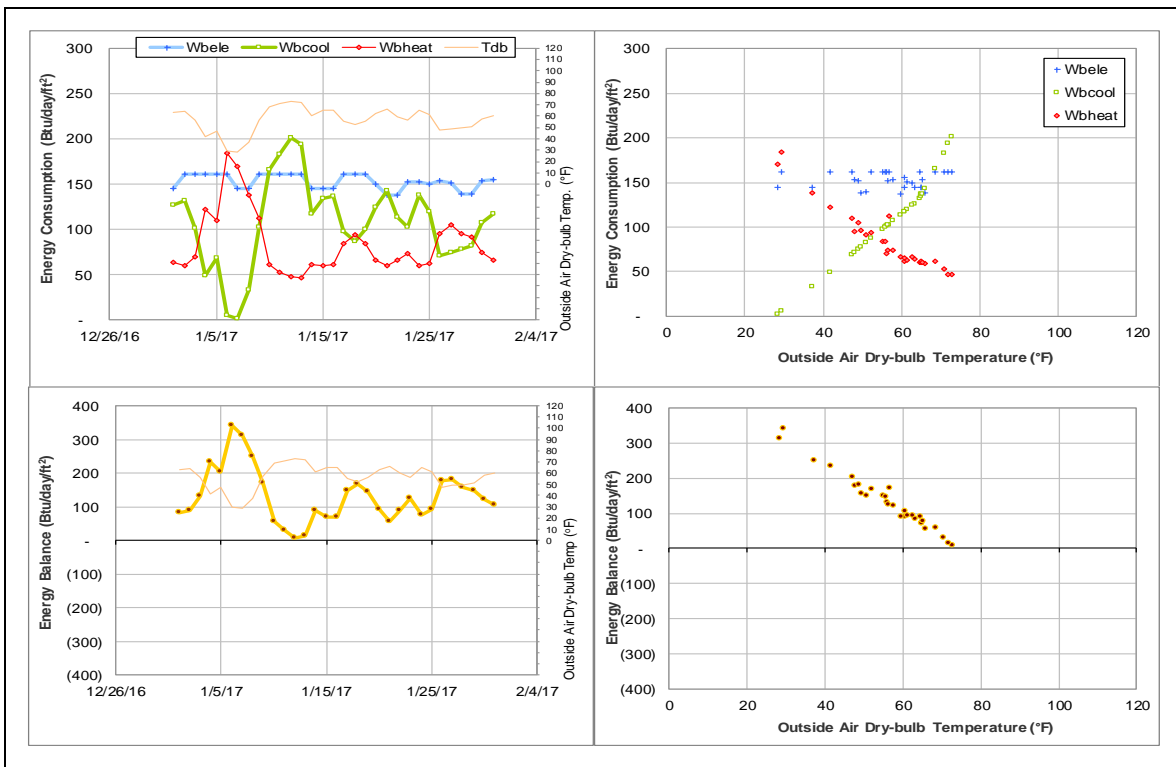
*Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during January 2017)*



**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
CHW	006411	31	1/1/2017 – 1/31/2017	Model
HHW	006415	31	1/1/2017 – 1/31/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The consumption level is higher than the level during the past year.	12/21/2016 – Ongoing
HHW	The consumption level is higher than the level during the past year. The consumption level has increased suddenly.	12/8/2016 – Ongoing

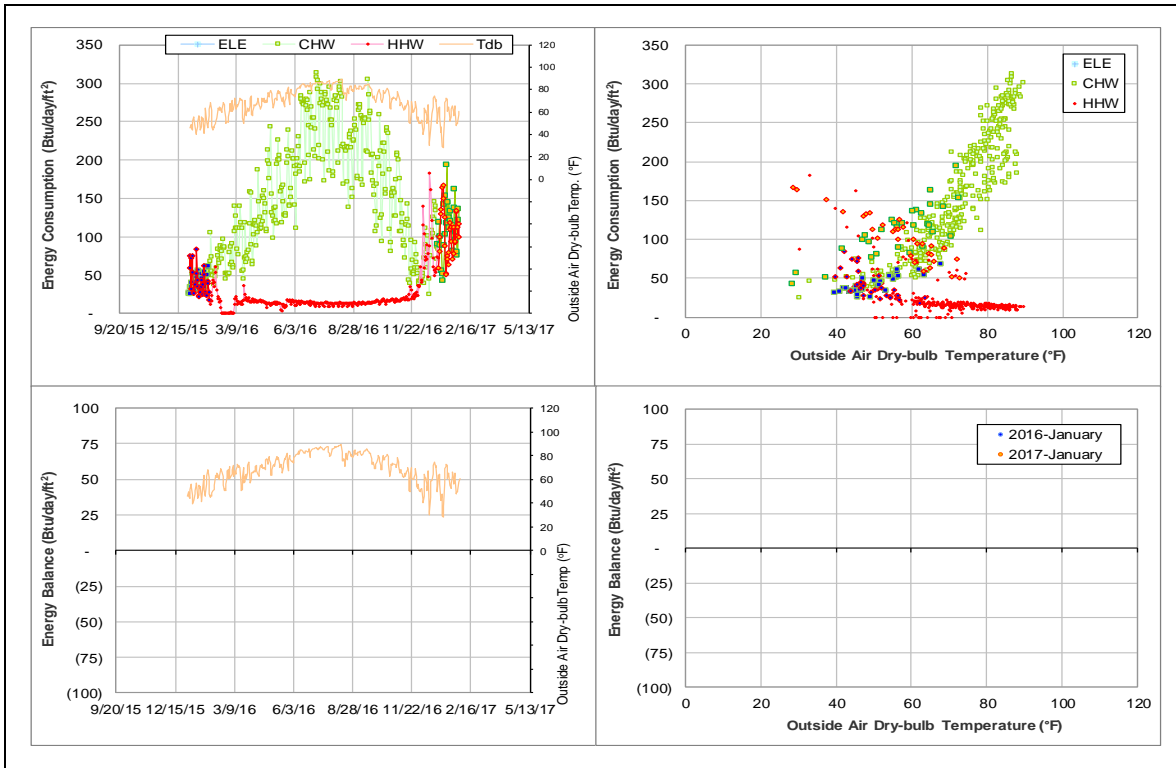
### *Changes in sensor readings related to the detected issues*

Energy Type	Meter ID	Period	Type	Description
CHW	006411	12/21/2016 – Ongoing	Delta-T and Flow Rate	High
HHW	006415	12/8/2016 – Ongoing	Delta-T and Flow Rate	High

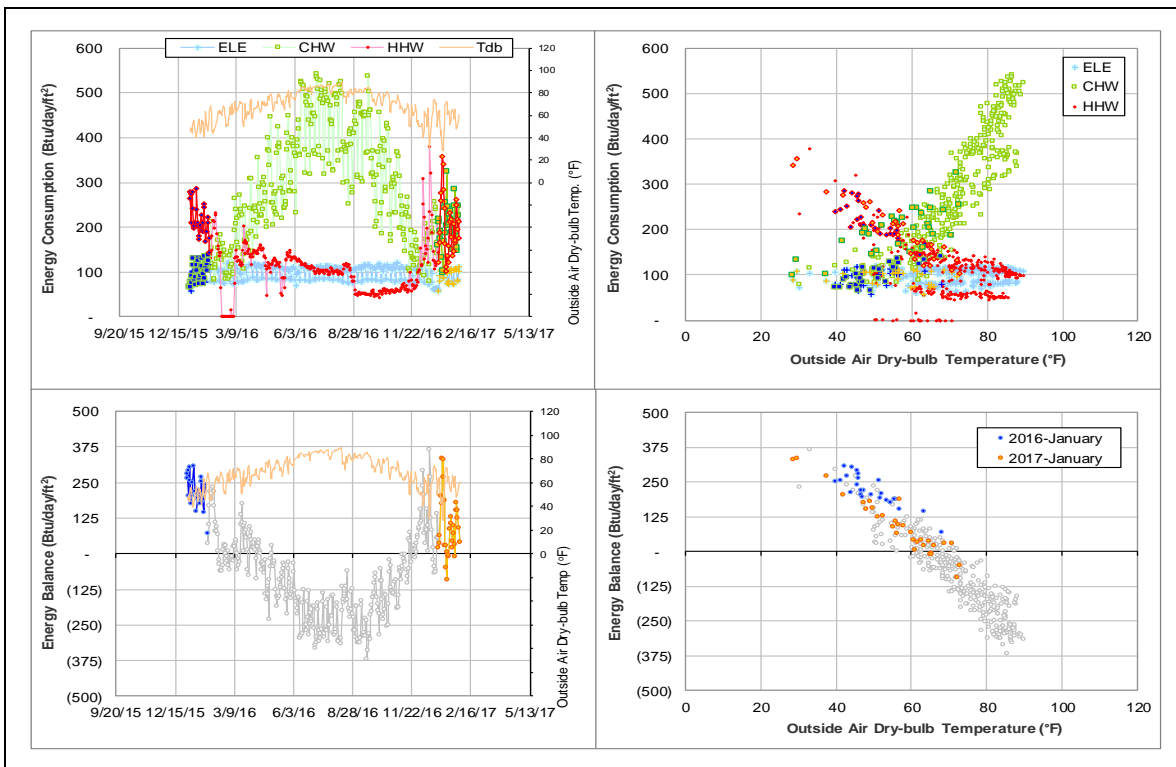
### *Quantitative descriptions and comments*

CHW had an increase in flow rate from circa 15 gpm to 80 gpm level. An increase of Delta-T followed on 1/4/2017 and pulled CHW consumption up gradually to a level higher than the previous year. Delta-T kept unstable throughout the month. HHW had an increase in both flow rate and Delta-T causing an increase of consumption and brought scatter to the data. These days are estimated by a model. See also section II-3.

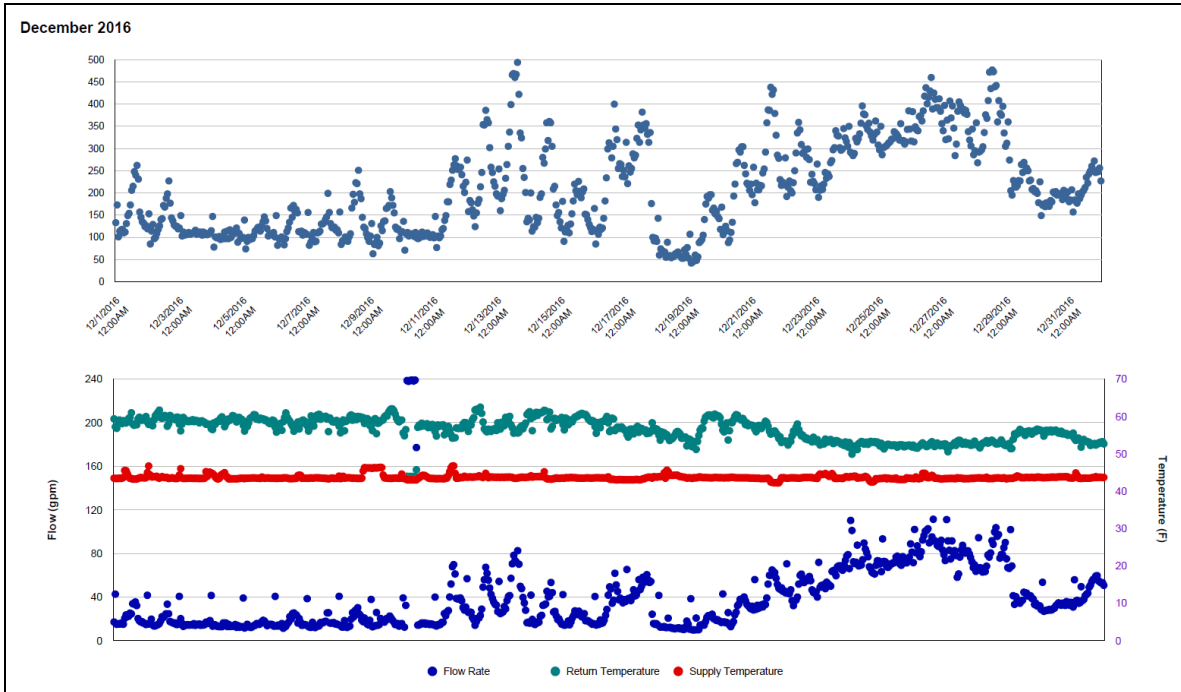
**Explanatory Figure: 13 months energy balance plot with original data for #445 only**



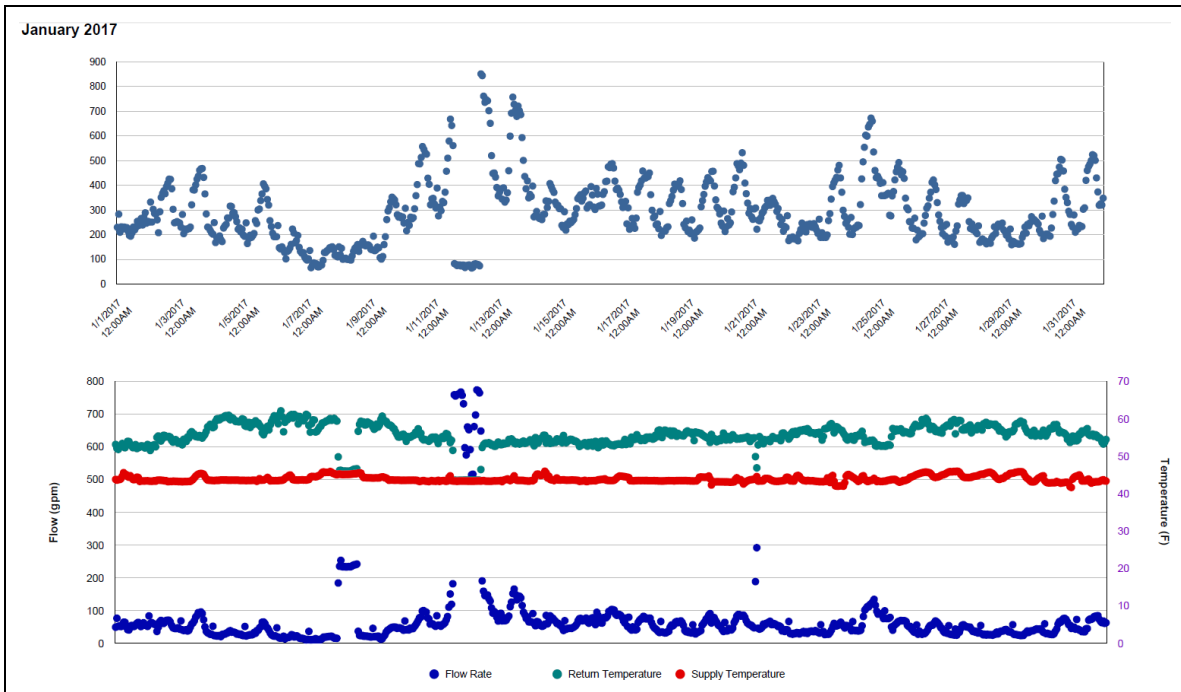
**Explanatory Figure: 13 months energy balance plot with original data for total of #445 and #517**



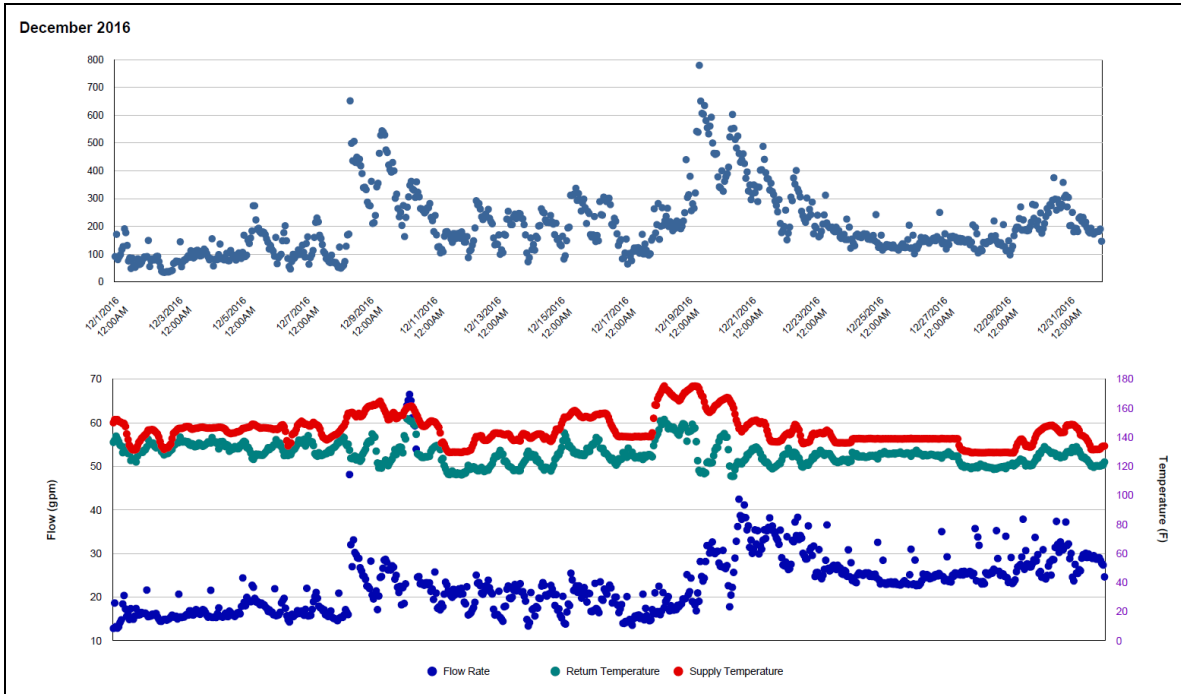
*Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during December 2016)*



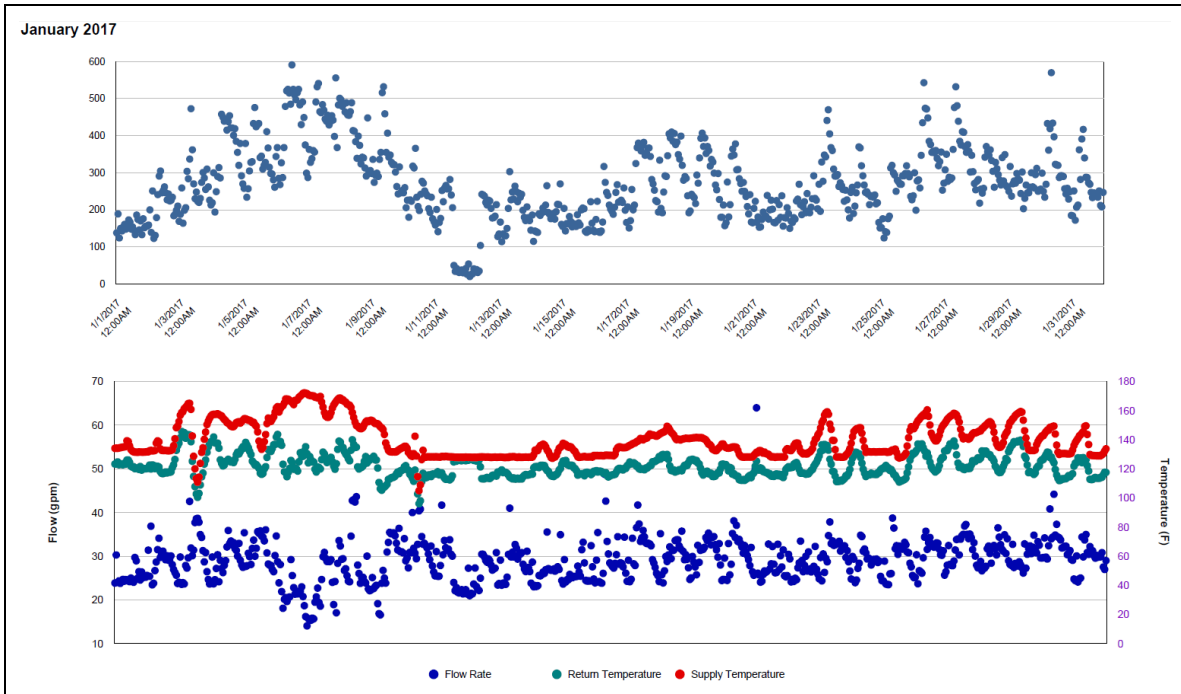
*Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during January 2017)*



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

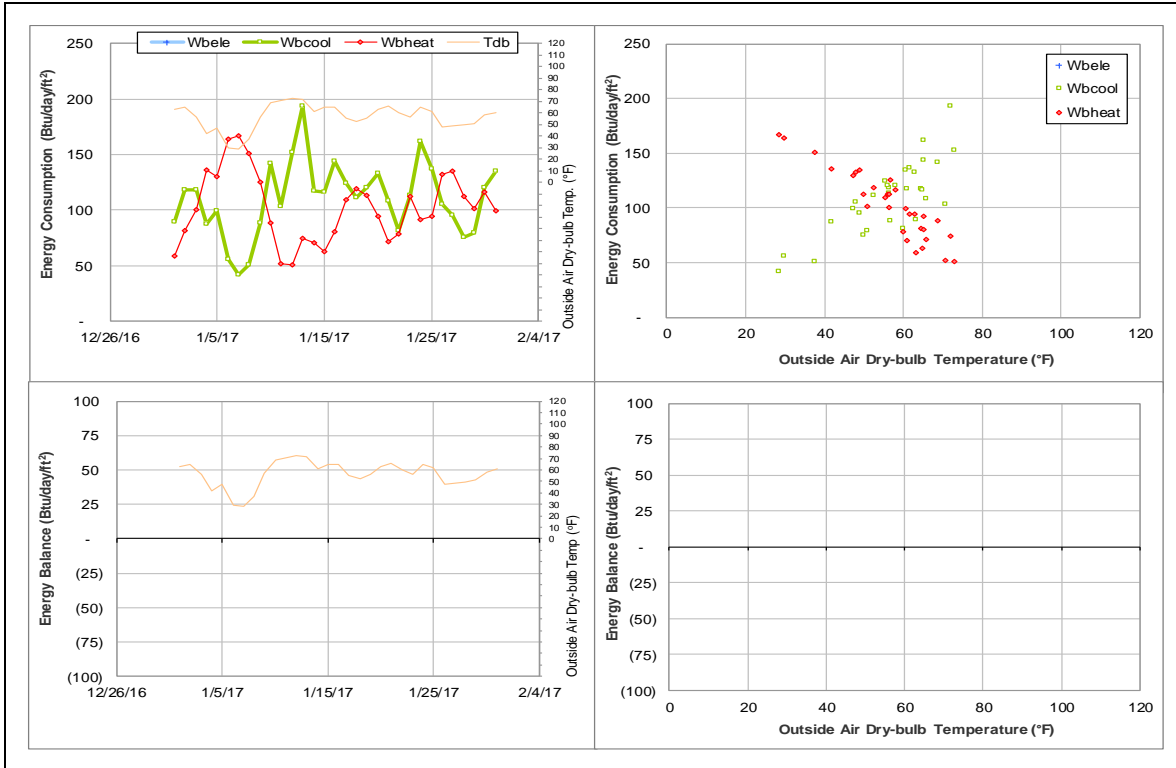


**Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during January 2017)**

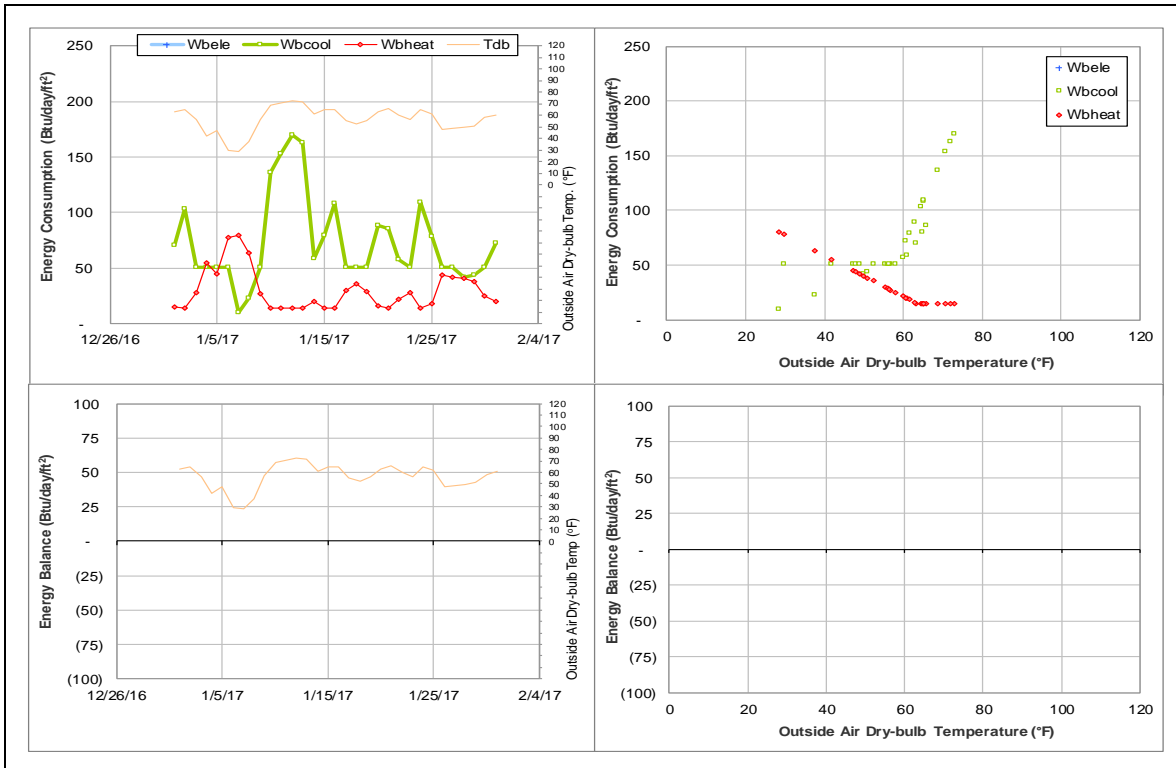




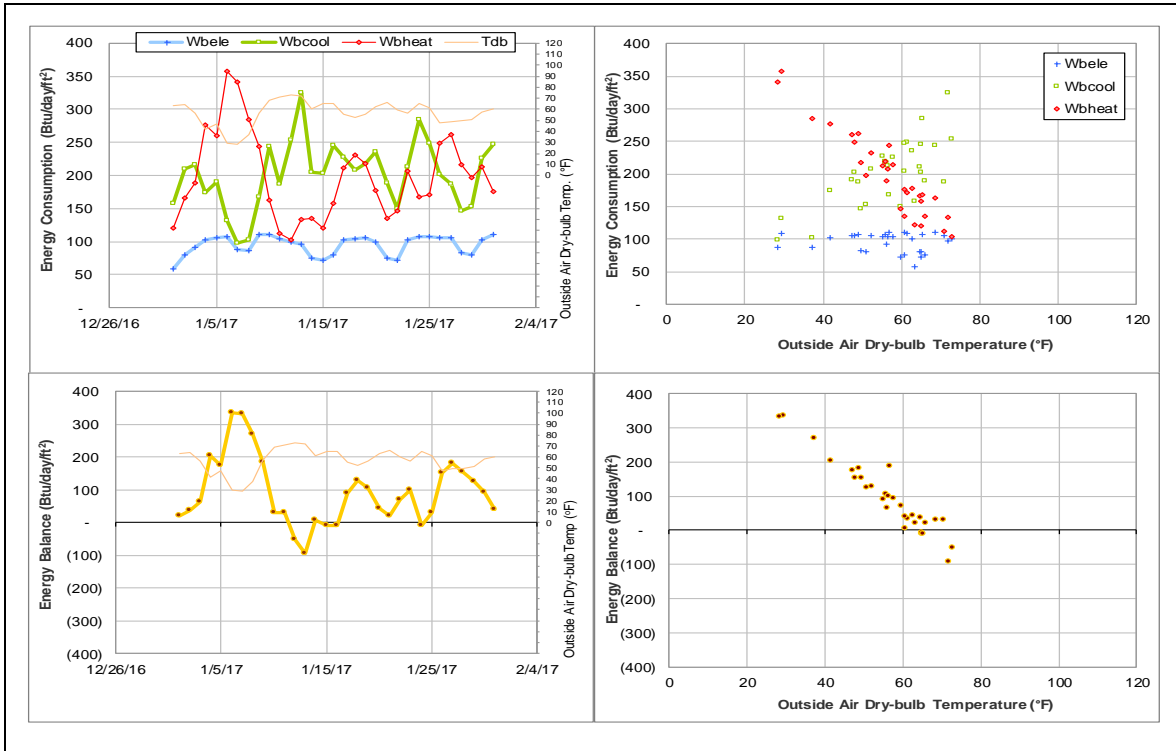
**Energy balance plot using the original data for the month of analysis for #445 only**



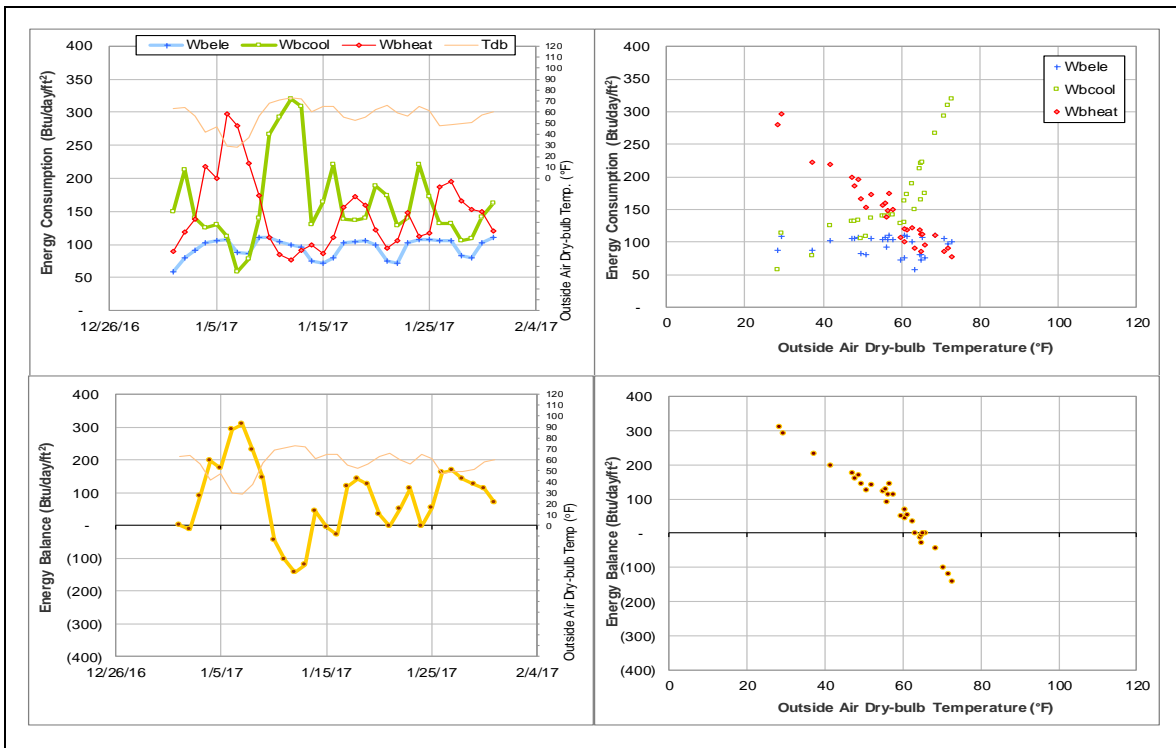
**Energy balance plot using the estimated data for the month of analysis for #445 only**



**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**



## DPC Annex (TAMU Bldg #517)

### Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	006563	31	1/1/2017 – 1/31/2017	Model

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

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

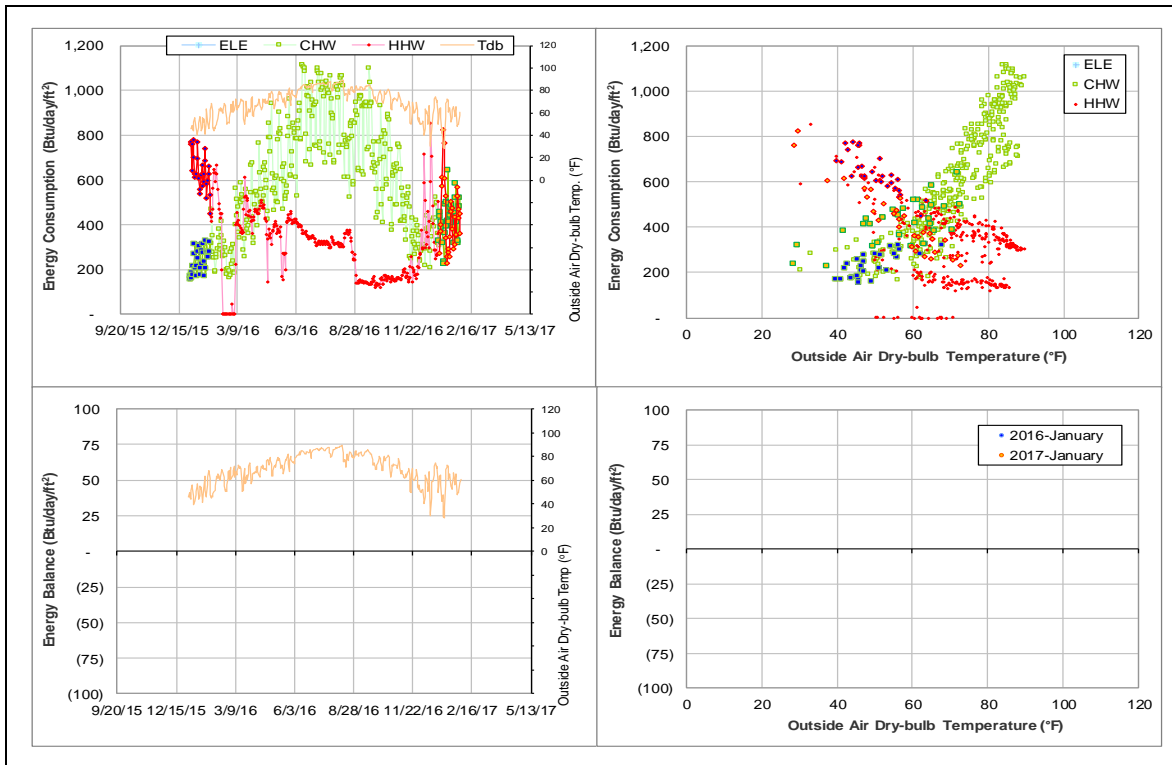
### Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	006563	1/1/2017 – Ongoing	Delta-T	High

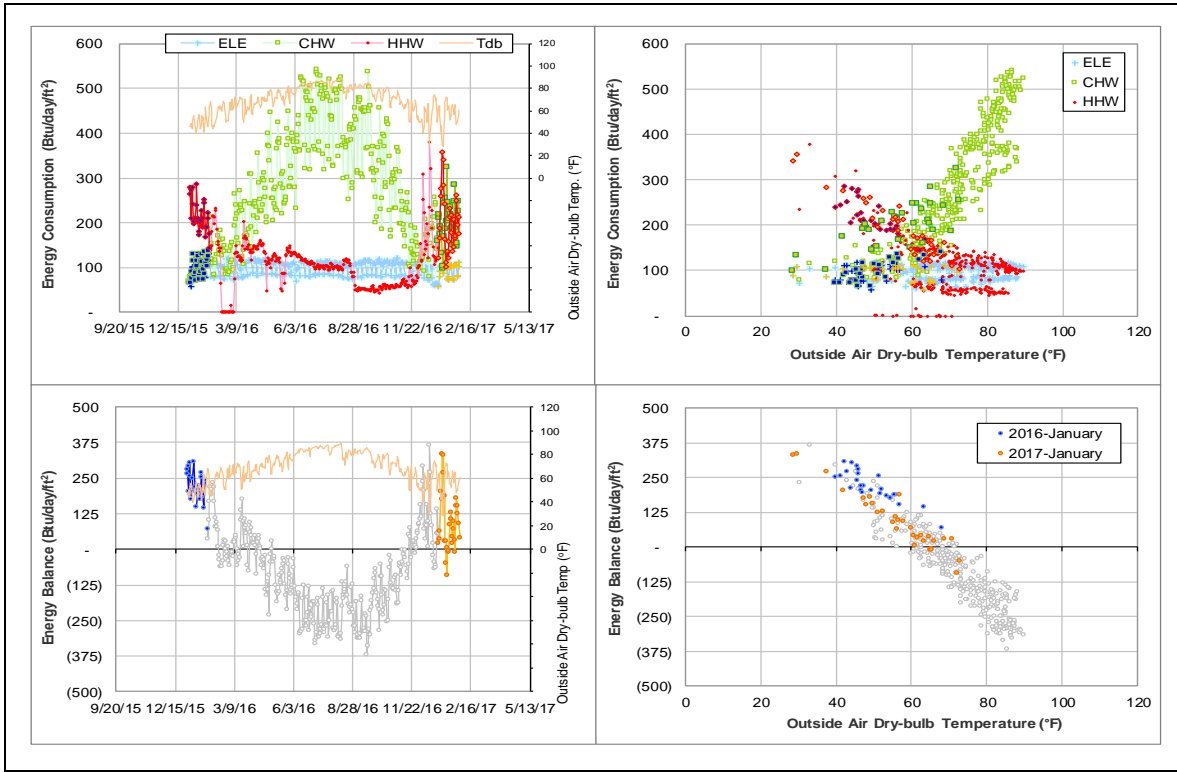
### Quantitative descriptions and comments

CHW consumption is 150 to 200 Btu/day/ft<sup>2</sup> higher than the previous year. Delta-T is higher but the difference is not conspicuous. See also section II-3.

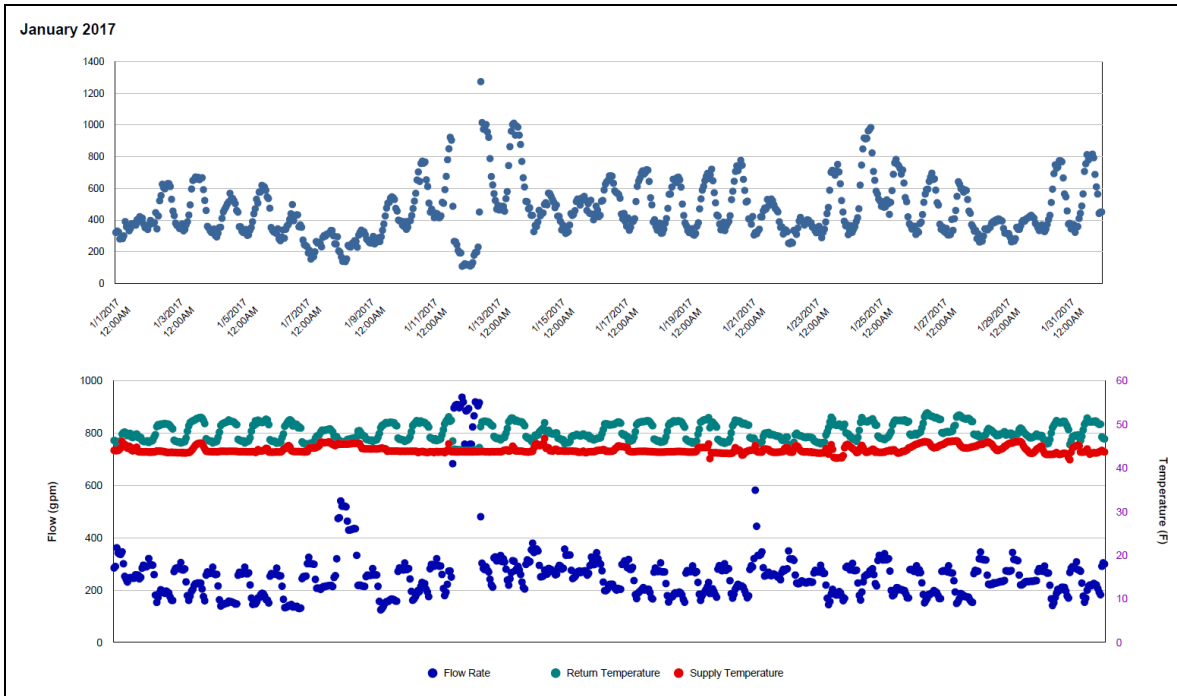
### Explanatory Figure: 13 months energy balance plot with original data for #517 only



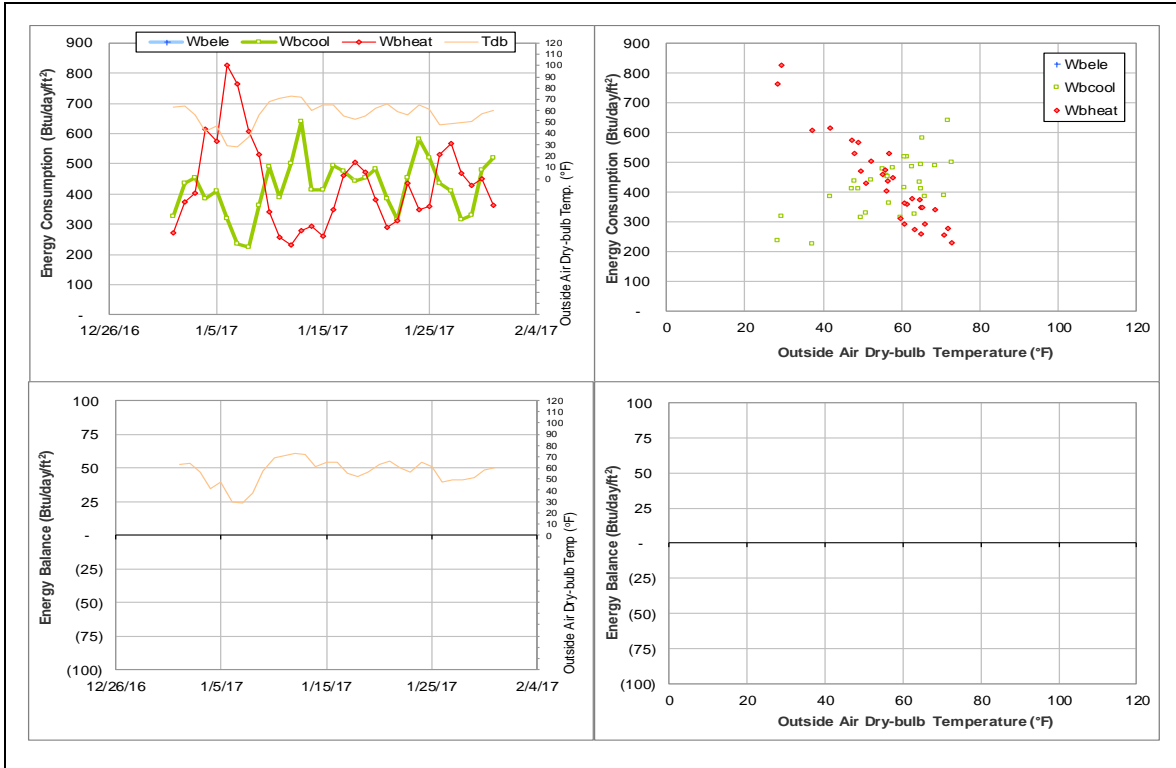
**Explanatory Figure: 13 months energy balance plot with original data for total of #445 and #517**



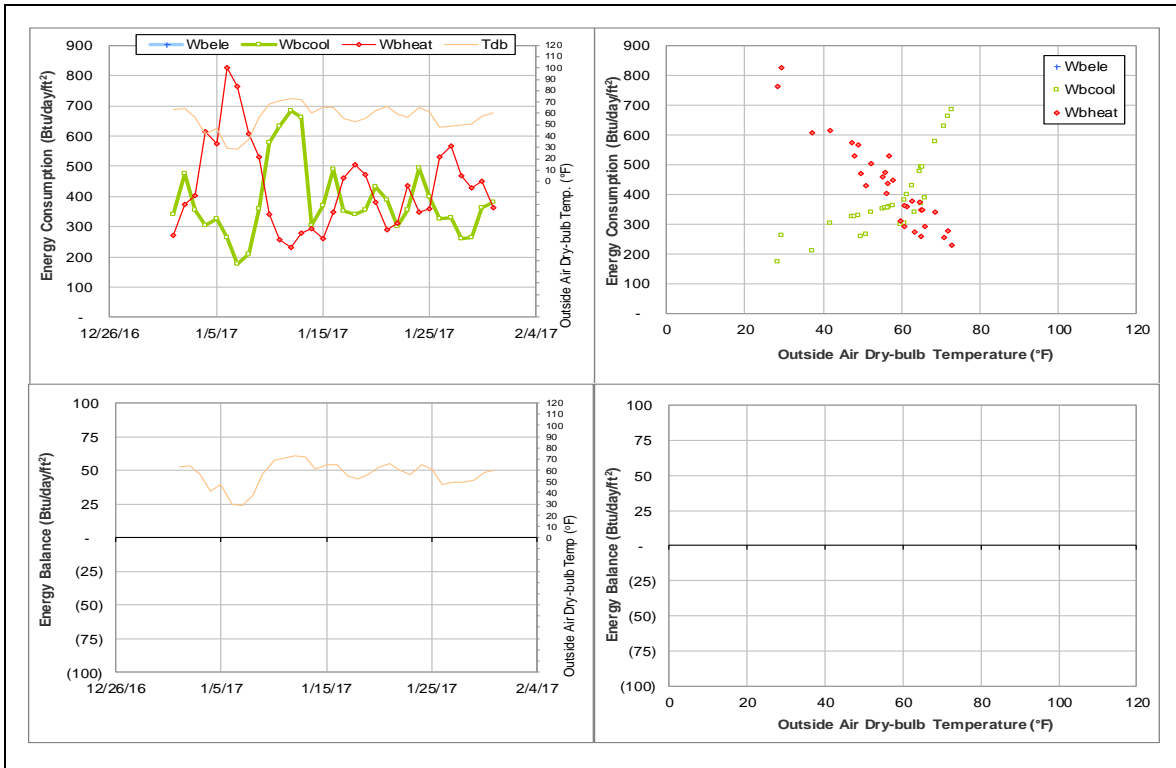
**Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during January 2017)**



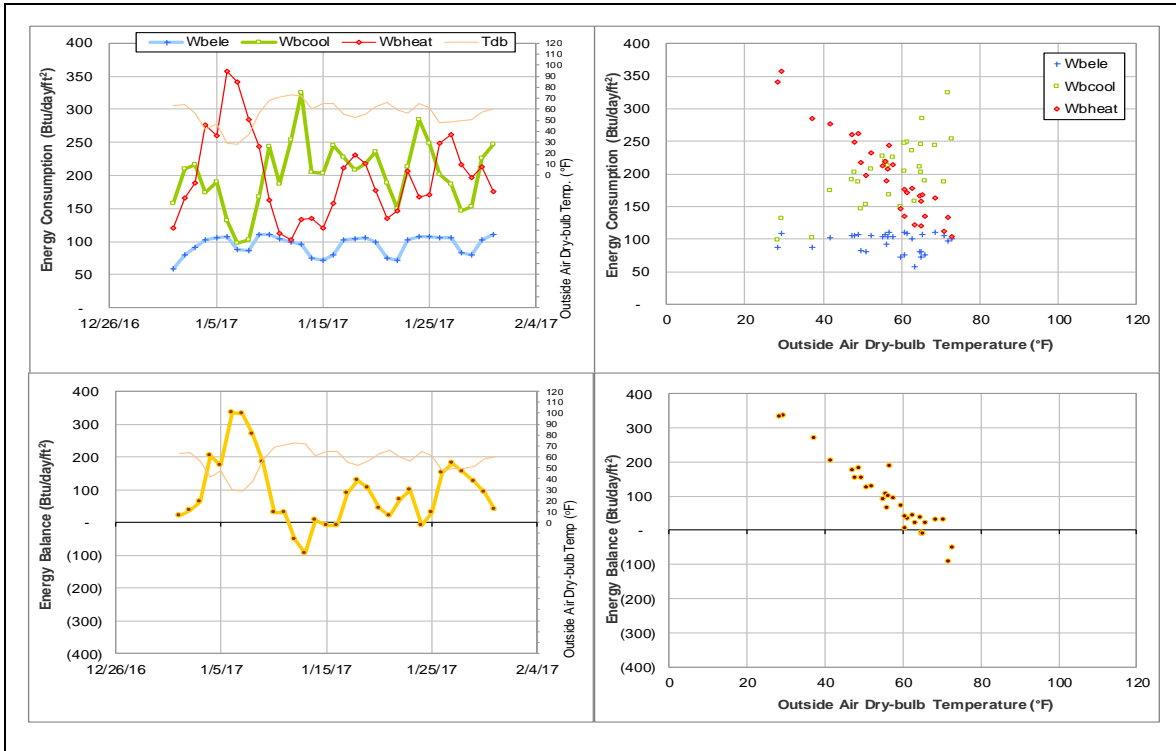
**Energy balance plot using the original data for the month of analysis for #517 only**



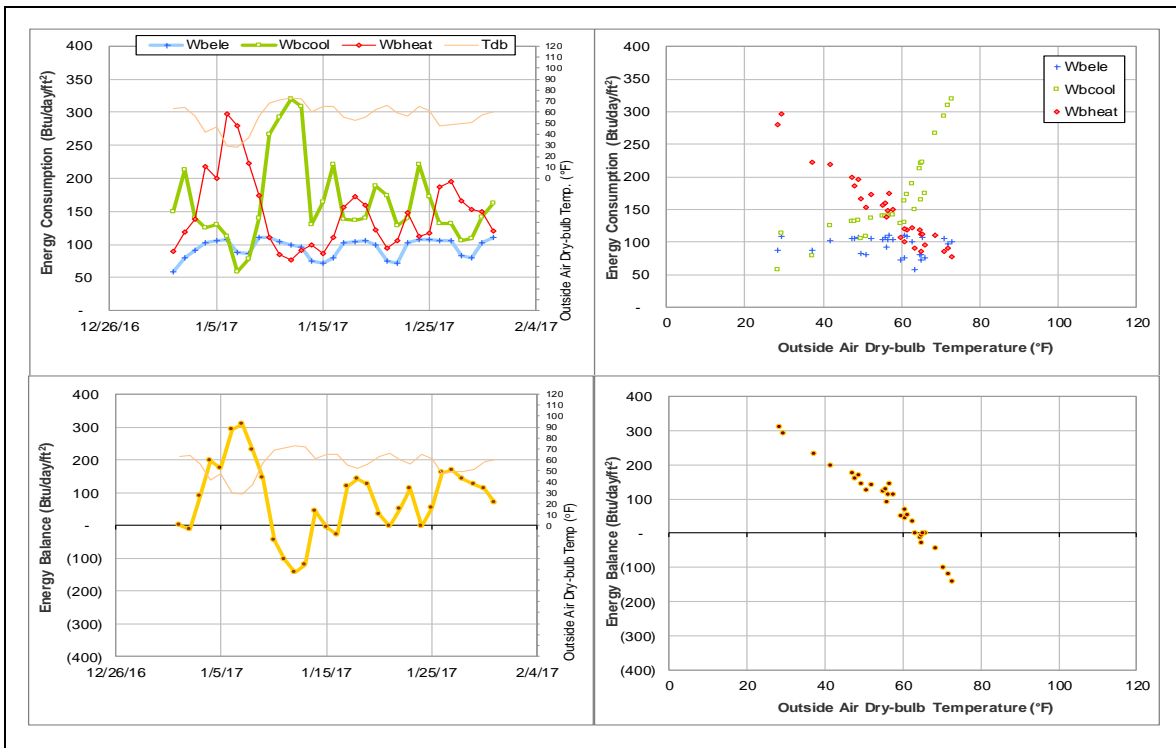
**Energy balance plot using the estimated data for the month of analysis for #517 only**



**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 Tower (TAMU Bldg #446)

## Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002455	31	1/1/2017 – 1/31/2017	Model
HHW	002459	9	1/1/2017 – 1/9/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The consumption increased for a short period. Scattering data are observed.	12/29/2016 – 1/31/2017
HHW	The consumption increased for a short period.	12/29/2016 – 1/9/2017

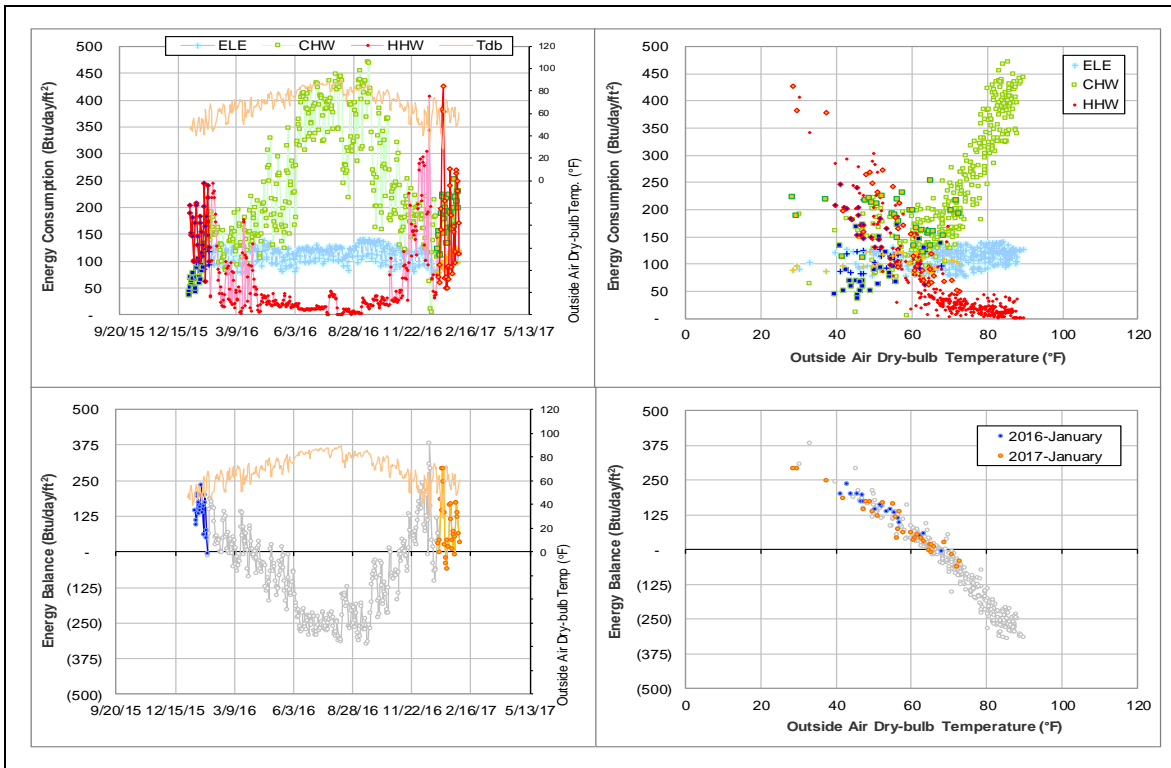
## Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002455	12/29/2016 – 1/9/2017	Delta-T	High
HHW	002459	12/29/2016 – 1/9/2017	Delta-T	High

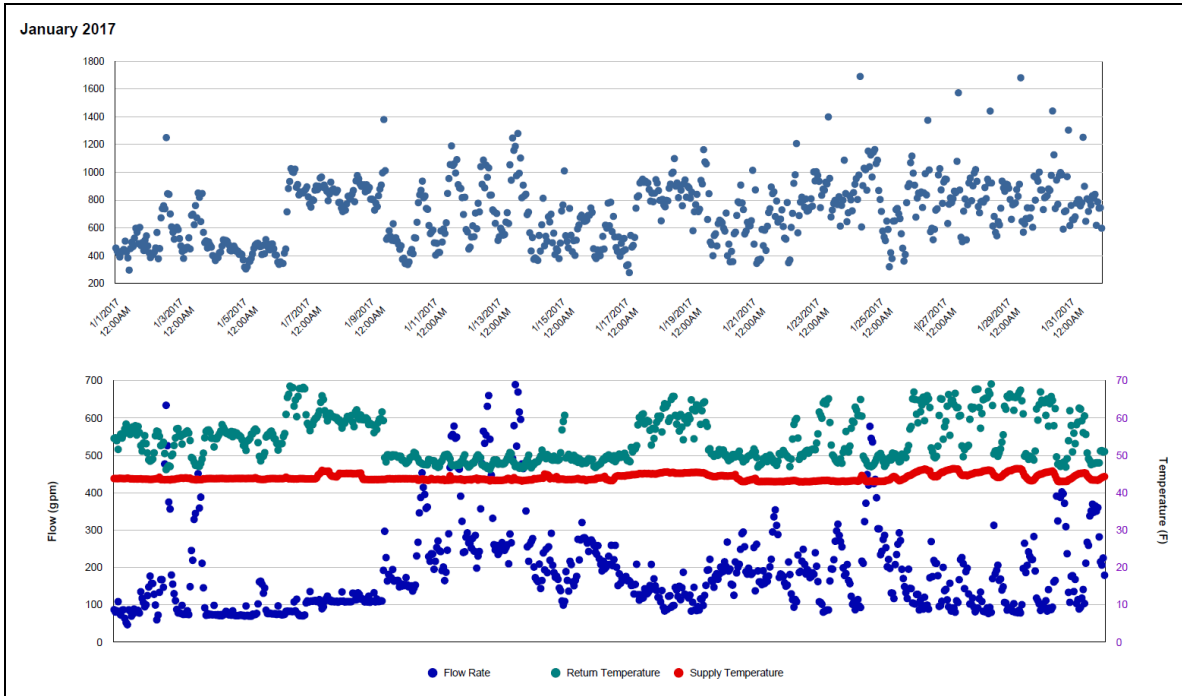
## Quantitative descriptions and comments

Both CHW and HHW had an increased Delta-T on 12/29/2016 – 1/9/2017. CHW continued to scatter throughout the whole month, but no noticeable behavior of the meter readings are found. These days are estimated using models.

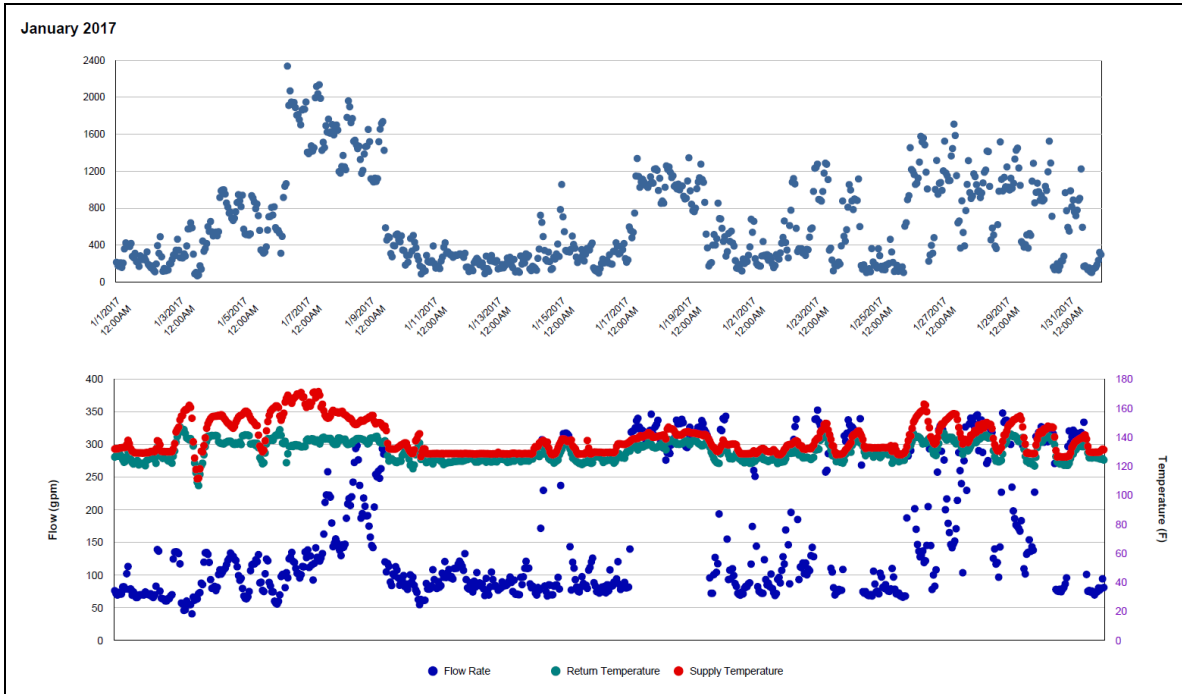
## Explanatory Figure: 13 months energy balance plot with original data.



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

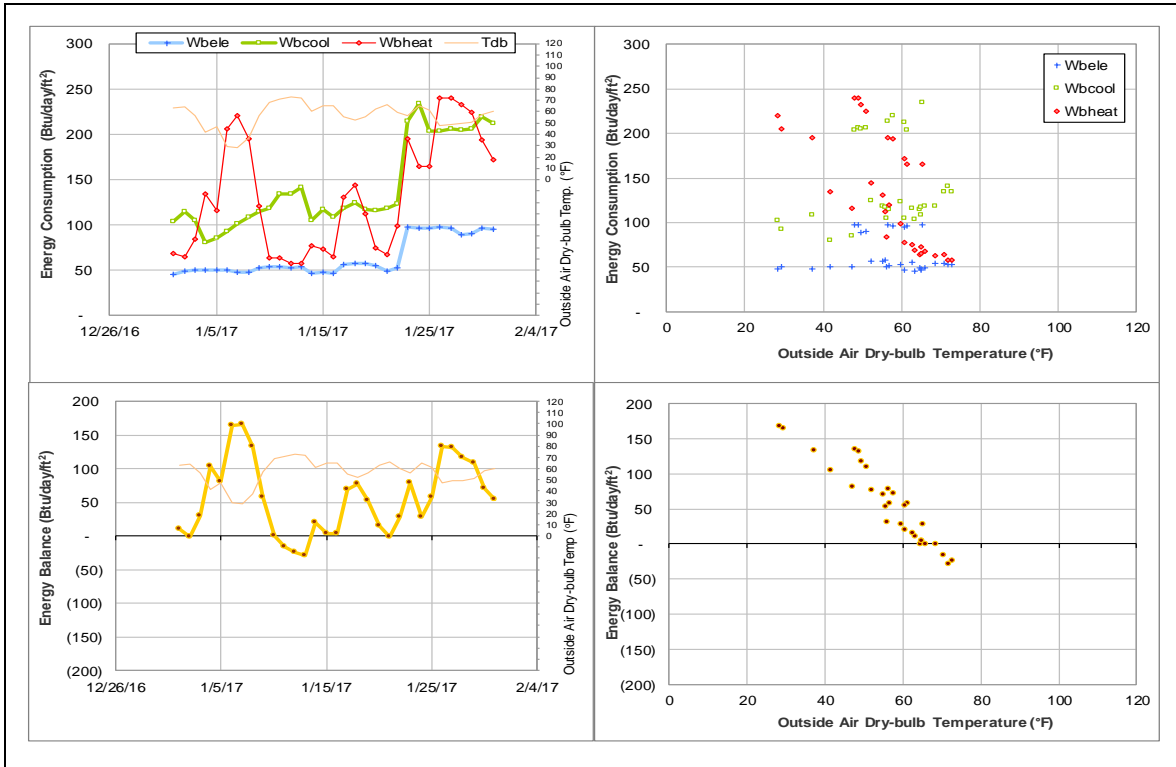


*Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during January 2017)*

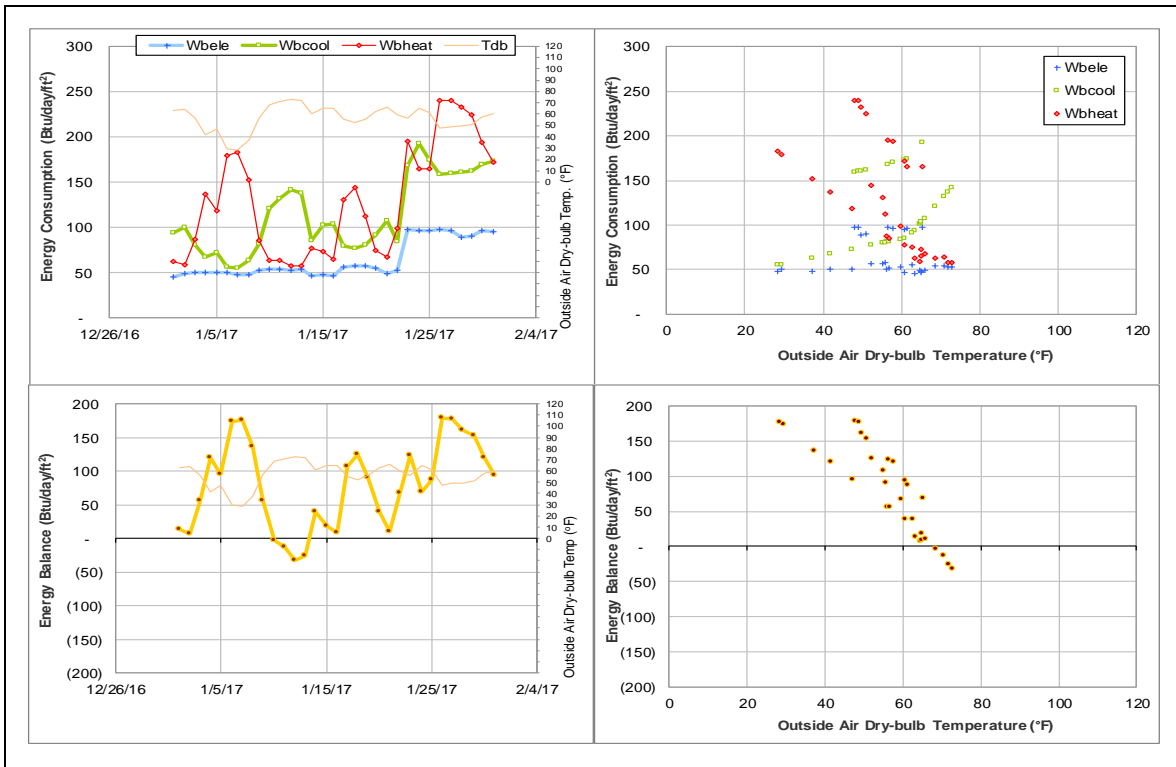




*Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.*



*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	19	1/1/2017 – 1/19/2017	Model
HHW	002945	4	1/4/2017 – 1/7/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The consumption increased for a short period.	1/1/2017 – 1/19/2017
HHW	The consumption dropped for a short period.	1/4/2017 – 1/7/2017

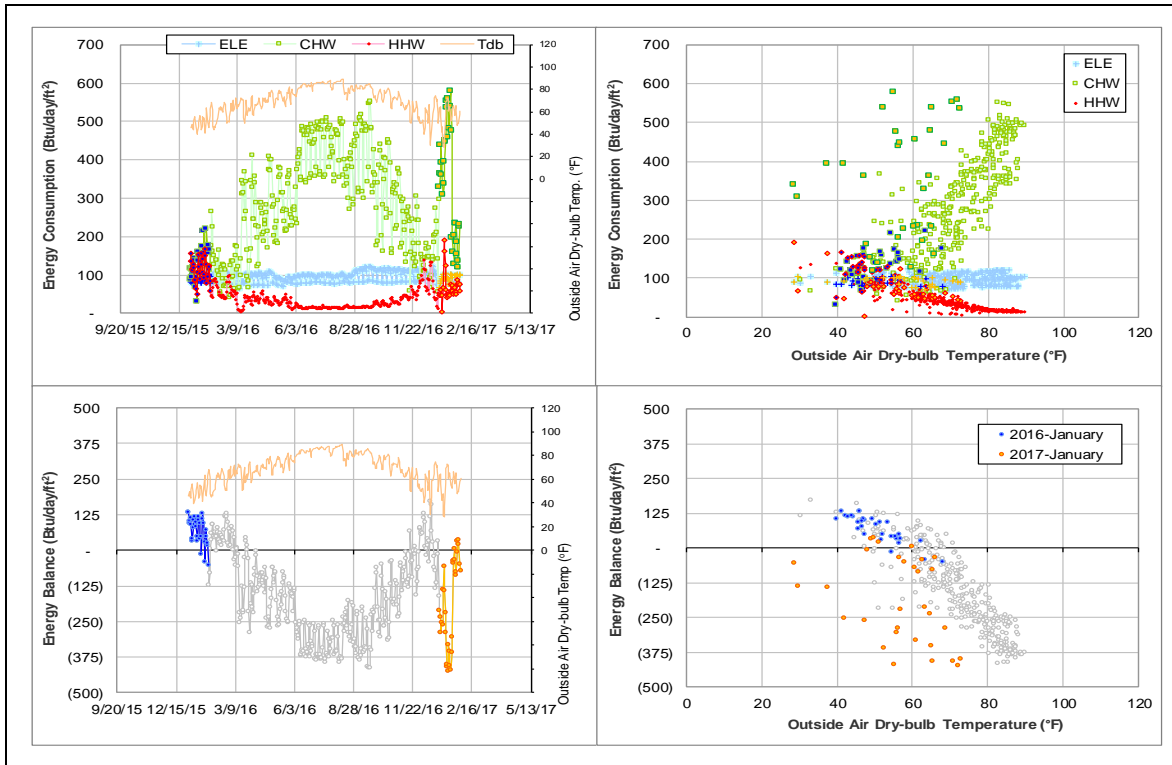
## Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002941	1/1/2017 – 1/19/2017	Flow rate	High
HHW	002945	1/4/2017 – 1/7/2016	Flow rate	Zero

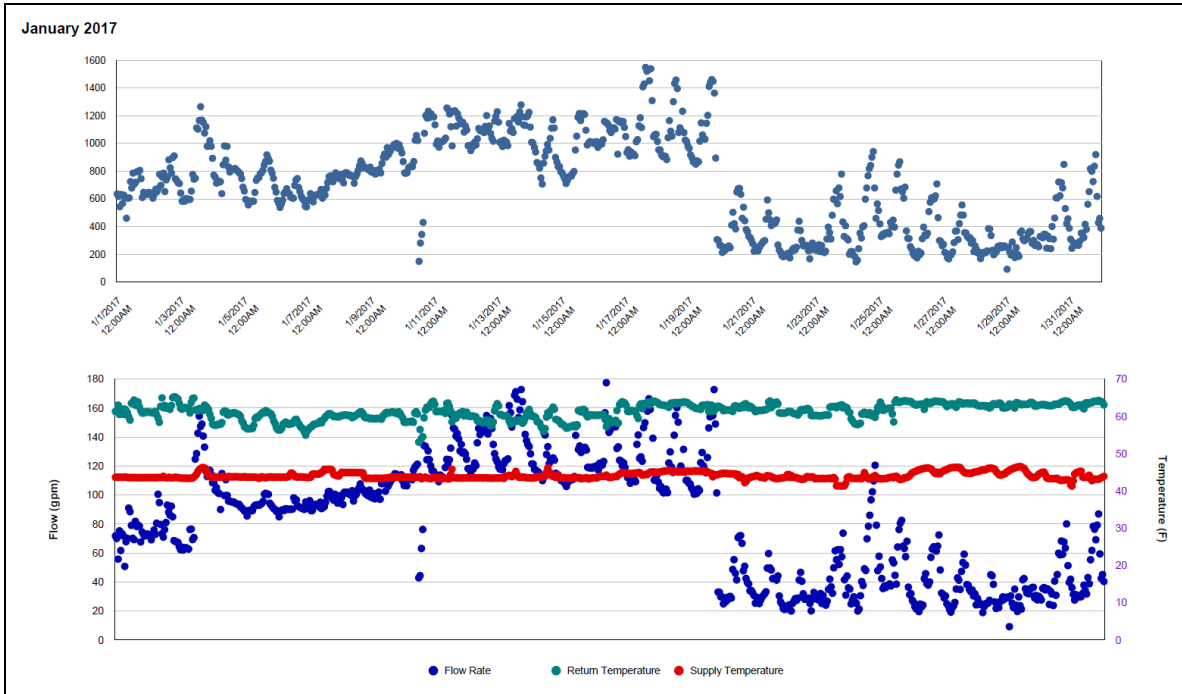
## Quantitative descriptions and comments

CHW flow rate was abnormally high at 80 – 160 gpm level on 1/1/2017 – 1/19/2017, and fell back to 20 – 80 gpm range on 1/20/2017. HHW flow rate dropped to zero on 1/4/2017 – 1/7/2017. They both contribute to the severe scatter in energy balance plot. These days are estimated using models.

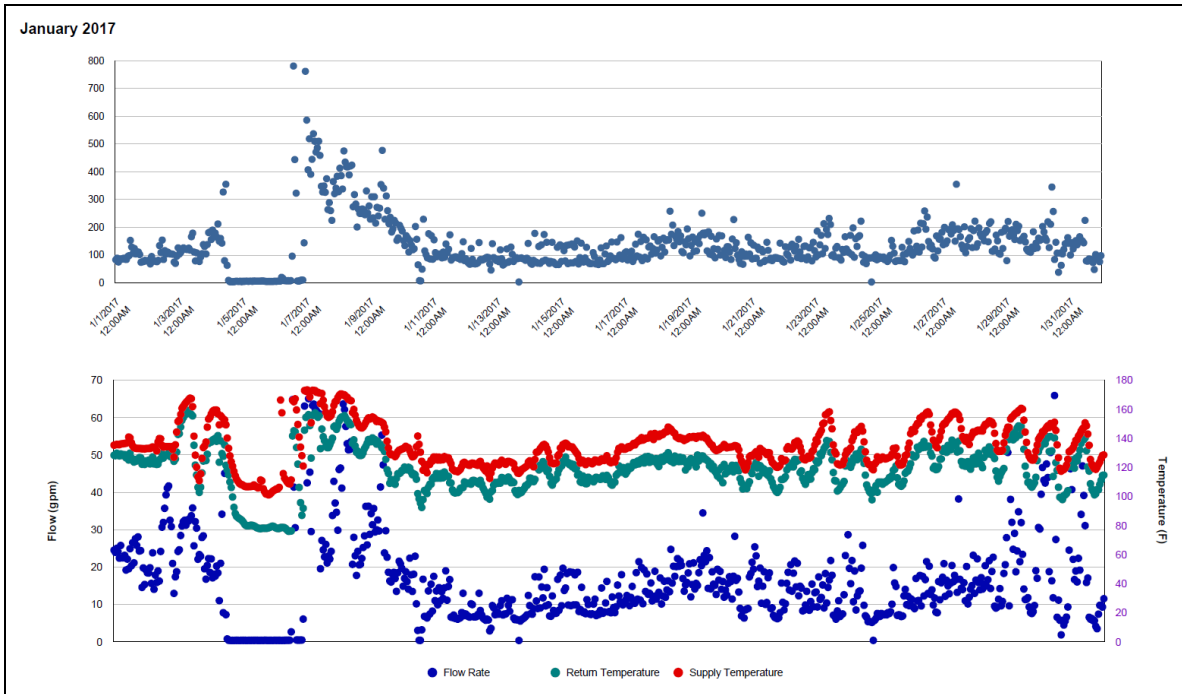
## Explanatory Figure: 13 months energy balance plot with original data.



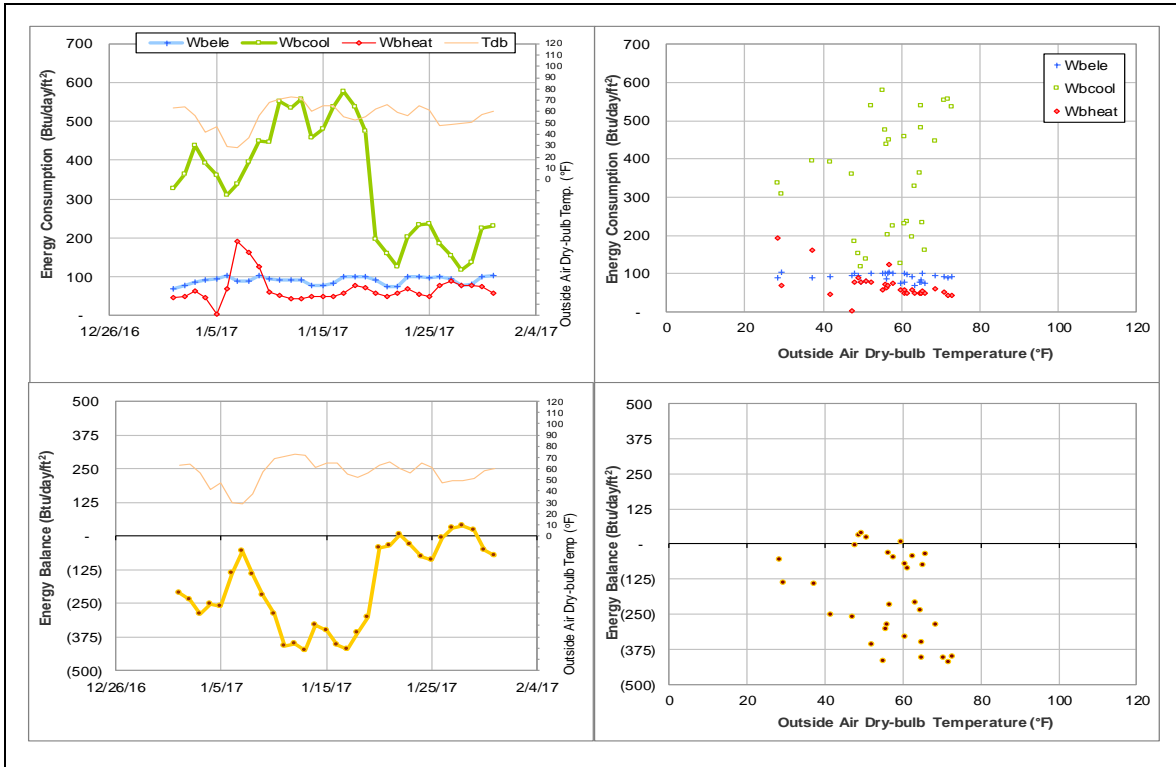
*Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during January 2017)*



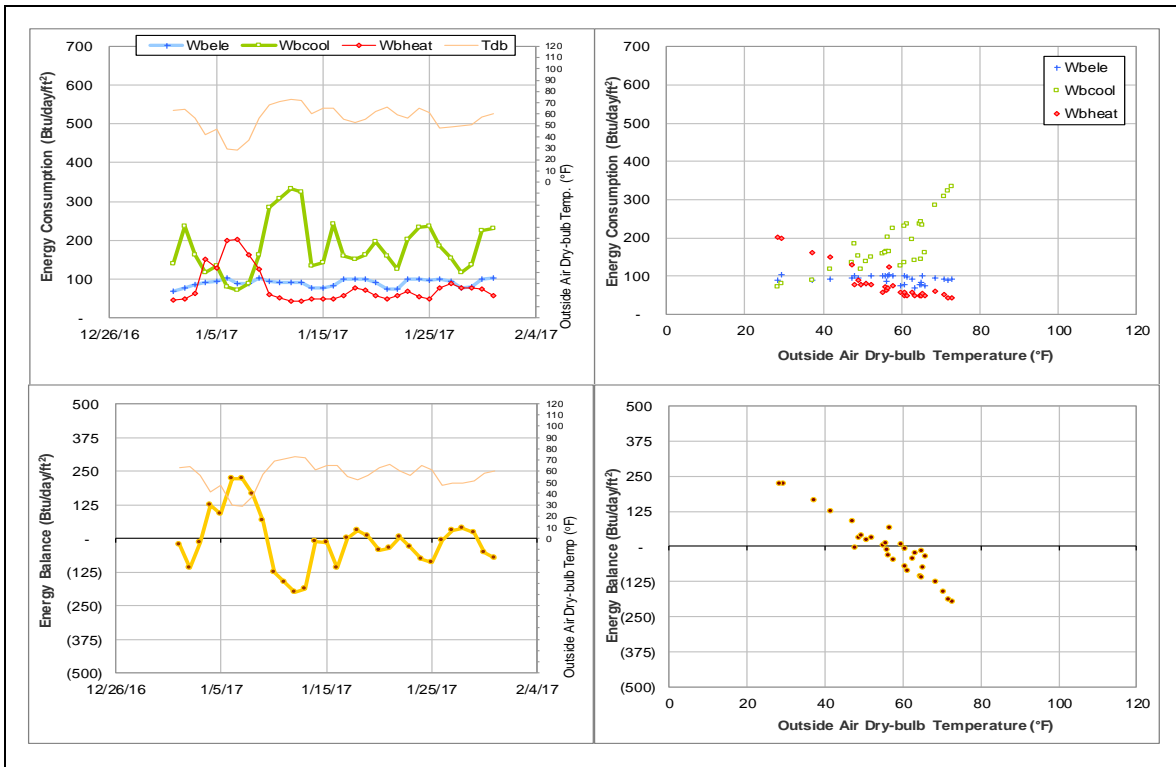
*Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during January 2017)*



*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	31	1/1/2017 – 1/31/2017	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

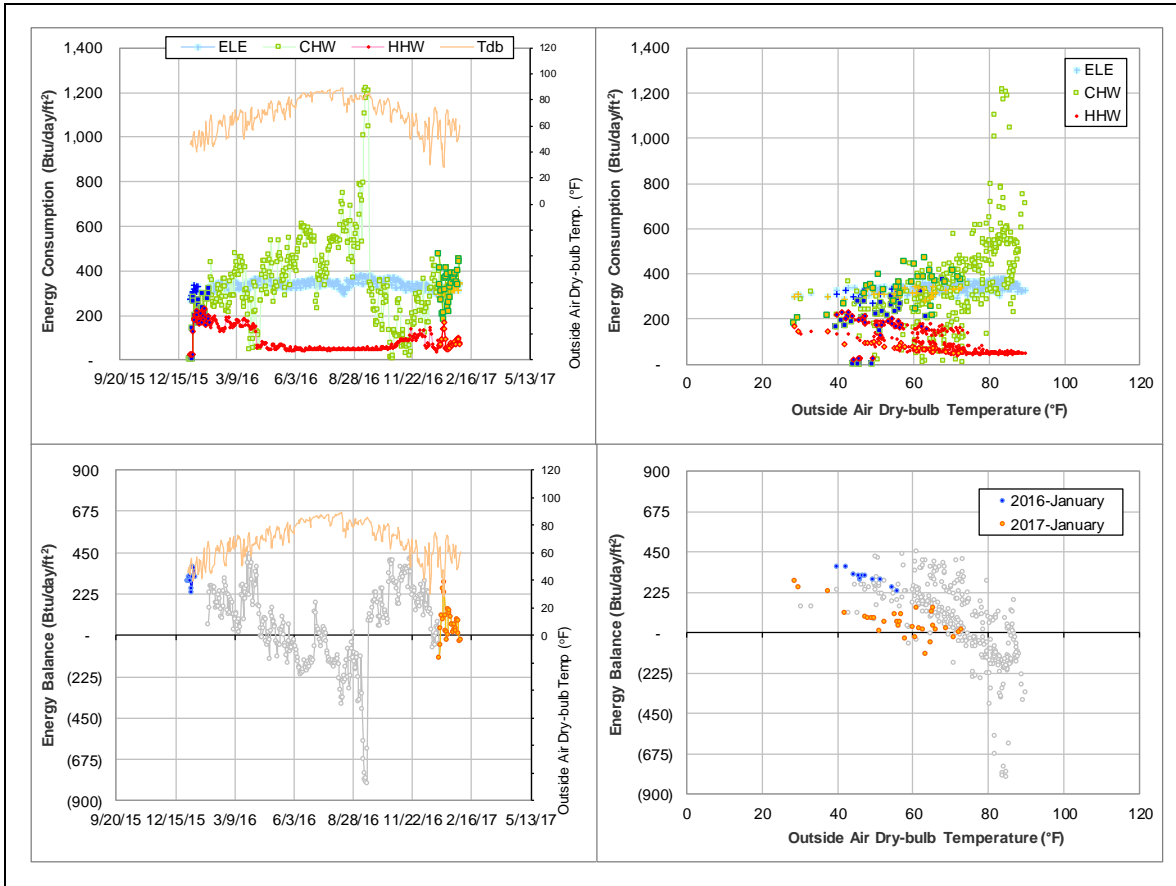
## Changes in sensor readings related to the detected issues

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

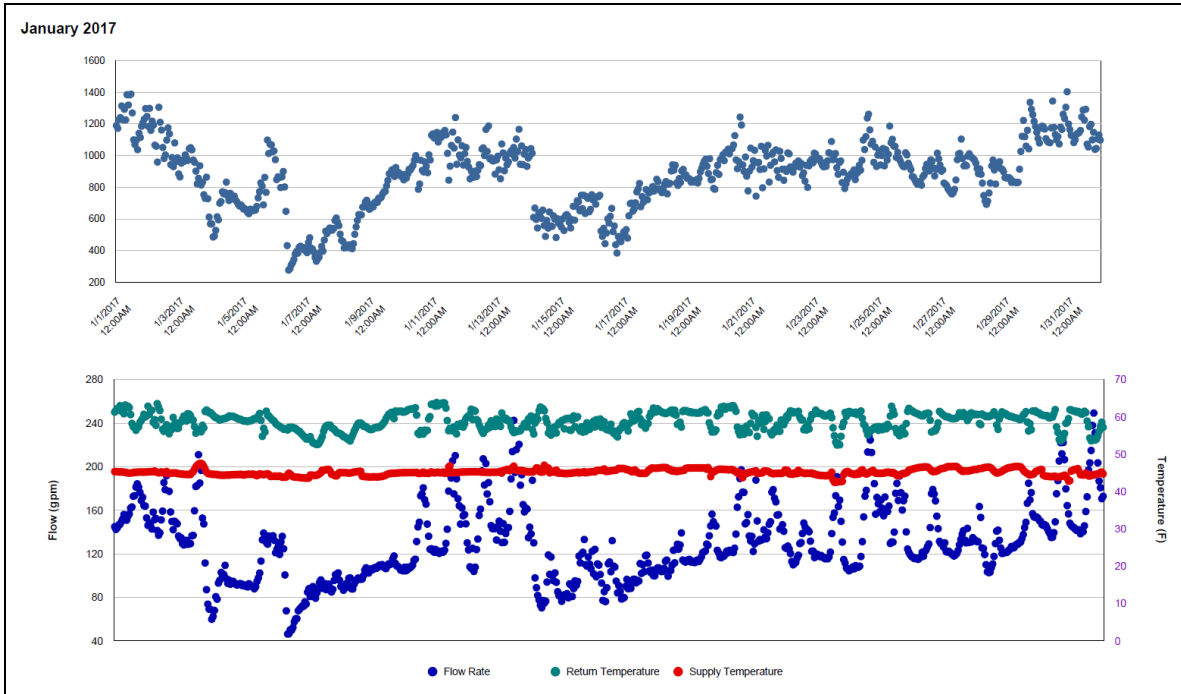
## Quantitative descriptions and comments

The CHW supply temp readings started to decrease on 8/6/2016 while all adjacent buildings have stable supply temp at circa 42°F. The supply temp had a period of obviously erroneous values of 20°F during 9/10 – 9/20/2016, and then increased to 45°F. The readings are still questionable and the whole month is estimated using a model.

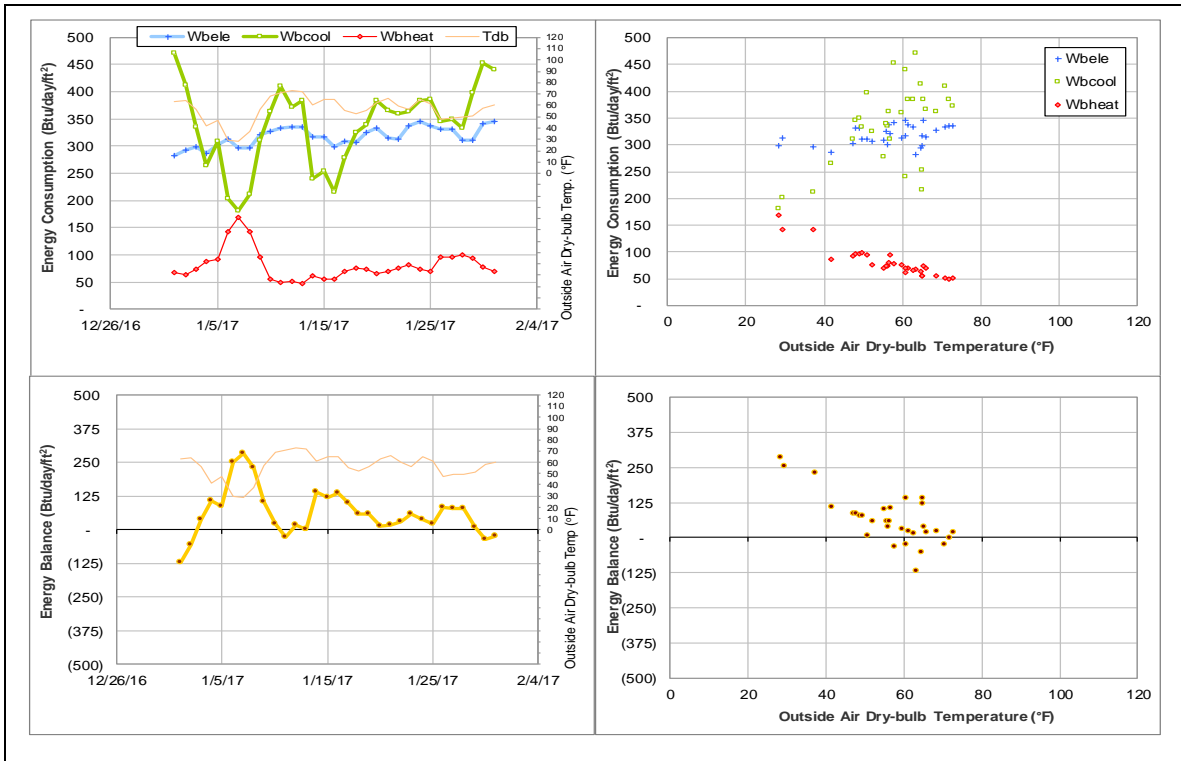
## Explanatory Figure: 13 months energy balance plot with original data.



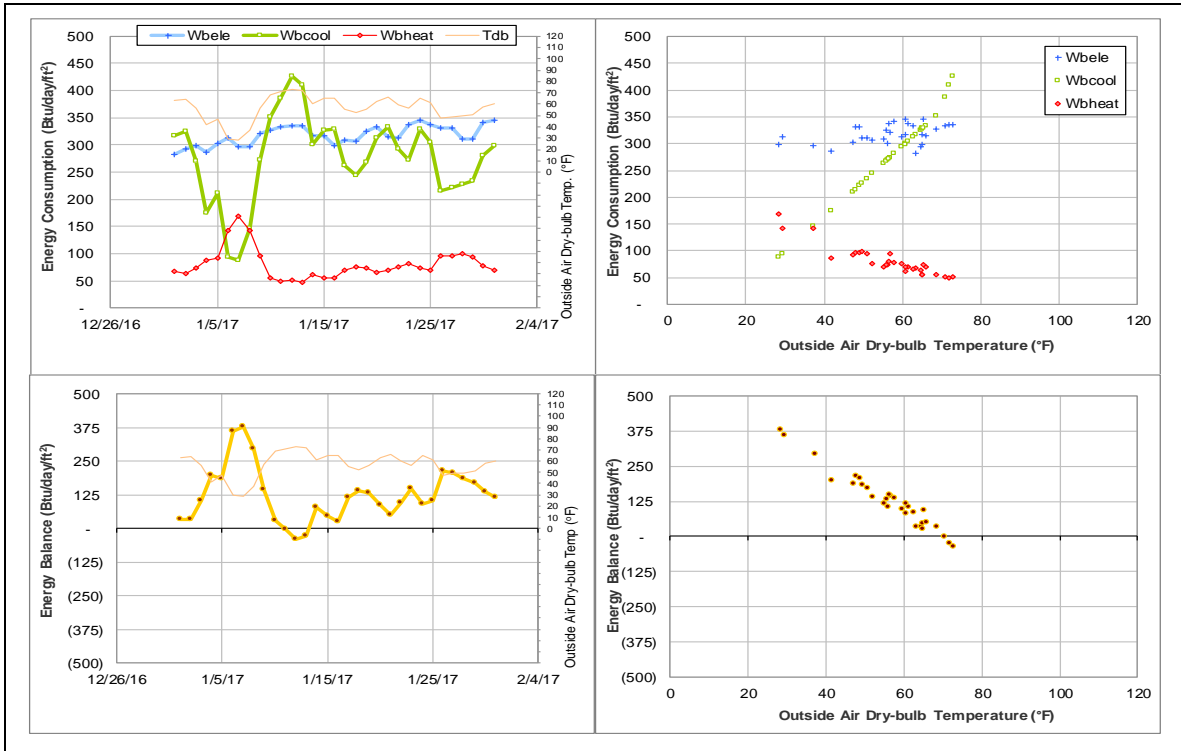
*Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during January 2017)*



*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
ELE	007559	1	1/28/2017	Other

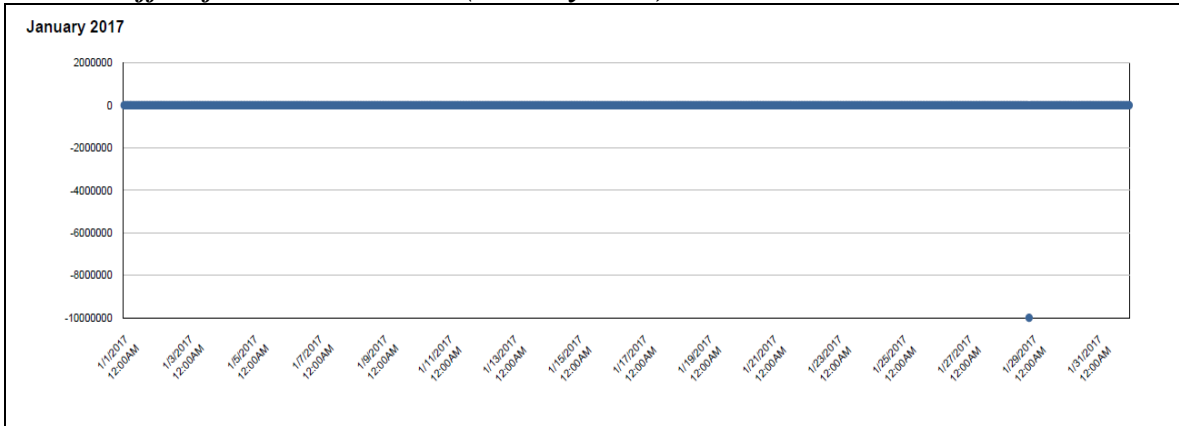
### *Detected issues in the energy balance and/or the consumption data*

Data Type	Description of data behaviors	Period
ELE	Large negative value for consumption.	1/28/2017

### *Quantitative descriptions and comments*

The counter on the electric meter #007559 appears to have rolled over the 9,999,999 mark causing the total kWh for the month to appear negative. The consumption for 1/28/2017 was estimated by adjusting for this meter roll over.

### *Explanatory Figure: Times series plot of hourly ELE energy consumption from utilities office for meter #007559. (January 2017)*





## Halbouty Geosciences Building (TAMU Bldg #490)

### *Estimated data*

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	006896	15	1/17/2017 – 1/31/2017	Model
HHW	006900	31	1/1/2017 – 1/31/2017	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.	1/17/2017 – 1/31/2017
HHW	The HHW consumption decreased to zero.	12/19/2016 – 1/31/2017

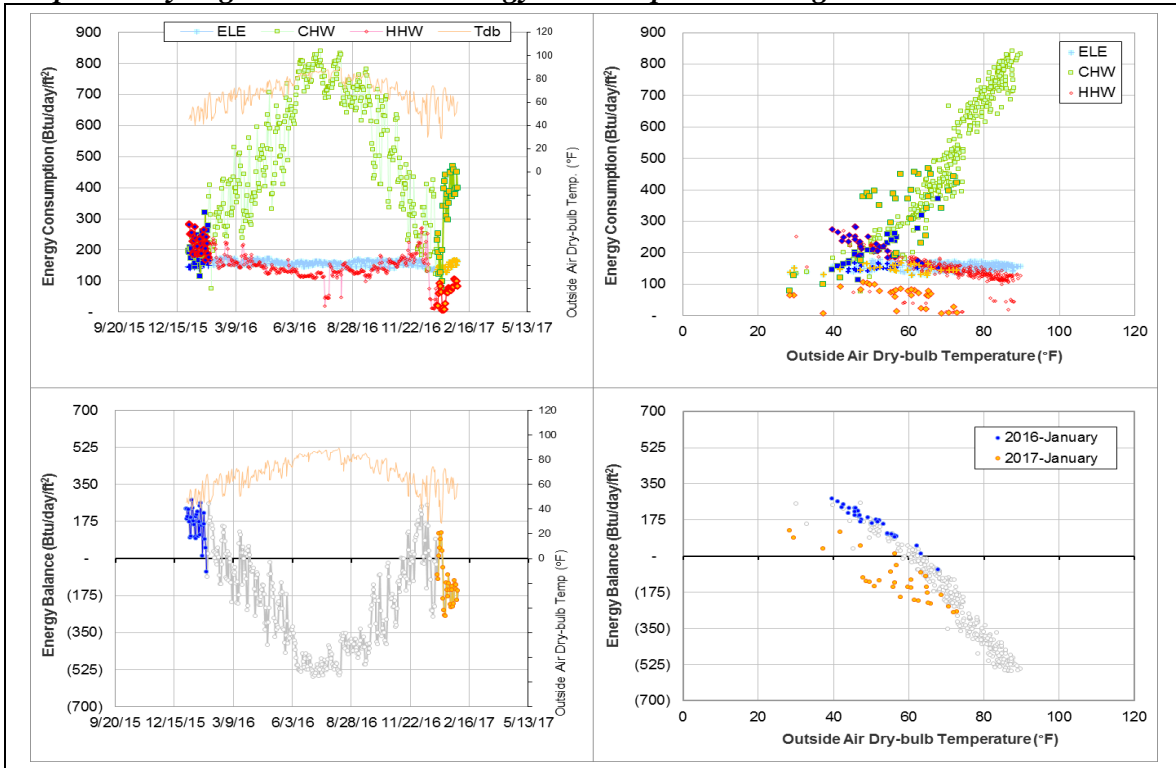
### *Changes in sensor readings related to the detected issues*

Energy Type	Meter ID	Period	Type	Description
CHW	006896	1/17/2017 – 1/31/2017	Flow rate	Increased
HHW	006900	12/19/2017 – 1/13/2017	Flow rate	Faulty, Constant value
		12/19/2017 – 1/31/2017	Supply and return temperature	Faulty, Constant value

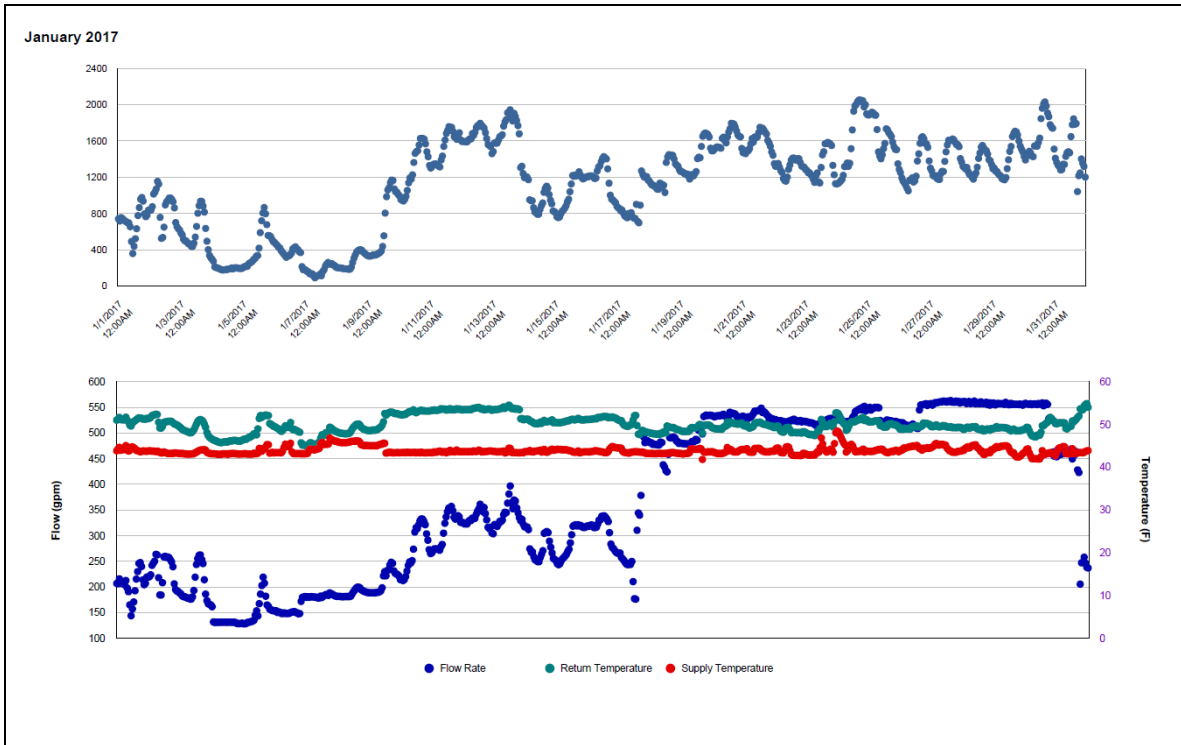
### *Quantitative descriptions and comments*

Starting 1/17/2017, for CHW MID 006896, the flow rate increased and remained high until the end of the month. The CHW was estimated by model for this period. Starting 12/19/2016, for HHW MID 006900, the consumption suddenly decreased and remained at zero caused by faulty flow rate and supply and return temperature with constant values. The HHW was estimated by model for this period.

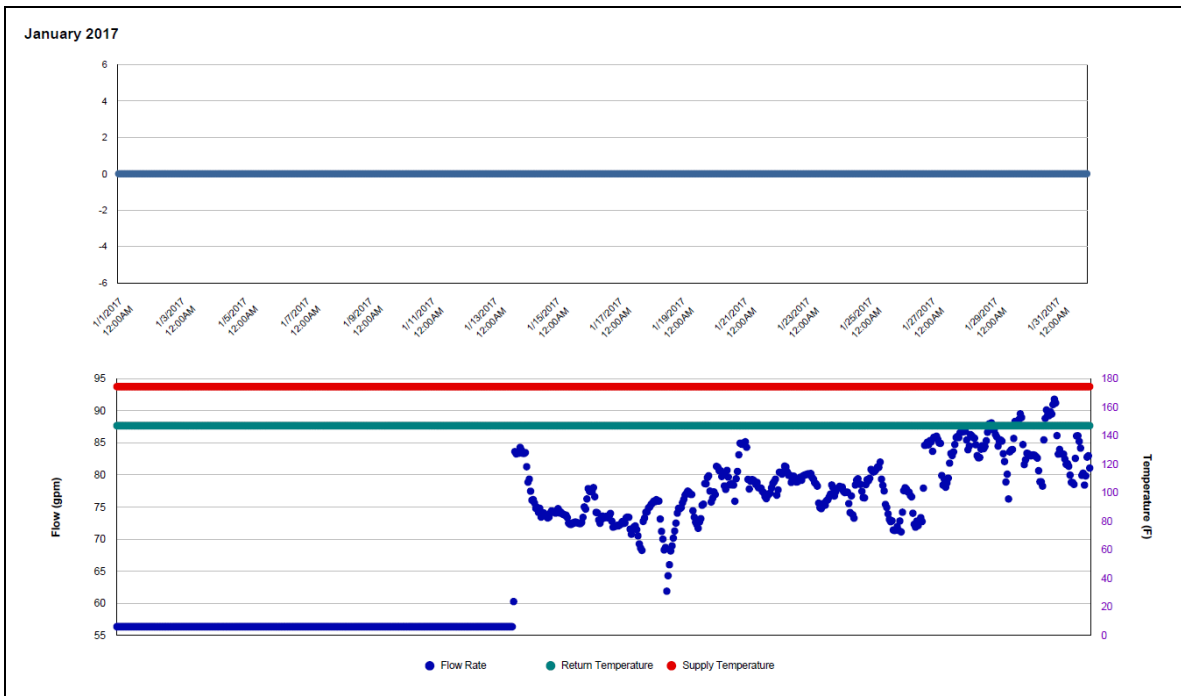
**Explanatory Figure: 13 months energy balance plot with original data.**



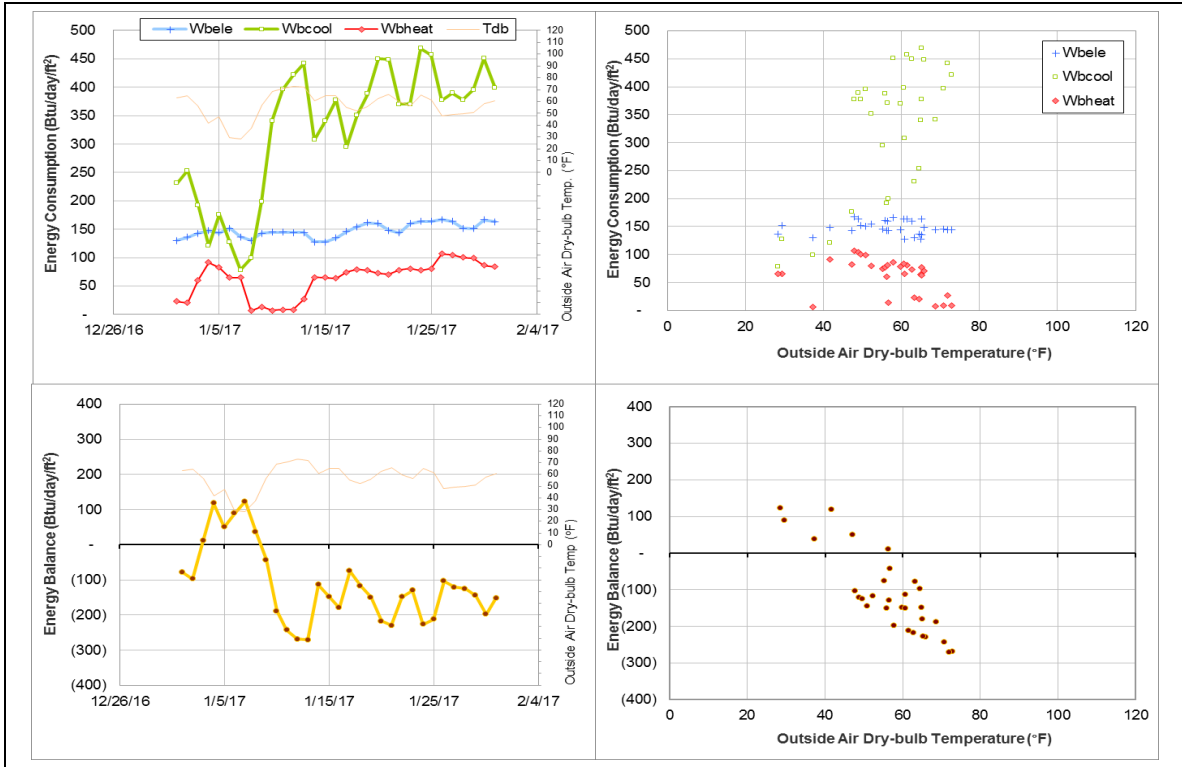
**Explanatory Figure: Time series plots of MID 006896 hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (January 2017)**



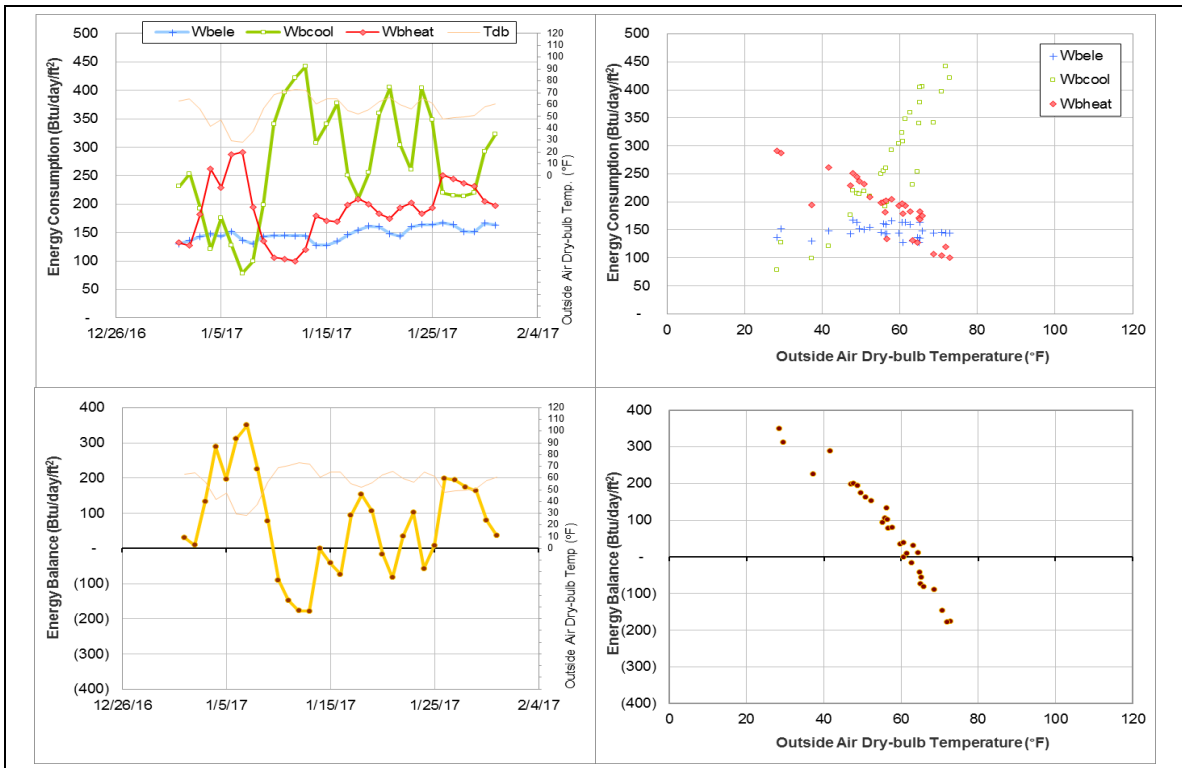
**Explanatory Figure: Time series plots of MID 006900 hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (January 2017)**



**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*



## Civil Engineering Building (TAMU Bldg #492)

### *Estimated data*

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	005950	31	1/1/2017 – 1/31/2017	Model
HHW	005954	31	1/1/2017 – 1/31/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The CHW consumption level decreased.	10/29/2016 – 1/31/2017
HHW	The HHW consumption decreased to zero.	10/29/2016 – 12/7/2016
	The HHW consumption level decreased	12/8/2016 – 1/31/2017

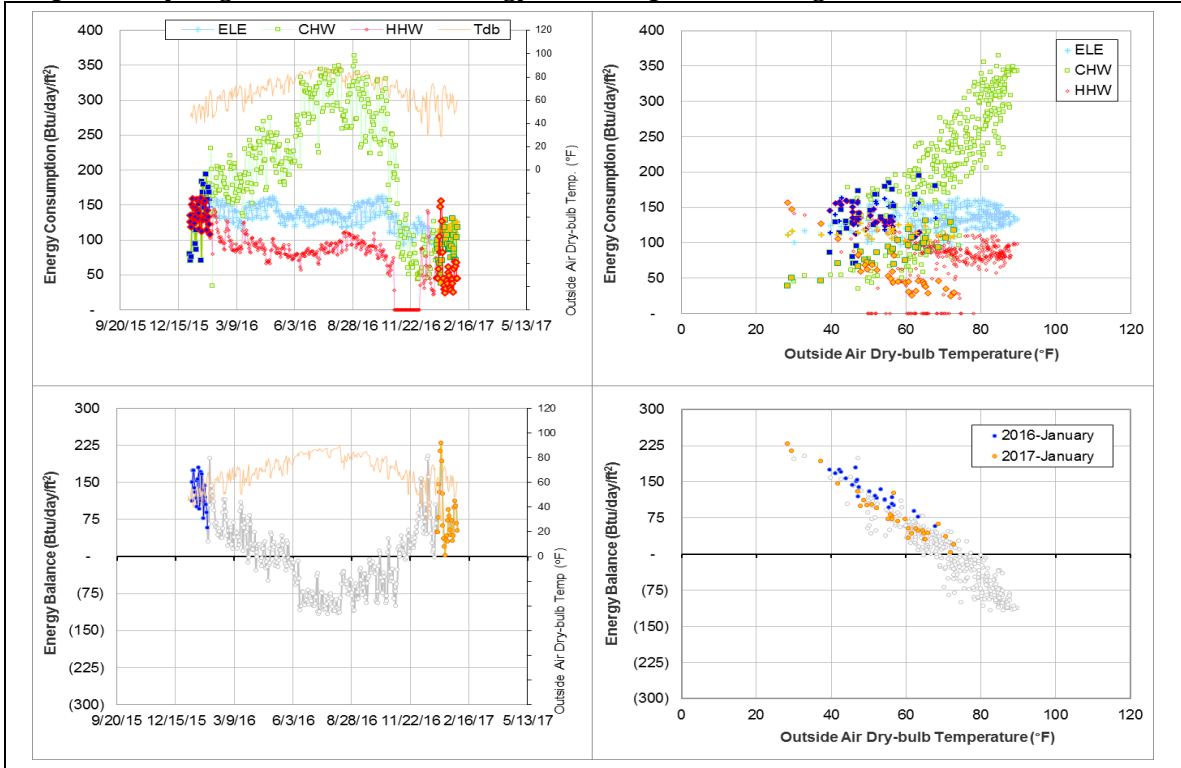
### *Changes in sensor readings related to the detected issues*

Energy Type	Meter ID	Period	Type	Description
CHW	005950	10/29/2016 – 1/31/2017	Flow rate	Decreased
			Return Temperature	Increased
HHW	005954	10/29/2016 – 12/7/2016	Flow rate	Sudden decrease to zero
			Delta-T	Sudden decrease, nearly zero

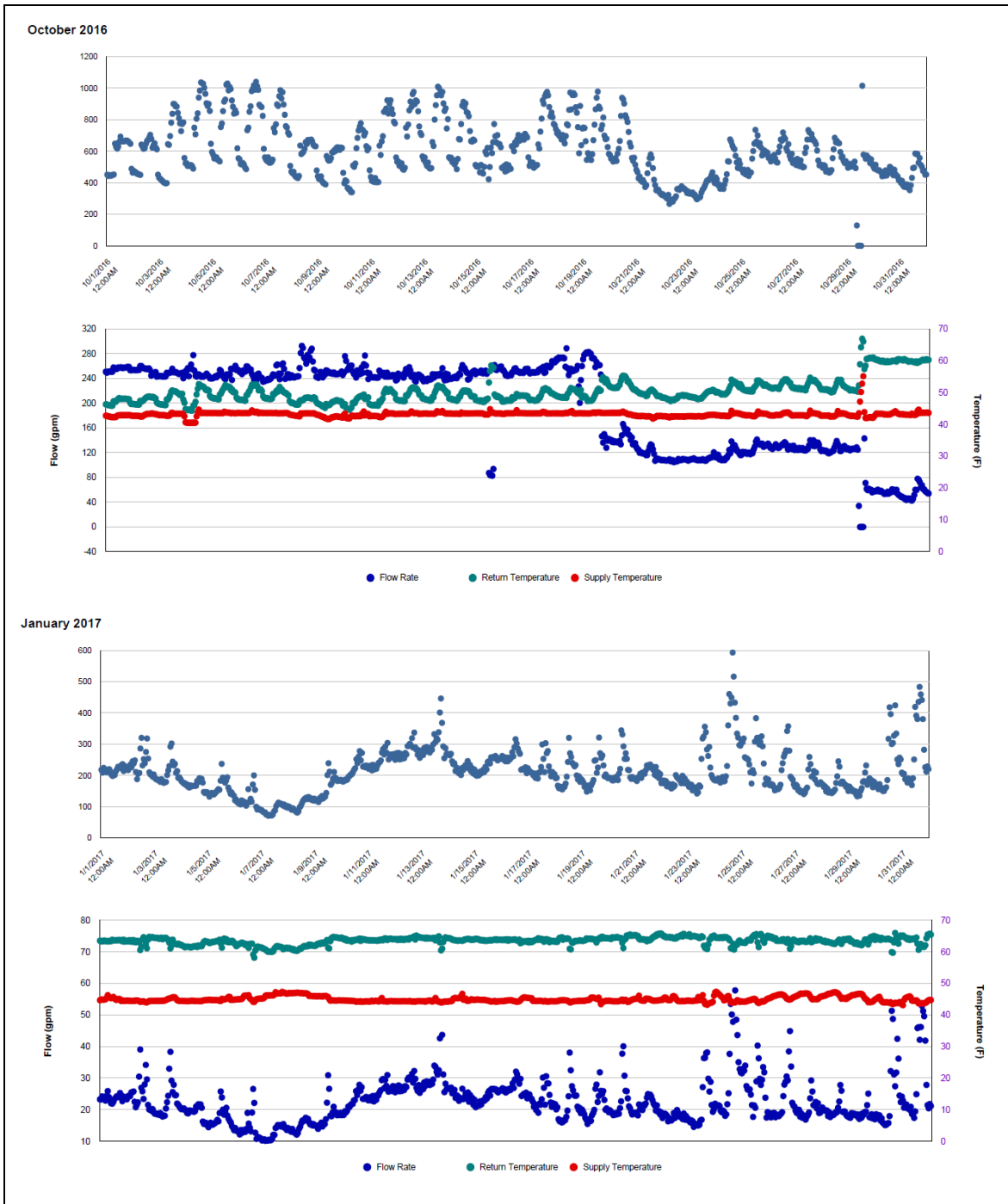
### *Quantitative descriptions and comments*

Starting 10/29/2016, the CHW flow rate decreased and the return temperature increased. The CHW was estimated by model for this period. Starting 10/29/2016, the HHW flow rate decreased to zero and both supply and return temperatures dropped to around 85°F then lower. Starting 12/7/2016, the flow and temperatures changed but still seem low. The HHW was estimated by model for this period.

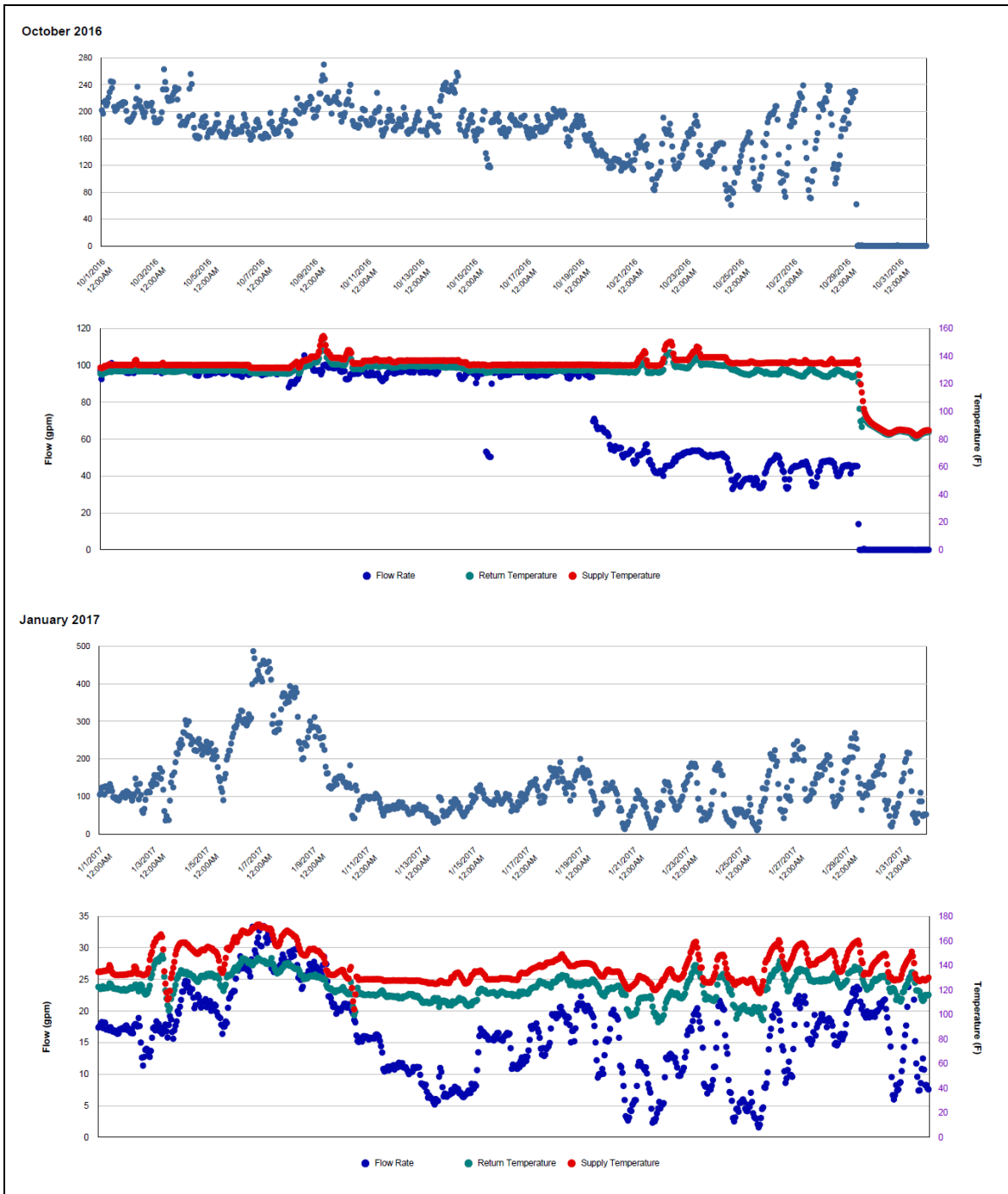
**Explanatory Figure: 13 months energy balance plot with original data.**



*Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (top: October 2016, bottom: January 2017)*

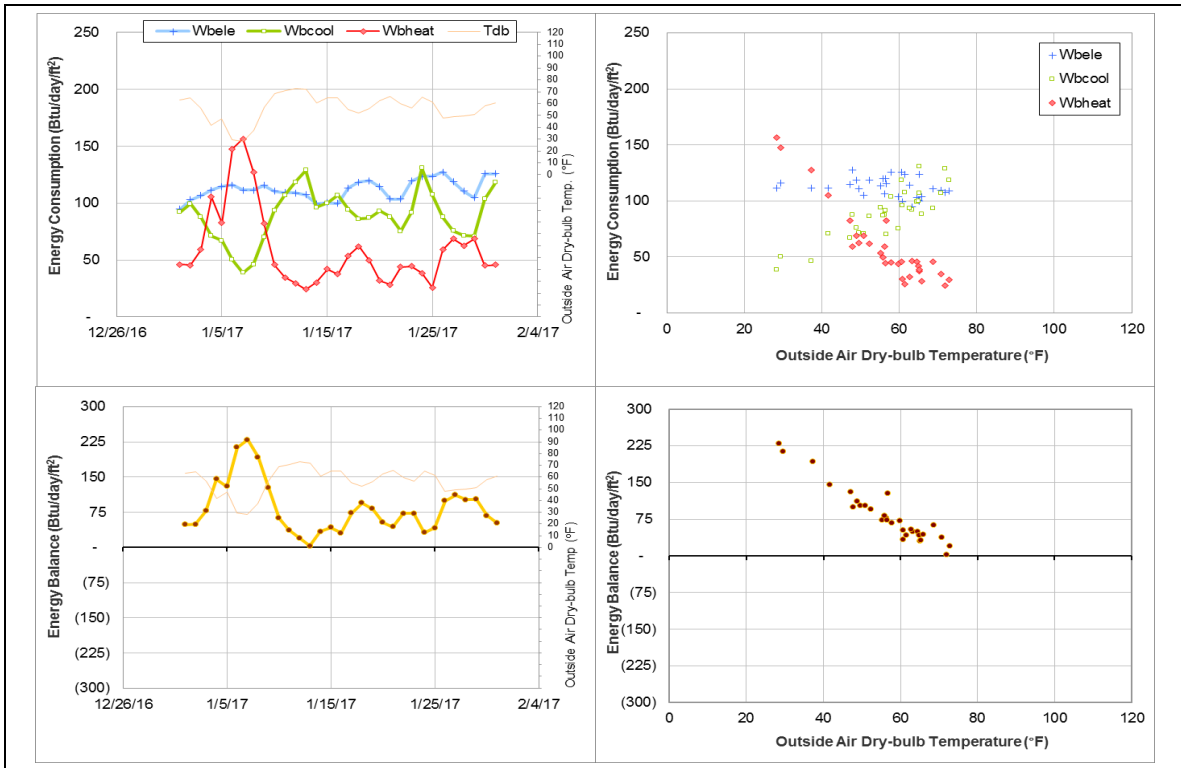


**Explanatory Figure: Time series plots of hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (top: October 2016, bottom: January 2017)**

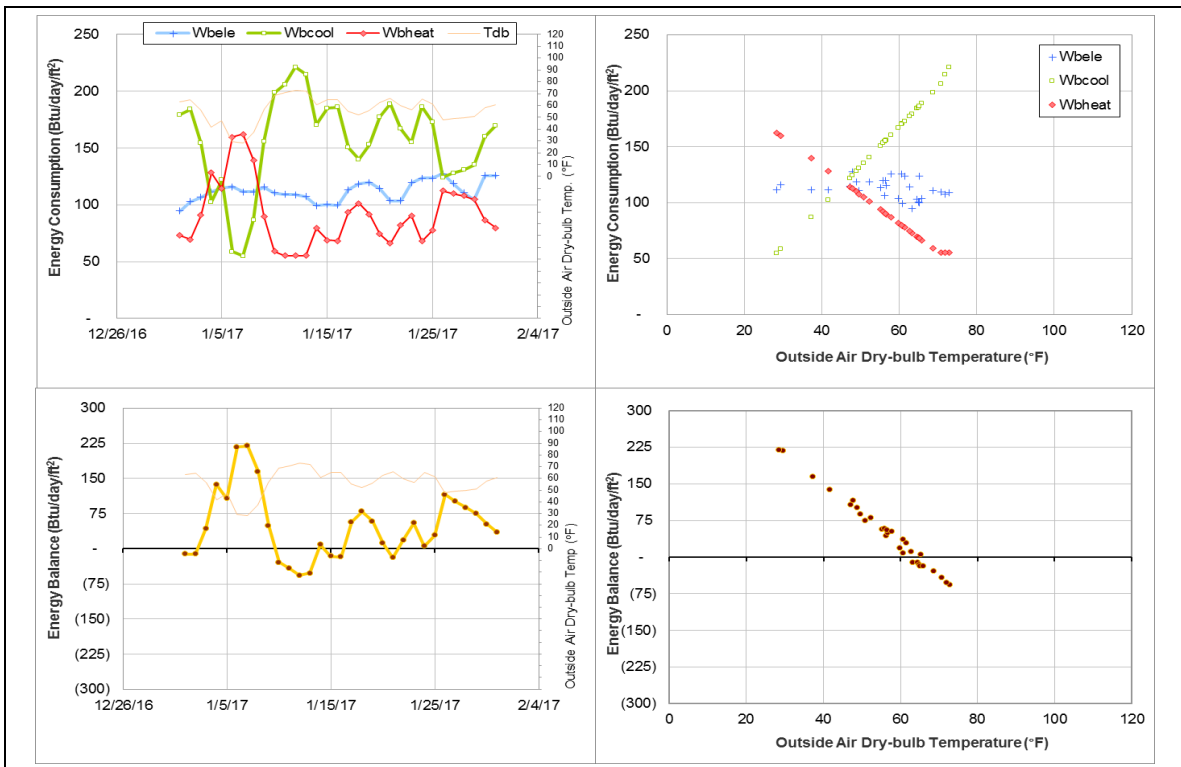




**Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.**



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



# Veterinary Teaching Hospital and Veterinary Medicine Administration (TAMU Bldg #508-1026)

## Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	004166	8	1/1/2017 – 1/8/2017	Model
HHW	004170	4	1/1/2017 – 1/4/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The consumption level decreased.	12/29/2016 – 1/8/2017
HHW	The consumption level decreased.	12/29/2016 – 1/4/2017

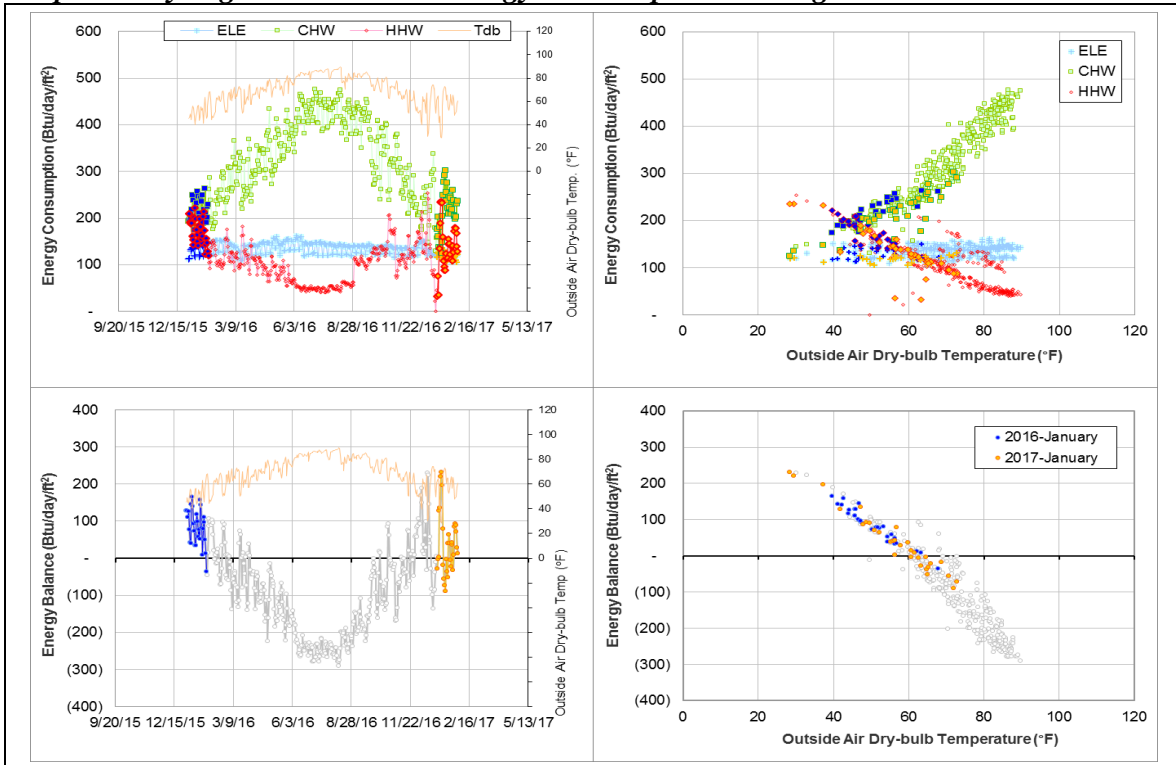
## Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	004166	12/29/2016 – 1/8/2017	Delta-T	Decreased
HHW	004170	12/29/2016 – 1/4/2017	Flow rate	Decreased, zero at times

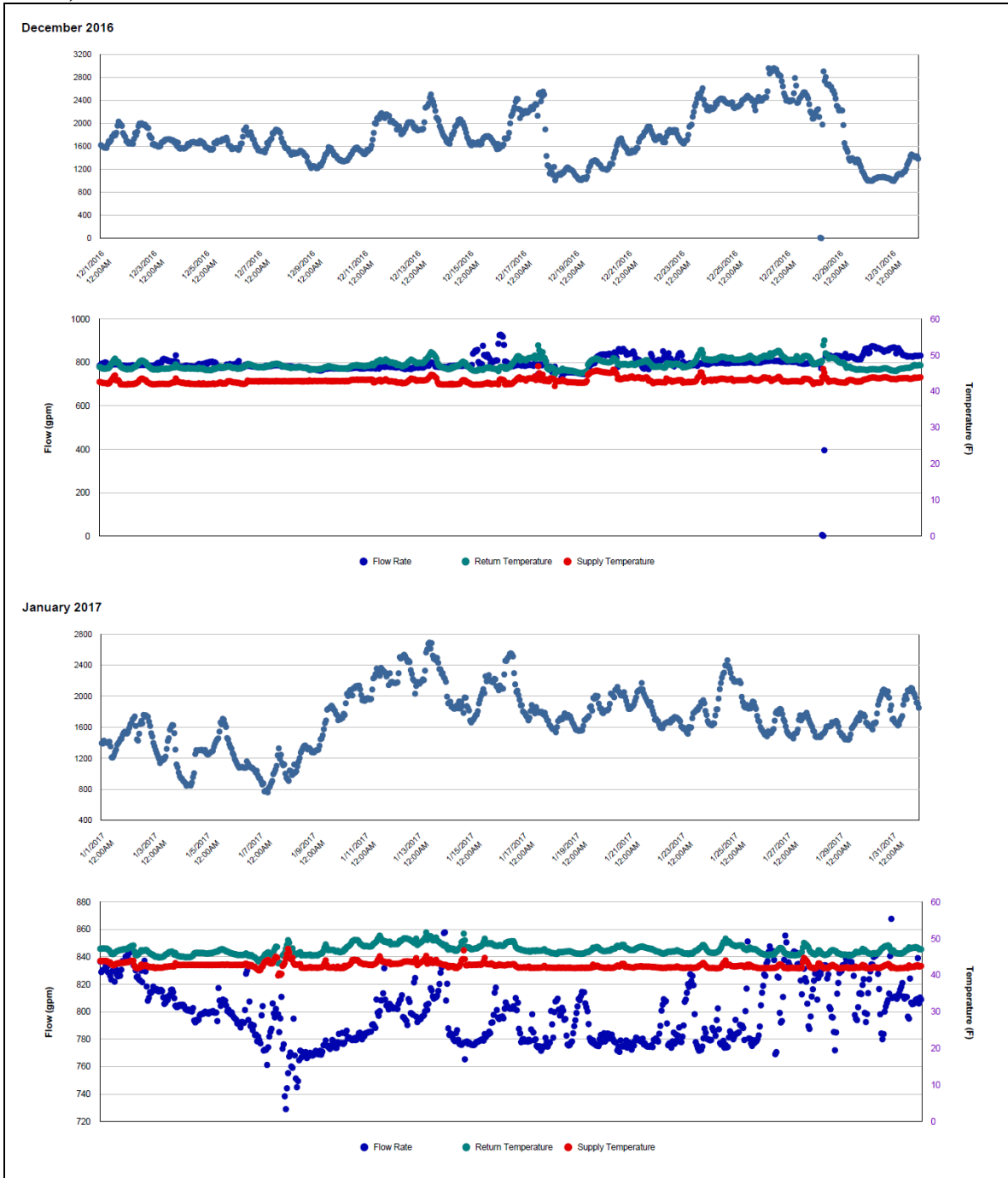
## Quantitative descriptions and comments

Starting 12/29/2016 both the CHW and HHW consumption decreased. The CHW delta-T decreased while the HHW flow rate decreased to zero for several hours each day. The consumption was estimated by model for these days.

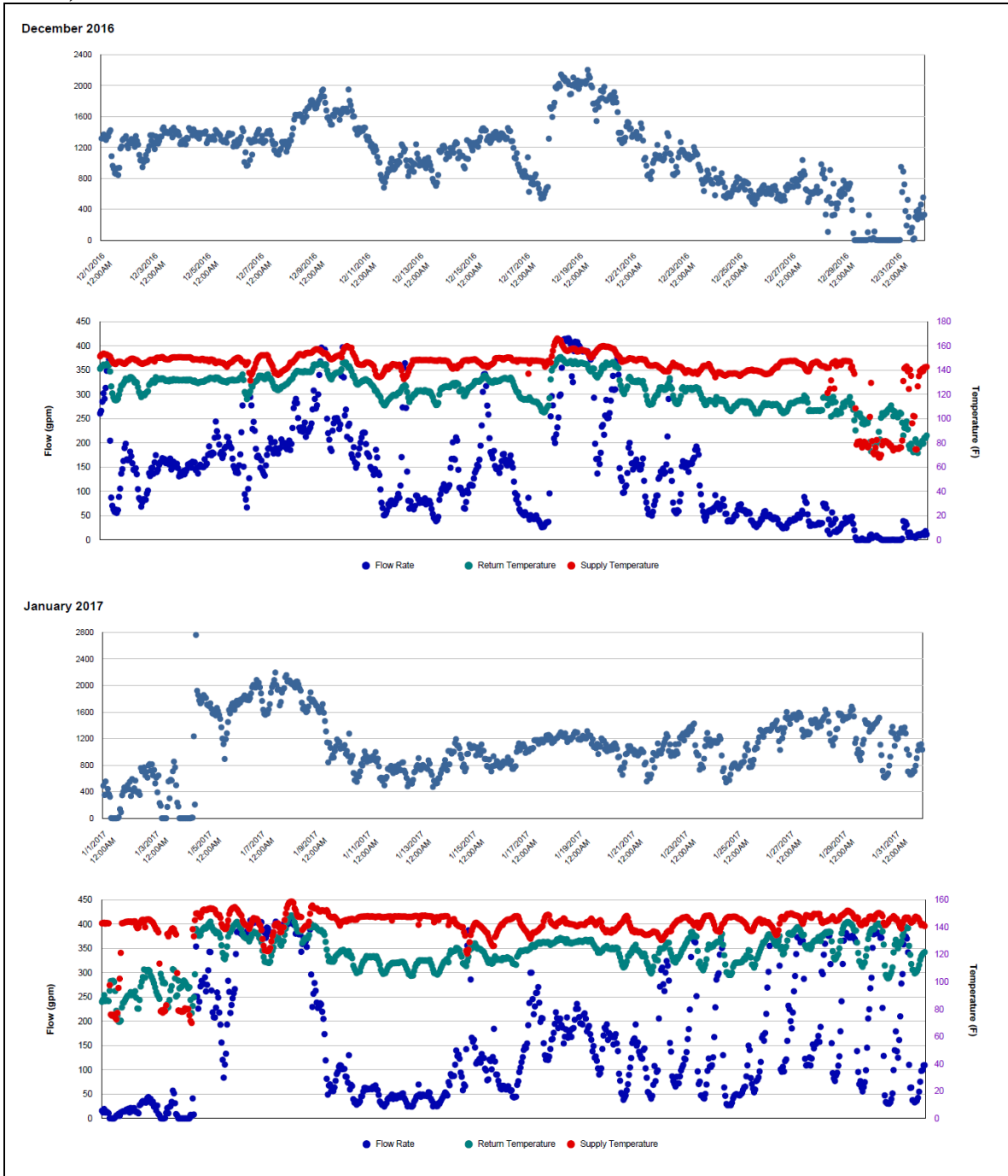
## Explanatory Figure: 13 months energy balance plot with original data.



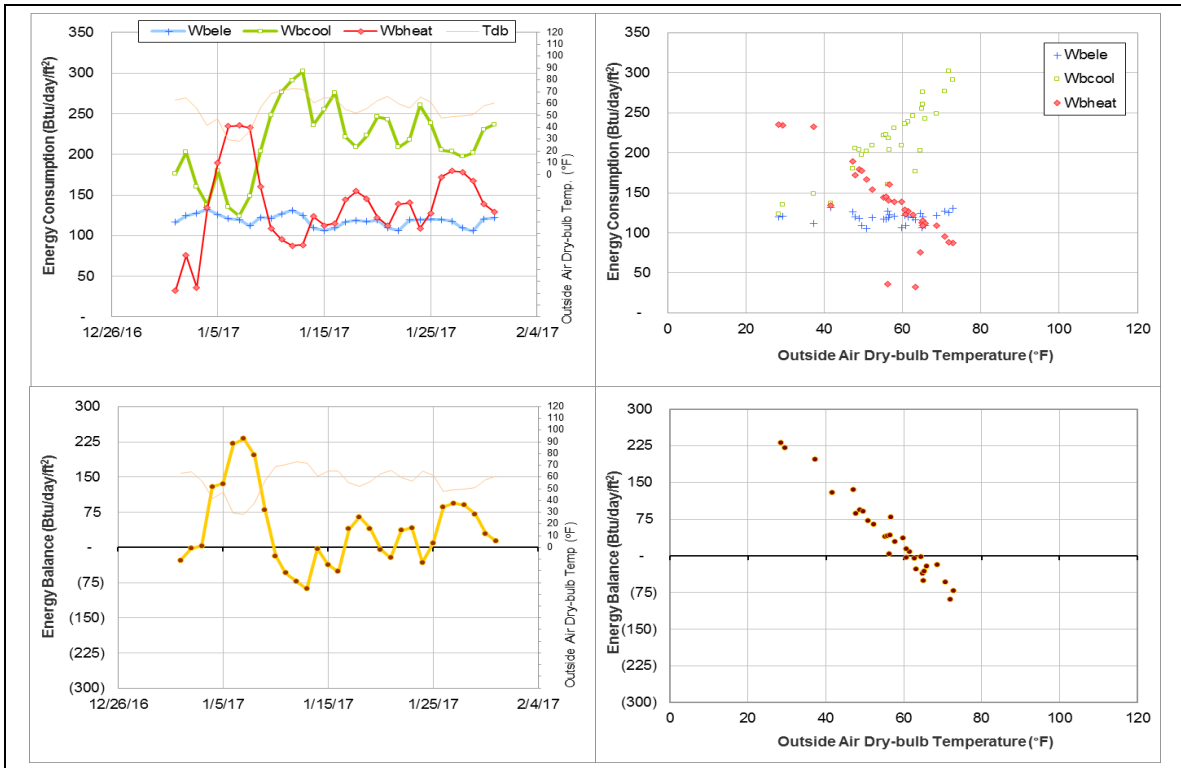
**Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (top: December 2016, bottom: January 2017)**



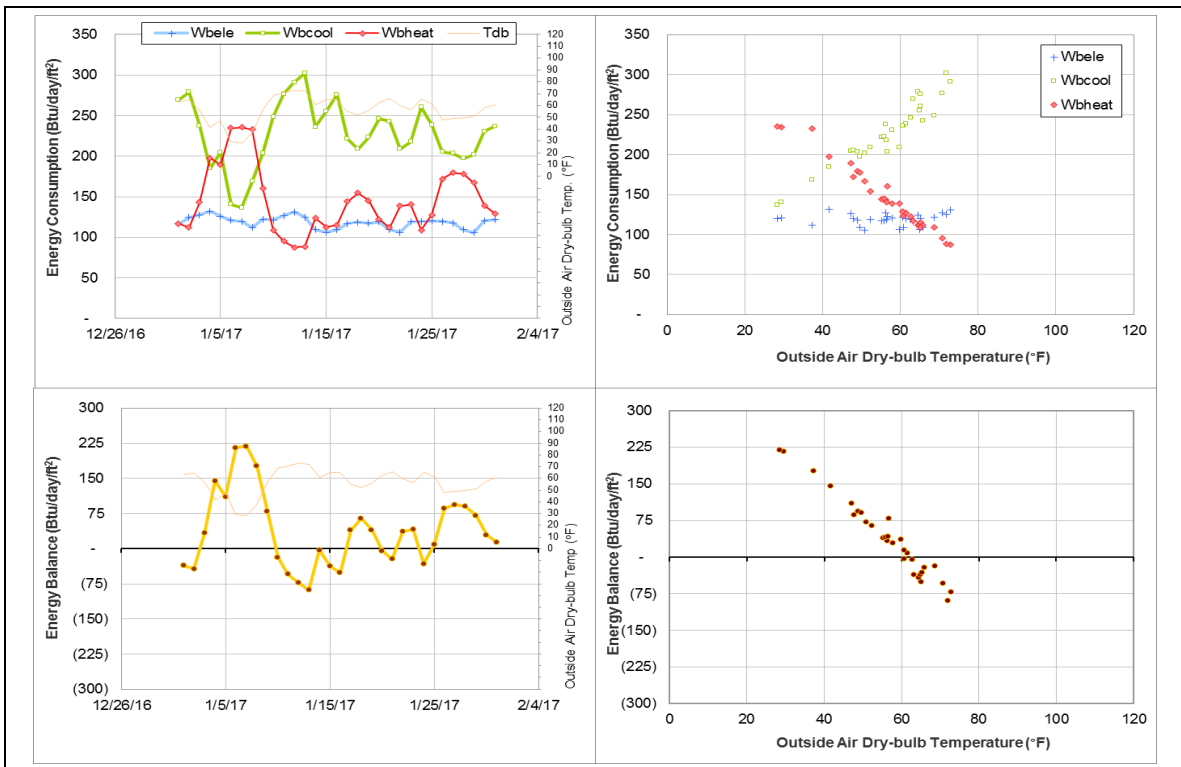
*Explanatory Figure: Time series plots of hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (top: December 2016, bottom: January 2017)*



**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	31	1/1/2017 – 1/31/2017	Model
HHW	005825	31	1/1/2017 – 1/31/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The consumption level increased.	6/14/2016 – Ongoing
HHW	The consumption level increased.	12/7/2016 – 1/31/2017
Energy Balance	The energy balance pattern dropped. And cross-point temperature was below 60°F.	6/14/2016 – Ongoing

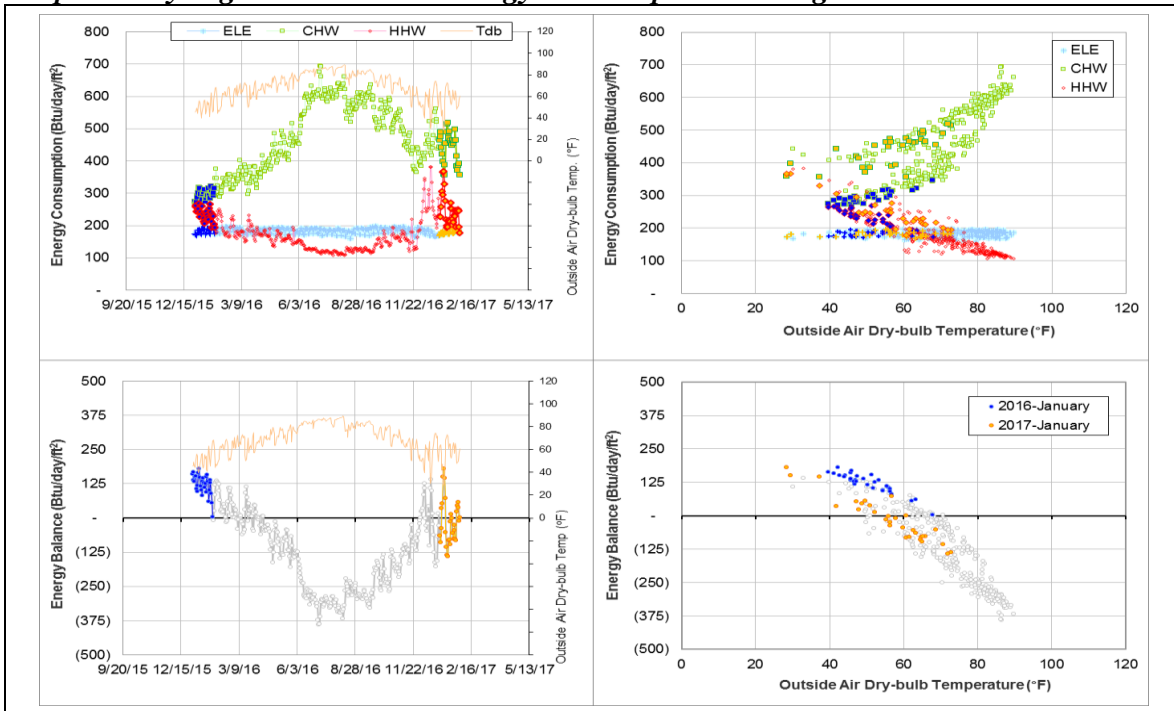
## Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	005821	6/14/2016 – Ongoing	Delta-T	Increased
HHW	005825	12/7/2016 – 1/31/2017	Delta-T	Increased

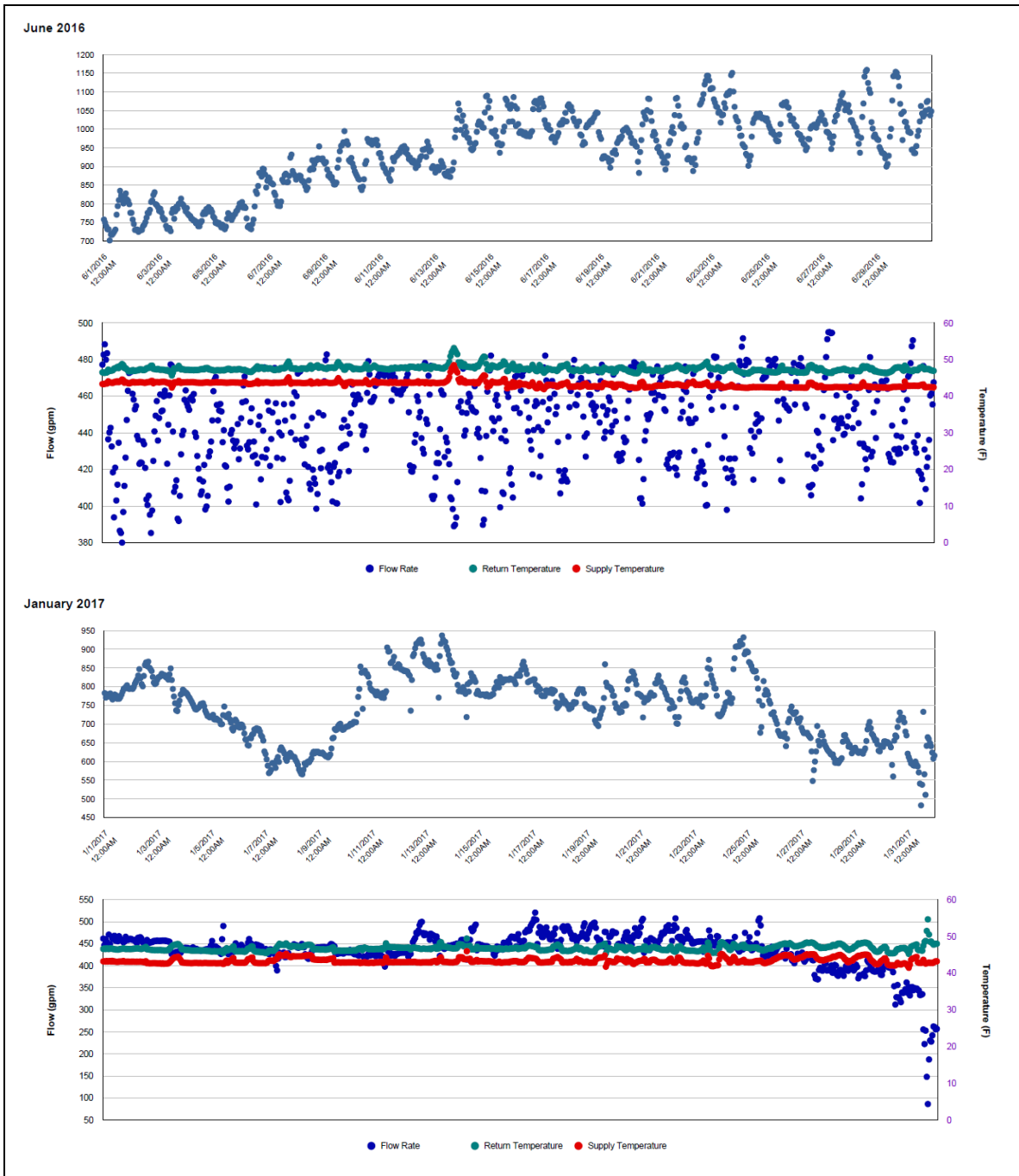
## Quantitative descriptions and comments

The CHW consumption increased by 100 Btu/day/ft<sup>2</sup> starting around 6/14/2016 and the pattern continues through December. Similarly, the HHW consumption increased starting 12/7/2016. These increased energy consumption patterns can be clearly seen sitting above the 13-month pattern in the energy balance plot below. This appears to be due to an increase in delta-T for CHW and HHW. Also, the pattern for the building's energy balance appears to have shifted downward, putting the change-point temperature below 60°F. Both CHW and HHW consumption were estimated by model for January.

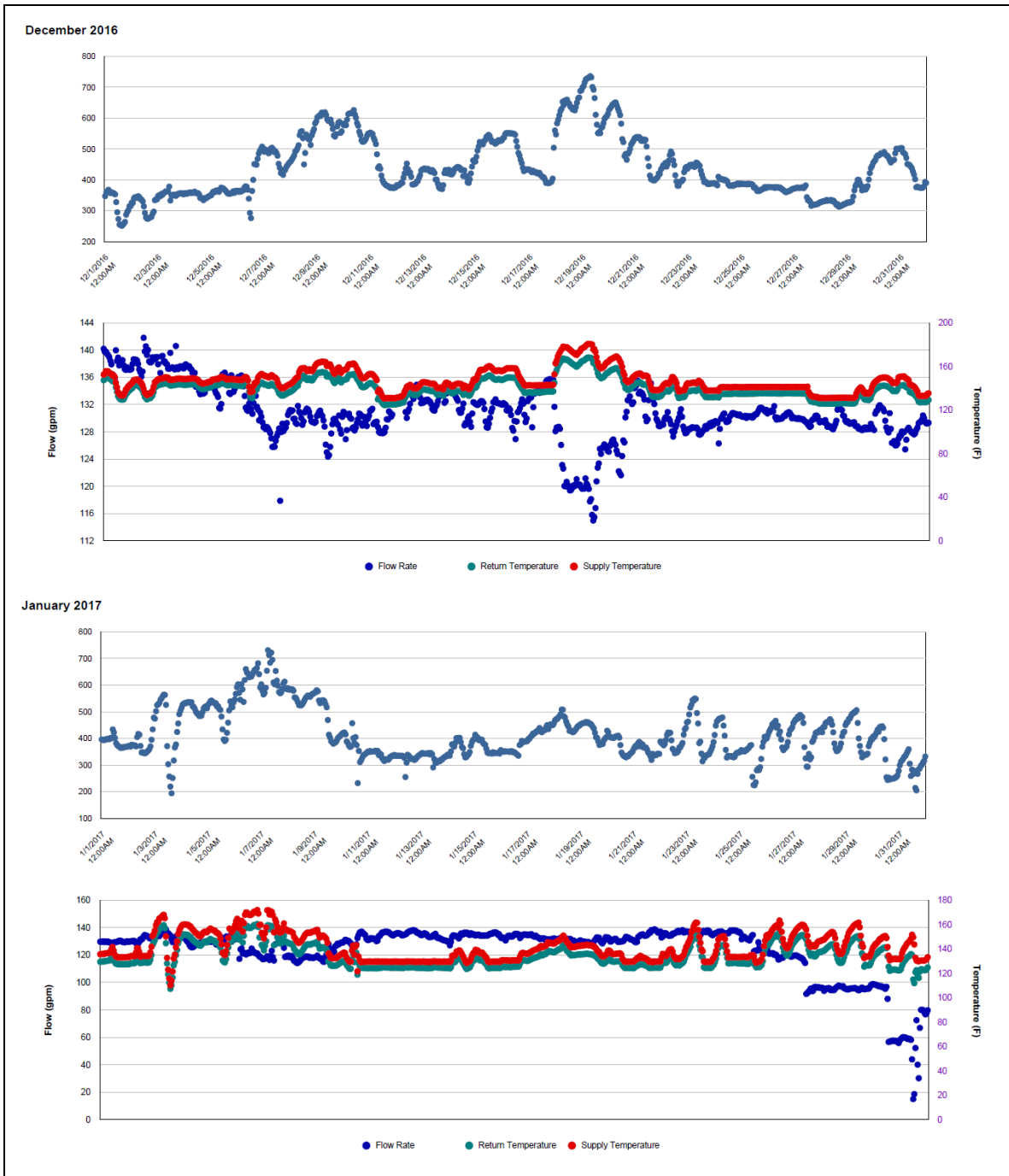
## Explanatory Figure: 13 months energy balance plot with original data.



*Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (top: June 2016, bottom: January 2017)  
Note the gradual increase in delta-T started in June 2016.*

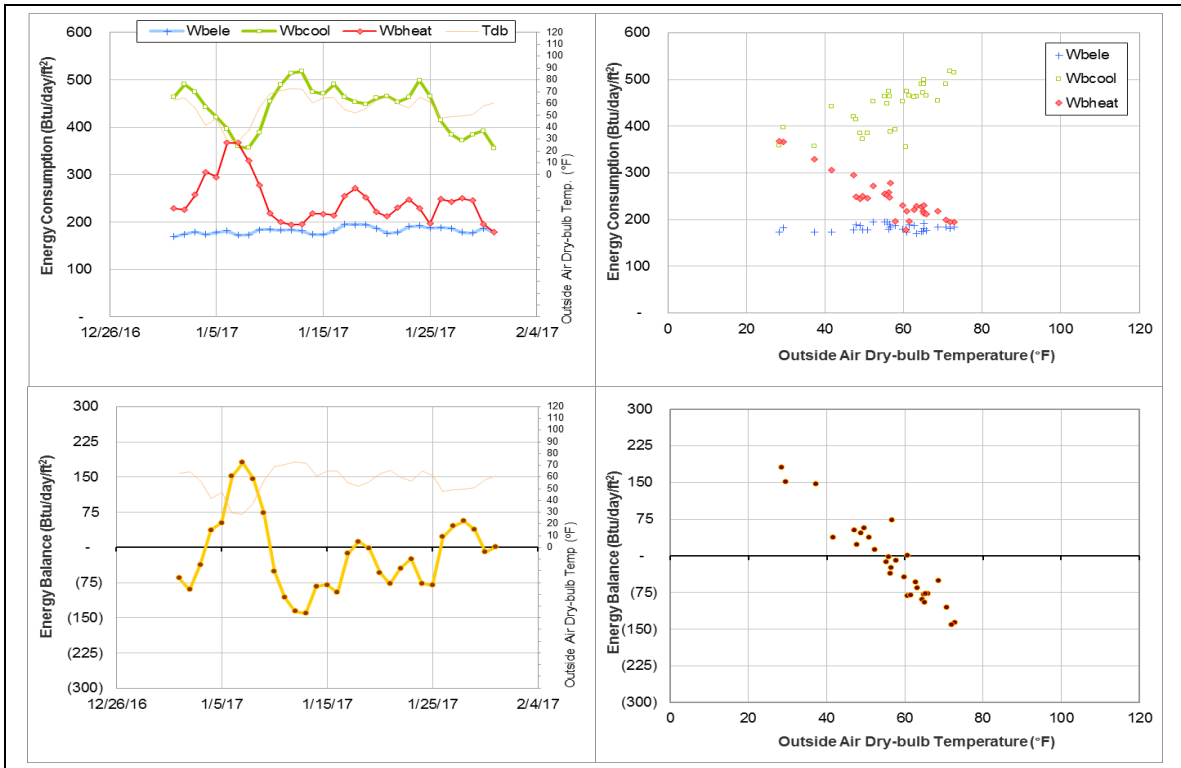


**Explanatory Figure: Time series plots of hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (top: December 2016, bottom: January 2017)**

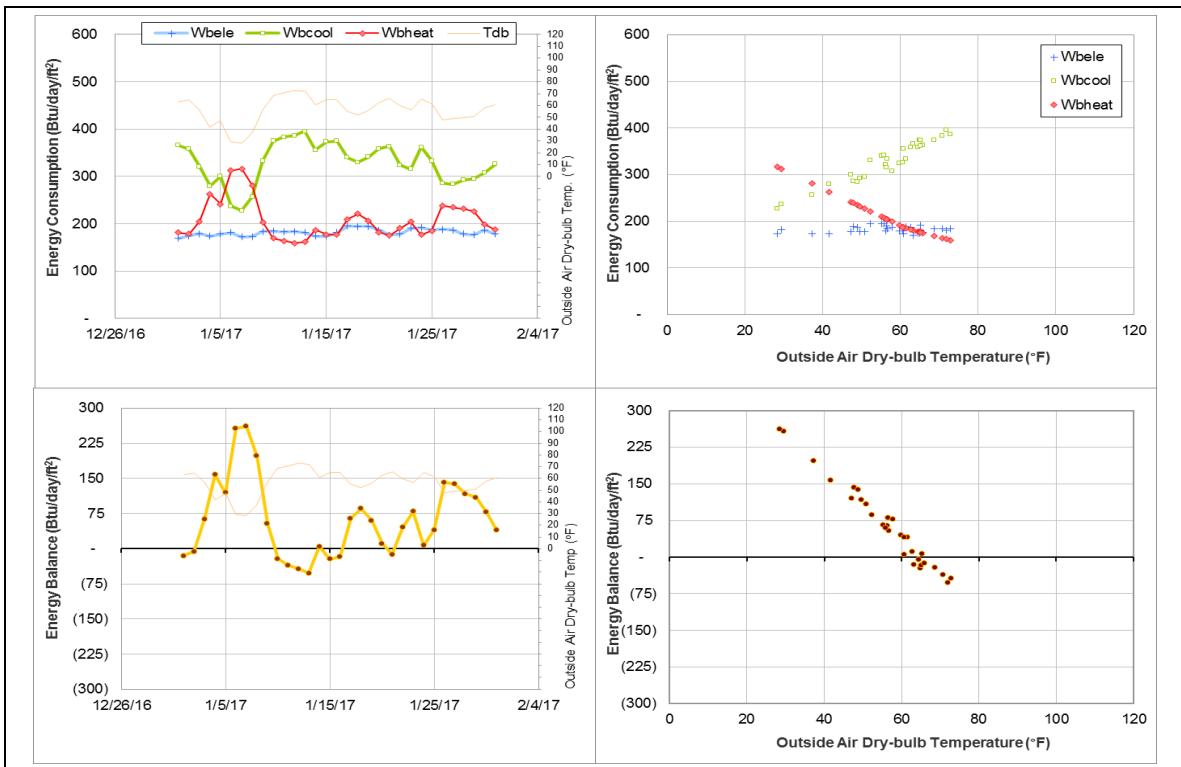




**Energy balance plot using the original data for the month of analysis. Missing data have been filled in, if any.**



**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	20	1/12/2017 – 1/31/2017	Model
HHW	004293	31	1/1/2017 – 1/31/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	The CHW consumption increased.	1/12/2017 – 1/31/2017
HHW	The HHW consumption increased.	12/4/2016 – 12/6/2016 12/19/2016 – 1/31/2017

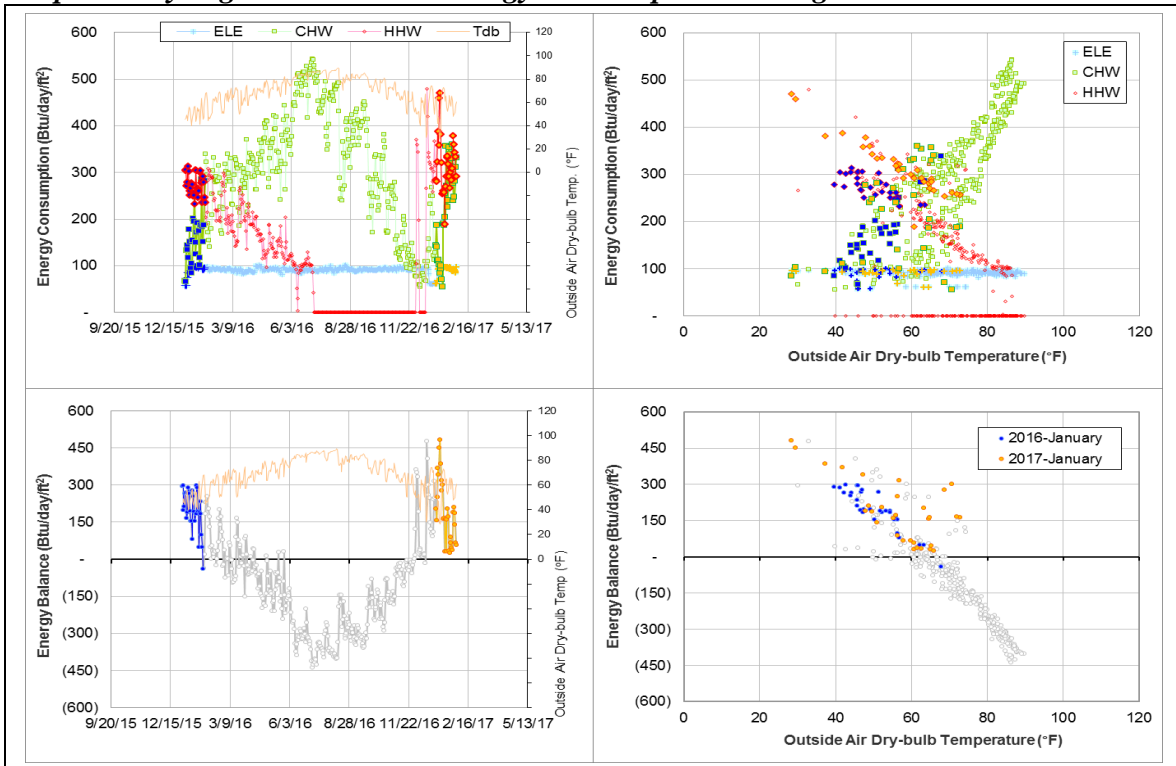
## Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	004288	1/12/2017 – 1/31/2017	Delta-T	Sudden increase
HHW	004293	12/4/2016 – 12/6/2016 12/19/2016 – 1/31/2017	Flow rate	Increased

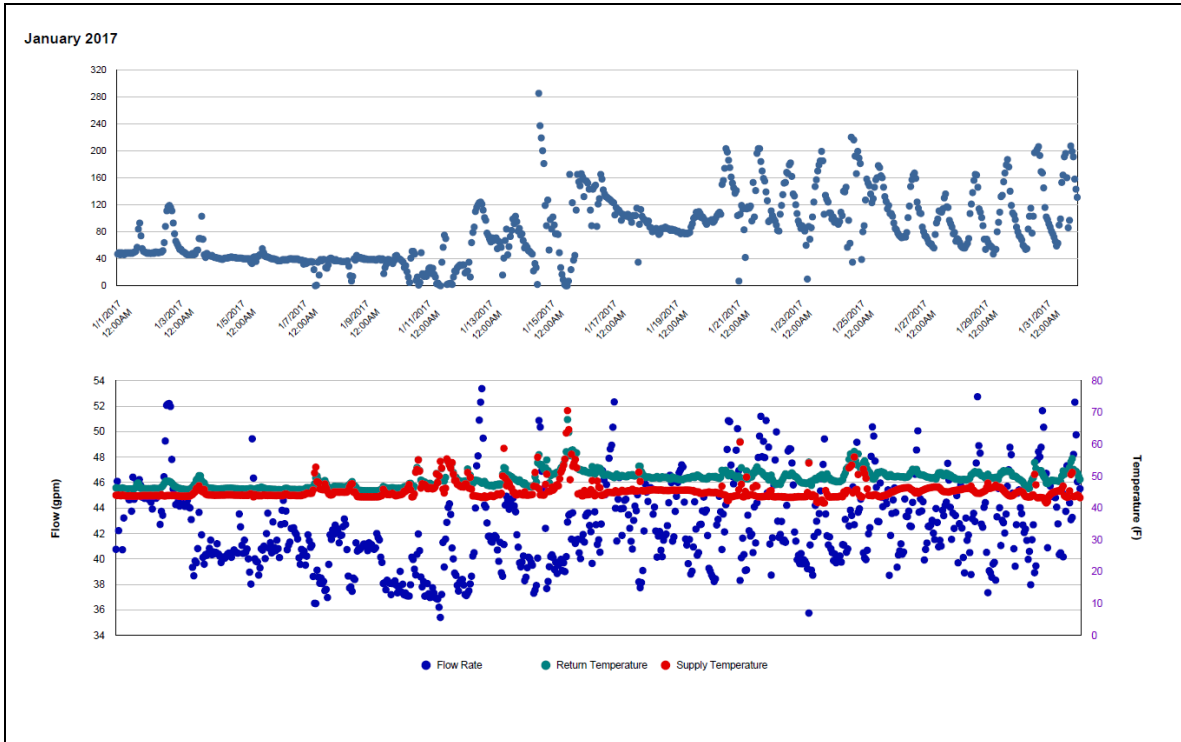
## Quantitative descriptions and comments

Starting around 1/12/2017, the CHW delta-T increased. The CHW was estimated by model for this period. From 12/4/2016 – 12/6/2016 and 12/19/2016 – 1/31/2017, the HHW consumption level is higher than the previous trend. The HHW was estimated by model for this period.

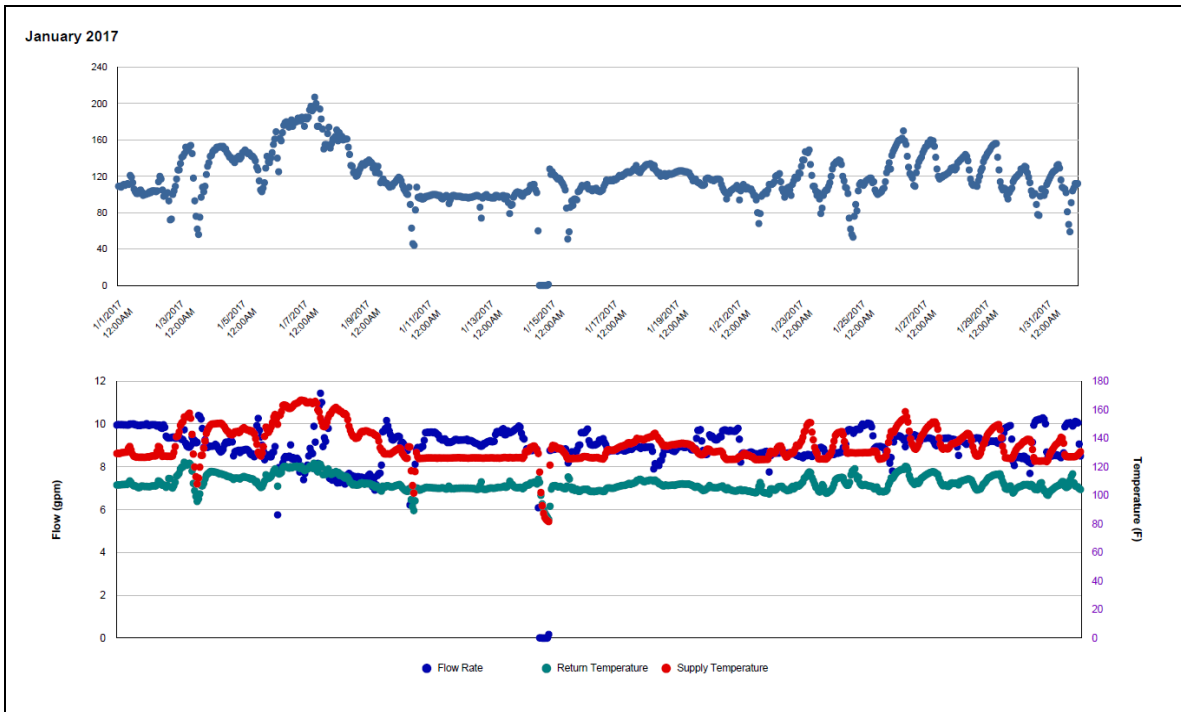
## Explanatory Figure: 13 months energy balance plot with original data.



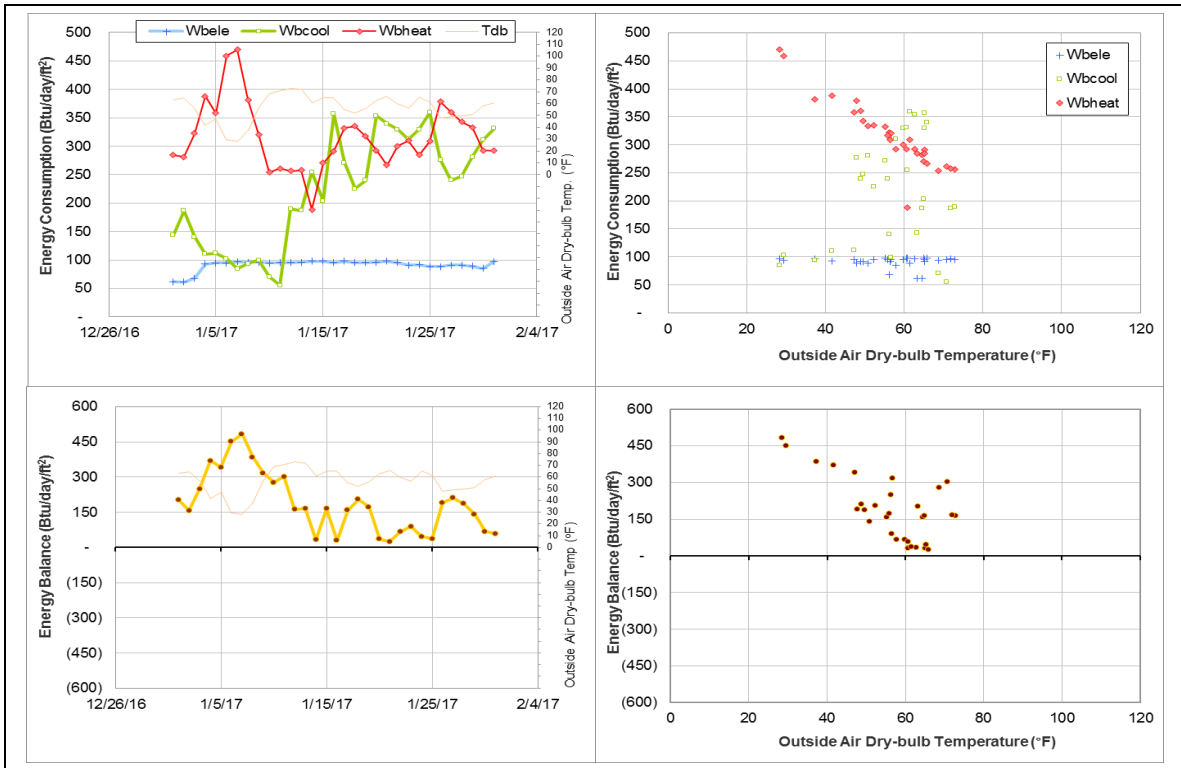
*Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (January 2017)*



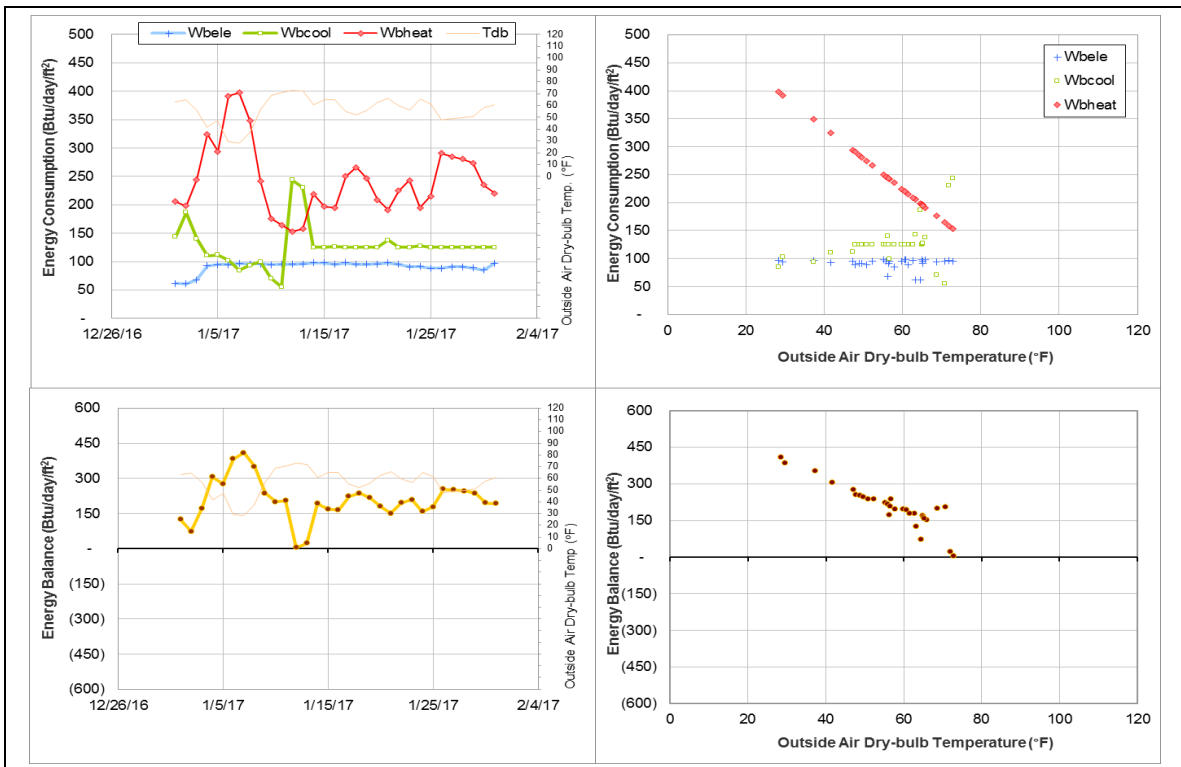
*Explanatory Figure: Time series plots of hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (January 2017)*



**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
HHW	005968	31	1/1/2017 – 1/31/2017	Model

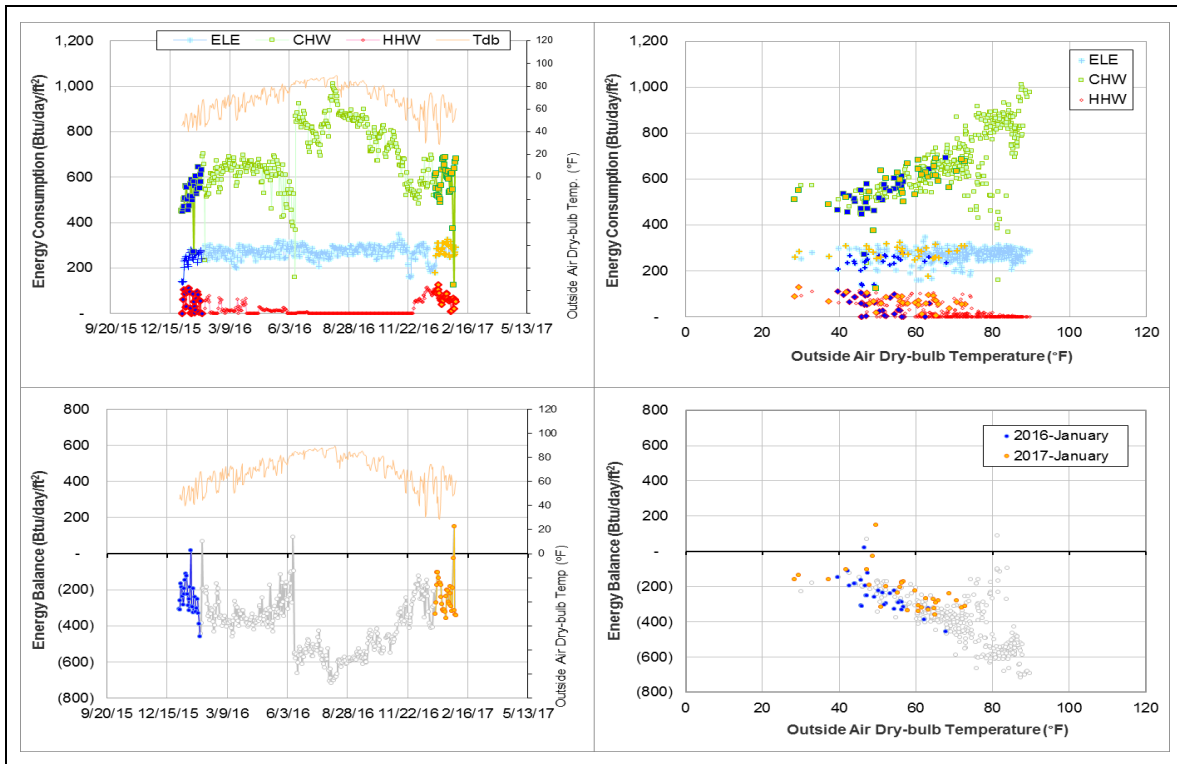
## Detected issues in the energy balance and/or the consumption data

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

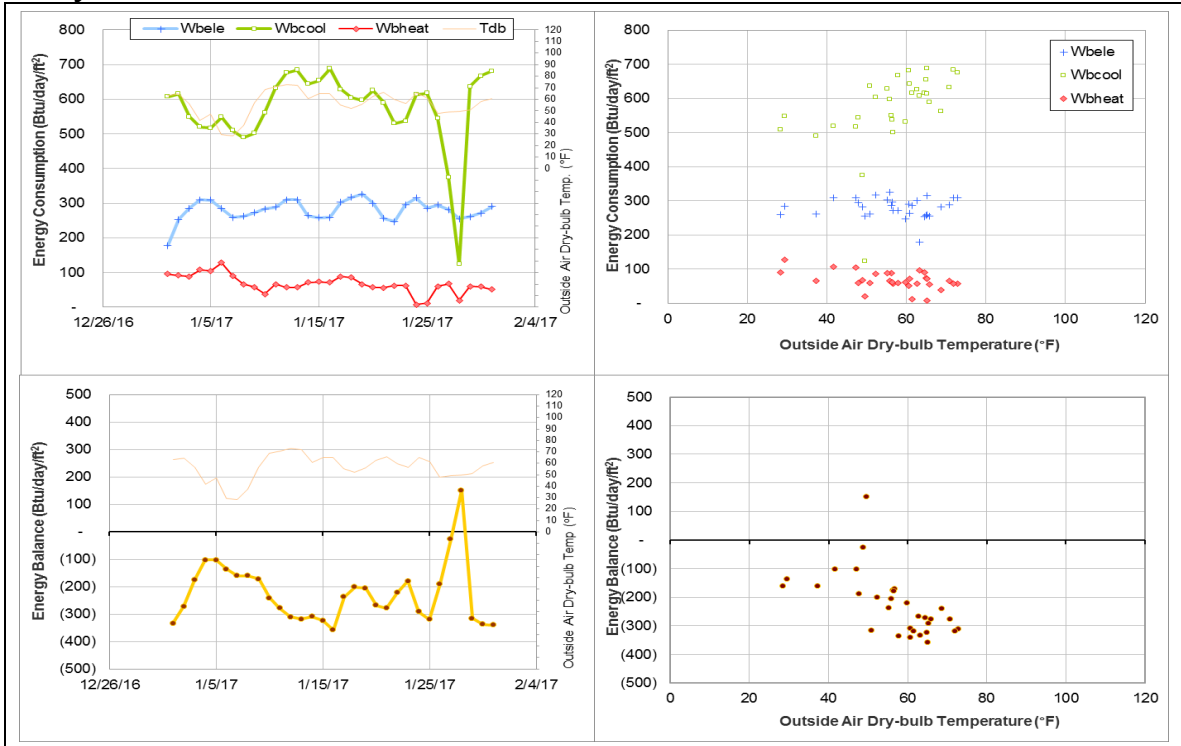
## Quantitative descriptions and comments

From May 2016 through November 2016, the HHW consumption has been near zero. Starting December 2016 the HHW consumption increased to a range of 56 – 128 Btu/day/ft<sup>2</sup>, but this level may still be a little too low. The HHW was estimated by model for the month.

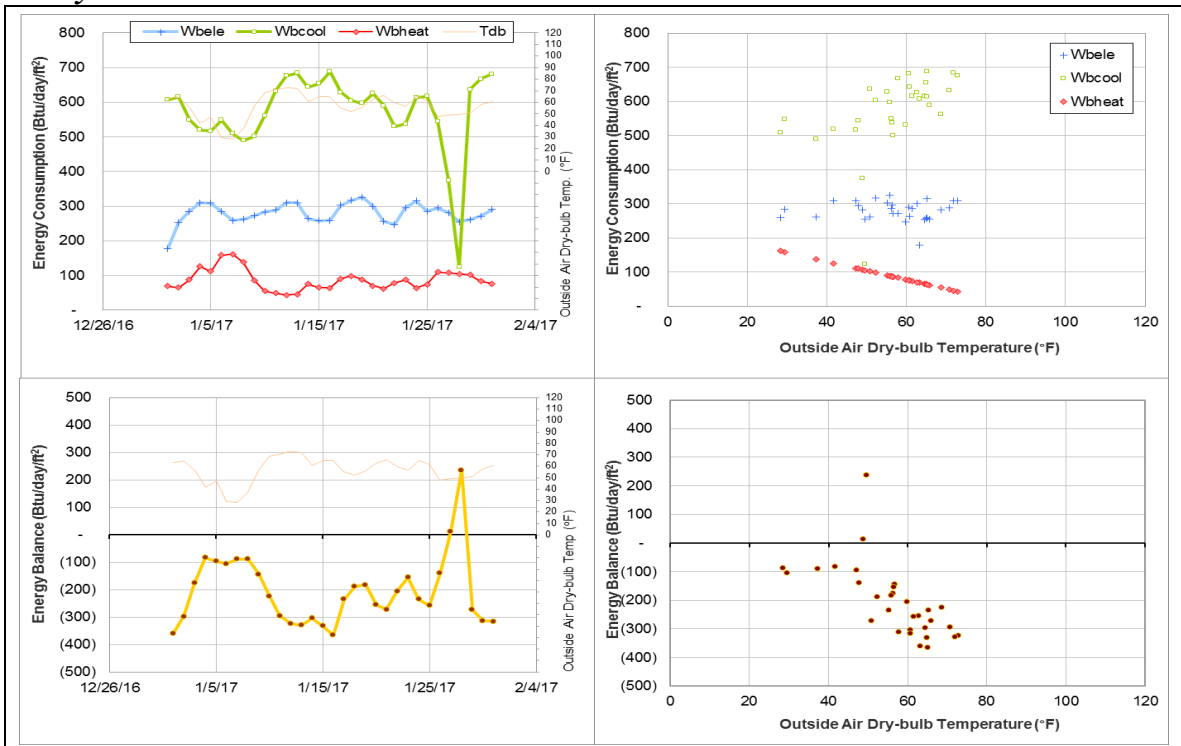
## Explanatory Figure: 13 months energy balance plot with original data



**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**



## Vivarium III (TAMU Bldg #1020)

### *Estimated data*

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	005997	31	1/1/2017 – 1/31/2017	Model
HHW	006001	31	1/1/2017 – 1/31/2017	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 – Ongoing
HHW	The HHW consumption is too low.	12/1/2015 – Ongoing
Energy Balance	The energy balance is too low.	12/1/2015 – Ongoing

### *Changes in sensor readings related to the detected issues*

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

### *Quantitative descriptions and comments*

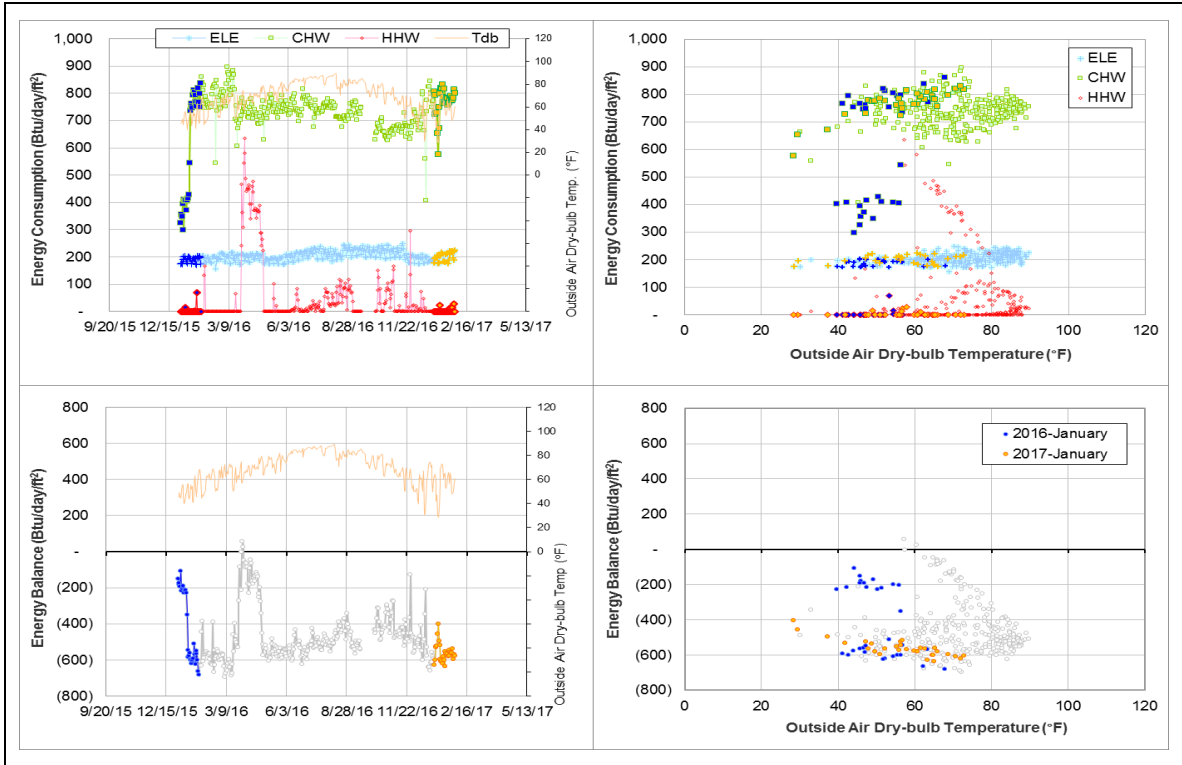
The CHW consumption pattern has increased and flattened out at cooler temperatures starting 1/14/2016. On this day, the CHW Delta-T increased and continues to remain at this higher value. This appears to be a long-term issue resulting in CHW estimates since January 2016 with the exception of the summer period June 2016 – August 2016.

In addition, the HHW consumption is lower than expected for this building. 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 the summer period of June 2016 – August 2016, where we would expect low consumption.

The resulting energy balance with the high CHW consumption and low HHW consumption is too low and does not reach a zero balance at any outside temperature.

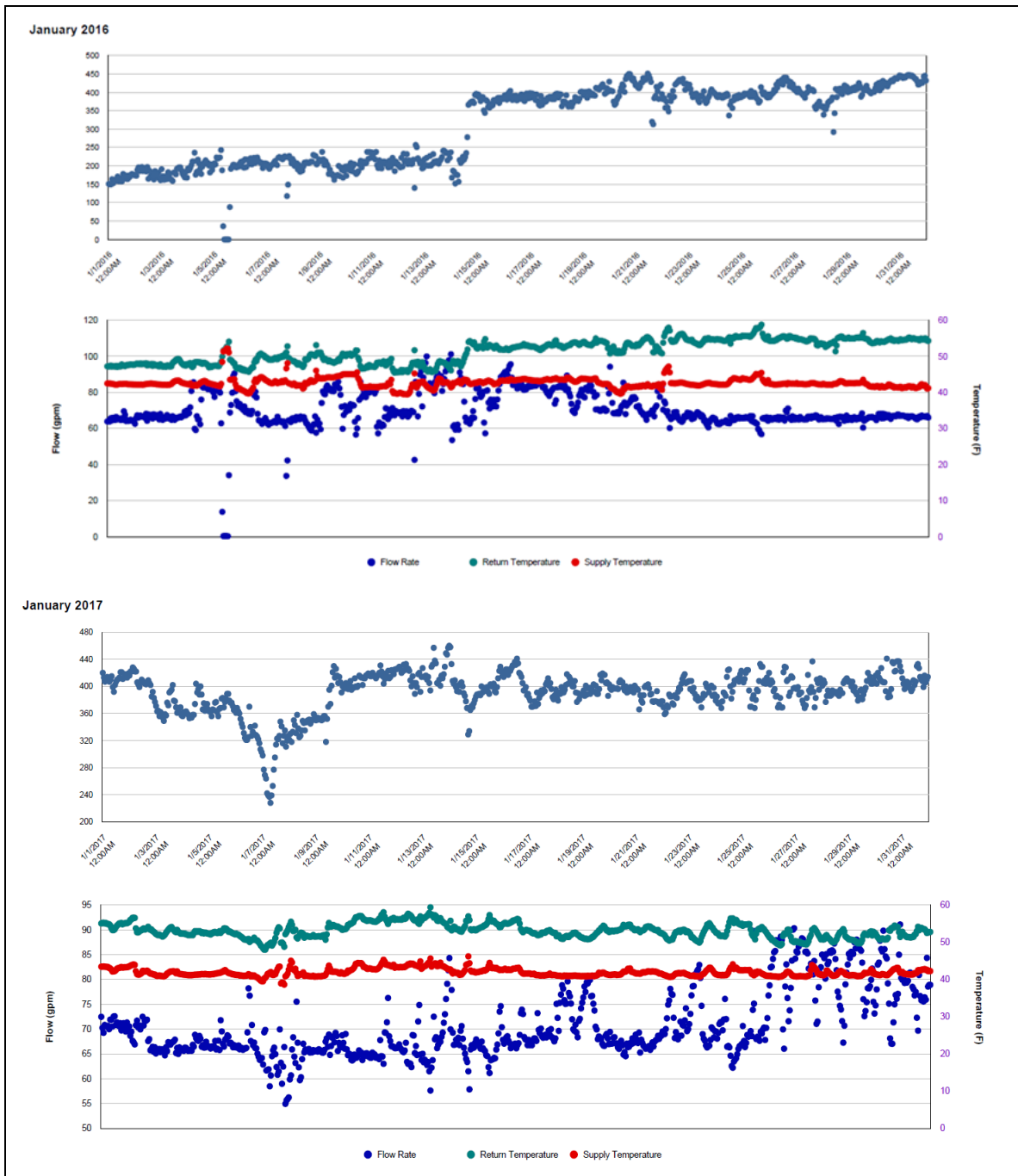
Both CHW and HHW consumption for the current month were estimated using a model.

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

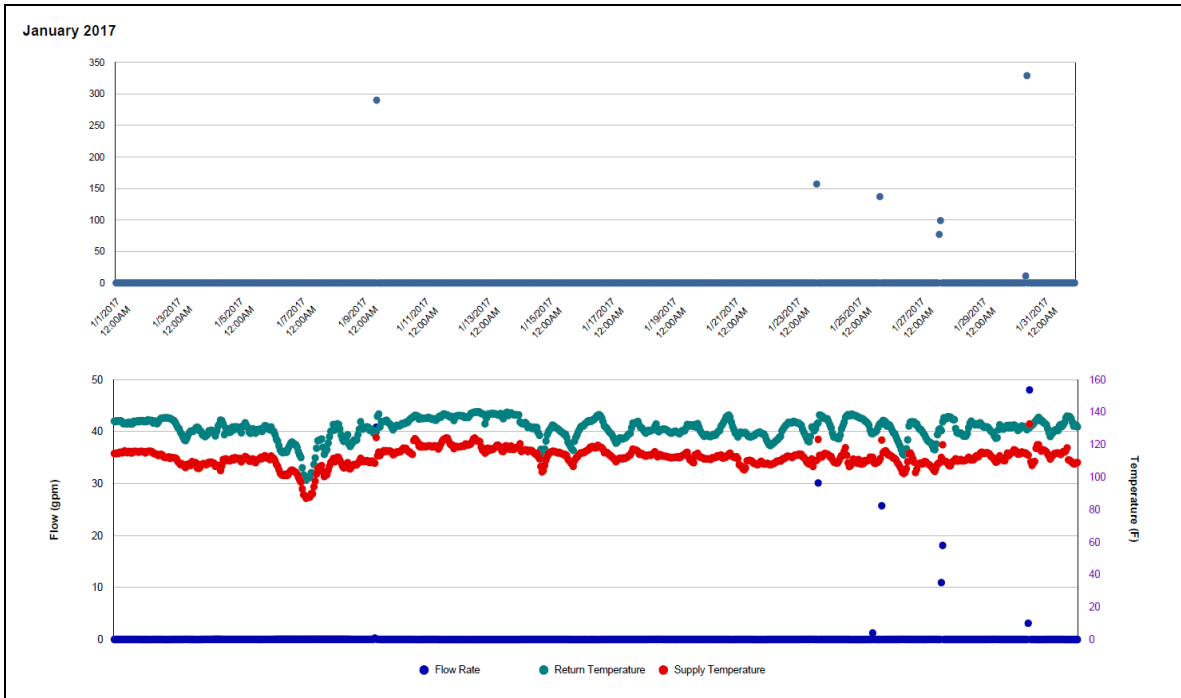




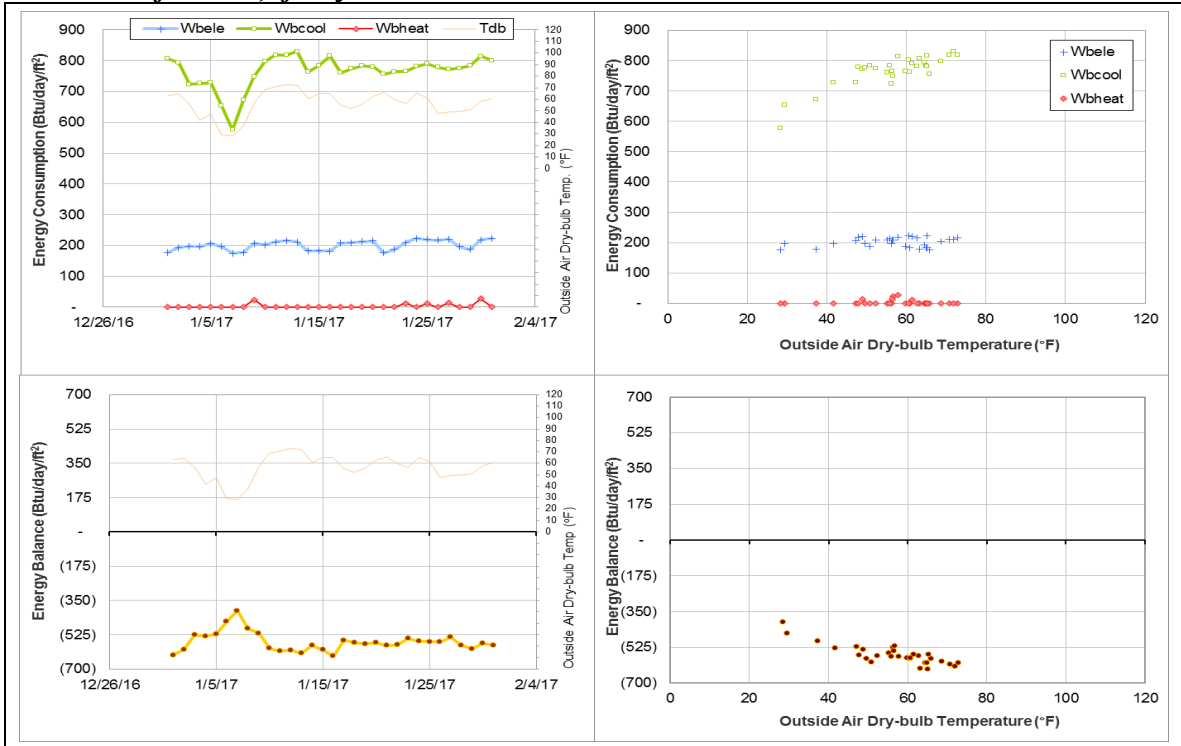
**Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from utilities office. (top: January 2016, bottom: January 2017)**



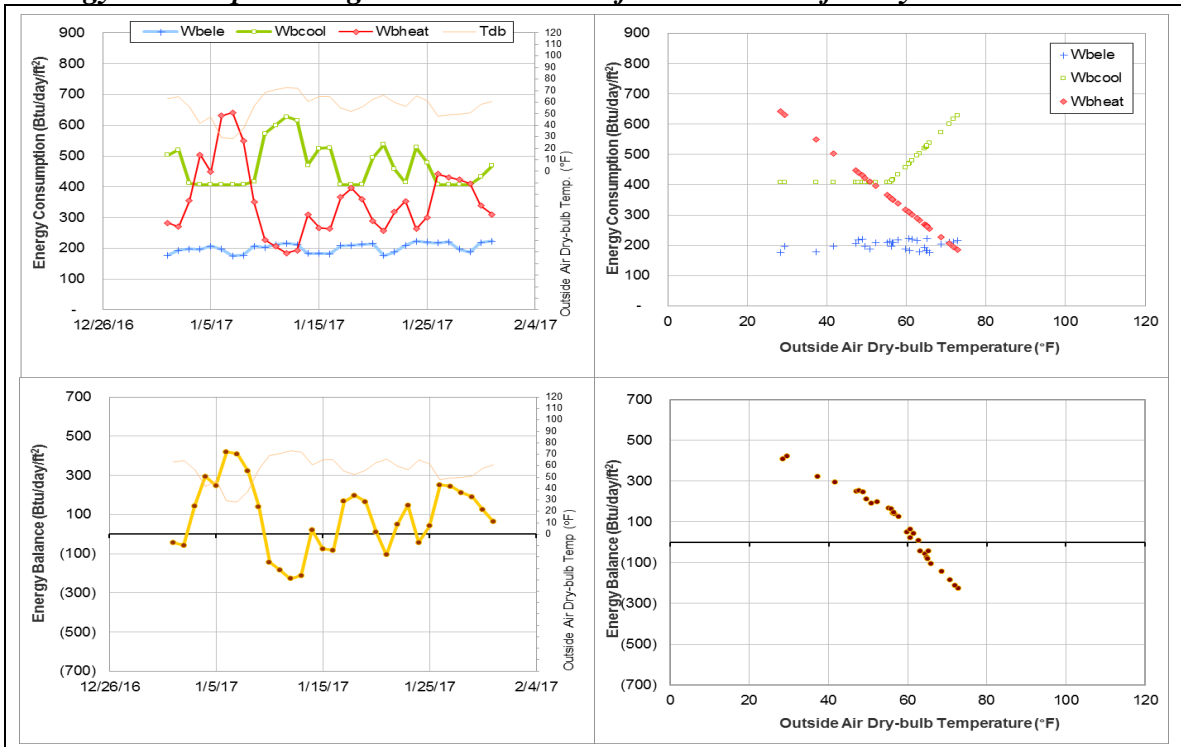
**Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (January 2017)**



**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**



## Veterinary Medicine Administration (TAMU Bldg #1026)

### Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	006053	4	1/1/2017 – 1/4/2017	Model

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

Data Type	Description of data behaviors	Period
HHW	HHW consumption dropped for a short period.	12/29/2016 – 1/4/2017

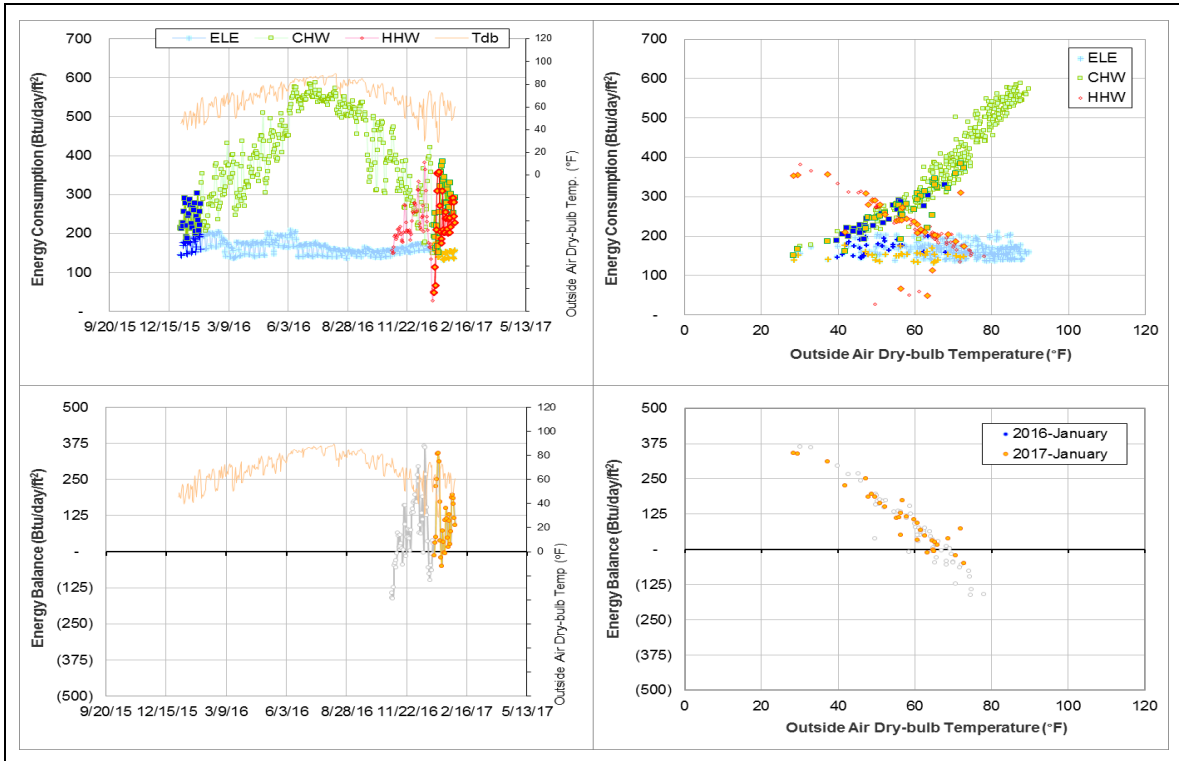
### Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	006053	12/29/2016 – 1/4/2017	Supply Temp	+20°F decrease in temp
			Return Temp	+20°F decrease in temp
		12/28/2016 – 1/4/2017	Flow Rate	+100 gpm decrease in flow rate

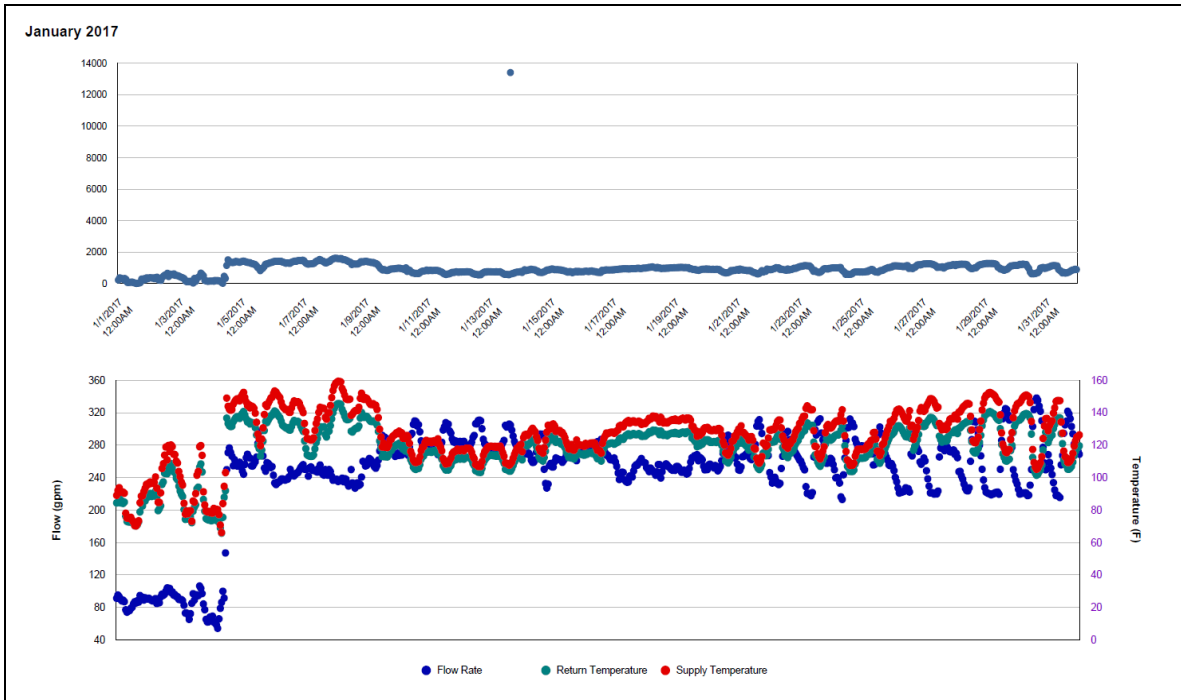
### Quantitative descriptions and comments

Starting December 29 2016, the HHW consumption experienced a significant drop. The HHW flow rate decreased from a +200 gpm range down to a 120 gpm range and below. In addition, the supply and return temperatures both dropped from 100-120°F to 70-90°F range. This issue seems to have continued into January up until the 4<sup>th</sup> and then returned to previous range for the rest of the month. These four days were estimated by model.

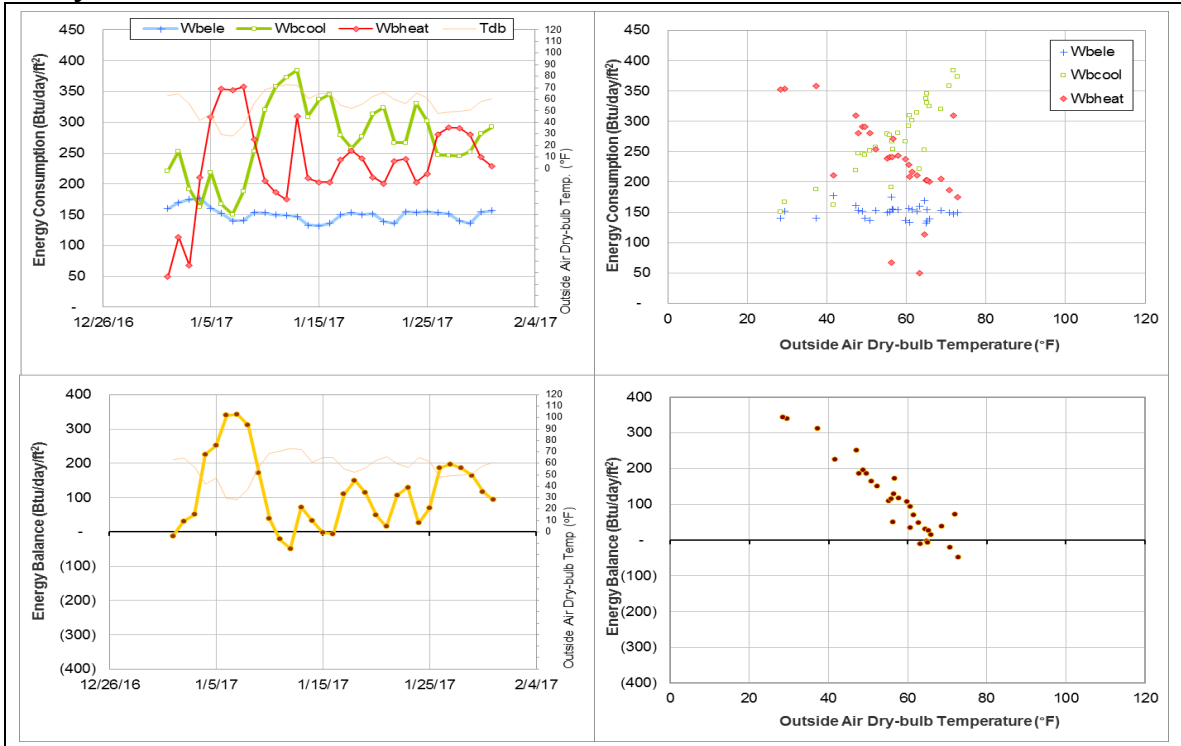
### Explanatory Figure: 13 months energy balance plot with original data



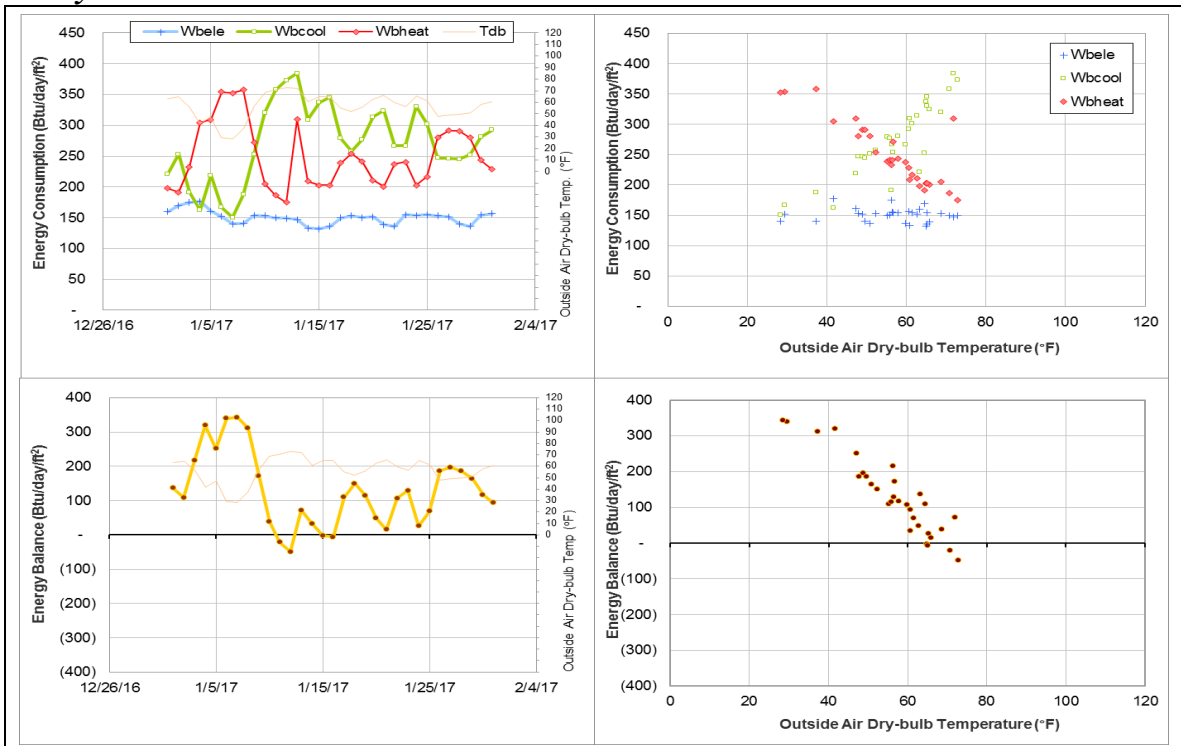
*Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (January 2017)*



**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**



# Veterinary Research Building (TAMU Bldg #1197)

## Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	006066	4	1/9/2017 – 1/12/2017	Model

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

Data Type	Description of data behaviors	Period
HHW	HHW consumption increased above normal pattern for a short period.	1/9/2017 – 1/12/2017

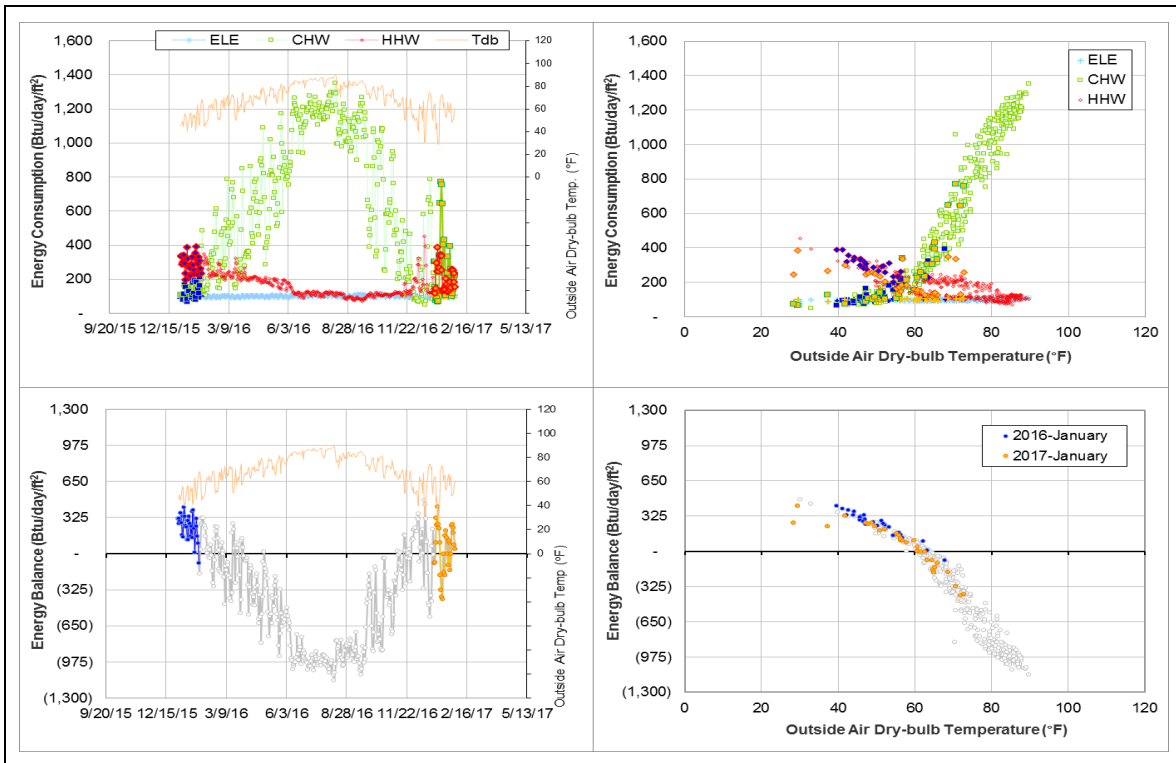
## Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	006066	1/9/2017 – 1/12/2017	Flow Rate	Increased

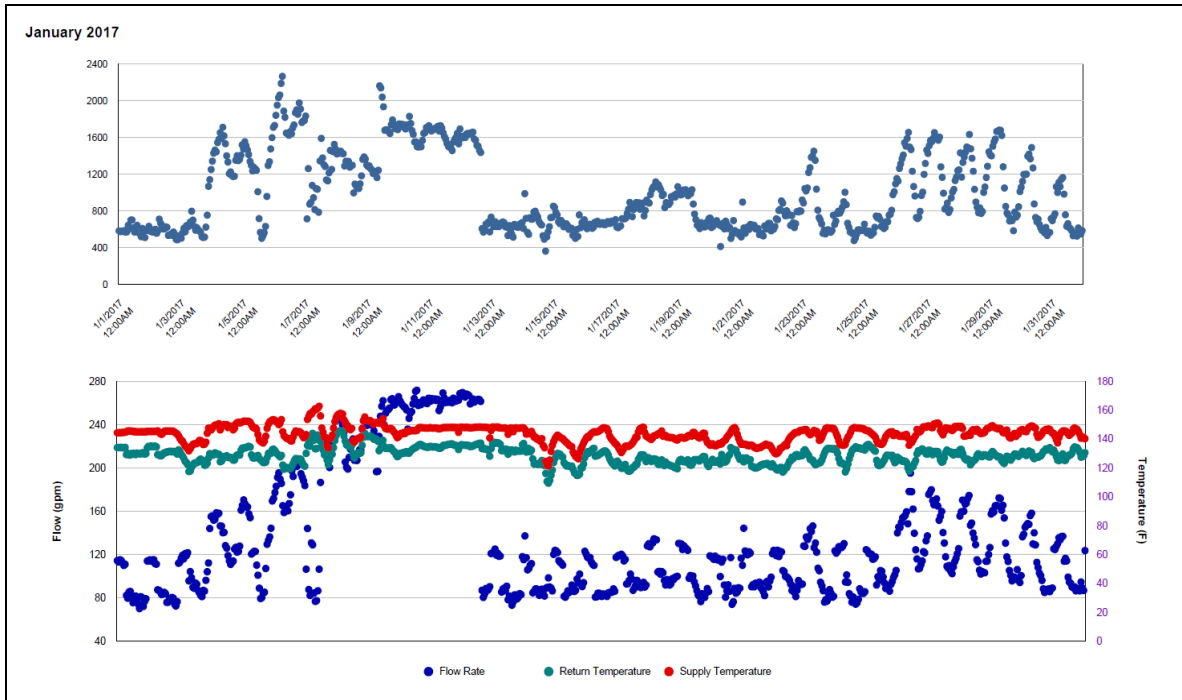
## Quantitative descriptions and comments

During 1/9/2017-1/12/2017, the HHW flow rate increased to double (from 80-120 gpm to 260 gpm) and stayed at this higher value. After 1/12/2017, the flow rate suddenly dropped to back to its previous range. This period was estimated by model.

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

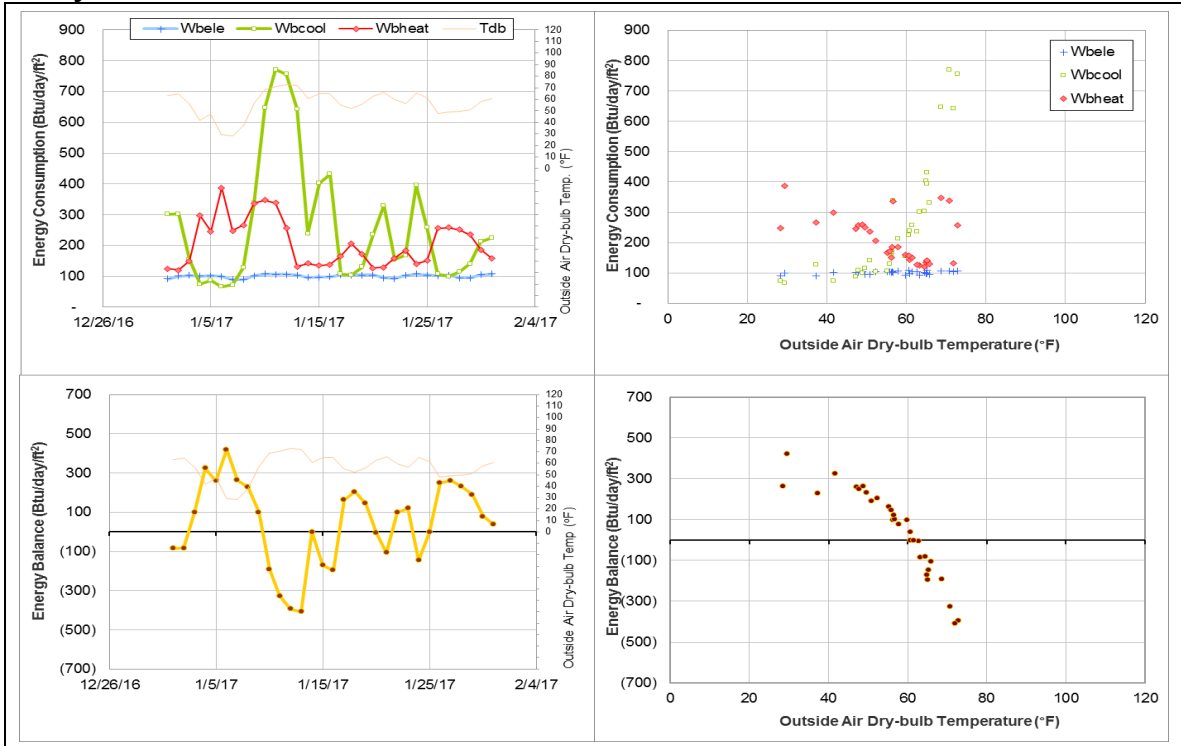


**Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (January 2017)**

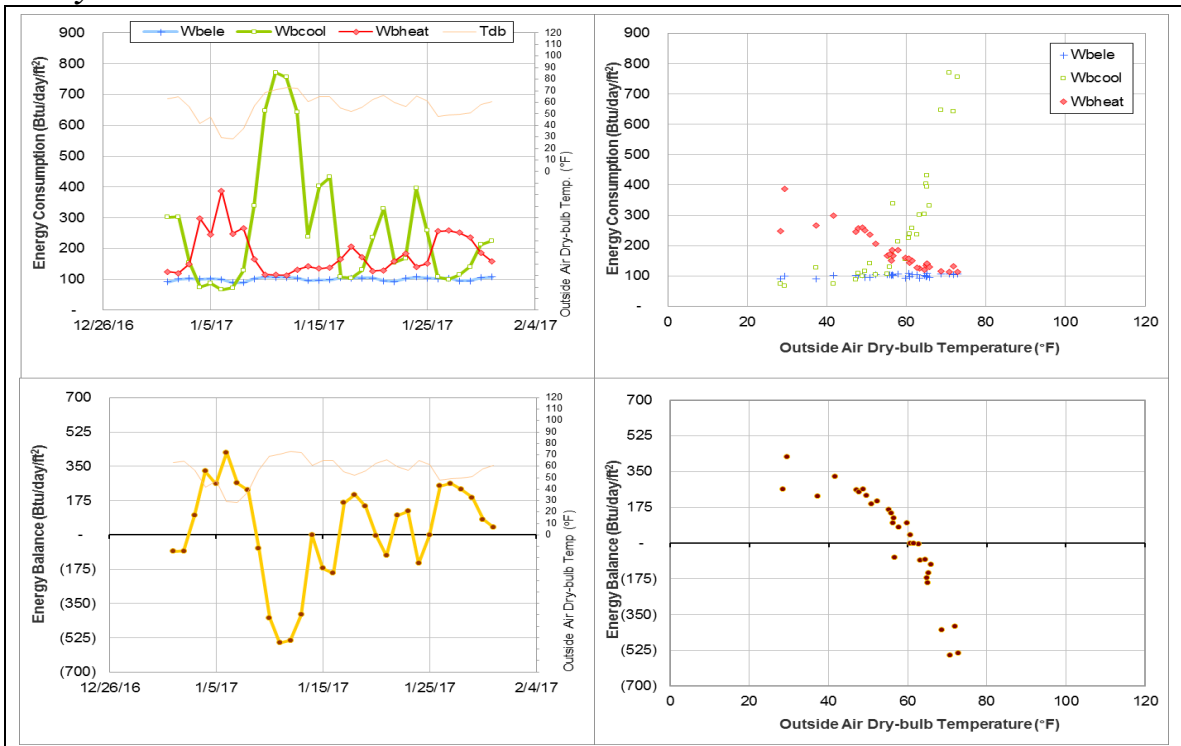




**Energy balance plot using the original ELE, CHW and HHW data for the month of analysis.**



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



# Hullabaloo Residence Hall (TAMU Bldg #1416)

## Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	007847	13	1/1/2017 – 1/13/2017	Model

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

Data Type	Description of data behaviors	Period
HHW	HHW consumption increased significantly.	12/8/2016 – 1/13/2017

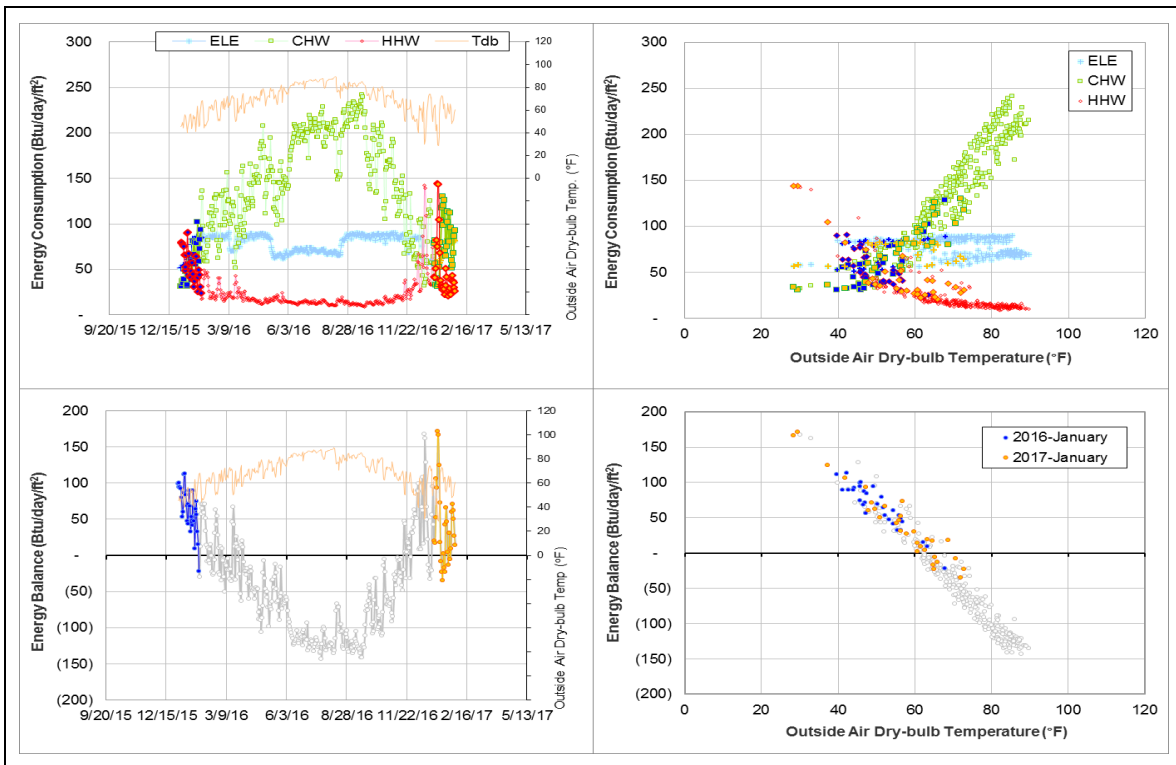
## Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	007847	12/8/2016 – 1/13/2017	Flow Rate	Increased

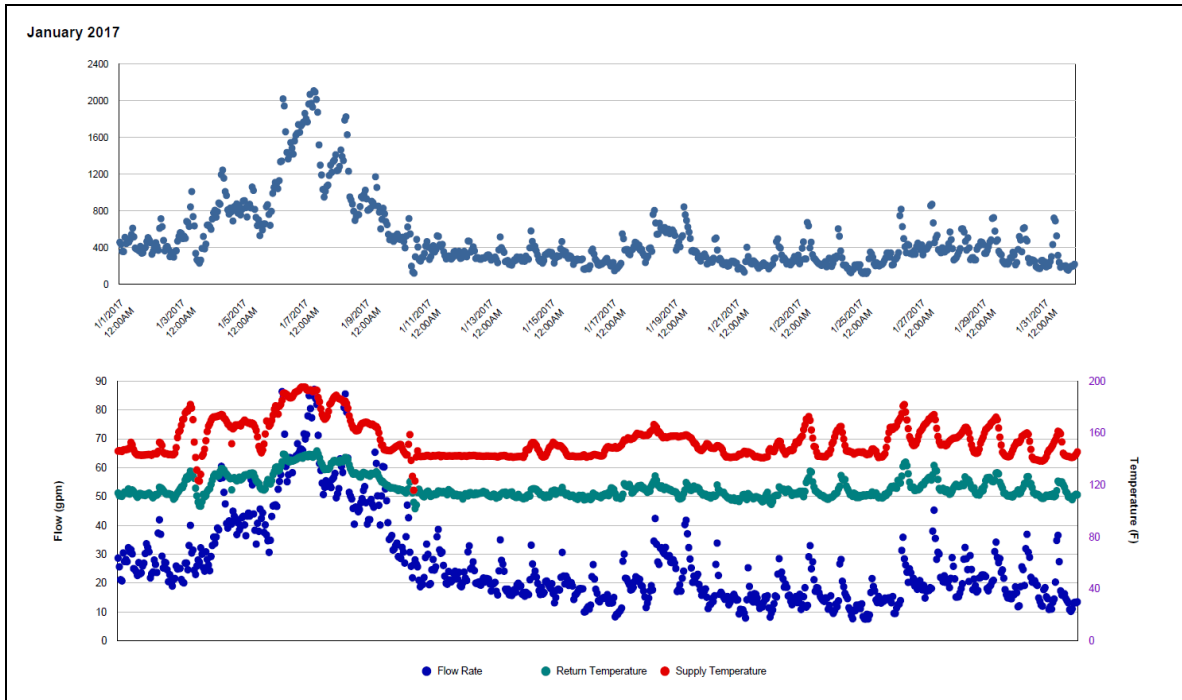
## Quantitative descriptions and comments

Starting around 12/8/2016, the HHW consumption pattern increased to almost double the Btu/day/ft<sup>2</sup>. During this time, the flow rate shows an increase. After 1/13/2017, the consumption decreased back to its previous pattern. The HHW consumption for this period was estimated by model.

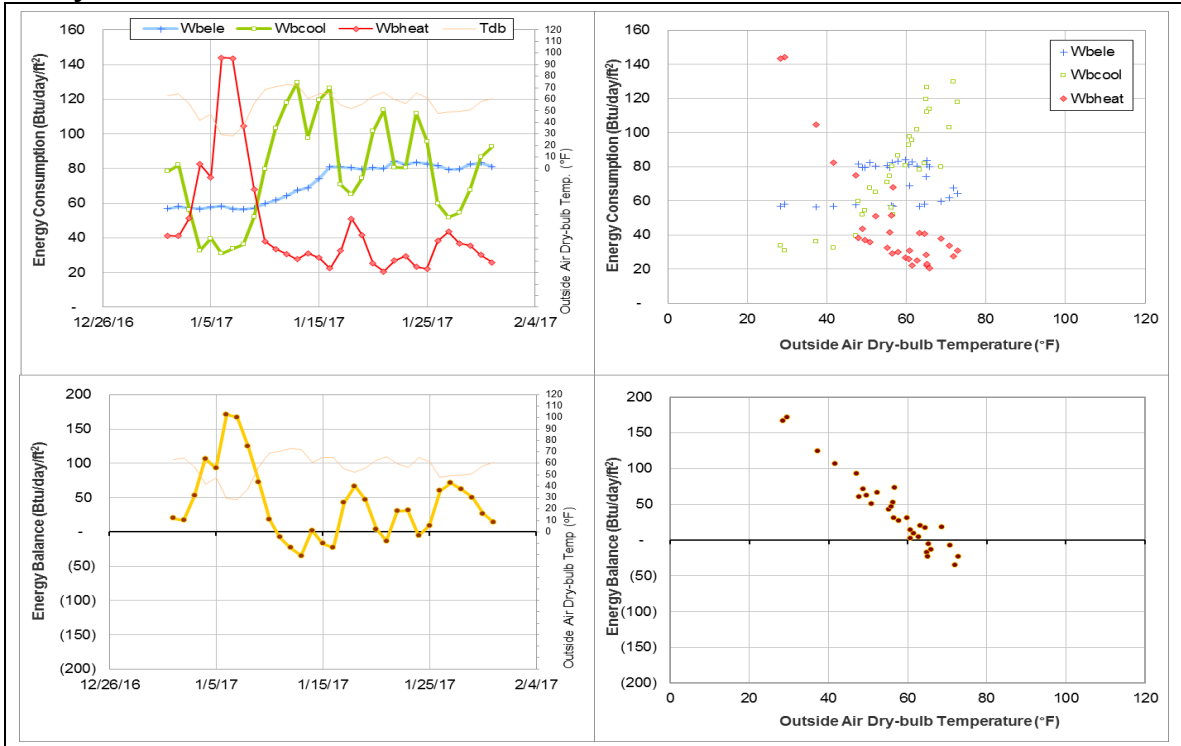
## Explanatory Figure: 13 months energy balance plot with original data



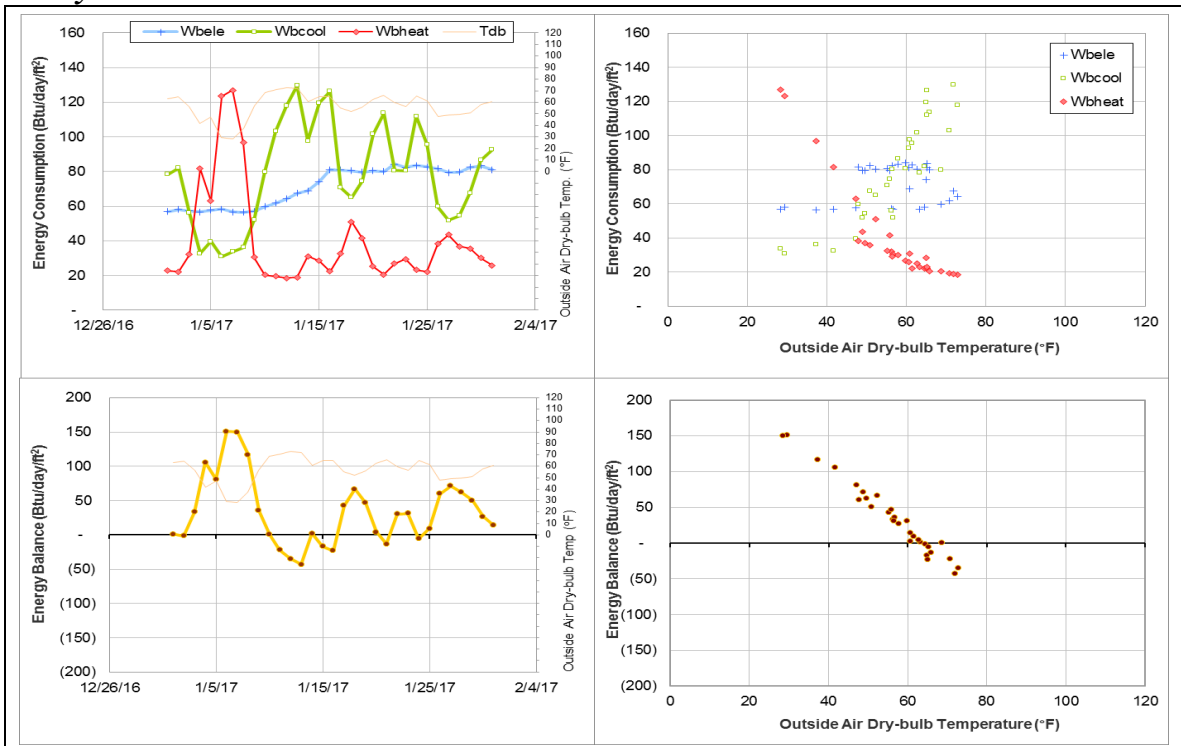
**Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (January 2017)**



**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**



# Southern Crop Improvement Greenhouse (TAMU Bldg #1512)

## Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	005931	13	1/19/2017 – 1/31/2017	Model

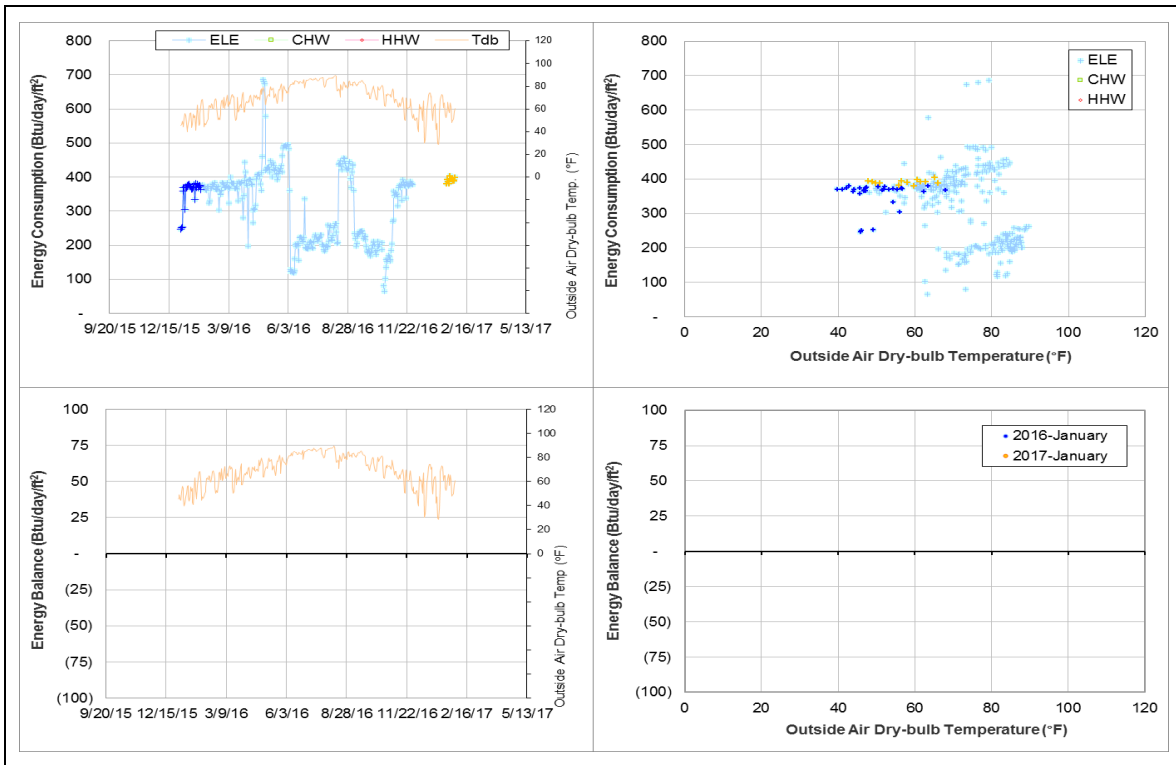
## Detected issues in the energy balance and/or the consumption data

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

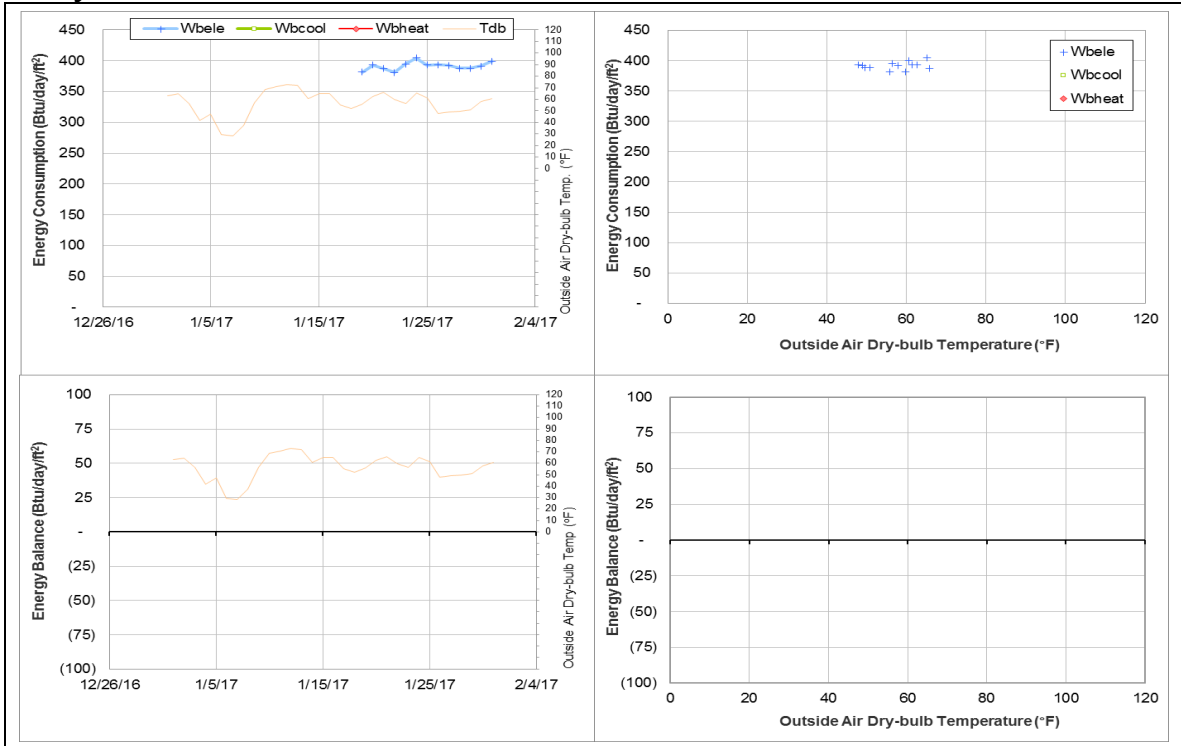
## Quantitative descriptions and comments

The ELE consumption level has changed frequently since July 2015. During the period of 1/19/2017 – 1/31/2017 it increased to the higher consumption pattern. The ELE consumption was estimated for this period using a model based on data during 7/1/2014 – 6/30/2015 when the consumption was stable.

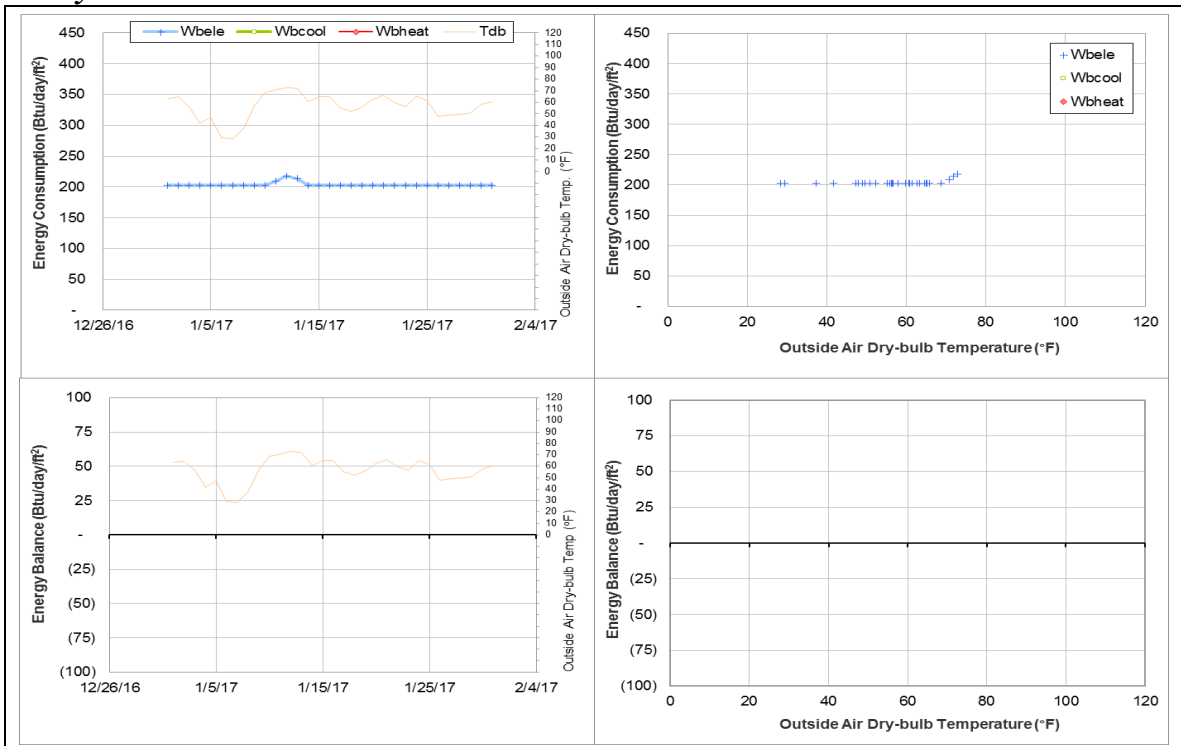
## Explanatory Figure: 13 months energy balance plot with original data



**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	31	1/1/2017 – 1/31/2017	Switch with 005275
ELE	005275	31	1/1/2017 – 1/31/2017	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 8/14/2016 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	4747157.886	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

# Human Clinical Research Building (TAMU Bldg #1542)

## Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	009616	1	1/9/2017	Model
HHW	009617	1	1/9/2017	Model

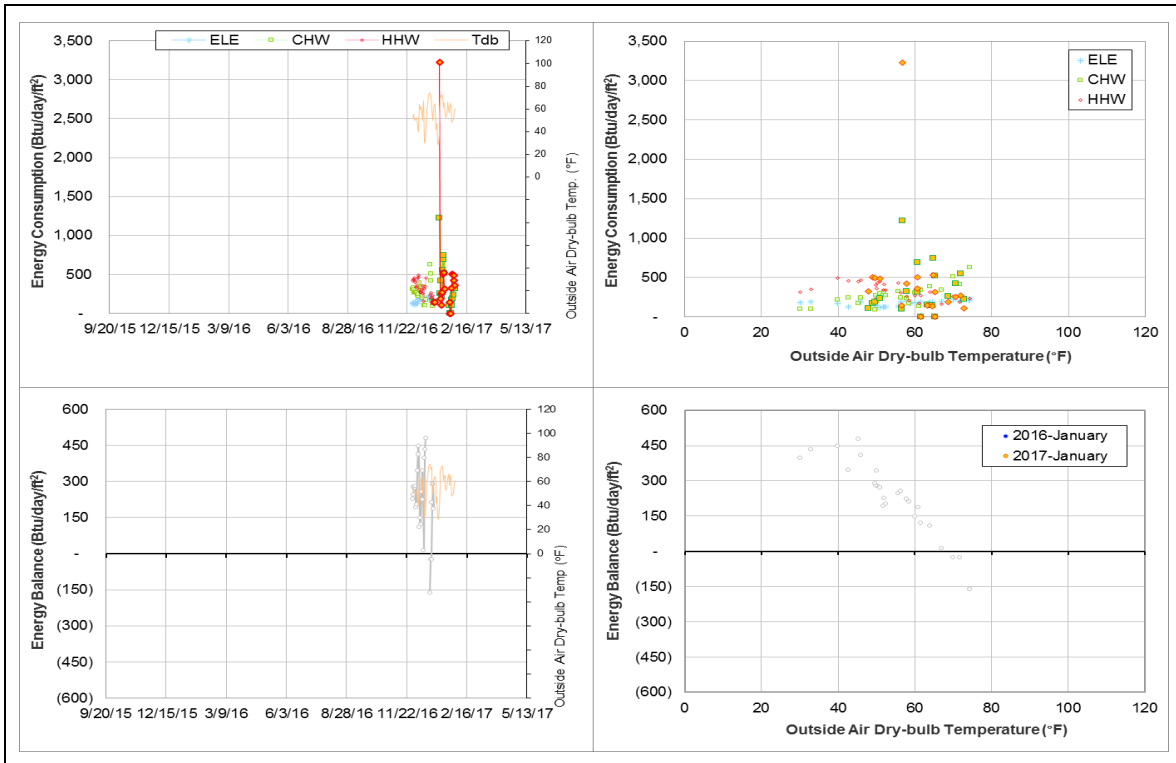
## Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The CHW consumption significantly increased for a short period.	1/9/2017
HHW	The HHW consumption significantly increased for a short period.	1/9/2017

## Quantitative descriptions and comments

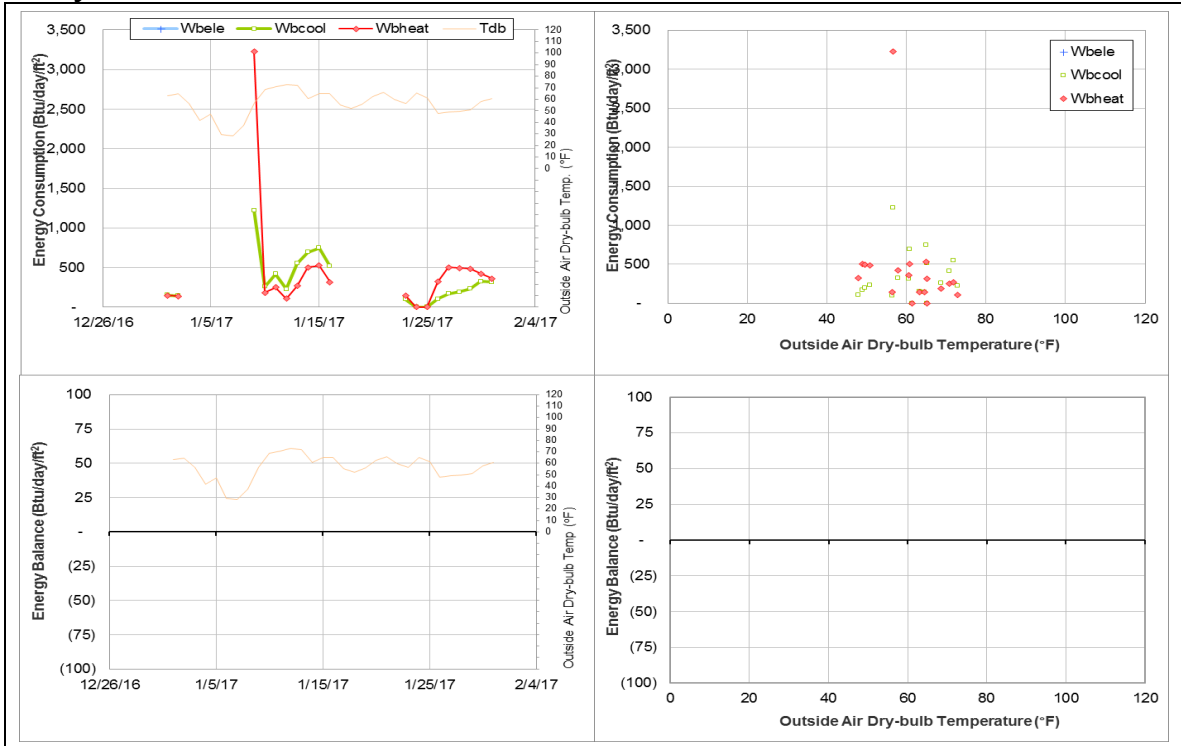
Both the CHW and HHW consumption shows a significant increase for 1/9/2017 3:00 AM. The large value may represent the accumulate consumption for the missing period 1/3/2017 – 1/8/2017. A model was used to estimate the CHW and HHW consumption for this day.

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

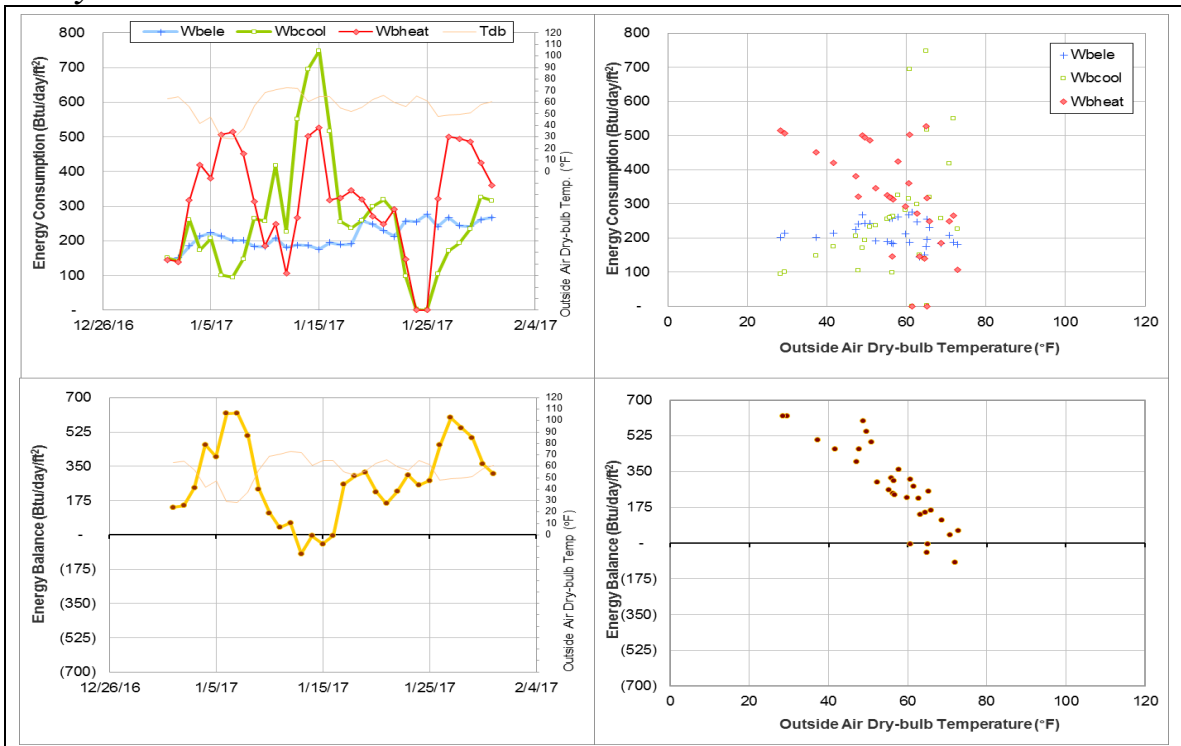




**Energy balance plot using the original ELE, CHW and HHW data for the month of analysis.**



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



# Offshore Technology Research Center (TAMU Bldg #1604)

## Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	008142	5	1/8/2017 – 1/12/2017	Model
HHW	008143	5	1/8/2017 – 1/12/2017	Model

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

Data Type	Description of data behaviors	Period
CHW	CHW consumption decreased to zero or near zero values.	1/8/2017 – 1/12/2017
HHW	HHW consumption decreased to zero or near zero values.	1/8/2017 – 1/12/2017

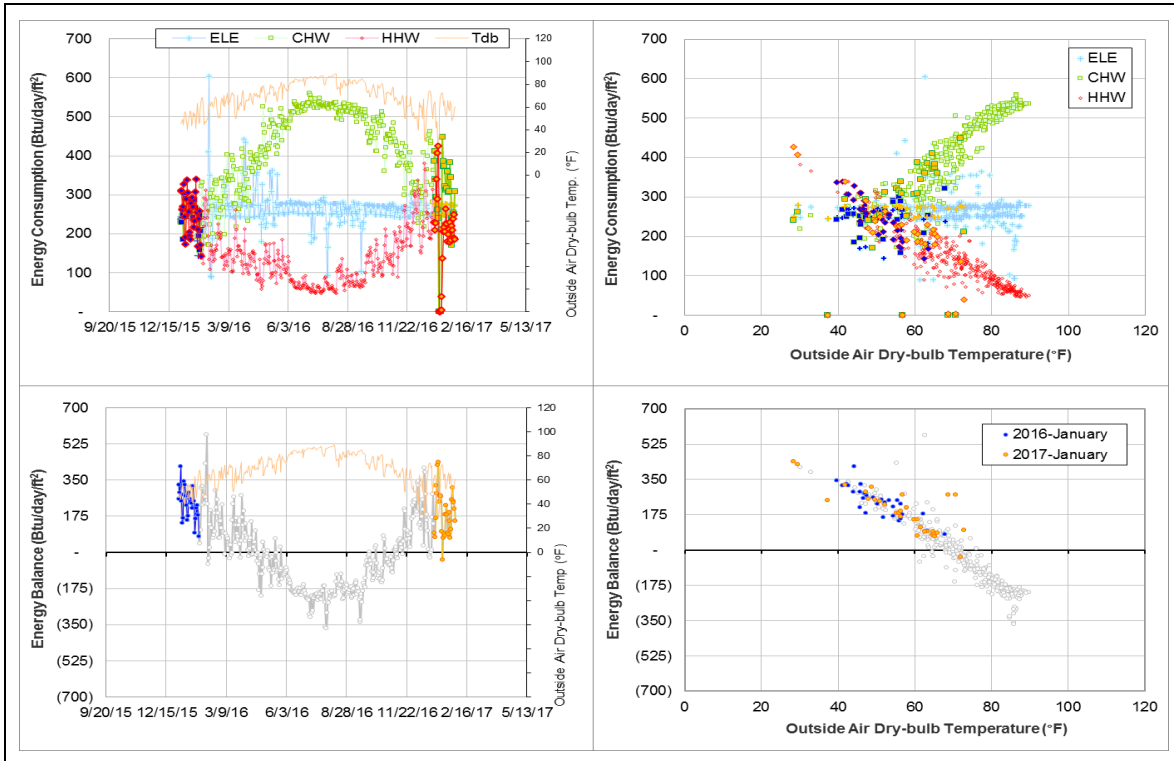
## Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	008142	1/8/2017 – 1/12/2017	Flow Rate	Decreased to near zero
HHW	008143	1/8/2017 – 1/12/2017	Flow Rate	Decreased to near zero

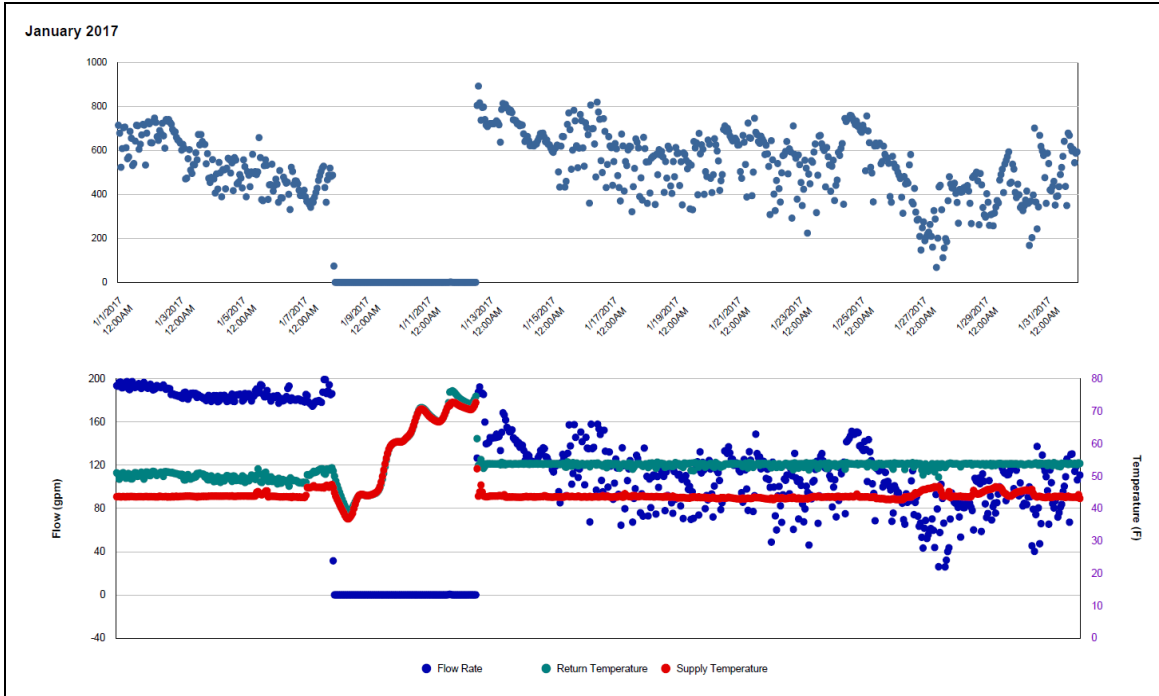
## Quantitative descriptions and comments

For the period 1/8/2017 – 1/12/2017, both CHW and HHW flow rate decreased to zero or near zero values resulting to little or no consumption during these days. This period was estimated by model.

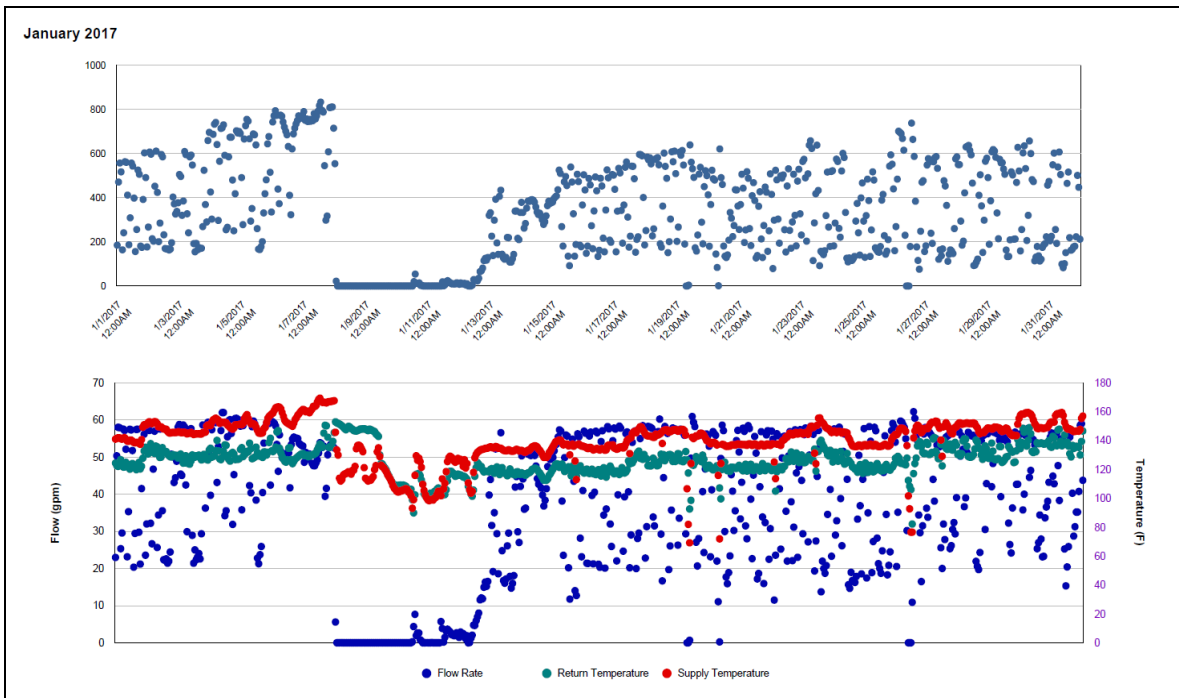
## Explanatory Figure: 13 months energy balance plot with original data



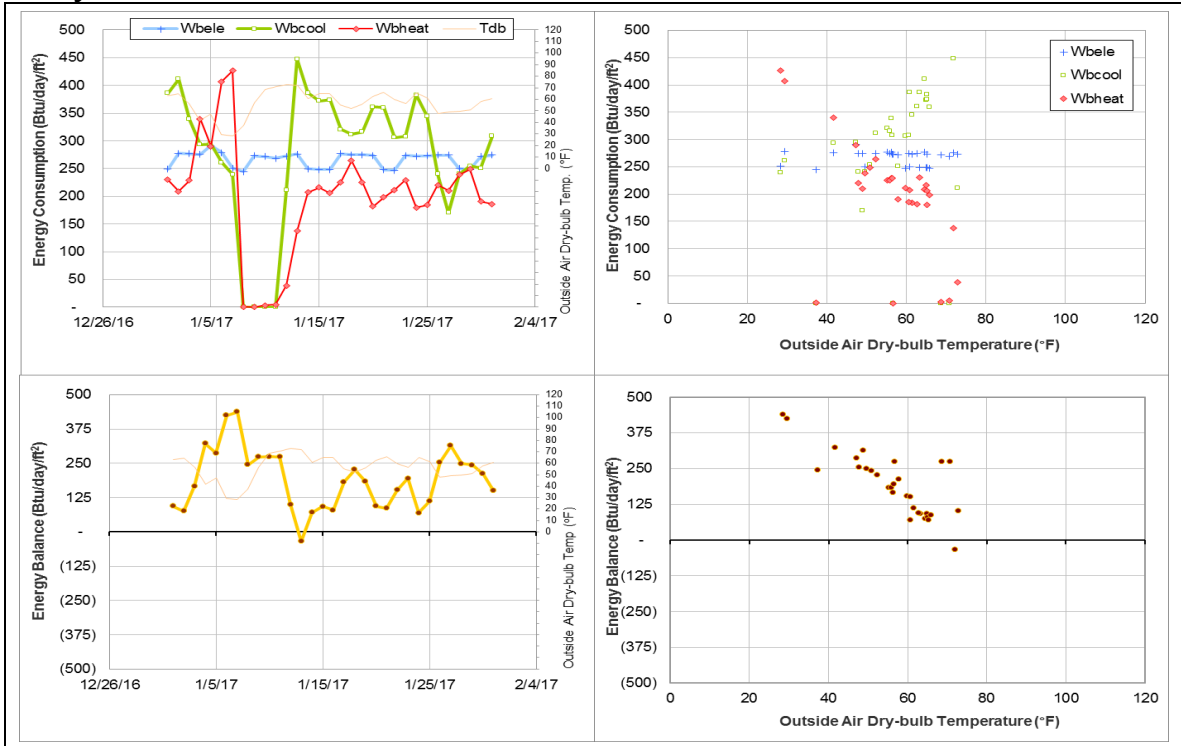
**Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from utilities office. (January 2017)**



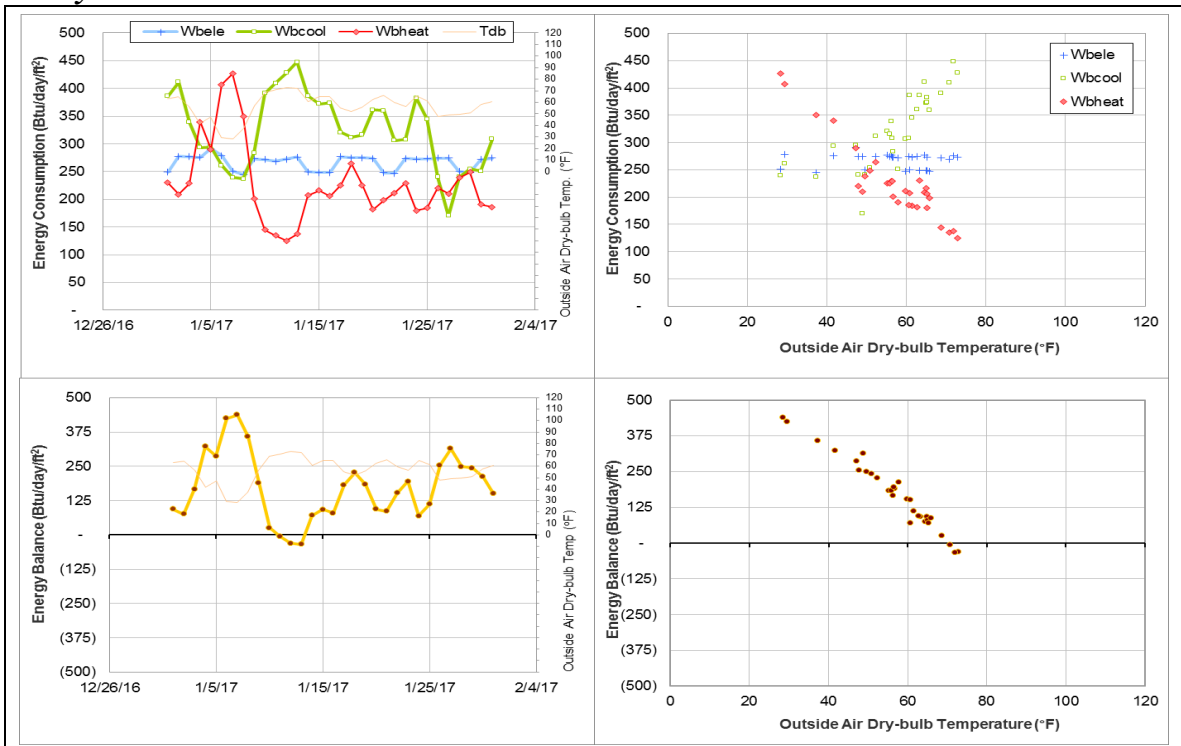
**Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (January 2017)**



**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**



## 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 January 2017

Building No.	Building Name	MeterID	Type	Building No.	Building Name	MeterID	Type
0290	Wells Residence Hall	001984	CHW	0512	All Faiths Chapel	004288	CHW
		001988	HHW			0524	Blocker Building
0291	Rudder Residence Hall	002132	CHW	652	Neeley Residence Hall		
		002136	HHW			740	McNew Laboratory
0293	Appelt Residence Hall	002062	CHW	815	Entomology Research Lab		
		002066	HHW			005974	CHW
0353	Bright Aerospace Building	002746	CHW			005968	HHW
		0398	Langford Architecture Center Building A	003951	CHW	880	TVMC-Small Animal Building
003955	HHW			1026	Veterinary Medicine Administration		
0433	Mosher Residence Hall	009083	ELE			1041	Texas Vet Med Diagnostic Lab
		002485	CHW	1146	Biological Control Facility		
		002489	HHW			1156	Physical Plant Administration & Shops
0443	Oceanography & Meteorology Building	006388	CHW				
		006392	HHW	007683	HHW		
0445	Teague Research Center	006411	CHW	1504	Reynolds Medical Sciences Building	006355	ELE
0517	DPC Annex	006563	CHW			006359	ELE
		0446	Rudder Theatre Complex	002977	ELE	1558	Cox-McFerrin Center for Aggie Basketball
002980	ELE			003989	CHW		
004297	CHW			003993	HHW		
004309	HHW			1560	Student Recreation Center	007575	CHW
0482	Fermier Hall	005878	CHW			007577	HHW
		005881	HHW	1601	International Ocean Discovery Building	000363	ELE
0484	Chemistry Building	007557	ELE			000366	ELE
		0496	Utilities & Energy Services Central Office			007706	ELE
006929	CHW			002937	HHW		
006933	HHW			1604	Offshore Technology Research Center	006351	ELE
0499	Engineering Innovation Center					002672	CHW
		0506	Nagle Hall	001484	ELE	008144	CHW
003619	CHW			008145	HHW		
003623	HHW			006660	ELE		

## Wells Residence Hall (TAMU Bldg #290)

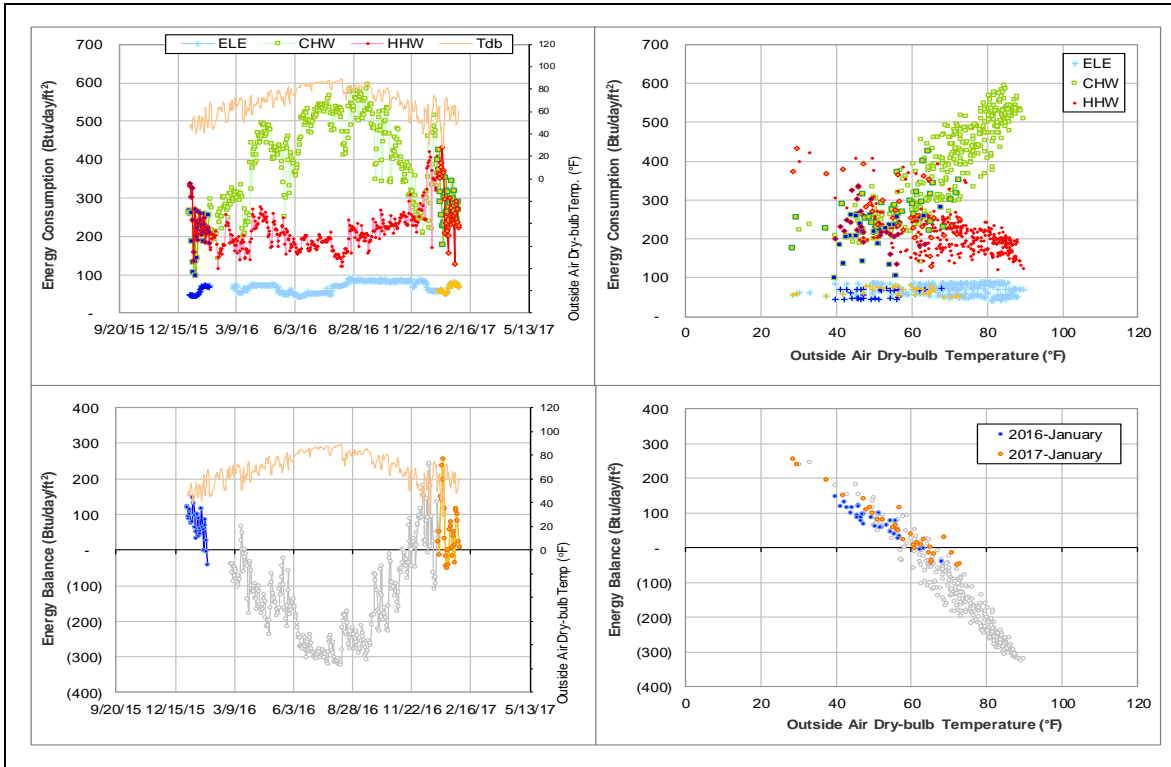
### *Detected issues in the energy balance and/or the consumption data*

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 balance seems to have moved to 65°F due to an increase in HHW flow from 120 gpm to 150 gpm, but more data are needed to verify this change. The low  $E_{BL}$  level suggests imbalance of metered energy use in the building, but we are not able to determine the cause.

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



## Rudder Residence Hall (TAMU Bldg #291)

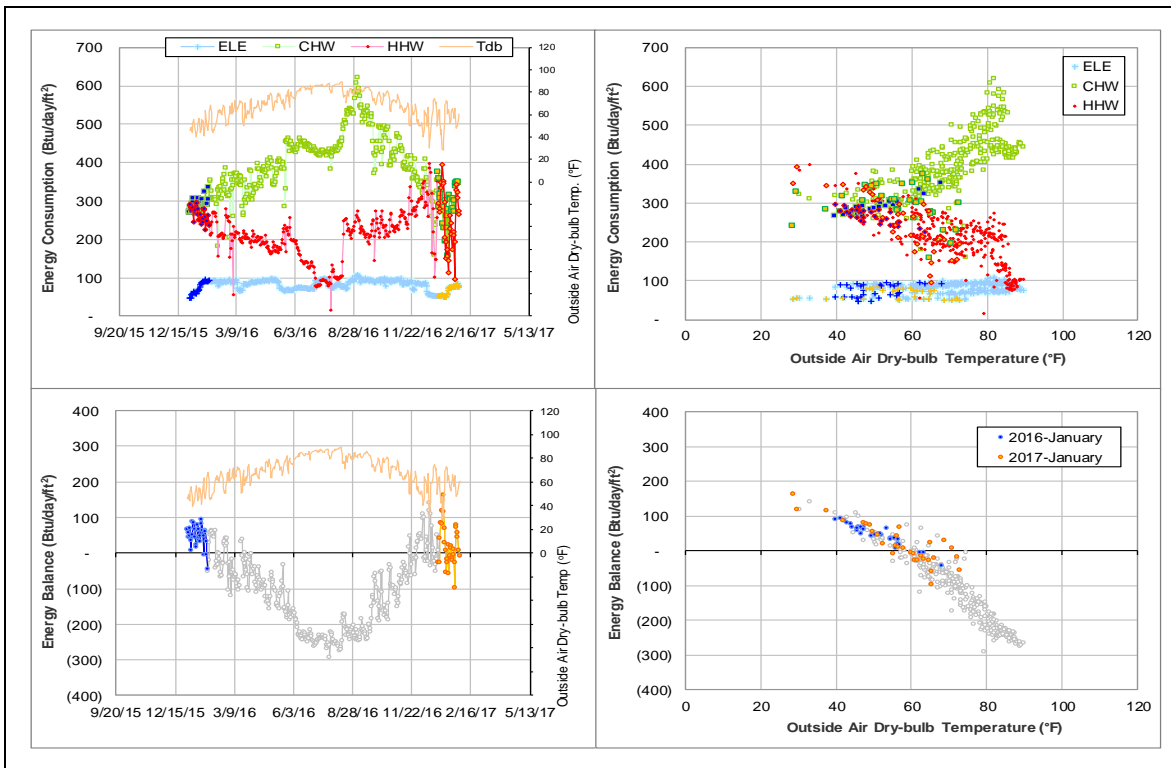
### *Detected issues in the energy balance and/or the consumption data*

Data Type	Description of data behaviors	Period
CHW	Sudden increase by 150 Btu/day/ft <sup>2</sup> .	Since 8/2016
HHW	Sudden increase by 100 Btu/day/ft <sup>2</sup> .	Since 8/2016
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 imbalance of metered energy use in the building, but we are not able to determine the cause. See also section II-2.

### *Explanatory Figure: 13 months energy balance plot with original data*



# Appelt Residence Hall (TAMU Bldg #293)

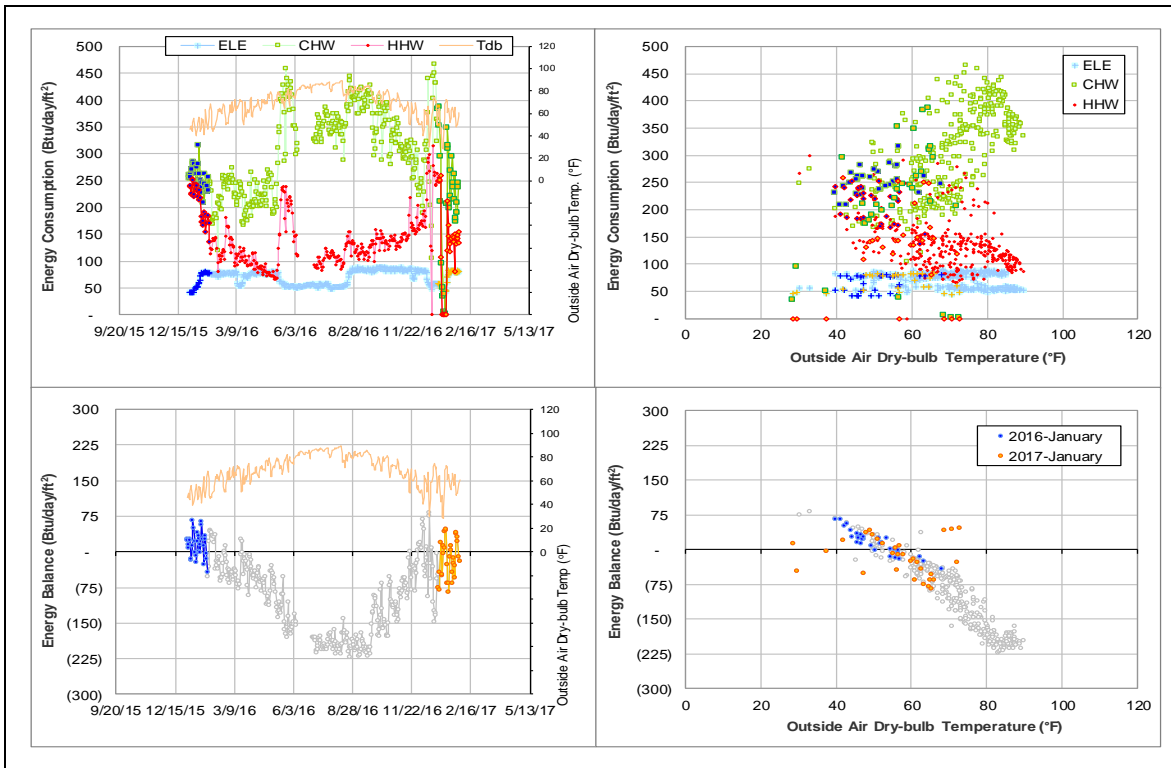
## Detected issues in the energy balance and/or the consumption data

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 imbalance of metered energy use in the building, but we are not able to determine the cause. See also section II-2.

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





## Bright Building (TAMU Bldg #353)

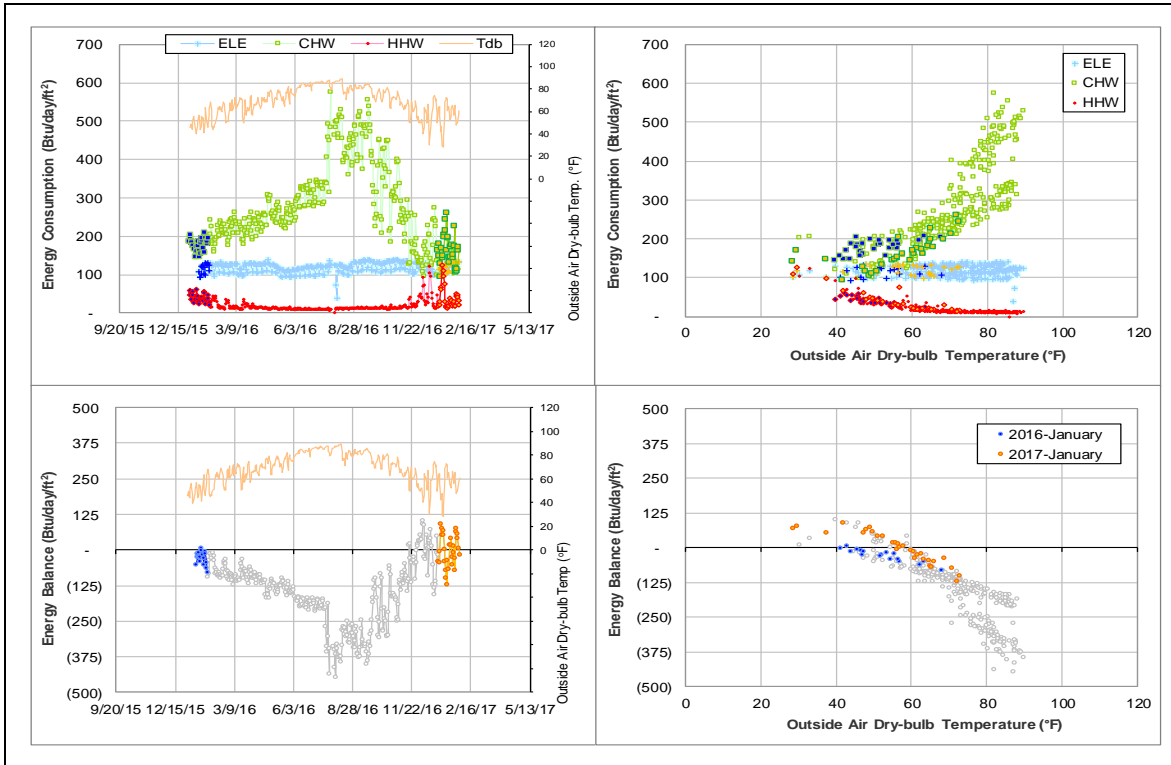
### *Detected issues in the energy balance and/or the consumption data*

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. The cross-point temperature of energy balance is now 60°F.

### *Explanatory Figure: 13 months energy balance plot with original data*



# Langford Architecture Center Building A (TAMU BLDG # 398)

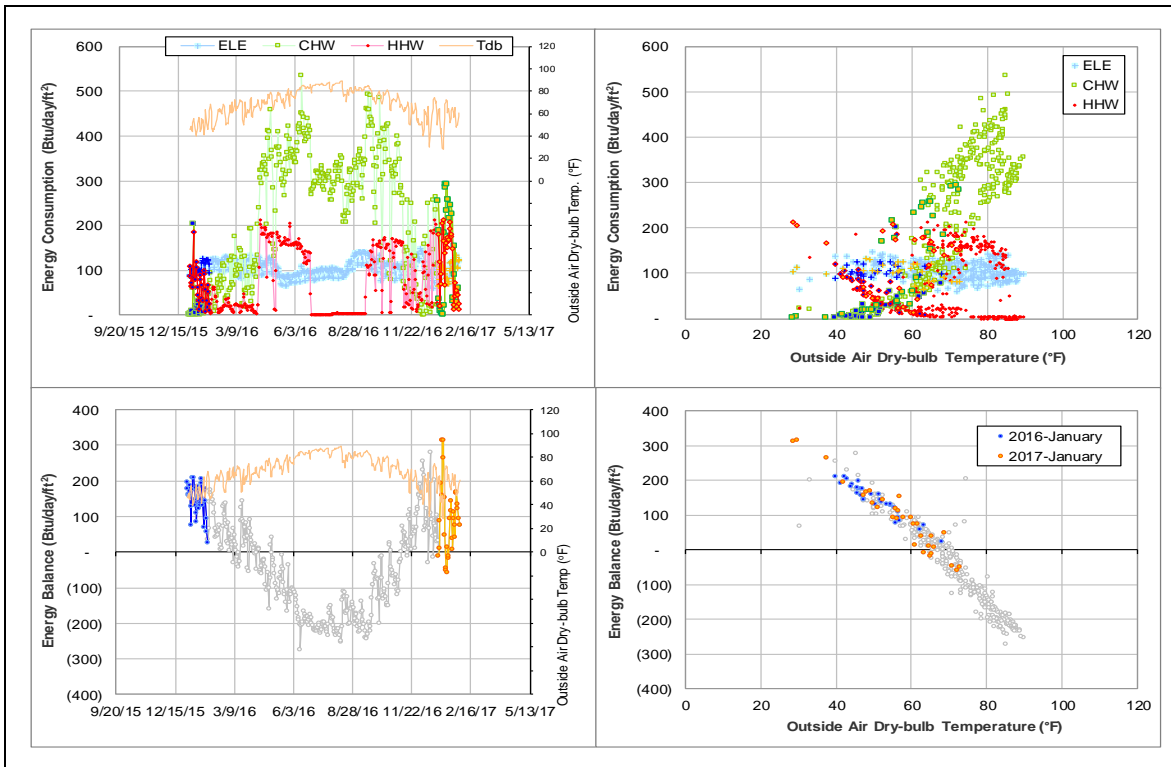
## Detected issues in the energy balance and/or the consumption data

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

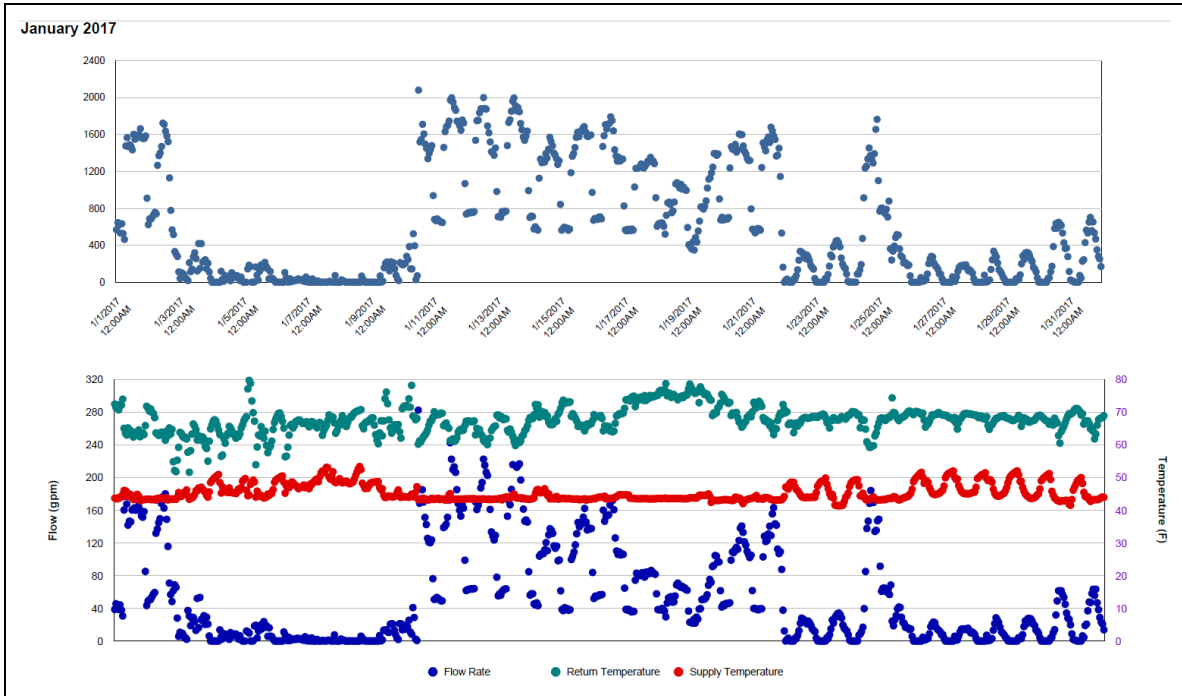
### Comments

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.

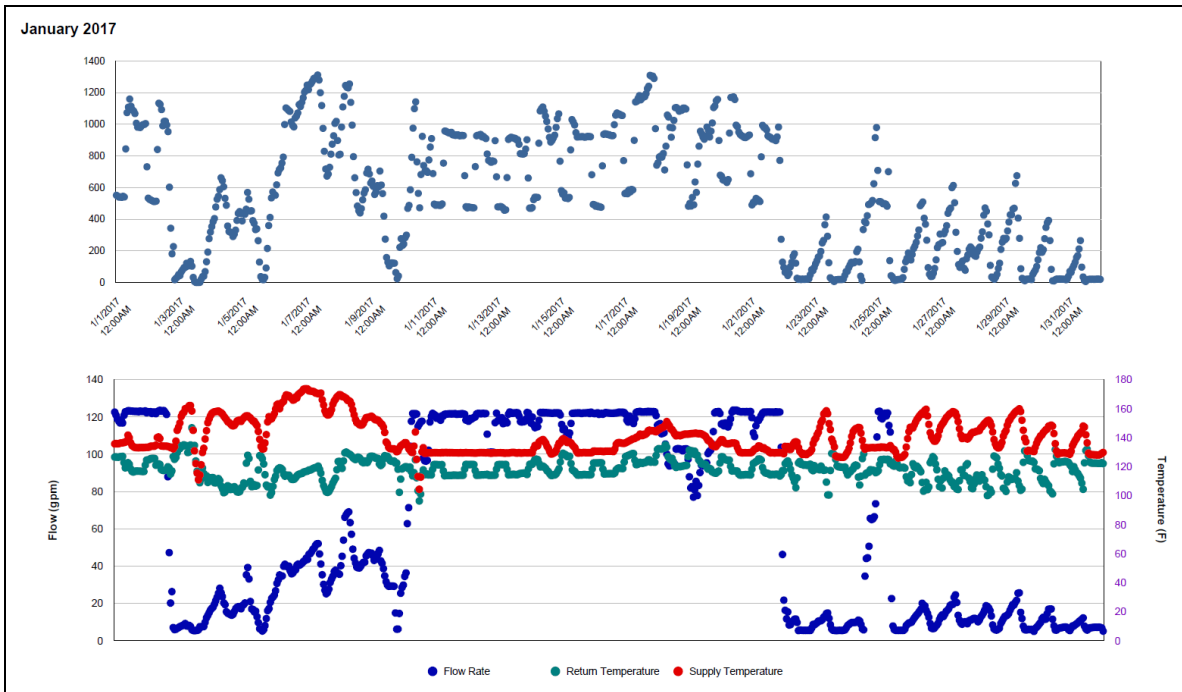
### Explanatory Figure: 13 months energy balance plot with original data



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



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



# Mosher Residence Hall (TAMU BLDG # 433)

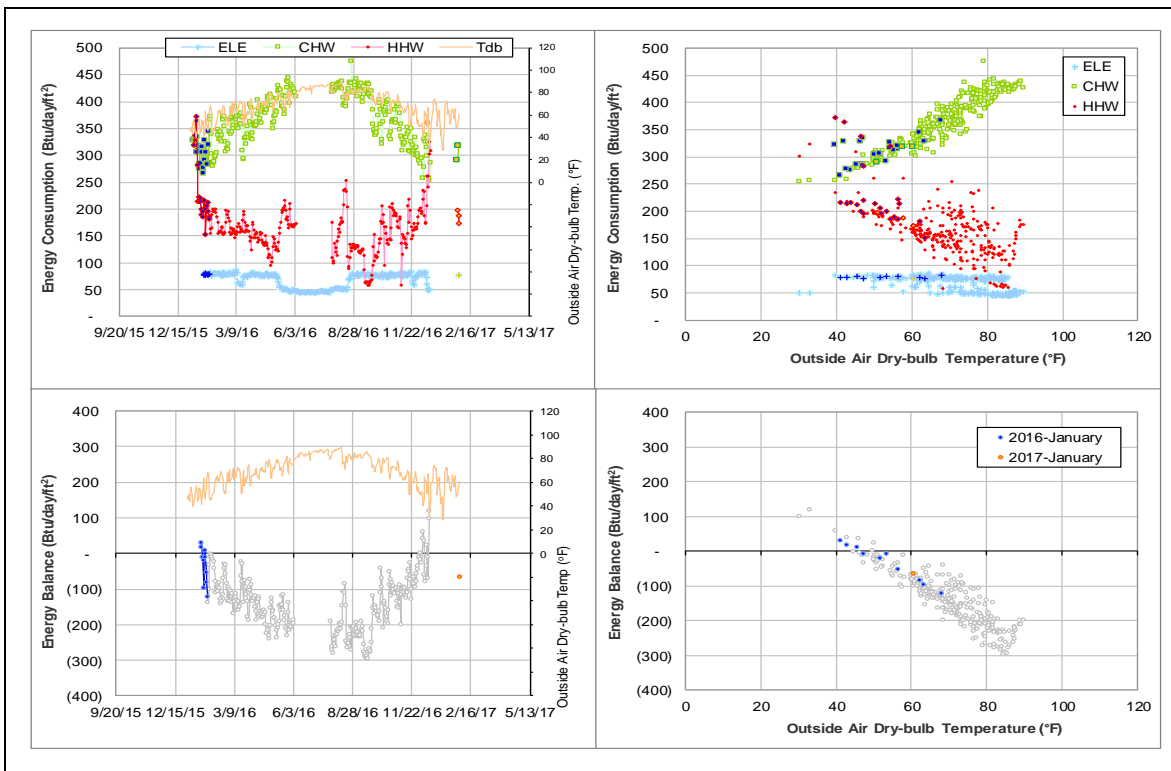
## Detected issues in the energy balance and/or the consumption data

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/ft<sup>2</sup> to 80 Btu/day/ft<sup>2</sup> (approximately 25%). At near 40°F compared to 11/2014, CHW increased slightly by about 25 Btu/day/ft<sup>2</sup> and HHW decreased slightly by about 25 Btu/day/ft<sup>2</sup>. 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)

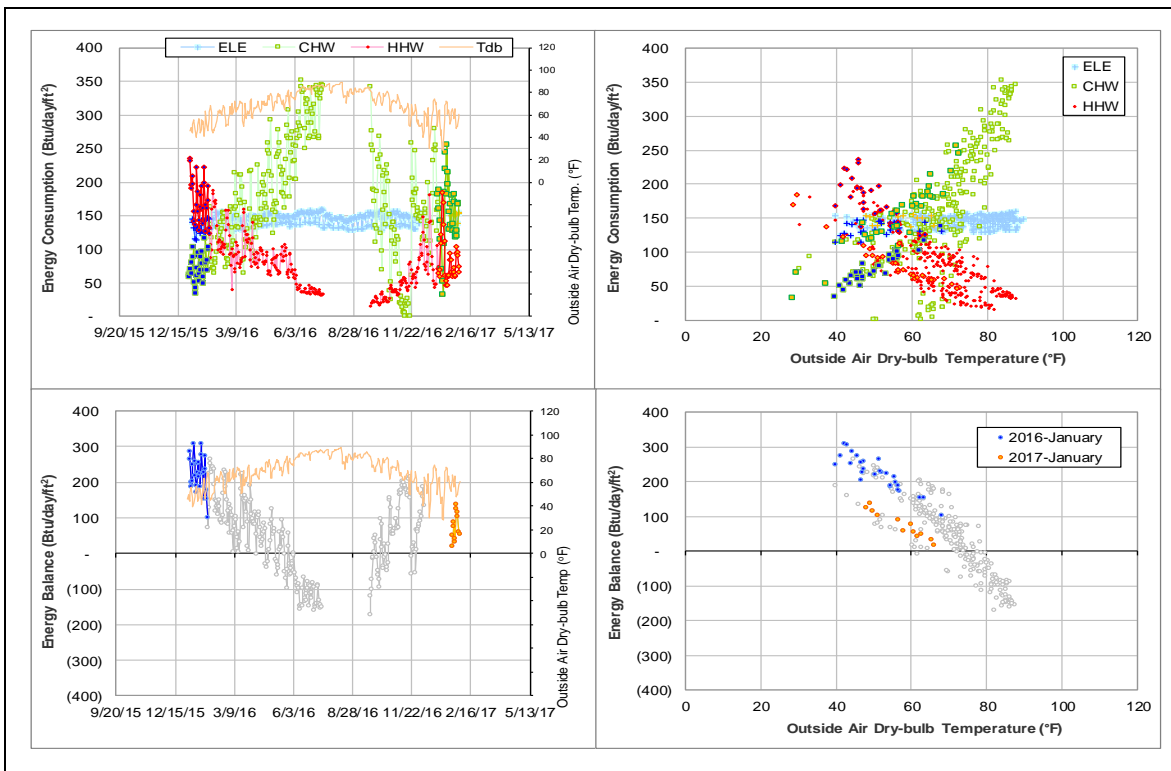
## Detected issues in the energy balance and/or the consumption data

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, but is at the same level last year.	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 after a missing period, but EB was not affected. CHW then saw a sharp increase at the end of 11/2016, and EB moved from 75°F to 62°F. This period, though, is suspected to have questionable meter readings. See also section II-2.

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



# Teague Research Center (TAMU BLDG # 445)

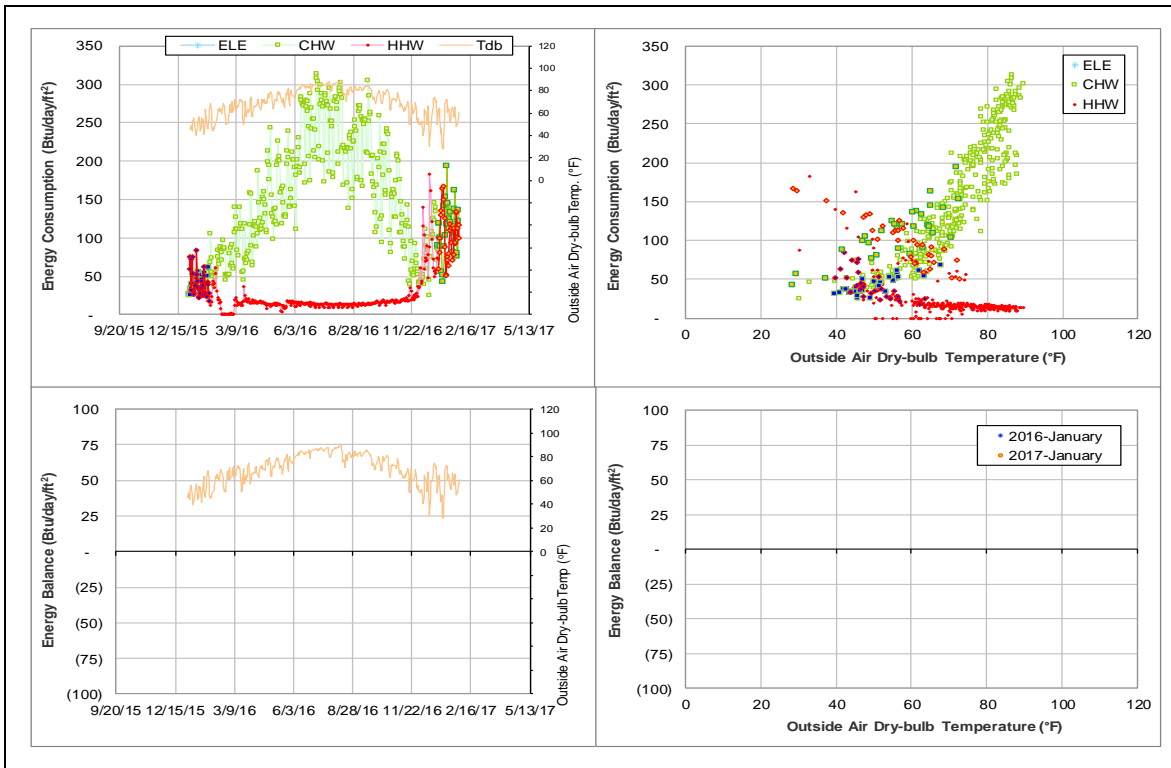
## Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	A new pattern seems to be forming.	Since 8/14/2016

### Comments

CHW seems to be forming a new pattern starting 8/14/2016. This new pattern is at a comparable level with the previous one. More data are needed to verify this new pattern. See also II-2.

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



## DPC Annex (TAMU BLDG # 517)

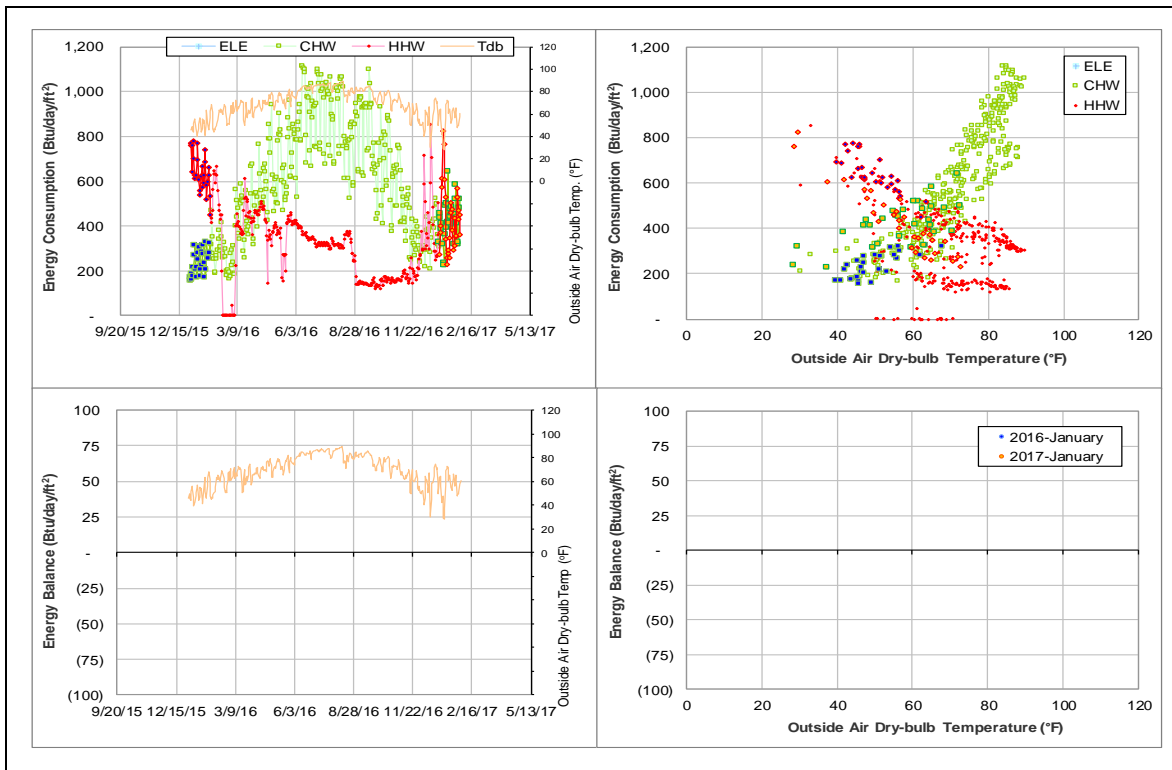
### *Detected issues in the energy balance and/or the consumption data*

Data Type	Description of data behaviors	Period
CHW	The consumption has decreased significantly. A new pattern seems to be forming.	Since 8/14/2016
HHW	The consumption has decreased significantly. A new pattern seems to be forming.	Since 8/31/2016

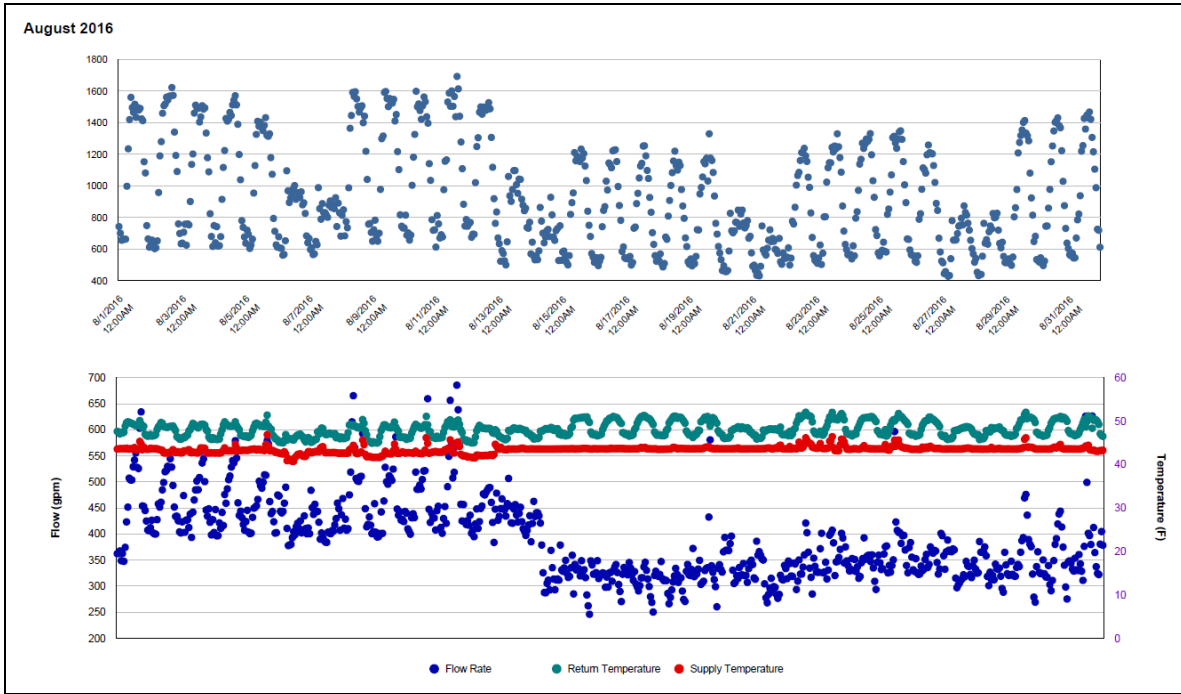
### *Comments*

CHW and HHW consumption significantly decreased on 8/14 and 8/31/2016, respectively. More data are needed to verify this new pattern. See also section II-2.

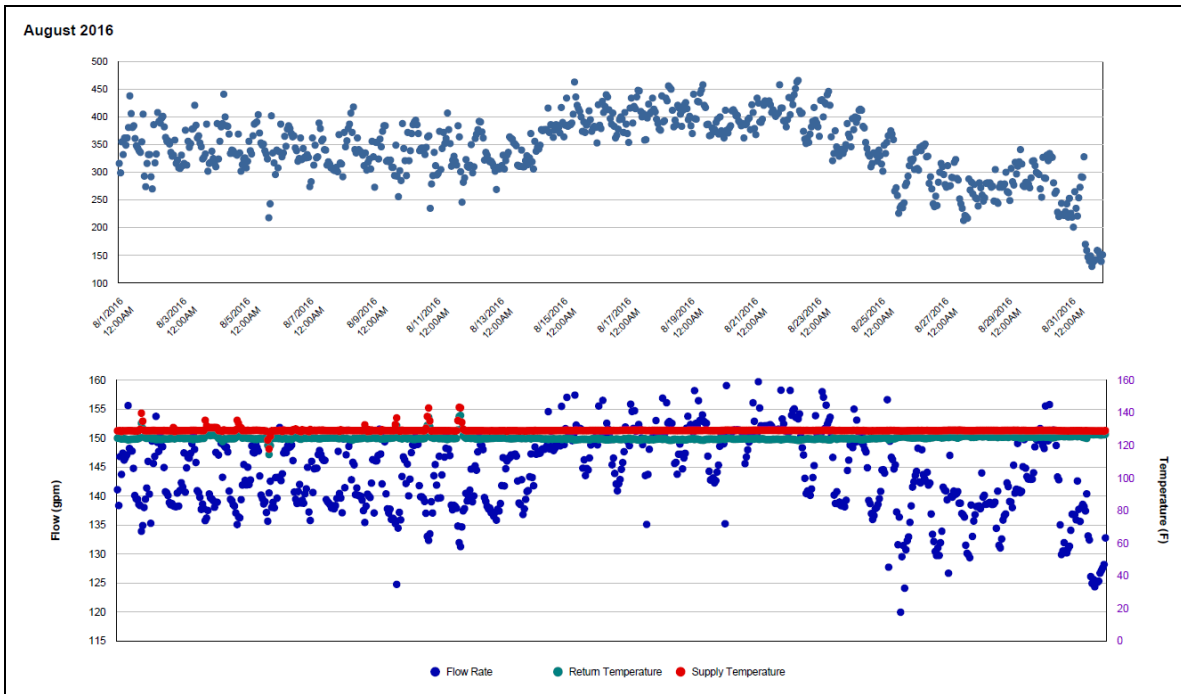
### *Explanatory Figure: 13 months energy balance plot with original data*



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



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





# Rudder Theatre Complex (TAMU Bldg #446)

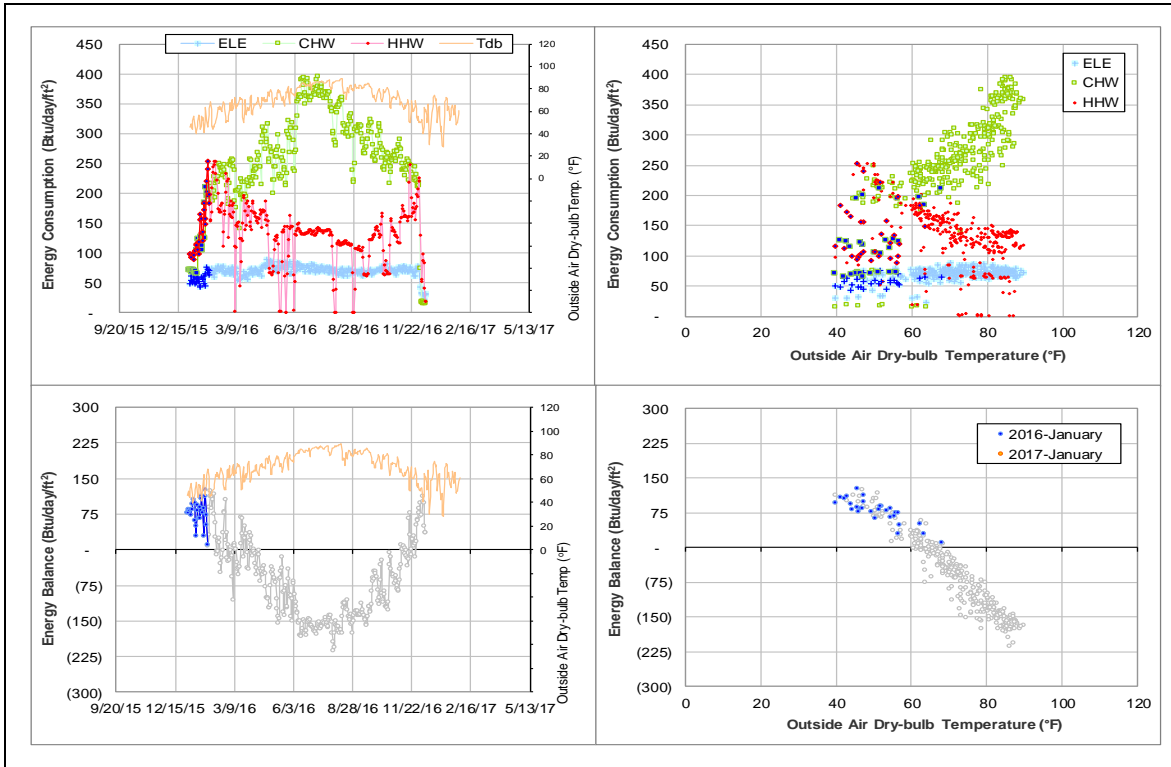
## Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
All Utilities	All utilities dropped to very low level.	Starting 12/5/2016

### Comments

All utilities for this building had dropped to a very low level during winter break last year. The similar phenomena also appeared in the winter break in 2016. This is not suspected to be a meter malfunction. The missing data in January are estimated using two different levels of models. The low consumption models are based on the short period of available data in December 2016. According to the data, the consumption went back to the normal level on Monday 1/25/2016. The consumption level is assumed to have restored to normal level on Monday 1/23/2017 this year.

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



## Fermier Hall (TAMU Bldg #482)

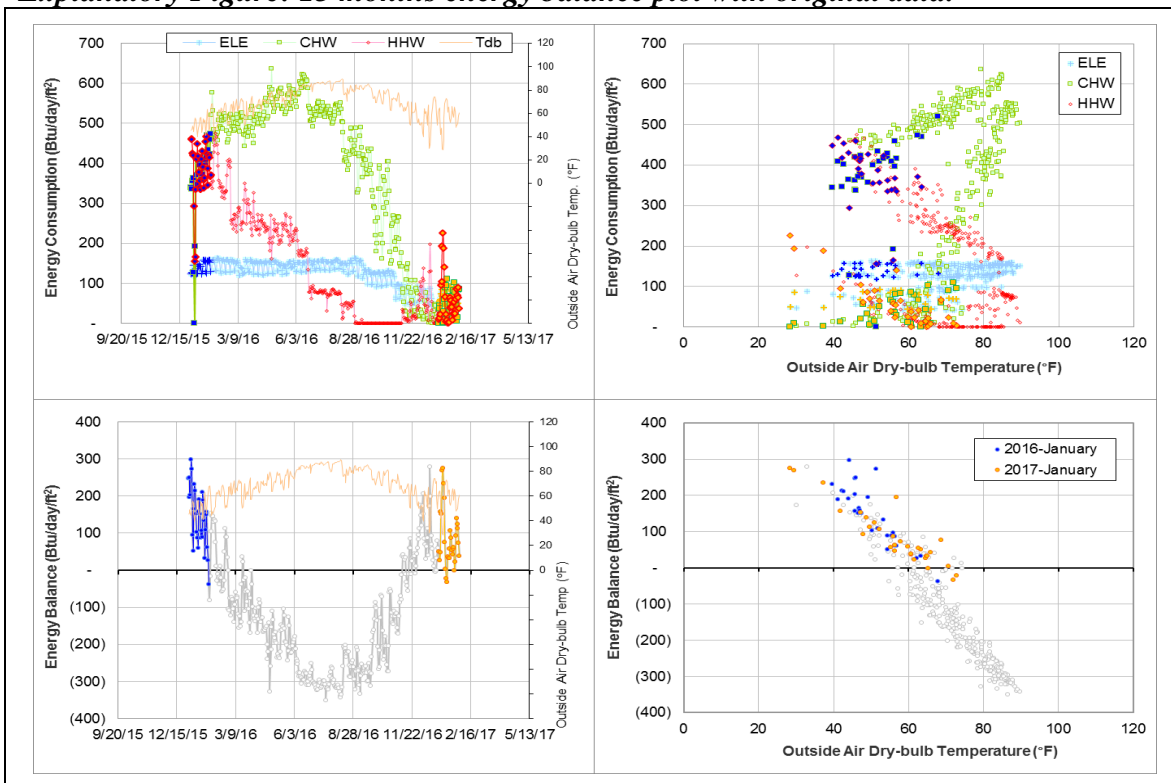
### *Detected issues in the energy balance and/or the consumption data*

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 winter break (12/23/2016 – 12/31/2016) consumption is lower than the recent pattern but does not appear to be a meter issue.

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



## Chemistry Building (TAMU Bldg #484)

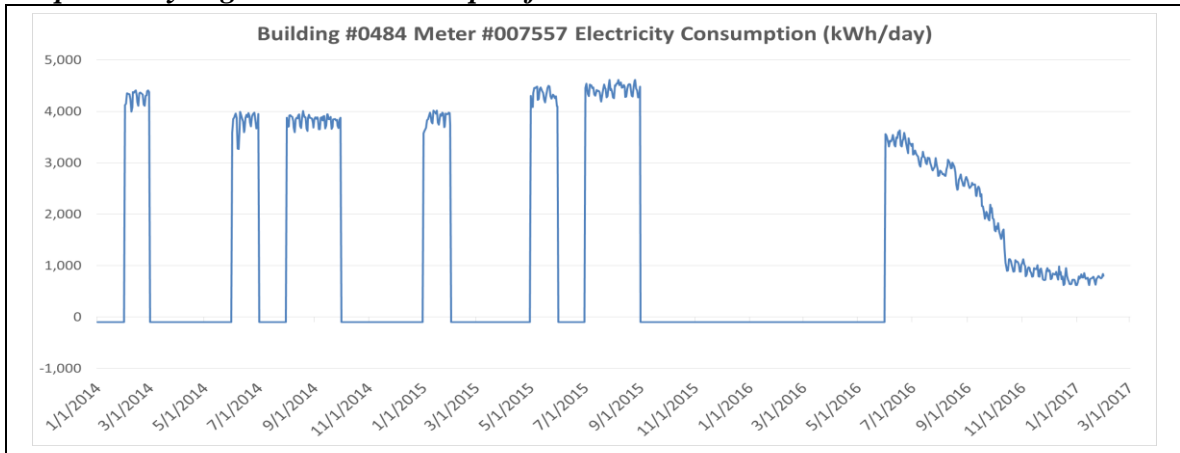
### *Detected issues in the energy balance and/or the consumption data*

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 be related to the building renovations.

### *Explanatory Figure: Times series plot for meter #007557*



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

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

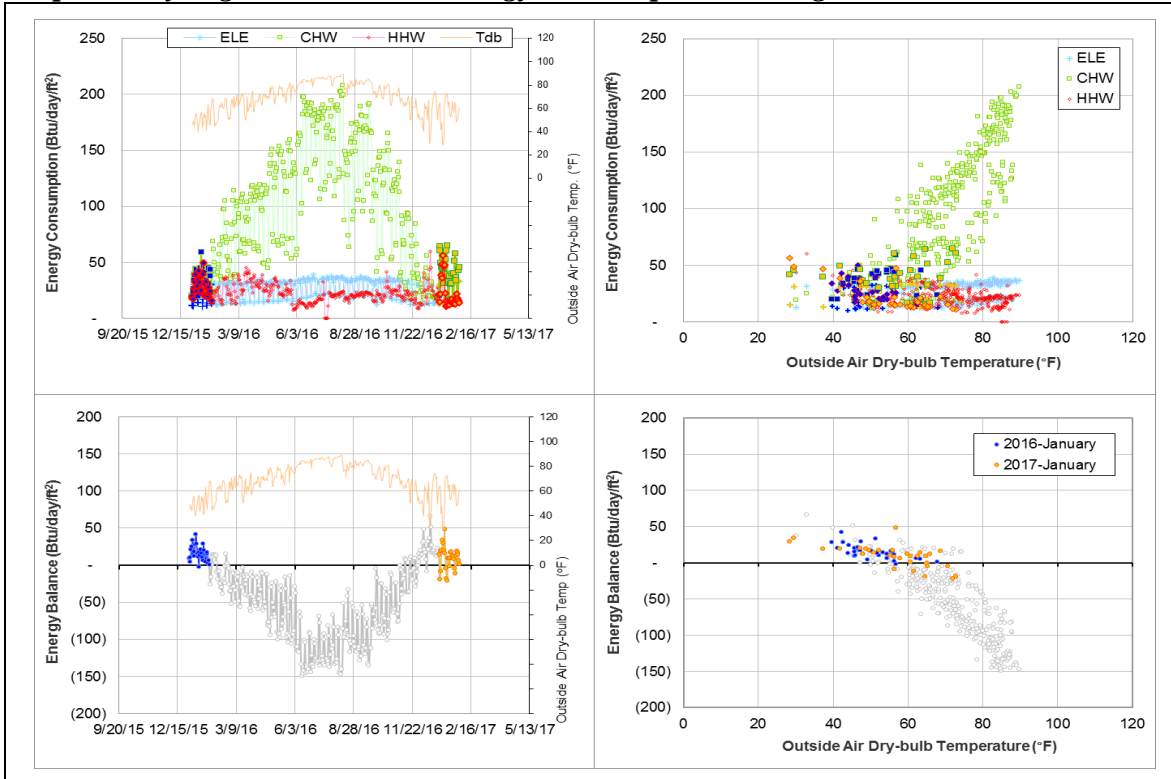
Data Type	Description of data behaviors	Period
ELE, CHW, and HHW	The energy use per unit floor area was low compared to other buildings.	Since the data became available on 7/1/2012

### Comments

The peak electricity use density was around 0.65 W/ft<sup>2</sup> which is small compared to that of other office buildings on campus. The delta T for HHW seemed to be small for years. The CHW and HHW consumption per the unit floor area also seemed to be low. It is possible that the GSF we have (46,110 ft<sup>2</sup>) 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 was scattered 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)

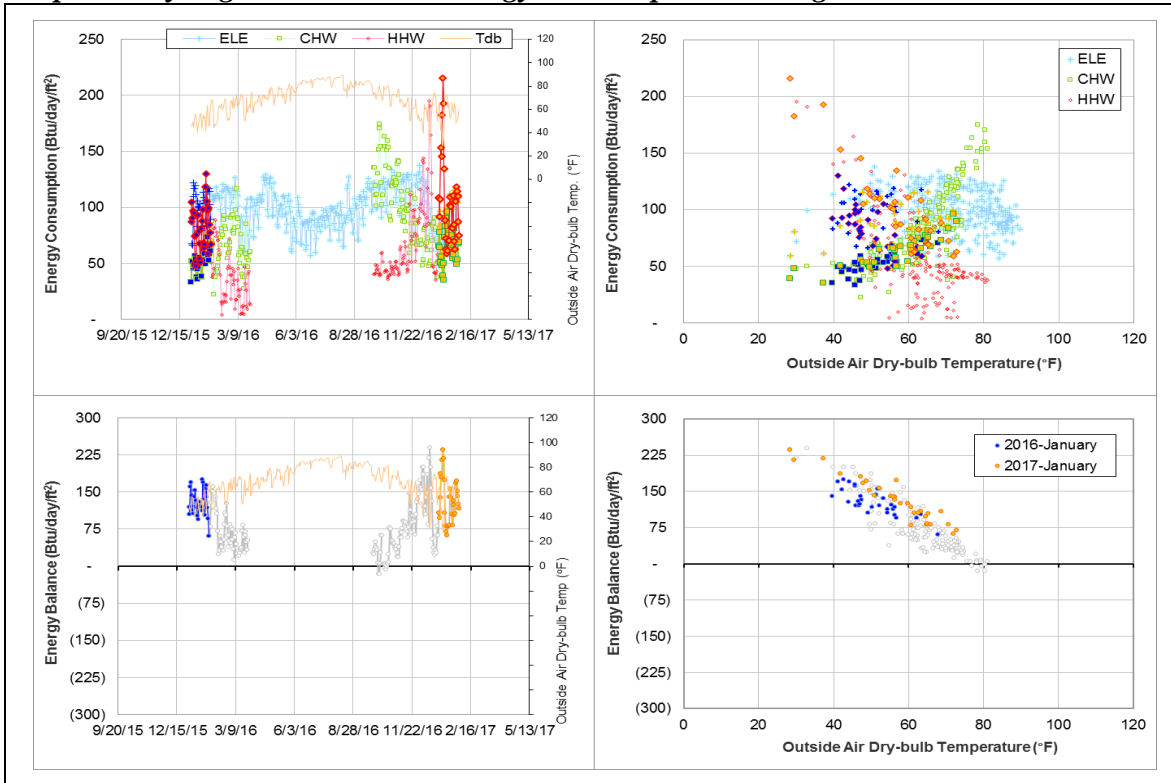
## Detected issues in the energy balance and/or the consumption data

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 compared to the ELE and HHW consumption and it could be the reason causing 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)

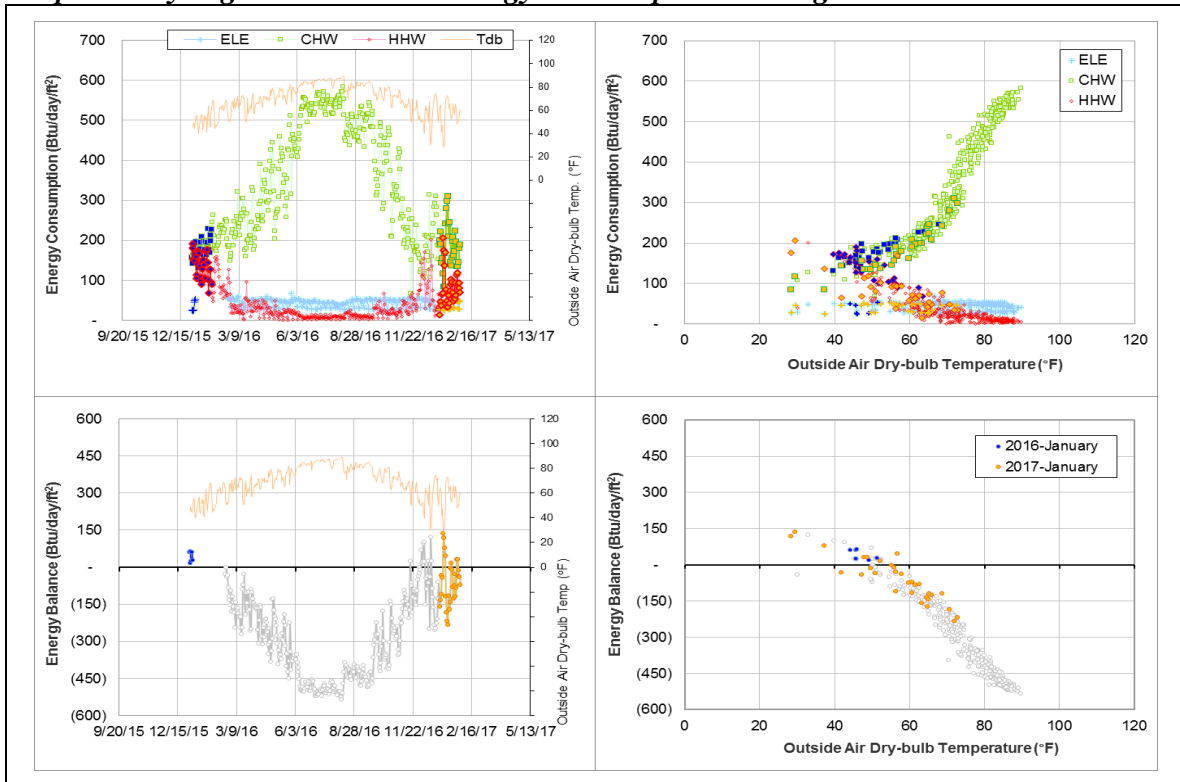
### *Detected issues in the energy balance and/or the consumption data*

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 over the past 4 years.

### *Comments*

The ELE consumption was about 100 Btu/day/ft<sup>2</sup> lower than the levels in typical office buildings on campus, and this might be a metering error or this meter might not cover the whole building.

### *Explanatory Figure: 13 months energy balance plot with original data*



## All Faiths Chapel (TAMU Bldg #512)

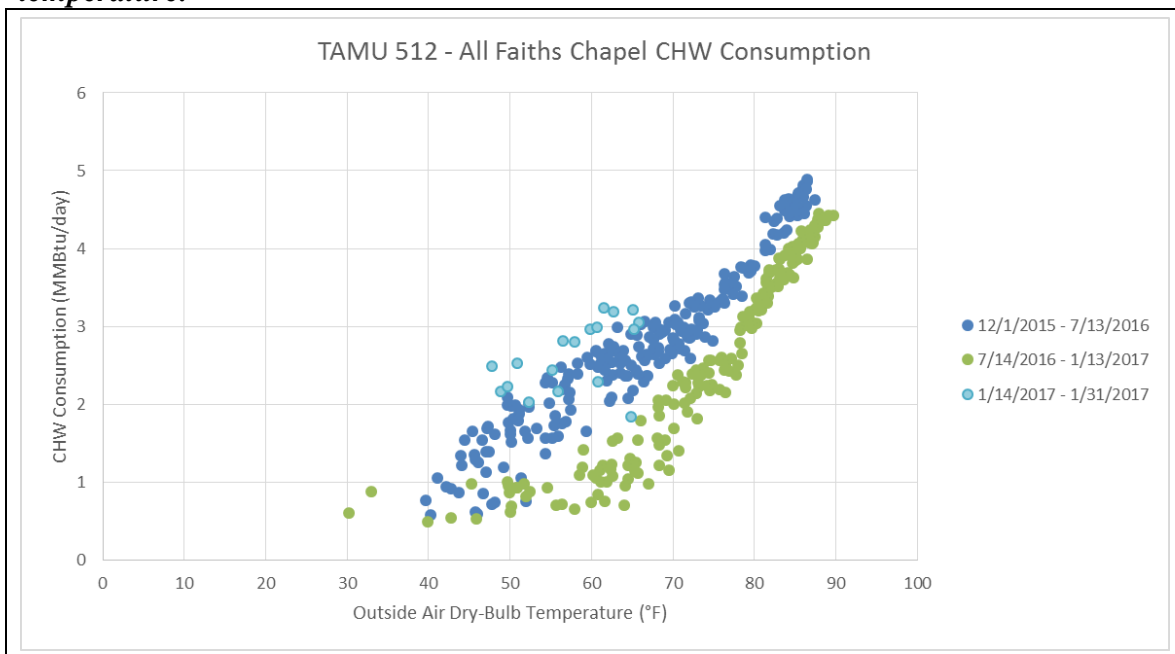
### *Detected issues in the energy balance and/or the consumption data*

Data Type	Description of data behaviors	Period
CHW	The CHW consumption level decreased.	7/14/2016 – 1/13/2017
	The CHW consumption level increased.	1/14/2017 – 1/31/2017

### *Comments*

From 7/14/2016 to 1/13/2017, the CHW consumption level has decreased dropping out of the main pattern. Starting 1/14/2017, the CHW consumption level has increased and appears above the original pattern. More data is needed to see how the pattern continues.

### *Explanatory Figure: 13 months energy consumption versus outside air dry-bulb temperature.*



## Blocker Building (TAMU Bldg #524)

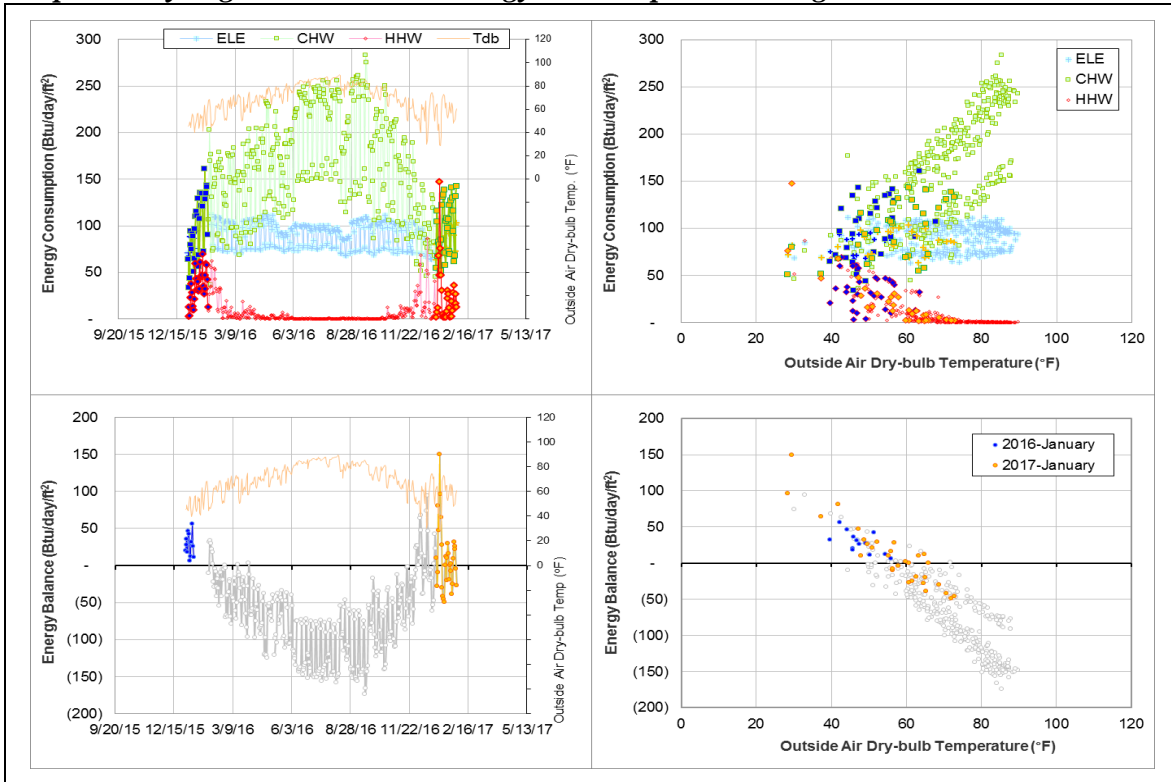
### *Detected issues in the energy balance and/or the consumption data*

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*

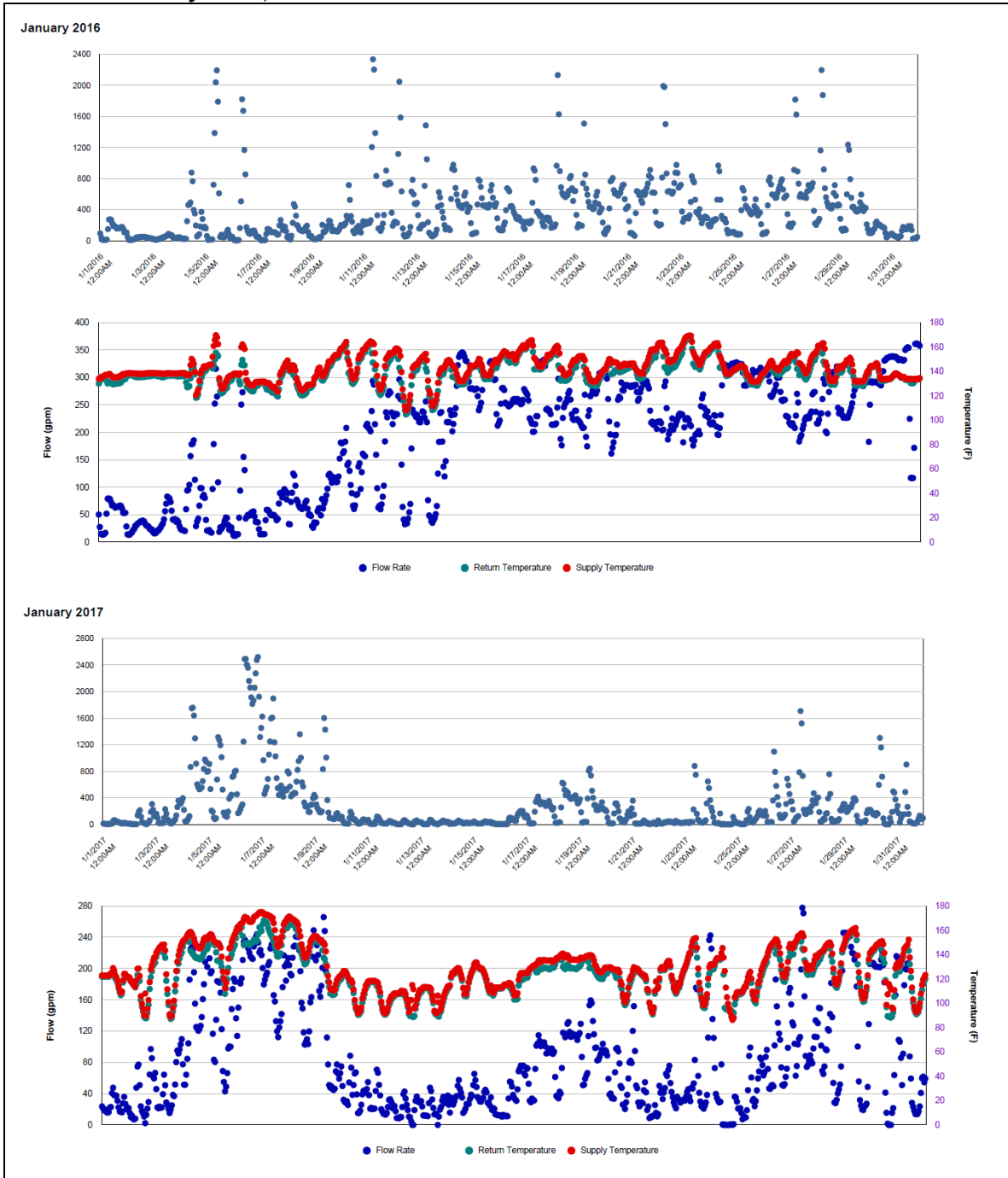
The cross-point of temperature of energy balance has been low for years. The delta-T and consumption level for HHW seems low for the past couple of years. More information is needed to help identify the reason causing the low energy balance for this building.

### *Explanatory Figure: 13 months energy balance plot with original data*





**Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from the utilities office. (top: January 2016, bottom: January 2017)**



# McNew Laboratory (TAMU Bldg #740)

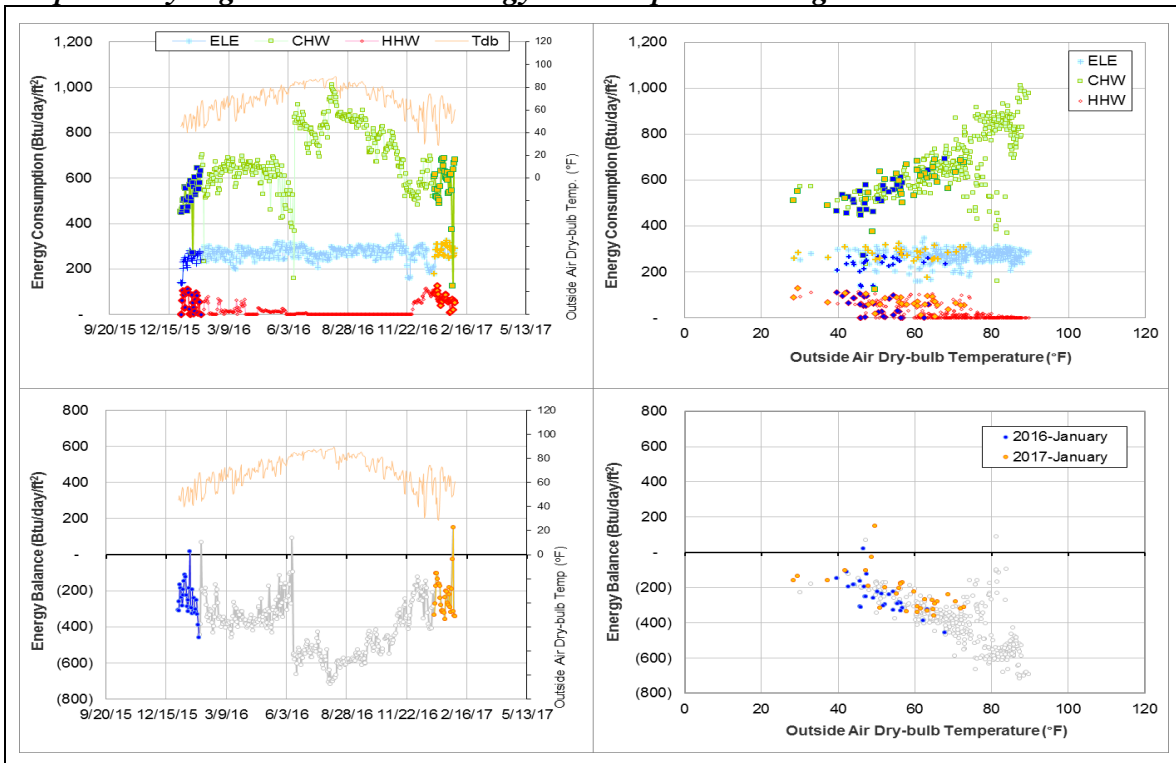
## Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The energy balance pattern level is low.	For years

### Comments

The energy balance level has consistently been low for years. 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)

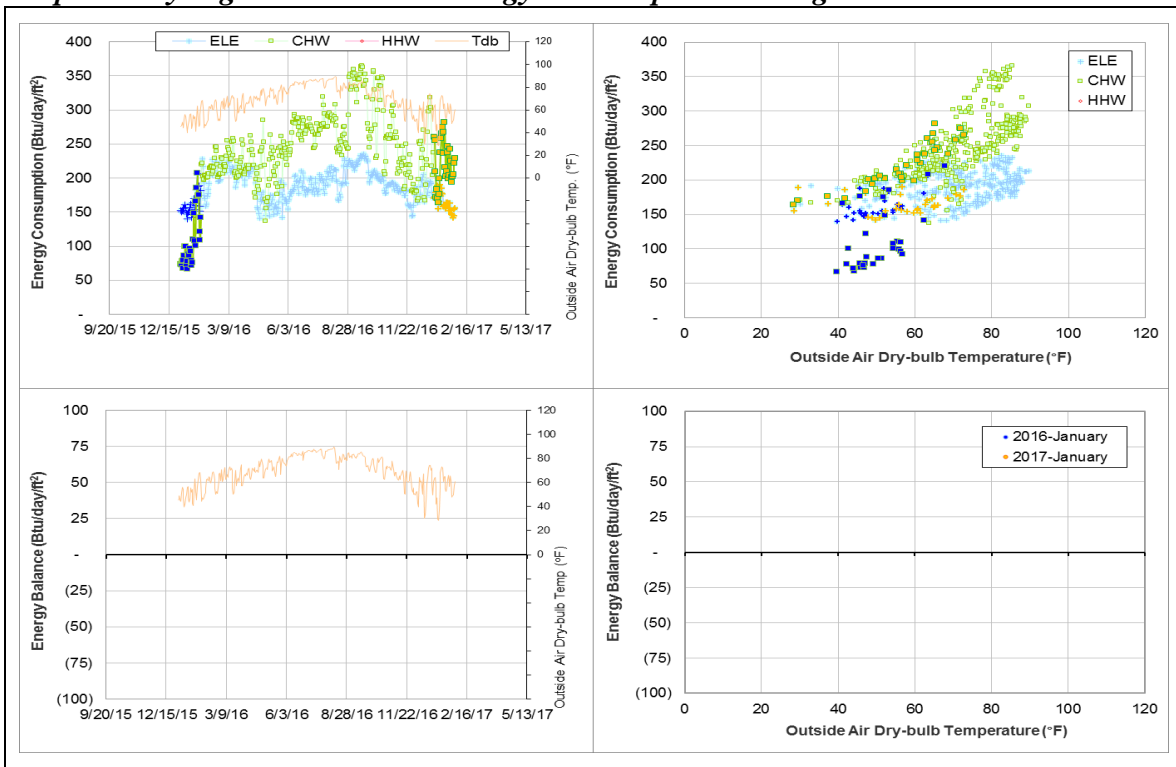
## Detected issues in the energy balance and/or the consumption data

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

### Comments

Starting the month of September 2016, the CHW energy consumption pattern appears to be becoming steeper. Consumption levels have increased at higher temperatures compared to 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



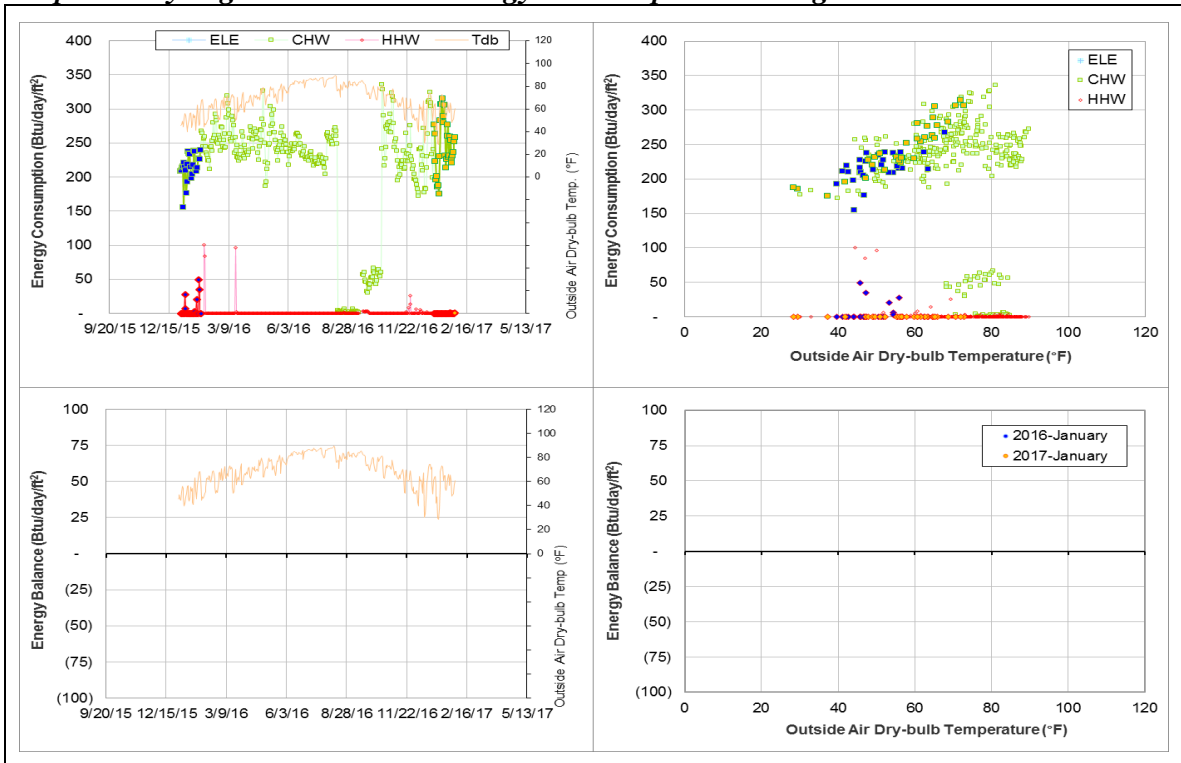
## TVMC-Small Animal Building (TAMU Bldg# 880)

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



## Veterinary Medicine Administration (TAMU Bldg# 1026)

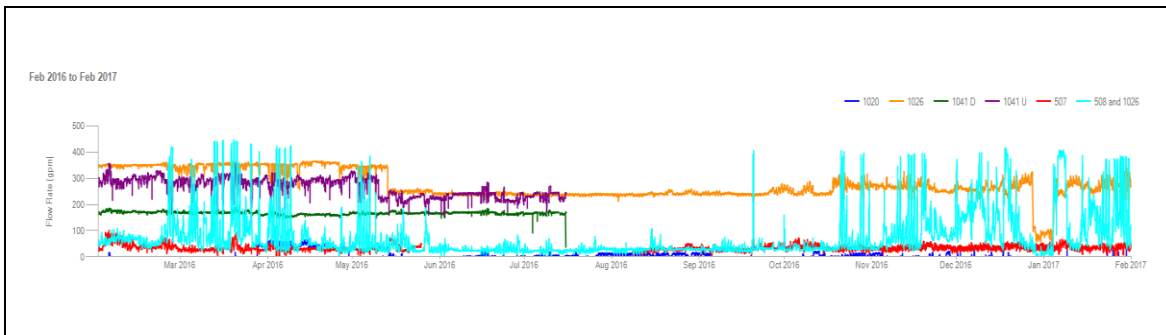
### *Detected issues in the energy balance and/or the consumption data*

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

### *Comments*

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

***Explanatory Figure: Time series of hourly HHW flow rates for Veterinary Medicine Administration (Bldg #1026) and neighboring buildings during 2/1/2016–2/1/2017. The combined HHW metered for Bldg #1026 and #508 (light blue) is lower than the standalone HHW meter for only Bldg #1026 (dark blue).***



## Texas Vet Med Diagnostic Lab (TAMU Bldg# 1041)

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

Data Type	Description of data behaviors	Period
ELE	Provided meter reading seems low	January 2017

### *Comments*

We received an electric meter reading of 71,687 kWh for meter #001539 with a read date 2/13/2017. Assuming this value represents January and part of February consumption, we feel it is a little too low and with a read date in the middle of the next month it is difficult to separate January consumption from February. Using a baseline period of 5/1/2014 – 7/31/2016, the modeled value for this meter for January is 83,312 kWh.

# Biological Control Facility (TAMU Bldg# 1146)

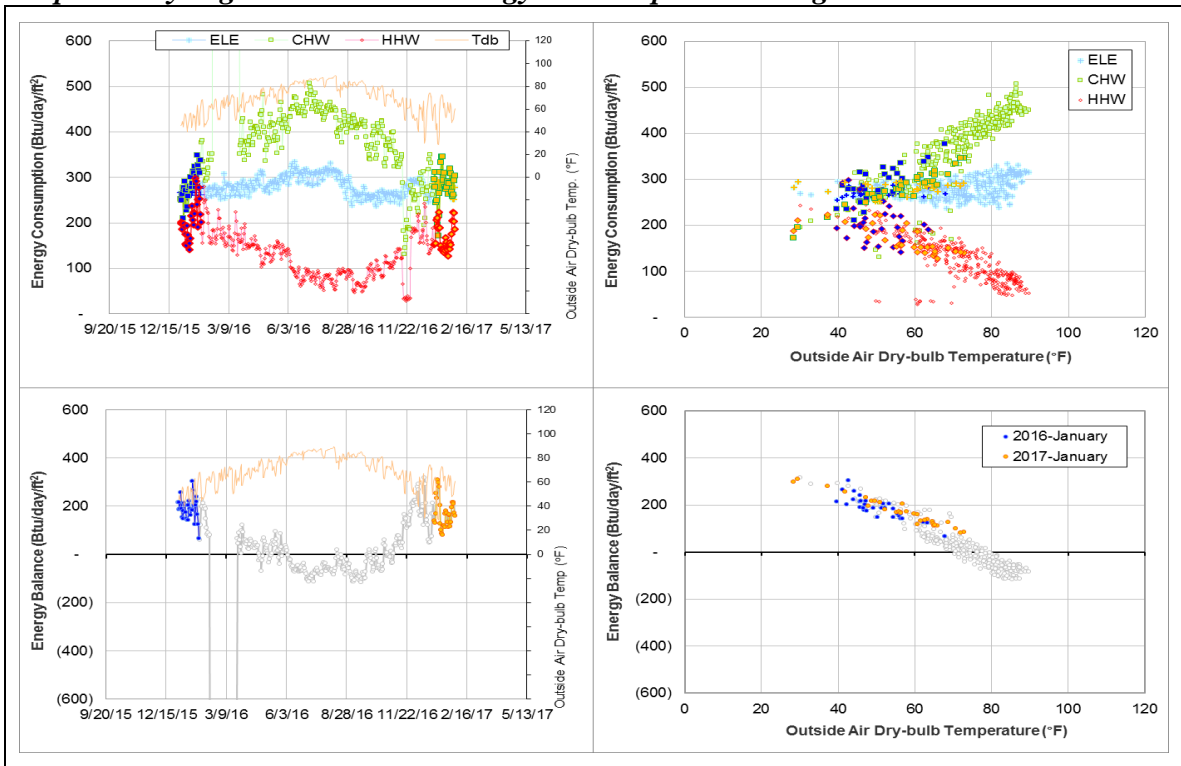
## Detected issues in the energy balance and/or the consumption data

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)

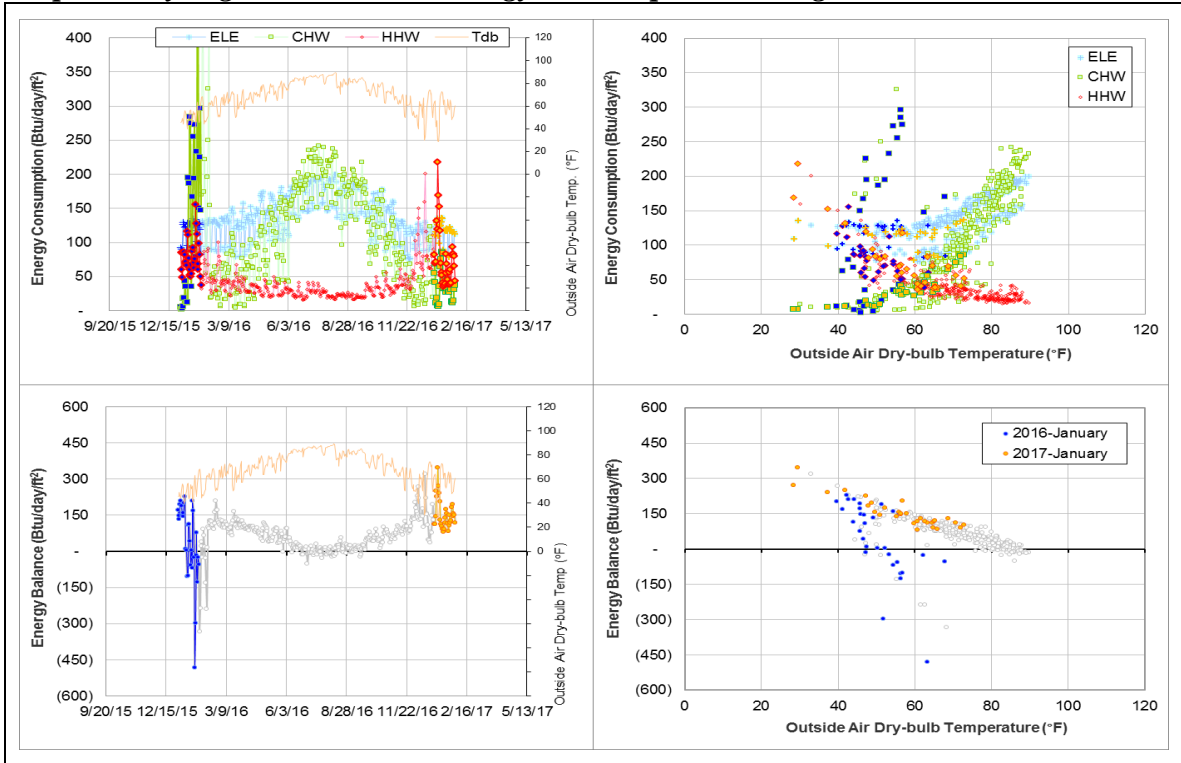
## Detected issues in the energy balance and/or the consumption data

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 compared to the ELE and HHW use level. But the CHW consumption level has been stable since the data became available on 7/1/2012. More information might be needed to help identify which type energy causes the high cross-point temperature.

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





# Veterinary Research Building (TAMU Bldg# 1197)

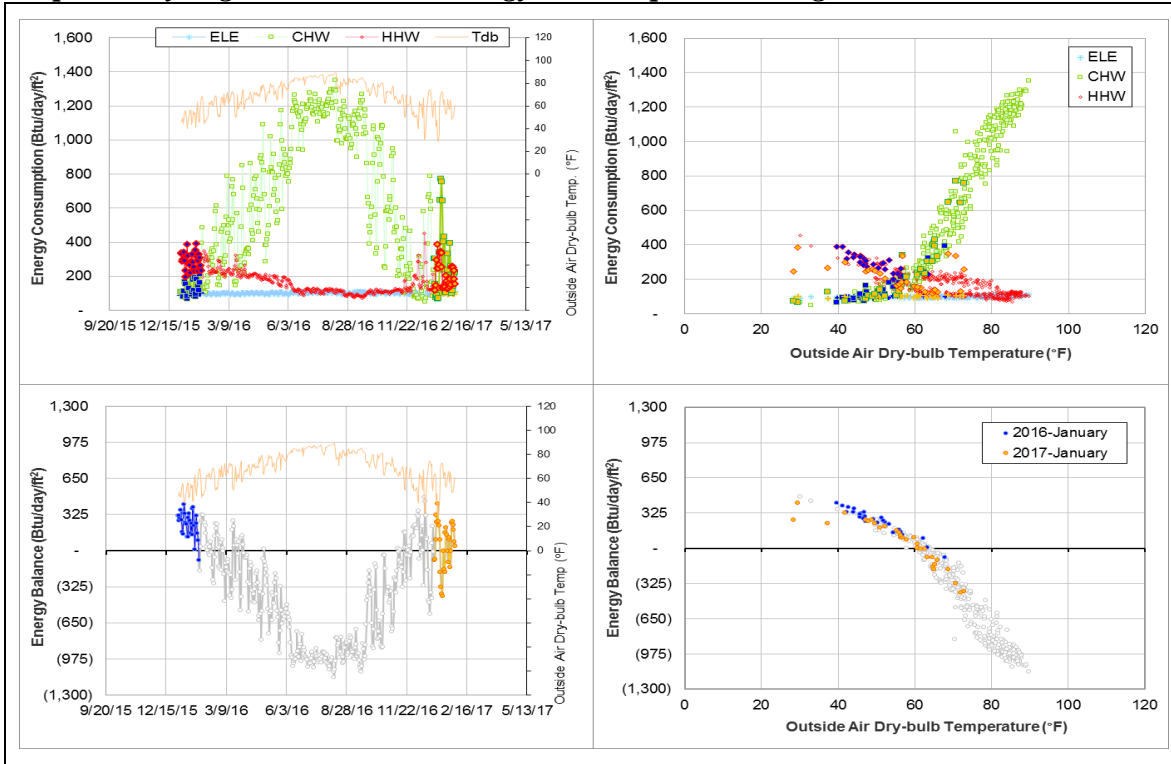
## Detected issues in the energy balance and/or the consumption data

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

### Comments

The whole building hourly electricity use is in the range 120 kWh to 160 kWh (1.05 W/ft<sup>2</sup> to 1.40 W/ft<sup>2</sup>), which is low for a veterinary laboratory building on the campus. This seems to be the reason for the low level of the energy balance load. The temperature-axis intercept of the energy balance is around 62°F.

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



# Reynolds Medical Sciences Building (TAMU Bldg# 1504)

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

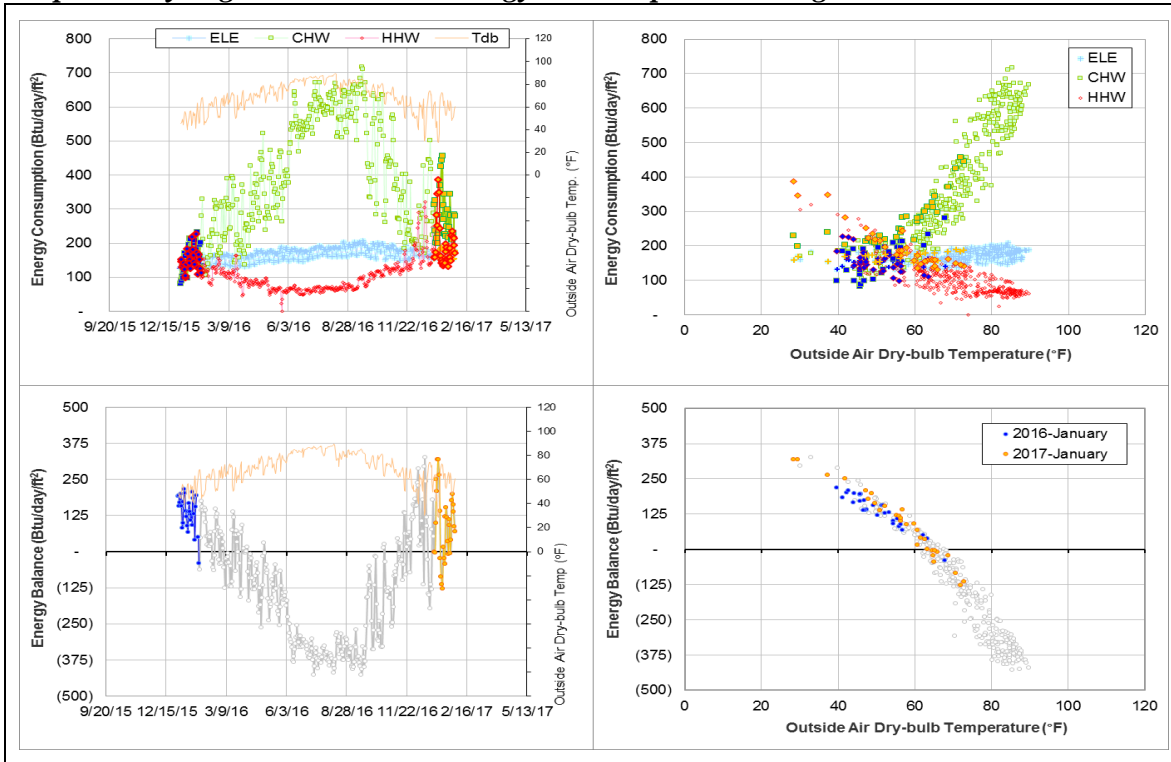
Data Type	Description of data behaviors	Period
ELE	Increase in energy consumption pattern.	September 2016 – Ongoing
CHW	Slight increase in energy consumption pattern.	September 2016 – Ongoing
HHW	Increase in energy consumption pattern	September 2016 – Ongoing

### Comments

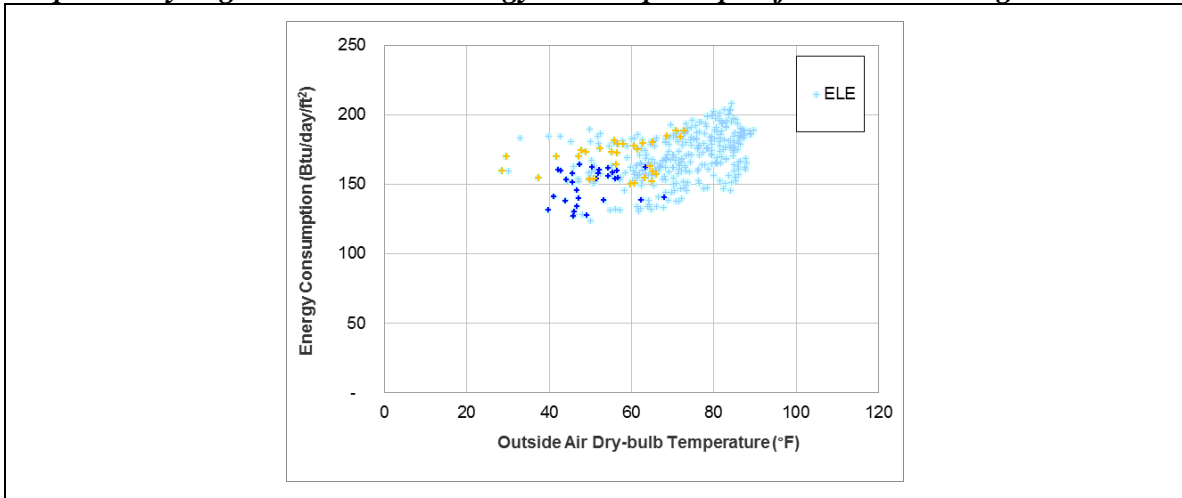
The HHW energy consumption pattern has increased by approximately 40 Btu/day/ft<sup>2</sup> starting in September 2016. Around the same time the CHW and ELE energy consumption also shows a slight increase. Even though the energy consumption has increased, the energy balance for the building is still within the range of the previous months. It doesn't 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***



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

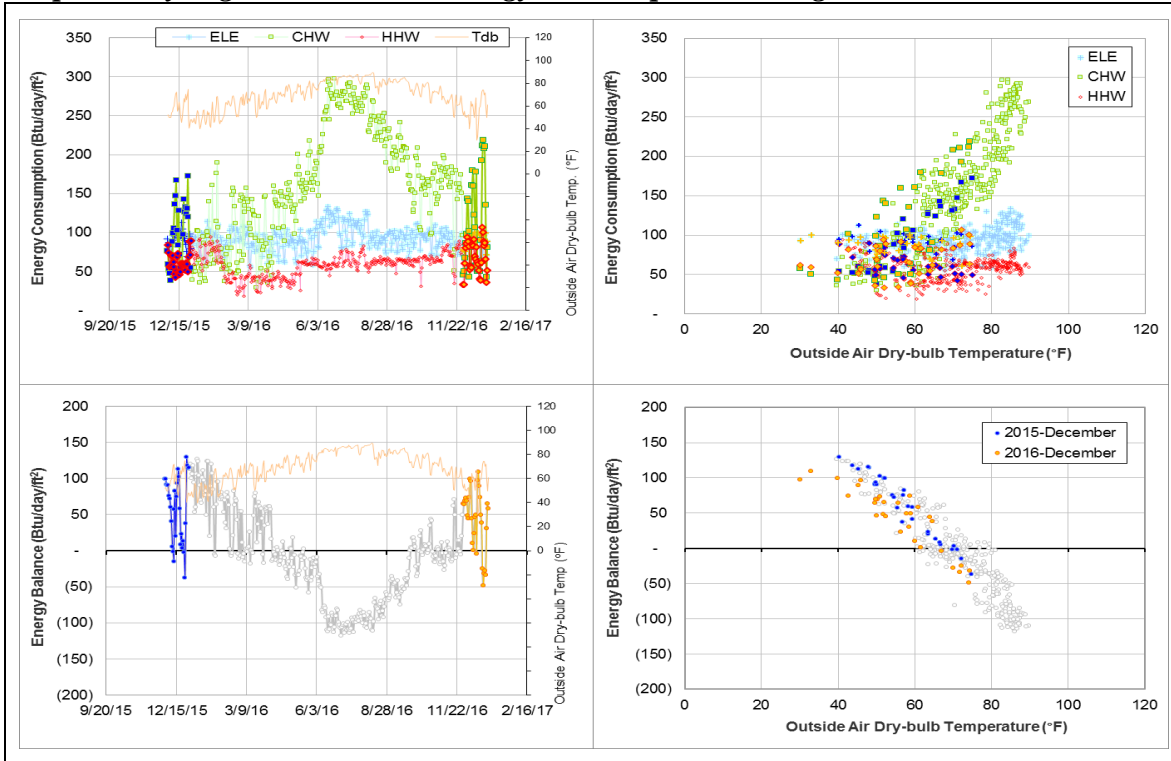
## Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	Increase in energy consumption pattern	11/5/2016 – 1/3/2017
HHW	Increase in energy consumption pattern	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/ft<sup>2</sup>, and the HHW consumption showed an increase of 10 – 15 Btu/day/ft<sup>2</sup>. In January 2017, the CHW pattern appears to be shifting back to its previous pattern while the HHW shows some days at the higher level and some at the lower level.

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



## Student Recreation Center (TAMU Bldg# 1560)

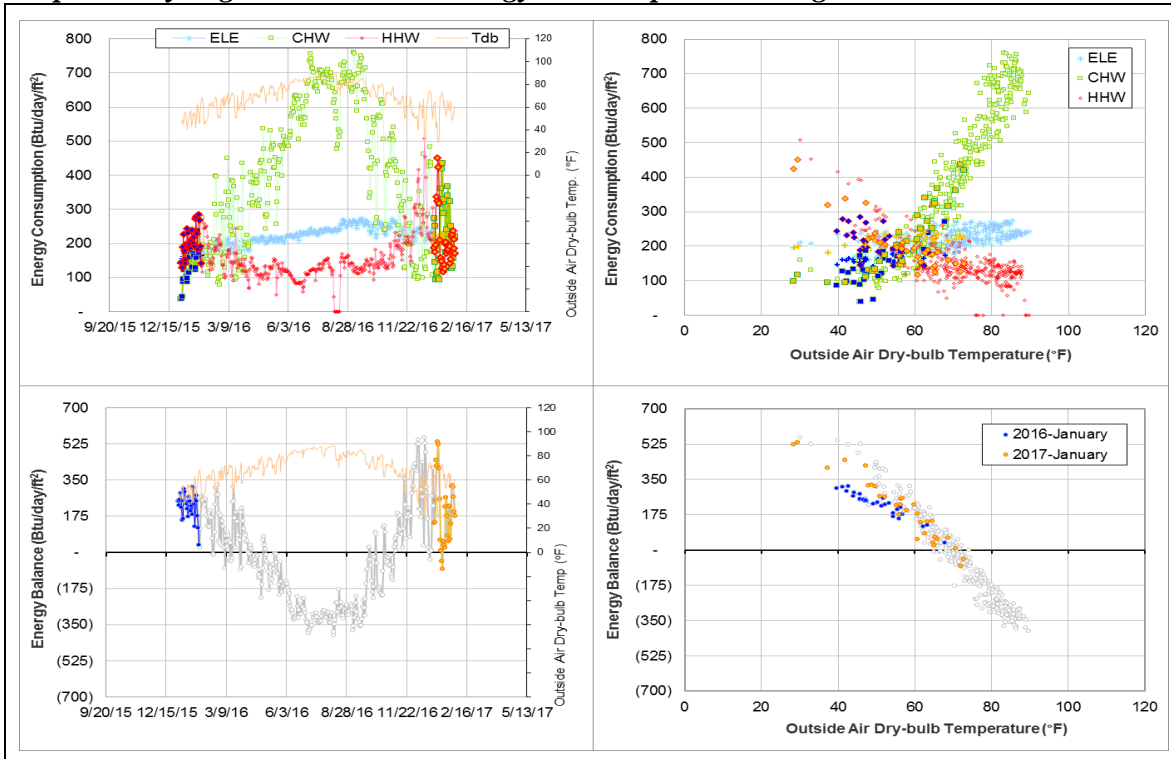
### Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE, CHW, HHW	Increase in energy consumption pattern	11/5/2016 – Ongoing
Energy Balance	Change in pattern slope for cooler temperatures	11/5/2016 – Ongoing

### Comments

The consumption patterns for ELE, CHW, and HHW are showing a slight increase. The energy balance pattern is also showing an increase in energy in the lower temperature range.

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



# International Ocean Discovery Building (TAMU Bldg# 1601)

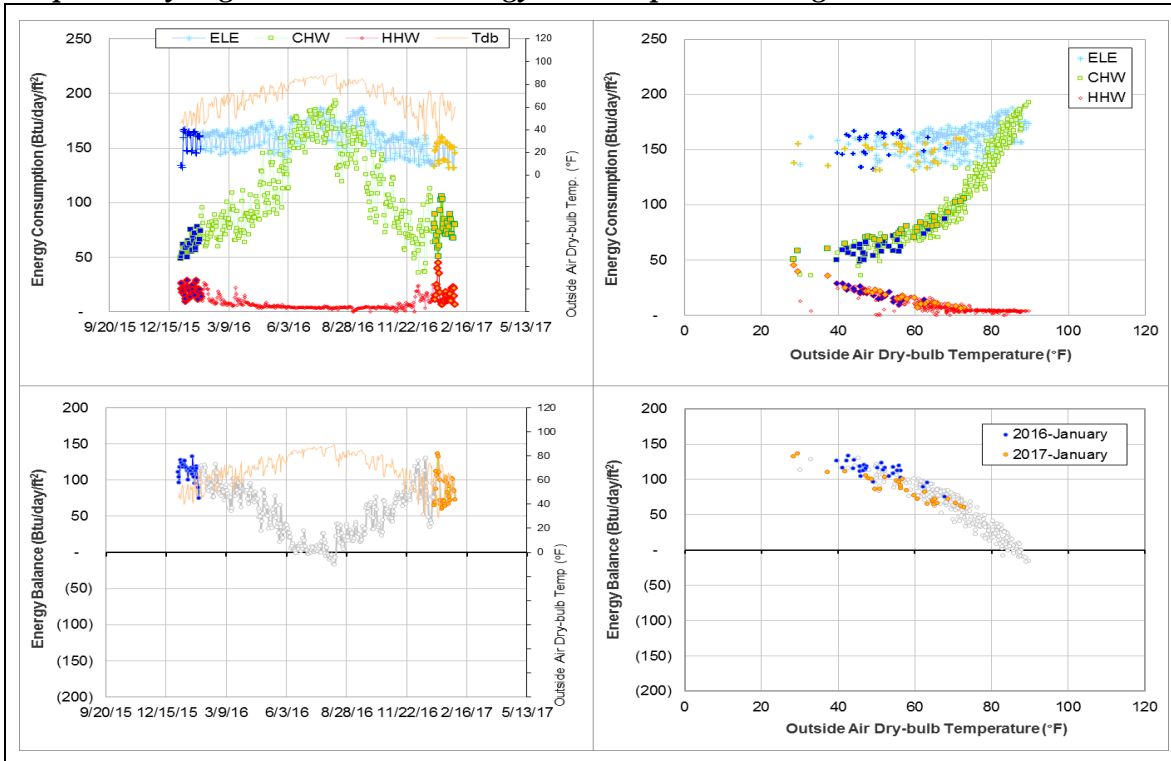
## Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
Energy Balance	The cross-point is high, around 85°F.	Since data became available in Feb 2015

### 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/ft<sup>2</sup>. The CHW consumption level is low compared to ELE and HHW levels. This building might have its own chillers.

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



# Offshore Technology Research Center (TAMU Bldg# 1604)

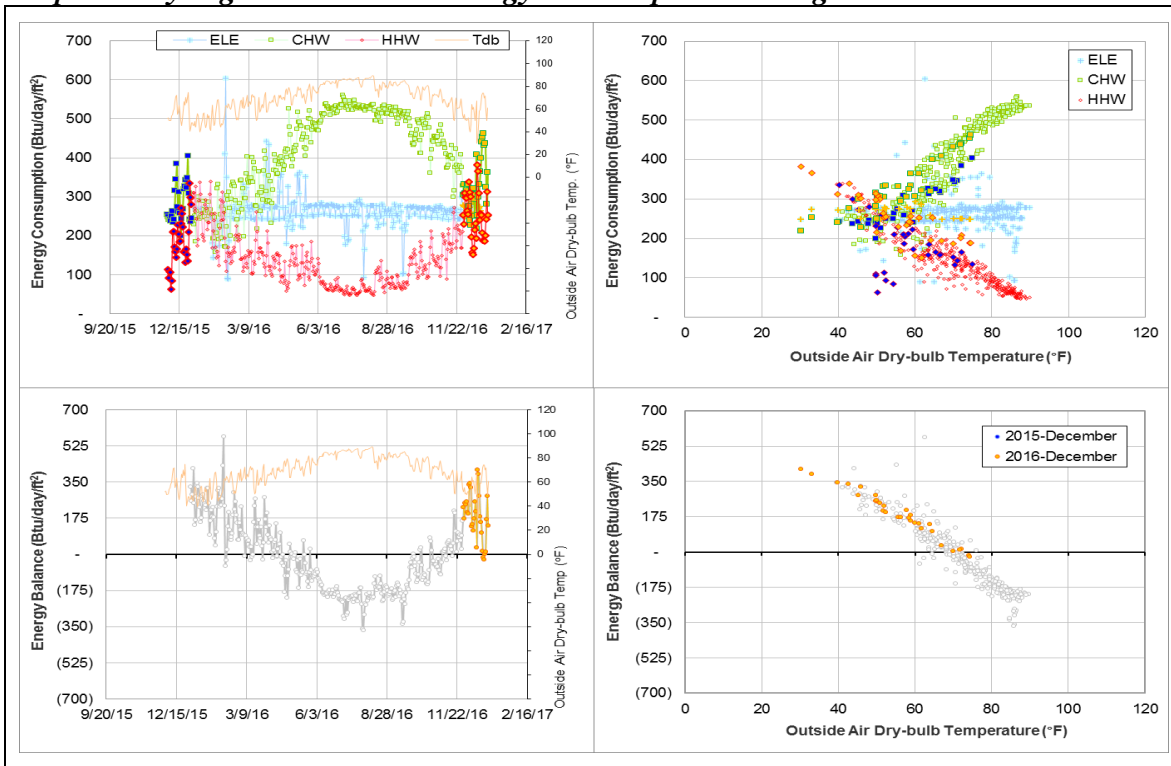
## Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW and HHW	The consumption level is higher than that of last year.	5/1/2016-ongoing

### Comments

It appears that new consumption patterns are developing for this building starting May 2016. The CHW consumption level is showing an overall increase, but most notably in the warmer months, and the HHW consumption level is also showing an increase for warmer temperatures. However, the energy balance maintained the same pattern. It doesn't appear to be metering problem.

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



### **III. Time Series Plots for January 2017 Consumption**



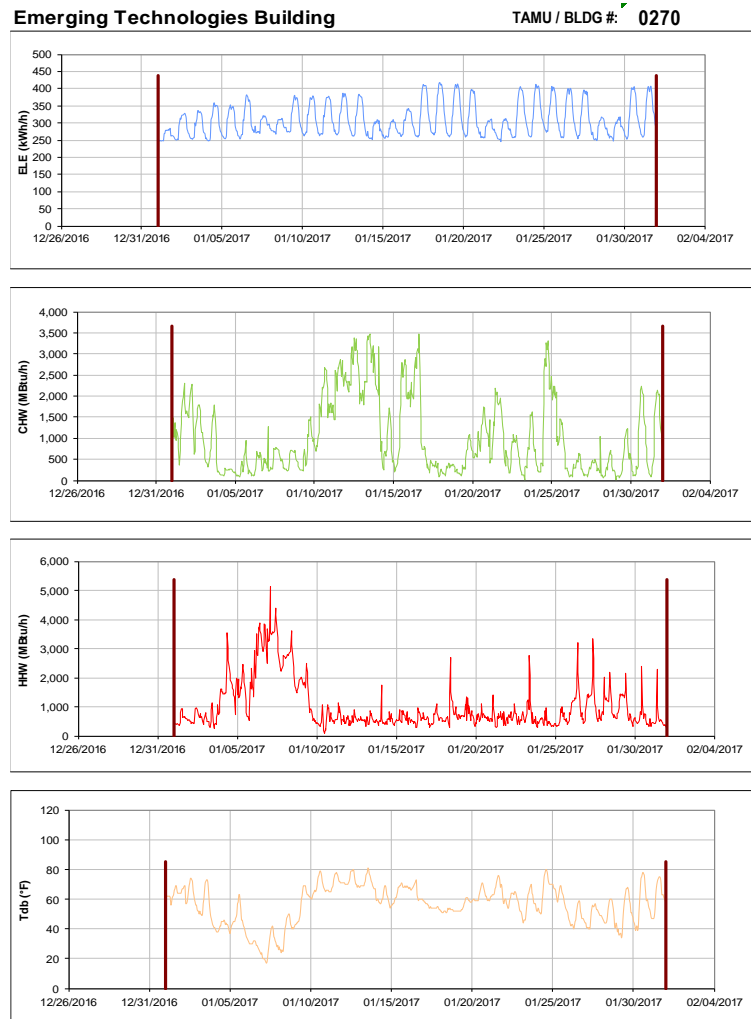


Figure III-1 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Emerging Technologies Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

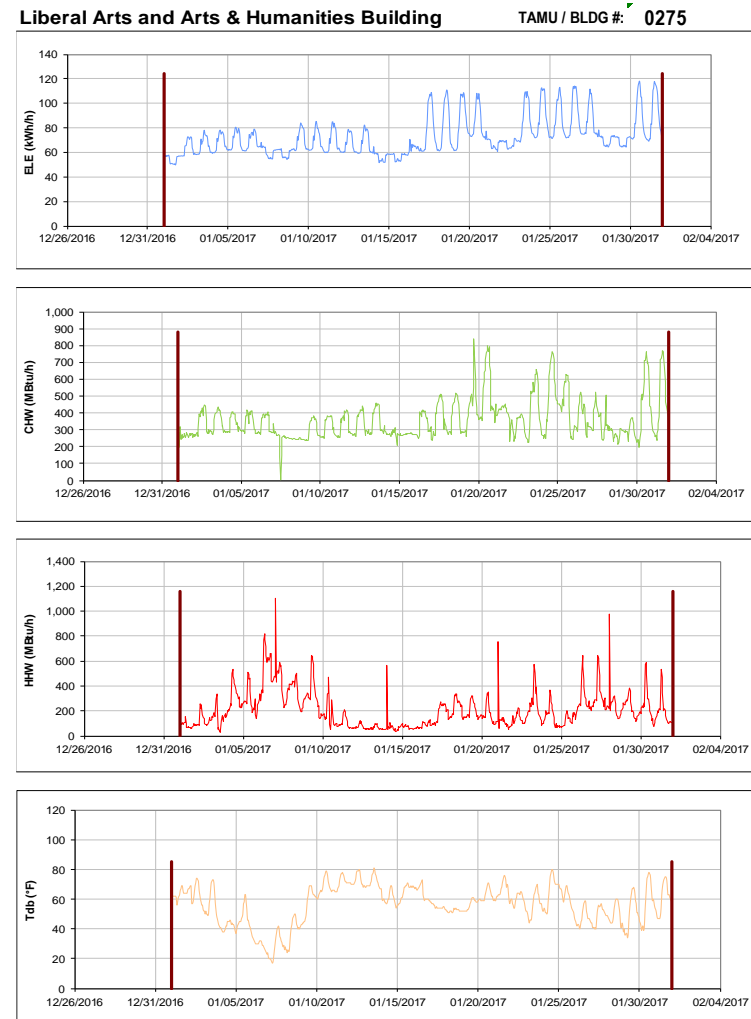


Figure III-2 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Liberal Arts and Arts & Humanities Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Wells Residence Hall

TAMU / BLDG #: 0290

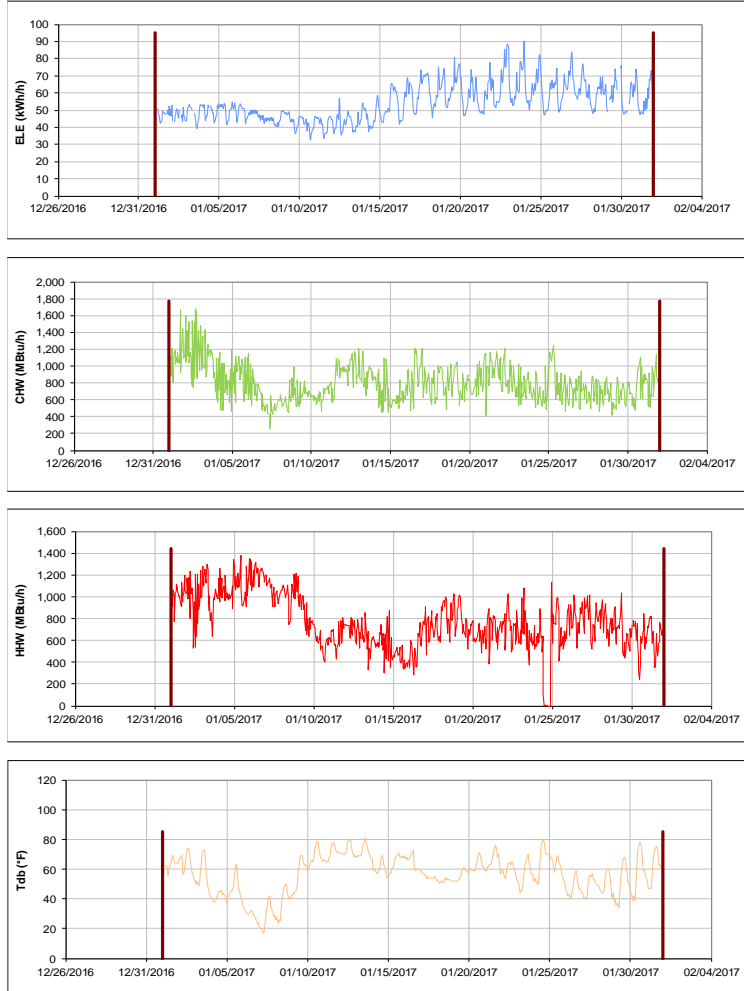


Figure III-3 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wells Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Rudder Residence Hall

TAMU / BLDG #: 0291

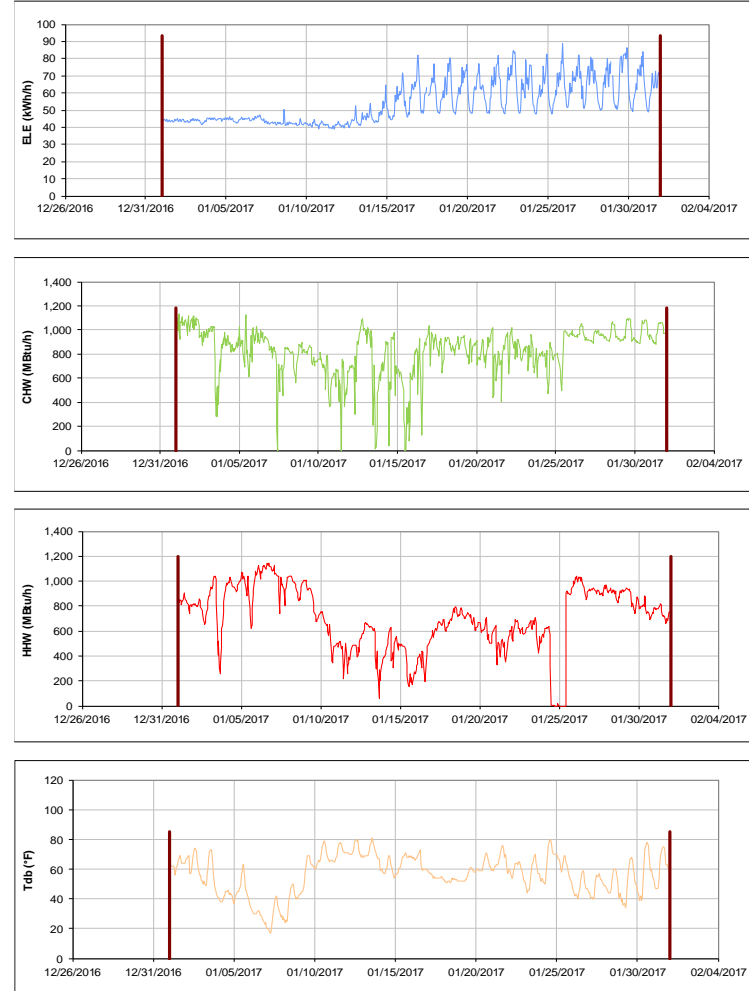


Figure III-4 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

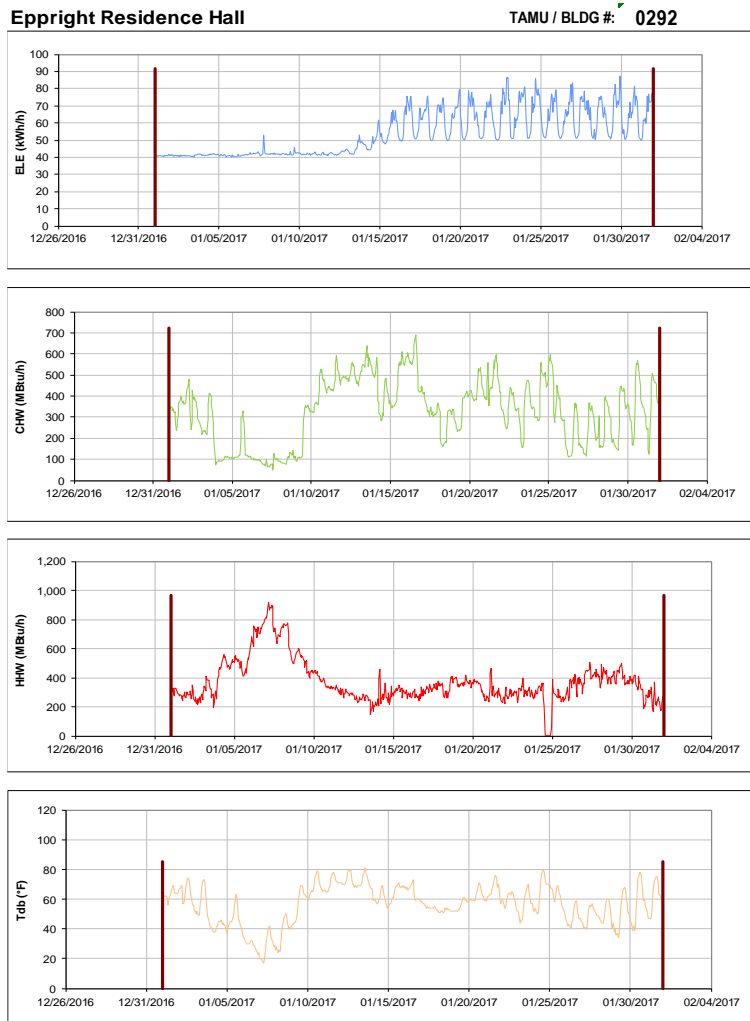


Figure III-5 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Eppright Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

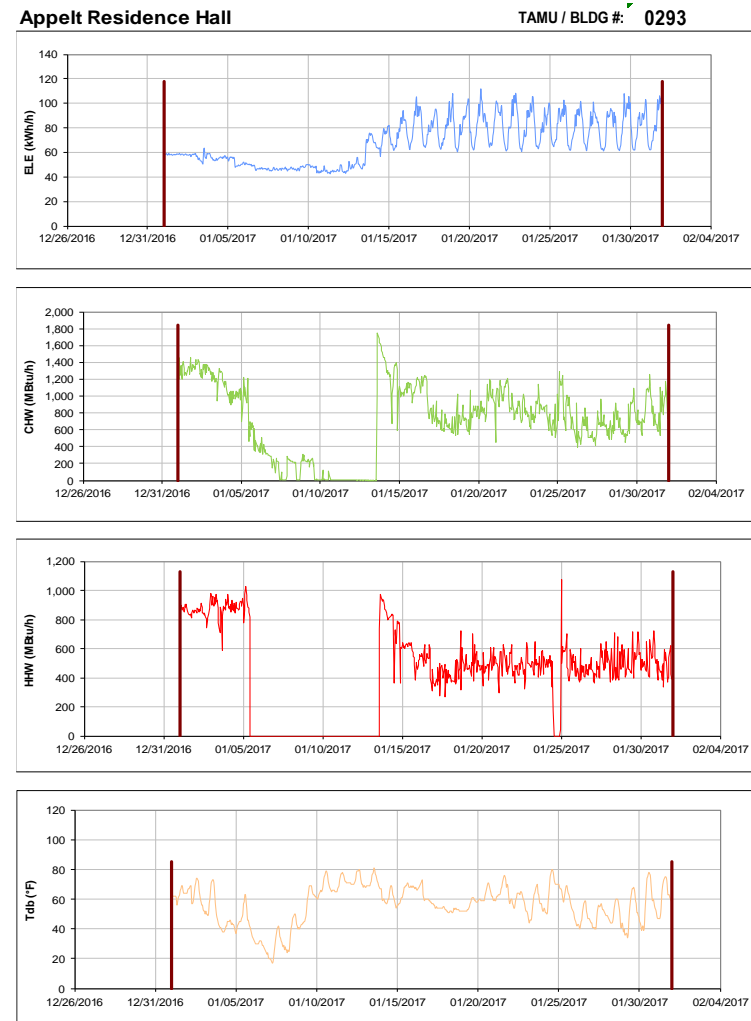


Figure III-6 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Appelt Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

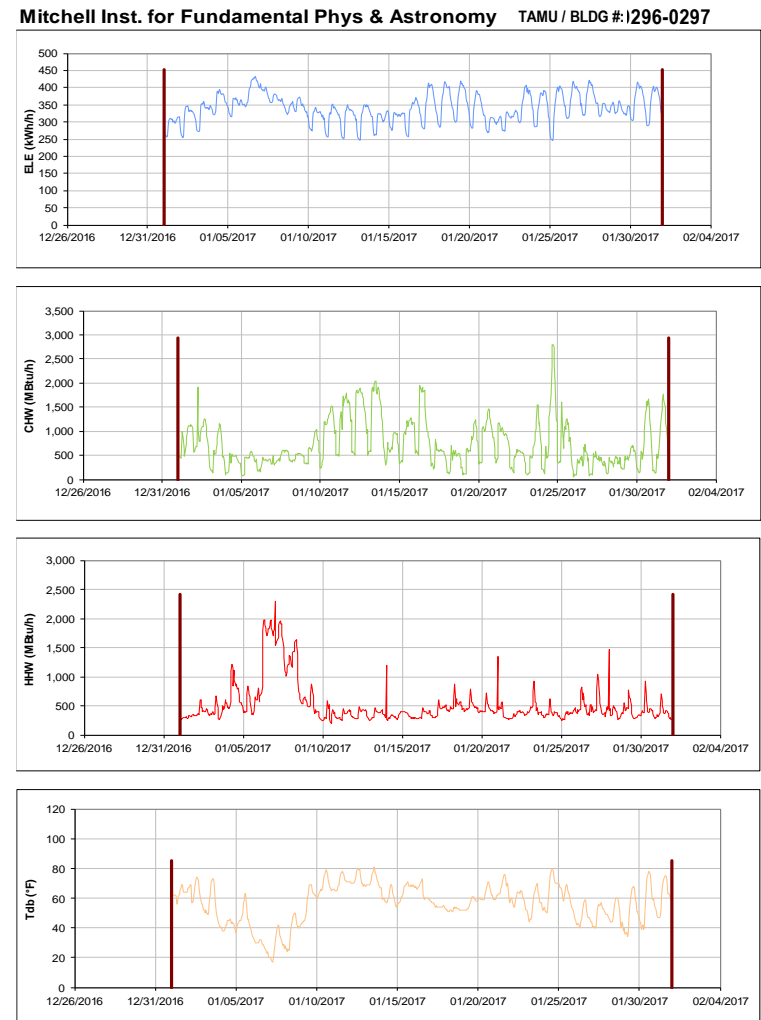


Figure III-8 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mitchell Inst. for Fundamental Phys & Astronomy during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

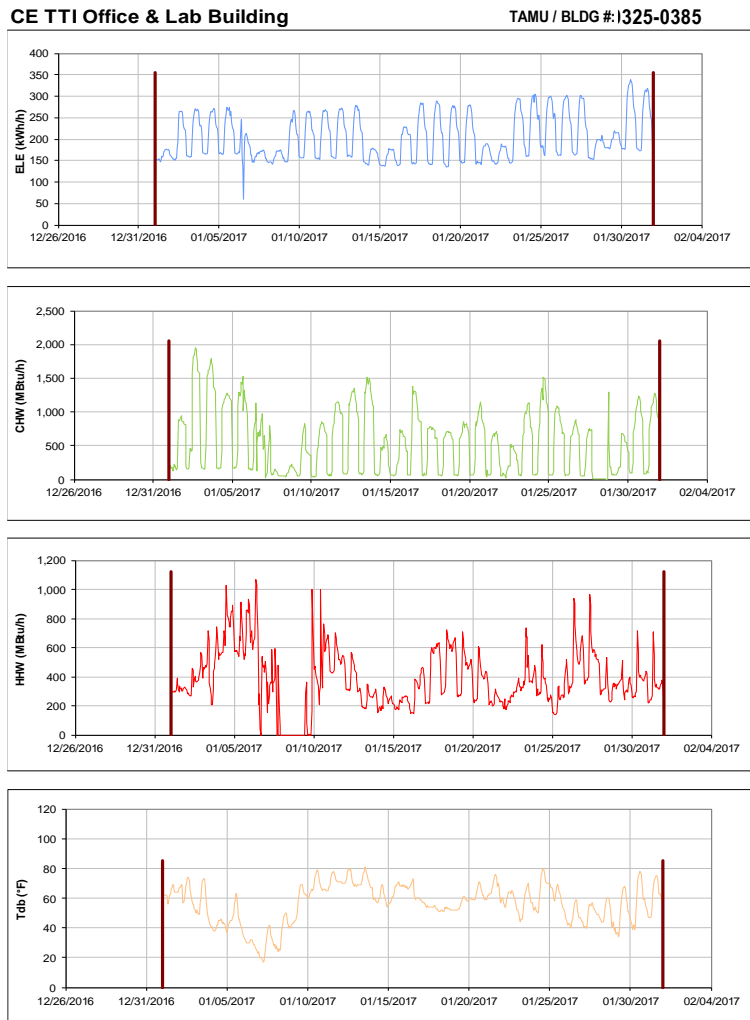


Figure III-9 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for CE TTI Office & Lab Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

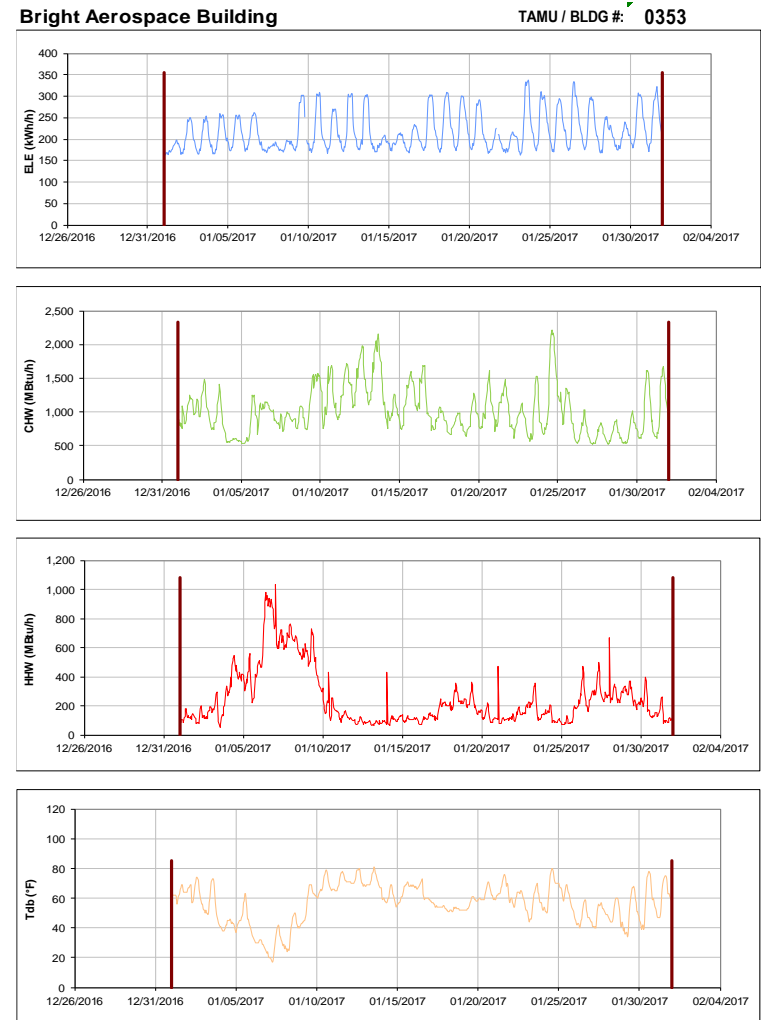


Figure III-10 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bright Aerospace Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

**Davis Football Player Development Center** TAMU / BLDG #: 0358

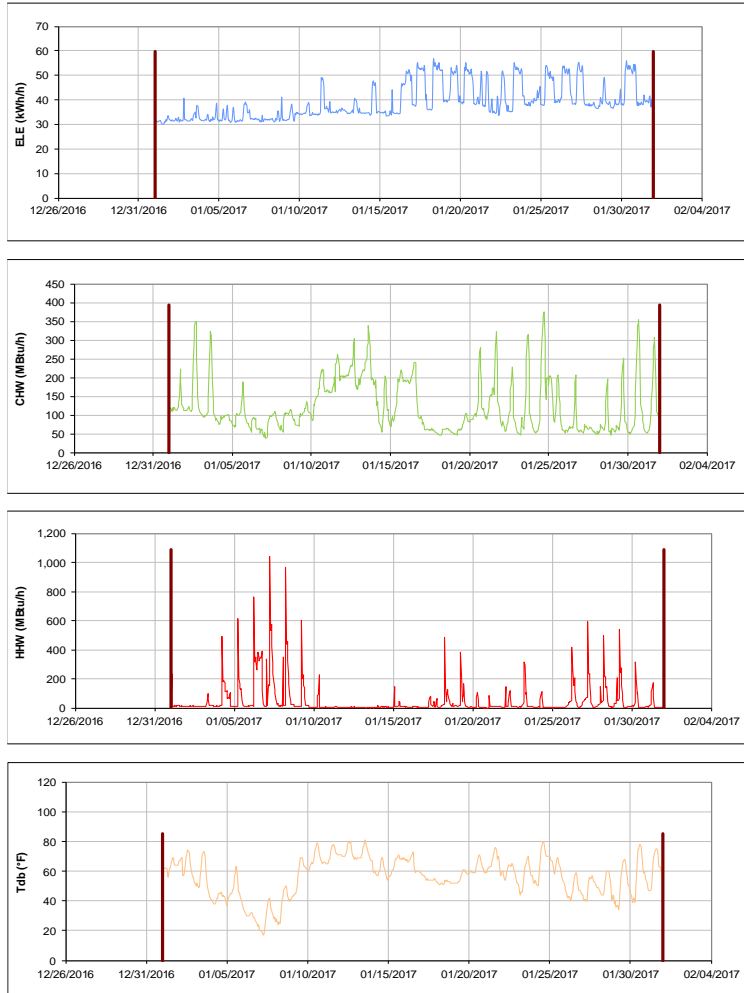


Figure III-11 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Davis Football Player Development Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

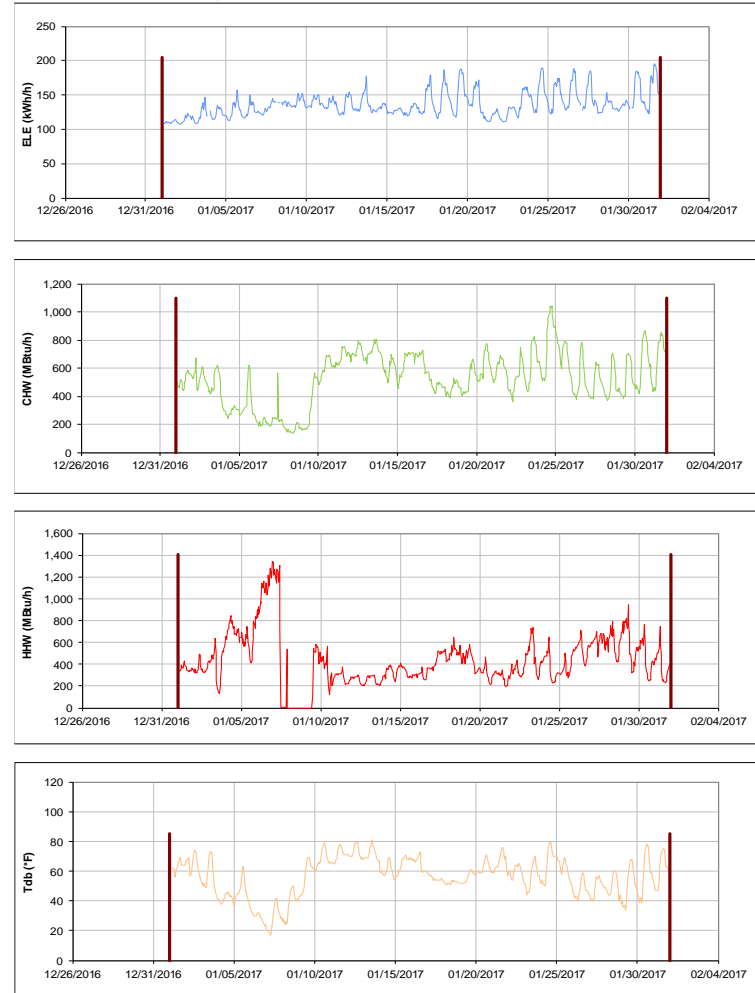


Figure III-12 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building B&C during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

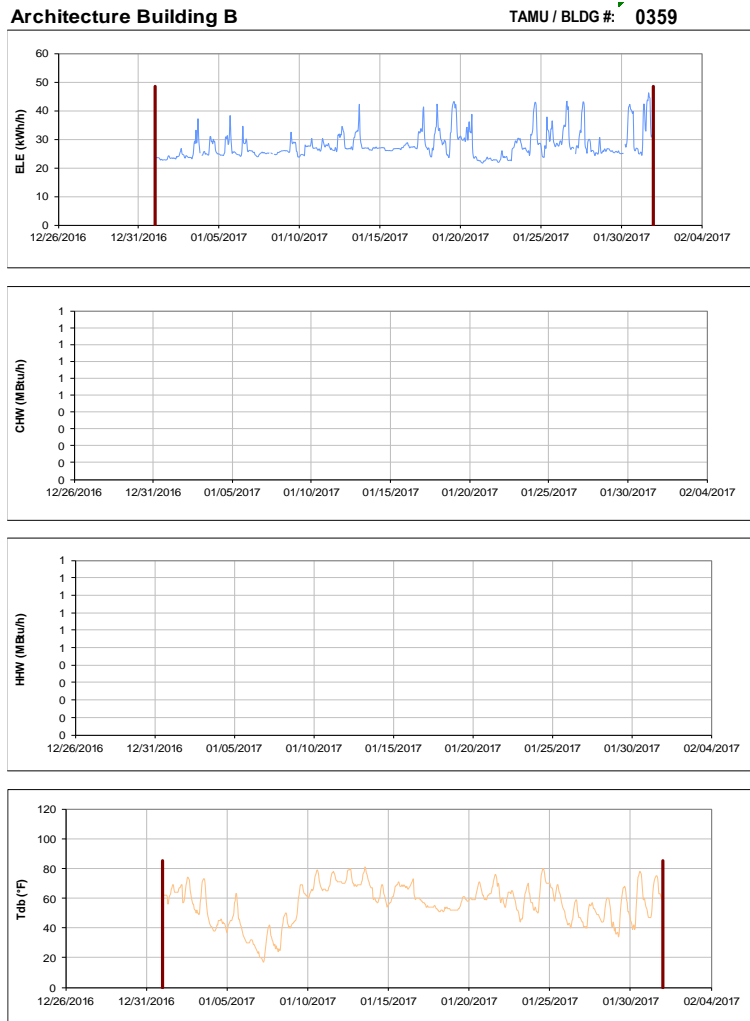


Figure III-13 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building B during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

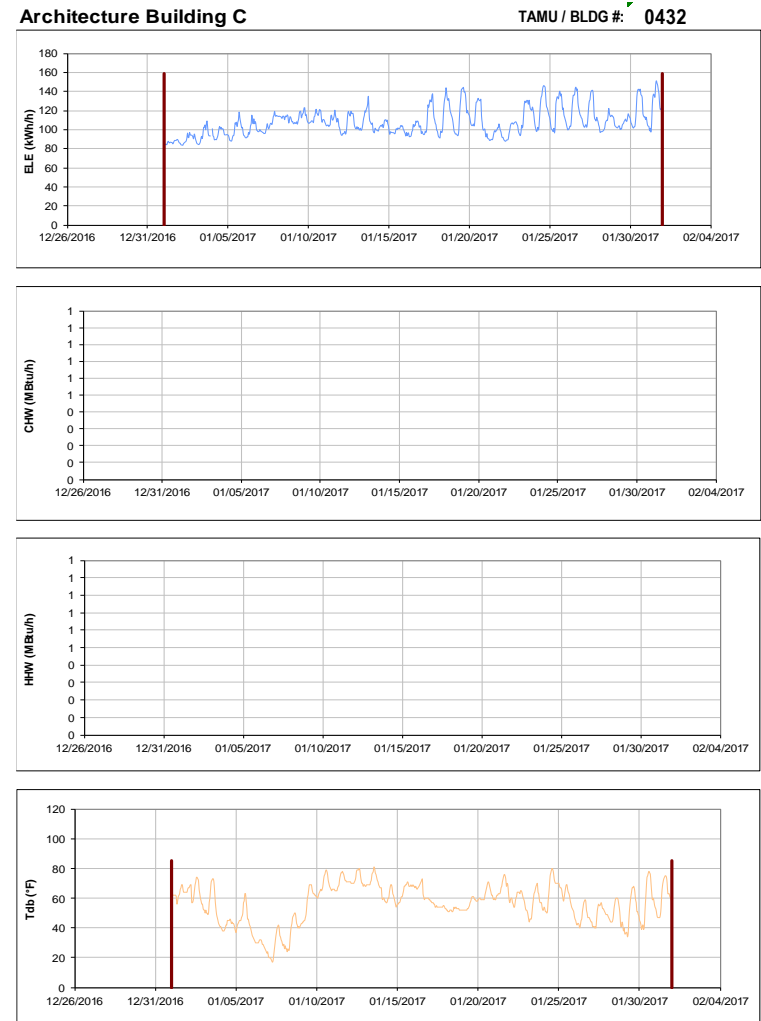


Figure III-14 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building C during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

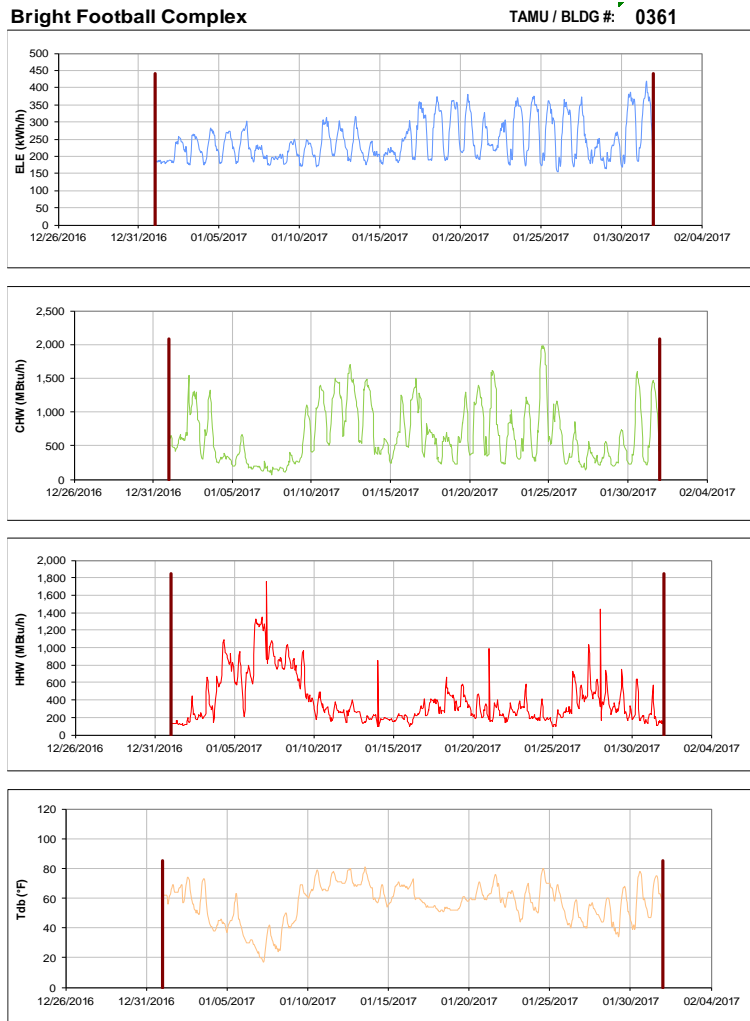


Figure III-15 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bright Football Complex during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

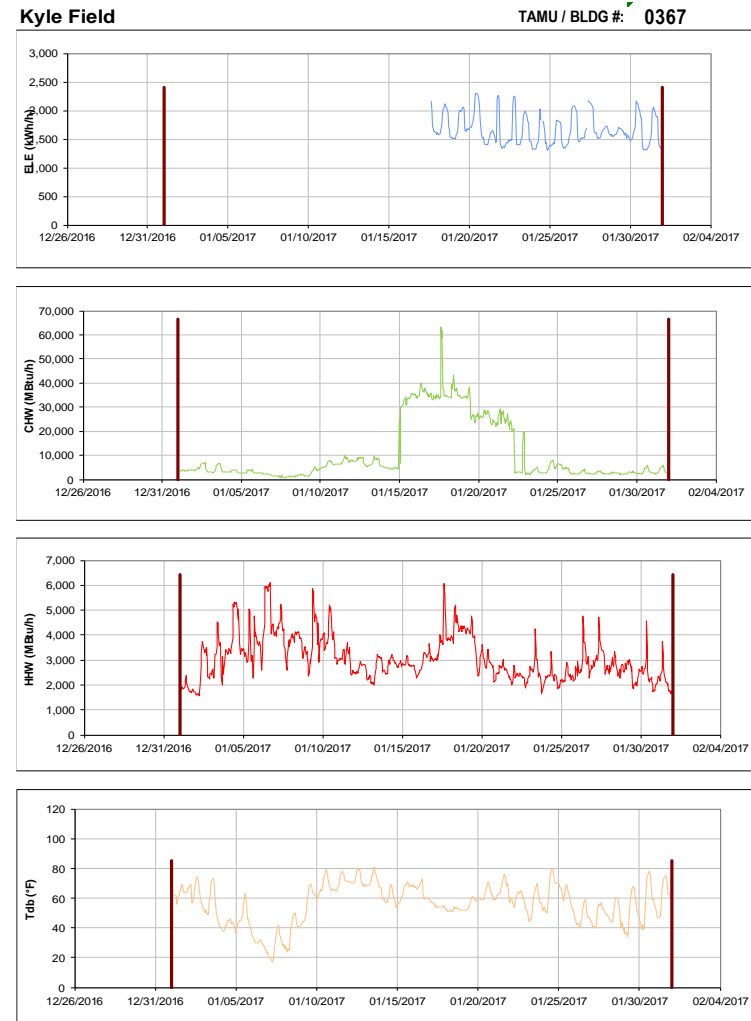


Figure III-16 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kyle Field during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Chemistry Building Addition

TAMU / BLDG #: 0376

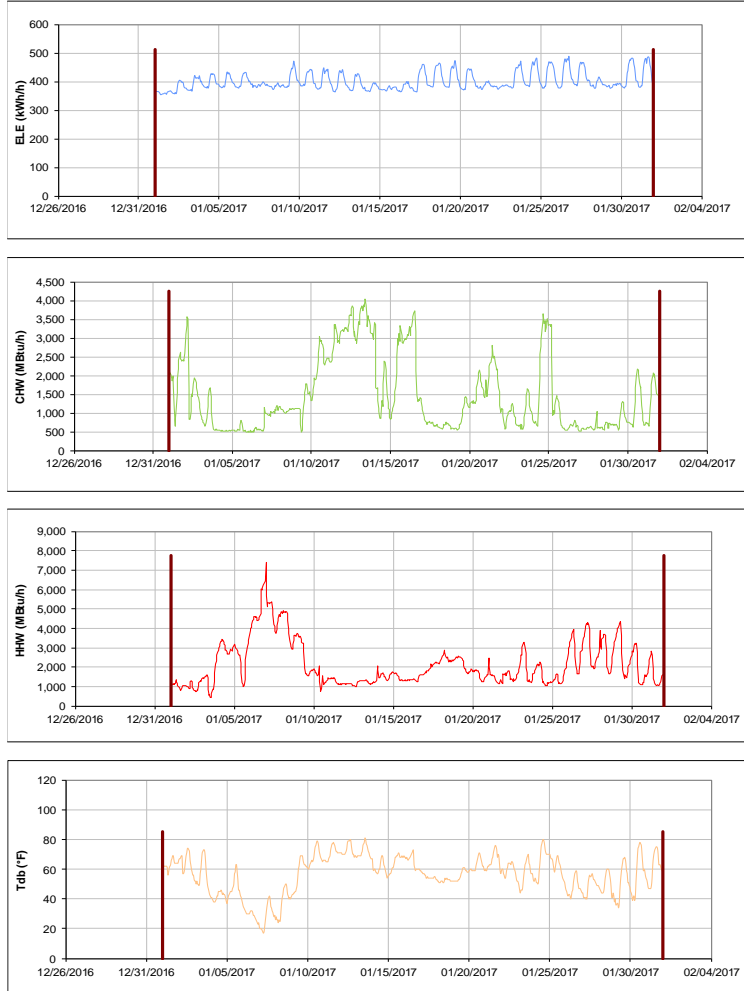


Figure III-17 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Chemistry Building Addition during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Koldus Building

TAMU / BLDG #: 0383

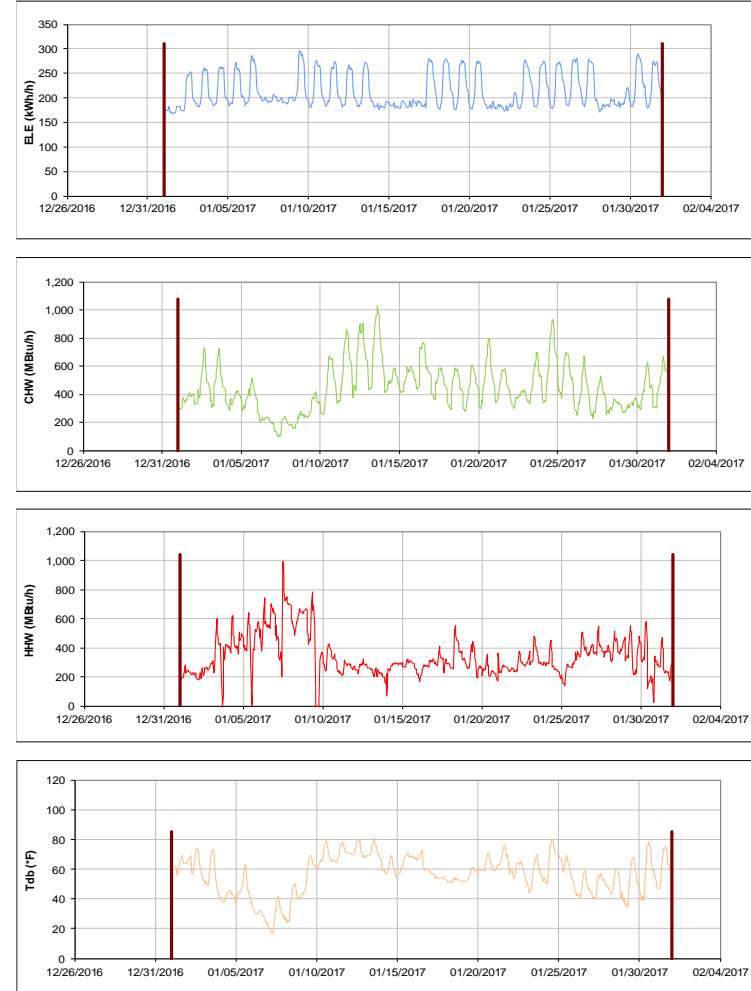


Figure III-18 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Koldus Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

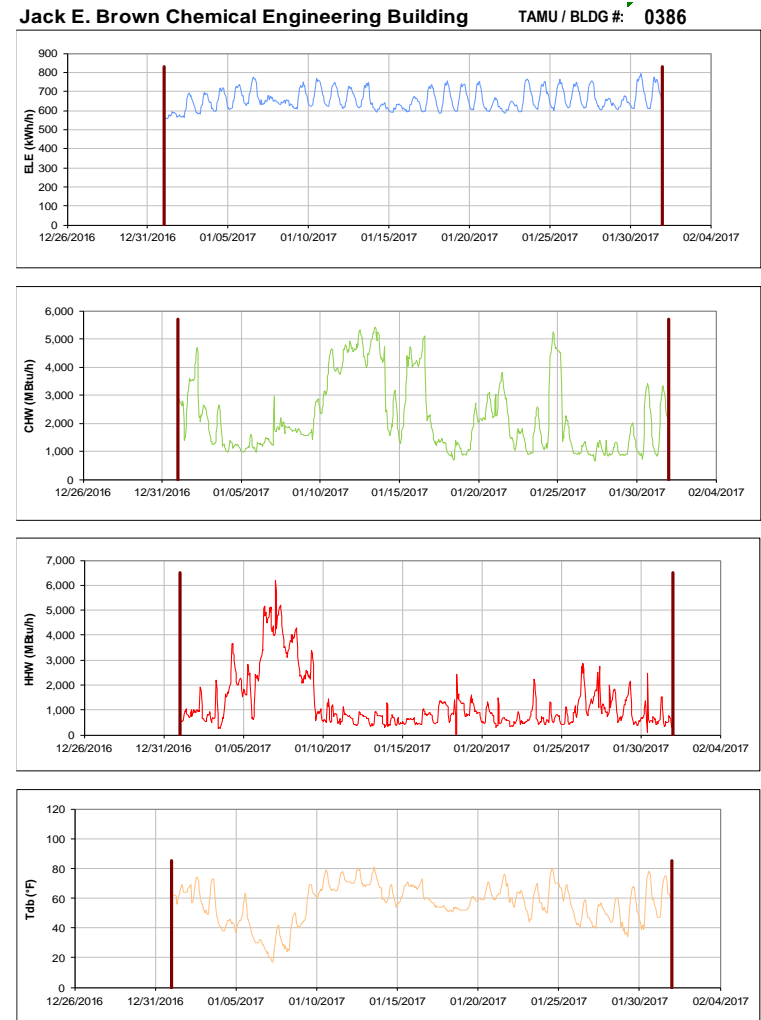


Figure III-20 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Jack E. Brown Chemical Engineering Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

**Richardson Petroleum Engineering Building** TAMU / BLDG #: 0387

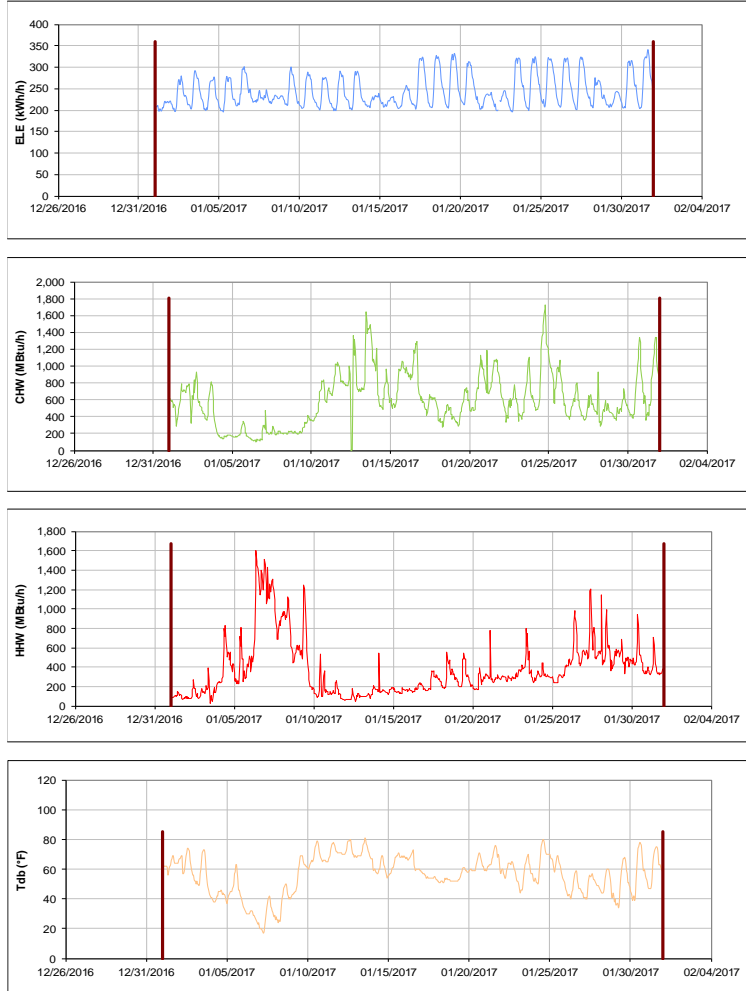


Figure III-21 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Richardson Petroleum Engineering Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

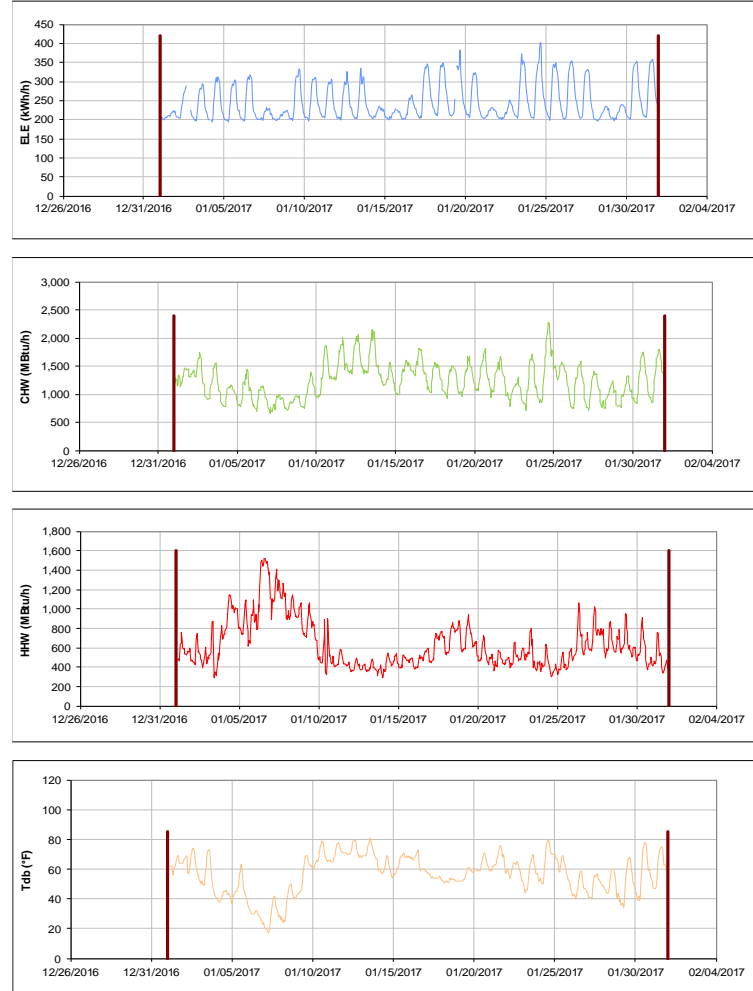


Figure III-22 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for James J. Cain'51 and Mechanical Engineering Office Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, T

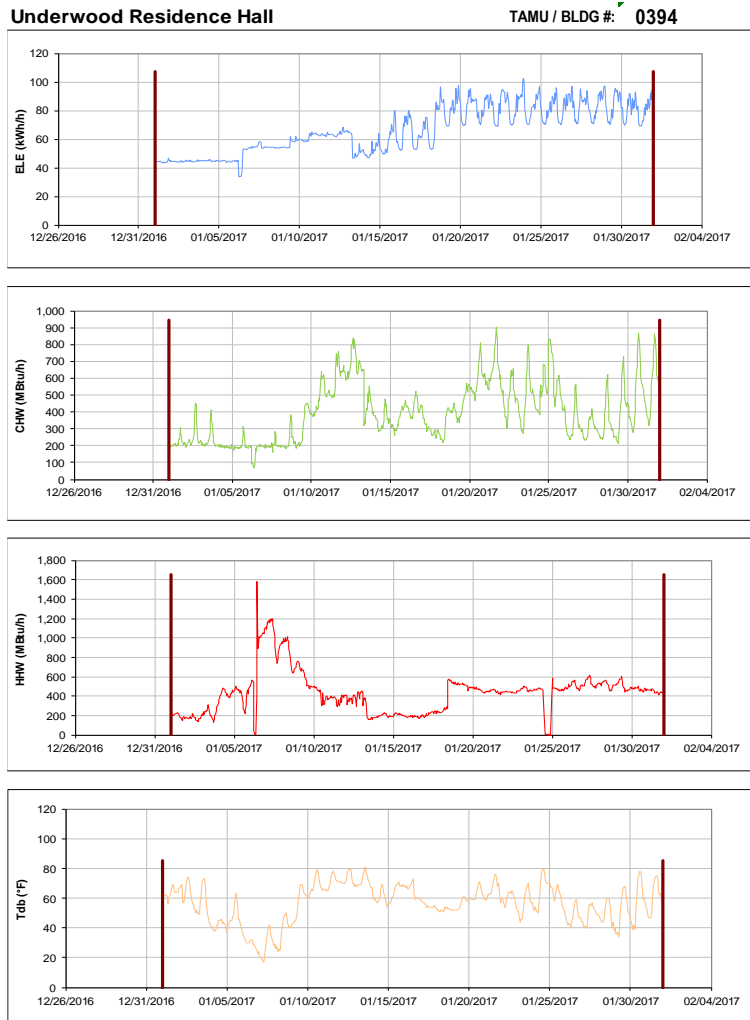


Figure III-23 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Underwood Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

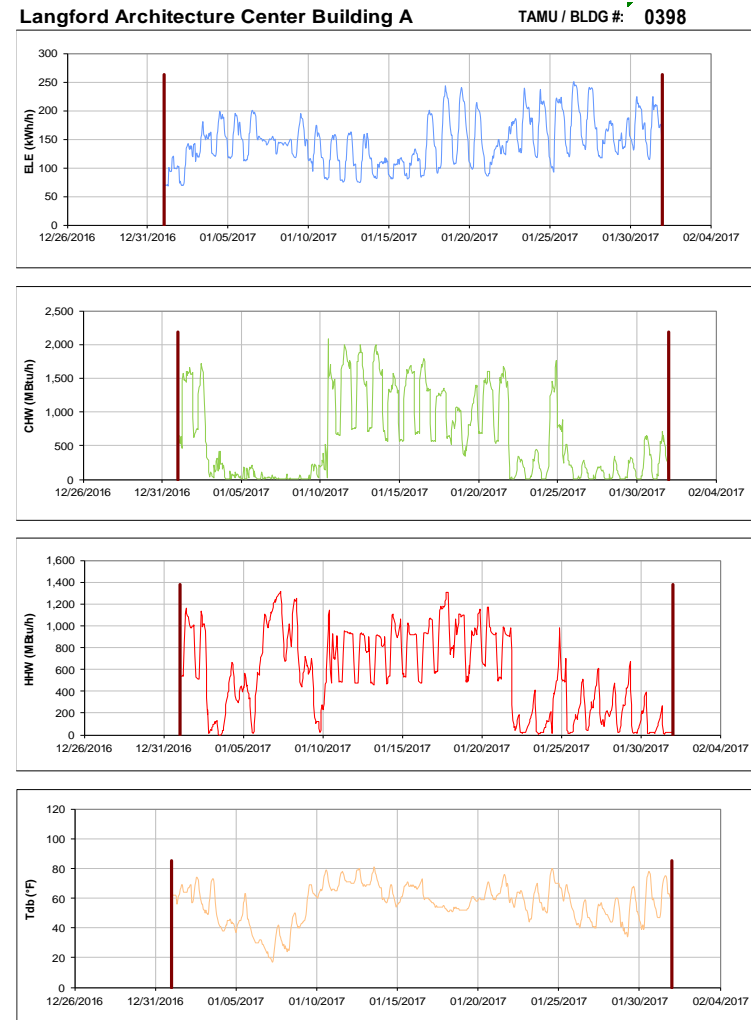


Figure III-24 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Langford Architecture Center Building A during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

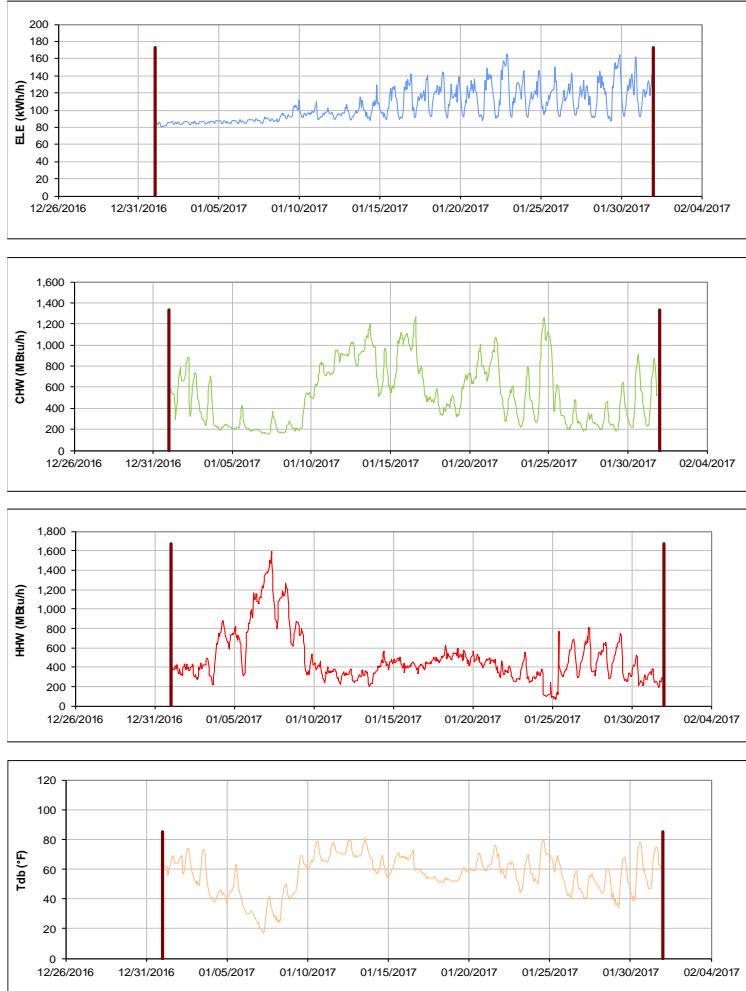


Figure III-25 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Spence Hall, Briggs Hall, and Ash II LLC during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Spence Hall Dorm 1 TAMU / BLDG #: 0400

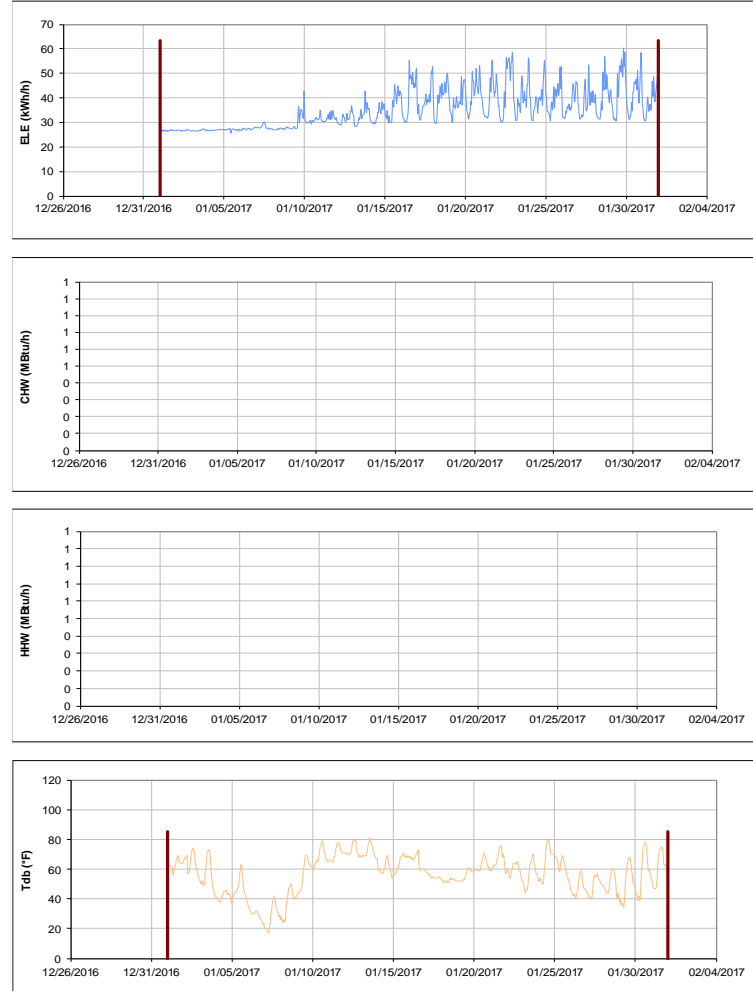


Figure III-26 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Spence Hall Dorm 1 during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

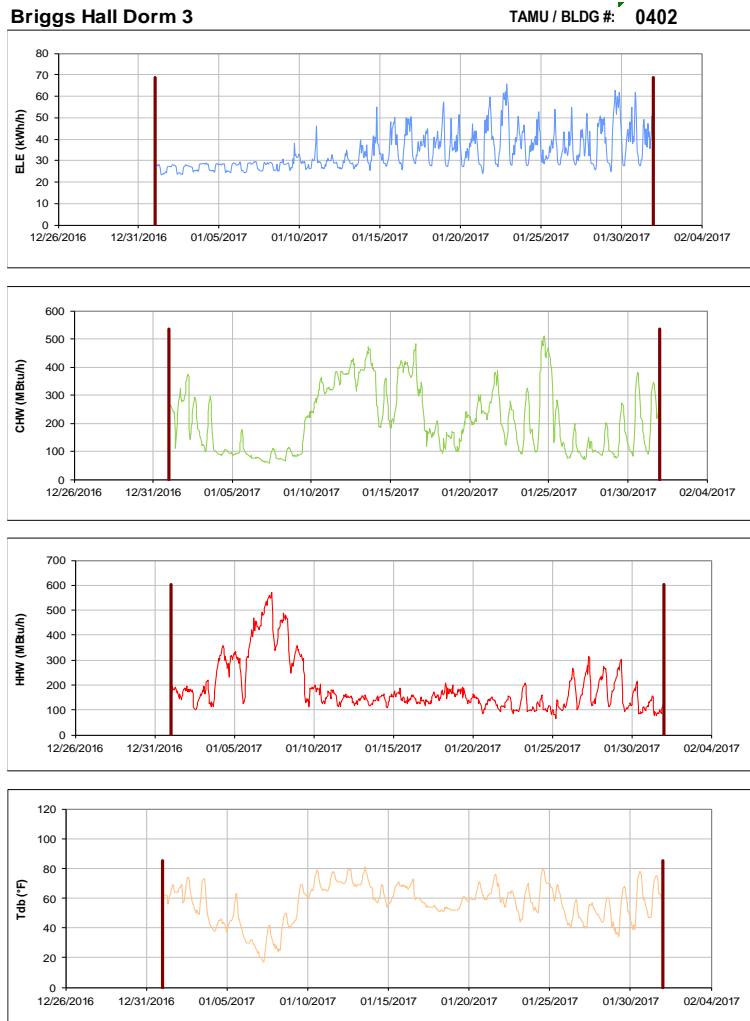


Figure III-27 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Briggs Hall Dorm 3 during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

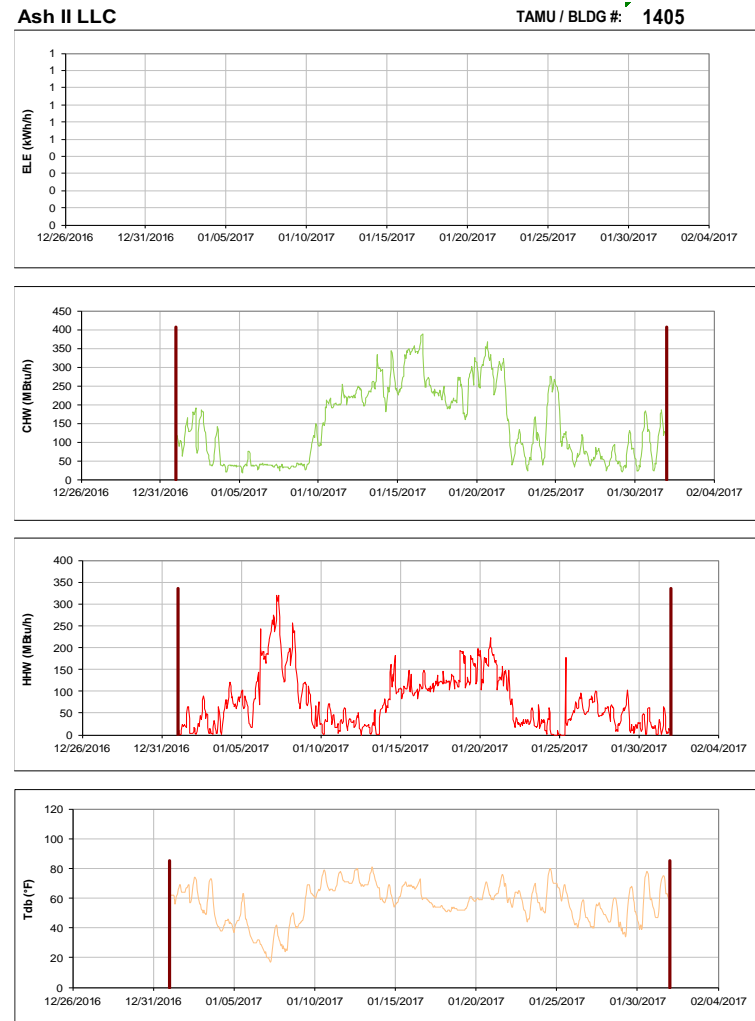


Figure III-28 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Ash II LLC during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

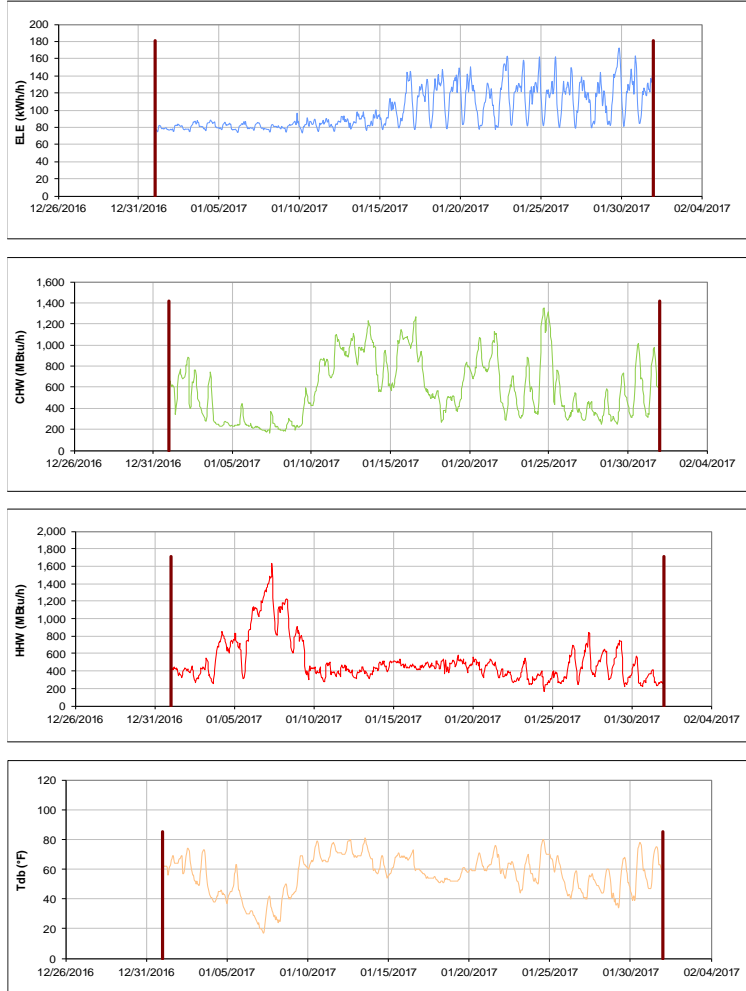


Figure III-29 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kiest Hall, Fountain Hall, and Plank LLC during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

**Kiest Hall Dorm 2** TAMU / BLDG #: 0401

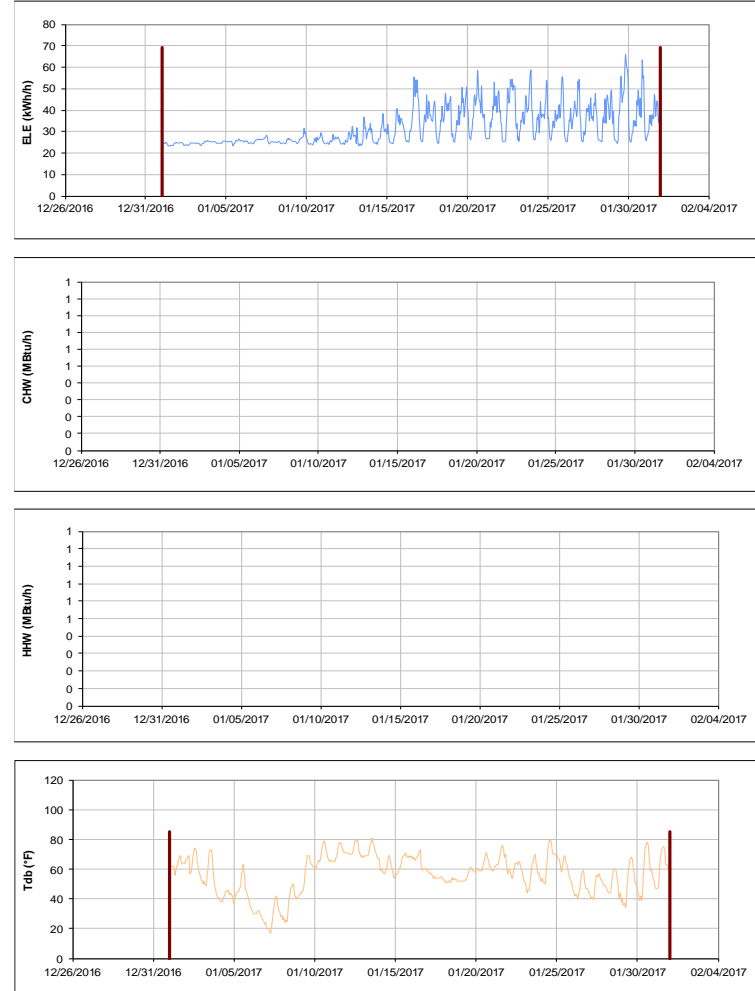


Figure III-30 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kiest Hall Dorm 2 during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

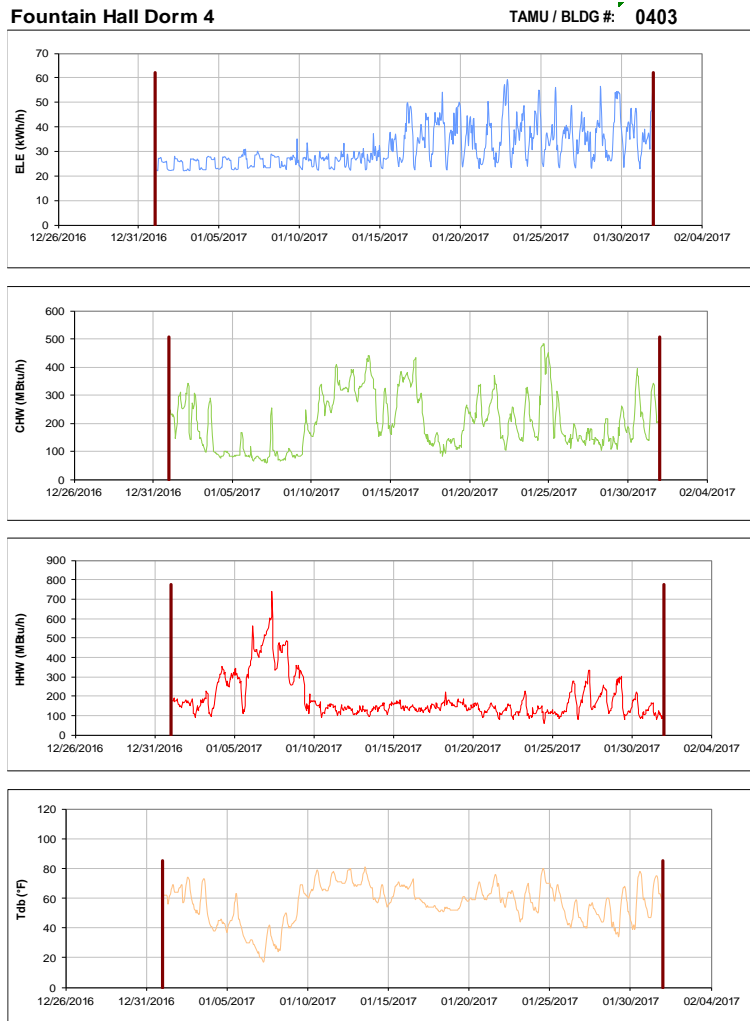


Figure III-31 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Fountain Hall Dorm 4 during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

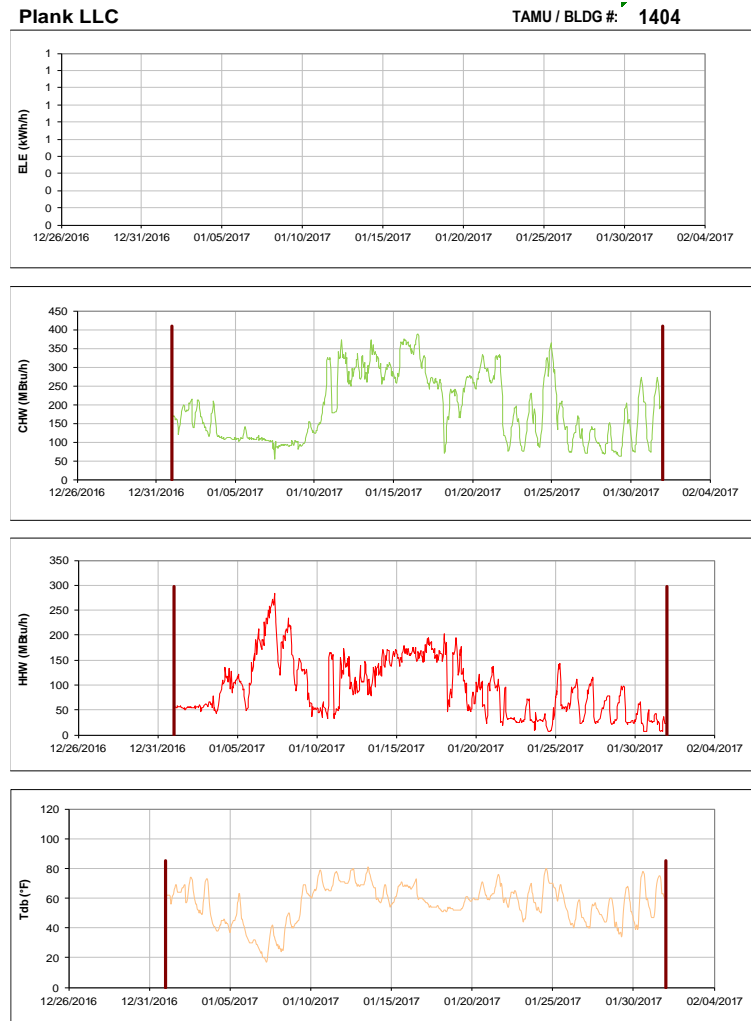


Figure III-32 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Plank LLC during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



**Gainer Hall, Leonard Hall and Ash LLC** TAMU / BLDG #: 4-0406-1403

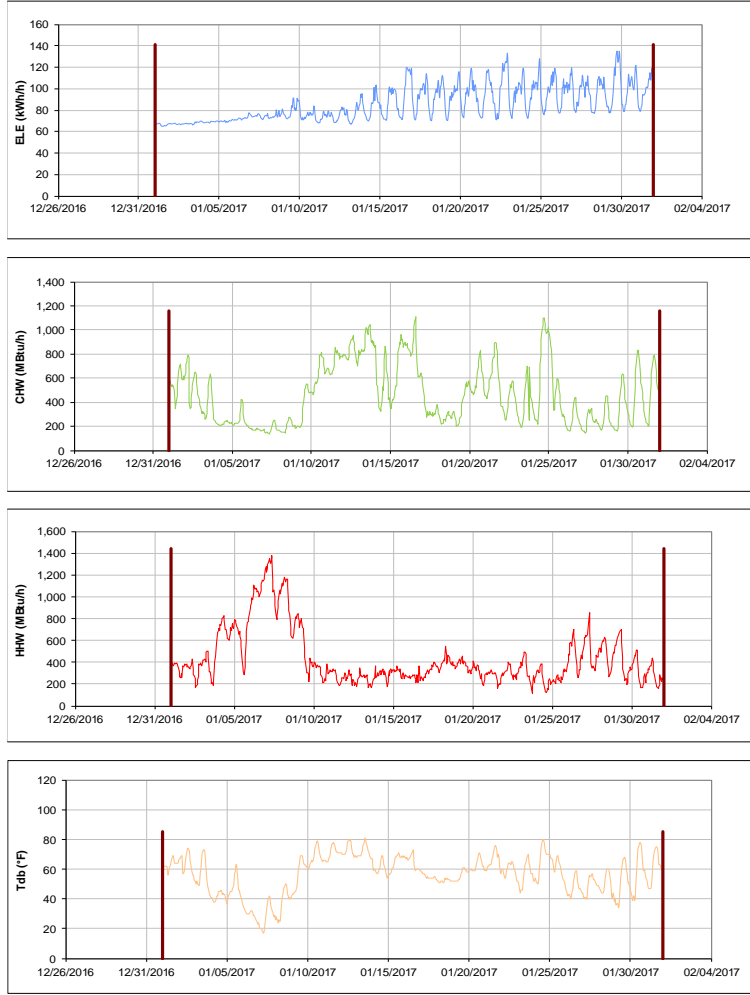


Figure III-33 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gainer Hall, Leonard Hall and Ash LLC during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

**Gainer Hall Dorm 5** TAMU / BLDG #: 0404

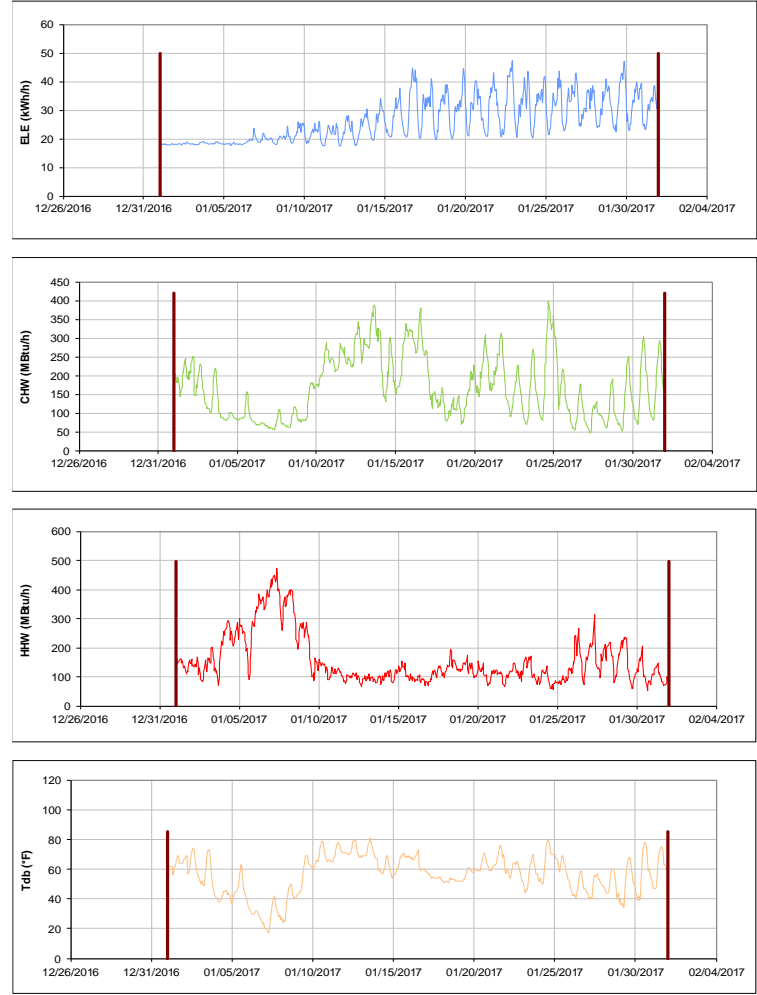


Figure III-34 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gainer Hall Dorm 5 during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Leonard Hall - Dorm 7

TAMU / BLDG #: 0406

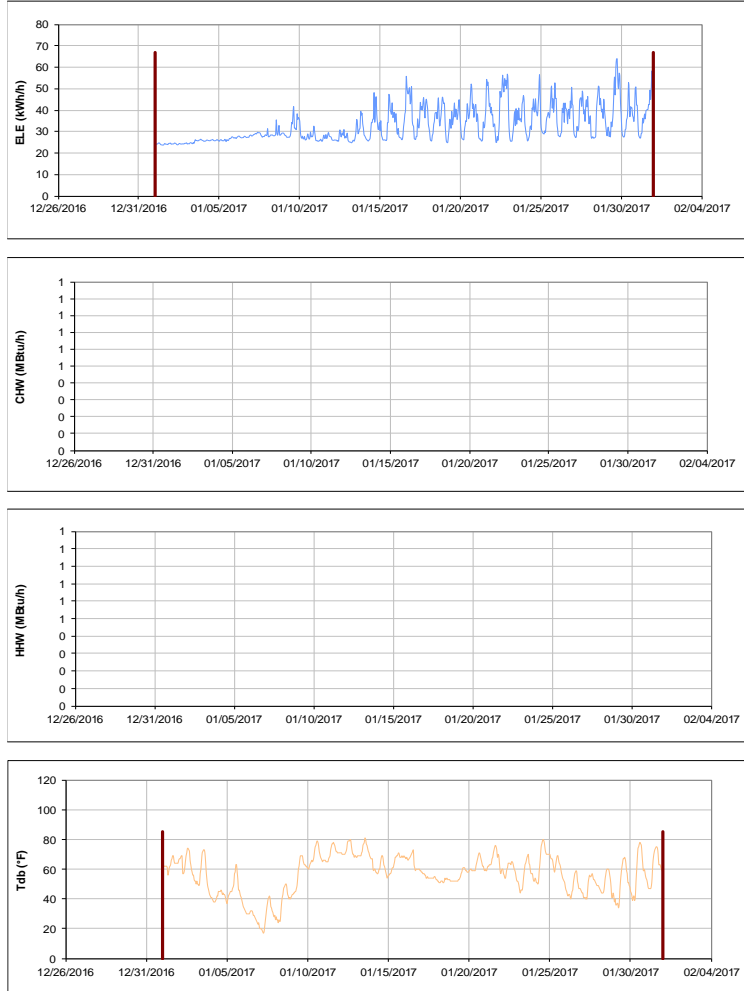


Figure III-35 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Leonard Hall - Dorm 7 during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

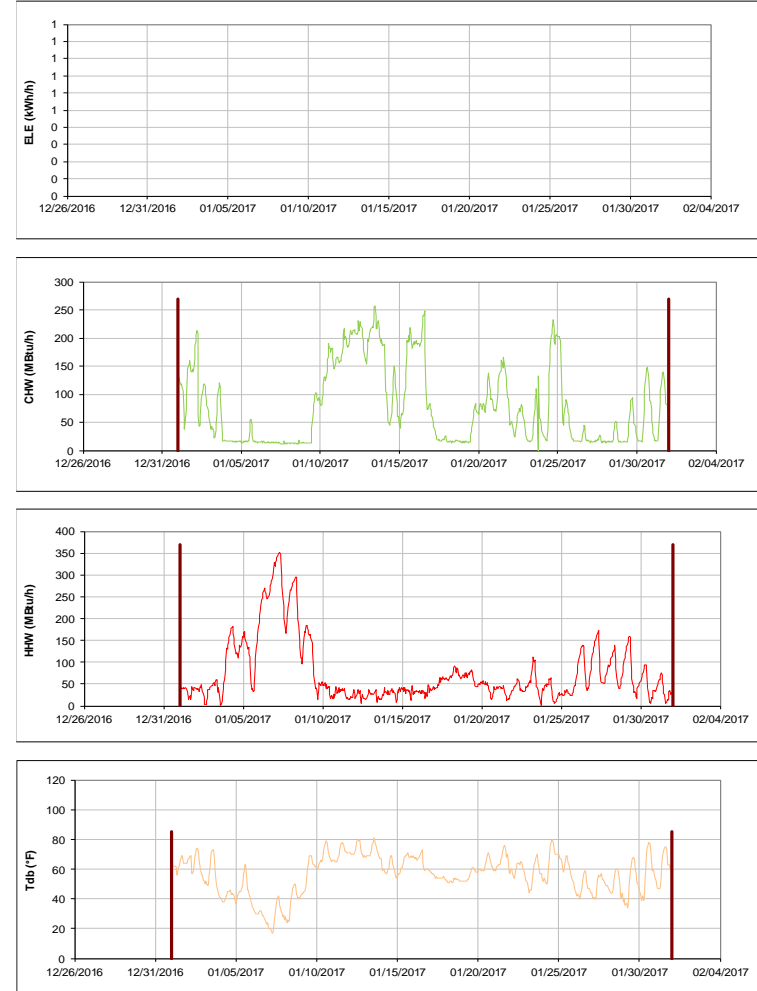


Figure III-36 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for H. Grady Ash, Jr. '58 Leadership Learning Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

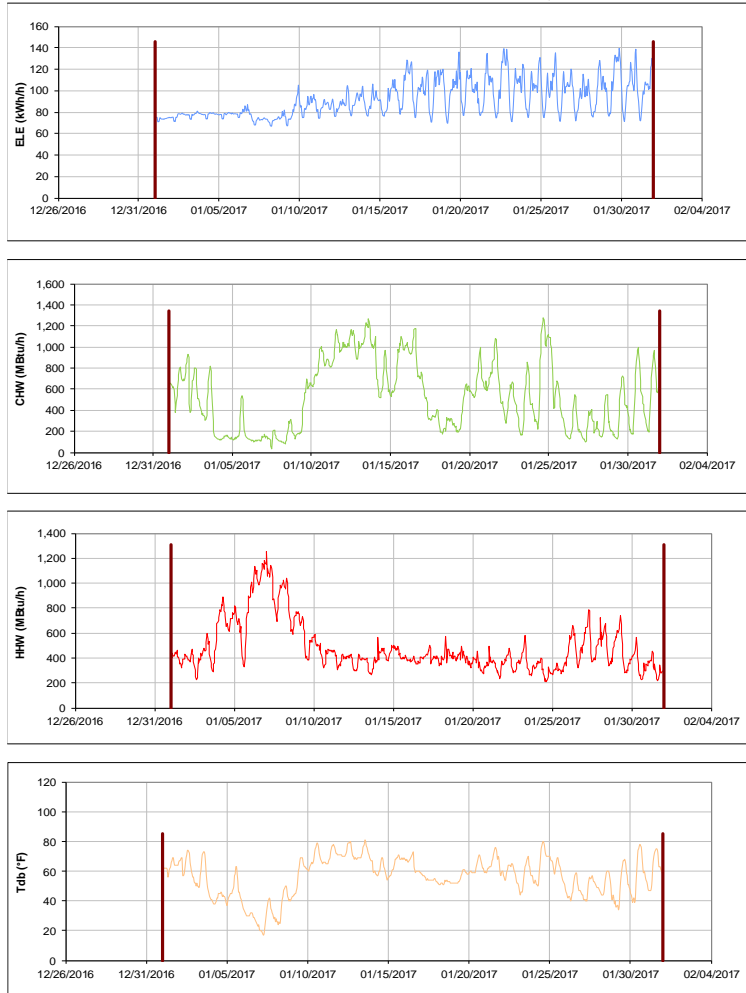


Figure III-37 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Lacy Hall - Dorm 6 TAMU / BLDG #: 0405

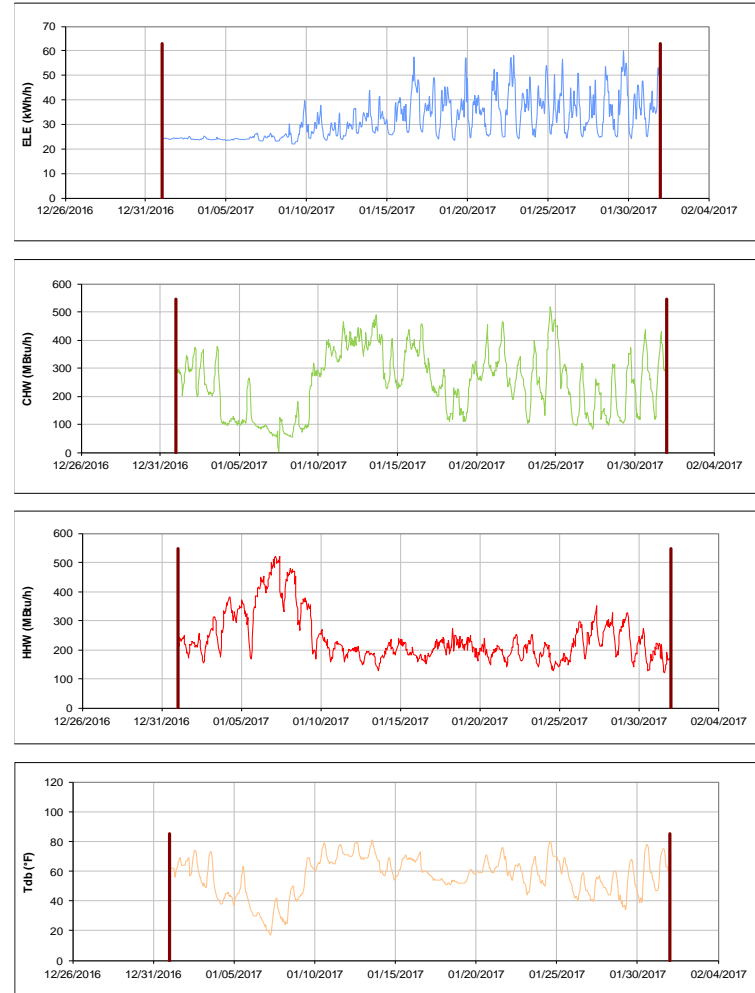


Figure III-38 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lacy Hall - Dorm 6 during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Harrell Hall - Dorm 8

TAMU / BLDG #: 0407

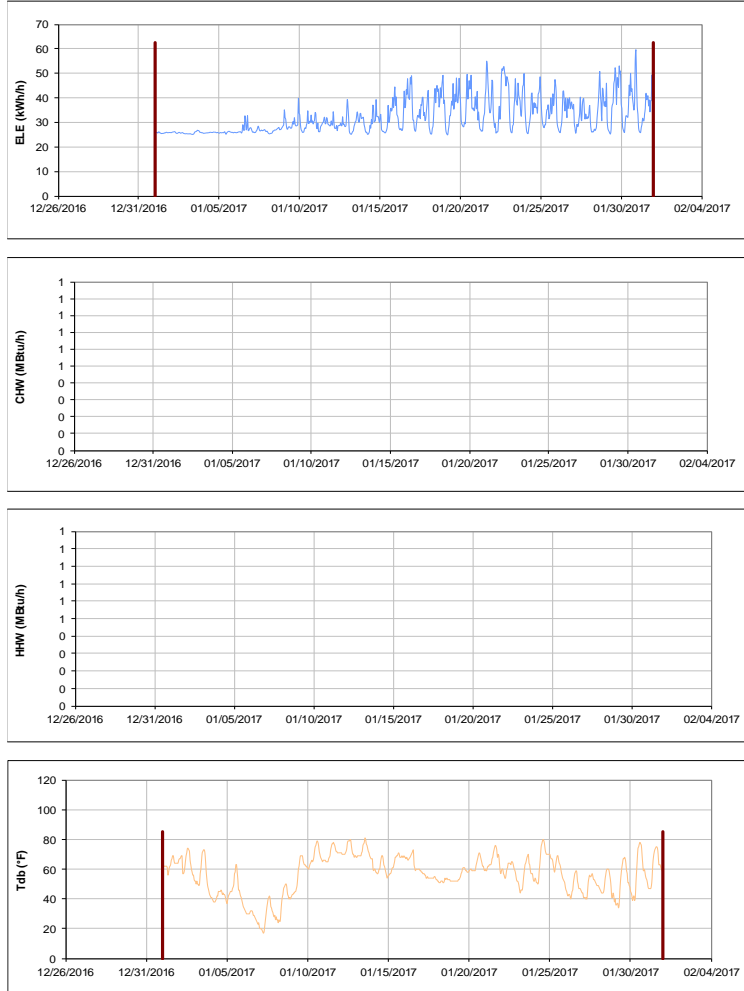


Figure III-39 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrell Hall - Dorm 8 during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Buzbee Leadership Learning Center

TAMU / BLDG #: 1402

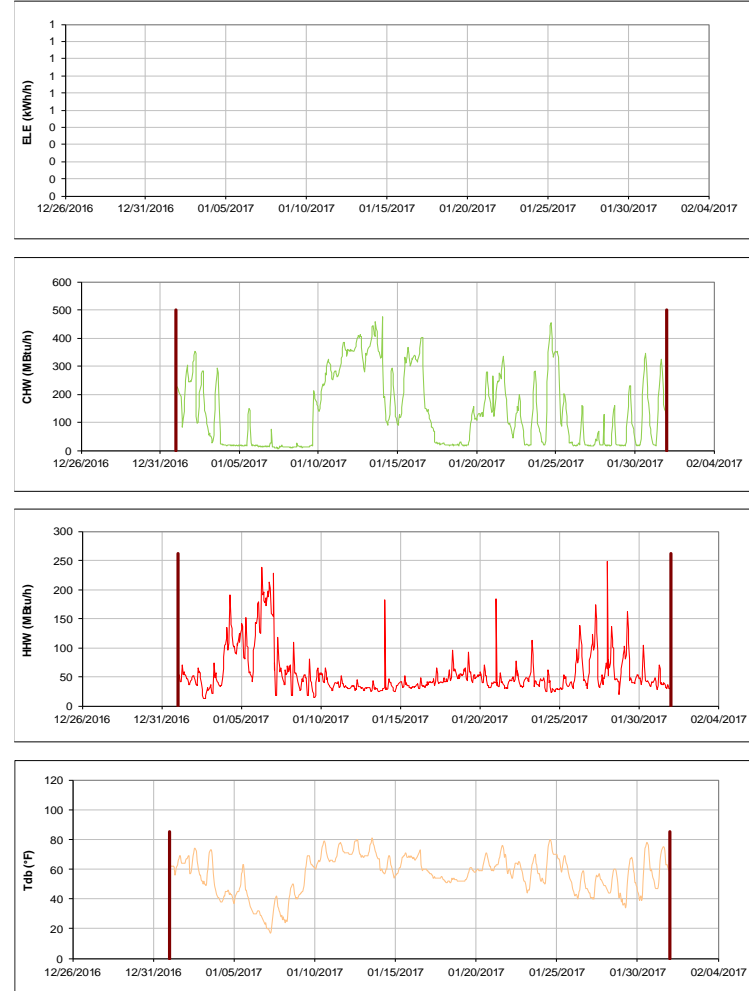


Figure III-40 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Buzbee Leadership Learning Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

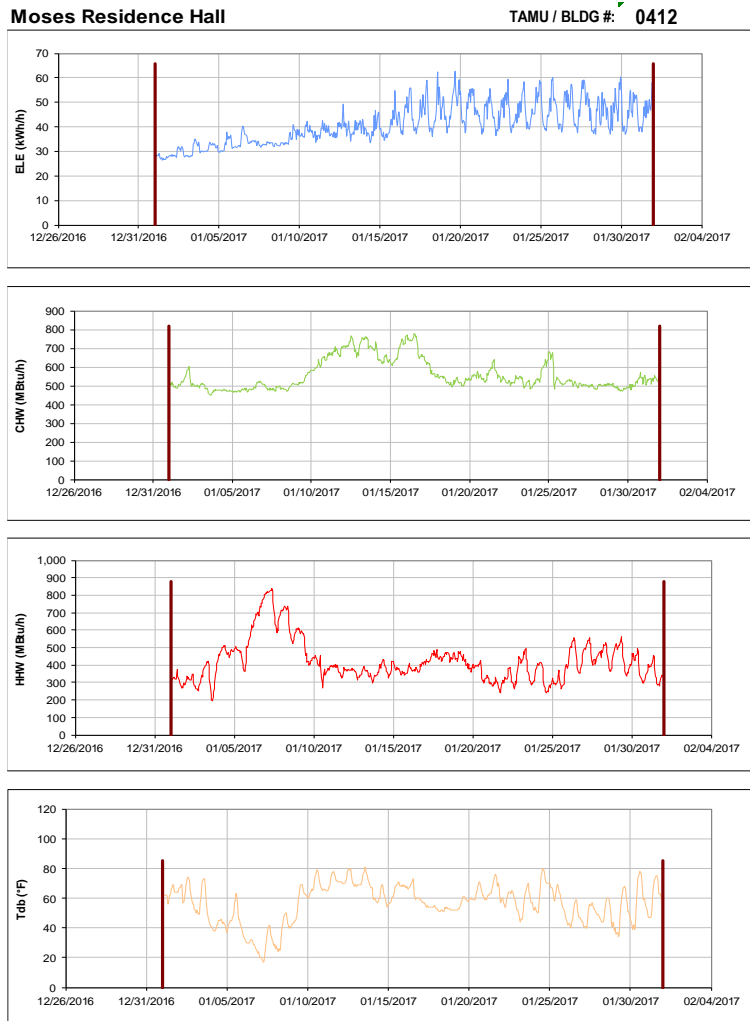


Figure III-41 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Moses Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

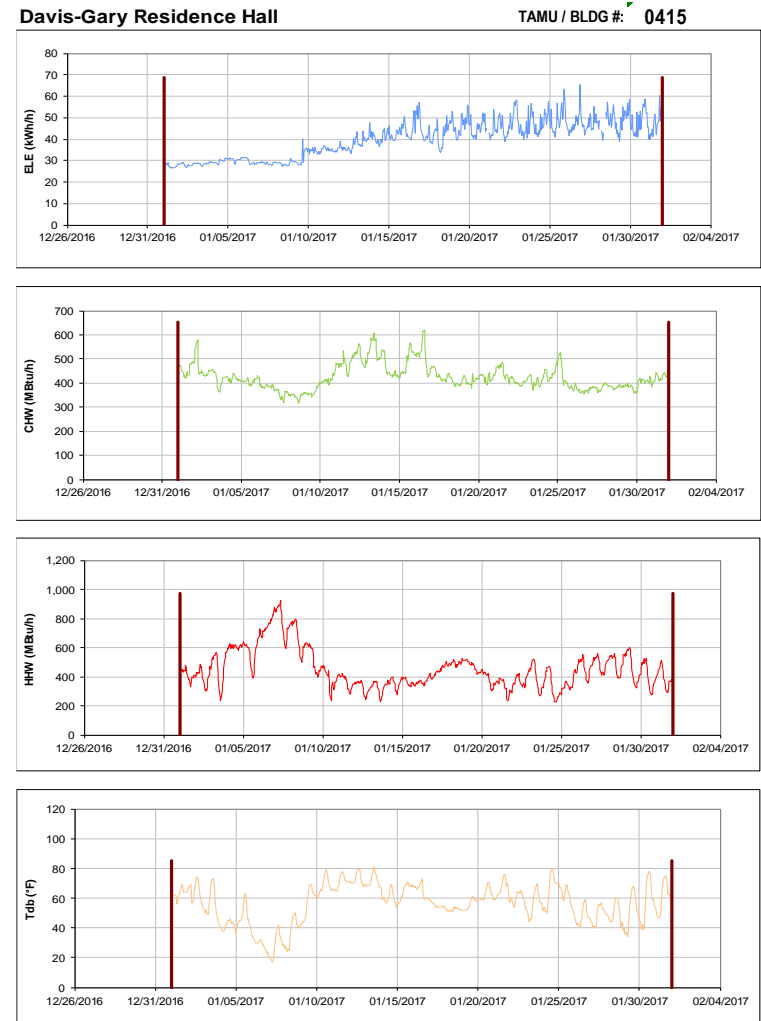


Figure III-42 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Davis-Gary Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

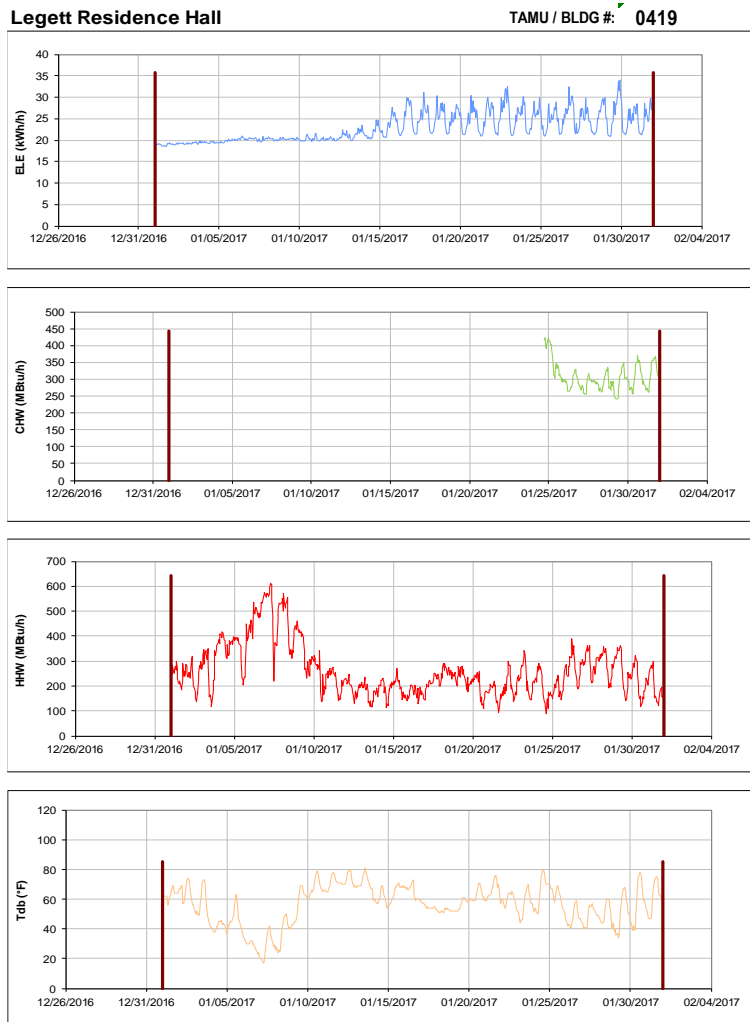


Figure III-43 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Legett Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

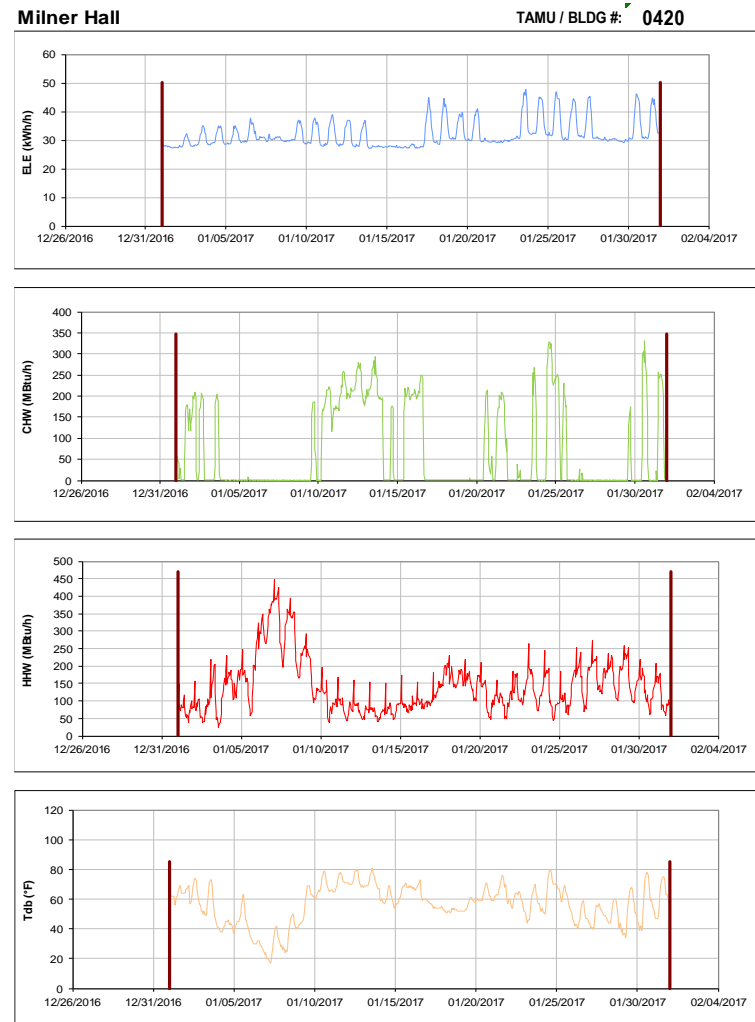


Figure III-44 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Milner Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Walton Residence Hall

TAMU / BLDG #: 0422

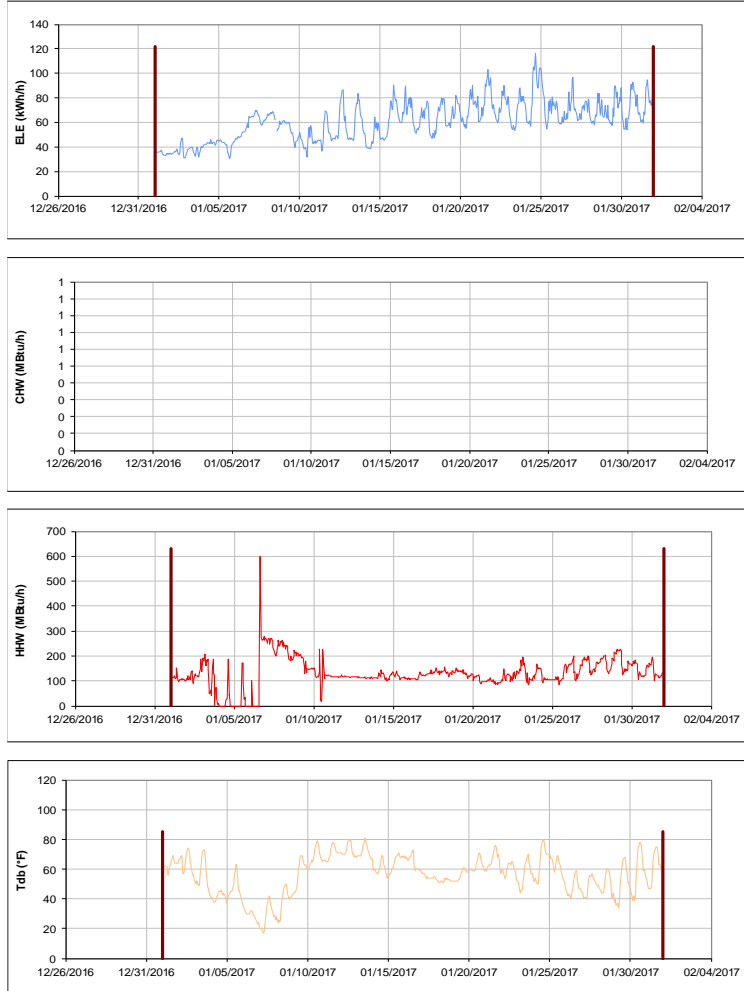


Figure III-45 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Walton Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Hotard Hall

TAMU / BLDG #: 0424

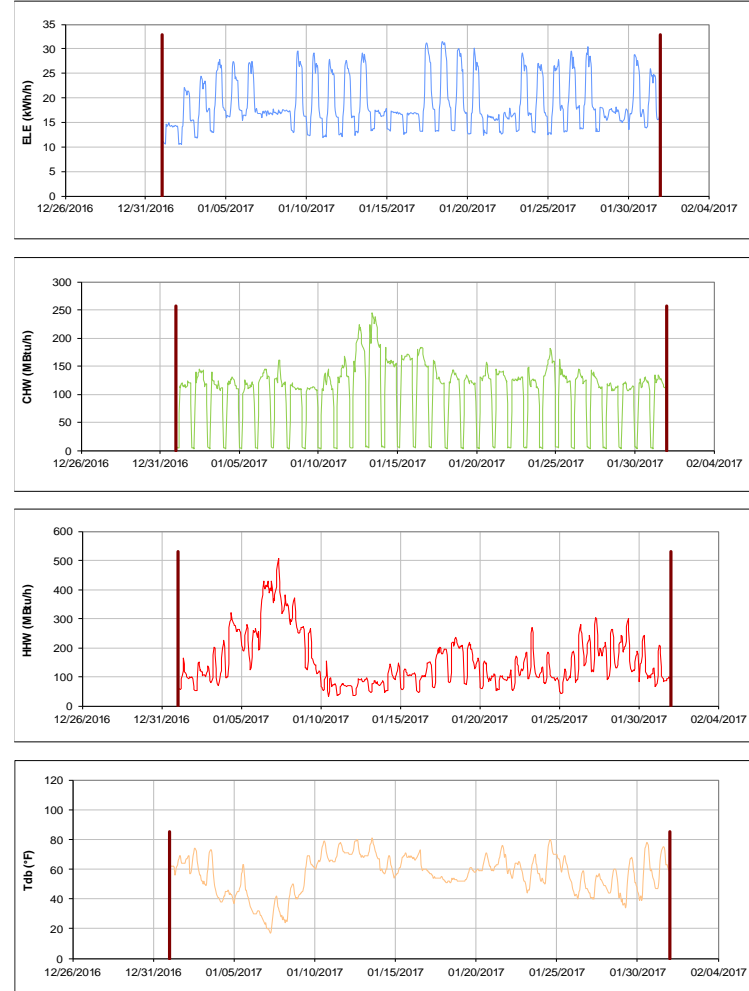


Figure III-46 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hotard Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

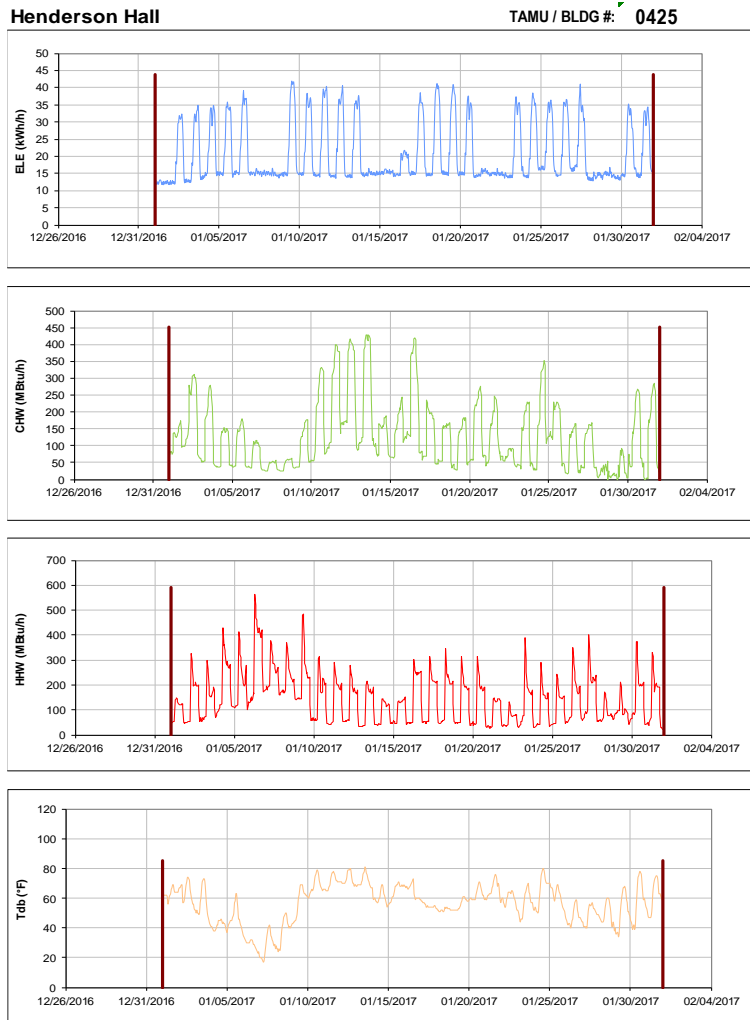


Figure III-47 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Henderson Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

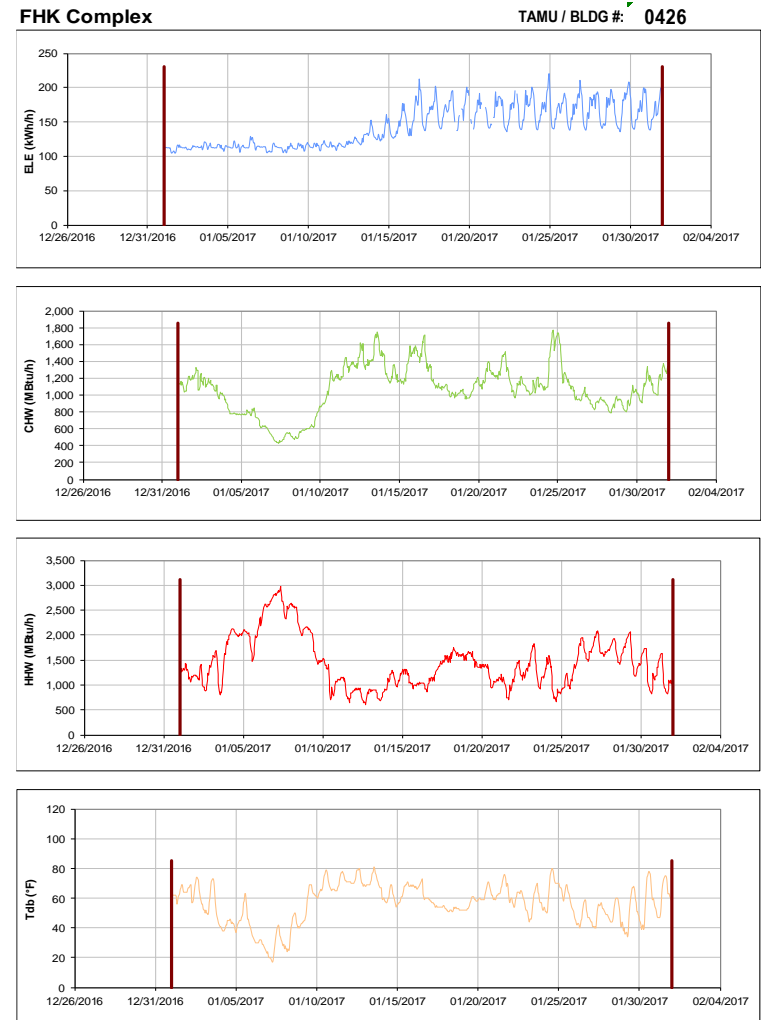


Figure III-48 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for FHK Complex during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Schumacher Residence Hall

TAMU / BLDG #: 0430

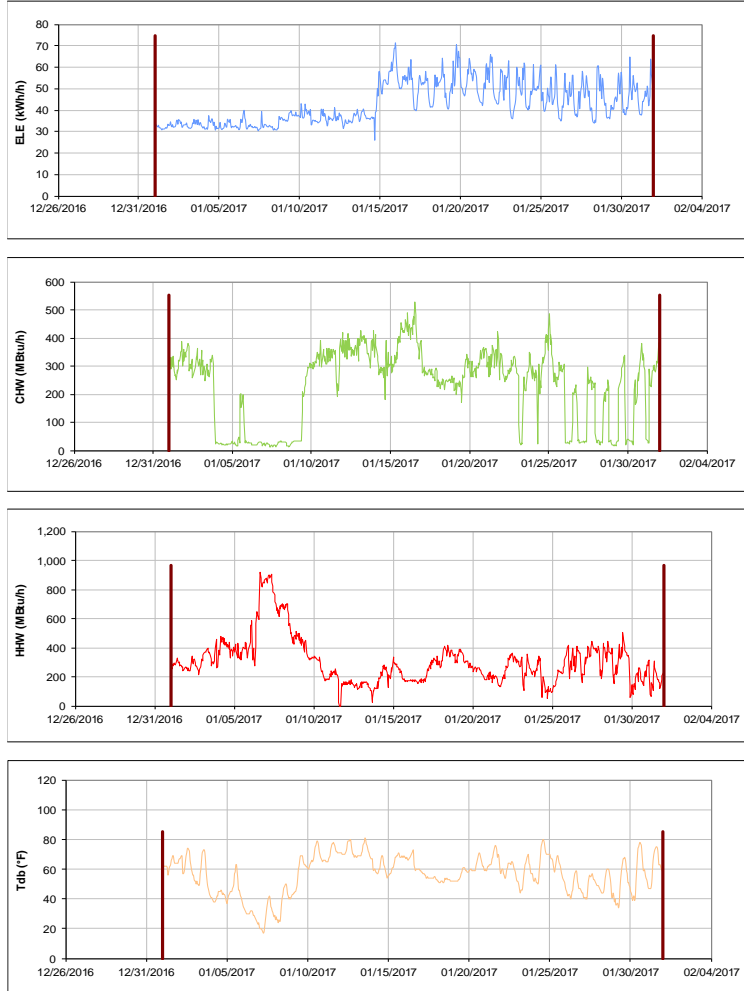


Figure III-49 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Schumacher Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Mosher Commons Krueger Dunn Aston

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

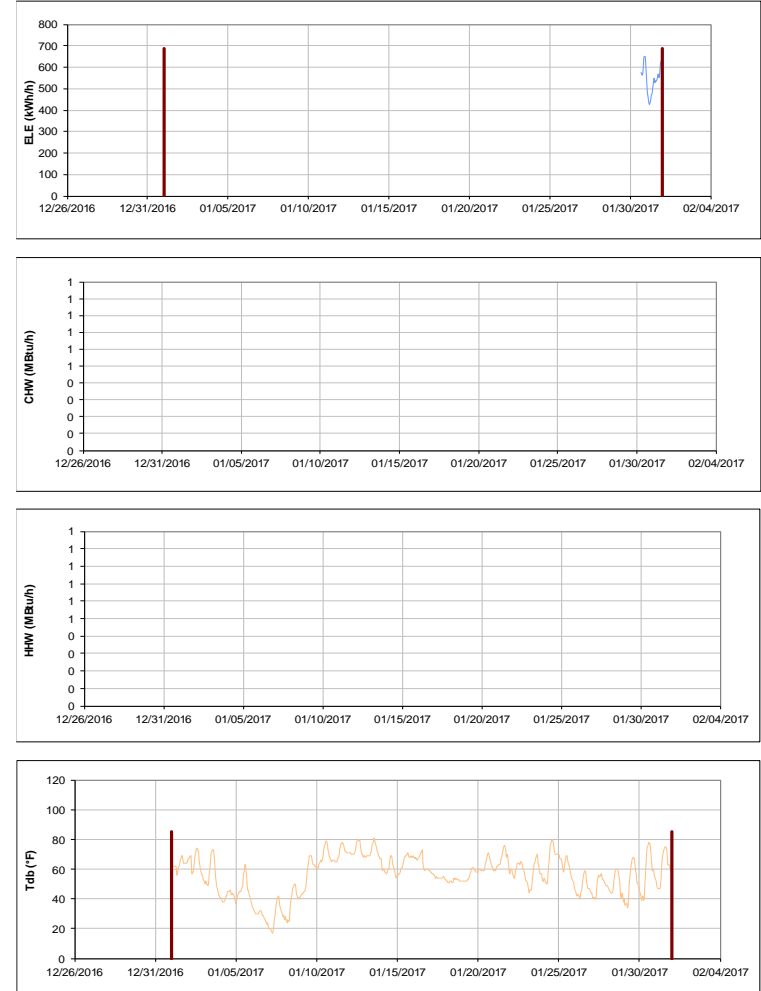


Figure III-50 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mosher Commons Krueger Dunn Aston during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Mosher Residence Hall

TAMU / BLDG #: 0433

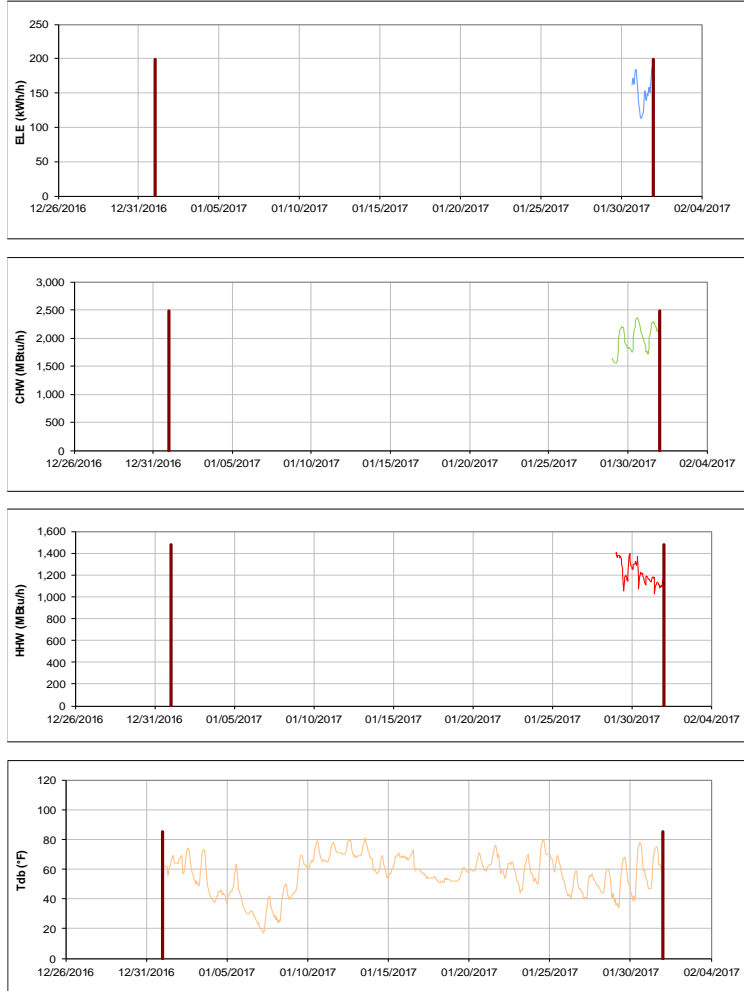


Figure III-51 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mosher Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Commons Hall

TAMU / BLDG #: 0440

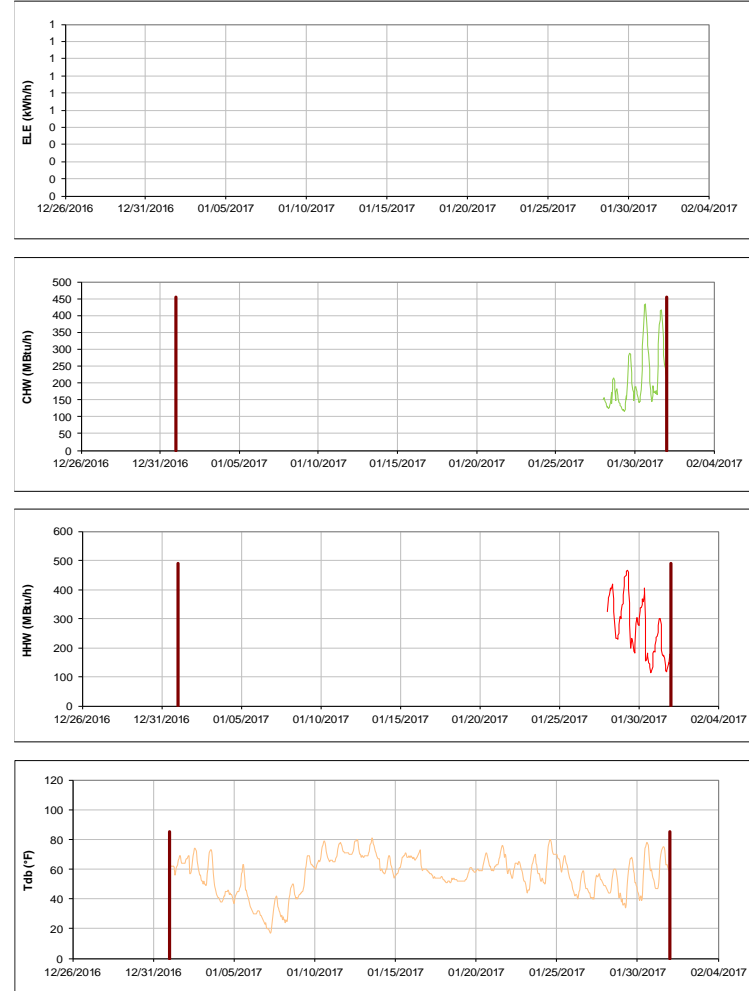


Figure III-52 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Commons Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Krueger Residence Hall

TAMU / BLDG #: 0441

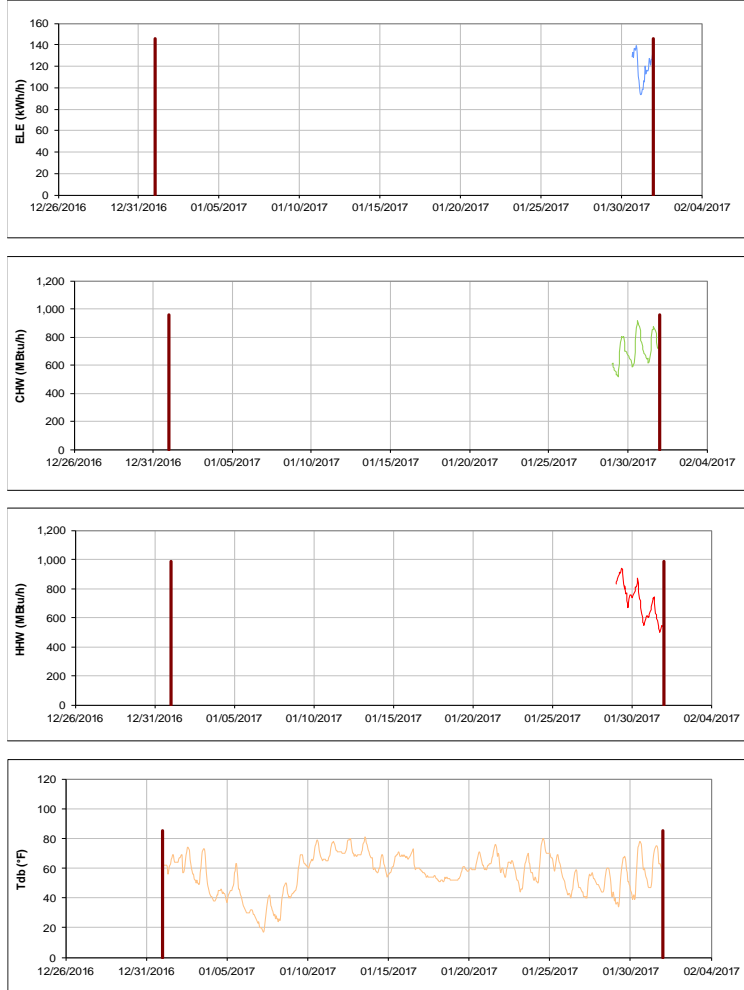


Figure III-53 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Krueger Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Dunn Residence Hall

TAMU / BLDG #: 0442

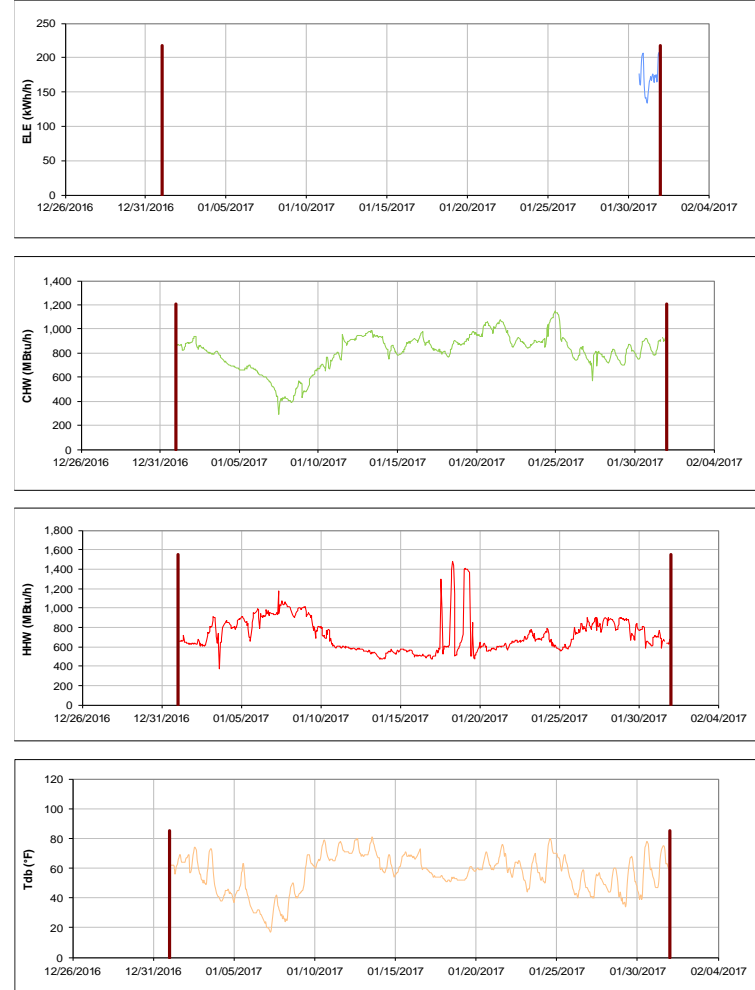


Figure III-54 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Dunn Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

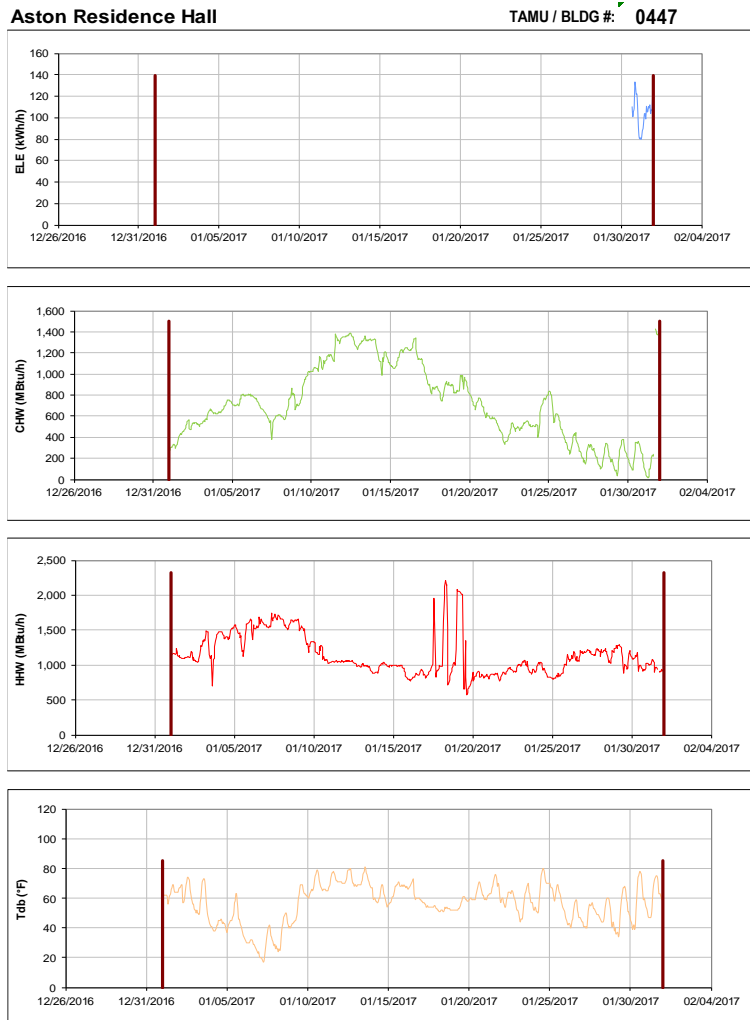


Figure III-55 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Aston Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

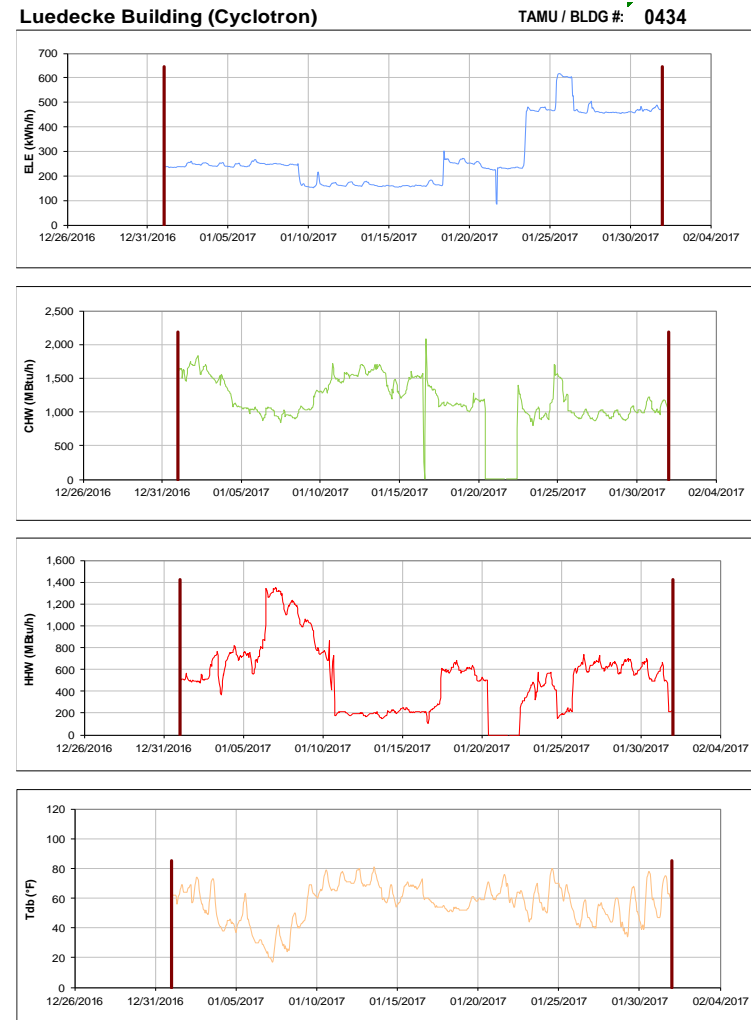


Figure III-56 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Luedecke Building (Cyclotron) during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

**Harrington Education Center Office Tower TAMU / BLDG #: 0435**



Figure III-57 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrington Education Center Office Tower during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

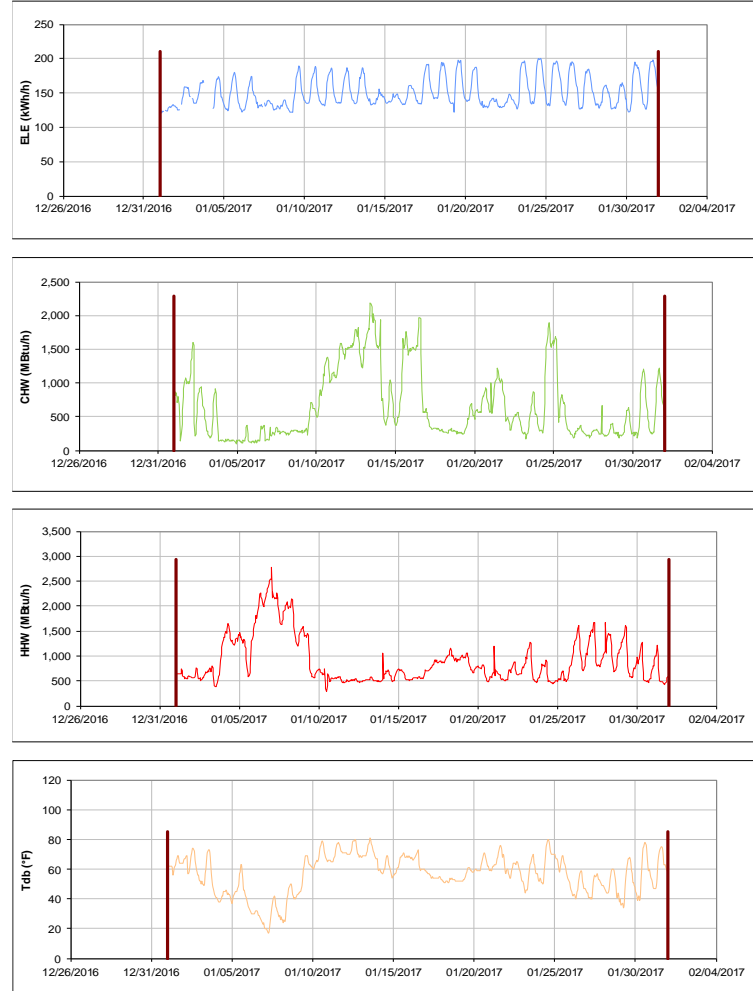


Figure III-58 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed-McDonald and Engineering Innovation Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Reed-McDonald Building

TAMU / BLDG #: 0436

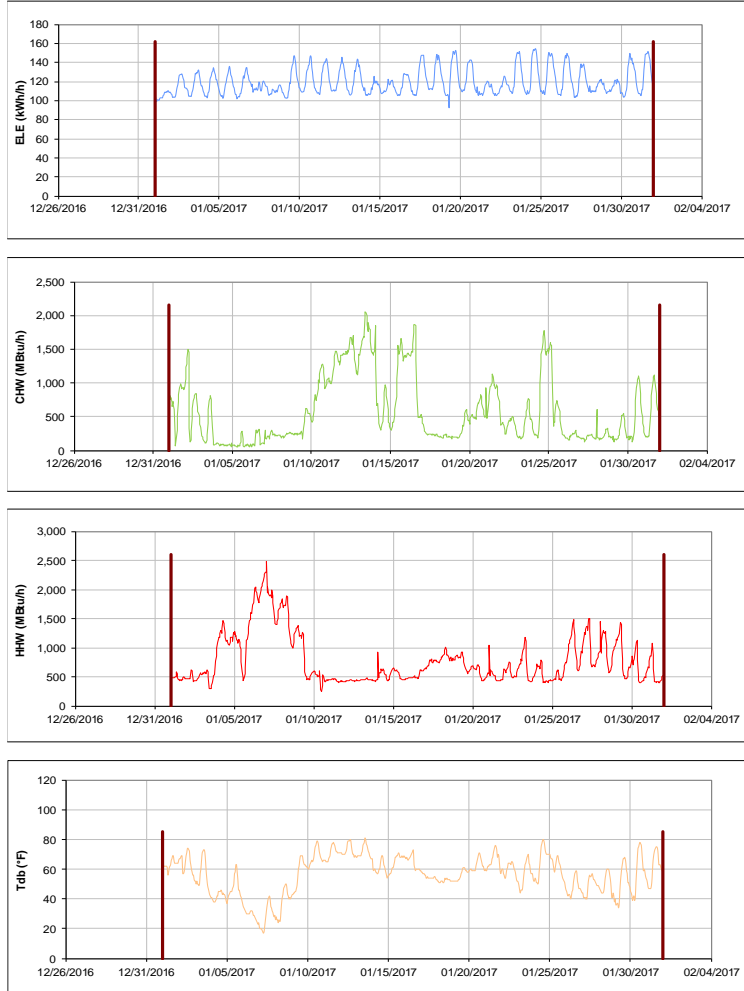


Figure III-59 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed-McDonald Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Engineering Innovation Center

TAMU / BLDG #: 0499

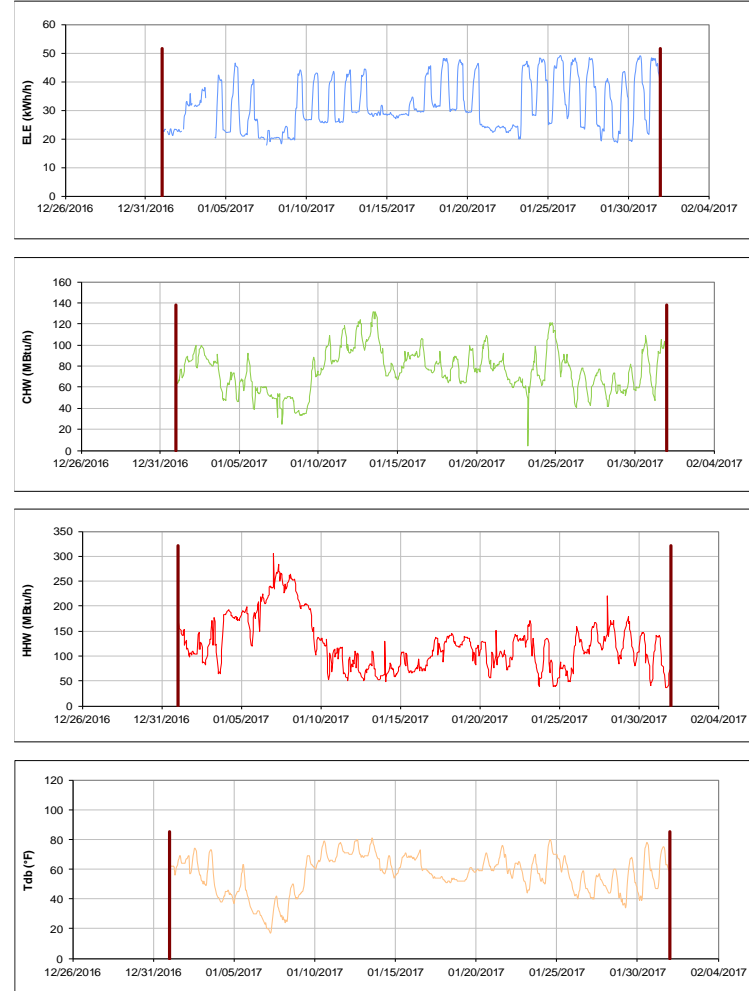


Figure III-60 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Engineering Innovation Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

**Harrington Education Center Classroom Building TAMU / BLDG #: 0438**

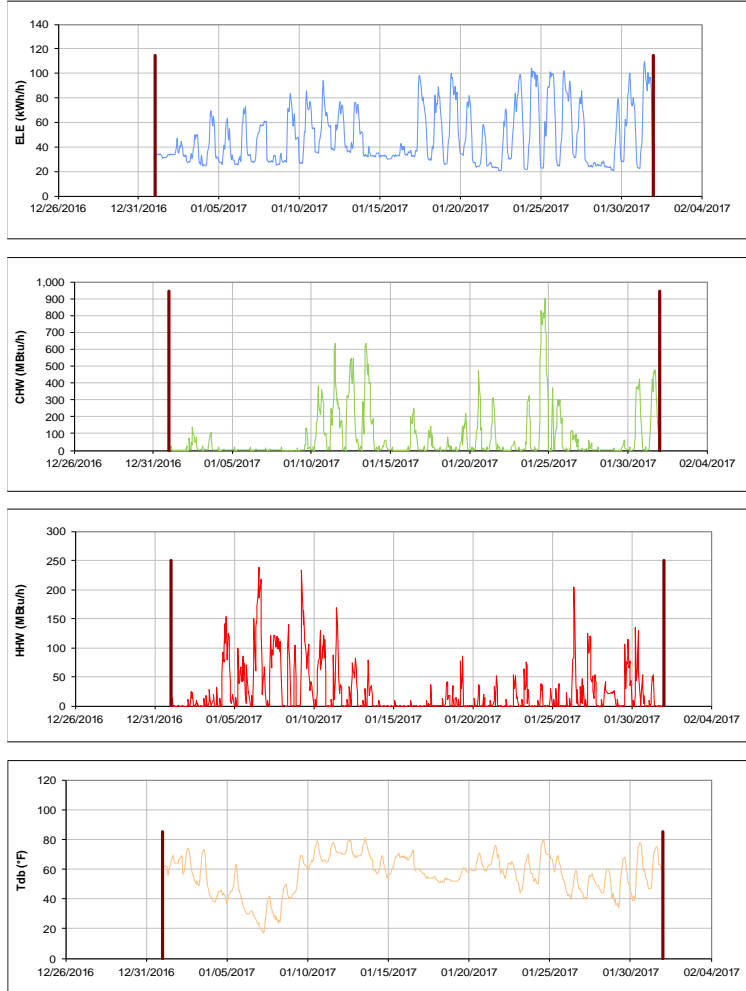


Figure III-61 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrington Education Center Classroom Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

**Oceanography & Meteorology Building TAMU / BLDG #: 0443**

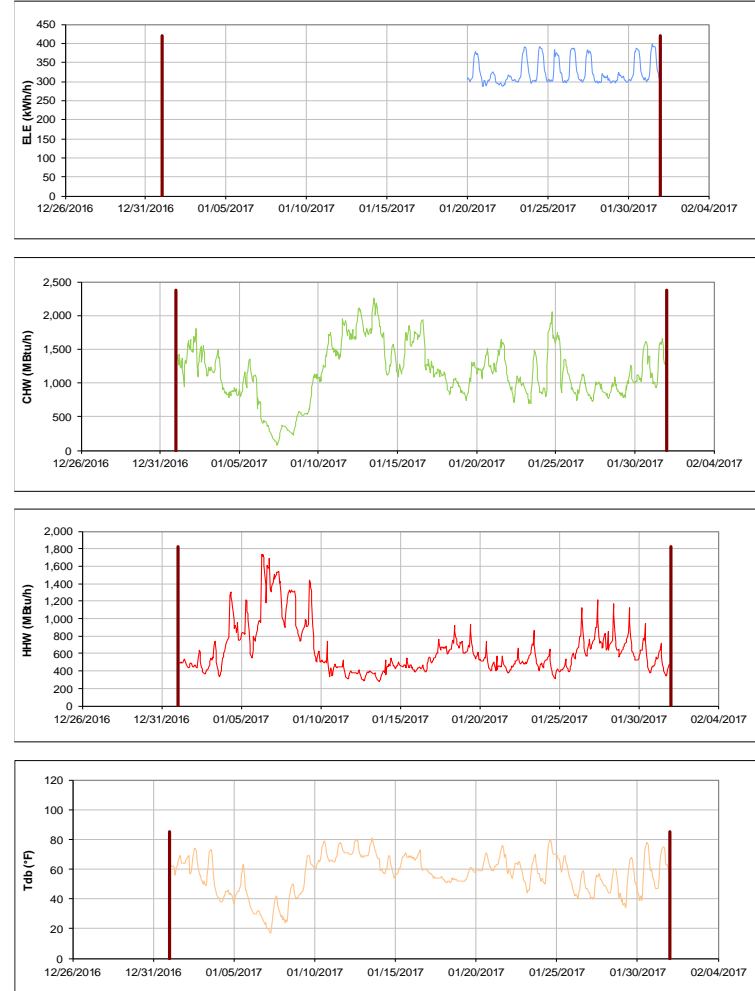


Figure III-62 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Oceanography & Meteorology Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

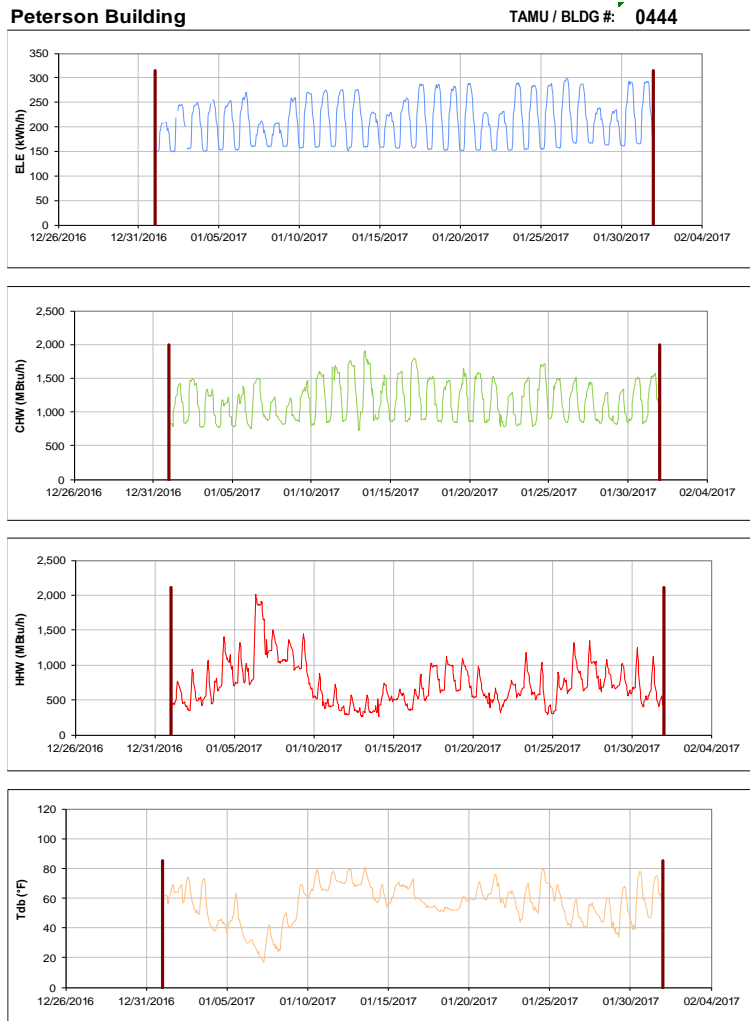


Figure III-63 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Peterson Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

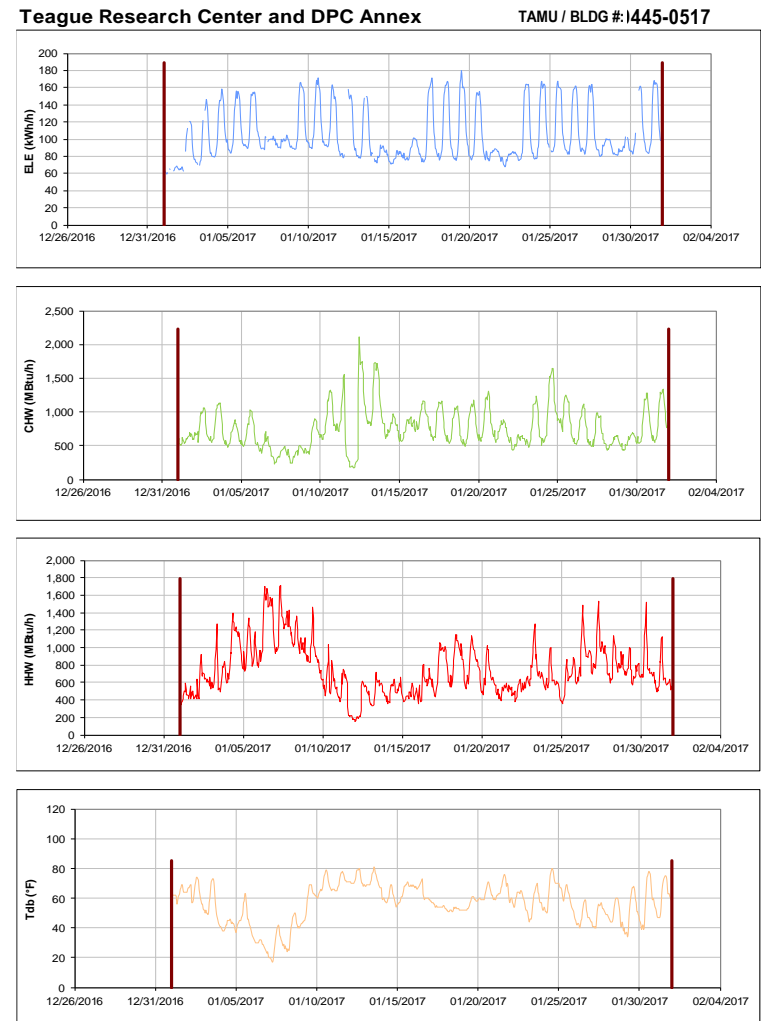


Figure III-64 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Teague Research Center and DPC Annex during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Teague Research Center

TAMU / BLDG #: 0445

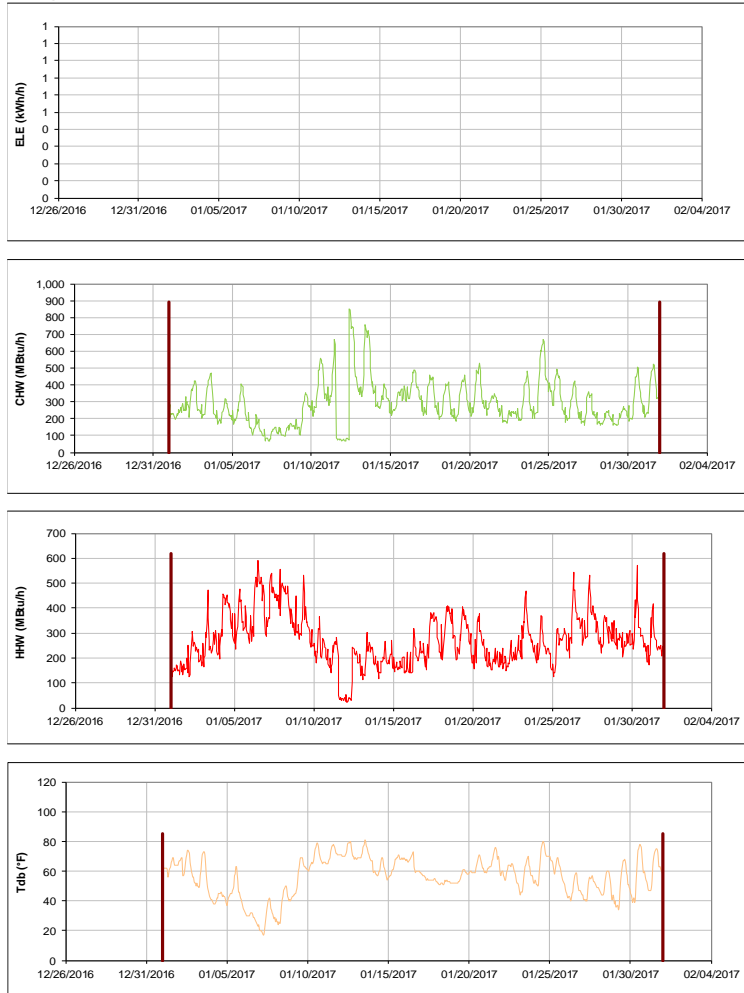


Figure III-65 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Teague Research Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

DPC Annex

TAMU / BLDG #: 0517

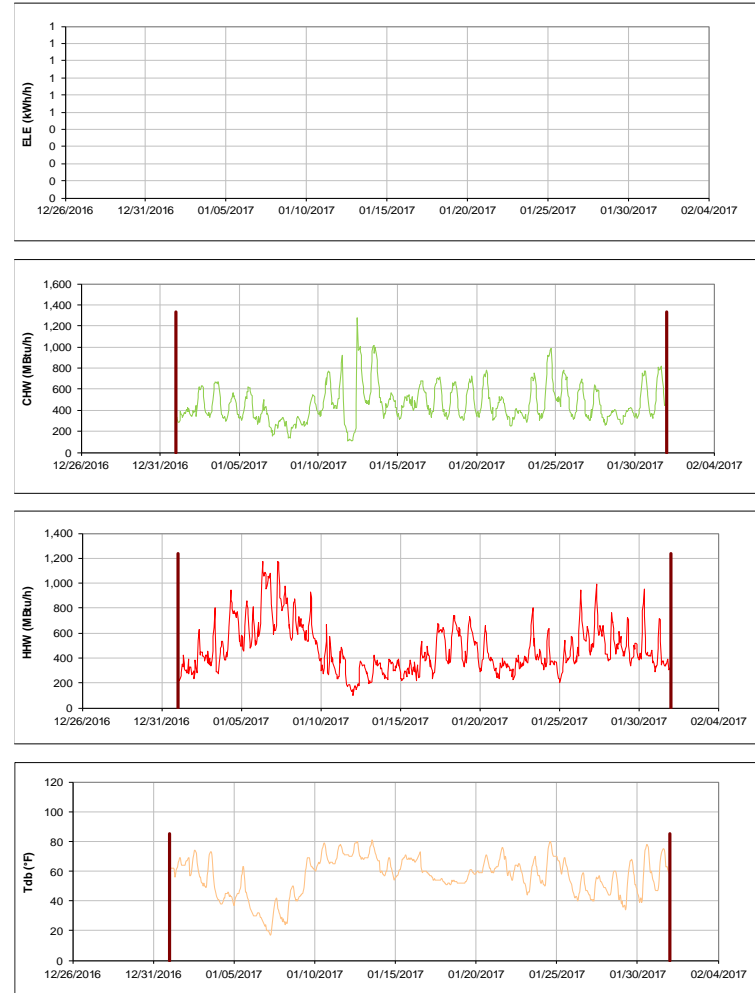


Figure III-66 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for DPC Annex during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Rudder Tower and Theatre Complex

TAMU / BLDG #: 0446

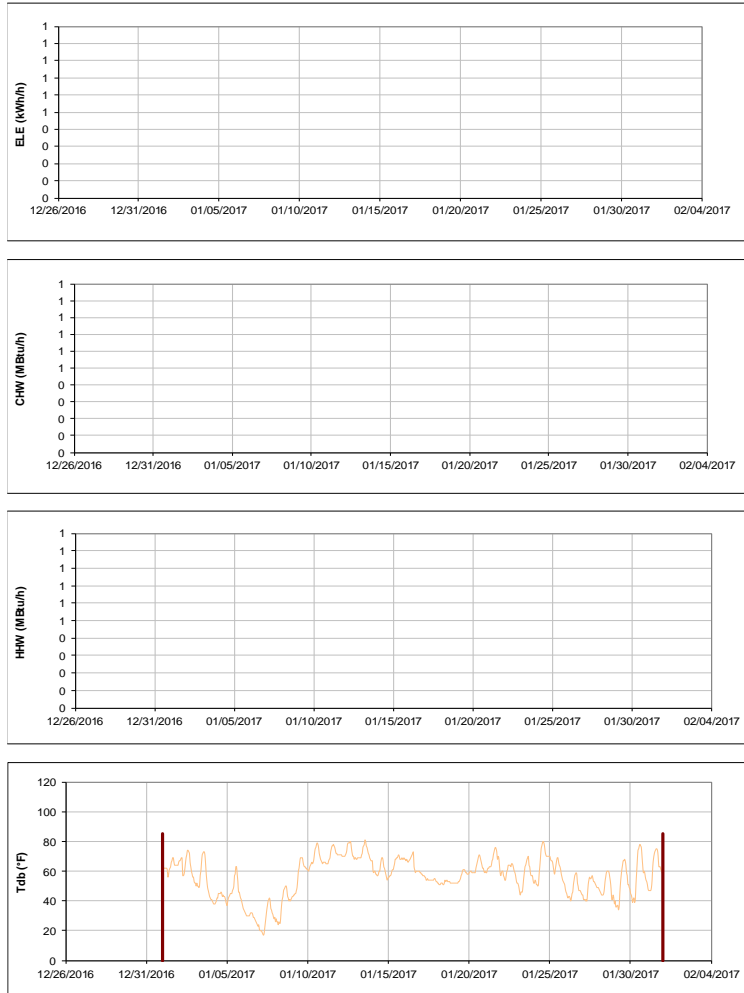


Figure III-67 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Tower and Theatre Complex during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Rudder Theatre Complex

TAMU / BLDG #: 0446-A

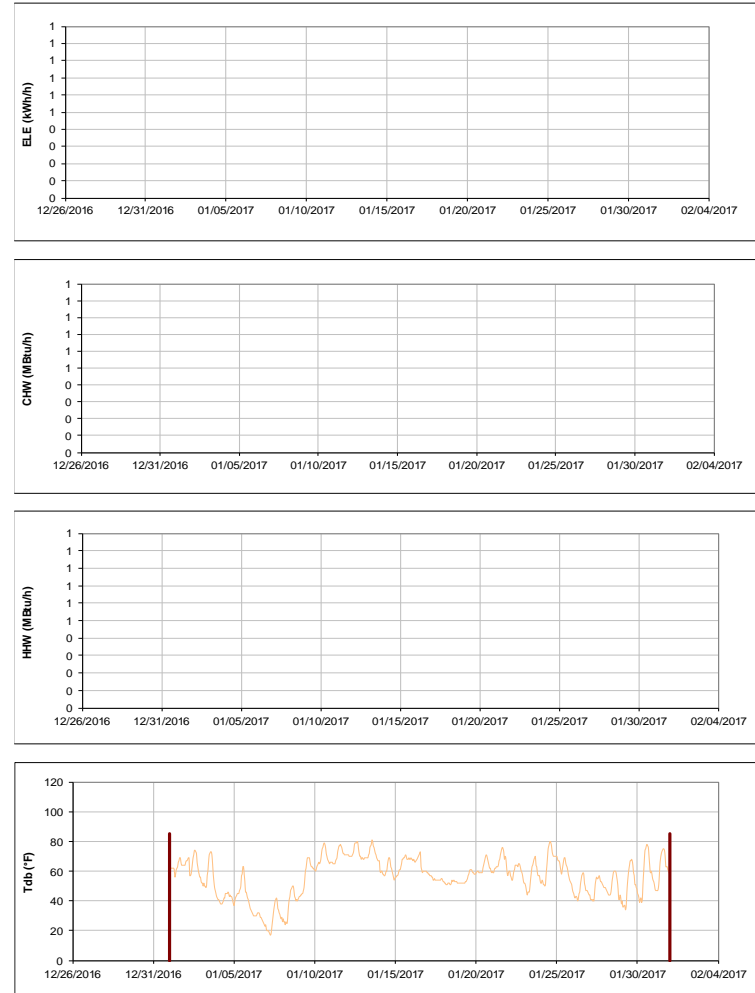


Figure III-68 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Theatre Complex during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

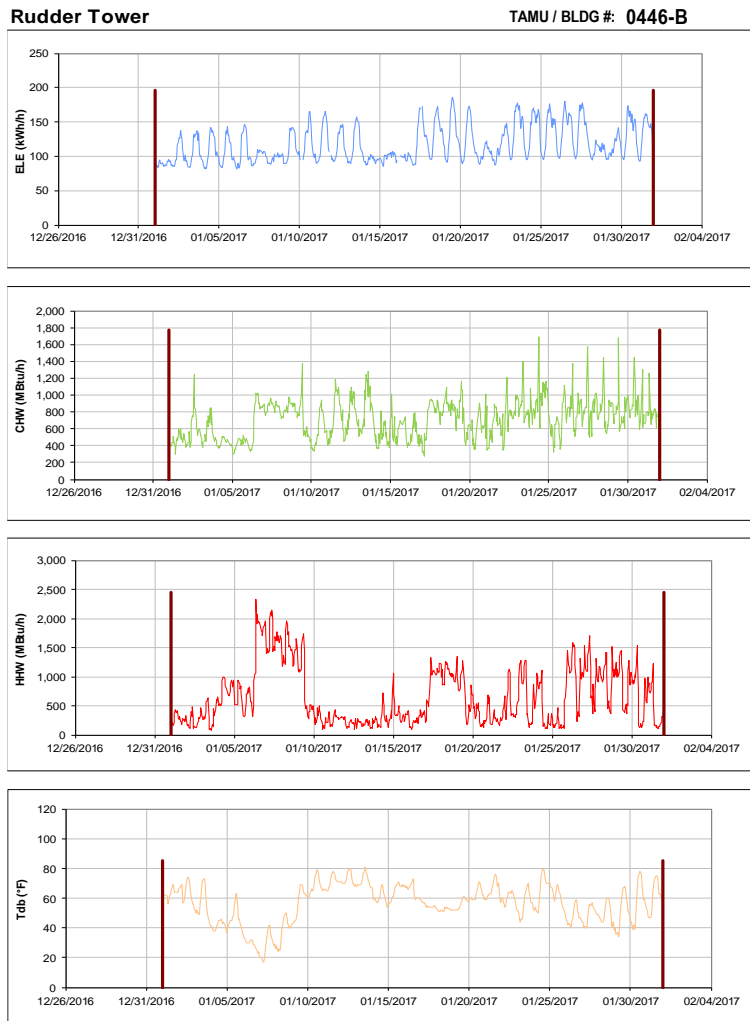


Figure III-69 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Tower during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

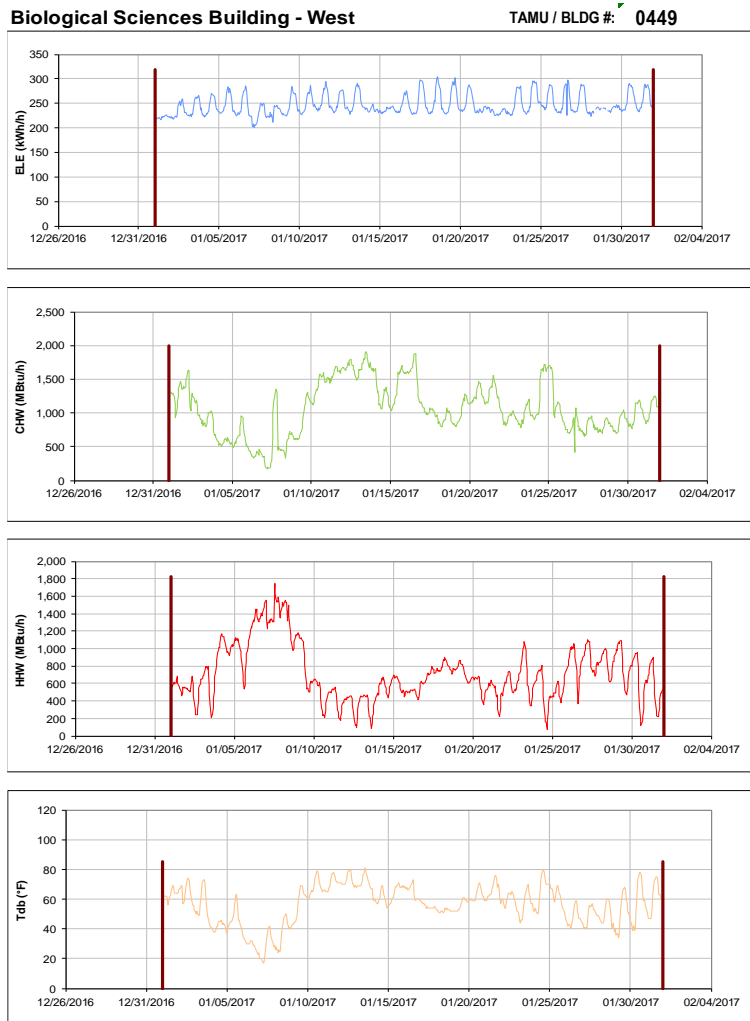


Figure III-71 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Sciences Building - West during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

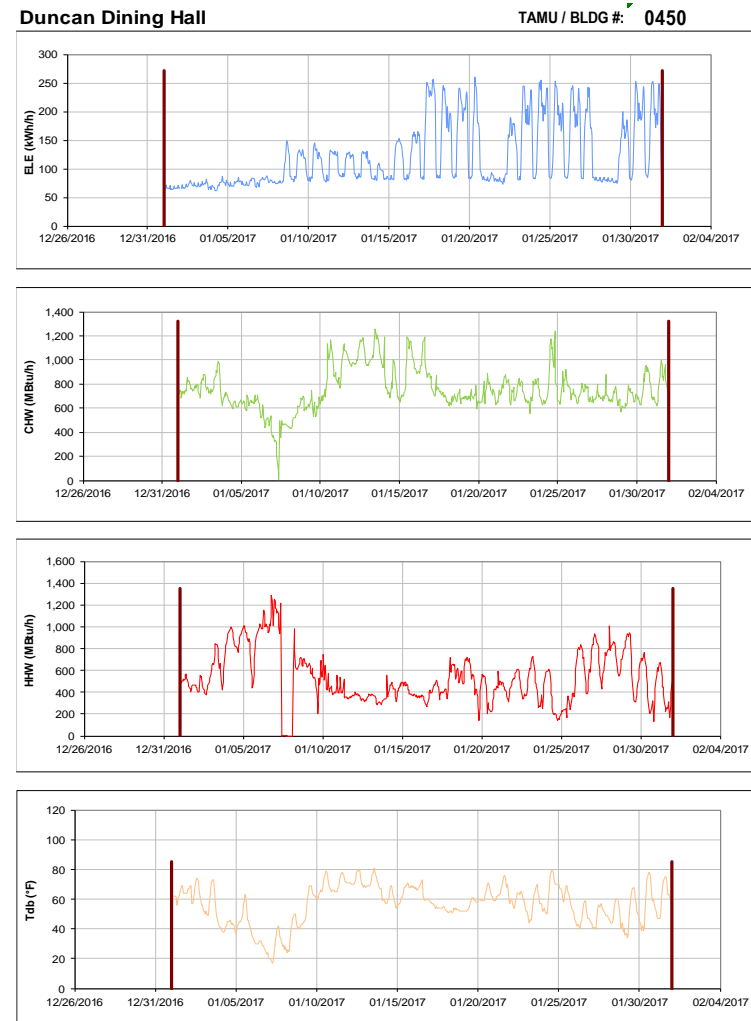


Figure III-72 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Duncan Dining Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-73 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for MSC during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

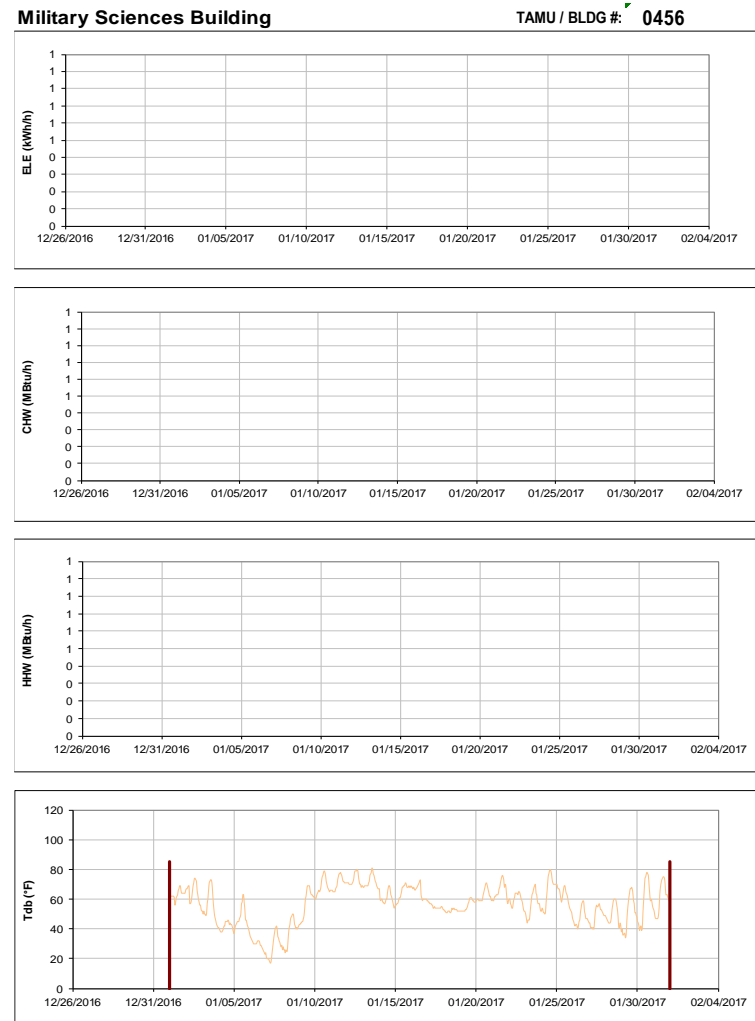


Figure III-74 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Military Sciences Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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



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

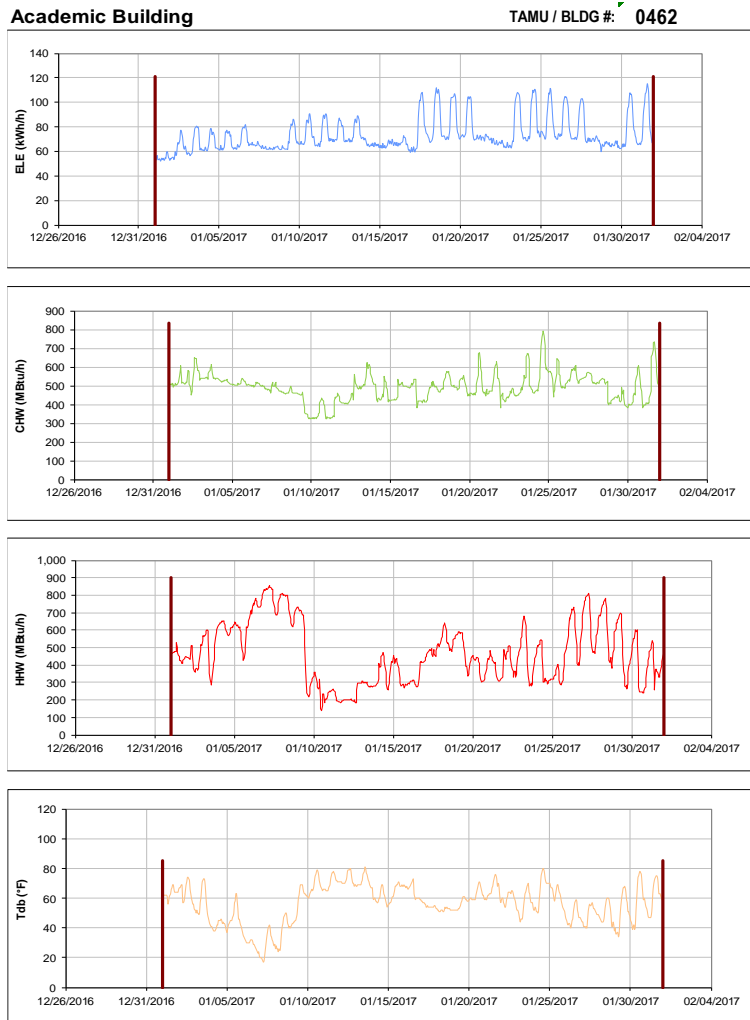


Figure III-77 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Academic Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

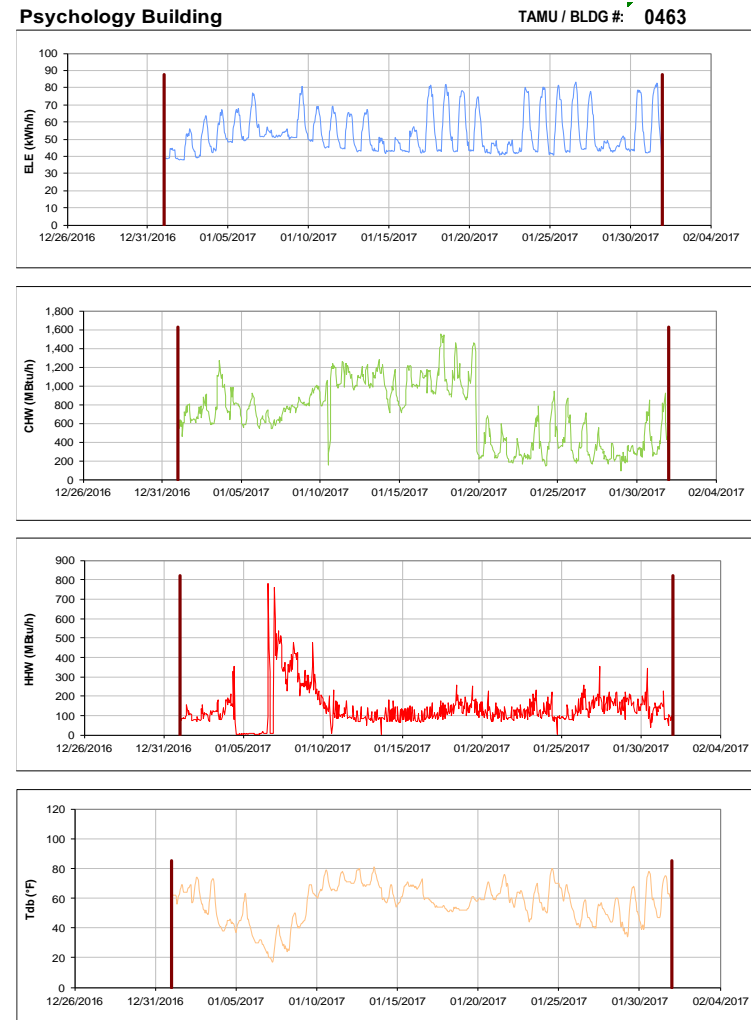


Figure III-78 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Psychology Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

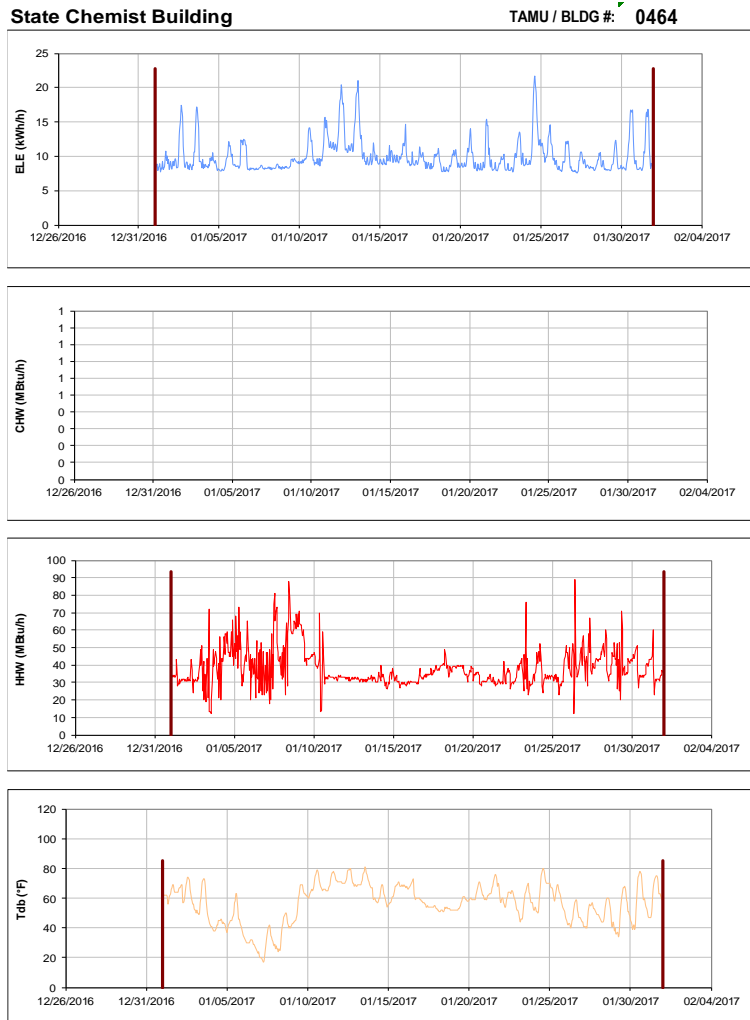


Figure III-79 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for State Chemist Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

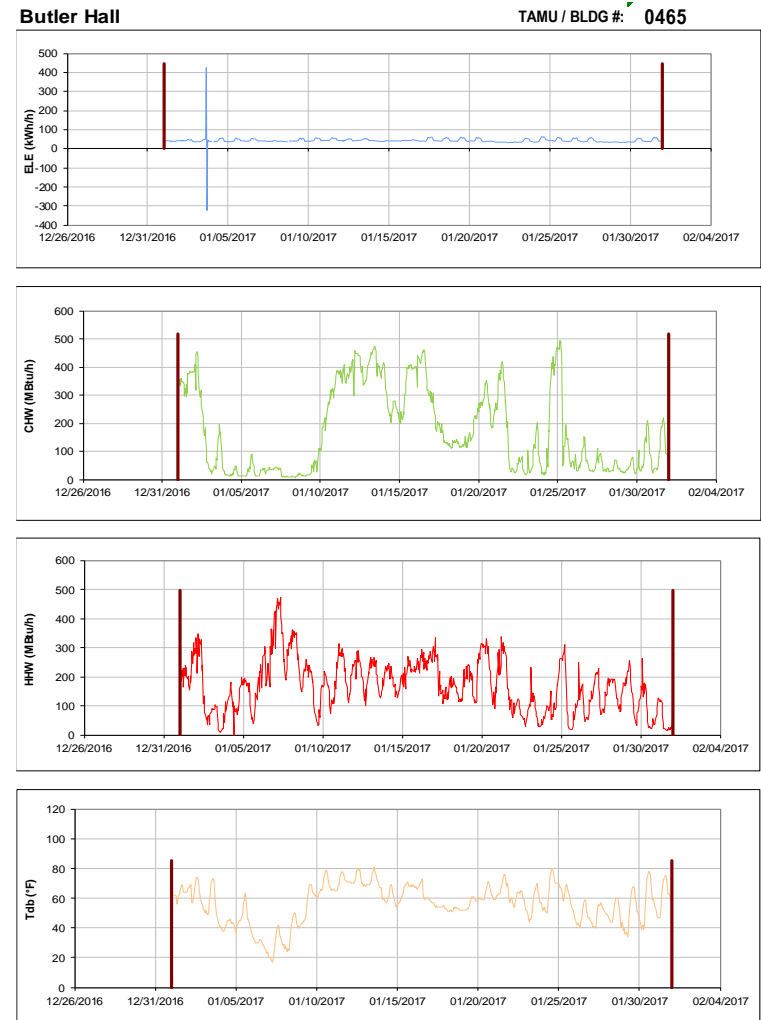


Figure III-80 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Butler Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



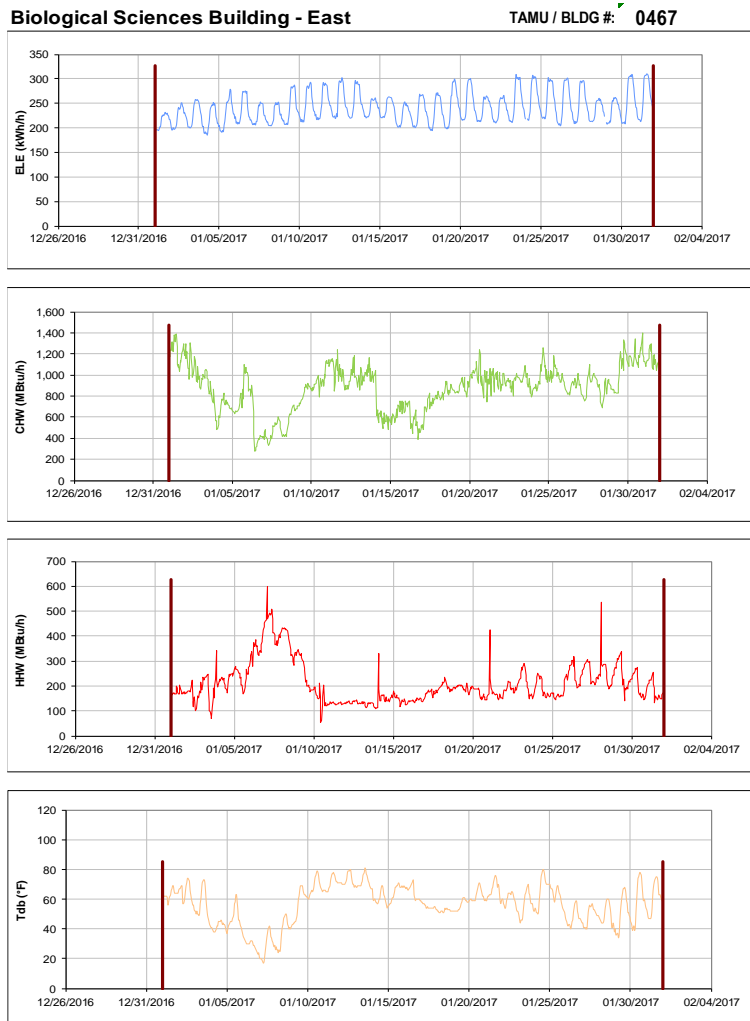


Figure III-81 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Sciences Building - East during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

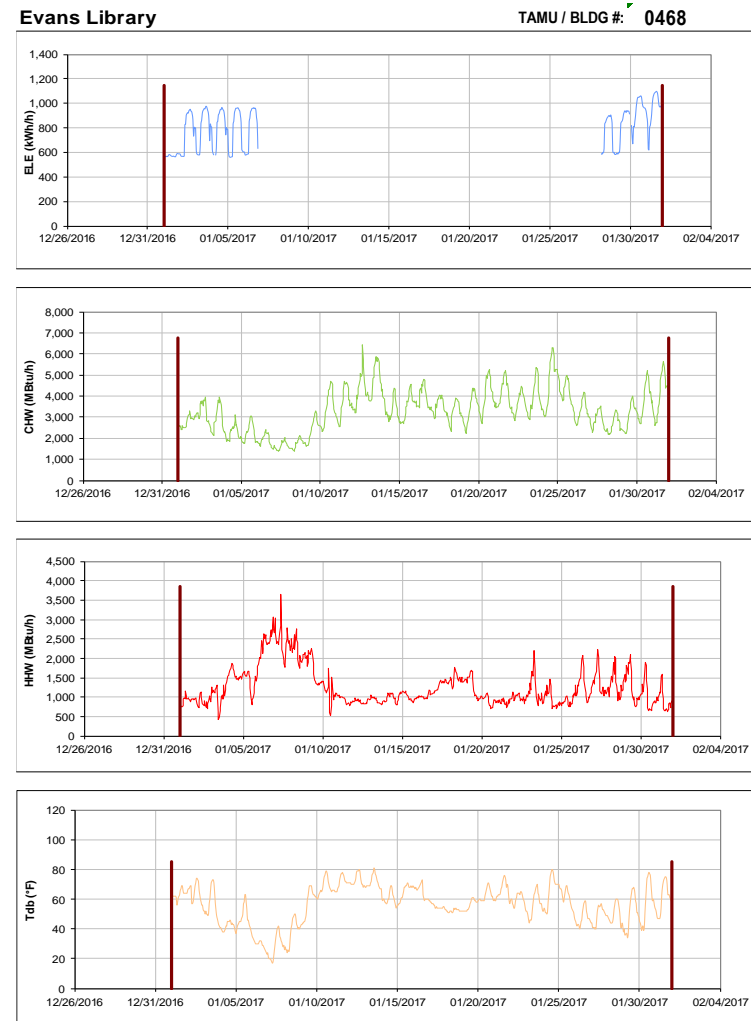


Figure III-82 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Evans Library during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

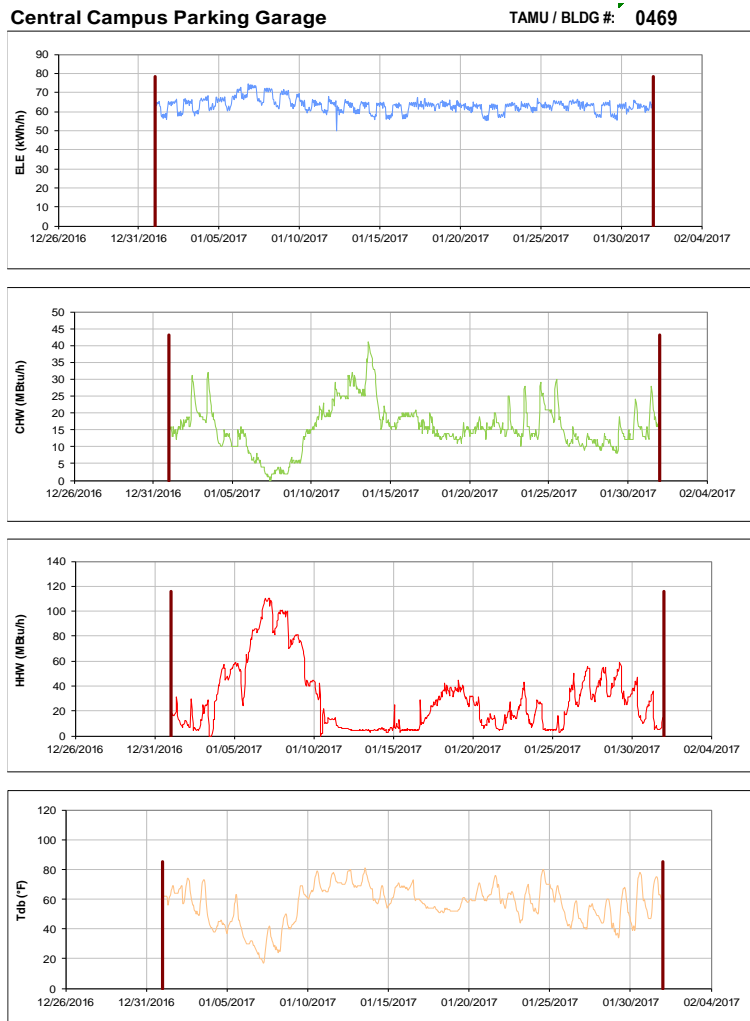


Figure III-83 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Central Campus Parking Garage during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

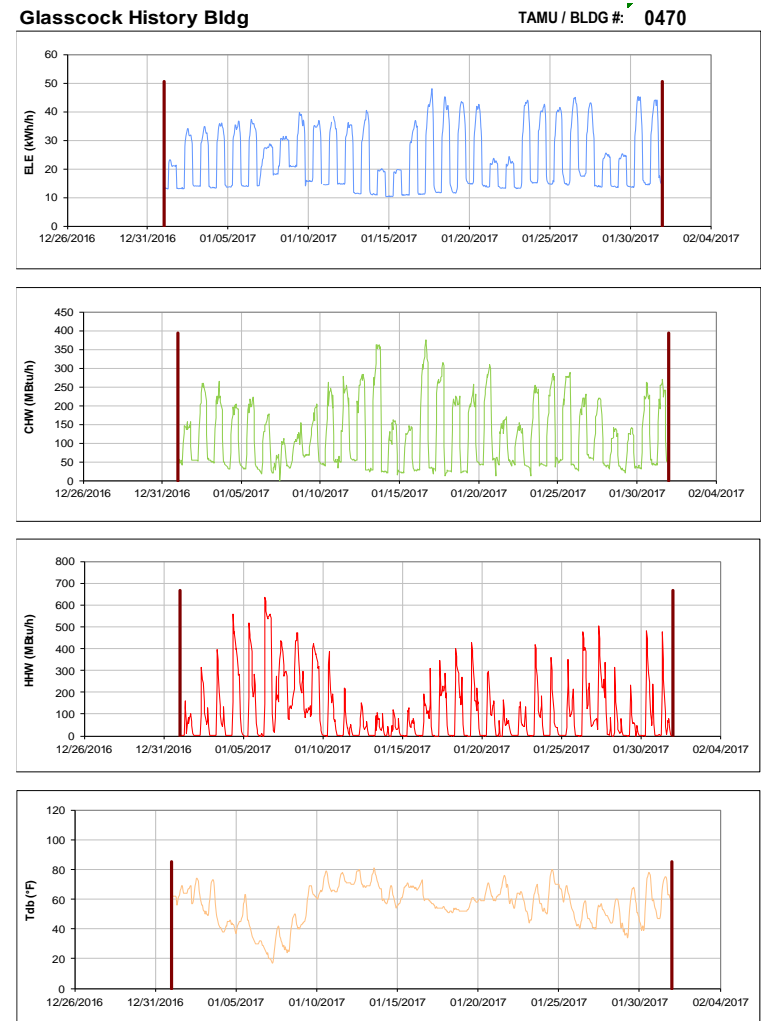


Figure III-84 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Glasscock History Bldg during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

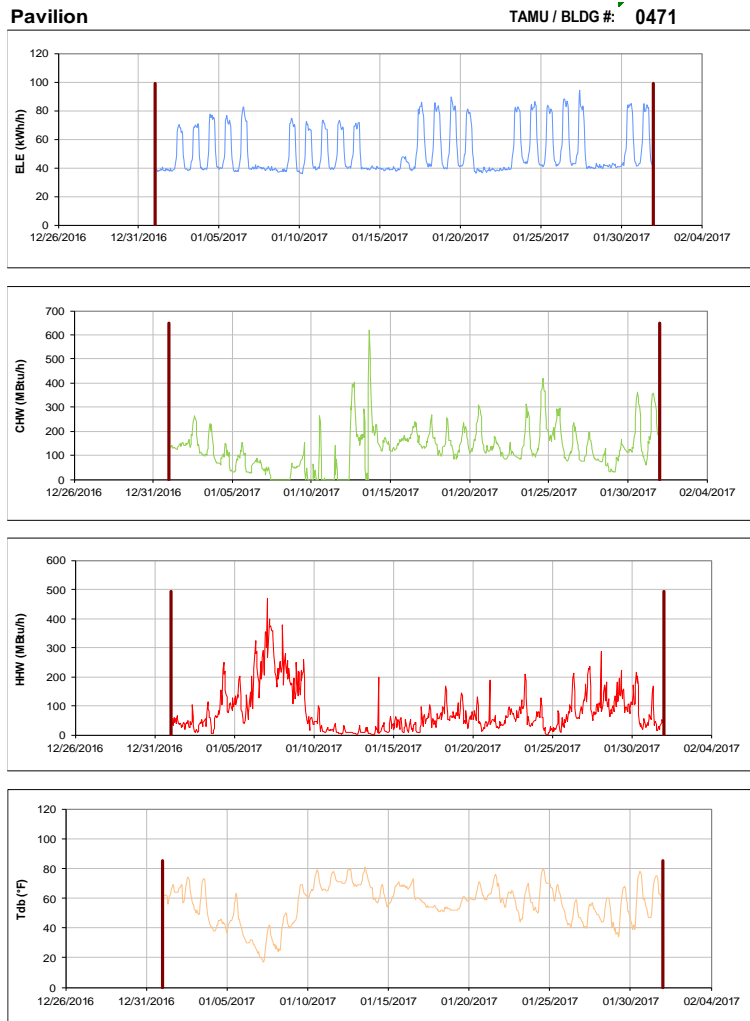


Figure III-85 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Pavilion during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

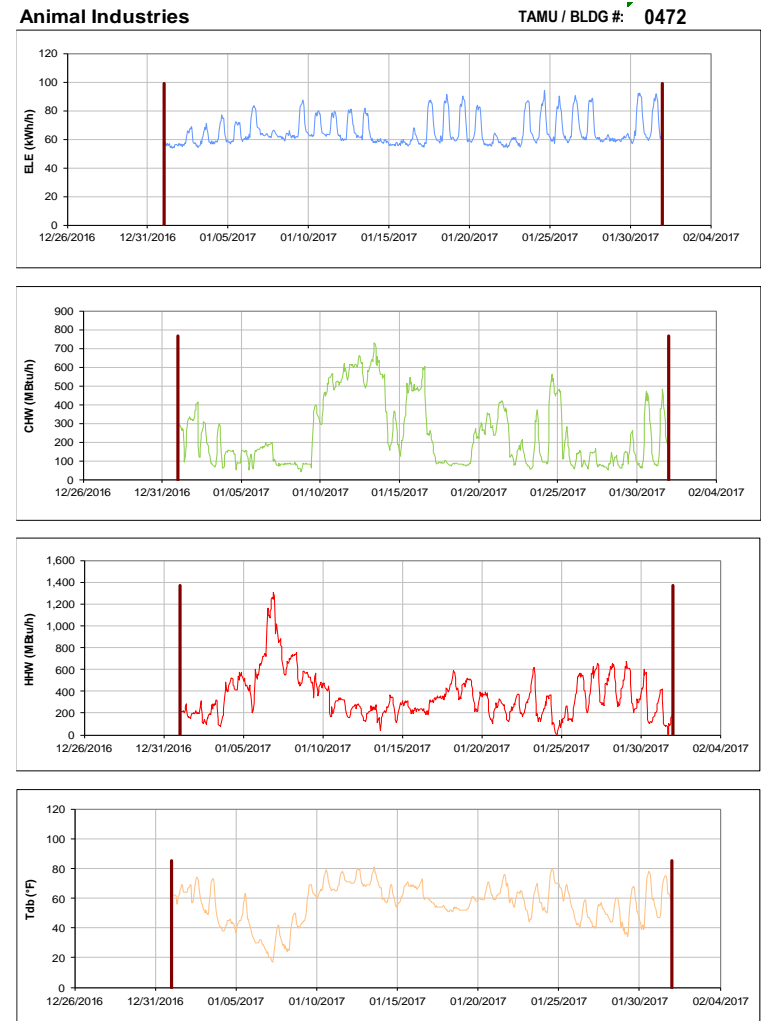


Figure III-86 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Animal Industries during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

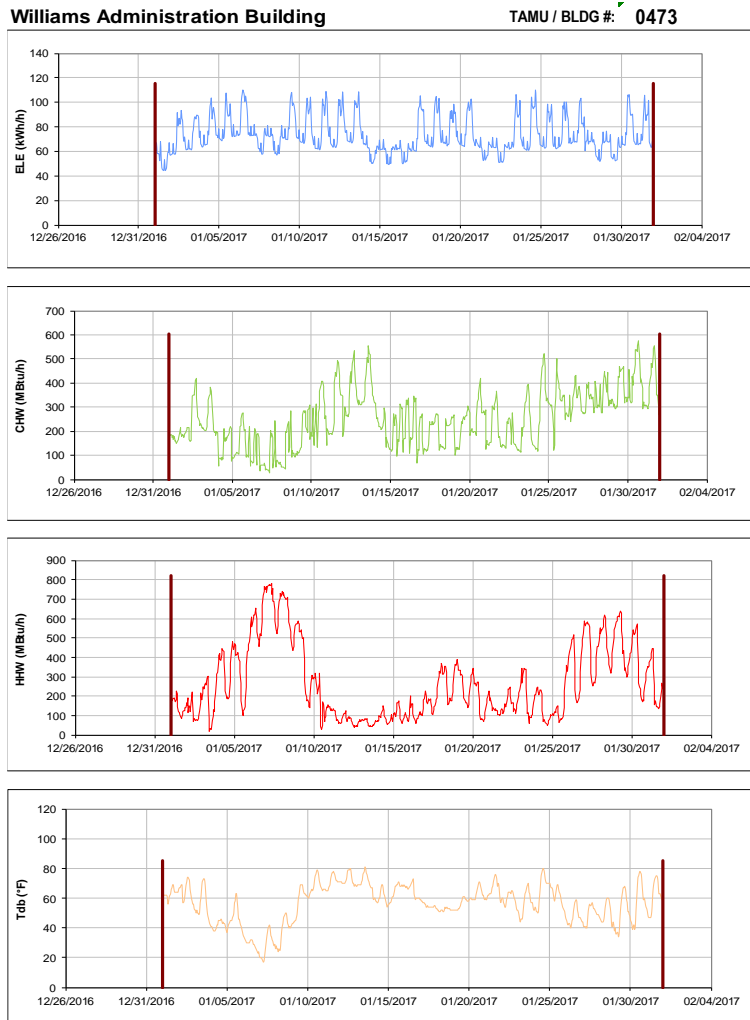


Figure III-87 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Williams Administration Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

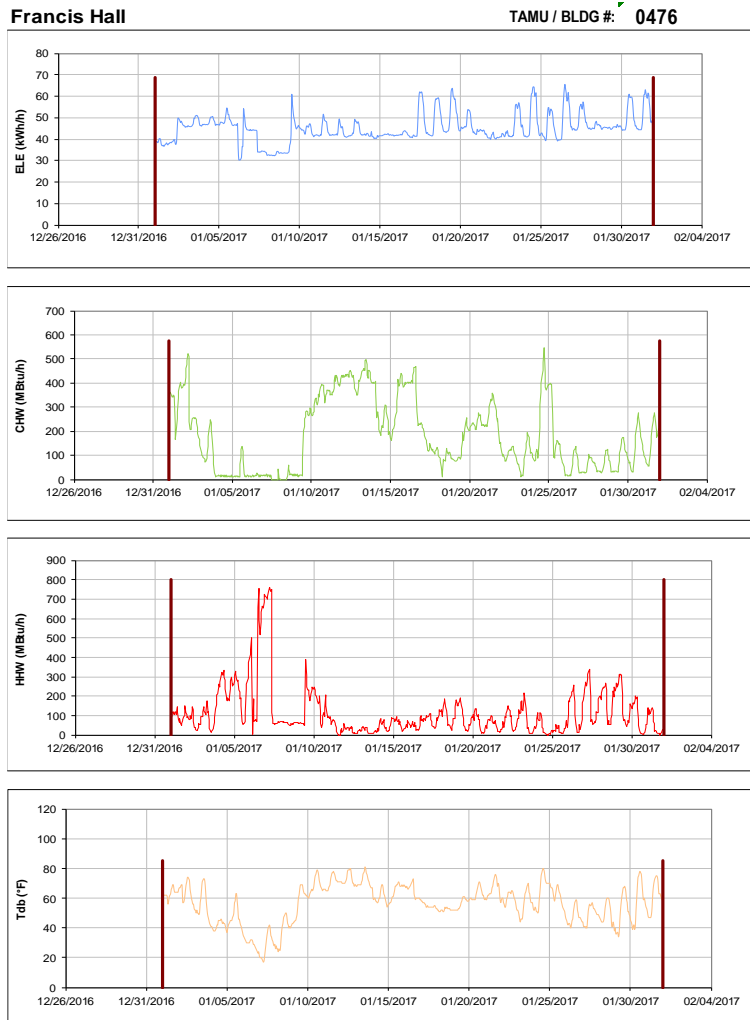


Figure III-89 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Francis Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

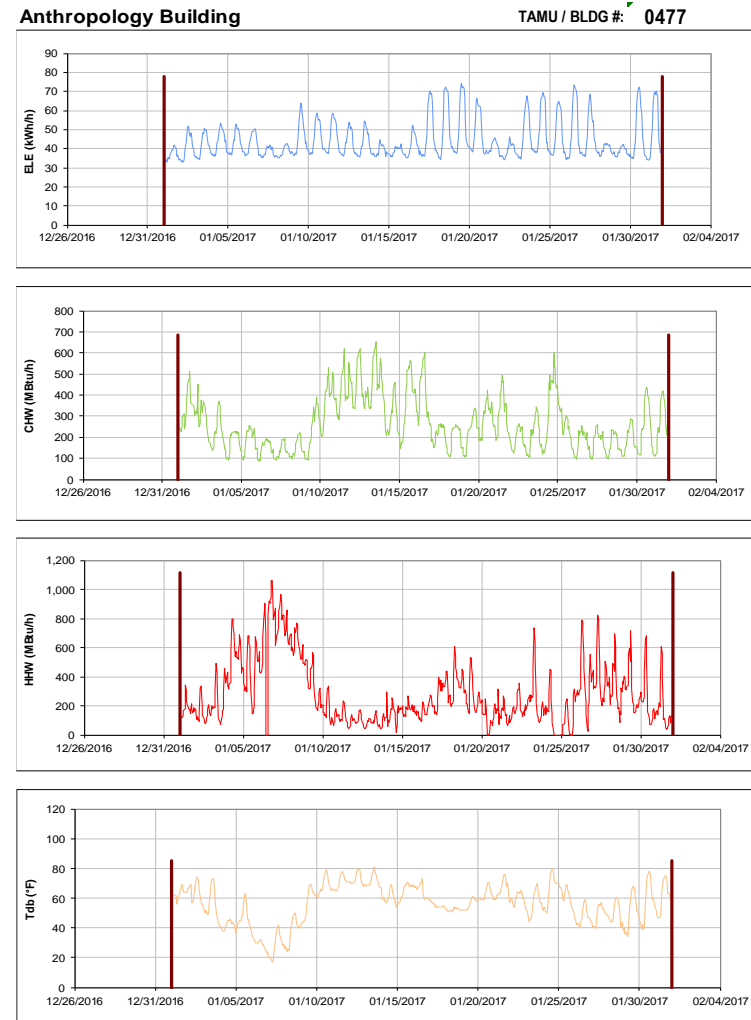


Figure III-90 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Anthropology Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

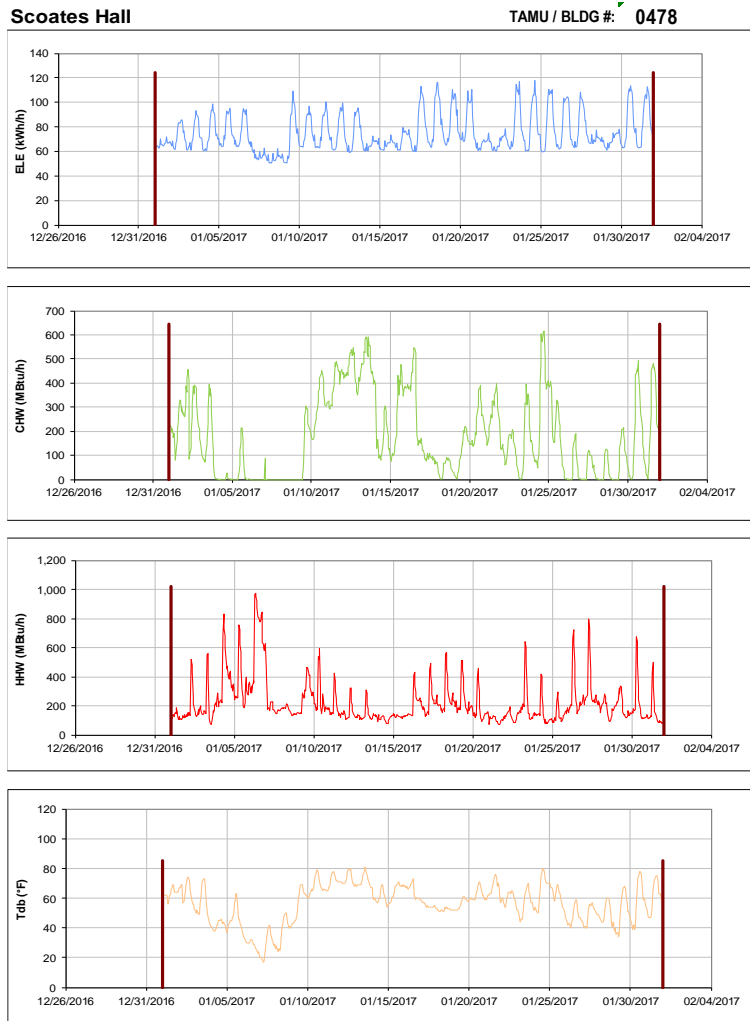


Figure III-91 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Scoates Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

Heaton Hall

TAMU / BLDG #: 0481



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

Fermier Hall

TAMU / BLDG #: 0482

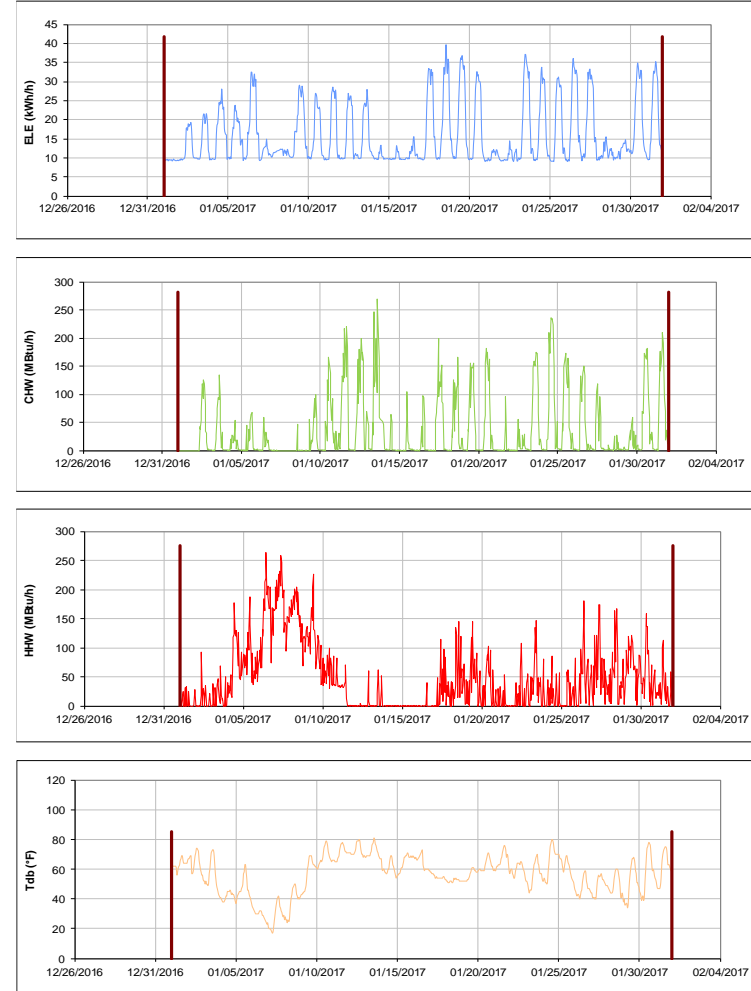


Figure III-94 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Fermier Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

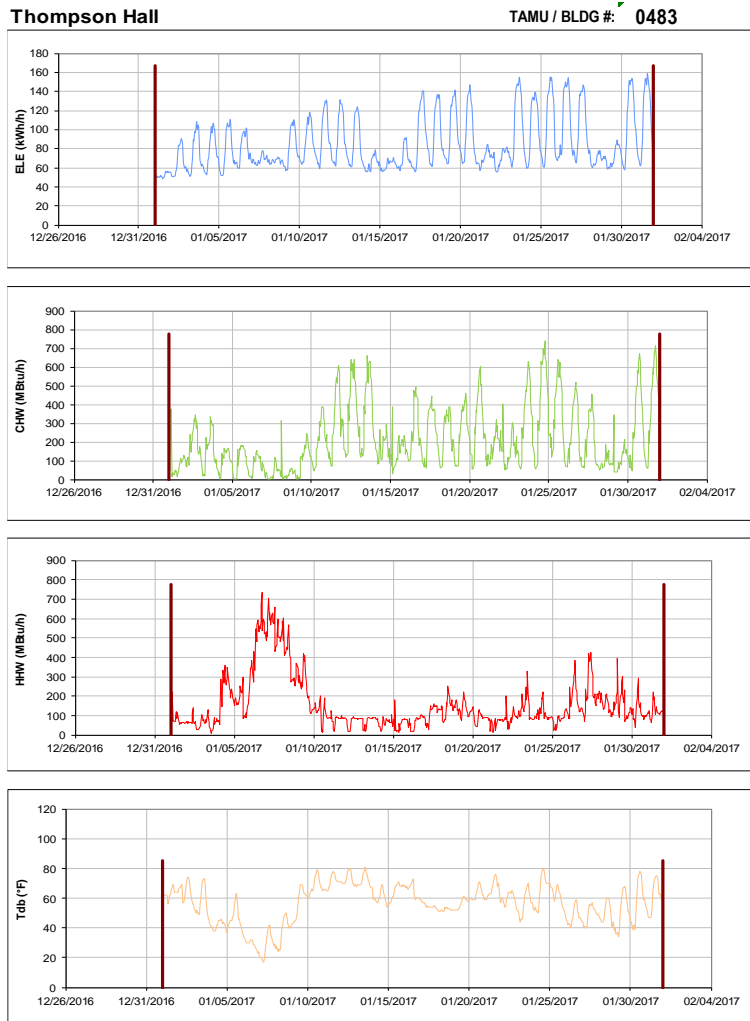


Figure III-95 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Thompson Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

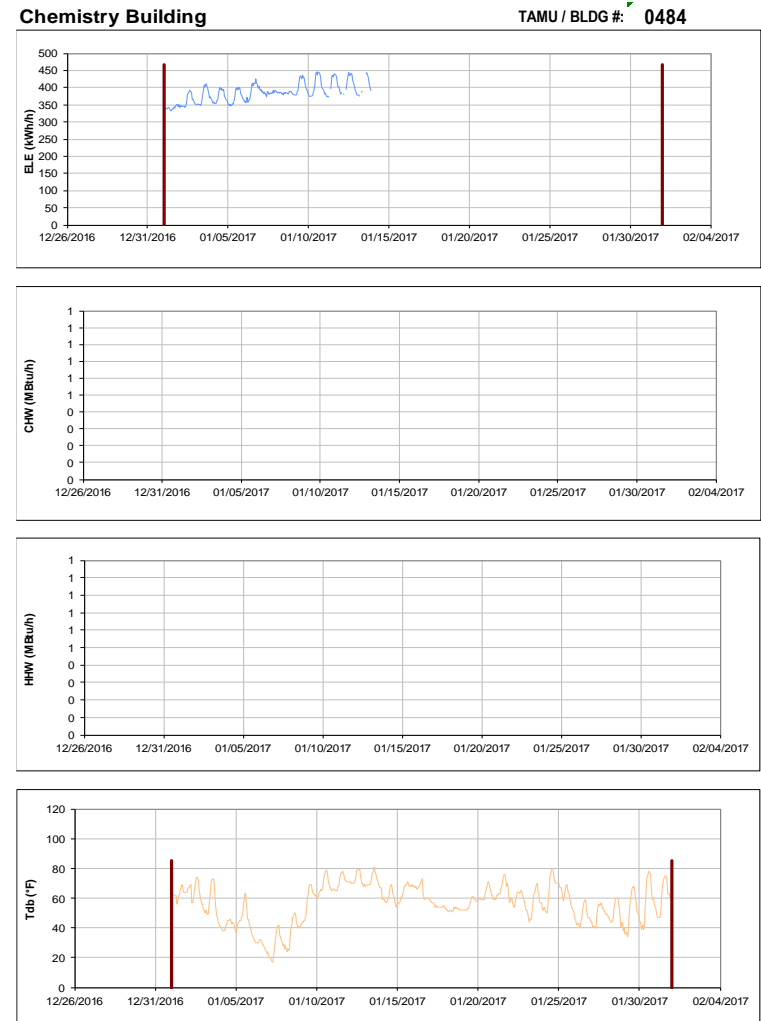


Figure III-96 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Chemistry Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX





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

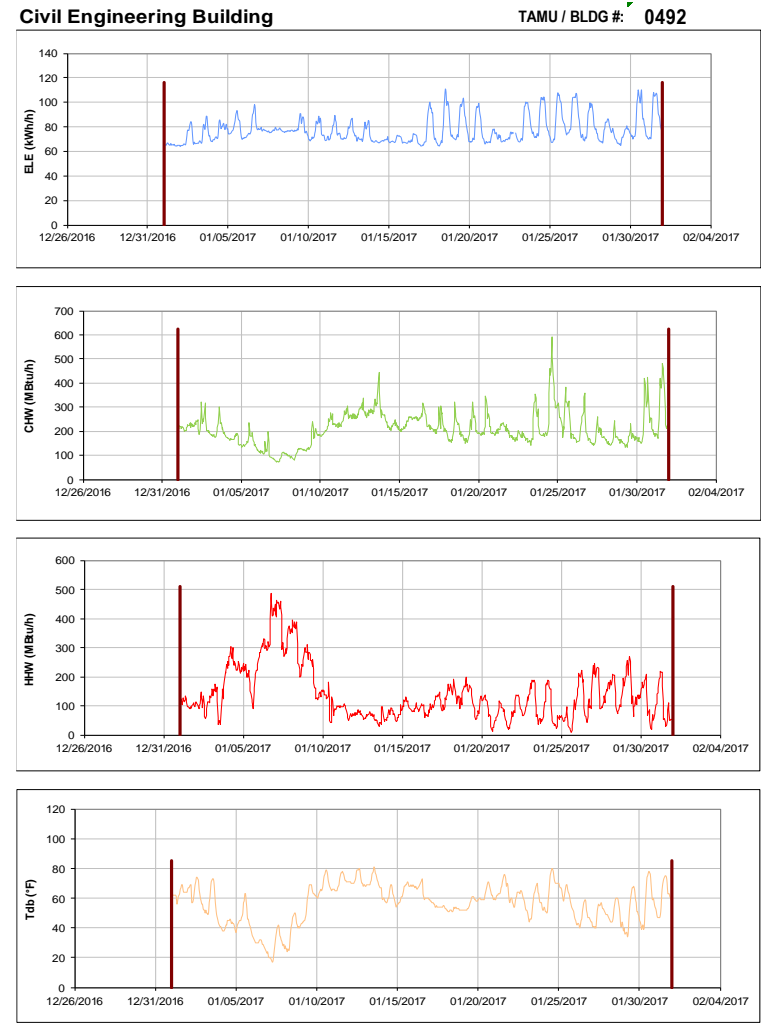


Figure III-98 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Civil Engineering Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

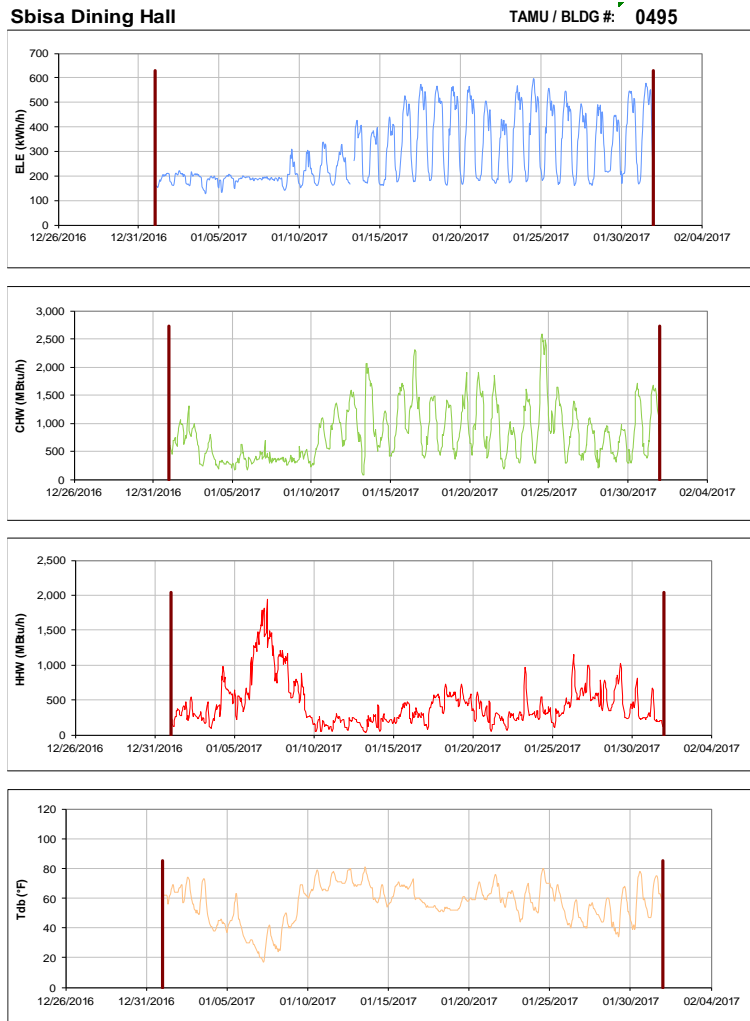


Figure III-99 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Sbisa Dining Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

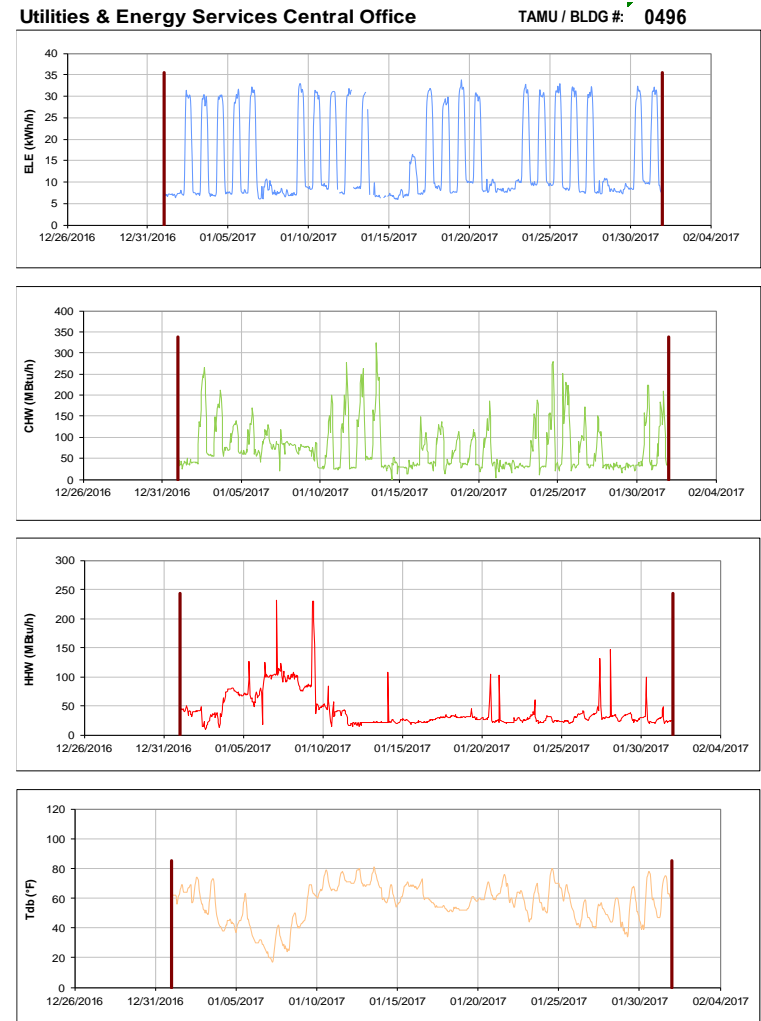


Figure III-100 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities & Energy Services Central Office during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Concrete Materials Laboratory

TAMU / BLDG #: 0501

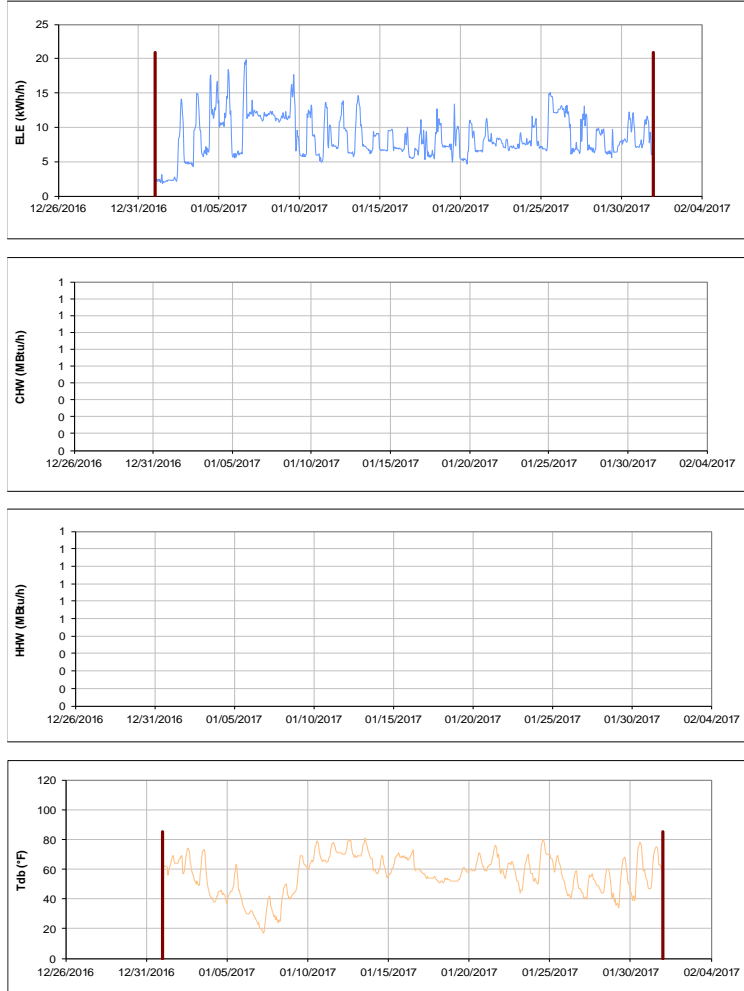


Figure III-101 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Concrete Materials Laboratory during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Nagle Hall

TAMU / BLDG #: 0506

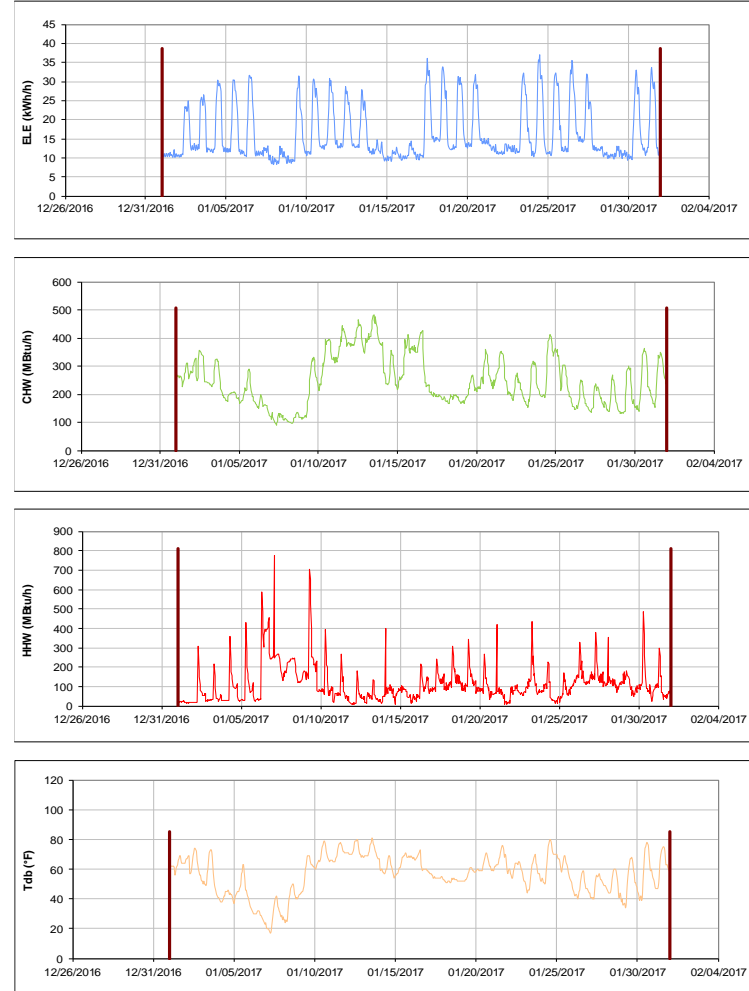


Figure III-102 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Nagle Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

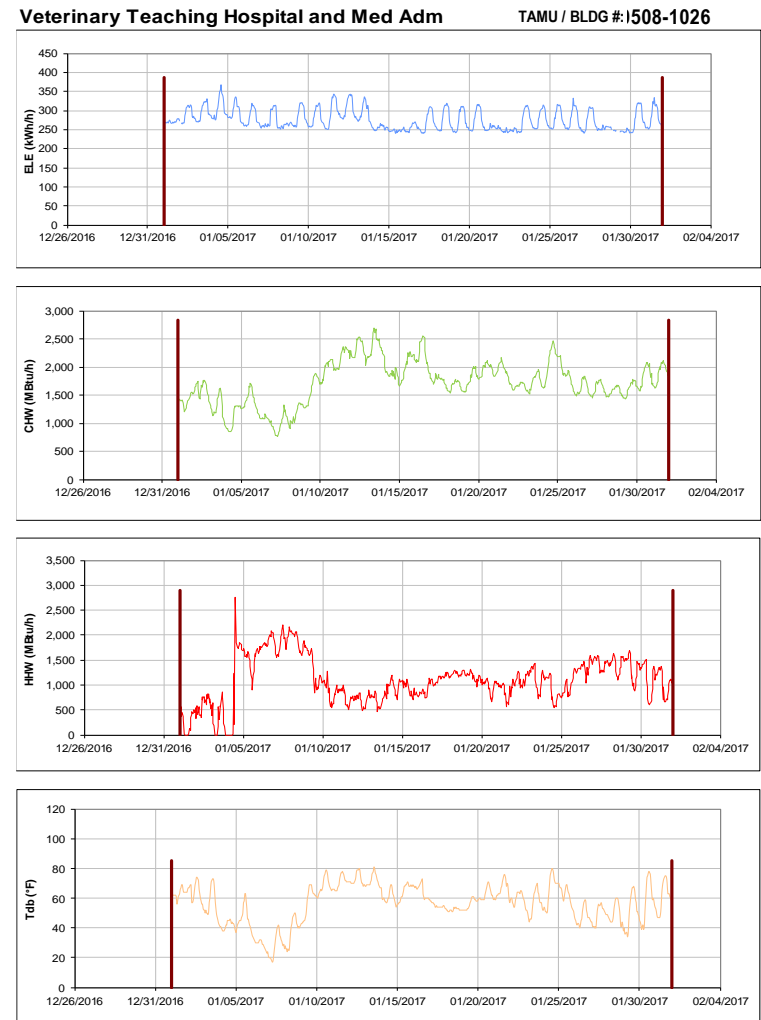


Figure III-104 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Teaching Hospital and Med Adm during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

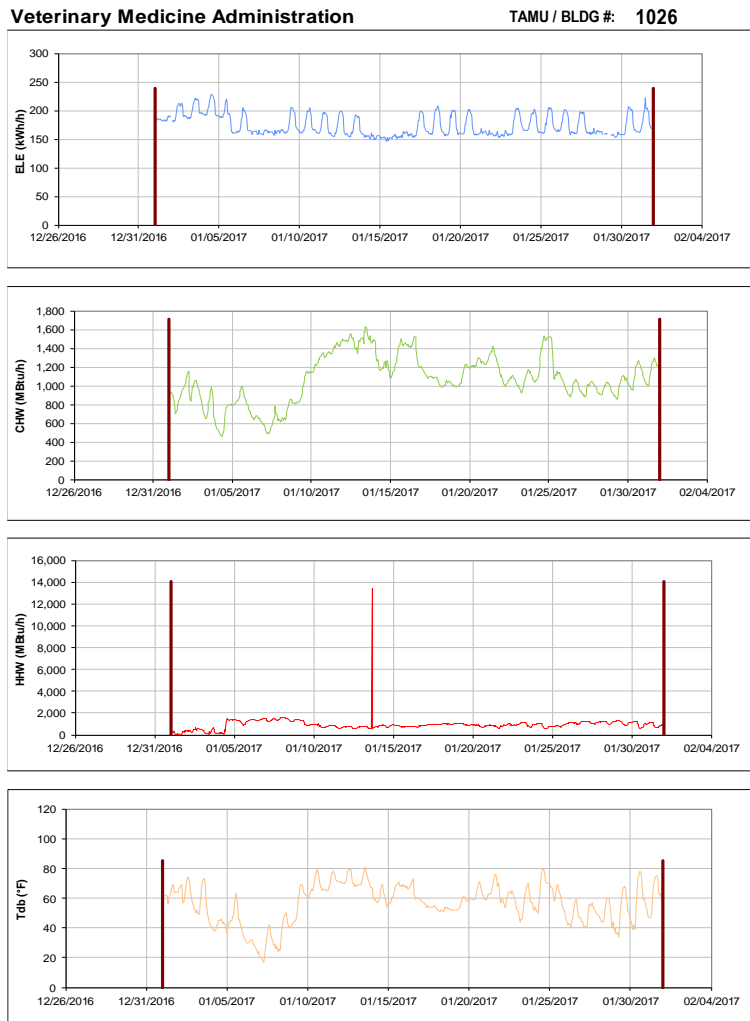


Figure III-105 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medicine Administration during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

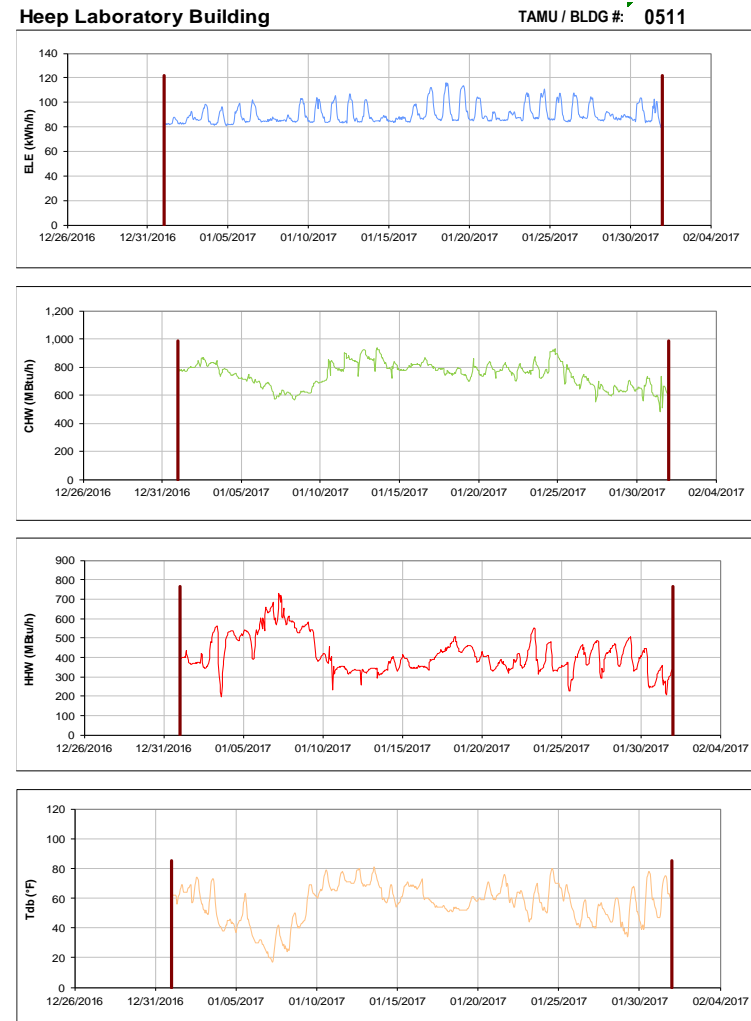


Figure III-106 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heep Laboratory Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

All Faiths Chapel

TAMU / BLDG #: 0512

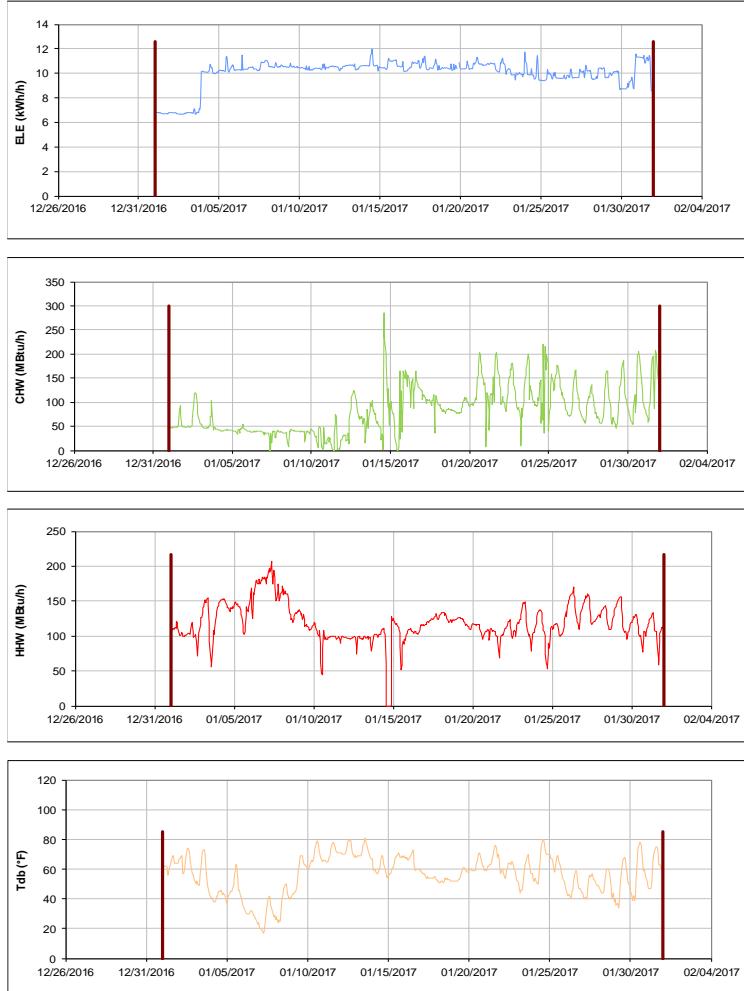


Figure III-107 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for All Faiths Chapel during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Doherty Building

TAMU / BLDG #: 0513

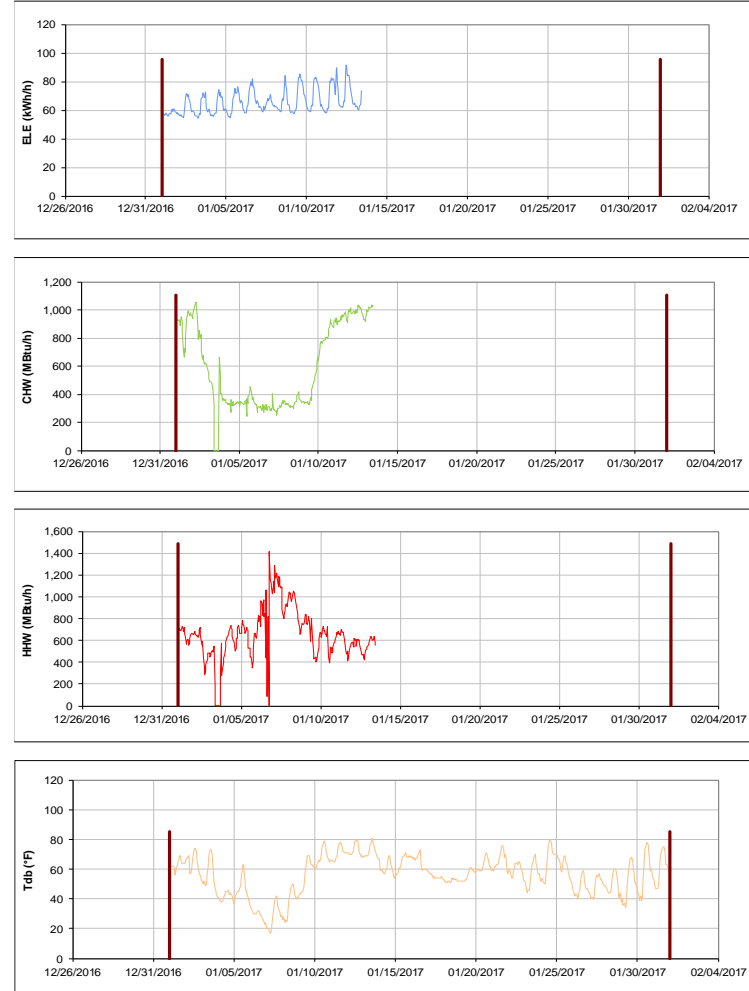


Figure III-108 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Doherty Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Munnerlyn Astronomy & Space Sciences Engineering TAMU / BLDG #: 0514

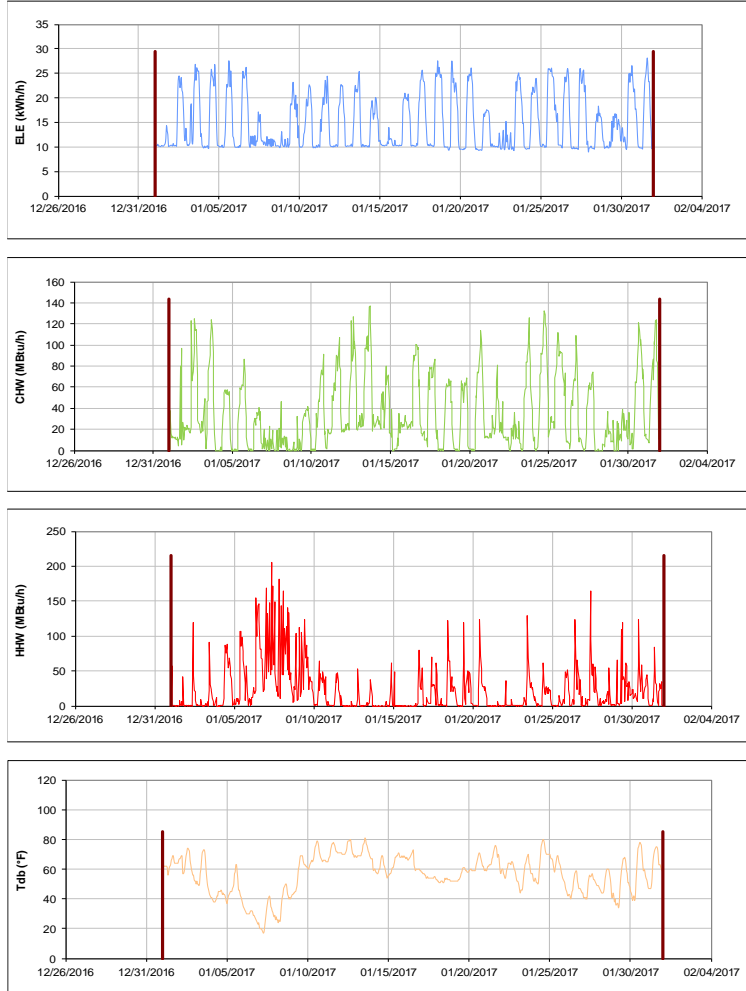


Figure III-109 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Munnerlyn Astronomy & Space Sciences Engineering during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Computing Services Center TAMU / BLDG #: 0516

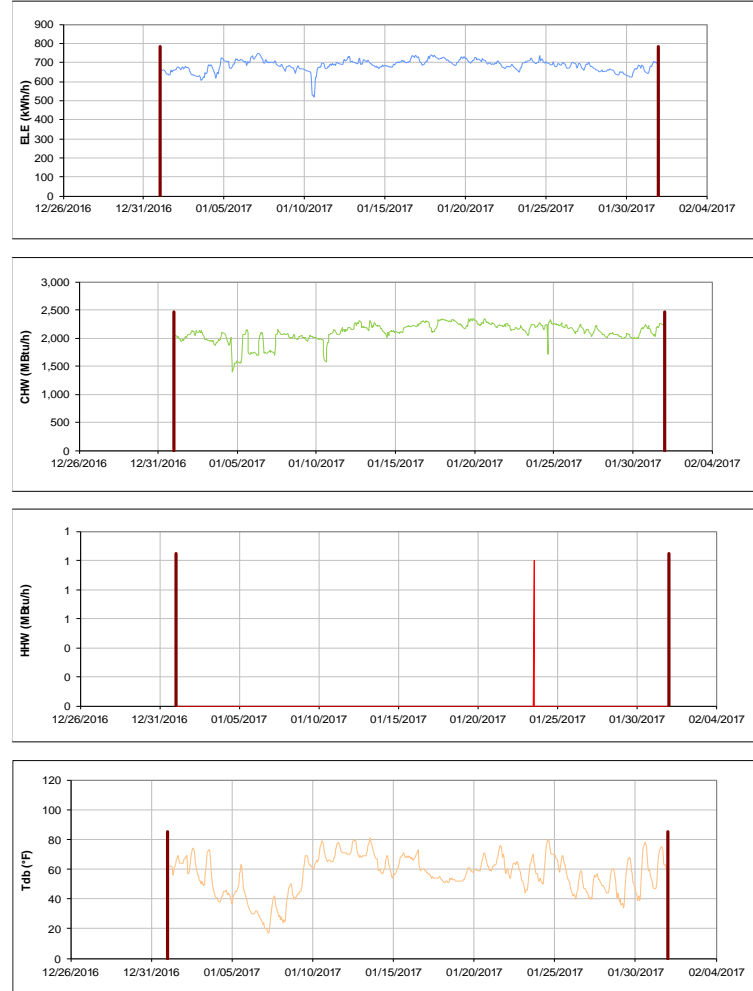


Figure III-110 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Computing Services Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-111 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Beutel Health Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

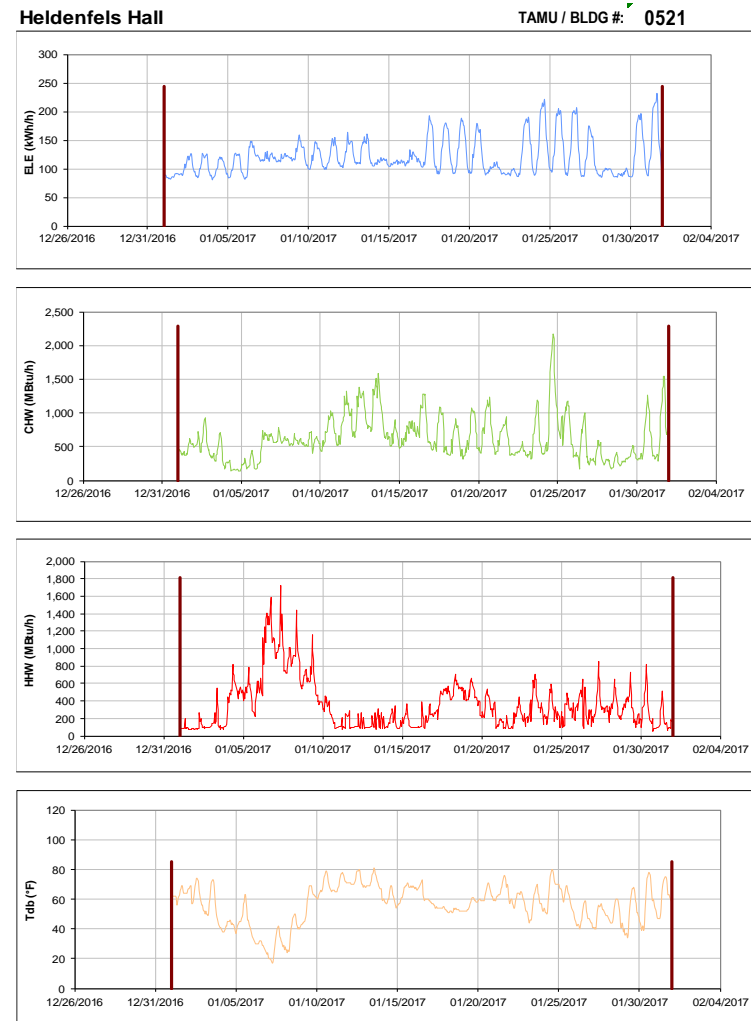


Figure III-112 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heldenfels Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX





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

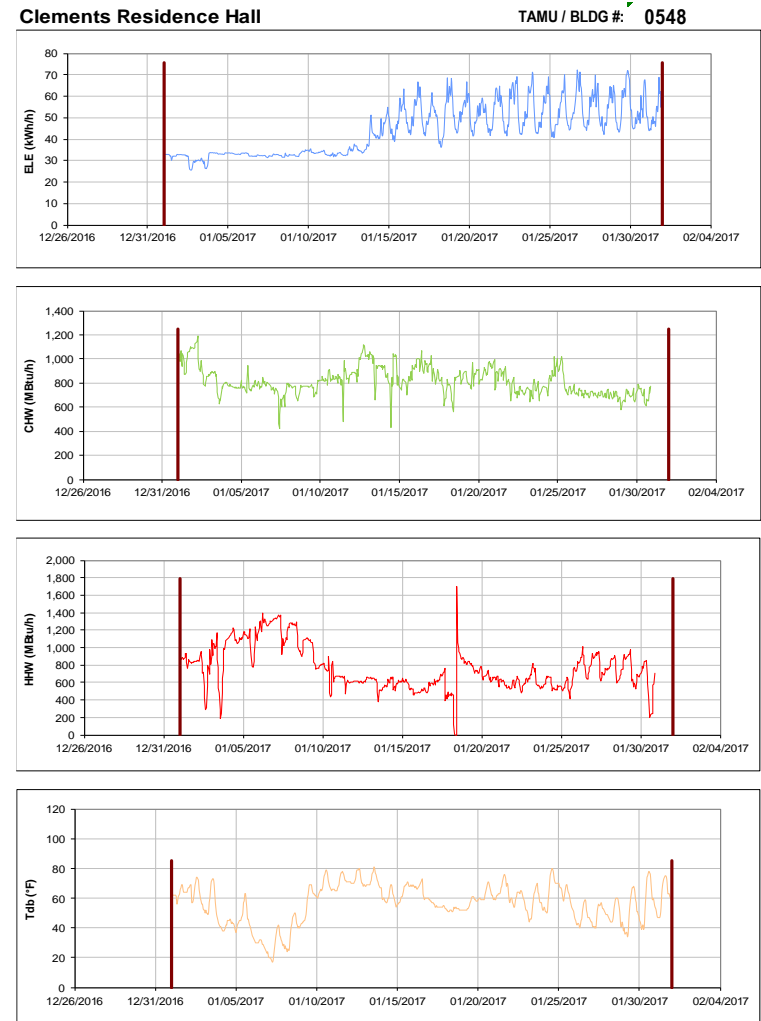


Figure III-114 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Clements Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

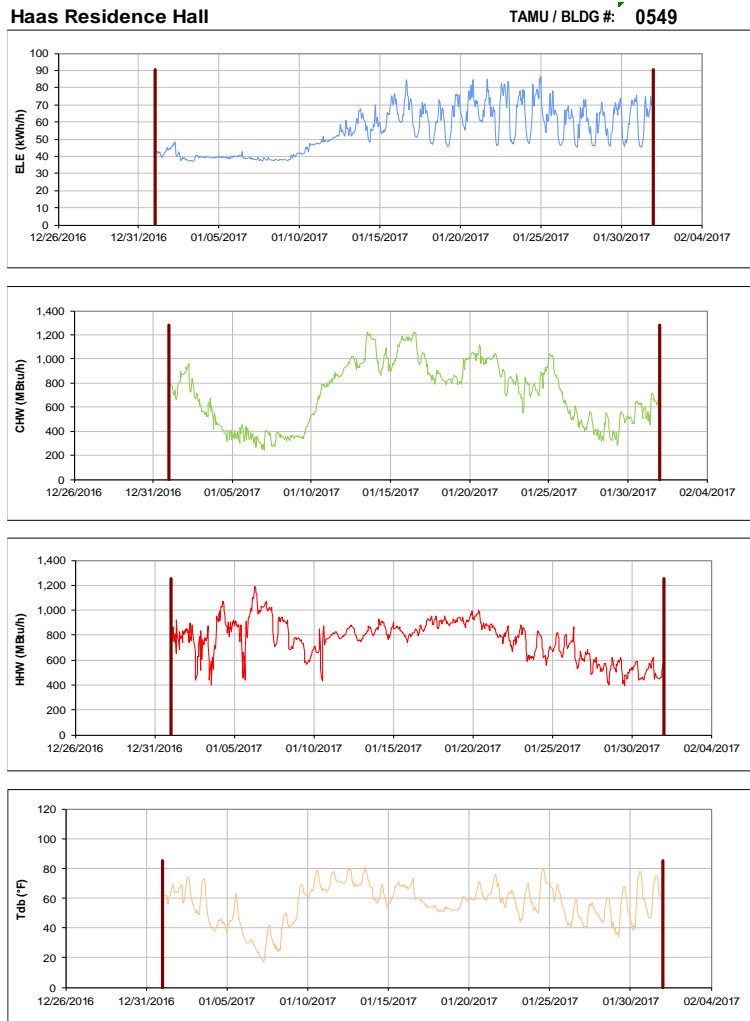


Figure III-115 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Haas Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

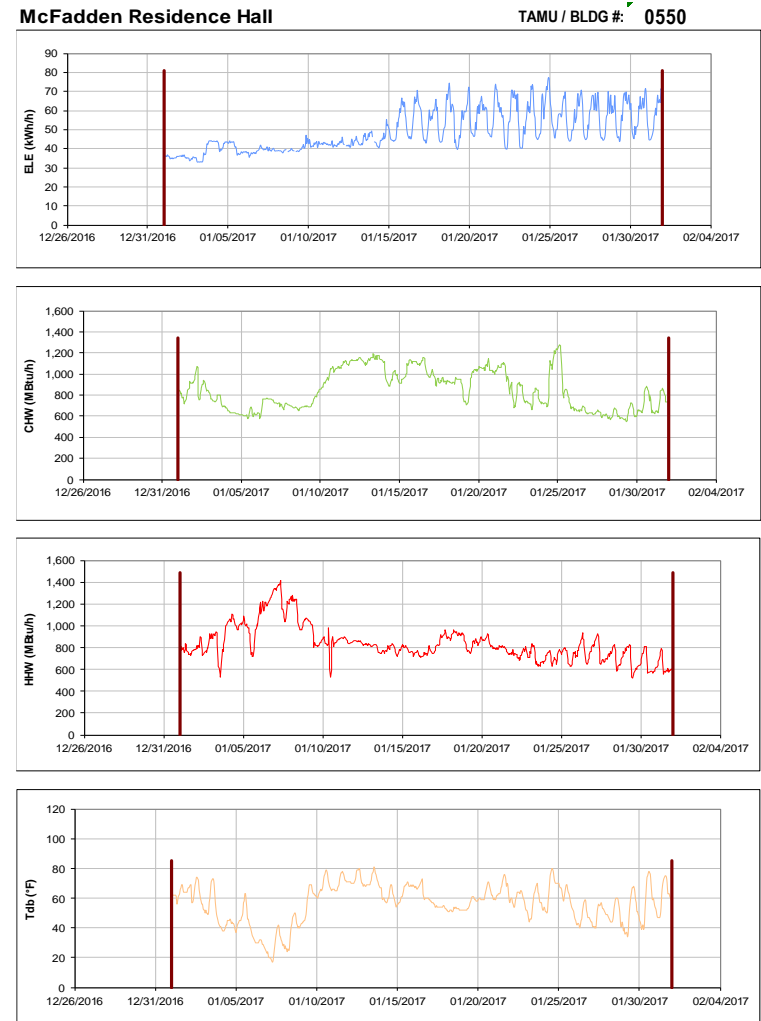


Figure III-116 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for McFadden Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Neeley Residence Hall

TAMU / BLDG #: 0652

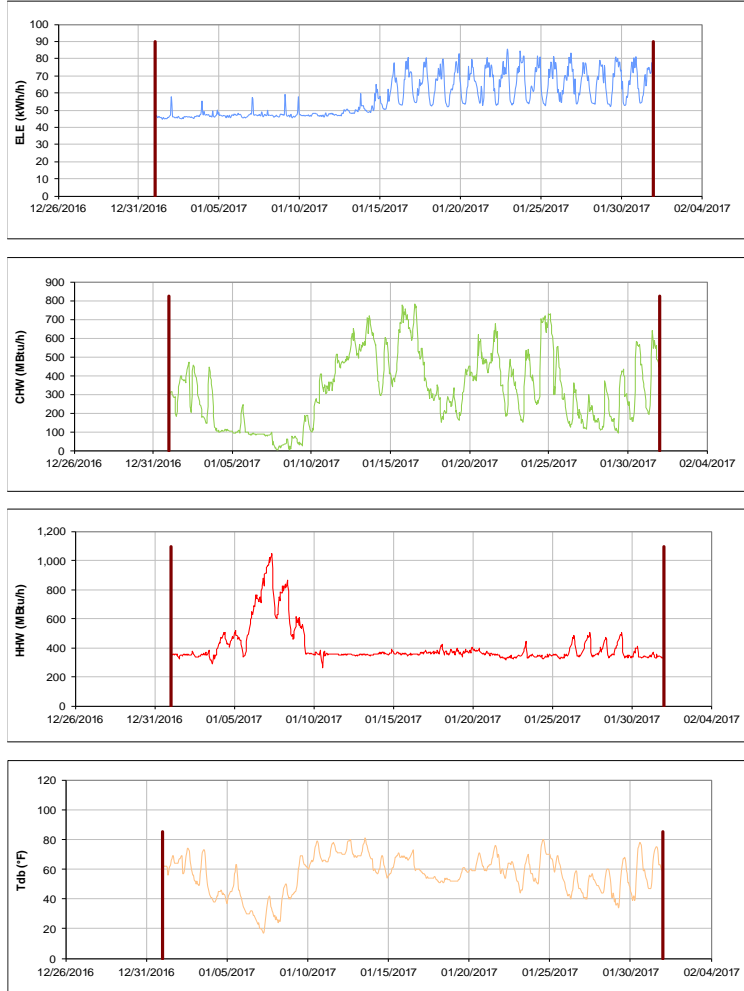


Figure III-117 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Neeley Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Hobby Residence Hall

TAMU / BLDG #: 0653

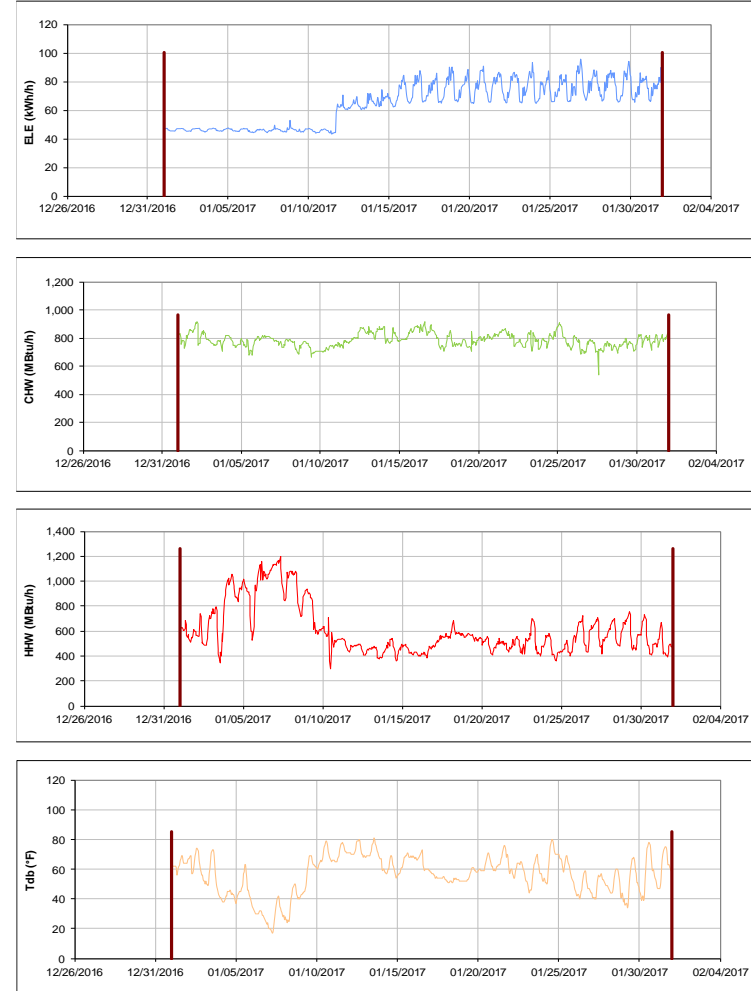


Figure III-118 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hobby Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

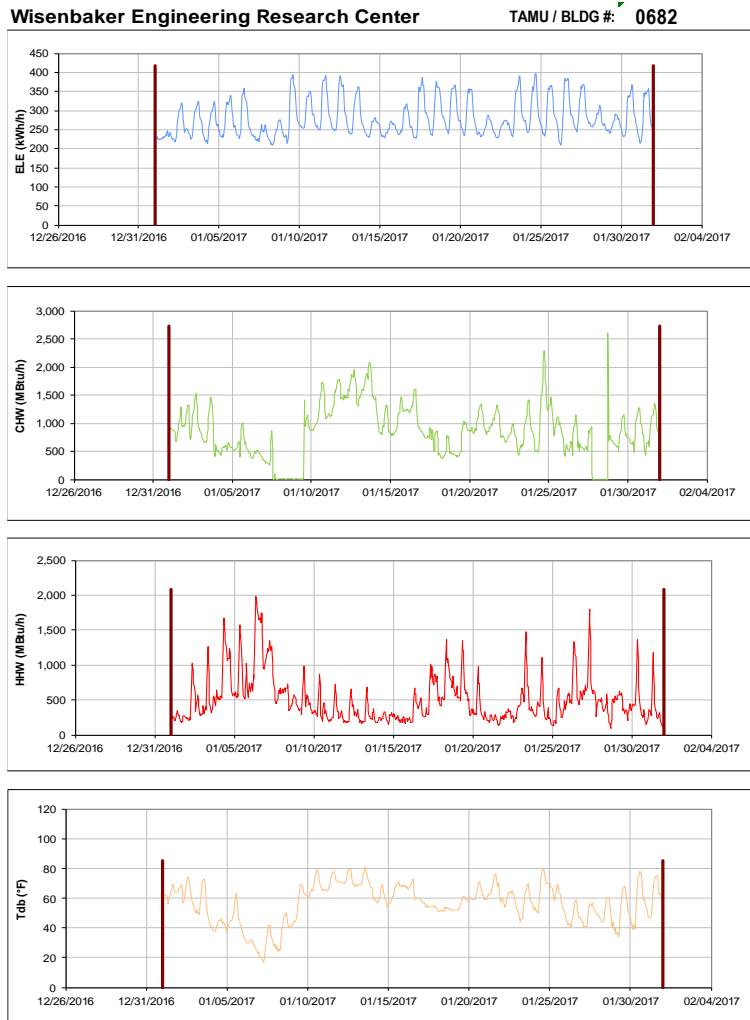


Figure III-119 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wisembaker Engineering Research Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

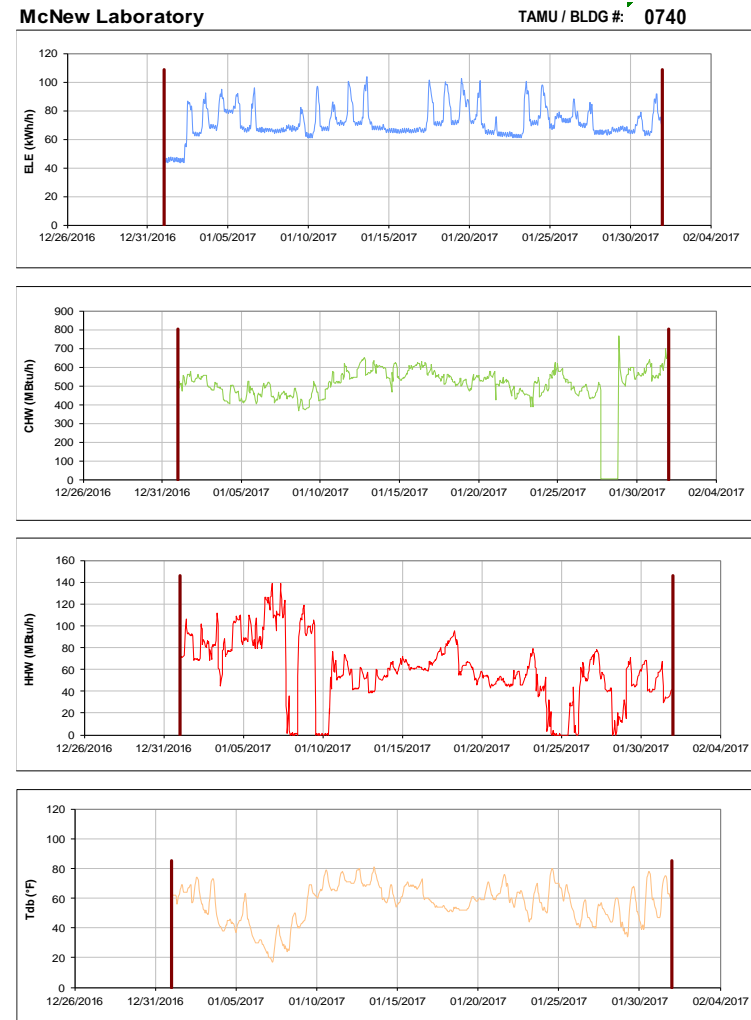


Figure III-120 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for McNew Laboratory during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Soil Testing Labs

TAMU / BLDG #: 0806

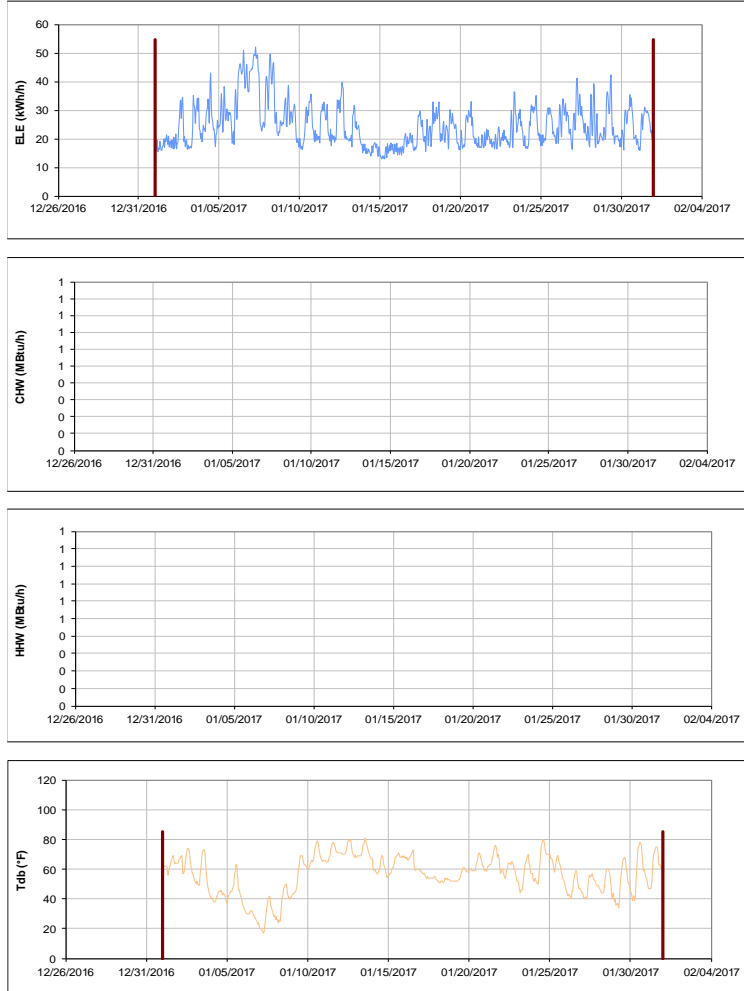


Figure III-121 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Soil Testing Labs during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Entomology Research Lab

TAMU / BLDG #: 0815

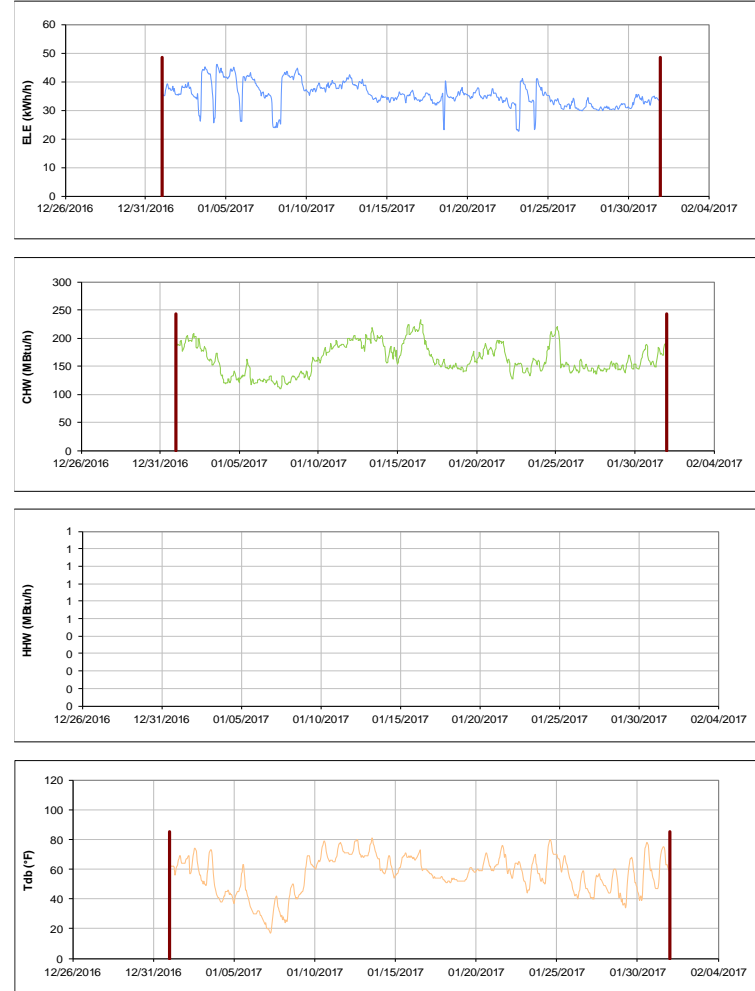


Figure III-122 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Entomology Research Lab during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

TVMC-Small Animal Building

TAMU / BLDG #: 0880



Figure III-123 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TVMC-Small Animal Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Laboratory Animal Care Building

TAMU / BLDG #: 0972

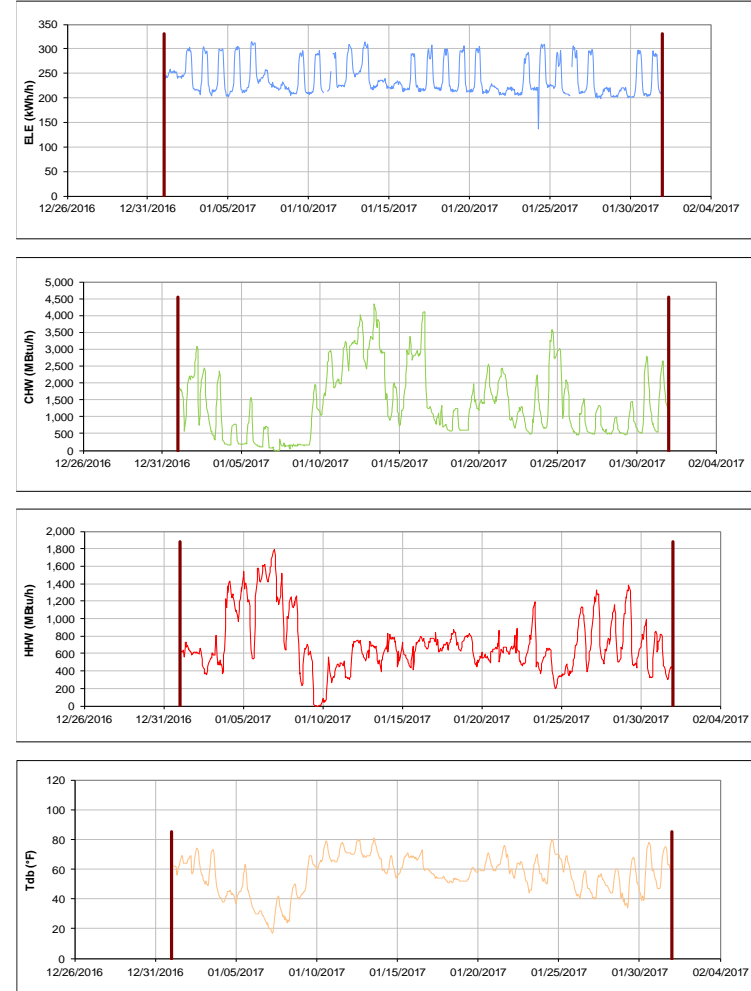


Figure III-124 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Laboratory Animal Care Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Vivarium III

TAMU / BLDG #: 1020



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

Texas Vet Med Diagnostic Lab

TAMU / BLDG #: 1041

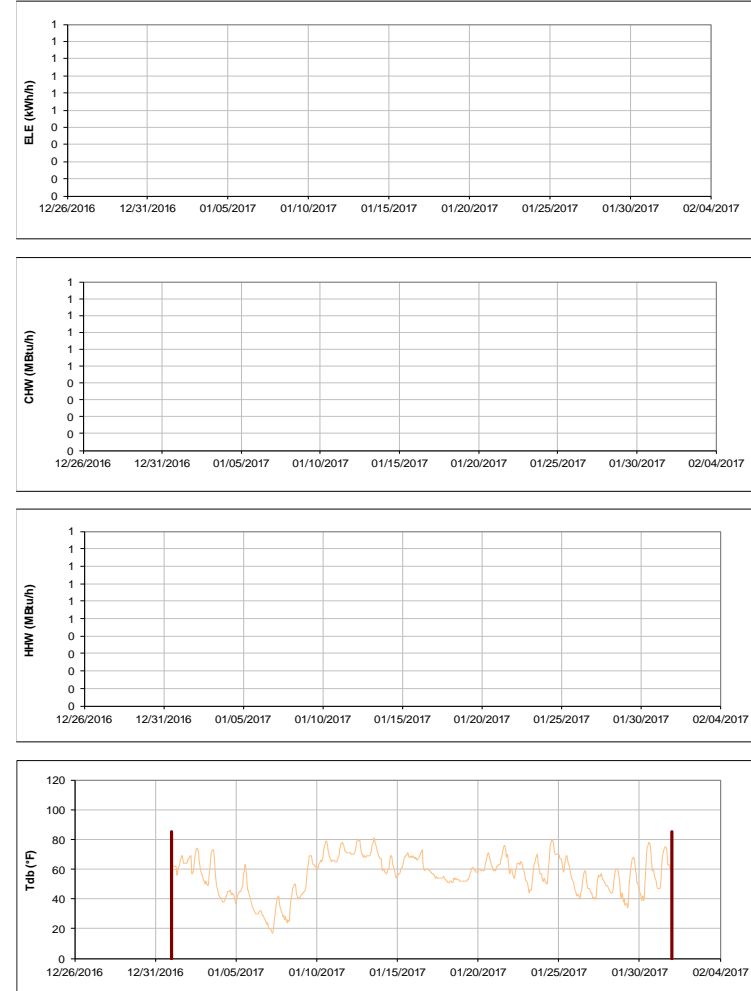


Figure III-126 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas Vet Med Diagnostic Lab during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

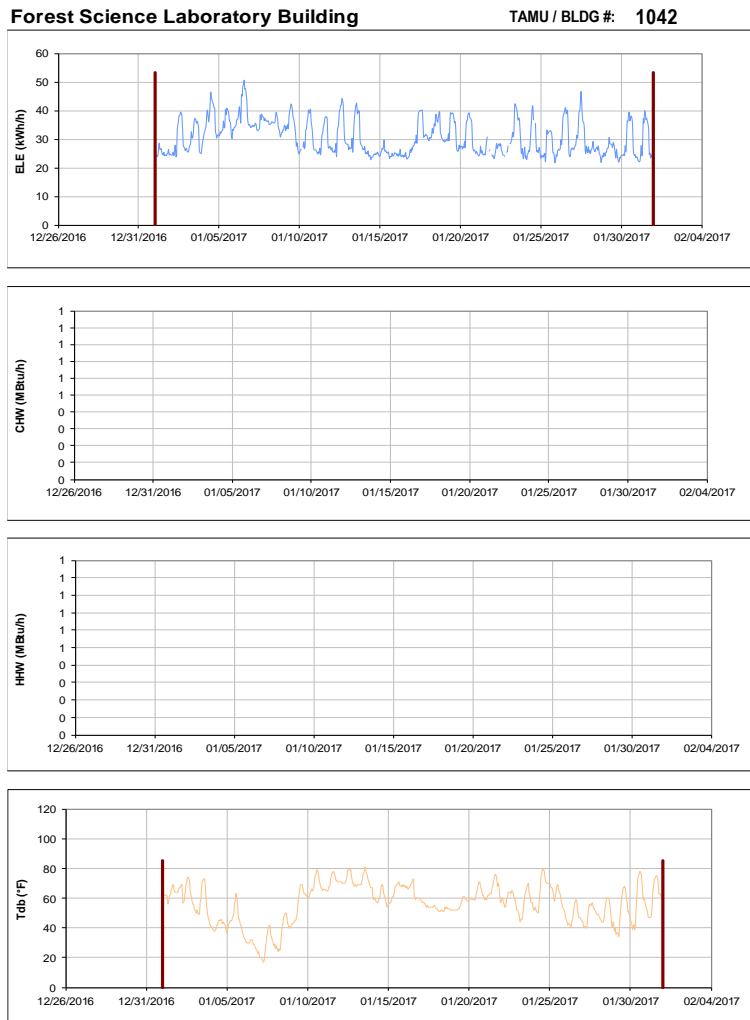


Figure III-127 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Forest Science Laboratory Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

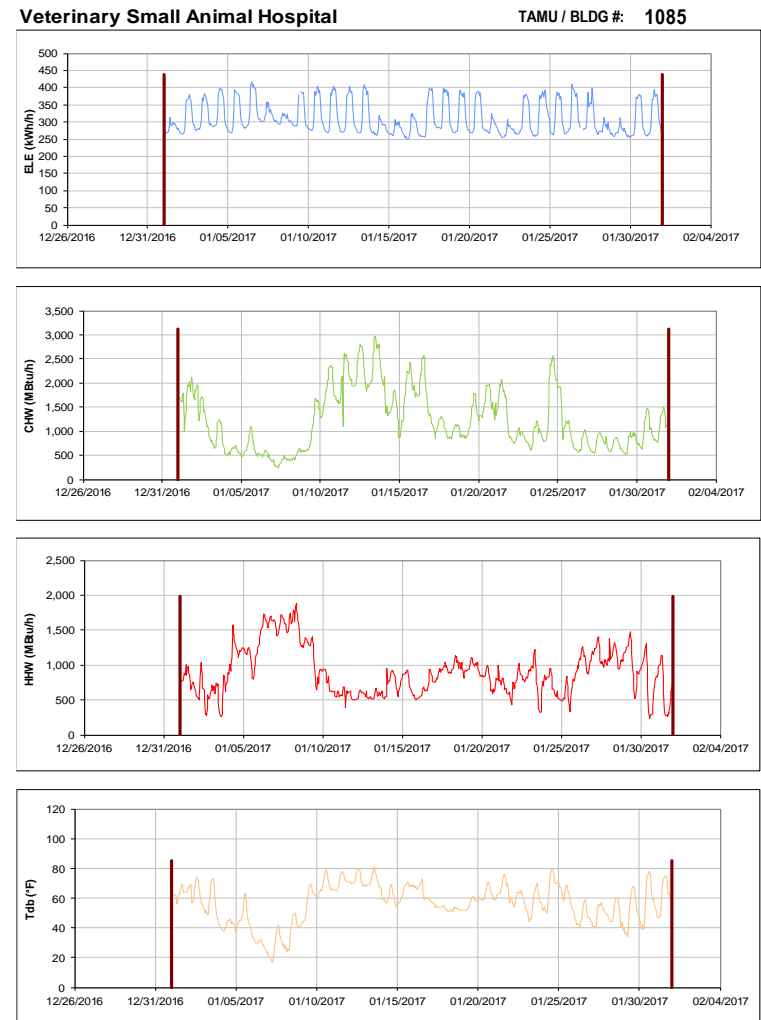


Figure III-128 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Small Animal Hospital during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Utilities Energy Office Annex

TAMU / BLDG #: 1089

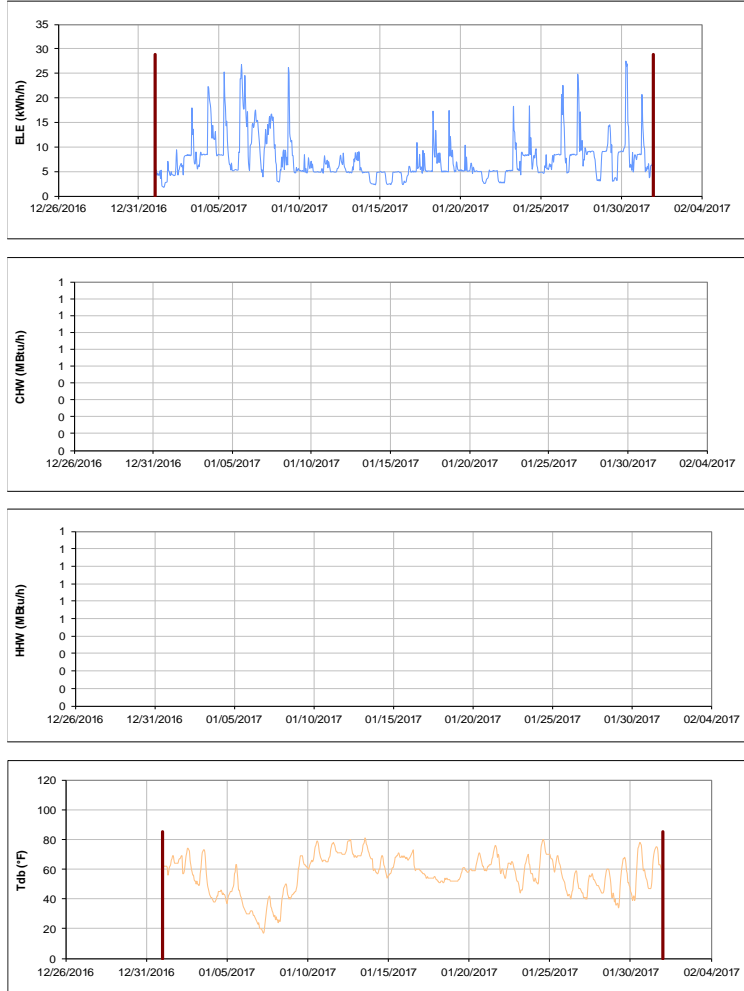


Figure III-129 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities Energy Office Annex during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Biological Control Facility

TAMU / BLDG #: 1146

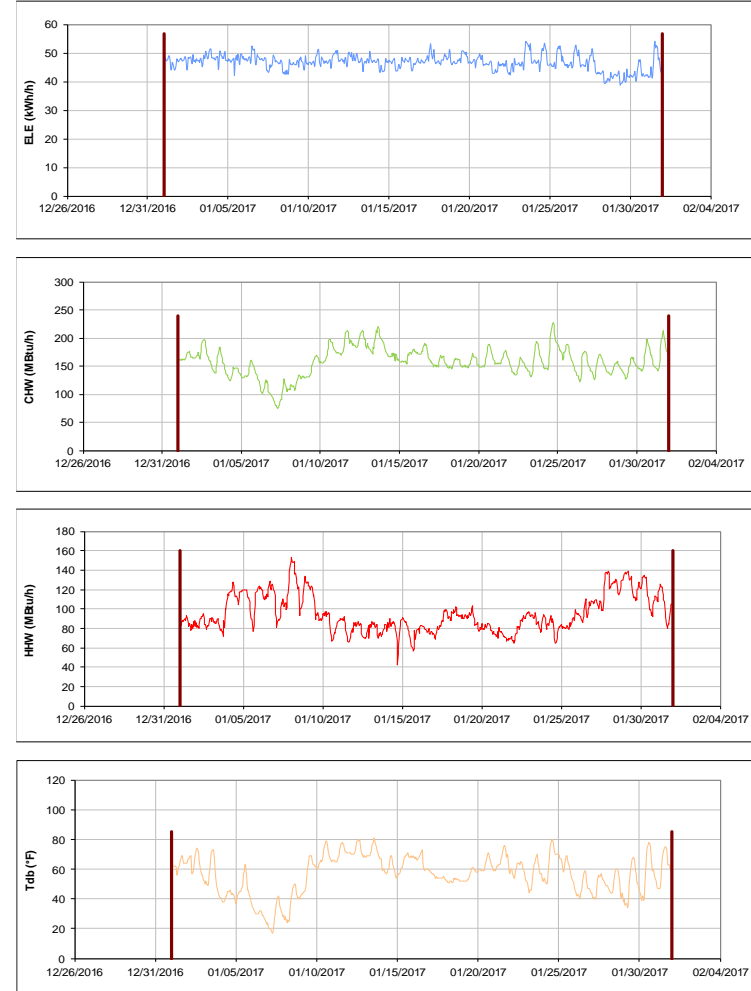


Figure III-130 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Control Facility during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

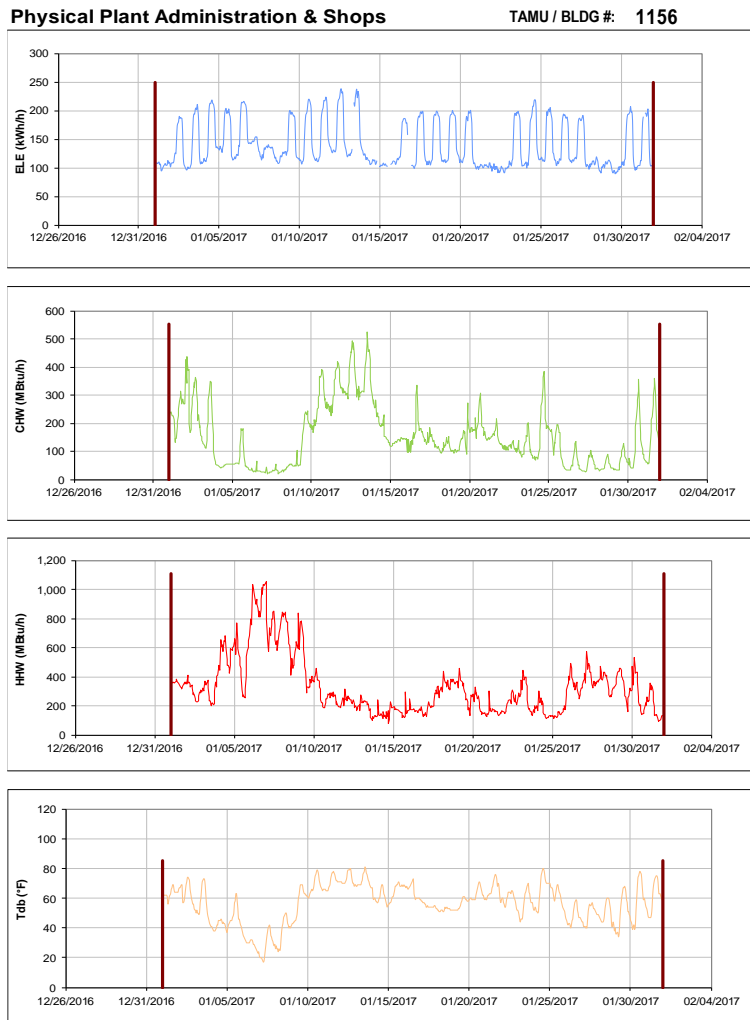


Figure III-131 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Physical Plant Administration & Shops during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

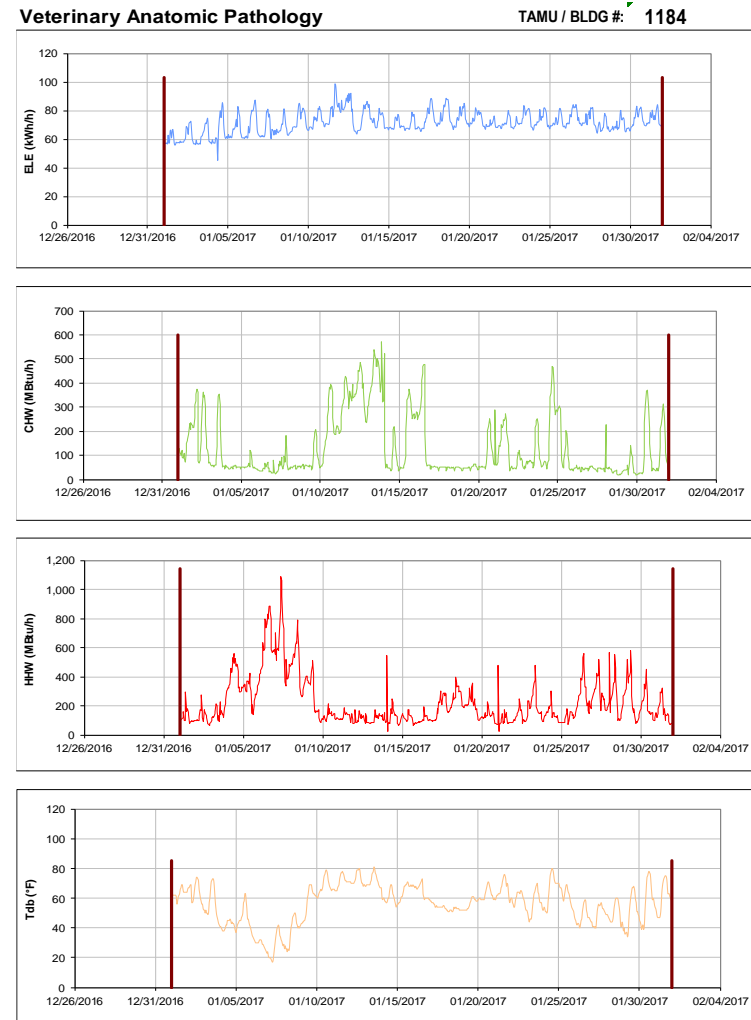


Figure III-132 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Anatomic Pathology during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

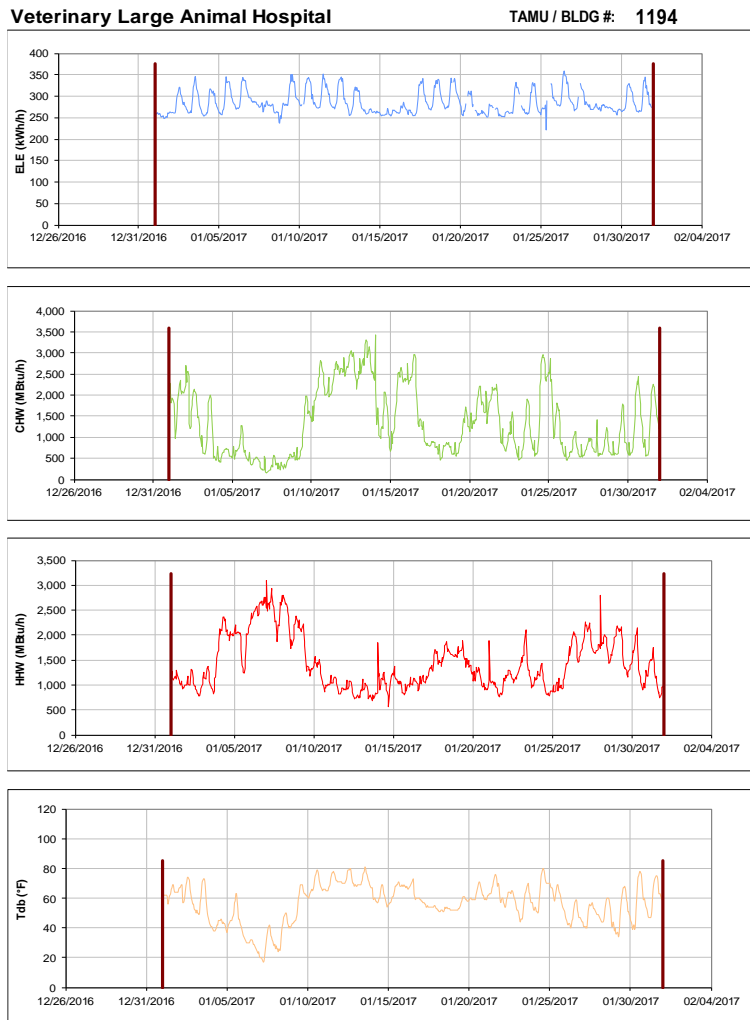


Figure III-133 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Large Animal Hospital during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

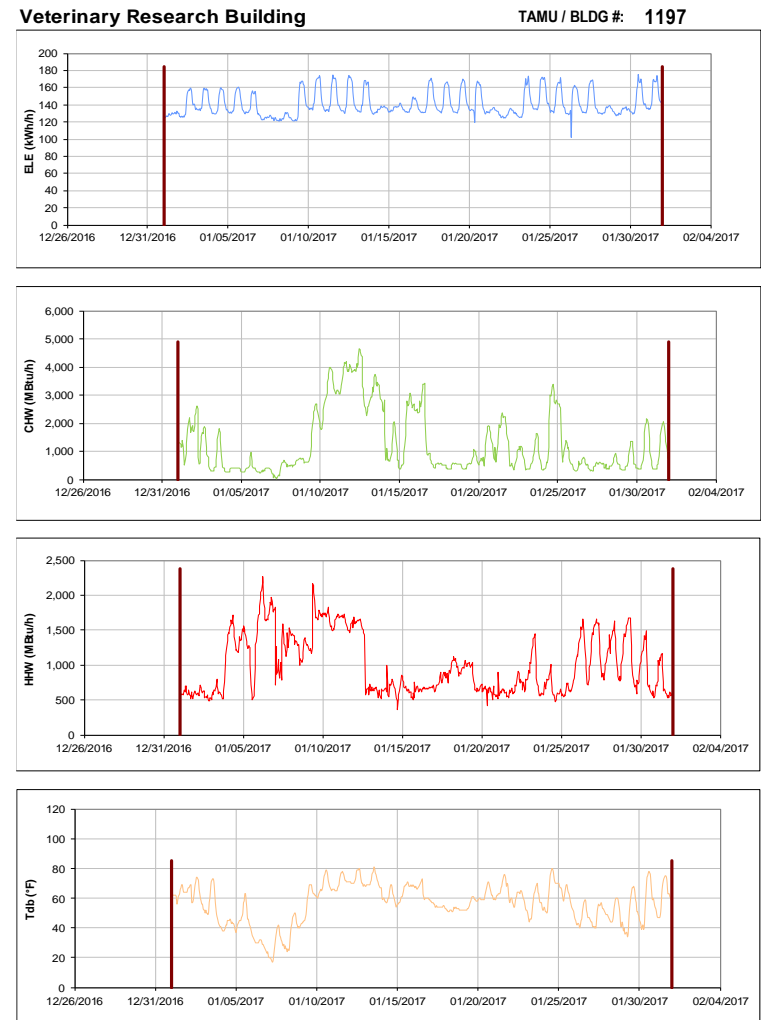


Figure III-134 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Research Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Hullabaloo Residence Hall

TAMU / BLDG #: 1416

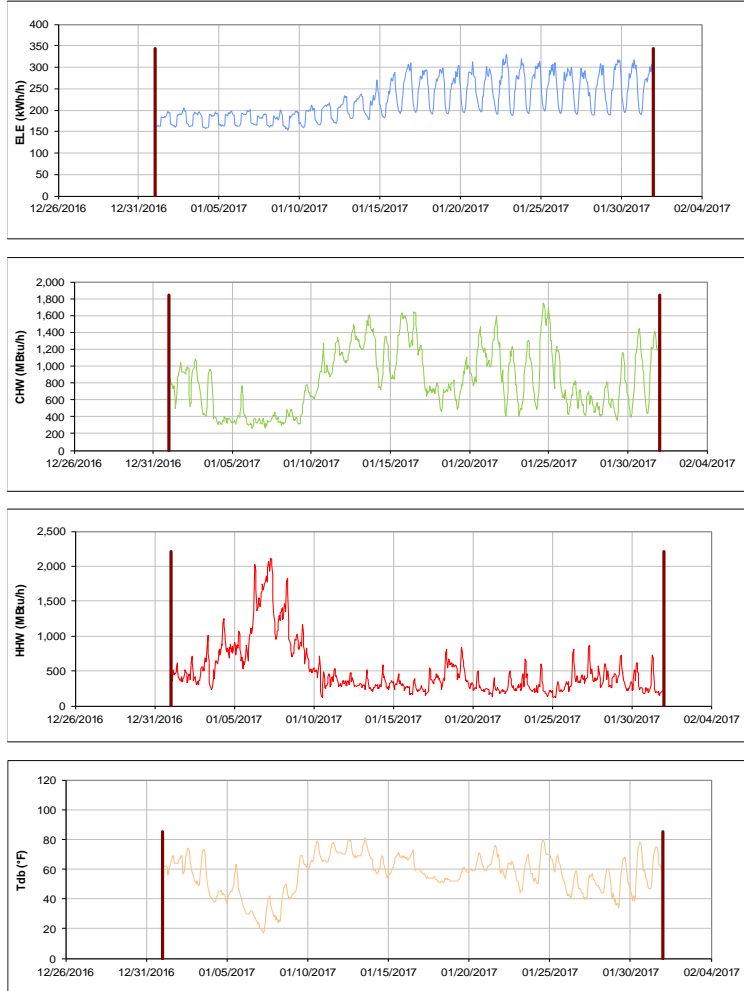


Figure III-135 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hullabaloo Residence Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

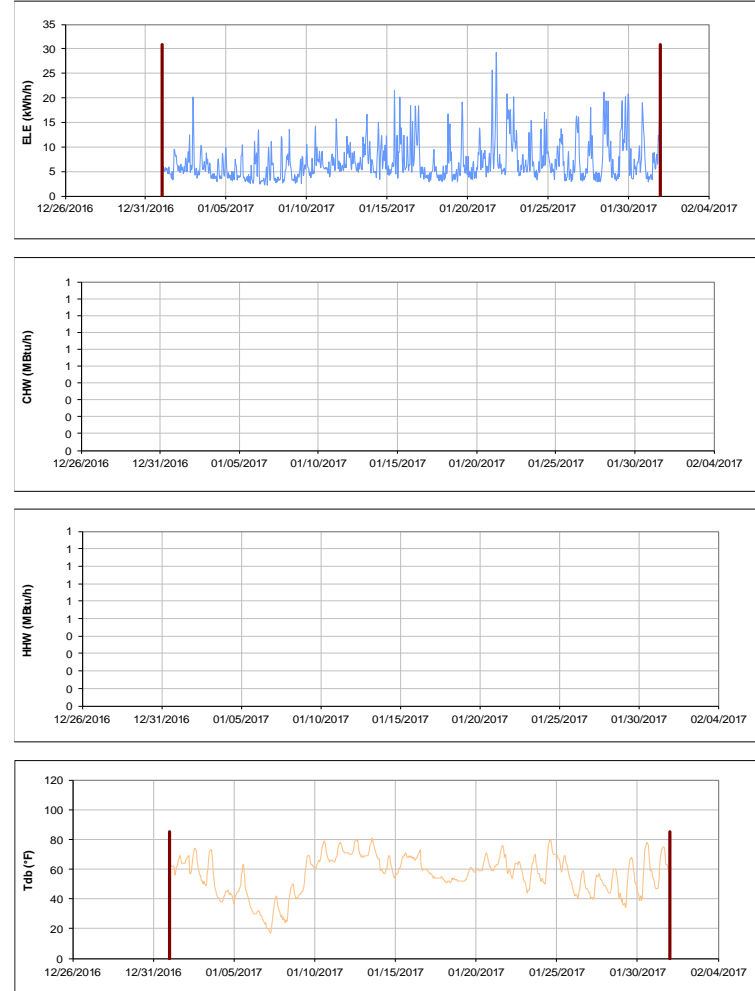


Figure III-136 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - Laundry at the Gardens during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

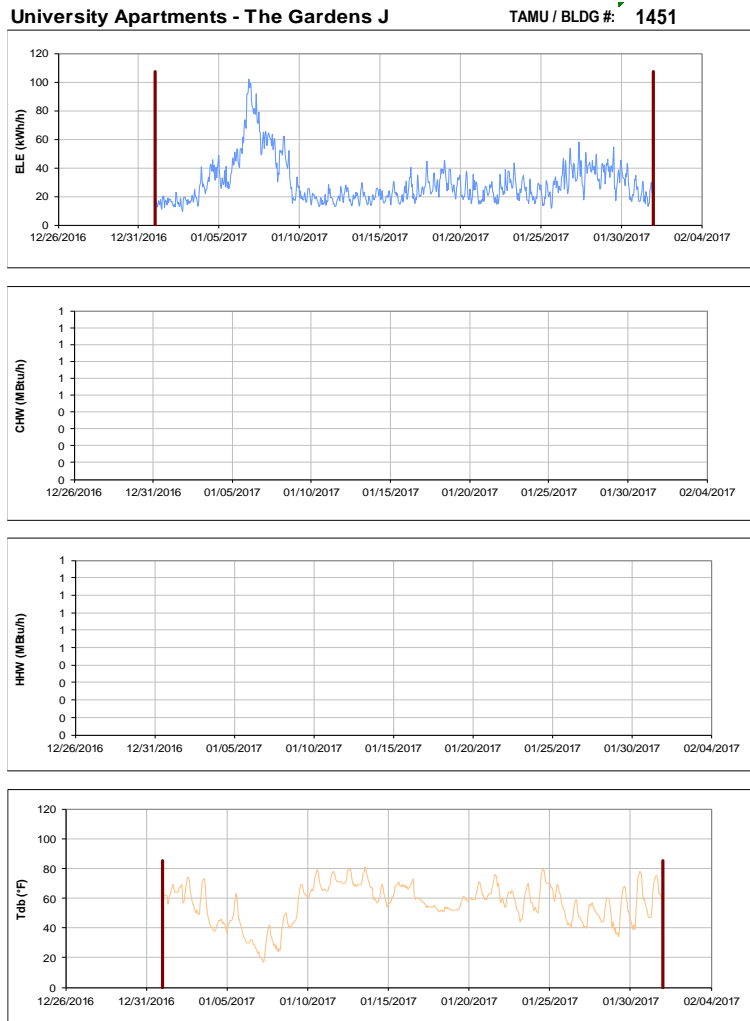


Figure III-137 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens J during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

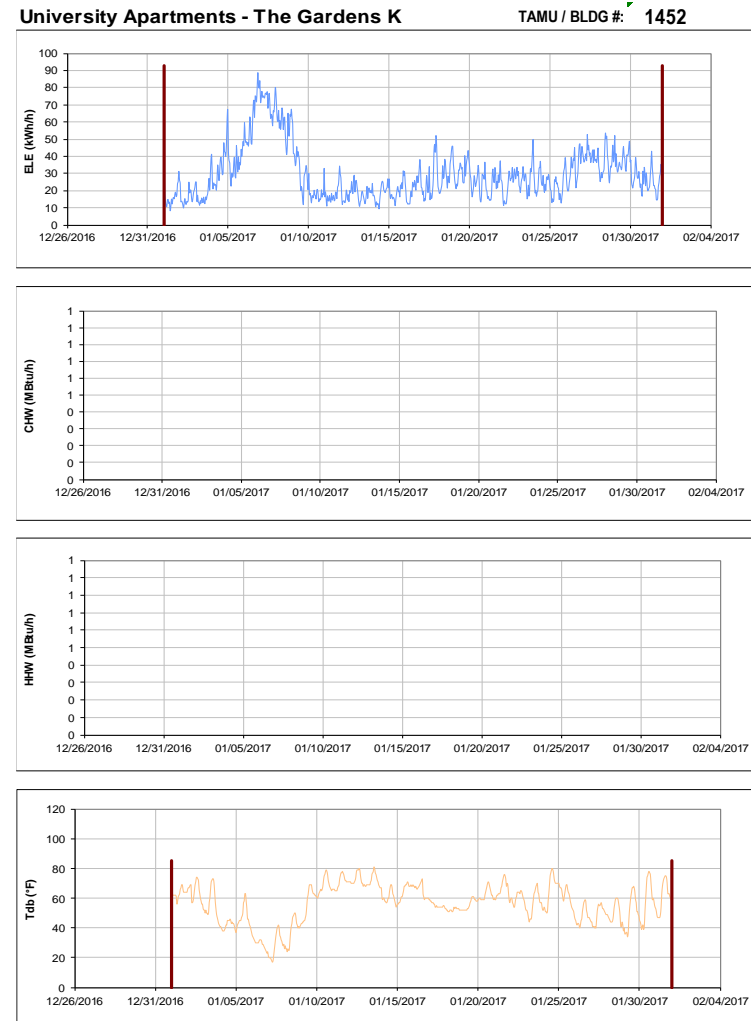


Figure III-138 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens K during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

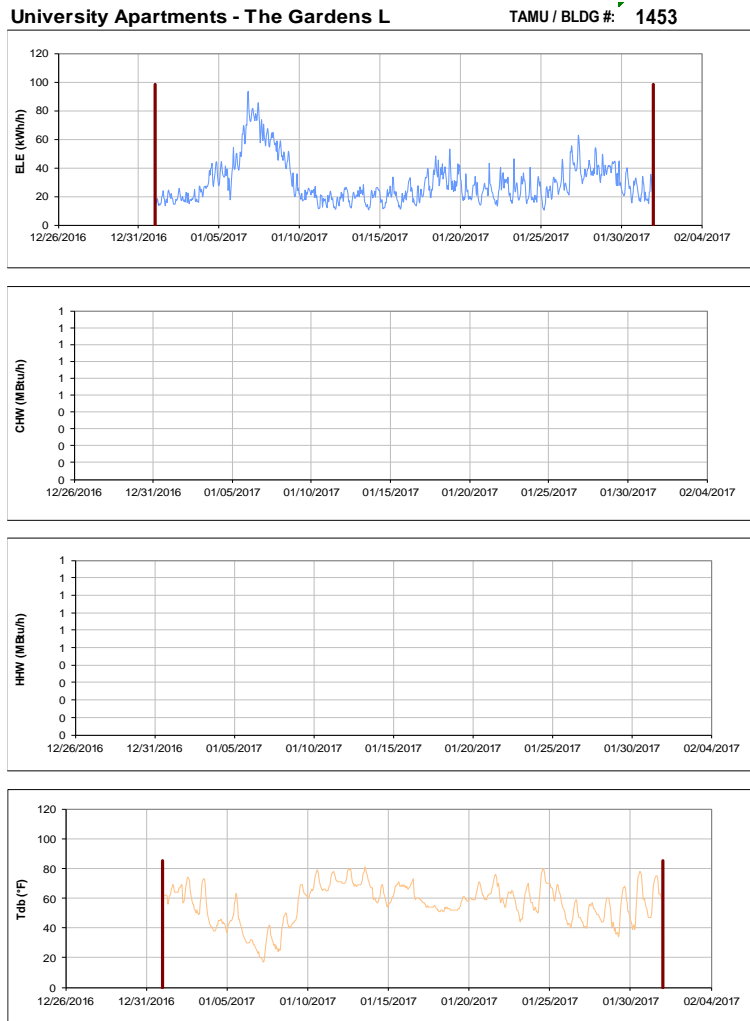


Figure III-139 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens L during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

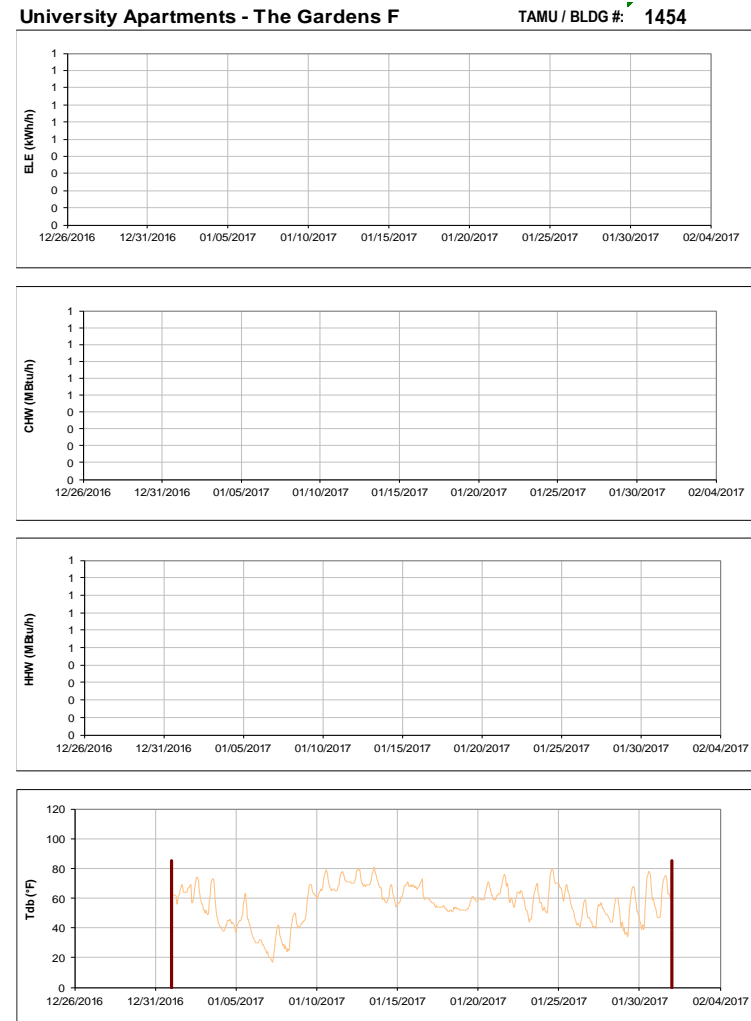


Figure III-140 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens F during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

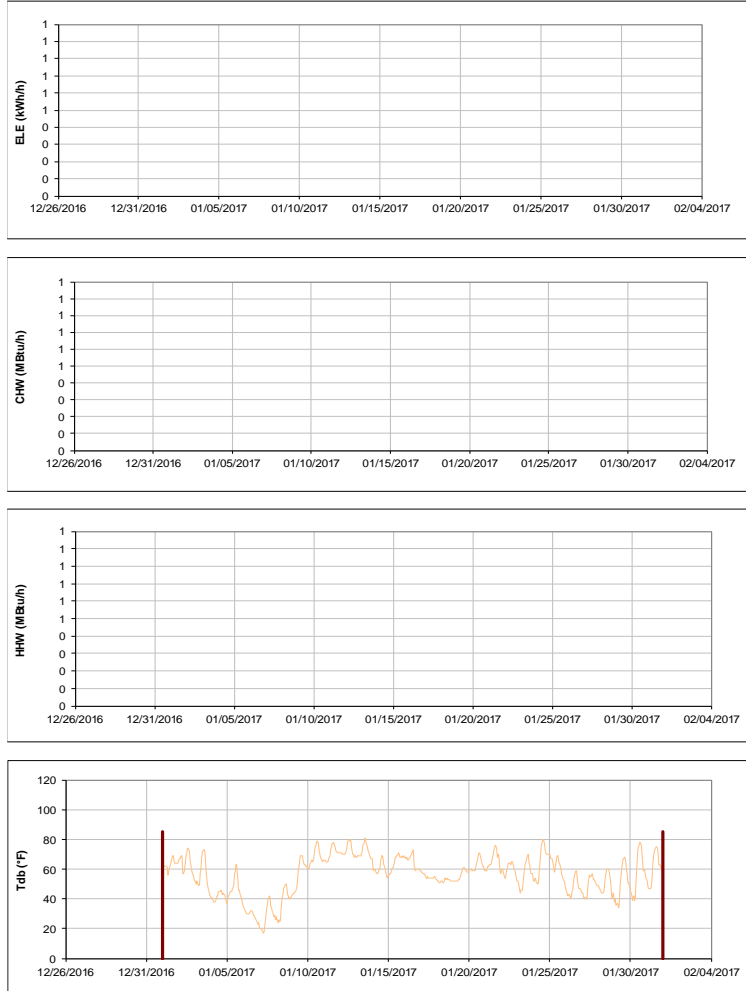


Figure III-141 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens G during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

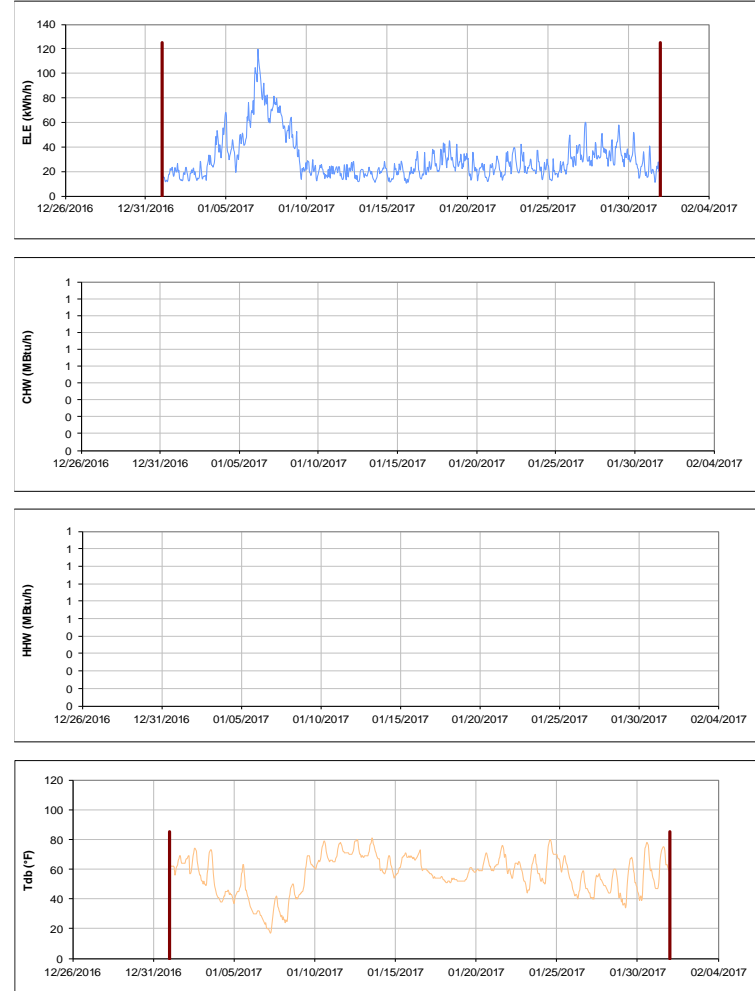


Figure III-142 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens H during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

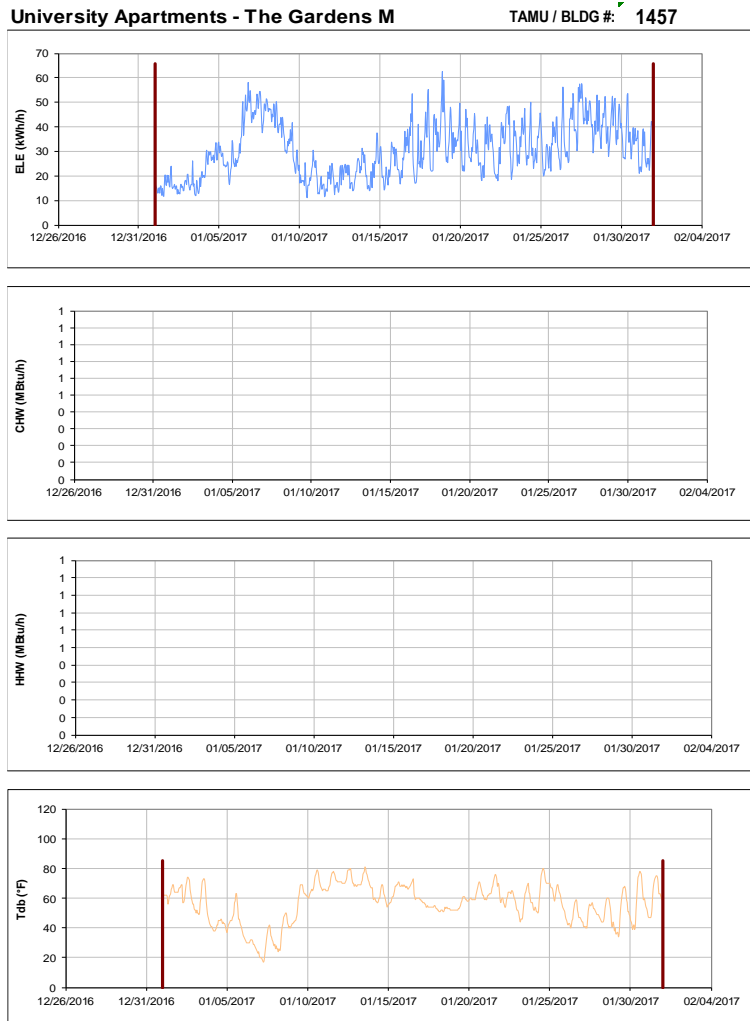


Figure III-143 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens M during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

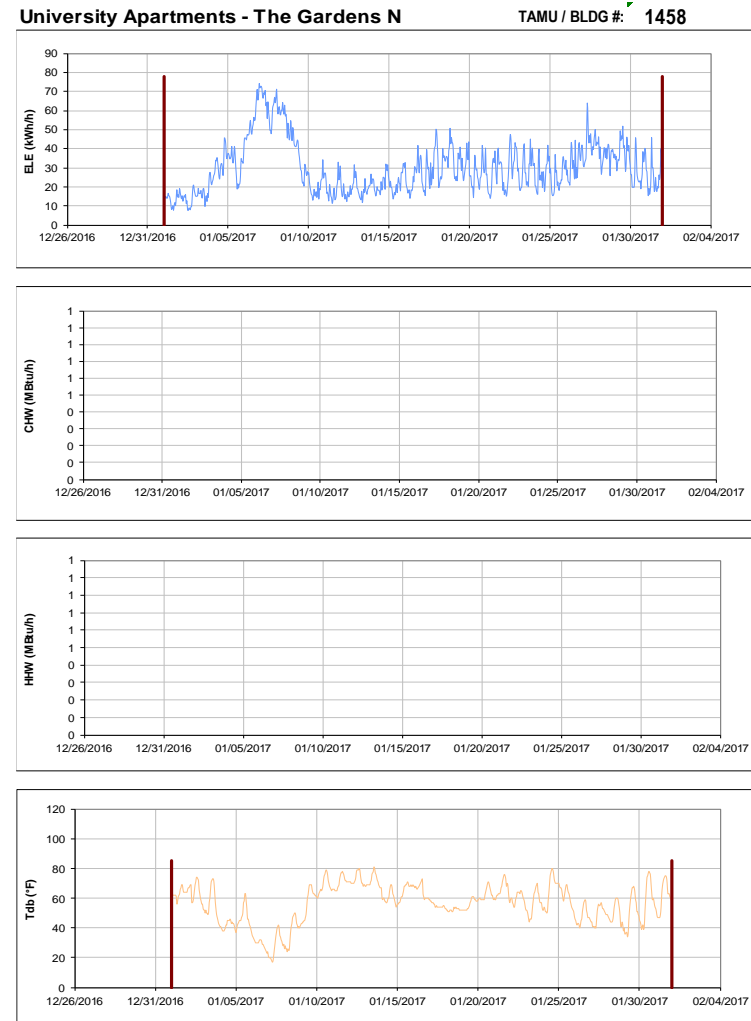


Figure III-144 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens N during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



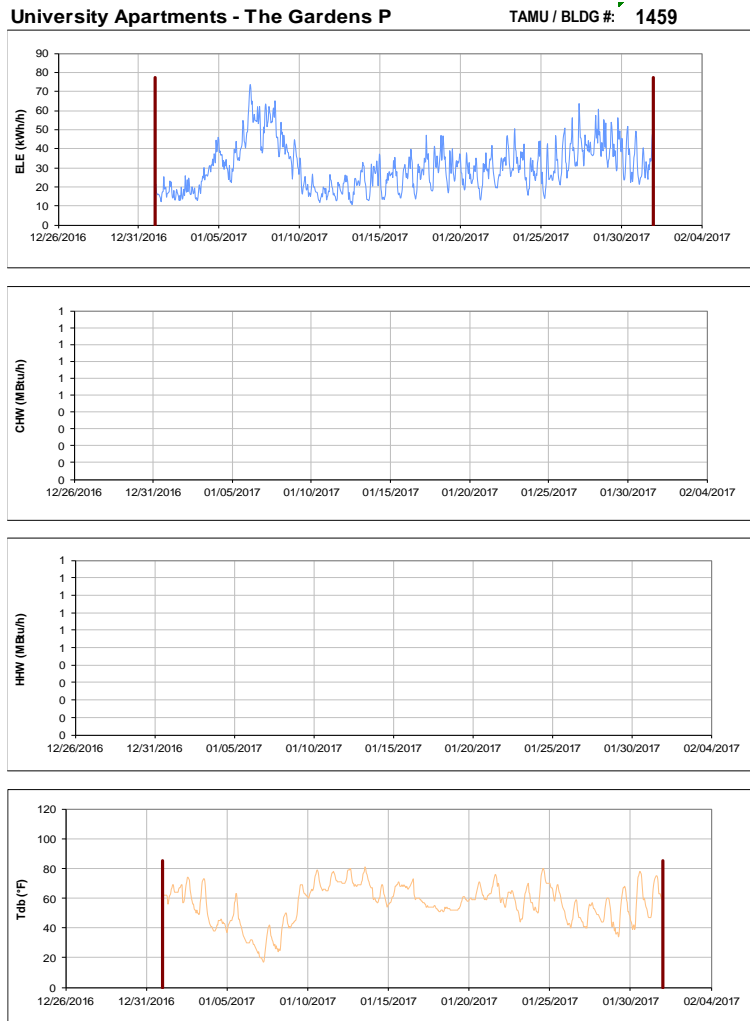


Figure III-145 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens P during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

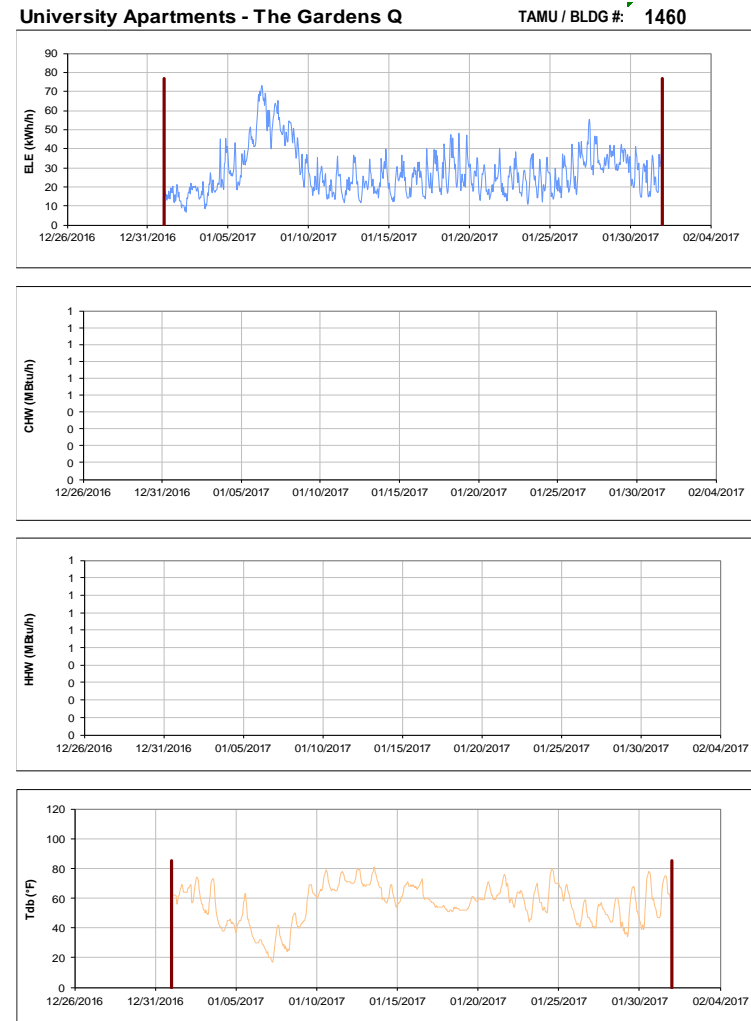


Figure III-146 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens Q during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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



Figure III-147 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities & Energy Services Business Office during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Kleberg Center TAMU / BLDG #: 1501

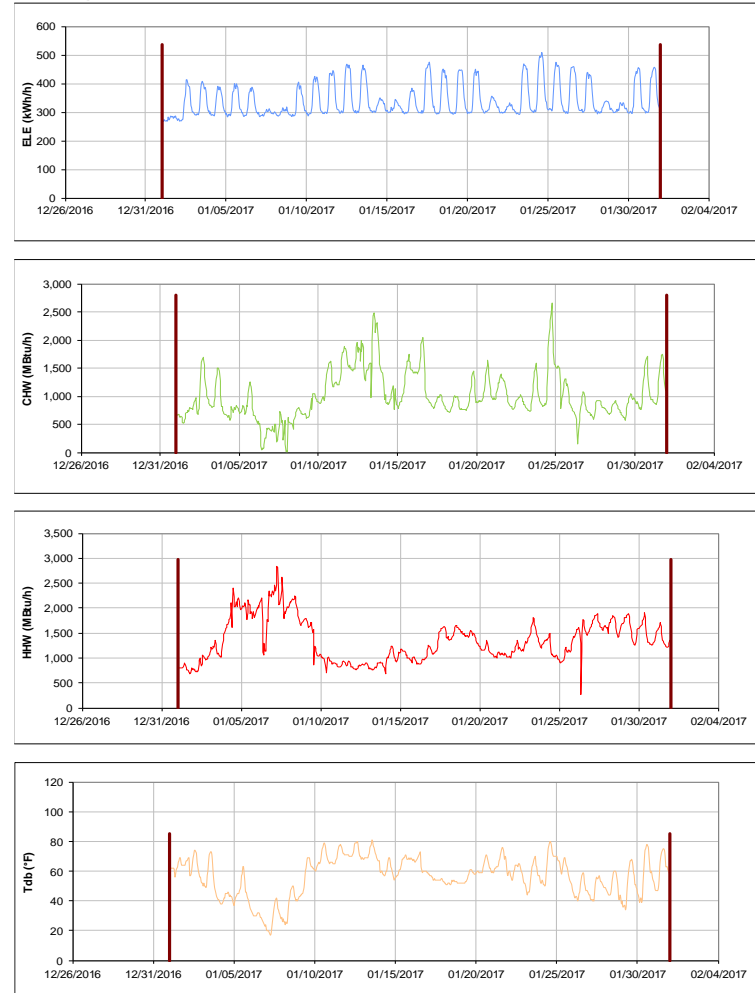


Figure III-148 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kleberg Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-149 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heep Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

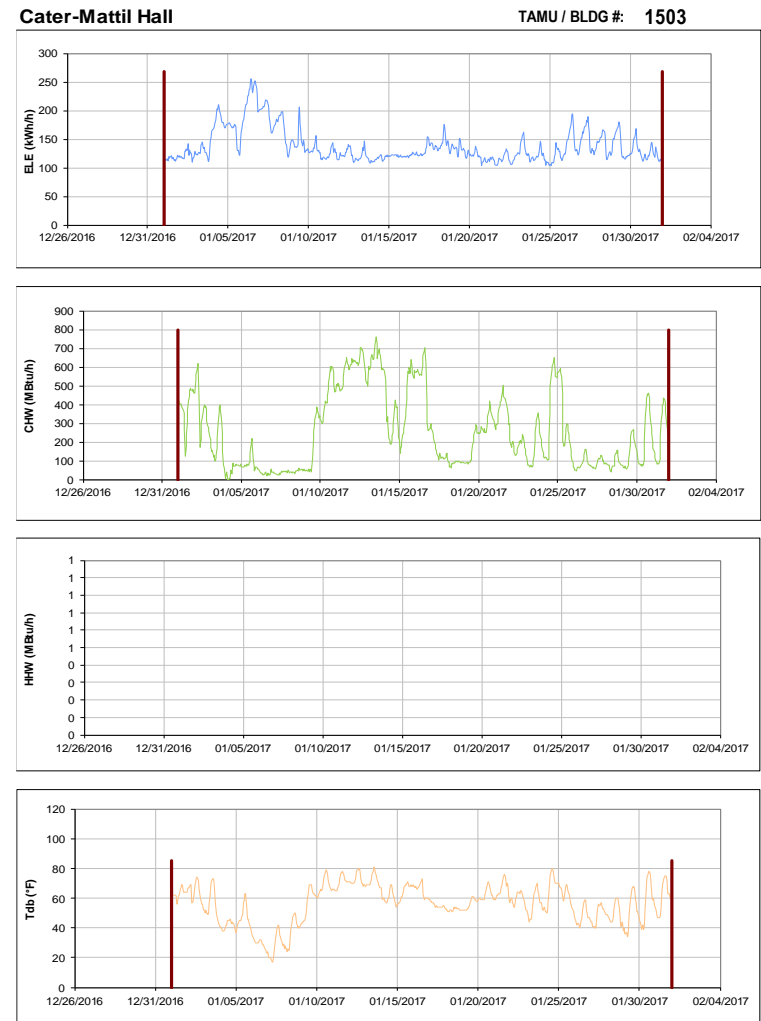


Figure III-150 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cater-Mattil Hall during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

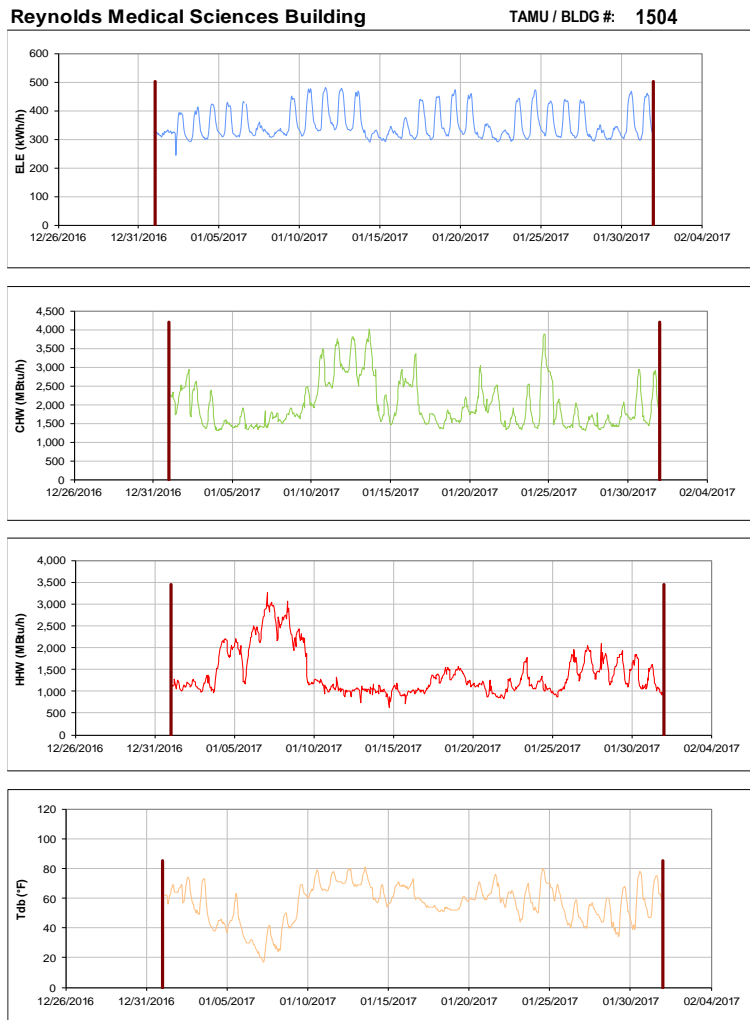


Figure III-151 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reynolds Medical Sciences Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

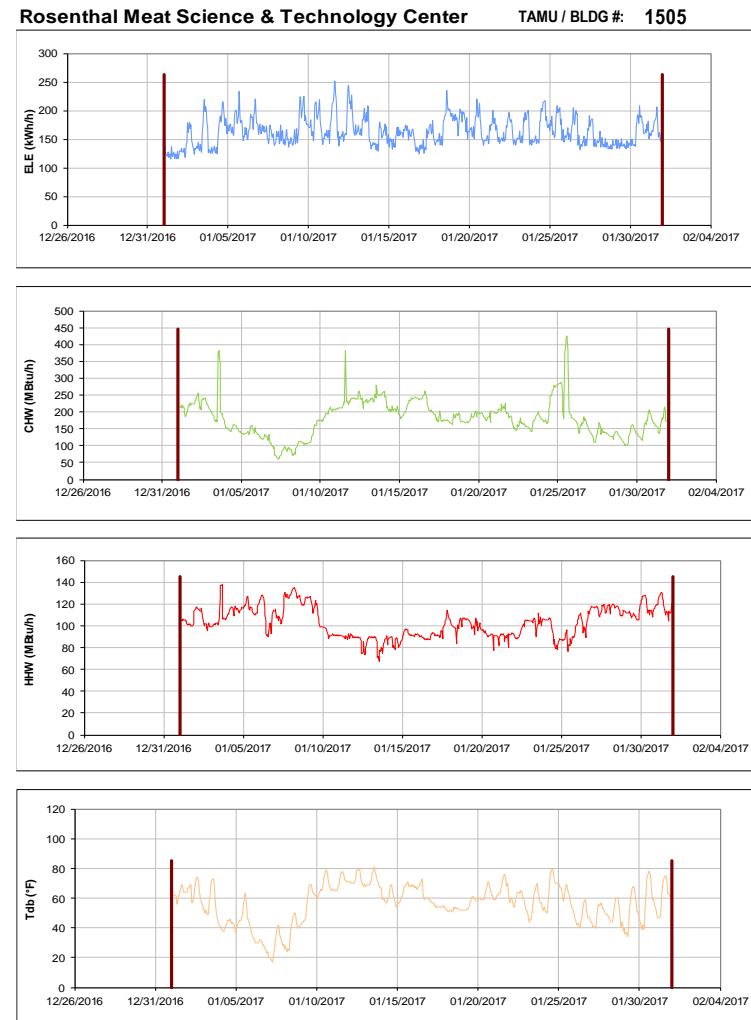


Figure III-152 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rosenthal Meat Science & Technology Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

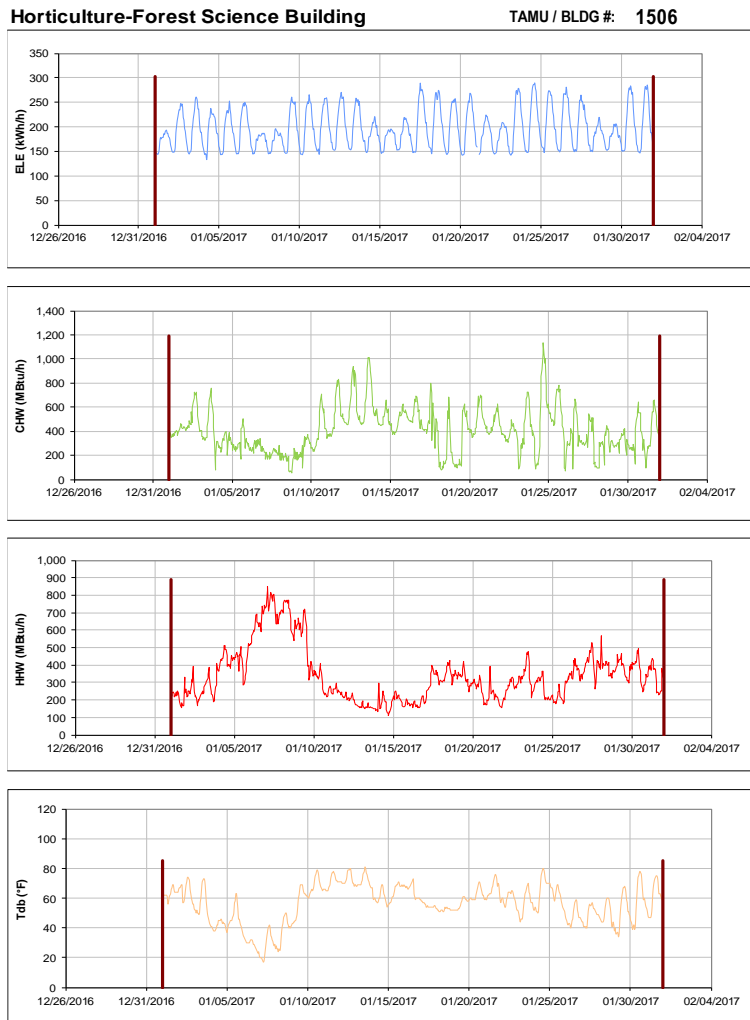


Figure III-153 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Horticulture-Forest Science Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

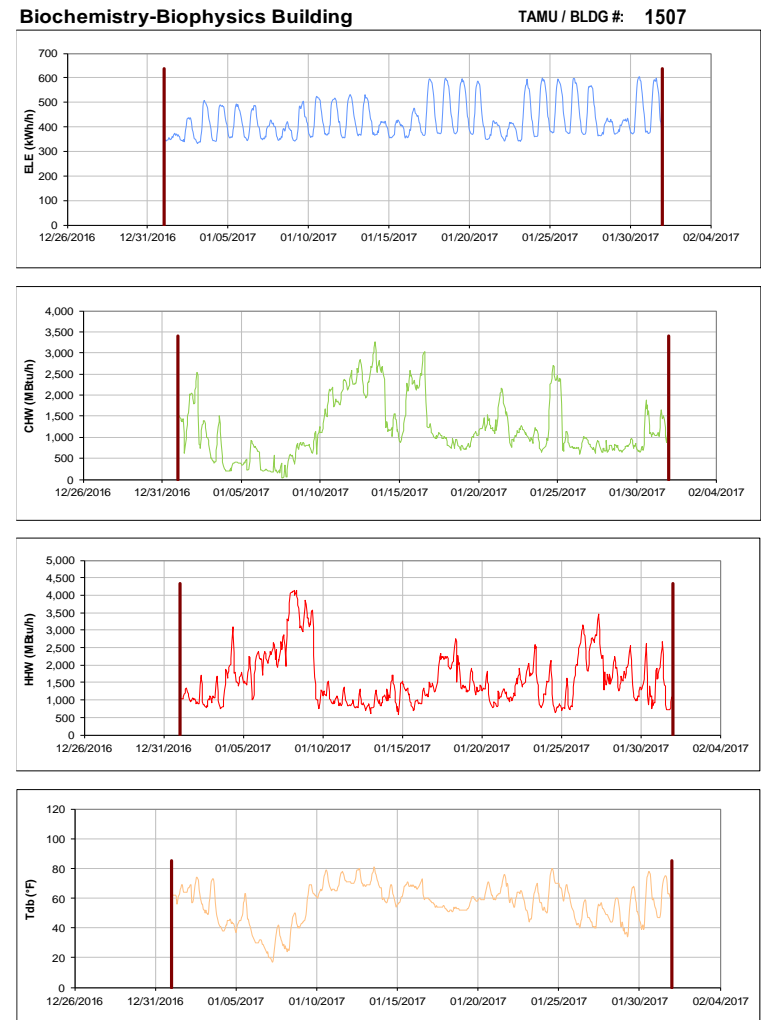


Figure III-154 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biochemistry-Biophysics Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

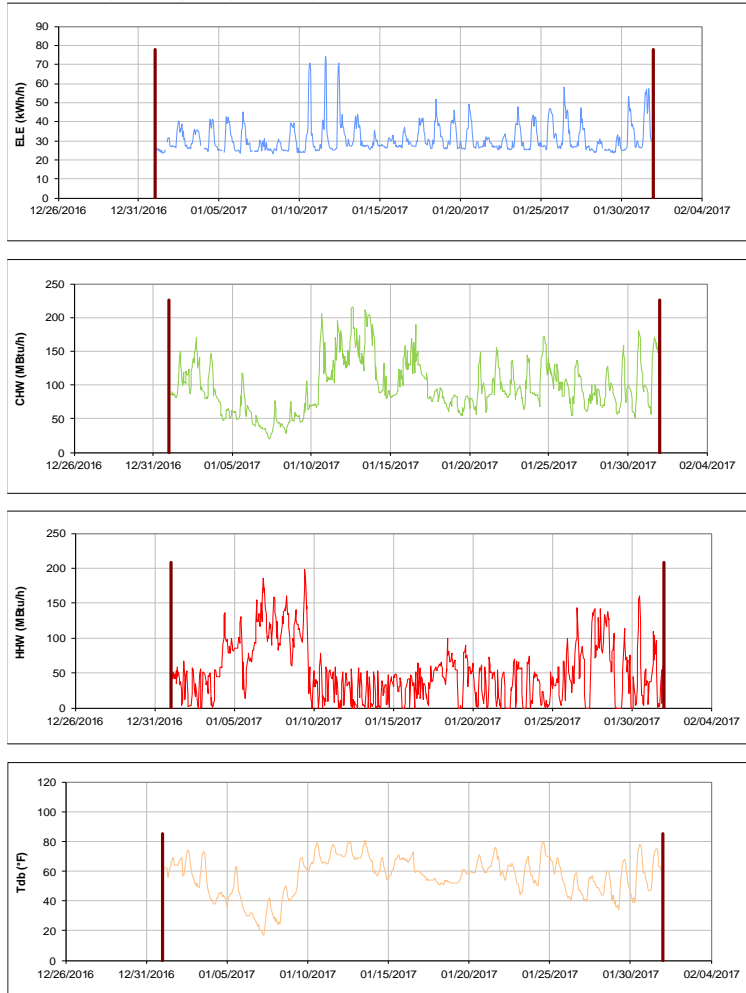


Figure III-155 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Price Hobgood Ag. Engineering Research Lab during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Medical Sciences Library TAMU / BLDG #: 1509

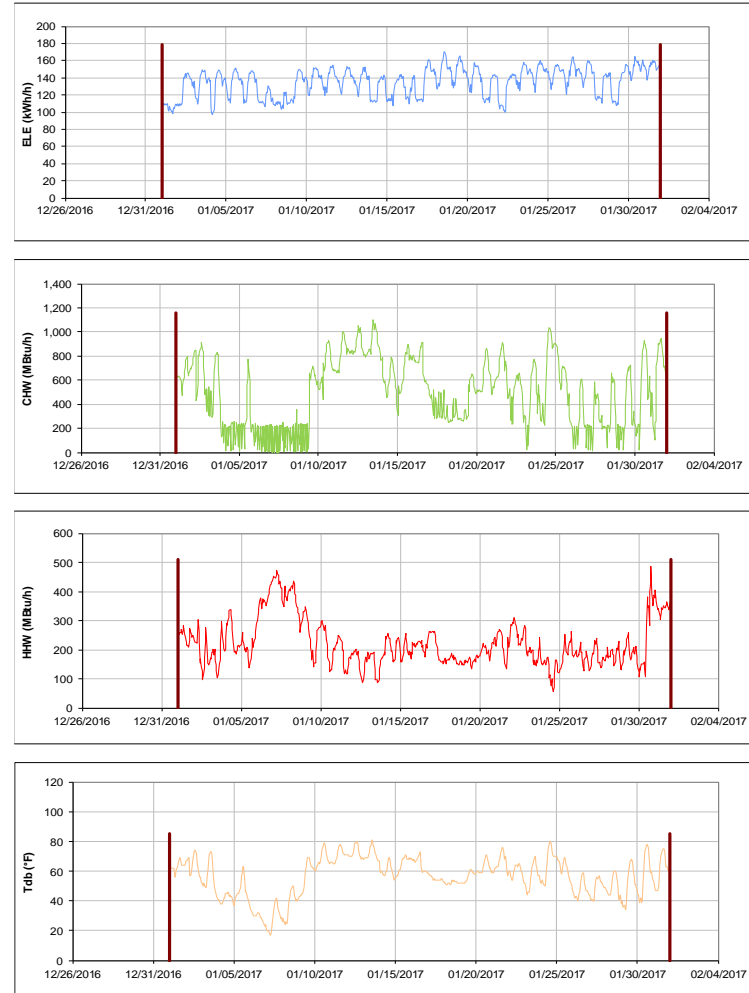


Figure III-156 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Medical Sciences Library during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-157 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wehner Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

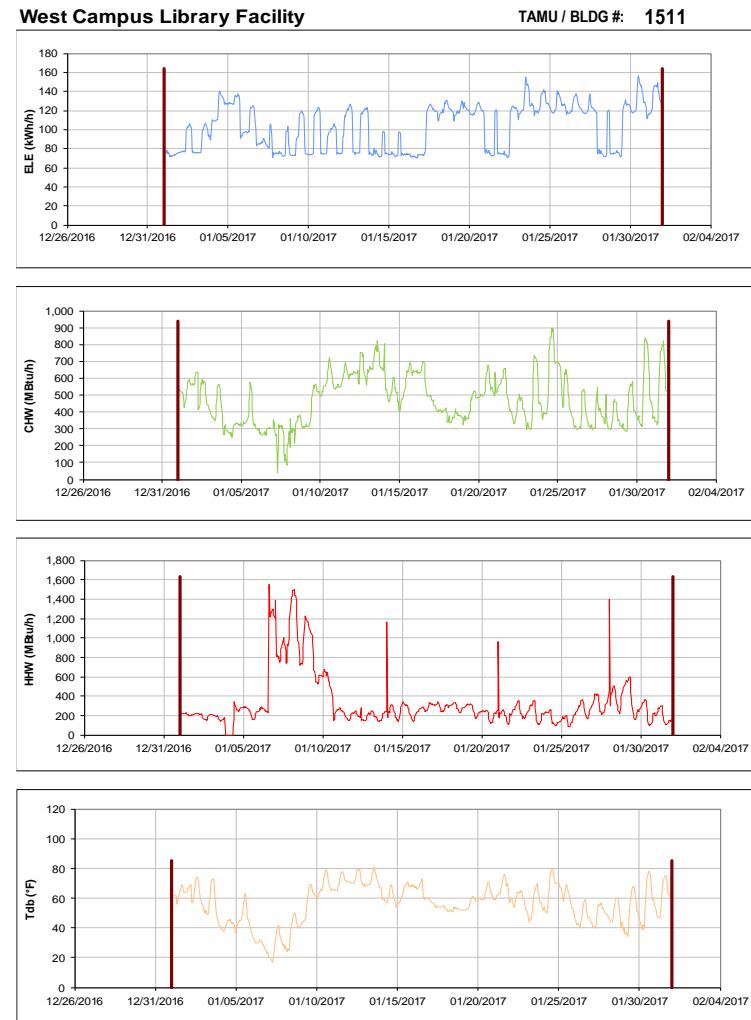


Figure III-158 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for West Campus Library Facility during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

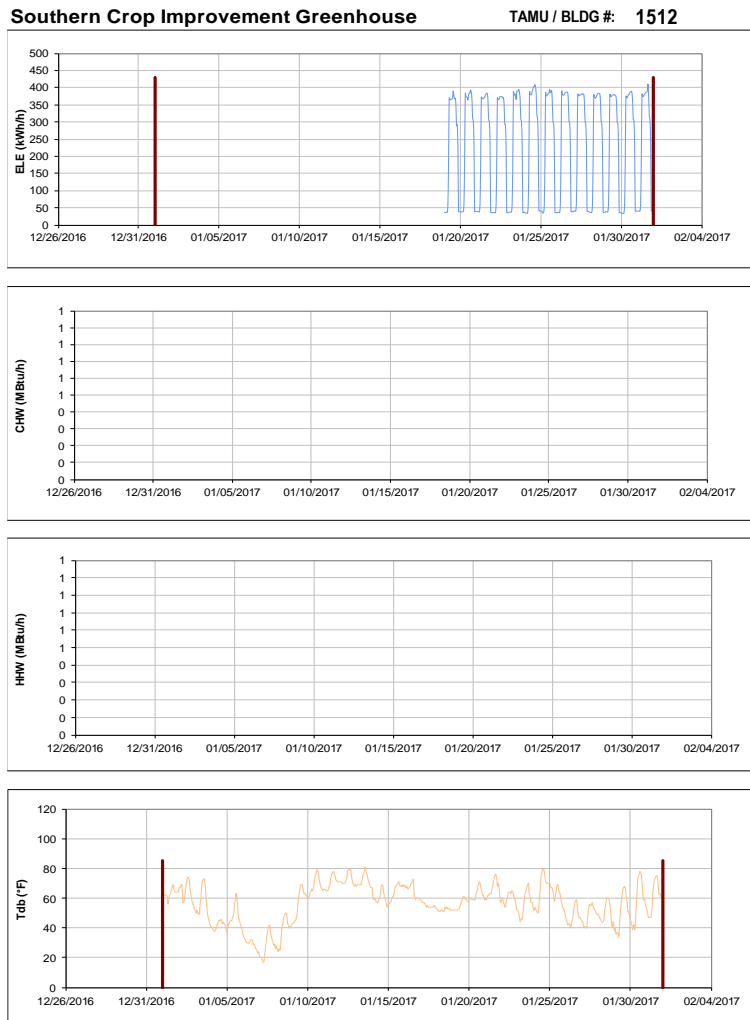


Figure III-159 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Southern Crop Improvement Greenhouse during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

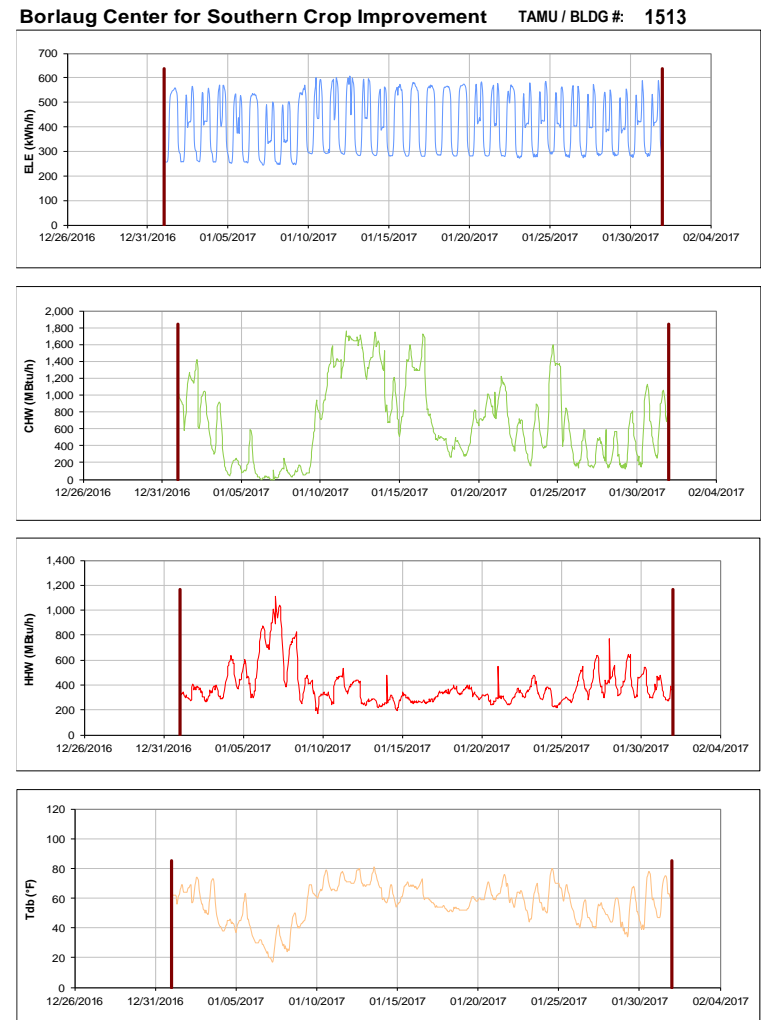


Figure III-160 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Borlaug Center for Southern Crop Improvement during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



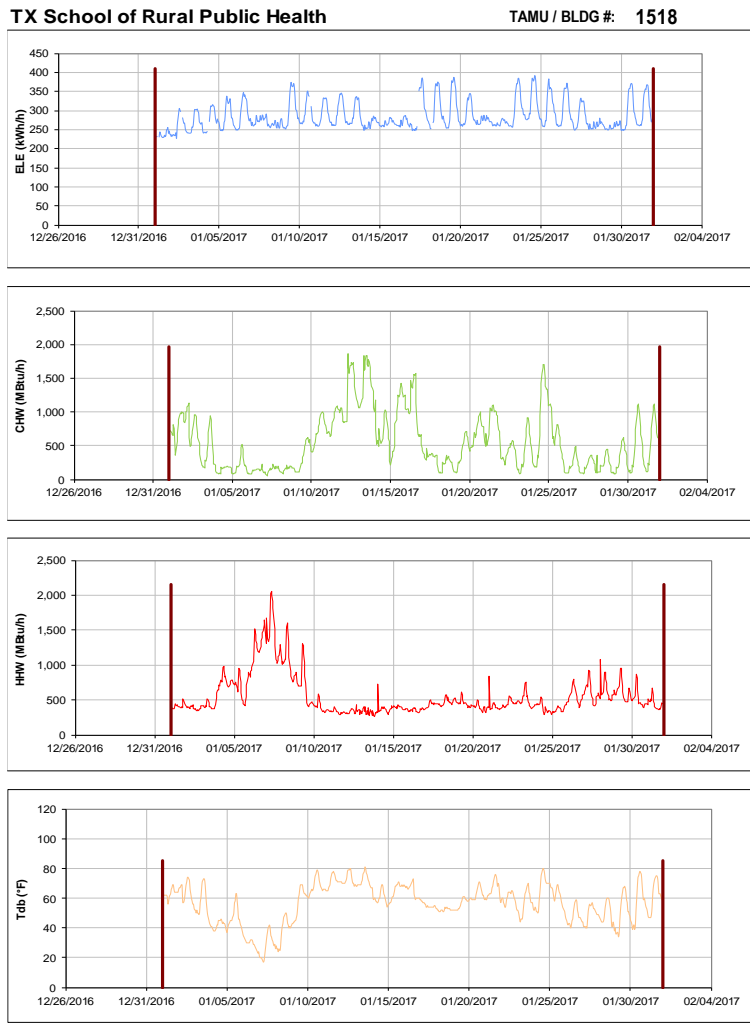


Figure III-161 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TX School of Rural Public Health during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

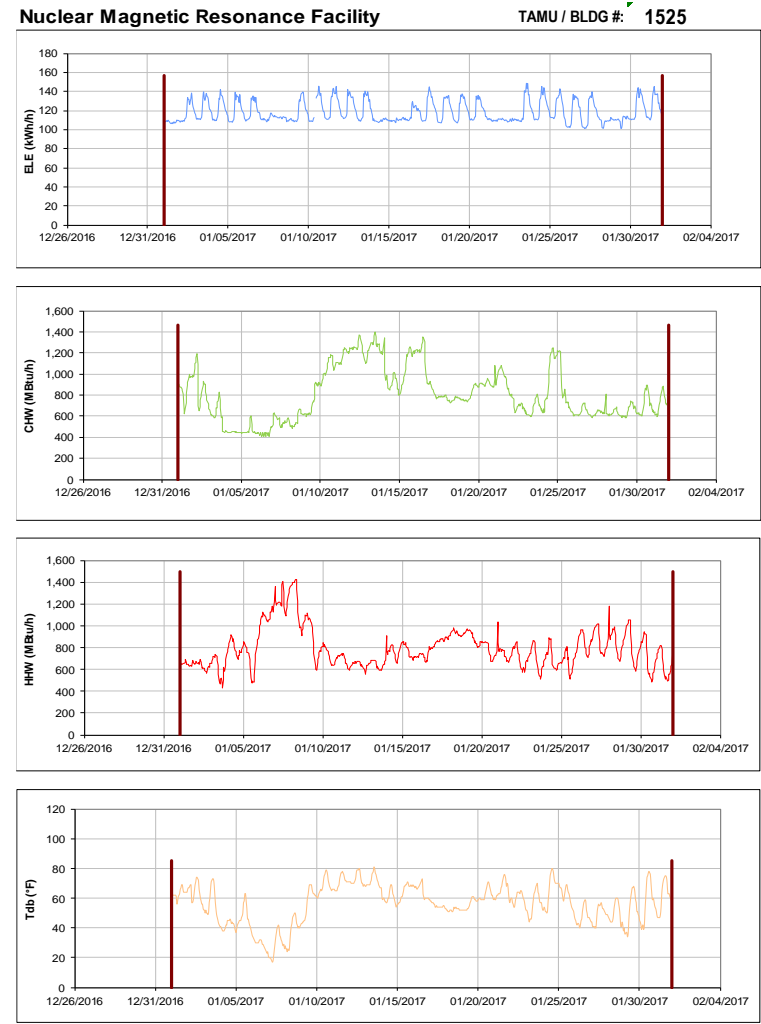


Figure III-162 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Nuclear Magnetic Resonance Facility during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

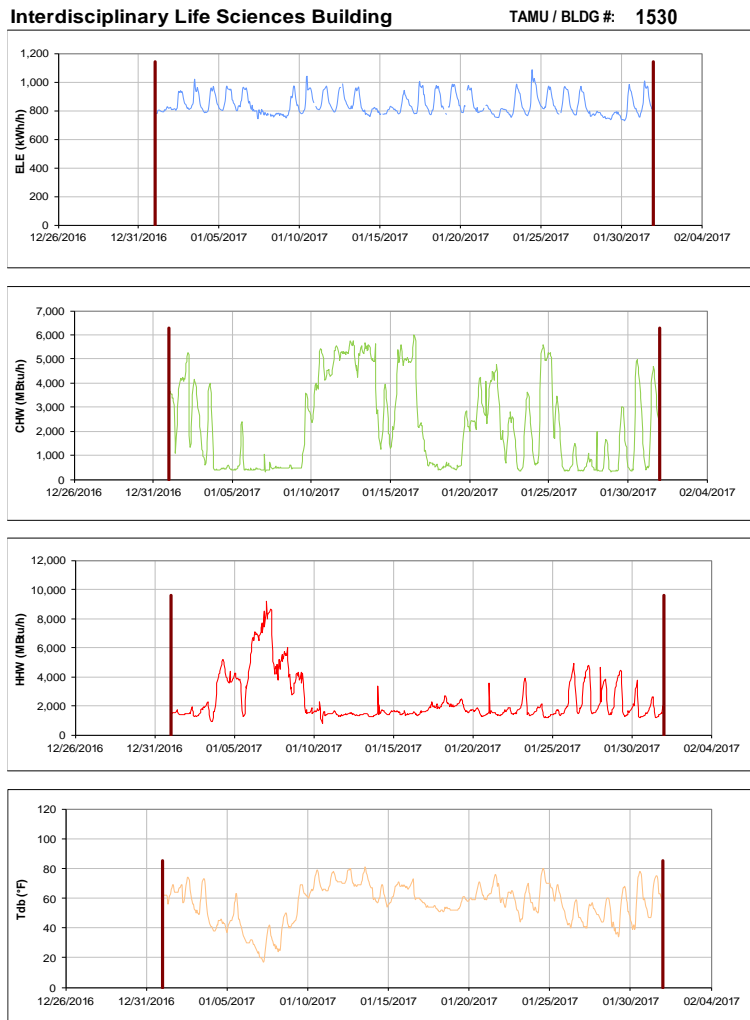


Figure III-163 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Interdisciplinary Life Sciences Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

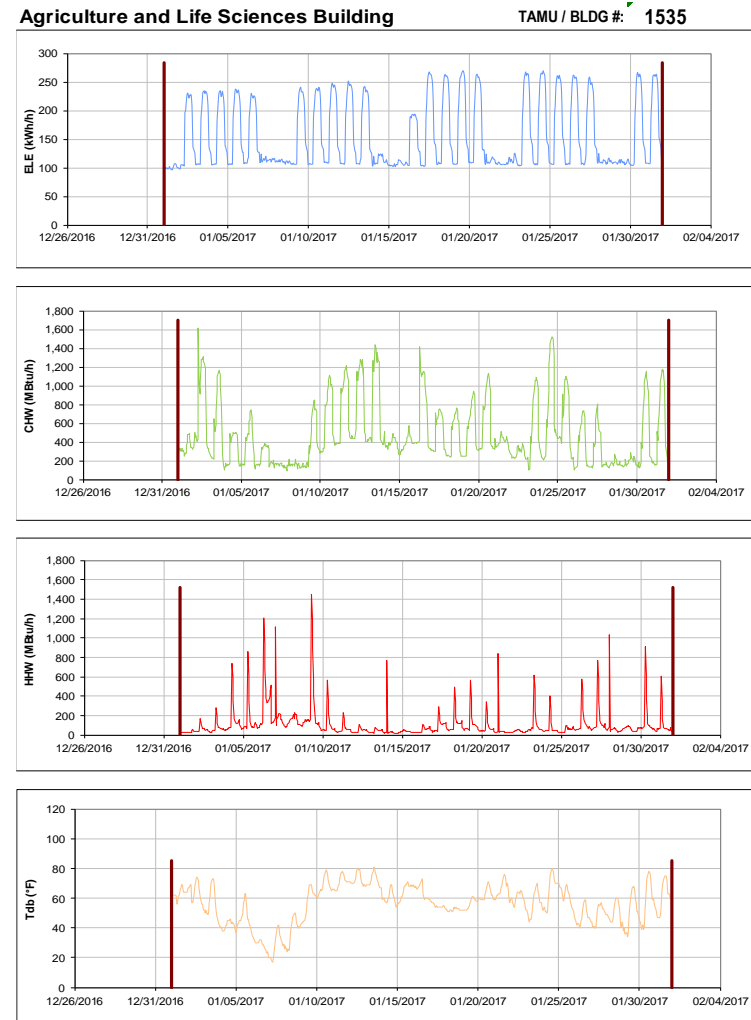


Figure III-164 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture and Life Sciences Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

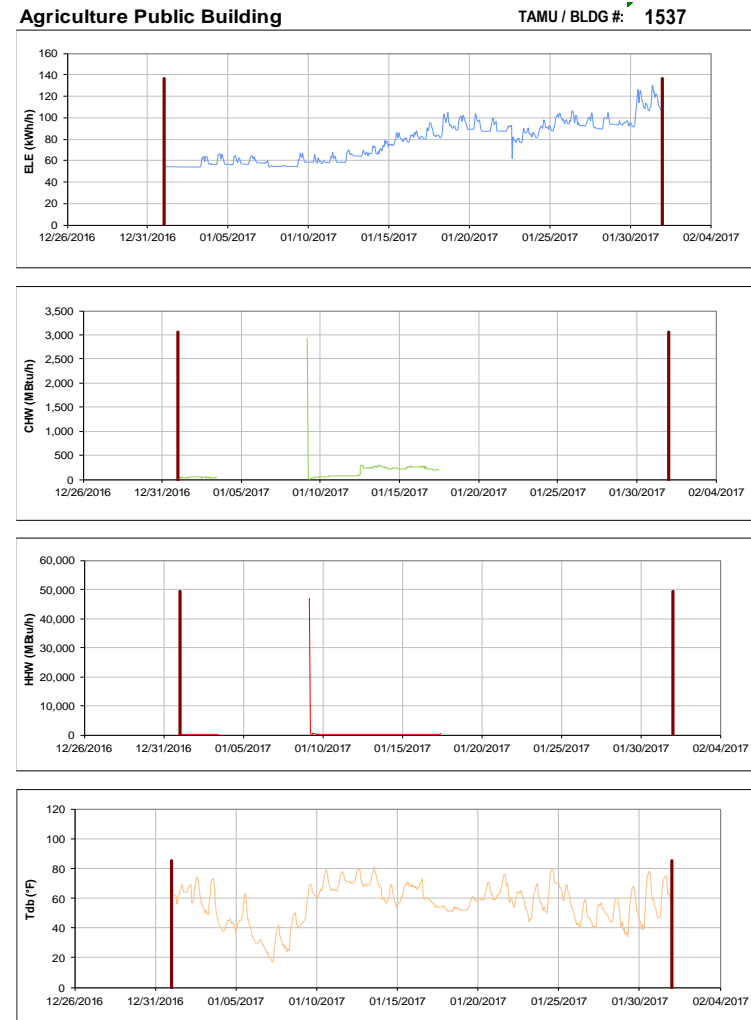


Figure III-166 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture Public Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-167 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture Program Visitors Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

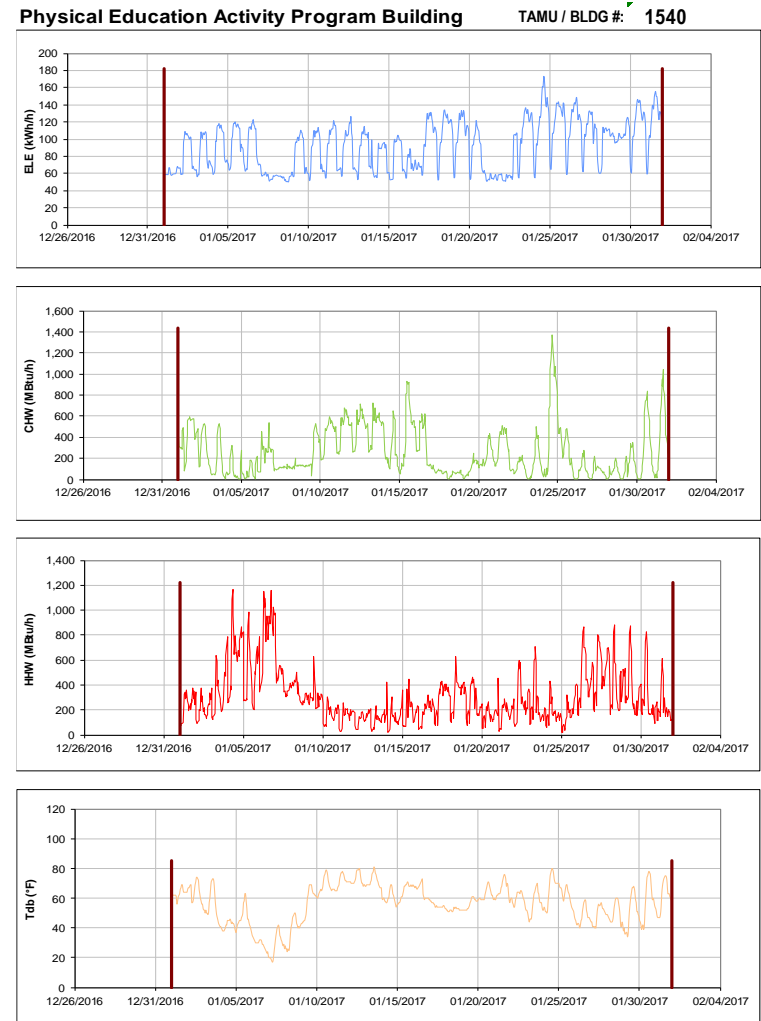


Figure III-168 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Physical Education Activity Program Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Human Clinical Research Building

TAMU / BLDG #: 1542

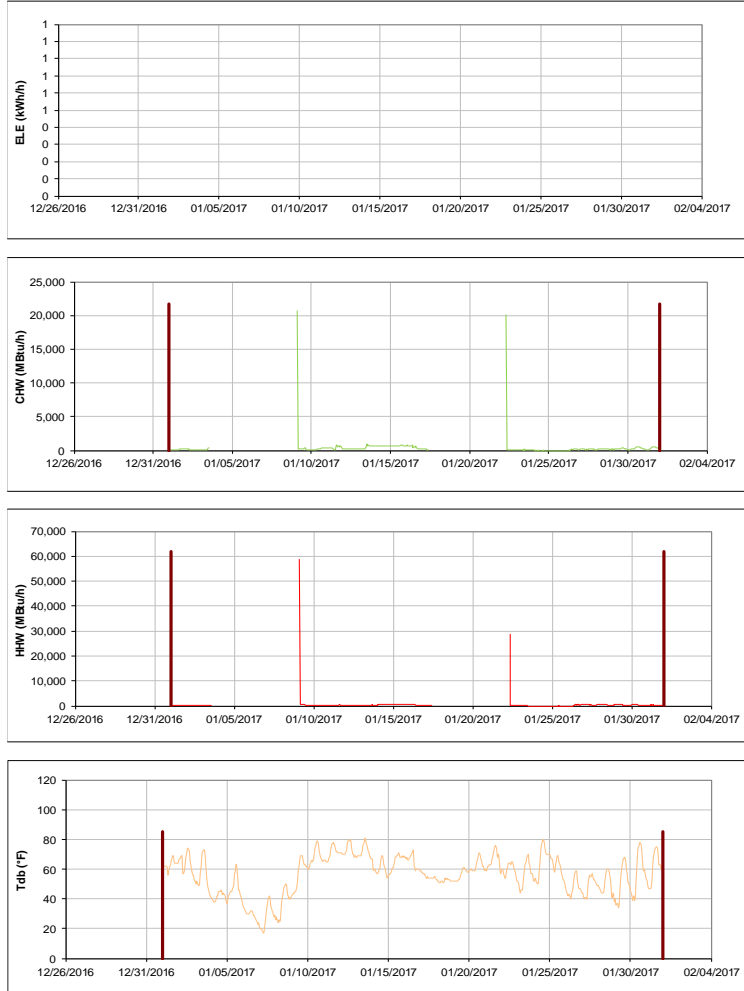


Figure III-169 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Human Clinical Research Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Cain Garage

TAMU / BLDG #: 1544

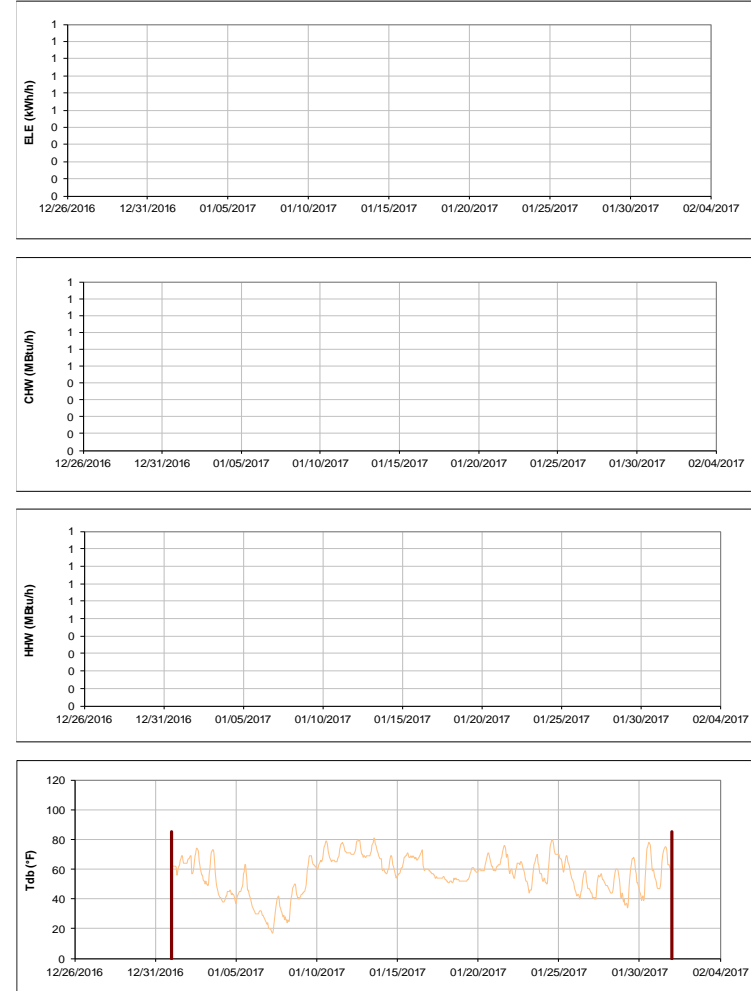


Figure III-170 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cain Garage during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Olsen Field at Bluebell Park

TAMU / BLDG #: 1550

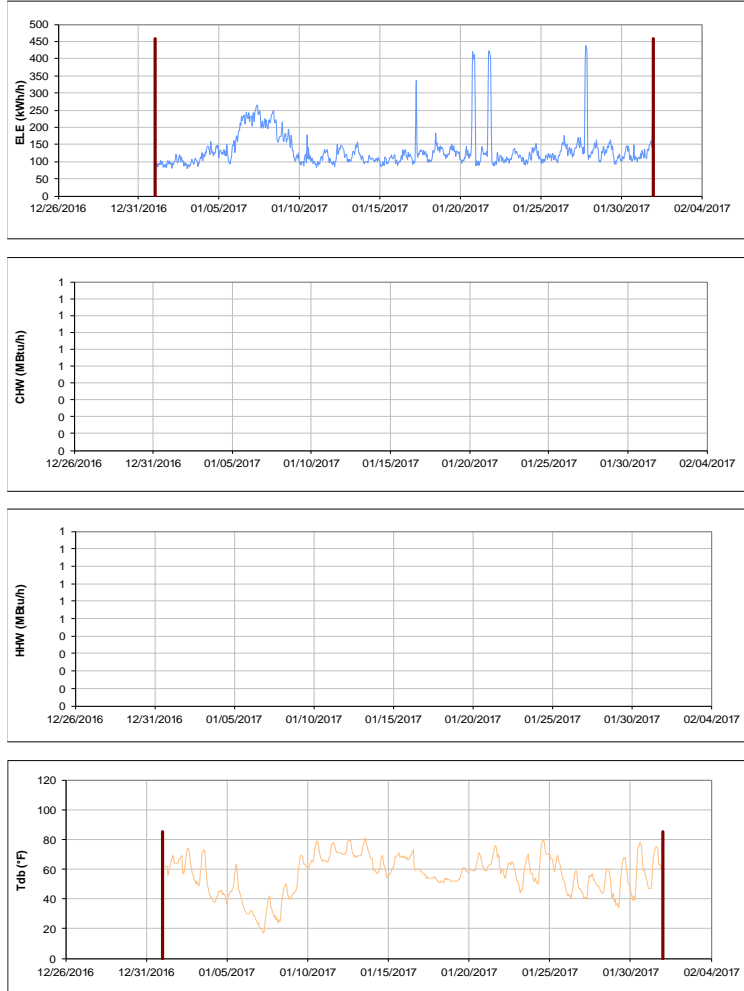


Figure III-171 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Olsen Field at Bluebell Park during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Reed Arena and Cox-McFerrin Center

TAMU / BLDG #: 554-1558

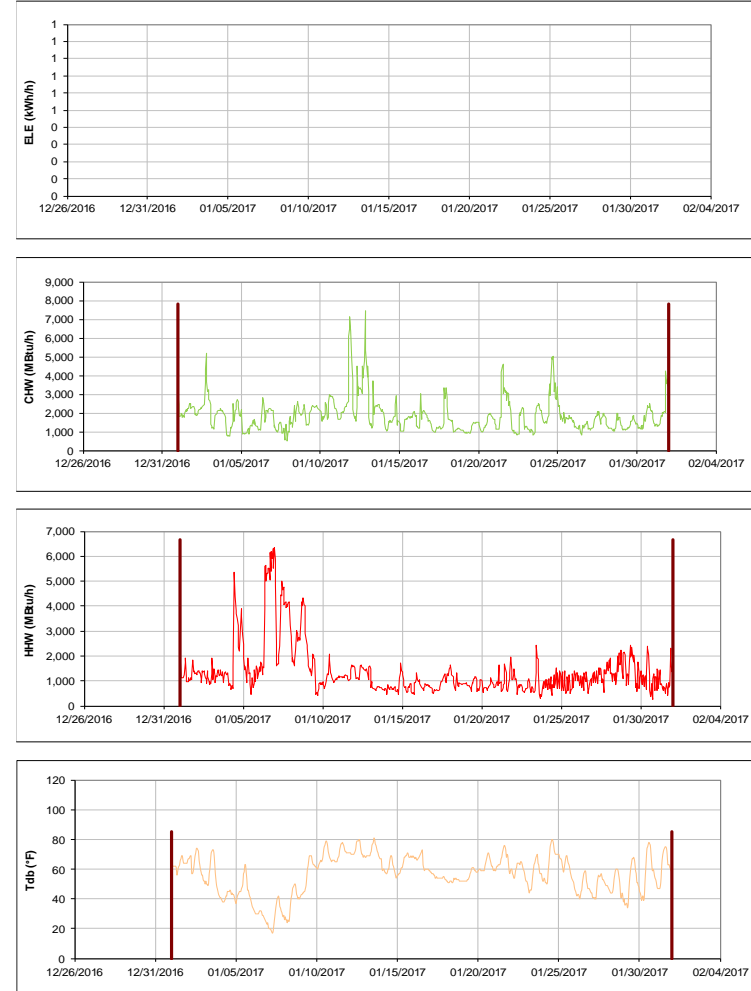


Figure III-172 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed Arena and Cox-McFerrin Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

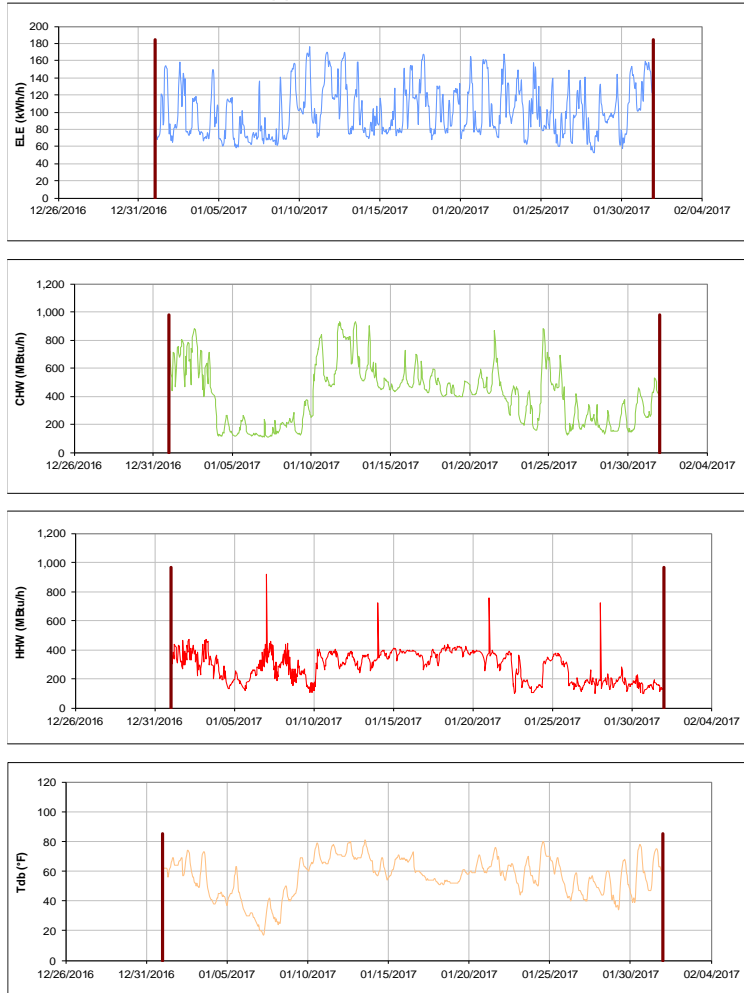


Figure III-173 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cox-McFerrin Center for Aggie Basketball during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

West Campus Parking Garage TAMU / BLDG #: 1559

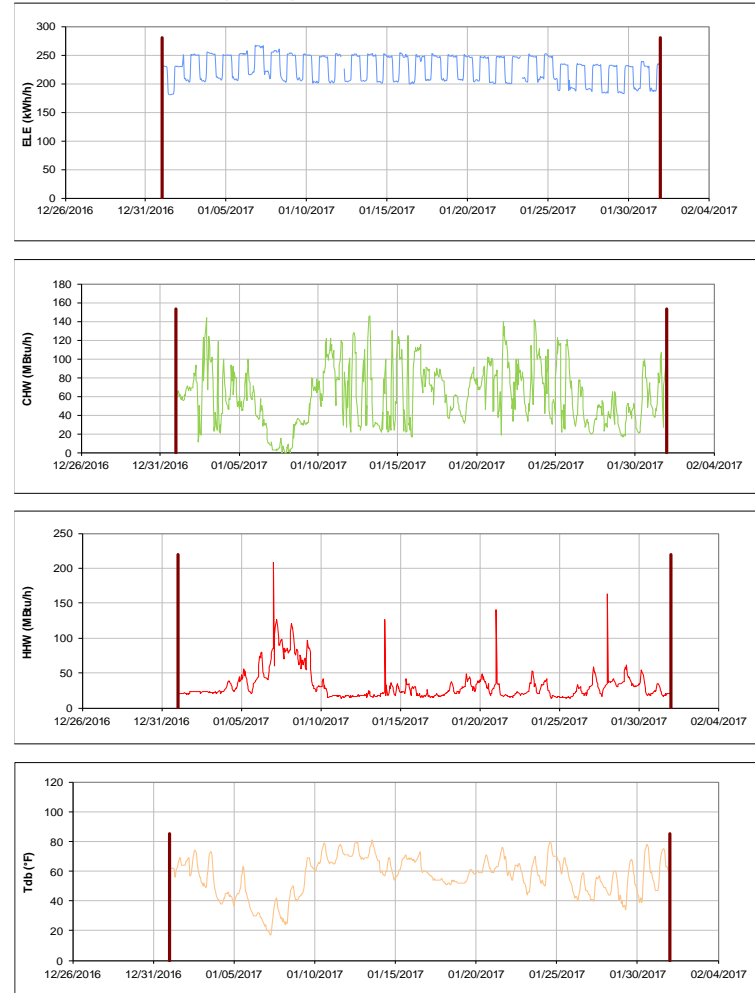


Figure III-174 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for West Campus Parking Garage during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

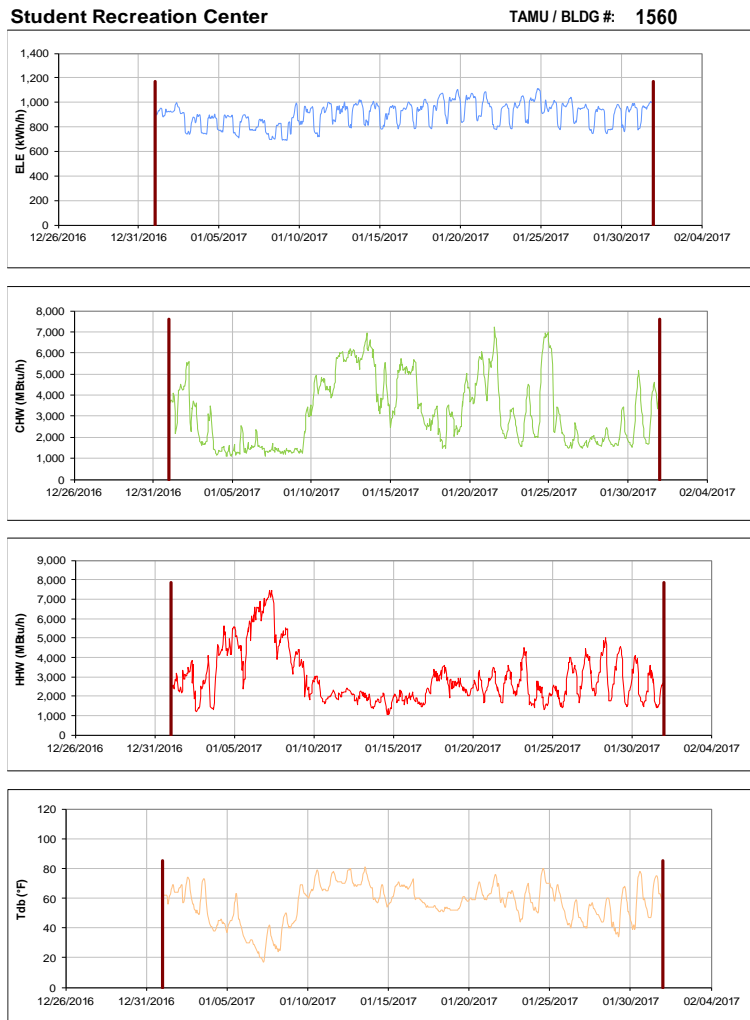


Figure III-175 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Student Recreation Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

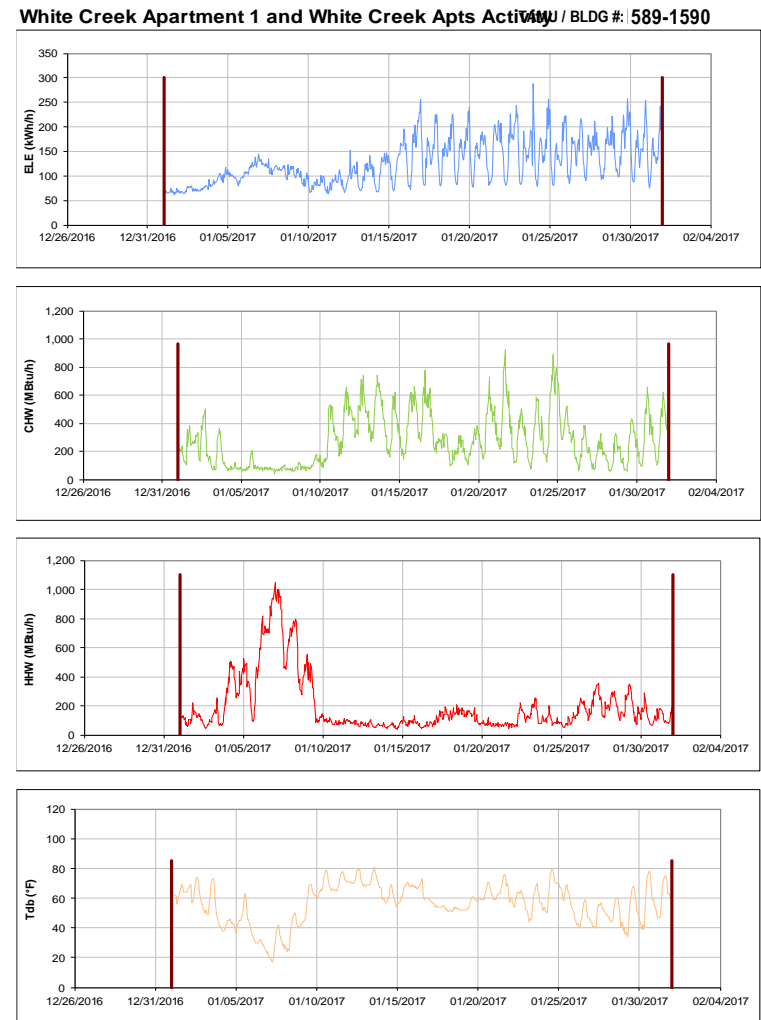


Figure III-176 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 1 and White Creek Apts Activity Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



White Creek Apartment 2

TAMU / BLDG #: 1591

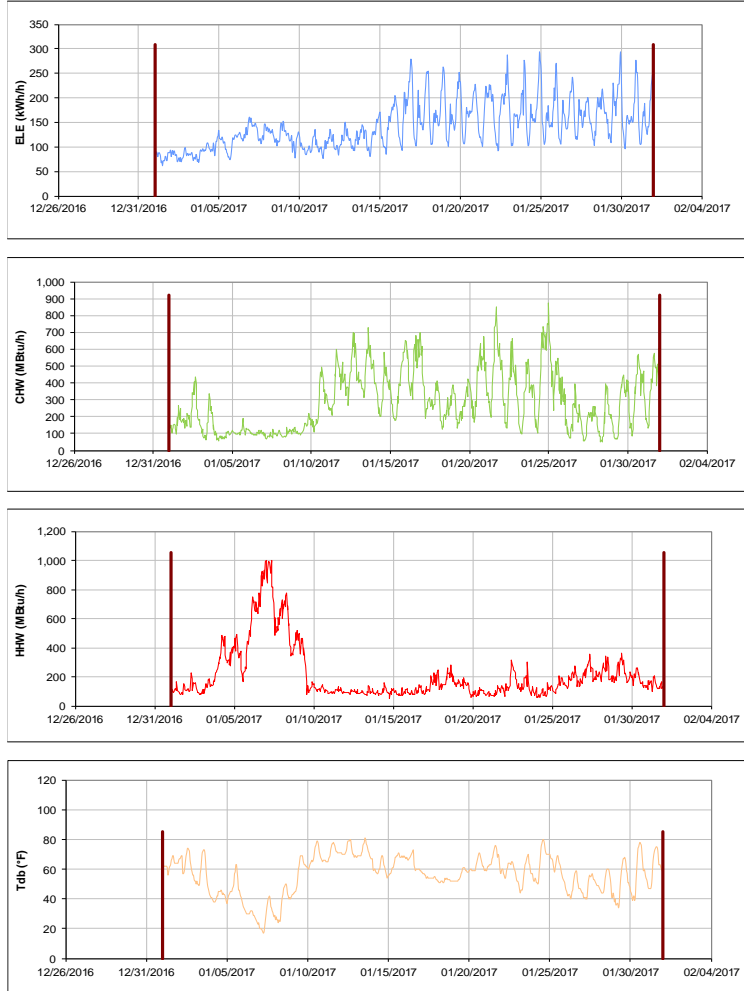


Figure III-177 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 2 during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

White Creek Apartment 3

TAMU / BLDG #: 1592

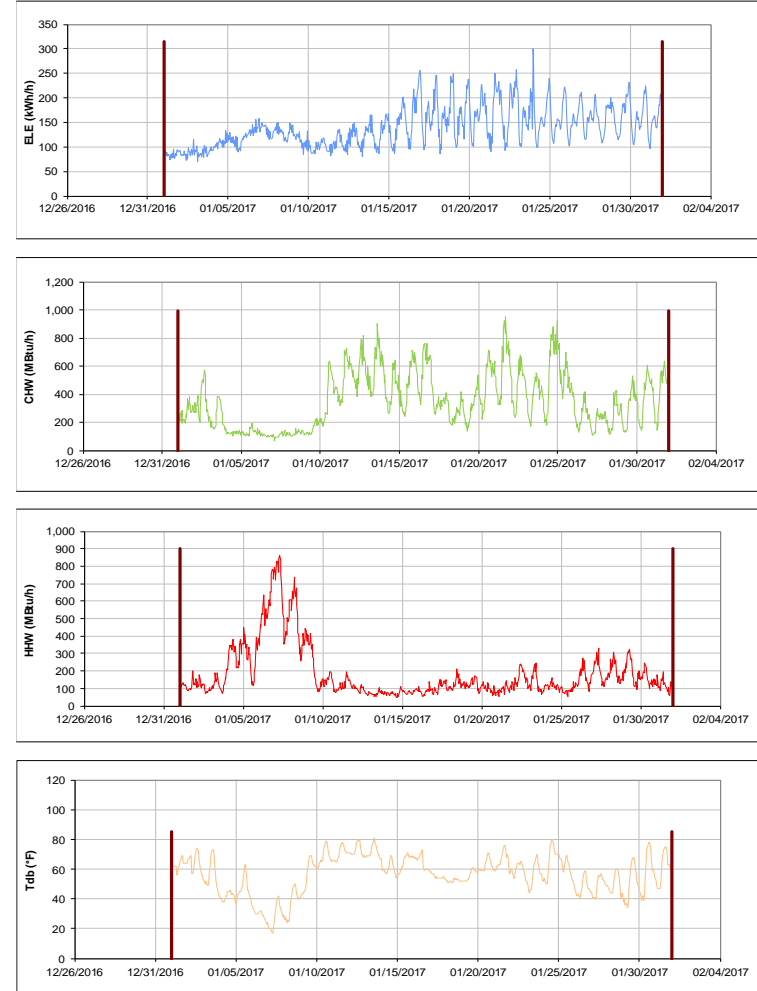


Figure III-178 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 3 during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

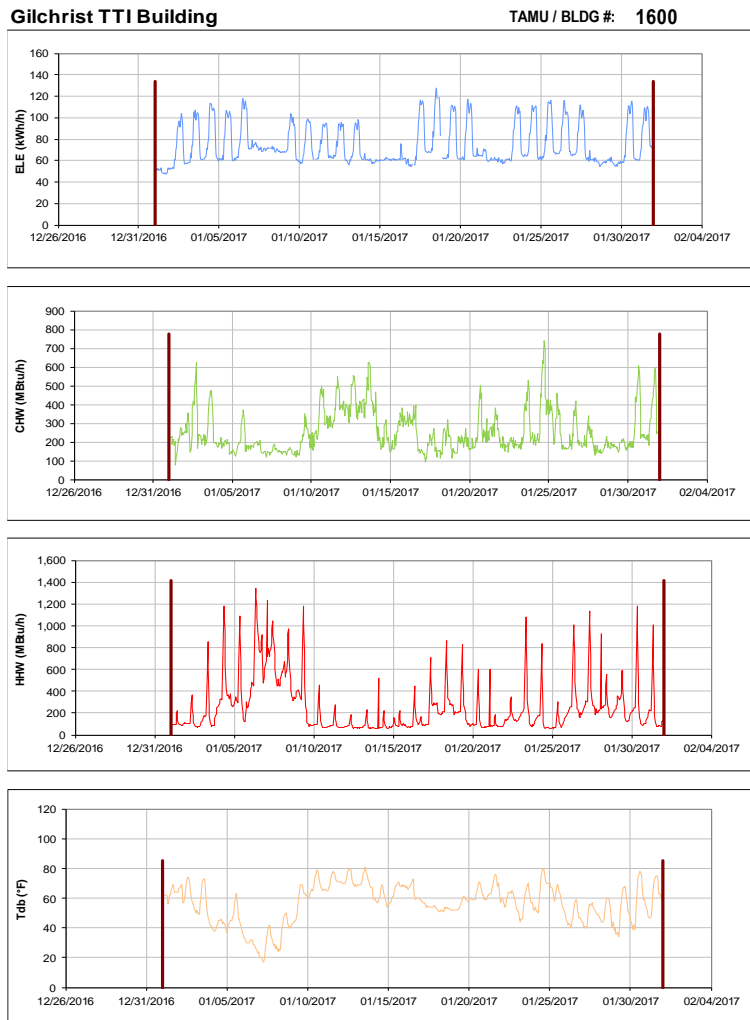


Figure III-179 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gilchrist TTI Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-180 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for International Ocean Discovery Building during the Month of January 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 Offshore Technology Research Center during the Month of January 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 George Bush Presidential Library & Museum during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

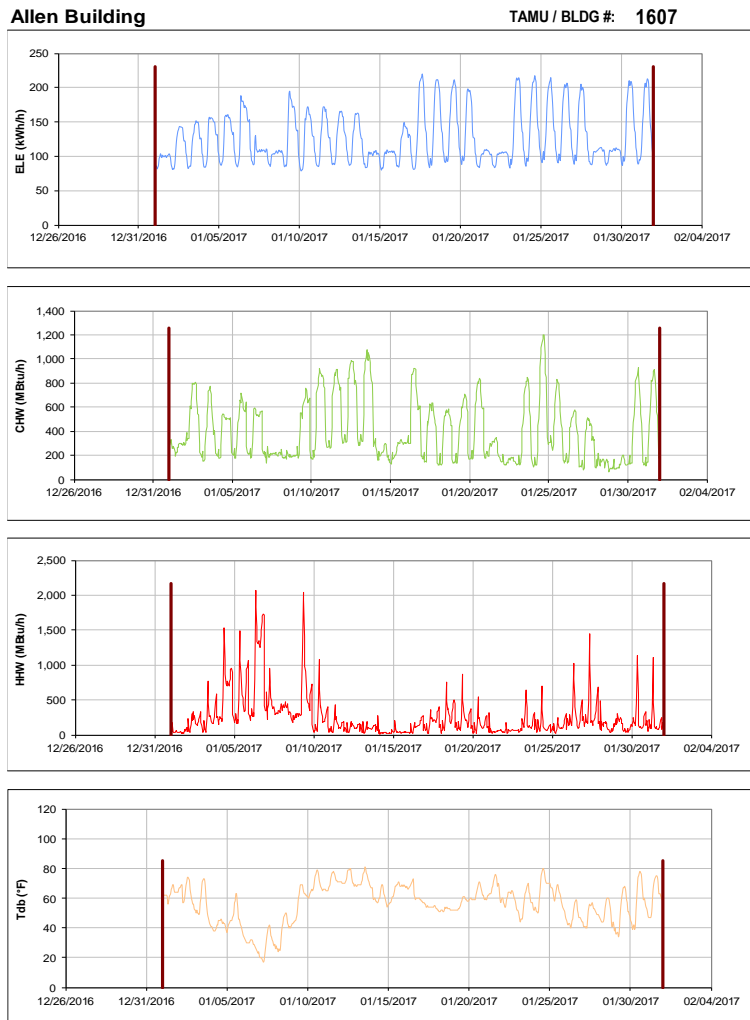


Figure III-183 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Allen Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

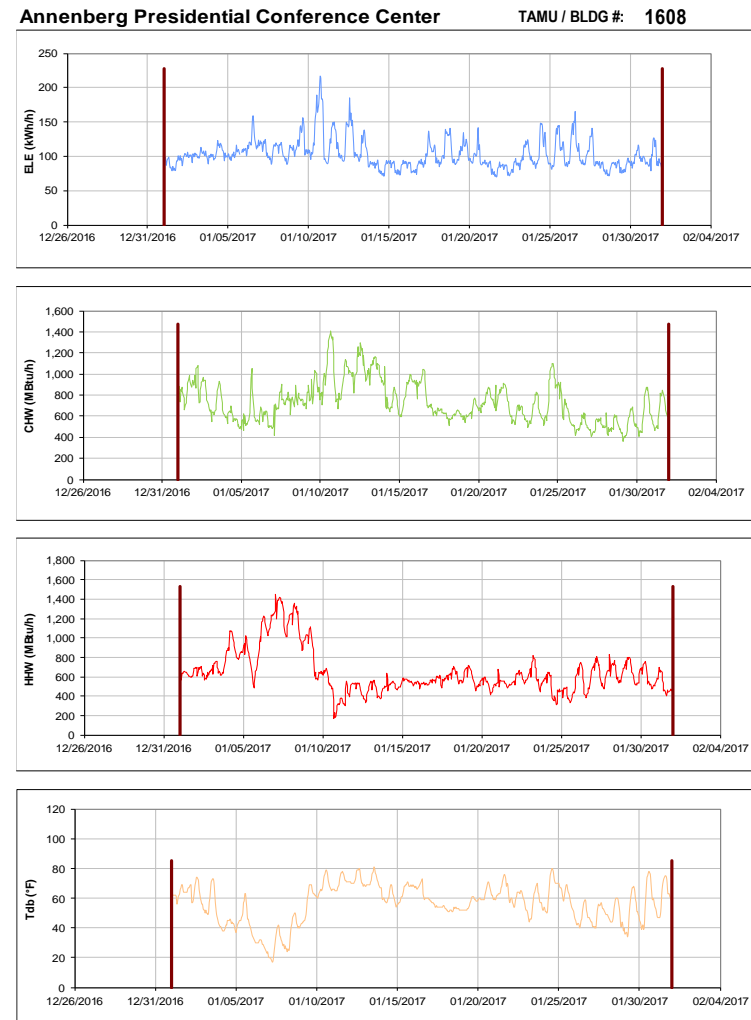


Figure III-184 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Annenberg Presidential Conference Center during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

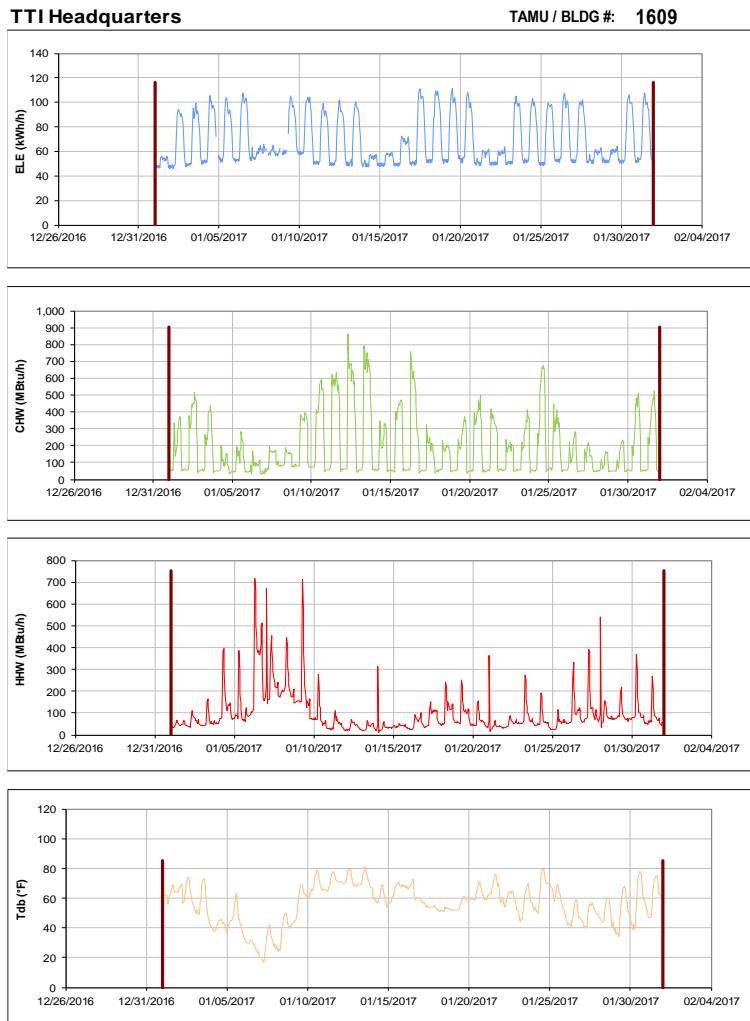


Figure III-185 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TTI Headquarters during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-186 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Engineering Research Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

General Services Complex

TAMU / BLDG #: 1800

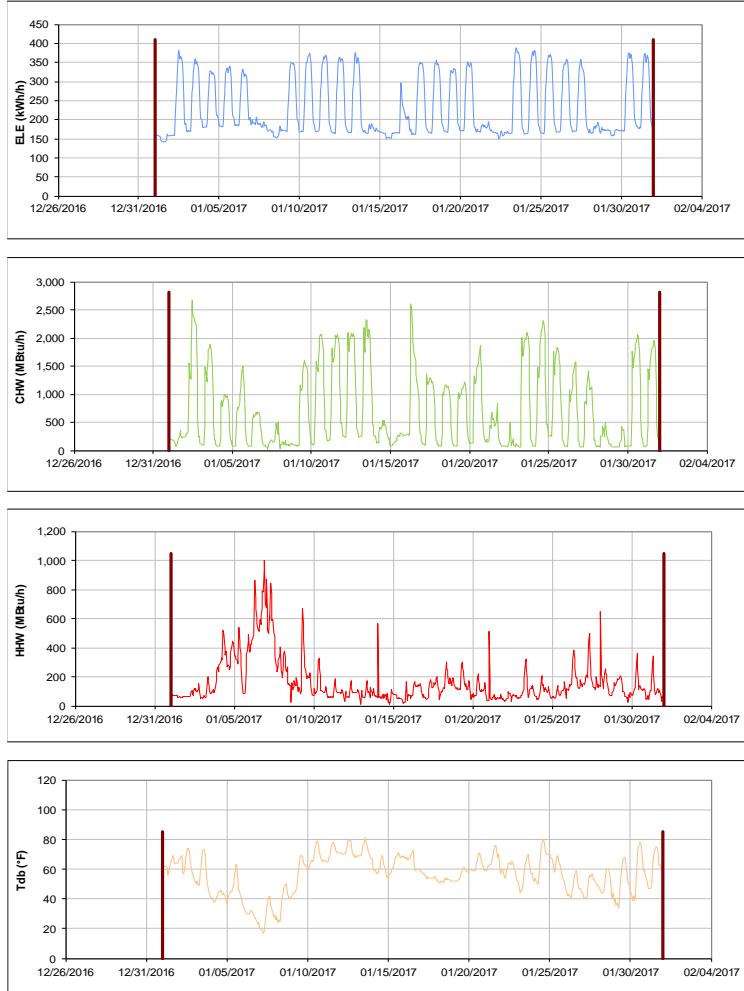


Figure III-187 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for General Services Complex during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

New TVMDL

TAMU / BLDG #: 1809

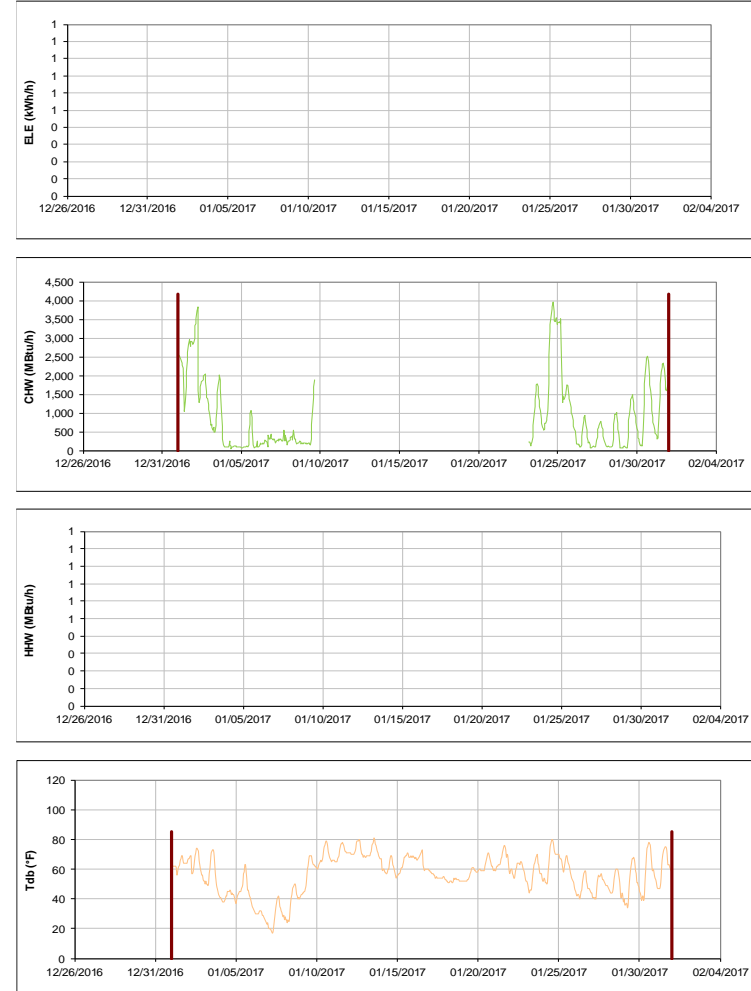


Figure III-188 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for New TVMDL during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

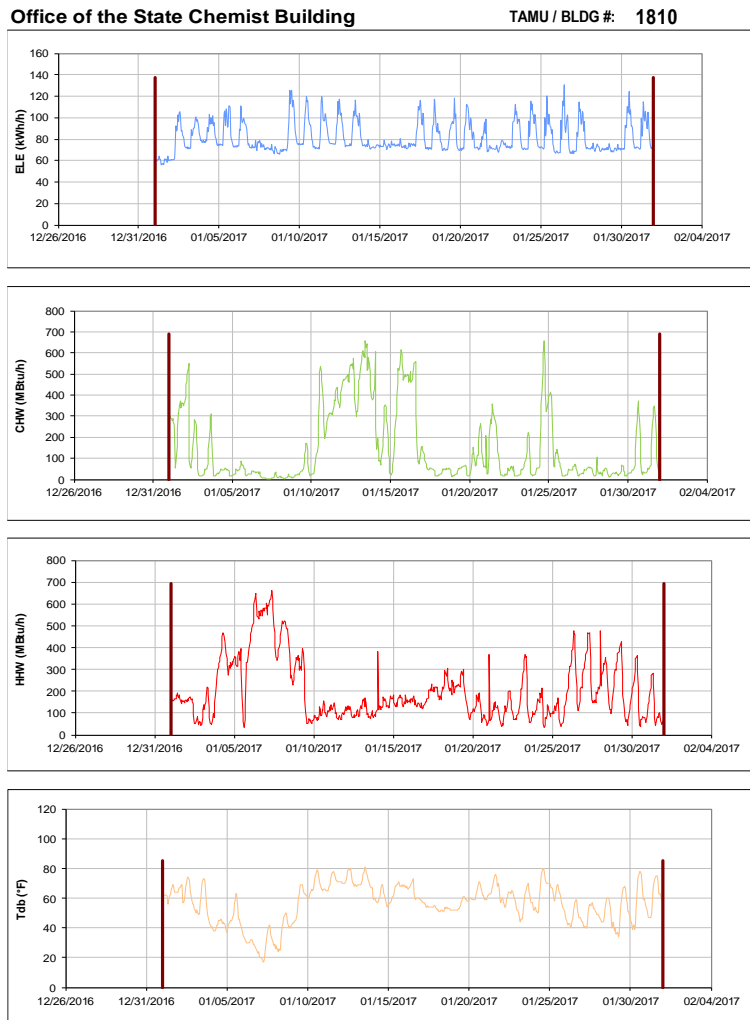


Figure III-189 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Office of the State Chemist Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

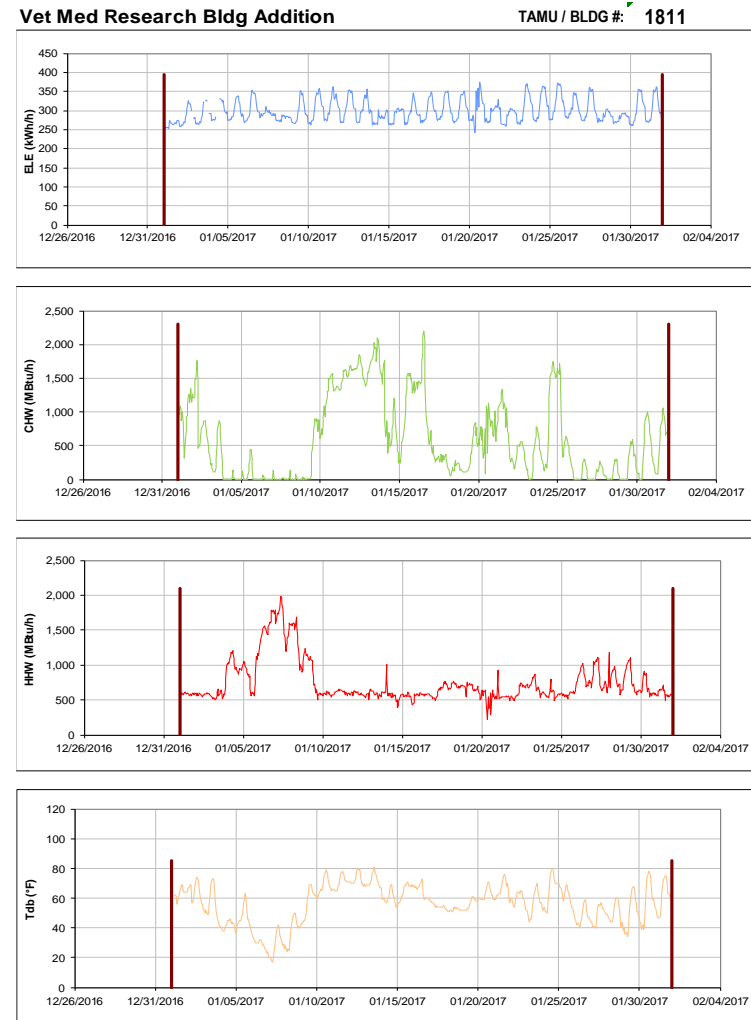


Figure III-190 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Vet Med Research Bldg Addition during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

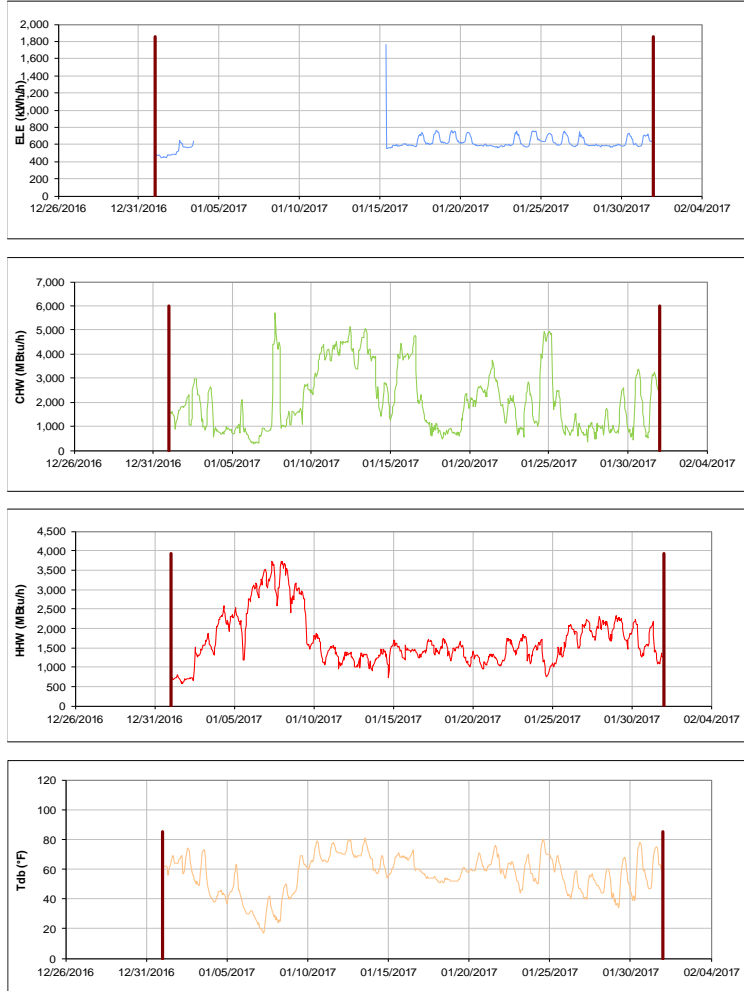


Figure III-191 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medicine Building 1, 2, and 3 during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

**Texas Institute for Genomic Medicine** TAMU / BLDG #: 1900

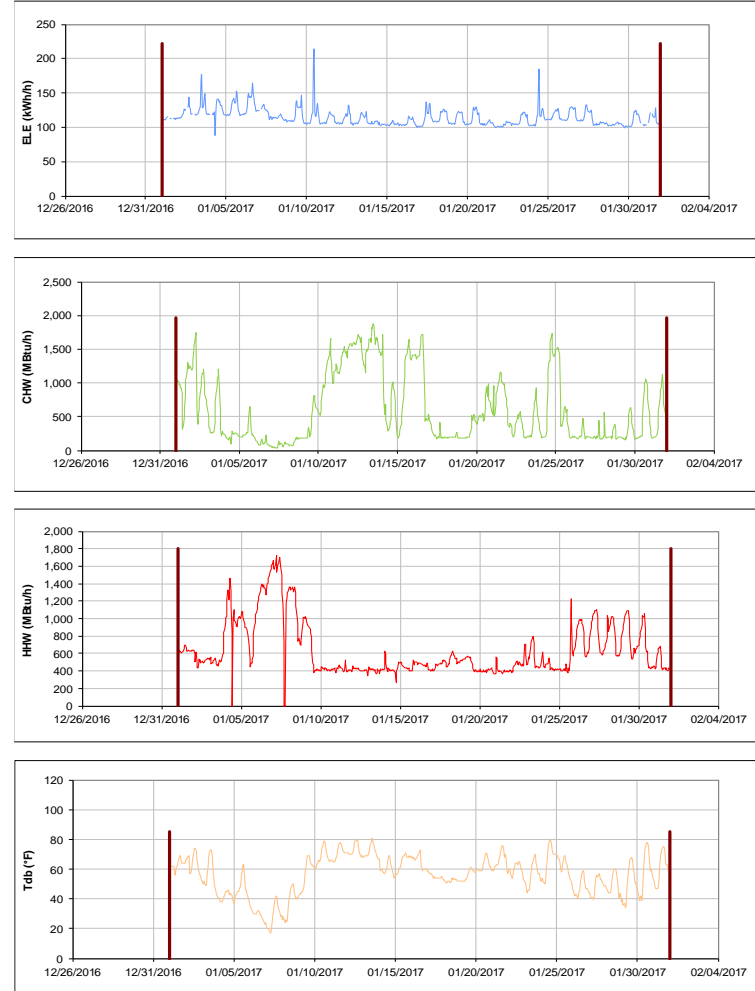


Figure III-192 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas Institute for Genomic Medicine during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

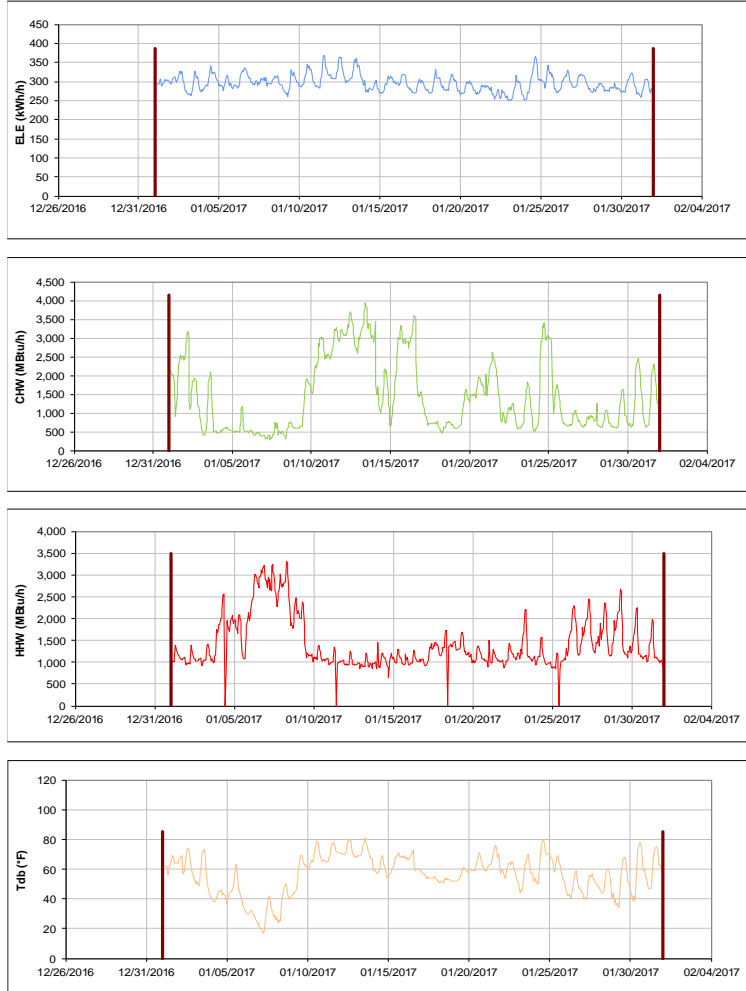


Figure III-193 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas A&M Institute for Preclinical Studies A during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

National Center for Therapeutics Manufacturing TAMU / BLDG #: 1910

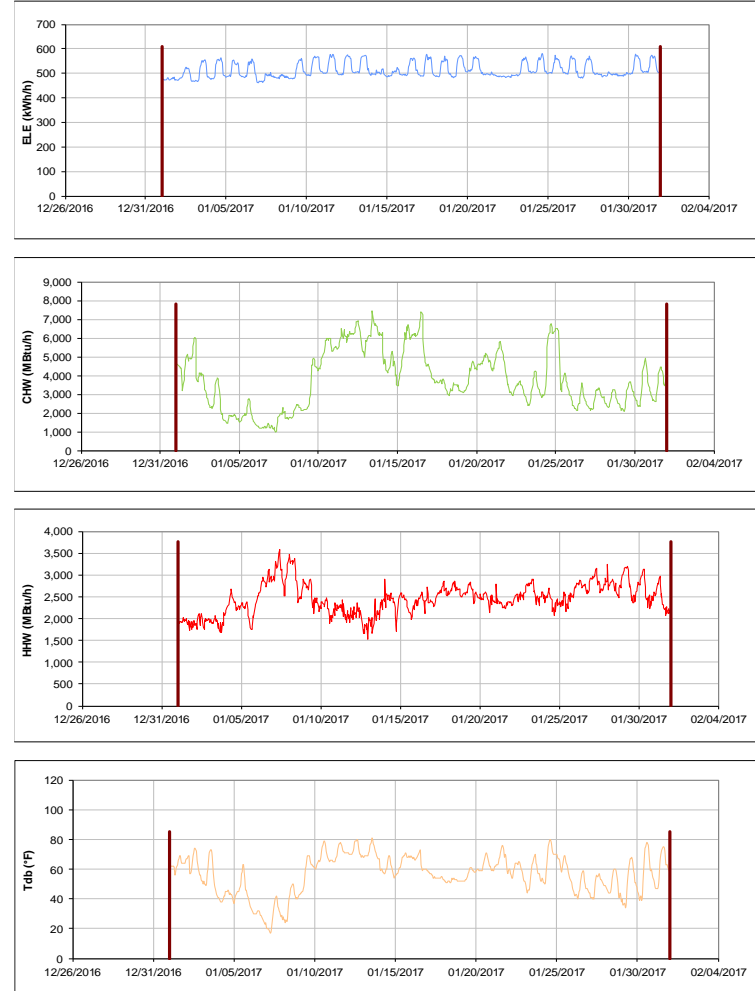


Figure III-194 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for National Center for Therapeutics Manufacturing during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

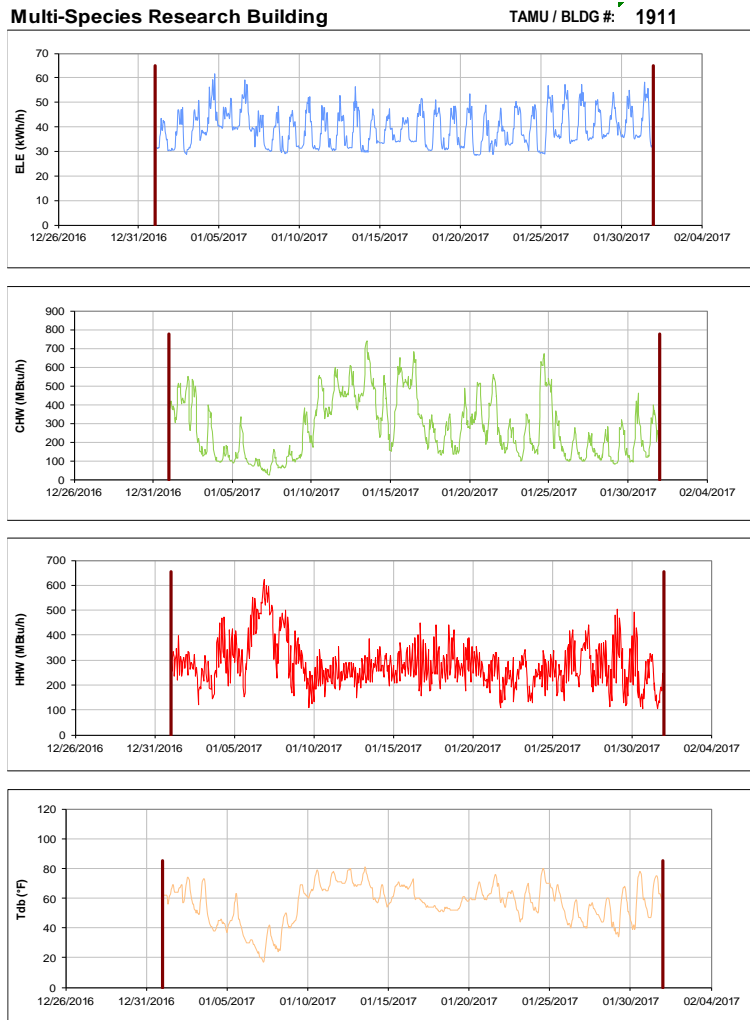


Figure III-195 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Multi-Species Research Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

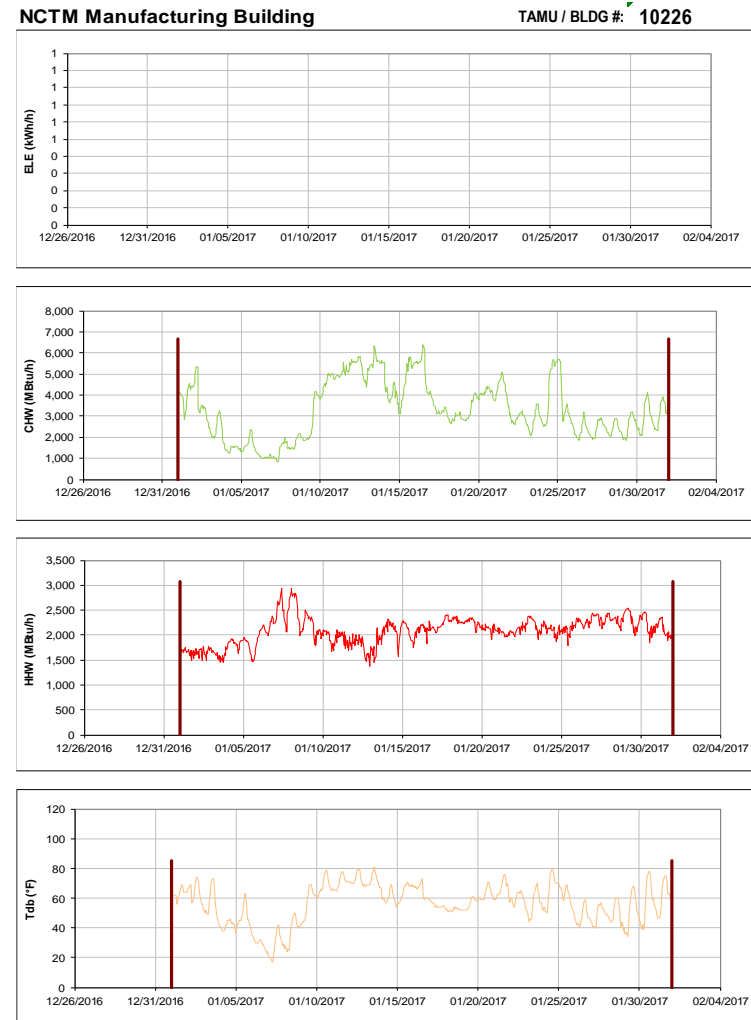


Figure III-196 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for NCTM Manufacturing Building during the Month of January 2017 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

**IV. Energy Balance Plots for January 2017  
Consumption**

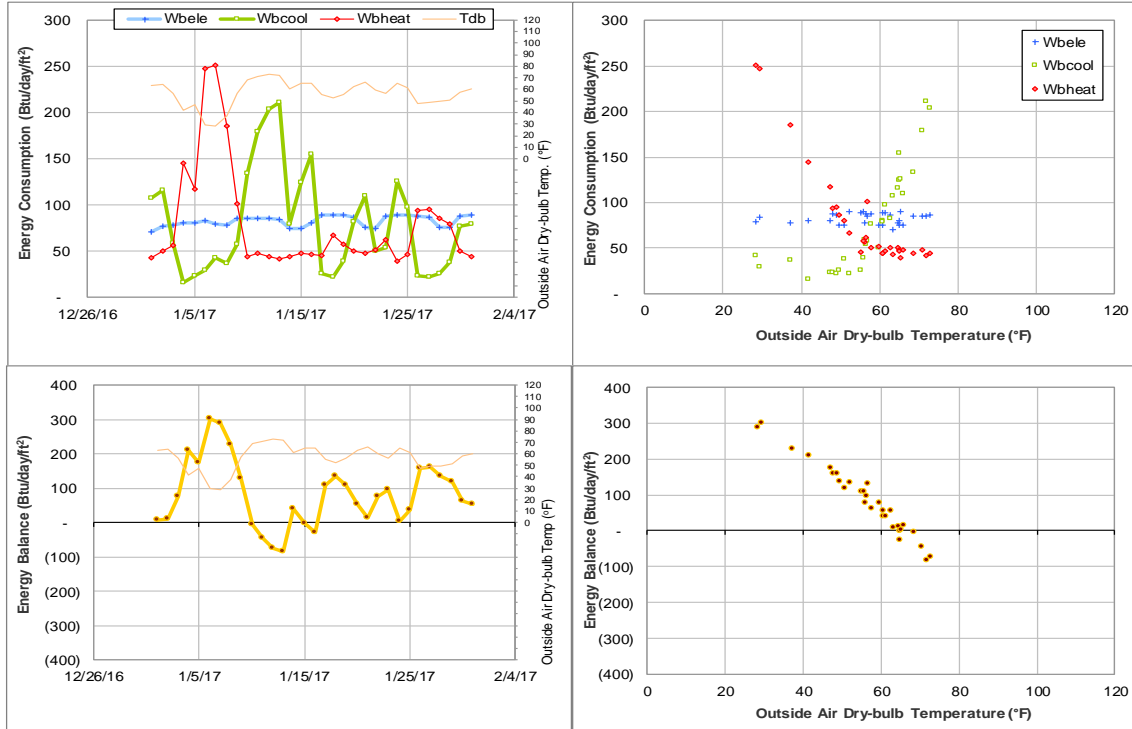


Figure IV-1 Emerging Technologies Building TAMU BLDG # 270 Energy Balance Plot during January 2017

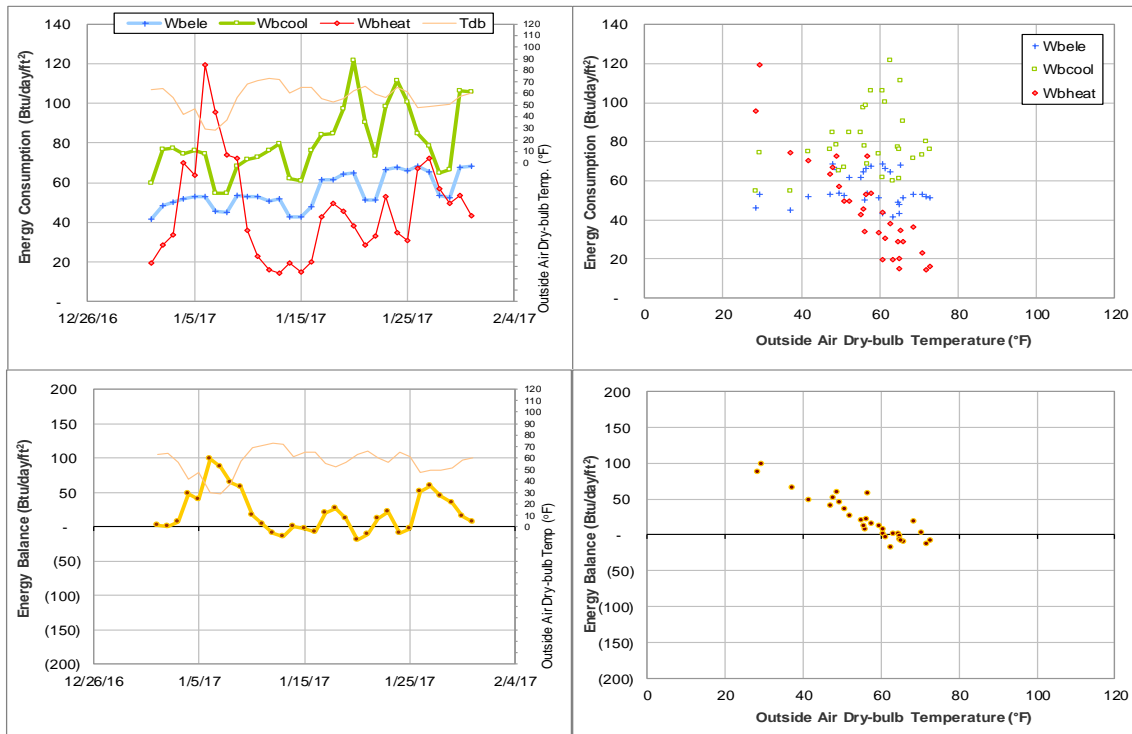


Figure IV-2 Liberal Arts and Arts & Humanities Building TAMU BLDG # 275 Energy Balance Plot during January 2017

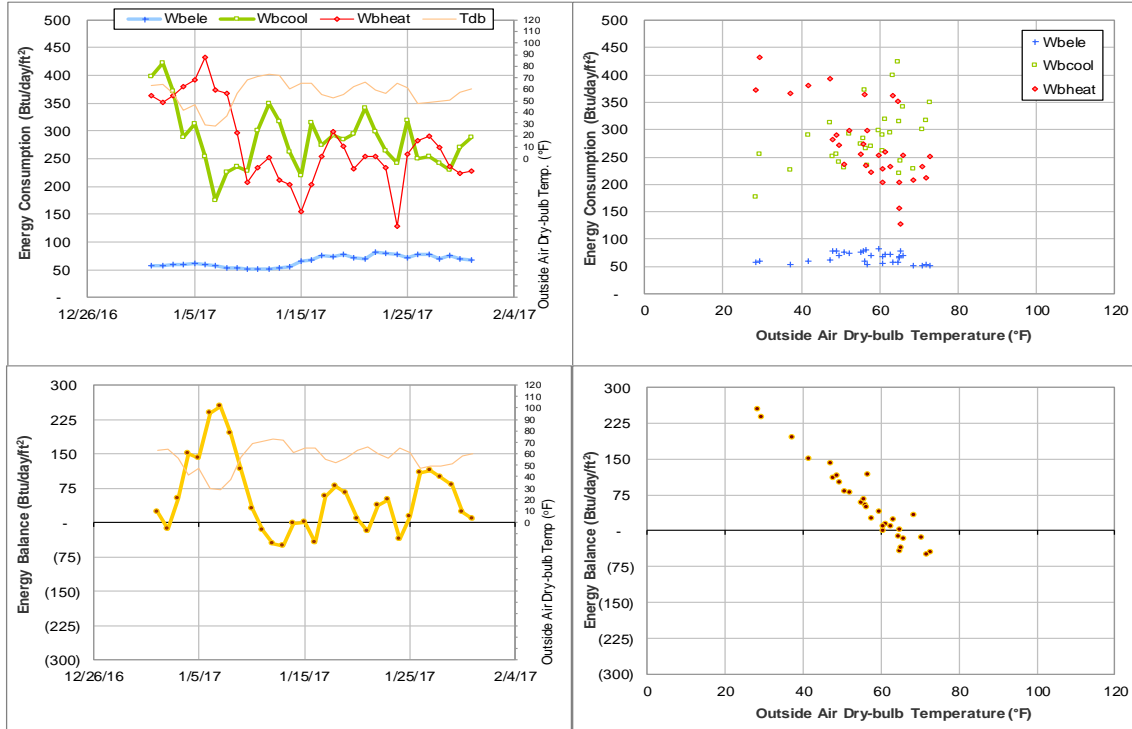


Figure IV-3 Wells Residence Hall TAMU BLDG # 290 Energy Balance Plot during January 2017

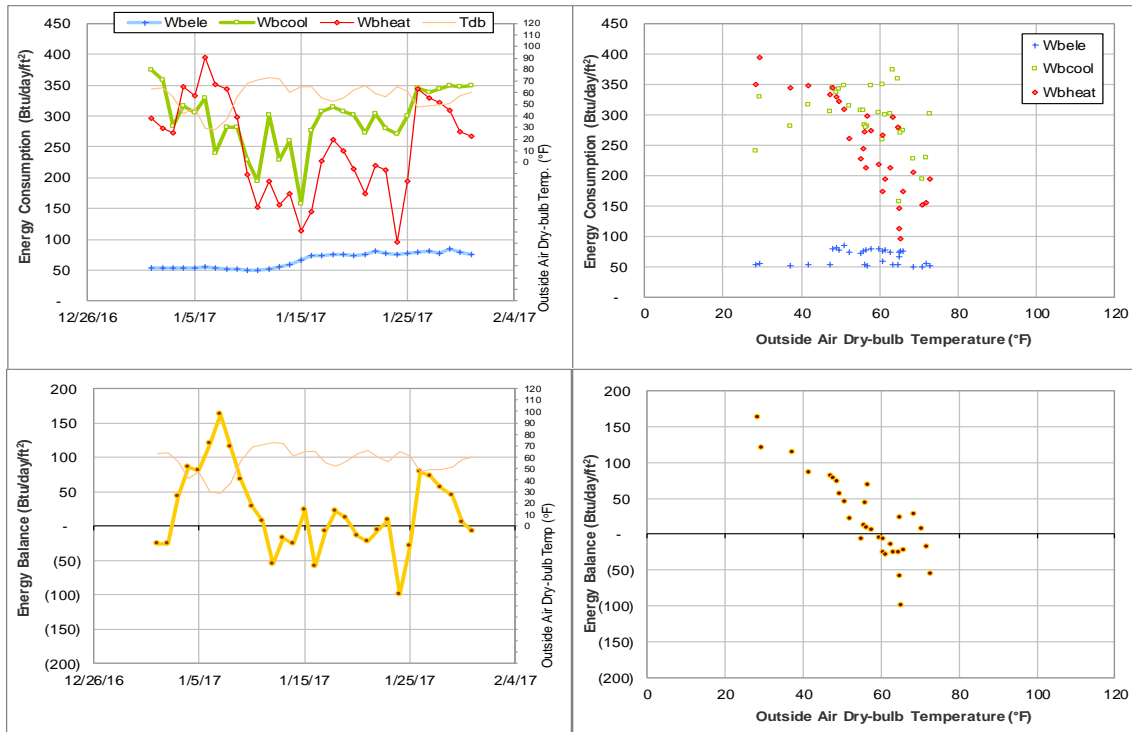


Figure IV-4 Rudder Residence Hall TAMU BLDG # 291 Energy Balance Plot during January 2017

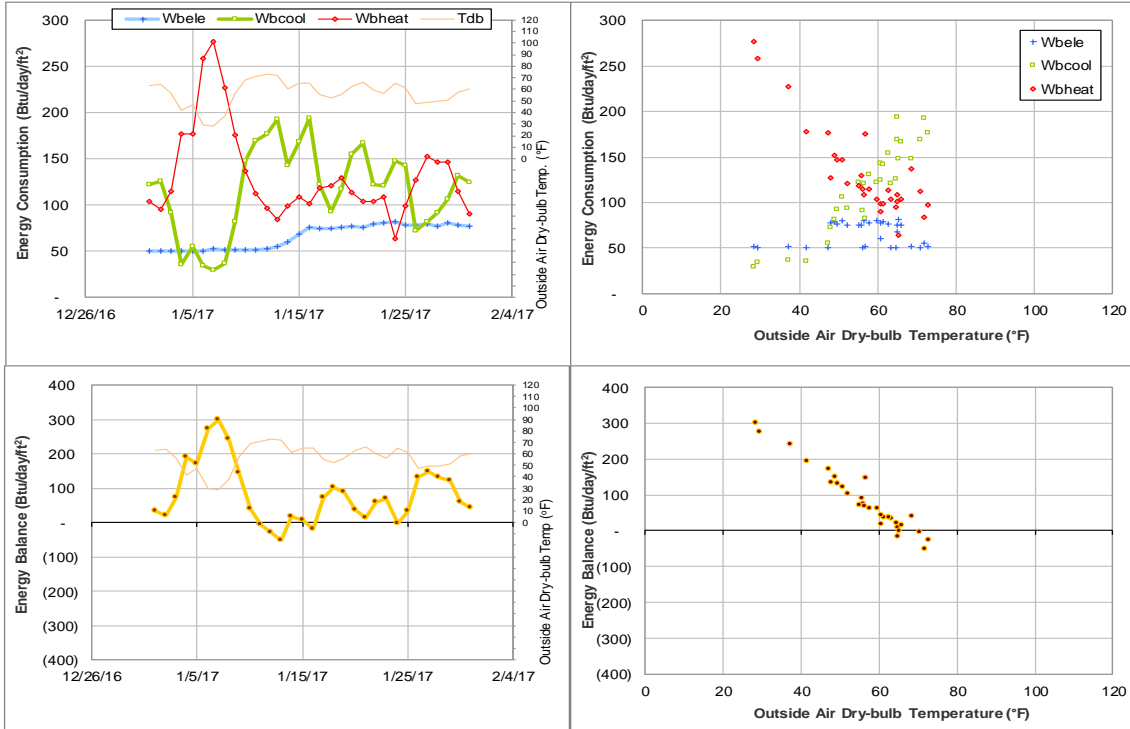


Figure IV-5 Eppright Residence Hall TAMU BLDG # 292 Energy Balance Plot during January 2017

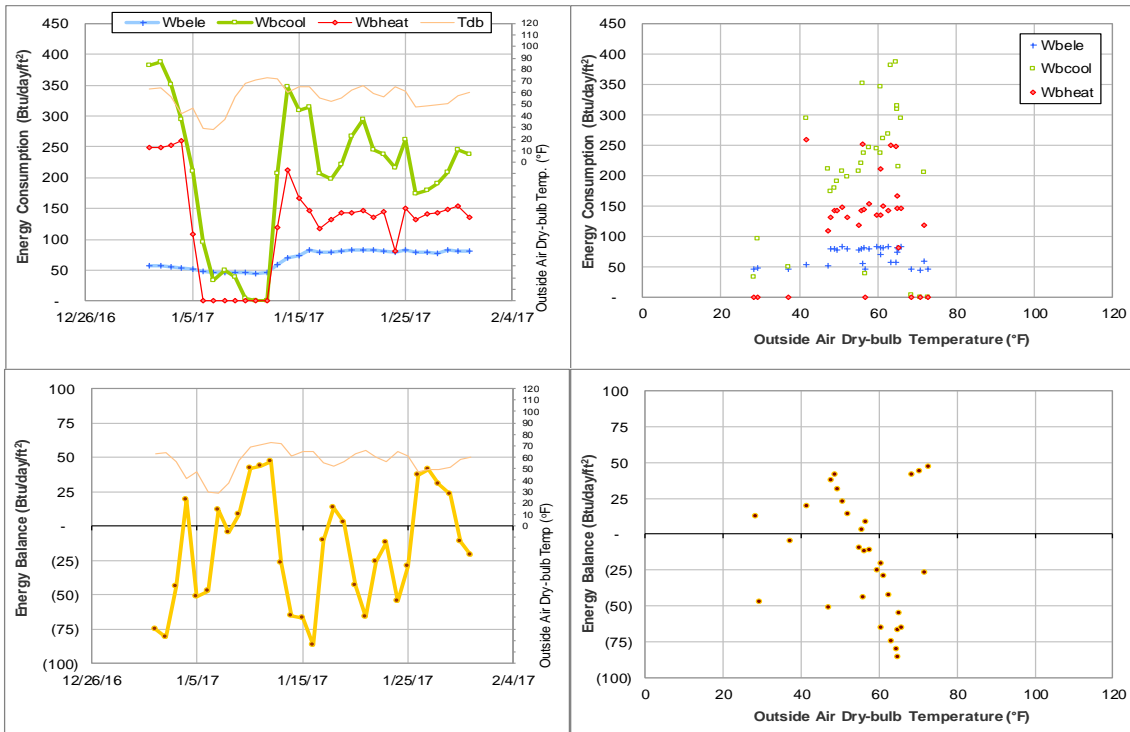


Figure IV-6 Appelt Residence Hall TAMU BLDG # 293 Energy Balance Plot during January 2017

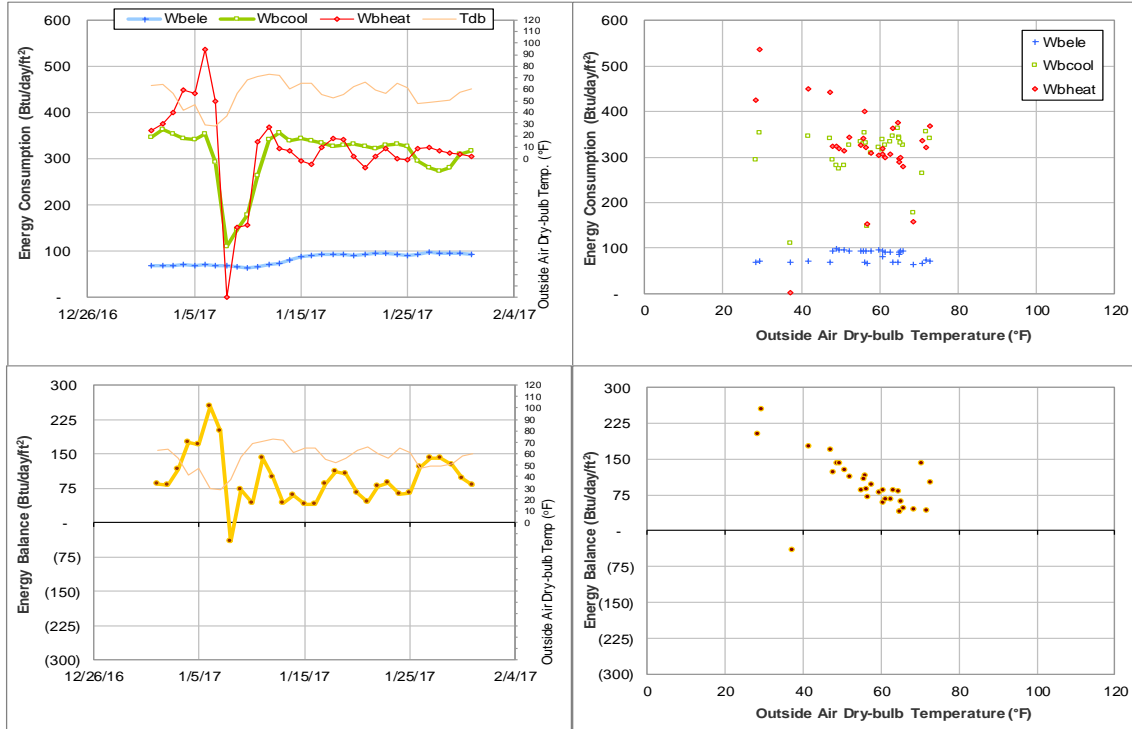


Figure IV-7 Lechner Residence Hall TAMU BLDG # 294 Energy Balance Plot during January 2017

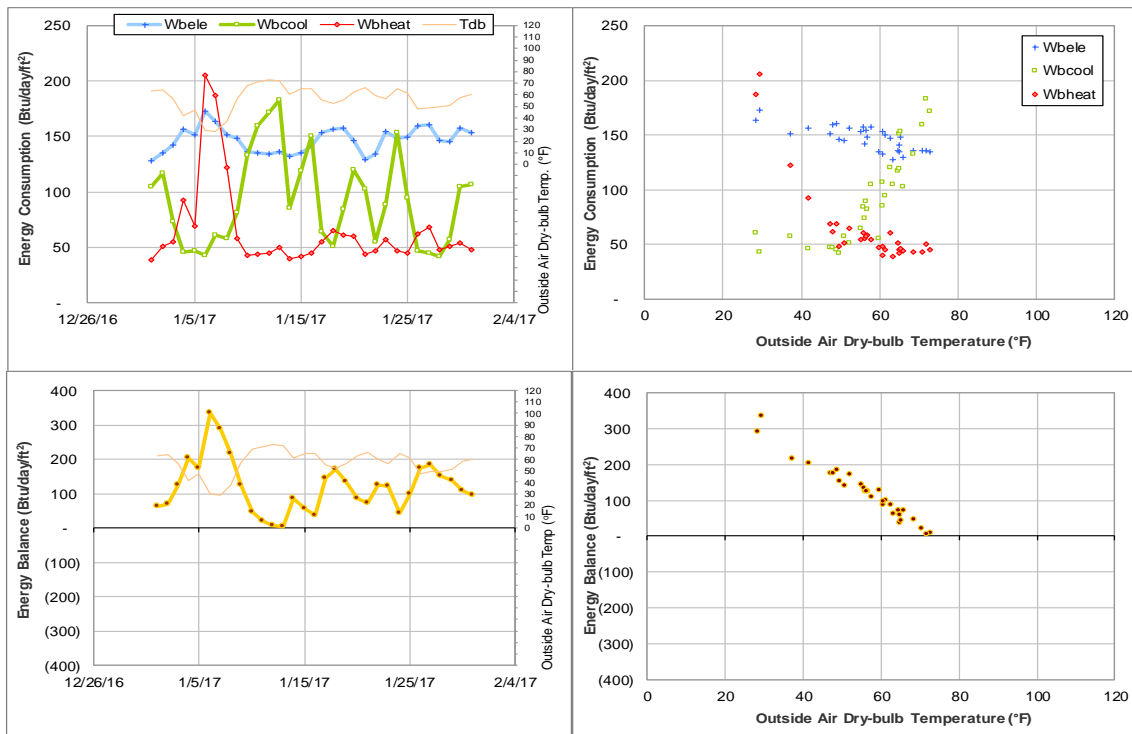


Figure IV-8 Mitchell Inst. for Fundamental Phys & Astronomy TAMU BLDG # 296 Energy Balance Plot during January 2017

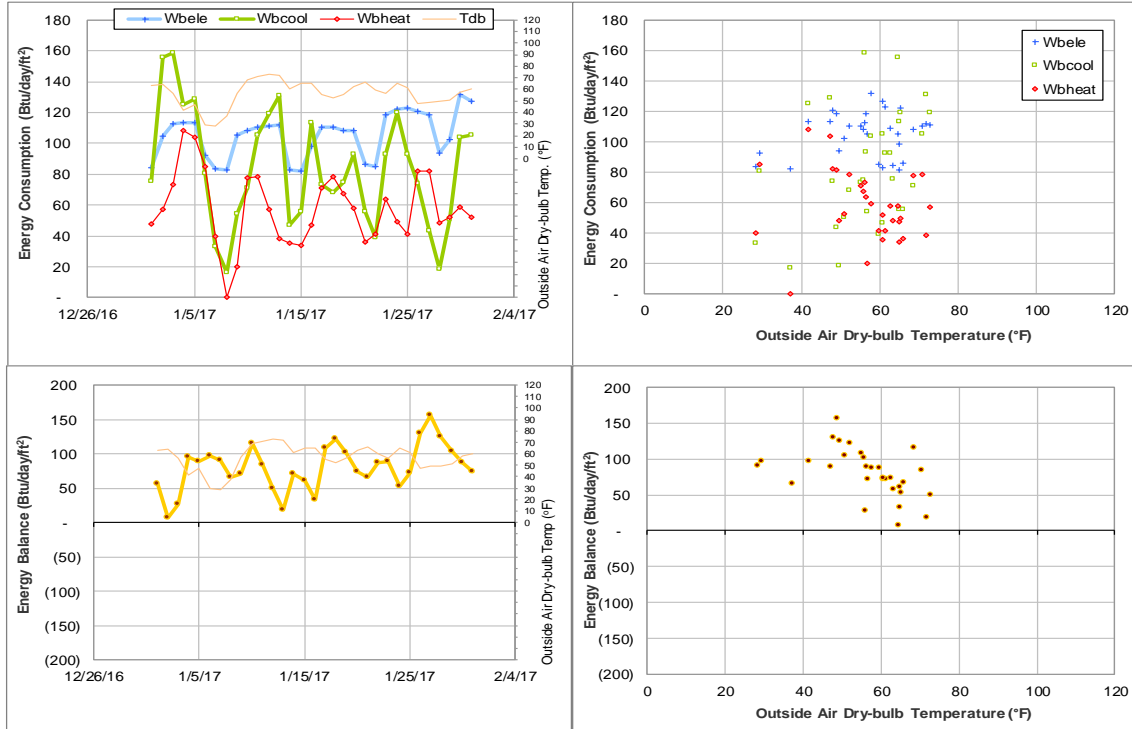


Figure IV-9 CE TTI Office & Lab Building TAMU BLDG # 325 Energy Balance Plot during January 2017

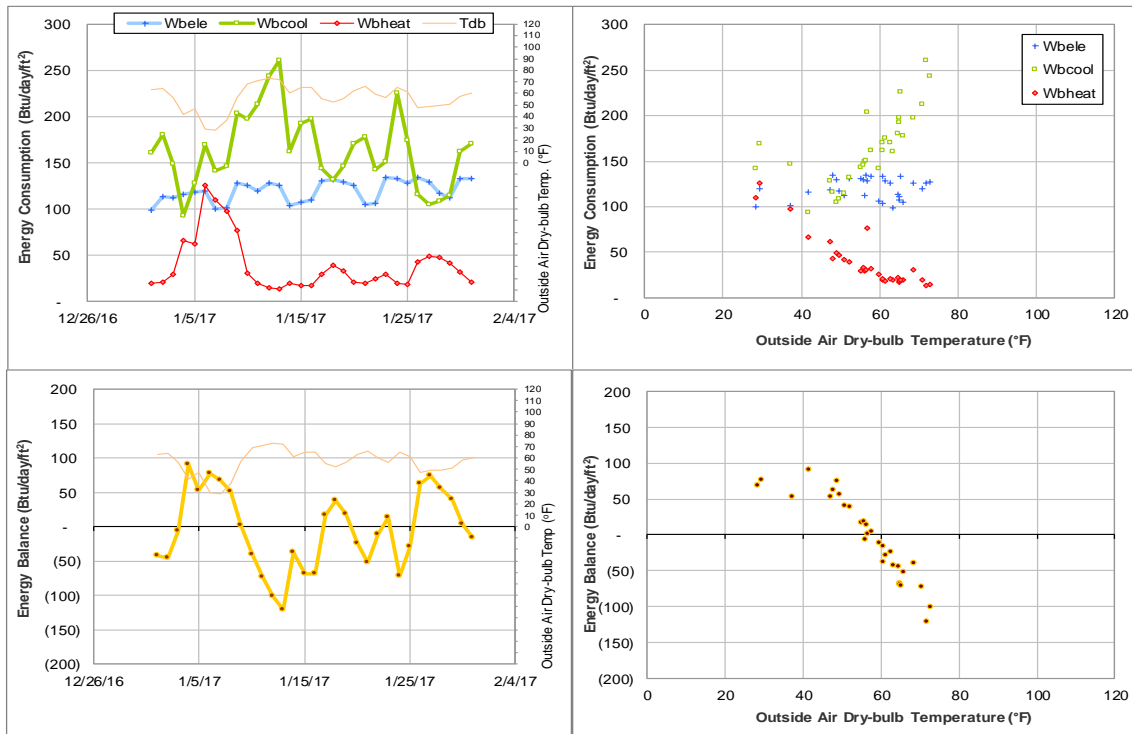


Figure IV-10 Bright Aerospace Building TAMU BLDG # 353 Energy Balance Plot during January 2017



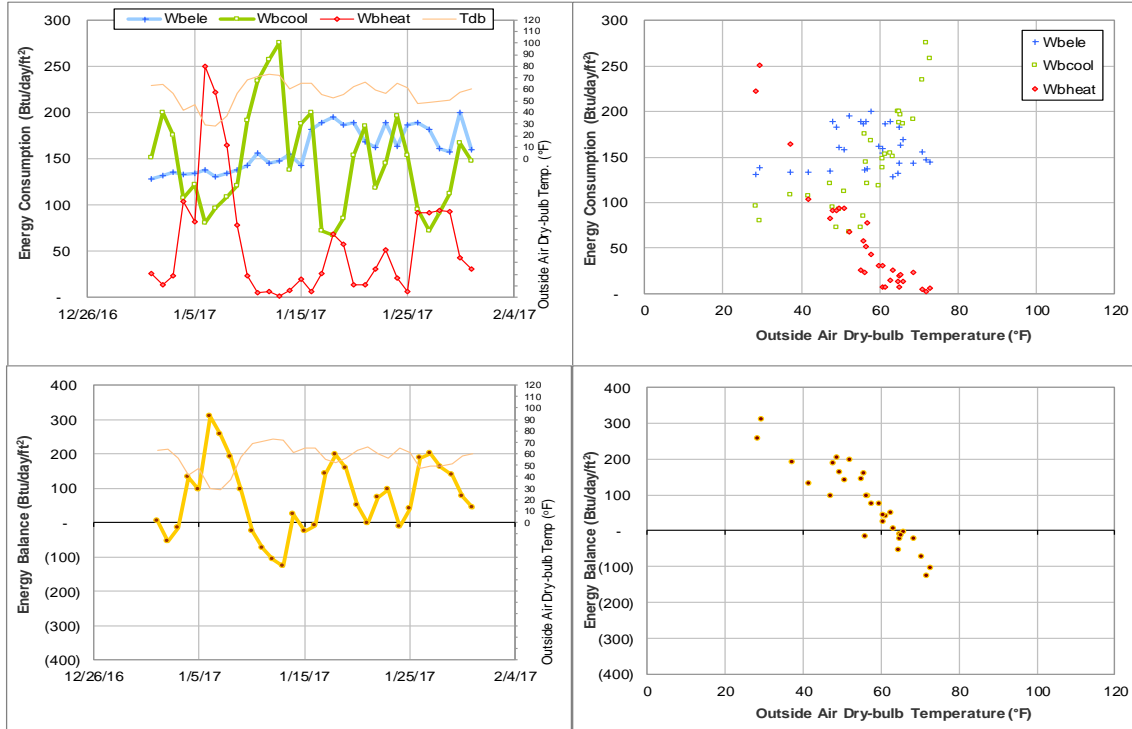


Figure IV-11 Davis Football Player Development Center TAMU BLDG # 358 Energy Balance Plot during January 2017

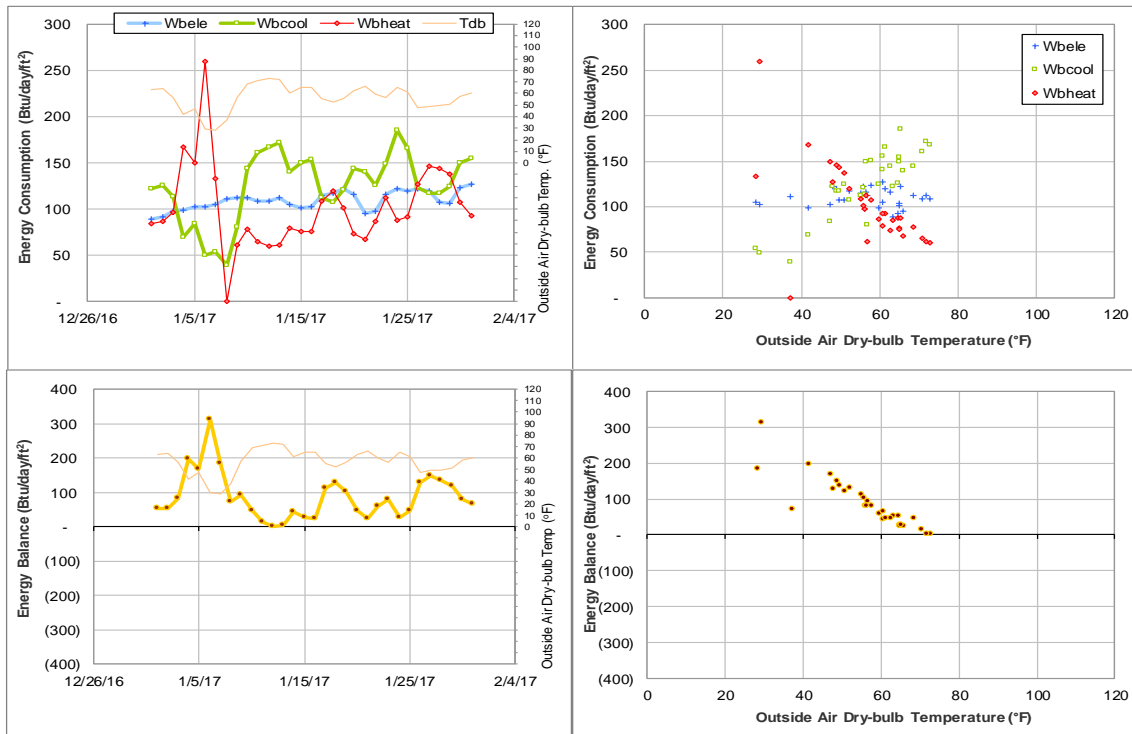


Figure IV-12 Architecture Building B&C TAMU BLDG # 359 and 432 Energy Balance Plot during January 2017

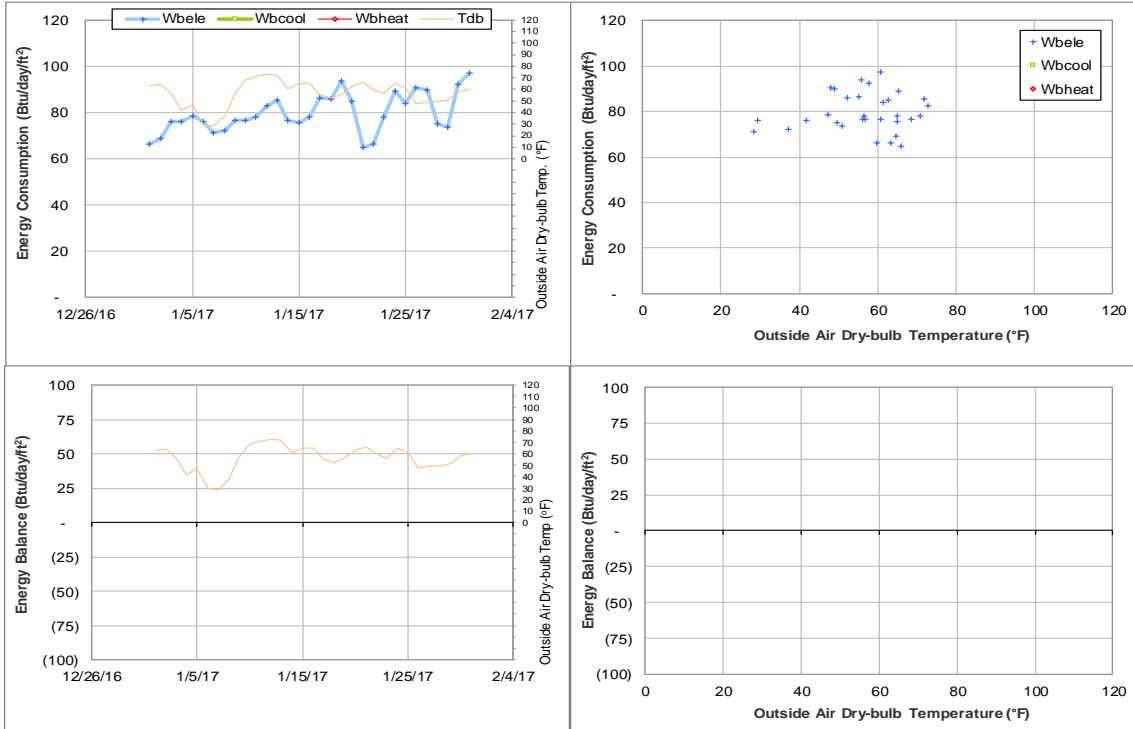


Figure IV-13 Architecture Building B TAMU BLDG # 359 Energy Balance Plot during January 2017

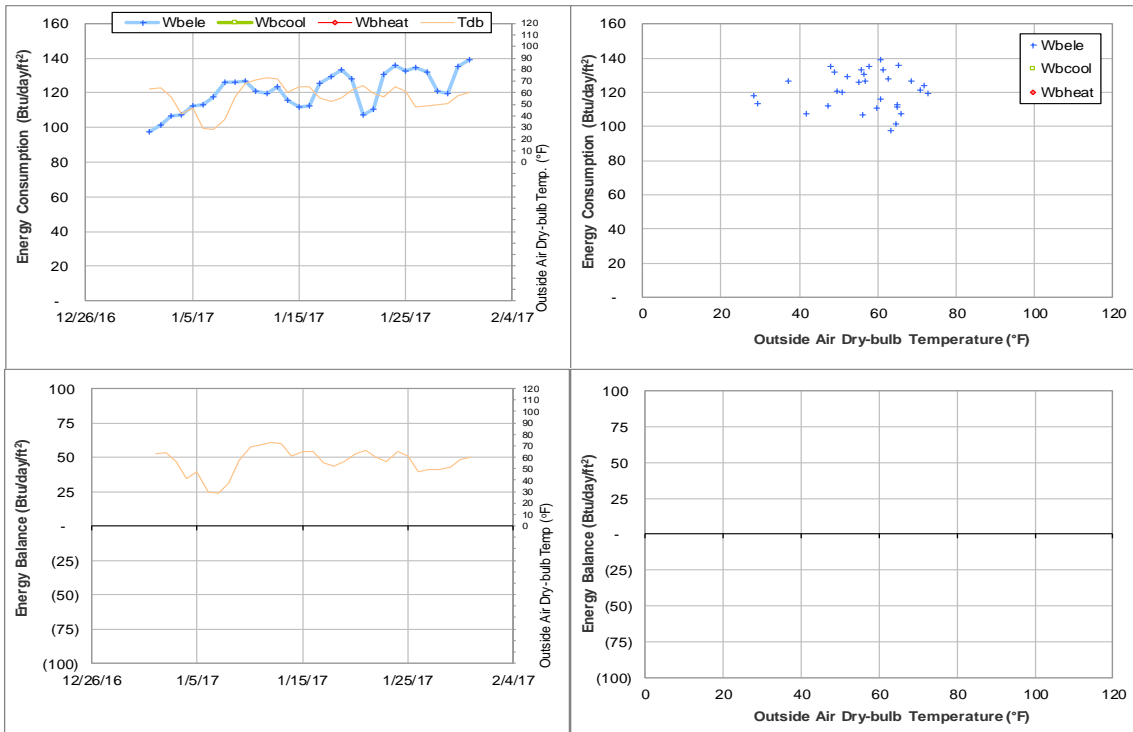


Figure IV-14 Architecture Building C TAMU BLDG # 432 Energy Balance Plot during January 2017

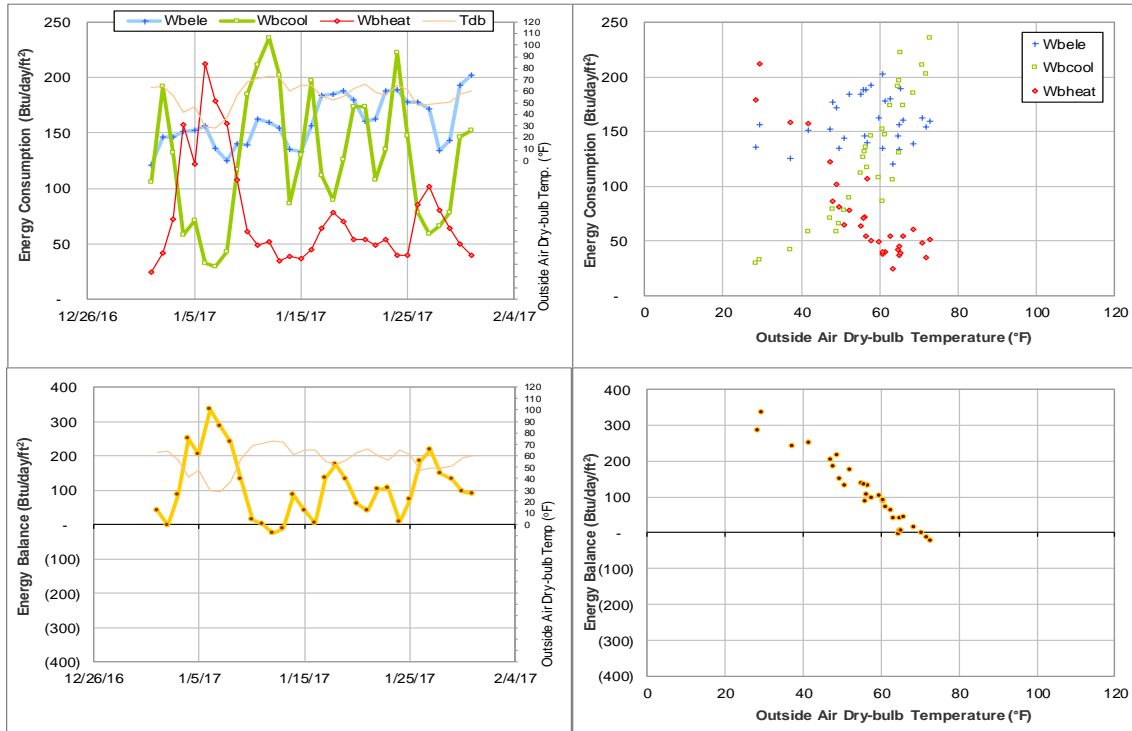


Figure IV-15 Bright Football Complex TAMU BLDG # 361 Energy Balance Plot during January 2017

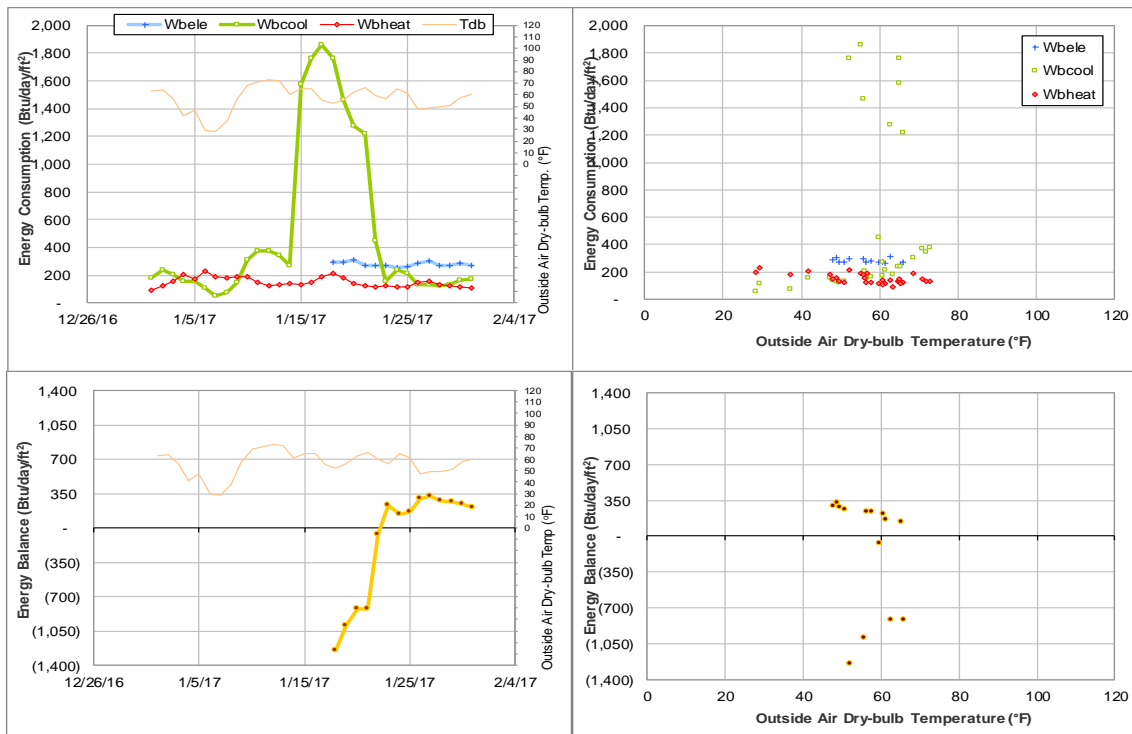


Figure IV-16 Kyle Field TAMU BLDG # 367 Energy Balance Plot during January 2017

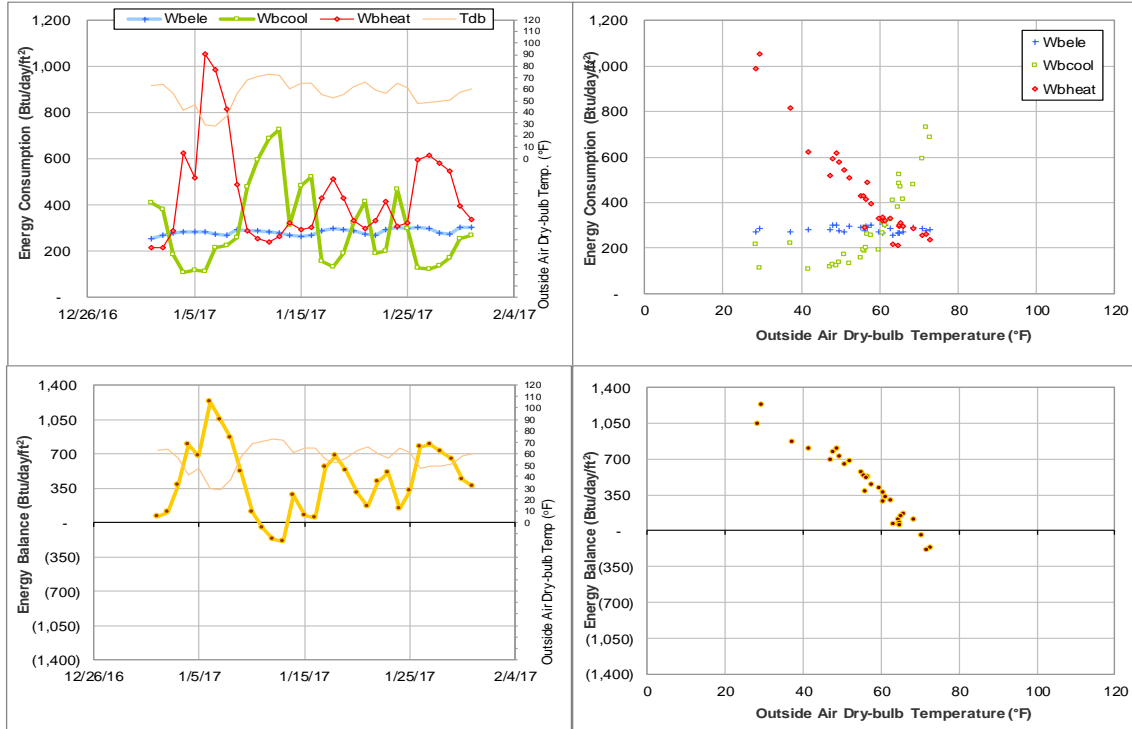


Figure IV-17 Chemistry Building Addition TAMU BLDG # 376 Energy Balance Plot during January 2017

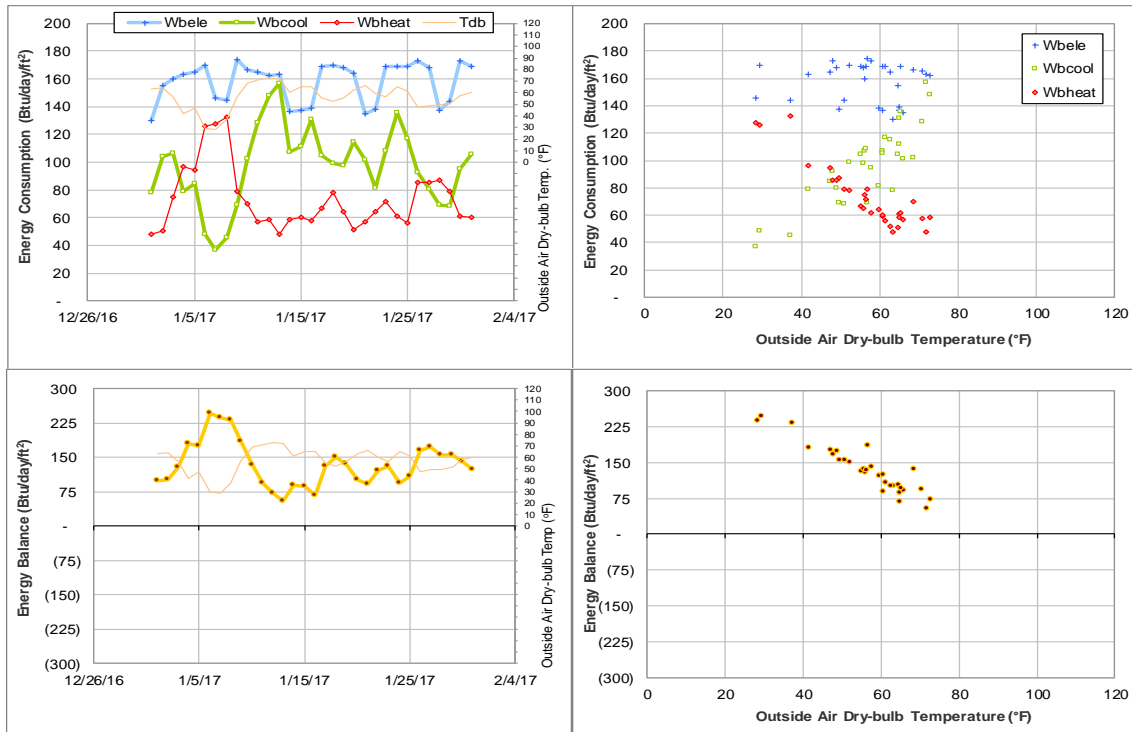


Figure IV-18 Koldus Building TAMU BLDG # 383 Energy Balance Plot during January 2017

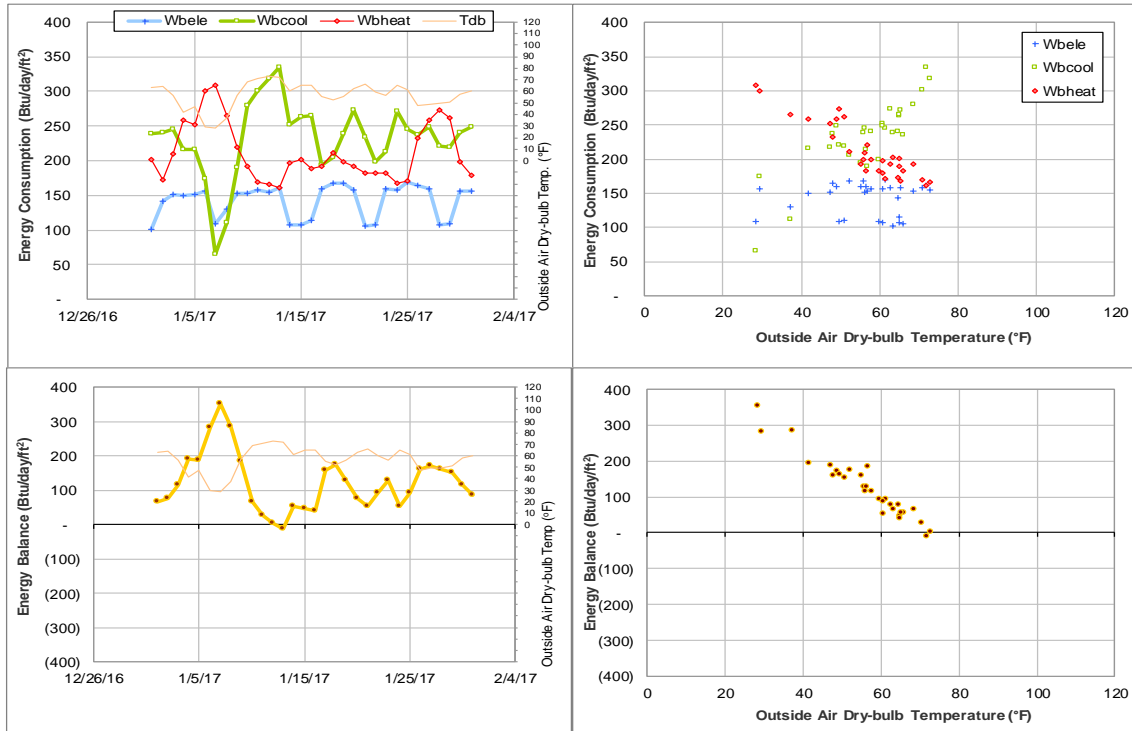


Figure IV-19 Sanders Corps of Cadets Center TAMU BLDG # 384 Energy Balance Plot during January 2017

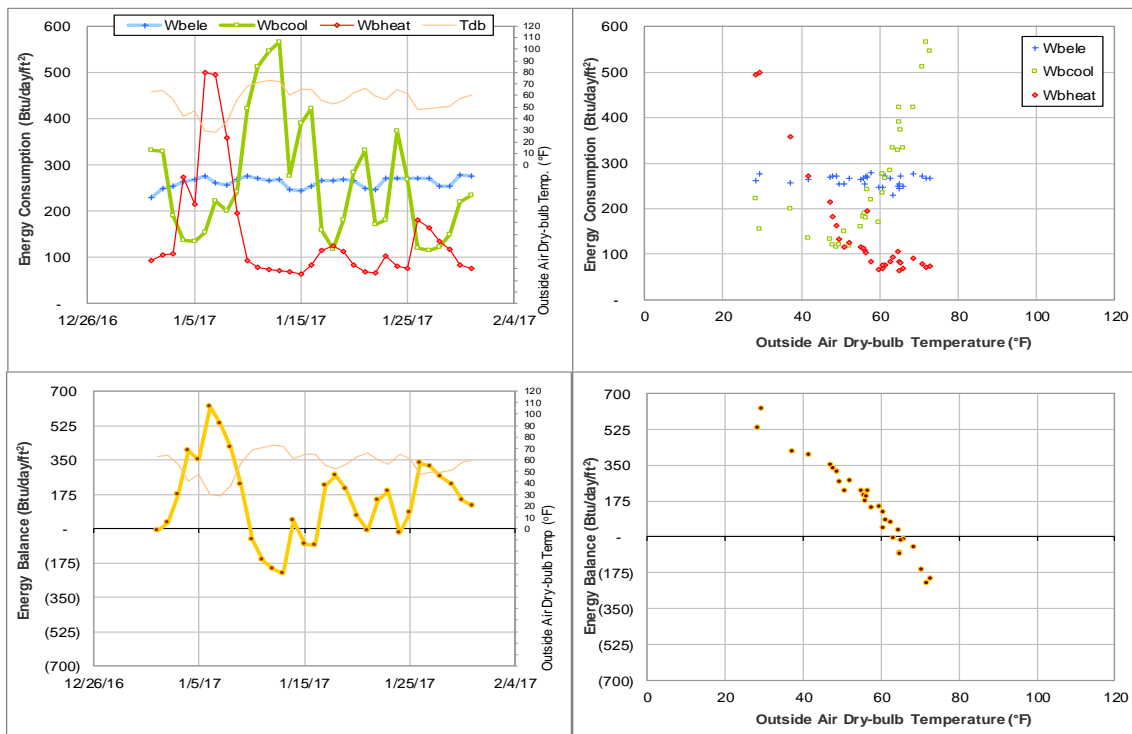


Figure IV-20 Jack E. Brown Chemical Engineering Building TAMU BLDG # 386 Energy Balance Plot during January 2017

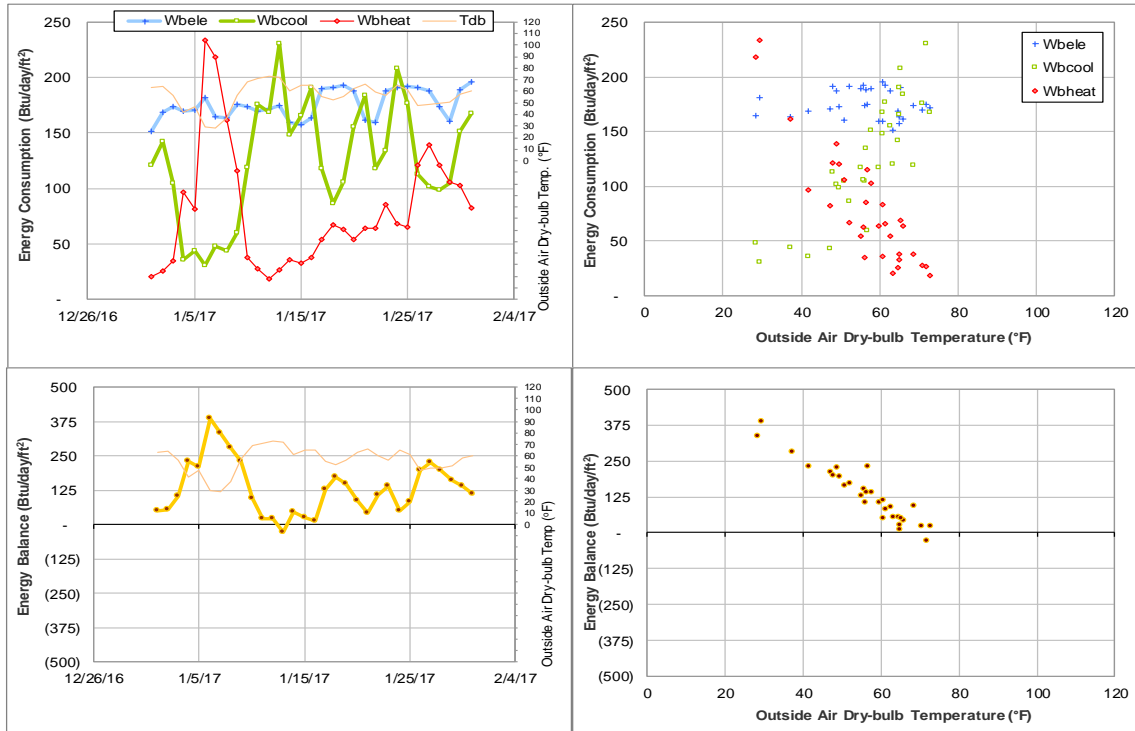


Figure IV-21 Richardson Petroleum Engineering Building TAMU BLDG # 387 Energy Balance Plot during January 2017

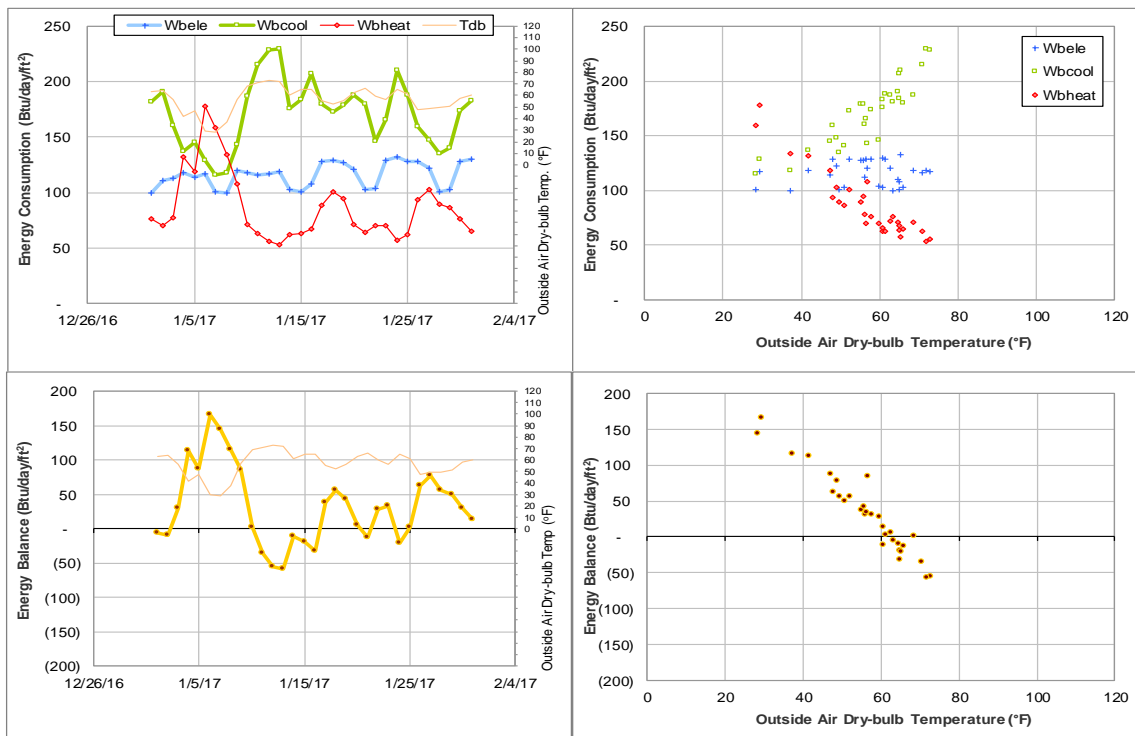


Figure IV-22 James J. Cain'51 and Mechanical Engineering Office Building TAMU BLDG # 391 Energy Balance Plot during January 2017

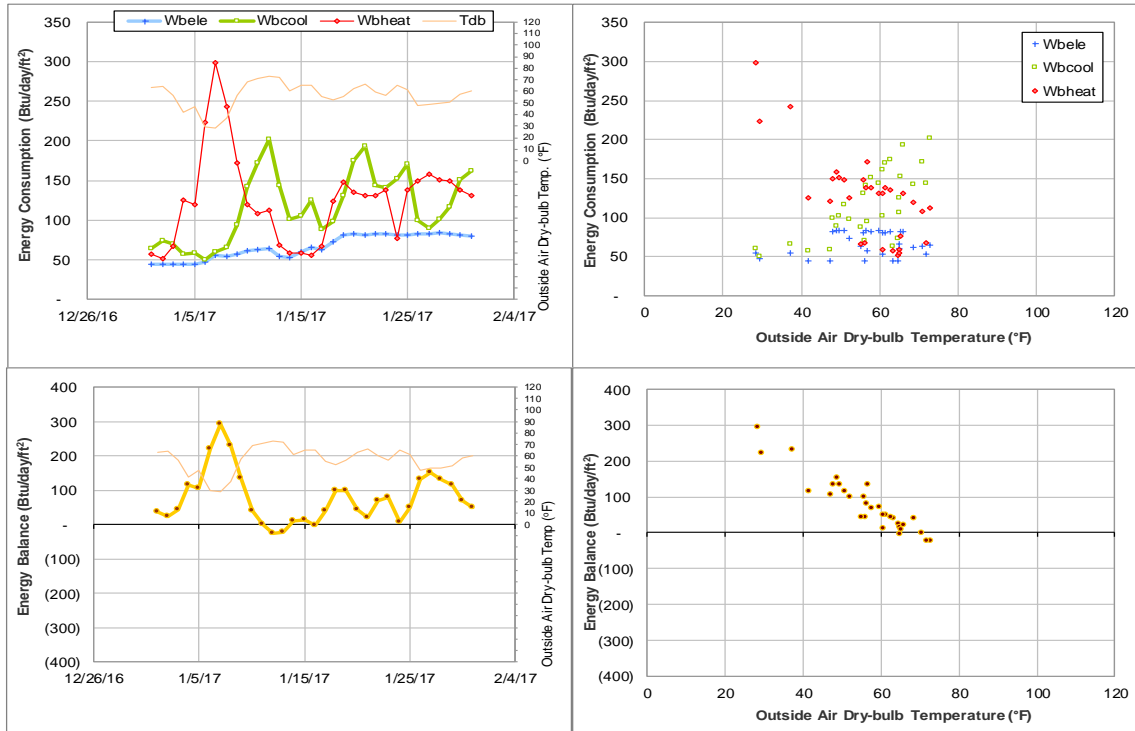


Figure IV-23 Underwood Residence Hall TAMU BLDG # 394 Energy Balance Plot during January 2017

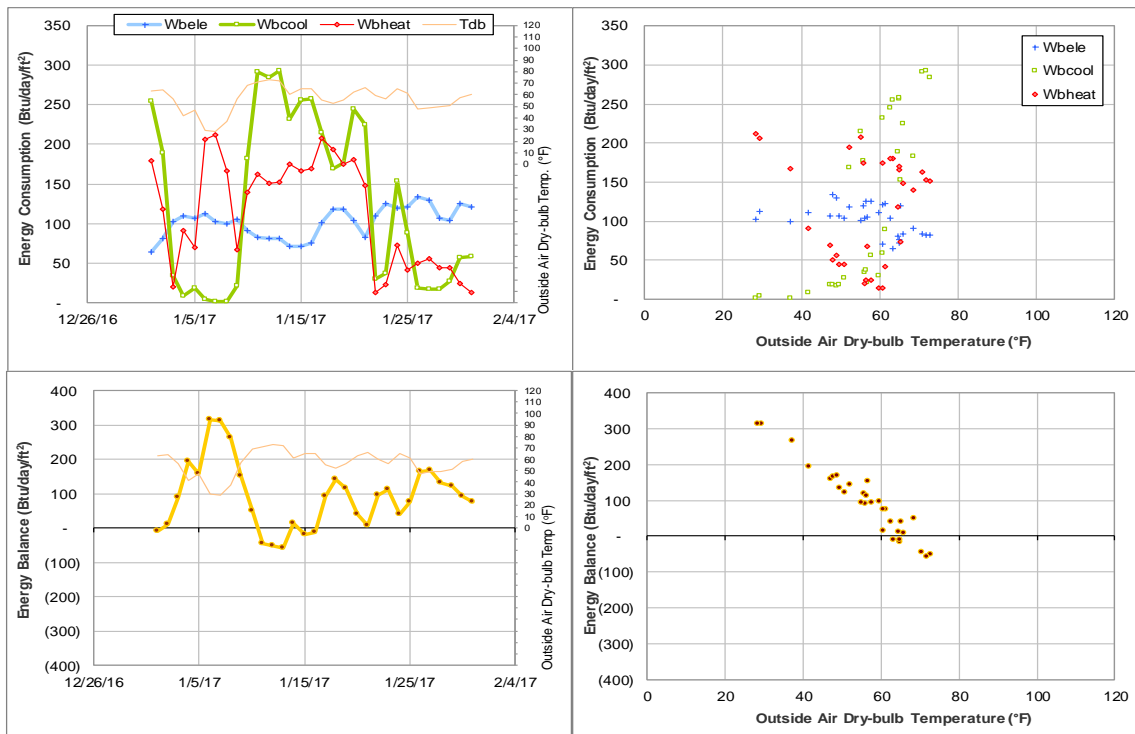


Figure IV-24 Langford Architecture Center Building A TAMU BLDG # 398 Energy Balance Plot during January 2017

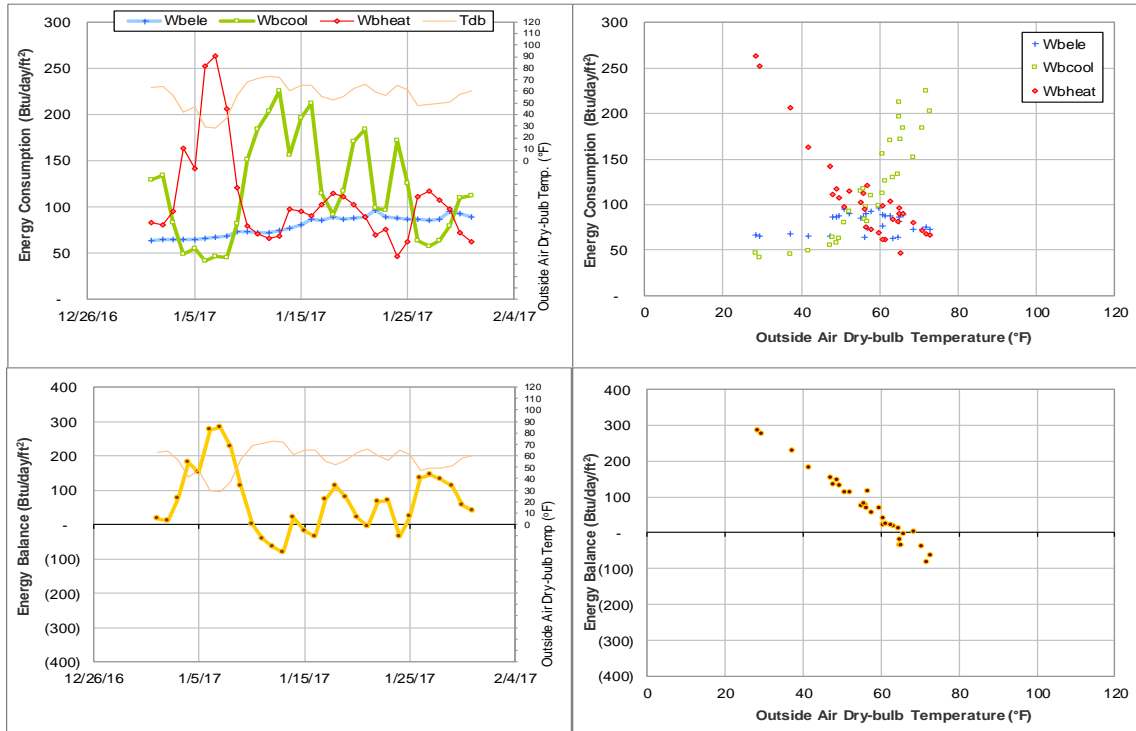


Figure IV-25 Spence Hall, Briggs Hall, and Ash II LLC TAMU BLDG # 400, 402, 1405 Energy Balance Plot during January 2017

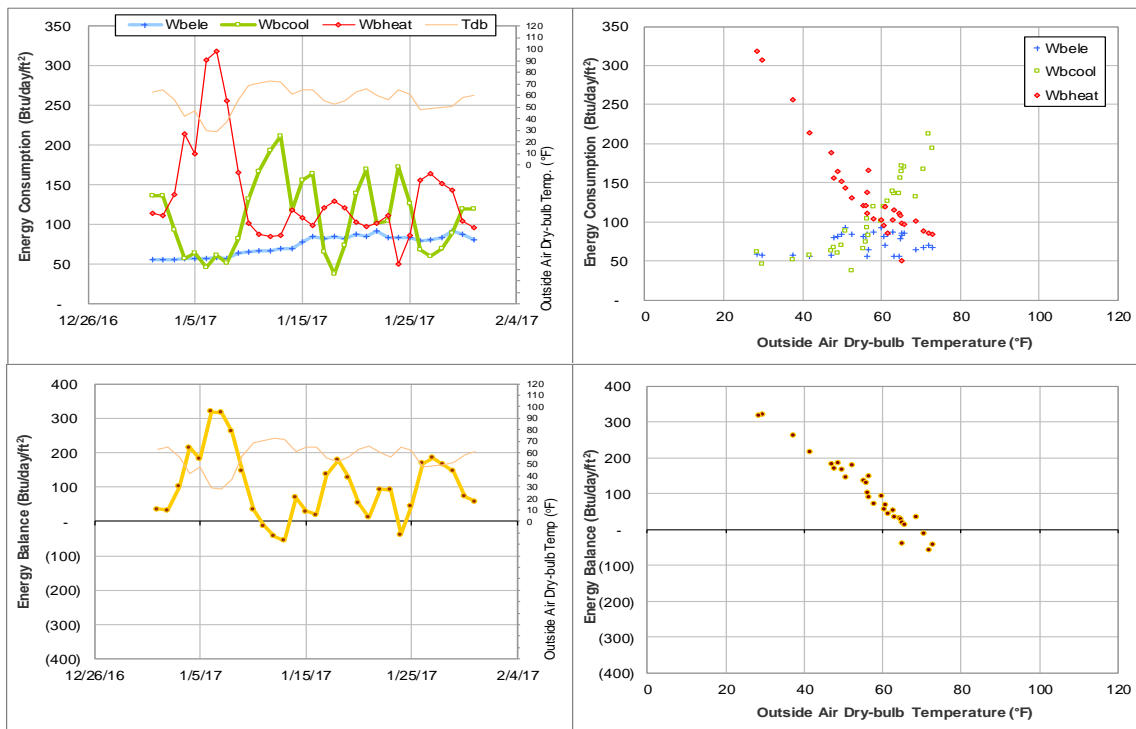


Figure IV-26 Spence Hall Dorm 1 TAMU BLDG # 400 Energy Balance Plot during January 2017



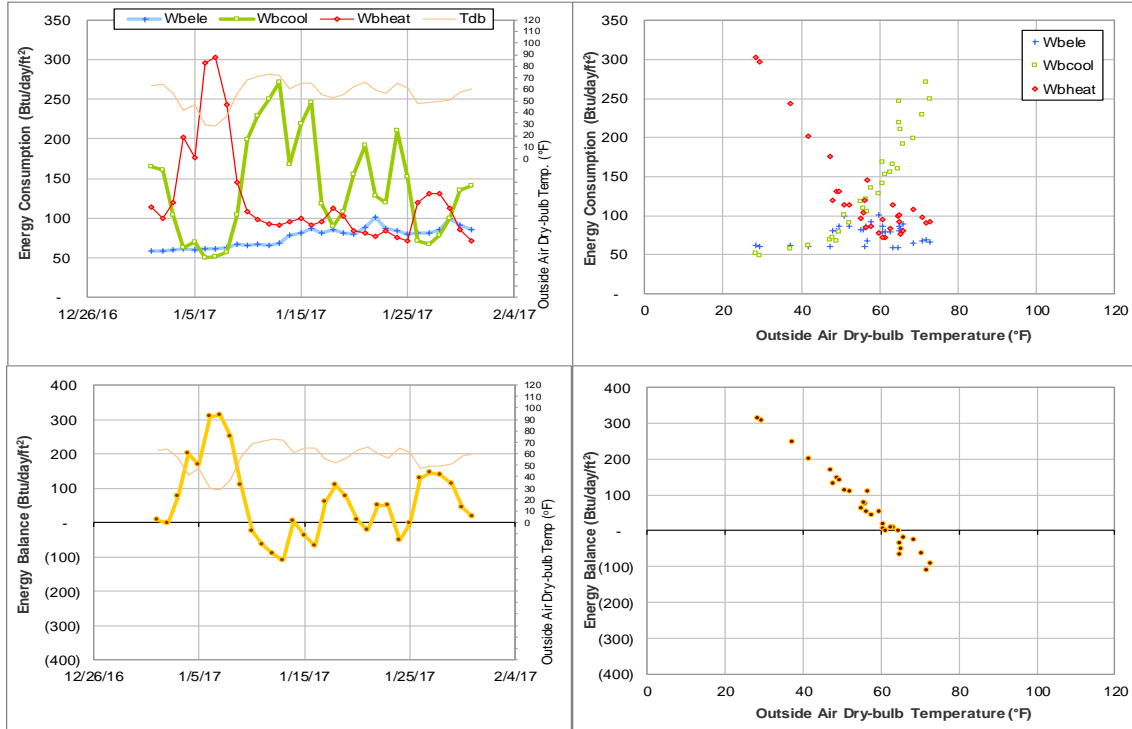


Figure IV-27 Briggs Hall Dorm 3 TAMU BLDG # 402 Energy Balance Plot during January 2017

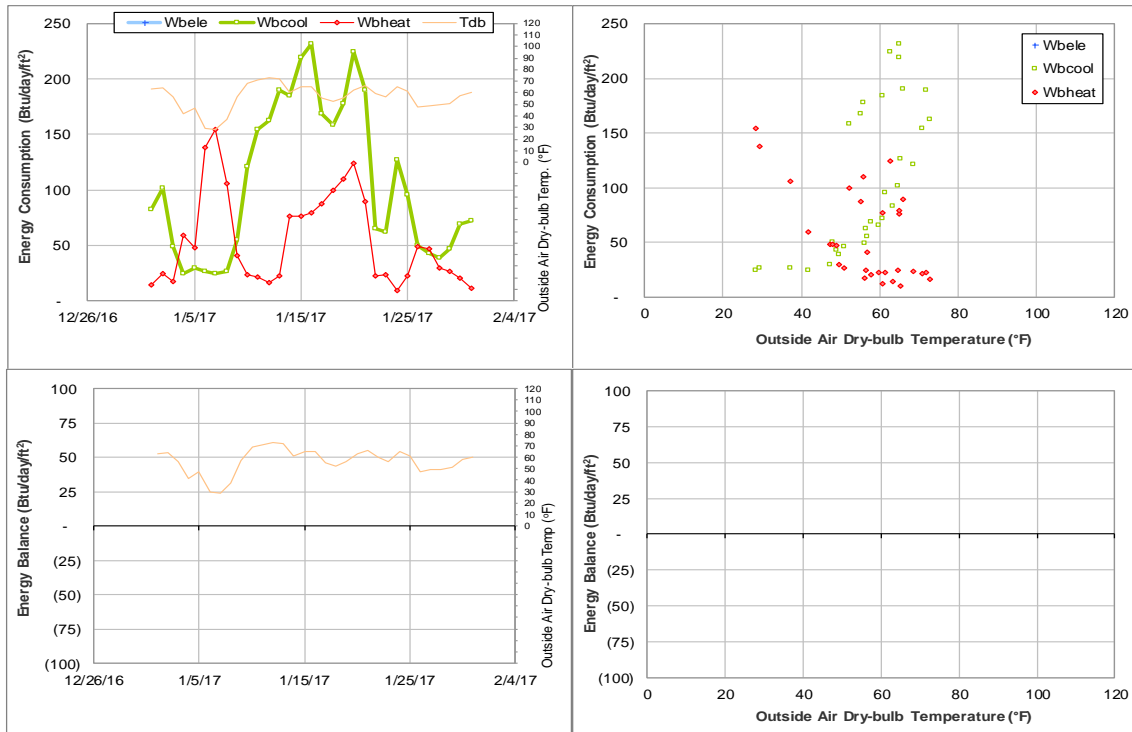


Figure IV-28 Ash II LLC TAMU BLDG # 1405 Energy Balance Plot during January 2017

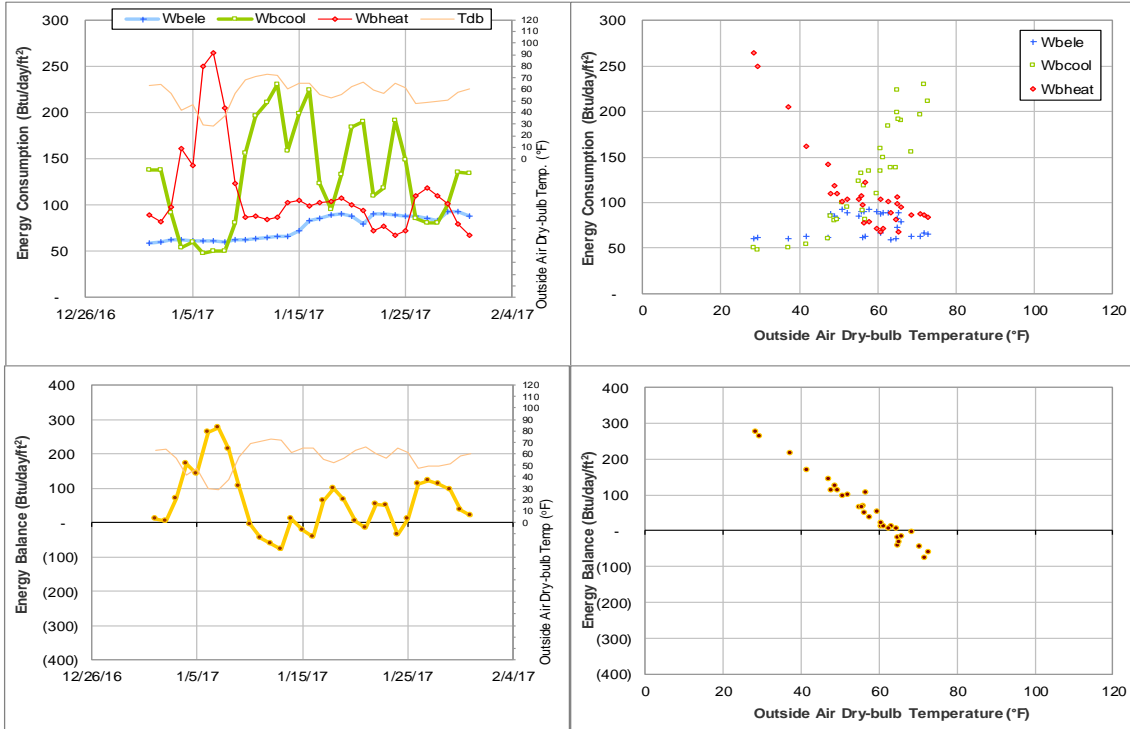


Figure IV-29 Kiest Hall, Fountain Hall, and Plank LLC TAMU BLDG # 401, 403, 1404 Energy Balance Plot during January 2017

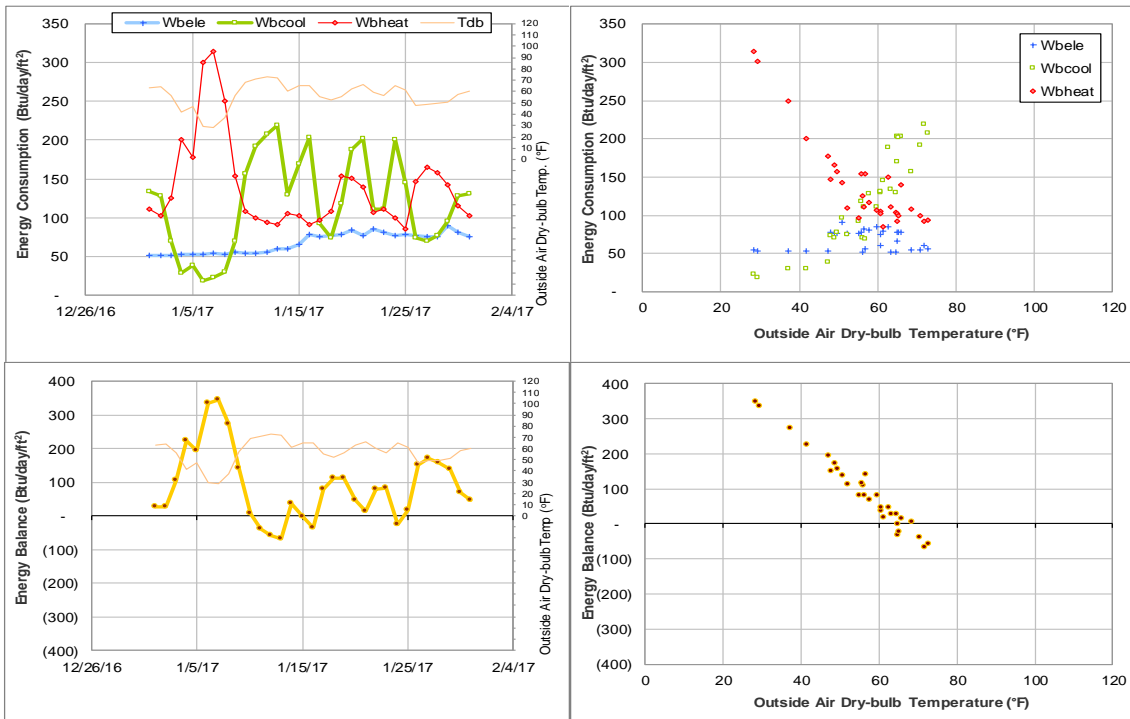


Figure IV-30 Kiest Hall Dorm 2 TAMU BLDG # 401 Energy Balance Plot during January 2017

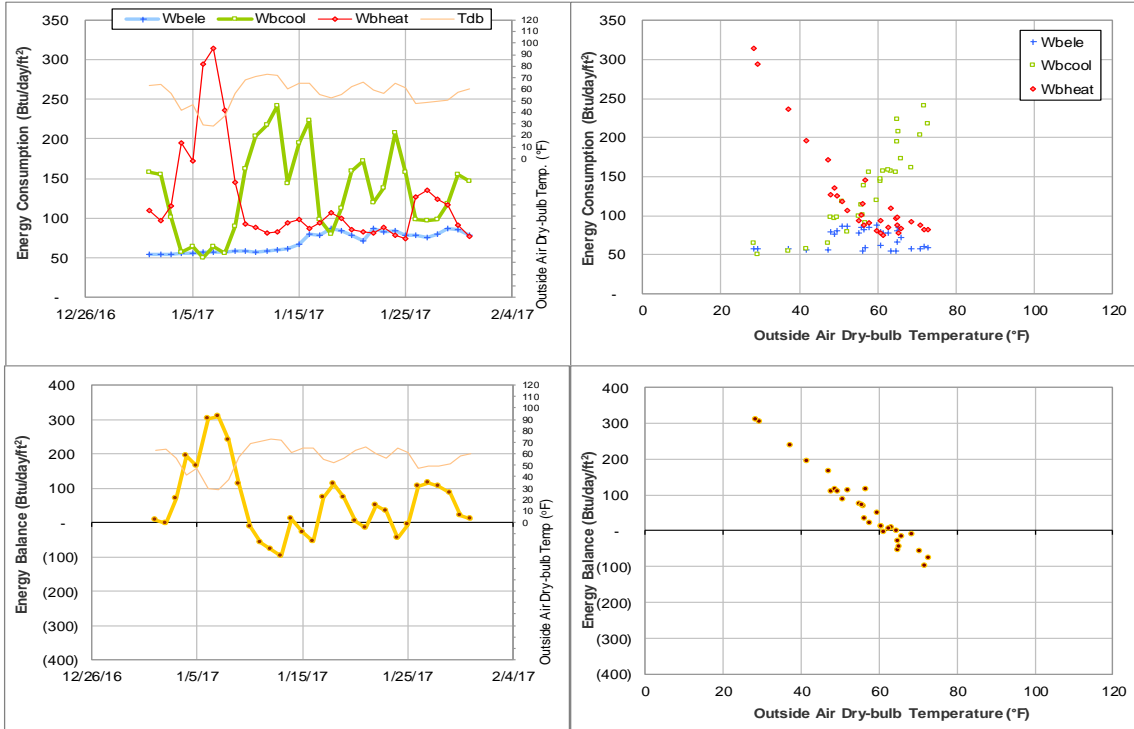


Figure IV-31 Fountain Hall Dorm 4 TAMU BLDG # 403 Energy Balance Plot during January 2017

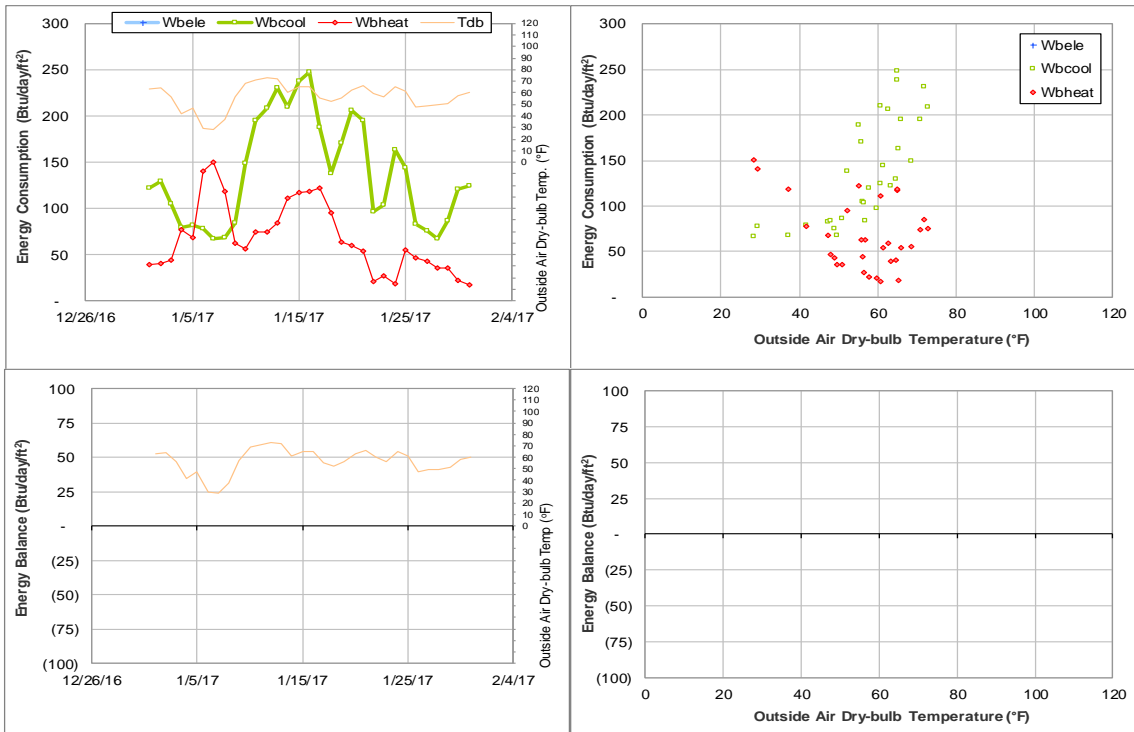


Figure IV-32 Plank LLC TAMU BLDG # 1404 Energy Balance Plot during January 2017

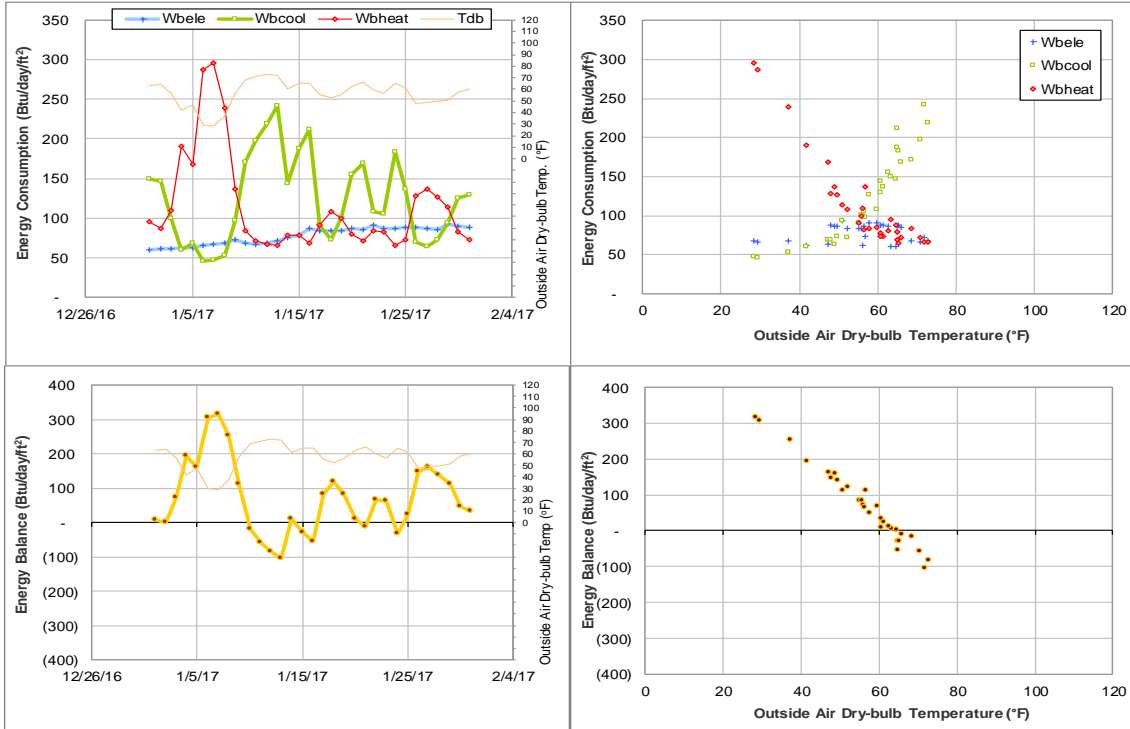


Figure IV-33 Gainer Hall, Leonard Hall and Ash LLC TAMU BLDG # 404, 406, 1403 Energy Balance Plot during January 2017

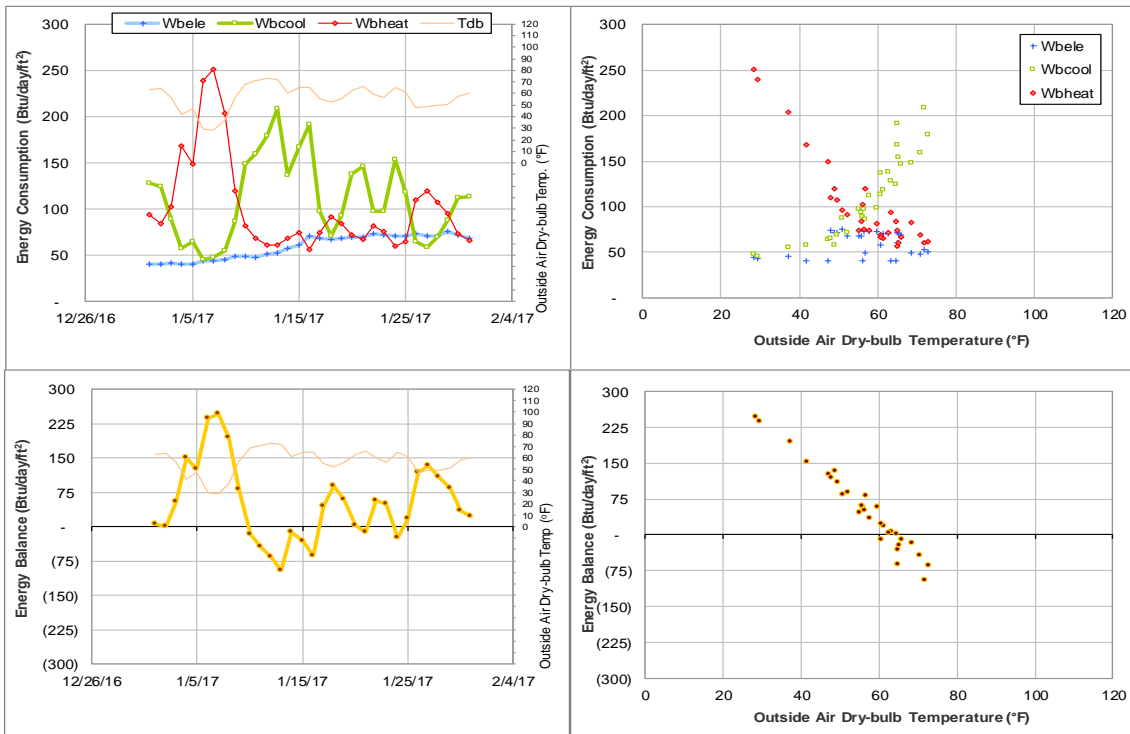


Figure IV-34 Gainer Hall Dorm 5 TAMU BLDG # 404 Energy Balance Plot during January 2017

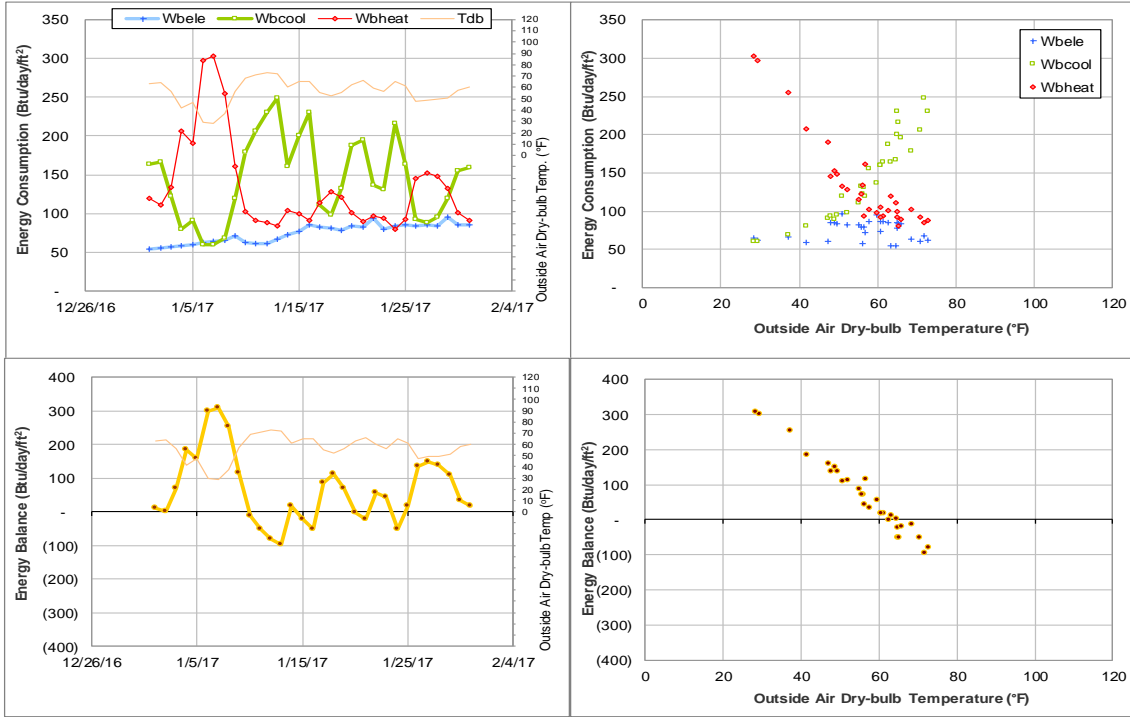


Figure IV-35 Leonard Hall - Dorm 7 TAMU BLDG # 406 Energy Balance Plot during January 2017

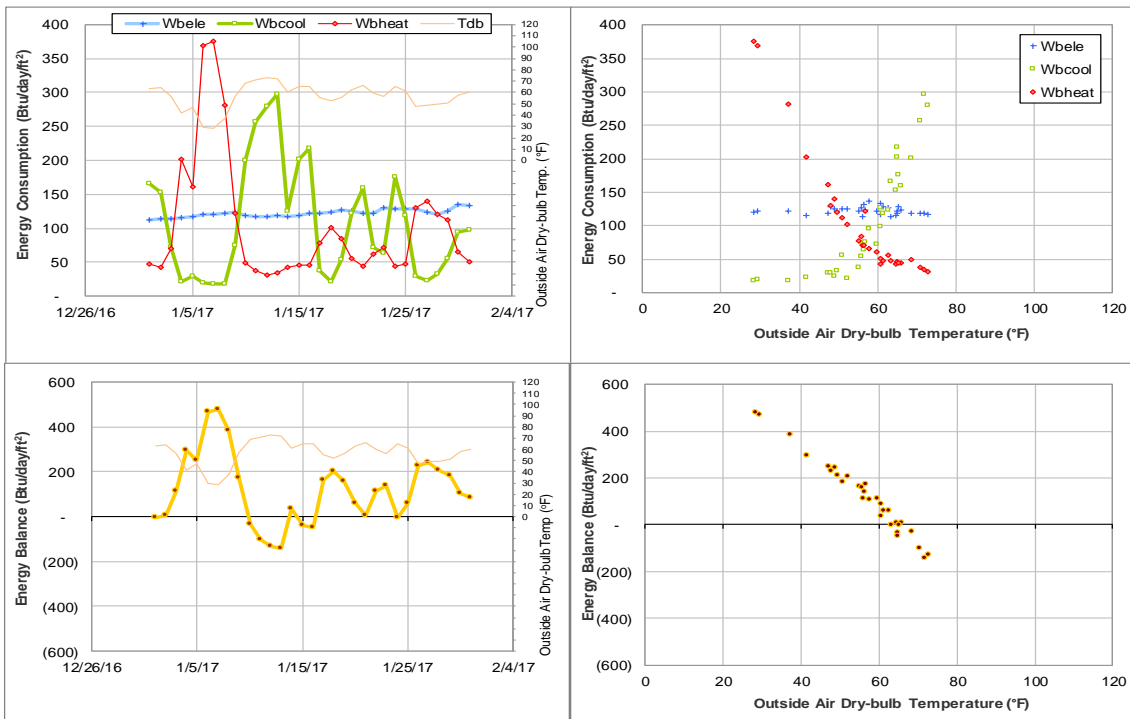


Figure IV-36 H. Grady Ash, Jr. '58 Leadership Learning Center TAMU BLDG # 1403 Energy Balance Plot during January 2017

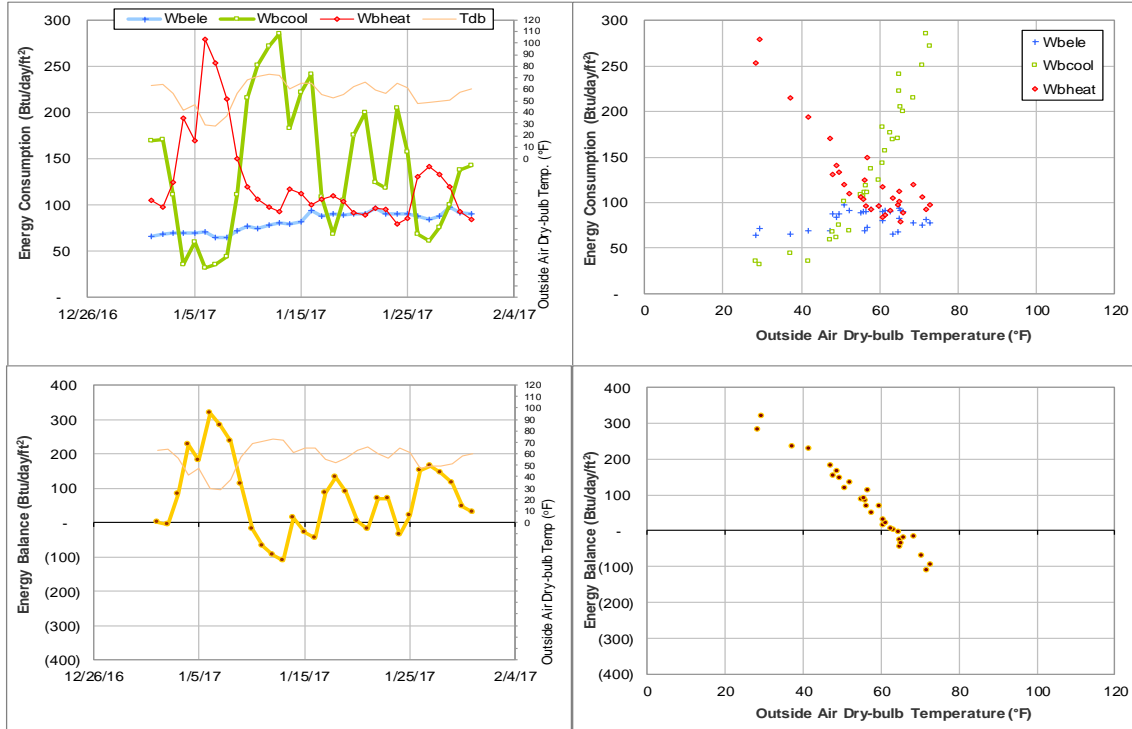


Figure IV-37 Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center TAMU BLDG # 405, 407, 1402 Energy Balance Plot during January 2017

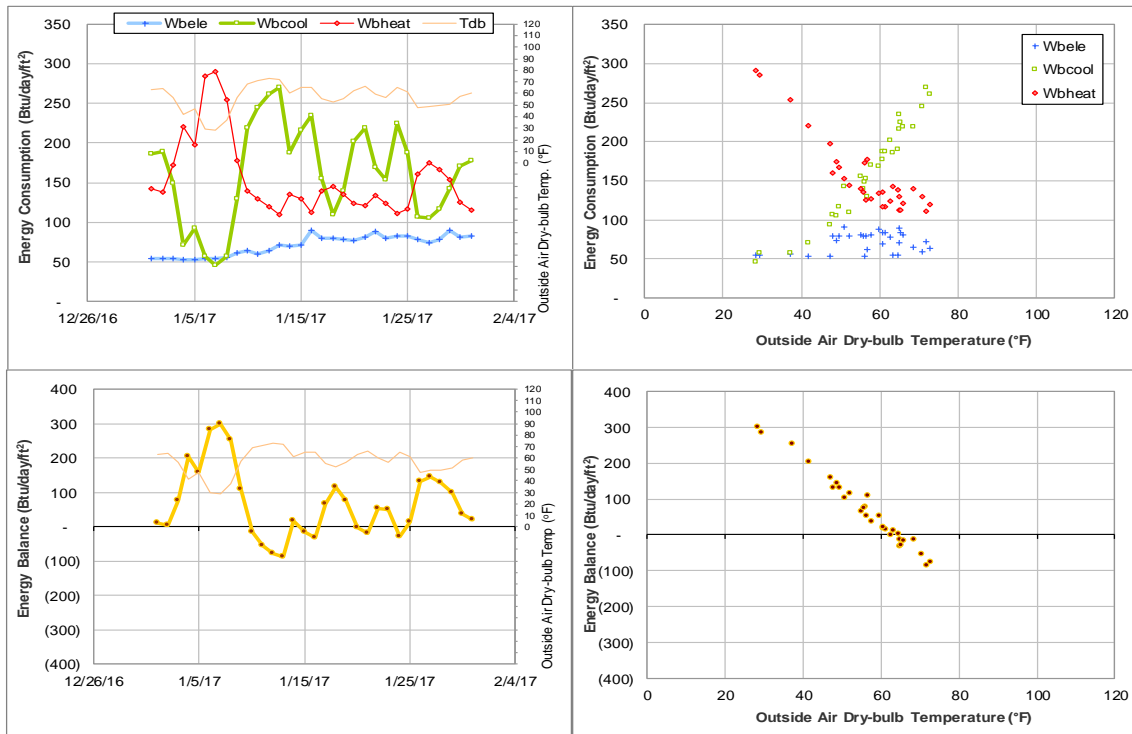


Figure IV-38 Lacy Hall - Dorm 6 TAMU BLDG # 405 Energy Balance Plot during January 2017

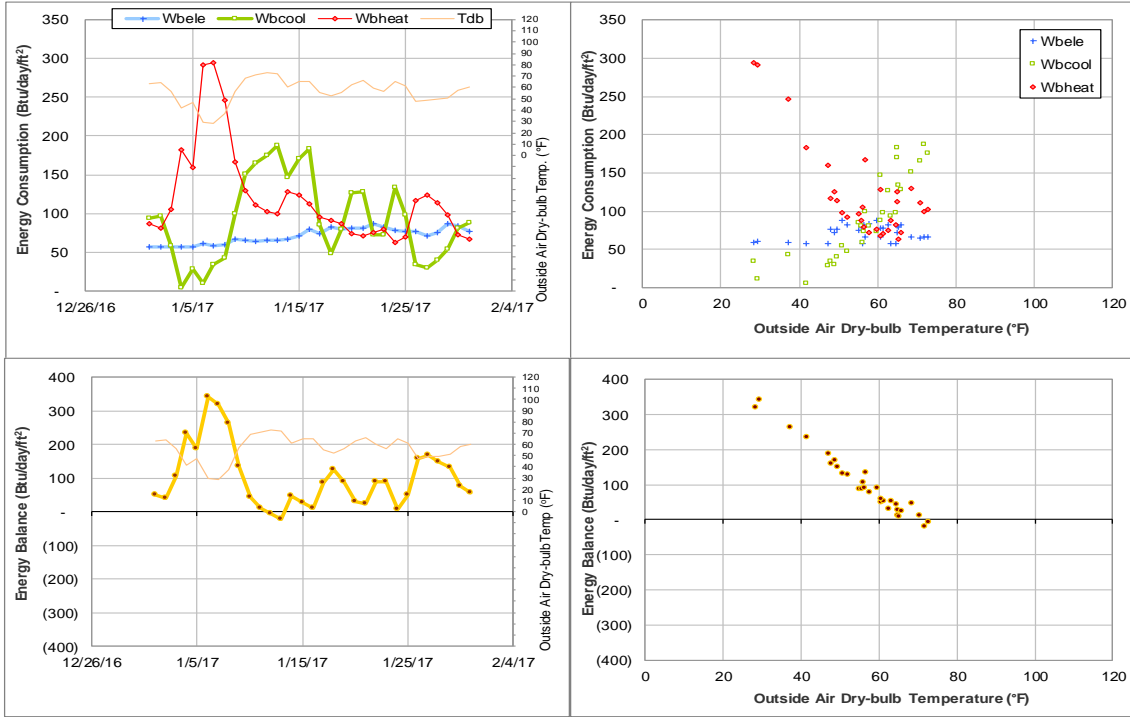


Figure IV-39 Harrell Hall - Dorm 8 TAMU BLDG # 407 Energy Balance Plot during January 2017

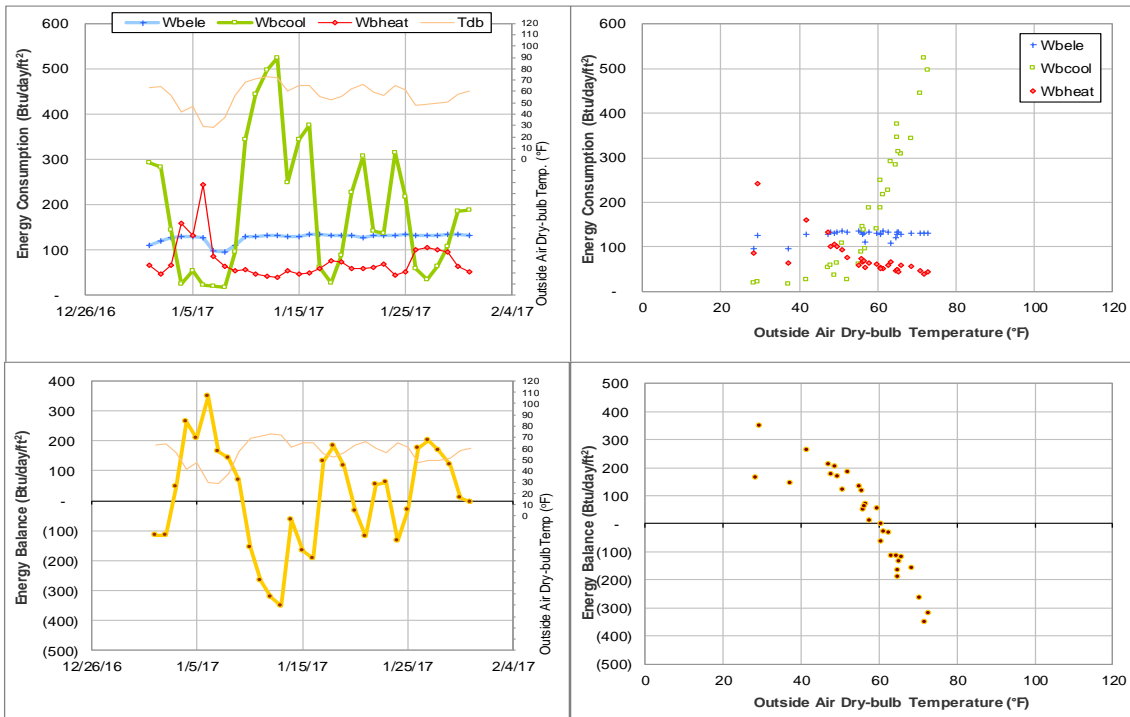


Figure IV-40 Buzbee Leadership Learning Center TAMU BLDG # 1402 Energy Balance Plot during January 2017

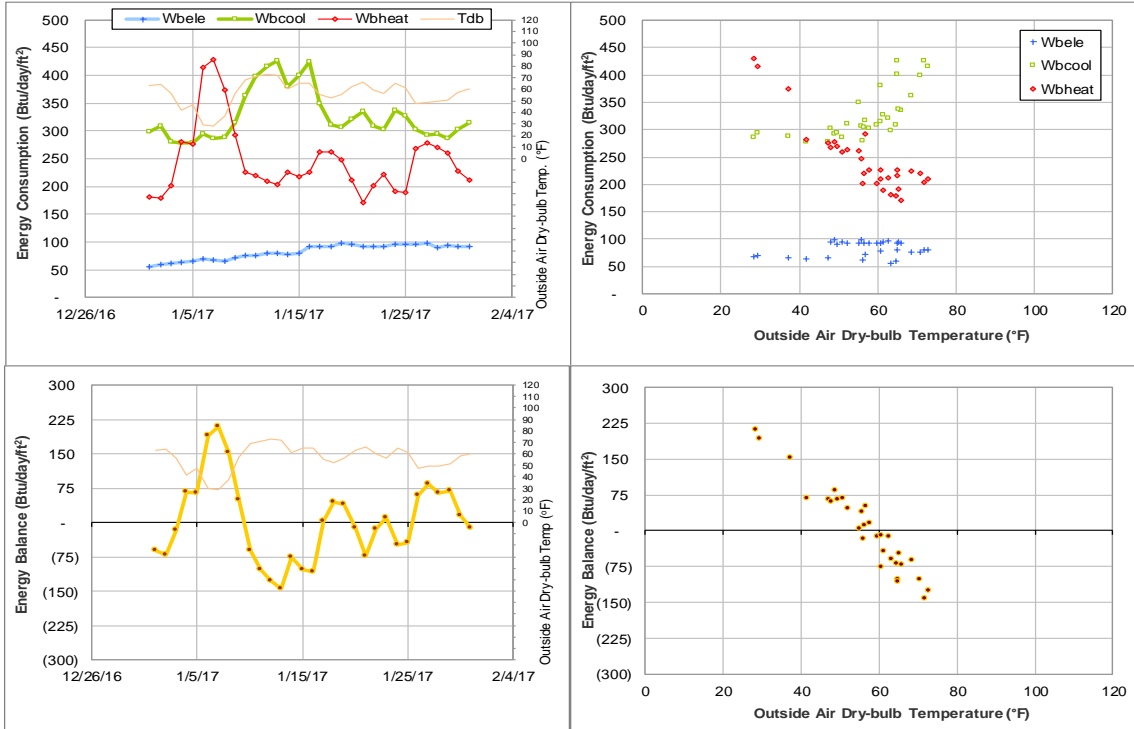


Figure IV-41 Moses Residence Hall TAMU BLDG # 412 Energy Balance Plot during January 2017

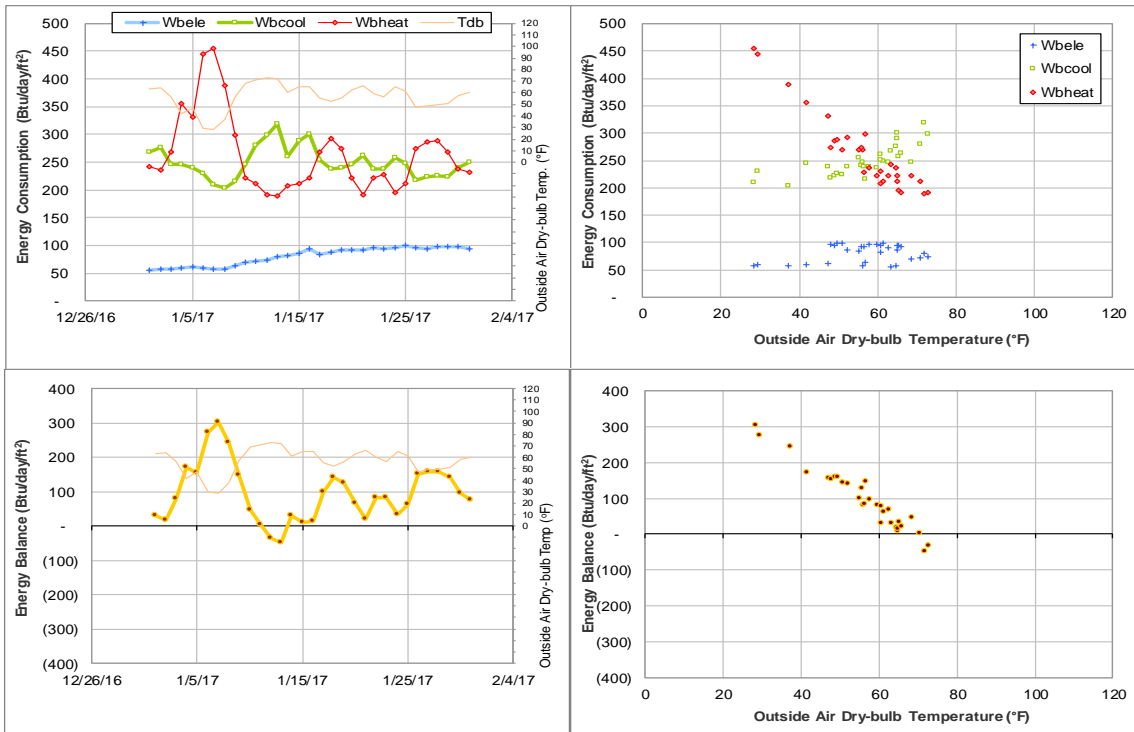


Figure IV-42 Davis-Gary Residence Hall TAMU BLDG # 415 Energy Balance Plot during January 2017



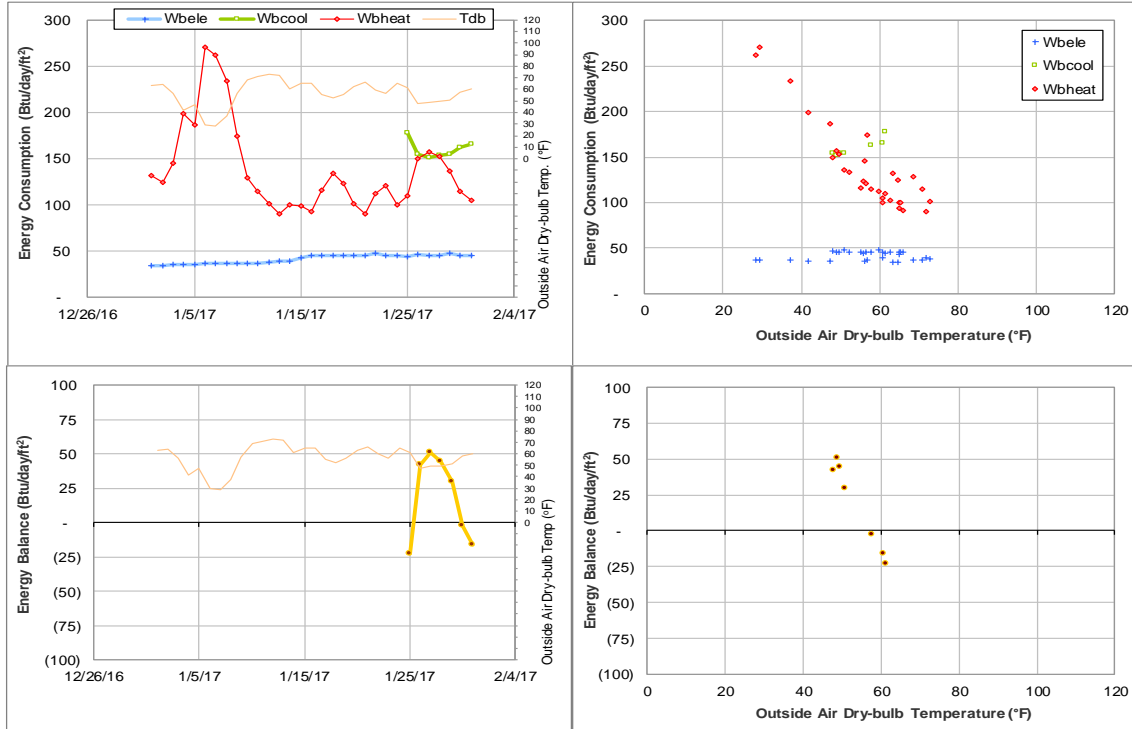


Figure IV-43 Legett Residence Hall TAMU BLDG # 419 Energy Balance Plot during January 2017

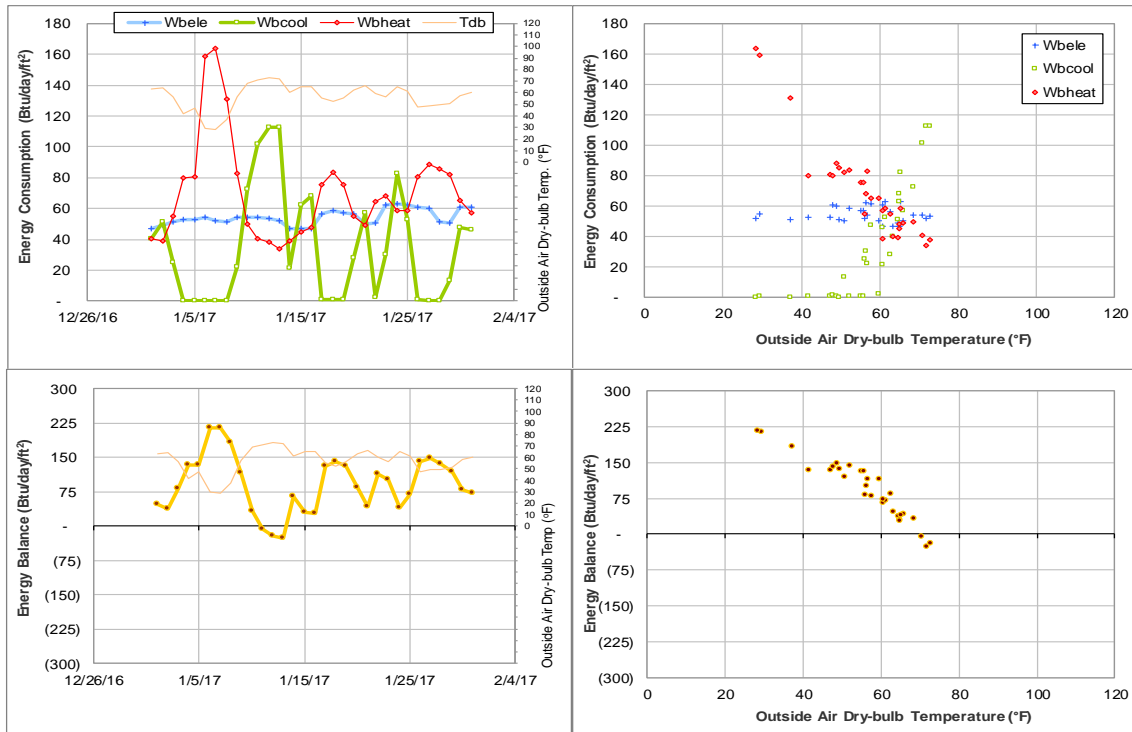


Figure IV-44 Milner Hall TAMU BLDG # 420 Energy Balance Plot during January 2017

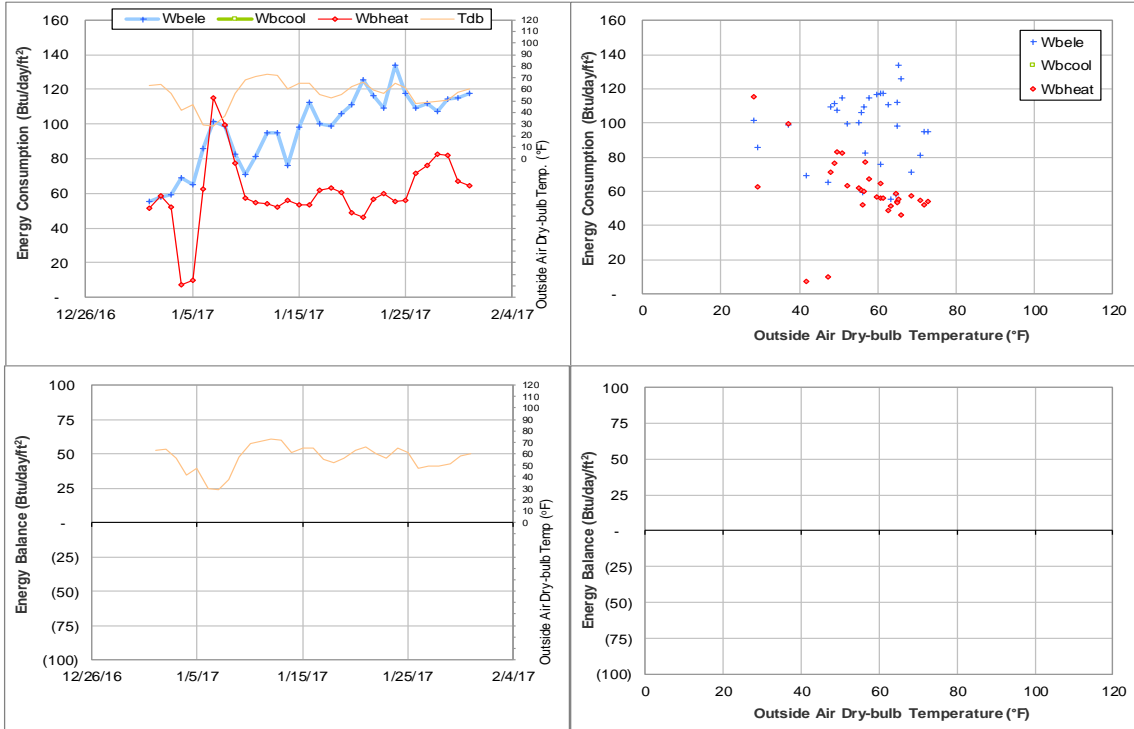


Figure IV-45 Walton Residence Hall TAMU BLDG # 422 Energy Balance Plot during January 2017

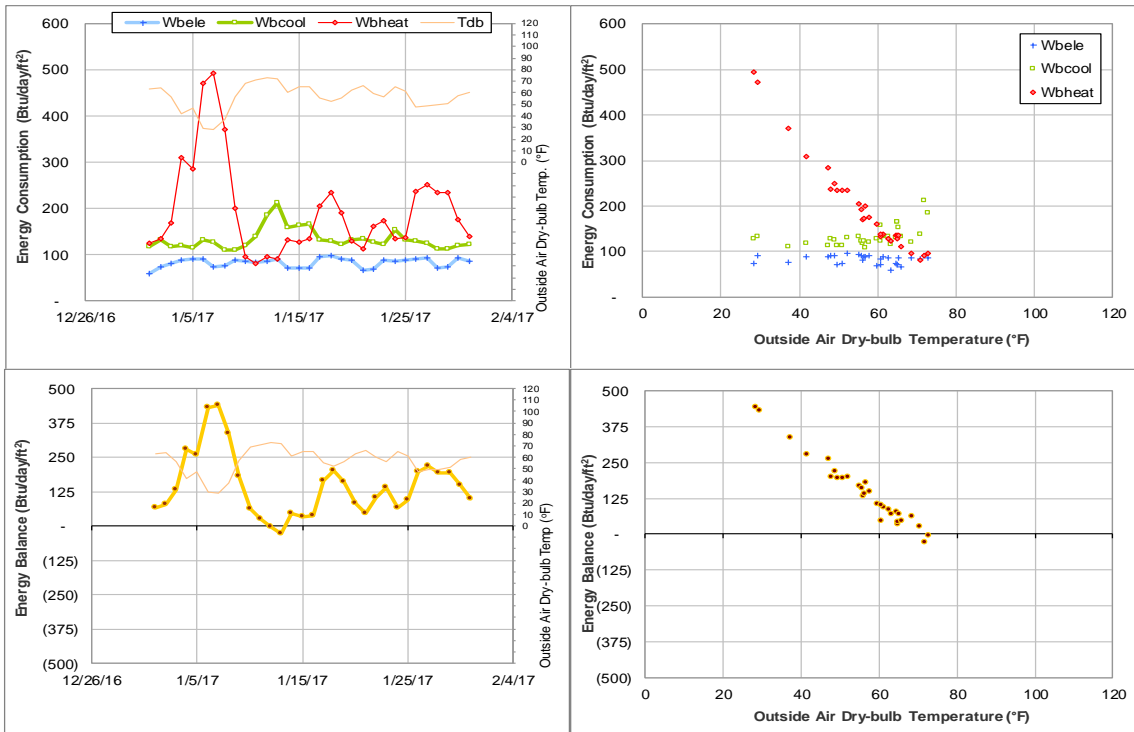


Figure IV-46 Hotard Hall TAMU BLDG # 424 Energy Balance Plot during January 2017

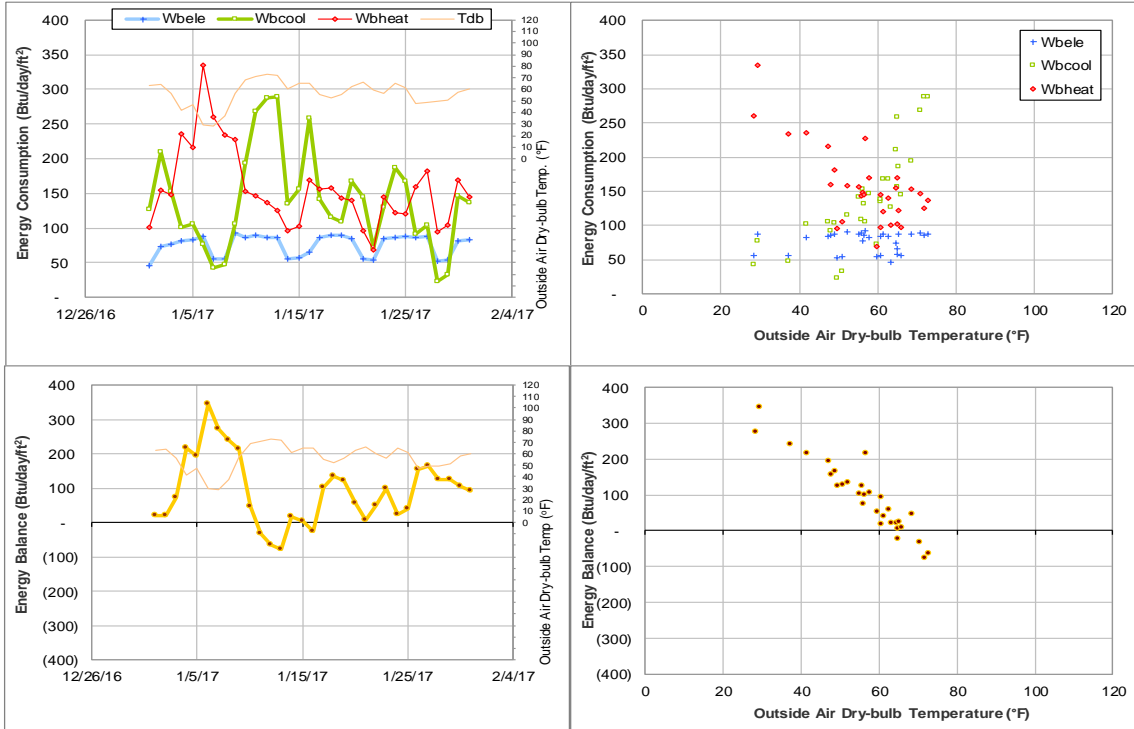


Figure IV-47 Henderson Hall TAMU BLDG # 425 Energy Balance Plot during January 2017

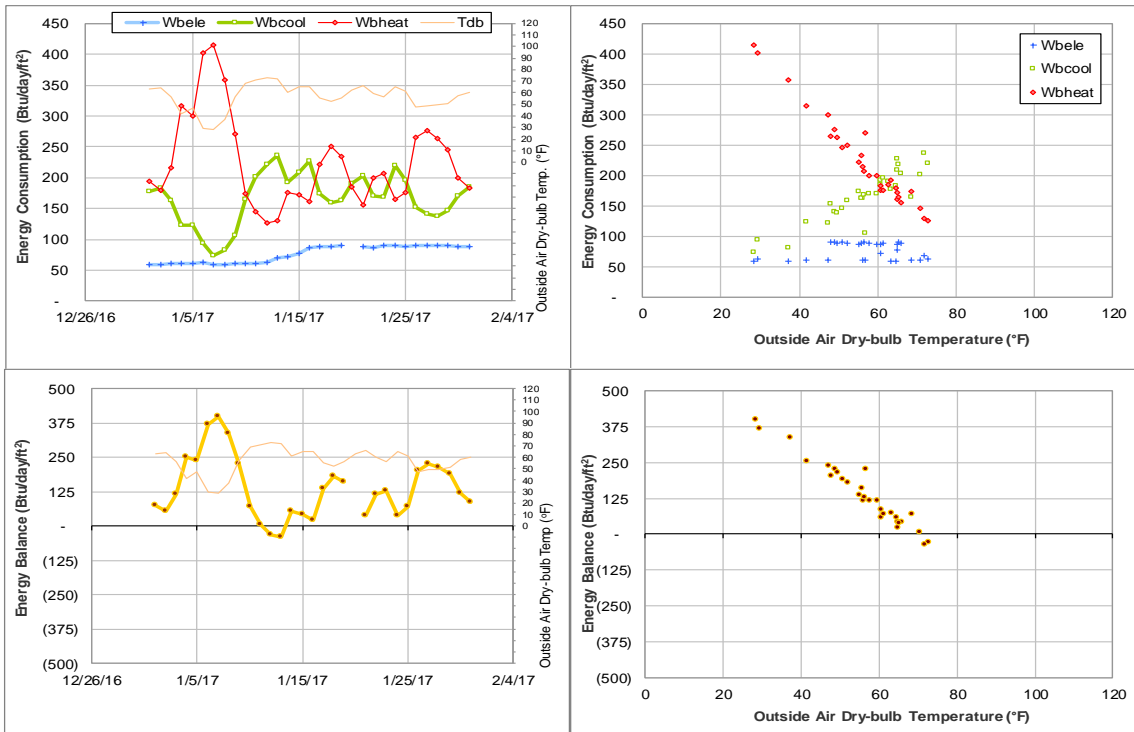


Figure IV-48 FHK Complex TAMU BLDG # 426 Energy Balance Plot during January 2017

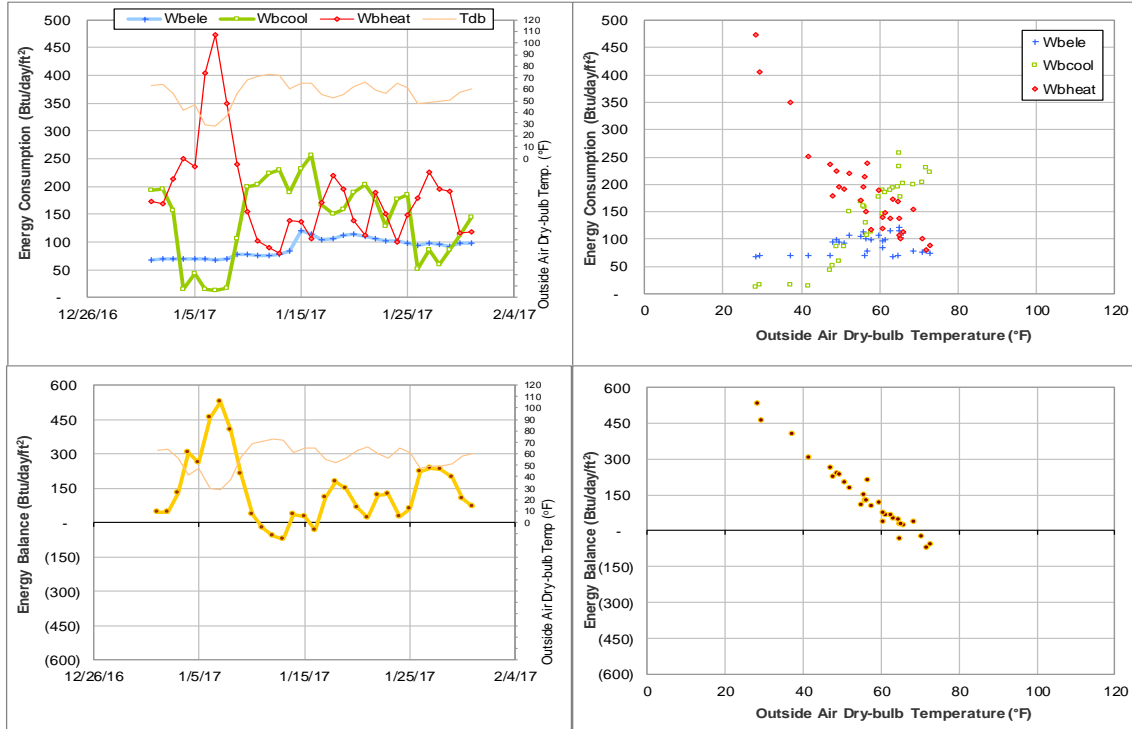


Figure IV-49 Schumacher Residence Hall TAMU BLDG # 430 Energy Balance Plot during January 2017

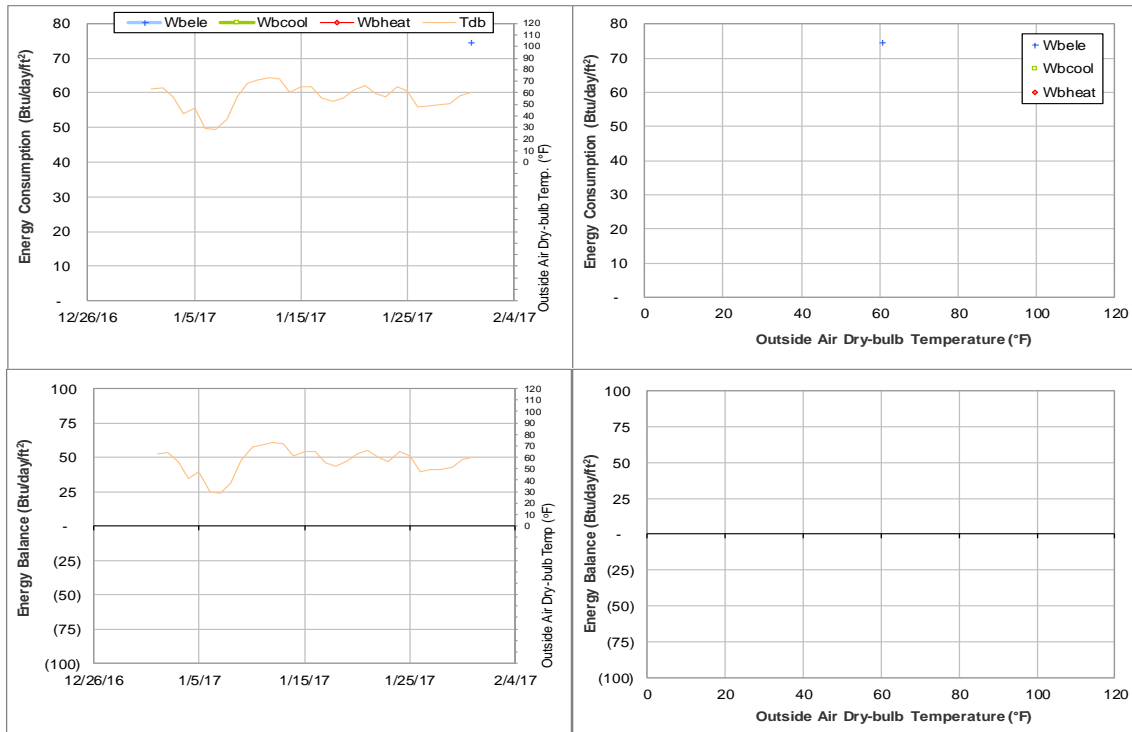


Figure IV-50 Mosher Commons Krueger Dunn Aston TAMU BLDG # 433, 440, 441, 442, 447 Energy Balance Plot during January 2017

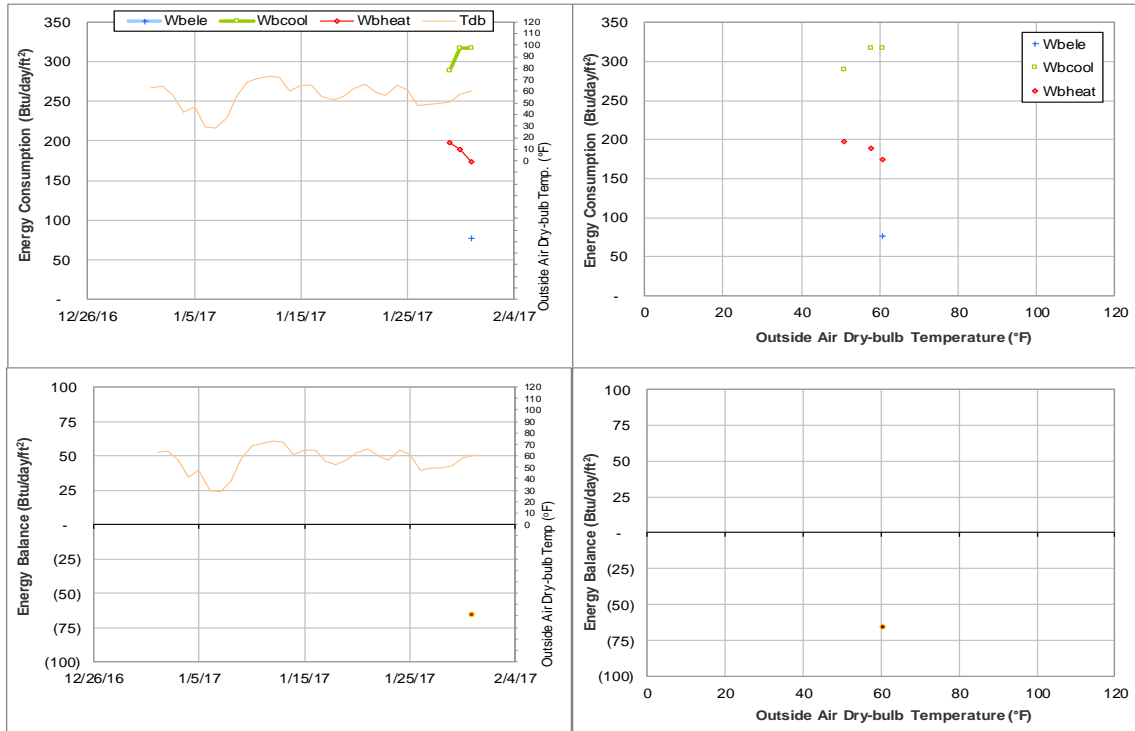


Figure IV-51 Moshier Residence Hall TAMU BLDG # 433 Energy Balance Plot during January 2017

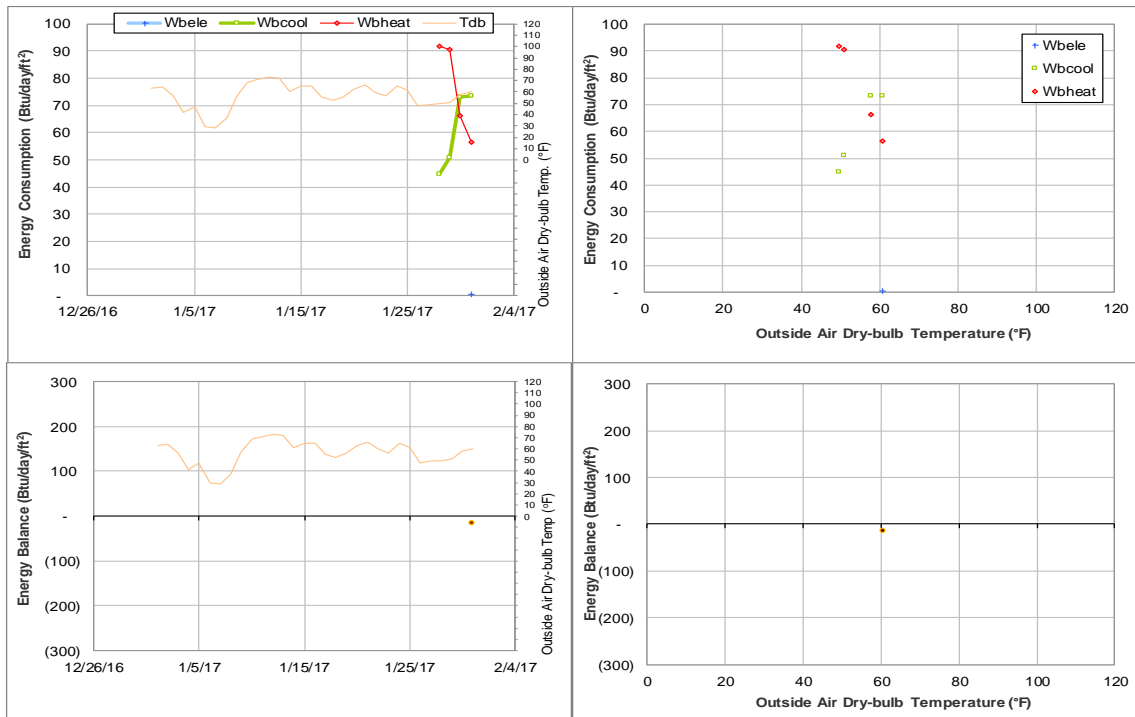


Figure IV-52 Commons Hall TAMU BLDG # 440 Energy Balance Plot during January 2017

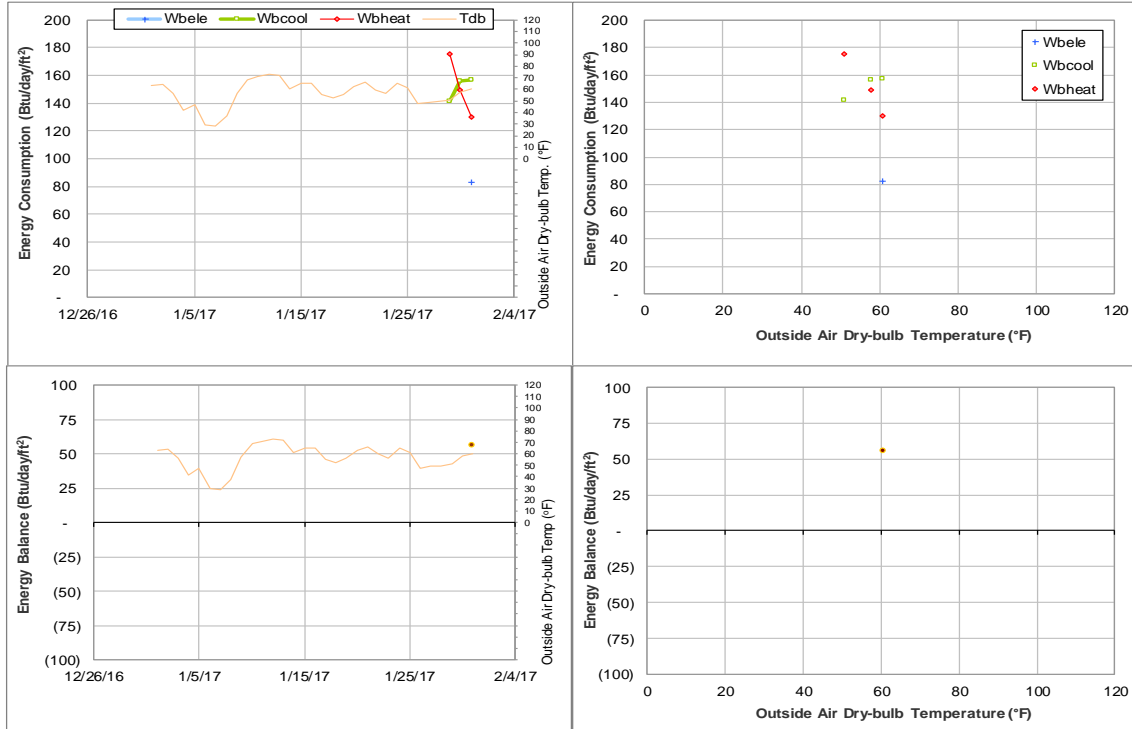


Figure IV-53 Krueger Residence Hall TAMU BLDG # 441 Energy Balance Plot during January 2017

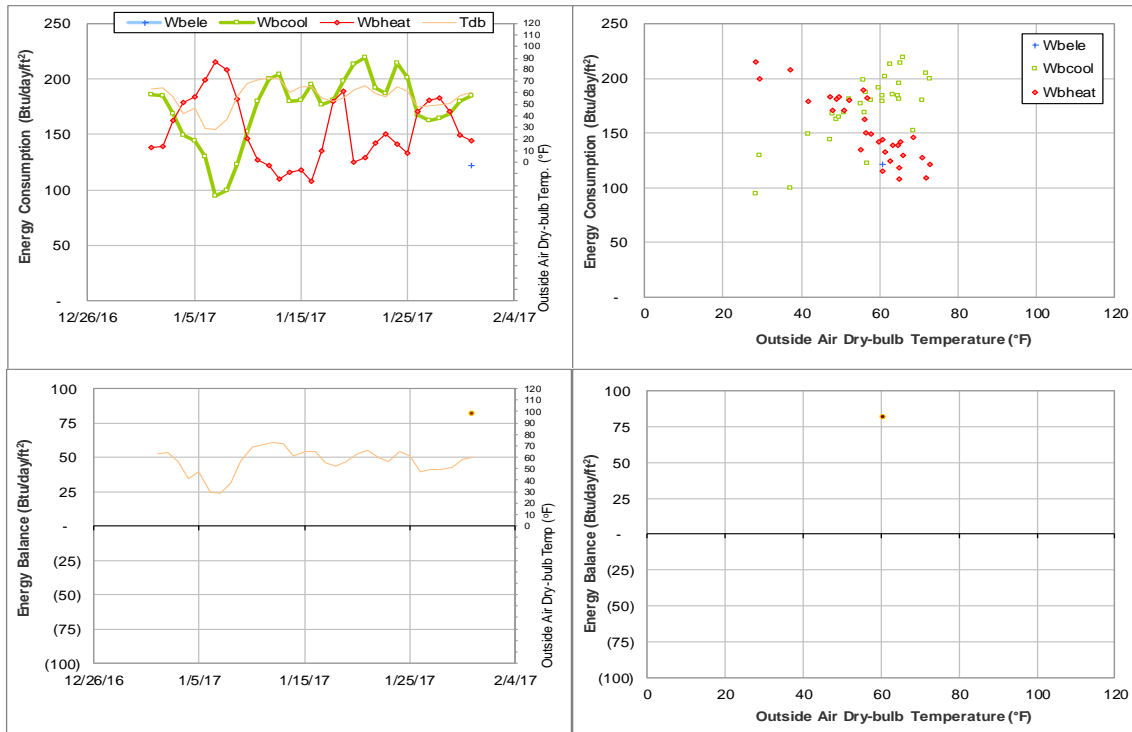


Figure IV-54 Dunn Residence Hall TAMU BLDG # 442 Energy Balance Plot during January 2017

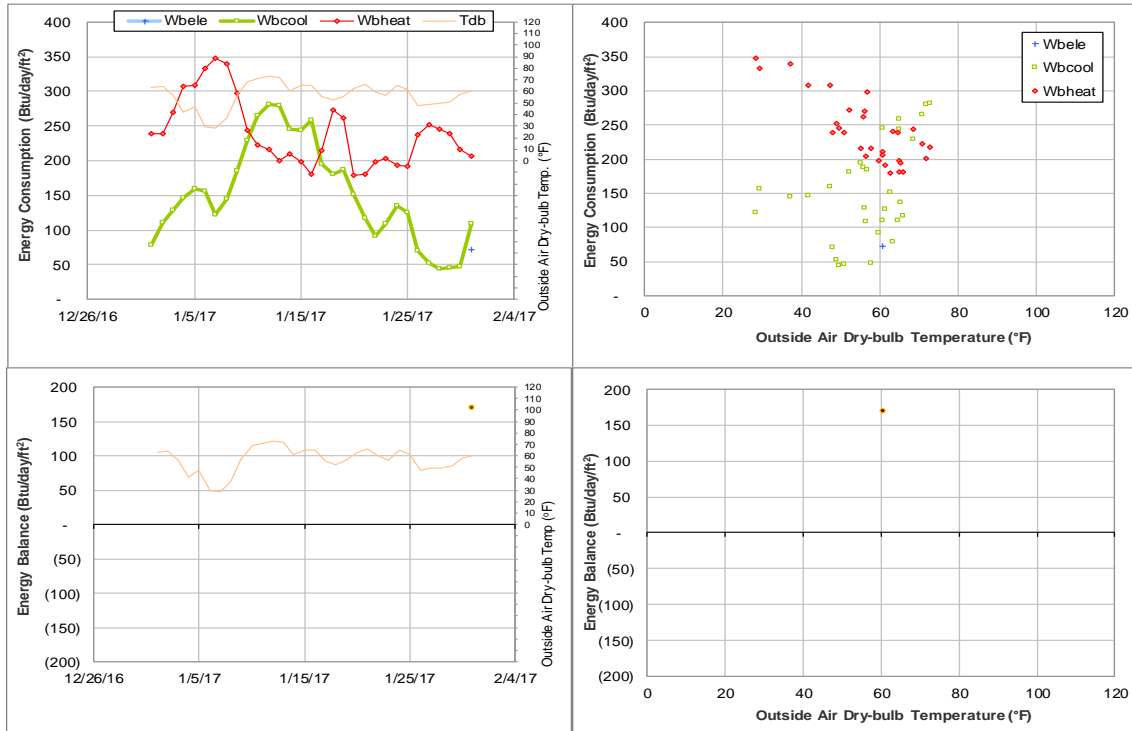


Figure IV-55 Aston Residence Hall TAMU BLDG # 447 Energy Balance Plot during January 2017

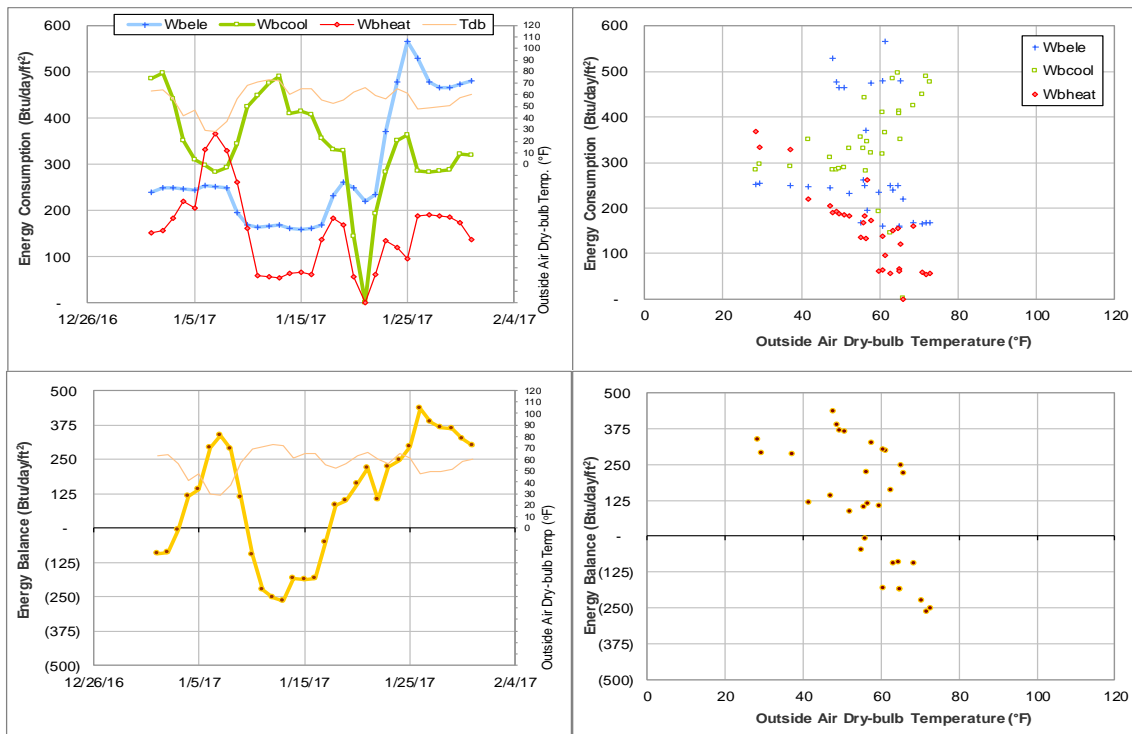


Figure IV-56 Luedcke Building (Cyclotron) TAMU BLDG # 434 Energy Balance Plot during January 2017

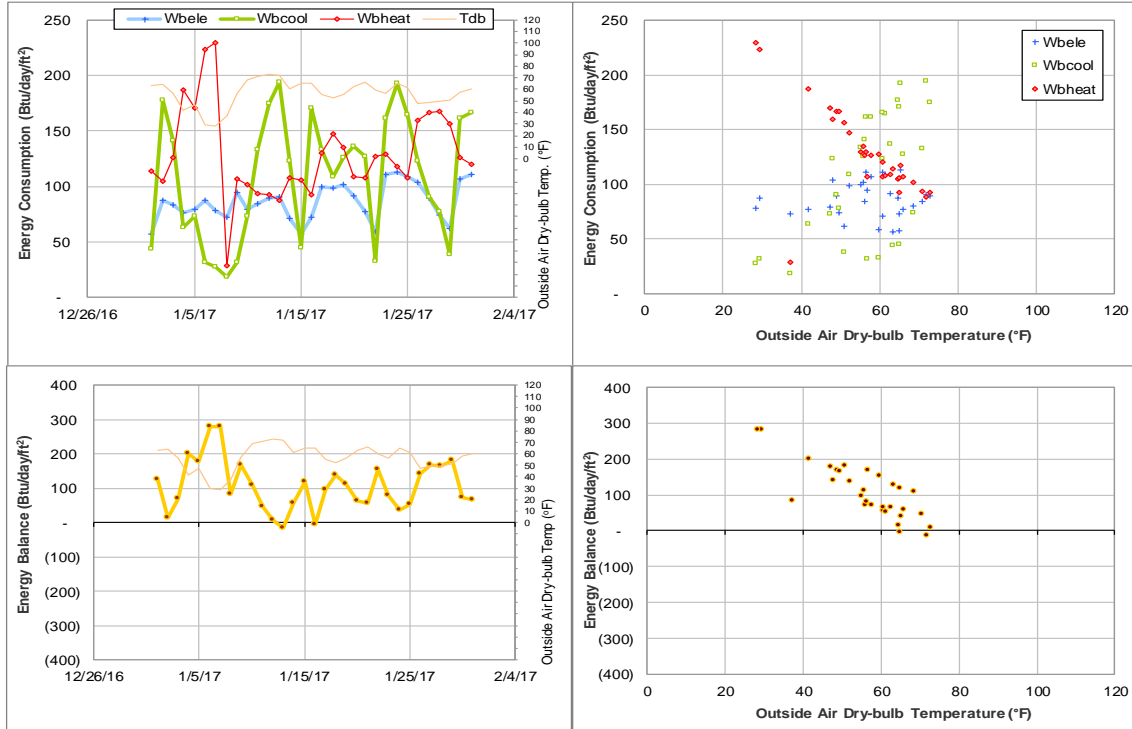


Figure IV-57 Harrington Education Center Office Tower TAMU BLDG # 435 Energy Balance Plot during January 2017

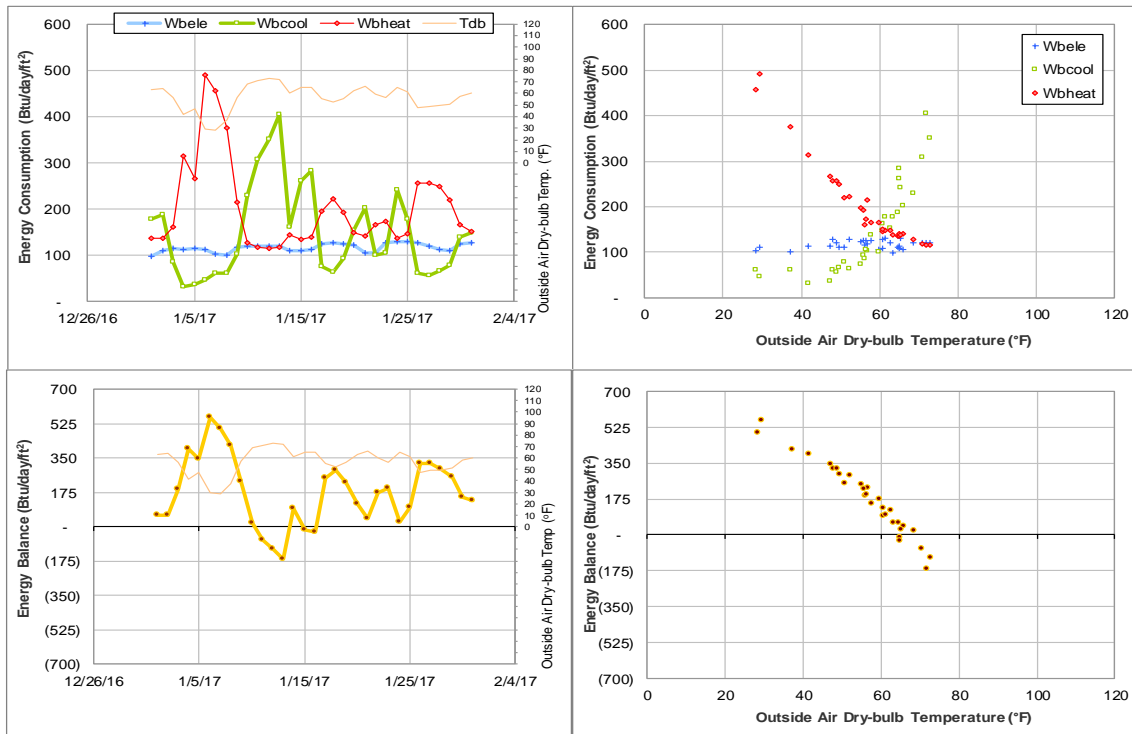


Figure IV-58 Reed-McDonald and Engineering Innovation Center TAMU BLDG # 436 and 499 Energy Balance Plot during January 2017



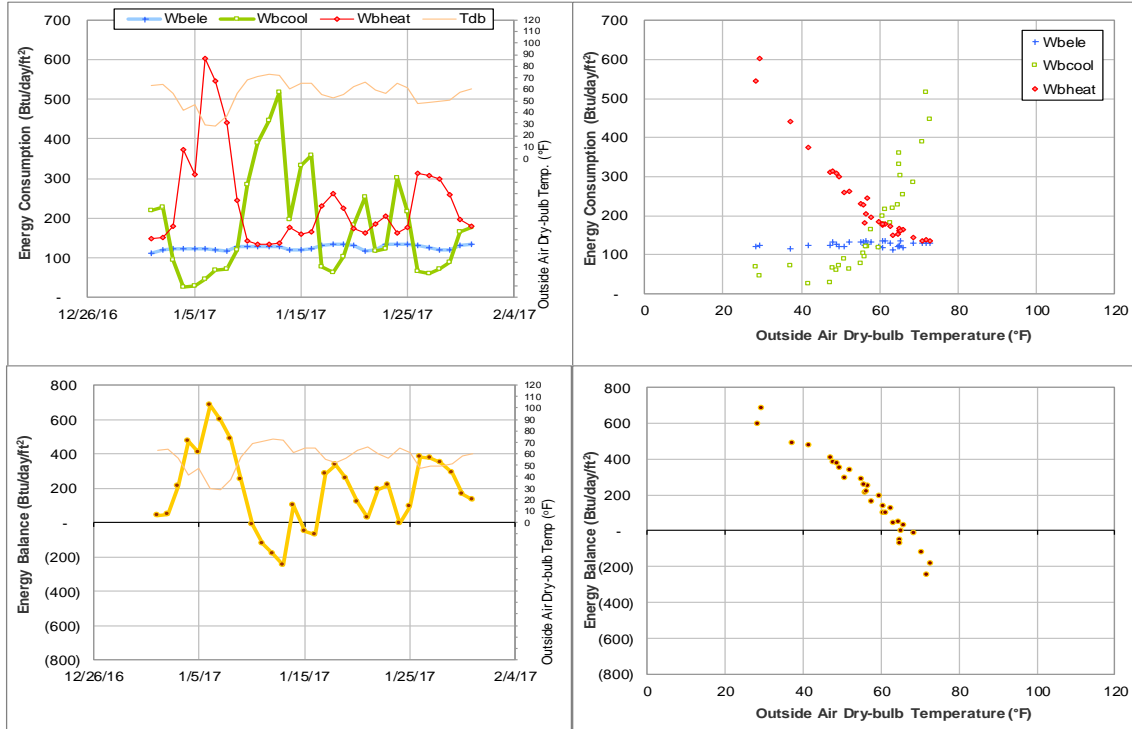


Figure IV-59 Reed-McDonald Building TAMU BLDG # 436 Energy Balance Plot during January 2017

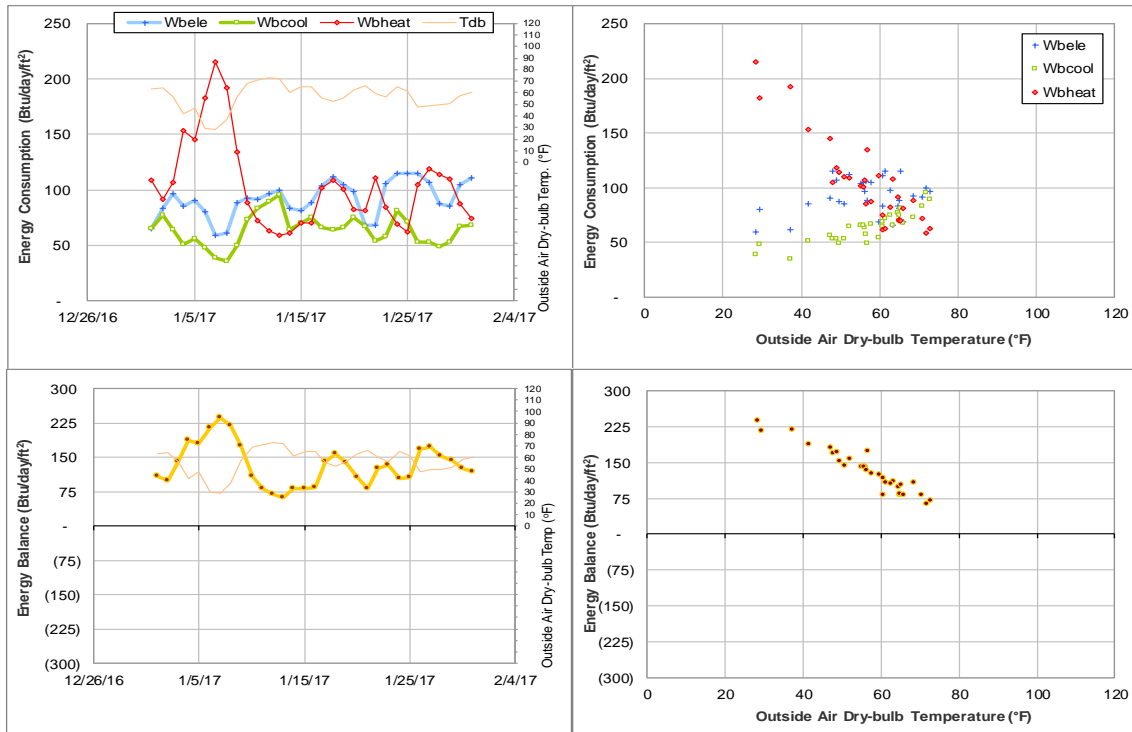


Figure IV-60 Engineering Innovation Center TAMU BLDG # 499 Energy Balance Plot during January 2017

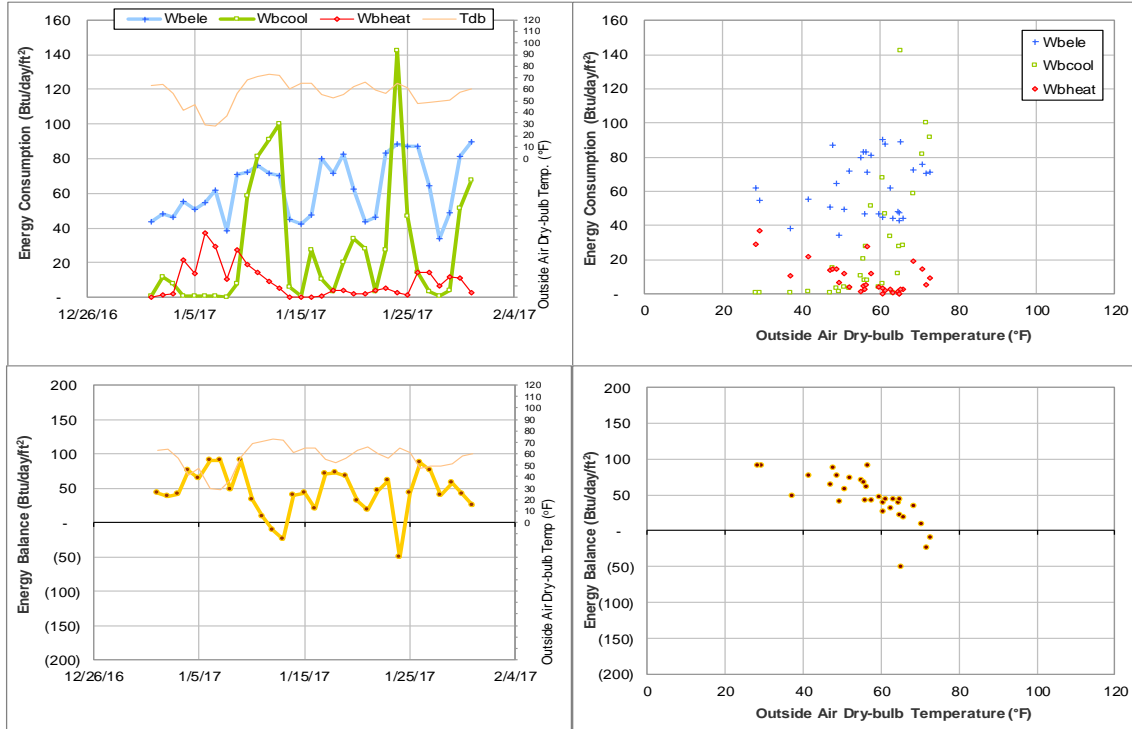


Figure IV-61 Harrington Education Center Classroom Building TAMU BLDG # 438 Energy Balance Plot during January 2017

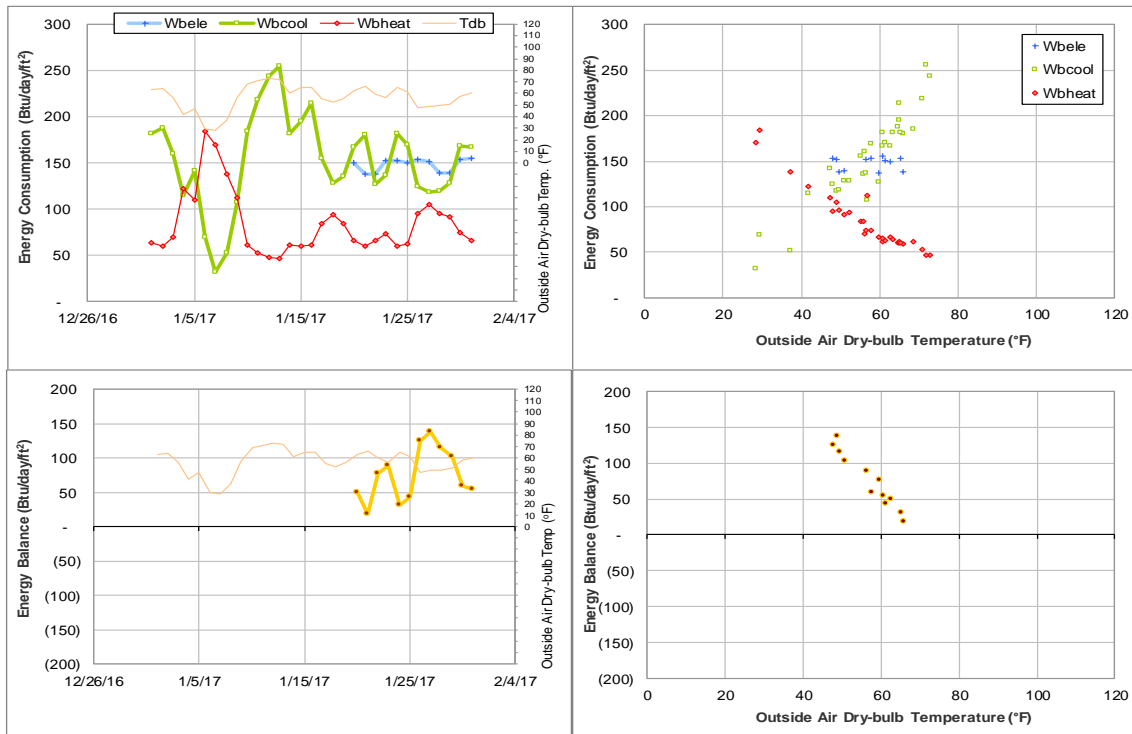


Figure IV-62 Oceanography & Meteorology Building TAMU BLDG # 443 Energy Balance Plot during January 2017

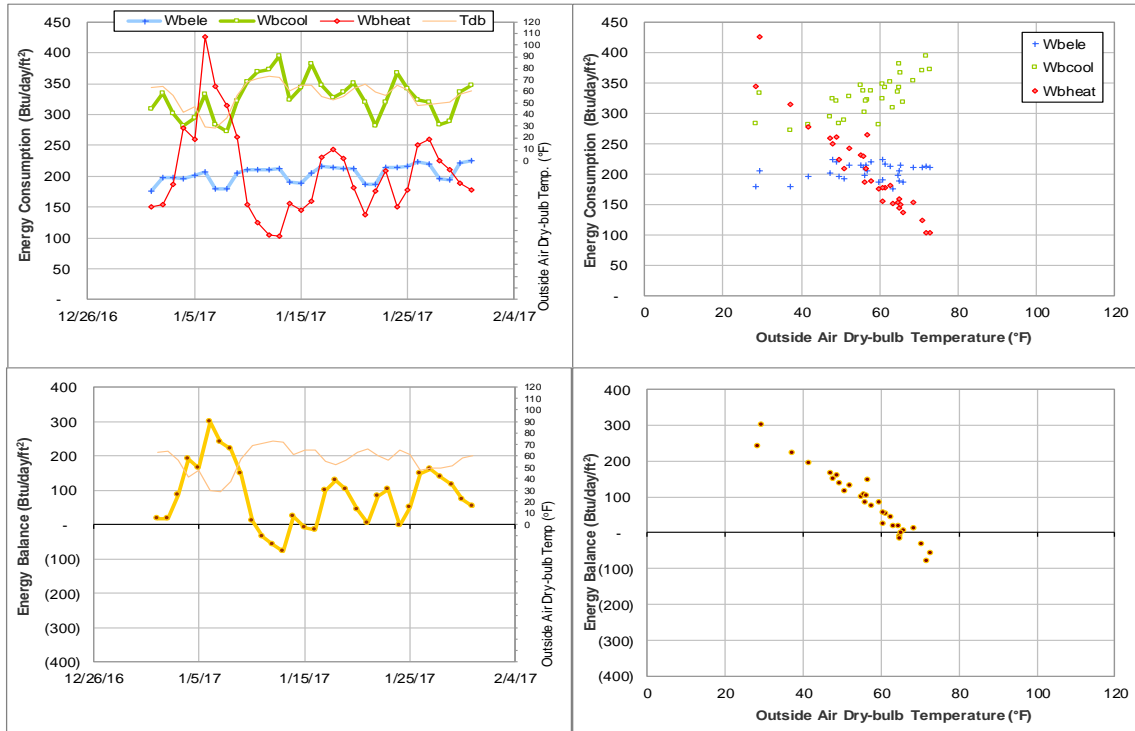


Figure IV-63 Peterson Building TAMU BLDG # 444 Energy Balance Plot during January 2017

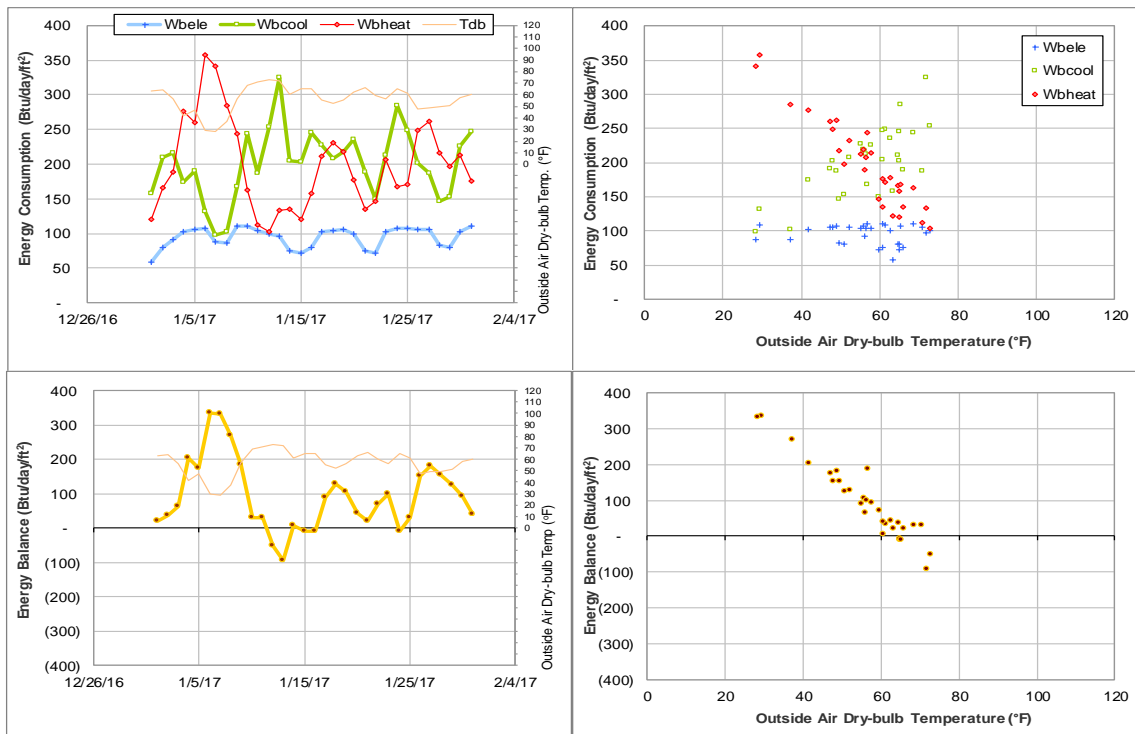


Figure IV-64 Teague Research Center and DPC Annex TAMU BLDG # 445 and 517 Energy Balance Plot during January 2017

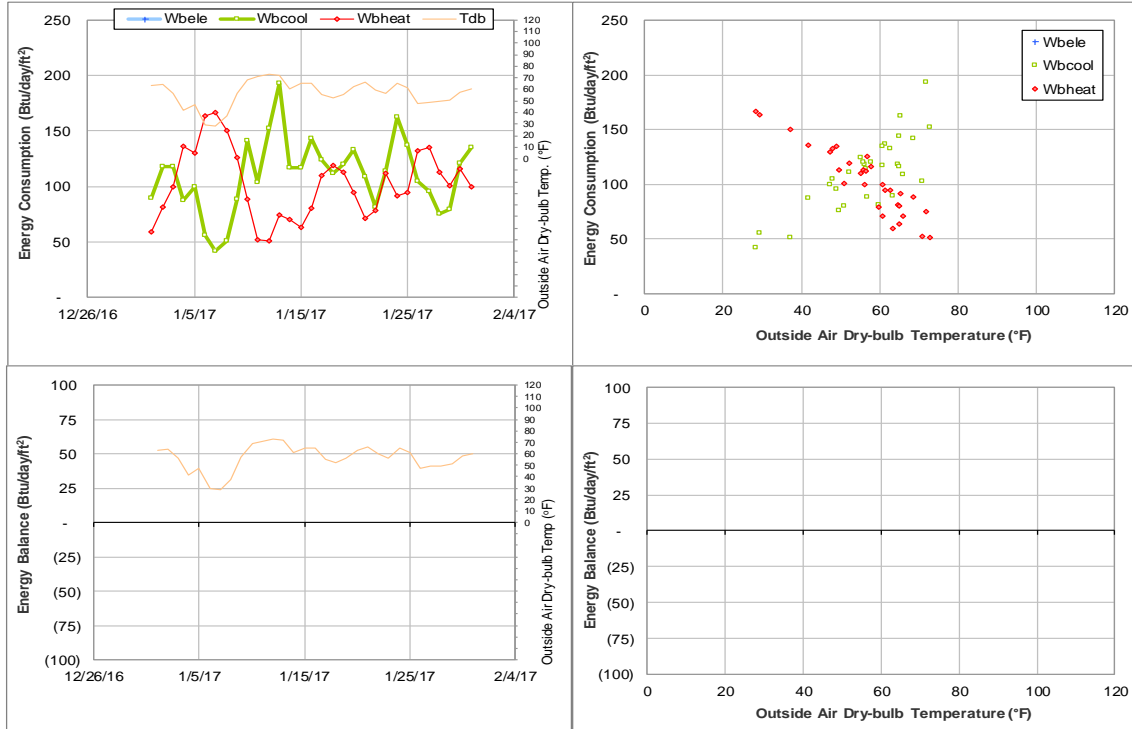


Figure IV-65 Teague Research Center TAMU BLDG # 445 Energy Balance Plot during January 2017

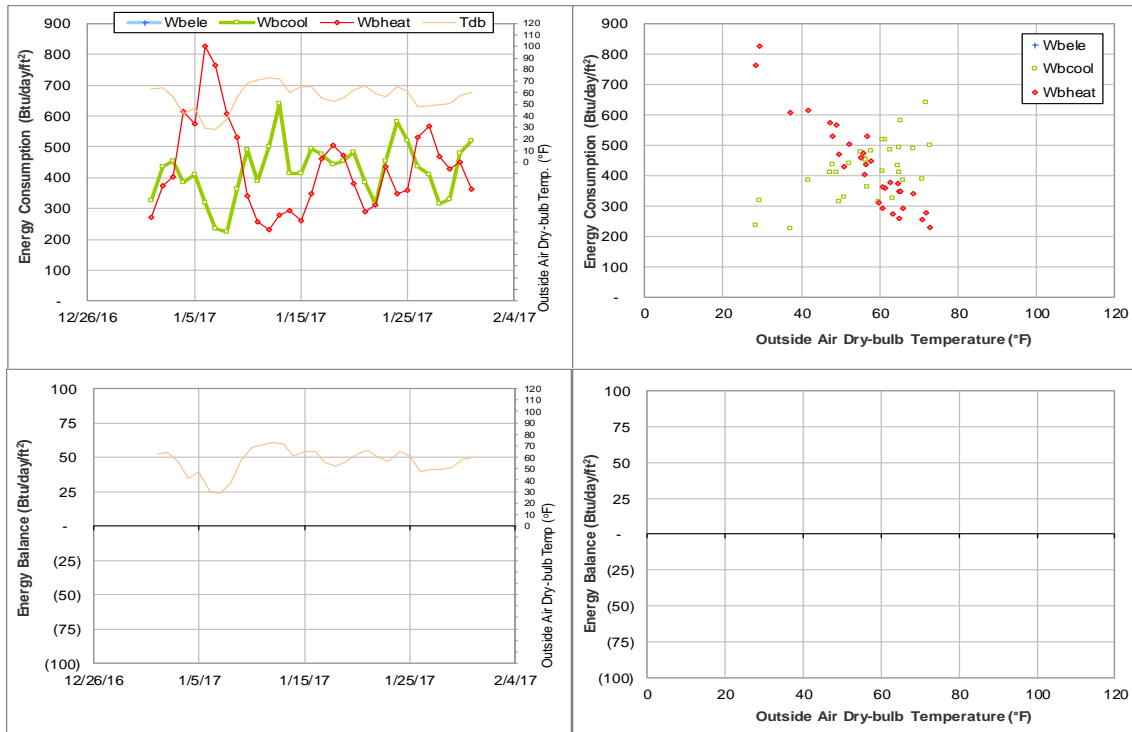


Figure IV-66 DPC Annex TAMU BLDG # 517 Energy Balance Plot during January 2017

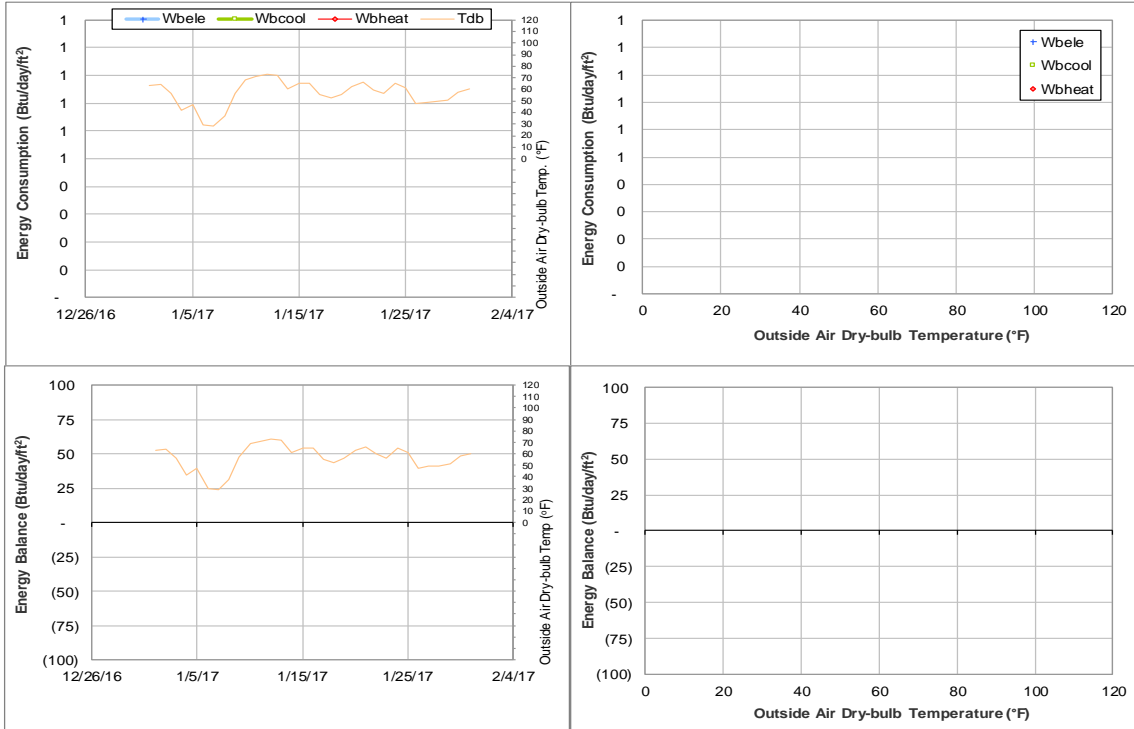


Figure IV-67 Rudder Tower and Theatre Complex TAMU BLDG # 446 Energy Balance Plot during January 2017

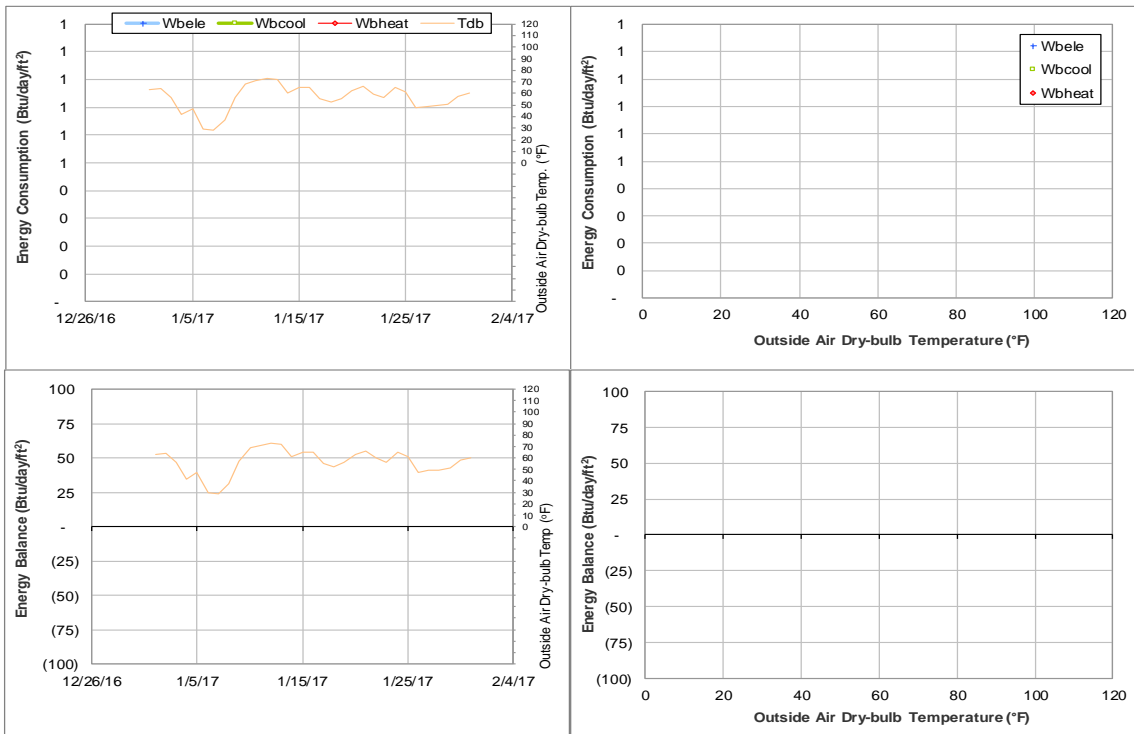


Figure IV-68 Rudder Theatre Complex TAMU BLDG # 446 Energy Balance Plot during January 2017

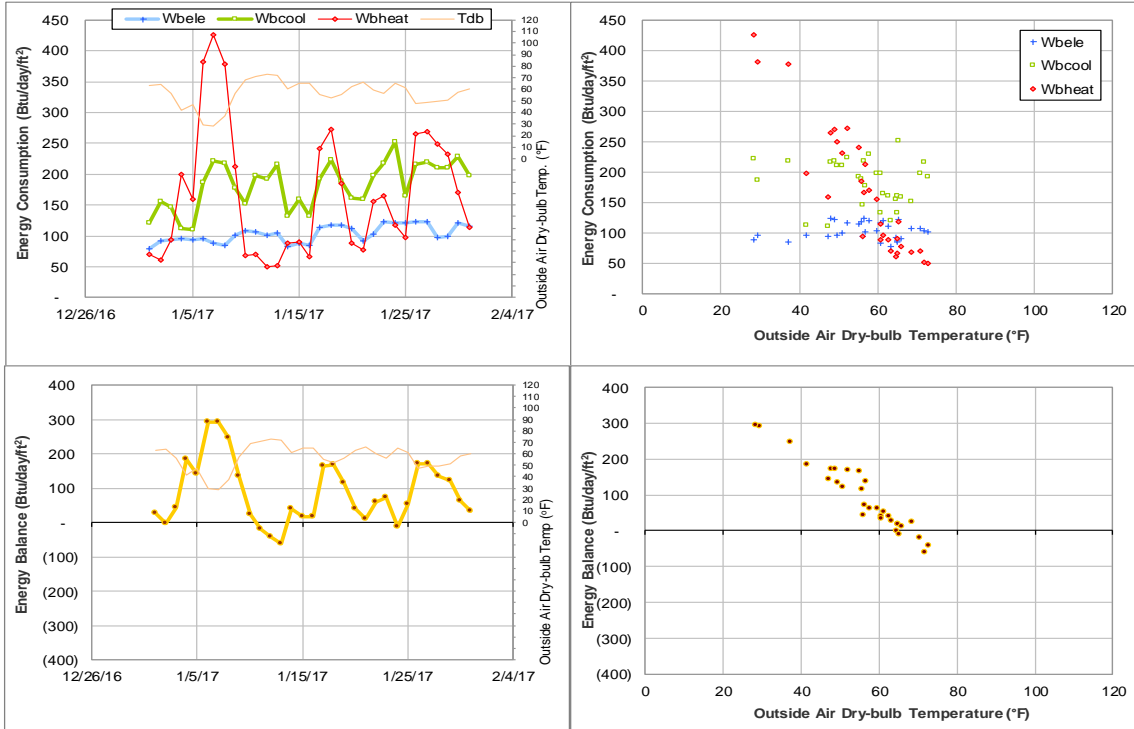


Figure IV-69 Rudder Tower TAMU BLDG # 446 Energy Balance Plot during January 2017

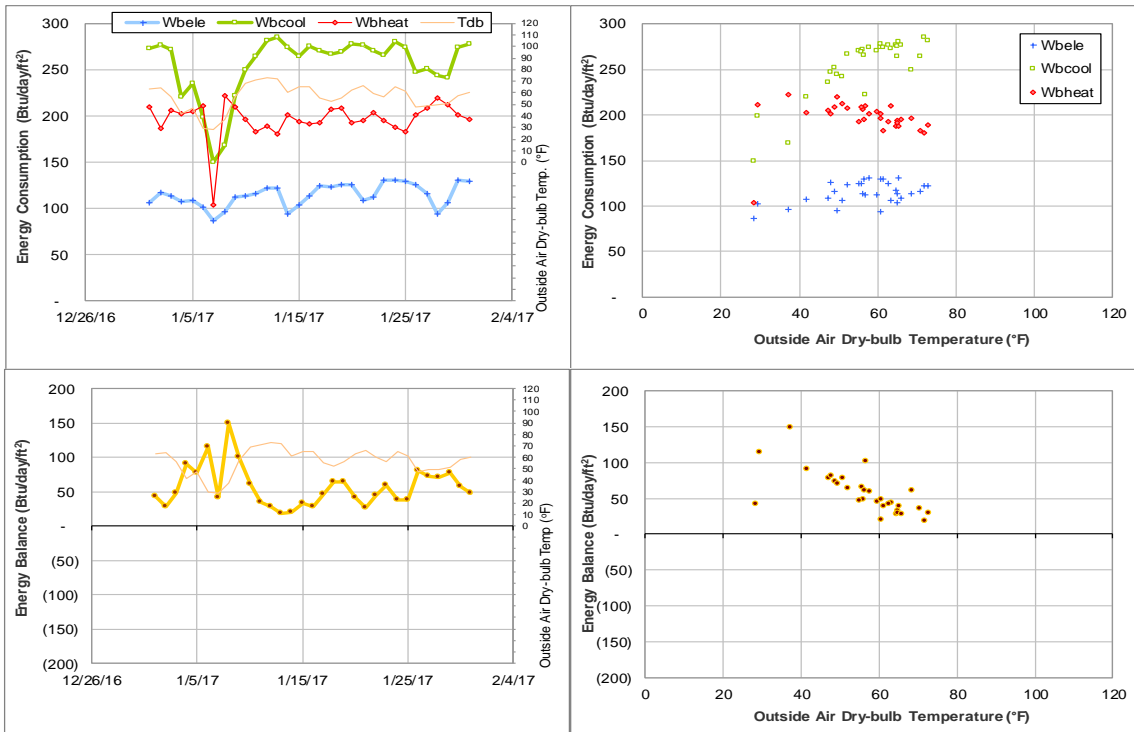


Figure IV-70 Adams Band Hall TAMU BLDG # 448 Energy Balance Plot during January 2017

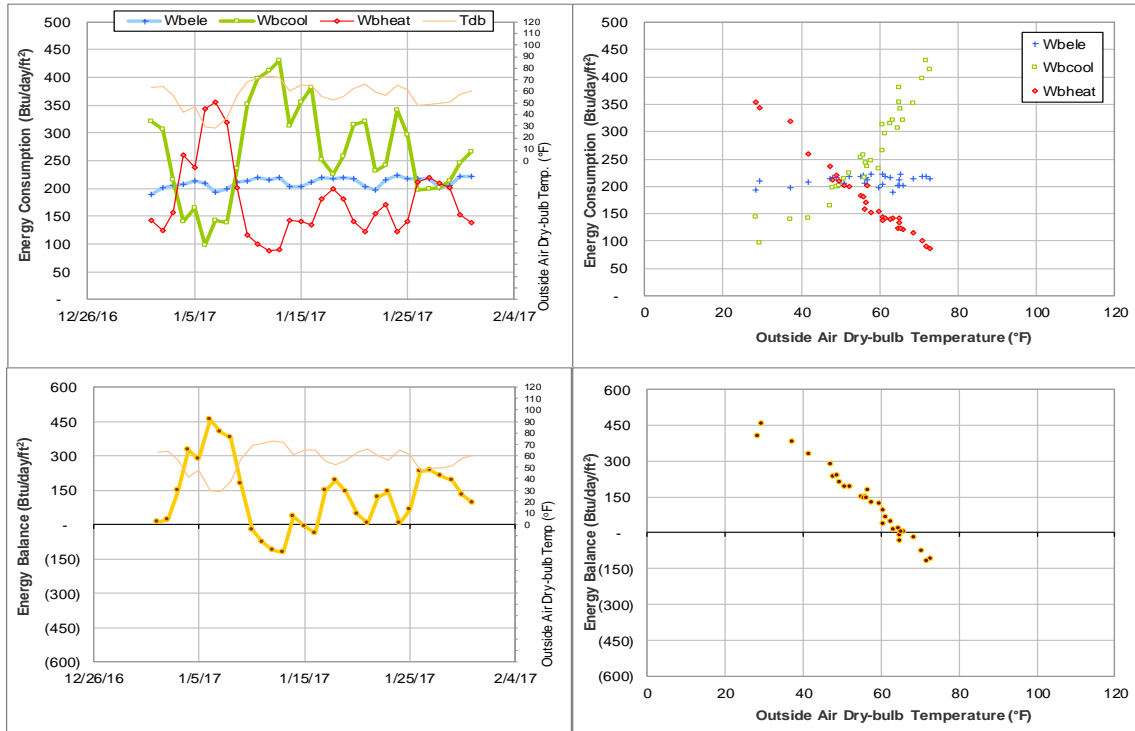


Figure IV-71 Biological Sciences Building - West TAMU BLDG # 449 Energy Balance Plot during January 2017

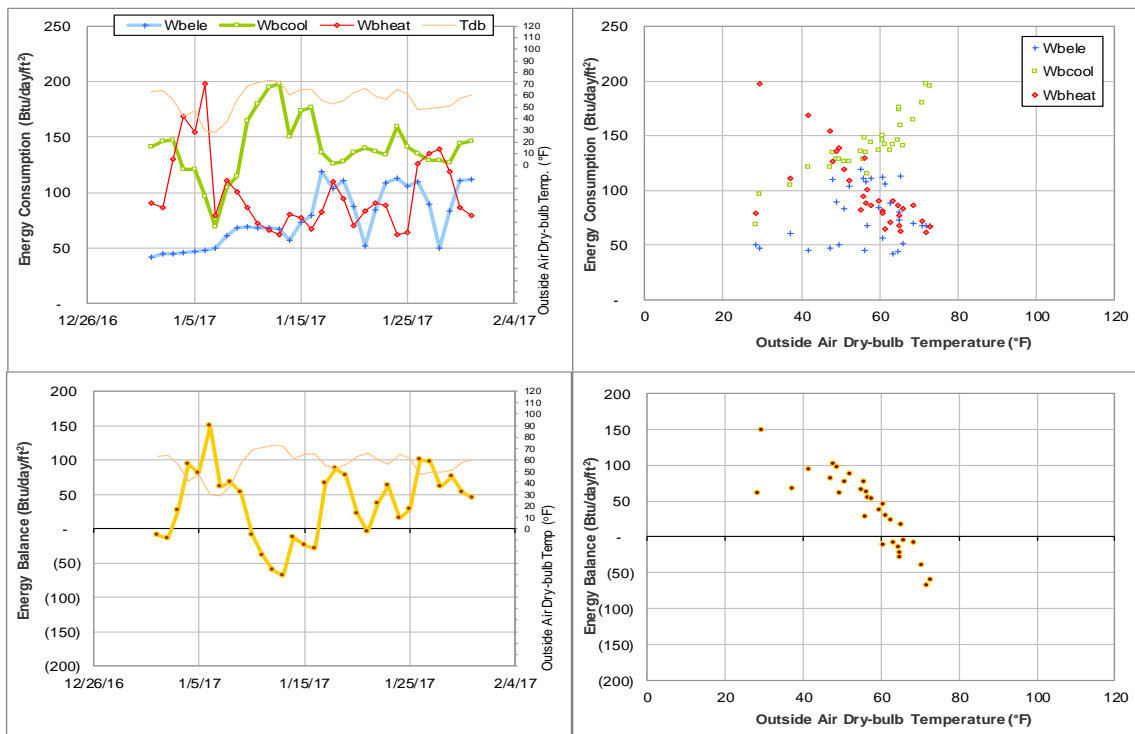


Figure IV-72 Duncan Dining Hall TAMU BLDG # 450 Energy Balance Plot during January 2017

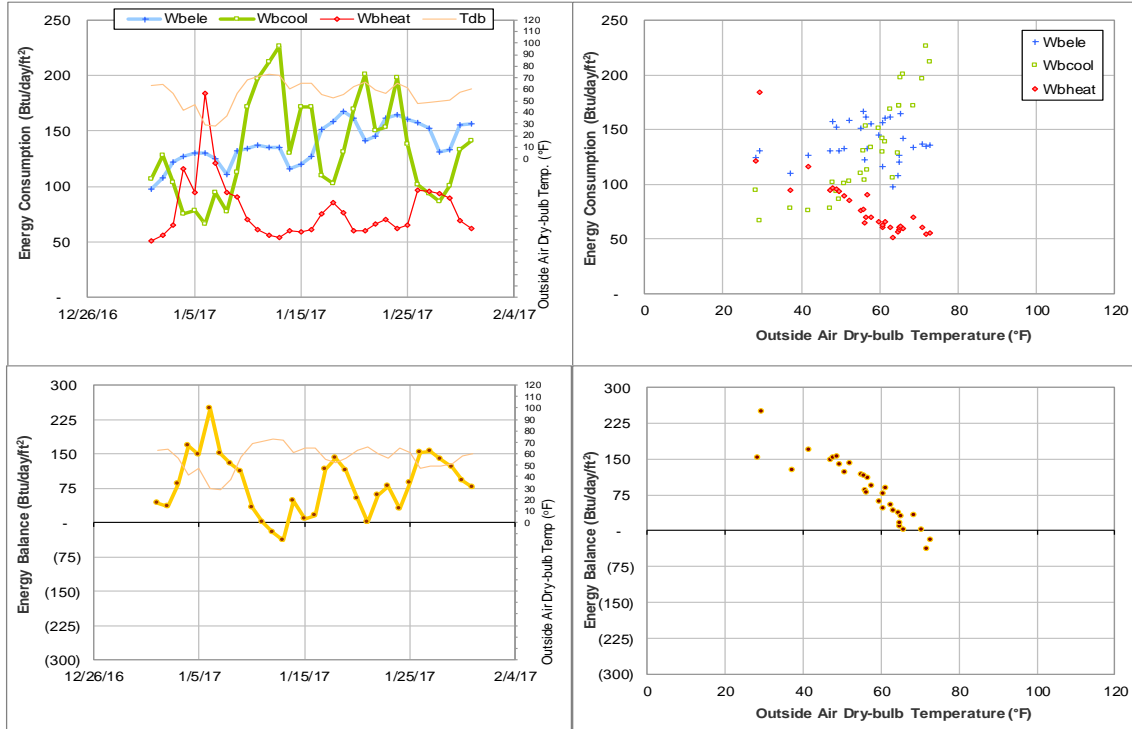


Figure IV-73 MSC TAMU BLDG # 454 Energy Balance Plot during January 2017

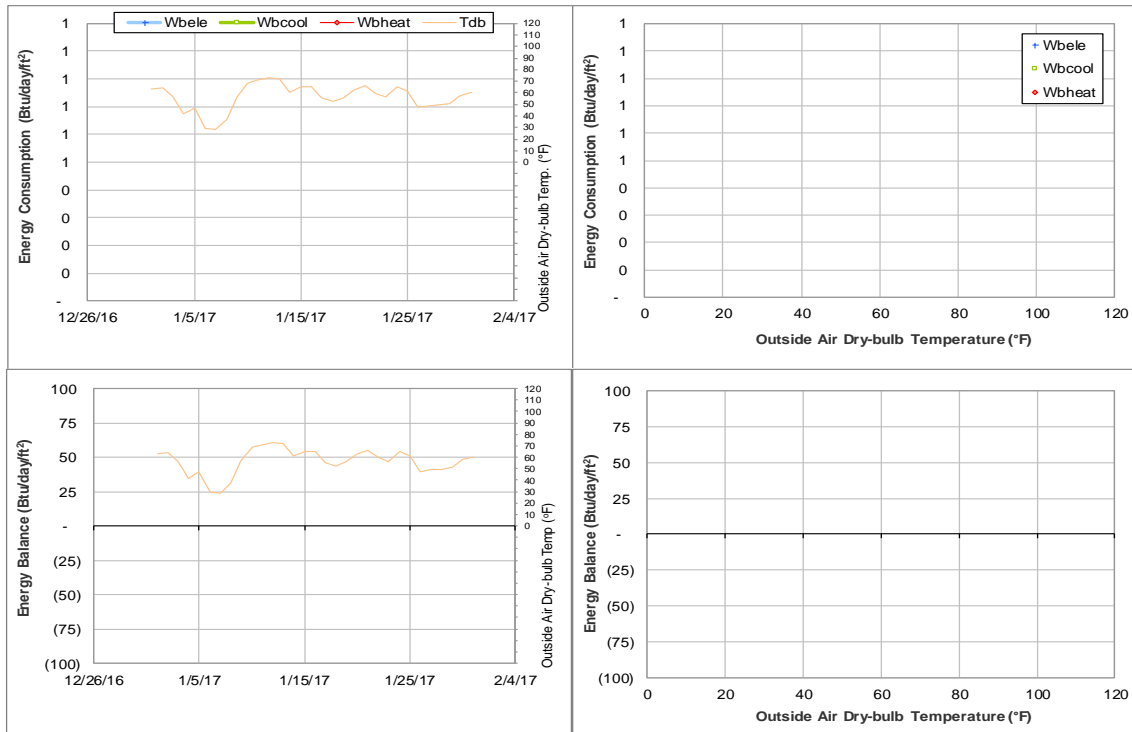


Figure IV-74 Military Sciences Building TAMU BLDG # 456 Energy Balance Plot during January 2017



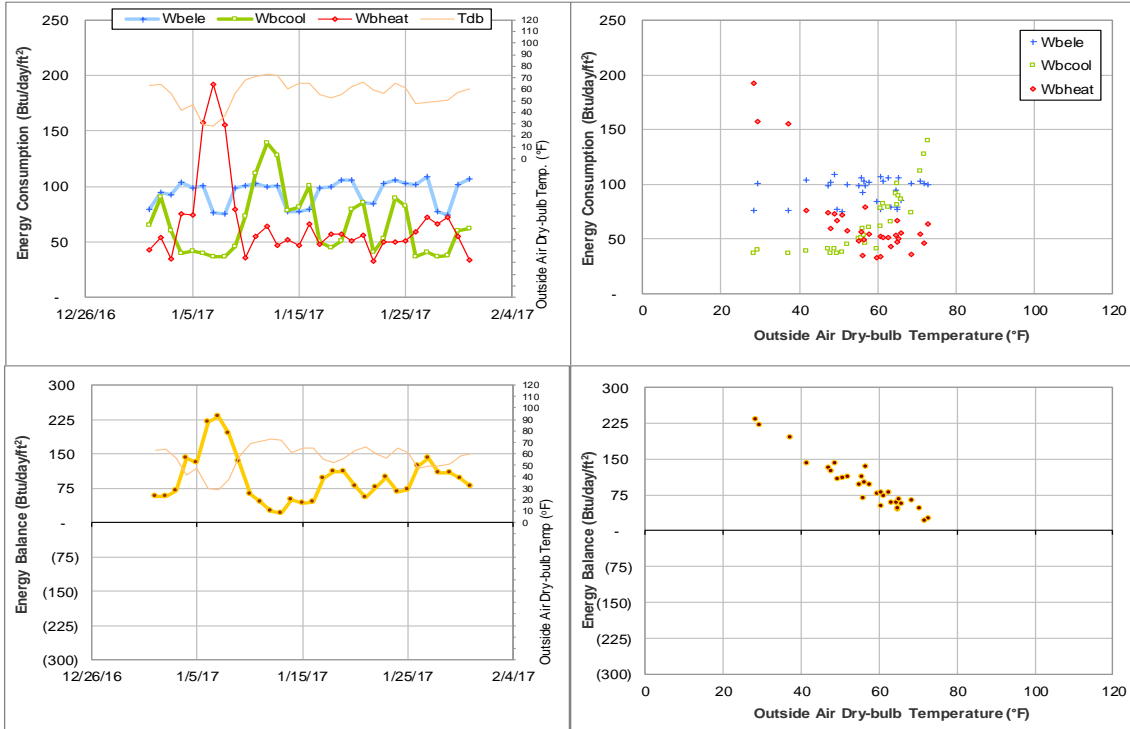


Figure IV-75 TAES Annex Building TAMU BLDG # 457 Energy Balance Plot during January 2017

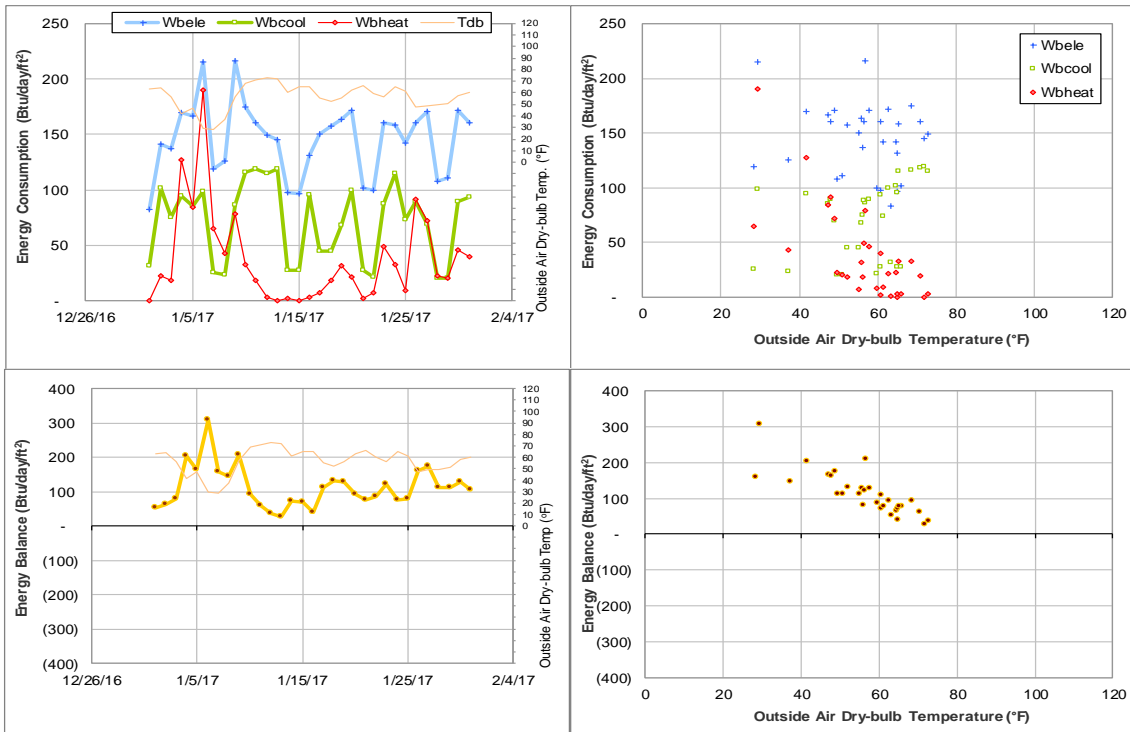


Figure IV-76 Coke Building TAMU BLDG # 461 Energy Balance Plot during January 2017

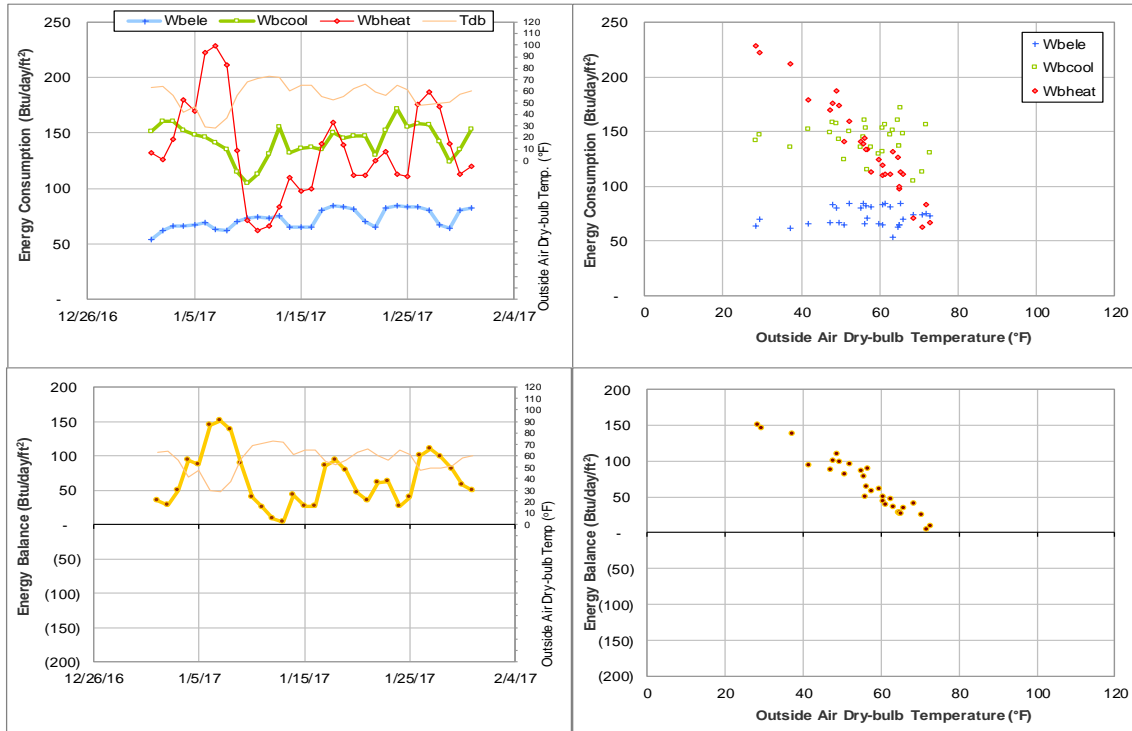


Figure IV-77 Academic Building TAMU BLDG # 462 Energy Balance Plot during January 2017

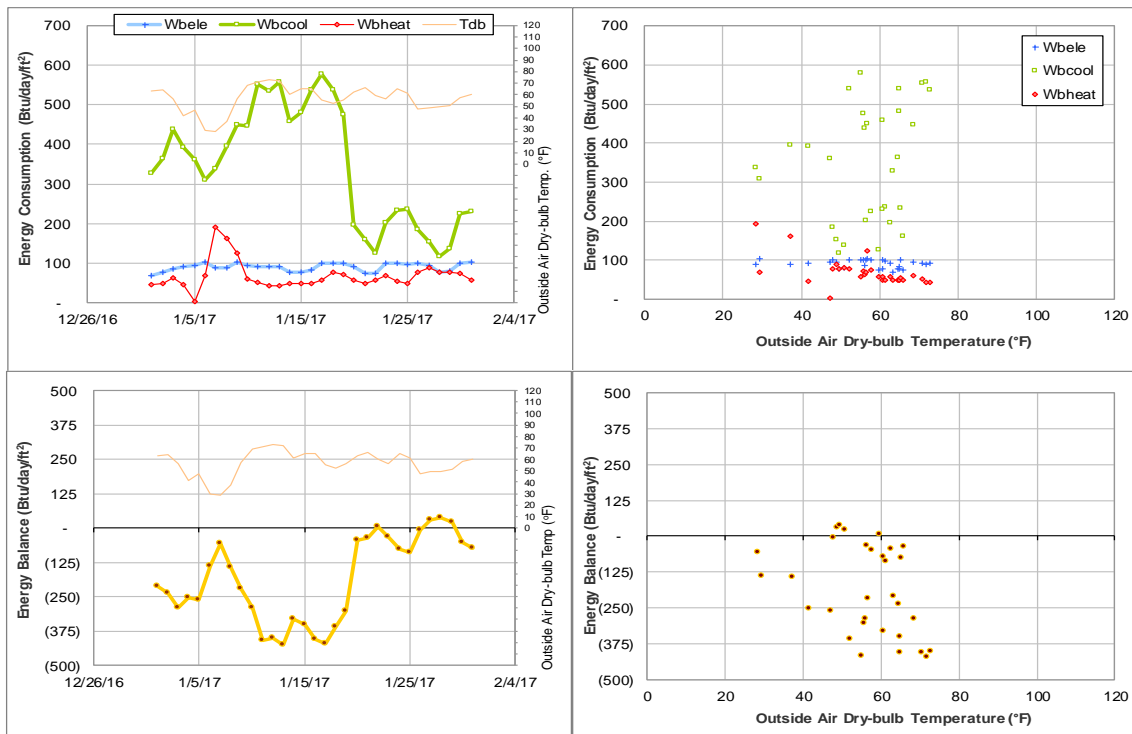


Figure IV-78 Psychology Building TAMU BLDG # 463 Energy Balance Plot during January 2017

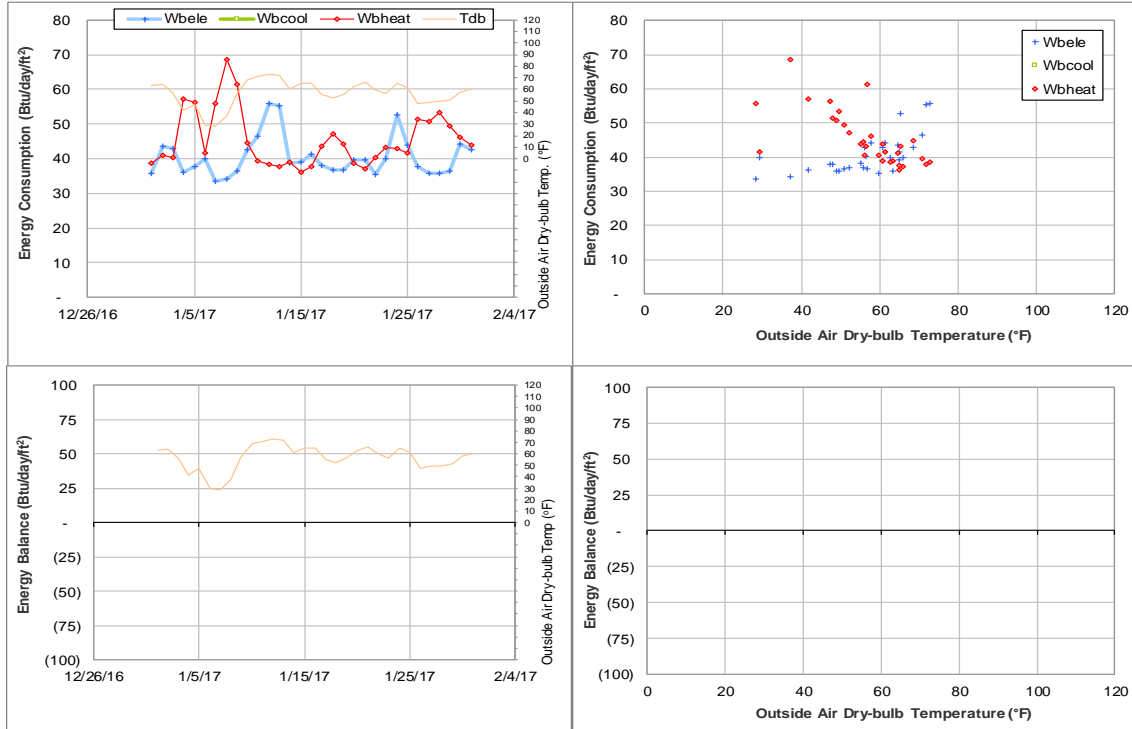


Figure IV-79 State Chemist Building TAMU BLDG # 464 Energy Balance Plot during January 2017

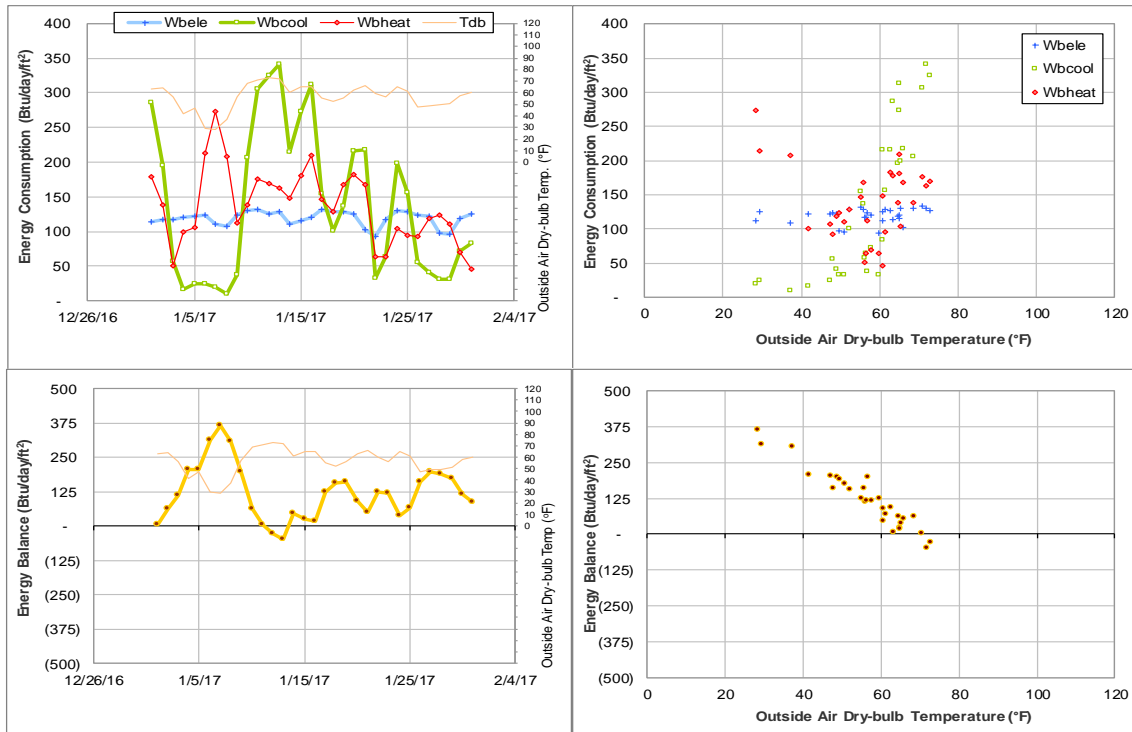


Figure IV-80 Butler Hall TAMU BLDG # 465 Energy Balance Plot during January 2017

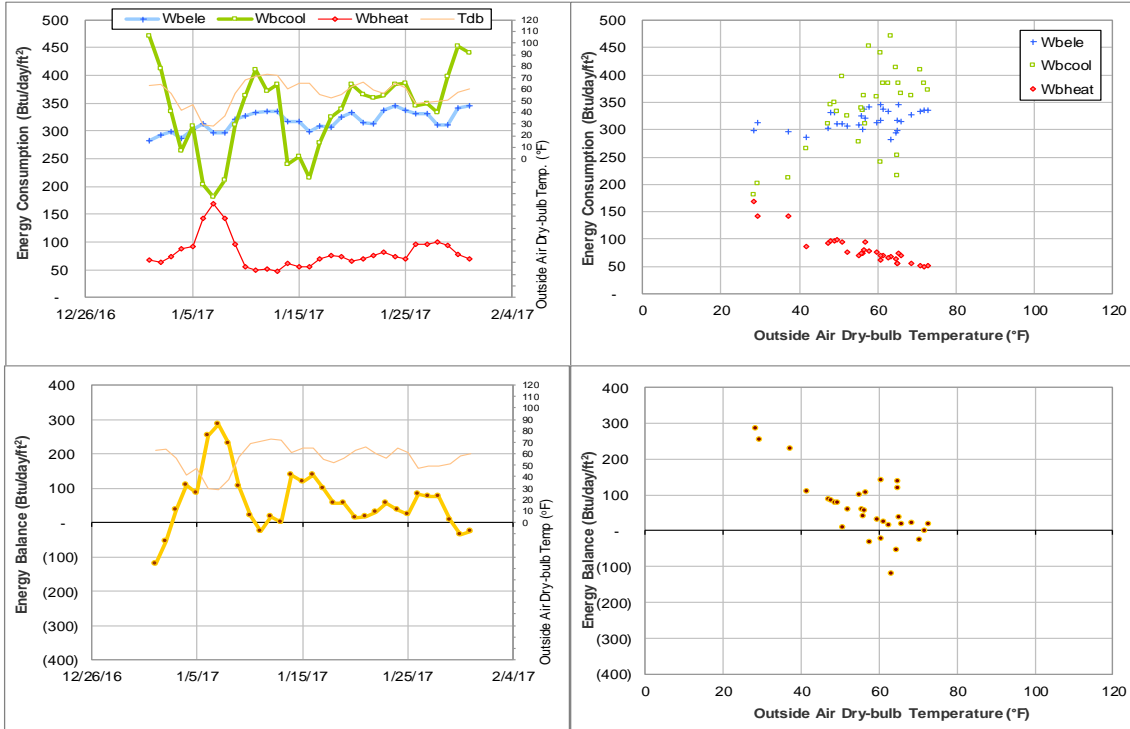


Figure IV-81 Biological Sciences Building - East TAMU BLDG # 467 Energy Balance Plot during January 2017

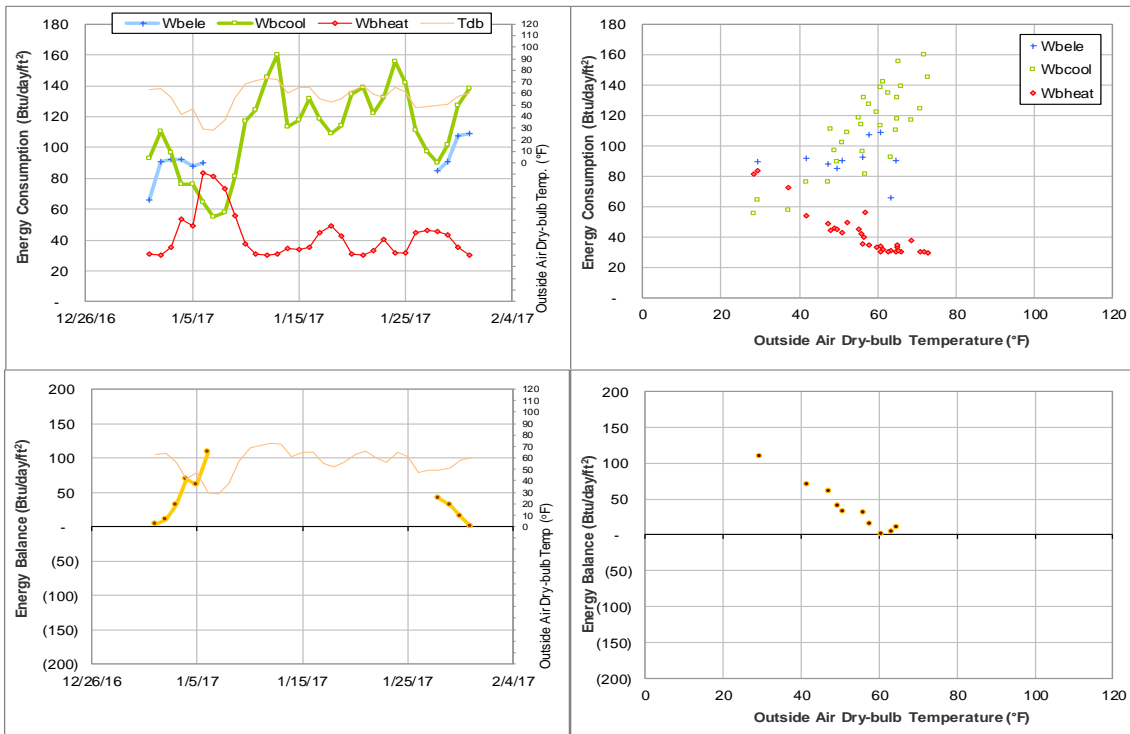


Figure IV-82 Evans Library TAMU BLDG # 468 Energy Balance Plot during January 2017

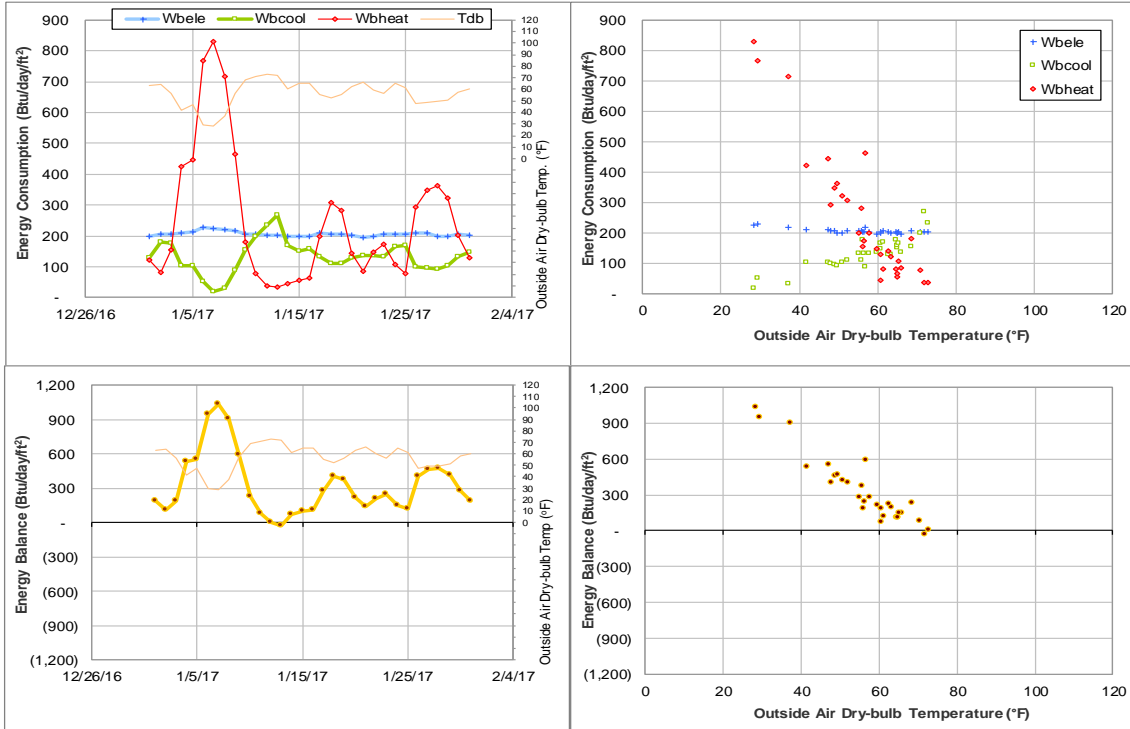


Figure IV-83 Central Campus Parking Garage TAMU BLDG # 469 Energy Balance Plot during January 2017

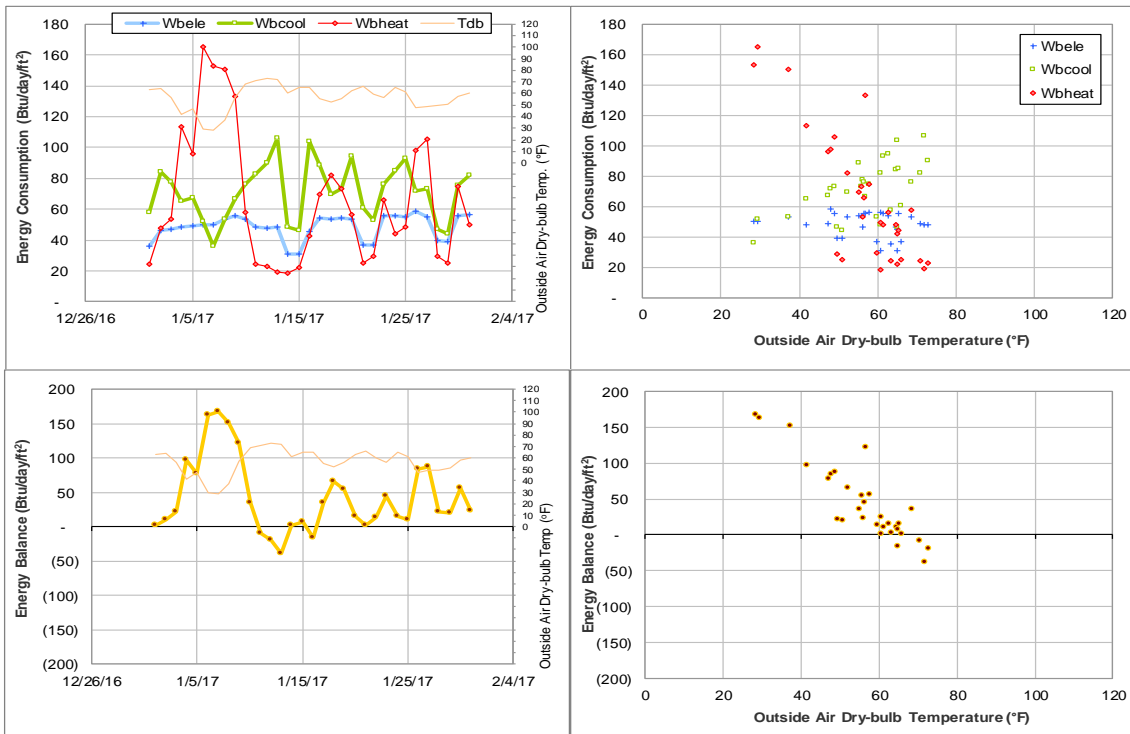


Figure IV-84 Glasscock History Bldg TAMU BLDG # 470 Energy Balance Plot during January 2017

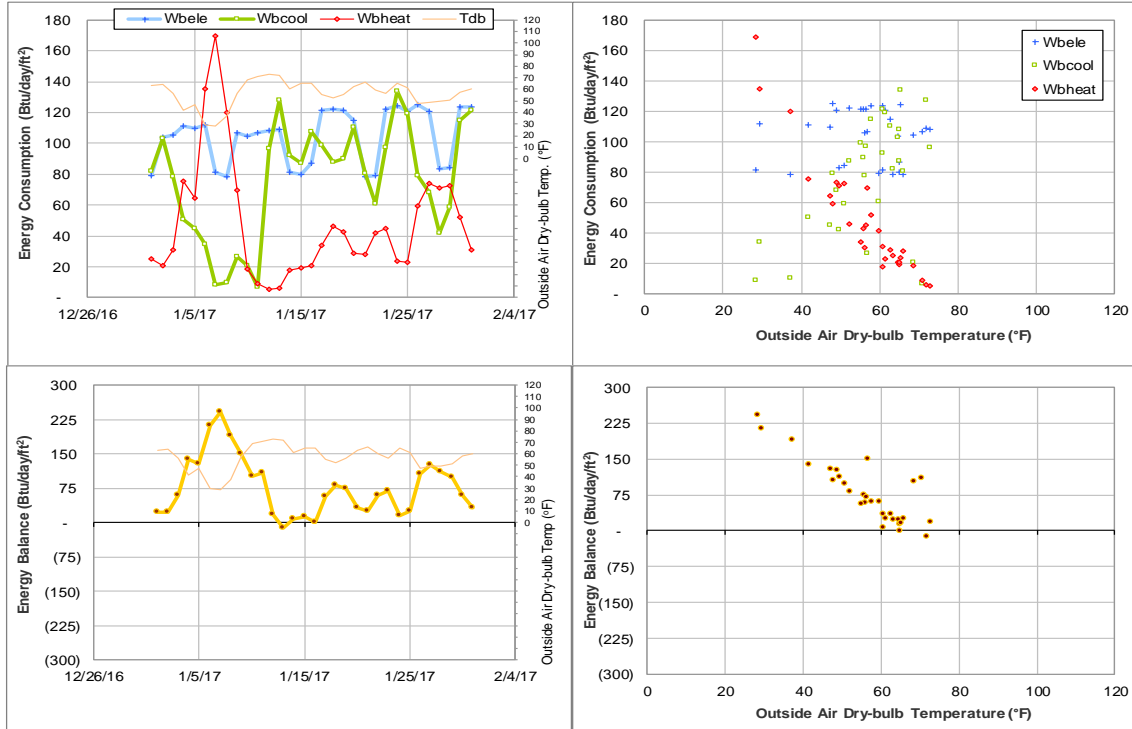


Figure IV-85 Pavilion TAMU BLDG # 471 Energy Balance Plot during January 2017

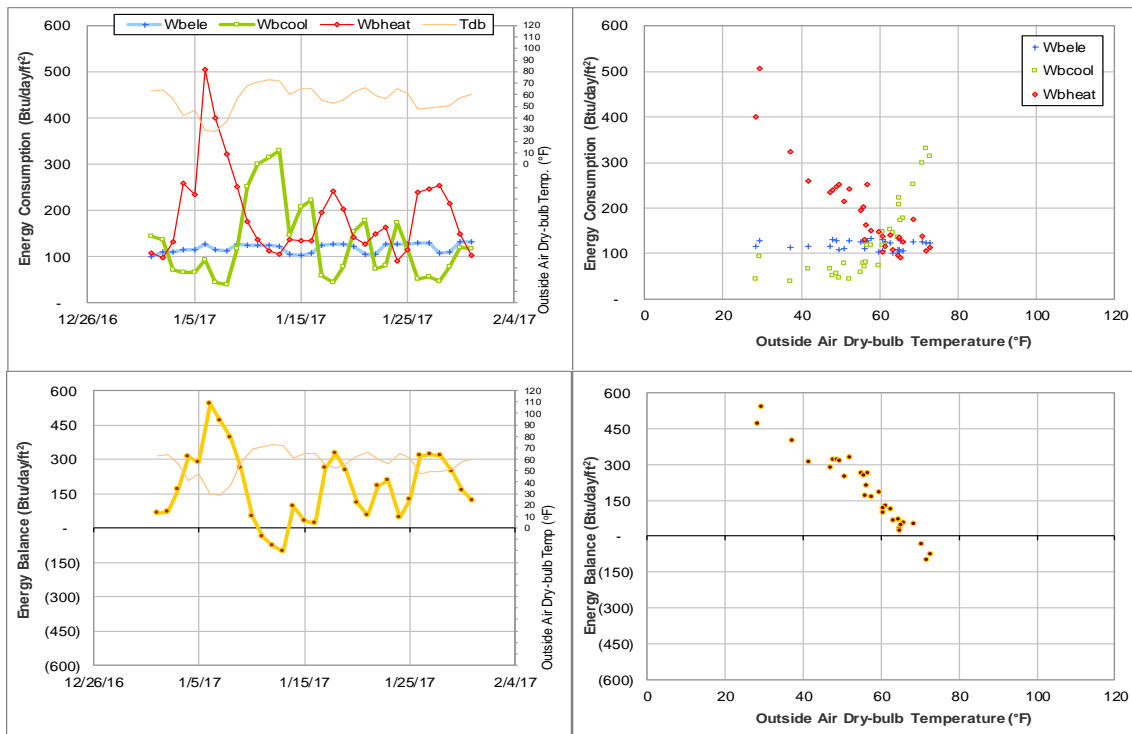


Figure IV-86 Animal Industries TAMU BLDG # 472 Energy Balance Plot during January 2017

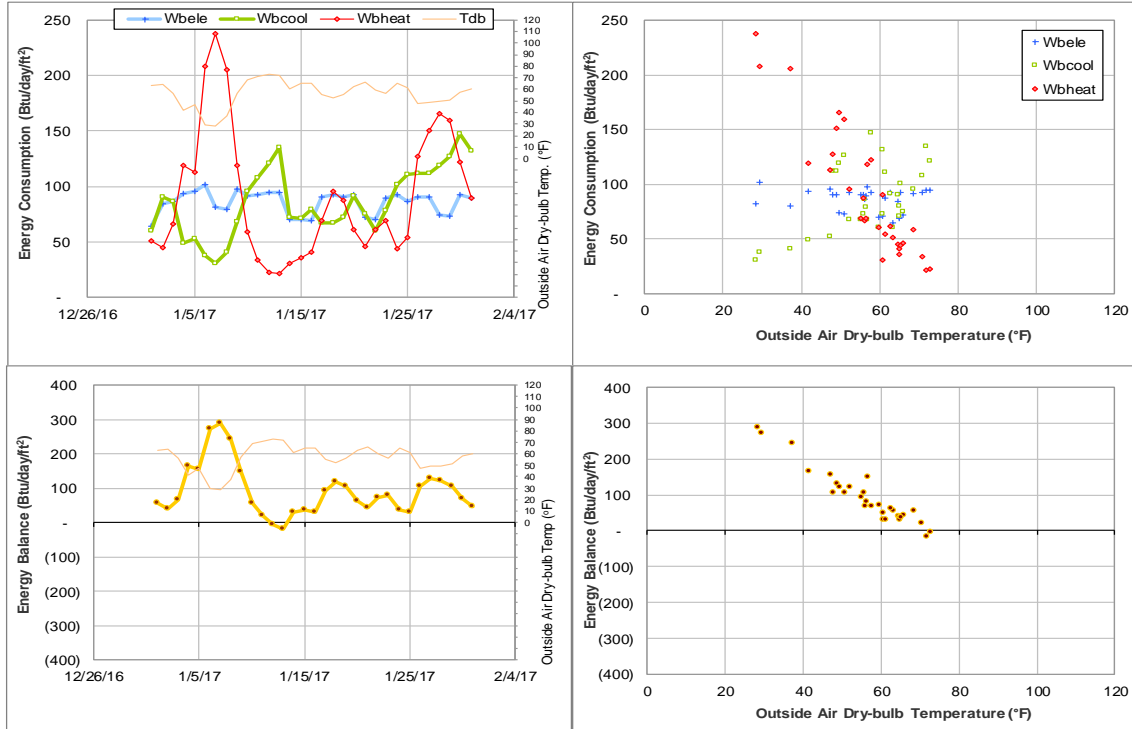


Figure IV-87 Williams Administration Building TAMU BLDG # 473 Energy Balance Plot during January 2017

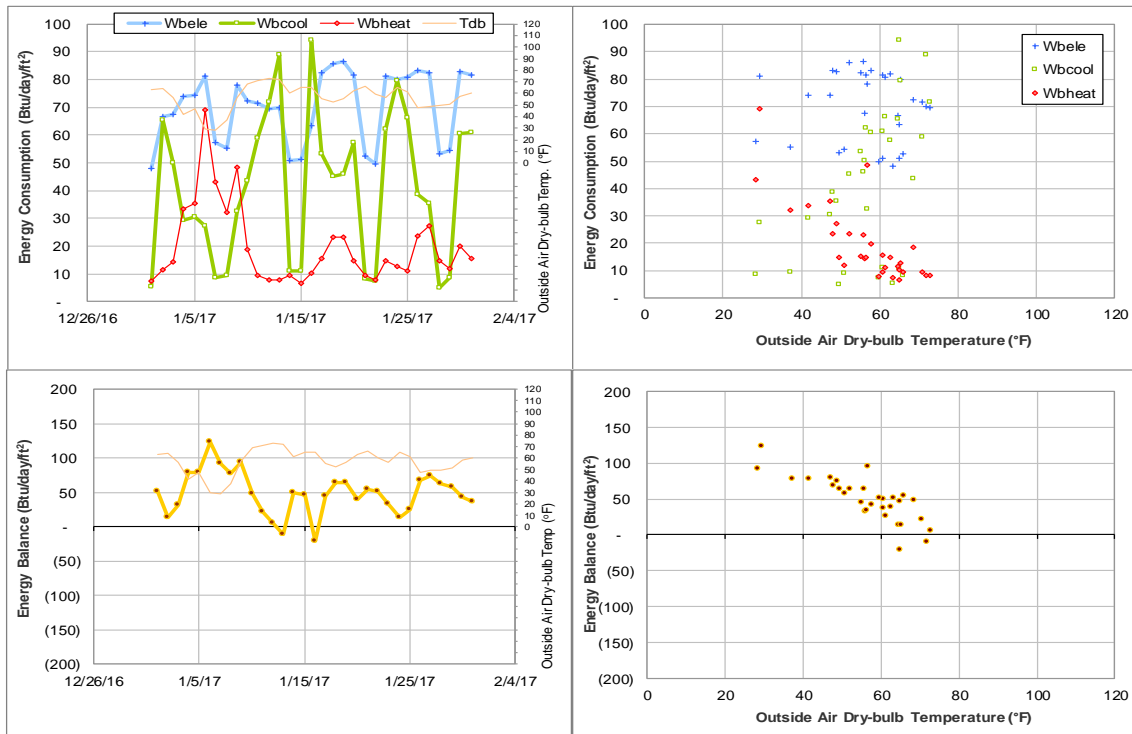


Figure IV-88 YMCA Building TAMU BLDG # 474 Energy Balance Plot during January 2017

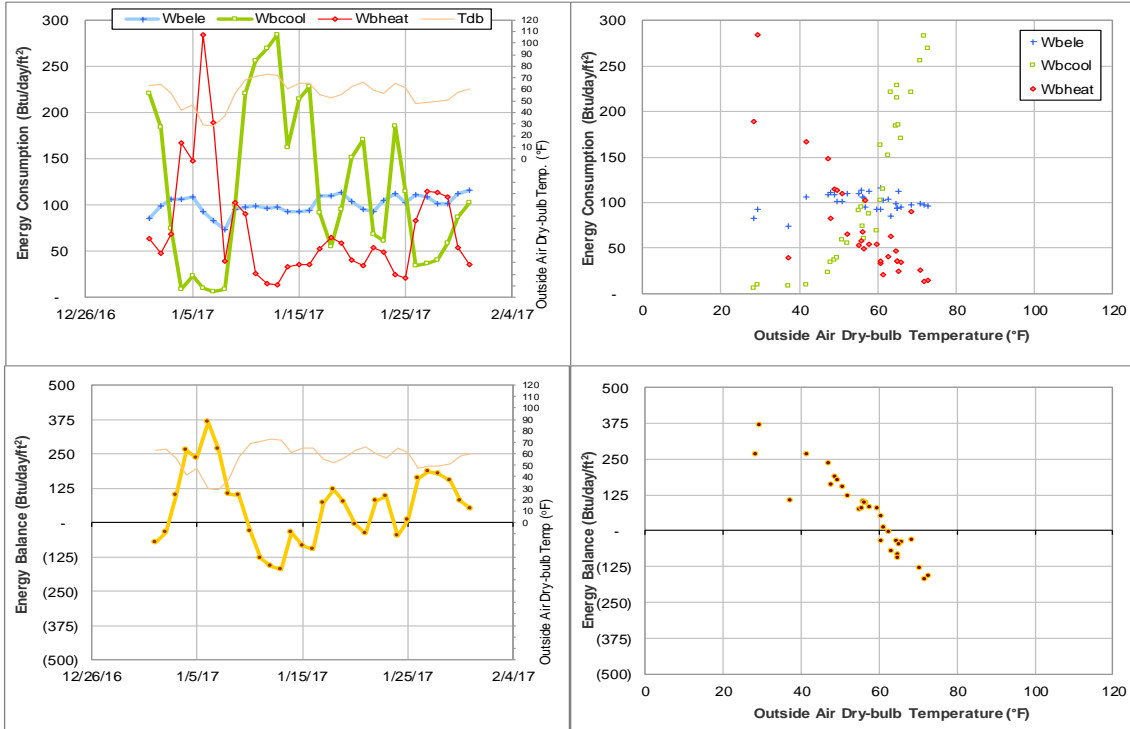


Figure IV-89 Francis Hall TAMU BLDG # 476 Energy Balance Plot during January 2017

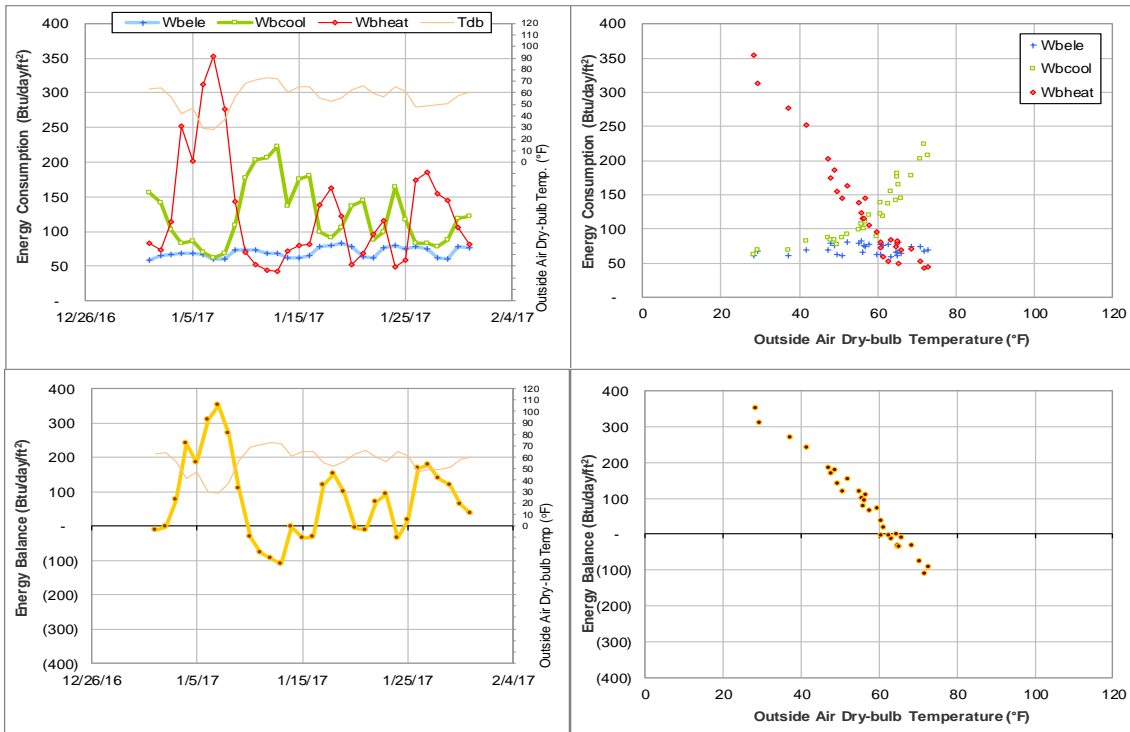


Figure IV-90 Anthropology Building TAMU BLDG # 477 Energy Balance Plot during January 2017



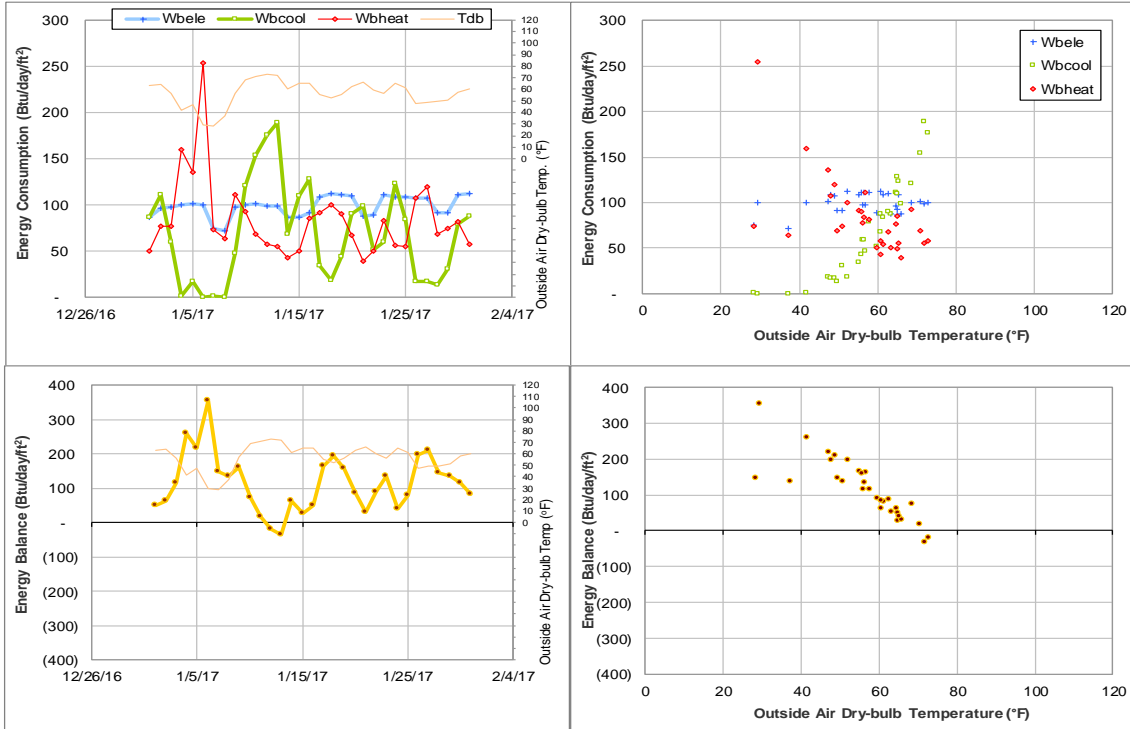


Figure IV-91 Scoates Hall TAMU BLDG # 478 Energy Balance Plot during January 2017

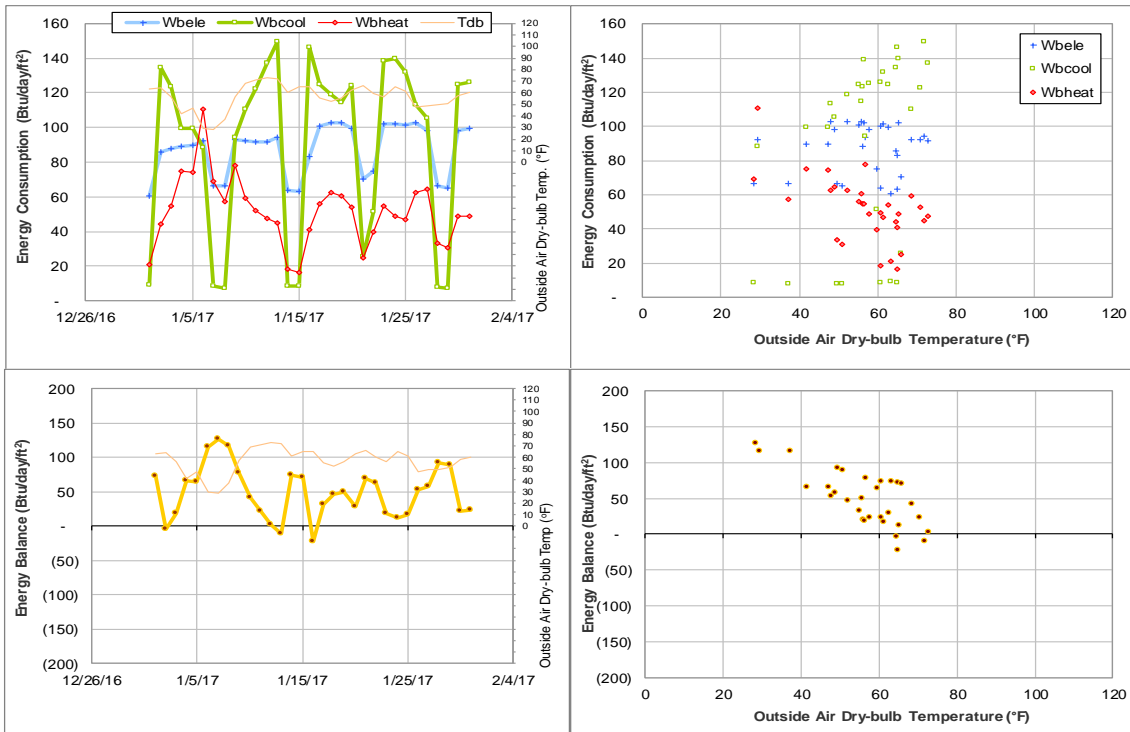


Figure IV-92 Bolton Hall TAMU BLDG # 480 Energy Balance Plot during January 2017

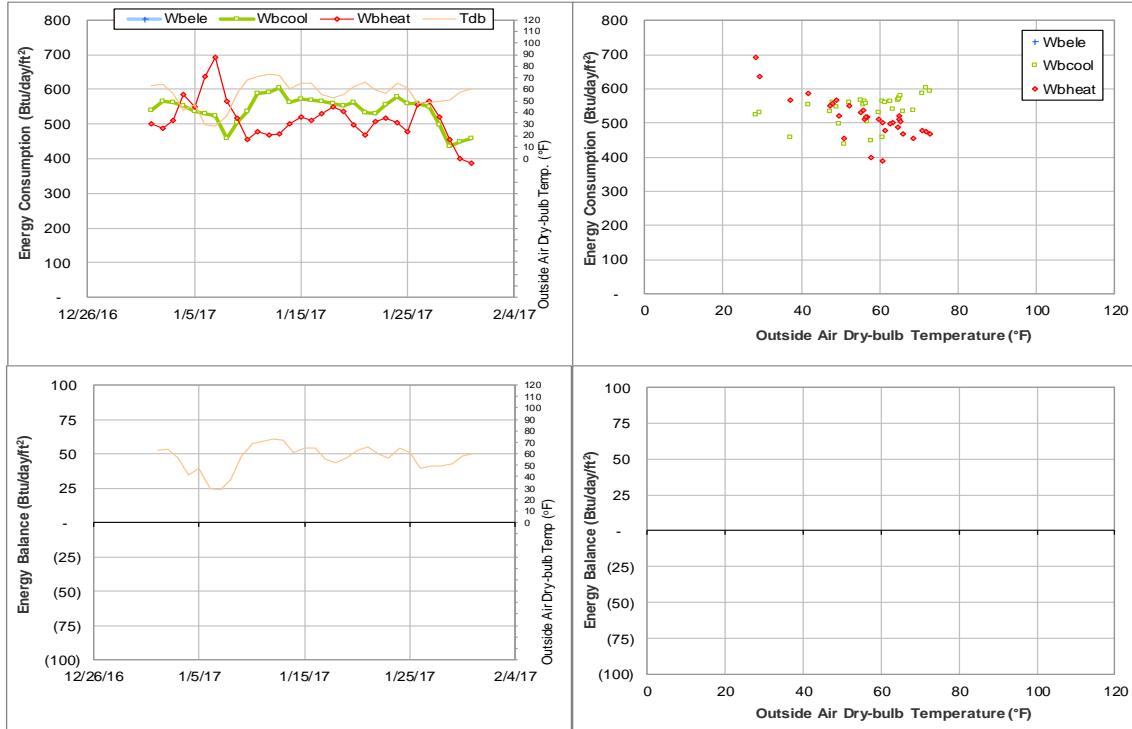


Figure IV-93 Heaton Hall TAMU BLDG # 481 Energy Balance Plot during January 2017

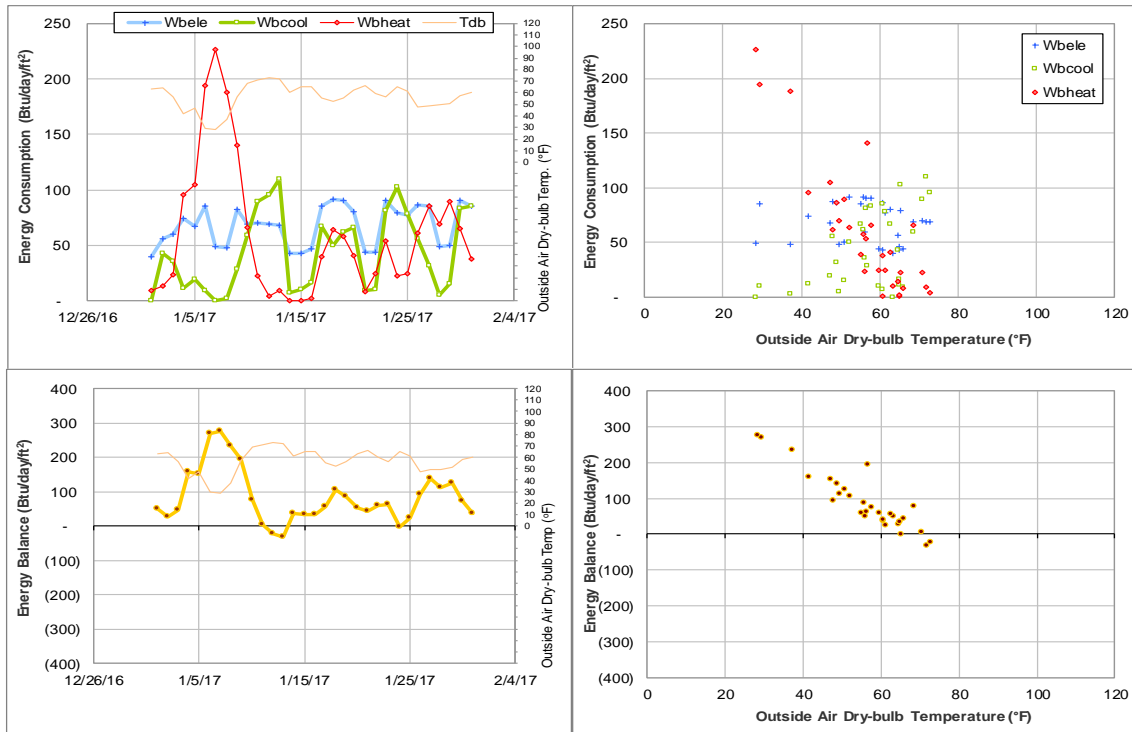


Figure IV-94 Fermier Hall TAMU BLDG # 482 Energy Balance Plot during January 2017

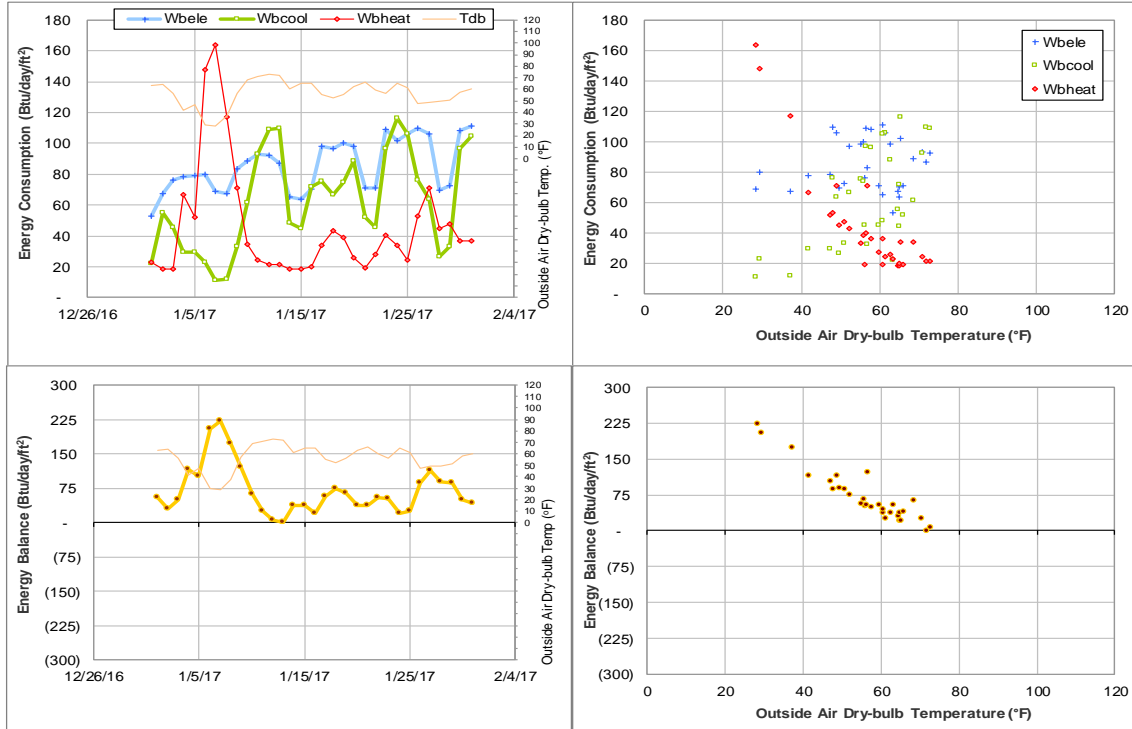


Figure IV-95 Thompson Hall TAMU BLDG # 483 Energy Balance Plot during January 2017

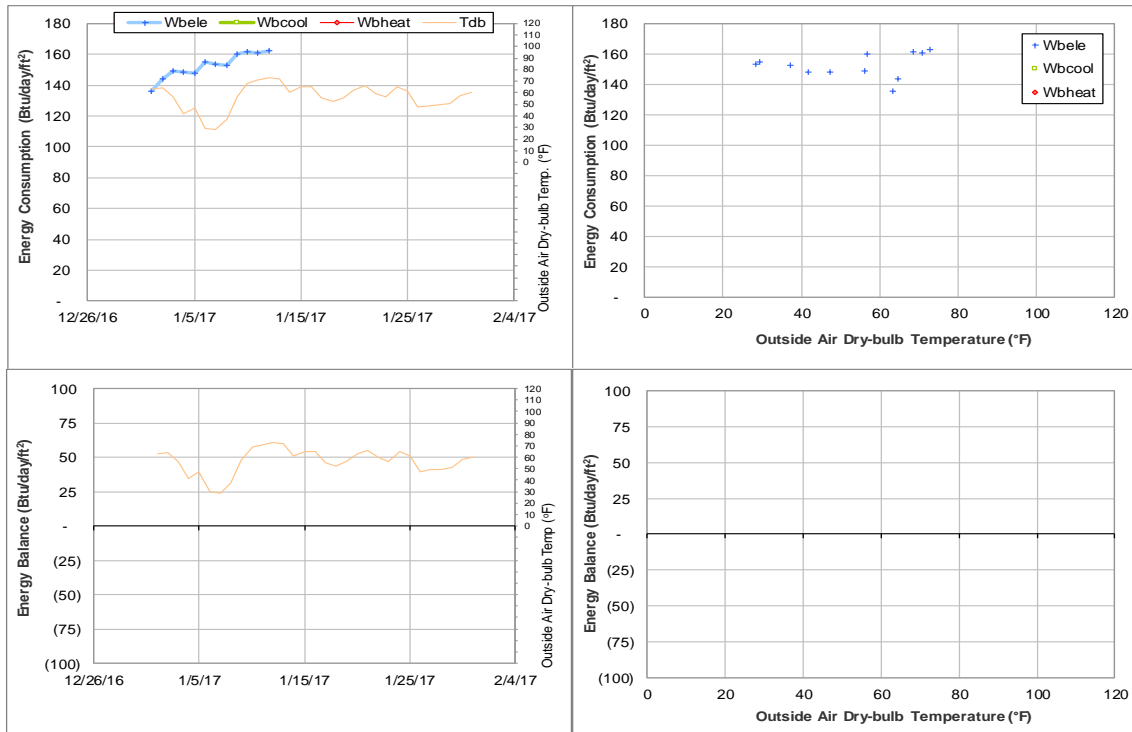


Figure IV-96 Chemistry Building TAMU BLDG # 484 Energy Balance Plot during January 2017

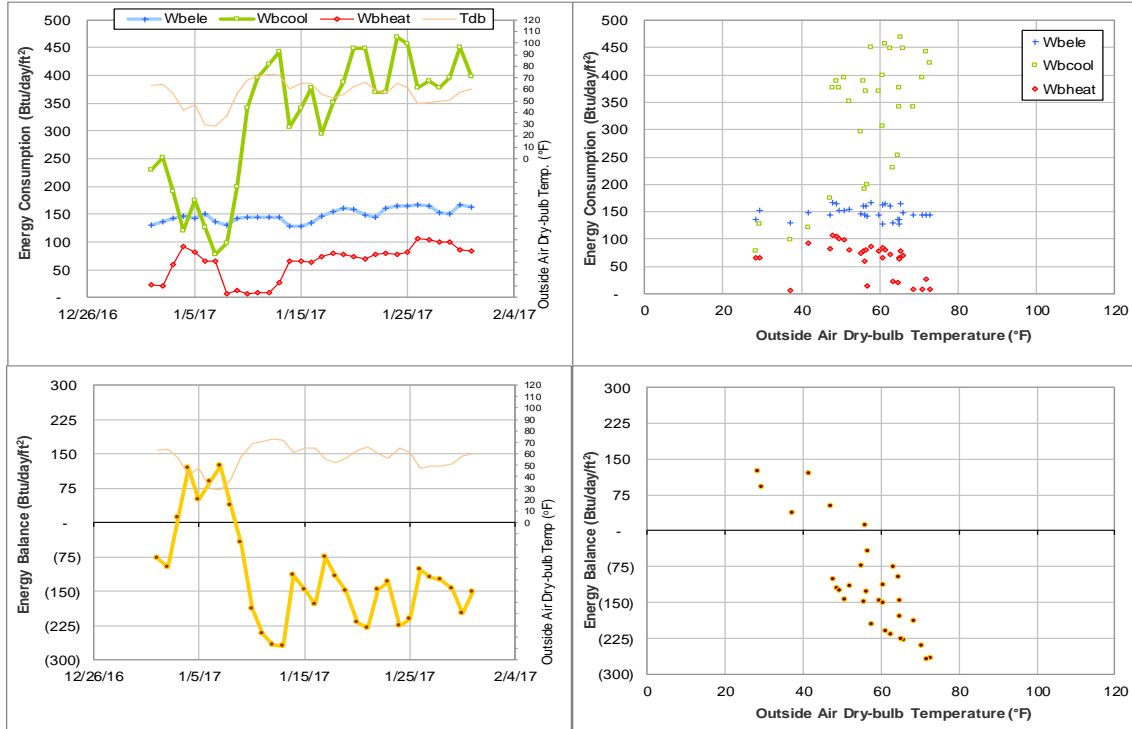


Figure IV-97 Halbouty Geosciences Building TAMU BLDG # 490 Energy Balance Plot during January 2017

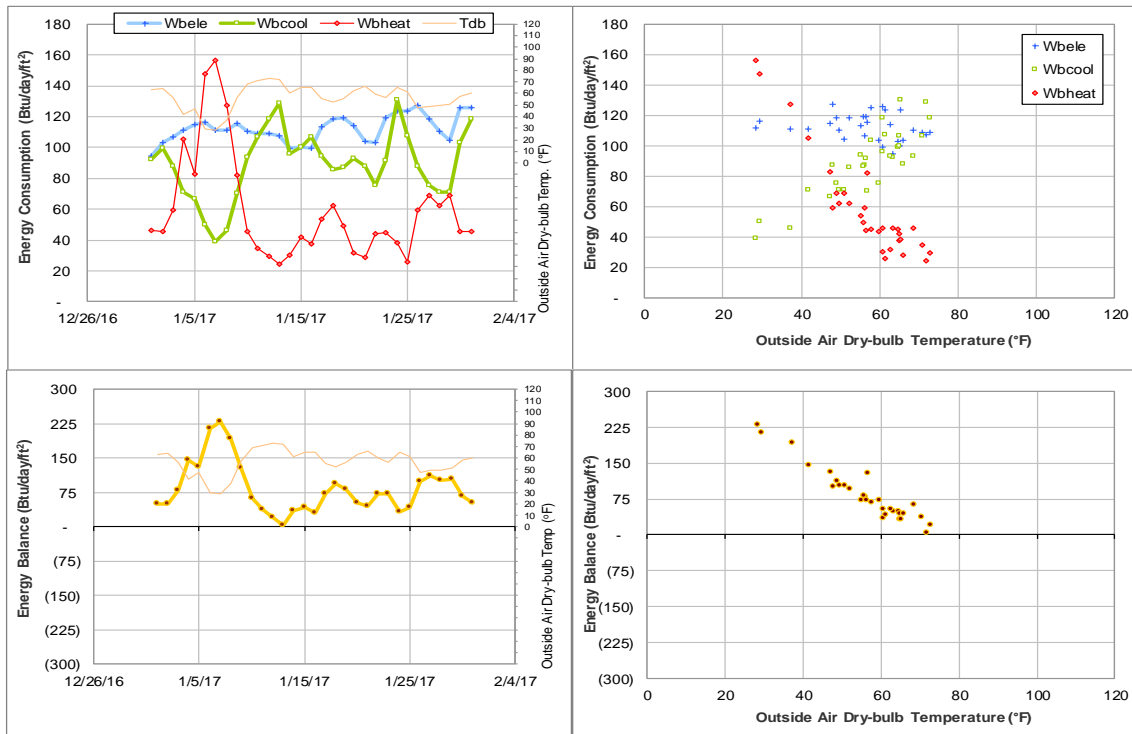


Figure IV-98 Civil Engineering Building TAMU BLDG # 492 Energy Balance Plot during January 2017

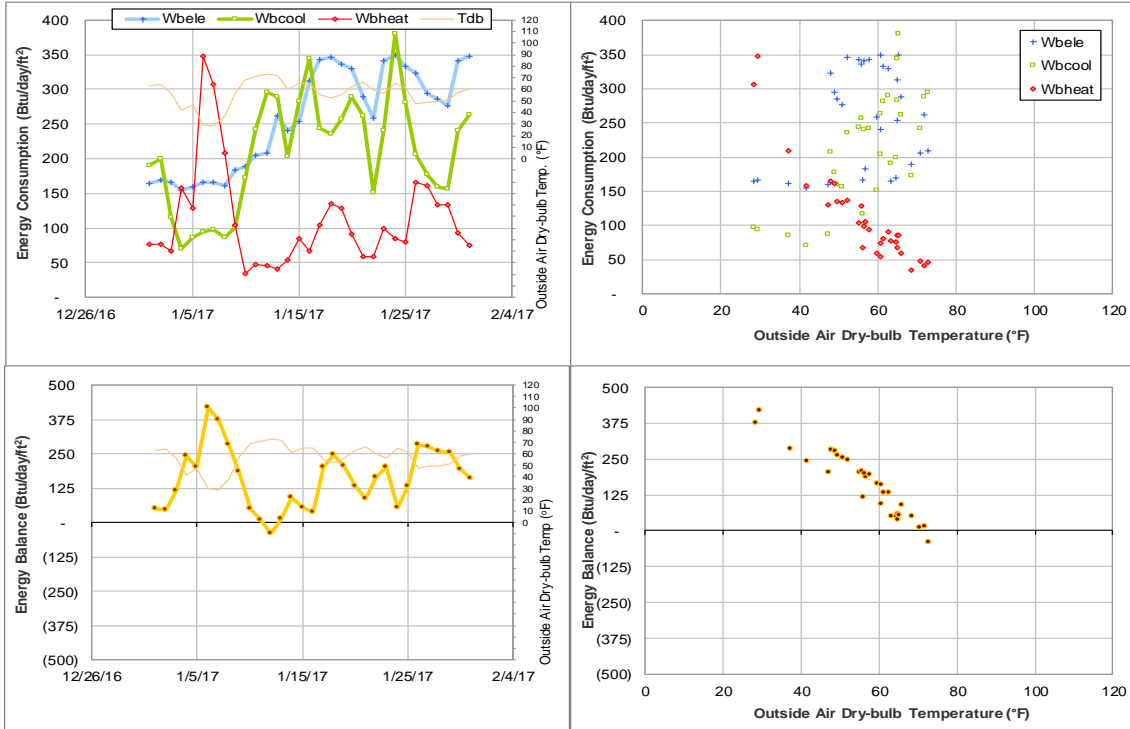


Figure IV-99 Sbisa Dining Hall TAMU BLDG # 495 Energy Balance Plot during January 2017

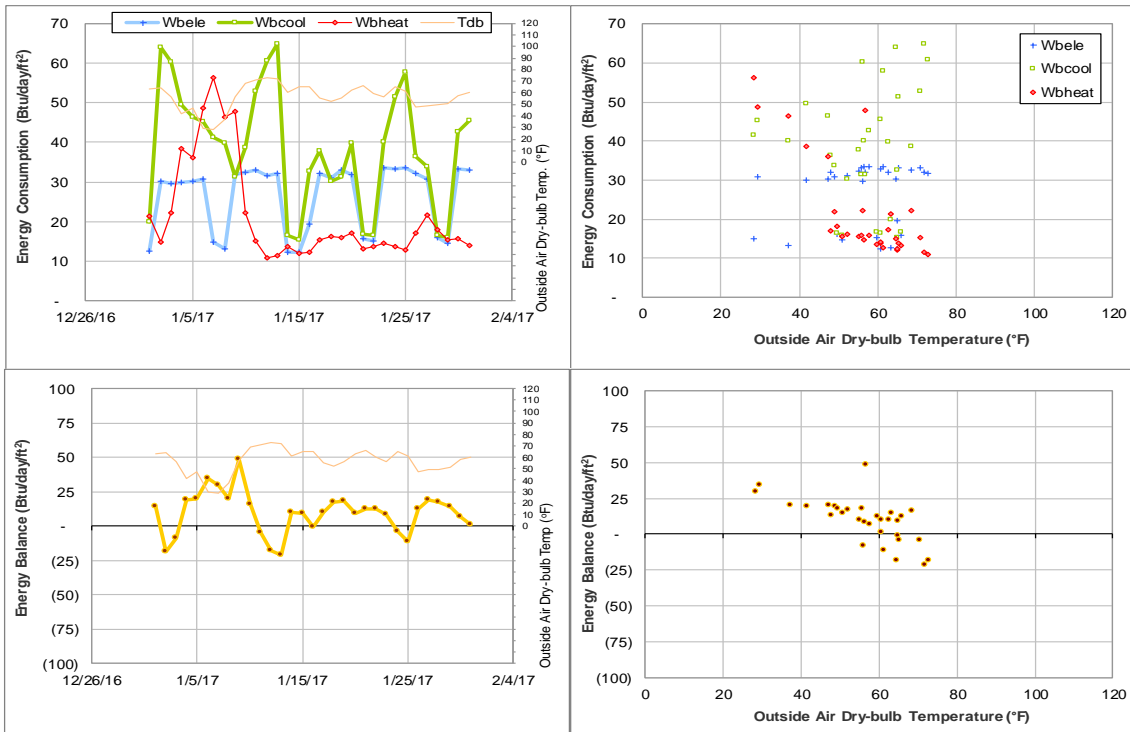


Figure IV-100 Utilities & Energy Services Central Office TAMU BLDG # 496 Energy Balance Plot during January 2017

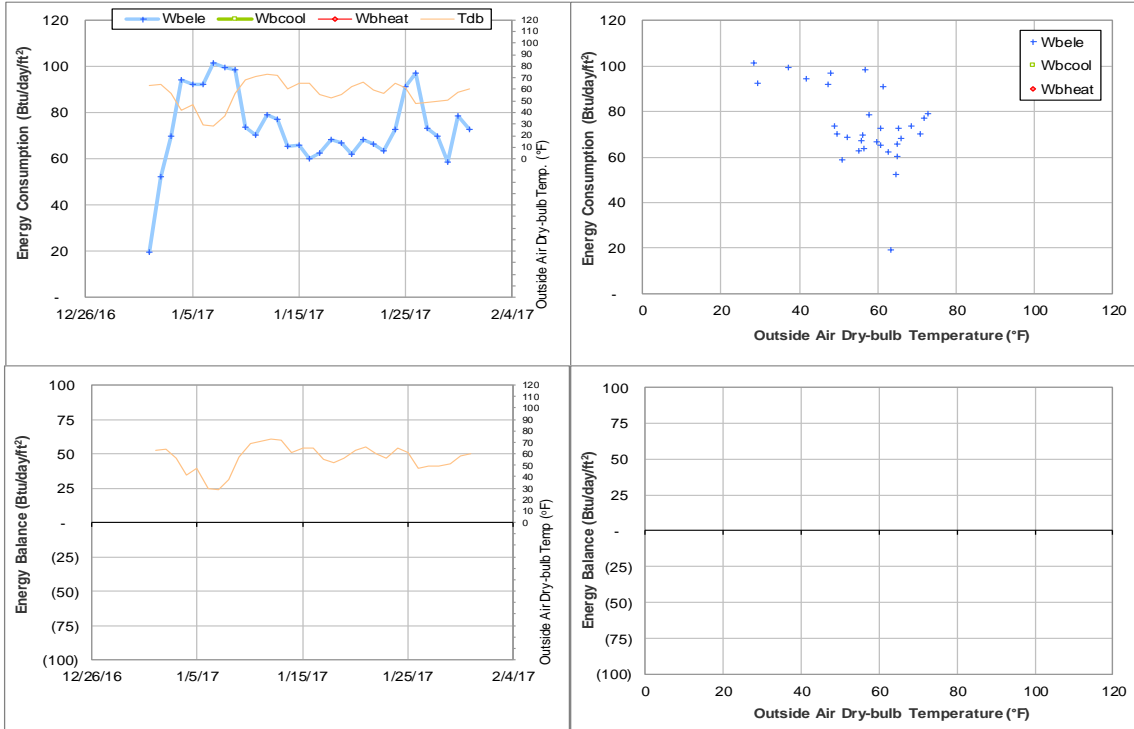


Figure IV-101 Concrete Materials Laboratory TAMU BLDG # 501 Energy Balance Plot during January 2017

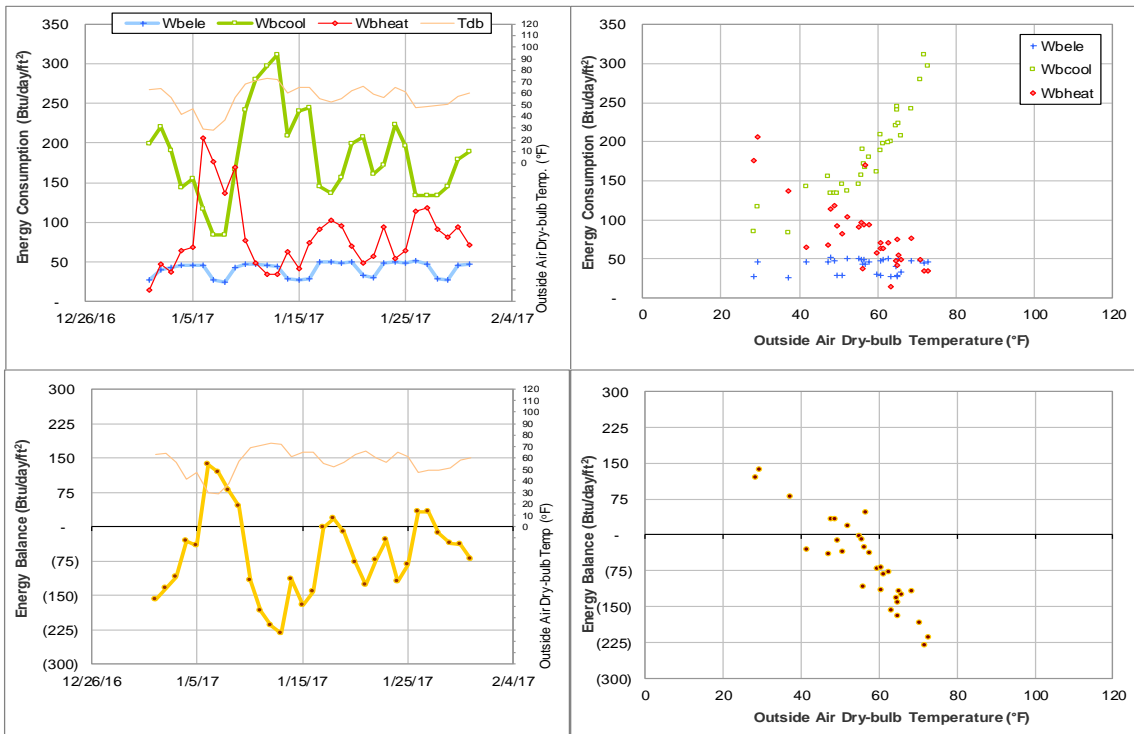


Figure IV-102 Nagle Hall TAMU BLDG # 506 Energy Balance Plot during January 2017

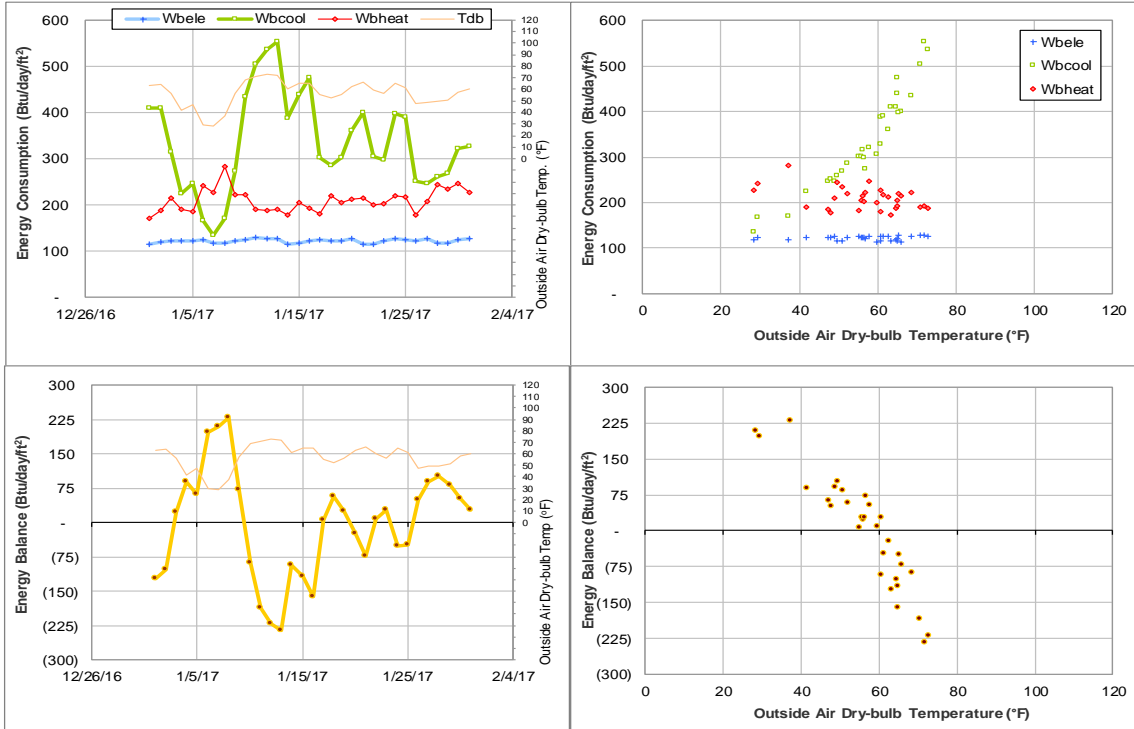


Figure IV-103 Veterinary Medical Science Building TAMU BLDG # 507 Energy Balance Plot during January 2017

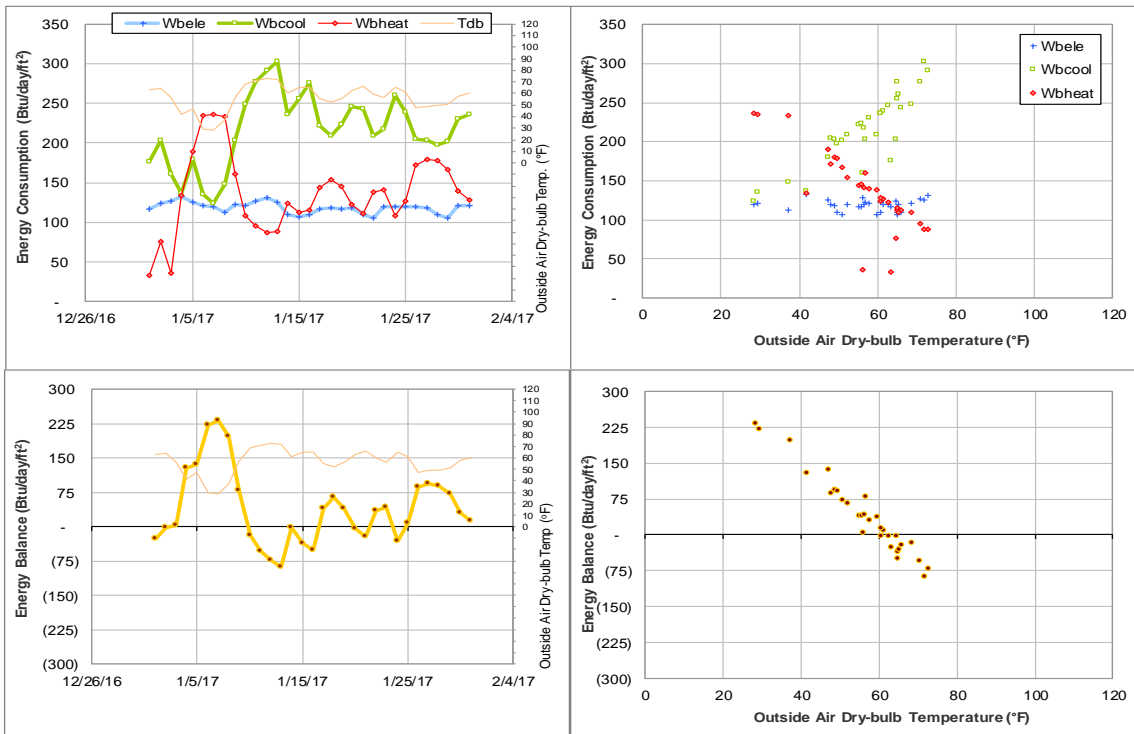


Figure IV-104 Veterinary Teaching Hospital and Med Adm. TAMU BLDG # 508 and 1026 Energy Balance Plot during January 2017

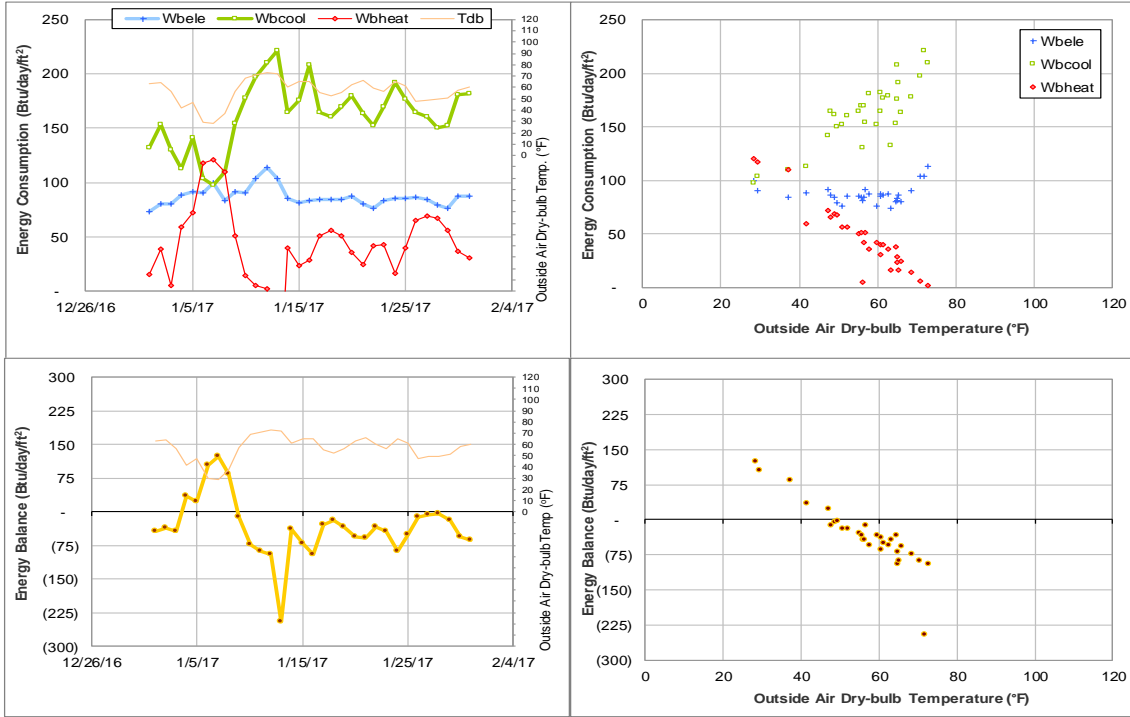




Figure IV-105 Veterinary Teaching Hospital TAMU BLDG # 508 Energy Balance Plot during January 2017

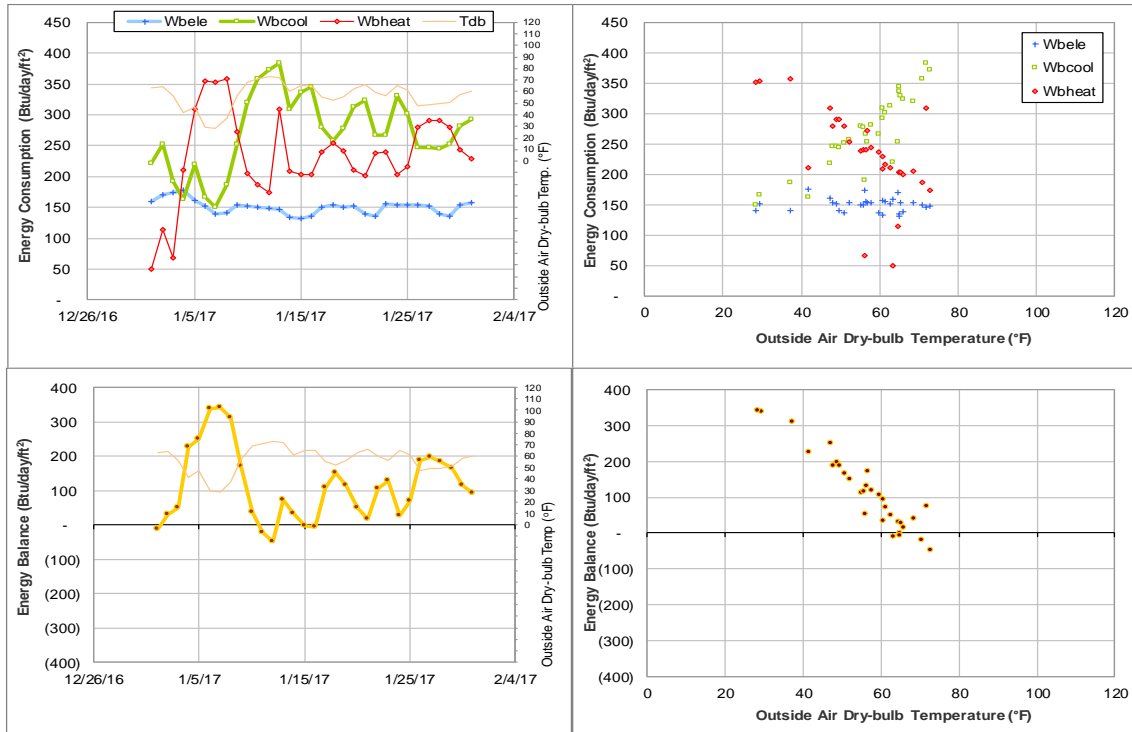


Figure IV-106 Veterinary Medicine Administration TAMU BLDG # 1026 Energy Balance Plot during January 2017

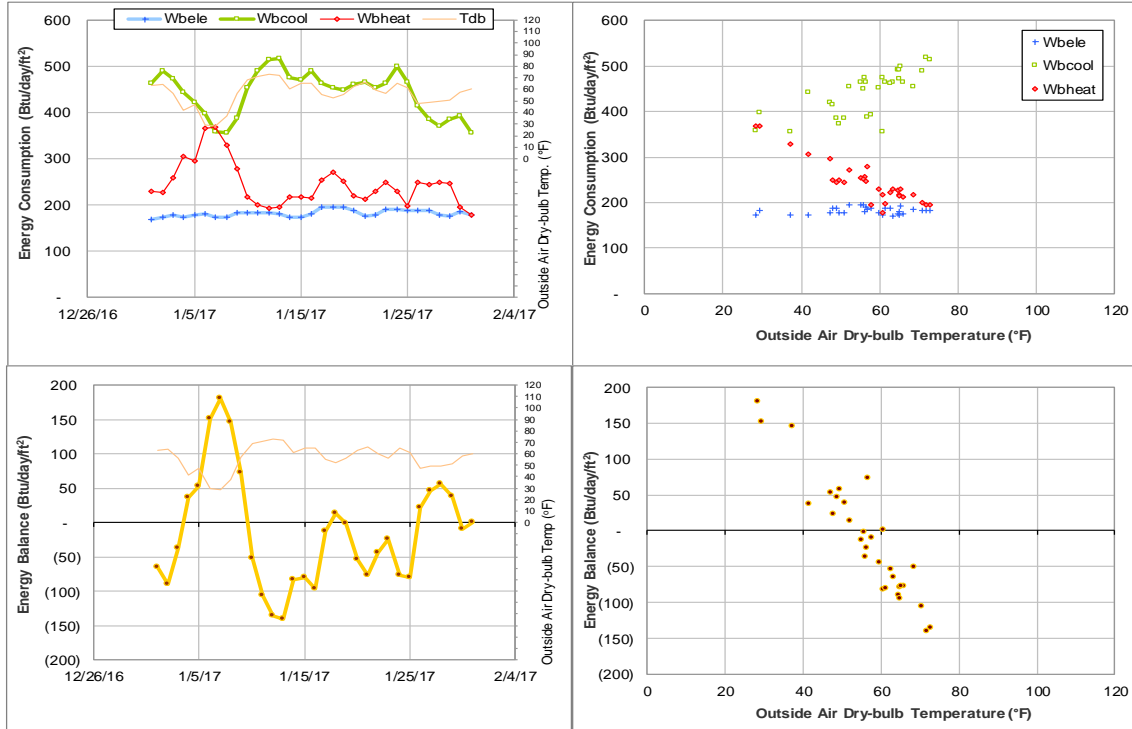


Figure IV-107 Heep Laboratory Building TAMU BLDG # 511 Energy Balance Plot during January 2017

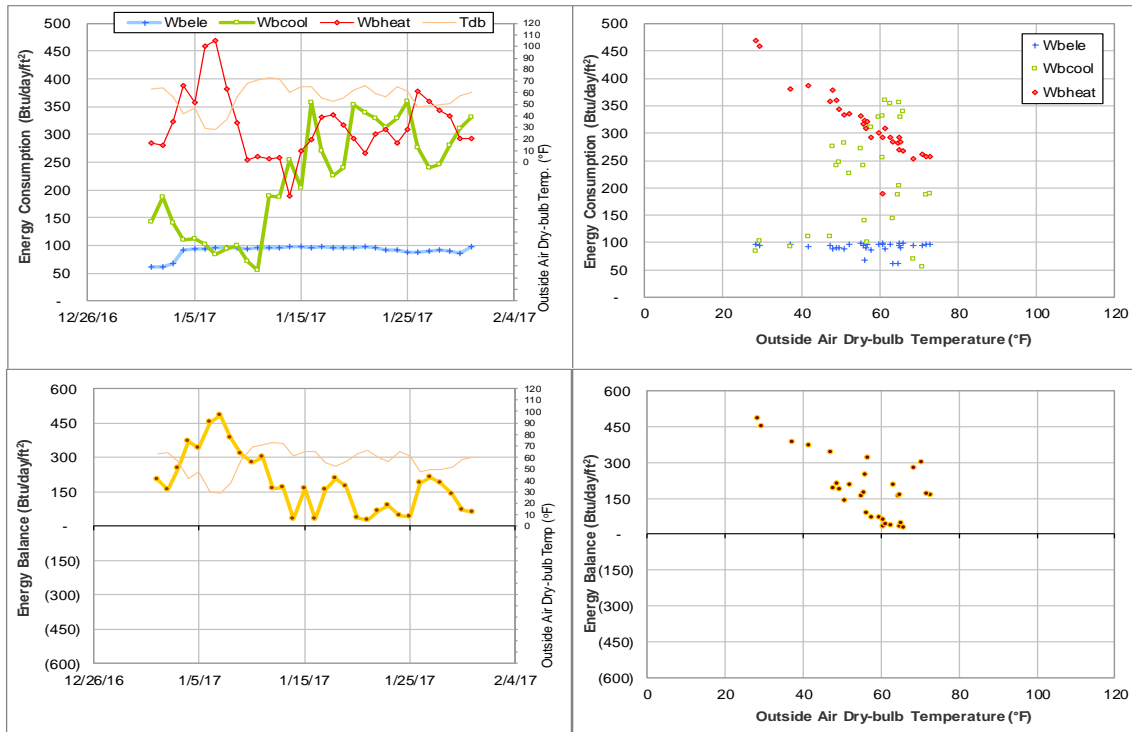


Figure IV-108 All Faiths Chapel TAMU BLDG # 512 Energy Balance Plot during January 2017

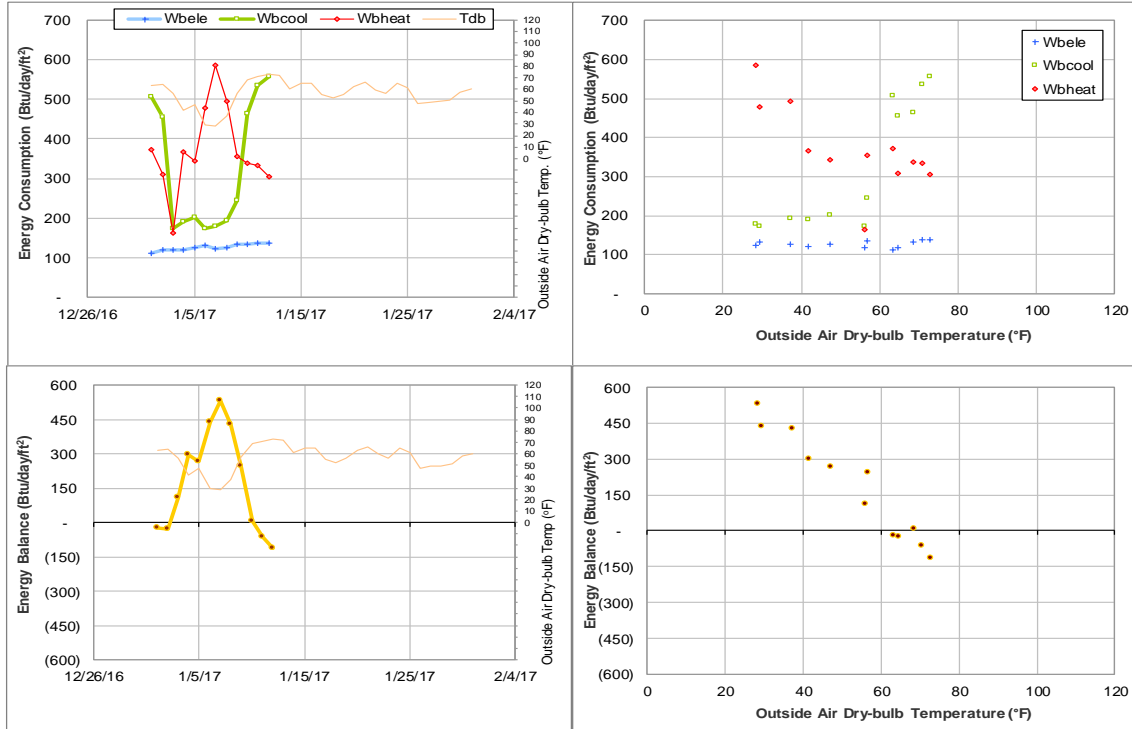


Figure IV-109 Doherty Building TAMU BLDG # 513 Energy Balance Plot during January 2017

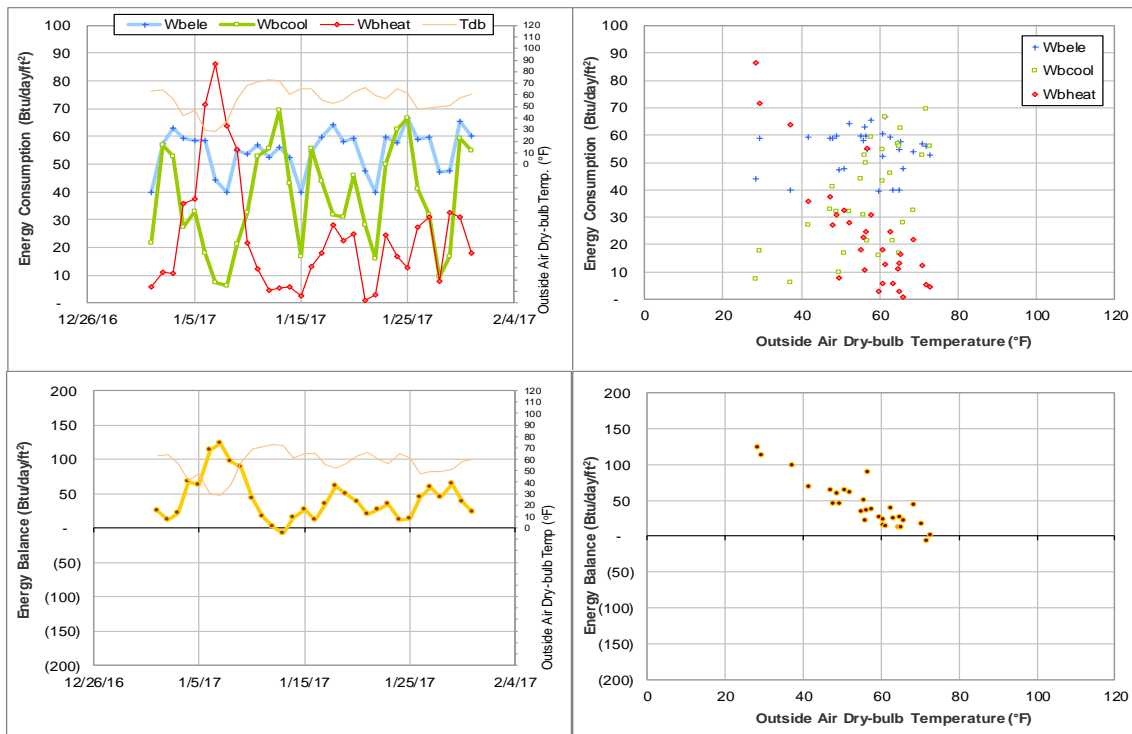


Figure IV-110 Munnerlyn Astronomy & Space Sciences Engineering TAMU BLDG # 514 Energy Balance Plot during January 2017

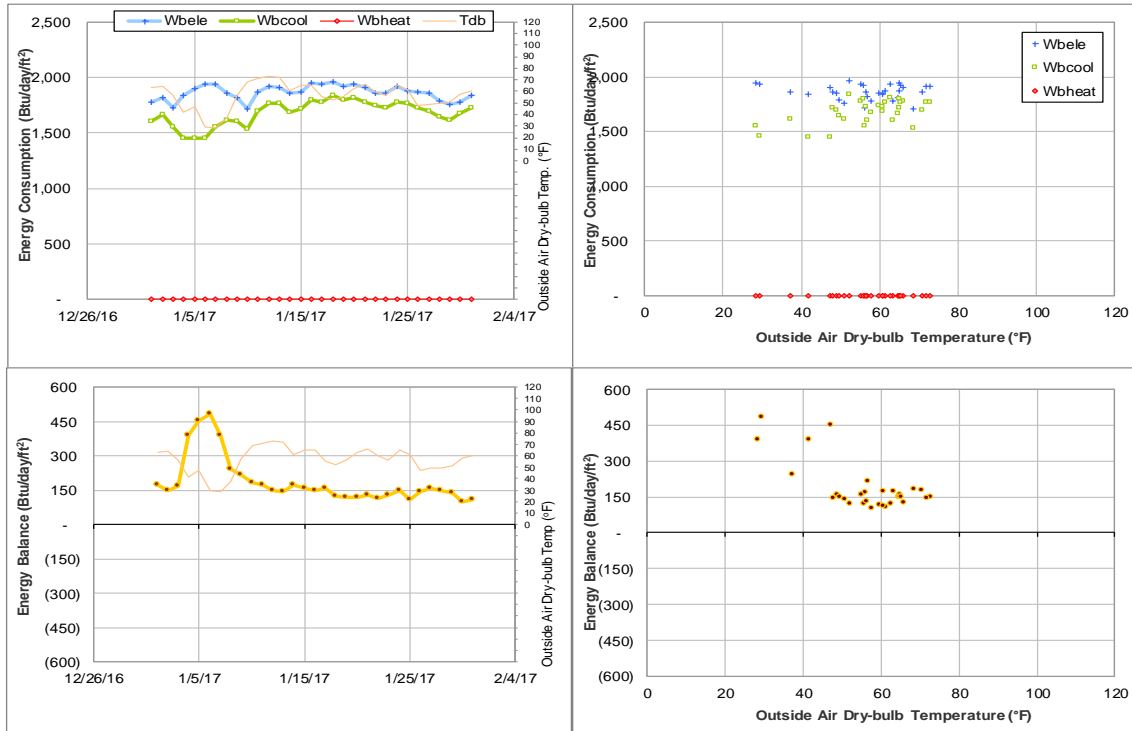


Figure IV-111 Computing Services Center TAMU BLDG # 516 Energy Balance Plot during January 2017

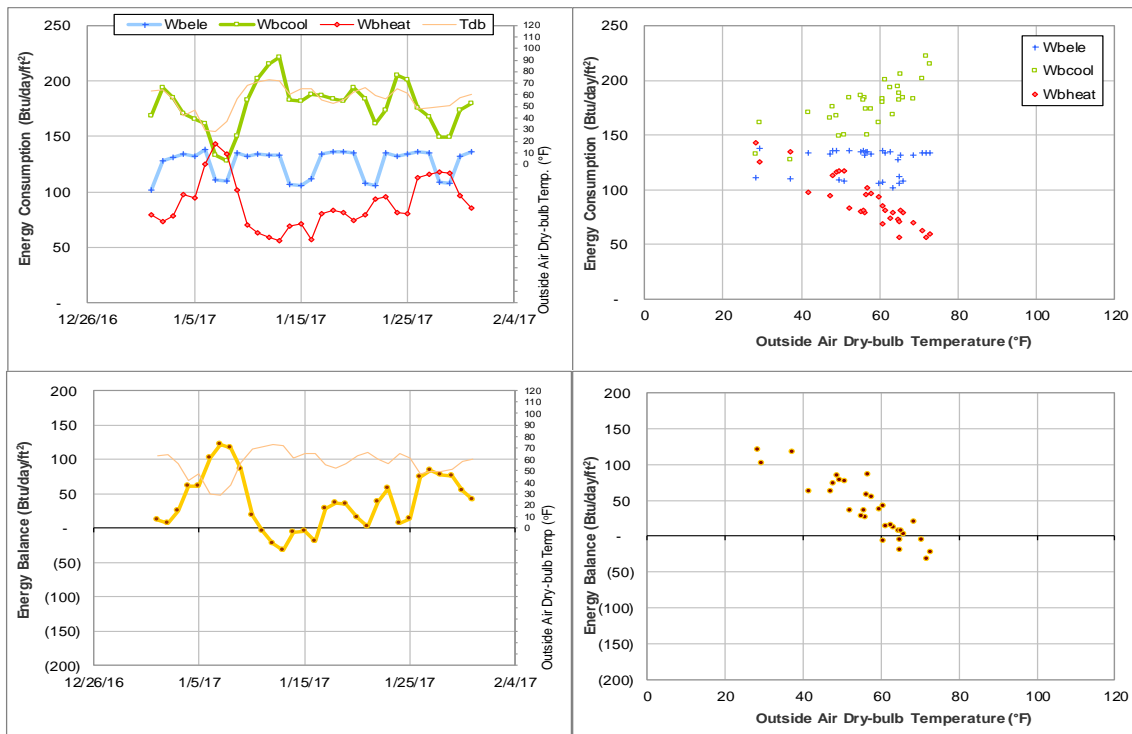


Figure IV-112 Beutel Health Center TAMU BLDG # 520 Energy Balance Plot during January 2017

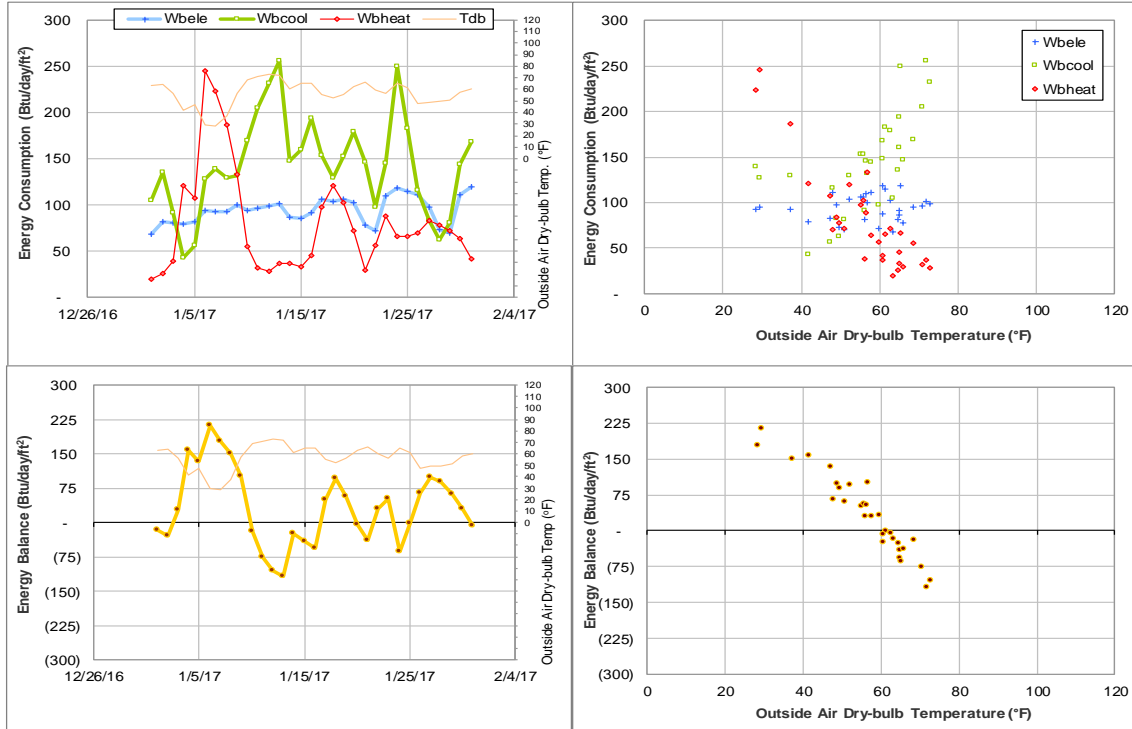


Figure IV-113 Heldenfels Hall TAMU BLDG # 521 Energy Balance Plot during January 2017

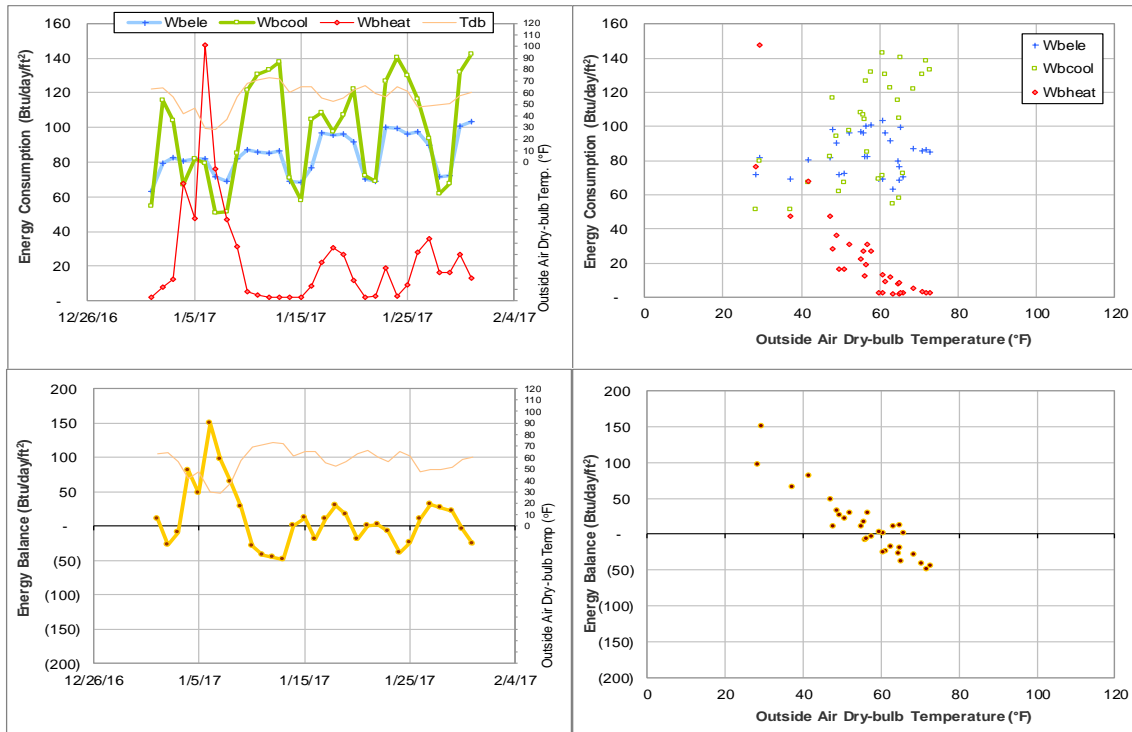


Figure IV-114 Blocker building TAMU BLDG # 524 Energy Balance Plot during January 2017

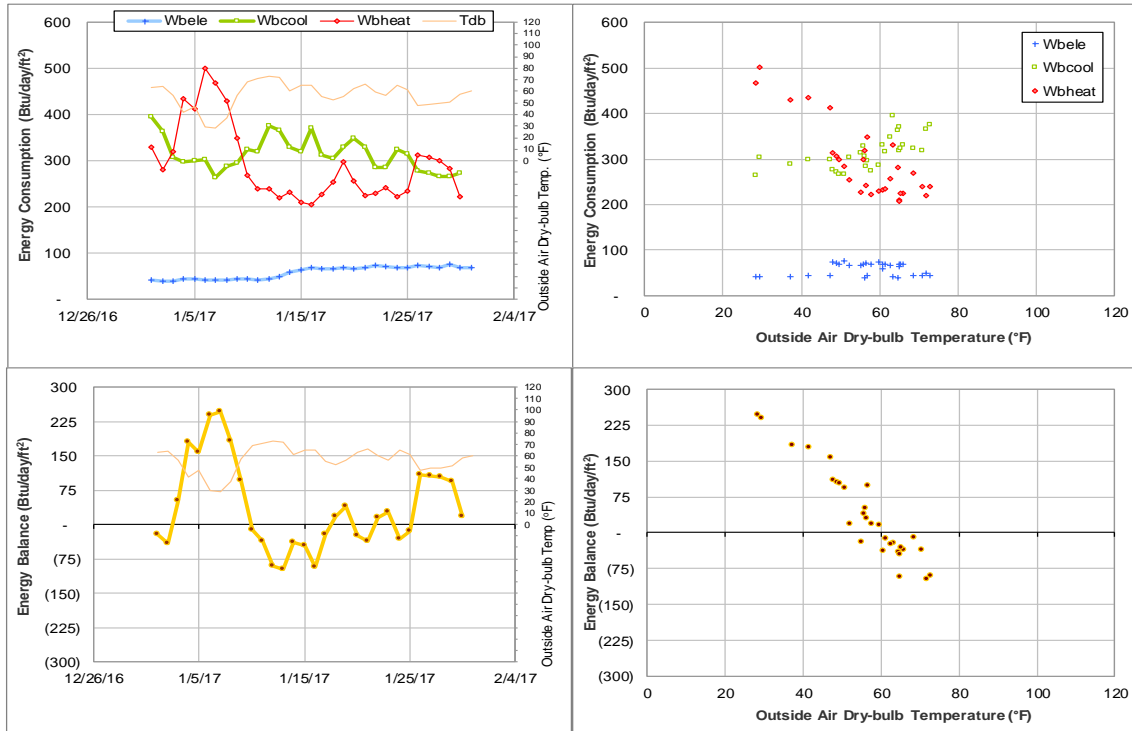


Figure IV-115 Clements Residence Hall TAMU BLDG # 548 Energy Balance Plot during January 2017

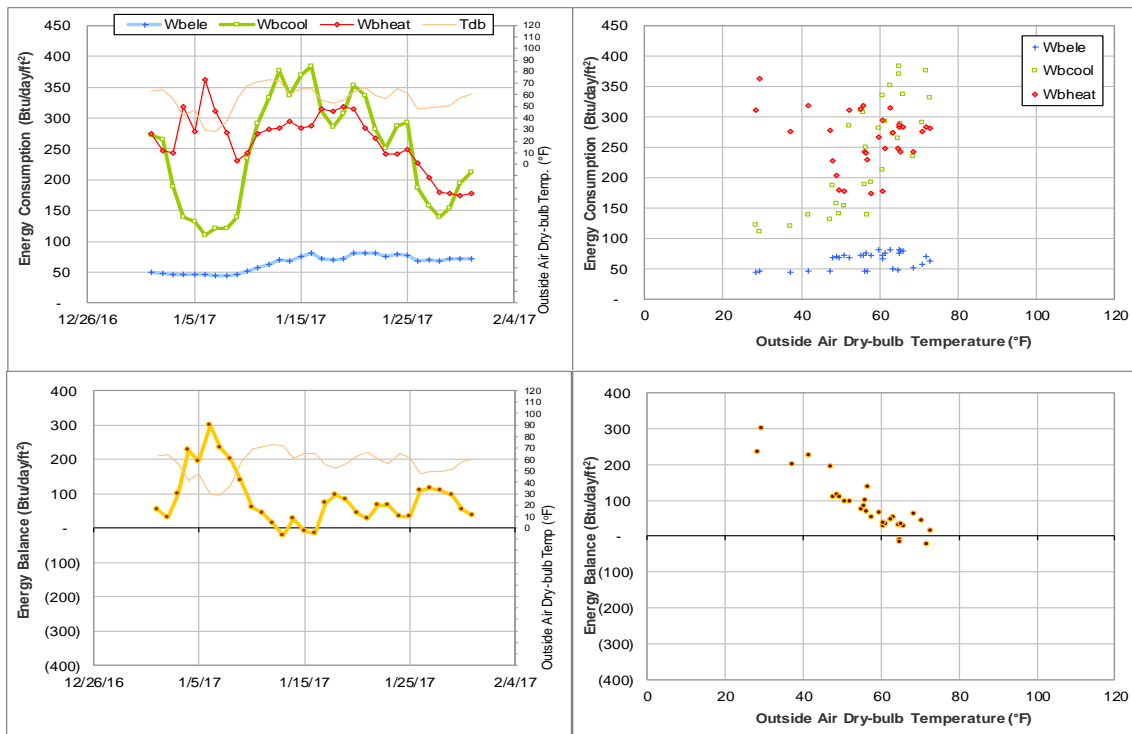


Figure IV-116 Haas Residence Hall TAMU BLDG # 549 Energy Balance Plot during January 2017

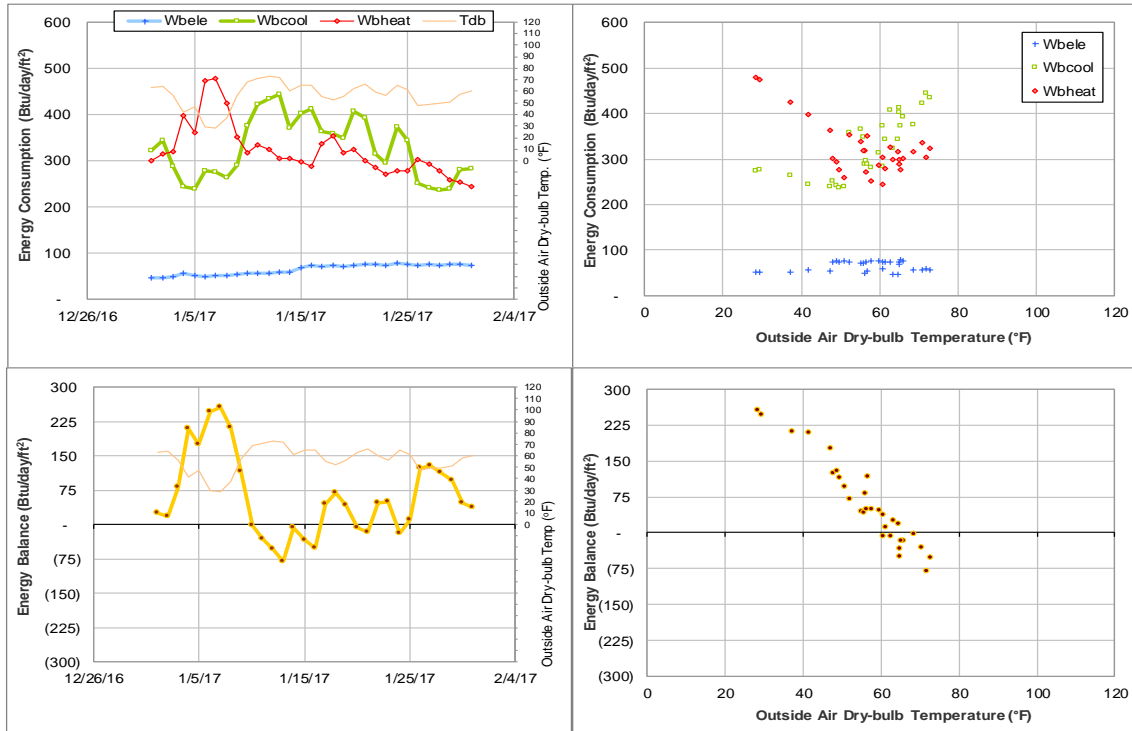


Figure IV-117 McFadden Residence Hall TAMU BLDG # 550 Energy Balance Plot during January 2017

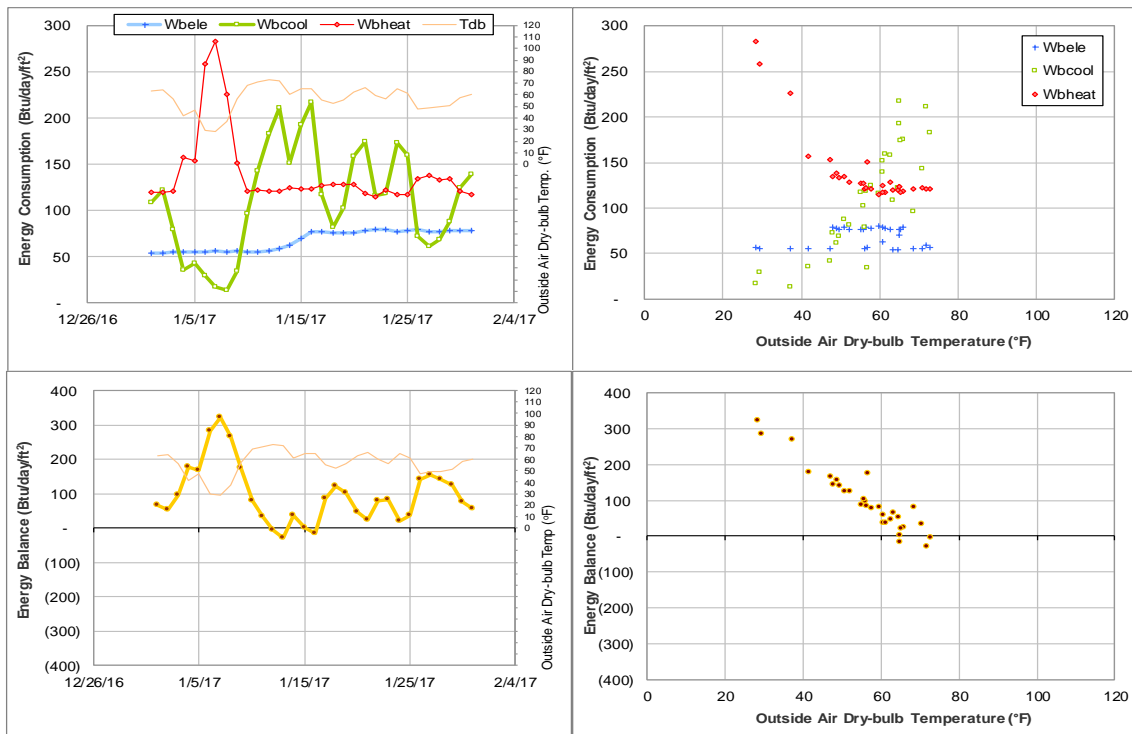


Figure IV-118 Neeley Residence Hall TAMU BLDG # 652 Energy Balance Plot during January 2017

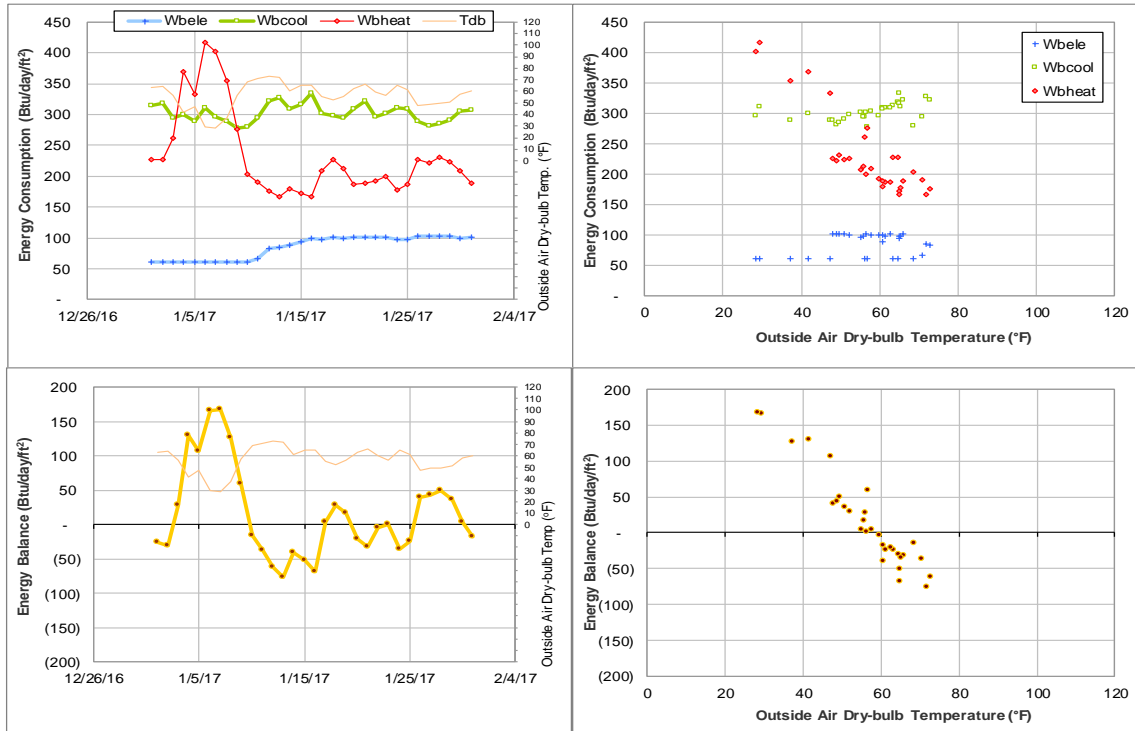


Figure IV-119 Hobby Residence Hall TAMU BLDG # 653 Energy Balance Plot during January 2017

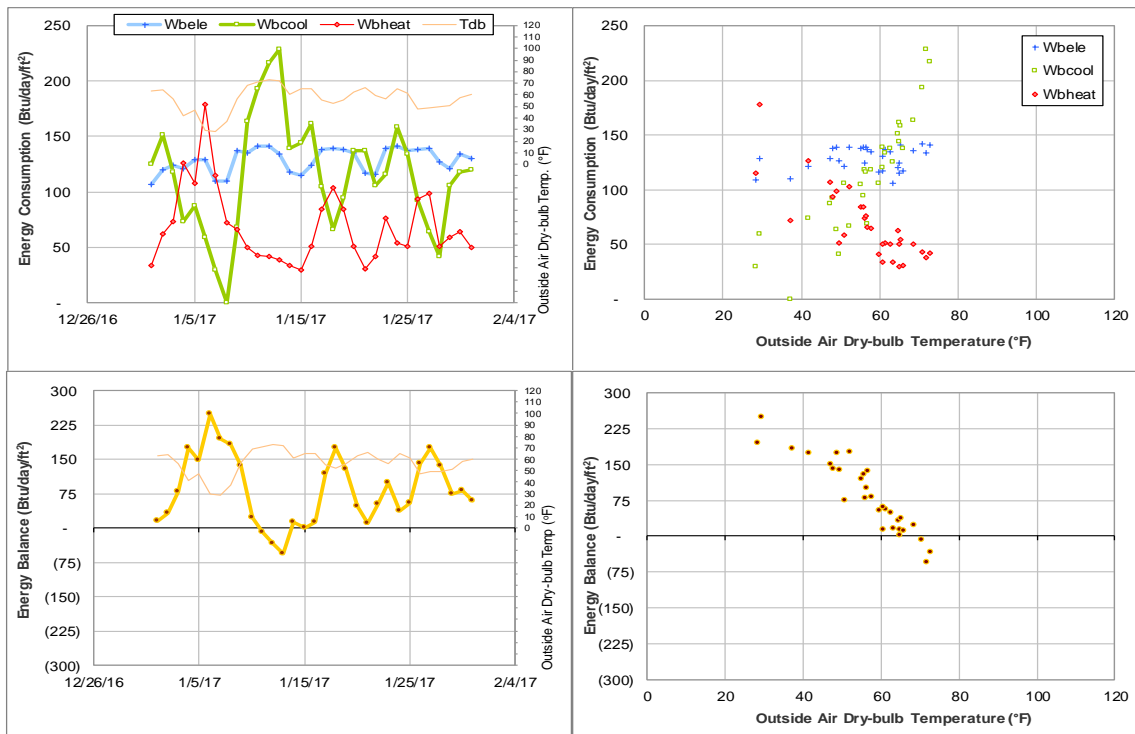


Figure IV-120 Wisenbaker Engineering Research Center TAMU BLDG # 682 Energy Balance Plot during January 2017



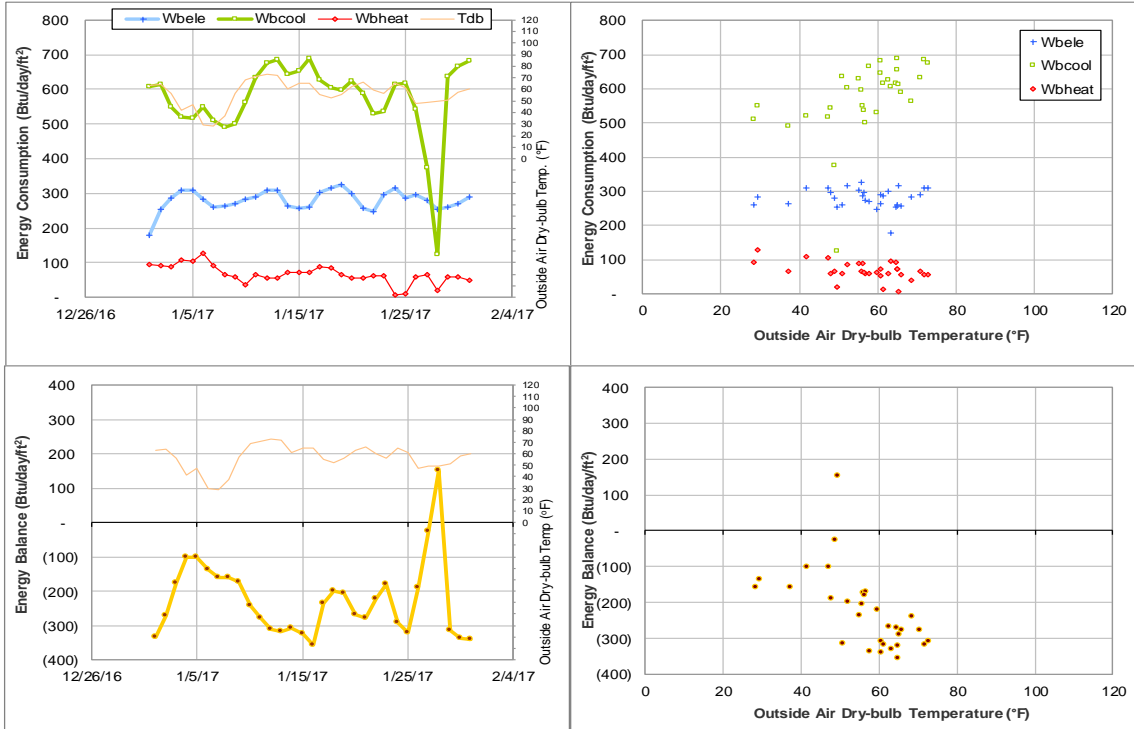


Figure IV-121 McNew Laboratory TAMU BLDG # 740 Energy Balance Plot during January 2017

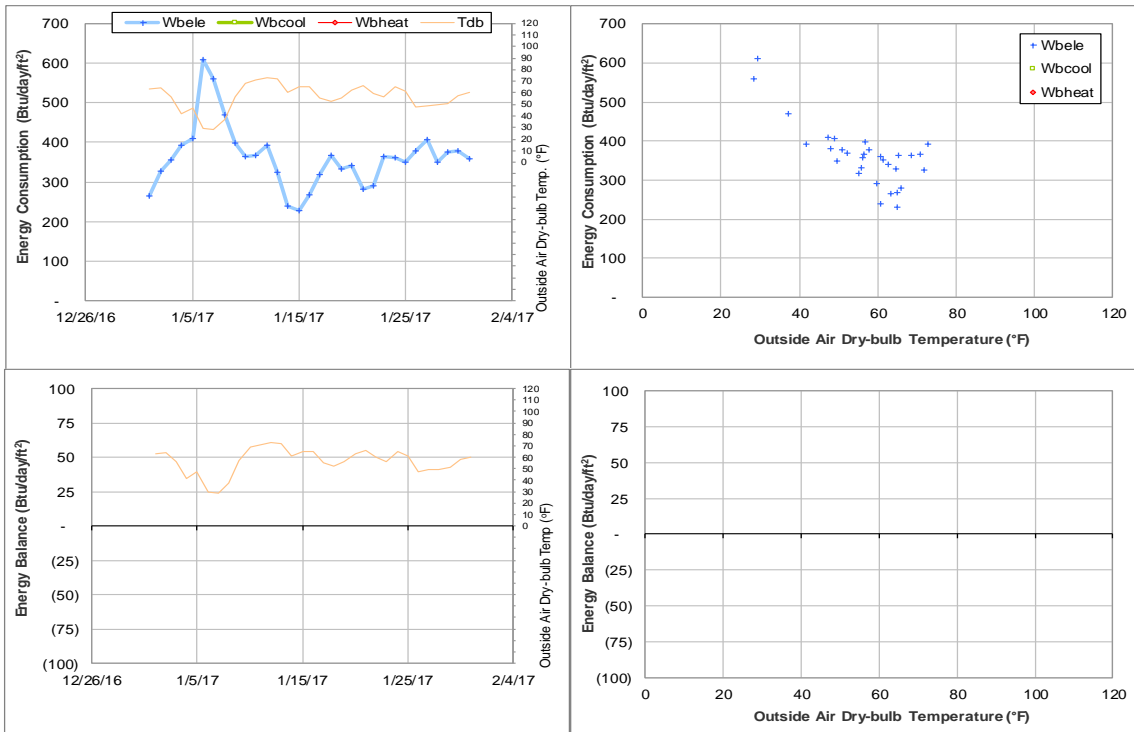


Figure IV-122 Soil Testing Labs TAMU BLDG # 806 Energy Balance Plot during January 2017

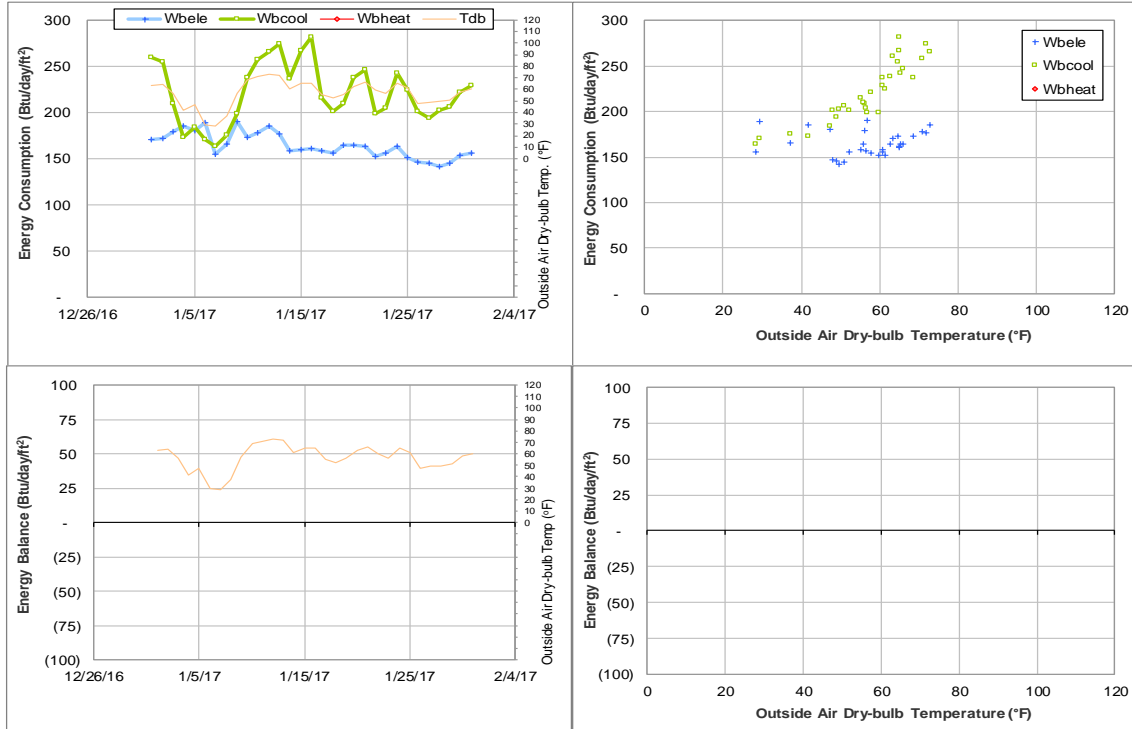


Figure IV-123 Entomology Research Lab TAMU BLDG # 815 Energy Balance Plot during January 2017

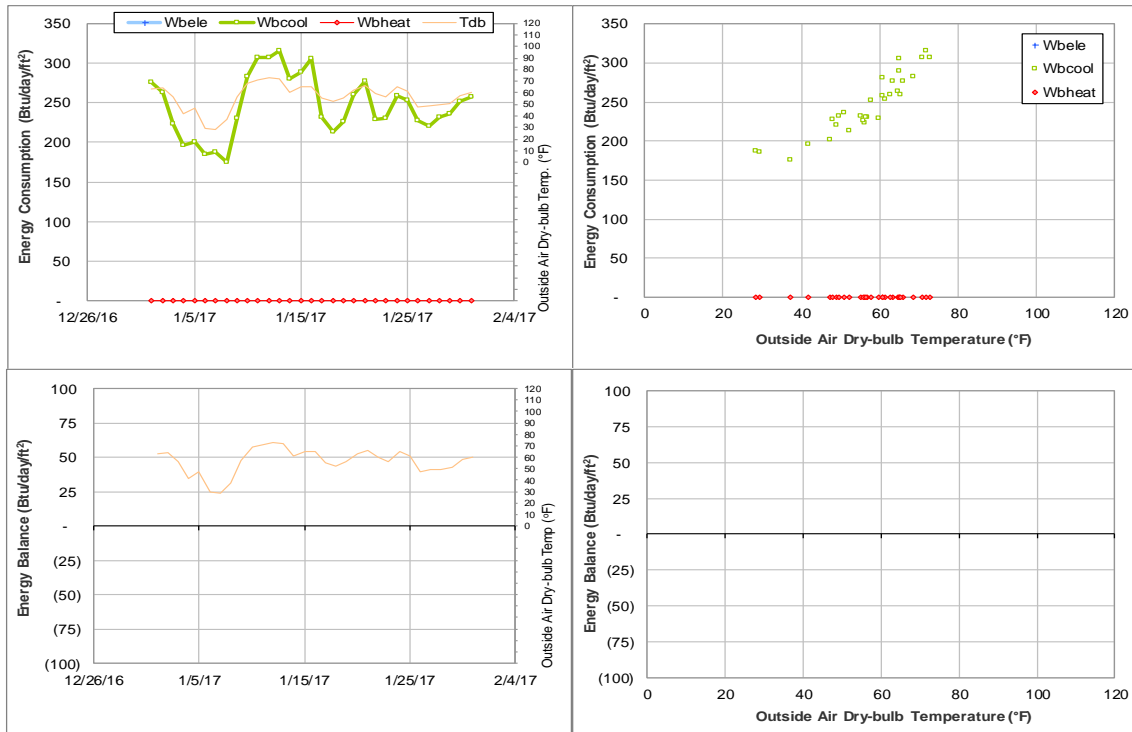


Figure IV-124 TVMC-Small Animal Building TAMU BLDG # 880 Energy Balance Plot during January 2017

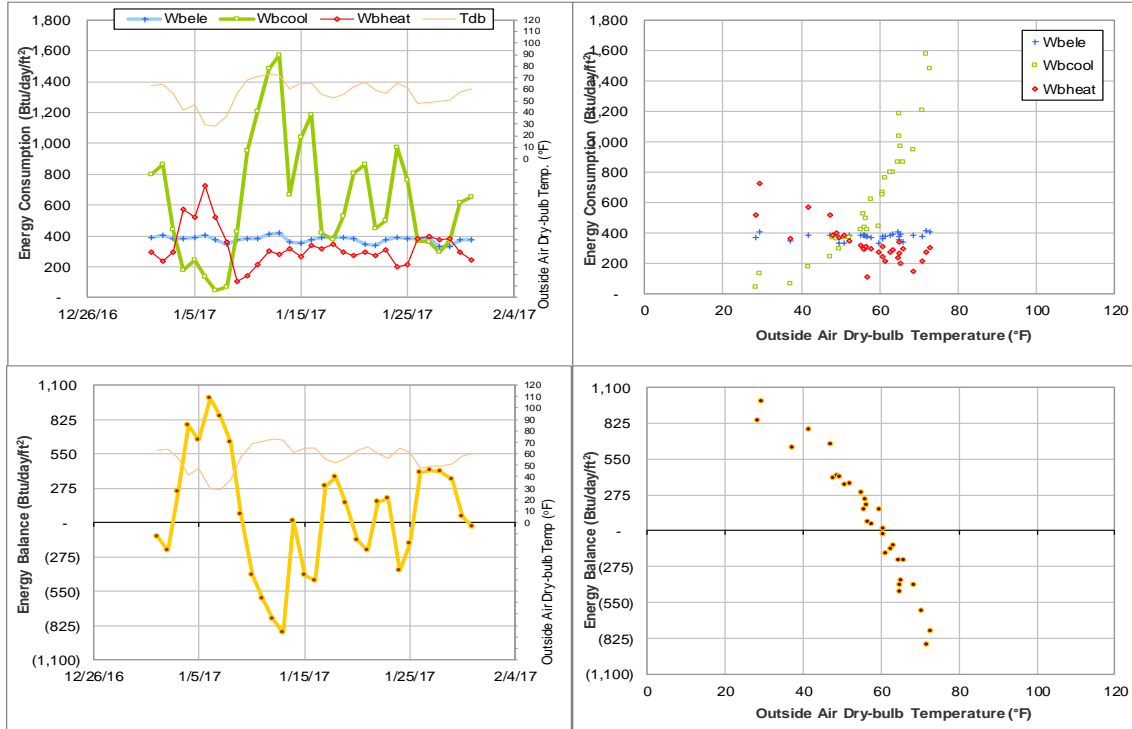


Figure IV-125 Laboratory Animal Care Building TAMU BLDG # 972 Energy Balance Plot during January 2017

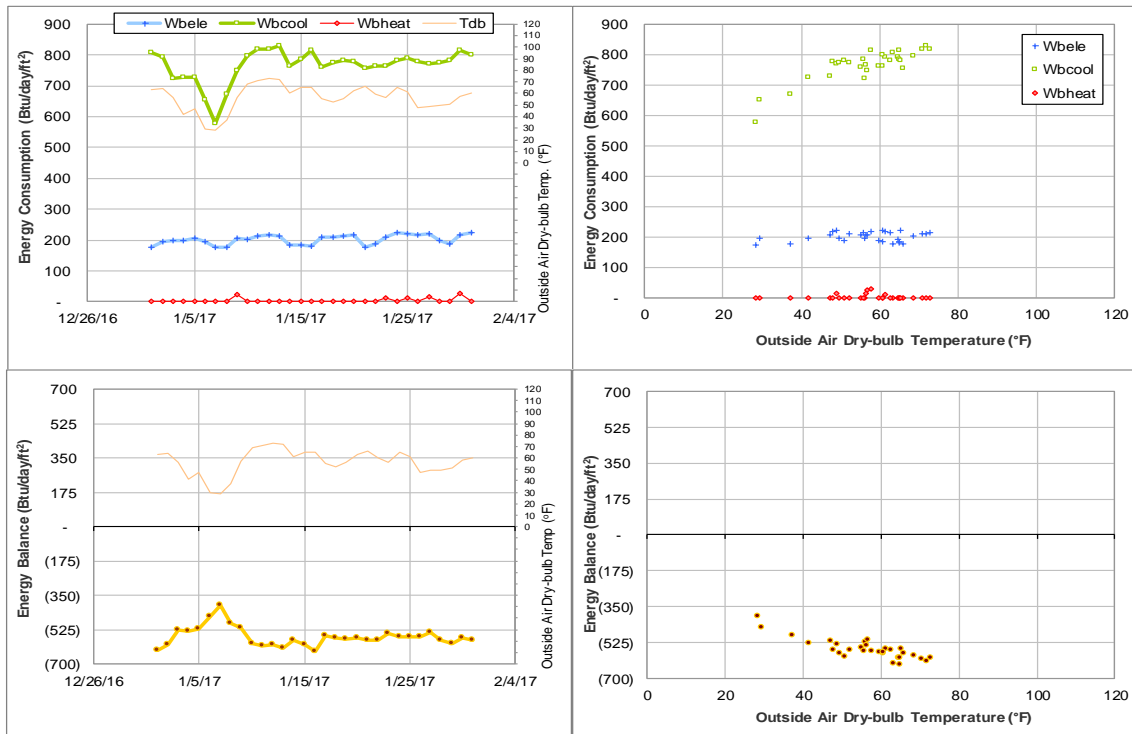


Figure IV-126 Vivarium III TAMU BLDG # 1020 Energy Balance Plot during January 2017

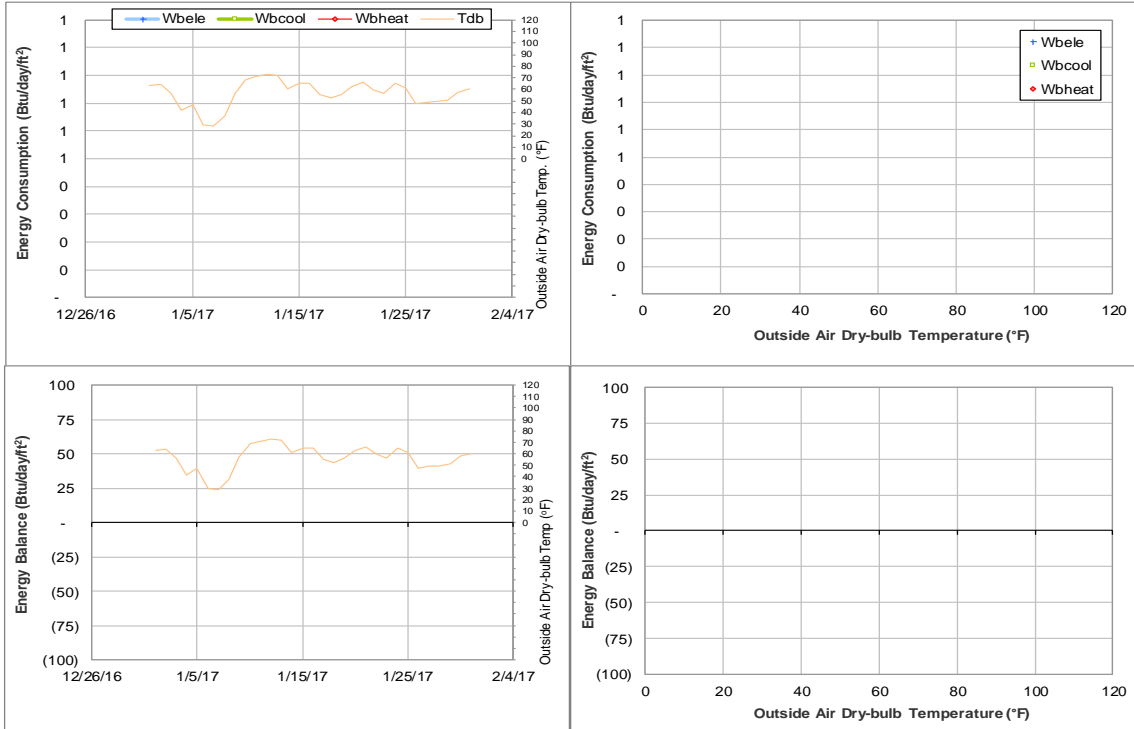


Figure IV-127 Texas Vet Med Diagnostic Lab TAMU BLDG # 1041 Energy Balance Plot during January 2017

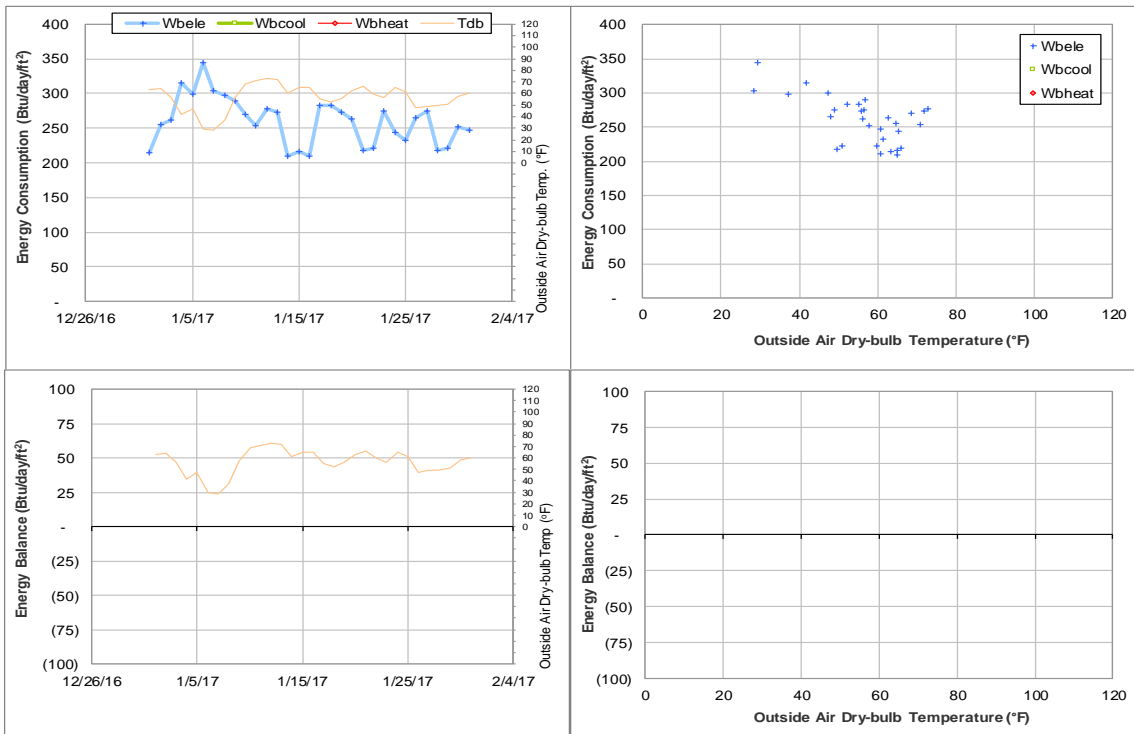


Figure IV-128 Forest Science Laboratory Building TAMU BLDG # 1042 Energy Balance Plot during January 2017

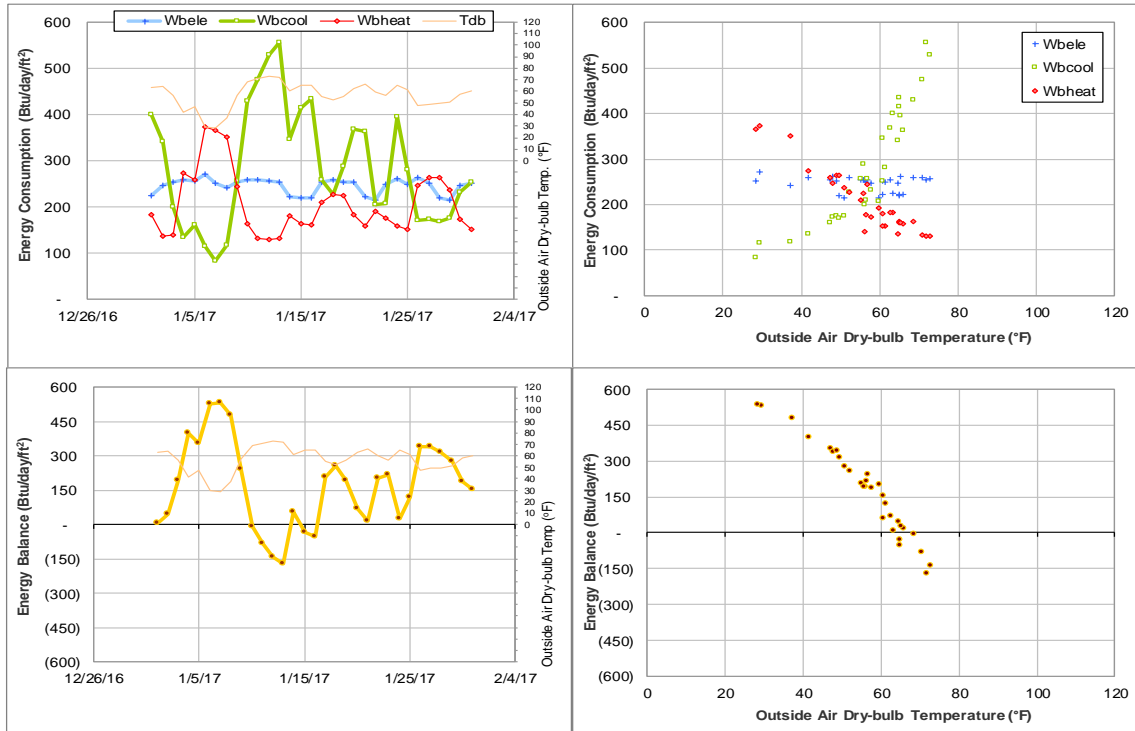


Figure IV-129 Veterinary Small Animal Hospital TAMU BLDG # 1085 Energy Balance Plot during January 2017

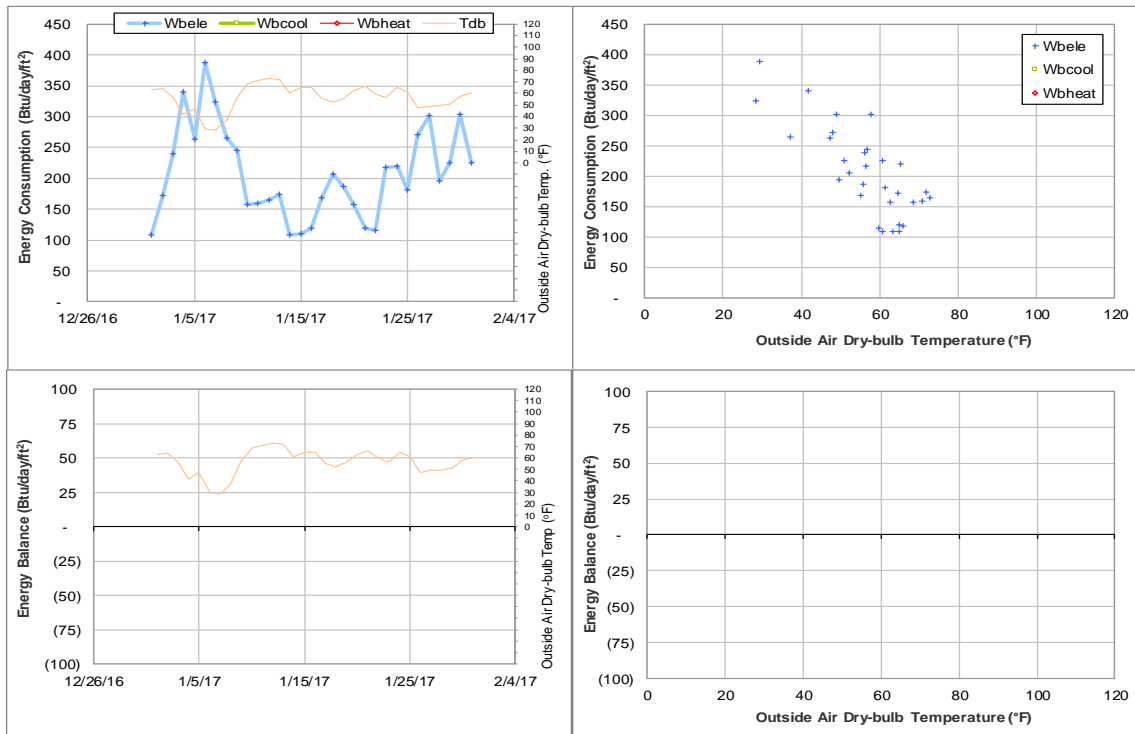


Figure IV-130 Utilities Energy Office Annex TAMU BLDG # 1089 Energy Balance Plot during January 2017

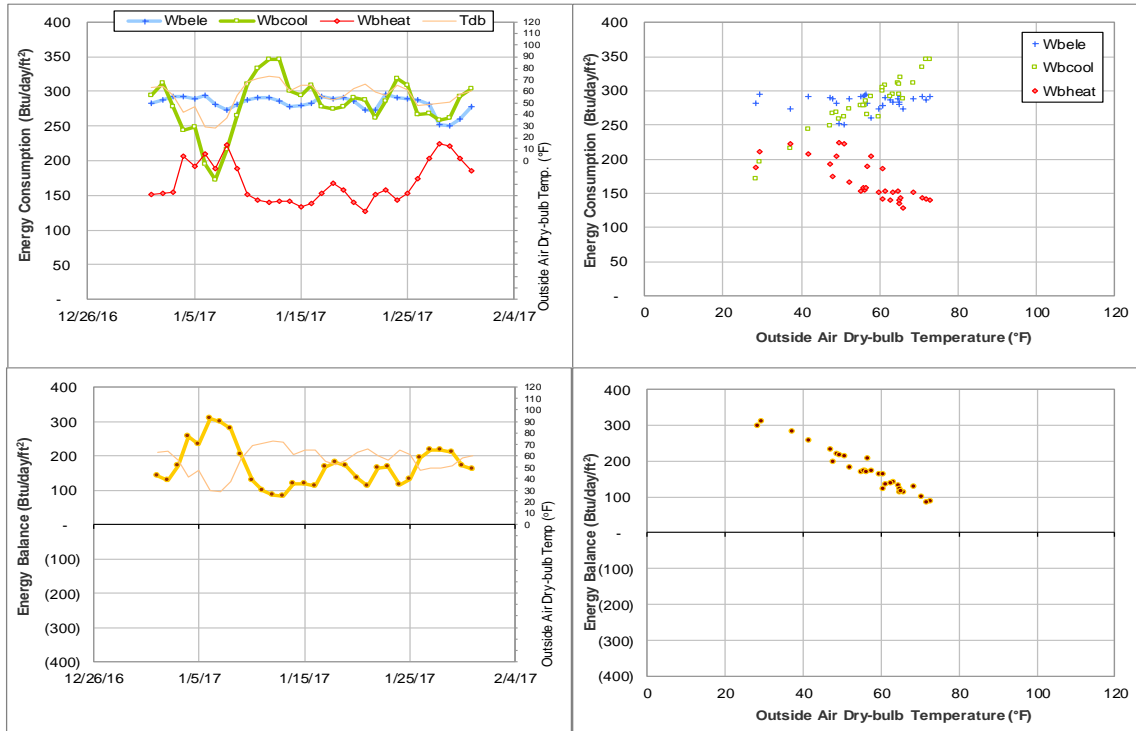


Figure IV-131 Biological Control Facility TAMU BLDG # 1146 Energy Balance Plot during January 2017

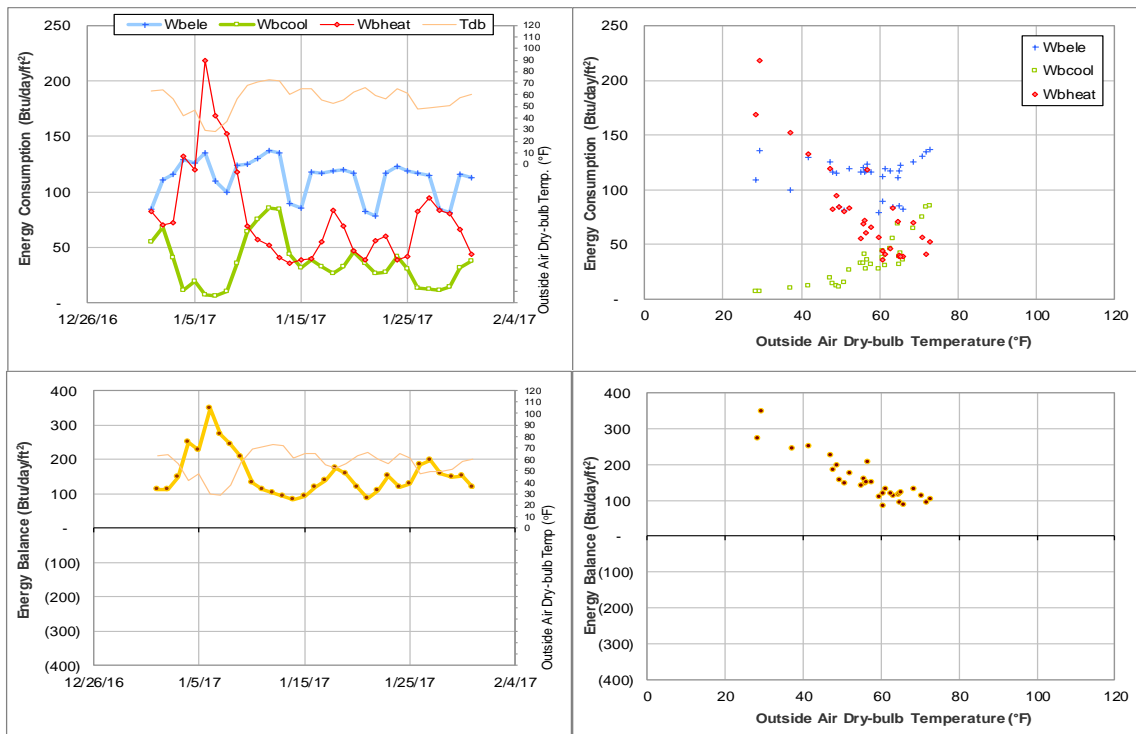


Figure IV-132 Physical Plant Administration & Shops TAMU BLDG # 1156 Energy Balance Plot during January 2017

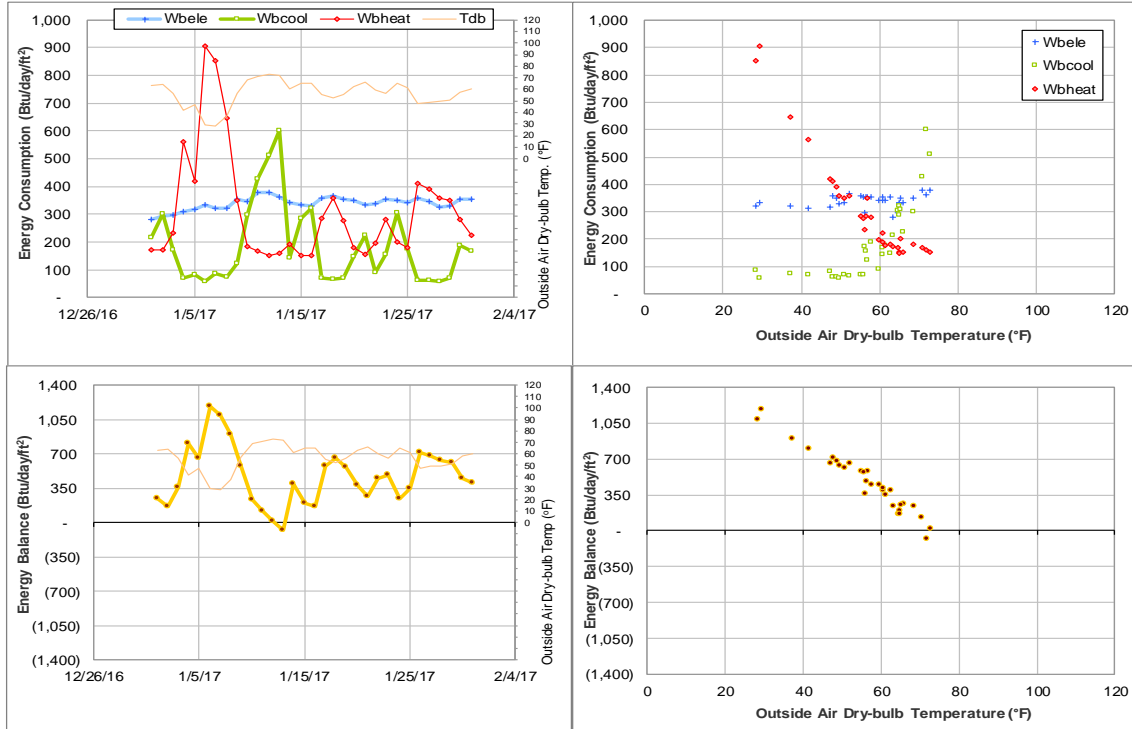


Figure IV-133 Veterinary Anatomic Pathology TAMU BLDG # 1184 Energy Balance Plot during January 2017

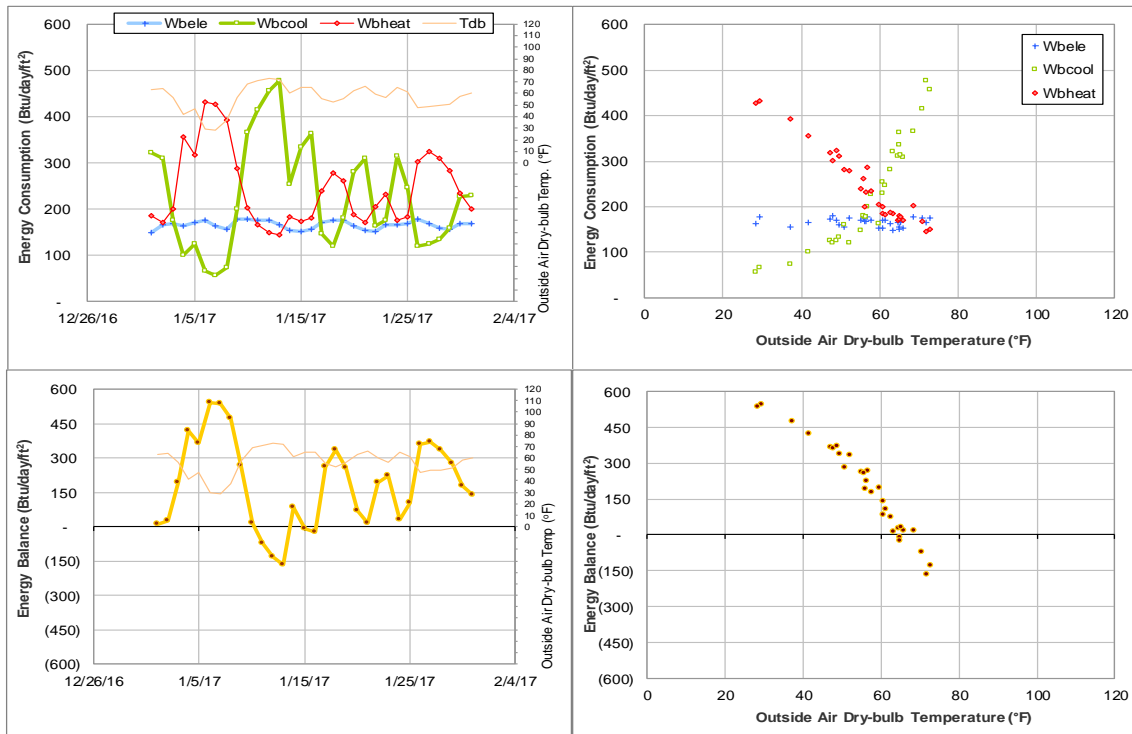


Figure IV-134 Veterinary Large Animal Hospital TAMU BLDG # 1194 Energy Balance Plot during January 2017

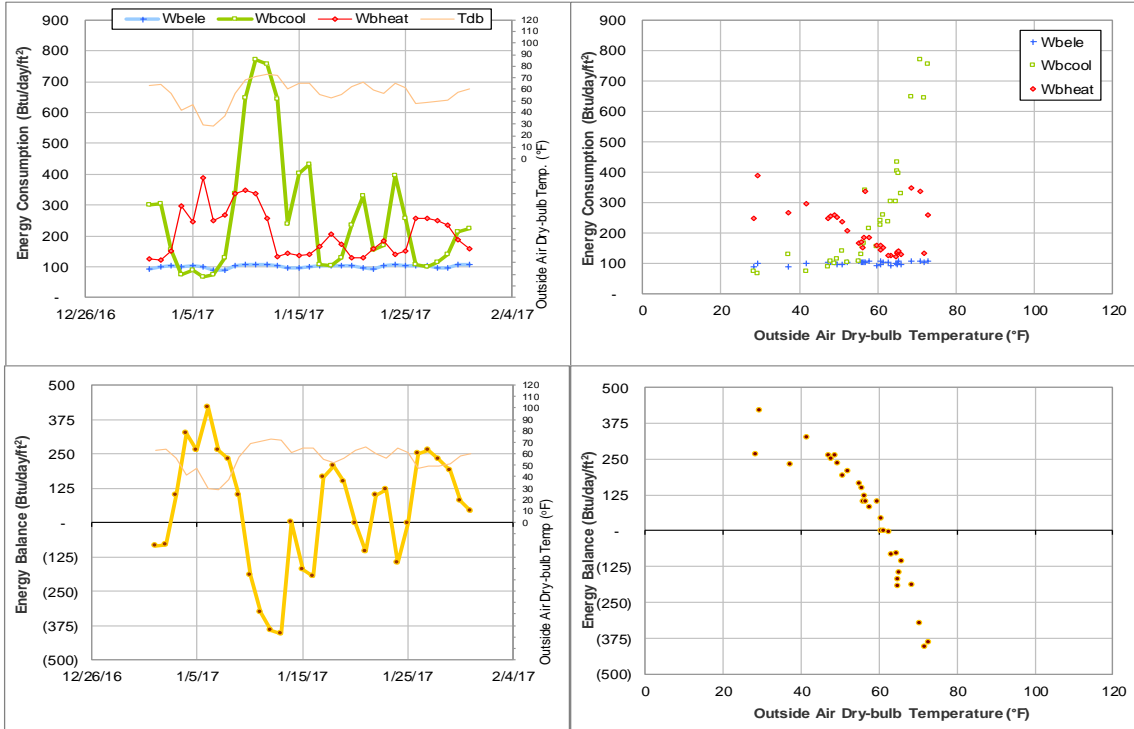


Figure IV-135 Veterinary Research Building TAMU BLDG # 1197 Energy Balance Plot during January 2017

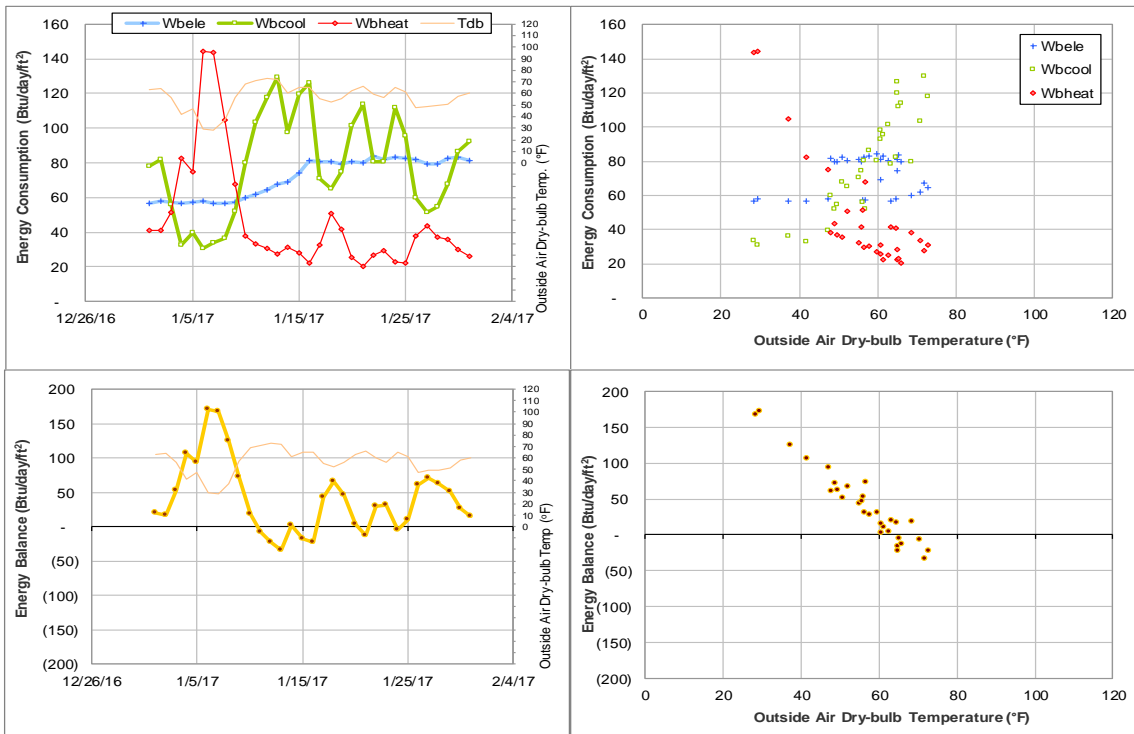


Figure IV-136 Hullabaloo Residence Hall TAMU BLDG # 1416 Energy Balance Plot during January 2017



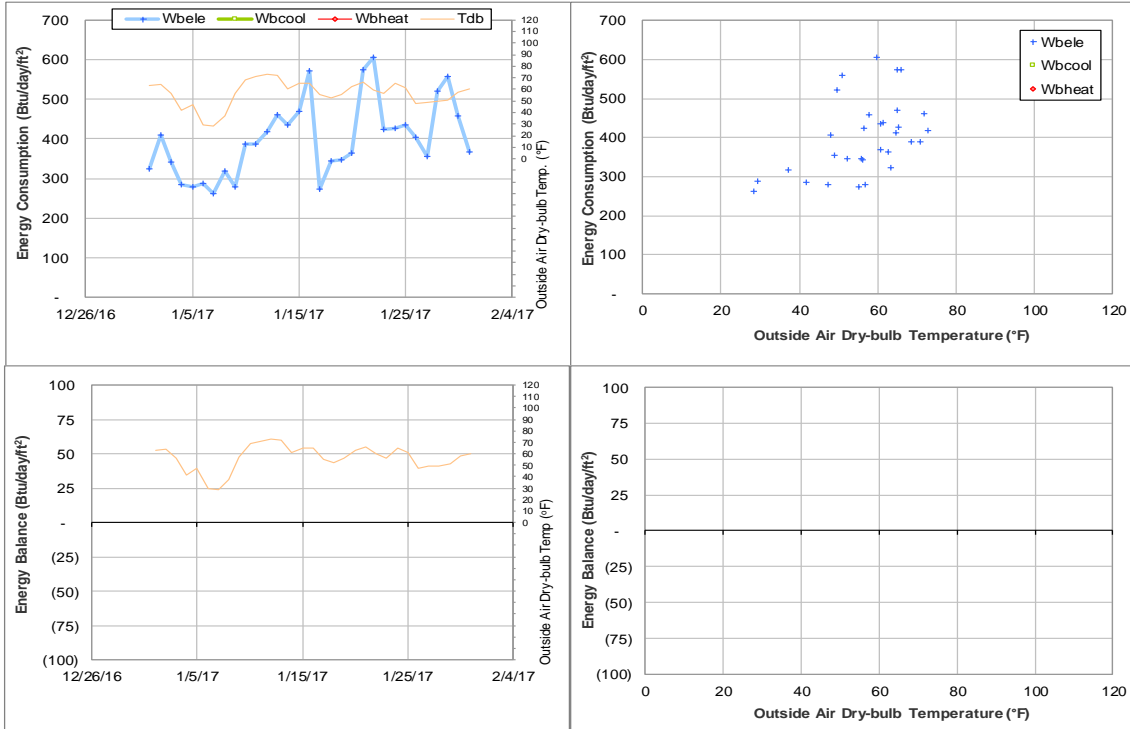


Figure IV-137 University Apartments - Laundry at the Gardens TAMU BLDG # 1450 Energy Balance Plot during January 2017

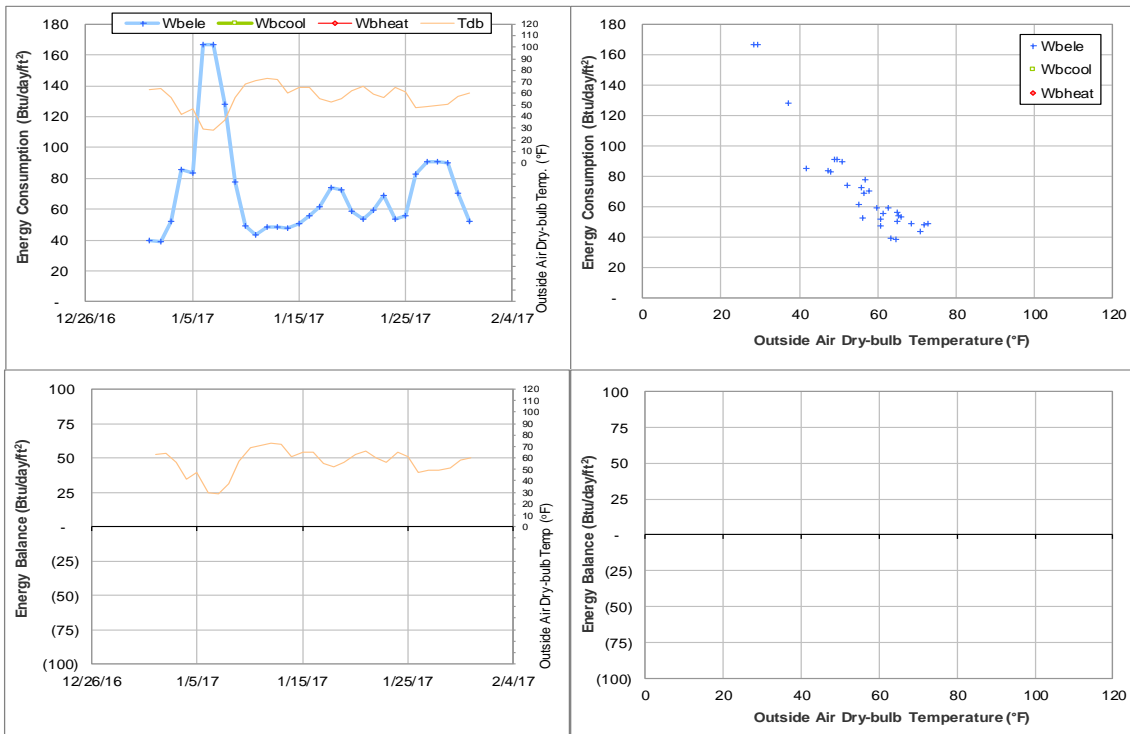


Figure IV-138 University Apartments - The Gardens J TAMU BLDG # 1451 Energy Balance Plot during January 2017

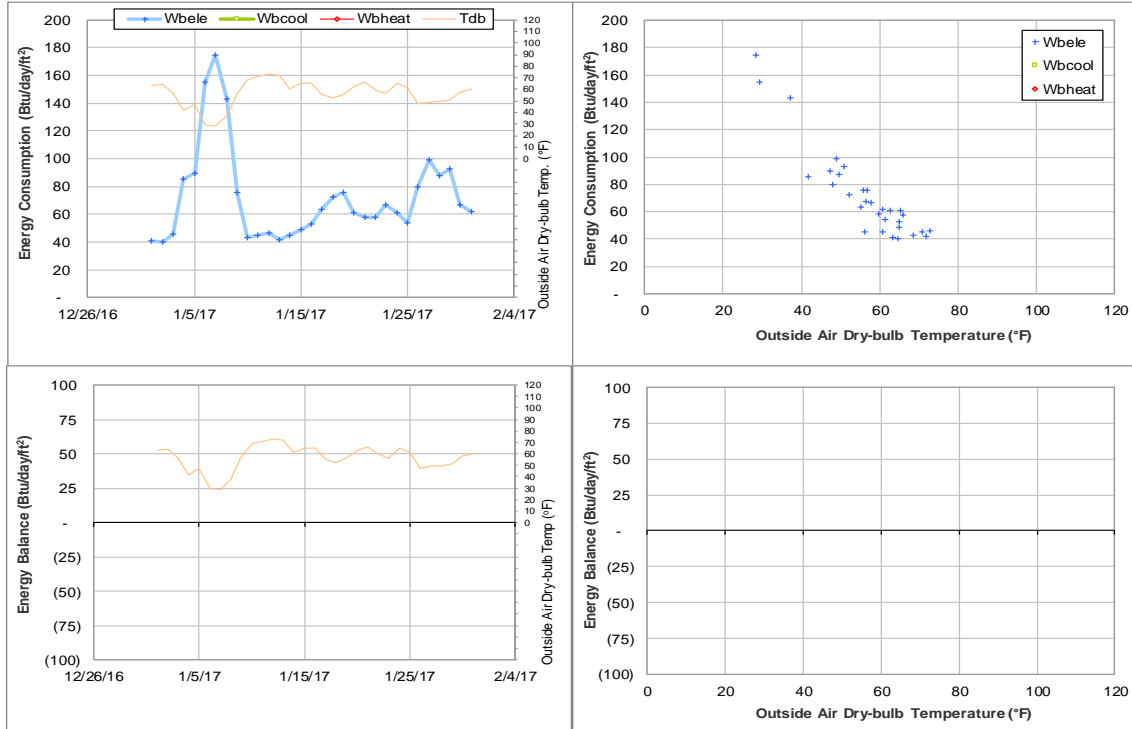


Figure IV-139 University Apartments - The Gardens K TAMU BLDG # 1452 Energy Balance Plot during January 2017

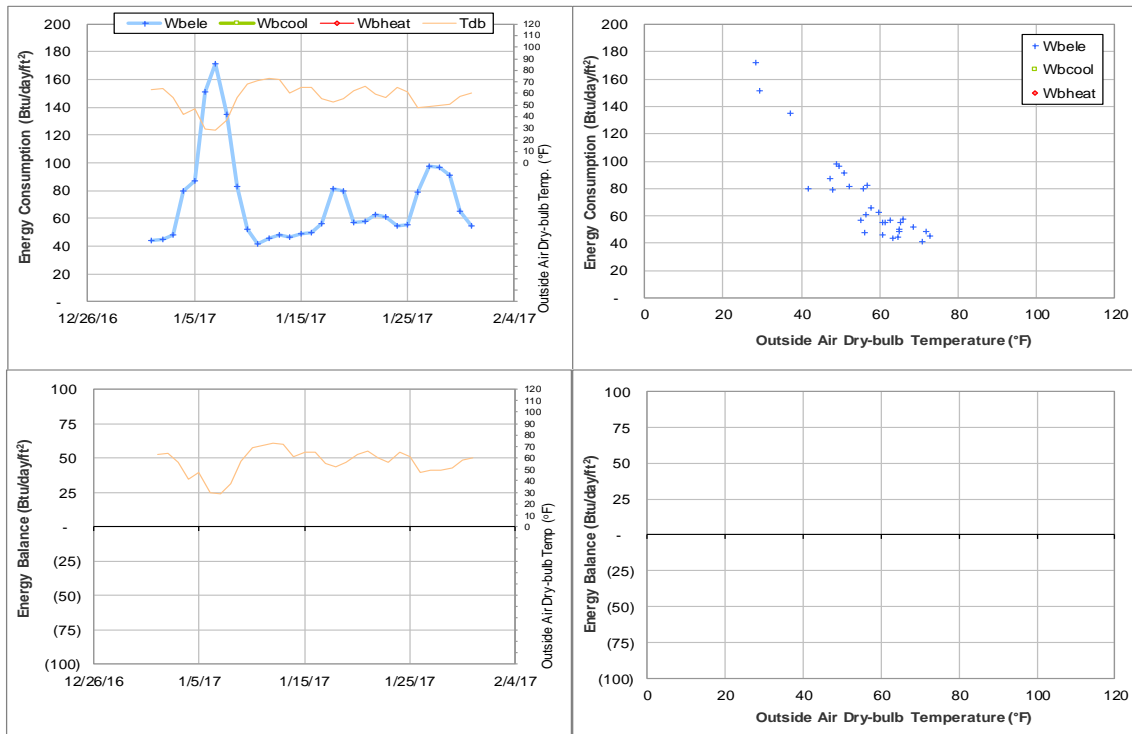


Figure IV-140 University Apartments - The Gardens L TAMU BLDG # 1453 Energy Balance Plot during January 2017

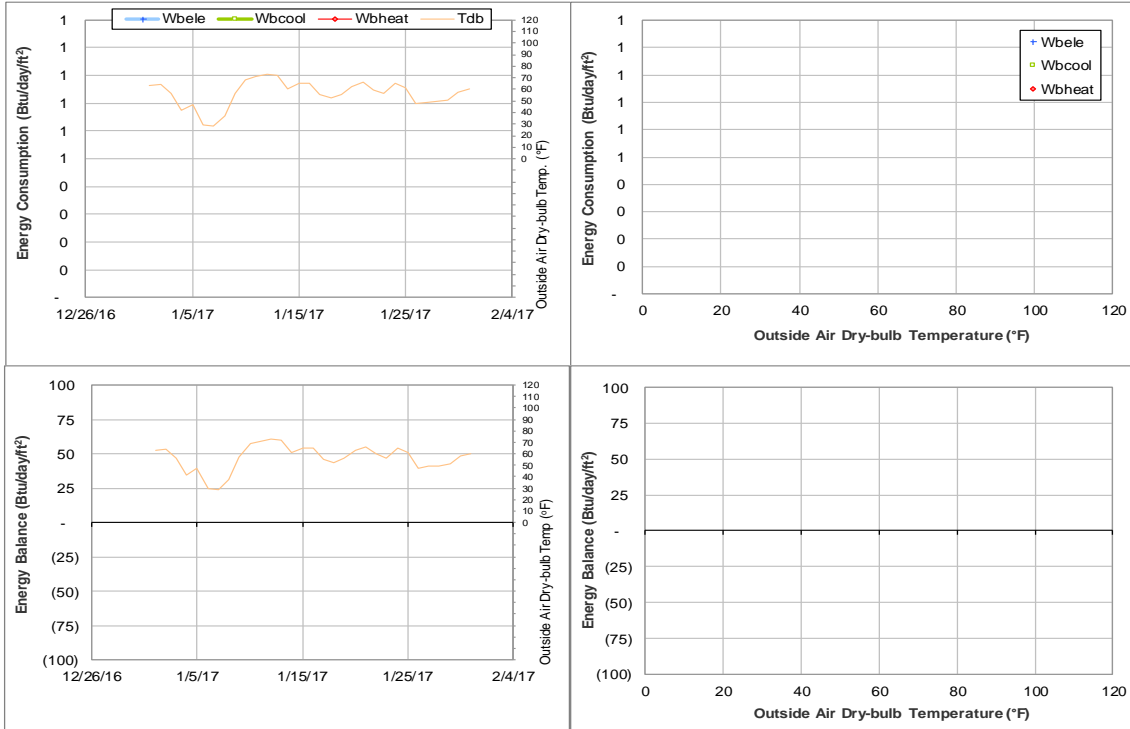


Figure IV-141 University Apartments - The Gardens F TAMU BLDG # 1454 Energy Balance Plot during January 2017

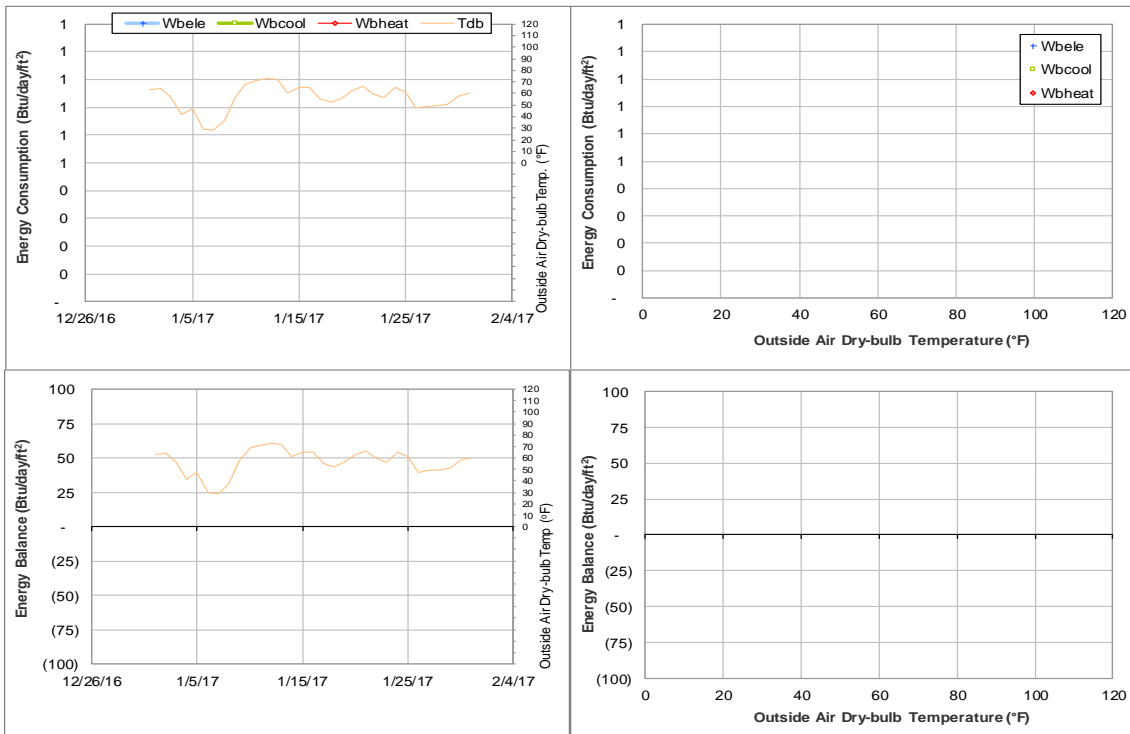


Figure IV-142 University Apartments - The Gardens G TAMU BLDG # 1455 Energy Balance Plot during January 2017

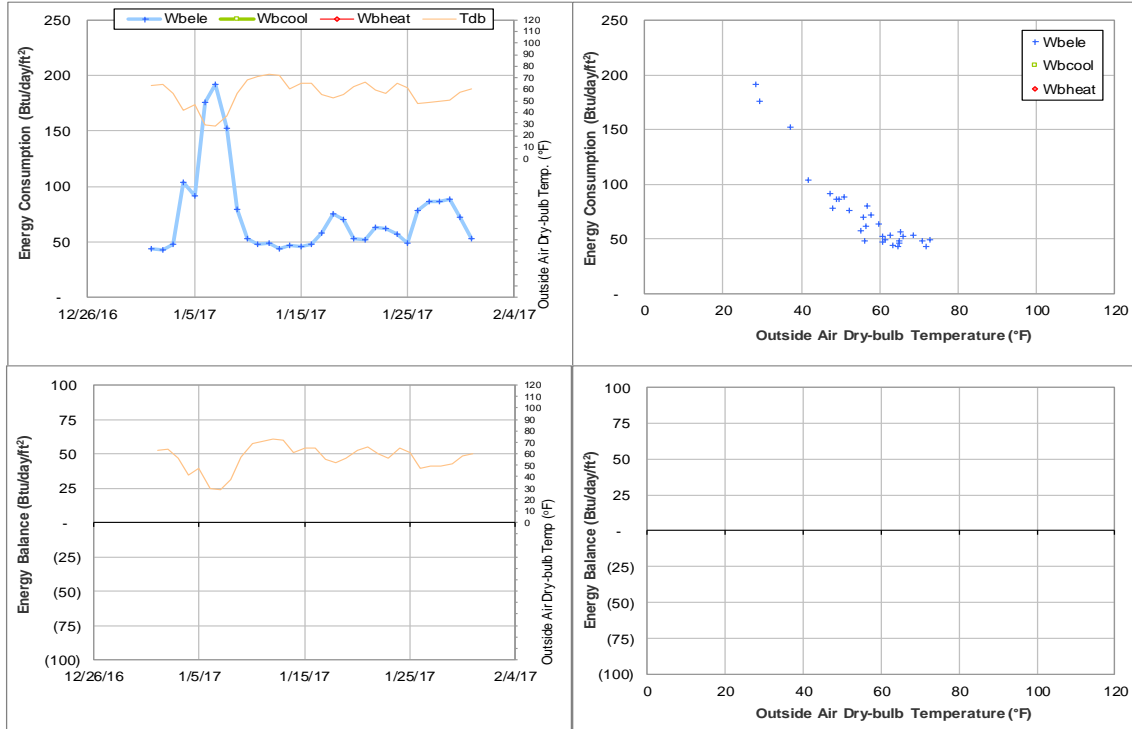


Figure IV-143 University Apartments - The Gardens H TAMU BLDG # 1456 Energy Balance Plot during January 2017

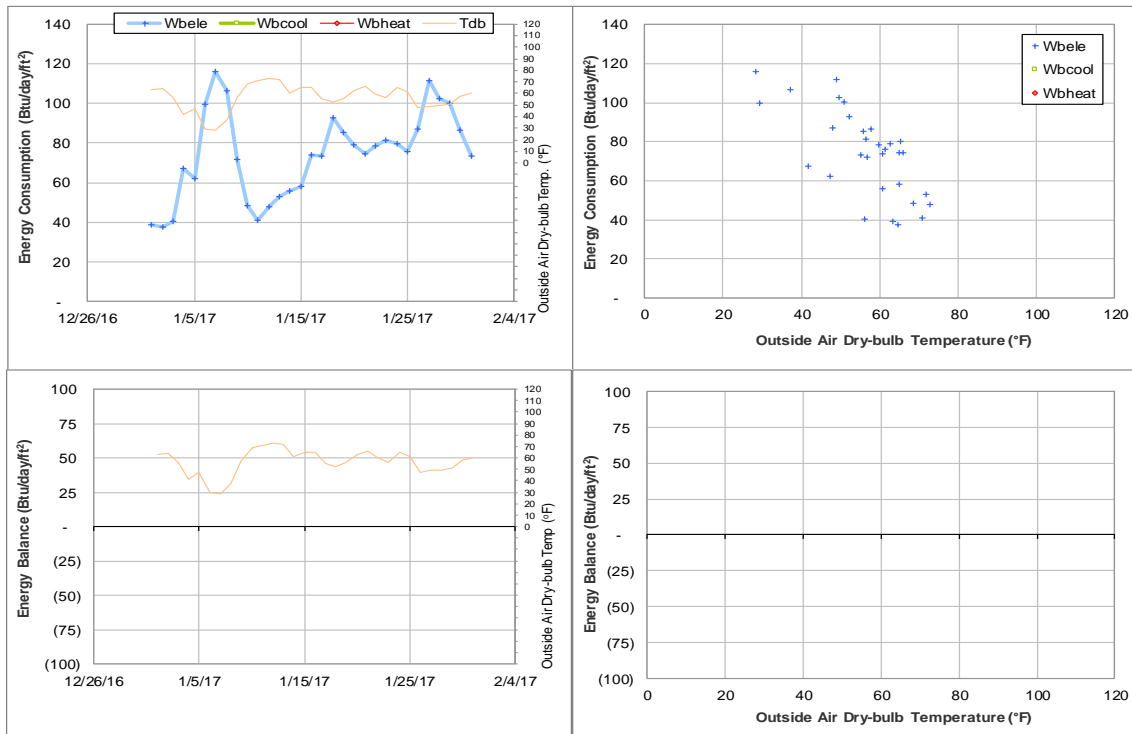


Figure IV-144 University Apartments - The Gardens M TAMU BLDG # 1457 Energy Balance Plot during January 2017

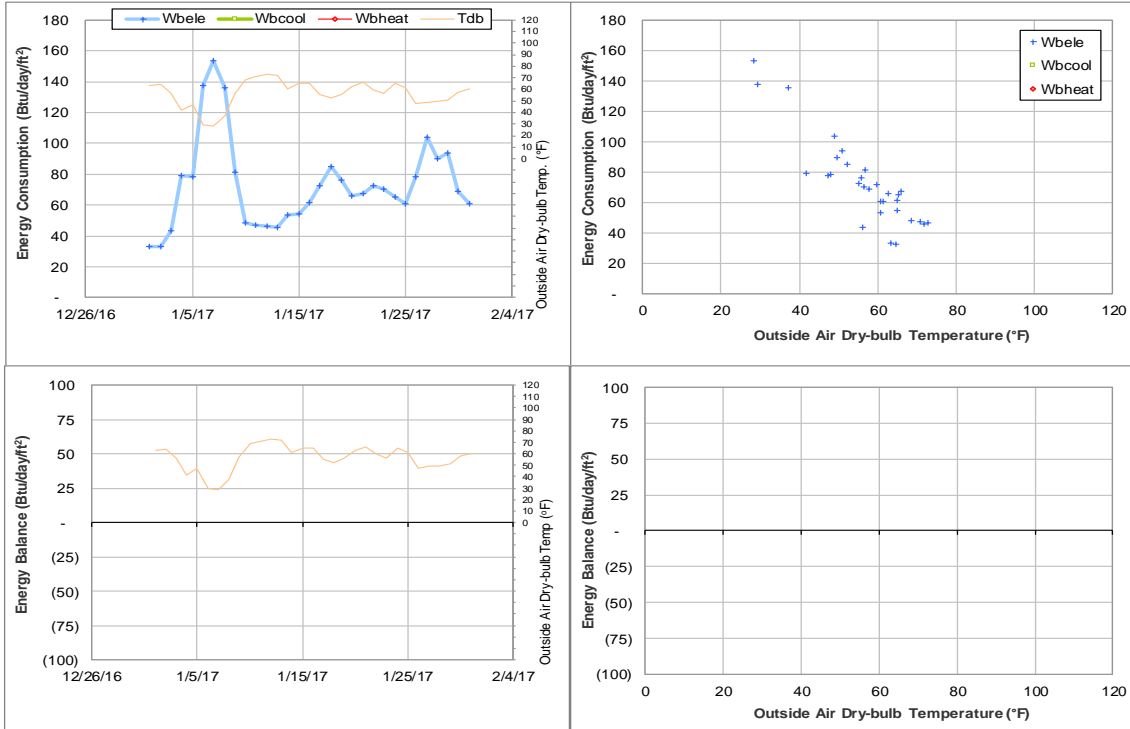


Figure IV-145 University Apartments - The Gardens N TAMU BLDG # 1458 Energy Balance Plot during January 2017

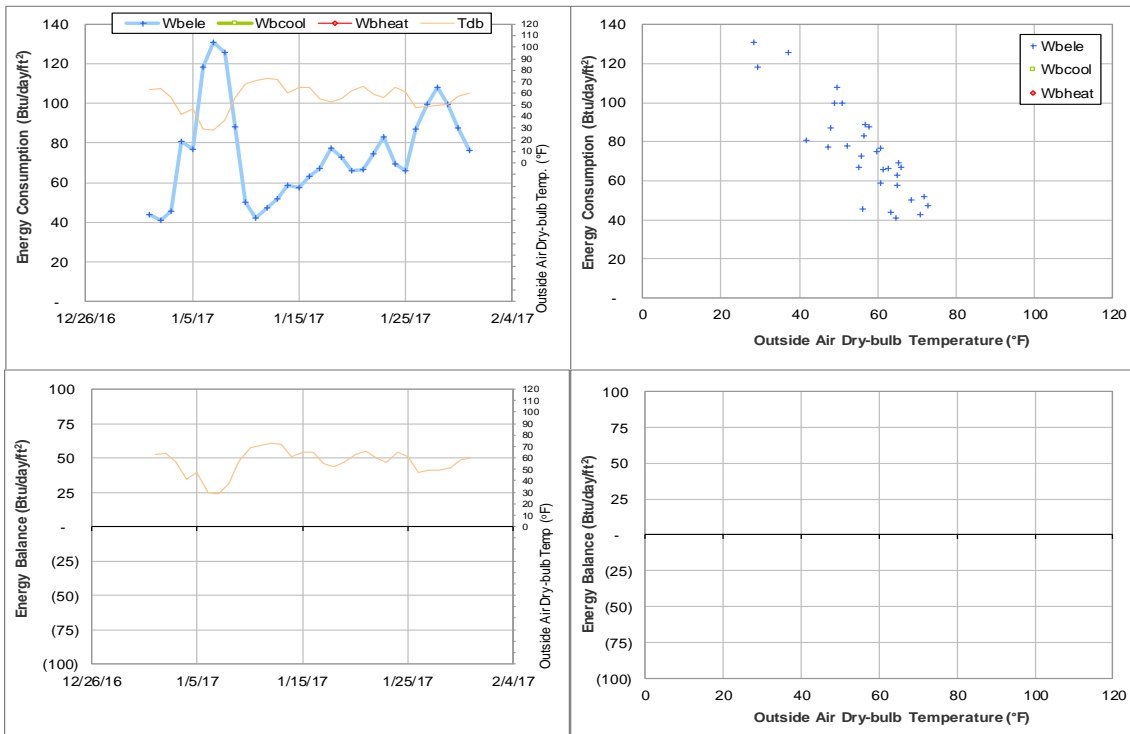


Figure IV-146 University Apartments - The Gardens P TAMU BLDG # 1459 Energy Balance Plot during January 2017

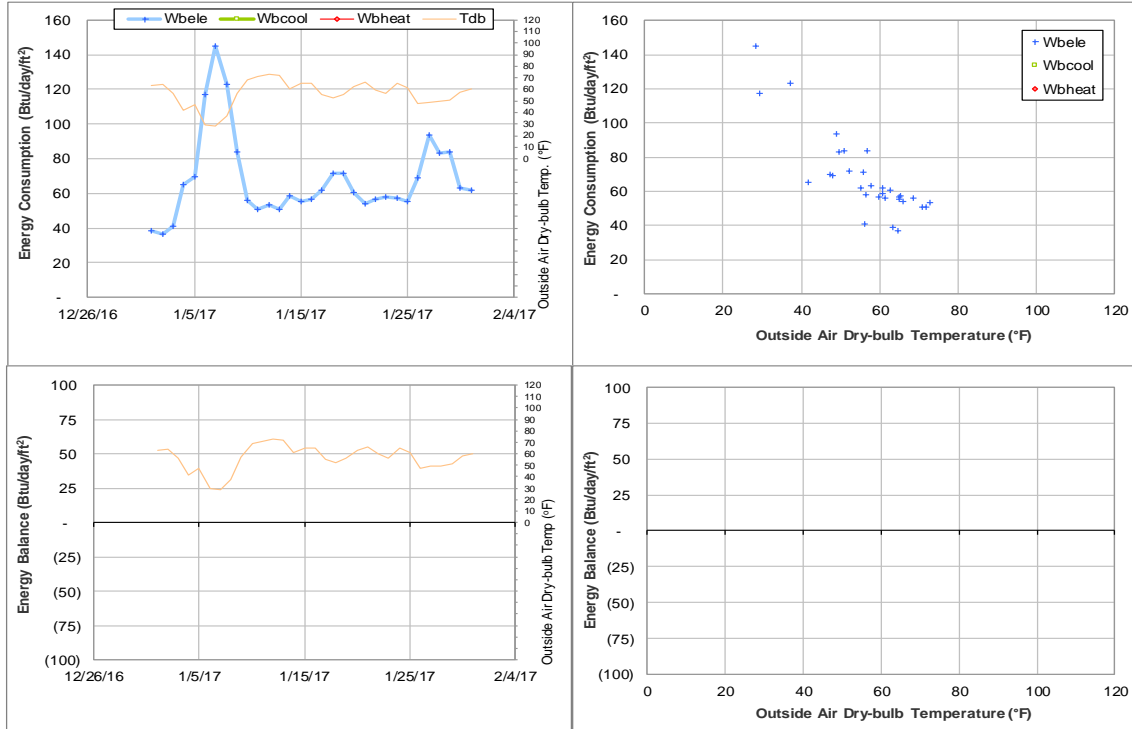


Figure IV-147 University Apartments - The Gardens Q TAMU BLDG # 1460 Energy Balance Plot during January 2017

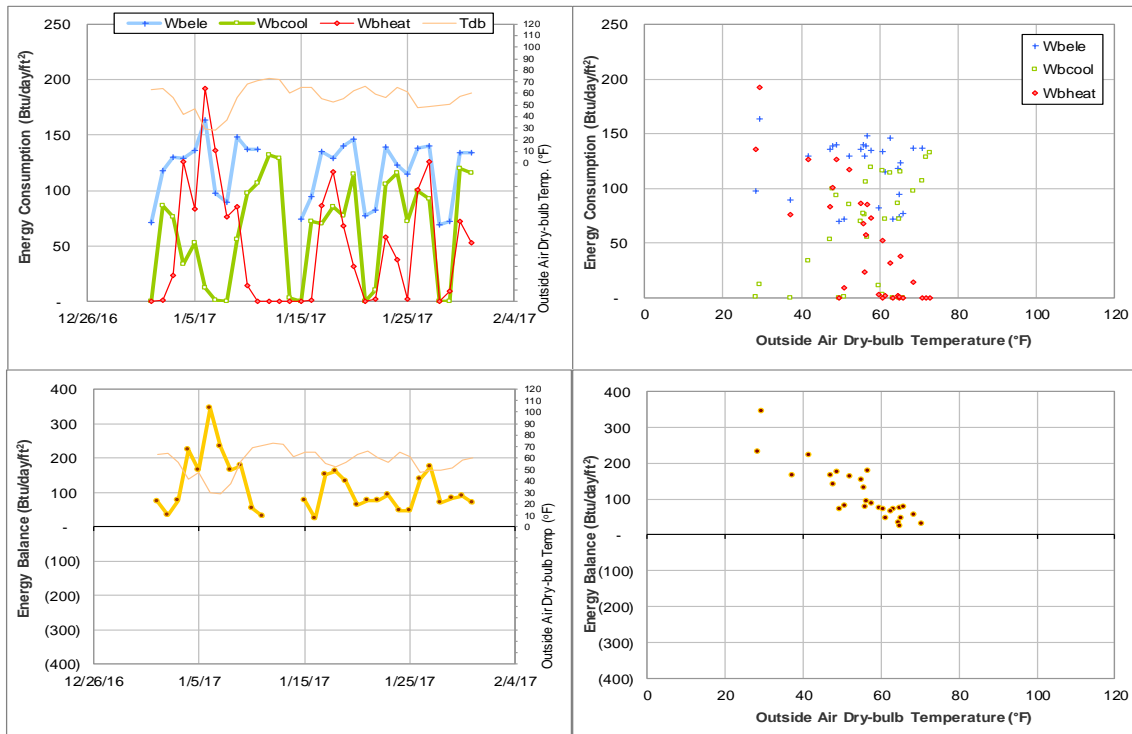


Figure IV-148 Utilities & Energy Services Business Office TAMU BLDG # 1497 Energy Balance Plot during January 2017

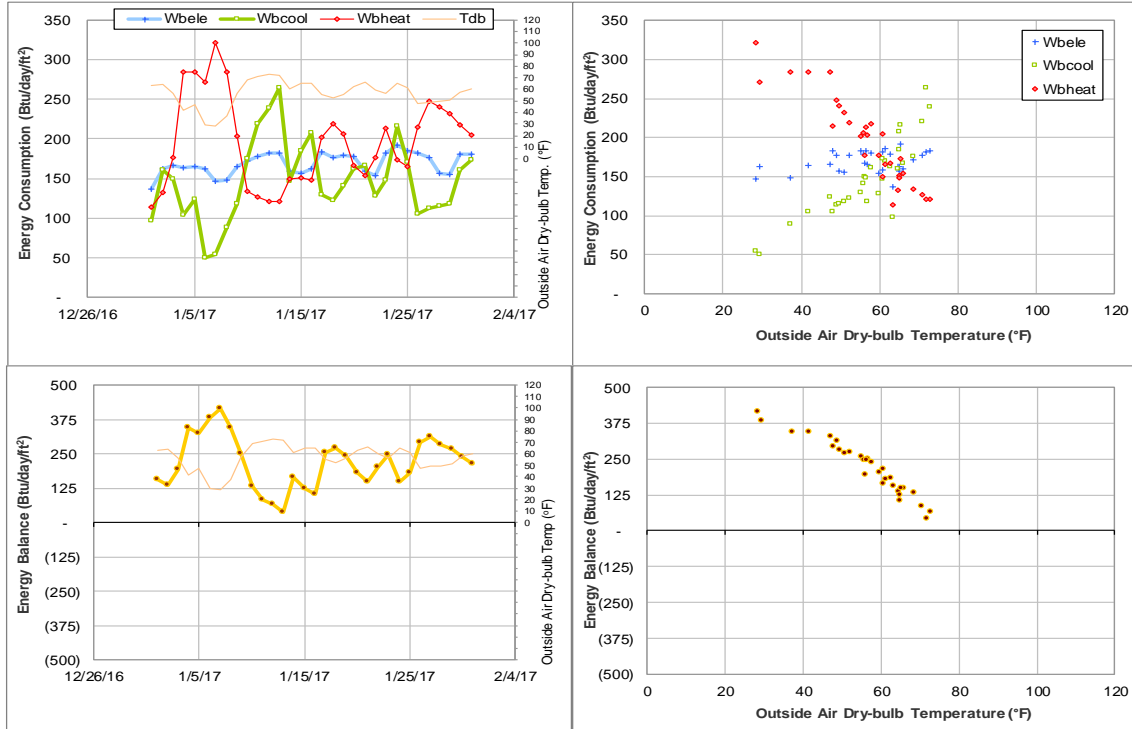


Figure IV-149 Kleberg Center TAMU BLDG # 1501 Energy Balance Plot during January 2017

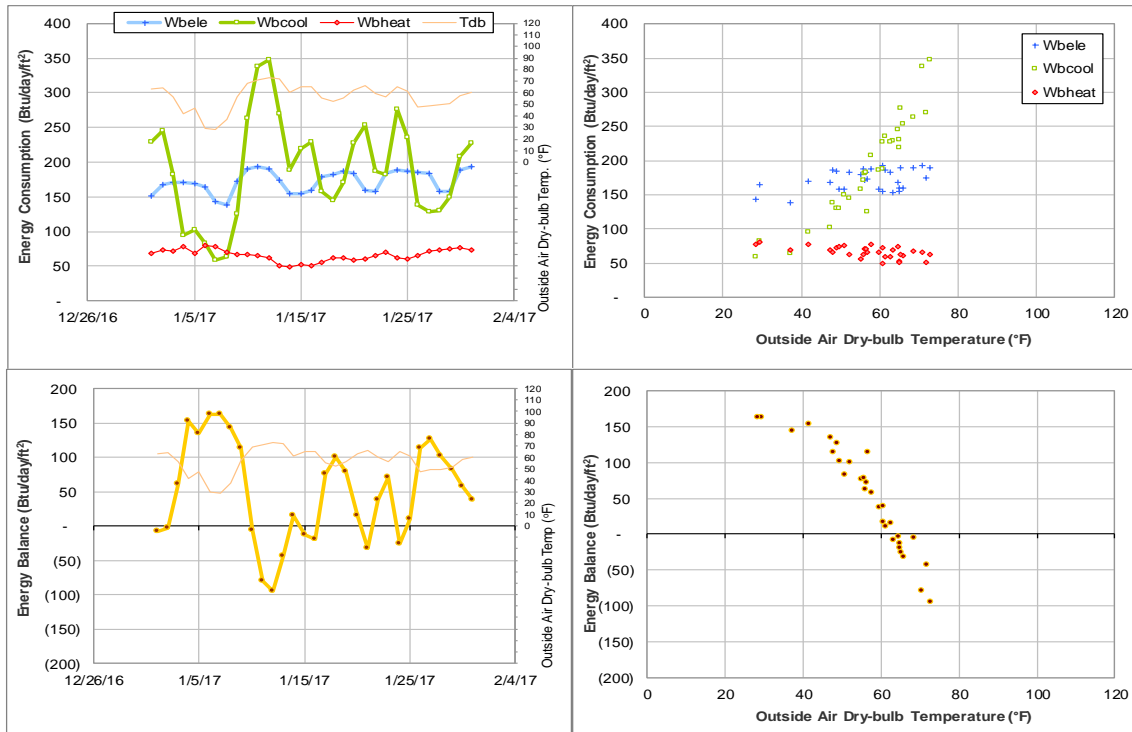


Figure IV-150 Heep Center TAMU BLDG # 1502 Energy Balance Plot during January 2017

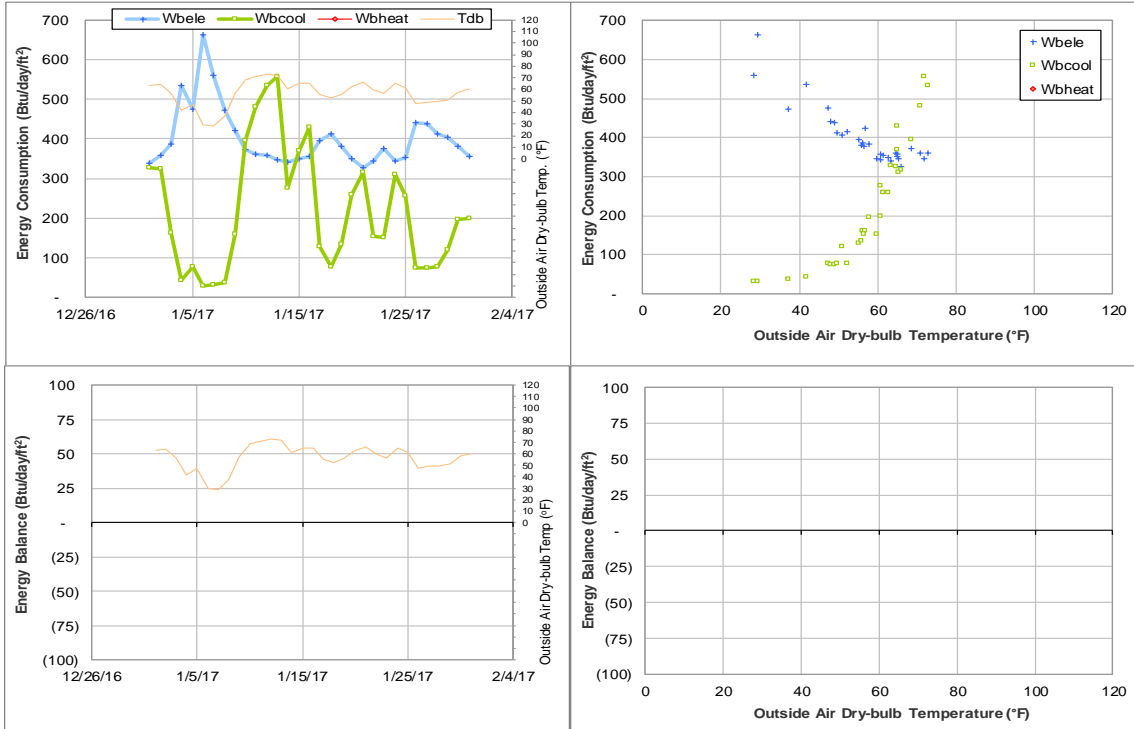


Figure IV-151 Cater-Mattil Hall TAMU BLDG # 1503 Energy Balance Plot during January 2017

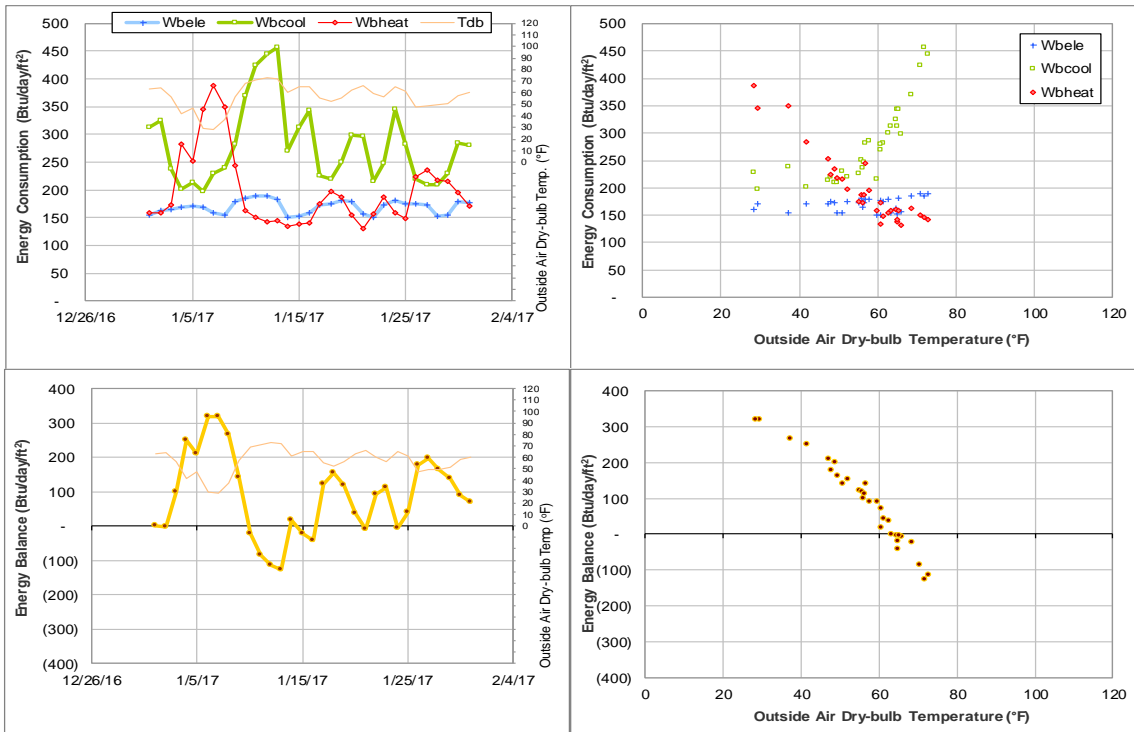


Figure IV-152 Reynolds Medical Sciences Building TAMU BLDG # 1504 Energy Balance Plot during January 2017



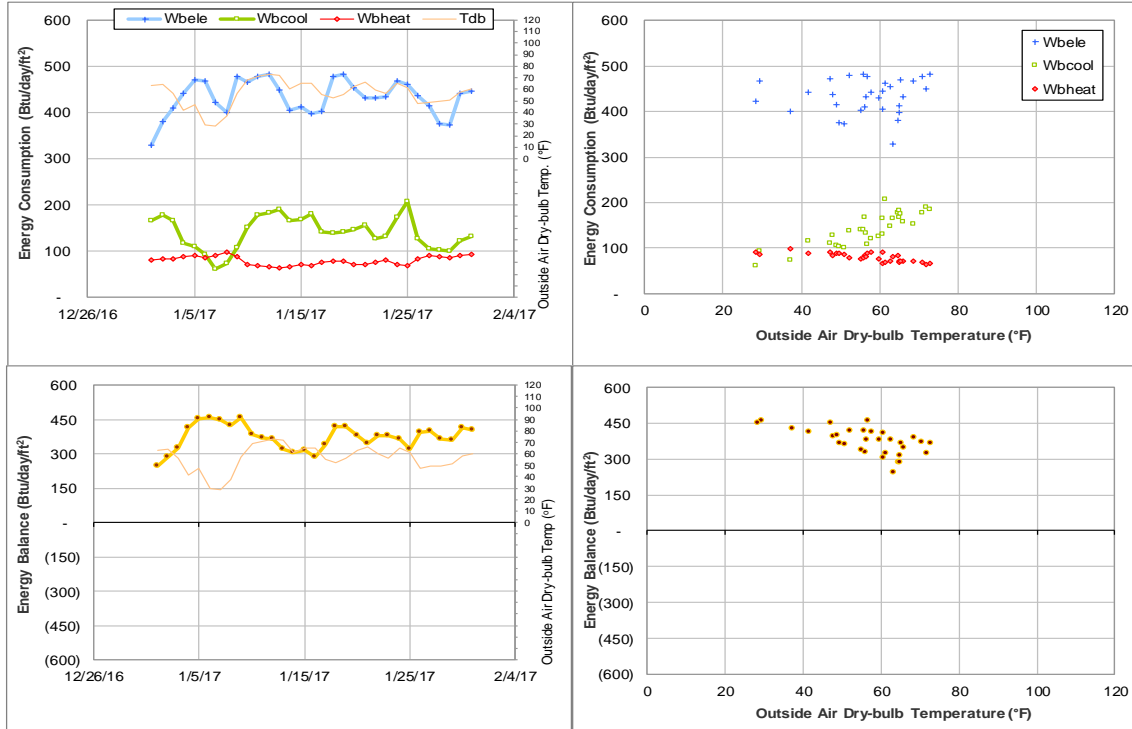


Figure IV-153 Rosenthal Meat Science & Technology Center TAMU BLDG # 1505 Energy Balance Plot during January 2017

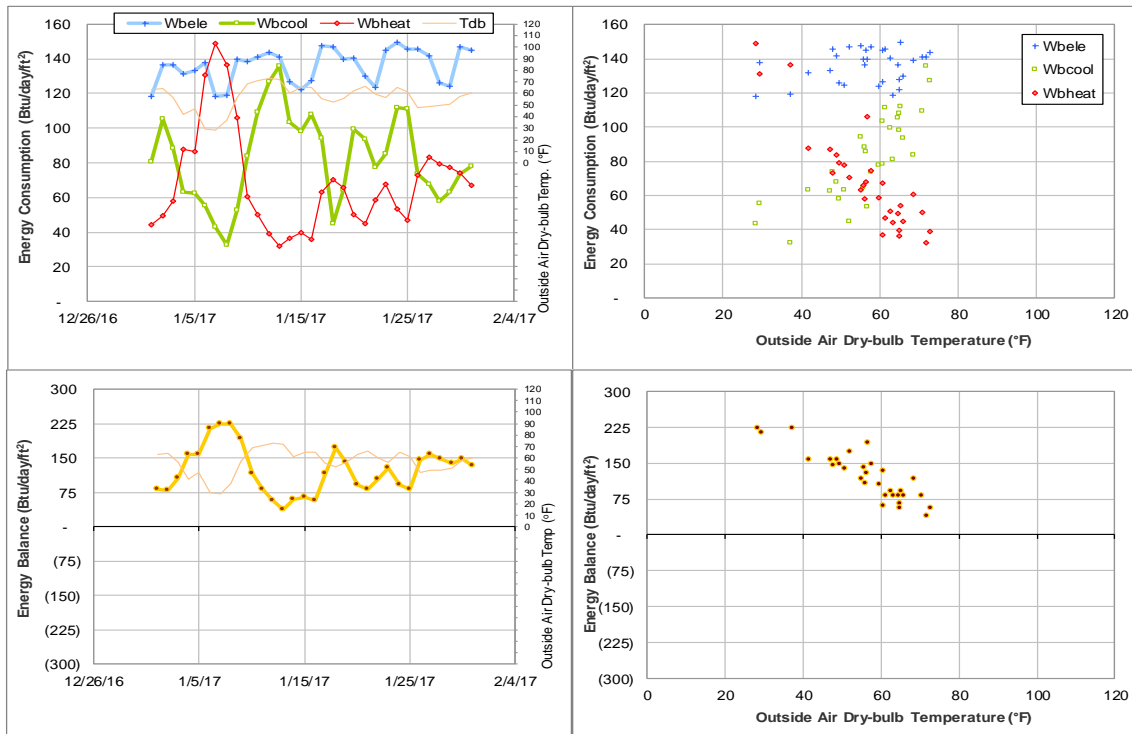


Figure IV-154 Horticulture-Forest Science Building TAMU BLDG # 1506 Energy Balance Plot during January 2017

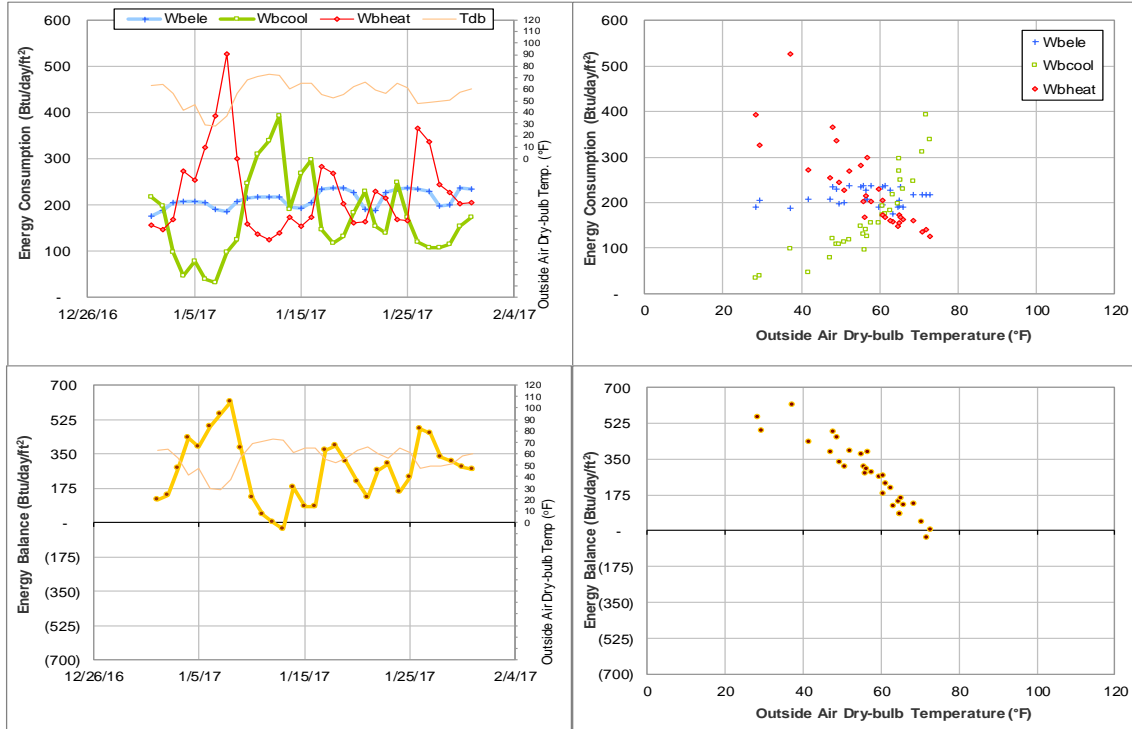


Figure IV-155 Biochemistry-Biophysics Building TAMU BLDG # 1507 Energy Balance Plot during January 2017

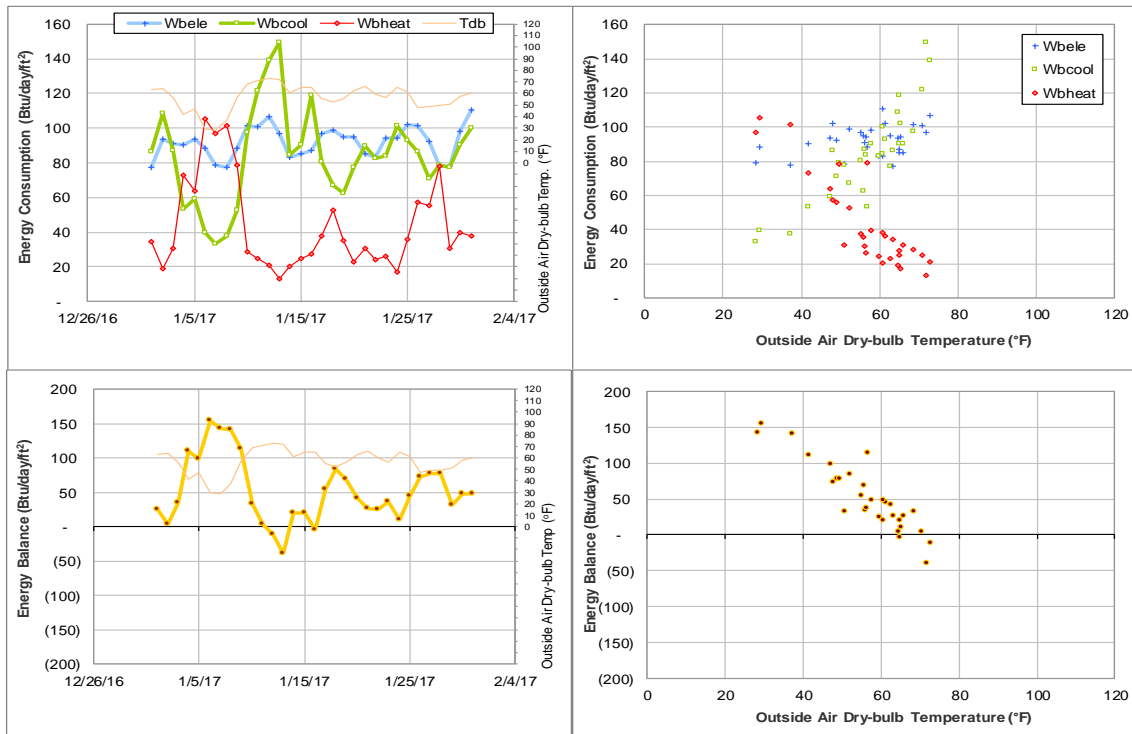


Figure IV-156 Price Hobgood Ag. Engineering Research Lab TAMU BLDG # 1508 Energy Balance Plot during January 2017

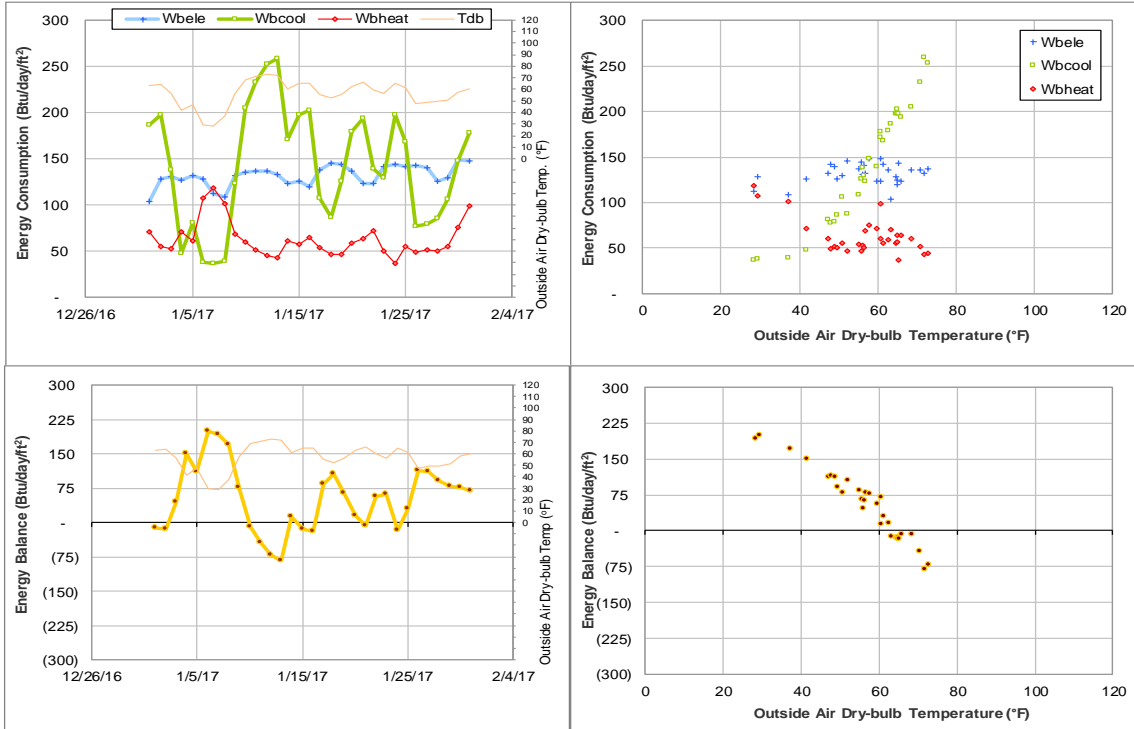


Figure IV-157 Medical Sciences Library TAMU BLDG # 1509 Energy Balance Plot during January 2017

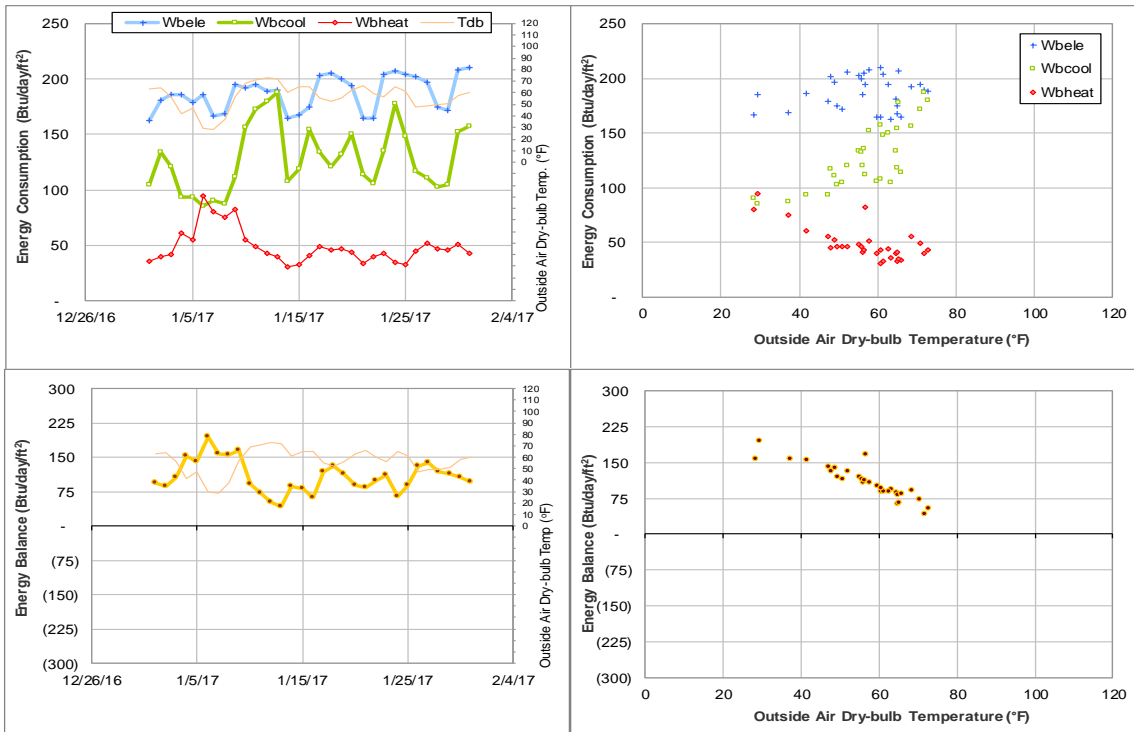


Figure IV-158 Wehner Building TAMU BLDG # 1510 Energy Balance Plot during January 2017

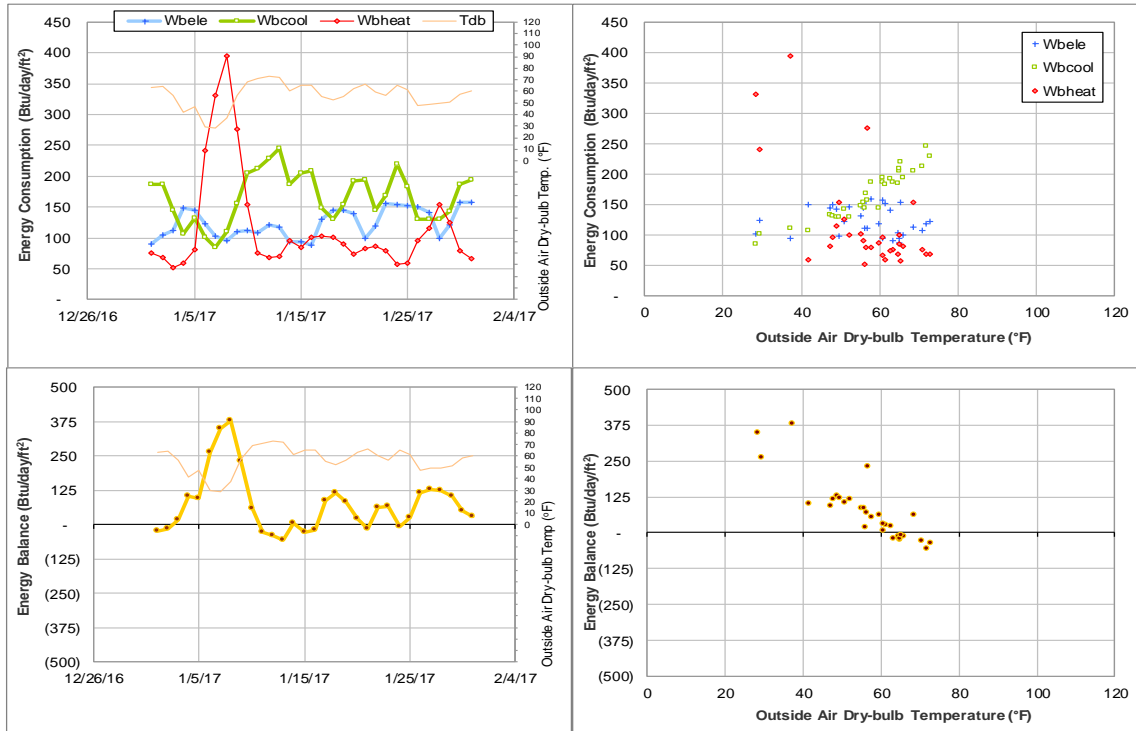


Figure IV-159 West Campus Library Facility TAMU BLDG # 1511 Energy Balance Plot during January 2017

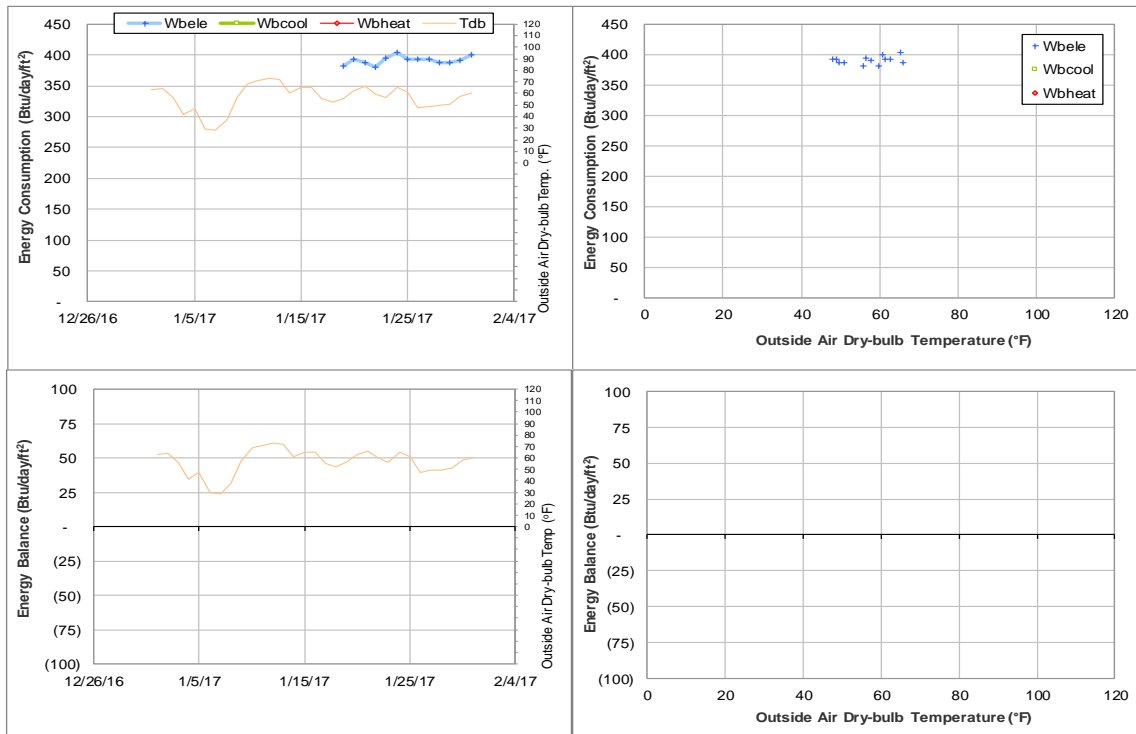


Figure IV-160 Southern Crop Improvement Greenhouse TAMU BLDG # 1512 Energy Balance Plot during January 2017

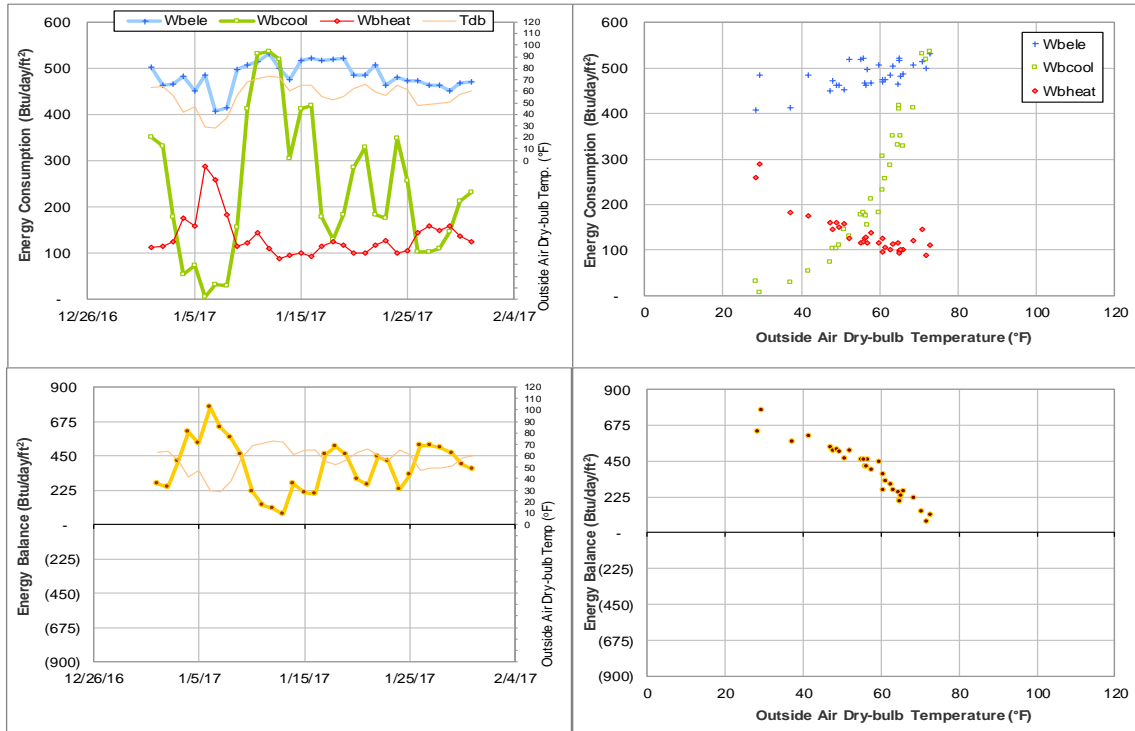


Figure IV-161 Borlaug Center for Southern Crop Improvement TAMU BLDG # 1513 Energy Balance Plot during January 2017

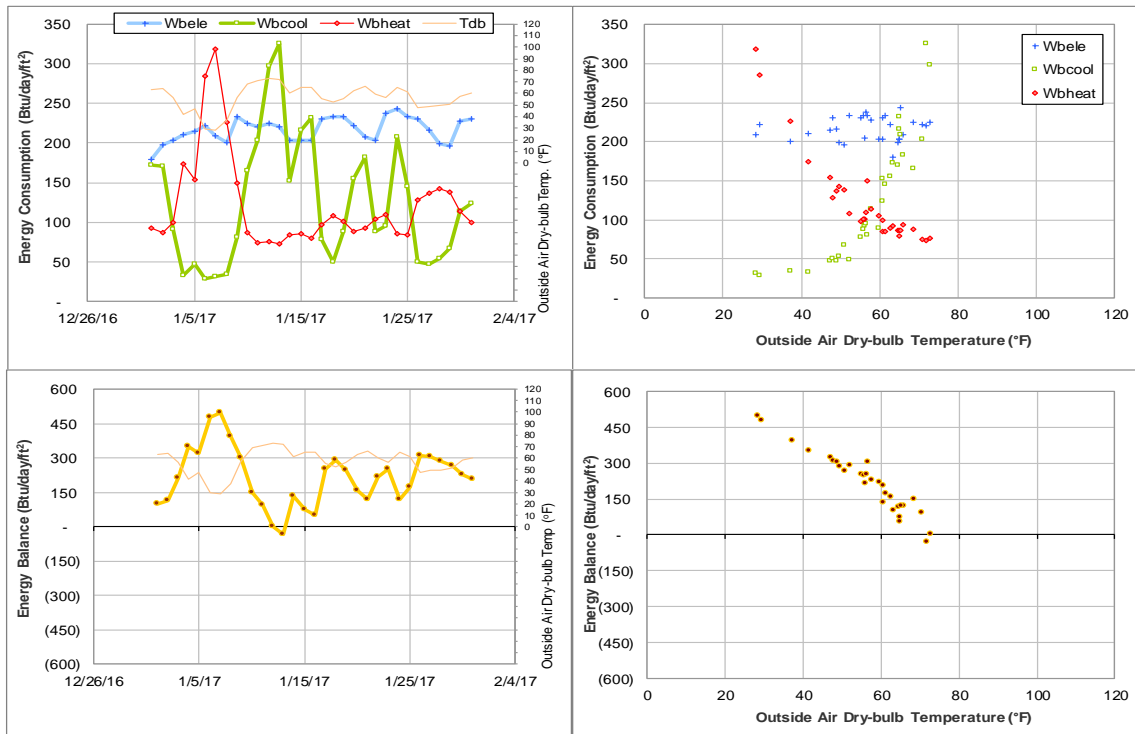


Figure IV-162 TX School of Rural Public Health TAMU BLDG # 1518 Energy Balance Plot during January 2017

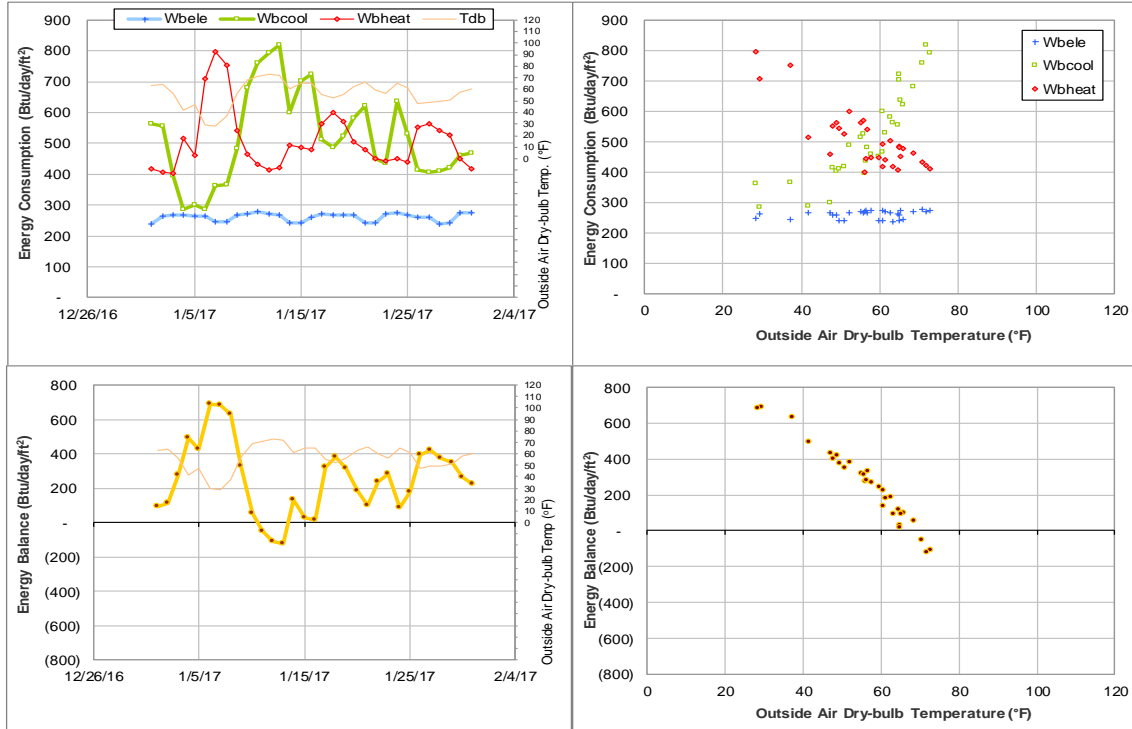


Figure IV-163 Nuclear Magnetic Resonance Facility TAMU BLDG # 1525 Energy Balance Plot during January 2017

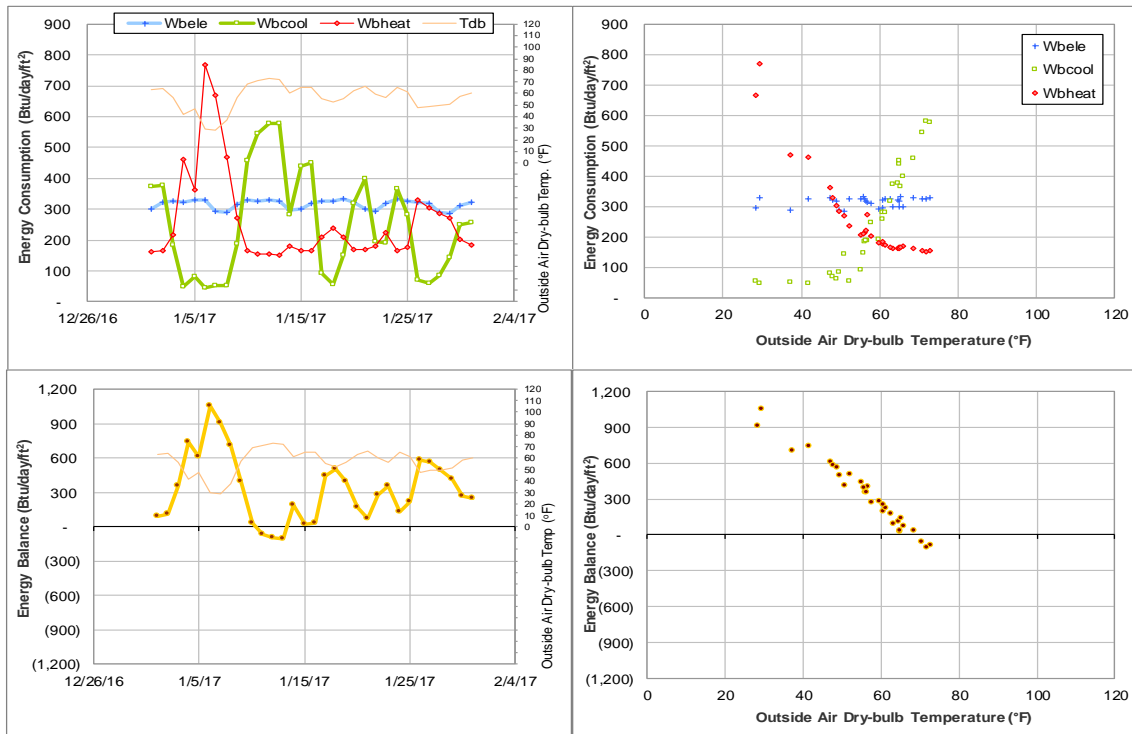


Figure IV-164 Interdisciplinary Life Sciences Building TAMU BLDG # 1530 Energy Balance Plot during January 2017

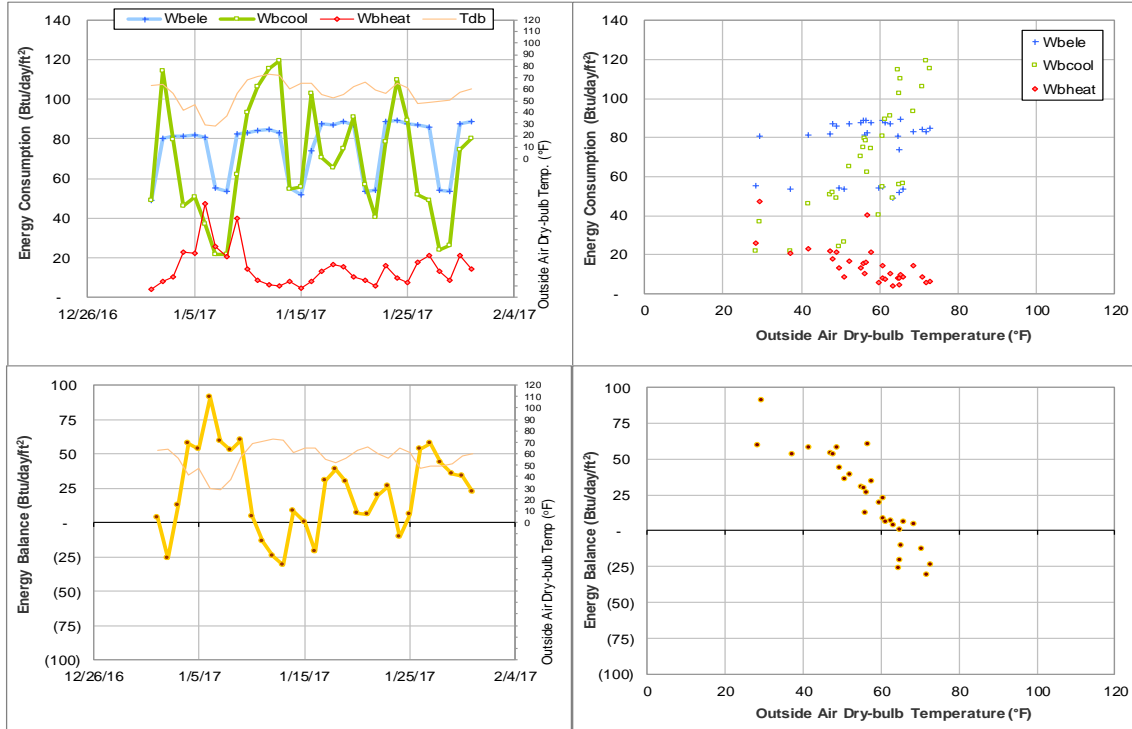


Figure IV-165 Agriculture and Life Sciences Building TAMU BLDG # 1535 Energy Balance Plot during January 2017

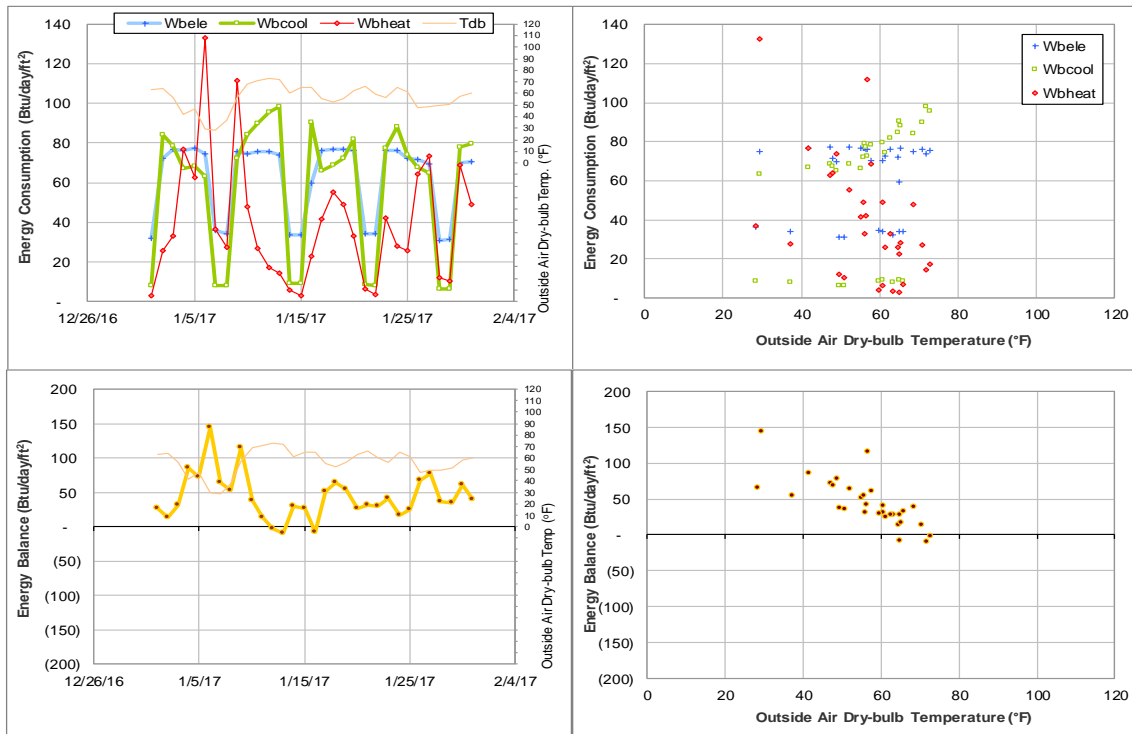


Figure IV-166 AgriLife Services Building TAMU BLDG # 1536 Energy Balance Plot during January 2017

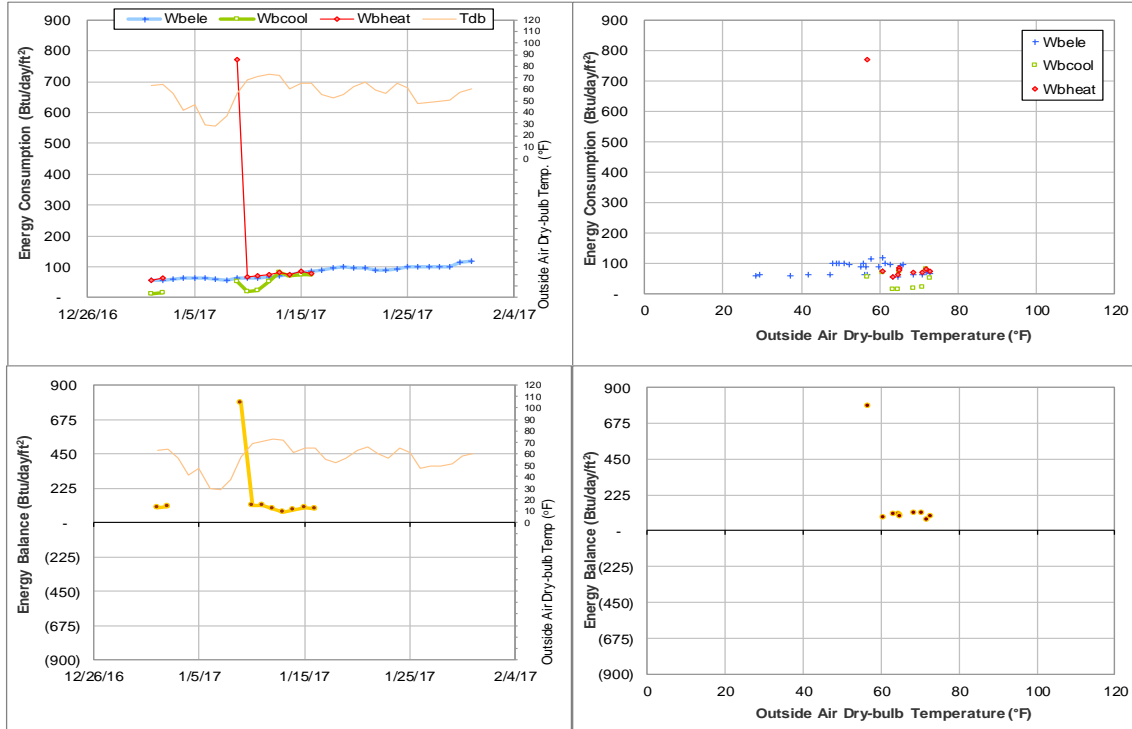


Figure IV-167 Agriculture Public Building TAMU BLDG # 1537 Energy Balance Plot during January 2017

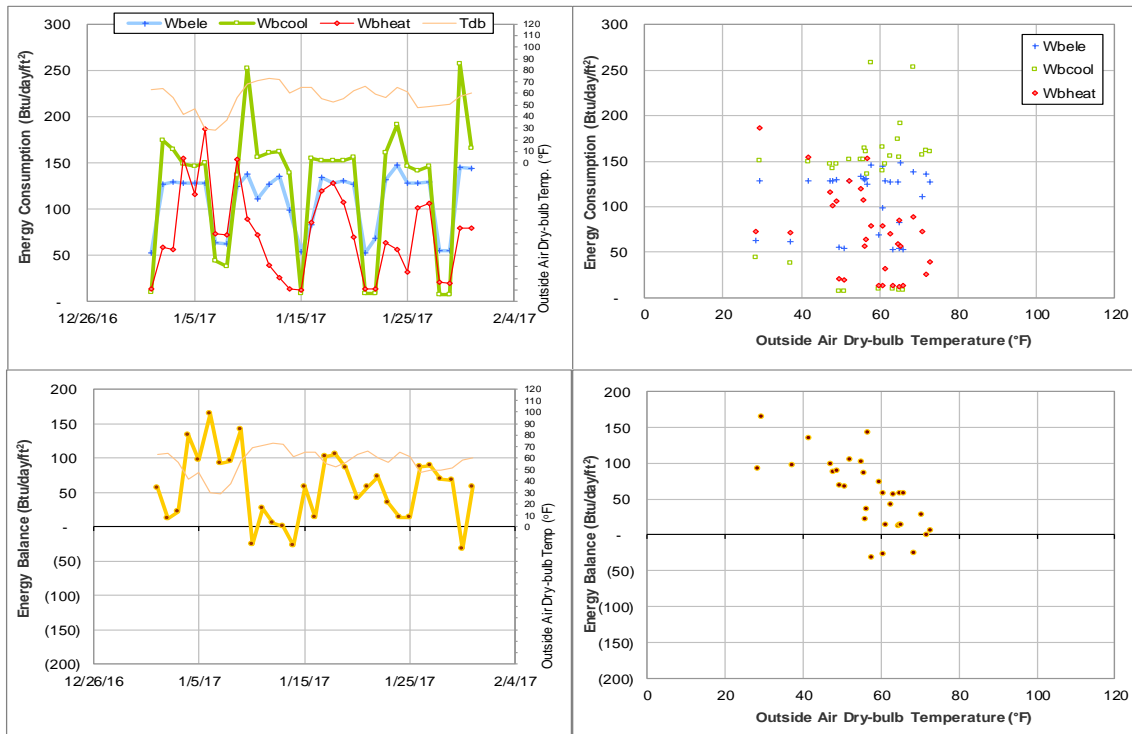


Figure IV-168 Agriculture Program Visitors Center TAMU BLDG # 1538 Energy Balance Plot during January 2017



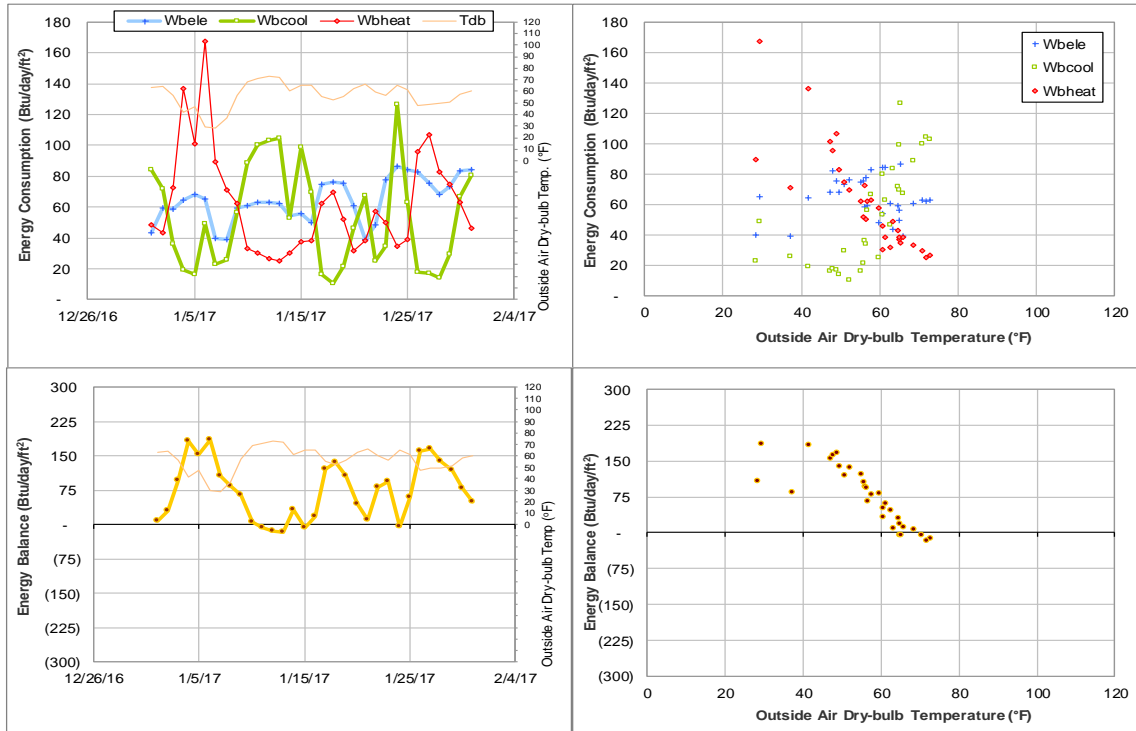


Figure IV-169 Physical Education Activity Program Building TAMU BLDG # 1540 Energy Balance Plot during January 2017

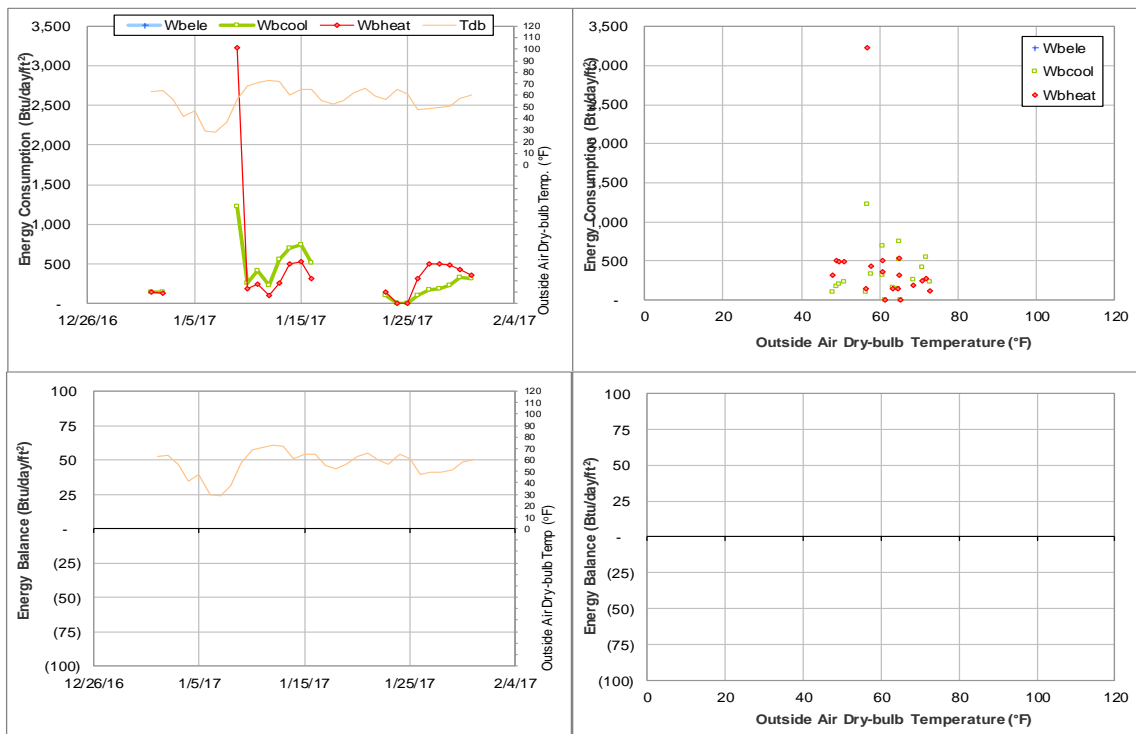


Figure IV-170 Human Clinical Research Building TAMU BLDG # 1542 Energy Balance Plot during January 2017

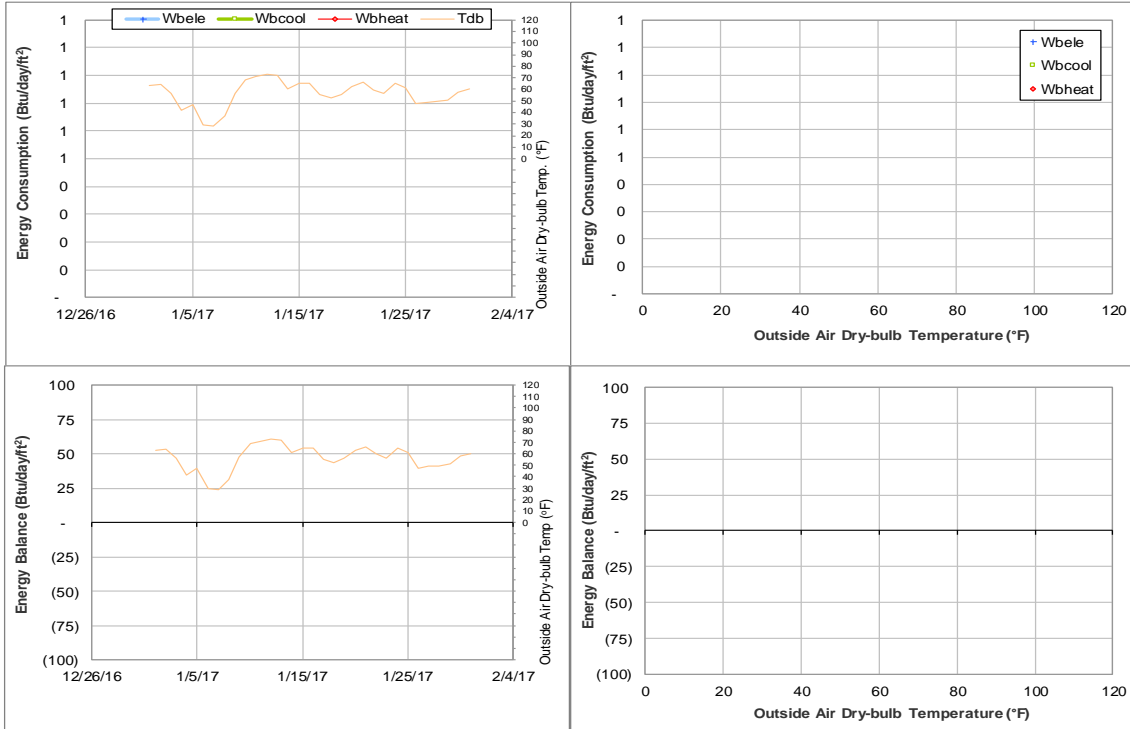


Figure IV-171 Cain Garage TAMU BLDG # 1544 Energy Balance Plot during January 2017

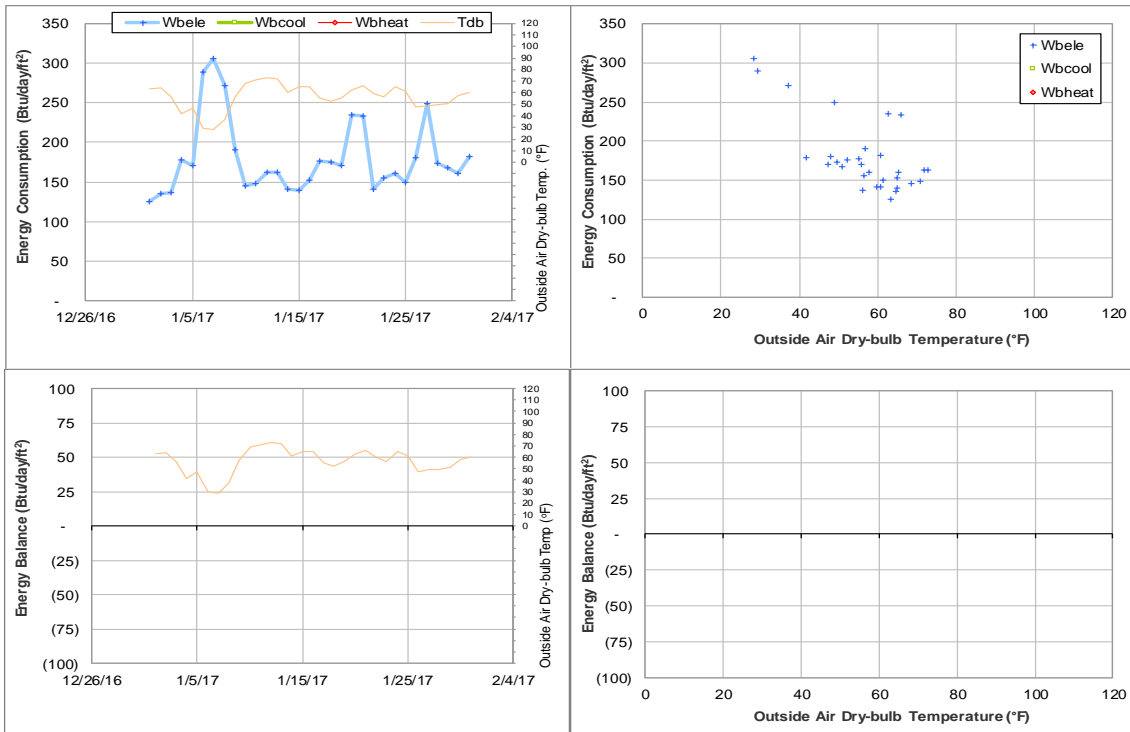


Figure IV-172 Olsen Field at Bluebell Park TAMU BLDG # 1550 Energy Balance Plot during January 2017

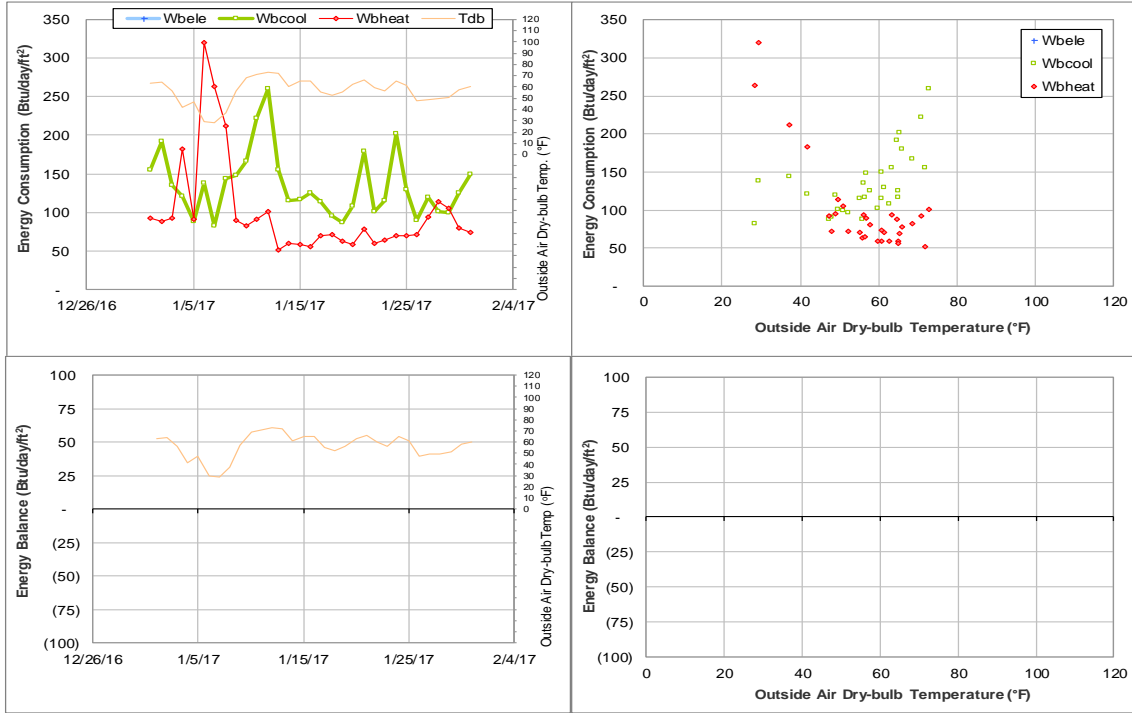


Figure IV-173 Reed Arena and Cox-McFerrin Center TAMU BLDG # 1554 and 1558 Energy Balance Plot during January 2017

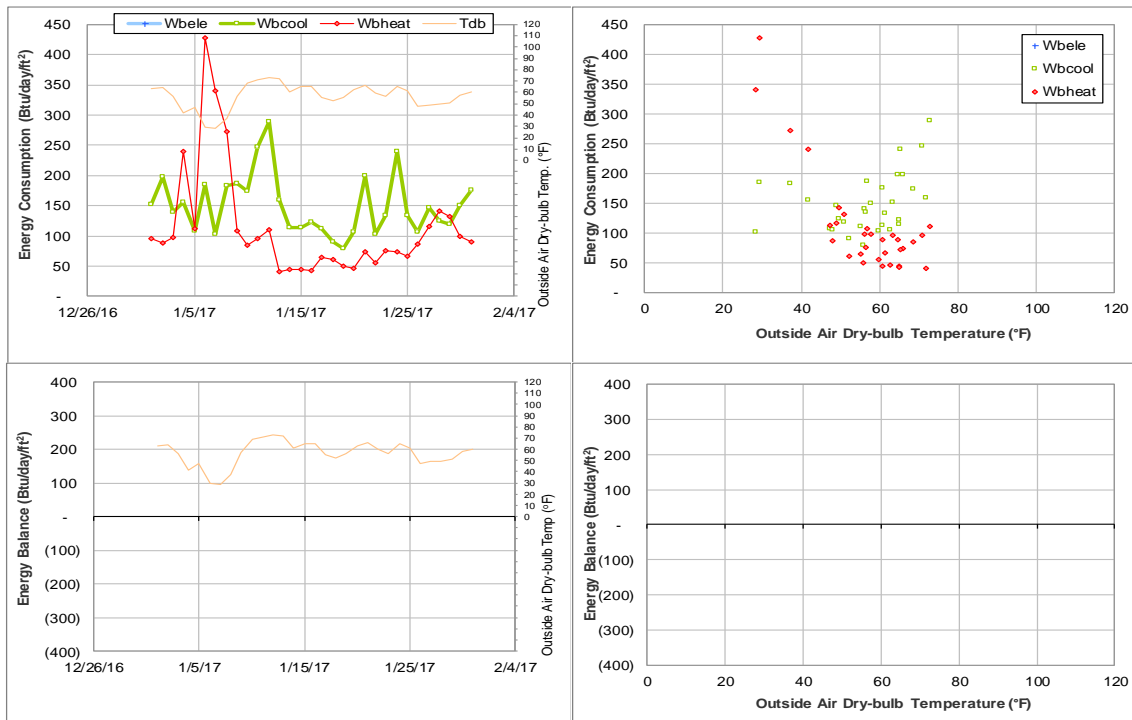


Figure IV-174 Reed Arena and Cox-McFerrin Center TAMU BLDG # 1554 Energy Balance Plot during January 2017

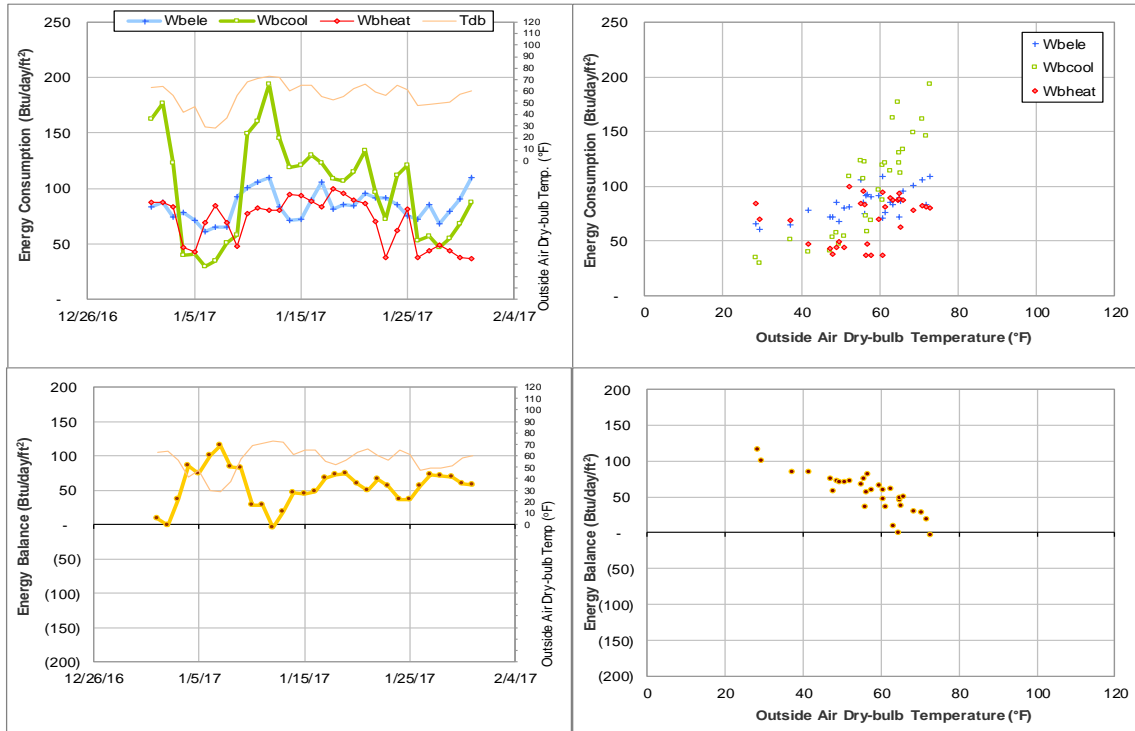


Figure IV-175 Cox-McFerrin Center for Aggie Basketball TAMU BLDG # 1558 Energy Balance Plot during January 2017

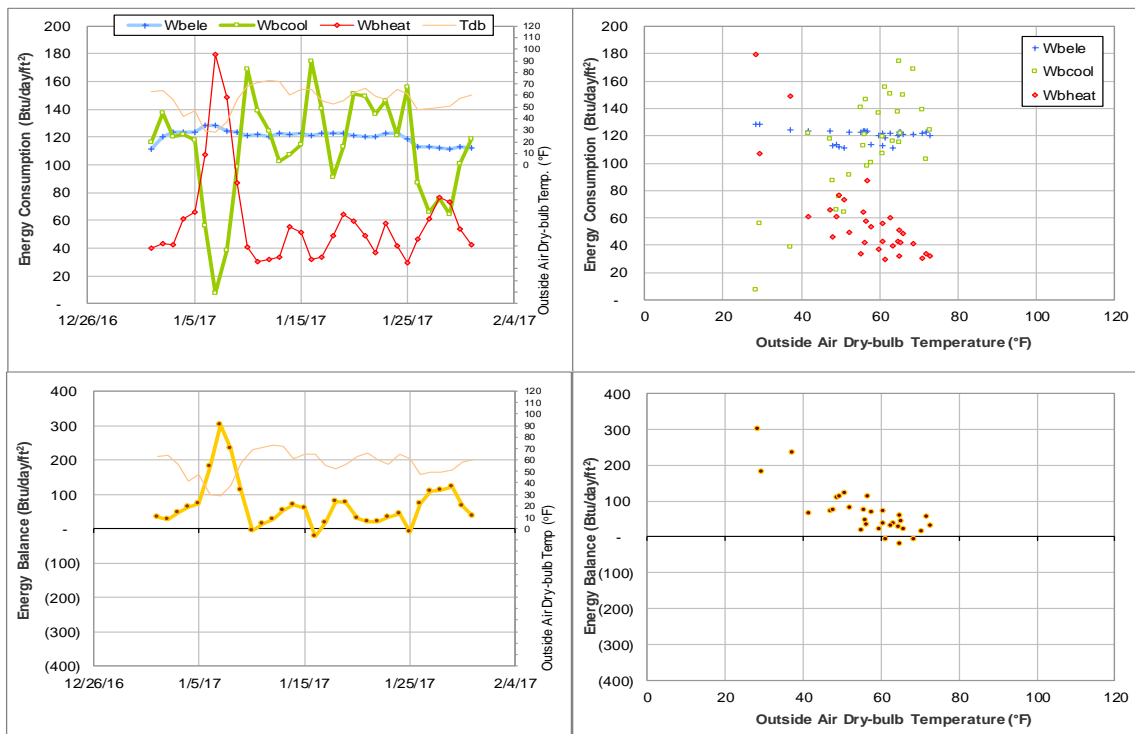


Figure IV-176 West Campus Parking Garage TAMU BLDG # 1559 Energy Balance Plot during January 2017

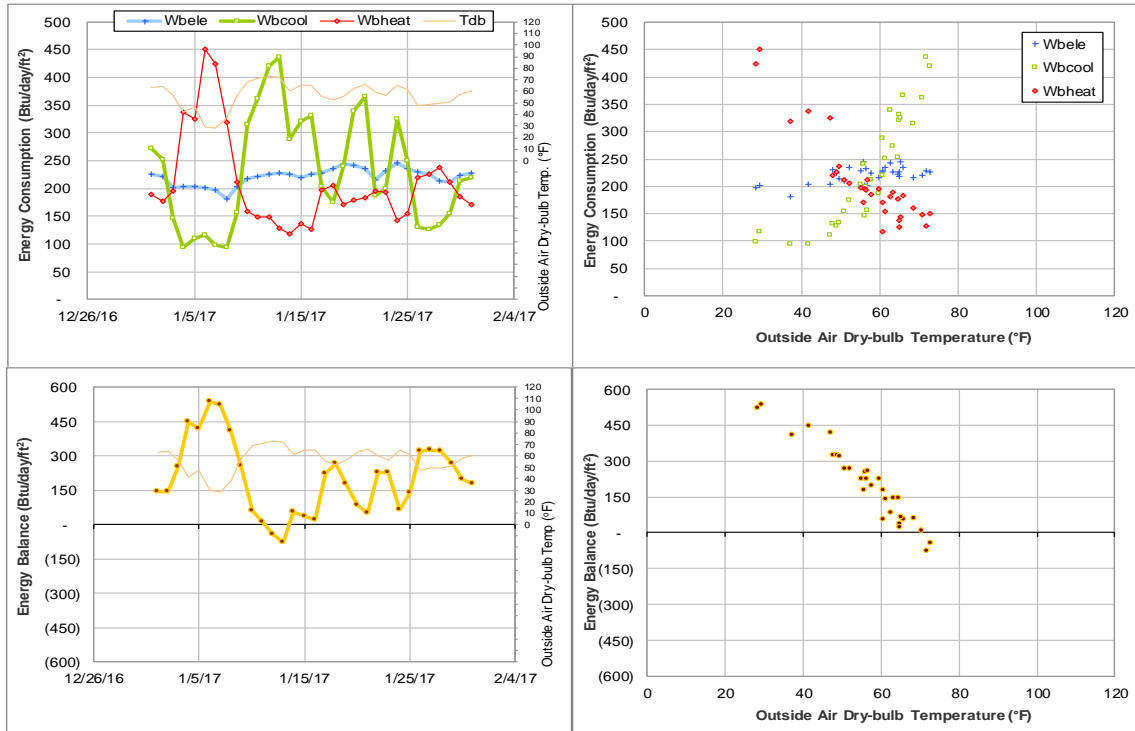


Figure IV-177 Student Recreation Center TAMU BLDG # 1560 Energy Balance Plot during January 2017

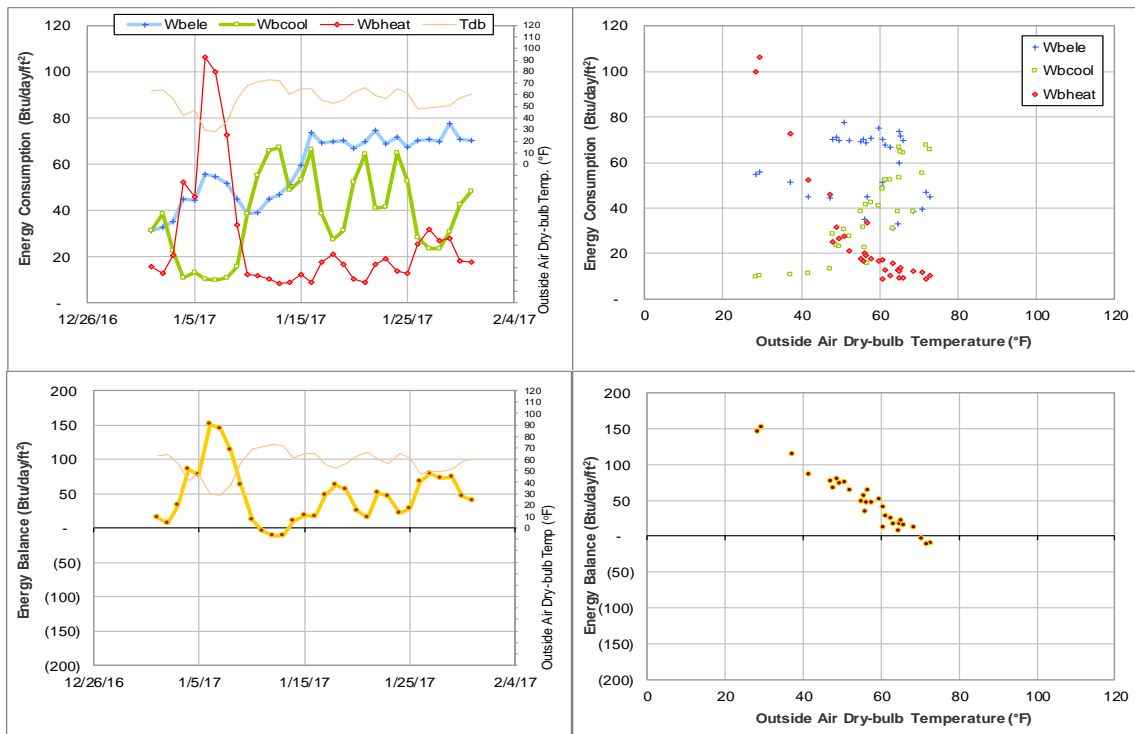


Figure IV-178 White Creek Apartment 1 and White Creek Apts Activity Center TAMU BLDG # 1589 Energy Balance Plot during January 2017

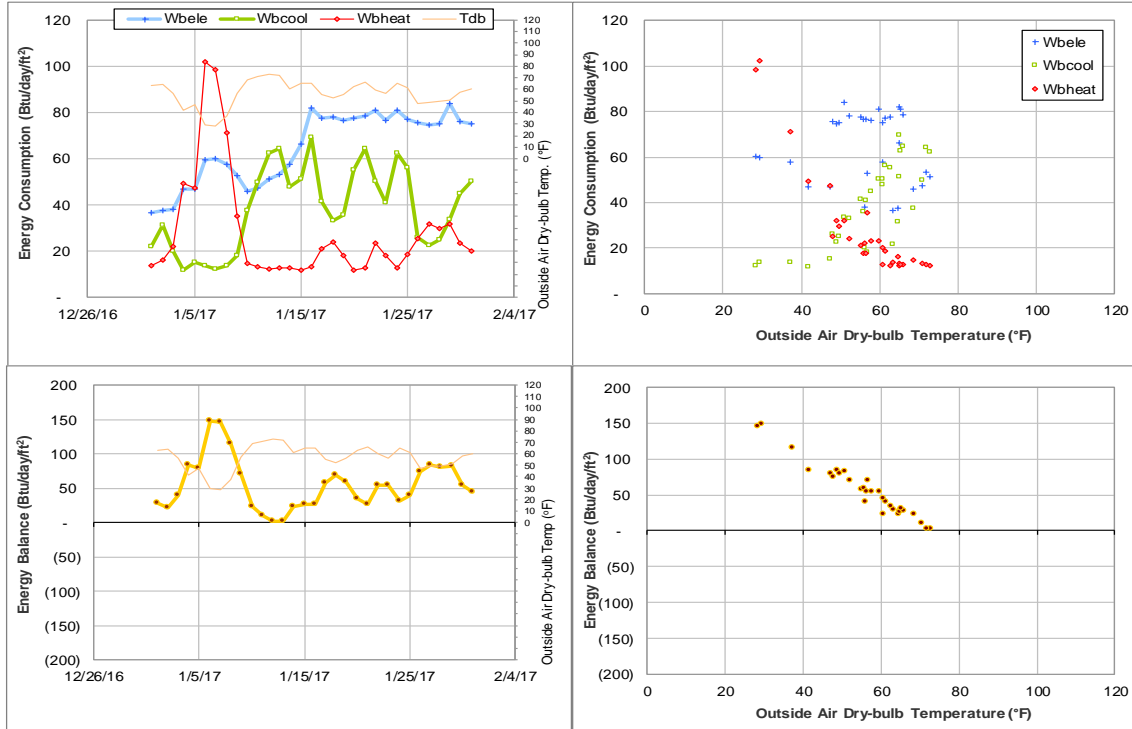


Figure IV-179 White Creek Apartment 2 TAMU BLDG # 1591 Energy Balance Plot during January 2017

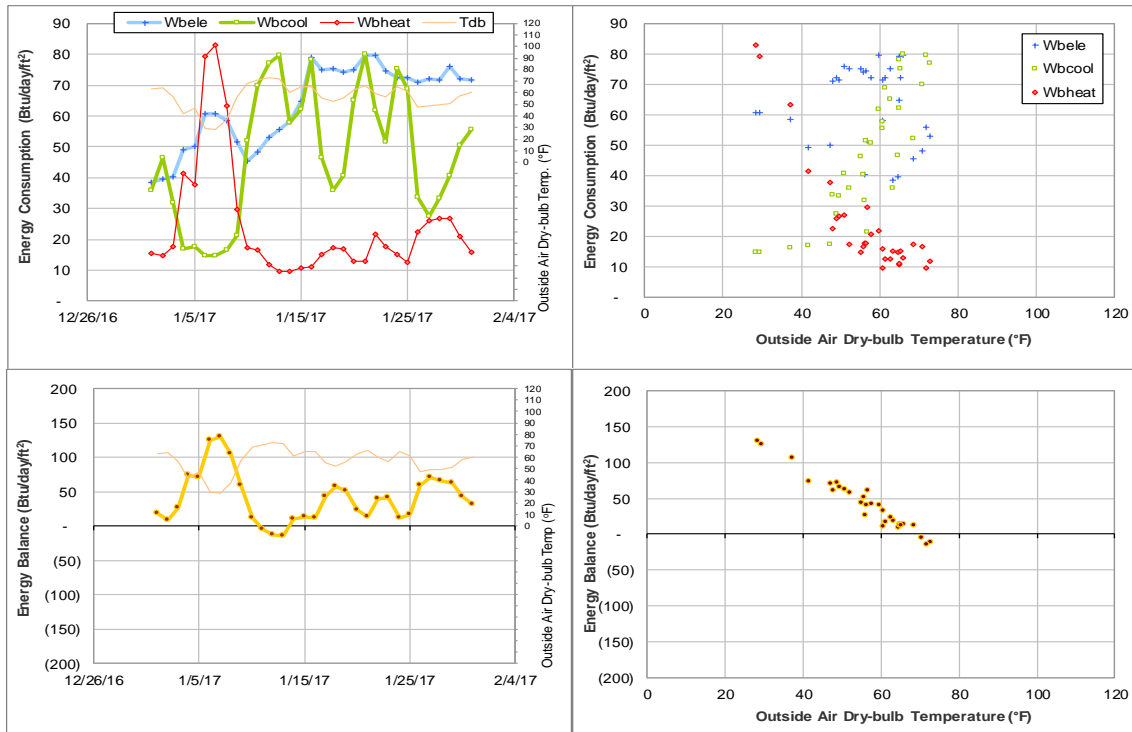


Figure IV-180 White Creek Apartment 3 TAMU BLDG # 1592 Energy Balance Plot during January 2017

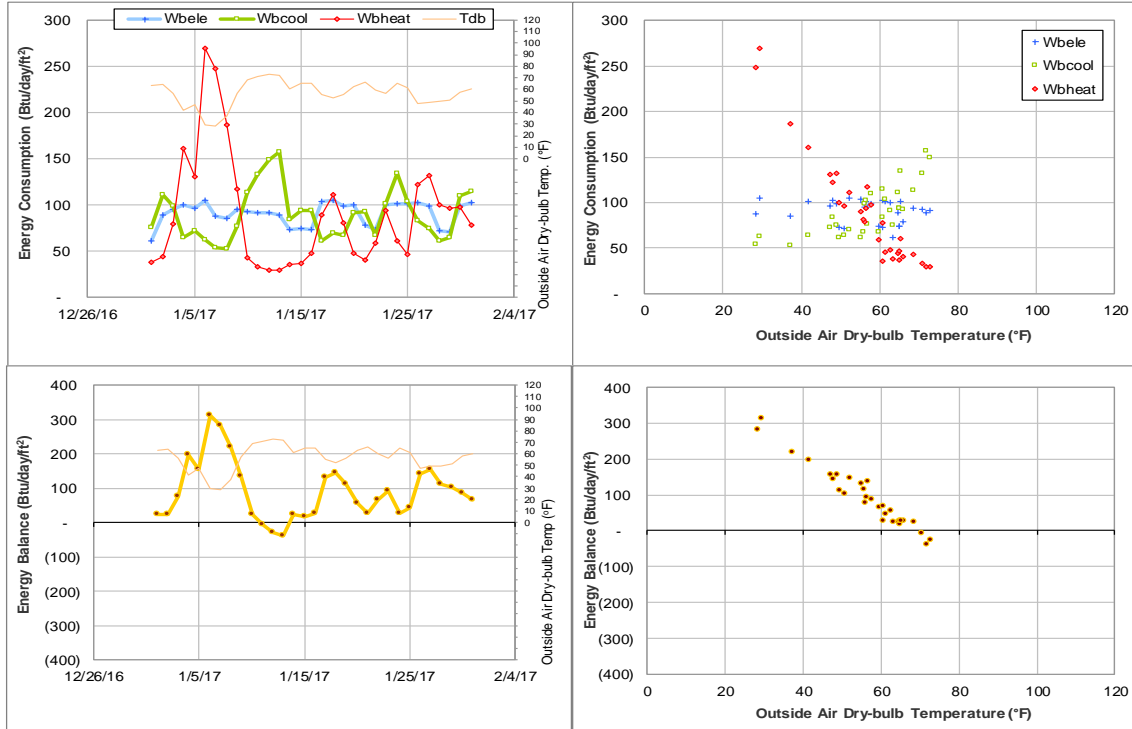


Figure IV-181 Gilchrist TTI Building TAMU BLDG # 1600 Energy Balance Plot during January 2017

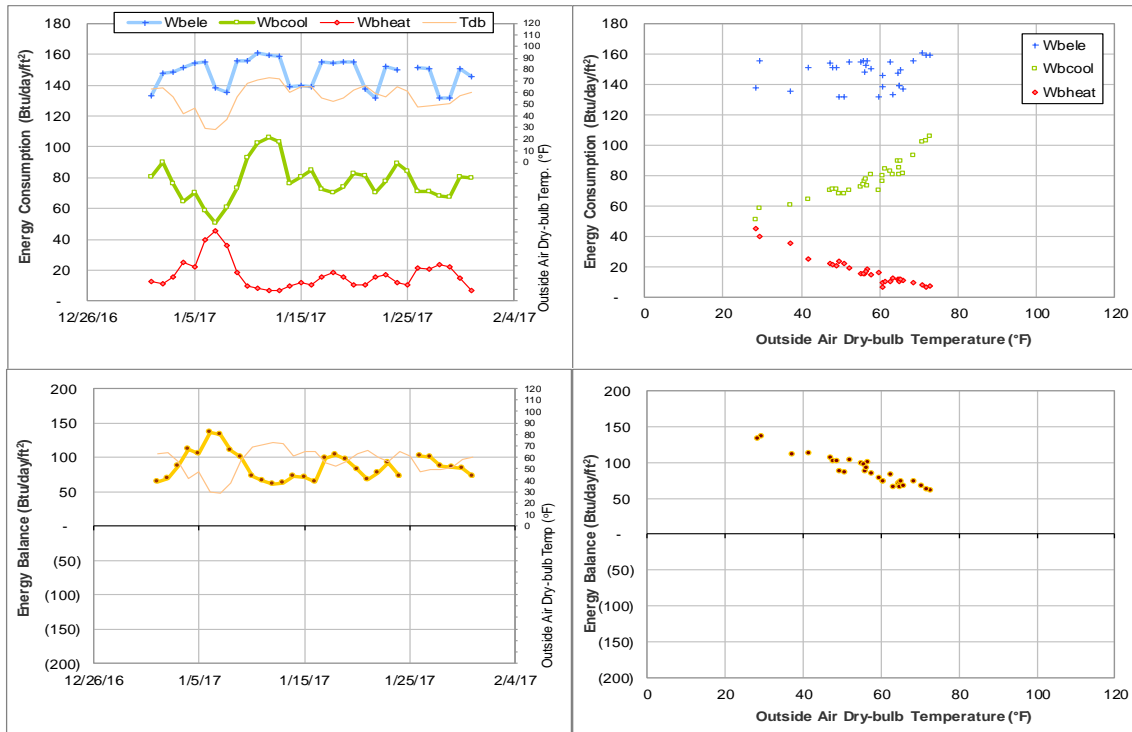


Figure IV-182 International Ocean Discovery Building TAMU BLDG # 1601 Energy Balance Plot during January 2017

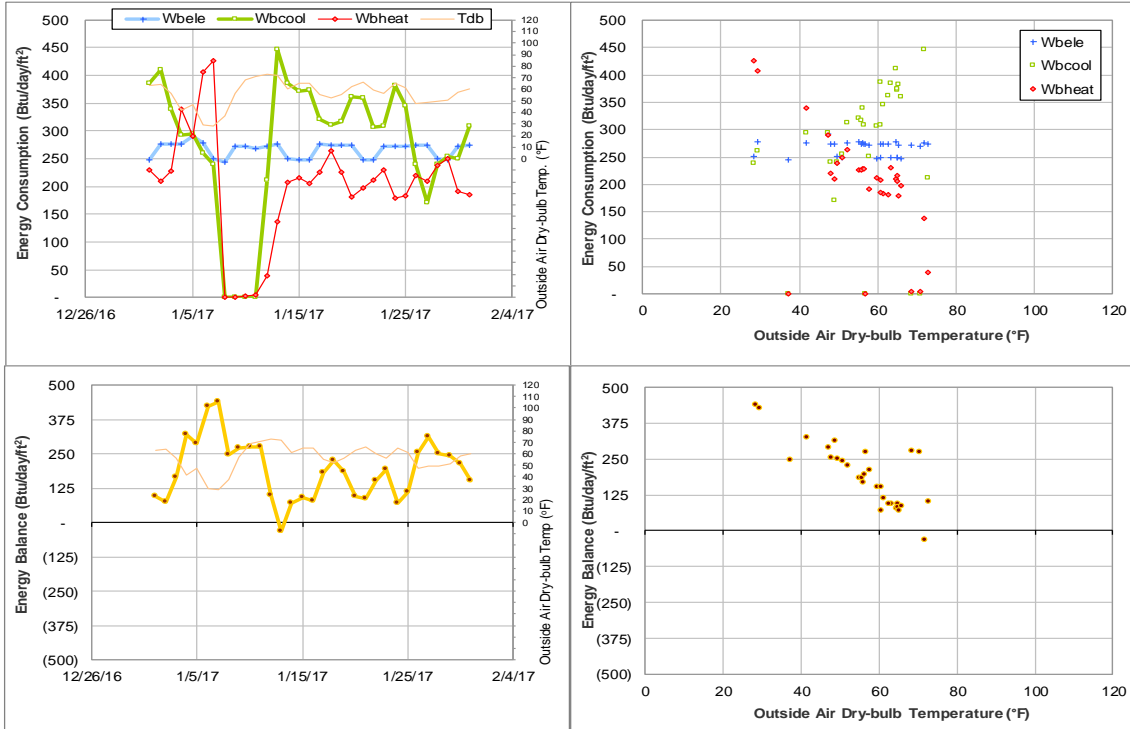


Figure IV-183 Offshore Technology Research Center TAMU BLDG # 1604 Energy Balance Plot during January 2017

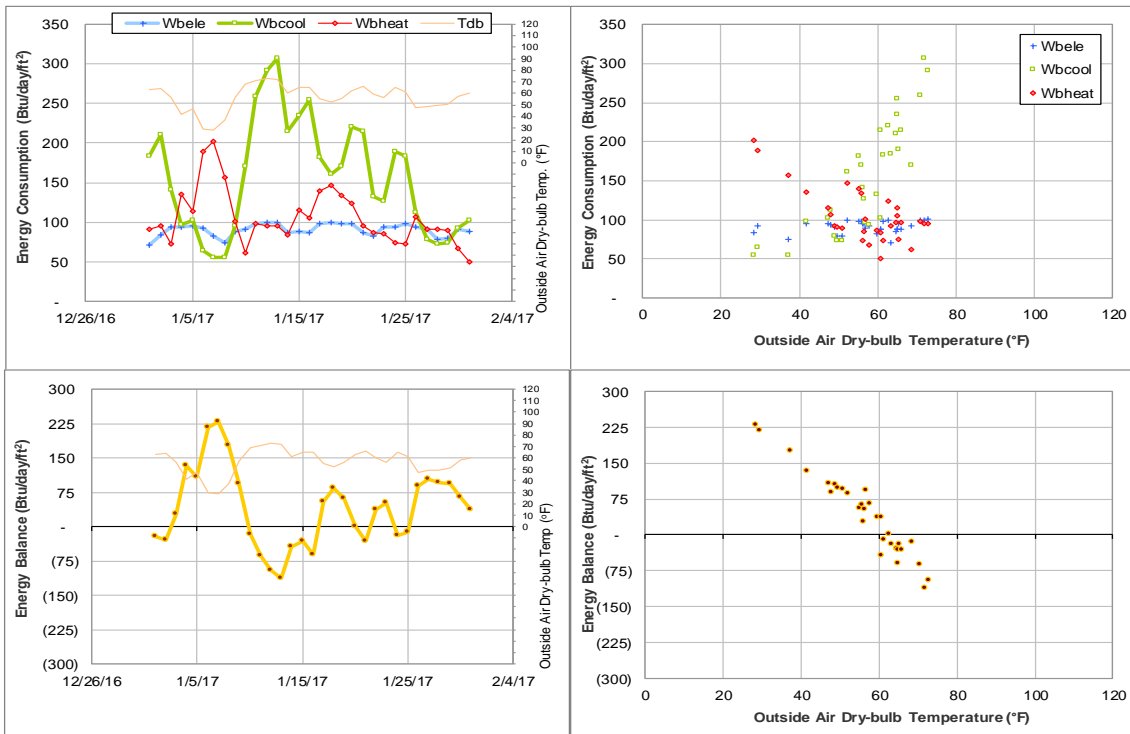


Figure IV-184 George Bush Presidential Library & Museum TAMU BLDG # 1606 Energy Balance Plot during January 2017



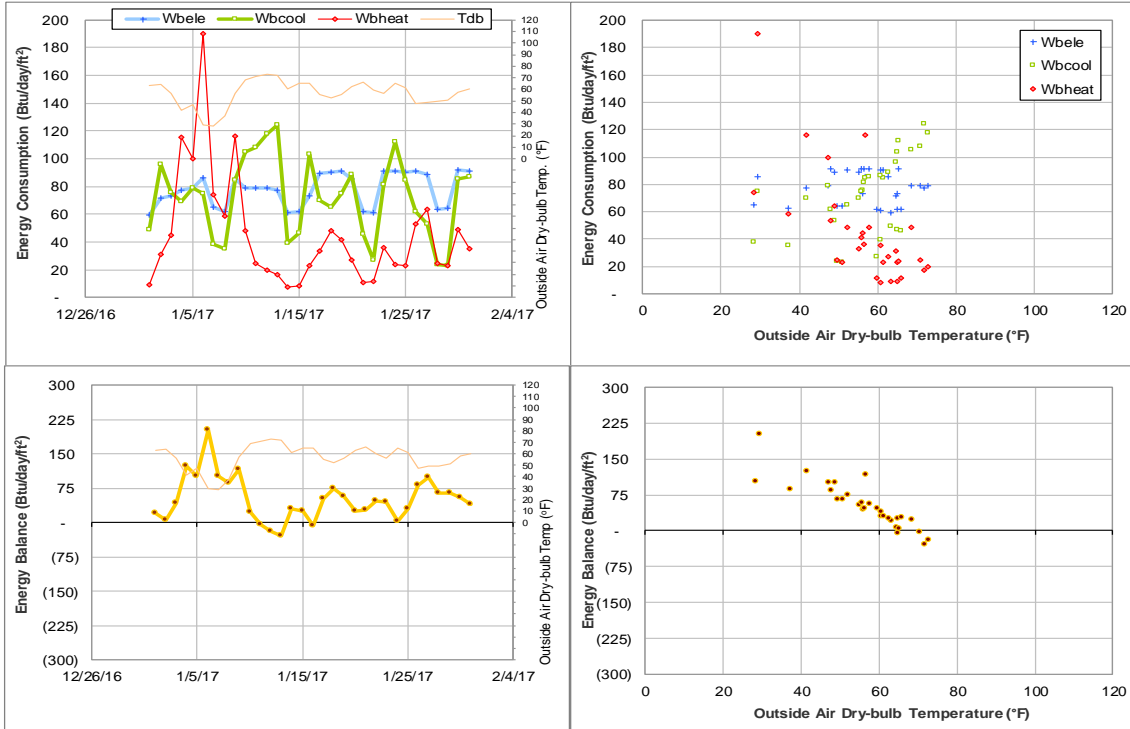


Figure IV-185 Allen Building TAMU BLDG # 1607 Energy Balance Plot during January 2017

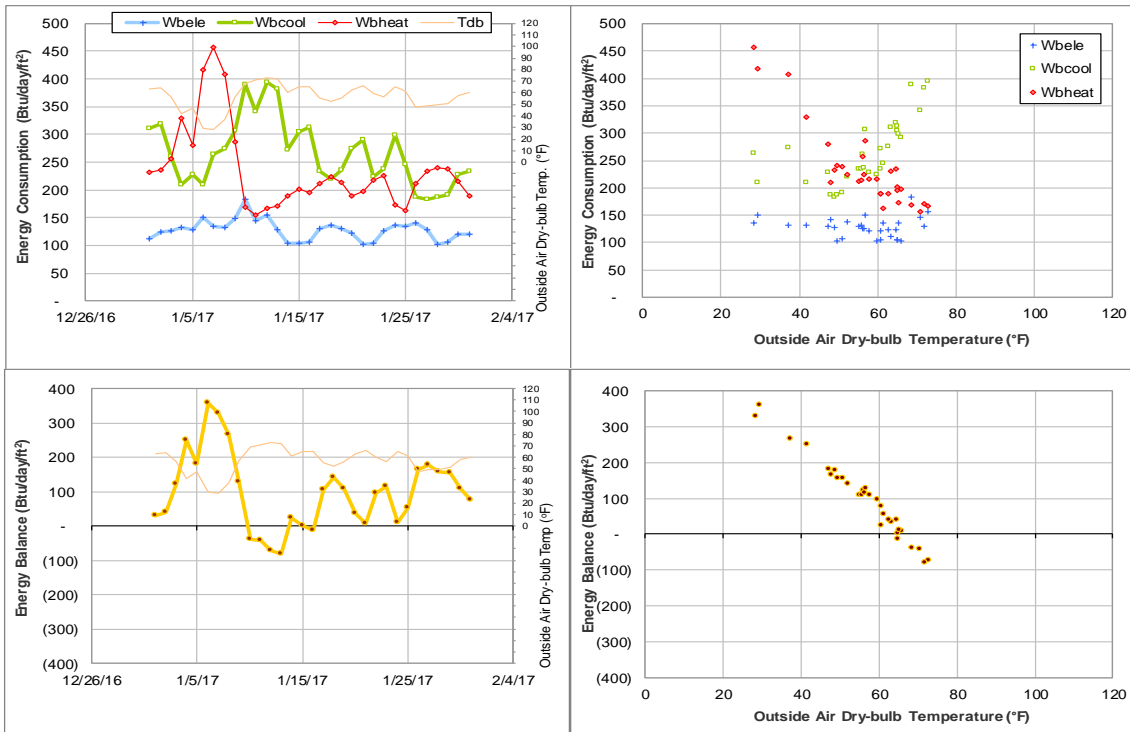


Figure IV-186 Annenberg Presidential Conference Center TAMU BLDG # 1608 Energy Balance Plot during January 2017

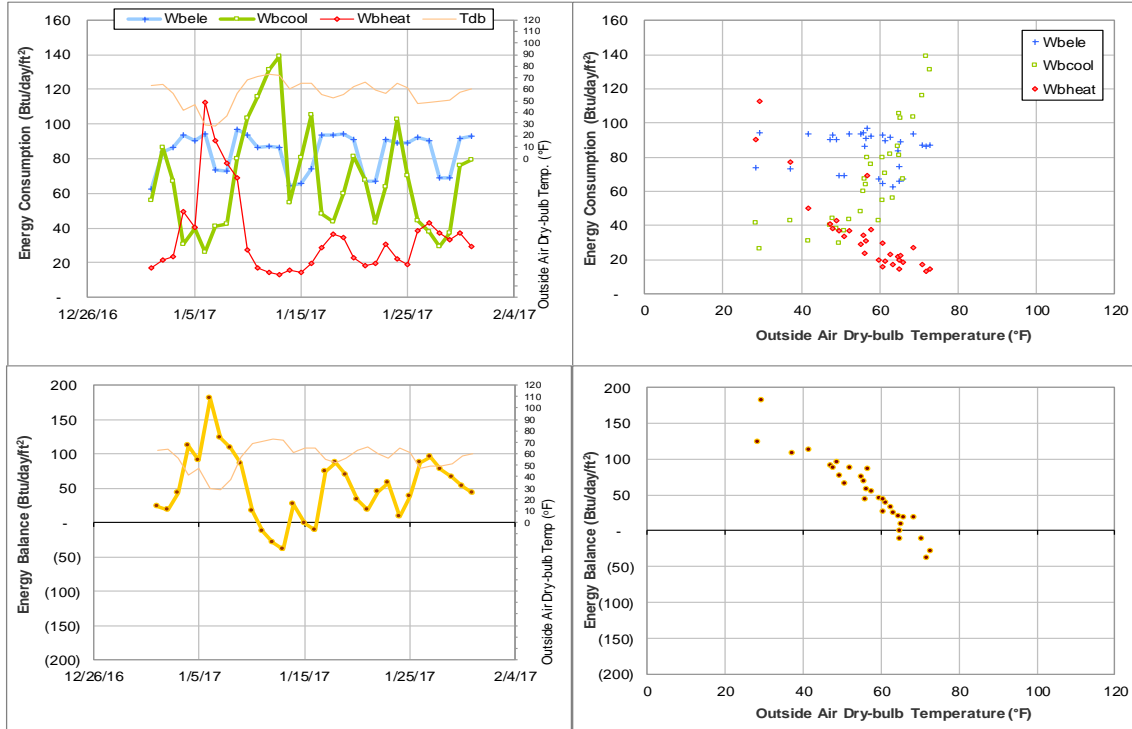


Figure IV-187 TTI Headquarters TAMU BLDG # 1609 Energy Balance Plot during January 2017

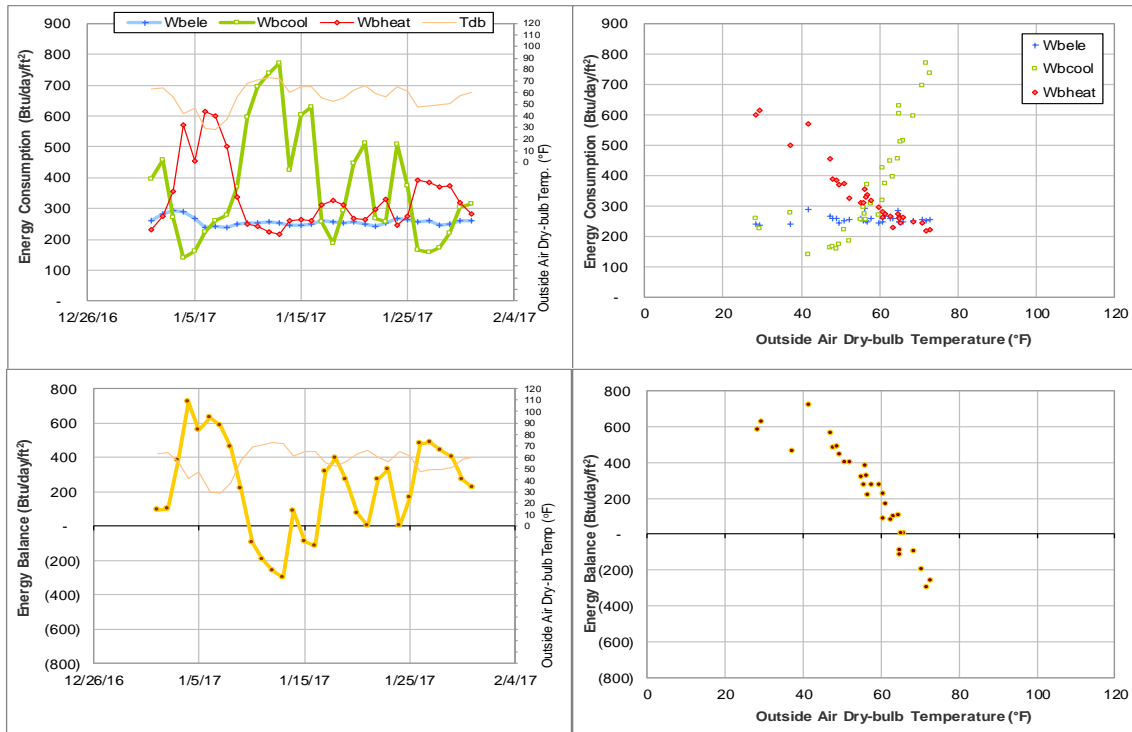


Figure IV-188 Engineering Research Building TAMU BLDG # 1611 Energy Balance Plot during January 2017

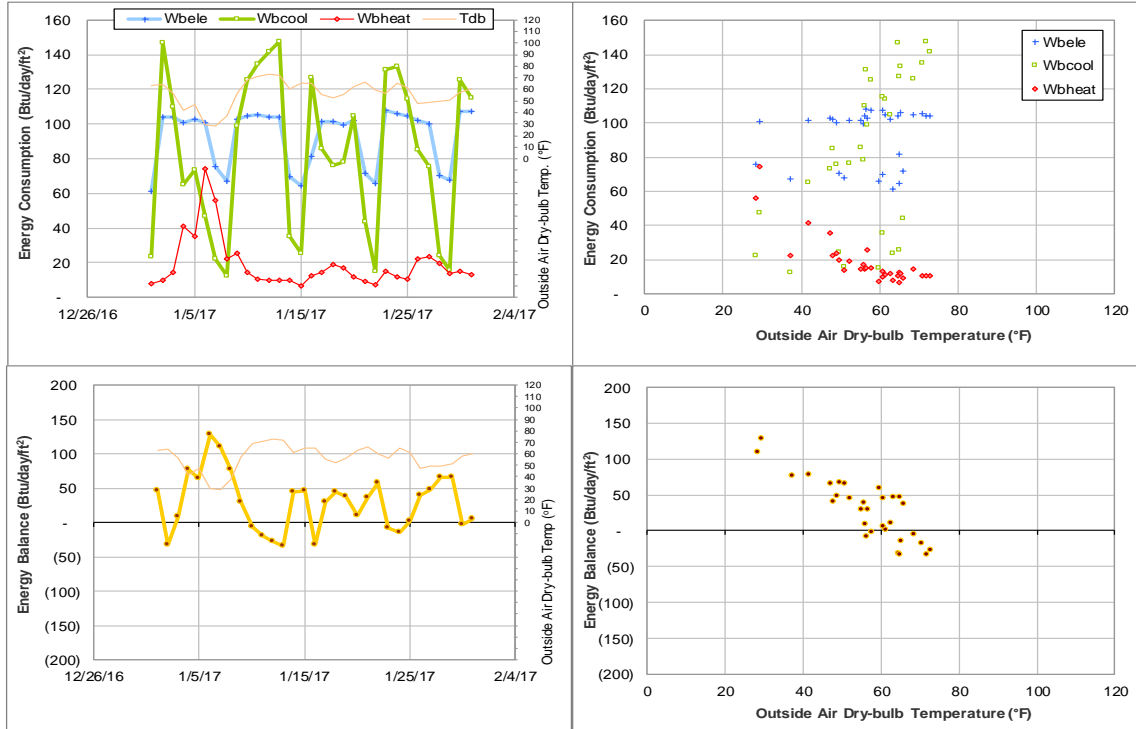


Figure IV-189 General Services Complex TAMU BLDG # 1800 Energy Balance Plot during January 2017

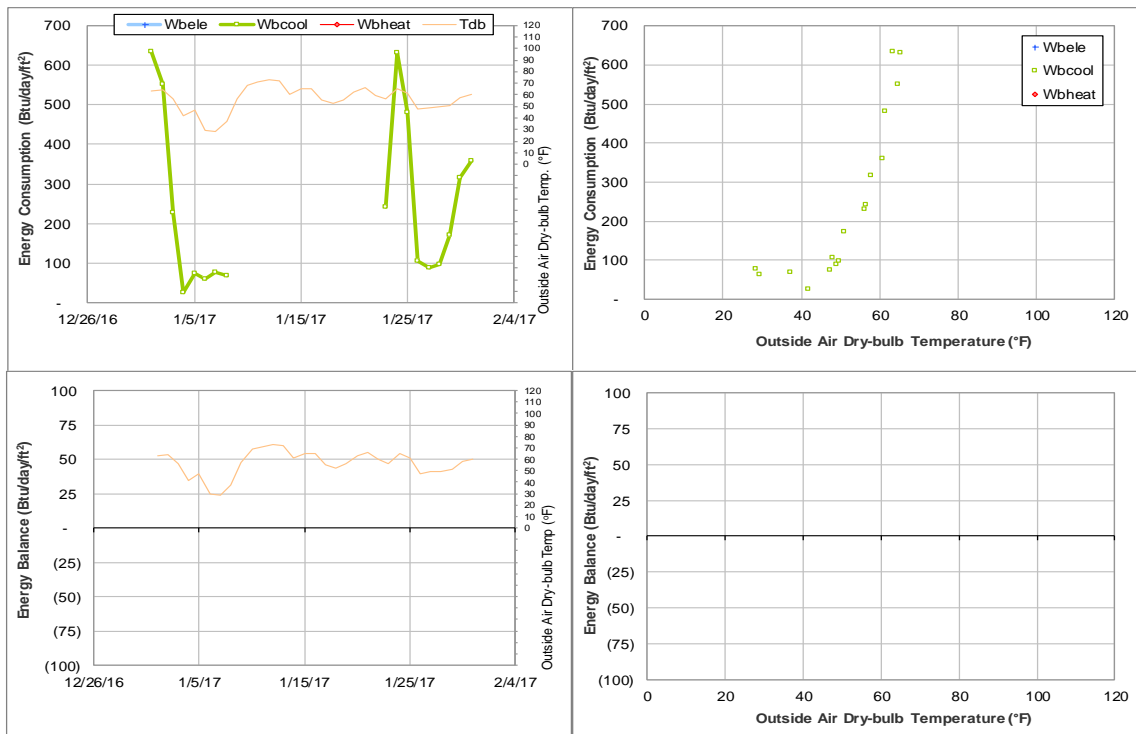


Figure IV-190 New TVMDL TAMU BLDG # 1809 Energy Balance Plot during January 2017

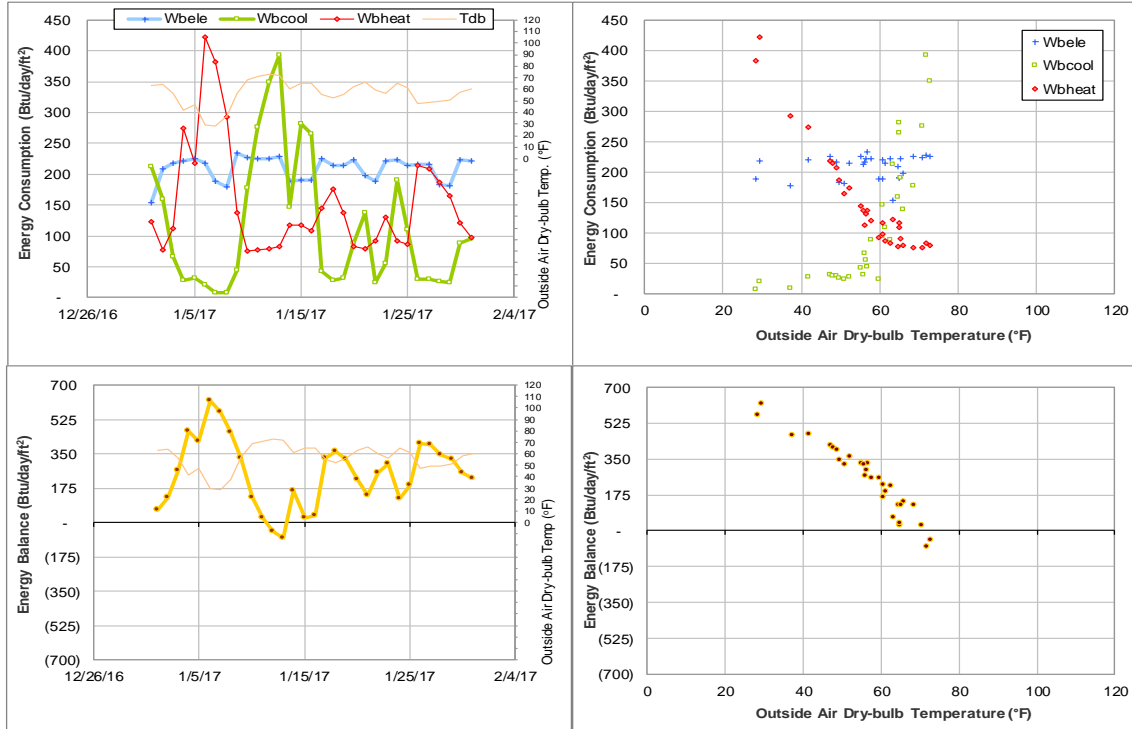


Figure IV-191 Office of the State Chemist Building TAMU BLDG # 1810 Energy Balance Plot during January 2017

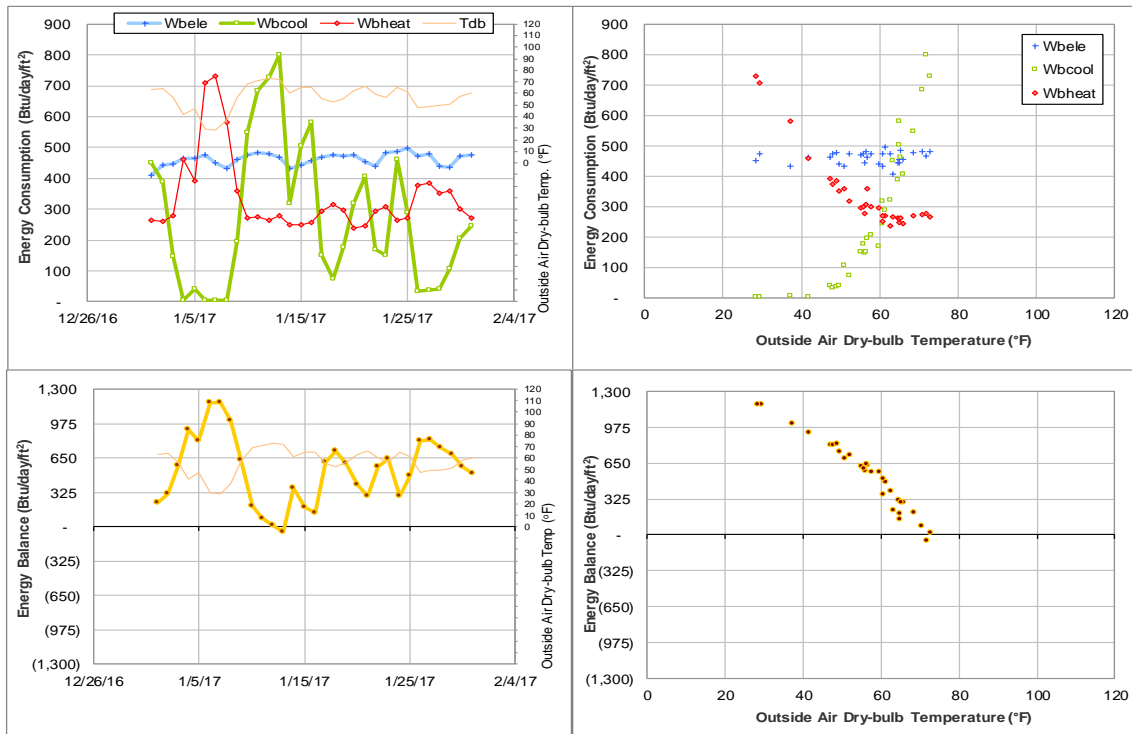


Figure IV-192 Vet Med Research Bldg Addition TAMU BLDG # 1811 Energy Balance Plot during January 2017

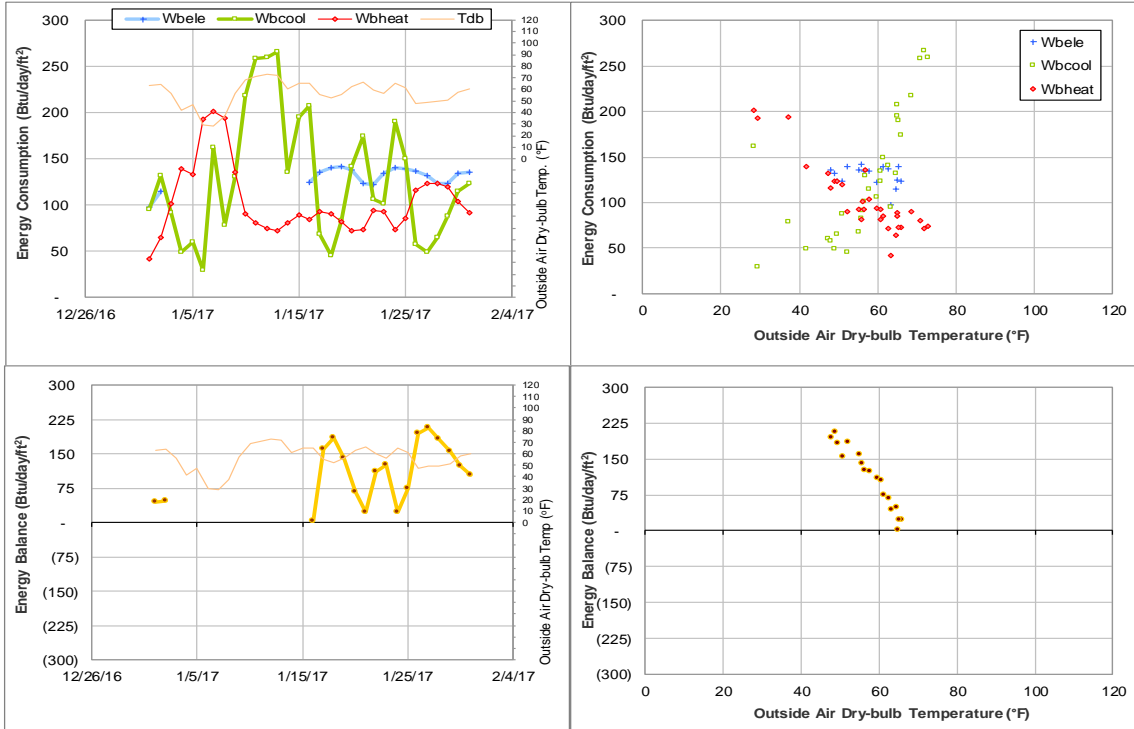


Figure IV-193 Veterinary Medicine Building 1, 2, and 3 TAMU BLDG # 1812 Energy Balance Plot during January 2017

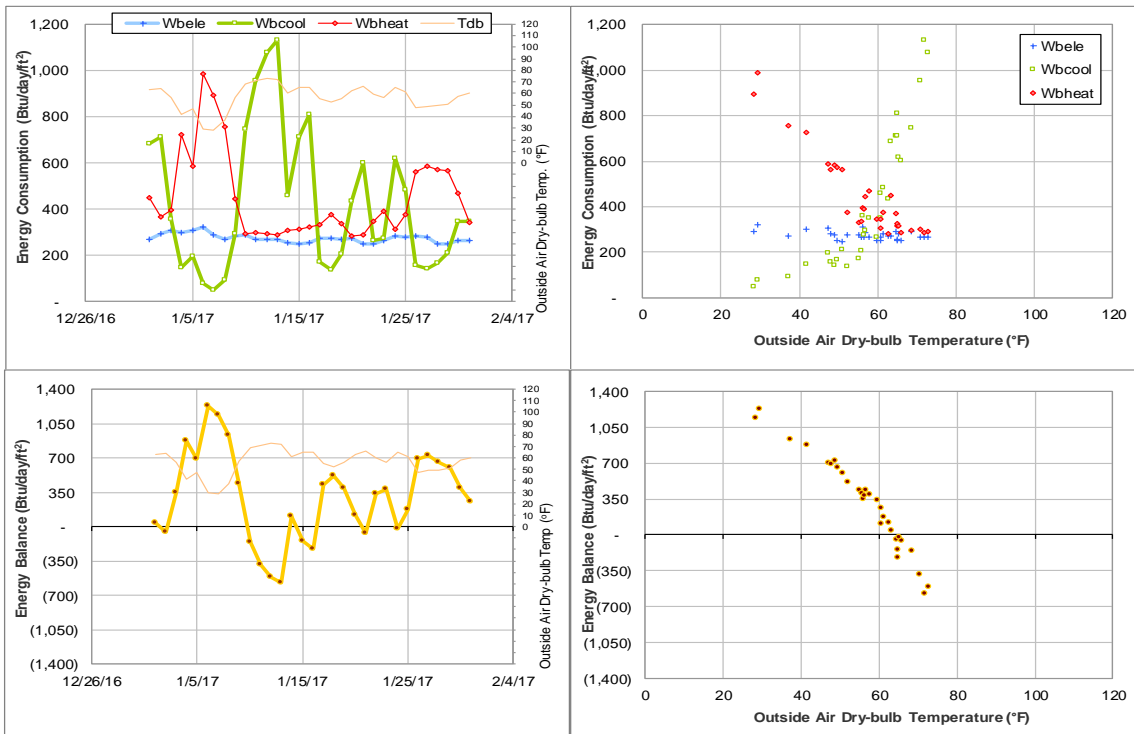


Figure IV-194 Texas Institute for Genomic Medicine TAMU BLDG # 1900 Energy Balance Plot during January 2017

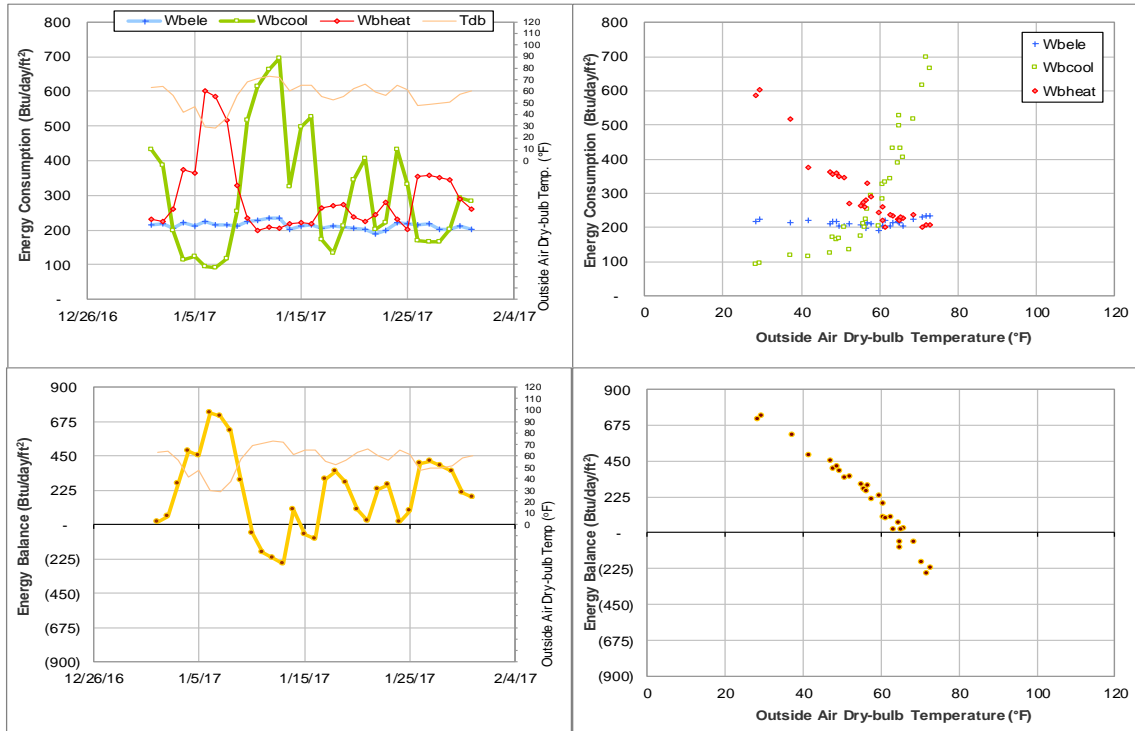


Figure IV-195 Texas A&M Institute for Preclinical Studies A TAMU BLDG # 1904 Energy Balance Plot during January 2017

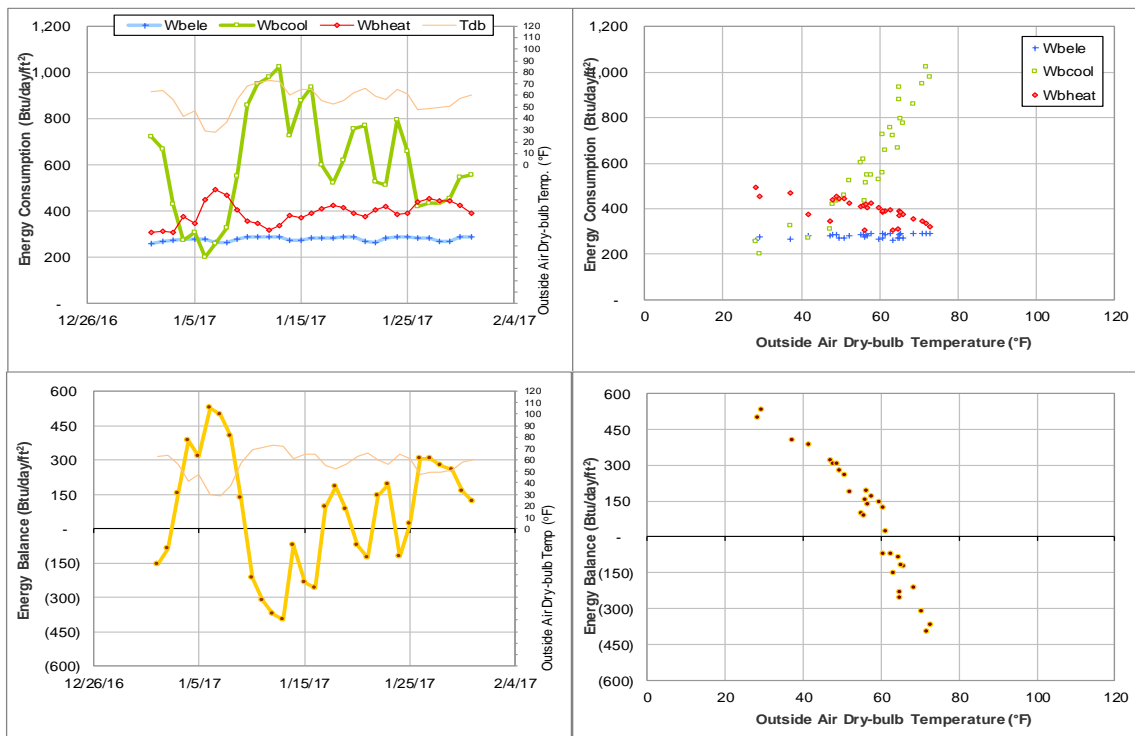


Figure IV-196 National Center for Therapeutics Manufacturing TAMU BLDG # 1910 Energy Balance Plot during January 2017

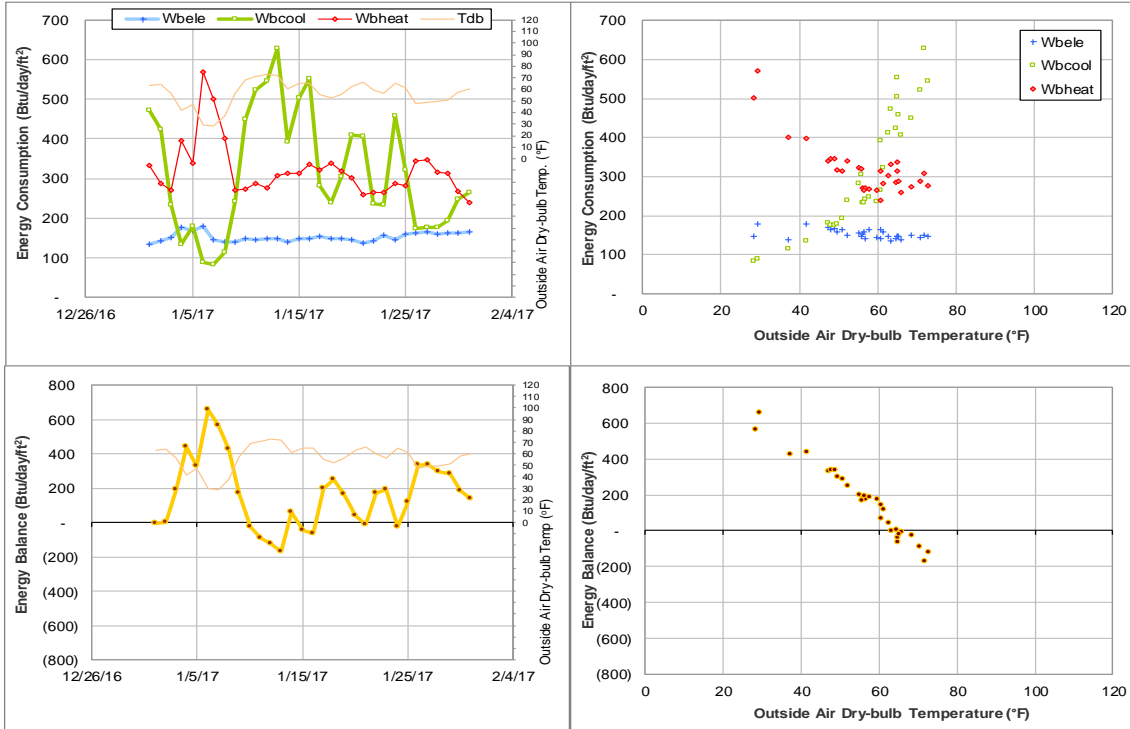


Figure IV-197 Multi-Species Research Building TAMU BLDG # 1911 Energy Balance Plot during January 2017

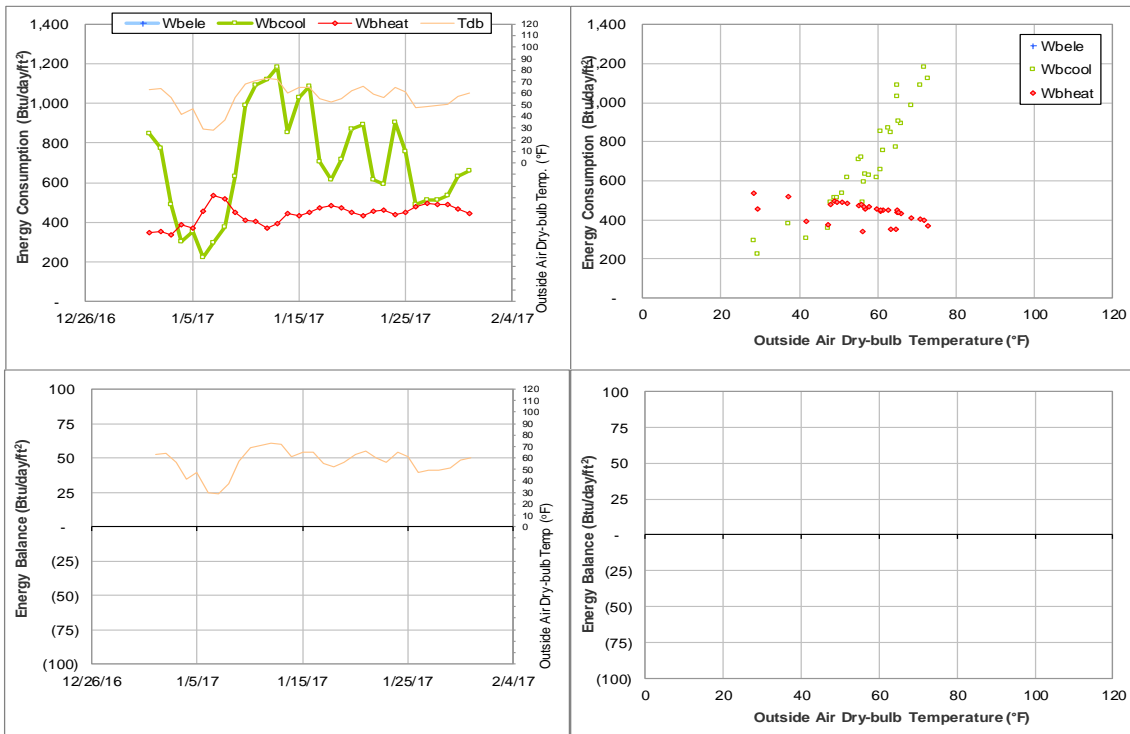


Figure IV-198 NCTM Manufacturing Building TAMU BLDG # 10226 Energy Balance Plot during January 2017

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



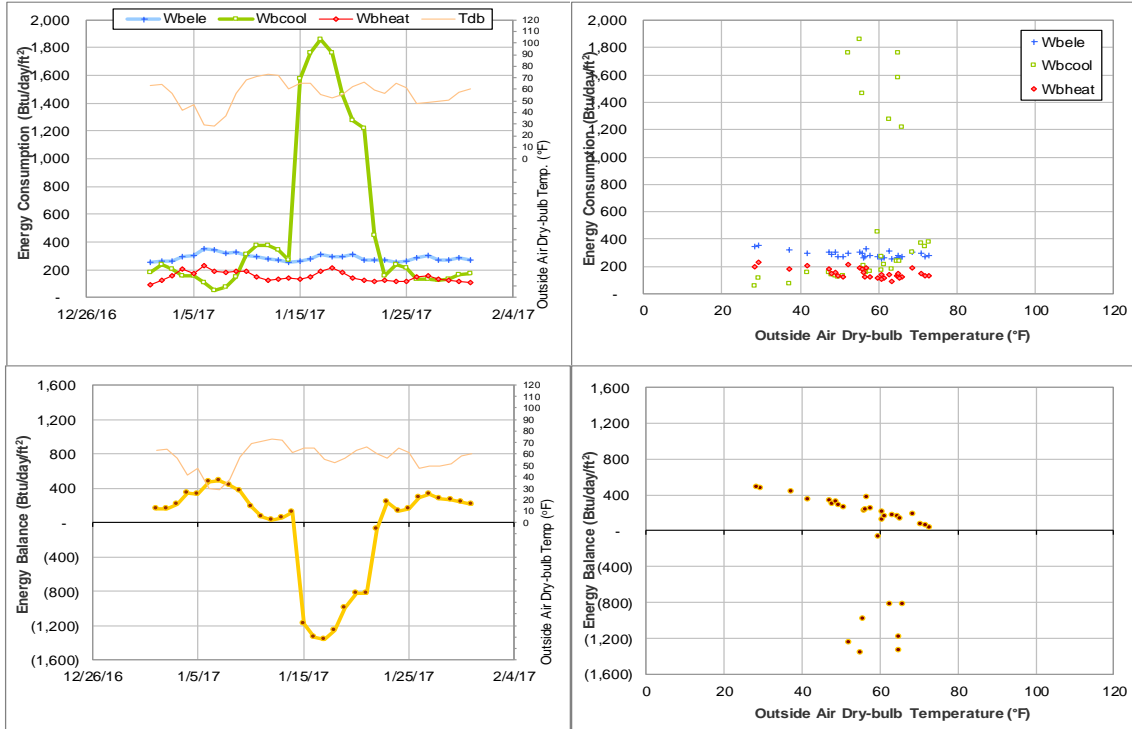


Figure V-1 Kyle Field TAMU BLDG # 367 Energy Balance Plot during January 2017

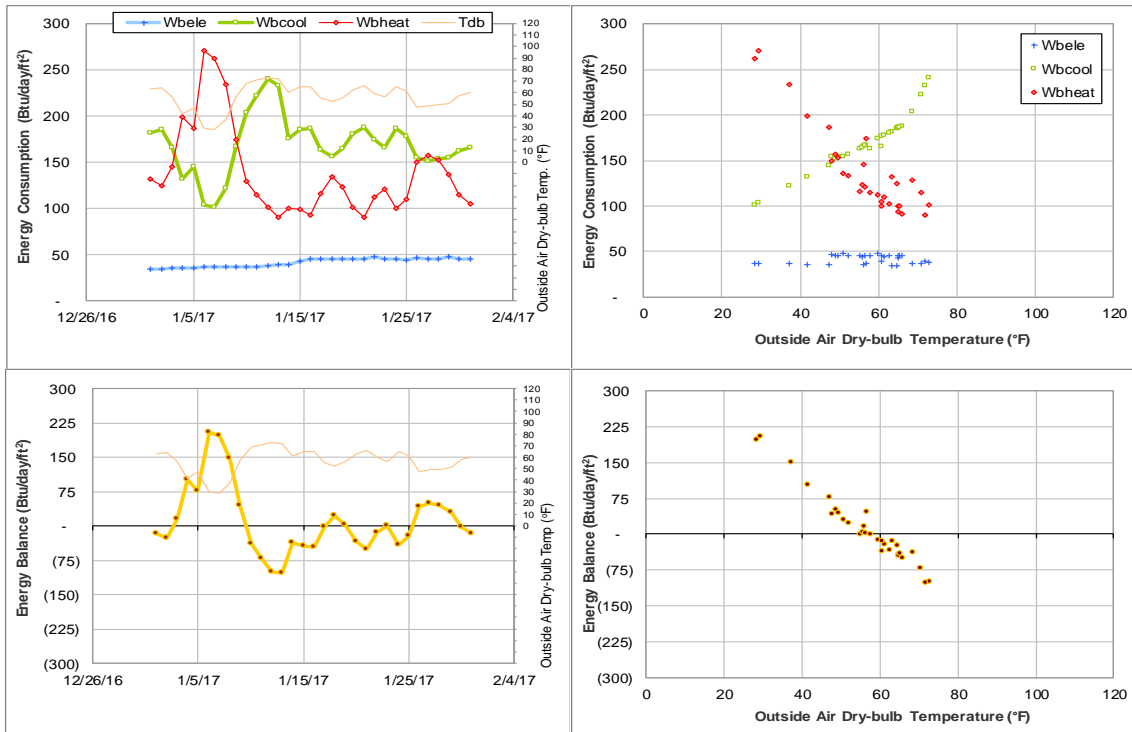


Figure V-2 Legett Residence Hall TAMU BLDG # 419 Energy Balance Plot during January 2017

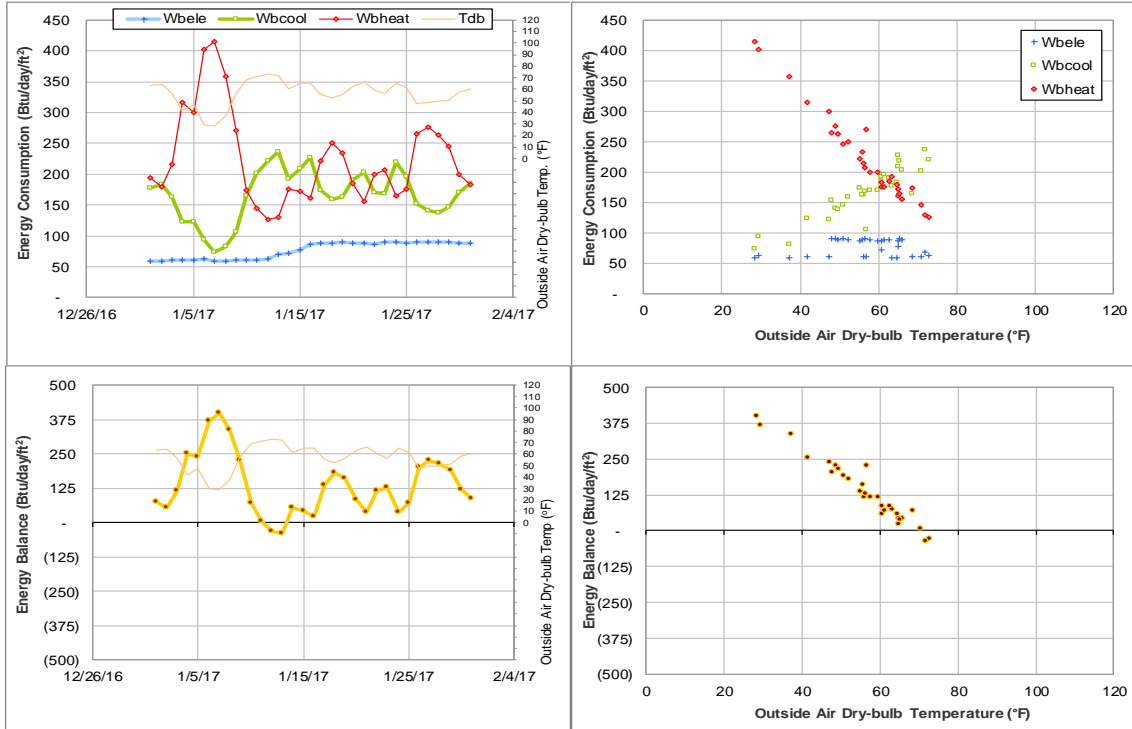


Figure V-3 FHK Complex TAMU BLDG # 426 Energy Balance Plot during January 2017

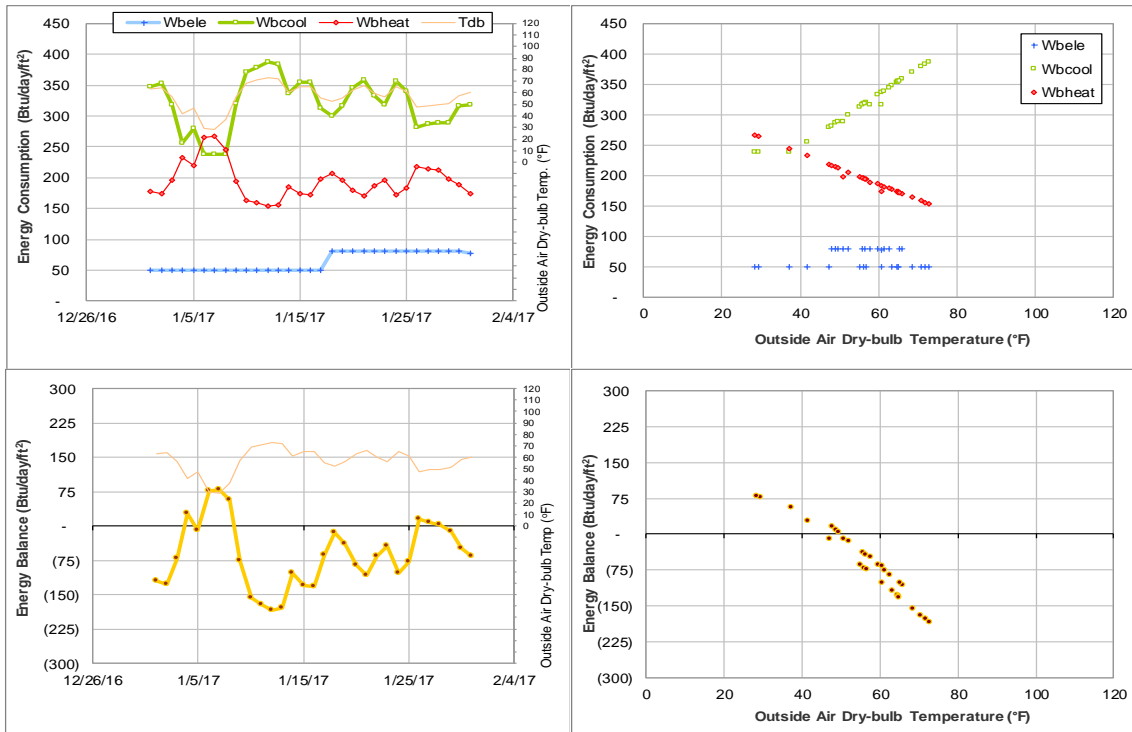


Figure V-4 Mosher Residence Hall TAMU BLDG # 433 Energy Balance Plot during January 2017

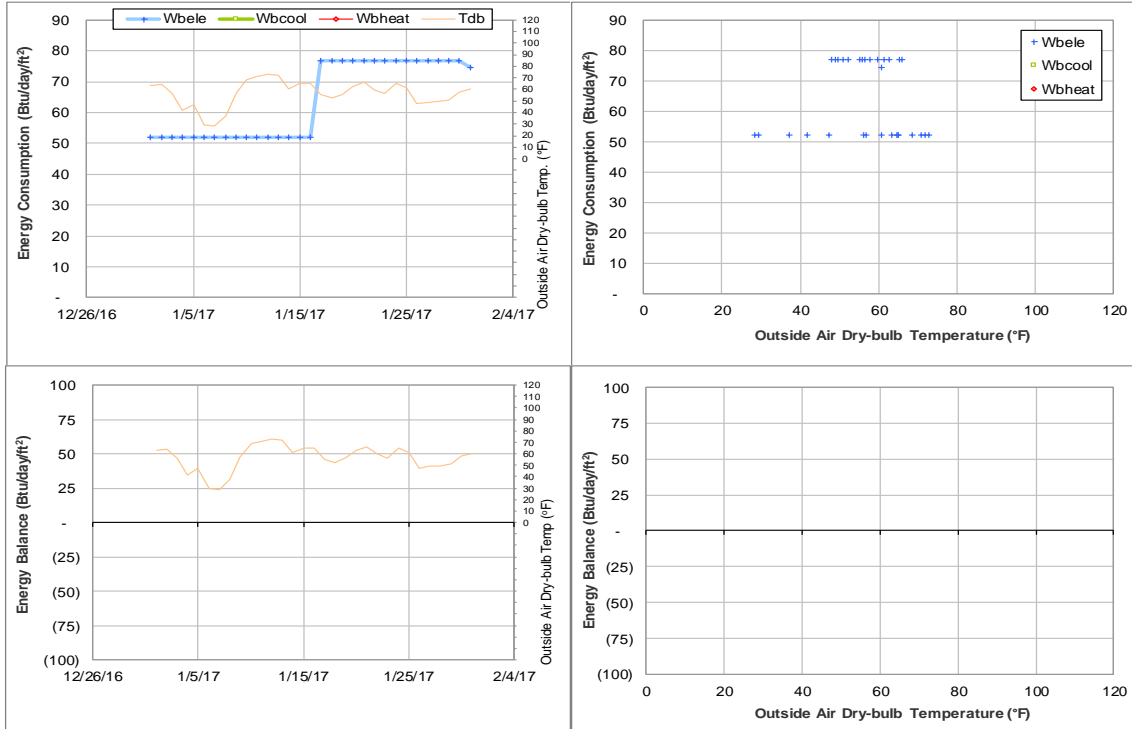


Figure V-5 Moshier Commons Krueger Dunn Aston TAMU BLDG # 433 Energy Balance Plot during January 2017

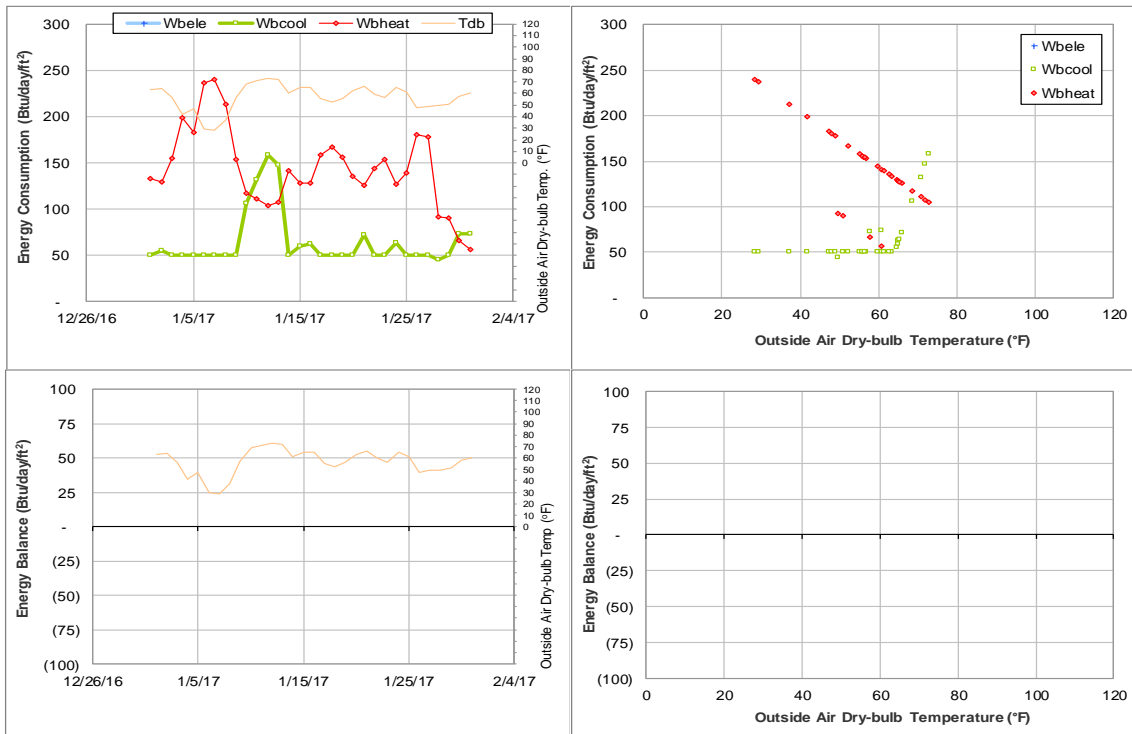


Figure V-6 Commons Hall TAMU BLDG # 440 Energy Balance Plot during January 2017

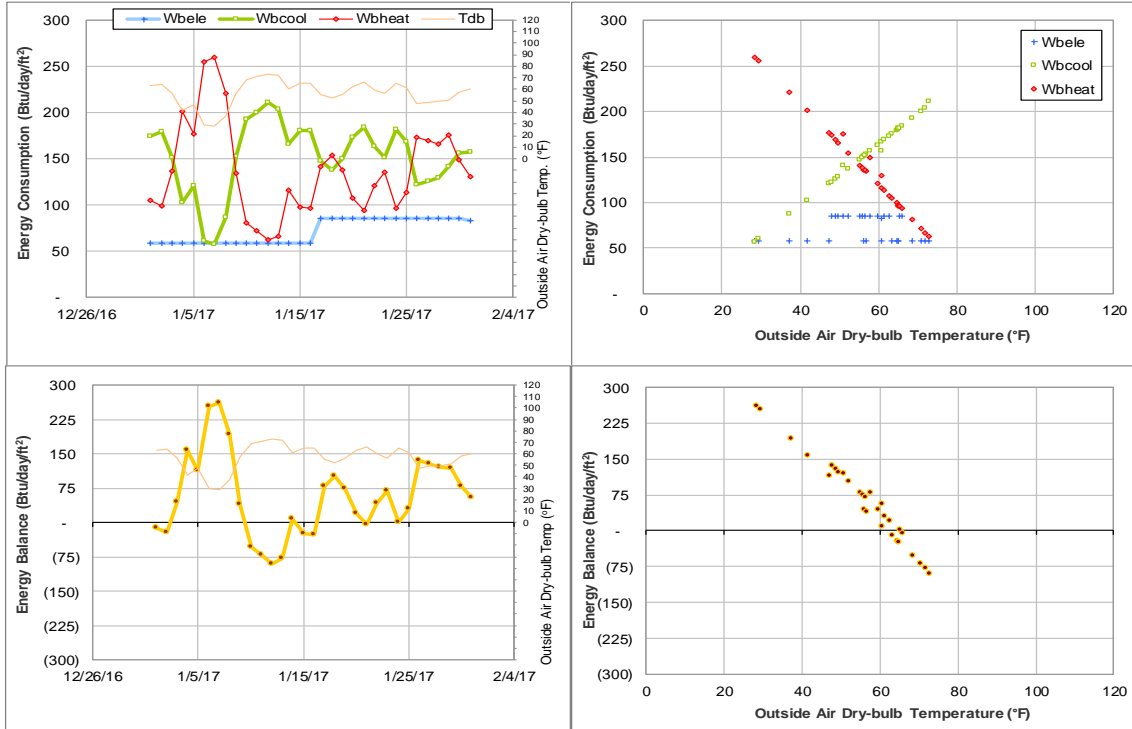


Figure V-7 Krueger Residence Hall TAMU BLDG # 441 Energy Balance Plot during January 2017

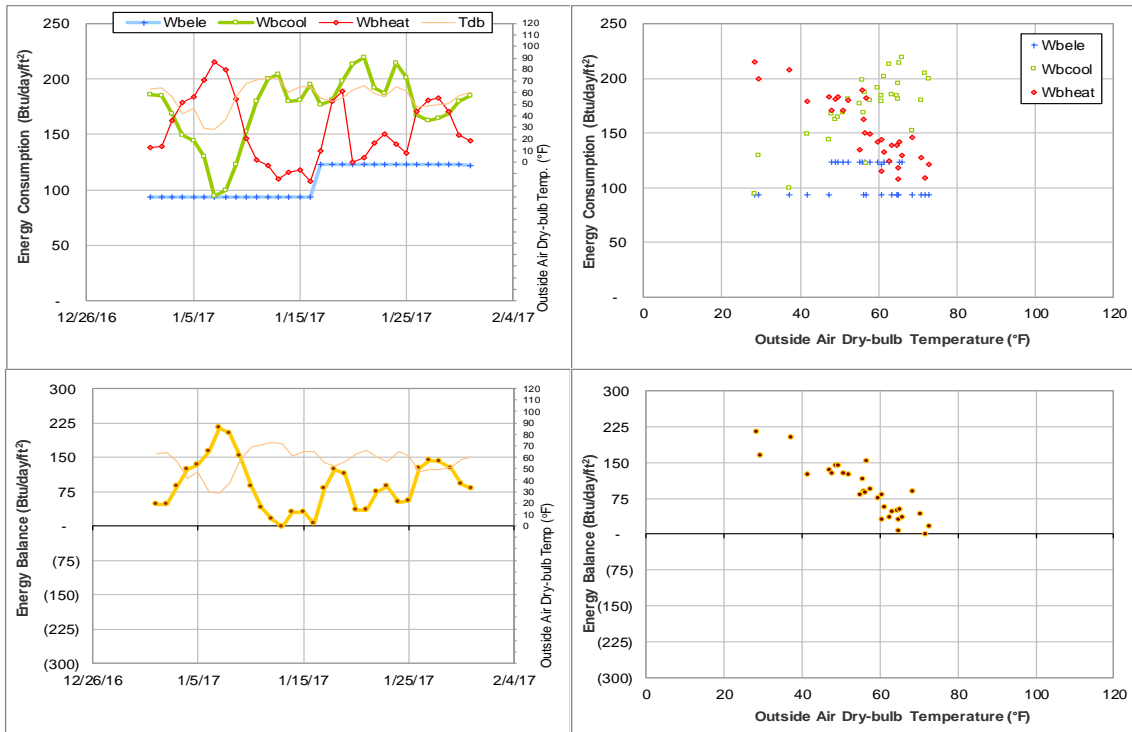


Figure V-8 Dunn Residence Hall TAMU BLDG # 442 Energy Balance Plot during January 2017

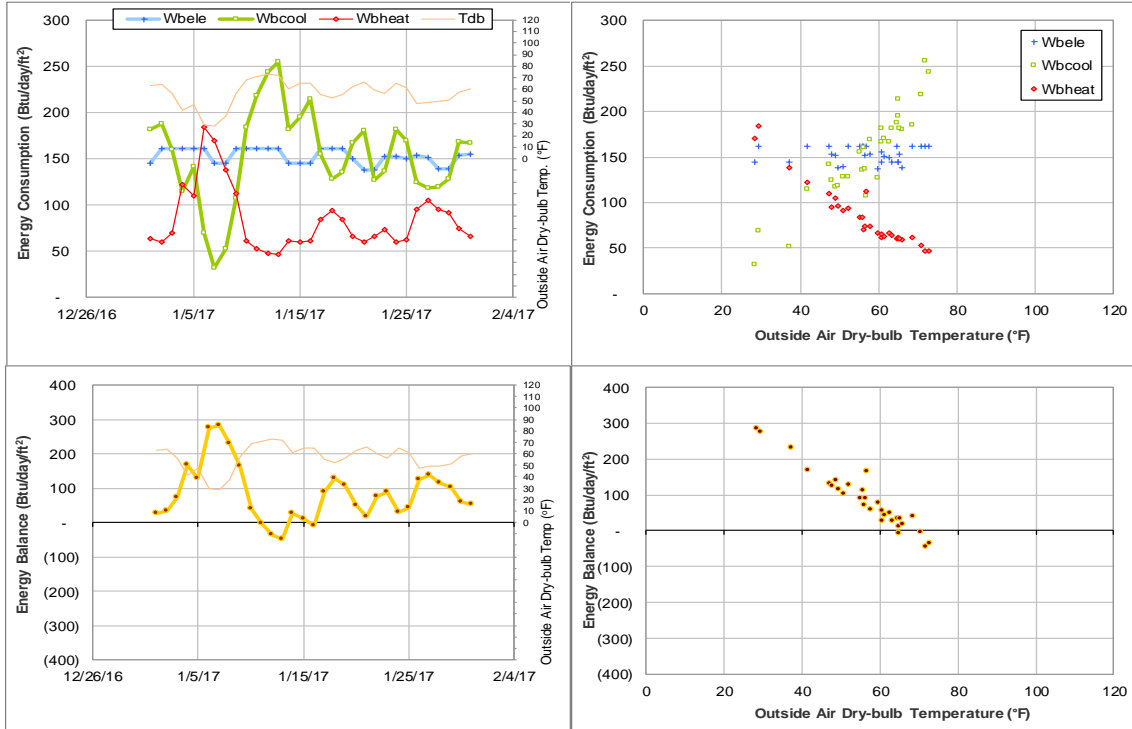


Figure V-9 Oceanography & Meteorology Building TAMU BLDG # 443 Energy Balance Plot during January 2017

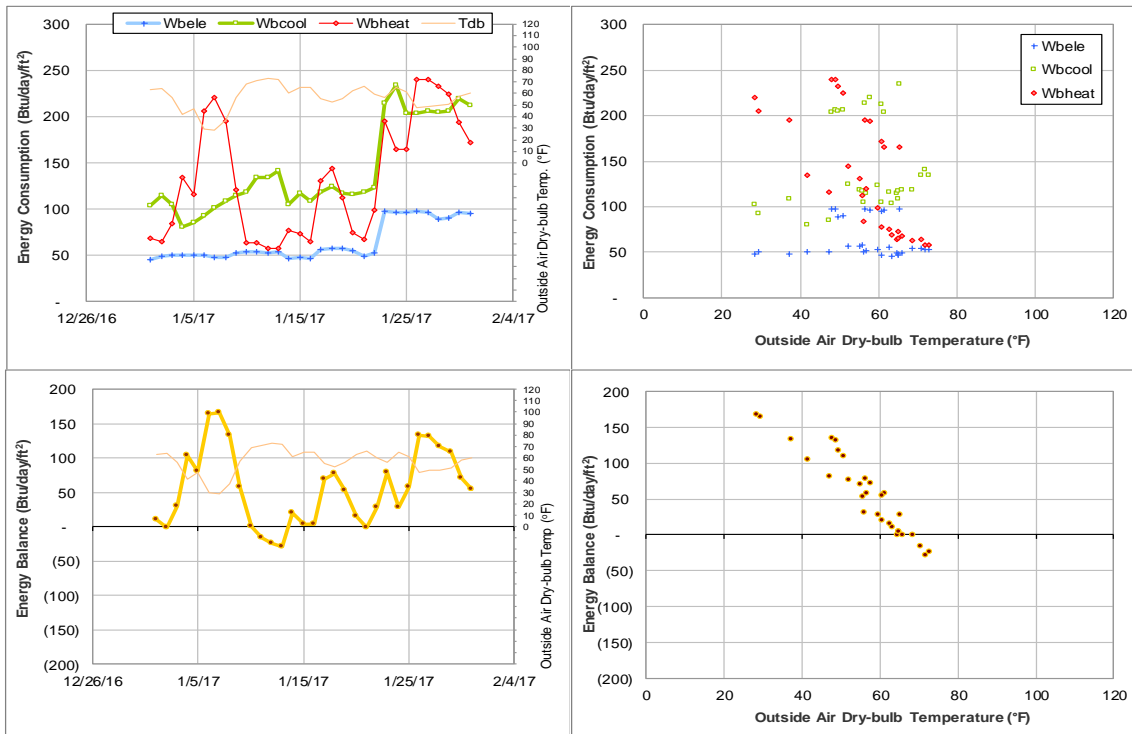


Figure V-10 Rudder Tower and Theatre Complex TAMU BLDG # 446 Energy Balance Plot during January 2017

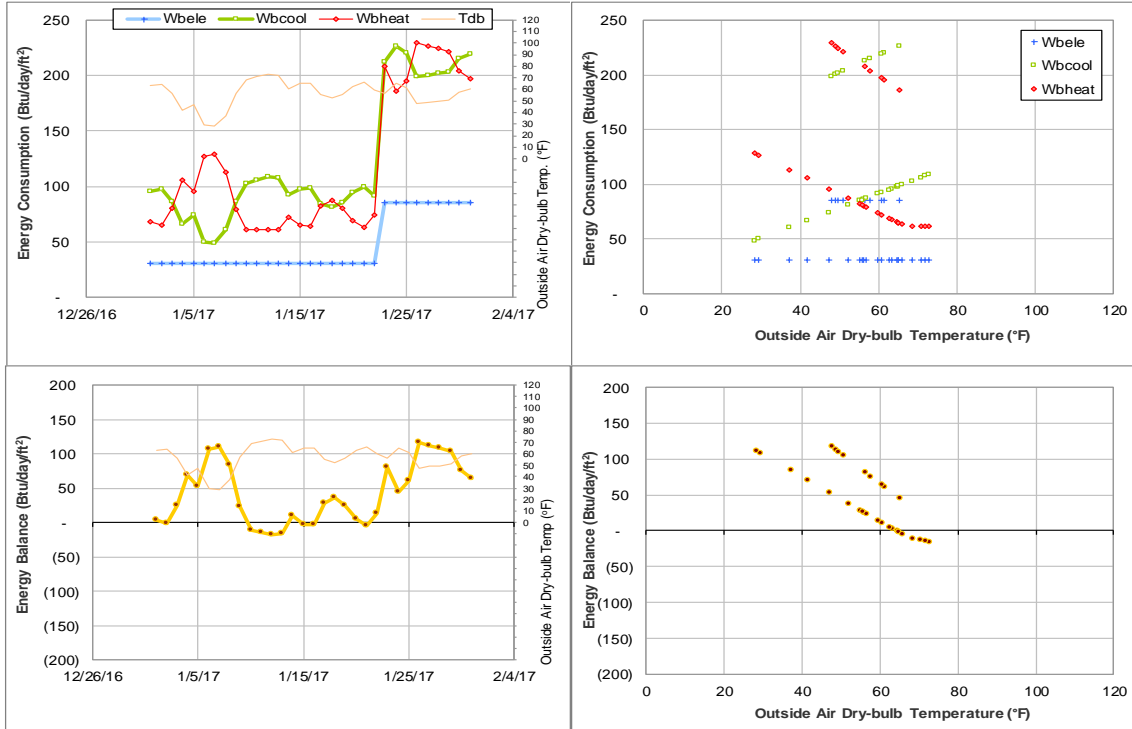


Figure V-11 Rudder Theatre Complex TAMU BLDG # 446 Energy Balance Plot during January 2017

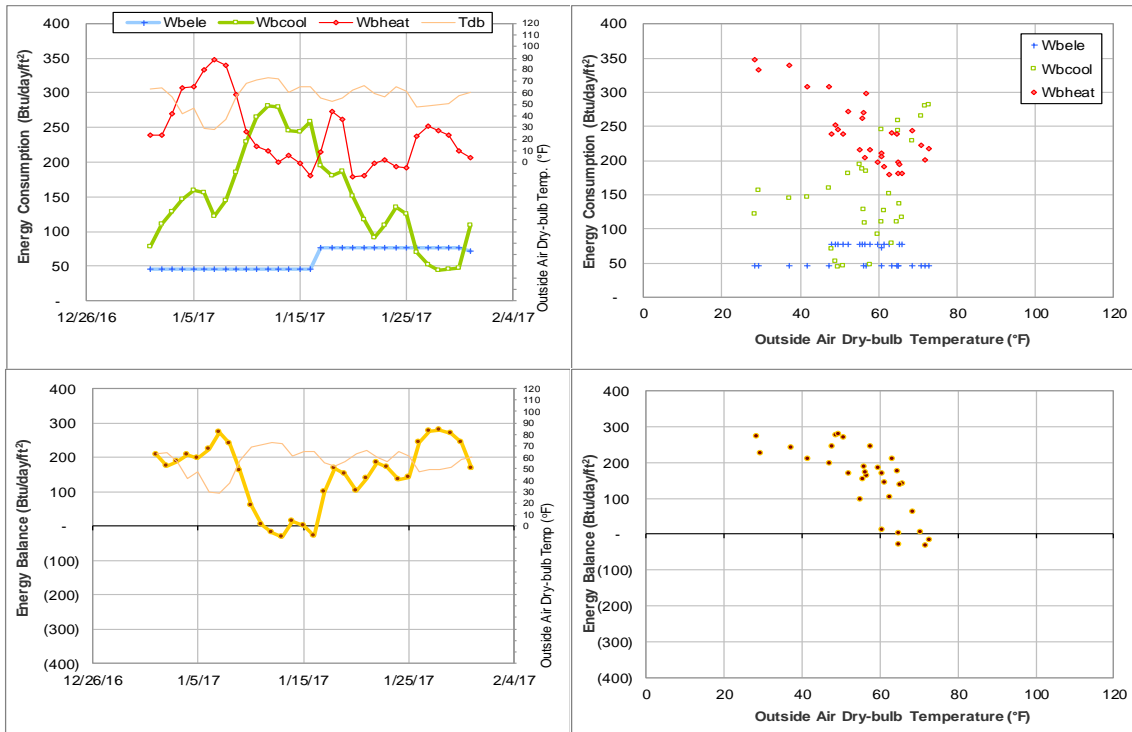


Figure V-12 Aston Residence Hall TAMU BLDG # 447 Energy Balance Plot during January 2017

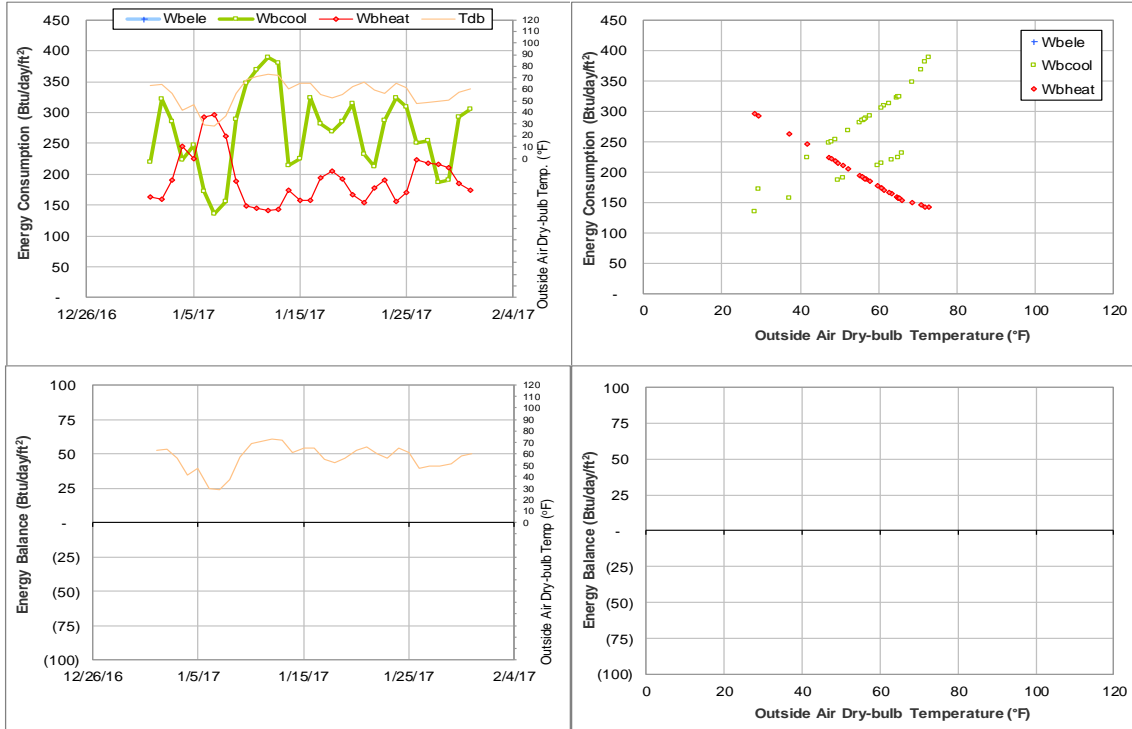


Figure V-13 Military Sciences Building TAMU BLDG # 456 Energy Balance Plot during January 2017

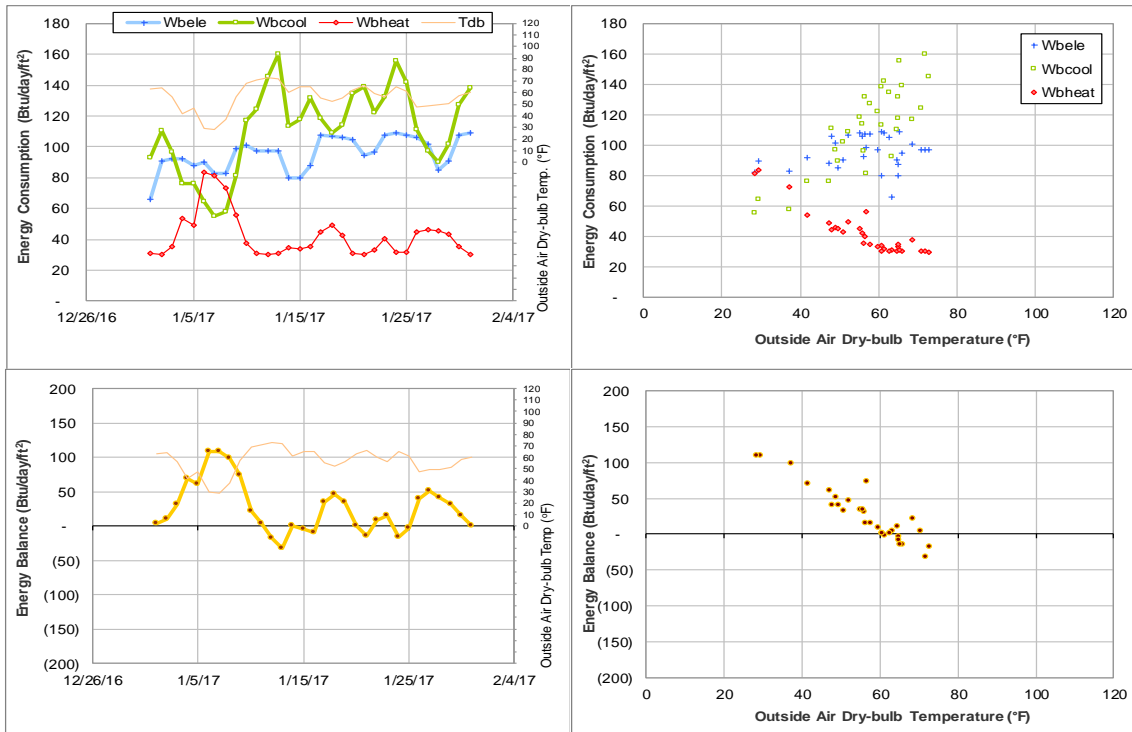


Figure V-14 Evans Library TAMU BLDG # 468 Energy Balance Plot during January 2017

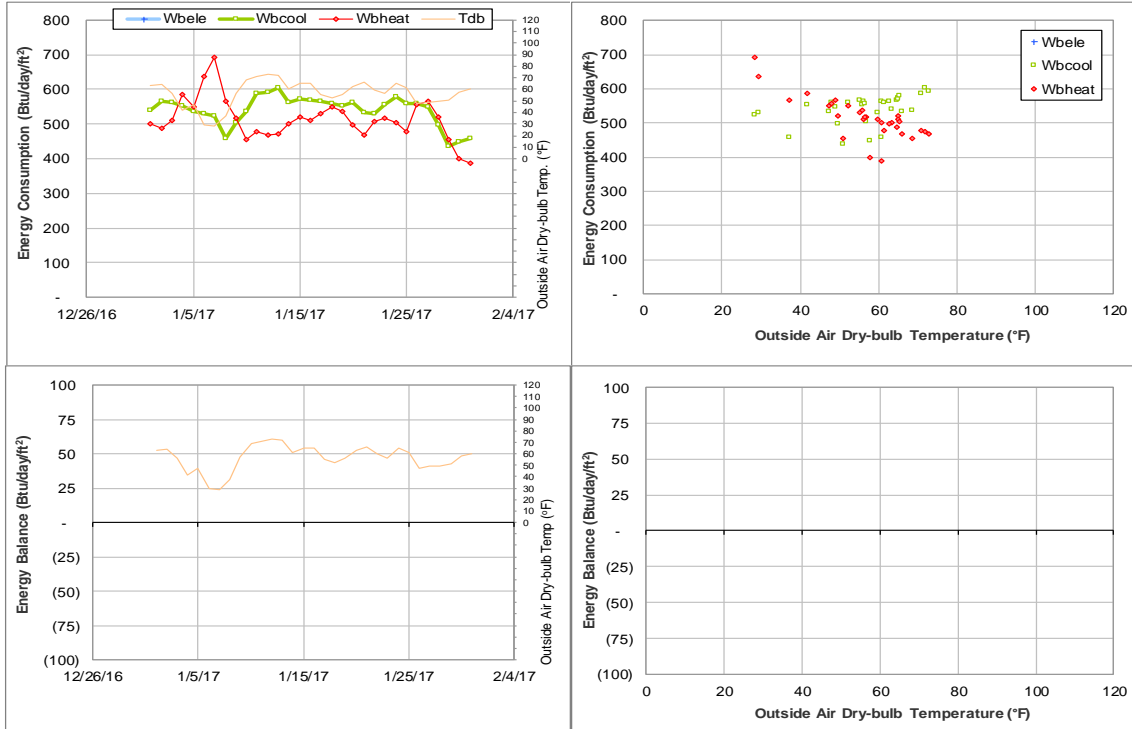


Figure V-15 Heaton Hall TAMU BLDG # 481 Energy Balance Plot during January 2017

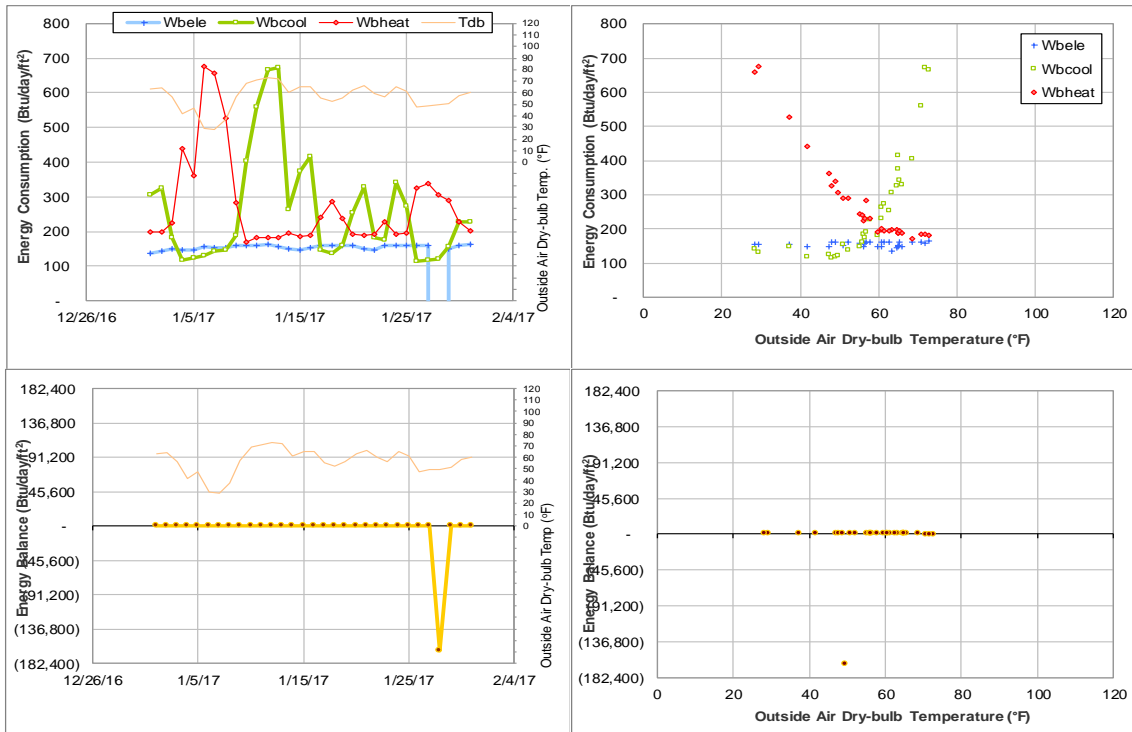


Figure V-16 Chemistry Building TAMU BLDG # 484 Energy Balance Plot during January 2017



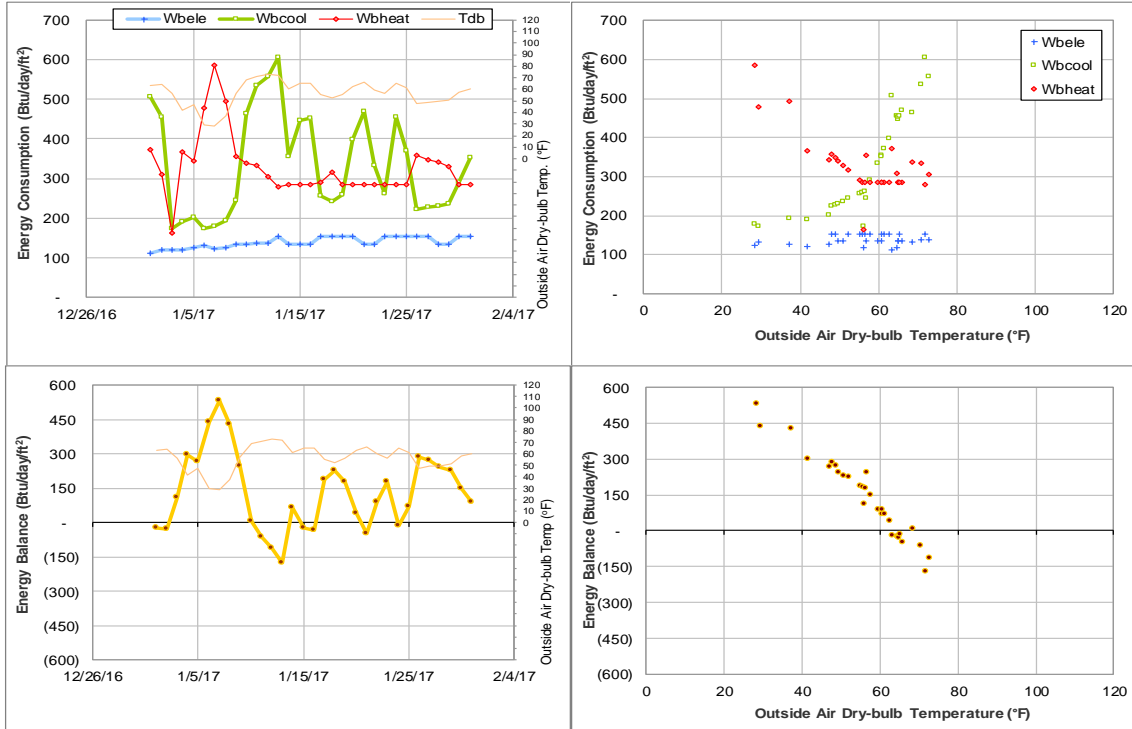


Figure V-17 Doherty Building TAMU BLDG # 513 Energy Balance Plot during January 2017

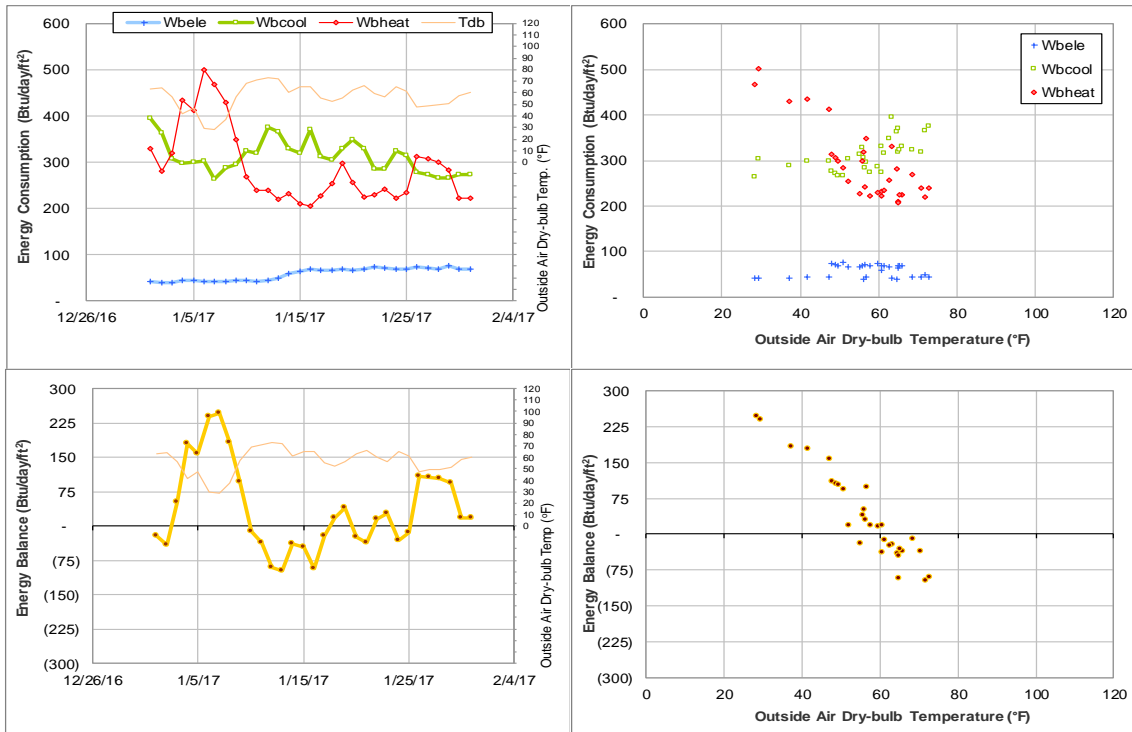


Figure V-18 Clements Residence Hall TAMU BLDG # 548 Energy Balance Plot during January 2017

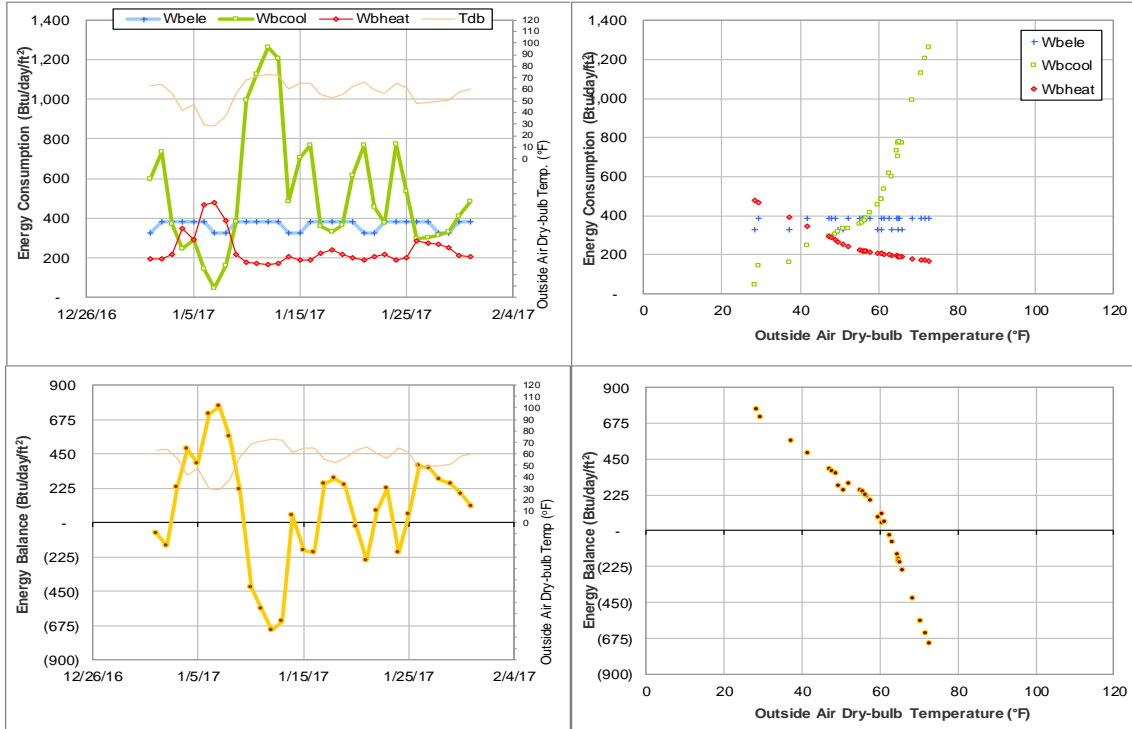


Figure V-19 Texas Vet Med Diagnostic Lab TAMU BLDG # 1041 Energy Balance Plot during January 2017

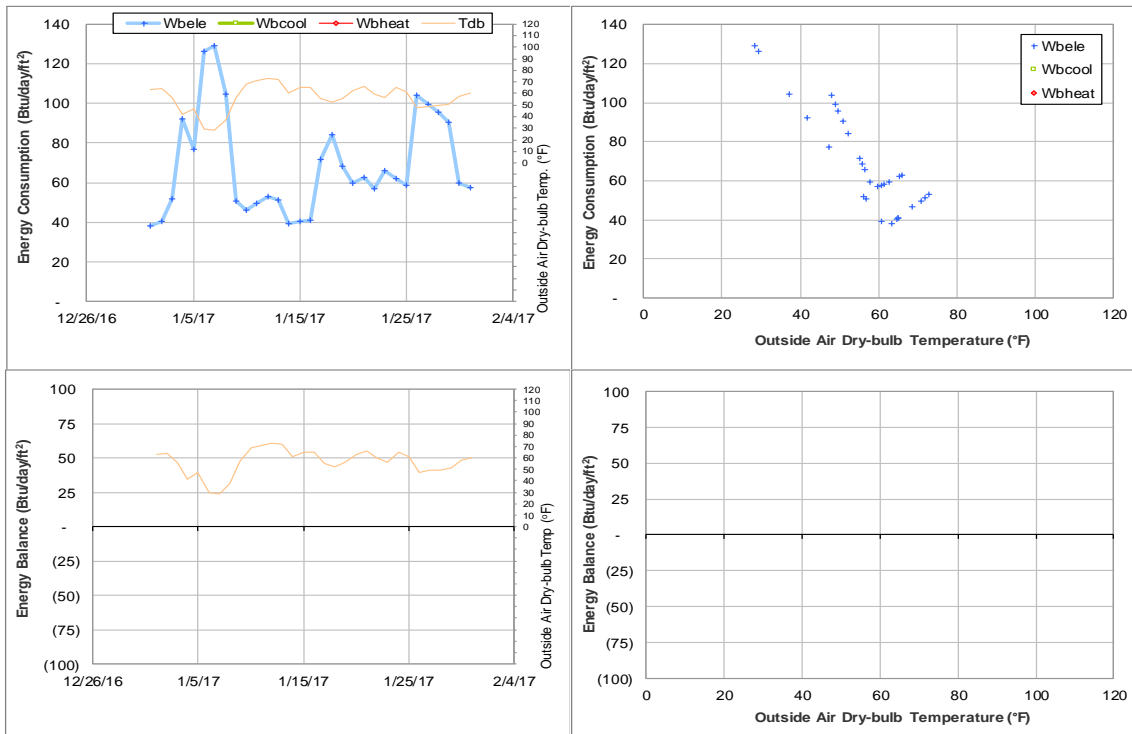


Figure V-20 University Apartments - The Gardens F TAMU BLDG # 1454 Energy Balance Plot during January 2017

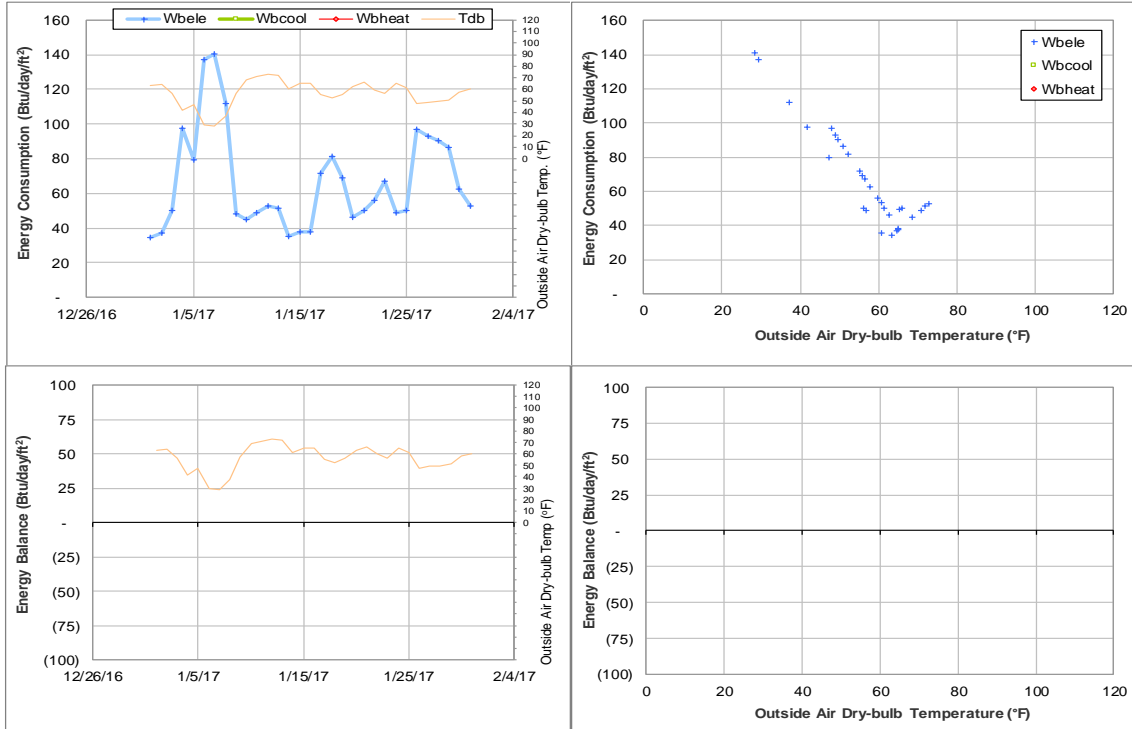


Figure V-21 University Apartments - The Gardens G TAMU BLDG # 1455 Energy Balance Plot during January 2017

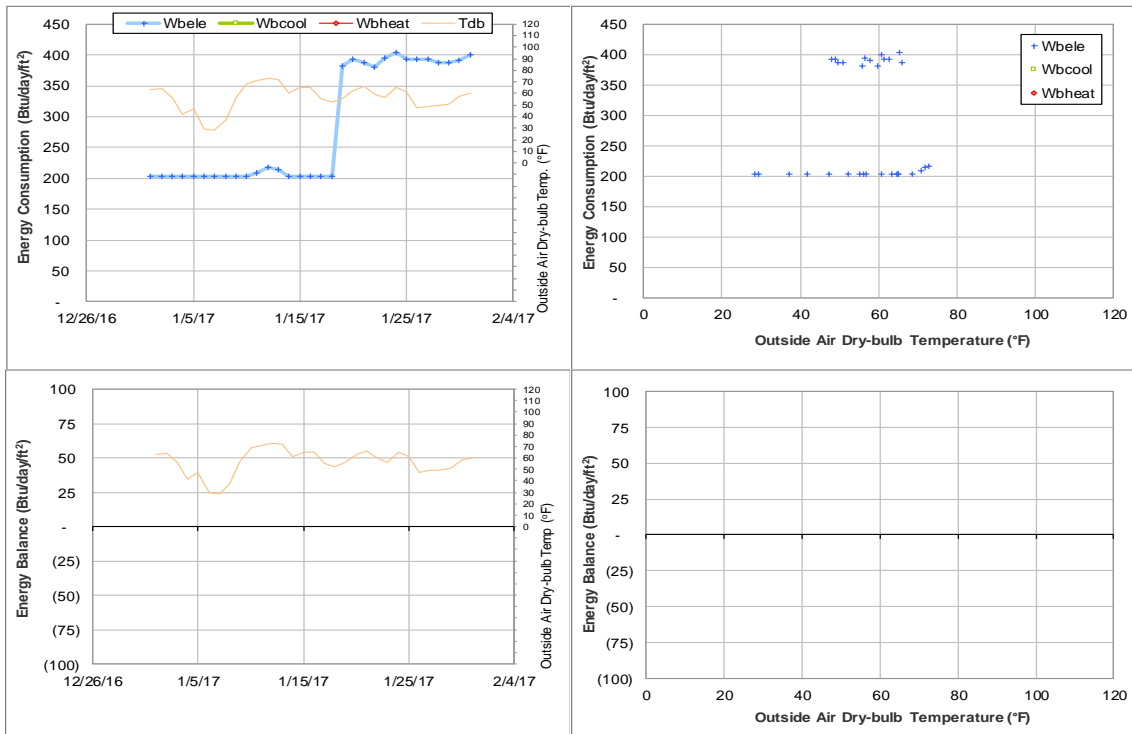


Figure V-22 Southern Crop Improvement Greenhouse TAMU BLDG # 1512 Energy Balance Plot during January 2017

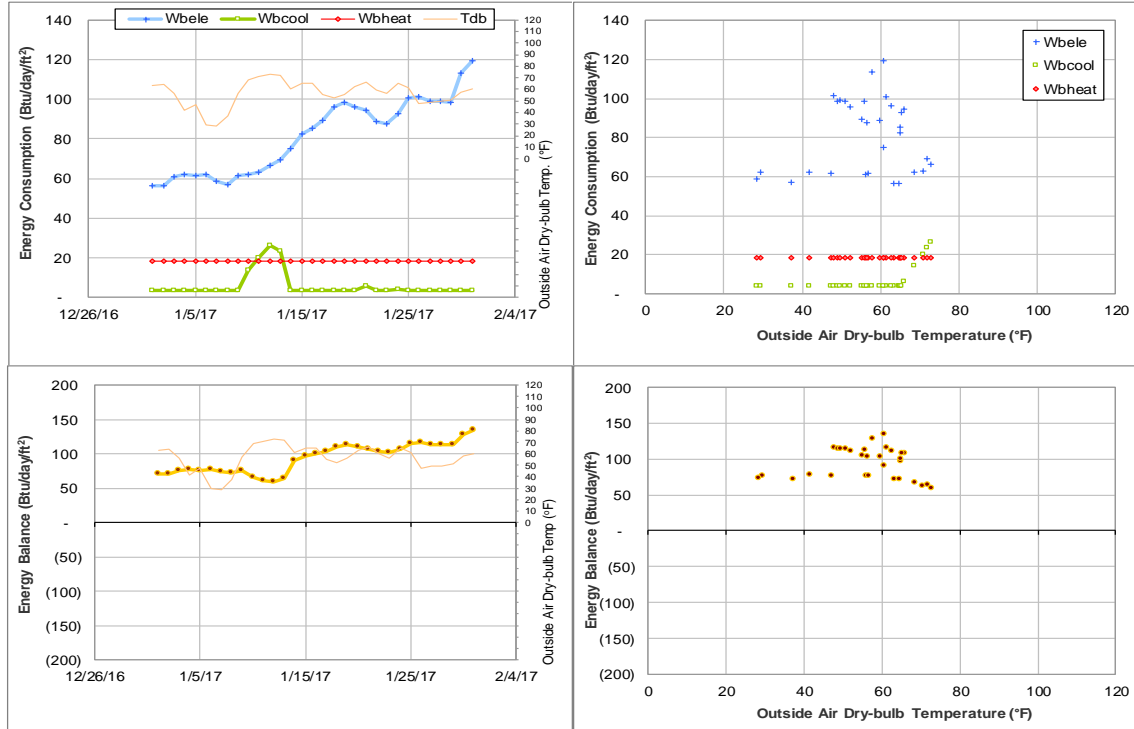


Figure V-23 Agriculture Public Building TAMU BLDG # 1537 Energy Balance Plot during January 2017

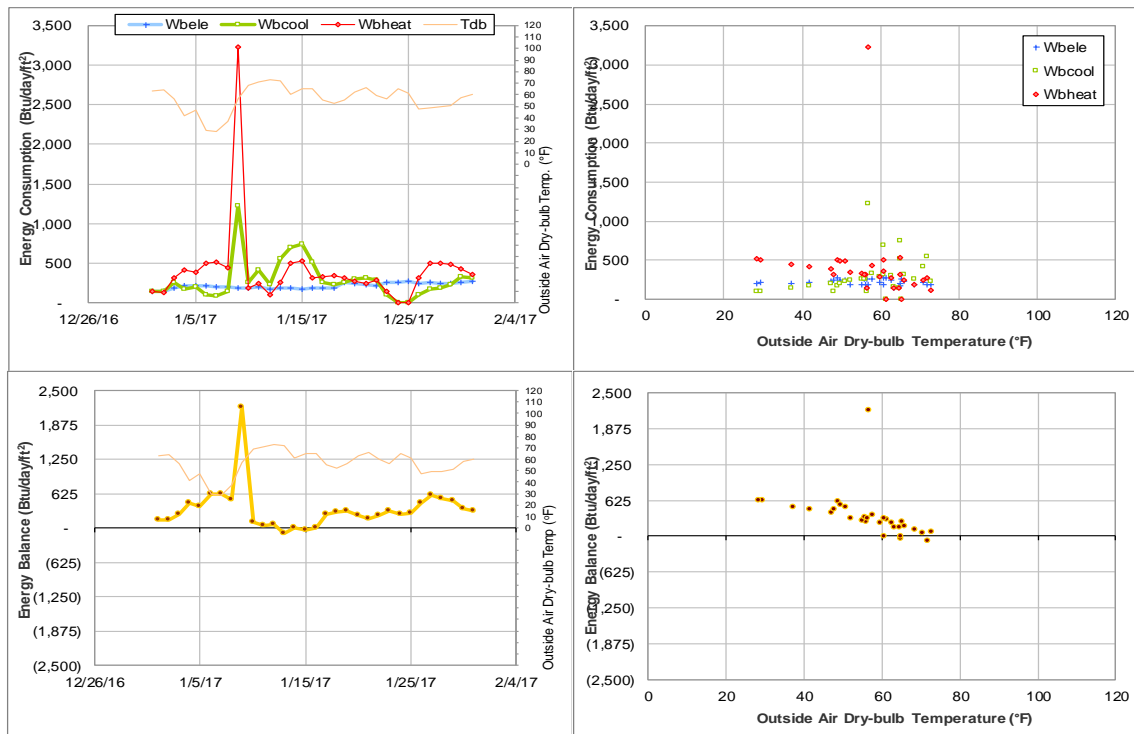


Figure V-24 Human Clinical Research Building TAMU BLDG # 1542 Energy Balance Plot during January 2017

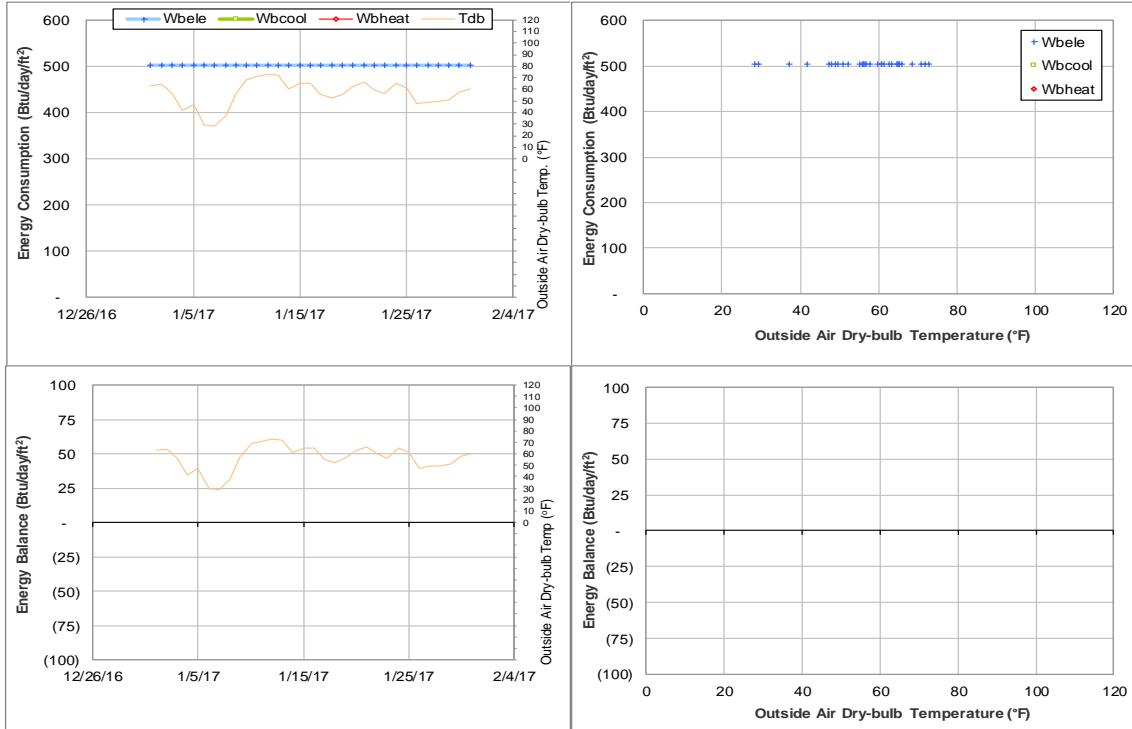


Figure V-25 Cain Garage TAMU BLDG # 1544 Energy Balance Plot during January 2017

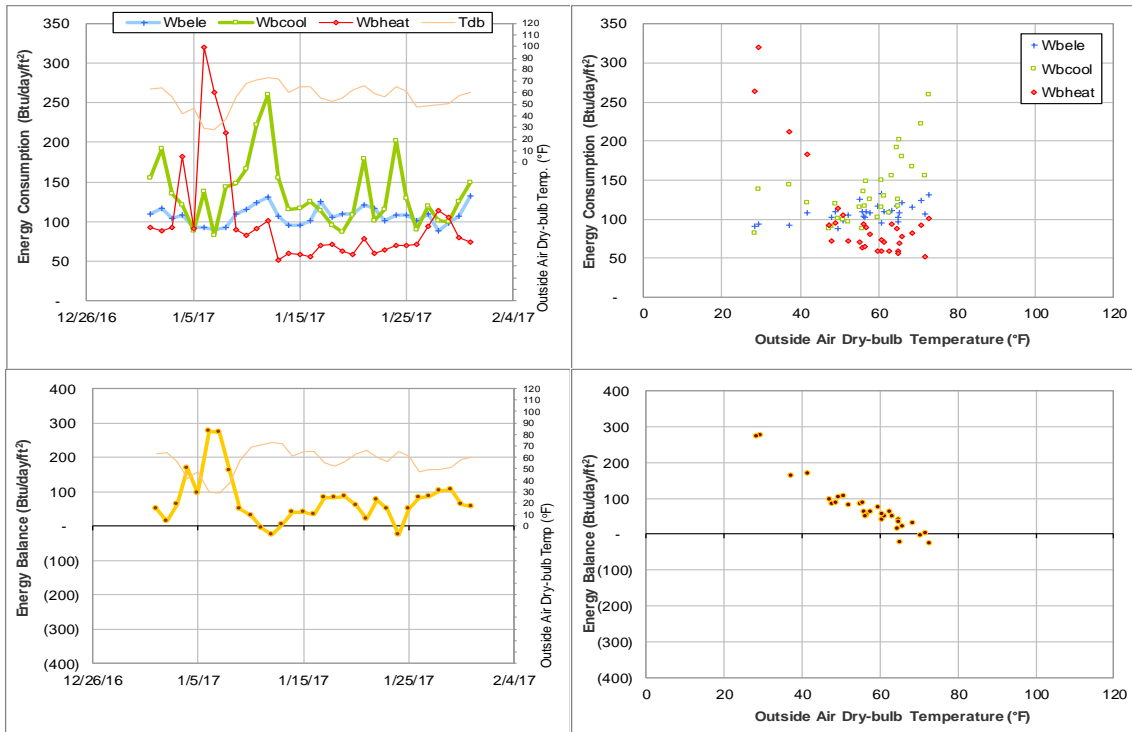


Figure V-26 Reed Arena and Cox-McFerrin Center TAMU BLDG # 1554 Energy Balance Plot during January 2017

## **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 January 2017**

**Prepared for:**

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

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