



TAMU Project

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

Prepared for

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

January 2017

Acknowledgements

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

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

Executive Summary

This report analyzes the energy use data collected from 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.

Table of Contents

	Page
Acknowledgements	i
Executive Summary.....	ii
Table of Contents	iii
List of Tables.....	v
List of Figures.....	v
I. Summary of Monthly Consumption.....	1
II. Data Analysis: Energy Use Estimation and Observation	11
II-1 Meters with Missing Energy Consumption Data.....	12
II-2 Meters with Estimated Consumption for Problematic Data	13
Appelt Residence Hall (TAMU Bldg #293).....	14
Lechner Residence Hall (TAMU Bldg #294)	18
Langford Architecture Center Building A (TAMU Bldg #398).....	21
Davis-Gary Residence Hall (TAMU Bldg #415).....	24
Legett Residence Hall (TAMU Bldg #419)	27
Commons Hall (TAMU Bldg #440)	30
Dunn Residence Hall (TAMU Bldg #442).....	33
Aston Residence Hall (TAMU Bldg #447).....	36
Oceanography & Meteorology Building (TAMU Bldg #443).....	39
Teague Research Center (TAMU Bldg #445).....	42
Rudder Tower (TAMU Bldg #446).....	46
Academic Building (TAMU Bldg #462).....	50
Biological Sciences Building – East (TAMU Bldg #467)	54
Halbouty Geosciences Building (TAMU Bldg #490)	57
Civil Engineering Building (TAMU Bldg #492)	61
Veterinary Teaching Hospital and Veterinary Medicine Administration (TAMU Bldg #508-1026).....	65
Heep Laboratory Building (TAMU Bldg #511).....	68
All Faiths Chapel (TAMU Bldg #512).....	72
McNew Laboratory (TAMU Bldg #740)	75
Vivarium III (TAMU Bldg #1020)	77
Veterinary Medicine Administration (TAMU Bldg #1026).....	82

Veterinary Small Animal Hospital (TAMU Bldg #1085).....	85
Hullabaloo Residence Hall (TAMU Bldg #1416).....	88
West Campus Library Facility (TAMU Bldg #1511)	91
TX School of Rural Public Health (TAMU Bldg # 1518, 1519, 1520)	94
International Ocean Discovery Building (TAMU Bldg #1601).....	95
National Center for Therapeutics Manufacturing (TAMU Bldg #1910)	98
II-3 Meters with Significant Issues in Energy Consumption Data	99
Wells Residence Hall (TAMU Bldg #290)	100
Rudder Residence Hall (TAMU Bldg #291).....	101
Appelt Residence Hall (TAMU Bldg #293).....	102
Bright Building (TAMU Bldg #353).....	103
Mosher Residence Hall (TAMU BLDG # 433)	104
Krueger Residence Hall (TAMU Bldg #441)	105
Oceanography & Meteorology Building (TAMU Bldg #443).....	106
Rudder Theatre Complex (TAMU Bldg #446)	107
DPC Annex (TAMU BLDG # 517)	108
Fermier Hall (TAMU Bldg #482)	110
Chemistry Building (TAMU Bldg #484)	111
Utilities & Energy Services Central Office (TAMU Bldg #496).....	112
Engineering Innovation Center (TAMU Bldg # 499)	113
Nagle Hall (TAMU Bldg #506)	114
All Faiths Chapel (TAMU Bldg #512).....	115
Blocker Building (TAMU Bldg #524)	116
Neeley Residence Hall (TAMU Bldg #652)	118
McNew Laboratory (TAMU Bldg #740)	119
Entomology Research Lab (TAMU Bldg #815)	120
TVMC-Small Animal Building (TAMU Bldg# 880).....	121
Veterinary Medicine Administration (TAMU Bldg# 1026).....	122
Biological Control Facility (TAMU Bldg# 1146).....	123
Physical Plant Administration & Shops (TAMU Bldg# 1156).....	124
Veterinary Research Building (TAMU Bldg# 1197).....	125
Reynolds Medical Sciences Building (TAMU Bldg# 1504).....	126
Cox-McFerrin Center for Aggie Basketball (TAMU Bldg# 1558).....	128
Student Recreation Center (TAMU Bldg# 1560).....	129
International Ocean Discovery Building (TAMU Bldg# 1601).....	130

Offshore Technology Research Center (TAMU Bldg# 1604)	131
III. Time Series Plots for December 2016 Consumption	133
IV. Energy Balance Plots for December 2016 Consumption	232
V. Energy Balance Plots with Filled-in data for December 2016 Consumption.....	332
VI. Appendix	348

List of Tables

	Page
Table I-1 December 2016 Monthly Consumption for TAMU Buildings.....	2
Table II-1 Meters with missing data during December 2016.....	12
Table II-2 Meters with problematic data during January 2017	13
Table II-3 Meters with significant issues in the consumption data during December 2016	99

List of Figures

	Page
Figure III-1 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Emerging Technologies Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	134
Figure III-2 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Liberal Arts and Arts & Humanities Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	134
Figure III-3 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wells Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	135
Figure III-4 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	135
Figure III-5 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Eppright Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	136
Figure III-6 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Appelt Residence Hall during the Month of December 2016	

and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	136
Figure III-7 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lechner Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	137
Figure III-8 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mitchell Inst. for Fundamental Phys & Astronomy during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	137
Figure III-9 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for CE TTI Office & Lab Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	138
Figure III-10 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bright Aerospace Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	138
Figure III-11 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Davis Football Player Development Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	139
Figure III-12 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building B&C during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	139
Figure III-13 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building B during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	140
Figure III-14 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building C during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	140
Figure III-15 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bright Football Complex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	141
Figure III-16 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kyle Field during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	141
Figure III-17 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Chemistry Building Addition during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	142

Figure III-18 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Koldus Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	142
Figure III-19 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Sanders Corps of Cadets Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	143
Figure III-20 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Jack E. Brown Chemical Engineering Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	143
Figure III-21 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Richardson Petroleum Engineering Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	144
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 December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station,	144
Figure III-23 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Underwood Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	145
Figure III-24 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Langford Architecture Center Building A during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	145
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 December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	146
Figure III-26 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Spence Hall Dorm 1 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	146
Figure III-27 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Briggs Hall Dorm 3 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	147
Figure III-28 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Ash II LLC during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	147
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 December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	148

Figure III-30 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kiest Hall Dorm 2 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	148
Figure III-31 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Fountain Hall Dorm 4 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	149
Figure III-32 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Plank LLC during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	149
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 December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	150
Figure III-34 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gainer Hall Dorm 5 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	150
Figure III-35 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Leonard Hall - Dorm 7 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	151
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 December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	151
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 December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	152
Figure III-38 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lacy Hall - Dorm 6 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	152
Figure III-39 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrell Hall - Dorm 8 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	153
Figure III-40 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Buzbee Leadership Learning Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	153
Figure III-41 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Moses Residence Hall during the Month of December 2016	

and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	154
Figure III-42 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Davis-Gary Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	154
Figure III-43 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Legett Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	155
Figure III-44 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Milner Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	155
Figure III-45 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Walton Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	156
Figure III-46 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hotard Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	156
Figure III-47 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Henderson Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	157
Figure III-48 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for FHK Complex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	157
Figure III-49 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Schumacher Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	158
Figure III-50 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mosher Commons Krueger Dunn Aston during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	158
Figure III-51 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mosher Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	159
Figure III-52 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Commons Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	159
Figure III-53 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Krueger Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	160

Figure III-54 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Dunn Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	160
Figure III-55 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Aston Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	161
Figure III-56 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Luedecke Building (Cyclotron) during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	161
Figure III-57 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrington Education Center Office Tower during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	162
Figure III-58 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed-McDonald and Engineering Innovation Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	162
Figure III-59 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed-McDonald Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	163
Figure III-60 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Engineering Innovation Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	163
Figure III-61 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrington Education Center Classroom Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	164
Figure III-62 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Oceanography & Meteorology Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	164
Figure III-63 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Peterson Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	165
Figure III-64 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Teague Research Center and DPC Annex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	165
Figure III-65 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Teague Research Center during the Month of December 2016	

and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	166
Figure III-66 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for DPC Annex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	166
Figure III-67 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Tower and Theatre Complex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	167
Figure III-68 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Theatre Complex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	167
Figure III-69 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Tower during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	168
Figure III-70 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Adams Band Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	168
Figure III-71 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Sciences Building - West during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	169
Figure III-72 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Duncan Dining Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	169
Figure III-73 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for MSC during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	170
Figure III-74 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Military Sciences Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	170
Figure III-75 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TAES Annex Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	171
Figure III-76 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Coke Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	171
Figure III-77 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Academic Building during the Month of December 2016 and	

the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	172
Figure III-78 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Psychology Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	172
Figure III-79 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for State Chemist Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	173
Figure III-80 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Butler Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	173
Figure III-81 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Sciences Building - East during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	174
Figure III-82 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Evans Library during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	174
Figure III-83 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Central Campus Parking Garage during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	175
Figure III-84 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Glasscock History Bldg during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	175
Figure III-85 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Pavilion during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	176
Figure III-86 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Animal Industries during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	176
Figure III-87 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Williams Administration Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	177
Figure III-88 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for YMCA Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	177
Figure III-89 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Francis Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	178

Figure III-90 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Anthropology Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	178
Figure III-91 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Scoates Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	179
Figure III-92 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bolton Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	179
Figure III-93 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heaton Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	180
Figure III-94 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Fermier Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	180
Figure III-95 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Thompson Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	181
Figure III-96 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Chemistry Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	181
Figure III-97 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Halbouty Geosciences Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	182
Figure III-98 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Civil Engineering Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	182
Figure III-99 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Sbisa Dining Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	183
Figure III-100 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities & Energy Services Central Office during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	183
Figure III-101 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Concrete Materials Laboratory during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	184

Figure III-102 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Nagle Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	184
Figure III-103 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medical Science Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	185
Figure III-104 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Teaching Hospital and Med Adm during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	185
Figure III-105 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medicine Administration during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	186
Figure III-106 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heep Laboratory Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	186
Figure III-107 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for All Faiths Chapel during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	187
Figure III-108 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Doherty Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	187
Figure III-109 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Munnerlyn Astronomy & Space Sciences Engineering during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	188
Figure III-110 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Computing Services Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	188
Figure III-111 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Beutel Health Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	189
Figure III-112 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heldenfels Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	189
Figure III-113 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Blocker building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	190

Figure III-114 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Clements Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	190
Figure III-115 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Haas Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	191
Figure III-116 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for McFadden Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	191
Figure III-117 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Neeley Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	192
Figure III-118 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hobby Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	192
Figure III-119 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wisenbaker Engineering Research Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	193
Figure III-120 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for McNew Laboratory during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	193
Figure III-121 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Soil Testing Labs during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	194
Figure III-122 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Entomology Research Lab during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	194
Figure III-123 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TVMC-Small Animal Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	195
Figure III-124 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Laboratory Animal Care Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	195

Figure III-125 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Vivarium III during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	196
Figure III-126 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas Vet Med Diagnostic Lab during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	196
Figure III-127 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Forest Science Laboratory Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	197
Figure III-128 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Small Animal Hospital during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	197
Figure III-129 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities Energy Office Annex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	198
Figure III-130 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Control Facility during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	198
Figure III-131 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Physical Plant Administration & Shops during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	199
Figure III-132 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Anatomic Pathology during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	199
Figure III-133 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Large Animal Hospital during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	200
Figure III-134 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Research Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	200
Figure III-135 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hullabaloo Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	201
Figure III-136 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - Laundry at the Gardens during the	

Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	201
Figure III-137 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens J during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	202
Figure III-138 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens K during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	202
Figure III-139 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens L during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	203
Figure III-140 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens F during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	203
Figure III-141 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens G during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	204
Figure III-142 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens H during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	204
Figure III-143 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens M during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	205
Figure III-144 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens N during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	205
Figure III-145 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens P during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	206
Figure III-146 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens Q during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	206
Figure III-147 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities & Energy Services Business Office during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	207

Figure III-148 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kleberg Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	207
Figure III-149 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heep Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	208
Figure III-150 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cater-Mattil Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	208
Figure III-151 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reynolds Medical Sciences Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	209
Figure III-152 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rosenthal Meat Science & Technology Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	209
Figure III-153 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Horticulture-Forest Science Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	210
Figure III-154 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biochemistry-Biophysics Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	210
Figure III-155 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Price Hobgood Ag. Engineering Research Lab during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	211
Figure III-156 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Medical Sciences Library during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	211
Figure III-157 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wehner Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	212
Figure III-158 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for West Campus Library Facility during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	212
Figure III-159 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Southern Crop Improvement Greenhouse during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	213

Figure III-160 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Borlaug Center for Southern Crop Improvement during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	213
Figure III-161 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TX School of Rural Public Health during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	214
Figure III-162 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Nuclear Magnetic Resonance Facility during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	214
Figure III-163 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Interdisciplinary Life Sciences Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	215
Figure III-164 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture and Life Sciences Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	215
Figure III-165 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for AgriLife Services Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	216
Figure III-166 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture Program Visitors Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	216
Figure III-167 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Physical Education Activity Program Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	217
Figure III-168 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Human Clinical Research Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	217
Figure III-169 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cain Garage during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	218
Figure III-170 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Olsen Field at Bluebell Park during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	218
Figure III-171 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed Arena and Cox-McFerrin Center during the Month of	

December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	219
Figure III-172 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cox-McFerrin Center for Aggie Basketball during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	219
Figure III-173 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for West Campus Parking Garage during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	220
Figure III-174 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Student Recreation Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	220
Figure III-175 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 December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station,	221
Figure III-176 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 2 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	221
Figure III-177 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 3 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	222
Figure III-178 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gilchrist TTI Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	222
Figure III-179 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for International Ocean Discovery Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	223
Figure III-180 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Offshore Technology Research Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	223
Figure III-181 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for George Bush Presidential Library & Museum during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	224
Figure III-182 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Allen Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	224

Figure III-183 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Annenberg Presidential Conference Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	225
Figure III-184 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TTI Headquarters during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	225
Figure III-185 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Engineering Research Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	226
Figure III-186 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for General Services Complex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	226
Figure III-187 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for New TVMDL during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	227
Figure III-188 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Office of the State Chemist Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	227
Figure III-189 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Vet Med Research Bldg Addition during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	228
Figure III-190 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medicine Building 1, 2, and 3 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	228
Figure III-191 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas Institute for Genomic Medicine during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	229
Figure III-192 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas A&M Institute for Preclinical Studies A during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	229
Figure III-193 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for National Center for Therapeutics Manufacturing during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	230
Figure III-194 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Multi-Species Research Building during the Month of	

December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	230
Figure III-195 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for AgriLife Extension 4-H State Headquarters during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX	231
Figure III-196 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for NCTM Manufacturing Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX.....	231
Figure IV-1 Emerging Technologies Building TAMU BLDG # 270 Energy Balance Plot during December 2016.....	233
Figure IV-2 Liberal Arts and Arts & Humanities Building TAMU BLDG # 275 Energy Balance Plot during December 2016	233
Figure IV-3 Wells Residence Hall TAMU BLDG # 290 Energy Balance Plot during December 2016.....	234
Figure IV-4 Rudder Residence Hall TAMU BLDG # 291 Energy Balance Plot during December 2016.....	234
Figure IV-5 Eppright Residence Hall TAMU BLDG # 292 Energy Balance Plot during December 2016.....	235
Figure IV-6 Appelt Residence Hall TAMU BLDG # 293 Energy Balance Plot during December 2016.....	235
Figure IV-7 Lechner Residence Hall TAMU BLDG # 294 Energy Balance Plot during December 2016.....	236
Figure IV-8 Mitchell Inst. for Fundamental Phys & Astronomy TAMU BLDG # 296 Energy Balance Plot during December 2016.....	236
Figure IV-9 CE TTI Office & Lab Building TAMU BLDG # 325 Energy Balance Plot during December 2016.....	237
Figure IV-10 Bright Aerospace Building TAMU BLDG # 353 Energy Balance Plot during December 2016.....	237
Figure IV-11 Davis Football Player Development Center TAMU BLDG # 358 Energy Balance Plot during December 2016	238
Figure IV-12 Architecture Building B&C TAMU BLDG # 359 and 432 Energy Balance Plot during December 2016.....	238
Figure IV-13 Architecture Building B TAMU BLDG # 359 Energy Balance Plot during December 2016.....	239
Figure IV-14 Architecture Building C TAMU BLDG # 432 Energy Balance Plot during December 2016.....	239
Figure IV-15 Bright Football Complex TAMU BLDG # 361 Energy Balance Plot during December 2016.....	240
Figure IV-16 Kyle Field TAMU BLDG # 367 Energy Balance Plot during December 2016	240

Figure IV-17 Chemistry Building Addition TAMU BLDG # 376 Energy Balance Plot during December 2016.....	241
Figure IV-18 Koldus Building TAMU BLDG # 383 Energy Balance Plot during December 2016.....	241
Figure IV-19 Sanders Corps of Cadets Center TAMU BLDG # 384 Energy Balance Plot during December 2016.....	242
Figure IV-20 Jack E. Brown Chemical Engineering Building TAMU BLDG # 386 Energy Balance Plot during December 2016.....	242
Figure IV-21 Richardson Petroleum Engineering Building TAMU BLDG # 387 Energy Balance Plot during December 2016	243
Figure IV-22 James J. Cain '51 and Mechanical Engineering Office Building TAMU BLDG # 391 Energy Balance Plot during December 2016.....	243
Figure IV-23 Underwood Residence Hall TAMU BLDG # 394 Energy Balance Plot during December 2016.....	244
Figure IV-24 Langford Architecture Center Building A TAMU BLDG # 398 Energy Balance Plot during December 2016	244
Figure IV-25 Spence Hall, Briggs Hall, and Ash II LLC TAMU BLDG # 400, 402, and 1405 Energy Balance Plot during December 2016.....	245
Figure IV-26 Spence Hall Dorm 1 TAMU BLDG # 400 Energy Balance Plot during December 2016.....	245
Figure IV-27 Briggs Hall Dorm 3 TAMU BLDG # 402 Energy Balance Plot during December 2016.....	246
Figure IV-28 Ash II LLC TAMU BLDG # 1405 Energy Balance Plot during December 2016	246
Figure IV-29 Kiest Hall, Fountain Hall, and Plank LLC TAMU BLDG # 401, 403, 1404 Energy Balance Plot during December 2016.....	247
Figure IV-30 Kiest Hall Dorm 2 TAMU BLDG # 401 Energy Balance Plot during December 2016.....	247
Figure IV-31 Fountain Hall Dorm 4 TAMU BLDG # 403 Energy Balance Plot during December 2016.....	248
Figure IV-32 Plank LLC TAMU BLDG # 1404 Energy Balance Plot during December 2016	248
Figure IV-33 Gainer Hall, Leonard Hall and Ash LLC TAMU BLDG # 404, 406, 1403 Energy Balance Plot during December 2016.....	249
Figure IV-34 Gainer Hall Dorm 5 TAMU BLDG # 404 Energy Balance Plot during December 2016.....	249
Figure IV-35 Leonard Hall - Dorm 7 TAMU BLDG # 406 Energy Balance Plot during December 2016.....	250
Figure IV-36 H. Grady Ash, Jr. '58 Leadership Learning Center TAMU BLDG # 1403 Energy Balance Plot during December 2016.....	250

Figure IV-37 Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center TAMU BLDG # 405, 407, 1402 Energy Balance Plot during December 2016	251
Figure IV-38 Lacy Hall - Dorm 6 TAMU BLDG # 405 Energy Balance Plot during December 2016.....	251
Figure IV-39 Harrell Hall - Dorm 8 TAMU BLDG # 407 Energy Balance Plot during December 2016.....	252
Figure IV-40 Buzbee Leadership Learning Center TAMU BLDG # 1402 Energy Balance Plot during December 2016	252
Figure IV-41 Moses Residence Hall TAMU BLDG # 412 Energy Balance Plot during December 2016.....	253
Figure IV-42 Davis-Gary Residence Hall TAMU BLDG # 415 Energy Balance Plot during December 2016.....	253
Figure IV-43 Legett Residence Hall TAMU BLDG # 419 Energy Balance Plot during December 2016.....	254
Figure IV-44 Milner Hall TAMU BLDG # 420 Energy Balance Plot during December 2016	254
Figure IV-45 Walton Residence Hall TAMU BLDG # 422 Energy Balance Plot during December 2016.....	255
Figure IV-46 Hotard Hall TAMU BLDG # 424 Energy Balance Plot during December 2016	255
Figure IV-47 Henderson Hall TAMU BLDG # 425 Energy Balance Plot during December 2016.....	256
Figure IV-48 FHK Complex TAMU BLDG # 426 Energy Balance Plot during December 2016.....	256
Figure IV-49 Schumacher Residence Hall TAMU BLDG # 430 Energy Balance Plot during December 2016.....	257
Figure IV-50 Mosher Commons Krueger Dunn Aston TAMU BLDG # 433, 440, 441, 442 and 447 Energy Balance Plot during December 2016	257
Figure IV-51 Mosher Residence Hall TAMU BLDG # 433 Energy Balance Plot during December 2016.....	258
Figure IV-52 Commons Hall TAMU BLDG # 440 Energy Balance Plot during December 2016.....	258
Figure IV-53 Krueger Residence Hall TAMU BLDG # 441 Energy Balance Plot during December 2016.....	259
Figure IV-54 Dunn Residence Hall TAMU BLDG # 442 Energy Balance Plot during December 2016.....	259
Figure IV-55 Aston Residence Hall TAMU BLDG # 447 Energy Balance Plot during December 2016.....	260
Figure IV-56 Luedecke Building (Cyclotron) TAMU BLDG # 434 Energy Balance Plot during December 2016.....	260

Figure IV-57 Harrington Education Center Office Tower TAMU BLDG # 435 Energy Balance Plot during December 2016	261
Figure IV-58 Reed-McDonald and Engineering Innovation Center TAMU BLDG # 436 and 499 Energy Balance Plot during December 2016	261
Figure IV-59 Reed-McDonald Building TAMU BLDG # 436 Energy Balance Plot during December 2016.....	262
Figure IV-60 Engineering Innovation Center TAMU BLDG # 499 Energy Balance Plot during December 2016.....	262
Figure IV-61 Harrington Education Center Classroom Building TAMU BLDG # 438 Energy Balance Plot during December 2016.....	263
Figure IV-62 Oceanography & Meteorology Building TAMU BLDG # 443 Energy Balance Plot during December 2016	263
Figure IV-63 Peterson Building TAMU BLDG # 444 Energy Balance Plot during December 2016.....	264
Figure IV-64 Teague Research Center and DPC Annex TAMU BLDG # 445 and 517 Energy Balance Plot during December 2016.....	264
Figure IV-65 Teague Research Center TAMU BLDG # 445 Energy Balance Plot during December 2016.....	265
Figure IV-66 DPC Annex TAMU BLDG # 517 Energy Balance Plot during December 2016	265
Figure IV-67 Rudder Tower and Theatre Complex TAMU BLDG # 446 Energy Balance Plot during December 2016	266
Figure IV-68 Rudder Theatre Complex TAMU BLDG # 446 Energy Balance Plot during December 2016.....	266
Figure IV-69 Rudder Tower TAMU BLDG # 446 Energy Balance Plot during December 2016	267
Figure IV-70 Adams Band Hall TAMU BLDG # 448 Energy Balance Plot during December 2016.....	267
Figure IV-71 Biological Sciences Building - West TAMU BLDG # 449 Energy Balance Plot during December 2016.....	268
Figure IV-72 Duncan Dining Hall TAMU BLDG # 450 Energy Balance Plot during December 2016.....	268
Figure IV-73 MSC TAMU BLDG # 454 Energy Balance Plot during December 2016.....	269
Figure IV-74 Military Sciences Building TAMU BLDG # 456 Energy Balance Plot during December 2016.....	269
Figure IV-75 TAES Annex Building TAMU BLDG # 457 Energy Balance Plot during December 2016.....	270
Figure IV-76 Coke Building TAMU BLDG # 461 Energy Balance Plot during December 2016	270
Figure IV-77 Academic Building TAMU BLDG # 462 Energy Balance Plot during December 2016.....	271

Figure IV-78 Psychology Building TAMU BLDG # 463 Energy Balance Plot during December 2016.....	271
Figure IV-79 State Chemist Building TAMU BLDG # 464 Energy Balance Plot during December 2016.....	272
Figure IV-80 Butler Hall TAMU BLDG # 465 Energy Balance Plot during December 2016	272
Figure IV-81 Biological Sciences Building - East TAMU BLDG # 467 Energy Balance Plot during December 2016.....	273
Figure IV-82 Evans Library TAMU BLDG # 468 Energy Balance Plot during December 2016	273
Figure IV-83 Central Campus Parking Garage TAMU BLDG # 469 Energy Balance Plot during December 2016.....	274
Figure IV-84 Glasscock History Bldg TAMU BLDG # 470 Energy Balance Plot during December 2016.....	274
Figure IV-85 Pavilion TAMU BLDG # 471 Energy Balance Plot during December 2016.....	275
Figure IV-86 Animal Industries TAMU BLDG # 472 Energy Balance Plot during December 2016.....	275
Figure IV-87 Williams Administration Building TAMU BLDG # 473 Energy Balance Plot during December 2016.....	276
Figure IV-88 YMCA Building TAMU BLDG # 474 Energy Balance Plot during December 2016.....	276
Figure IV-89 Francis Hall TAMU BLDG # 476 Energy Balance Plot during December 2016	277
Figure IV-90 Anthropology Building TAMU BLDG # 477 Energy Balance Plot during December 2016.....	277
Figure IV-91 Scoates Hall TAMU BLDG # 478 Energy Balance Plot during December 2016	278
Figure IV-92 Bolton Hall TAMU BLDG # 480 Energy Balance Plot during December 2016	278
Figure IV-93 Heaton Hall TAMU BLDG # 481 Energy Balance Plot during December 2016	279
Figure IV-94 Fermier Hall TAMU BLDG # 482 Energy Balance Plot during December 2016	279
Figure IV-95 Thompson Hall TAMU BLDG # 483 Energy Balance Plot during December 2016.....	280
Figure IV-96 Chemistry Building TAMU BLDG # 484 Energy Balance Plot during December 2016.....	280
Figure IV-97 Halbouty Geosciences Building TAMU BLDG # 490 Energy Balance Plot during December 2016.....	281
Figure IV-98 Civil Engineering Building TAMU BLDG # 492 Energy Balance Plot during December 2016.....	281

Figure IV-99 Sbisa Dining Hall TAMU BLDG # 495 Energy Balance Plot during December 2016.....	282
Figure IV-100 Utilities & Energy Services Central Office TAMU BLDG # 496 Energy Balance Plot during December 2016	282
Figure IV-101 Concrete Materials Laboratory TAMU BLDG # 501 Energy Balance Plot during December 2016.....	283
Figure IV-102 Nagle Hall TAMU BLDG # 506 Energy Balance Plot during December 2016	283
Figure IV-103 Veterinary Medical Science Building TAMU BLDG # 507 Energy Balance Plot during December 2016	284
Figure IV-104 Veterinary Teaching Hospital and Med Adm TAMU BLDG # 508 and 1026 Energy Balance Plot during December 2016.....	284
Figure IV-105 Veterinary Teaching Hospital TAMU BLDG # 508 Energy Balance Plot during December 2016.....	285
Figure IV-106 Veterinary Medicine Administration TAMU BLDG # 1026 Energy Balance Plot during December 2016	285
Figure IV-107 Heep Laboratory Building TAMU BLDG # 511 Energy Balance Plot during December 2016.....	286
Figure IV-108 All Faiths Chapel TAMU BLDG # 512 Energy Balance Plot during December 2016.....	286
Figure IV-109 Doherty Building TAMU BLDG # 513 Energy Balance Plot during December 2016.....	287
Figure IV-110 Munnerlyn Astronomy & Space Sciences Engineering TAMU BLDG # 514 Energy Balance Plot during December 2016.....	287
Figure IV-111 Computing Services Center TAMU BLDG # 516 Energy Balance Plot during December 2016.....	288
Figure IV-112 Beutel Health Center TAMU BLDG # 520 Energy Balance Plot during December 2016.....	288
Figure IV-113 Heldenfels Hall TAMU BLDG # 521 Energy Balance Plot during December 2016.....	289
Figure IV-114 Blocker building TAMU BLDG # 524 Energy Balance Plot during December 2016.....	289
Figure IV-115 Clements Residence Hall TAMU BLDG # 548 Energy Balance Plot during December 2016.....	290
Figure IV-116 Haas Residence Hall TAMU BLDG # 549 Energy Balance Plot during December 2016.....	290
Figure IV-117 McFadden Residence Hall TAMU BLDG # 550 Energy Balance Plot during December 2016.....	291
Figure IV-118 Neeley Residence Hall TAMU BLDG # 652 Energy Balance Plot during December 2016.....	291

Figure IV-119 Hobby Residence Hall TAMU BLDG # 653 Energy Balance Plot during December 2016.....	292
Figure IV-120 Wisenbaker Engineering Research Center TAMU BLDG # 682 Energy Balance Plot during December 2016	292
Figure IV-121 McNew Laboratory TAMU BLDG # 740 Energy Balance Plot during December 2016.....	293
Figure IV-122 Soil Testing Labs TAMU BLDG # 806 Energy Balance Plot during December 2016.....	293
Figure IV-123 Entomology Research Lab TAMU BLDG # 815 Energy Balance Plot during December 2016.....	294
Figure IV-124 TVMC-Small Animal Building TAMU BLDG # 880 Energy Balance Plot during December 2016.....	294
Figure IV-125 Laboratory Animal Care Building TAMU BLDG # 972 Energy Balance Plot during December 2016	295
Figure IV-126 Vivarium III TAMU BLDG # 1020 Energy Balance Plot during December 2016.....	295
Figure IV-127 Texas Vet Med Diagnostic Lab TAMU BLDG # 1041 Energy Balance Plot during December 2016	296
Figure IV-128 Forest Science Laboratory Building TAMU BLDG # 1042 Energy Balance Plot during December 2016	296
Figure IV-129 Veterinary Small Animal Hospital TAMU BLDG # 1085 Energy Balance Plot during December 2016	297
Figure IV-130 Utilities Energy Office Annex TAMU BLDG # 1089 Energy Balance Plot during December 2016.....	297
Figure IV-131 Biological Control Facility TAMU BLDG # 1146 Energy Balance Plot during December 2016.....	298
Figure IV-132 Physical Plant Administration & Shops TAMU BLDG # 1156 Energy Balance Plot during December 2016	298
Figure IV-133 Veterinary Anatomic Pathology TAMU BLDG # 1184 Energy Balance Plot during December 2016.....	299
Figure IV-134 Veterinary Large Animal Hospital TAMU BLDG # 1194 Energy Balance Plot during December 2016	299
Figure IV-135 Veterinary Research Building TAMU BLDG # 1197 Energy Balance Plot during December 2016.....	300
Figure IV-136 Hullabaloo Residence Hall TAMU BLDG # 1416 Energy Balance Plot during December 2016.....	300
Figure IV-137 University Apartments - Laundry at the Gardens TAMU BLDG # 1450 Energy Balance Plot during December 2016.....	301
Figure IV-138 University Apartments - The Gardens J TAMU BLDG # 1451 Energy Balance Plot during December 2016	301

Figure IV-139 University Apartments - The Gardens K TAMU BLDG # 1452 Energy Balance Plot during December 2016	302
Figure IV-140 University Apartments - The Gardens L TAMU BLDG # 1453 Energy Balance Plot during December 2016	302
Figure IV-141 University Apartments - The Gardens F TAMU BLDG # 1454 Energy Balance Plot during December 2016	303
Figure IV-142 University Apartments - The Gardens G TAMU BLDG # 1455 Energy Balance Plot during December 2016	303
Figure IV-143 University Apartments - The Gardens H TAMU BLDG # 1456 Energy Balance Plot during December 2016	304
Figure IV-144 University Apartments - The Gardens M TAMU BLDG # 1457 Energy Balance Plot during December 2016	304
Figure IV-145 University Apartments - The Gardens N TAMU BLDG # 1458 Energy Balance Plot during December 2016	305
Figure IV-146 University Apartments - The Gardens P TAMU BLDG # 1459 Energy Balance Plot during December 2016	305
Figure IV-147 University Apartments - The Gardens Q TAMU BLDG # 1460 Energy Balance Plot during December 2016	306
Figure IV-148 Utilities & Energy Services Business Office TAMU BLDG # 1497 Energy Balance Plot during December 2016.....	306
Figure IV-149 Kleberg Center TAMU BLDG # 1501 Energy Balance Plot during December 2016.....	307
Figure IV-150 Heep Center TAMU BLDG # 1502 Energy Balance Plot during December 2016.....	307
Figure IV-151 Cater-Mattil Hall TAMU BLDG # 1503 Energy Balance Plot during December 2016.....	308
Figure IV-152 Reynolds Medical Sciences Building TAMU BLDG # 1504 Energy Balance Plot during December 2016	308
Figure IV-153 Rosenthal Meat Science & Technology Center TAMU BLDG # 1505 Energy Balance Plot during December 2016.....	309
Figure IV-154 Horticulture-Forest Science Building TAMU BLDG # 1506 Energy Balance Plot during December 2016	309
Figure IV-155 Biochemistry-Biophysics Building TAMU BLDG # 1507 Energy Balance Plot during December 2016.....	310
Figure IV-156 Price Hobgood Ag. Engineering Research Lab TAMU BLDG # 1508 Energy Balance Plot during December 2016.....	310
Figure IV-157 Medical Sciences Library TAMU BLDG # 1509 Energy Balance Plot during December 2016.....	311
Figure IV-158 Wehner Building TAMU BLDG # 1510 Energy Balance Plot during December 2016.....	311

Figure IV-159 West Campus Library Facility TAMU BLDG # 1511 Energy Balance Plot during December 2016	312
Figure IV-160 Southern Crop Improvement Greenhouse TAMU BLDG # 1512 Energy Balance Plot during December 2016	312
Figure IV-161 Borlaug Center for Southern Crop Improvement TAMU BLDG # 1513 Energy Balance Plot during December 2016.....	313
Figure IV-162 TX School of Rural Public Health TAMU BLDG # 1518 Energy Balance Plot during December 2016	313
Figure IV-163 Nuclear Magnetic Resonance Facility TAMU BLDG # 1525 Energy Balance Plot during December 2016	314
Figure IV-164 Interdisciplinary Life Sciences Building TAMU BLDG # 1530 Energy Balance Plot during December 2016	314
Figure IV-165 Agriculture and Life Sciences Building TAMU BLDG # 1535 Energy Balance Plot during December 2016	315
Figure IV-166 AgriLife Services Building TAMU BLDG # 1536 Energy Balance Plot during December 2016.....	315
Figure IV-167 Agriculture Program Visitors Center TAMU BLDG # 1538 Energy Balance Plot during December 2016	316
Figure IV-168 Physical Education Activity Program Building TAMU BLDG # 1540 Energy Balance Plot during December 2016.....	316
Figure IV-169 Human Clinical Research Building TAMU BLDG # 1542 Energy Balance Plot during December 2016	317
Figure IV-170 Cain Garage TAMU BLDG # 1544 Energy Balance Plot during December 2016.....	317
Figure IV-171 Olsen Field at Bluebell Park TAMU BLDG # 1550 Energy Balance Plot during December 2016.....	318
Figure IV-172 Reed Arena and Cox-McFerrin Center TAMU BLDG # 1554 and 1558 Energy Balance Plot during December 2016.....	318
Figure IV-173 Reed Arena and Cox-McFerrin Center TAMU BLDG # 1554 Energy Balance Plot during December 2016	319
Figure IV-174 Cox-McFerrin Center for Aggie Basketball TAMU BLDG # 1558 Energy Balance Plot during December 2016	319
Figure IV-175 West Campus Parking Garage TAMU BLDG # 1559 Energy Balance Plot during December 2016.....	320
Figure IV-176 Student Recreation Center TAMU BLDG # 1560 Energy Balance Plot during December 2016.....	320
Figure IV-177 White Creek Apartment 1 and White Creek Apts Activity Center TAMU BLDG # 1589 Energy Balance Plot during December 2016.....	321
Figure IV-178 White Creek Apartment 2 TAMU BLDG # 1591 Energy Balance Plot during December 2016.....	321

Figure IV-179 White Creek Apartment 3 TAMU BLDG # 1592 Energy Balance Plot during December 2016.....	322
Figure IV-180 Gilchrist TTI Building TAMU BLDG # 1600 Energy Balance Plot during December 2016.....	322
Figure IV-181 International Ocean Discovery Building TAMU BLDG # 1601 Energy Balance Plot during December 2016	323
Figure IV-182 Offshore Technology Research Center TAMU BLDG # 1604 Energy Balance Plot during December 2016	323
Figure IV-183 George Bush Presidential Library & Museum TAMU BLDG # 1606 Energy Balance Plot during December 2016.....	324
Figure IV-184 Allen Building TAMU BLDG # 1607 Energy Balance Plot during December 2016.....	324
Figure IV-185 Annenberg Presidential Conference Center TAMU BLDG # 1608 Energy Balance Plot during December 2016	325
Figure IV-186 TTI Headquarters TAMU BLDG # 1609 Energy Balance Plot during December 2016.....	325
Figure IV-187 Engineering Research Building TAMU BLDG # 1611 Energy Balance Plot during December 2016.....	326
Figure IV-188 General Services Complex TAMU BLDG # 1800 Energy Balance Plot during December 2016.....	326
Figure IV-189 New TVMDL TAMU BLDG # 1809 Energy Balance Plot during December 2016.....	327
Figure IV-190 Office of the State Chemist Building TAMU BLDG # 1810 Energy Balance Plot during December 2016	327
Figure IV-191 Vet Med Research Bldg Addition TAMU BLDG # 1811 Energy Balance Plot during December 2016.....	328
Figure IV-192 Veterinary Medicine Building 1, 2, and 3 TAMU BLDG # 1812 Energy Balance Plot during December 2016	328
Figure IV-193 Texas Institute for Genomic Medicine TAMU BLDG # 1900 Energy Balance Plot during December 2016	329
Figure IV-194 Texas A&M Institute for Preclinical Studies A TAMU BLDG # 1904 Energy Balance Plot during December 2016.....	329
Figure IV-195 National Center for Therapeutics Manufacturing TAMU BLDG # 1910 Energy Balance Plot during December 2016.....	330
Figure IV-196 Multi-Species Research Building TAMU BLDG # 1911 Energy Balance Plot during December 2016.....	330
Figure IV-197 NCTM Manufacturing Building TAMU BLDG # 10226 Energy Balance Plot during December 2016.....	331
Figure IV-198 AgriLife Extension 4-H State Headquarters TAMU BLDG # 3410 Energy Balance Plot during December 2016.....	331
Figure V-1 Kyle Field TAMU BLDG # 367 Energy Balance Plot during December 2016	333

Figure V-2 Davis-Gary Residence Hall TAMU BLDG # 415 Energy Balance Plot during December 2016.....	333
Figure V-3 Legett Residence Hall TAMU BLDG # 419 Energy Balance Plot during December 2016.....	334
Figure V-4 Mosher Residence Hall TAMU BLDG # 433 Energy Balance Plot during December 2016.....	334
Figure V-5 Mosher Commons Krueger Dunn Aston TAMU BLDG # 433 Energy Balance Plot during December 2016	335
Figure V-6 Commons Hall TAMU BLDG # 440 Energy Balance Plot during December 2016	335
Figure V-7 Krueger Residence Hall TAMU BLDG # 441 Energy Balance Plot during December 2016.....	336
Figure V-8 Dunn Residence Hall TAMU BLDG # 442 Energy Balance Plot during December 2016.....	336
Figure V-9 Oceanography & Meteorology Building TAMU BLDG # 443 Energy Balance Plot during December 2016	337
Figure V-10 Rudder Tower and Theatre Complex TAMU BLDG # 446 Energy Balance Plot during December 2016.....	337
Figure V-11 Rudder Theatre Complex TAMU BLDG # 446 Energy Balance Plot during December 2016.....	338
Figure V-12 Aston Residence Hall TAMU BLDG # 447 Energy Balance Plot during December 2016.....	338
Figure V-13 Military Sciences Building TAMU BLDG # 456 Energy Balance Plot during December 2016.....	339
Figure V-14 Glasscock History Bldg TAMU BLDG # 470 Energy Balance Plot during December 2016.....	339
Figure V-15 Pavilion TAMU BLDG # 471 Energy Balance Plot during December 2016.....	340
Figure V-16 Heaton Hall TAMU BLDG # 481 Energy Balance Plot during December 2016	340
Figure V-17 Thompson Hall TAMU BLDG # 483 Energy Balance Plot during December 2016.....	341
Figure V-18 Chemistry Building TAMU BLDG # 484 Energy Balance Plot during December 2016.....	341
Figure V-19 Halbouty Geosciences Building TAMU BLDG # 490 Energy Balance Plot during December 2016.....	342
Figure V-20 Civil Engineering Building TAMU BLDG # 492 Energy Balance Plot during December 2016.....	342
Figure V-21 Veterinary Teaching Hospital and Med Adm TAMU BLDG # 508 Energy Balance Plot during December 2016	343
Figure V-22 Heep Laboratory Building TAMU BLDG # 511 Energy Balance Plot during December 2016.....	343

Figure V-23 All Faiths Chapel TAMU BLDG # 512 Energy Balance Plot during December 2016.....	344
Figure V-24 Vivarium III TAMU BLDG # 1020 Energy Balance Plot during December 2016	344
Figure V-25 Texas Vet Med Diagnostic Lab TAMU BLDG # 1041 Energy Balance Plot during December 2016.....	345
Figure V-26 University Apartments - The Gardens F TAMU BLDG # 1454 Energy Balance Plot during December 2016	345
Figure V-27 University Apartments - The Gardens G TAMU BLDG # 1455 Energy Balance Plot during December 2016	346
Figure V-28 Southern Crop Improvement Greenhouse TAMU BLDG # 1512 Energy Balance Plot during December 2016	346
Figure V-29 Reed Arena and Cox-McFerrin Center TAMU BLDG # 1554 Energy Balance Plot during December 2016	347

I. Summary of Monthly Consumption

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

TAMU#	Building Name	Area (ft ²)	MeterID	Type	Monthly Consumption	Units	Comments
1609	TTI Headquarters	66,707	006495	ELE	51,014	kWh	
1609	TTI Headquarters	66,707	006496	CHW	132,591	mBtu	
1609	TTI Headquarters	66,707	006497	HHW	81,544	mBtu	
1611	Engineering Research Building	68,807	008462	ELE	183,208	kWh	
1611	Engineering Research Building	68,807	008463	CHW	875,533	mBtu	
1611	Engineering Research Building	68,807	008467	HHW	774,362	mBtu	
1800	General Services Complex	203,369	005441	ELE	161,495	kWh	
1800	General Services Complex	203,369	005468	CHW	425,327	mBtu	
1800	General Services Complex	203,369	005472	HHW	131,348	mBtu	
1809	New TVMDL	NA	009180	ELE	99,695	kWh	
1809	New TVMDL	NA	009181	ELE	52,392	mBtu	
1809	New TVMDL	NA	009174	CHW	NA	mBtu	*
1809	New TVMDL	NA	009647	CHW	1,189,632	mBtu	
1810	Office of the State Chemist Building	31,735	009073	ELE	55,732	kWh	
1810	Office of the State Chemist Building	31,735	005460	CHW	124,089	mBtu	
1810	Office of the State Chemist Building	31,735	005464	HHW	160,392	mBtu	
1811	Vet Med Research Bldg Addition	52,993	006705	ELE	217,891	kWh	*
1811	Vet Med Research Bldg Addition	52,993	006706	CHW	453,029	mBtu	
1811	Vet Med Research Bldg Addition	52,993	006707	HHW	553,341	mBtu	
1812	Veterinary Medicine Building 1	138,460	009404	ELE	176,379	kWh	
1813	Veterinary Medicine Building 2	116,492	009418	ELE	3,218	kWh	*
1814	Veterinary Medicine Building 3	135,470	009405	ELE	175,182	kWh	
1812-1813-1814	Veterinary Medicine Building 1, 2 and 3	390,422	009406	CHW	2,139,259	mBtu	
1812-1813-1814	Veterinary Medicine Building 1, 2 and 3	390,422	009410	HHW	1,341,055	mBtu	
1900	Texas Institute for Genomic Medicine	34,120	005548	ELE	89,586	kWh	
1900	Texas Institute for Genomic Medicine	34,120	005545	CHW	495,219	mBtu	
1900	Texas Institute for Genomic Medicine	34,120	005546	HHW	431,234	mBtu	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006364	ELE	227,682	kWh	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006365	CHW	984,156	mBtu	
1904	Texas A&M Institute for Preclinical Studies A	113,559	006366	HHW	1,008,432	mBtu	
1910	National Center for Therapeutics Manufacturing	149,924	007517	ELE	197,406	kWh	# (1)
1910	National Center for Therapeutics Manufacturing	149,924	007518	ELE	175,615	kWh	
1910	National Center for Therapeutics Manufacturing	149,924	007519	CHW	2,467,948	mBtu	
1910	National Center for Therapeutics Manufacturing	149,924	007520	HHW	1,479,495	mBtu	
1911	Multi-Species Research Building	21,000	009138	ELE	29,700	kWh	
1911	Multi-Species Research Building	21,000	009129	CHW	210,996	mBtu	
1911	Multi-Species Research Building	21,000	009133	HHW	210,499	mBtu	
10226	NCTM Manufacturing Building	113,397	007648	CHW	2,159,785	mBtu	
10226	NCTM Manufacturing Building	113,397	007649	HHW	1,076,917	mBtu	
10226	NCTM Manufacturing Building	113,397	008133	HHW	158,212	mBtu	
3410	AgriLife Extension 4-H State Headquarters	NA	009620	ELE	16,935	kWh	
3410	AgriLife Extension 4-H State Headquarters	NA	009621	ELE	28,520	kWh	
3410	AgriLife Extension 4-H State Headquarters	NA	009622	CHW	16,771	mBtu	*
3410	AgriLife Extension 4-H State Headquarters	NA	009623	HHW	68,422	mBtu	*

1 mBtu = 1 000 Btu

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

II. Data Analysis: Energy Use Estimation and Observation

Appelt Residence Hall (TAMU Bldg #293)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002062	17	12/15/2016 – 12/31/2016	Model
HHW	002066	17	12/15/2016 – 12/31/2016	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.	12/15/2016 – 12/19/2016
	The consumption dropped for a short period.	12/20/2016 – 12/22/2016
	The consumption level has increased suddenly.	12/23/2016 – Ongoing
HHW	The consumption level has increased suddenly.	12/15/2016 – 12/19/2016
	The consumption dropped for a short period.	12/20/2016 – 12/22/2016
	The consumption level has increased suddenly.	12/23/2016 – Ongoing

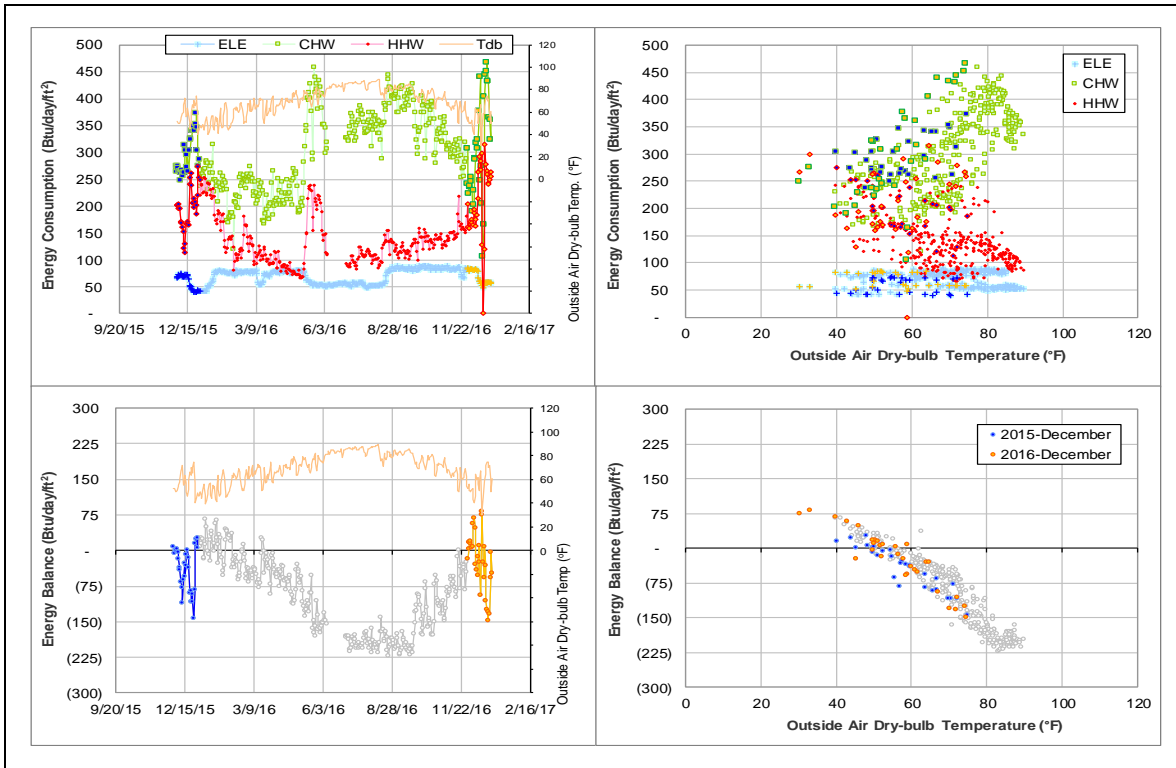
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002062	12/15/2016 – 12/19/2016	Flow Rate	High
		12/20/2016 – 12/22/2016	Flow Rate	Low
		12/23/2016 – Ongoing	Flow Rate	High
HHW	002066	12/15/2016 – 12/19/2016	Flow Rate	High
		12/20/2016 – 12/22/2016	Flow Rate	Zero
		12/23/2016 – Ongoing	Flow Rate	High

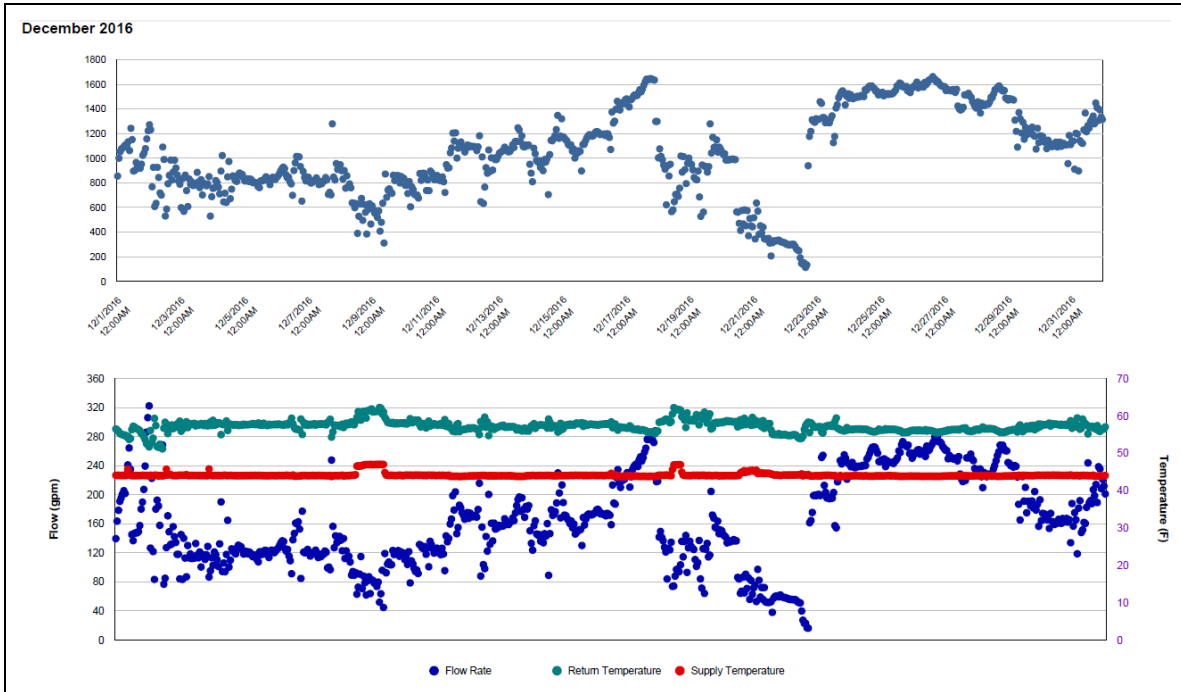
Quantitative descriptions and comments

Both CHW and HHW had an increase in flow rate starting 12/15/2016. HHW flow dropped to zero on 12/20/2016 – 12/22/2016. In the meantime, CHW flow dropped to a lower level in response of the change of HHW. These days are estimated using a model. See also section II-3.

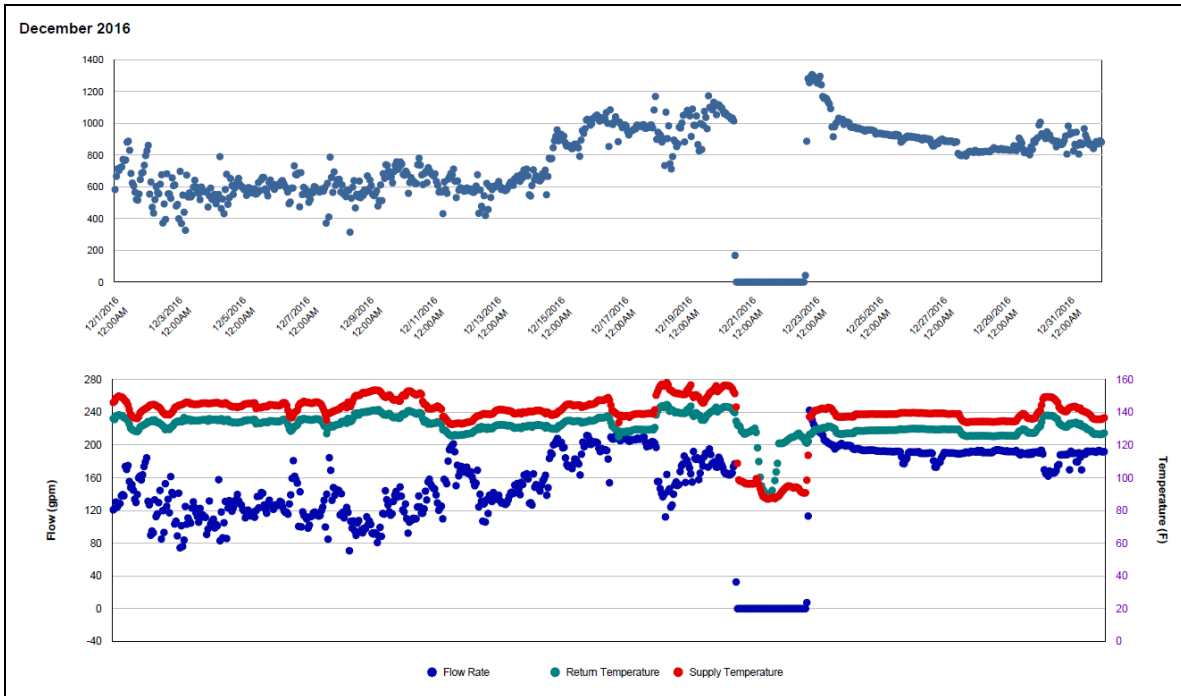
Explanatory Figure: 13 months energy balance plot with original data



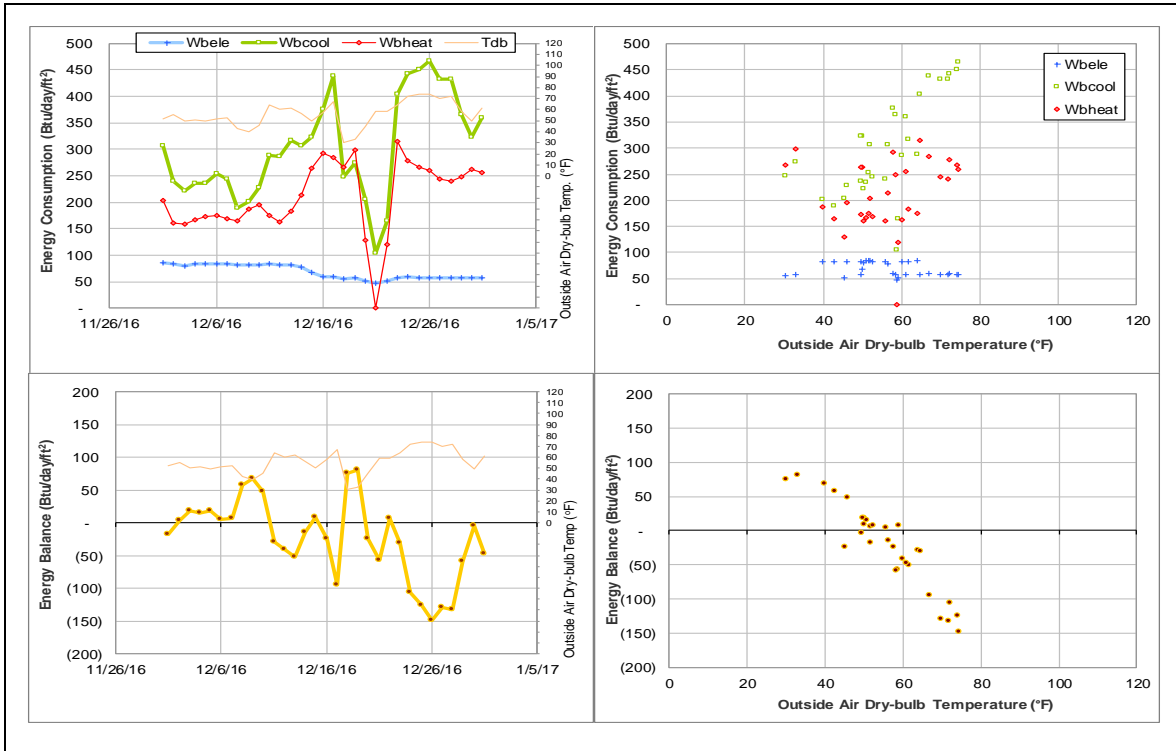
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during December 2016)



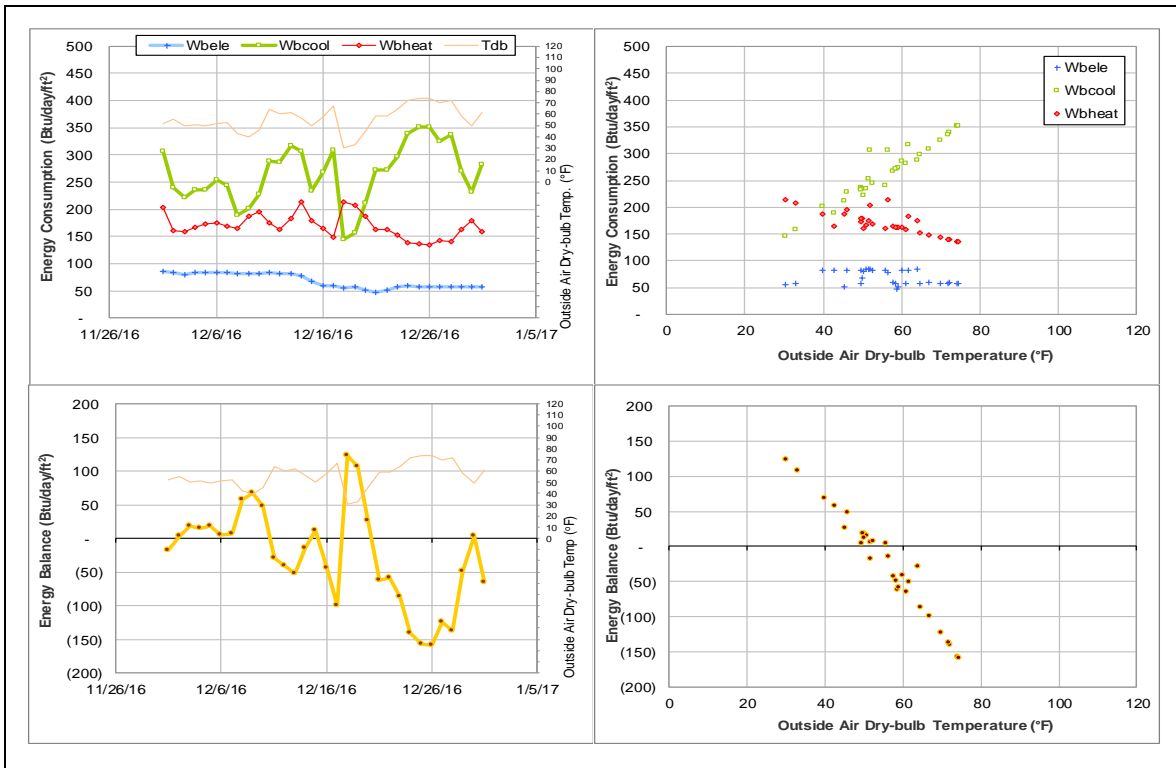
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during December 2016)



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



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



Lechner Residence Hall (TAMU Bldg #294)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	002289	18	12/14/2016 – 12/31/2016	Model

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

Data Type	Description of data behaviors	Period
HHW	The consumption level is higher than the level during the past year.	12/14/2016 – Ongoing

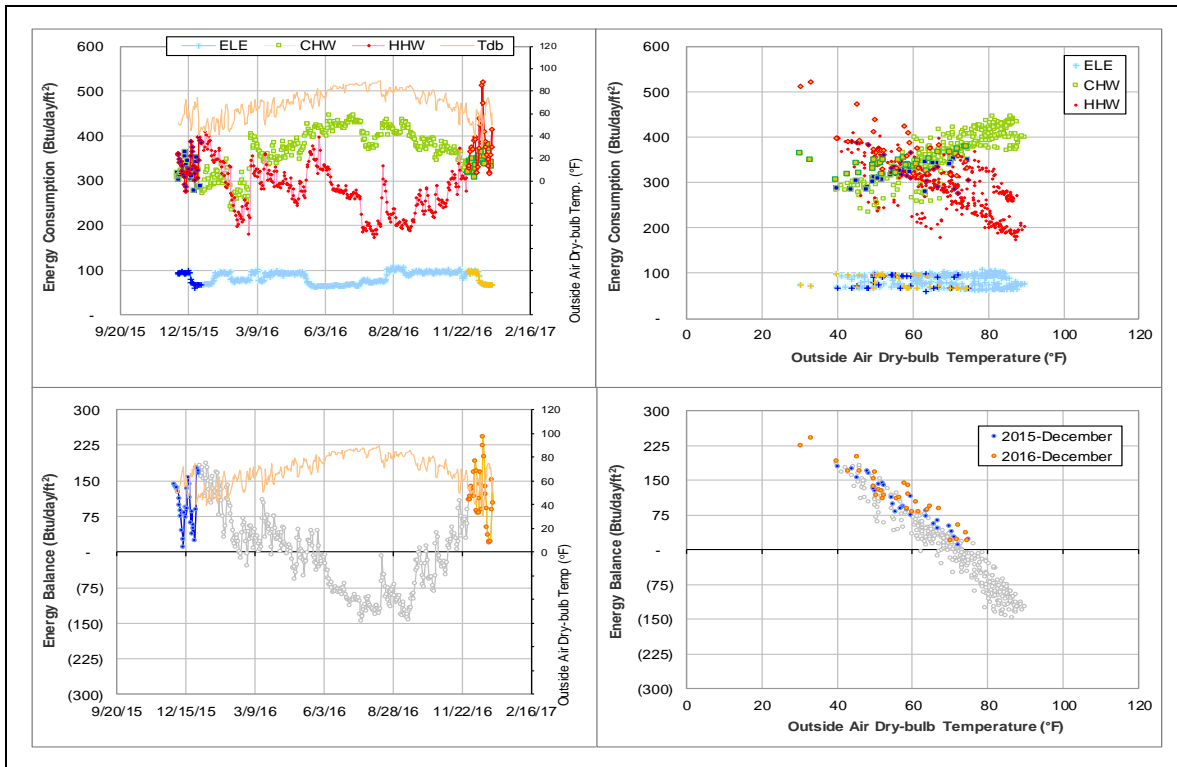
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	002289	12/14/2016 – Ongoing	Delta-T or Flow Rate	High

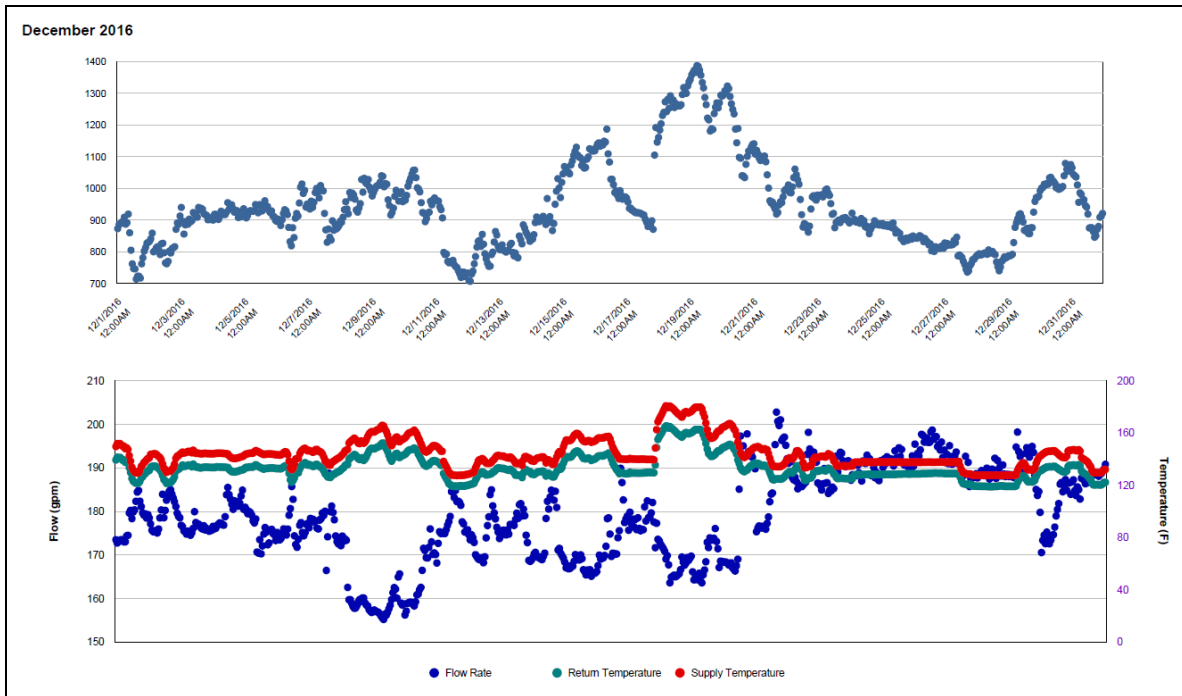
Quantitative descriptions and comments

The consumption of HHW increased to a higher level by circa 80 Btu/day/ft² starting 12/14/2016. This increase is maintained by either increased Delta-T or increased flow rate.

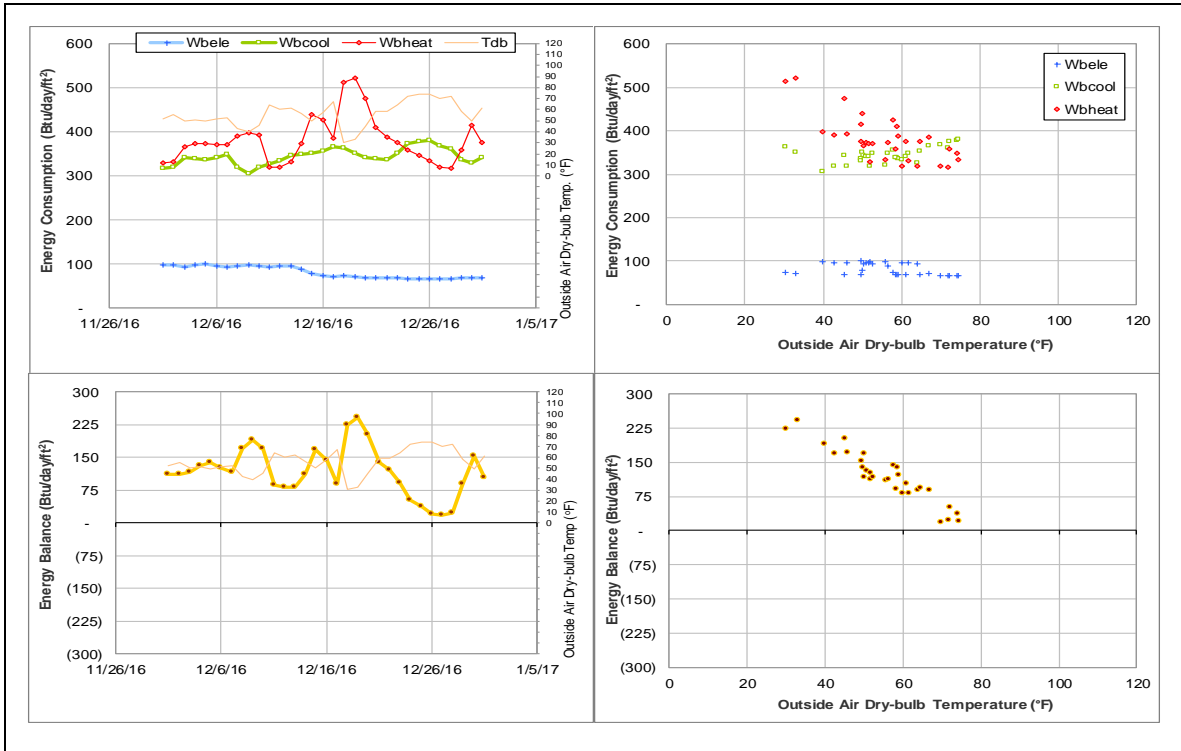
Explanatory Figure: 13 months energy balance plot with original data



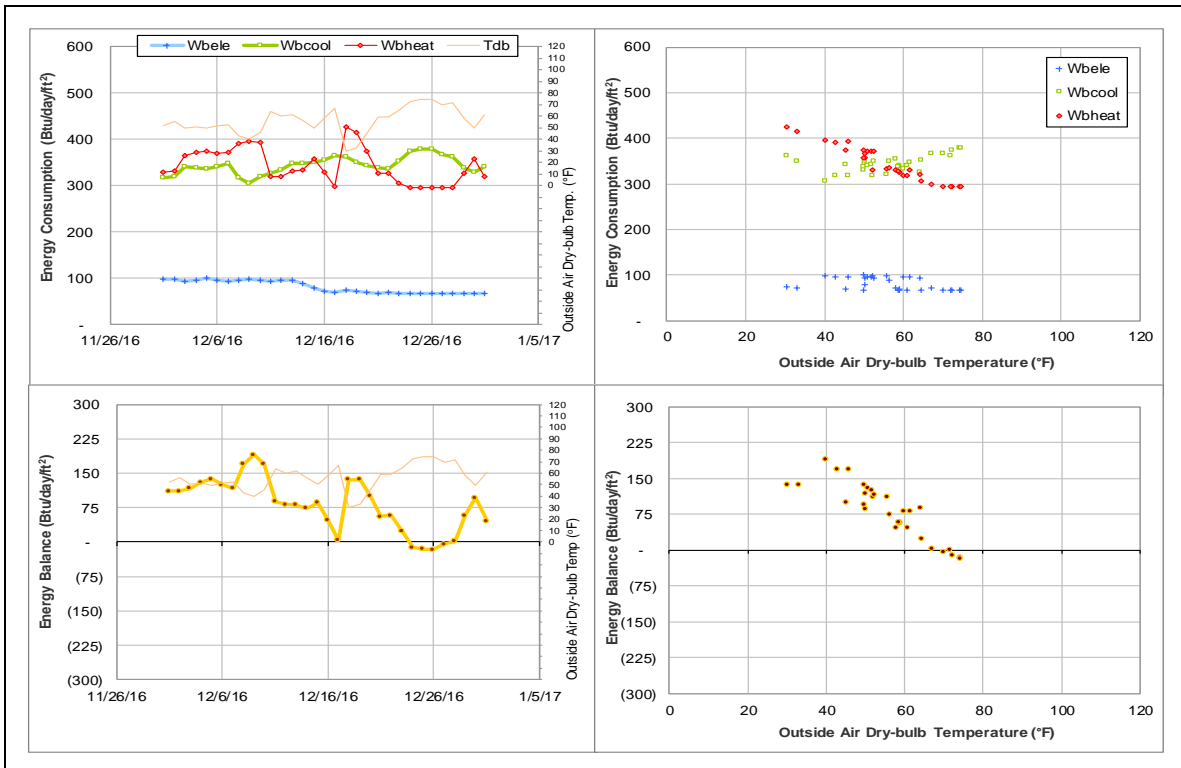
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during December 2016)



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



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



Langford Architecture Center Building A (TAMU Bldg #398)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	003955	16	12/1/2016, 12/11/2016, 12/12/2016, 12/16/2016 – 12/20/2016, 12/23/2016 – 12/29/2016, 12/31/2016	Model

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

Data Type	Description of data behaviors	Period
HHW	Scattering data are observed.	12/1/2016 – Ongoing

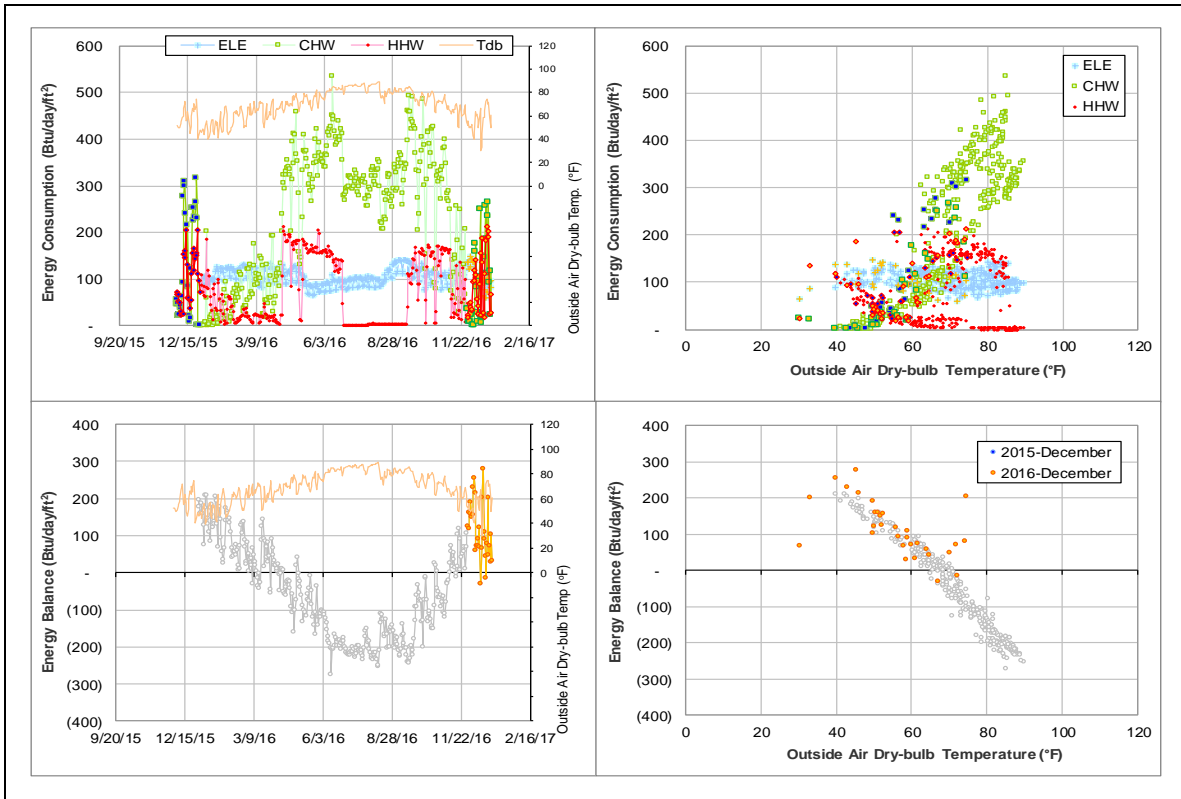
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	007119	12/1/2016	Flow Rate	Low
		12/11/2016 12/12/2016 12/16/2016 – 12/20/2016 12/23/2016 – 12/29/2016 12/31/2016	Flow Rate	High
		12/14/2016 12/18/2016 12/19/2016	Flow Rate	Zero

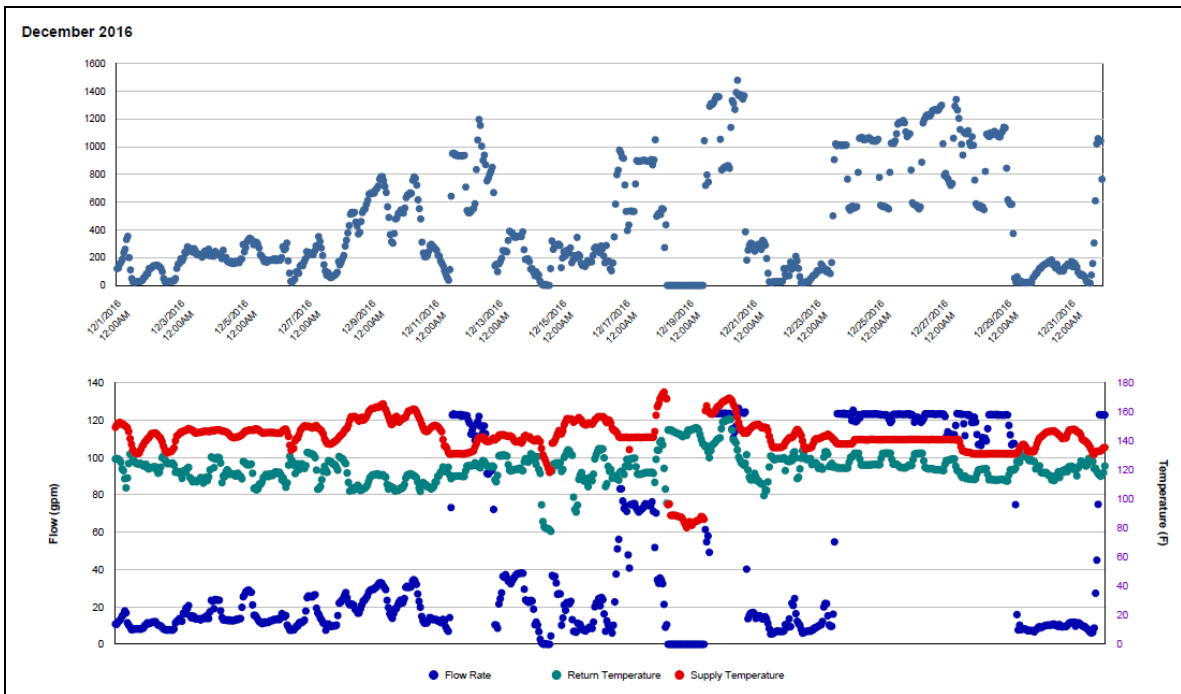
Quantitative descriptions and comments

The flow rate of HHW is very unstable and scattered the data. But by seeing the response of the temperature readings these points do not seem faulty. These days with abnormally high or low or zero flow are estimated by a model.

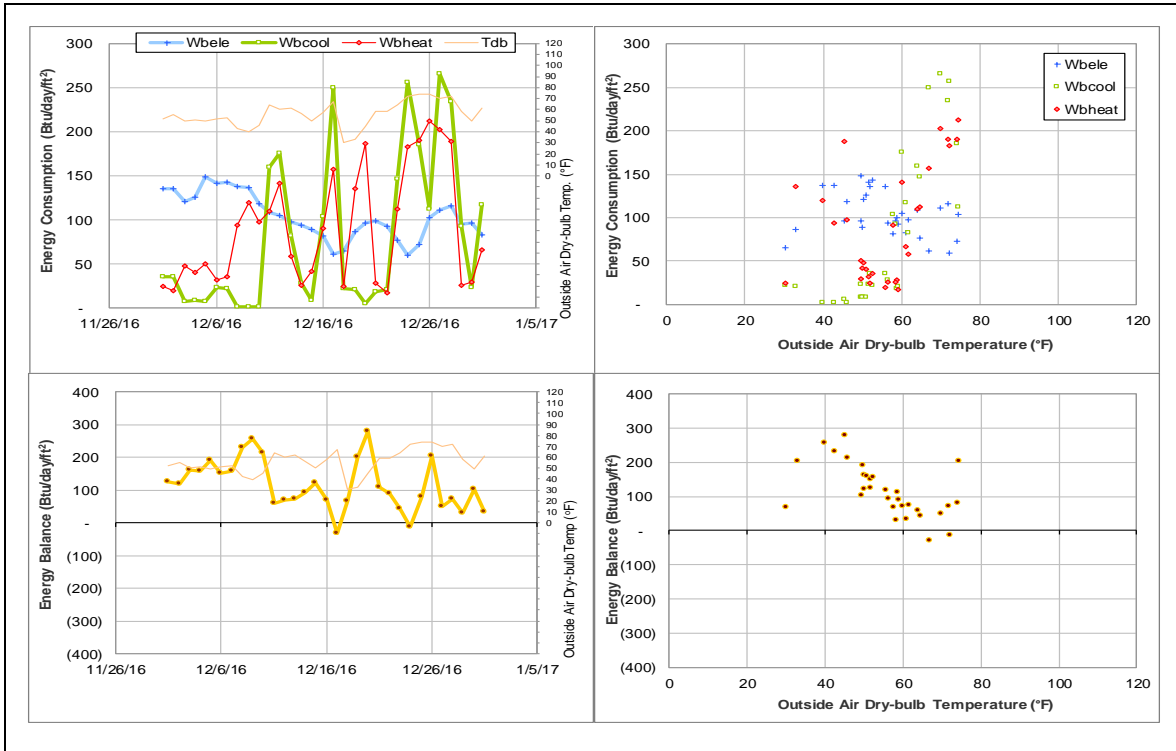
Explanatory Figure: 13 months energy balance plot with original data



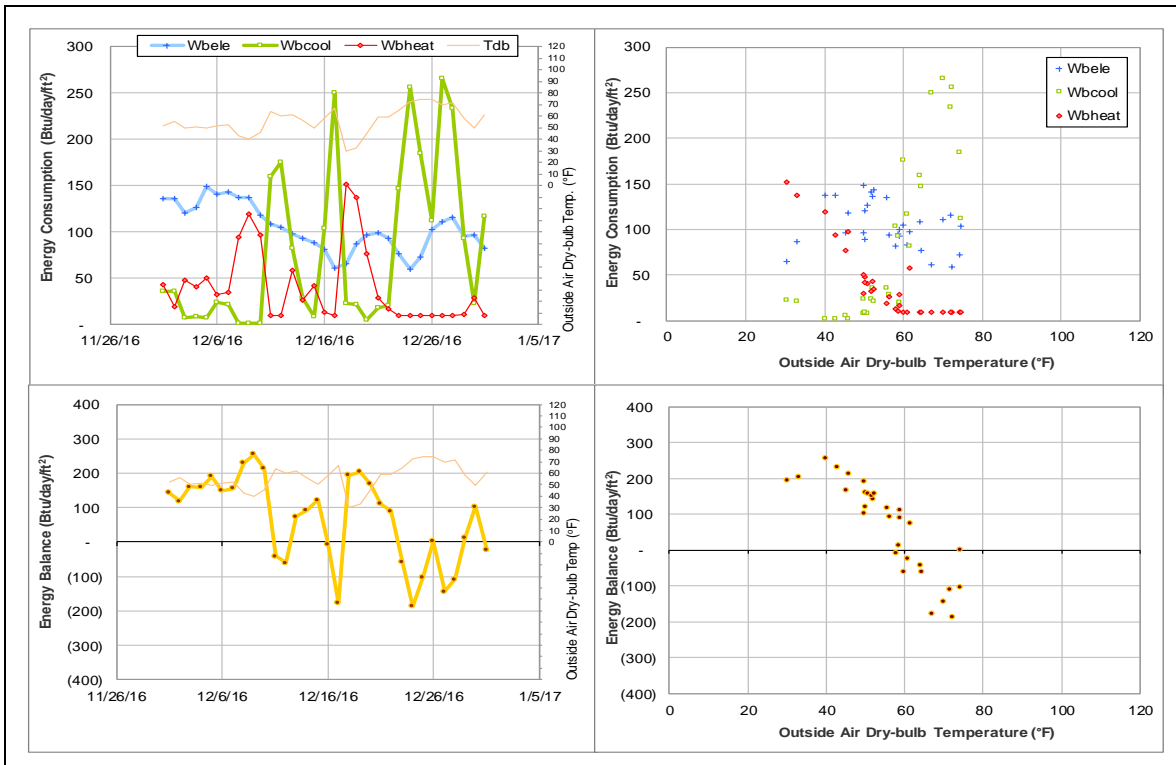
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during December 2016)



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



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



Davis-Gary Residence Hall (TAMU Bldg #415)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002532	5	12/9/2016 – 12/13/2016	Model

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

Data Type	Description of data behaviors	Period
CHW	The metered values appear to be faulty.	12/9/2016 – 12/13/2016

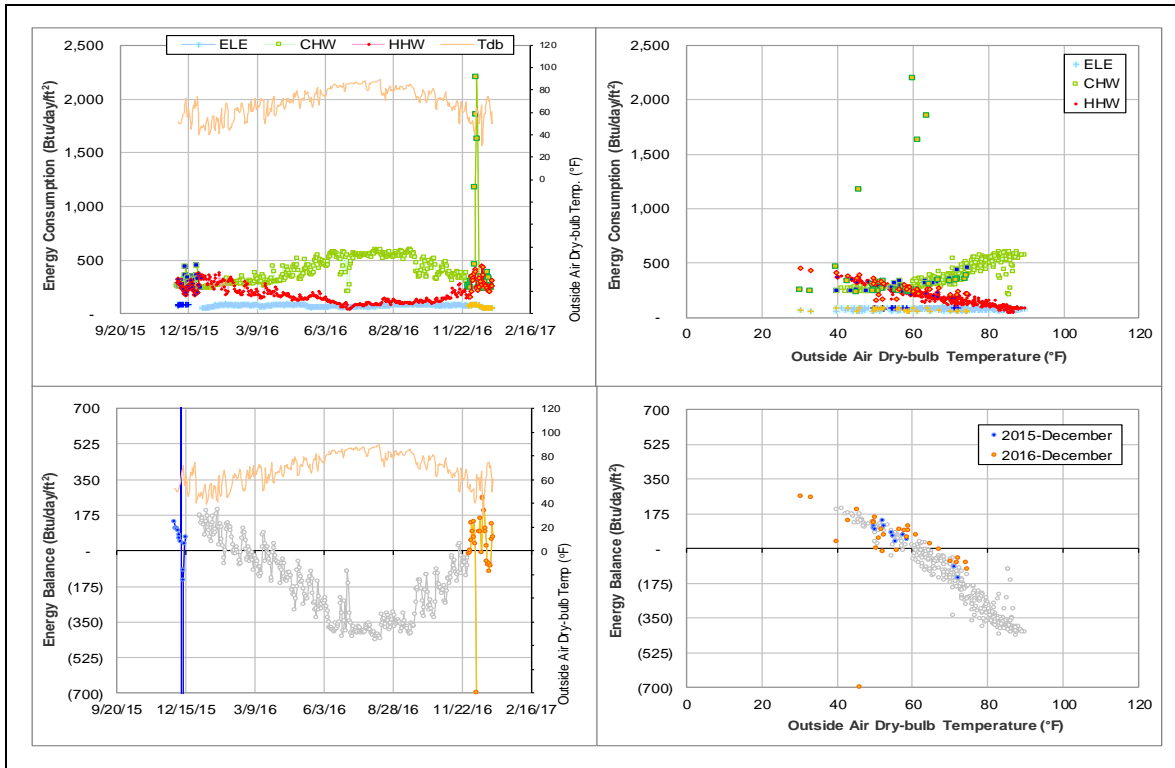
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002532	12/9/2016 – 12/13/2016	Supply Temp	Faulty

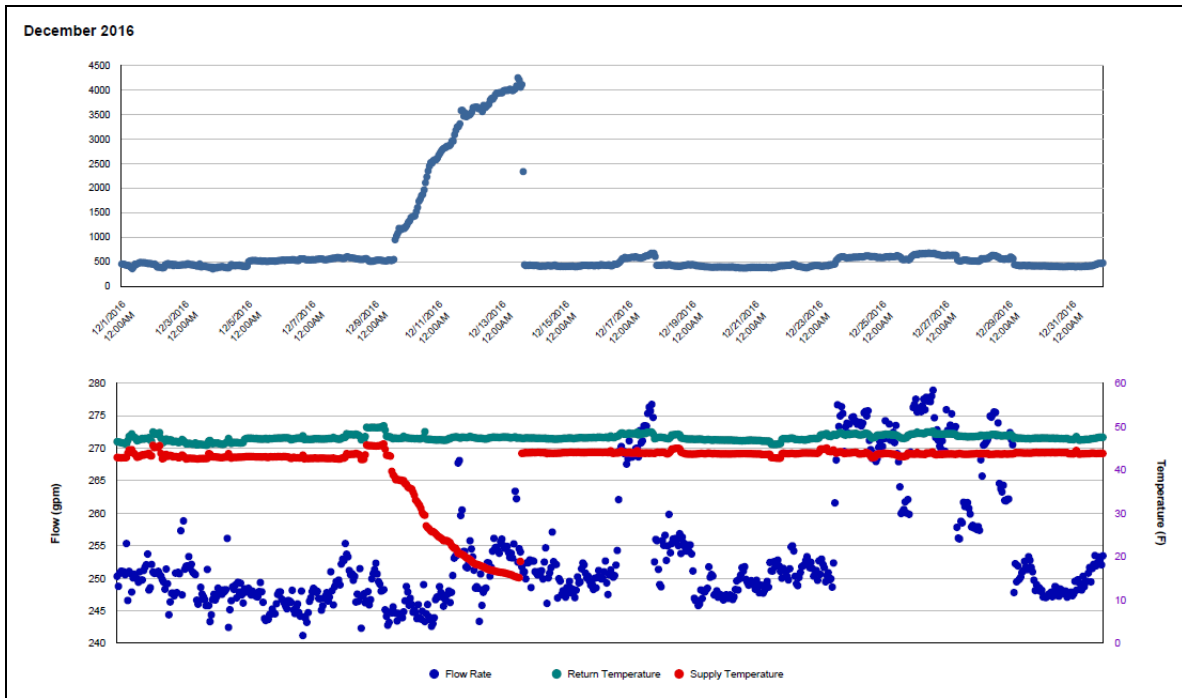
Quantitative descriptions and comments

The supply temp readings of CHW 002532 decreased gradually since 12/9/2016 and reached around 15°F on 12/13/2016 which causing extremely high CHW use. The faulty consumption was estimated by a model.

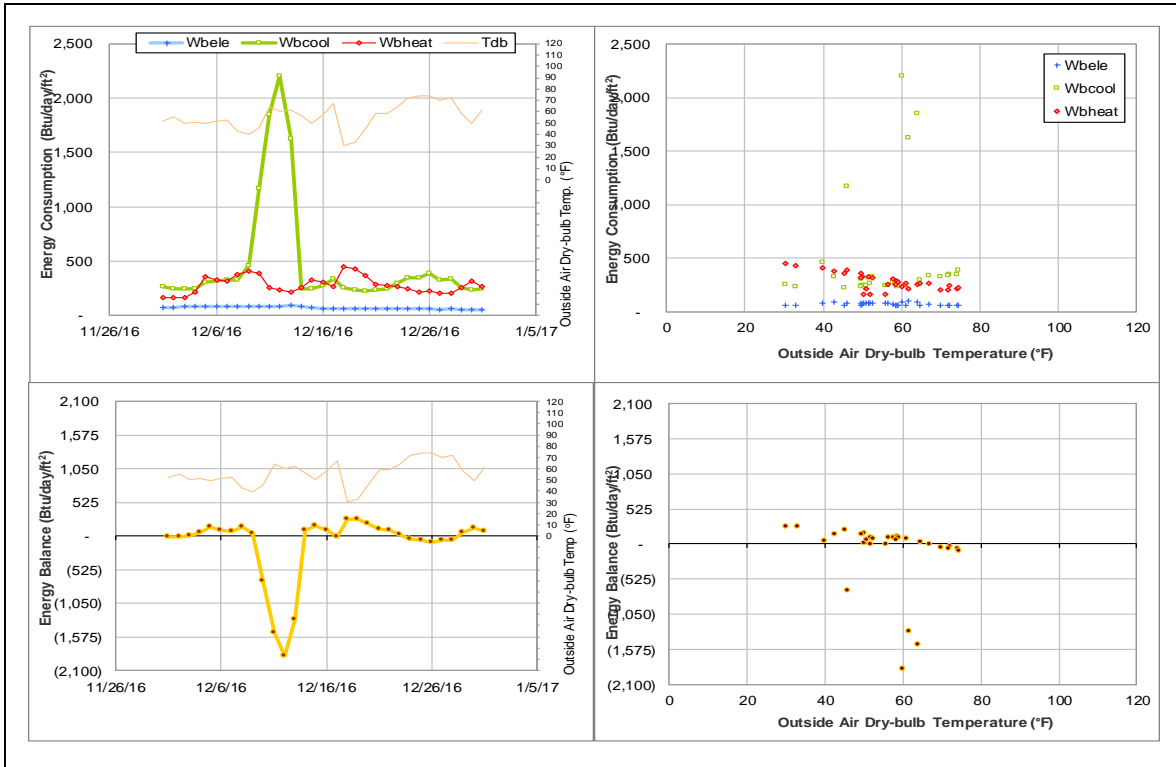
Explanatory Figure: 13 months energy balance plot with original data (The spikes on 12/9/2016, 12/10/2016 are removed)



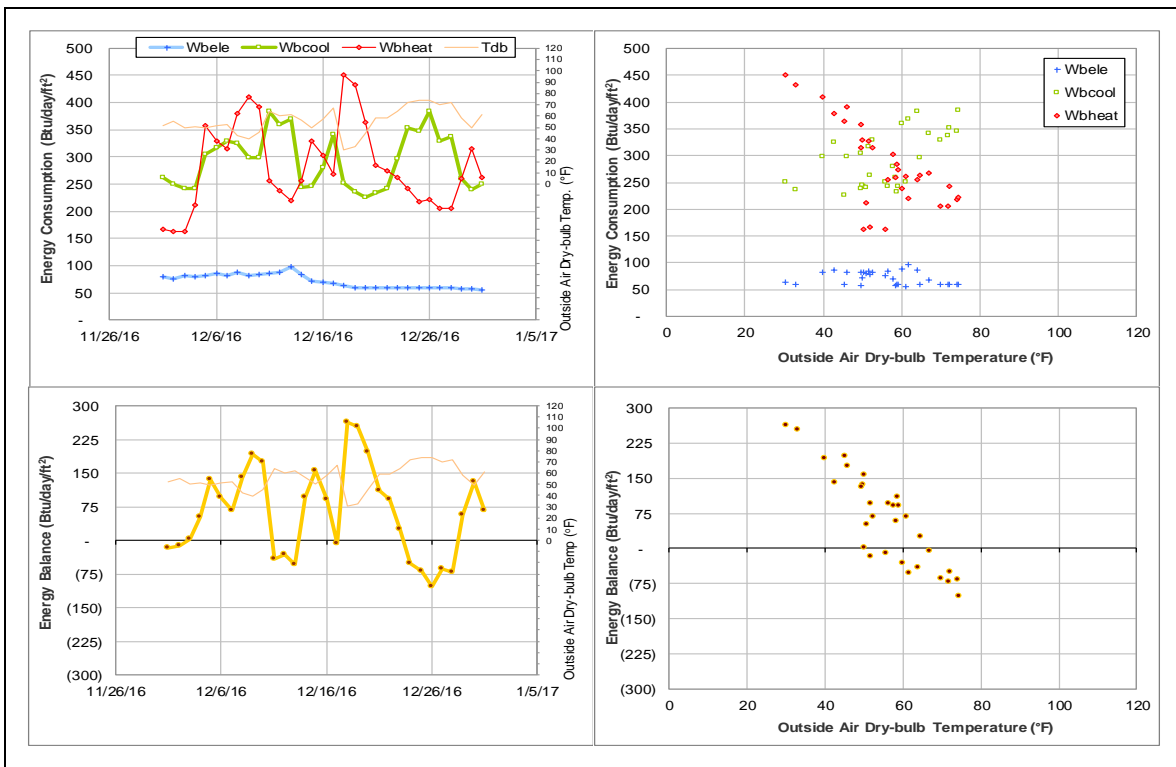
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during December 2016)



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



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



Legett Residence Hall (TAMU Bldg #419)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002218	4	12/14/2016 – 12/17/2016	Model

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

Data Type	Description of data behaviors	Period
CHW	The metered values appear to be faulty.	12/14/2016 – 12/17/2016

Changes in sensor readings related to the detected issues

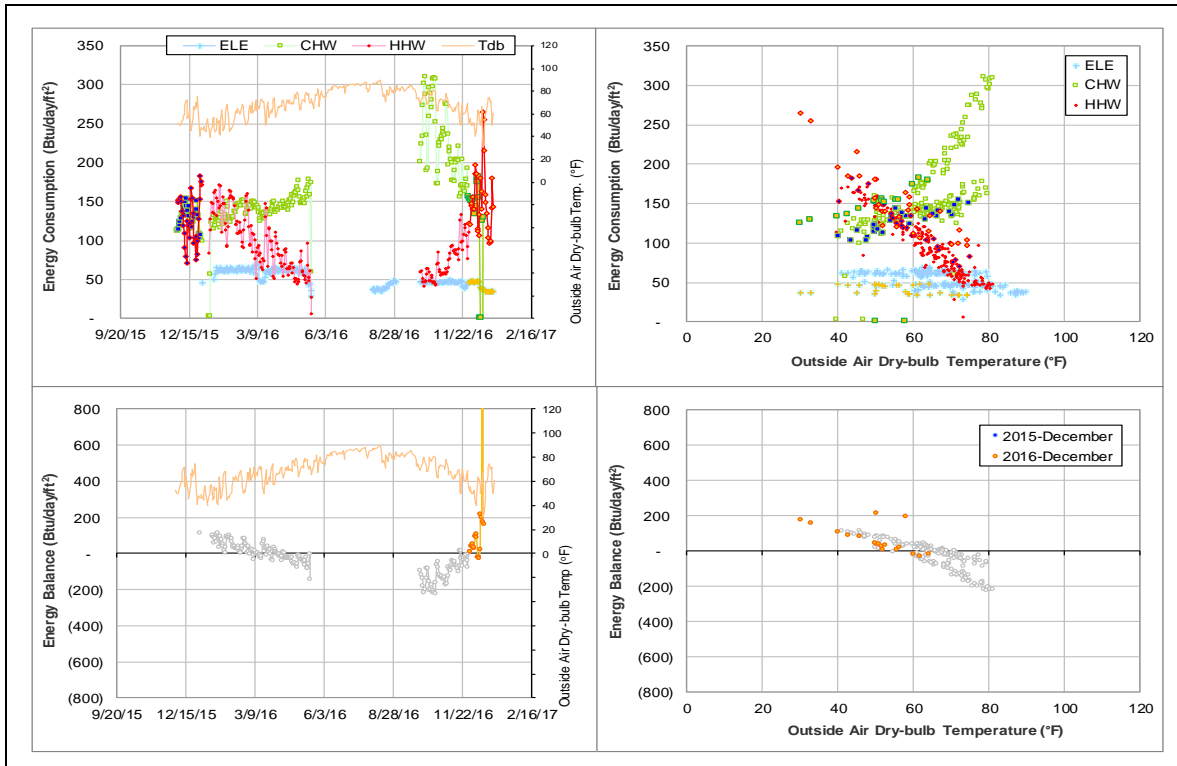
Energy Type	Meter ID	Period	Type	Description
CHW	002218	12/14/2016 – 12/17/2016	Flow Rate	Constant

Quantitative descriptions and comments

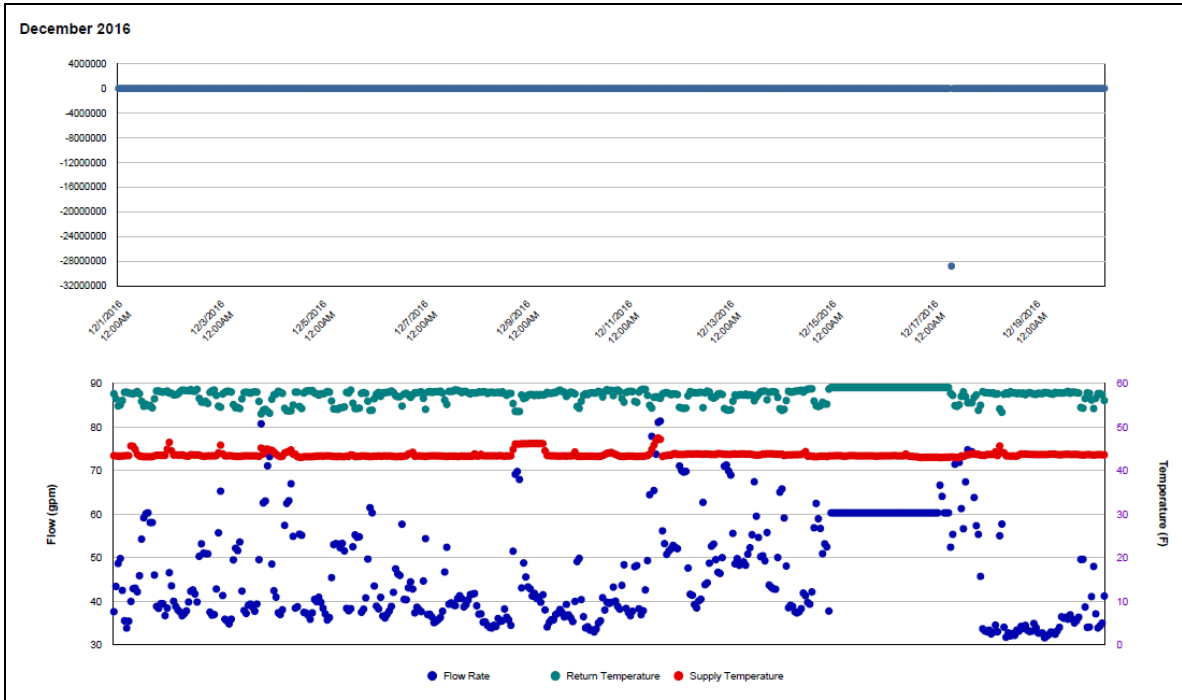
The flow rate readings of CHW 002218 are constant on 12/14 – 12/17/2016, and a negative value appeared on 12/17. The CHW data missing started on 12/20. These days are estimated by a model.

The HHW meter was reset on 12/20/2016 which caused a negative monthly interval value. The use for this day is estimated. The flow rate readings of HHW 002222 are constant on 12/14 – 12/20/2016, but the consumption values do not seem to be affected.

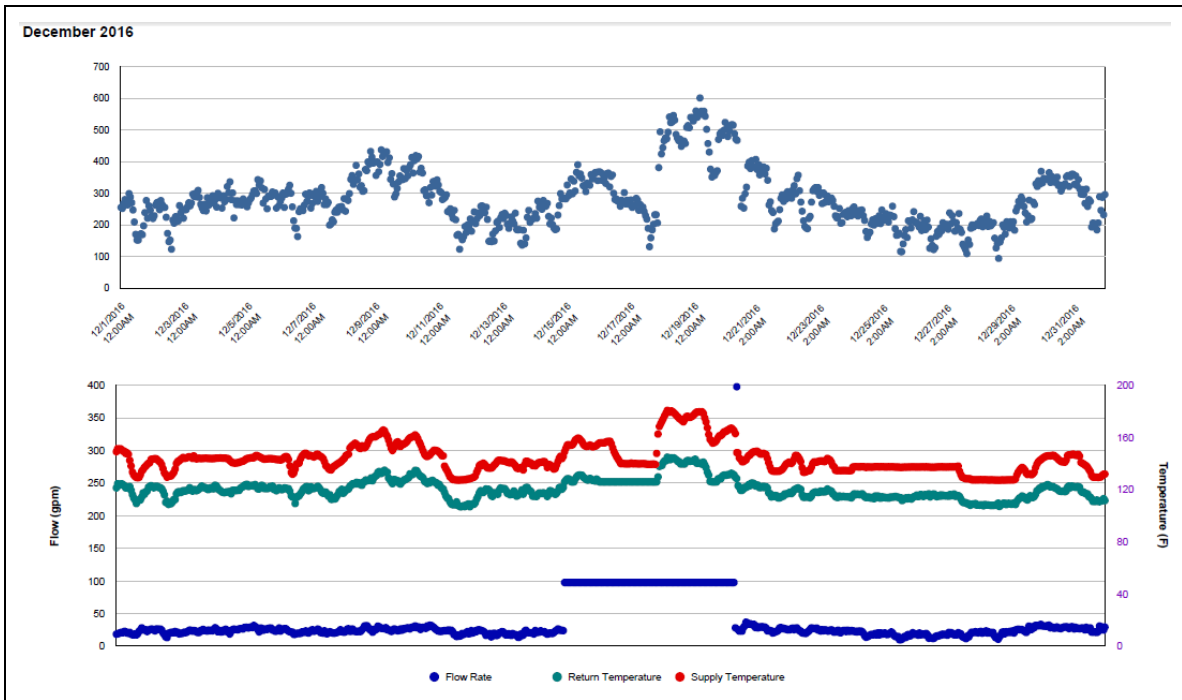
Explanatory Figure: 13 months energy balance plot with original data



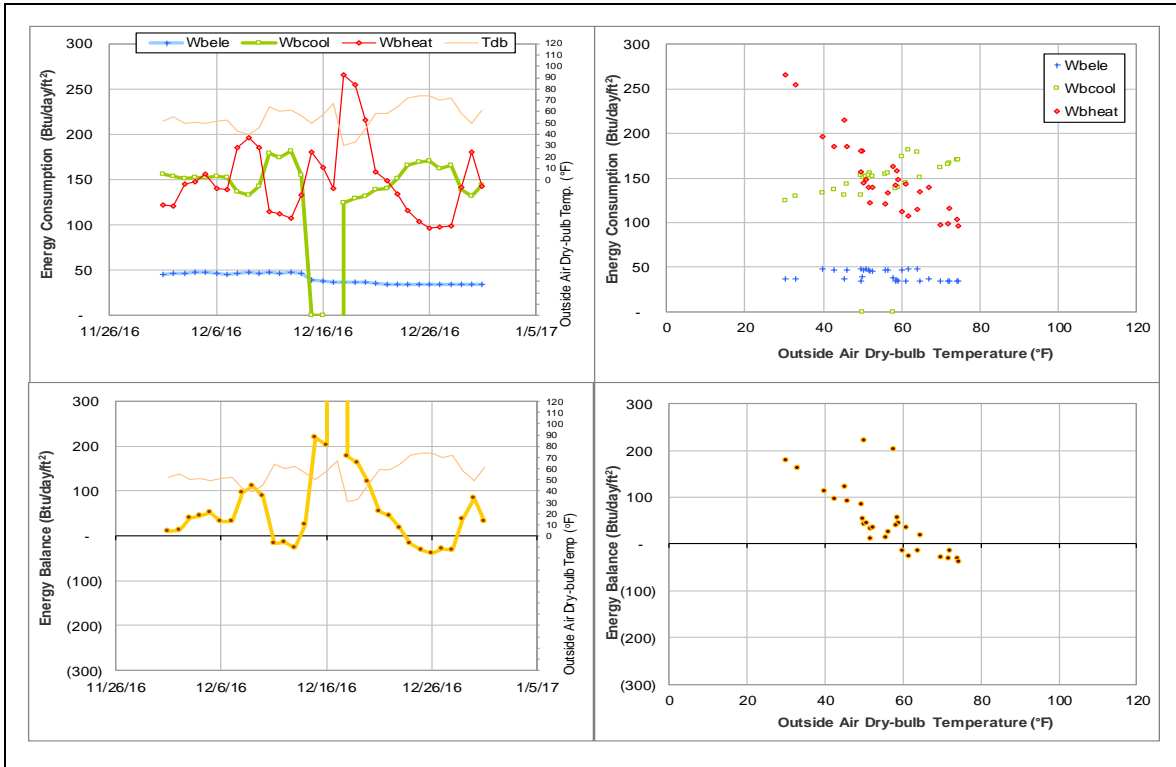
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during December 2016)



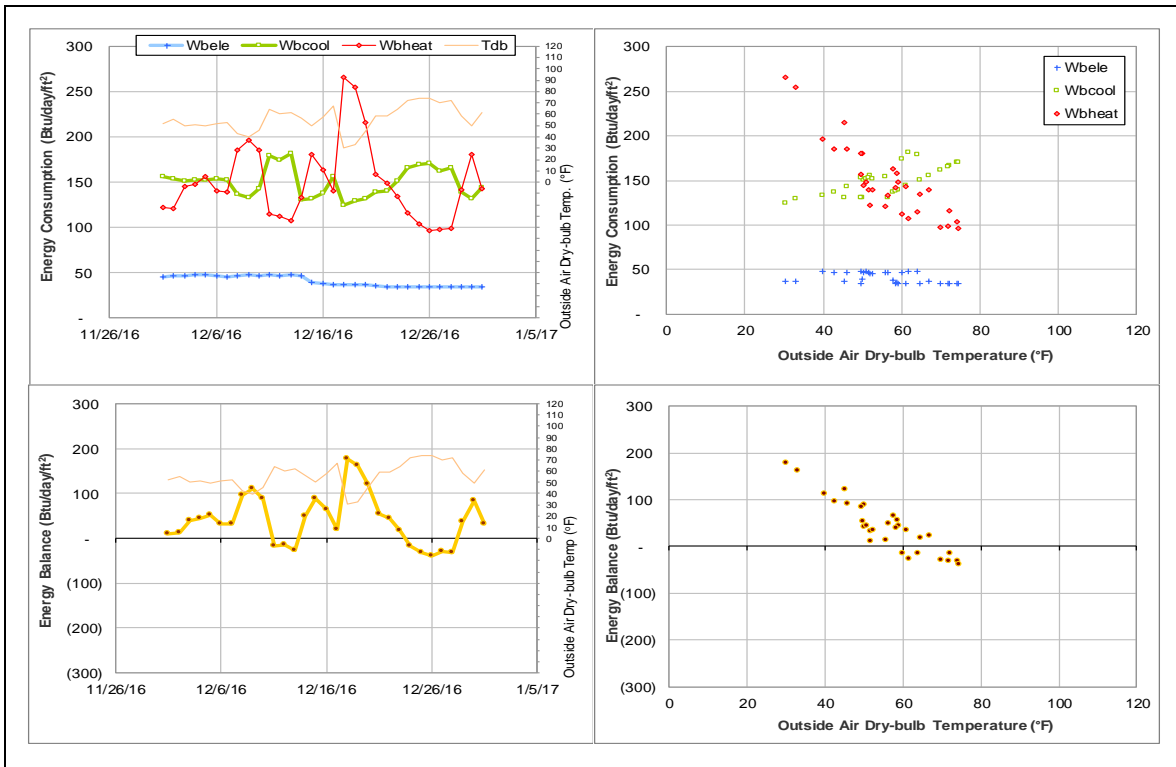
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HW during December 2016)



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



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



Commons Hall (TAMU Bldg #440)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	009237	11	12/1/2016 – 12/11/2016	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.	12/1/2016 – 12/11/2016

Changes in sensor readings related to the detected issues

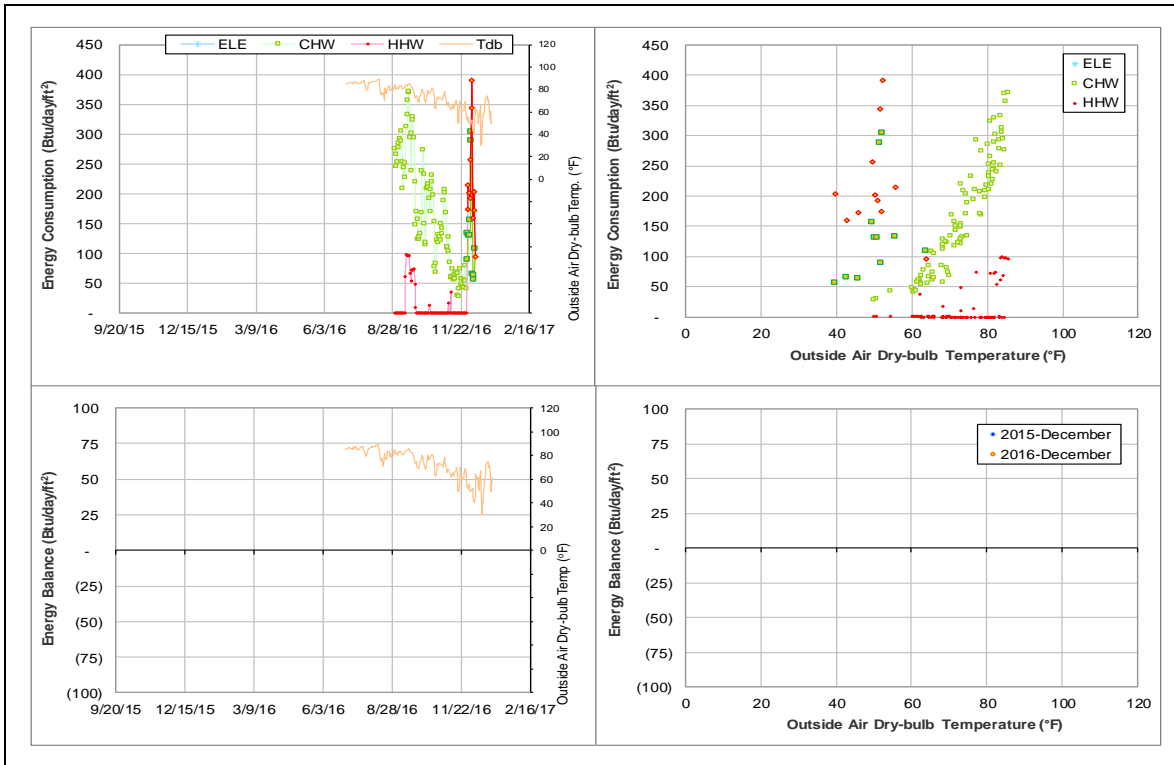
Energy Type	Meter ID	Period	Type	Description
CHW	009237	12/1/2016 – 12/11/2016	Delta-T	High

Quantitative descriptions and comments

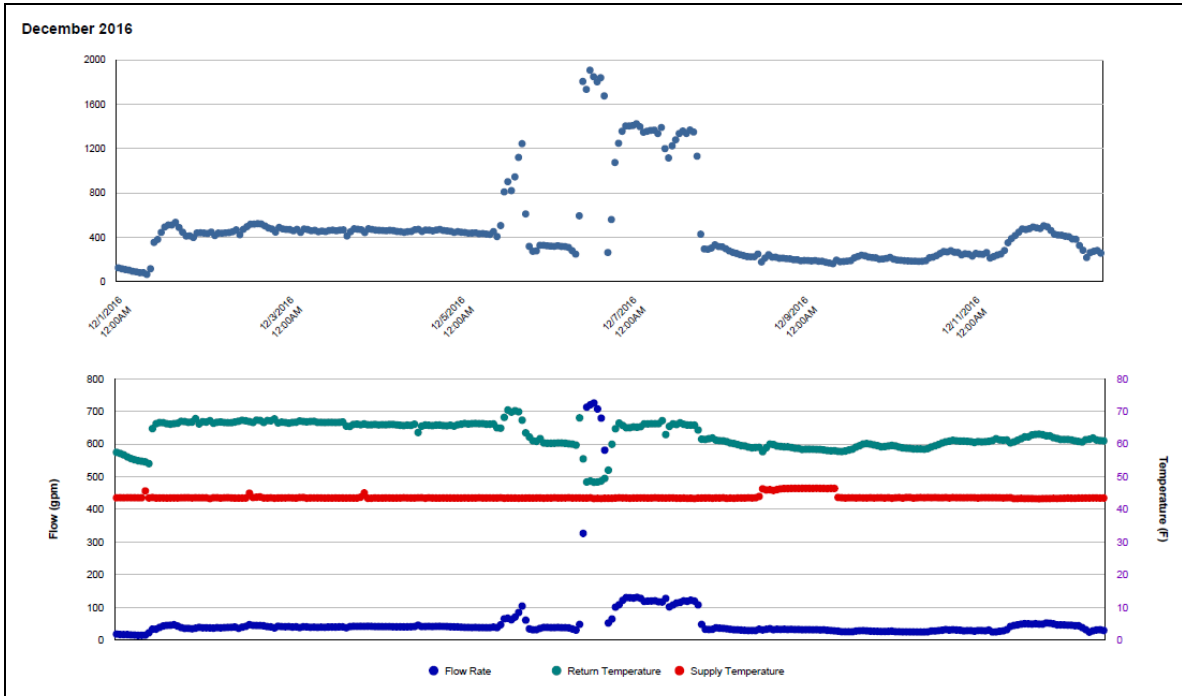
The Delta-T of CHW increased starting 12/1/2016 from a range of 15 – 20°F to relatively stable circa 25°F. The missing started on 12/12/2016. A model is used to estimate the whole month.

HHW is also abnormally high, but a reliable baseline cannot be found to estimate the consumption.

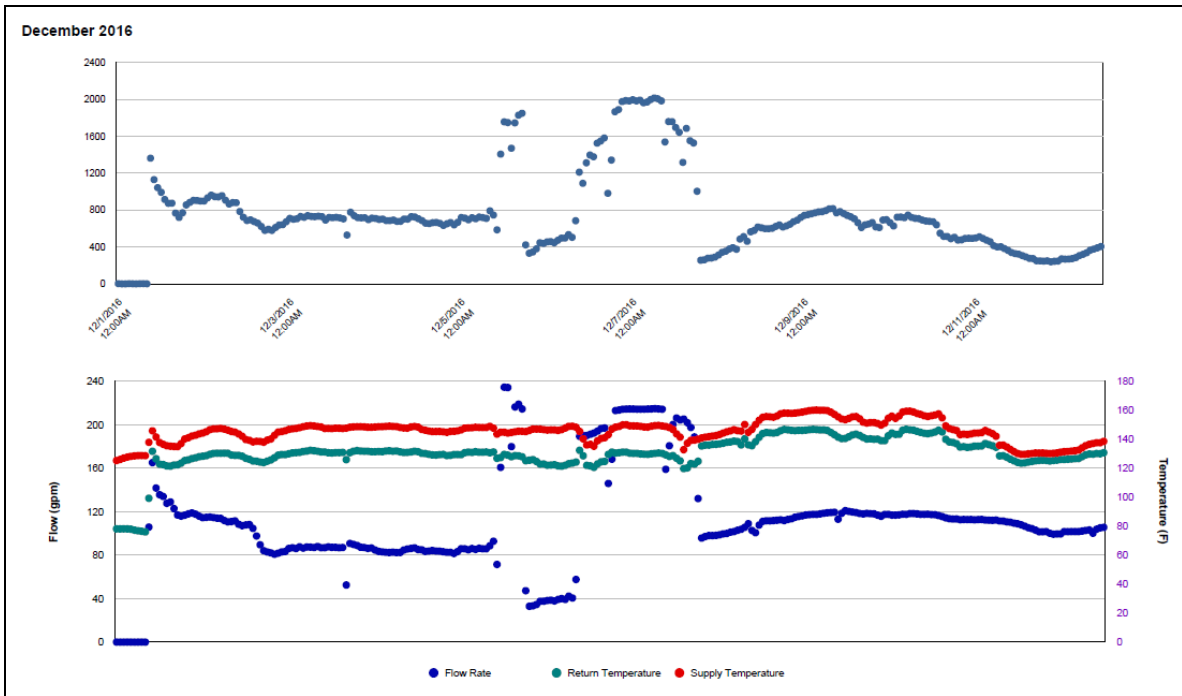
Explanatory Figure: 13 months energy balance plot with original data.



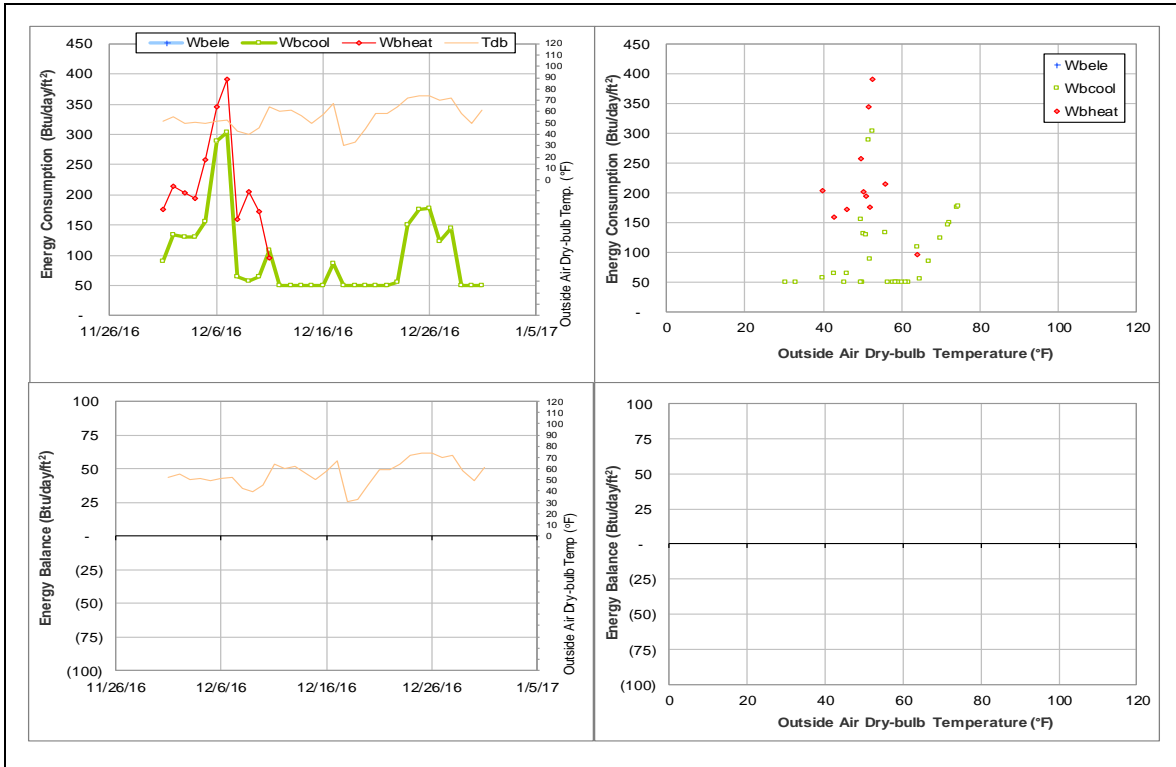
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during December 2016)



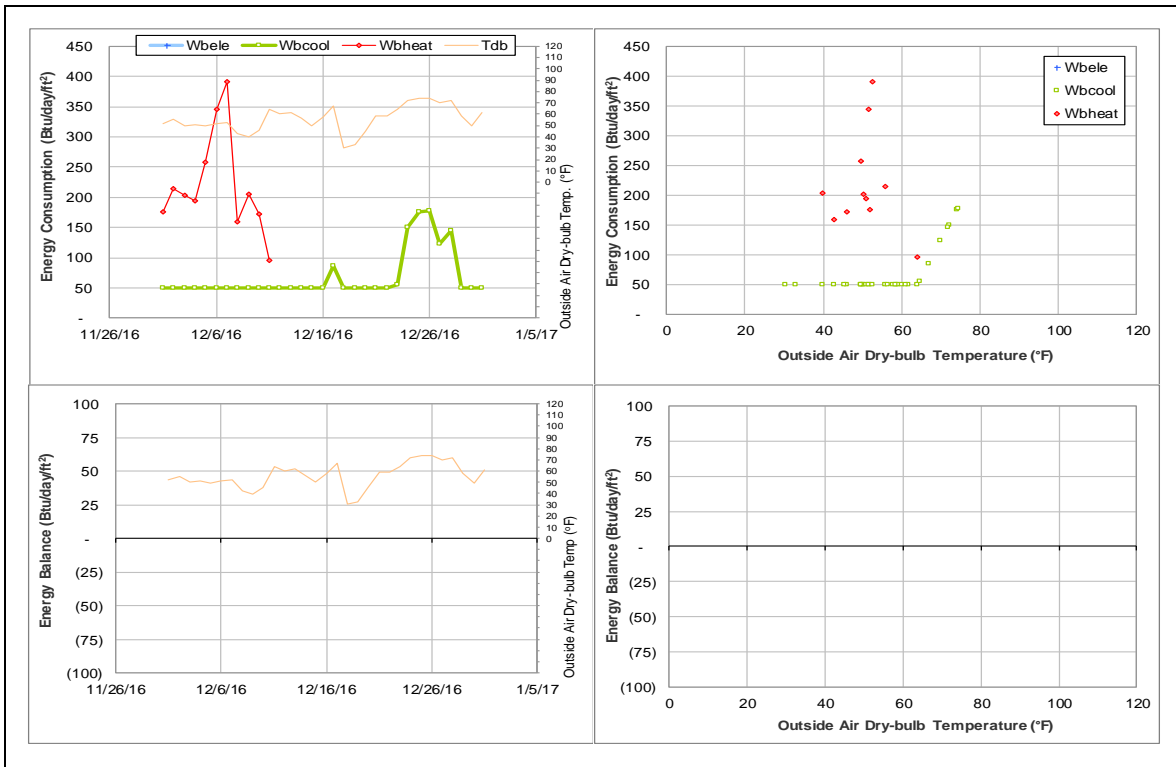
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during December 2016)



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



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



Dunn Residence Hall (TAMU Bldg #442)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	002515	11	12/17/2016 – 12/27/2016	Model

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

Data Type	Description of data behaviors	Period
HHW	The consumption level has increased suddenly.	12/17/2016 – 12/27/2016

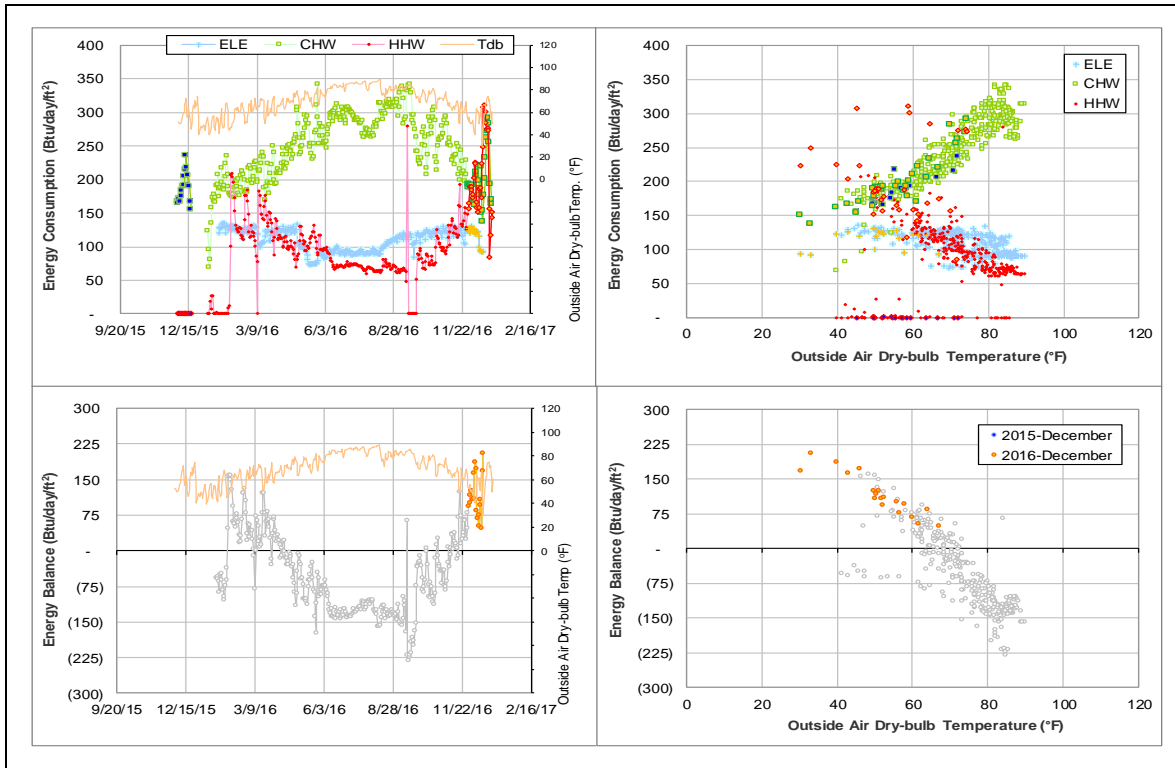
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	002515	12/17/2016 – 12/27/2016	Delta-T	High

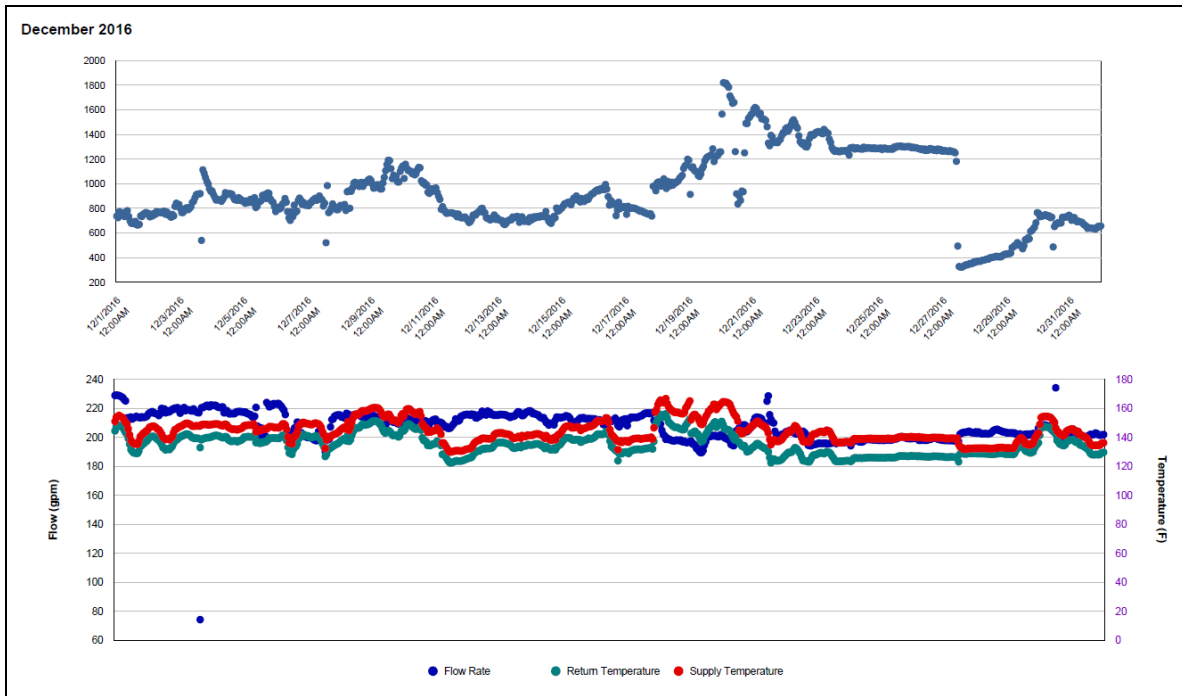
Quantitative descriptions and comments

The Delta-T of HHW increased during 12/17/2016 – 12/27/2016, resulting in a consumption increase from around 175 Btu/day/ft² to higher than 250 Btu/day/ft². These days are estimated by a model.

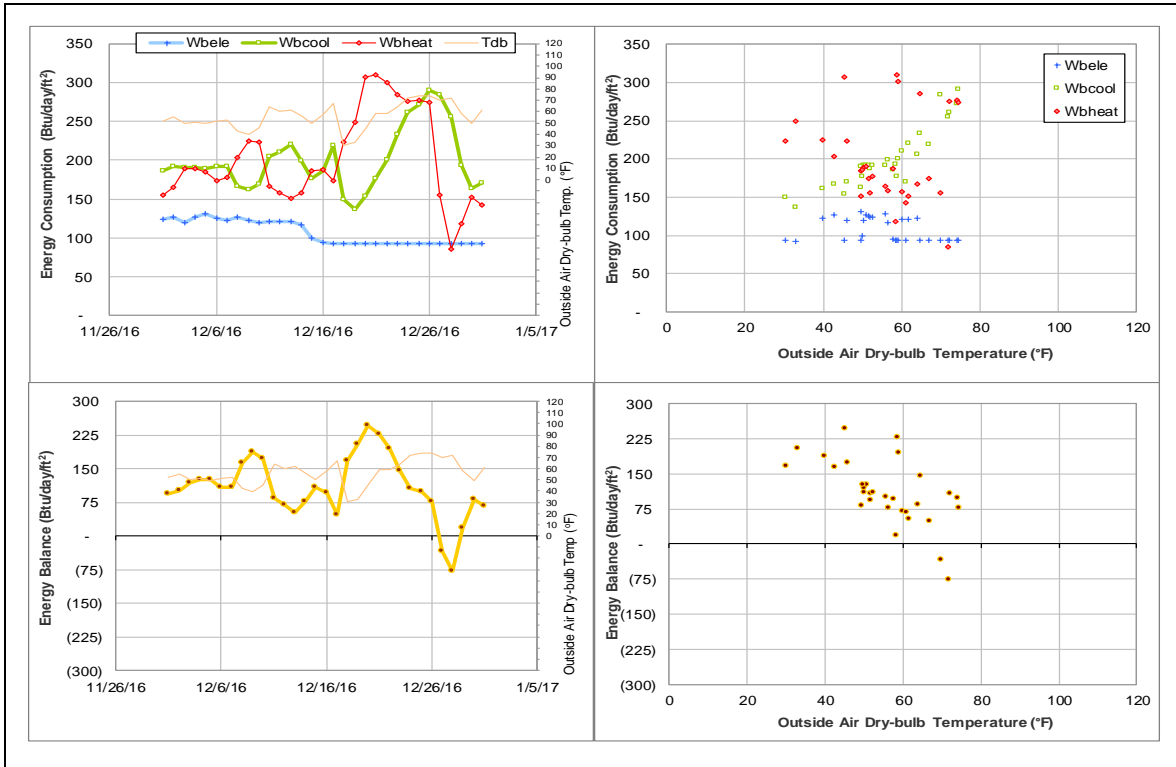
Explanatory Figure: 13 months energy balance plot with original data.



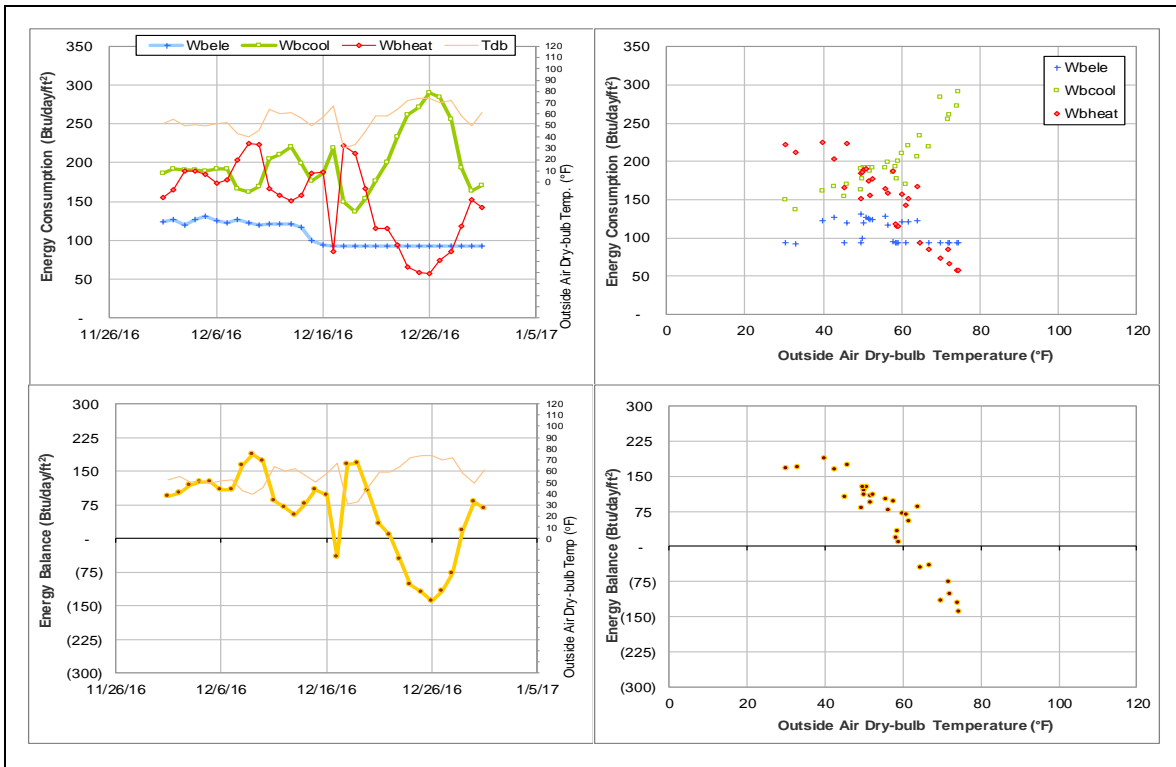
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during December 2016)



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



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



Aston Residence Hall (TAMU Bldg #447)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002474	31	12/1/2016 – 12/31/2016	Model
HHW	002470	11	12/17/2016 – 12/27/2016	Model

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

Data Type	Description of data behaviors	Period
CHW	The metered values appear to be faulty.	12/1/2016 – Ongoing
HHW	The consumption level has increased suddenly.	12/17/2016 – 12/27/2016

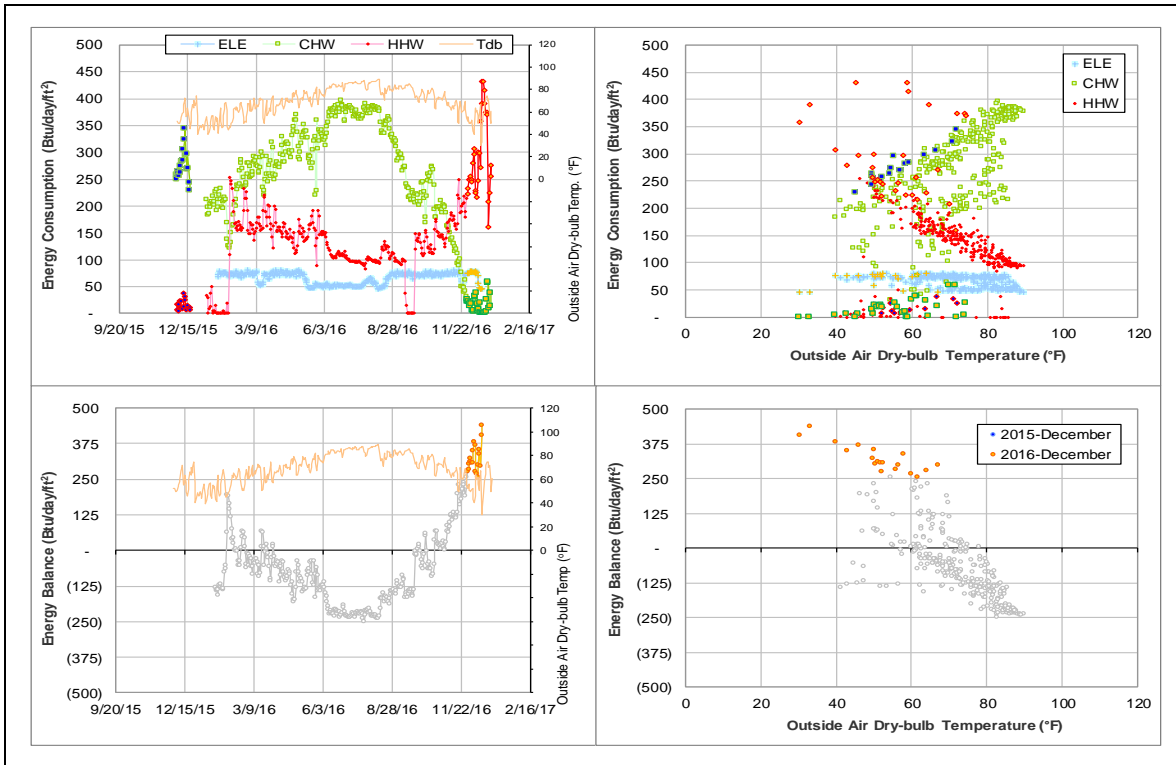
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002474	8/18/2016 – Ongoing	Delta-T	Low and occasionally negative
HHW	002515	12/17/2016 – 12/27/2016	Delta-T	High

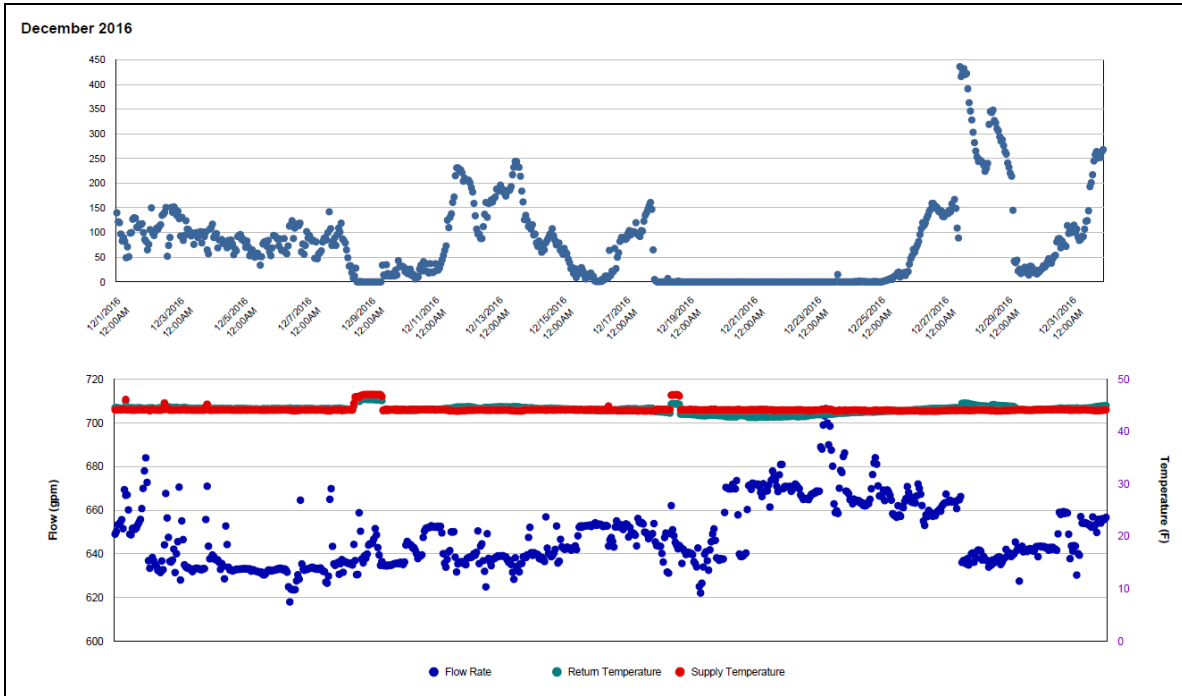
Quantitative descriptions and comments

Delta-T of CHW decreased significantly and consumption dropped to a very low level since 11/18/2016, and negative values of Delta-T appeared in this month. The whole month is estimated by a model. The Delta-T of HHW increased during 12/17/2016 – 12/27/2016, resulting in a consumption increase from around 175 Btu/day/ft² to higher than 350 Btu/day/ft². These days are estimated by a model.

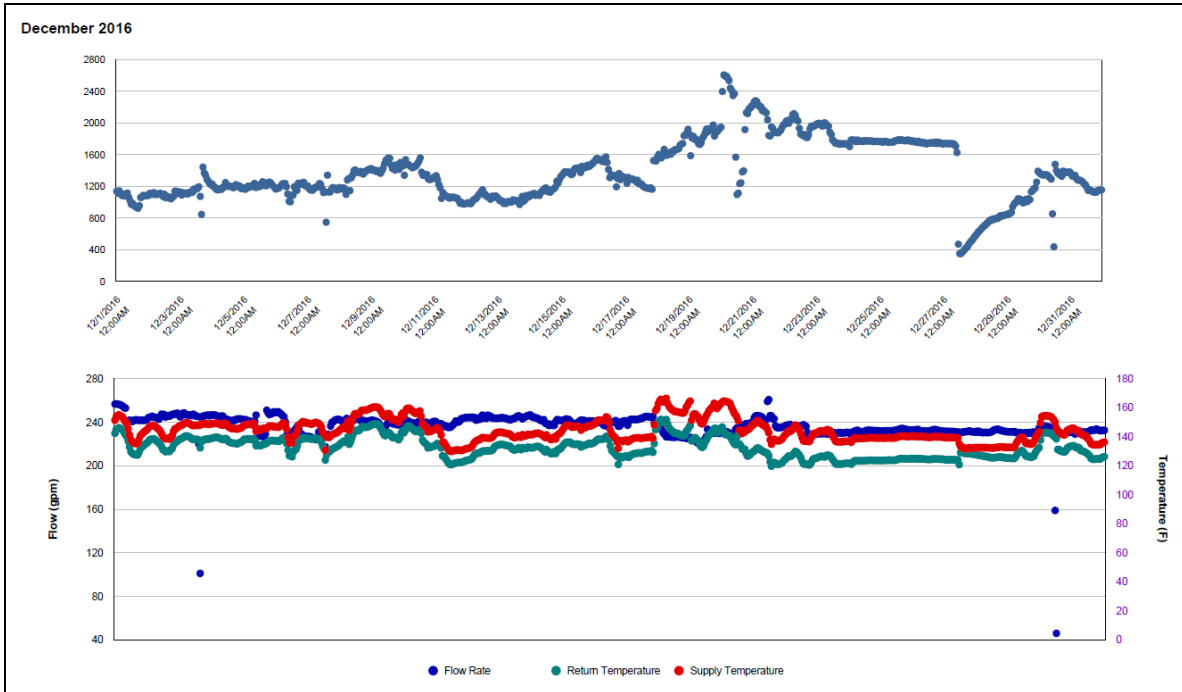
Explanatory Figure: 13 months energy balance plot with original data.



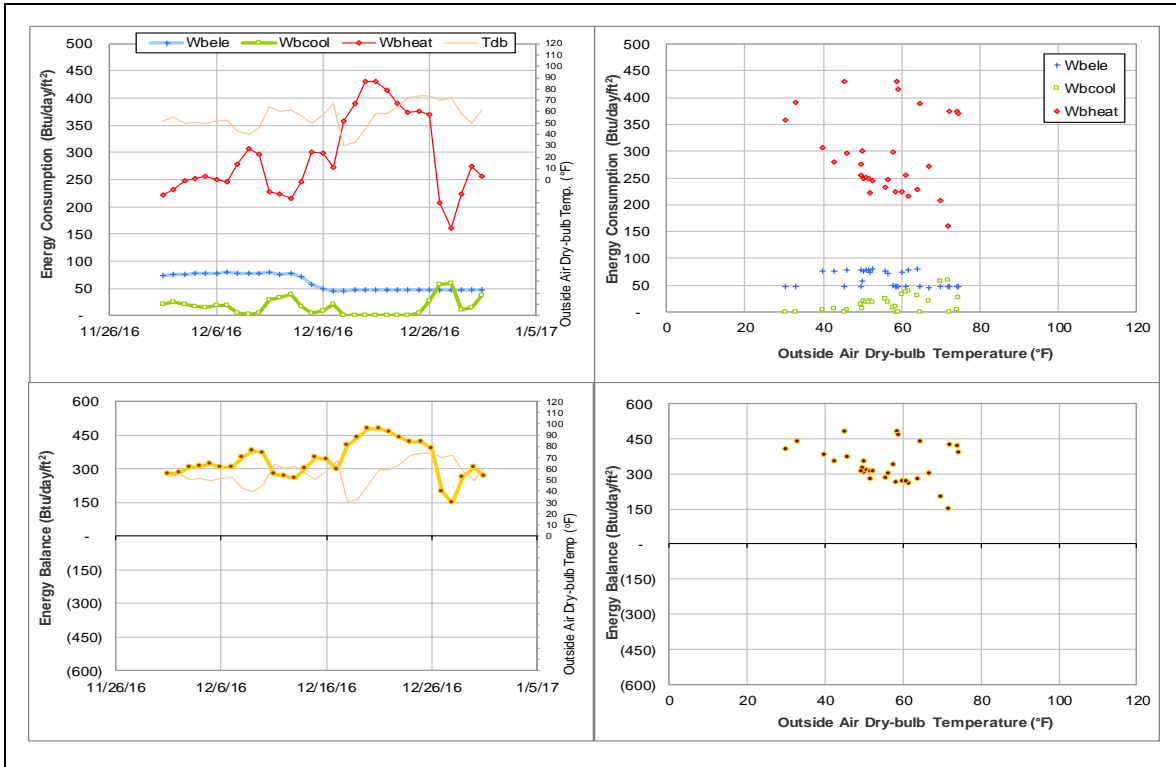
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during December 2016)



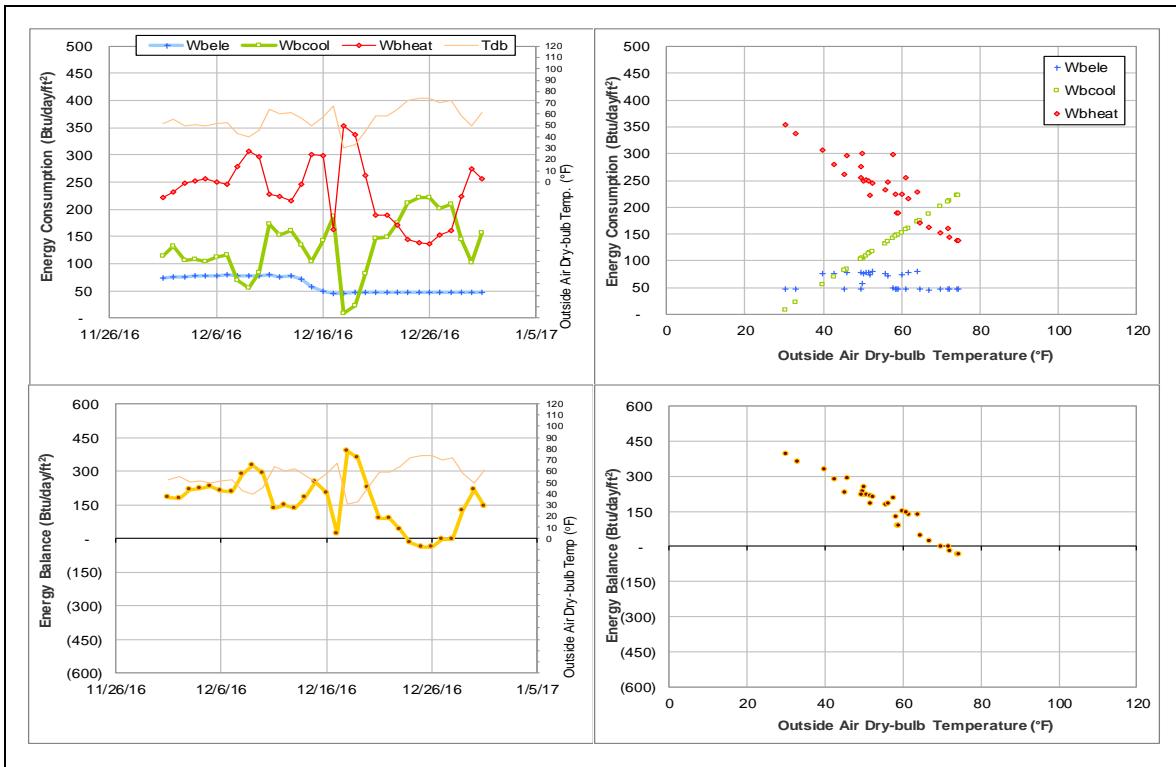
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during December 2016)



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



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



Oceanography & Meteorology Building (TAMU Bldg #443)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	006388	31	12/1/2016 – 12/31/2016	Model

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

Data Type	Description of data behaviors	Period
CHW	The metered values appear to be faulty.	10/1/2016 – Ongoing

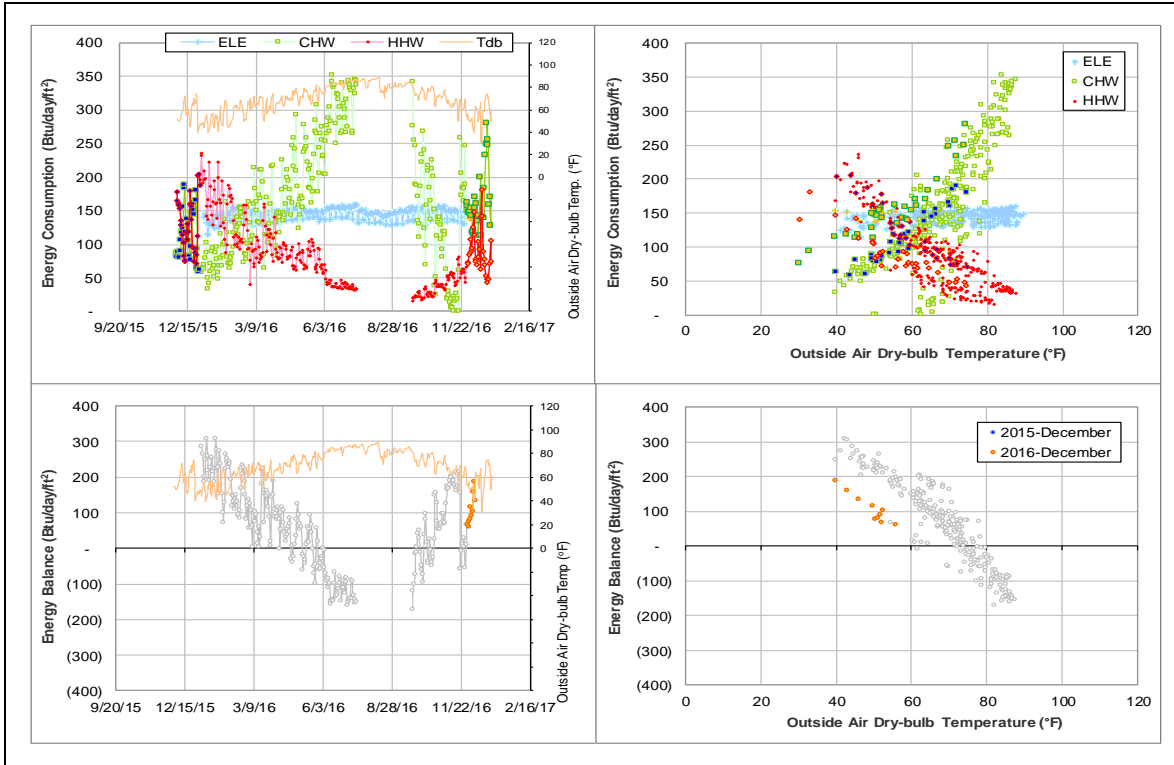
Changes in sensor readings related to the detected issues

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		
		11/23/2016 – Ongoing	Delta-T	High

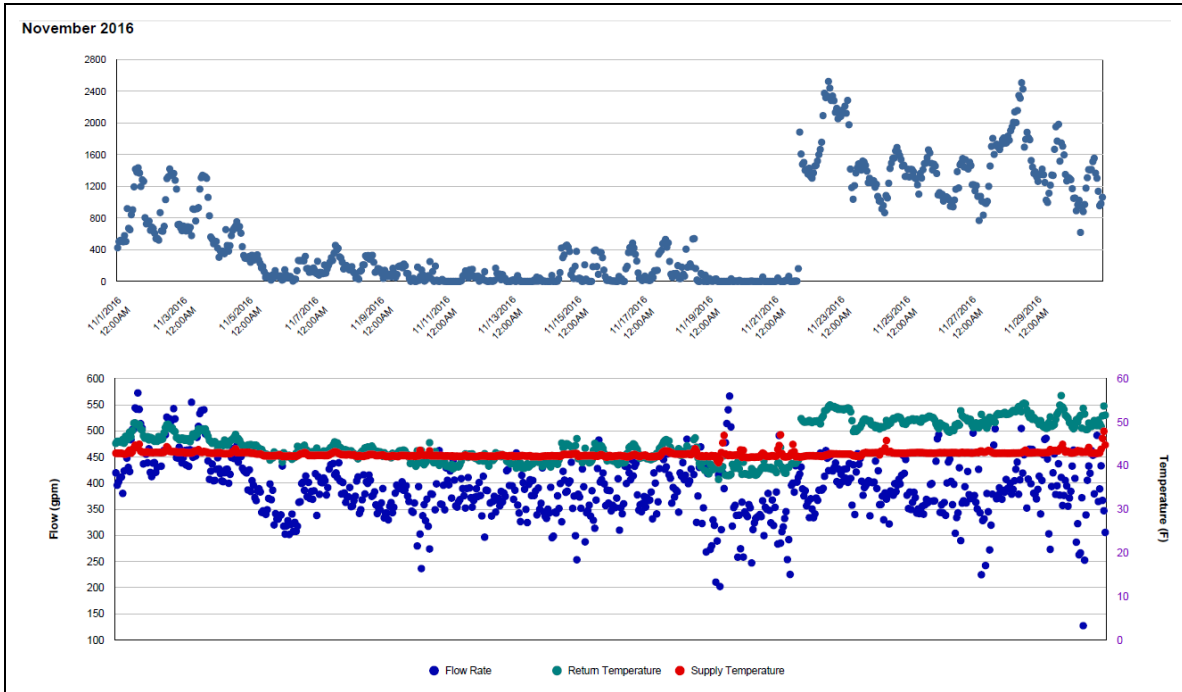
Quantitative descriptions and comments

CHW temperature readings appear to contain negative values during 10/21 – 10/25/2016 and 11/5 – 11/22/2016. This renders the whole set of data questionable. 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.

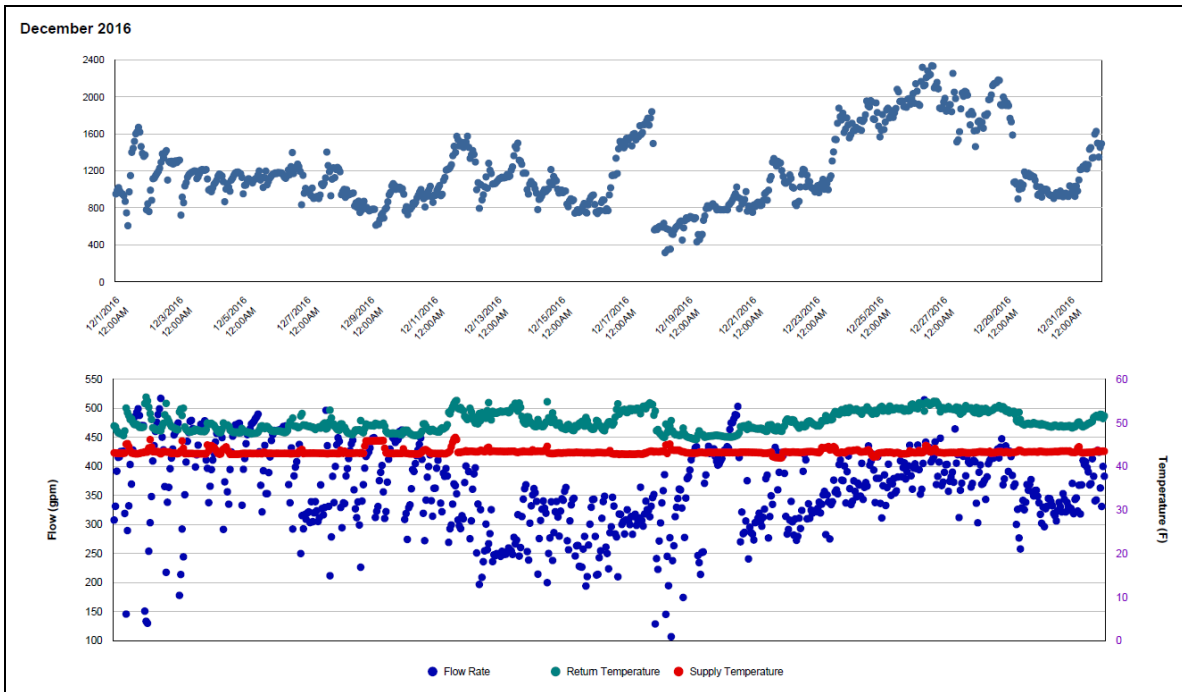
Explanatory Figure: 13 months energy balance plot with original data.



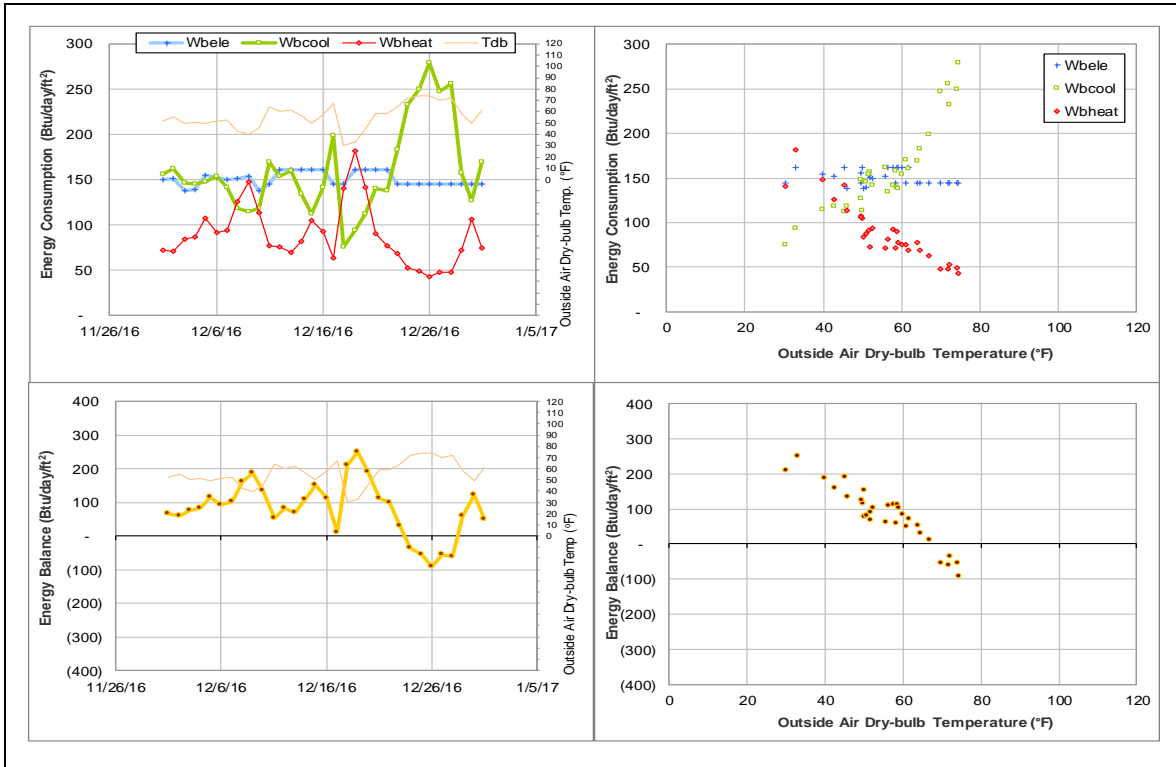
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during November 2016)



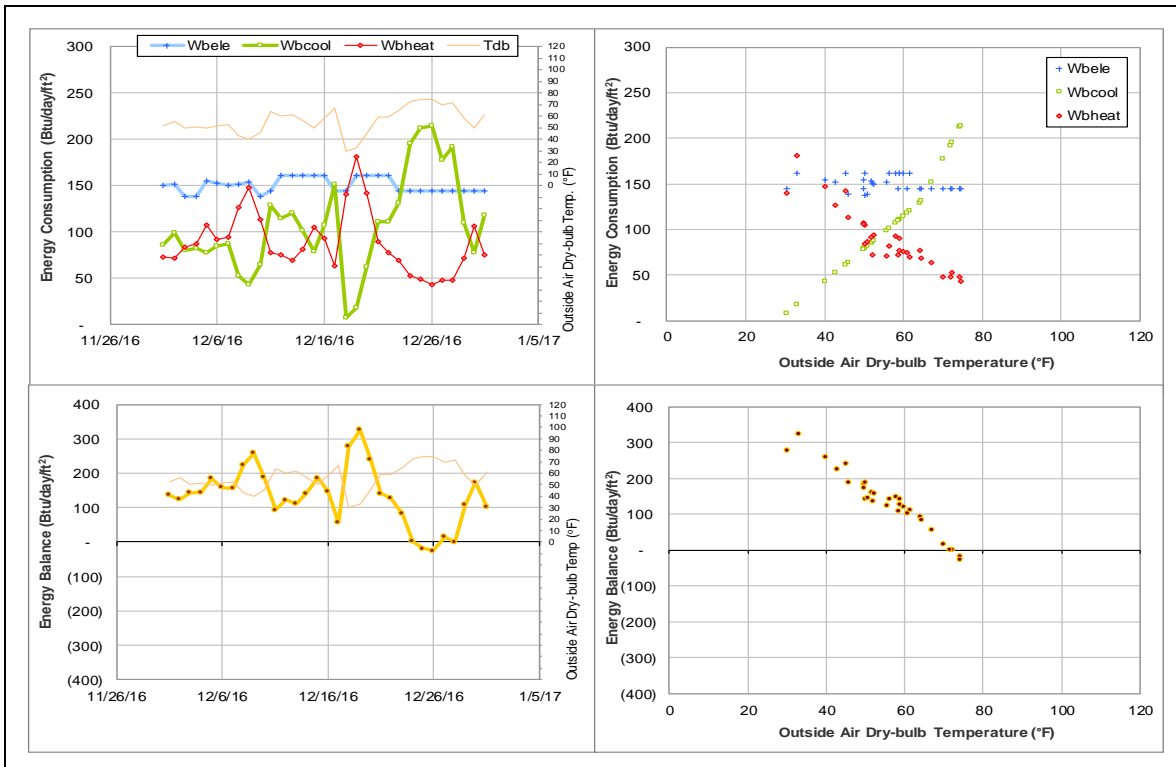
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during December 2016)



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



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



Teague Research Center (TAMU Bldg #445)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	006415	24	12/8/2016 – 12/31/2016	Model

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

Data Type	Description of data behaviors	Period
HHW	The consumption level has increased suddenly.	12/8/2016 – 12/31/2016

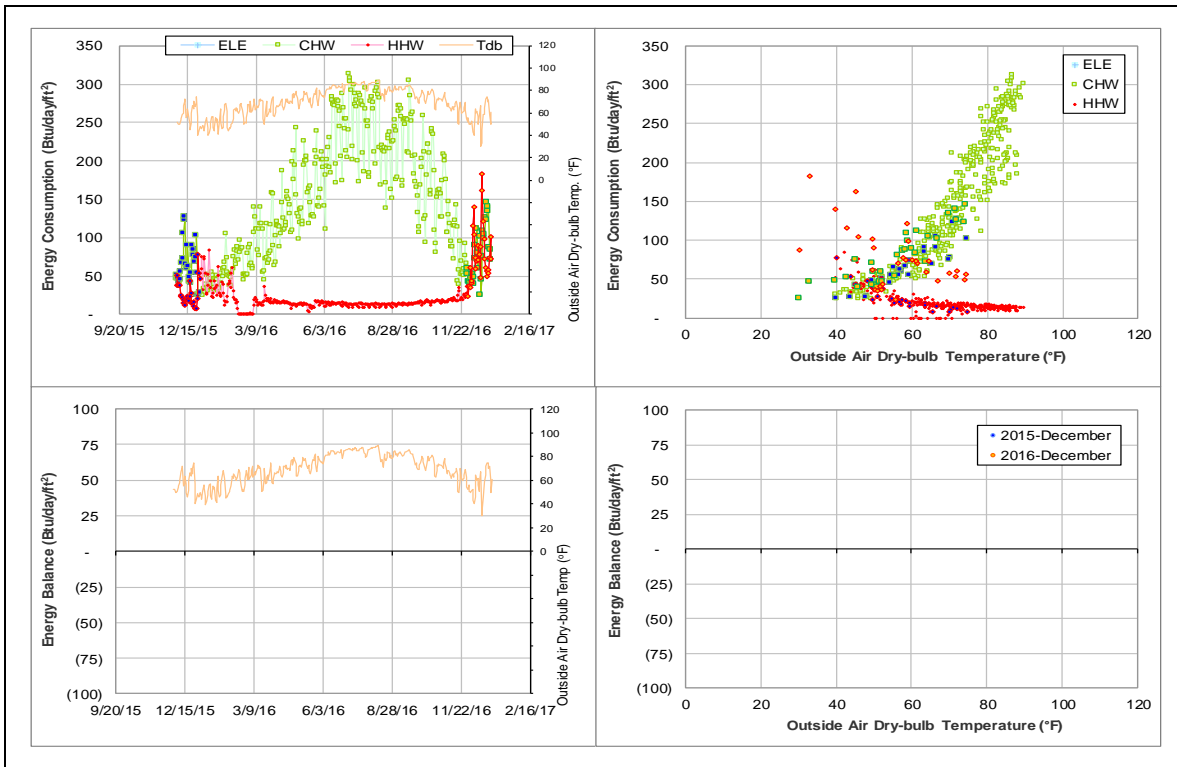
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	006415	12/8/2016 – 12/31/2016	Delta-T and Flow Rate	High

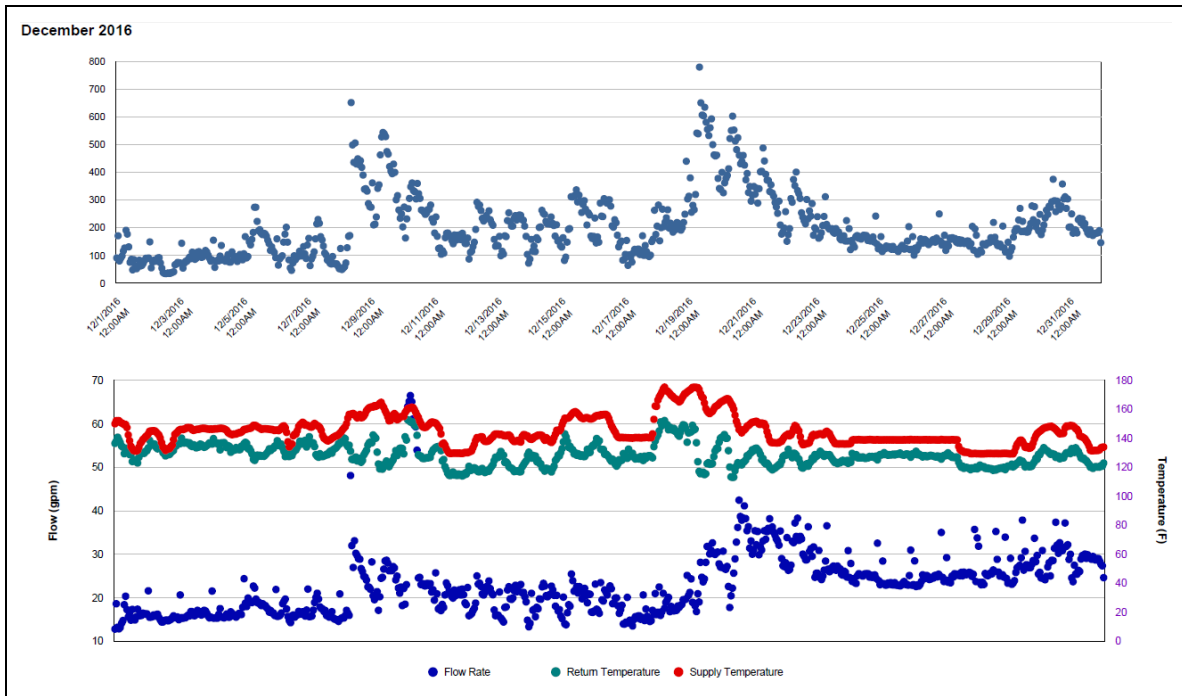
Quantitative descriptions and comments

HHW had an increase in both flow rate and Delta-T causing an increase of consumption and brought scatter to the data. The days of high consumption are estimated by a model.

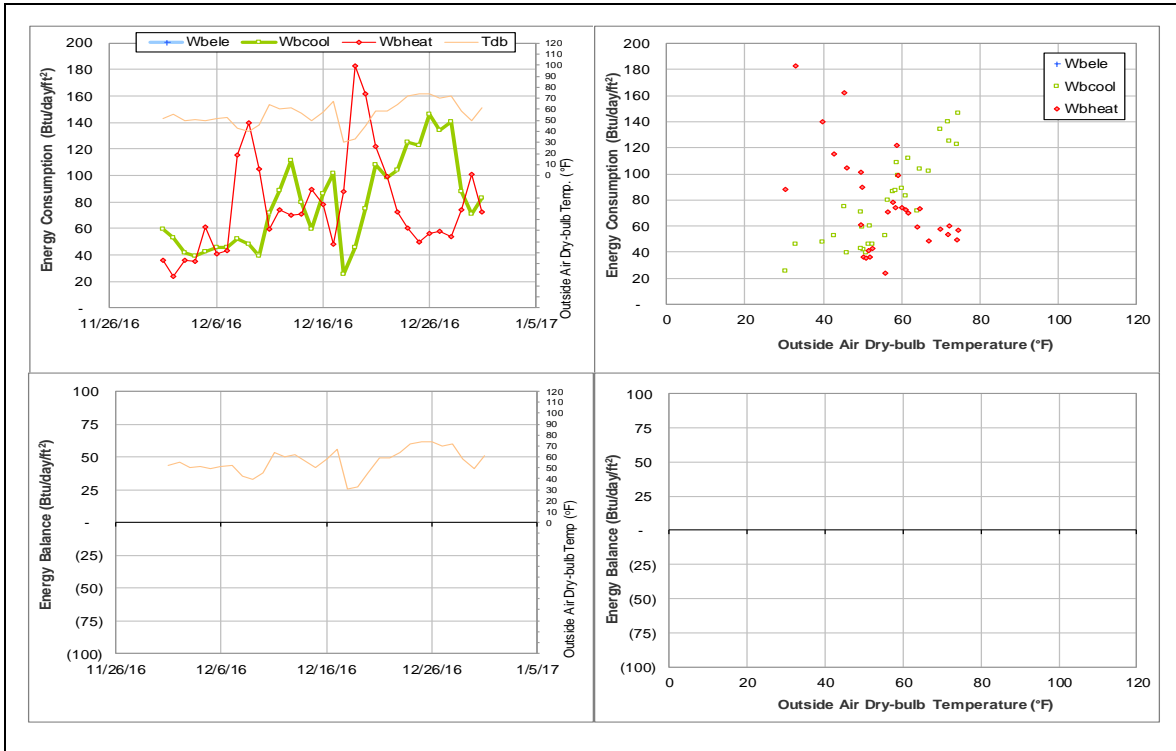
Explanatory Figure: 13 months energy balance plot with original data.



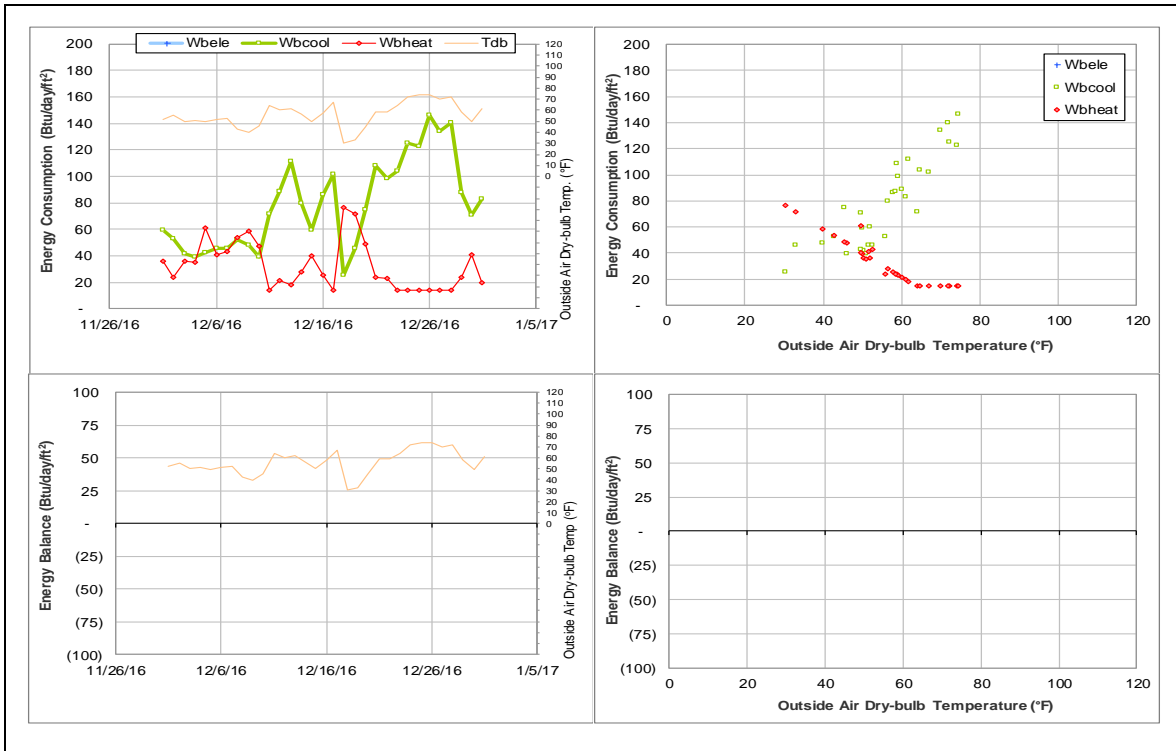
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during December 2016)



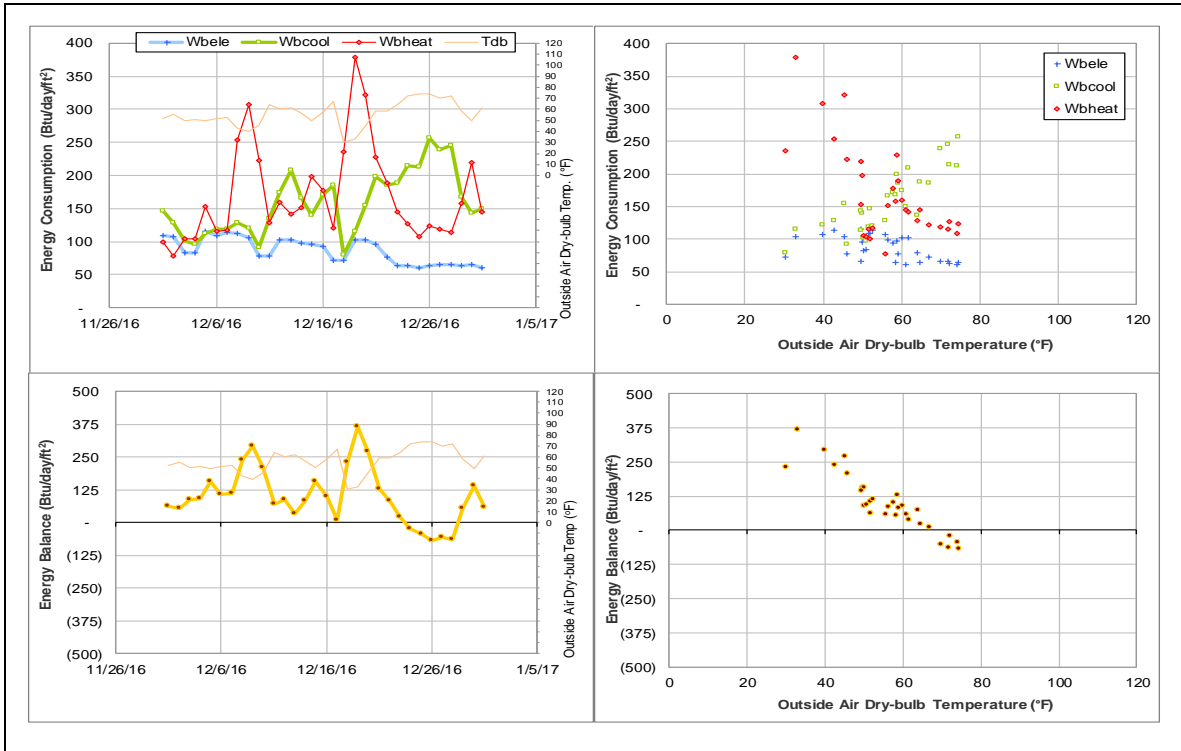
Energy balance plot using the original data for the month of analysis for #445 Teague Research Center



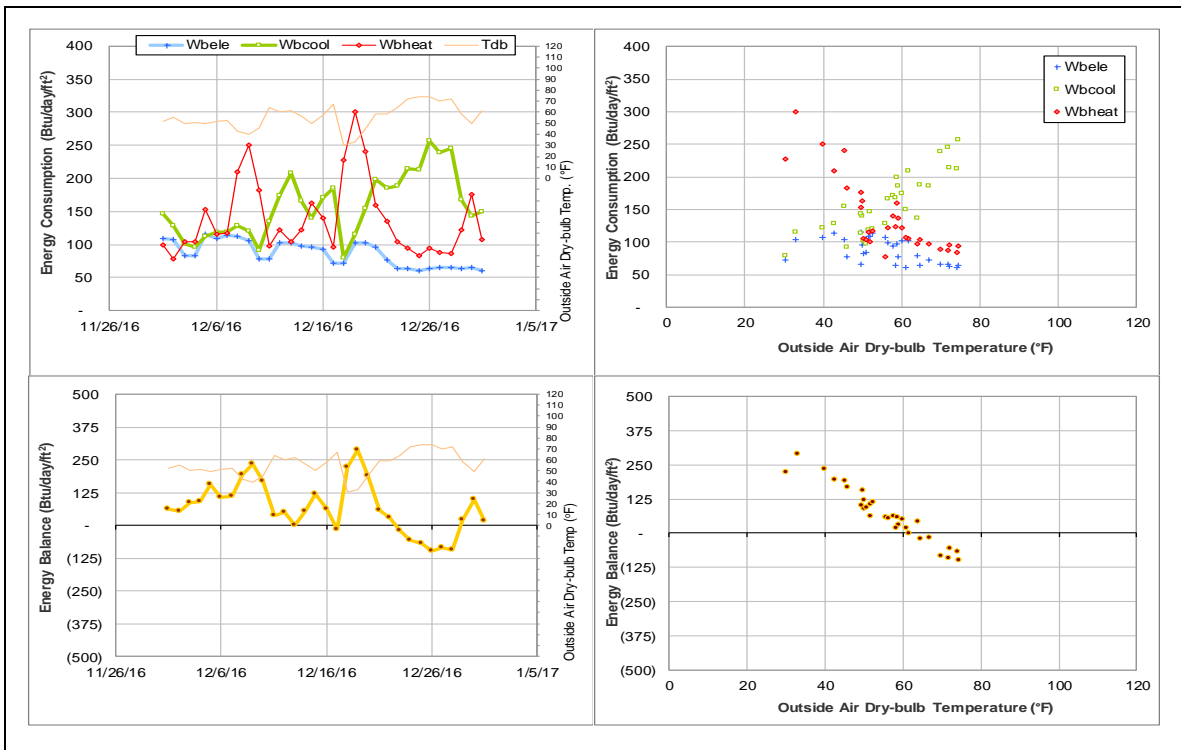
Energy balance plot using the estimated data for the month of analysis for Teague Research Center



Energy balance plot using the original data for the month of analysis for total of 0445-0517



Energy balance plot using the estimated data for the month of analysis for total of 0445-0517



Rudder Tower (TAMU Bldg #446)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	002455	19	12/1/2016 – 12/19/2016	Model
HHW	002459	19	12/1/2016 – 12/19/2016	Model

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

Data Type	Description of data behaviors	Period
CHW	The consumption level is higher than the level during the past year.	11/14/2016 – 12/19/2016
HHW	The consumption level is higher than the level during the past year.	11/19/2016 – 12/19/2016

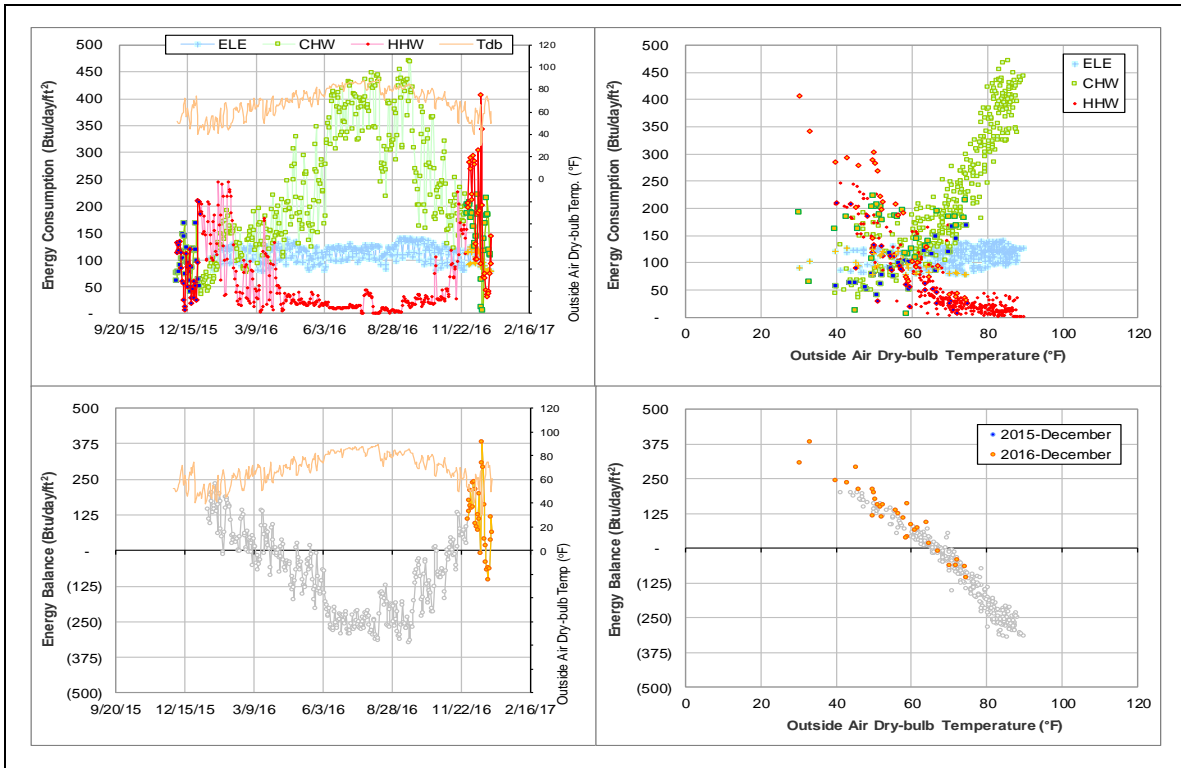
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	002455	11/14/2016 – 11/19/2016	Flow Rate	High
		11/19/2016 – 12/19/2016	Delta-T	High
HHW	002459	11/19/2016 – 12/19/2016	Return temp	High

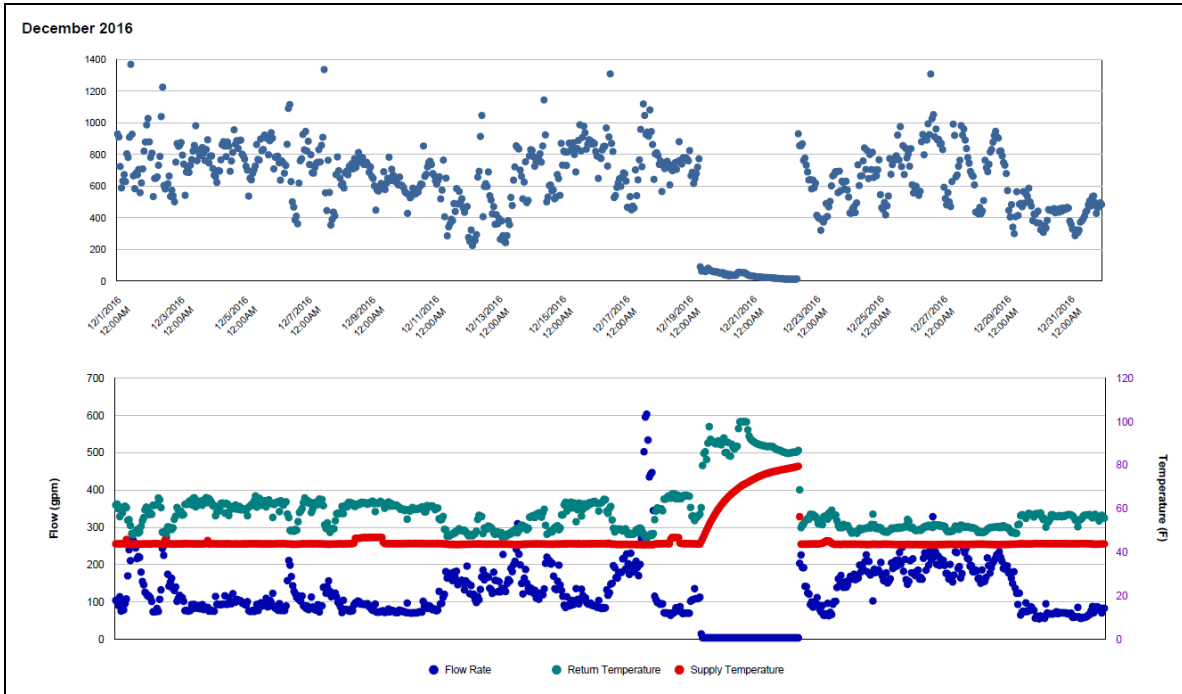
Quantitative descriptions and comments

Both CHW and HHW increased. CHW first had an increase in flow rate in day time on 11/14 – 11/19/2016 from 300 gpm to 500 – 800 gpm (daily peak flow), then had an increase in return temperature since 11/19 from about 50°F to about 58°F. This should be the reason that the CHW consumption did not decrease as temperature decreased. HHW flow increased from around 70 gpm at the beginning of 11/2016 to near 150 gpm during 11/19 – 12/19/2016. These high consumption periods are estimated by models. CHW was closed during 12/19 – 12/21/2016. This does not seem to be a faulty and is not estimated.

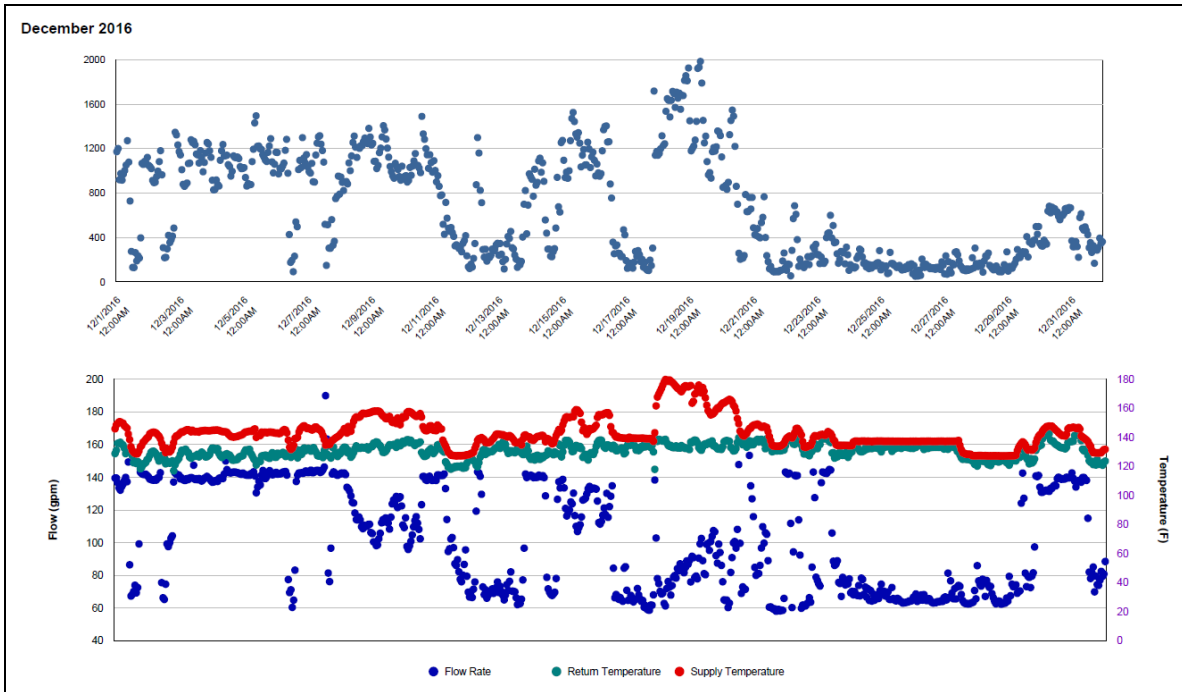
Explanatory Figure: 13 months energy balance plot with original data.



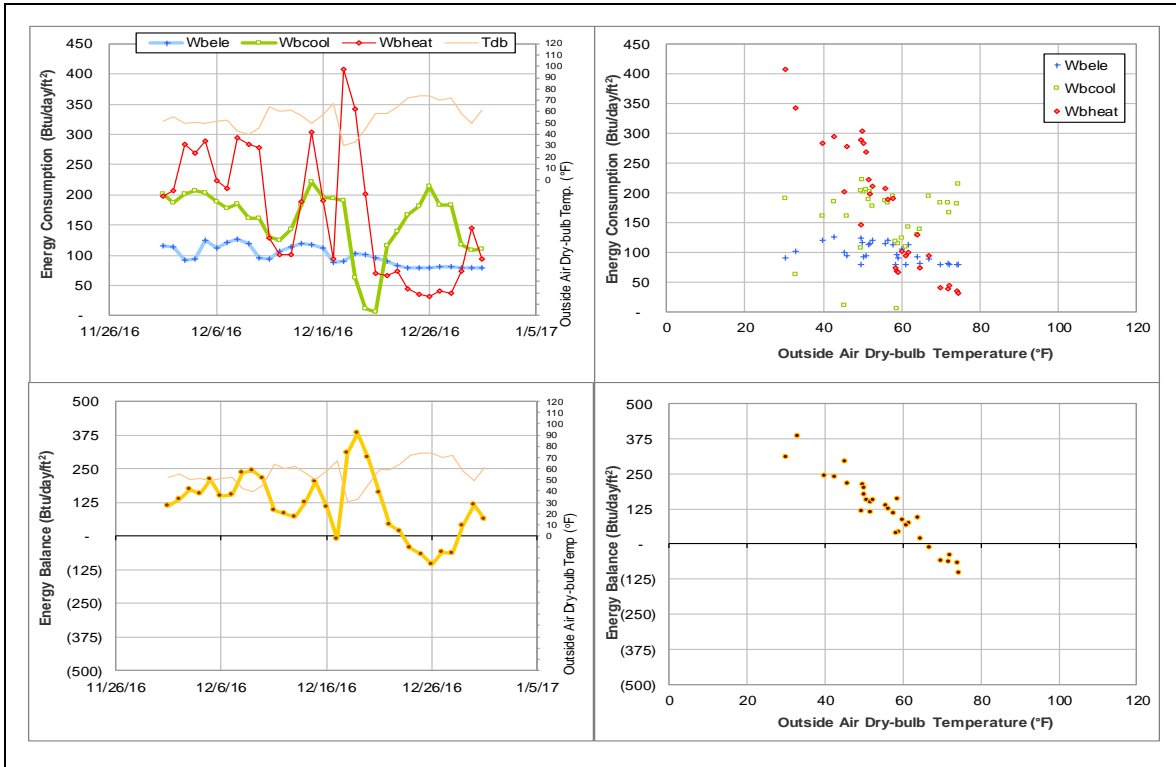
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during December 2016)



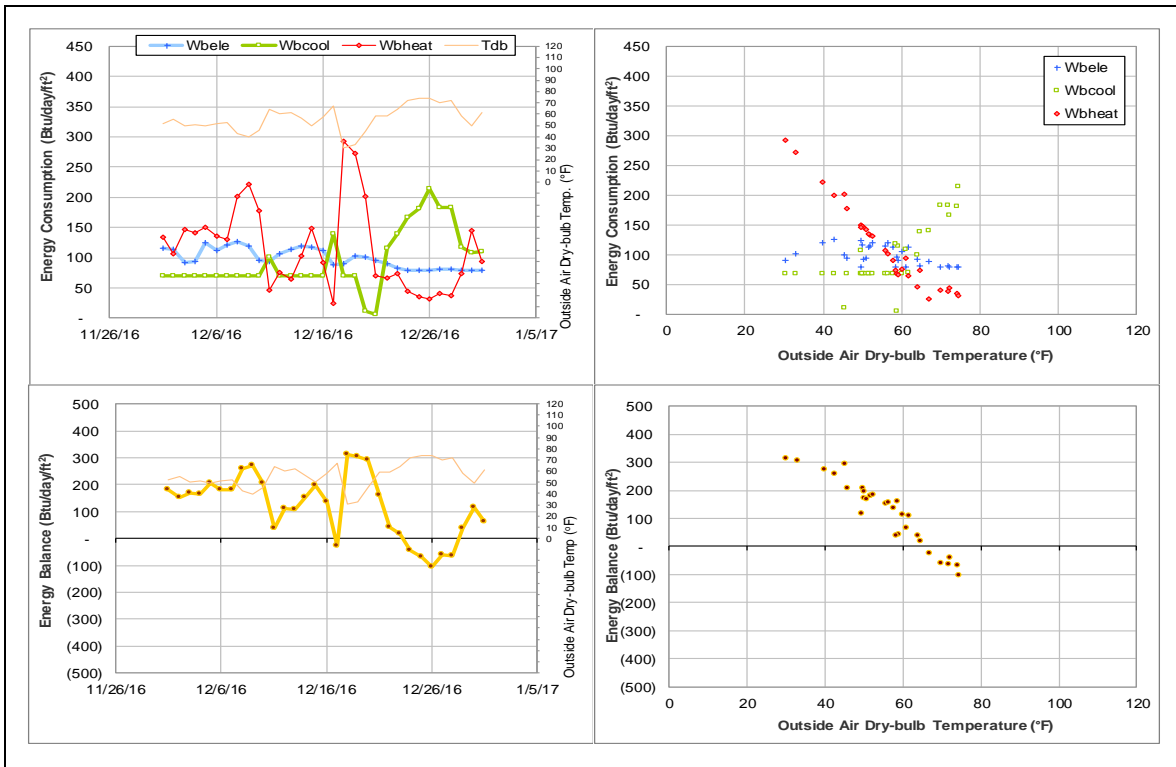
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during December 2016)



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



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



Academic Building (TAMU Bldg #462)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	005905	3	12/25/2016 – 12/27/2016	Average
HHW	005909	3	12/25/2016 – 12/27/2016	Model

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

Data Type	Description of data behaviors	Period
CHW	The metered values appear to be faulty.	12/25/2016 – 12/27/2016
HHW	The metered values appear to be faulty.	12/25/2016 – 12/27/2016

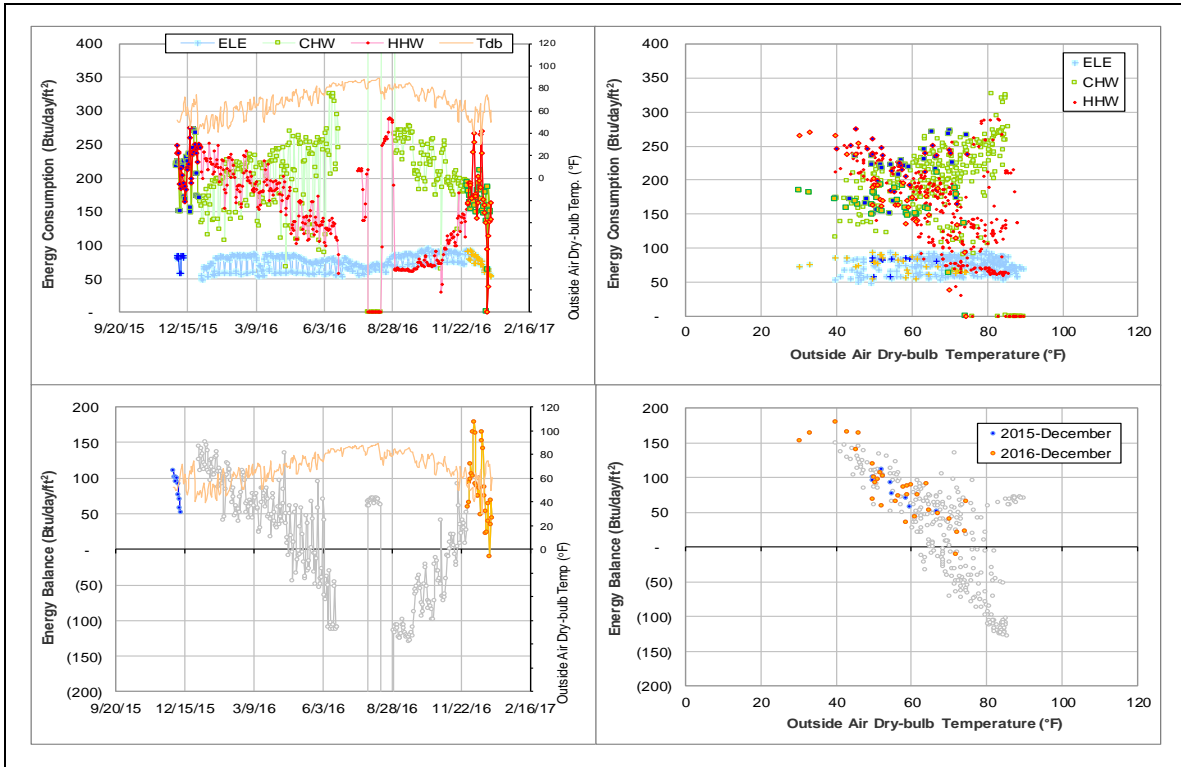
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	005905	12/25/2016 – 12/27/2016	Flow rate, Supply Temp, Return Temp	Zero
HHW	005909	12/25/2016 – 12/27/2016	Flow rate, Supply Temp, Return Temp	Zero

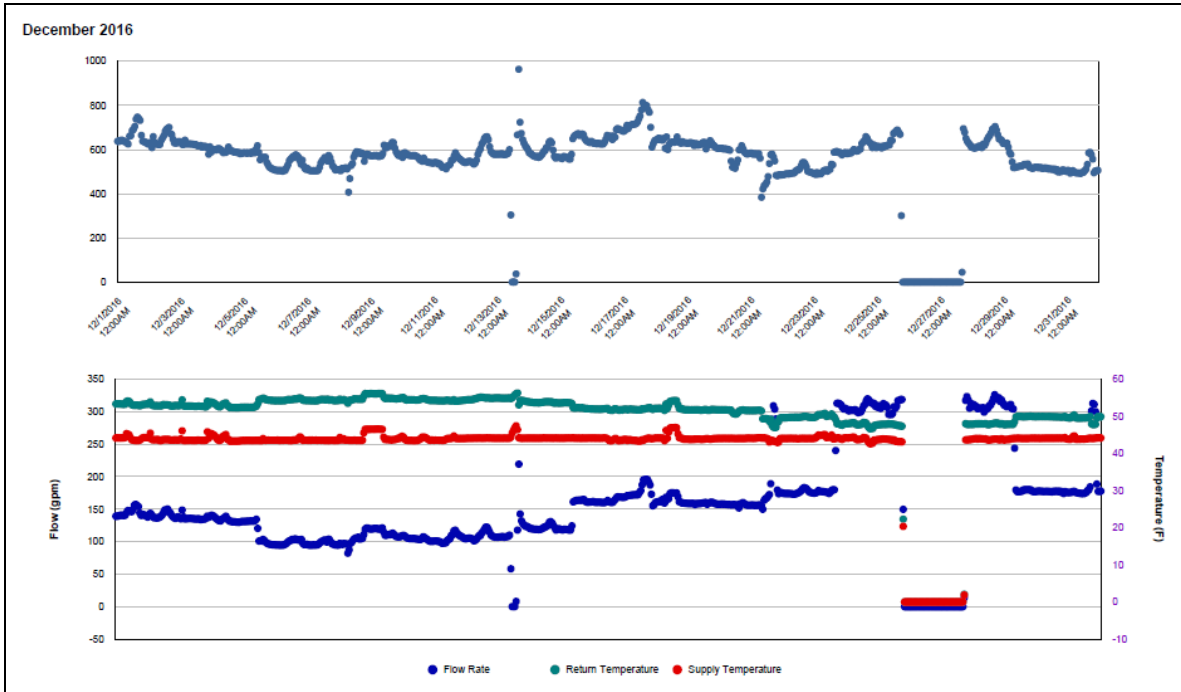
Quantitative descriptions and comments

The meter readings of flow rate, supply temp, and return temp are all zero of both CHW and HHW on 12/25 – 12/27/2016. These days of CHW are estimated by taking weekend average of the current month. The days of HHW are estimated by a model.

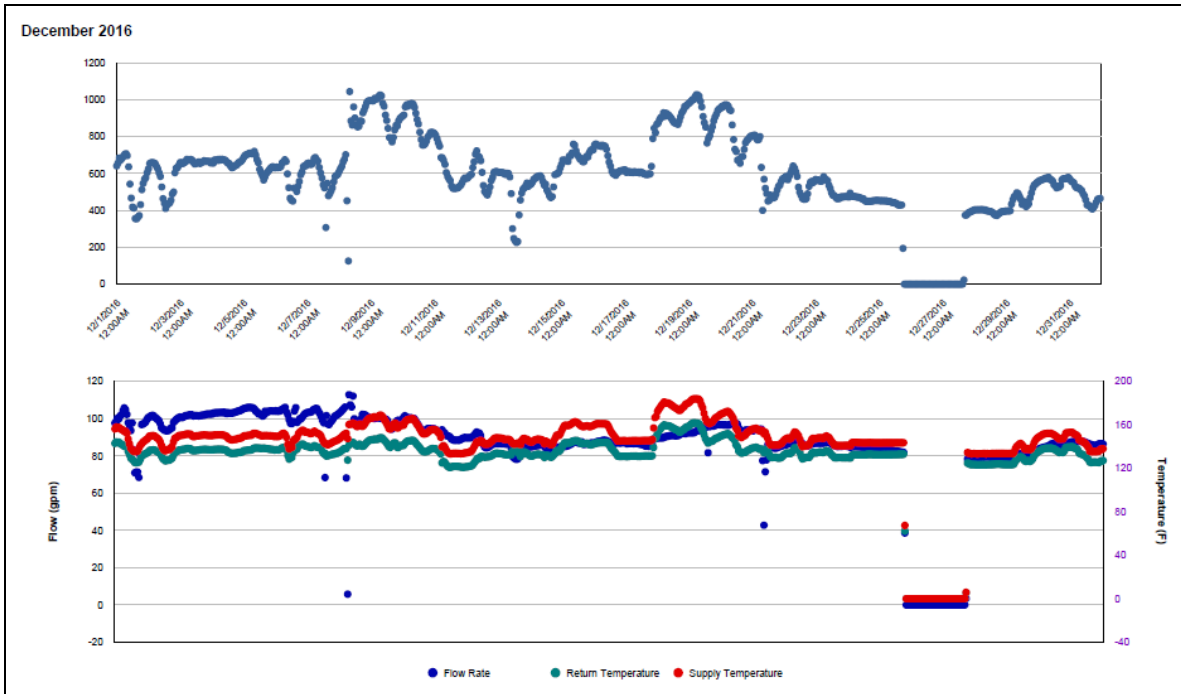
Explanatory Figure: 13 months energy balance plot with original data. (The plot is rescaled to remove spikes)



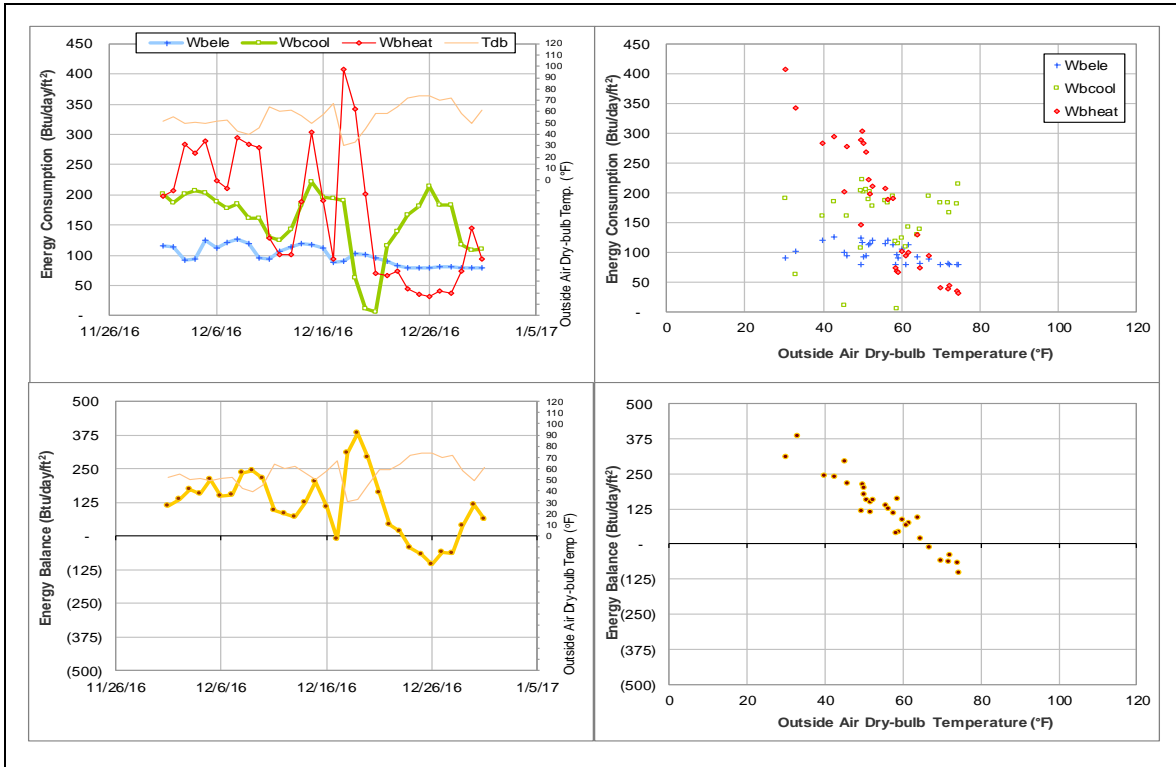
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during December 2016)



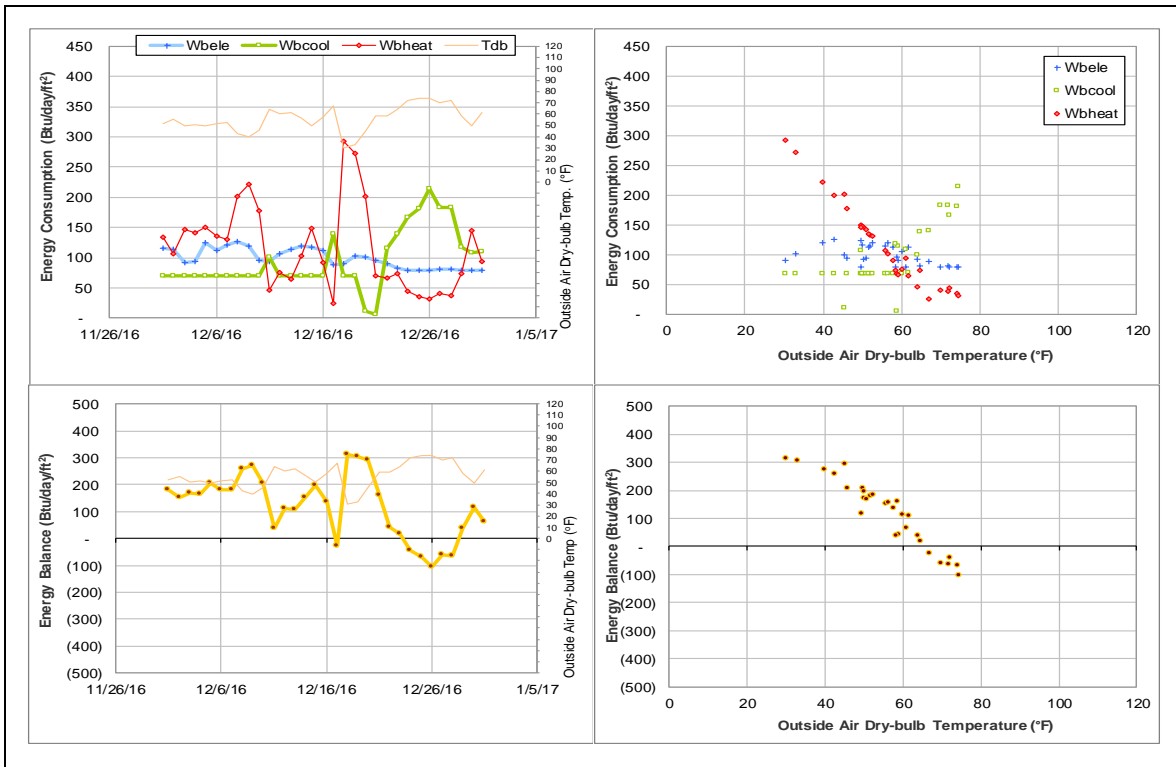
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (HHW during December 2016)



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



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



Biological Sciences Building – East (TAMU Bldg #467)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	003851	31	12/1/2016 – 12/31/2016	Model

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

Data Type	Description of data behaviors	Period
CHW	The metered values appear to be faulty.	8/6/2016 – Ongoing

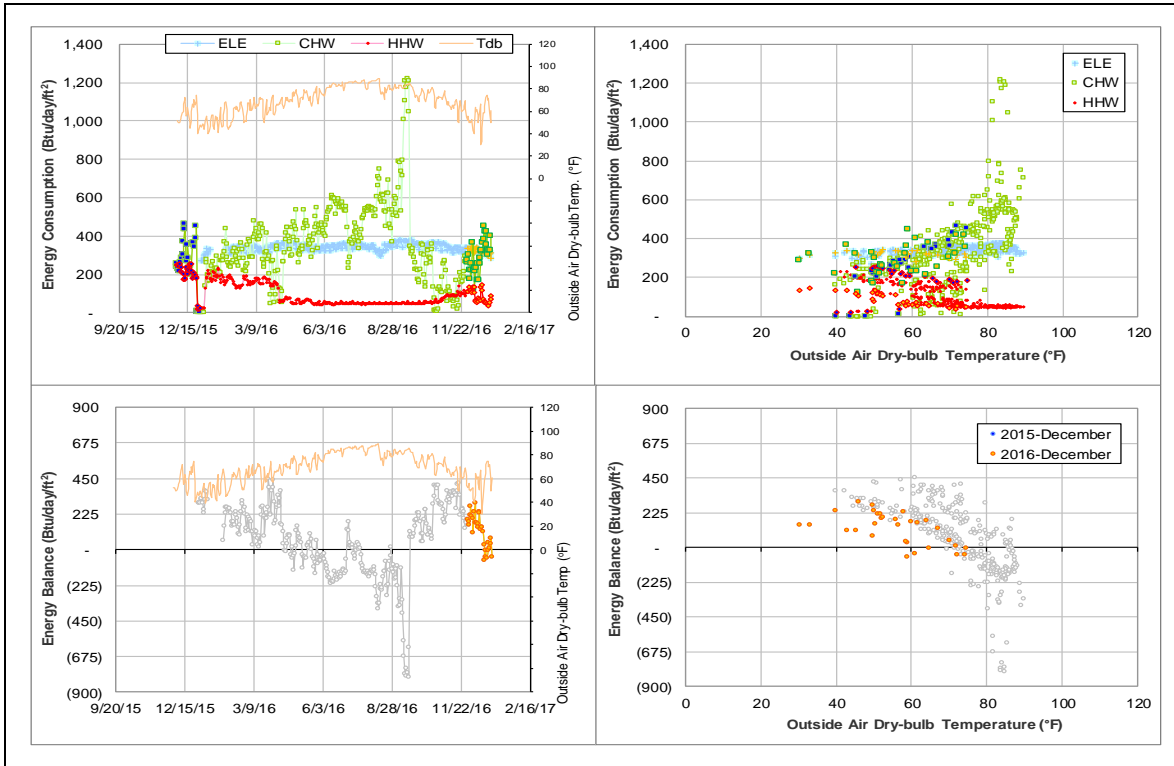
Changes in sensor readings related to the detected issues

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

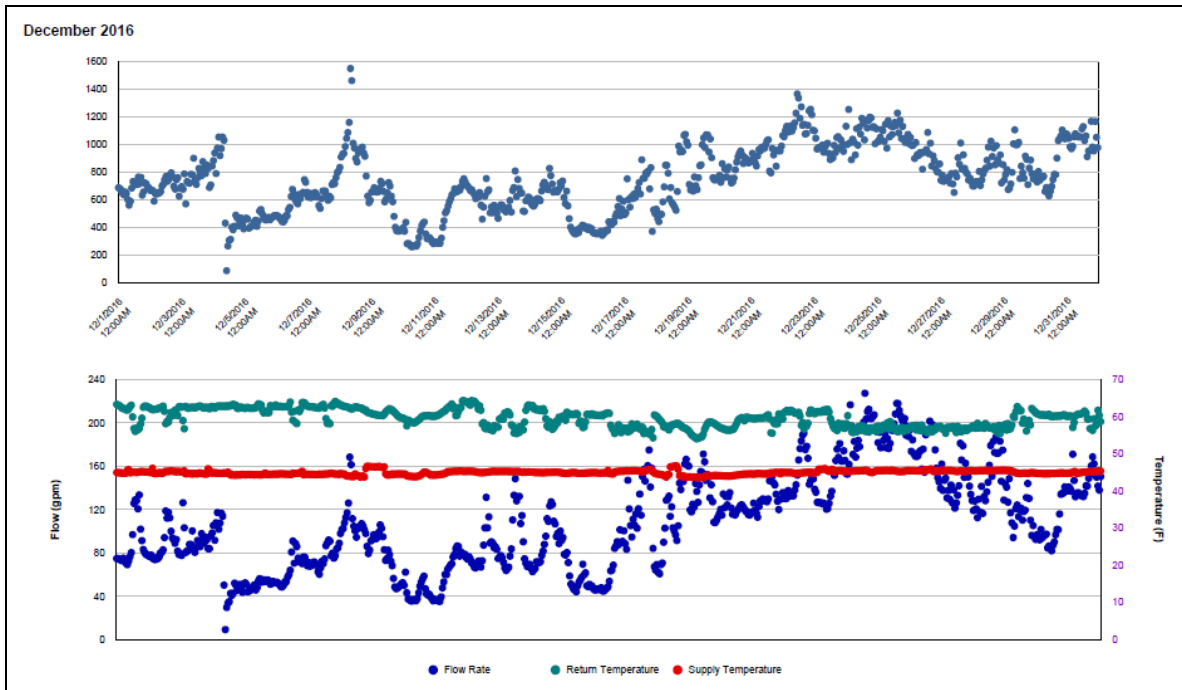
Quantitative descriptions and comments

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.

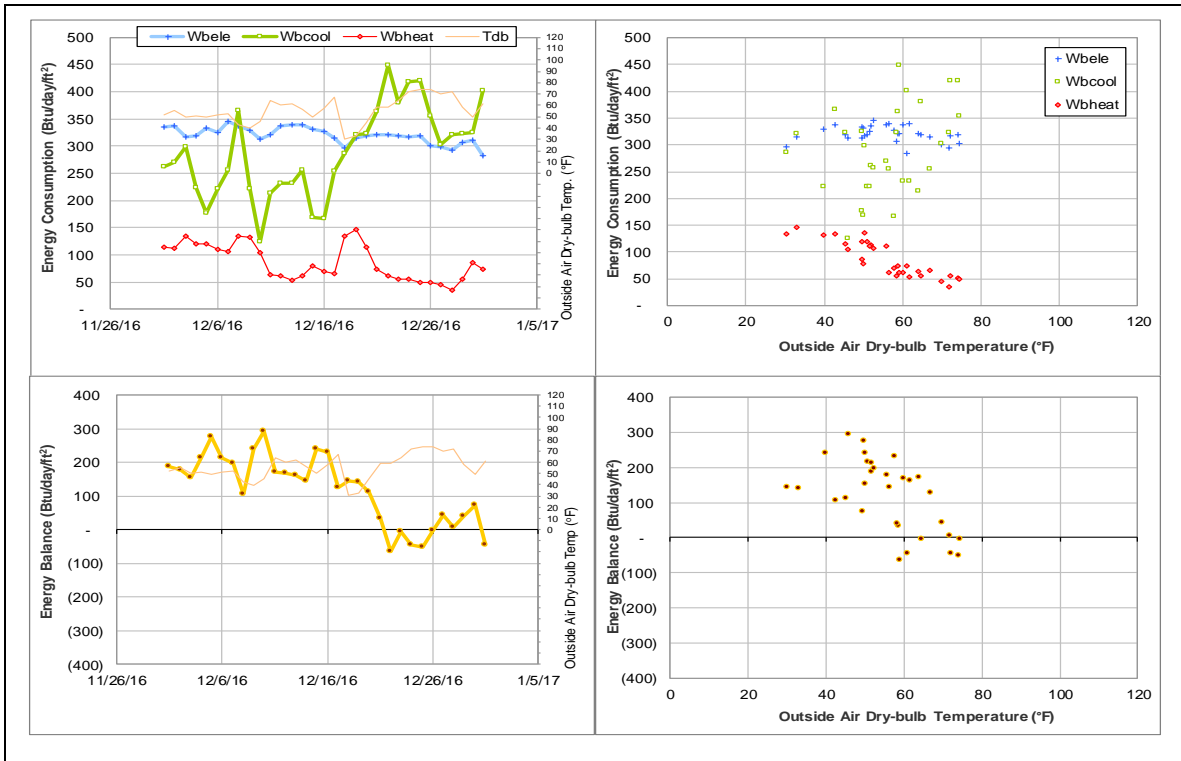
Explanatory Figure: 13 months energy balance plot with original data.



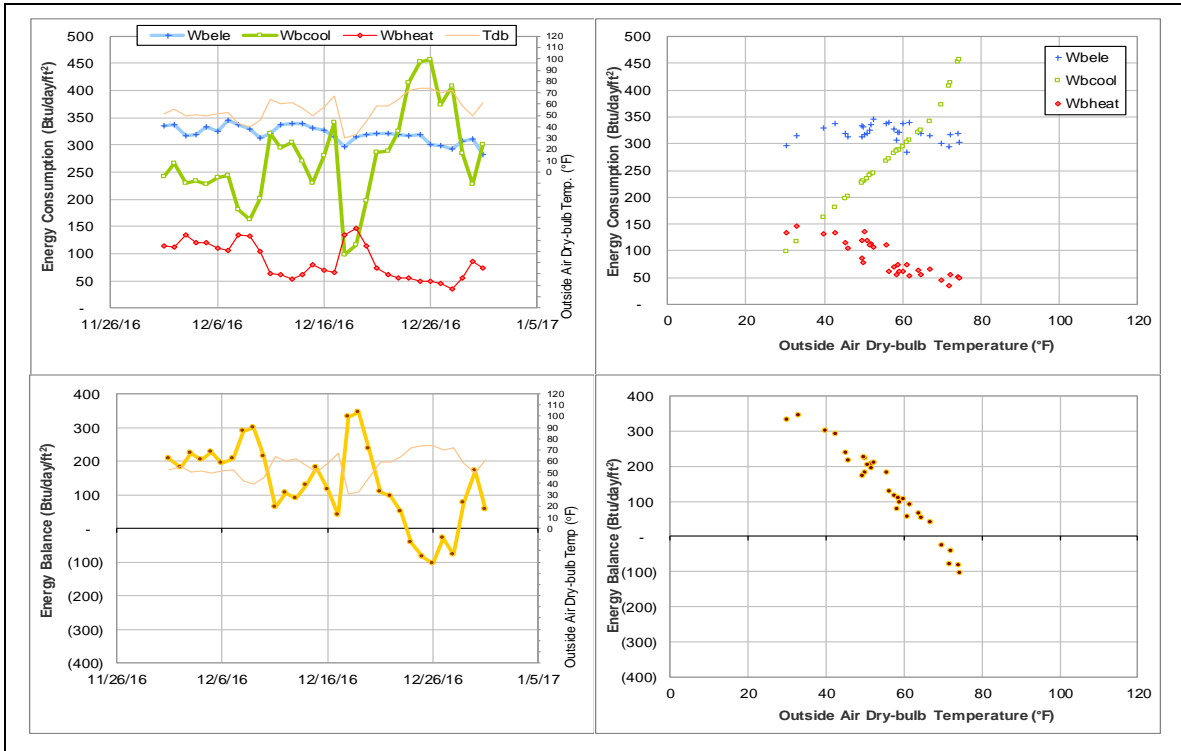
Explanatory Figure: Time series plots of hourly energy consumption, flow rate, and supply and return temperatures from the utilities office. (CHW during December 2016)



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



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



Halbouty Geosciences Building (TAMU Bldg #490)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	006900	13	12/19/2016 – 12/31/2016	Model
HHW	006917	21	12/11/2016 – 12/31/2016	Model

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

Data Type	Description of data behaviors	Period
HHW	The HHW consumption decreased to zero.	12/19/2016 – 12/31/2016
HHW	The HHW consumption is below the normal pattern.	12/11/2016 – 12/31/2016

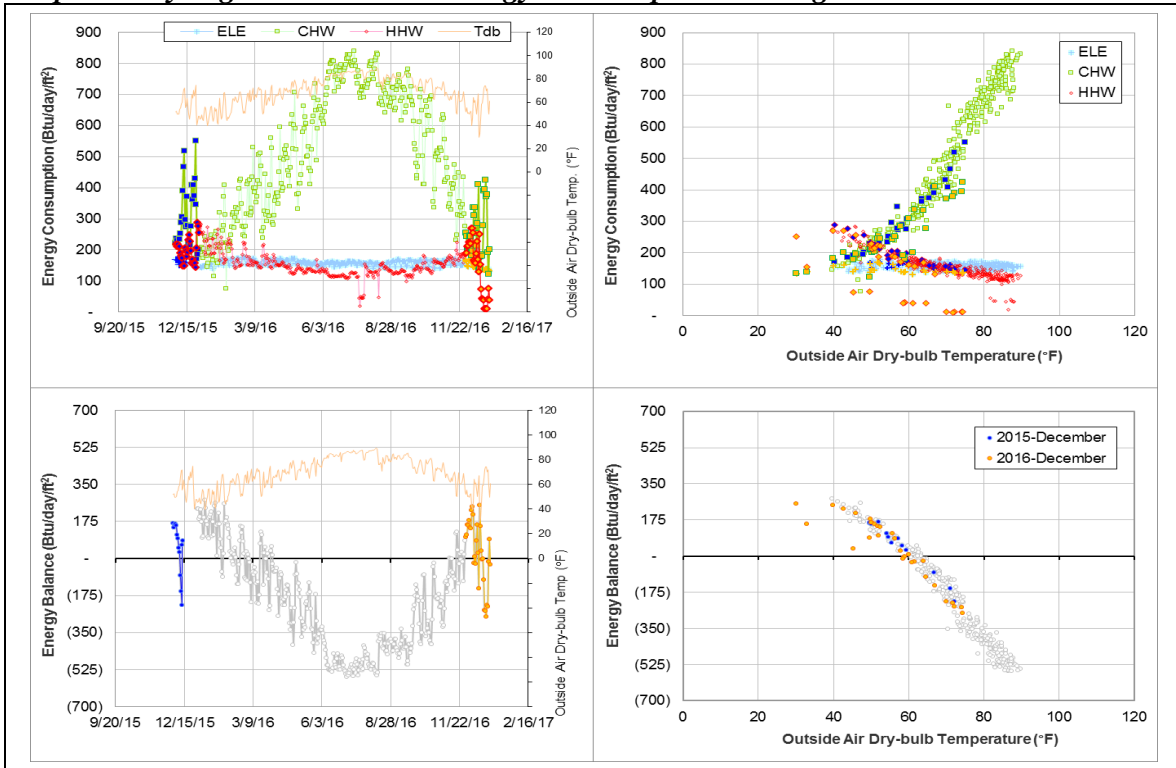
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	006900	12/19/2016 – 12/31/2016	Flow rate	Faulty, Constant value
			Supply and return temperature	Faulty, Constant value
HHW	006917	12/11/2016 – 12/31/2016	Supply and return temperature	Faulty, Constant value sometimes
			Delta-T	Zero on several days

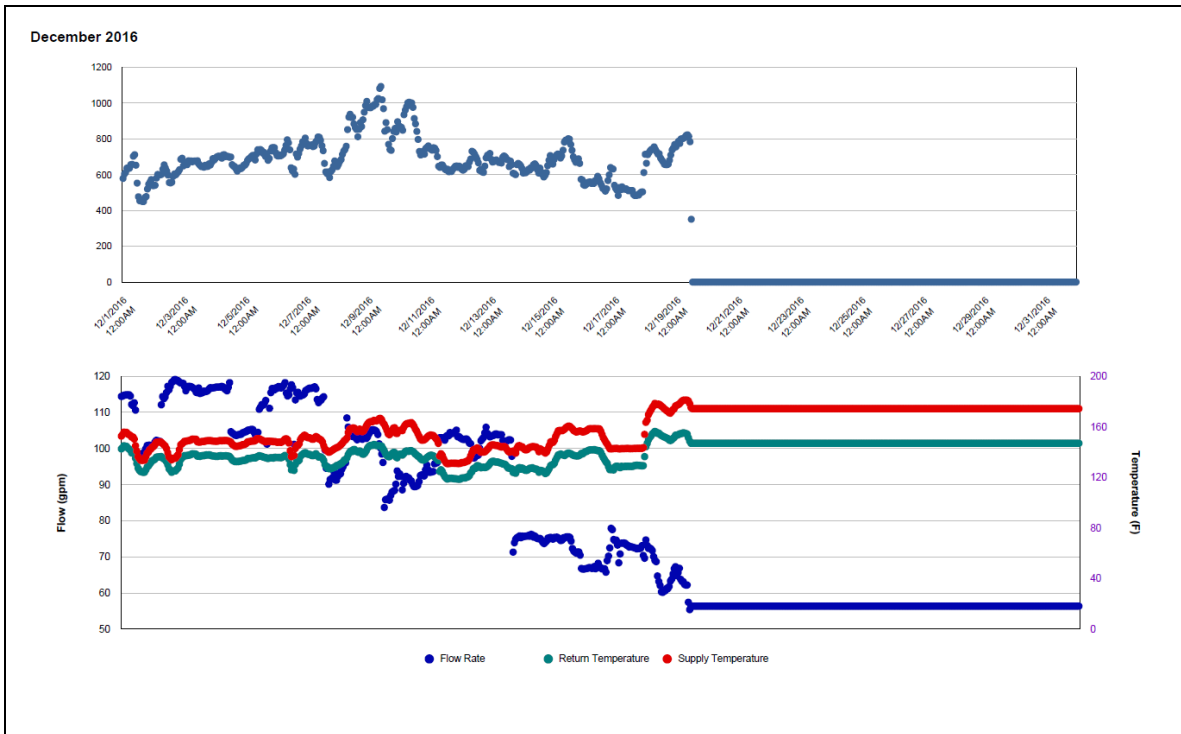
Quantitative descriptions and comments

There are two HHW meters for this building. 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. Starting 12/11/2016, for HHW MID 006917 the supply and return temperature maintained constant values too and the delta-T was zero for several days. The HHW was estimated by model for this period.

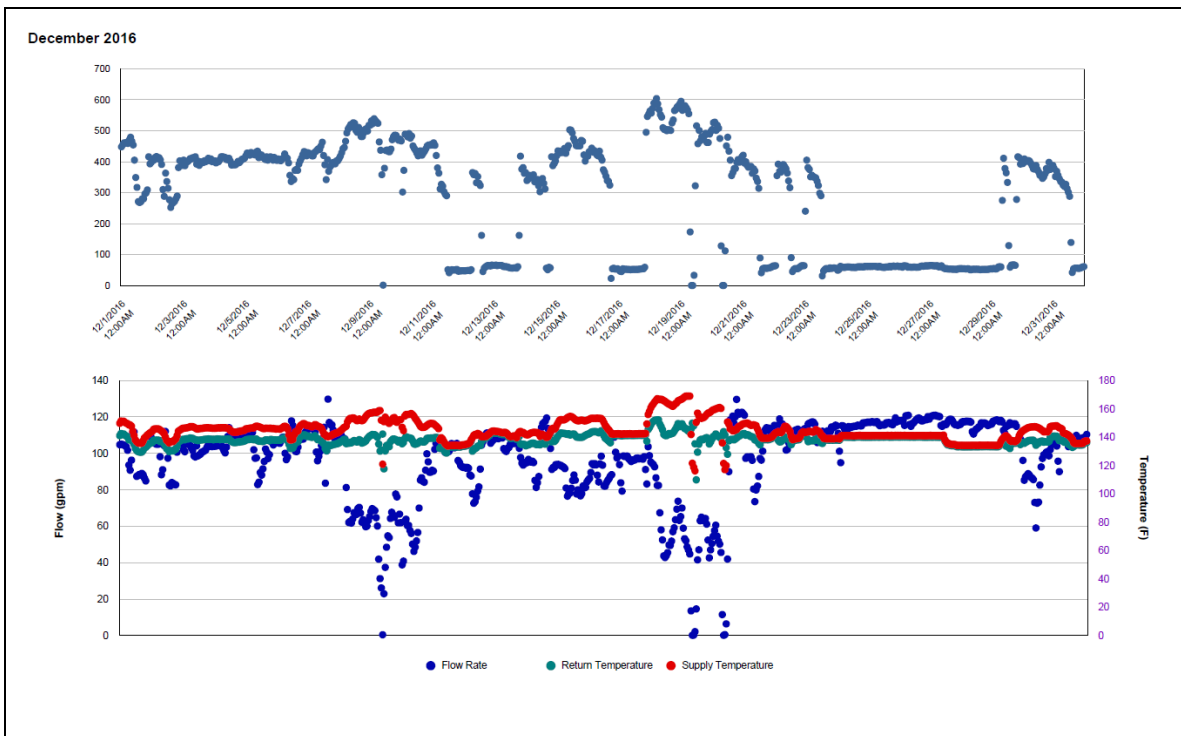
Explanatory Figure: 13 months energy balance plot with original data.



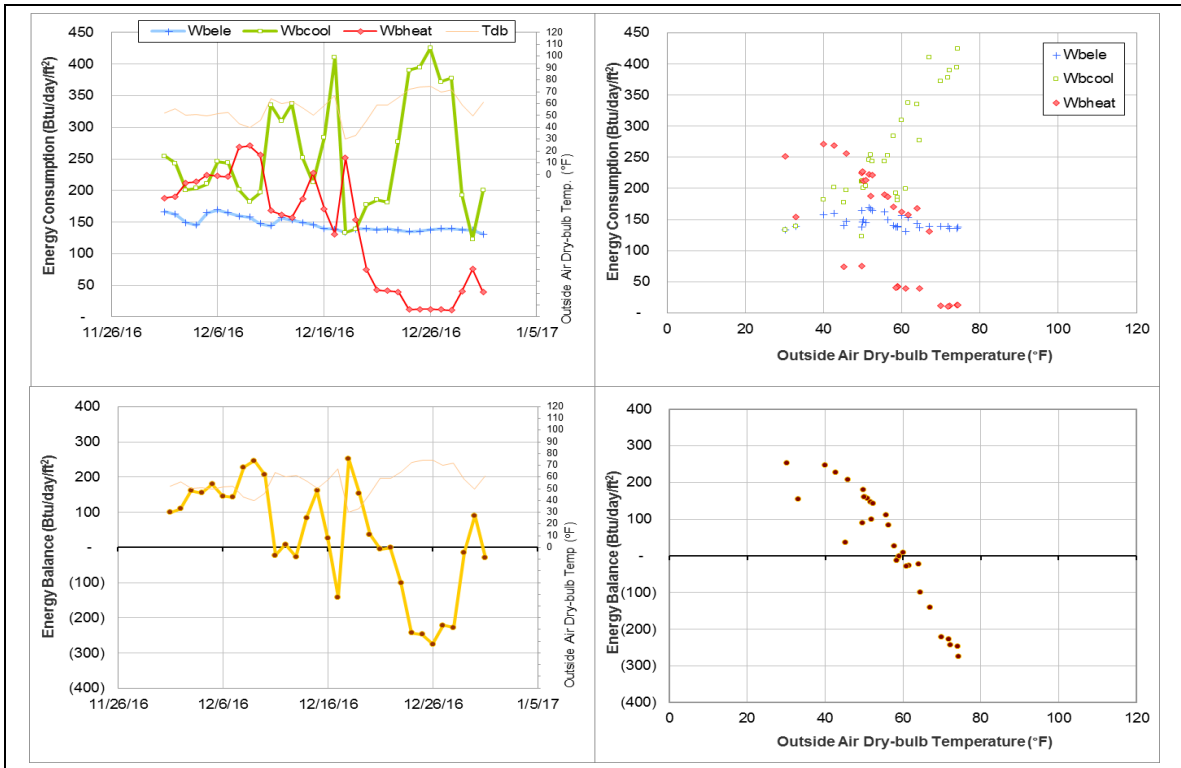
Explanatory Figure: Time series plots of MID 006900 hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (December 2016)



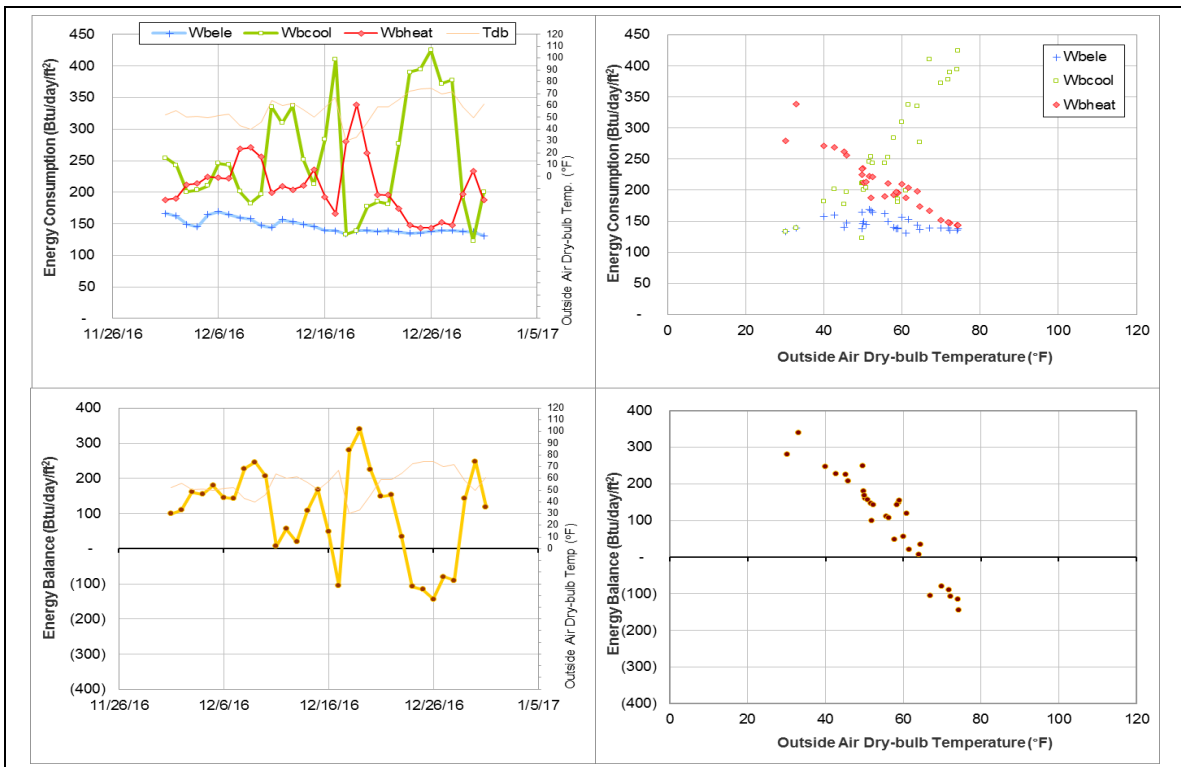
Explanatory Figure: Time series plots of MID 006917 hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (December 2016)



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



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



Civil Engineering Building (TAMU Bldg #492)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	005950	31	12/1/2016 – 12/31/2016	Model
HHW	005954	31	12/1/2016 – 12/31/2016	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 – 12/31/2016
HHW	The HHW consumption decreased to zero.	10/29/2016 – 12/7/2016

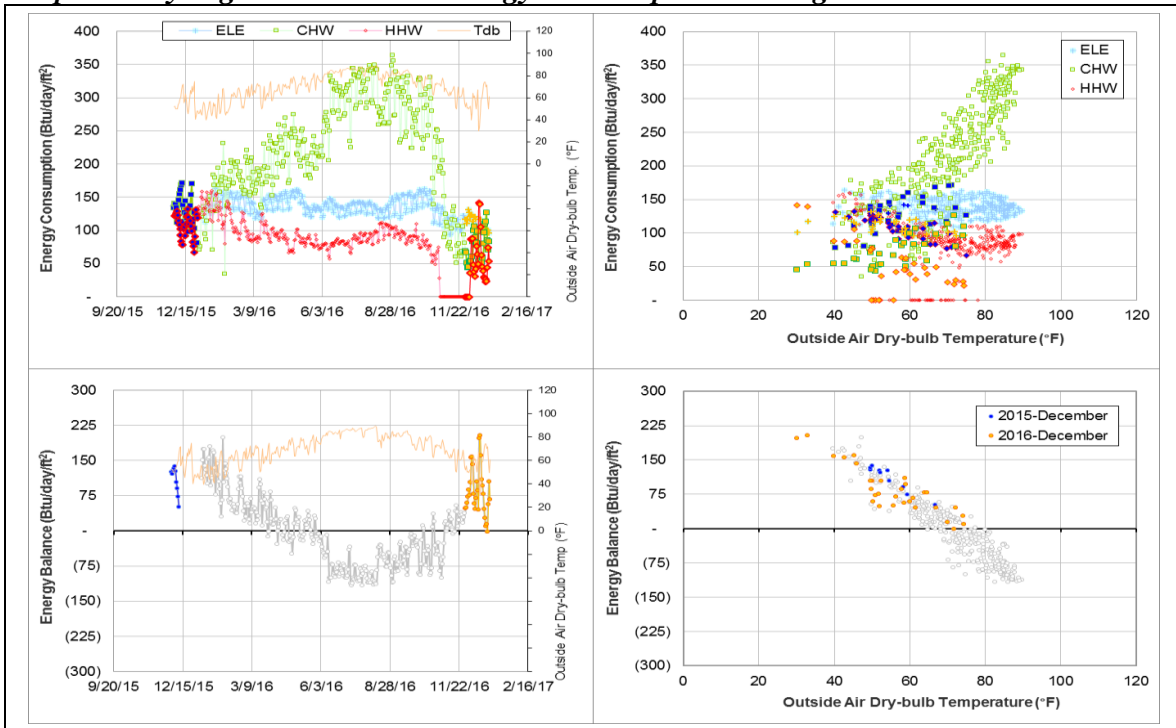
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	005950	10/29/2016 – 12/31/2016	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

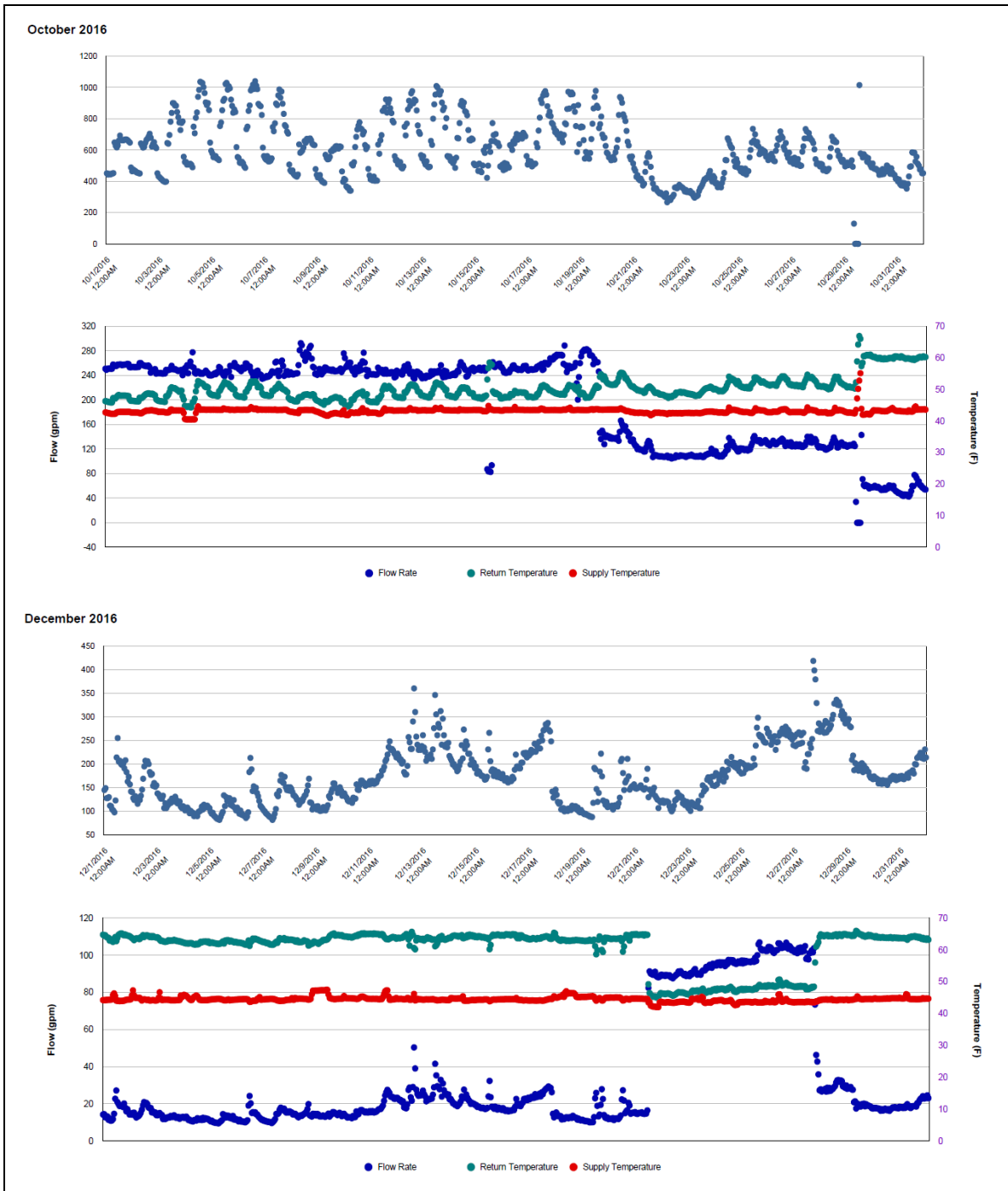
Quantitative descriptions and comments

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.

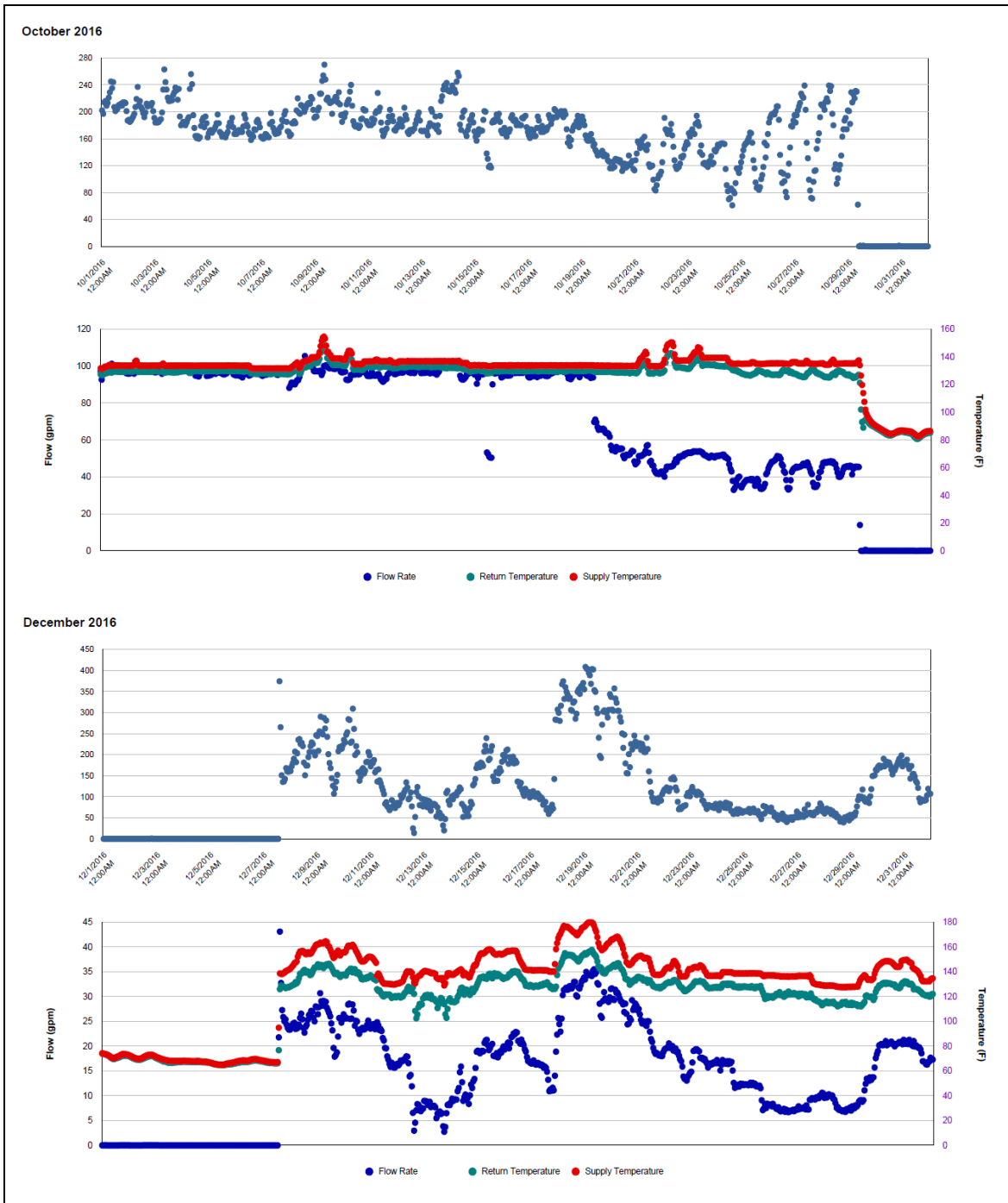
Explanatory Figure: 13 months energy balance plot with original data.



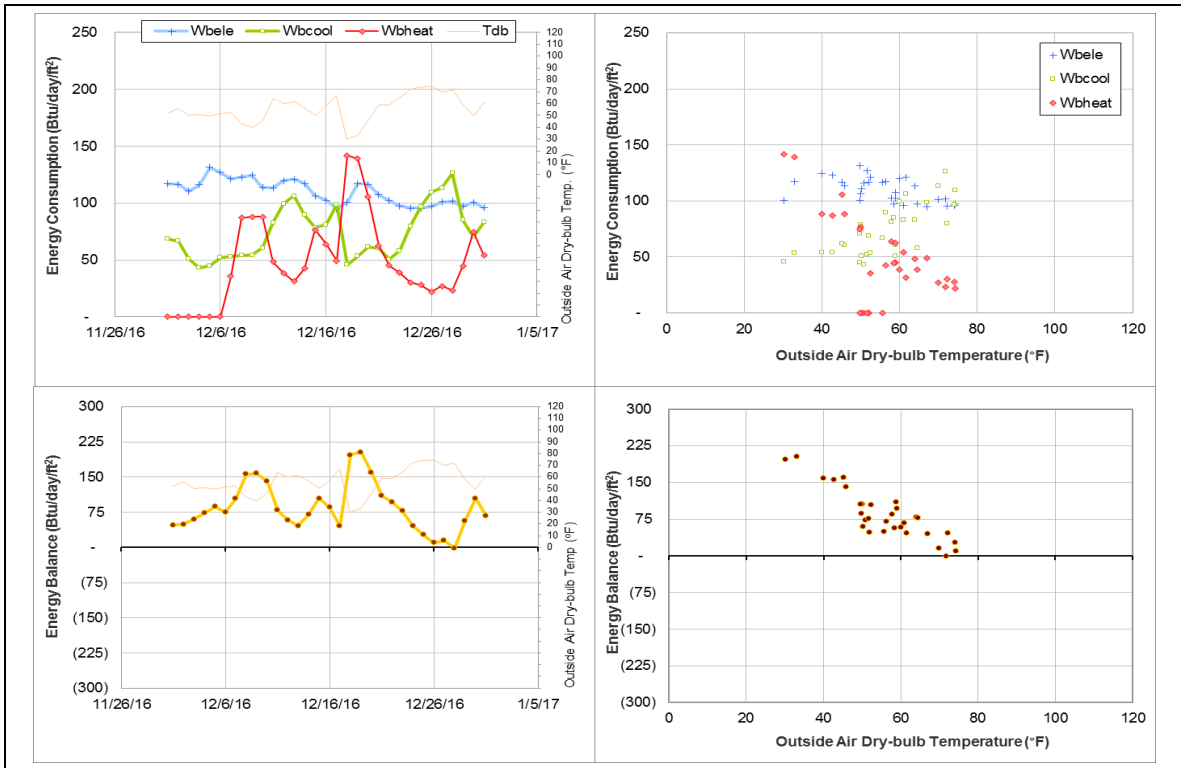
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (top: October 2016, bottom: December 2016)



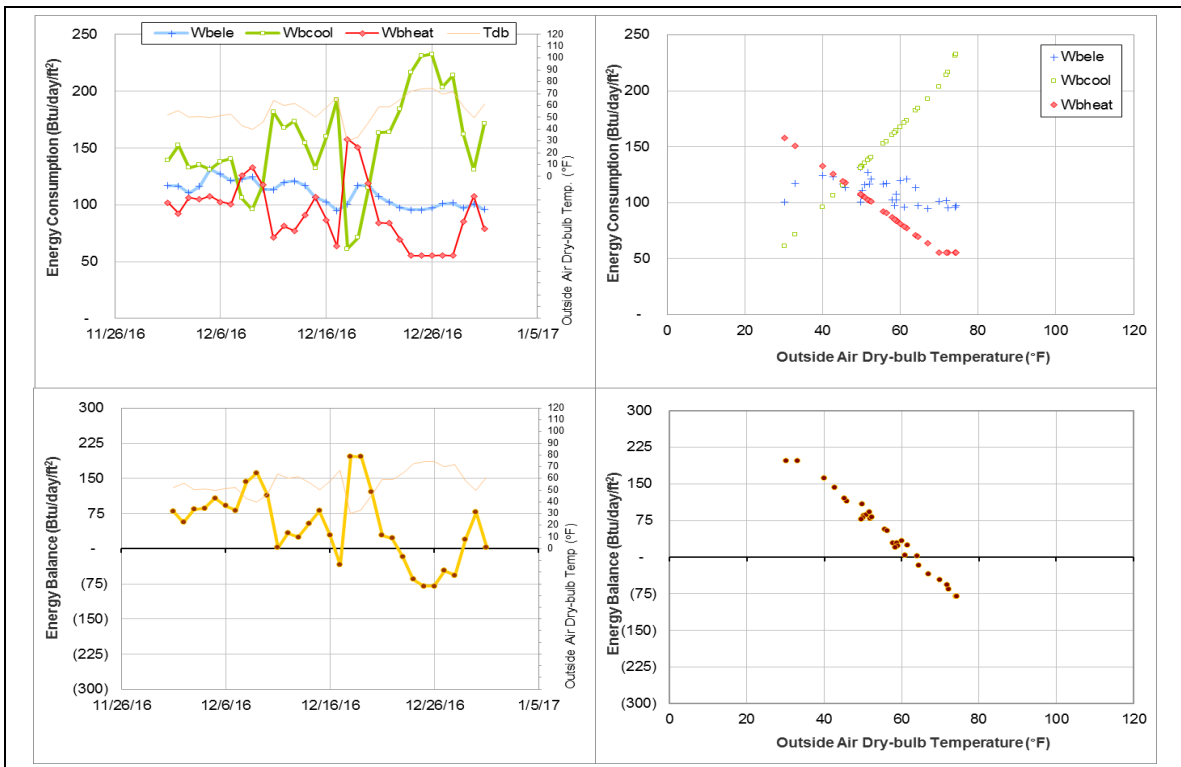
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (top: October 2016, bottom: December 2016)



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



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



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

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	004166	3	12/29/2016 – 12/31/2016	Model
HHW	004170	3	12/29/2016 – 12/31/2016	Model

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

Data Type	Description of data behaviors	Period
CHW	The consumption level decreased.	12/29/2016 – 12/31/2016
HHW	The consumption level decreased.	12/29/2016 – 12/31/2016

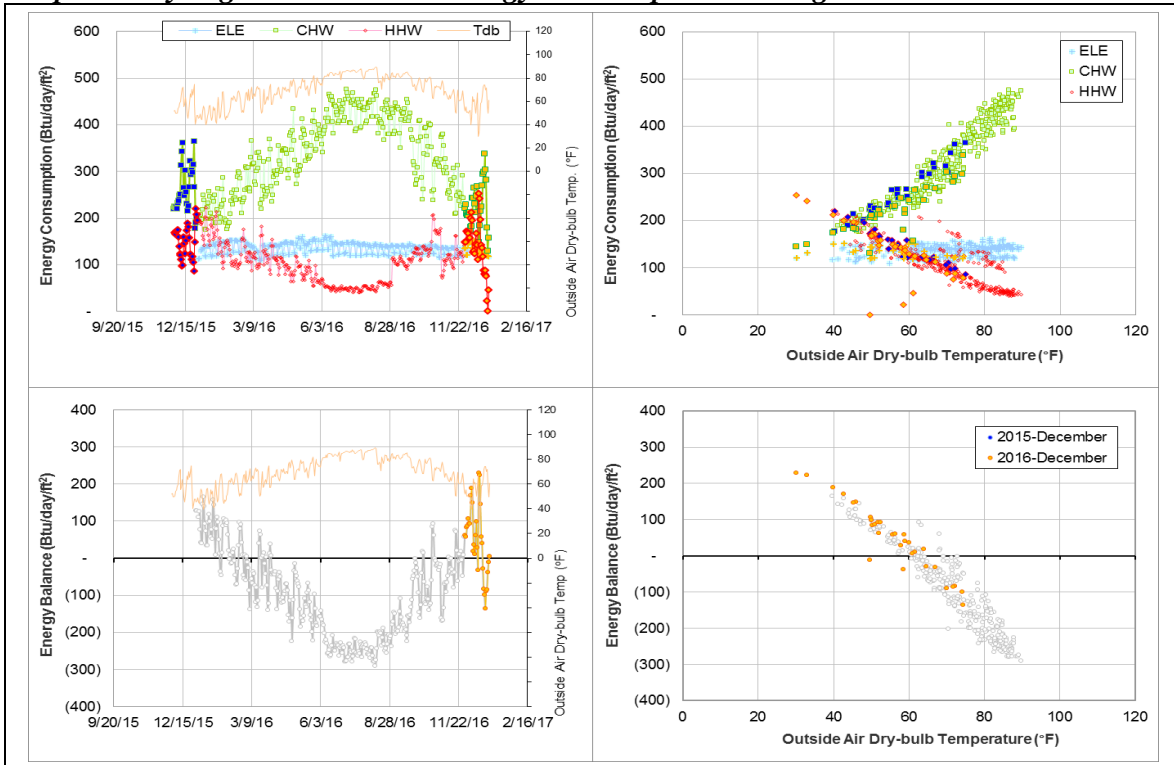
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	004166	12/29/2016 – 12/31/2016	Delta-T	Decreased
HHW	004170	12/29/2016 – 12/31/2016	Flow rate	Decreased, zero at times

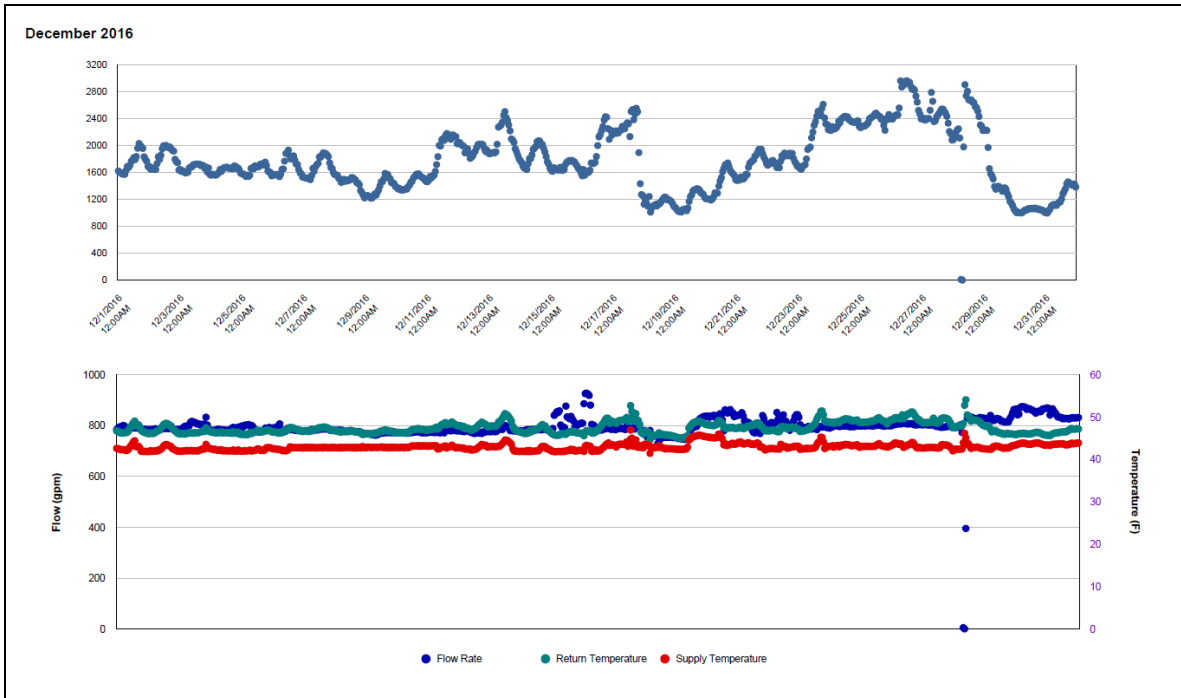
Quantitative descriptions and comments

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.

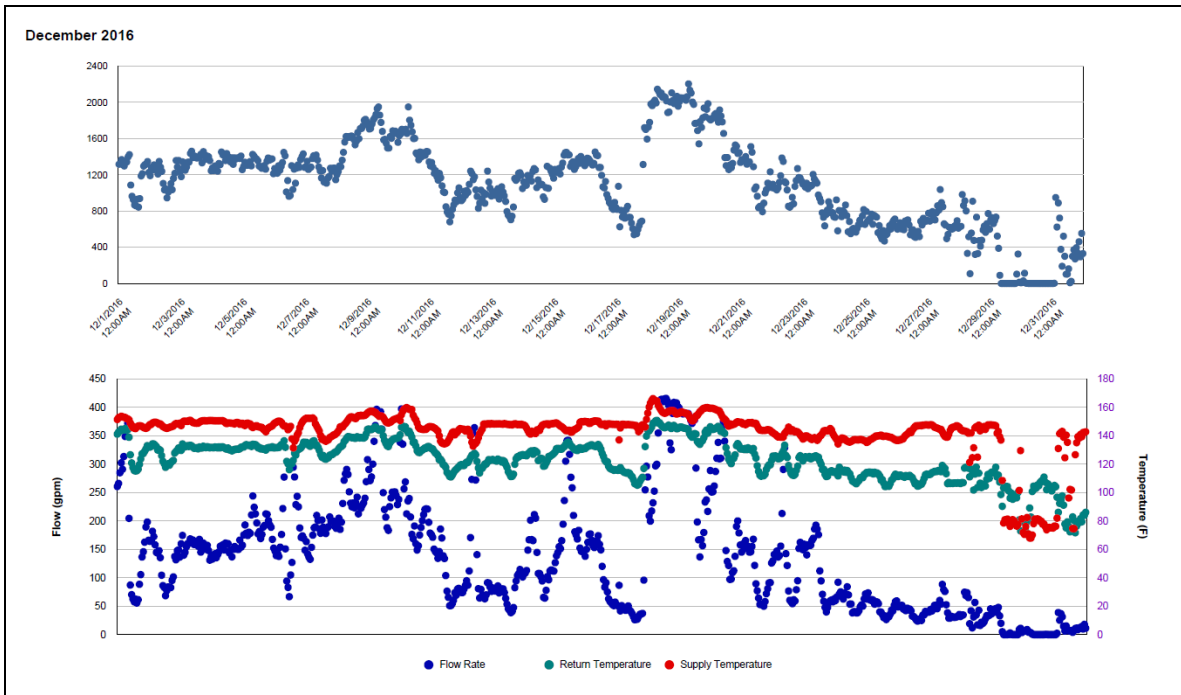
Explanatory Figure: 13 months energy balance plot with original data.



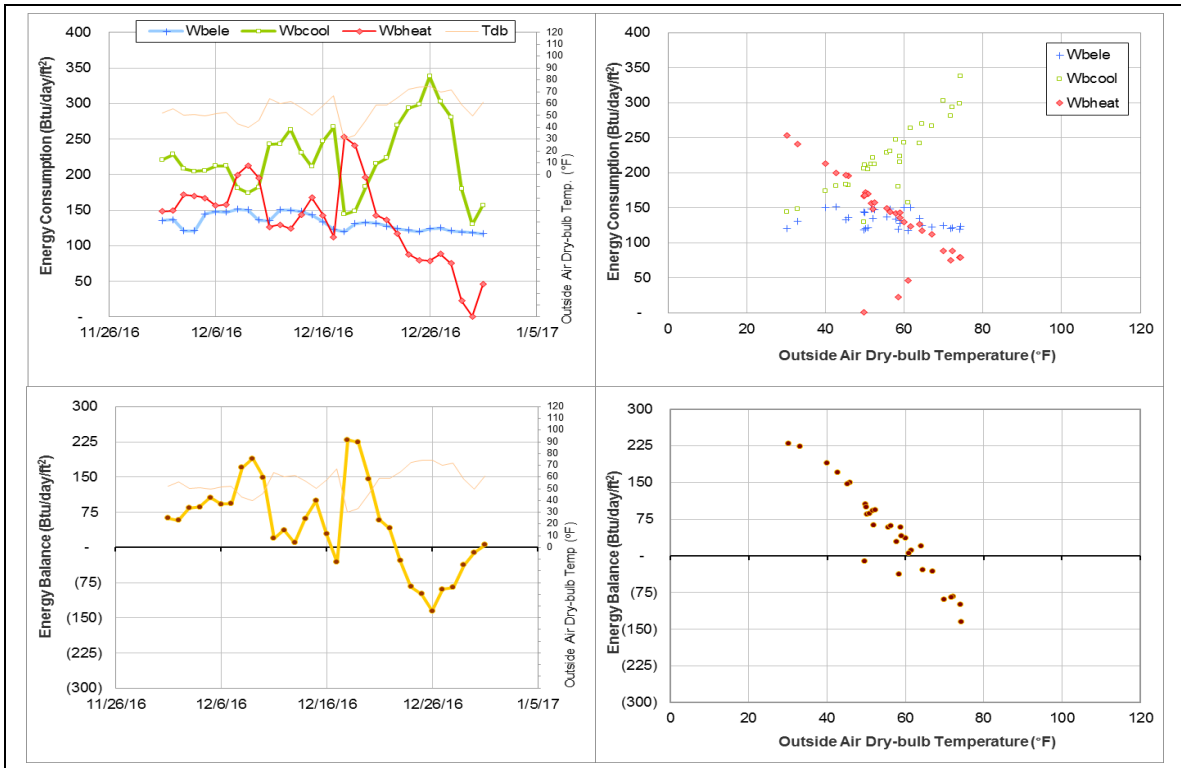
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (December 2016)



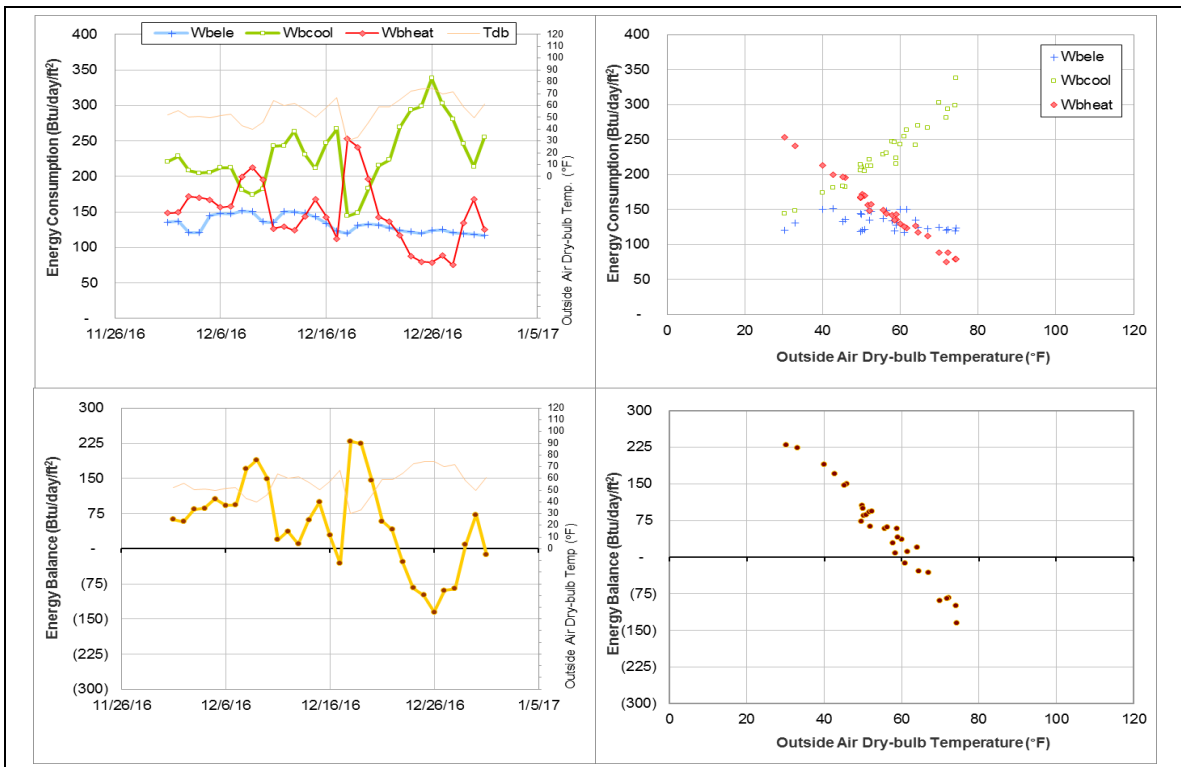
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (December 2016)



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



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



Heep Laboratory Building (TAMU Bldg #511)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	005821	31	12/1/2016 – 12/31/2016	Model
HHW	005825	31	12/1/2016 – 12/31/2016	Model

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

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

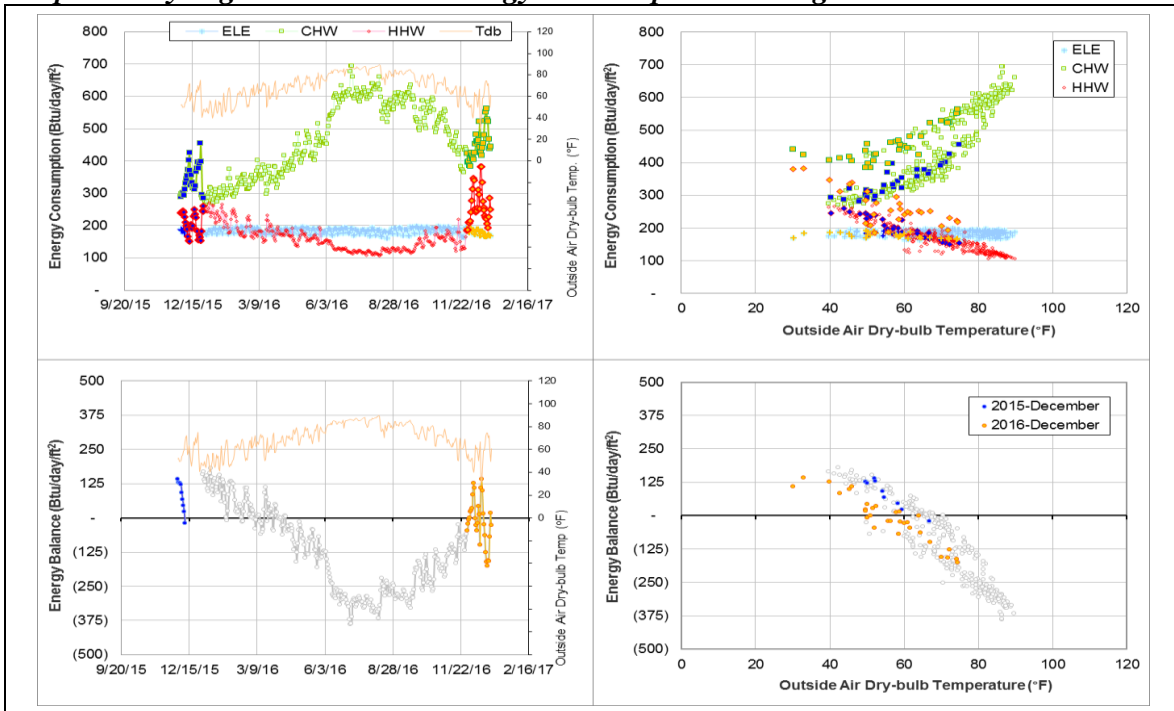
Changes in sensor readings related to the detected issues

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

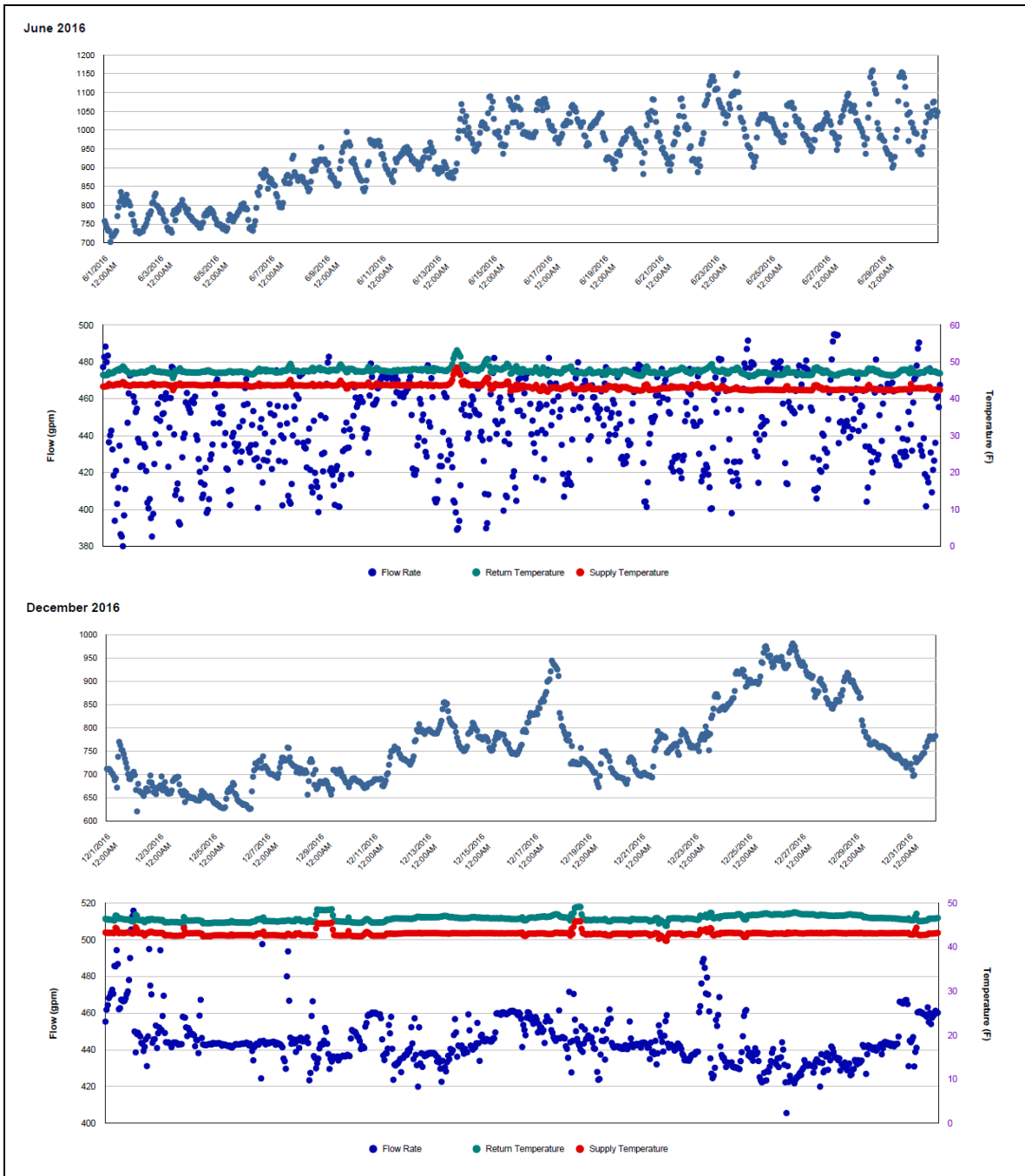
Quantitative descriptions and comments

The CHW consumption increased by 100 Btu/day/ft² 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 December.

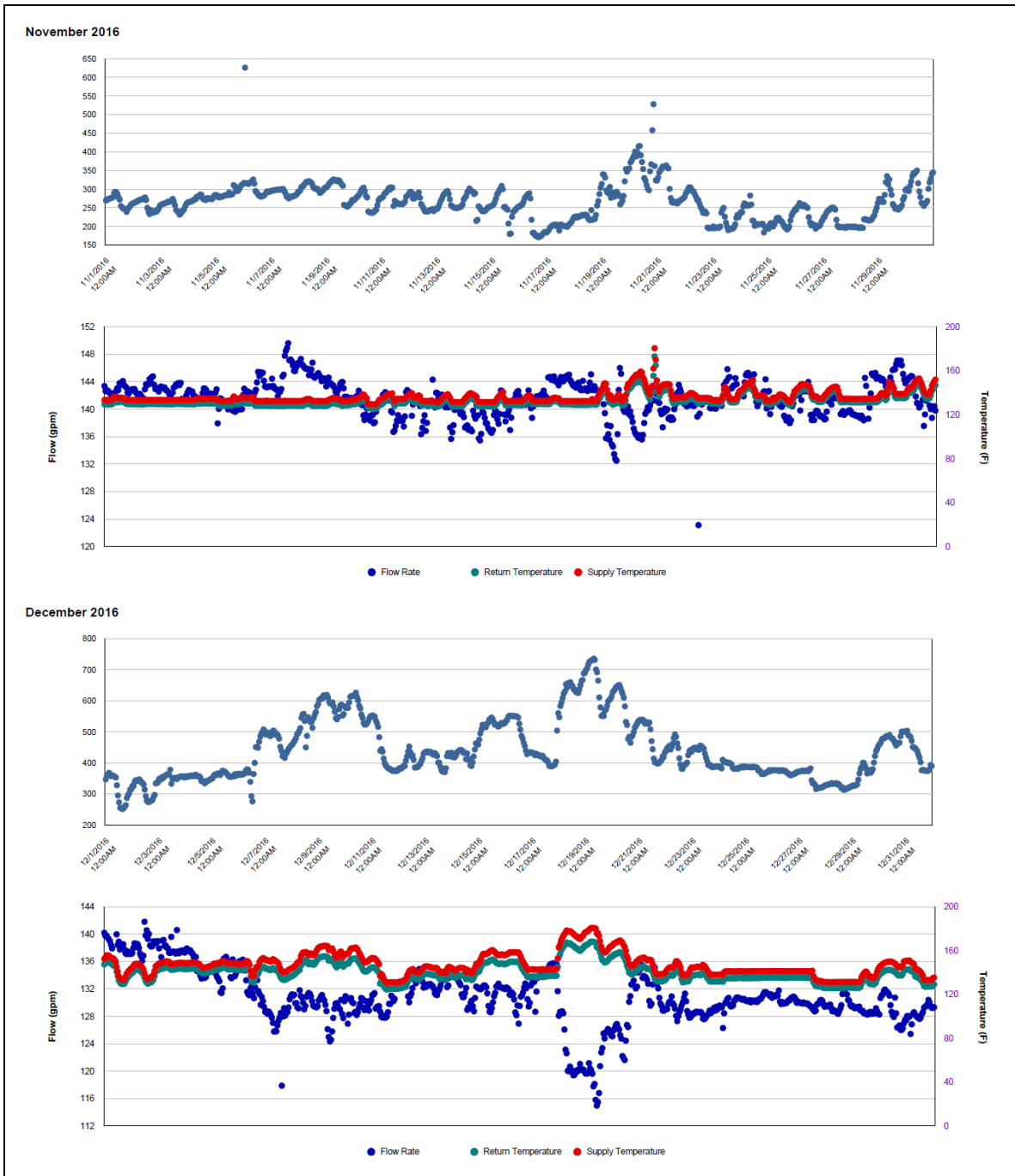
Explanatory Figure: 13 months energy balance plot with original data.



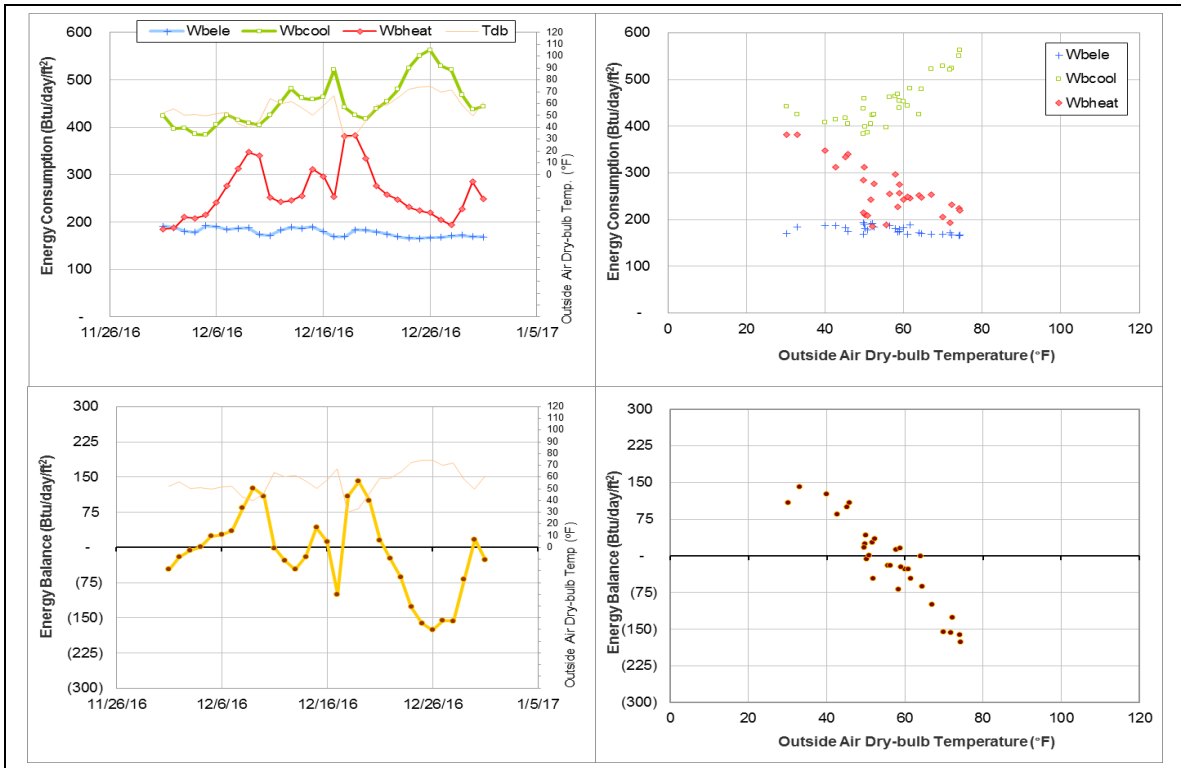
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow, and supply/return temperatures from utilities office. (top: June 2016, bottom: December 2016) Note the gradual increase in delta T started in June 2016.



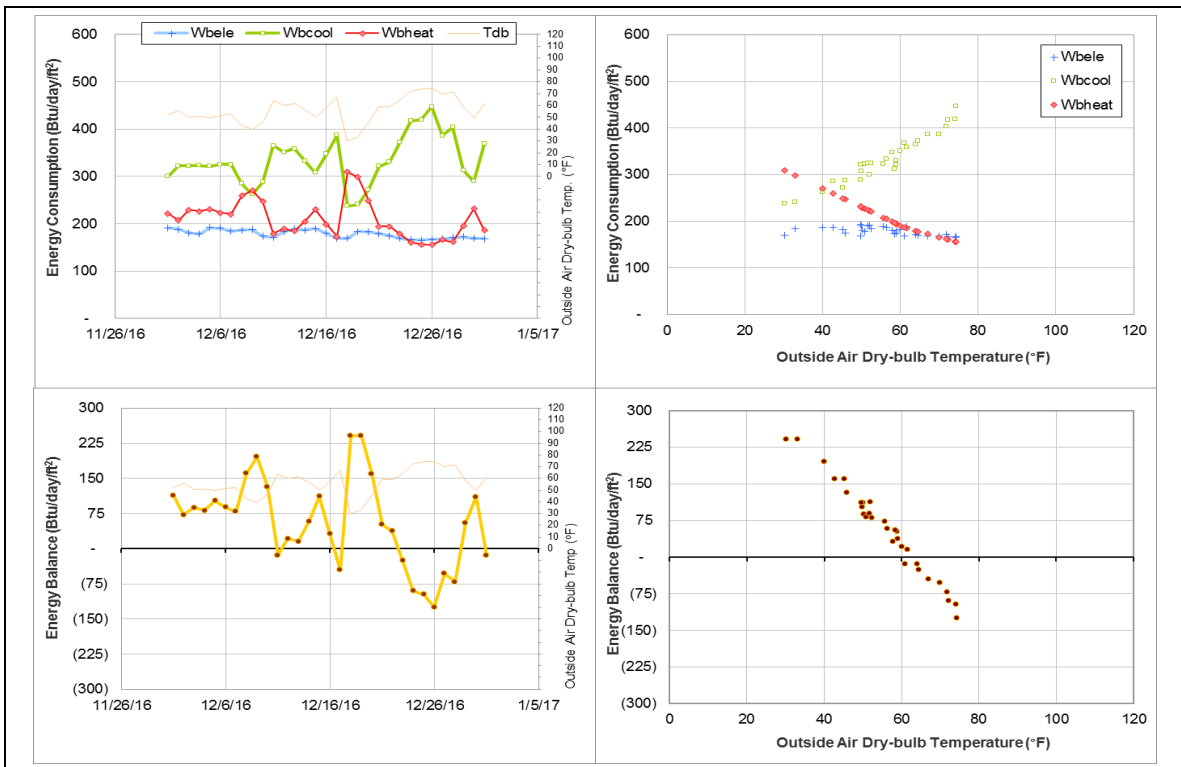
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (top: November 2016, bottom: December 2016)



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



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



All Faiths Chapel (TAMU Bldg #512)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	004293	31	12/1/2016 – 12/31/2016	Model

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

Data Type	Description of data behaviors	Period
HHW	The HHW consumption decreased to near zero.	7/6/2016 – 12/3/2016 12/7/2016 – 12/18/2016

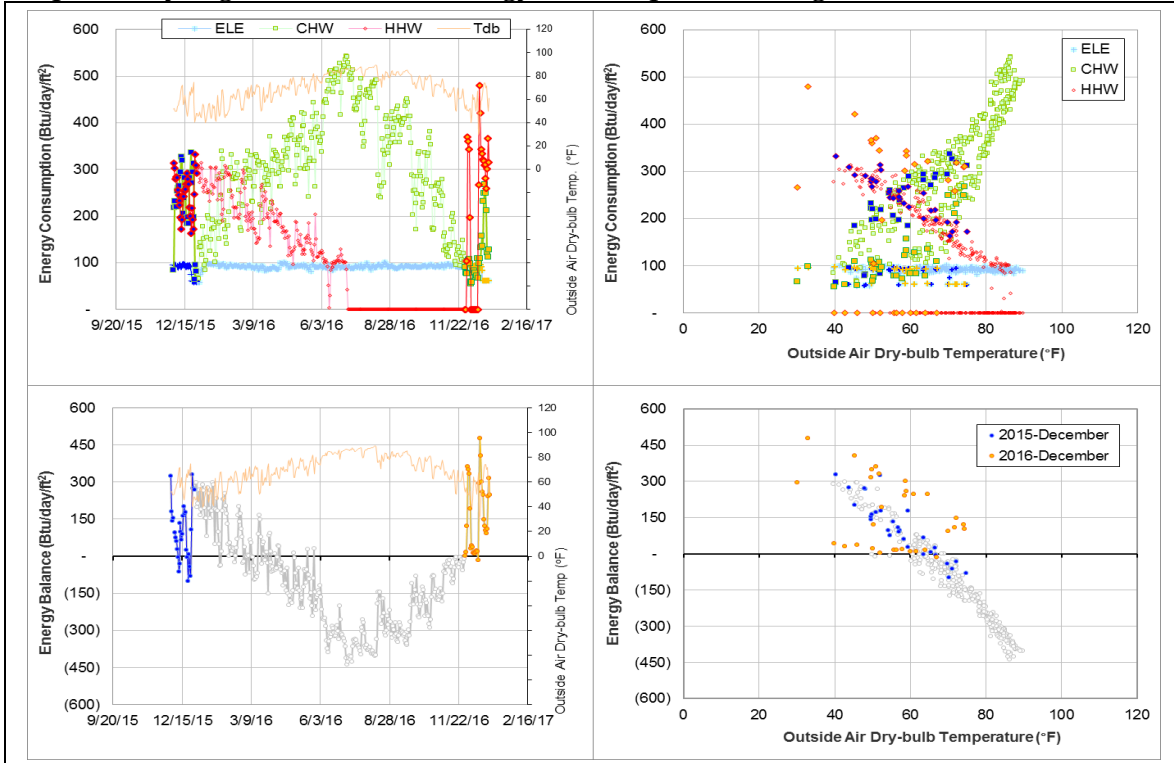
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	004293	7/6/2016 – 12/3/2016	Flow rate	Sudden decrease, nearly zero
		12/7/2016 – 12/18/2016	Delta-T	Sudden decrease, nearly zero

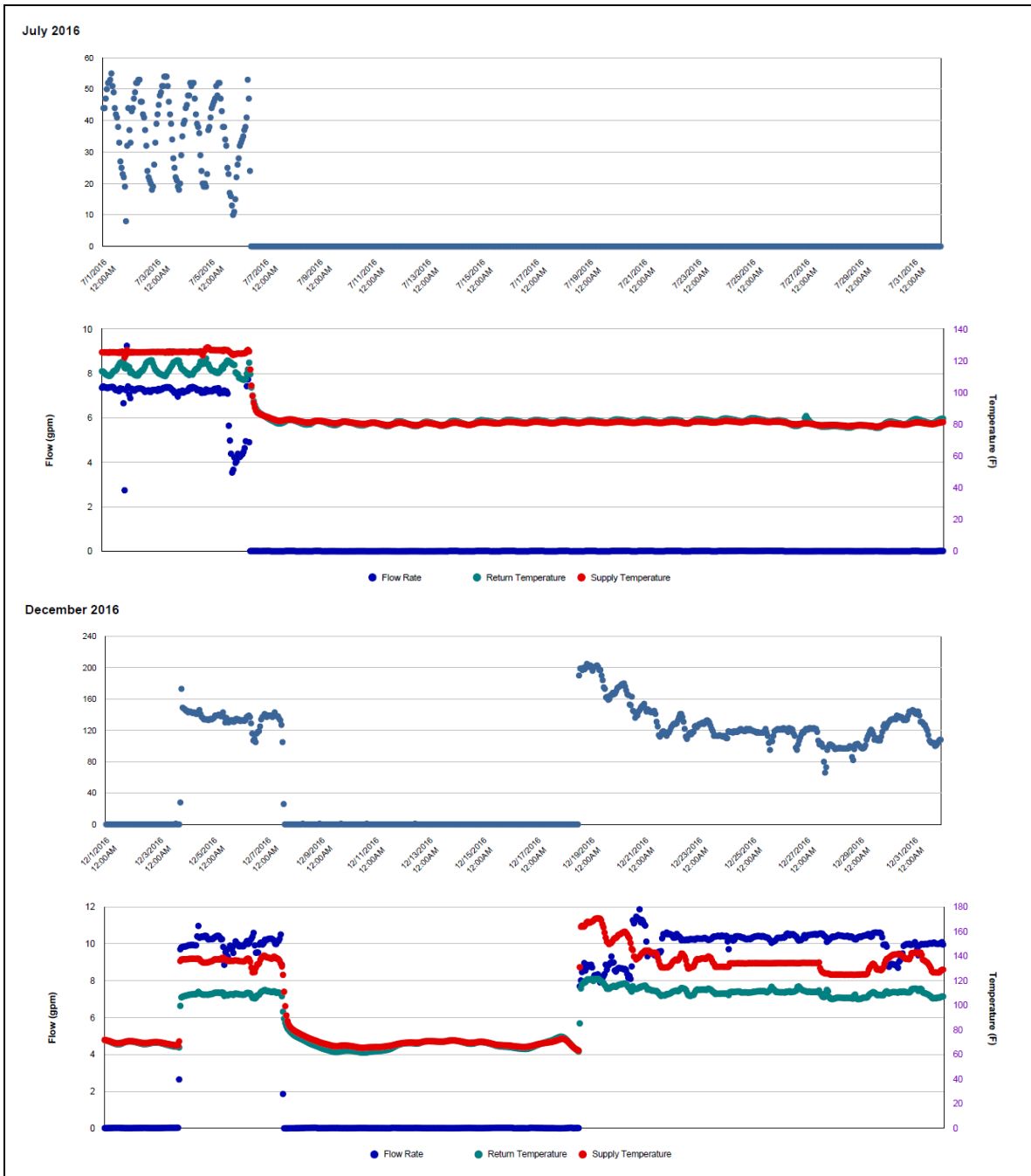
Quantitative descriptions and comments

Starting around 7/6/2016, the HHW flow rate decreased to near zero and both supply and return temperature dropped to around 80°F and has continued like this through parts of December. The HHW was estimated by model for this period.

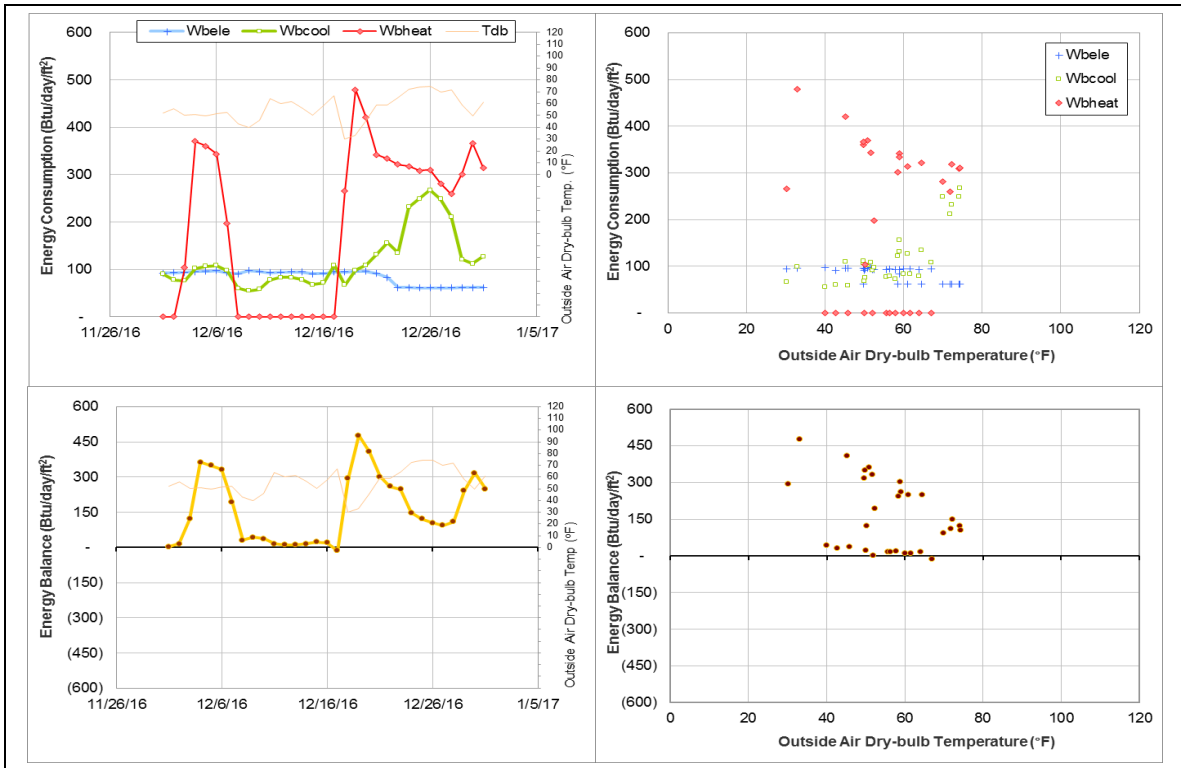
Explanatory Figure: 13 months energy balance plot with original data.



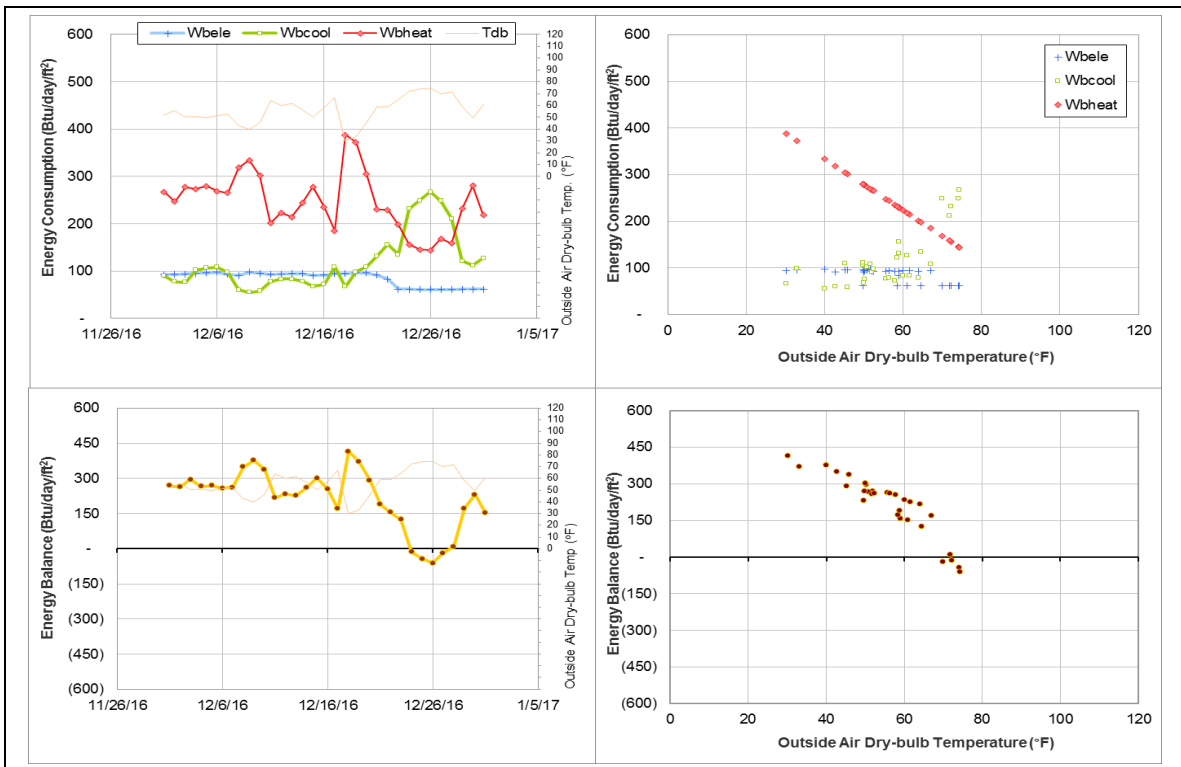
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow, and supply/return temperatures from utilities office. (top: July 2016, bottom: December 2016)



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



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



McNew Laboratory (TAMU Bldg #740)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	005968	31	12/1/2016 – 12/31/2016	Model

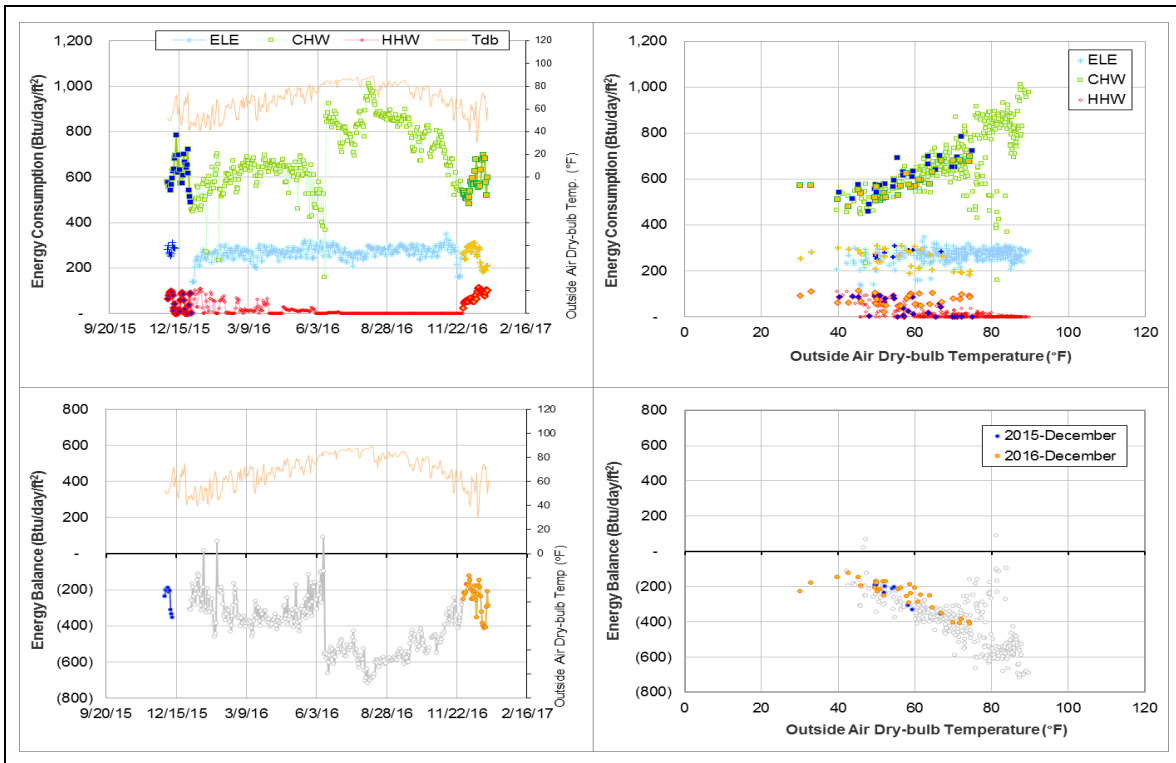
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
HHW	The HHW consumption pattern is flat.	12/1/2016 – Ongoing

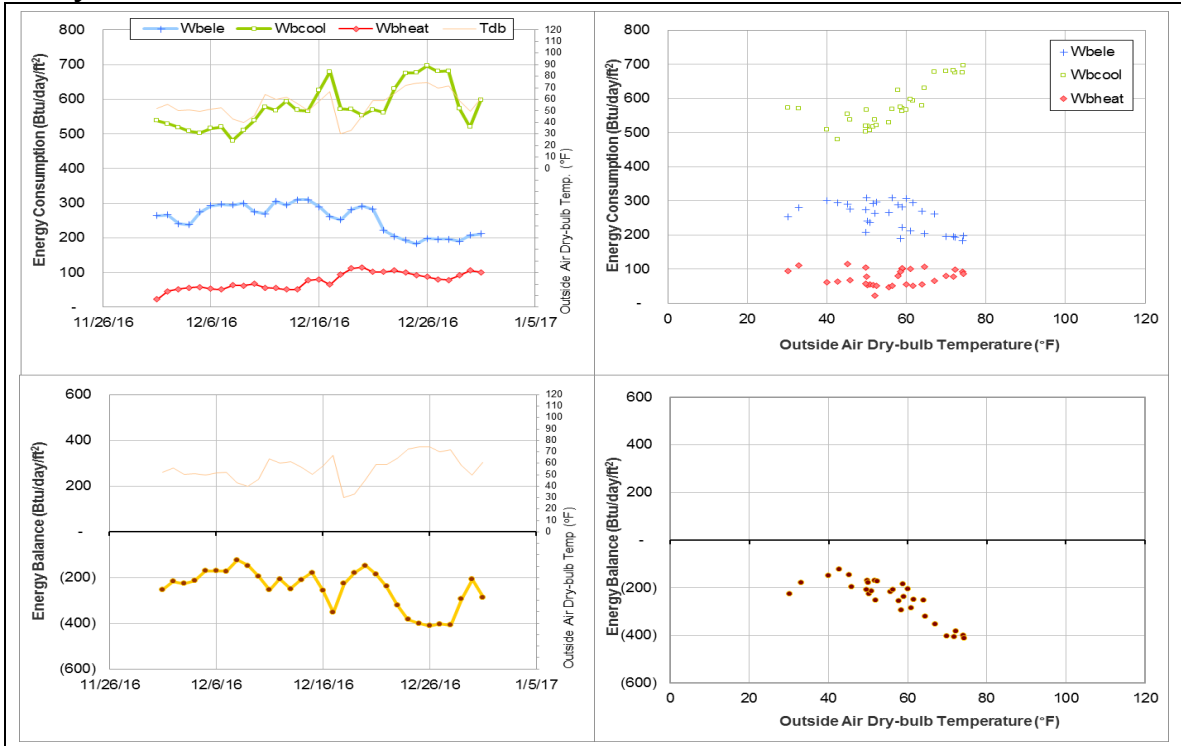
Quantitative descriptions and comments

From May 2016 through November 2016, the HHW consumption has been near zero. Starting December 2016 the HHW consumption increased, but the pattern appears to have flattened in the lower and higher temperature ranges. The HHW was estimated by model for the month.

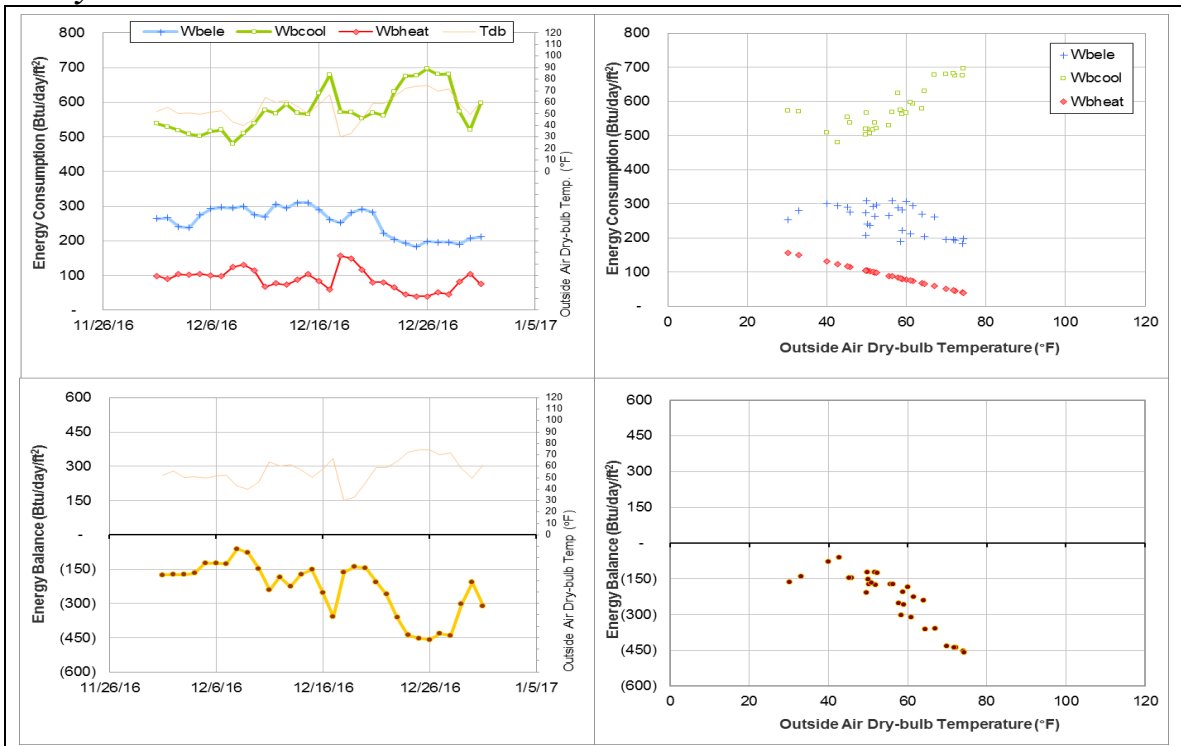
Explanatory Figure: 13 months energy balance plot with original data



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	12/1/2016 – 12/31/2016	Model
HHW	006001	31	12/1/2016 – 12/31/2016	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 – 12/31/2016
HHW	The HHW consumption is too low.	12/1/2015 – 12/31/2016
Energy Balance	The energy balance is too low.	12/1/2015 – 12/31/2016

Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	005997	12/1/2016 – 12/31/2016	Delta-T	Increased
HHW	006001	12/1/2015 – 12/31/2016	Flow rate	Periods of near zero
		12/1/2015 – 12/31/2016	Delta-T	Periods of negative Delta-T

Quantitative descriptions and comments

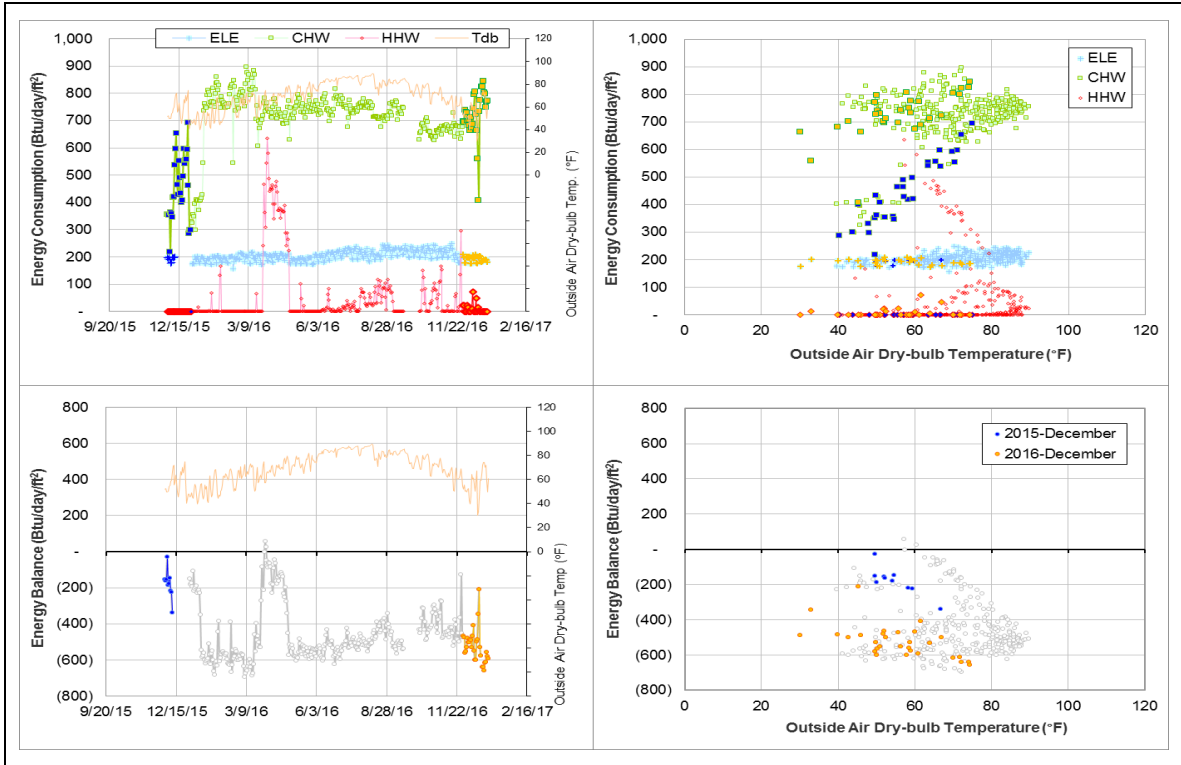
The CHW consumption pattern has increased and flattened out at cooler temperatures starting 1/14/2016. On this day, the CHW Delta-T increased and continues to remain at this higher value. This appears to be a long-term issue resulting in CHW estimates since January 2016 with the exception of the summer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

In addition, the HHW consumption is lower than expected for this building. The flow rate is near zero and the Delta-T is negative for most of the month. This has been a long-term issue over the past 13 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 – August, where we would expect low consumption.

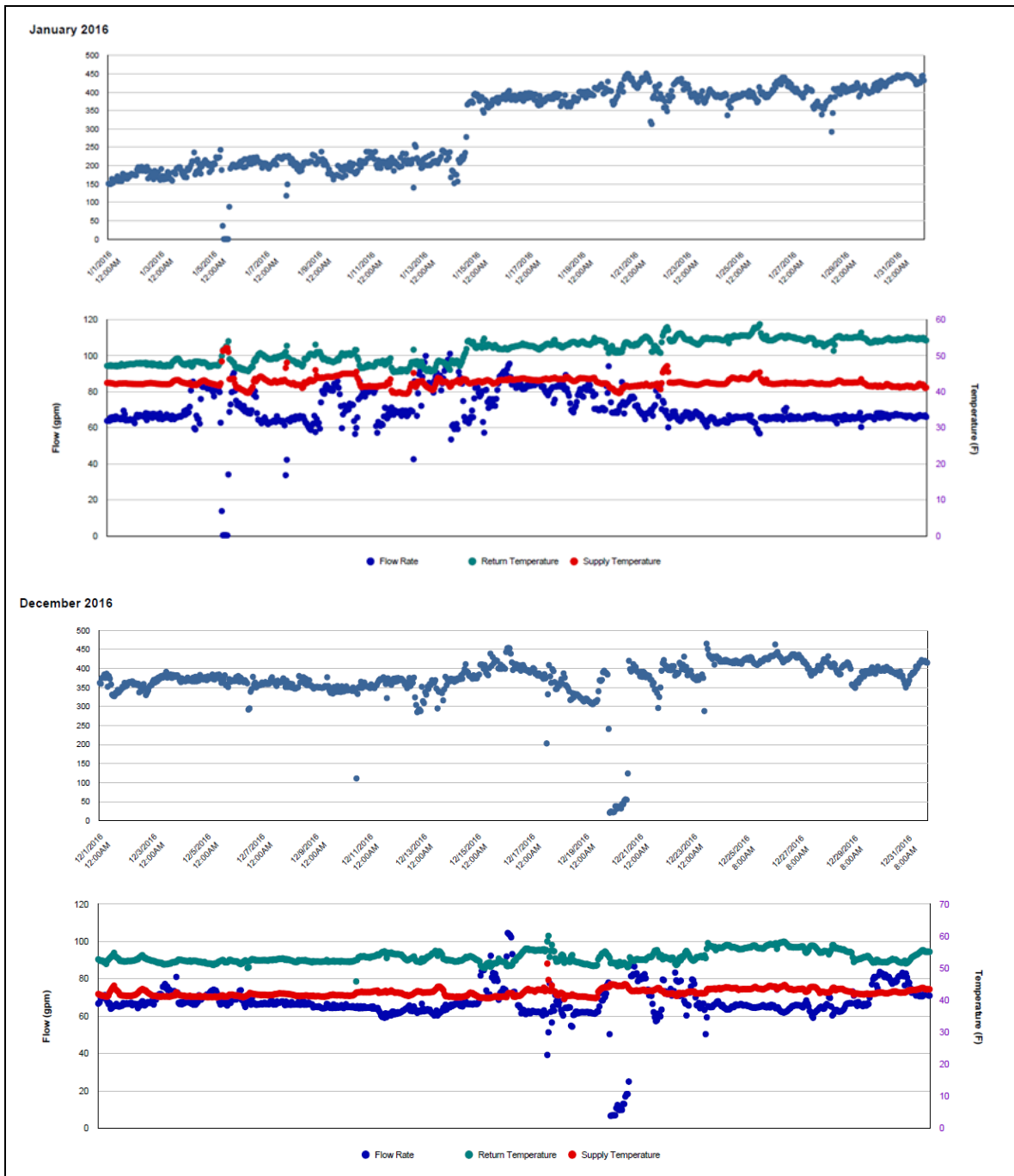
The resulting energy balance with the high CHW consumption and low HHW consumption is too low and does not reach a zero balance at any outside temperature.

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

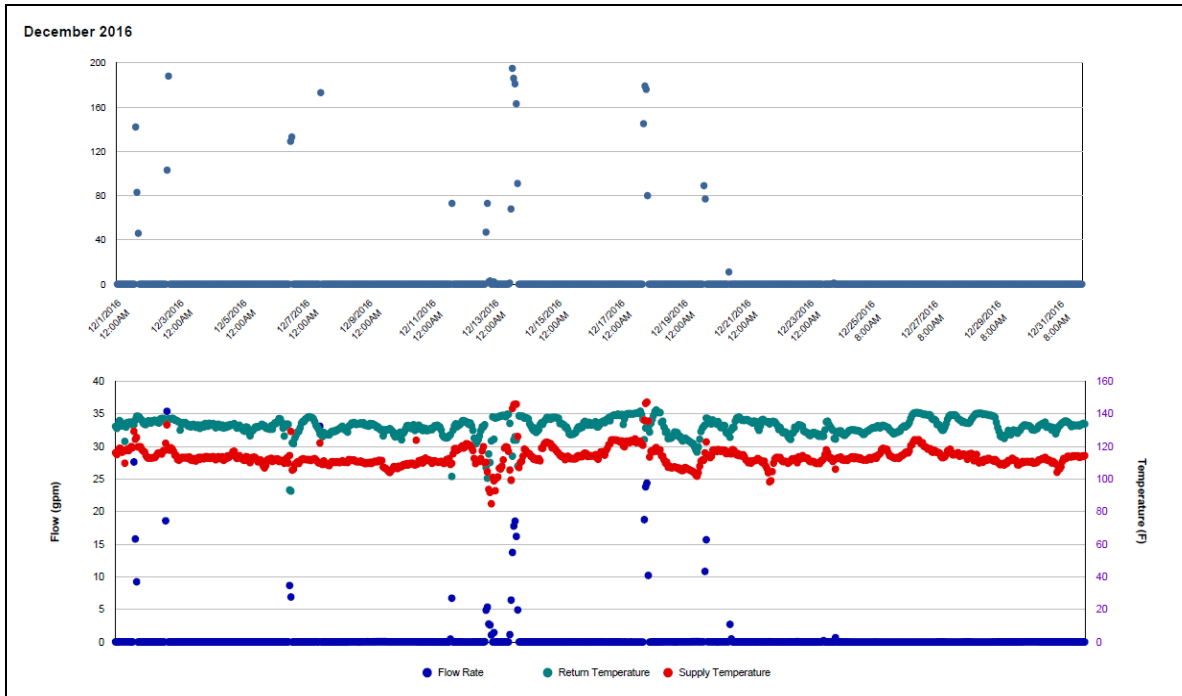
Explanatory Figure: 13 months energy balance plot with original data



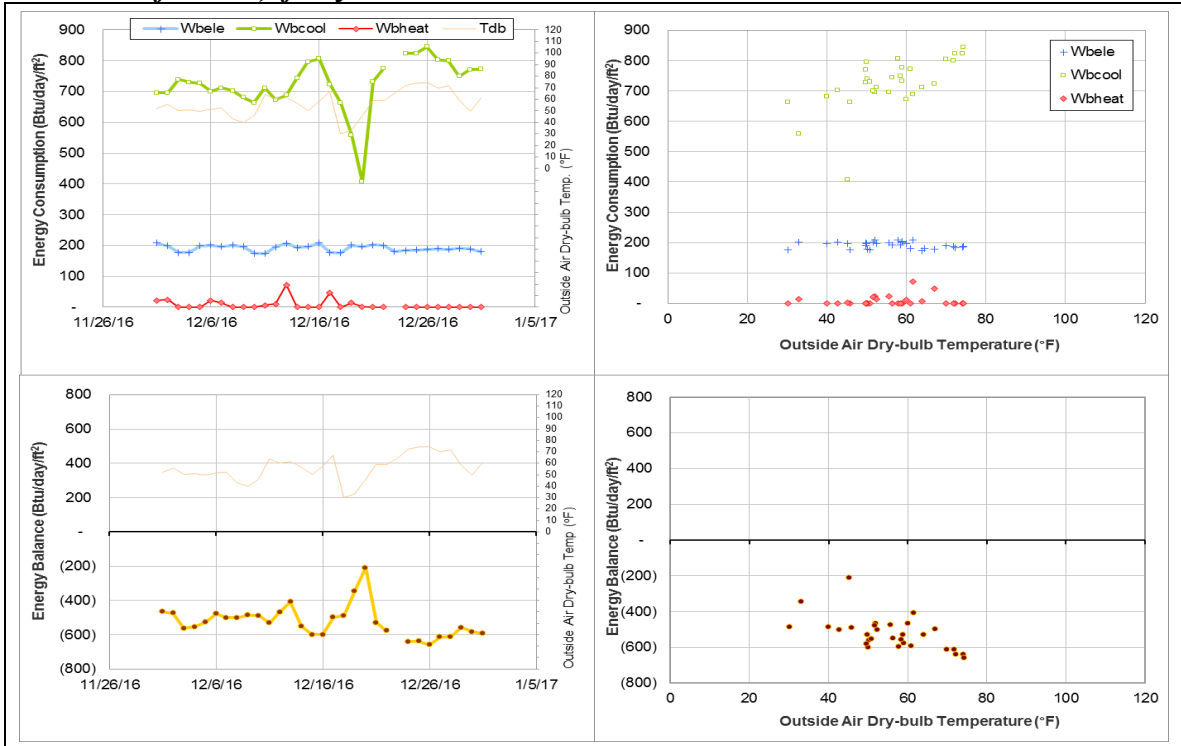
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from utilities office. (top: January 2015, bottom: December 2016)



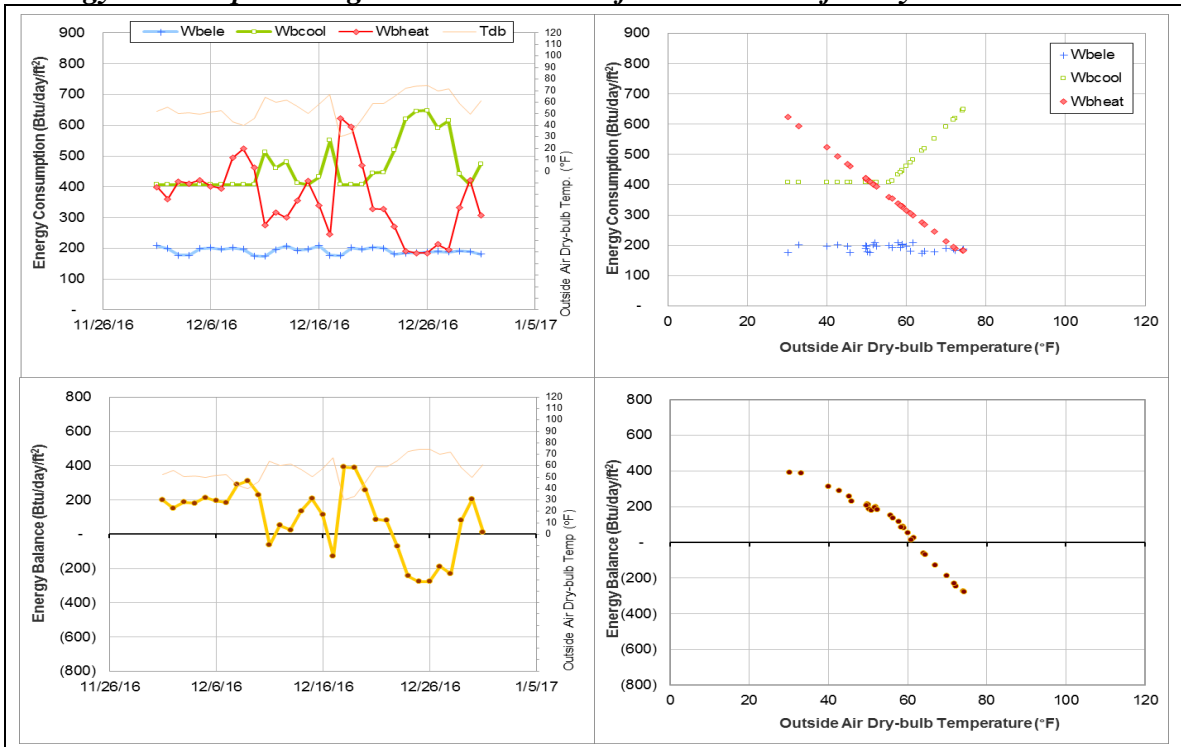
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (December 2016)



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



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



Veterinary Medicine Administration (TAMU Bldg #1026)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	006053	3	12/29/2016 – 12/31/2016	Model

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

Data Type	Description of data behaviors	Period
HHW	HHW consumption suddenly decreased.	12/29/2016 – Ongoing

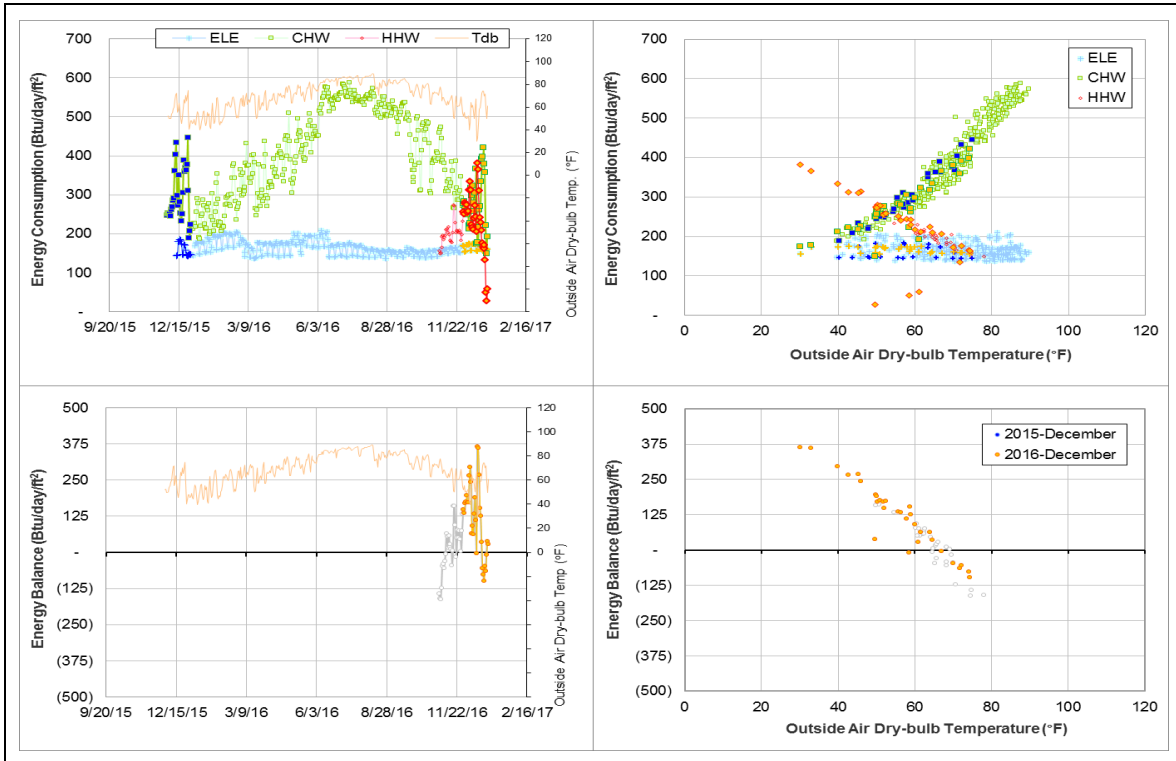
Changes in sensor readings related to the detected issues

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

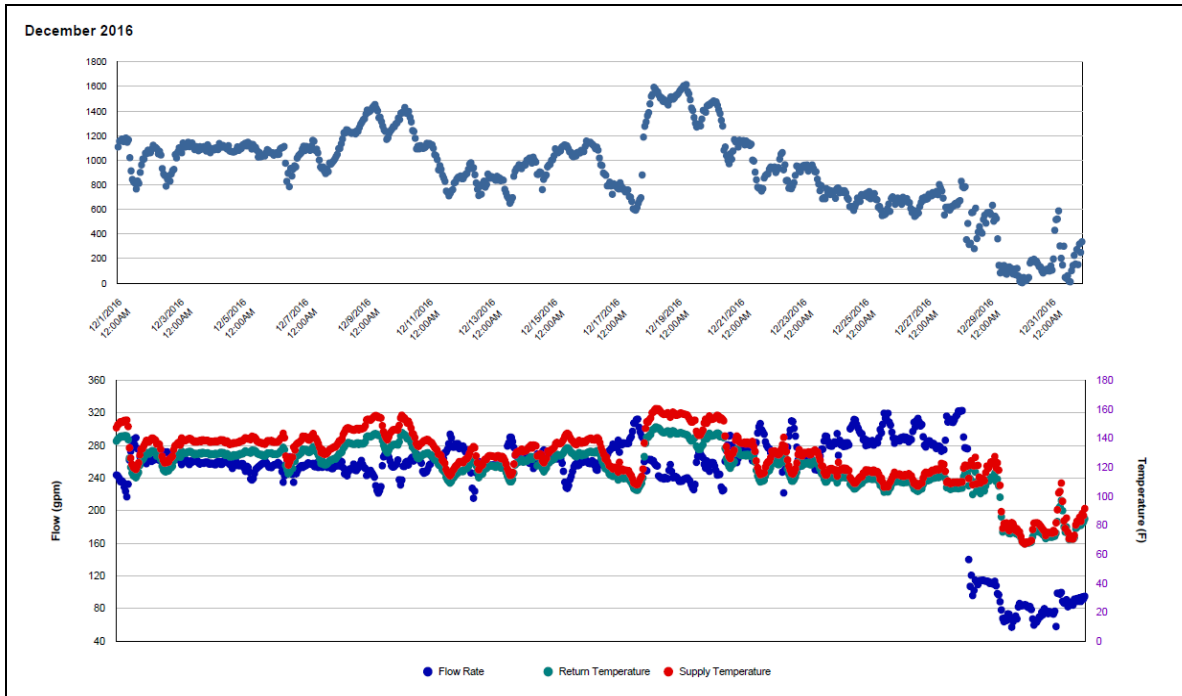
Quantitative descriptions and comments

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. Also, the supply and return temperatures both dropped from 100-120 °F to 70-90 °F range. These three days were estimated by model.

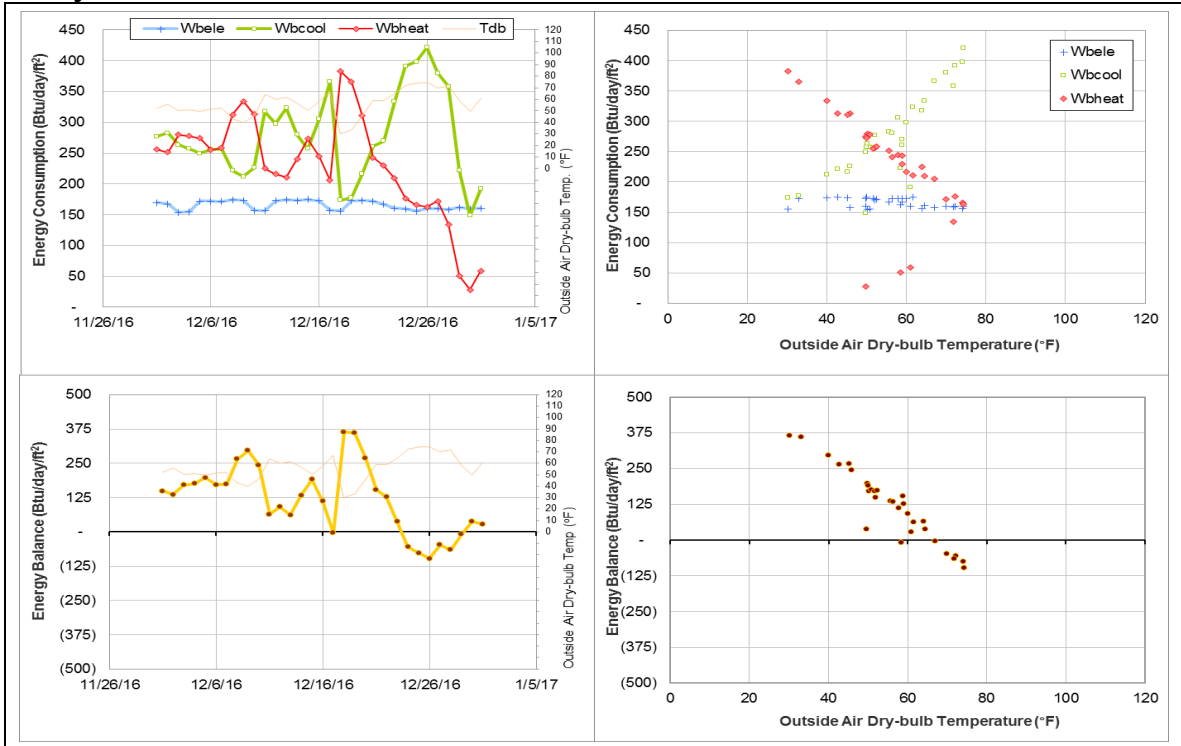
Explanatory Figure: 13 months energy balance plot with original data



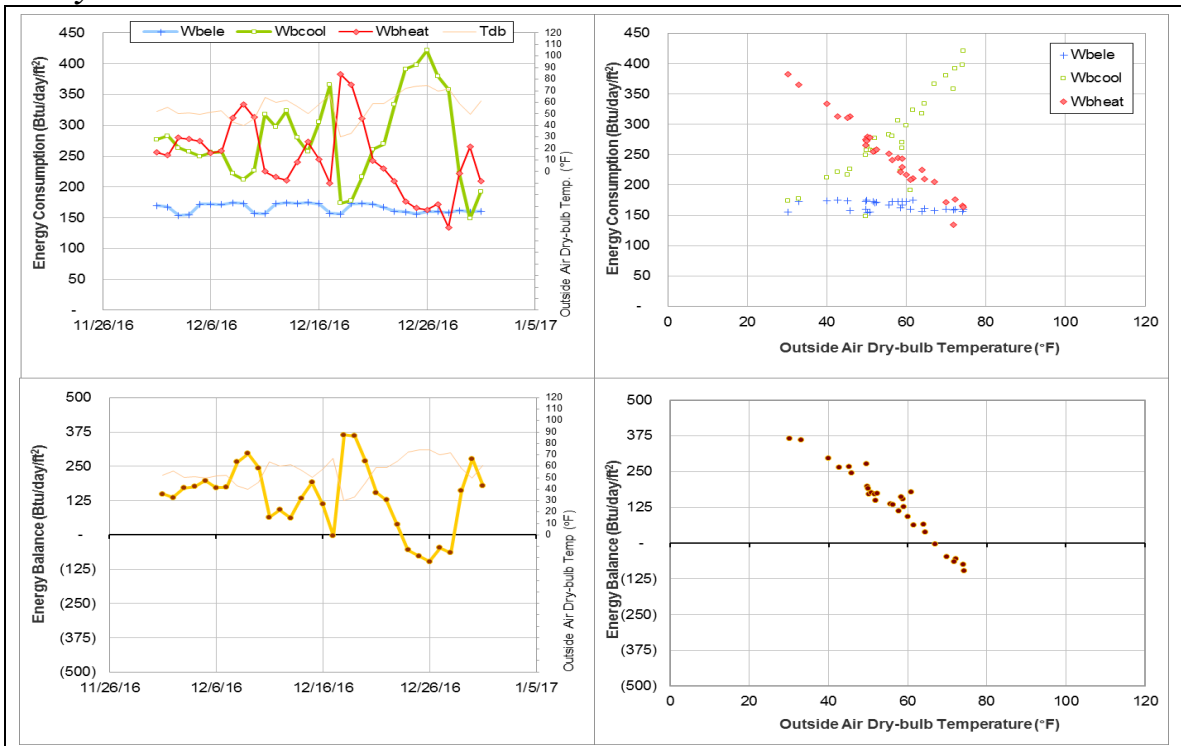
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (December 2016)



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 Small Animal Hospital (TAMU Bldg #1085)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	003656	3	12/6/2016 – 12/9/2016	Model

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

Data Type	Description of data behaviors	Period
CHW	CHW consumption suddenly decreased to near zero.	12/6/2016 – 12/9/2016

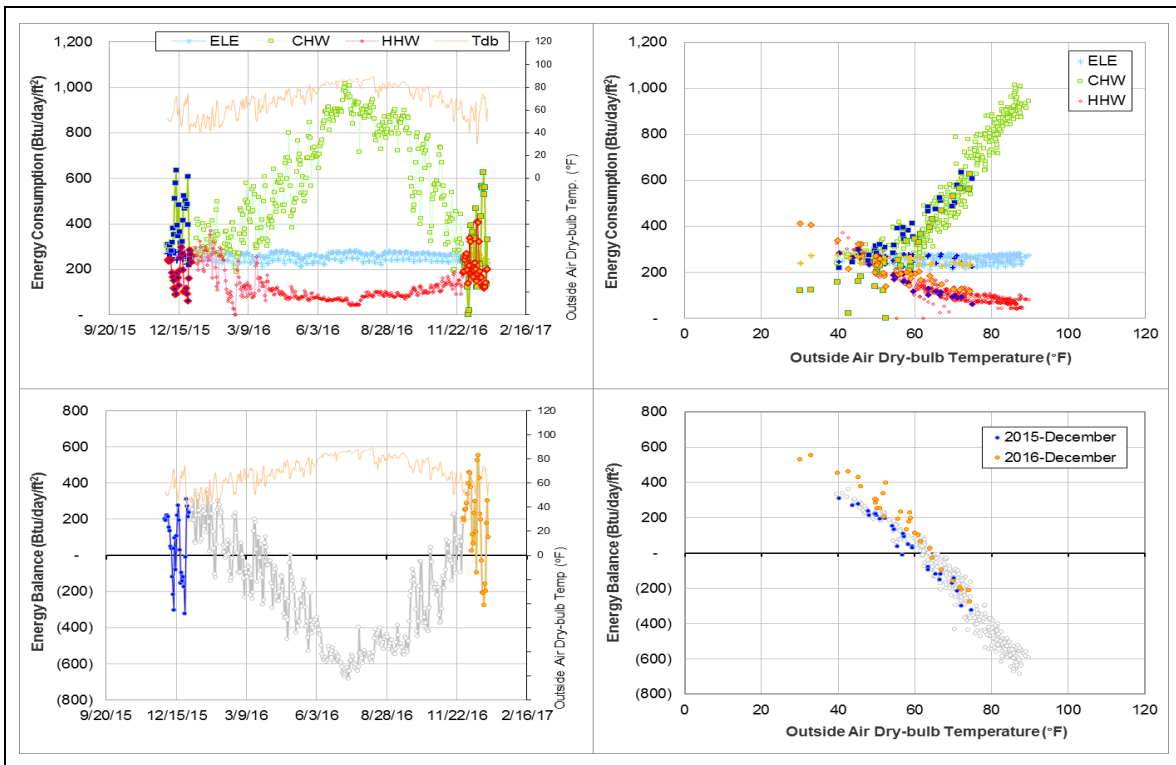
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	003656	12/6/2016 – 12/9/2016	Flow Rate	Decreased to near zero

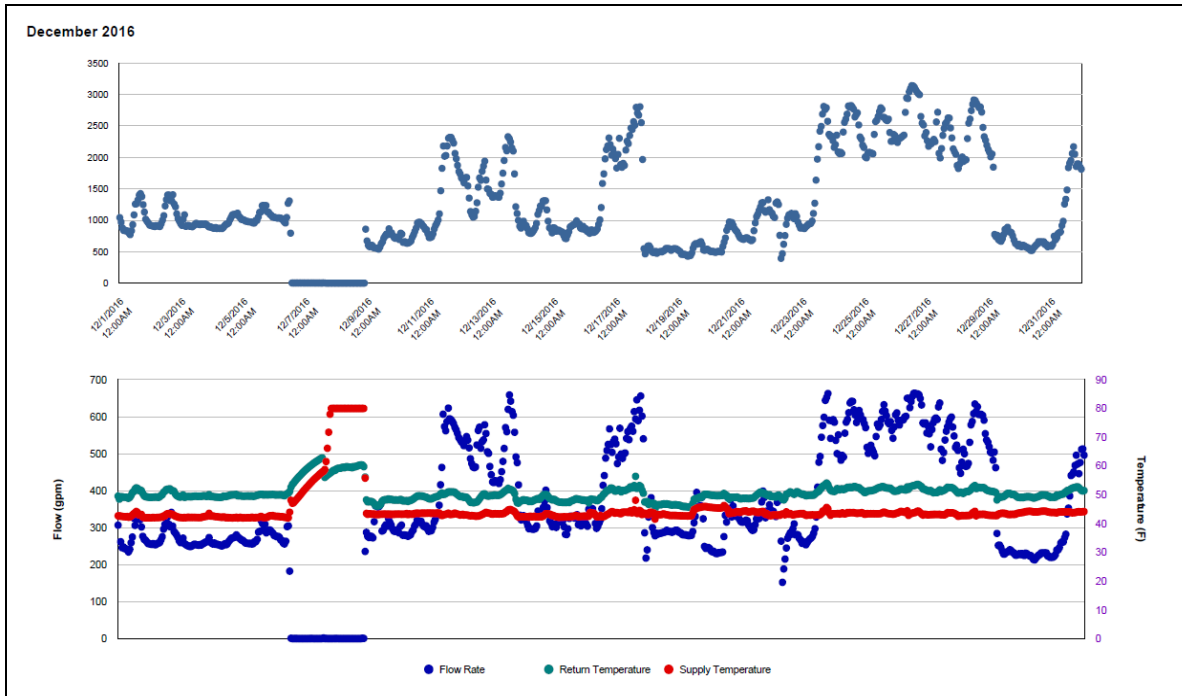
Quantitative descriptions and comments

During 12/6/2016-12/9/2016, the CHW flow rate suddenly decreased to near zero value. After 12/9/2016, the flow rate returned to previous range. These three days of CHW consumption was estimated by model.

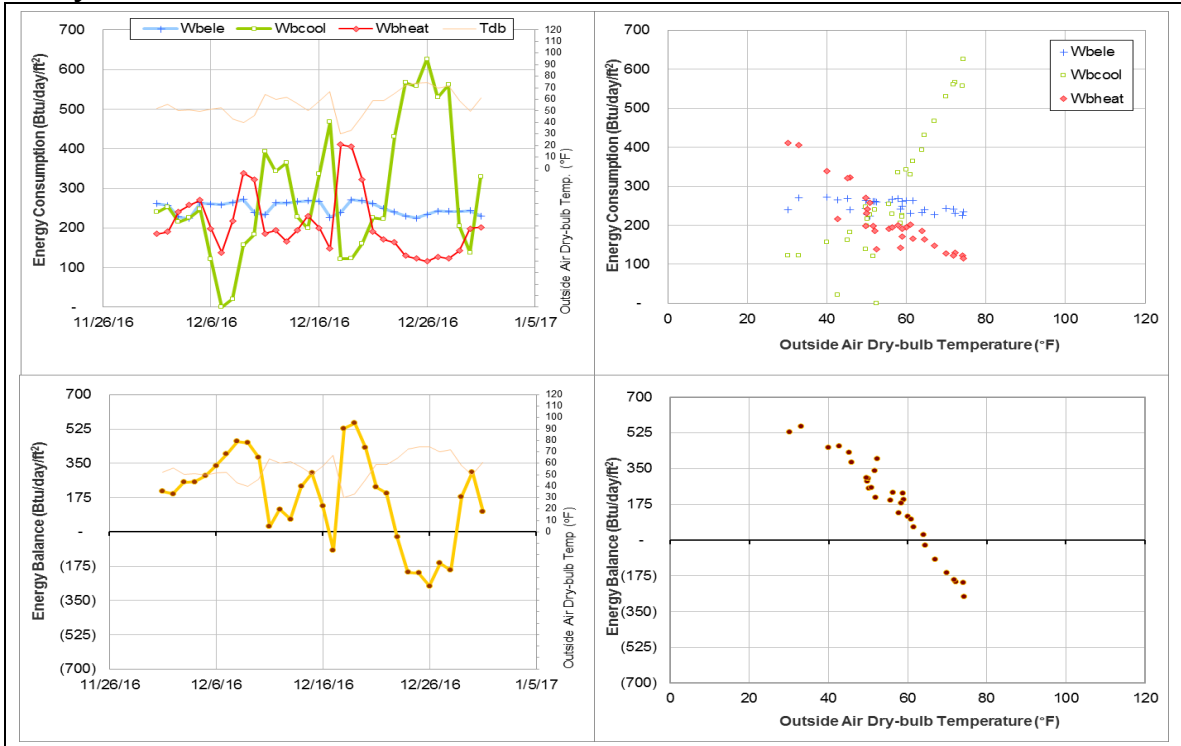
Explanatory Figure: 13 months energy balance plot with original data



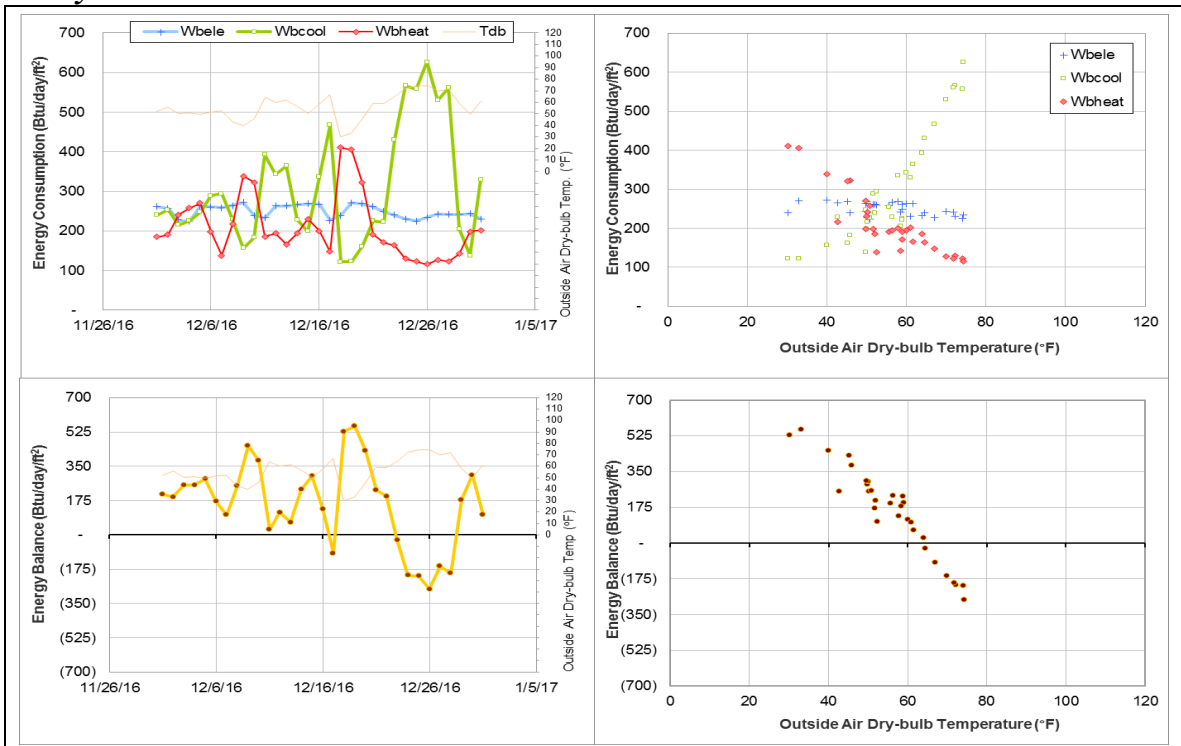
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from utilities office. (December 2016)



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	24	12/8/2016 – 12/1/2016	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 – Ongoing

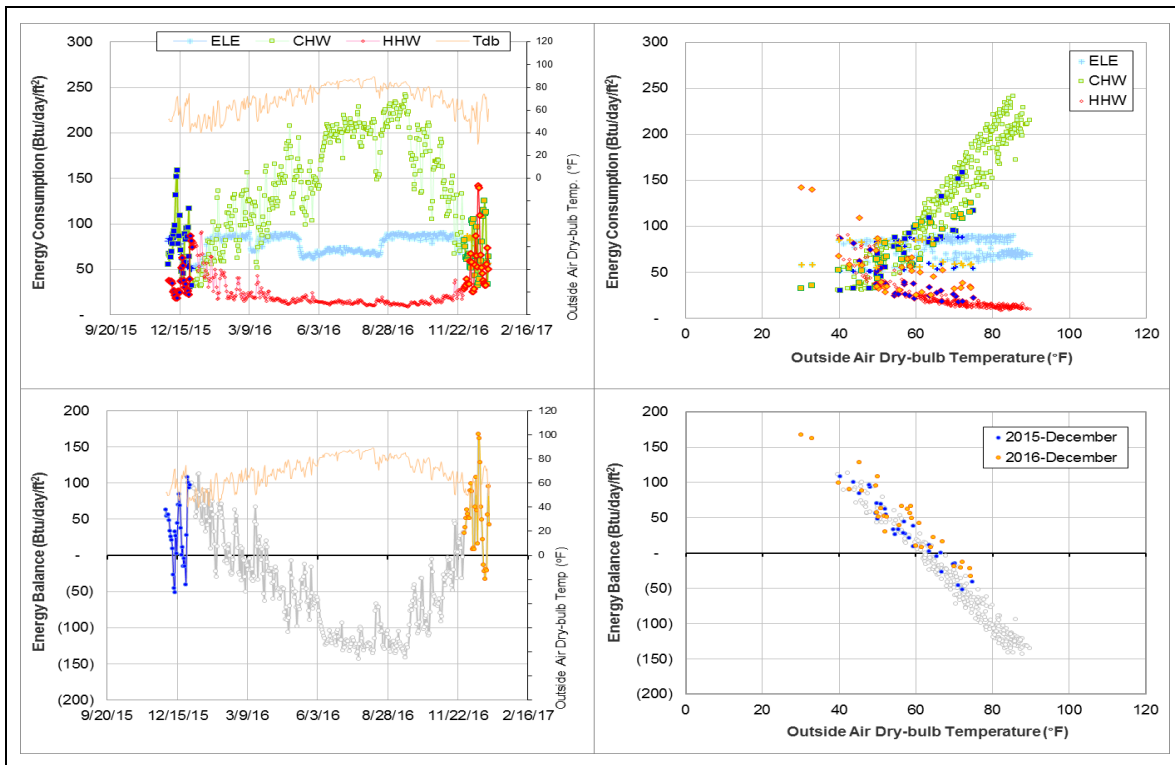
Changes in sensor readings related to the detected issues

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

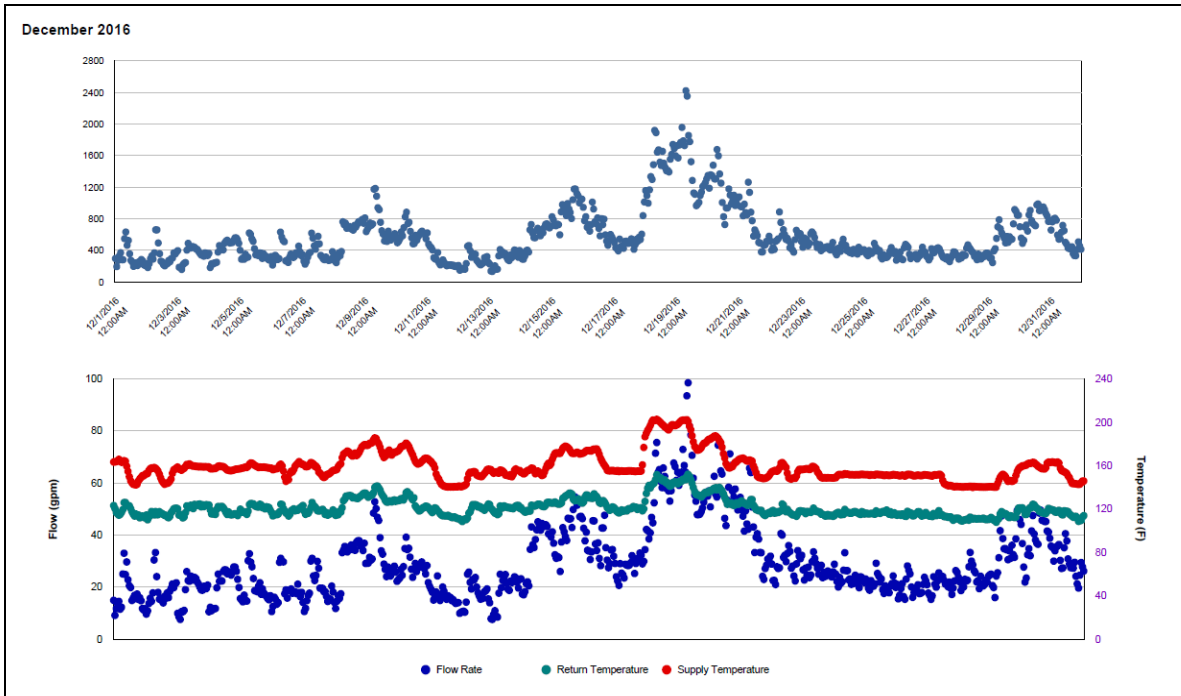
Quantitative descriptions and comments

Starting around 12/8/2016, the HHW consumption pattern increased to almost double the Btu/day/ft². During this time, the flow rate shows an increase. The HHW consumption for this period was estimated by model.

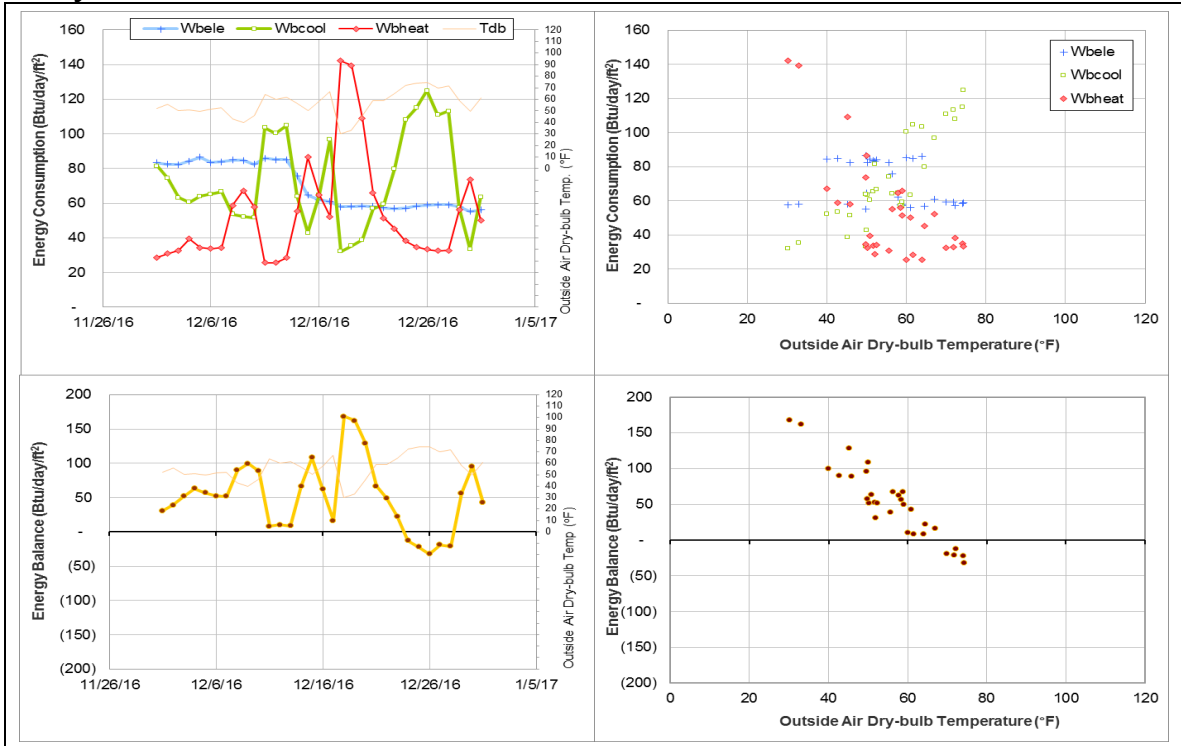
Explanatory Figure: 13 months energy balance plot with original data



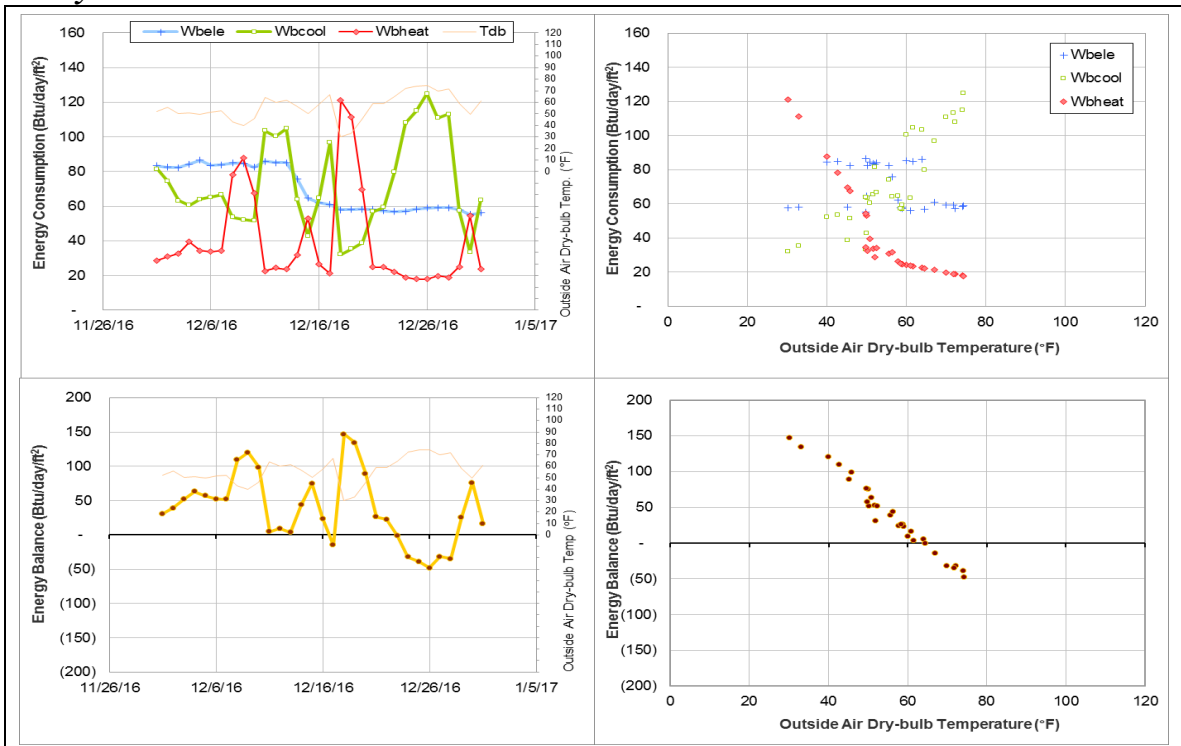
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (December 2016)



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.



West Campus Library Facility (TAMU Bldg #1511)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
CHW	004313	6	12/23/2016 – 12/28/2016	Model

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

Data Type	Description of data behaviors	Period
CHW	CHW consumption decreased for a brief period.	12/23/2016 – 12/28/2016

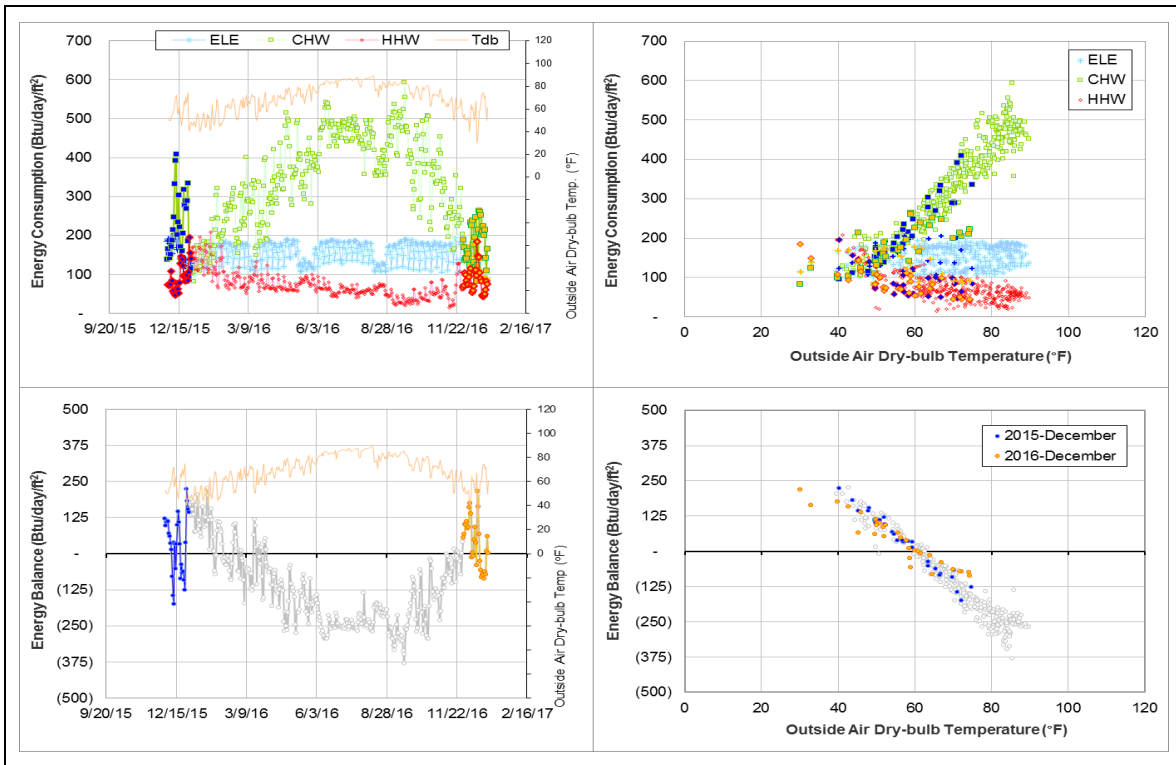
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
CHW	004313	12/23/2016 – 12/28/2016	Flow Rate	Decreased for brief period

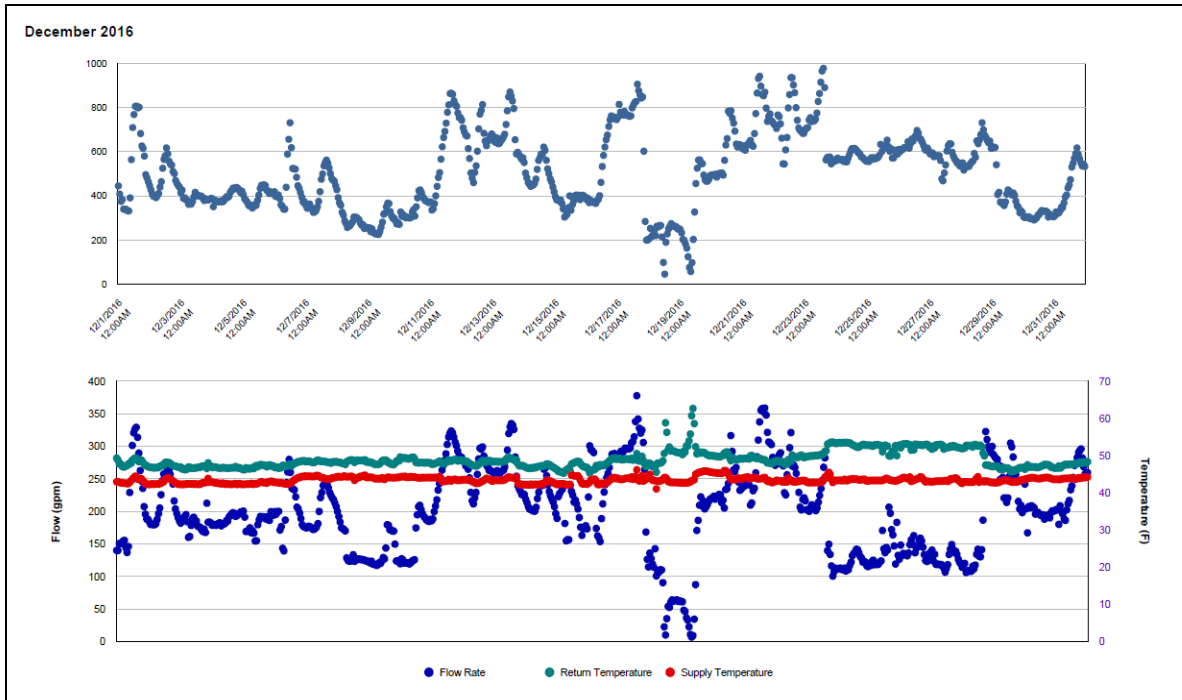
Quantitative descriptions and comments

The CHW consumption decreased for a brief period between 12/23/2016 and 12/28/2016. The CHW flow rate decreased to nearly half. The CHW consumption for the period was estimated by model.

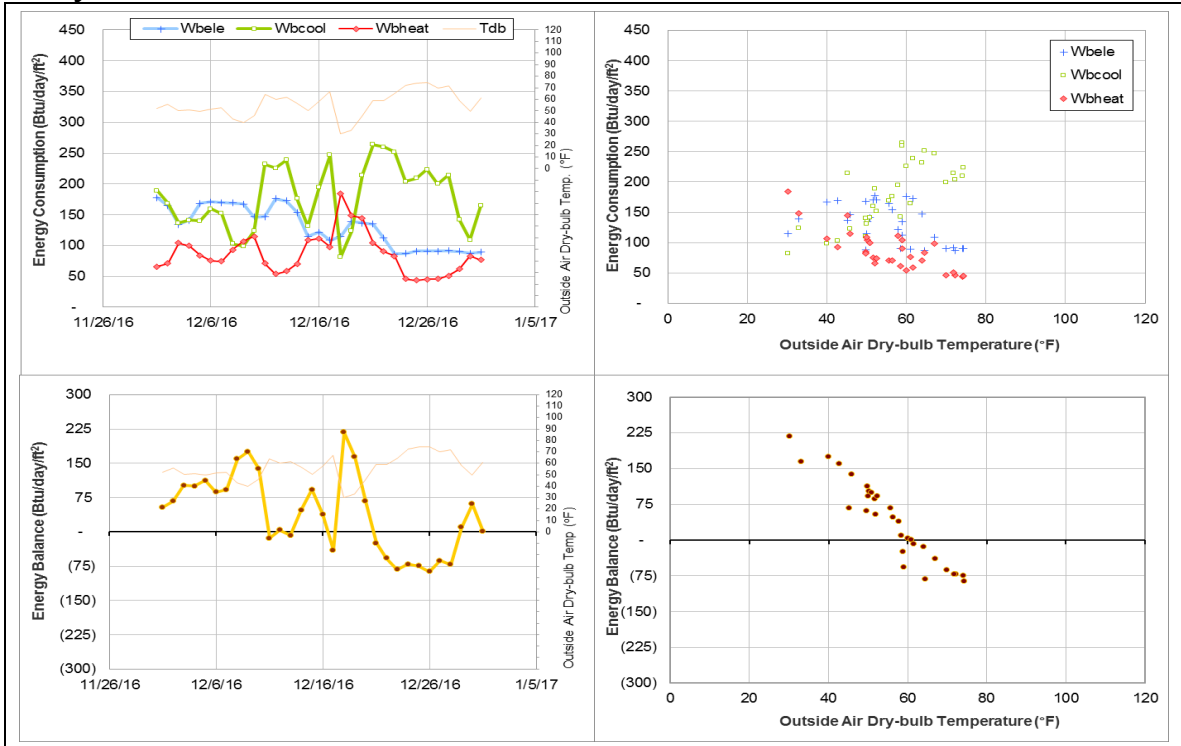
Explanatory Figure: 13 months energy balance plot with original data



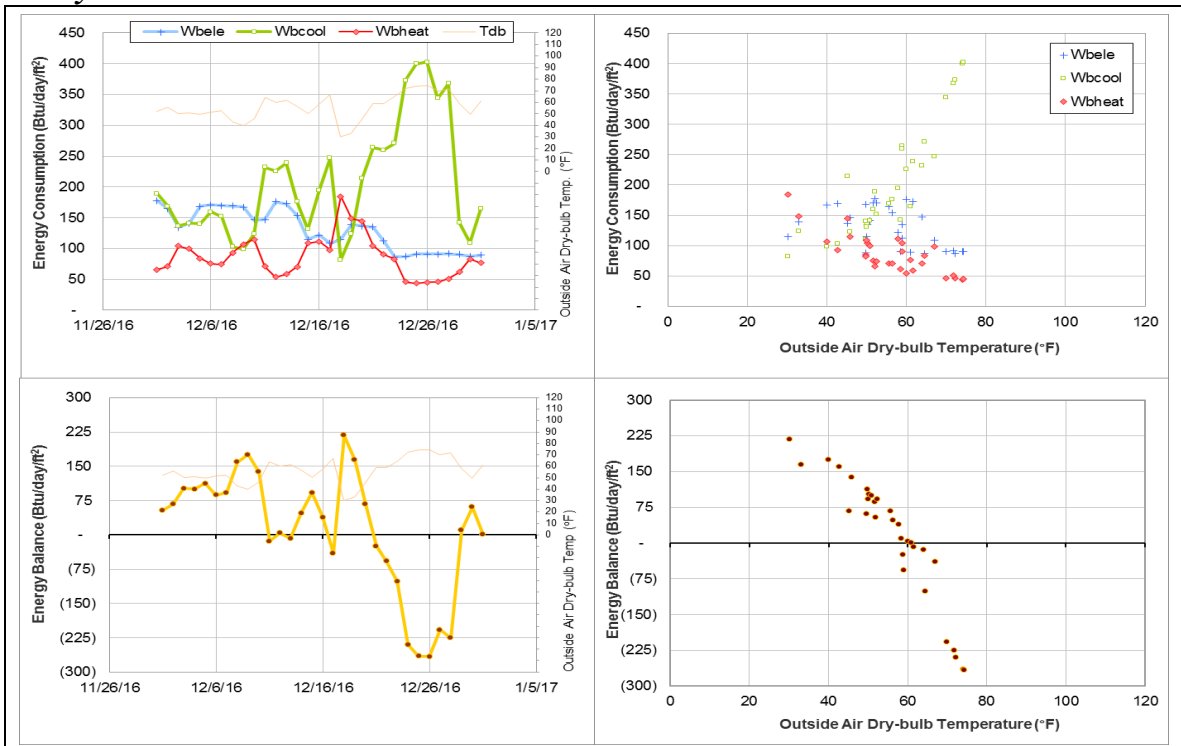
Explanatory Figure: Time series plots of hourly CHW energy consumption, flow rate, and supply and return temperatures from utilities office. (December 2016)



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



International Ocean Discovery Building (TAMU Bldg #1601)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
HHW	008145	4	12/1/2016 – 12/4/2016	Model

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

Data Type	Description of data behaviors	Period
HHW	The HHW consumption dropped for short periods.	12/1/2016 – 12/4/2016

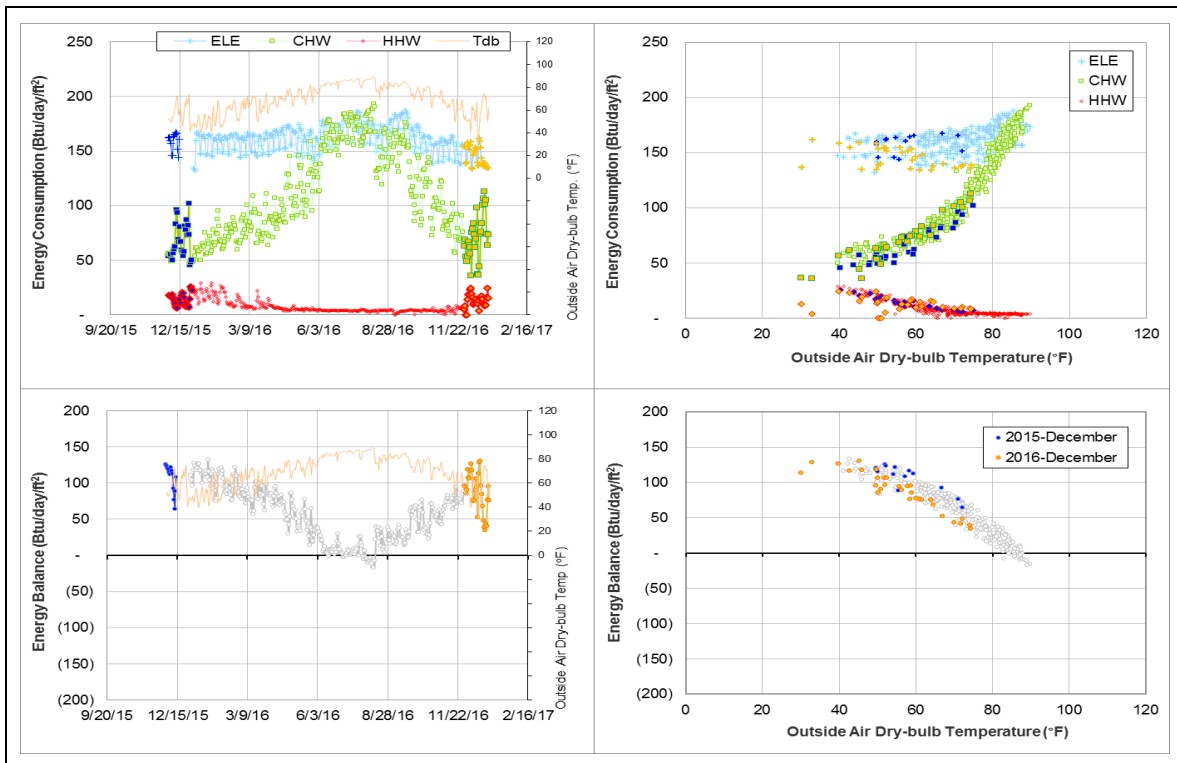
Changes in sensor readings related to the detected issues

Energy Type	Meter ID	Period	Type	Description
HHW	008145	12/1/2016 – 12/4/2016	Flow Rate	Decreased to near zero

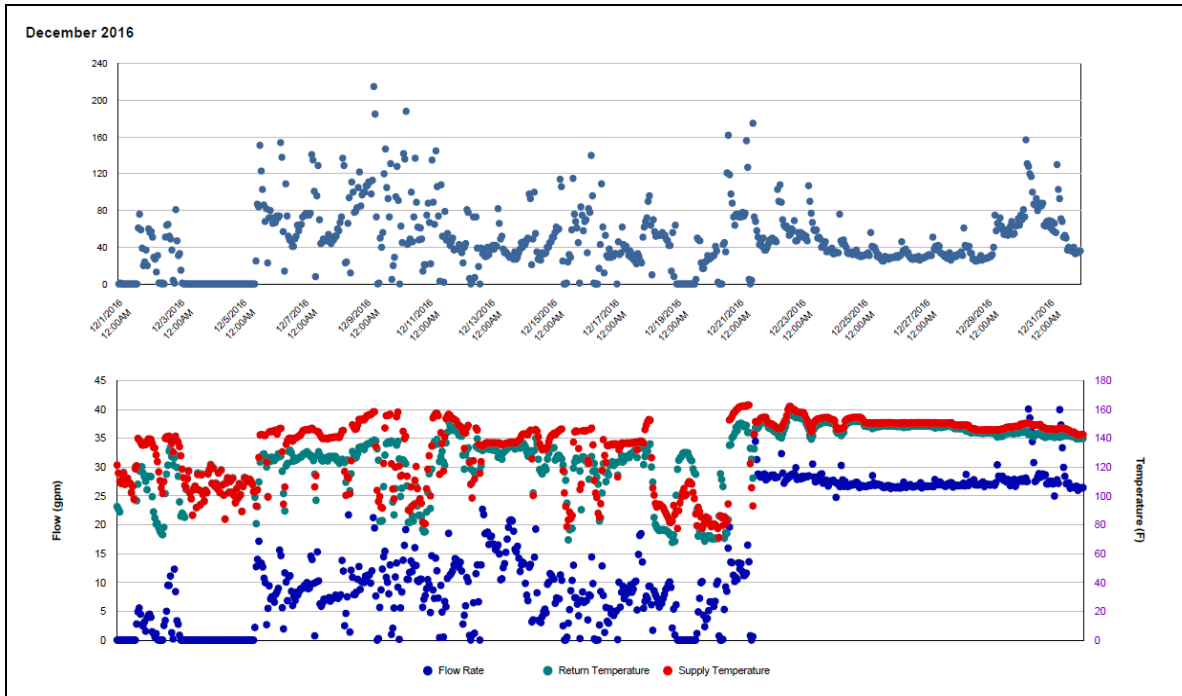
Quantitative descriptions and comments

The HHW consumption decreased to lower than expected values for 12/1/2016 – 12/4/2016. During this period, the flow rate reached near zero values. The HHW consumption was estimated using a model for these four days.

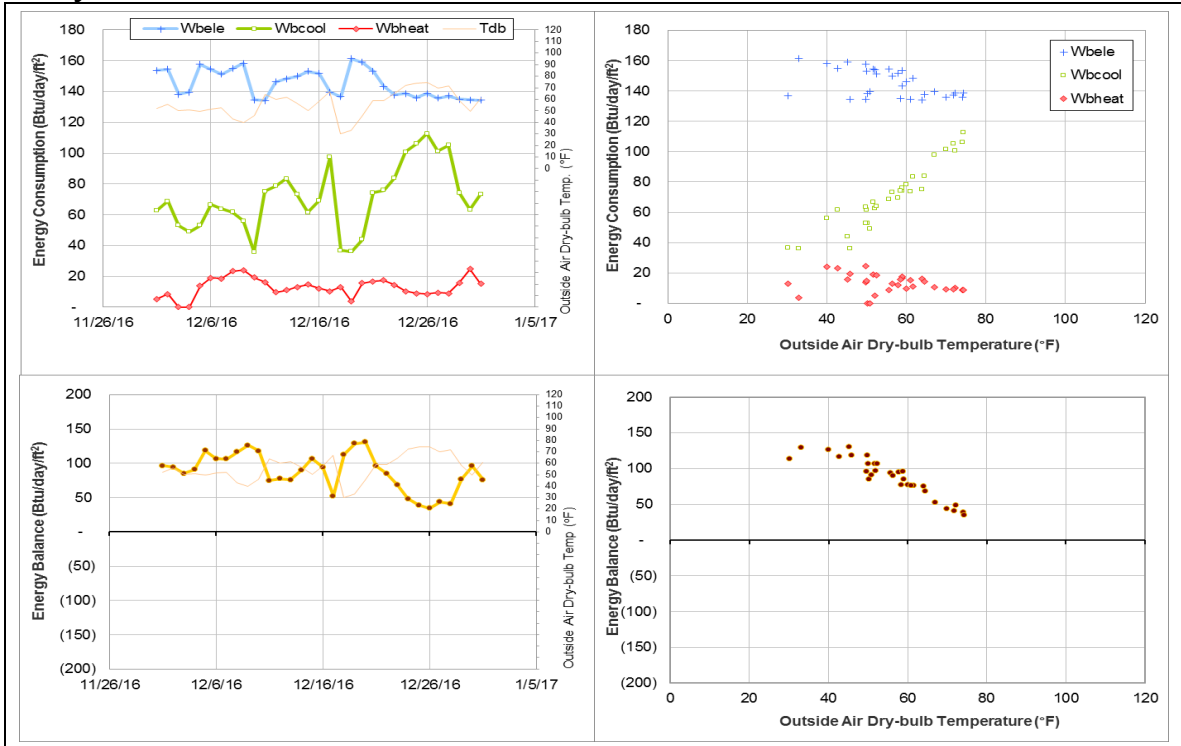
Explanatory Figure: 13 months energy balance plot with original data



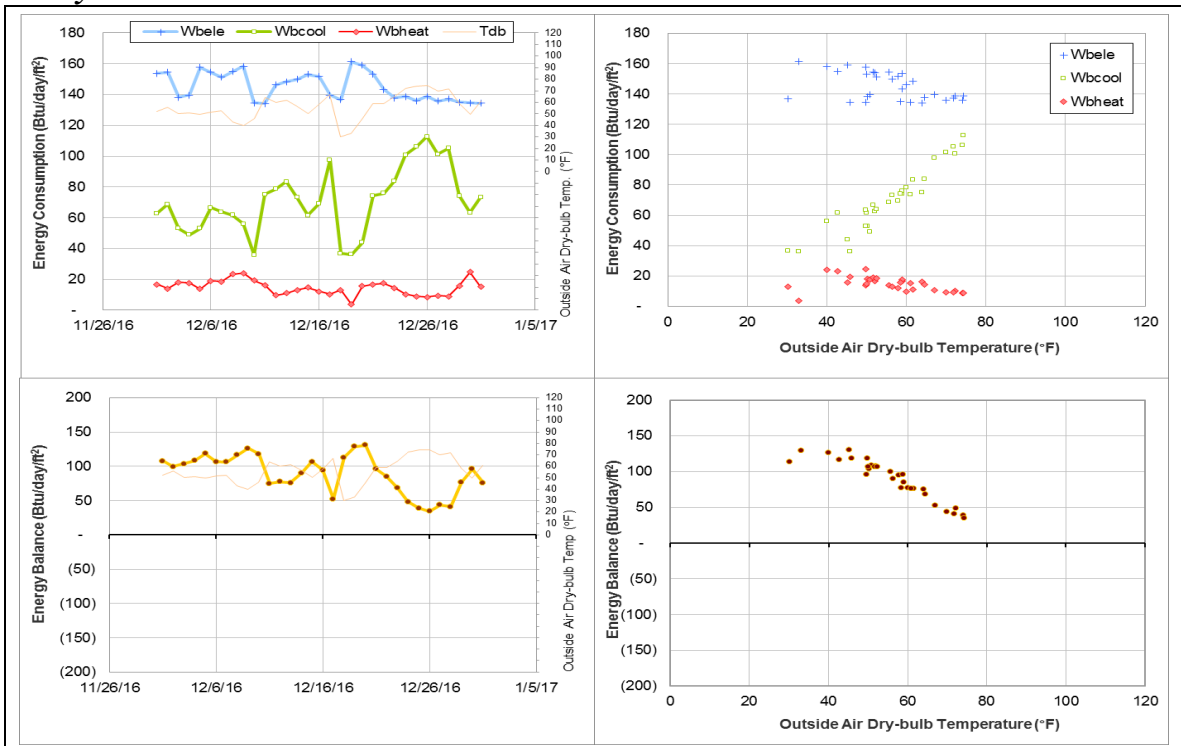
Explanatory Figure: Time series plots of hourly HHW energy consumption, flow rate, and supply and return temperatures from utilities office. (December 2016)



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



National Center for Therapeutics Manufacturing (TAMU Bldg #1910)

Estimated data

Energy Type	Meter ID	Number of Days	Period	Estimation Method
ELE	007517	1	12/26/2016	Other

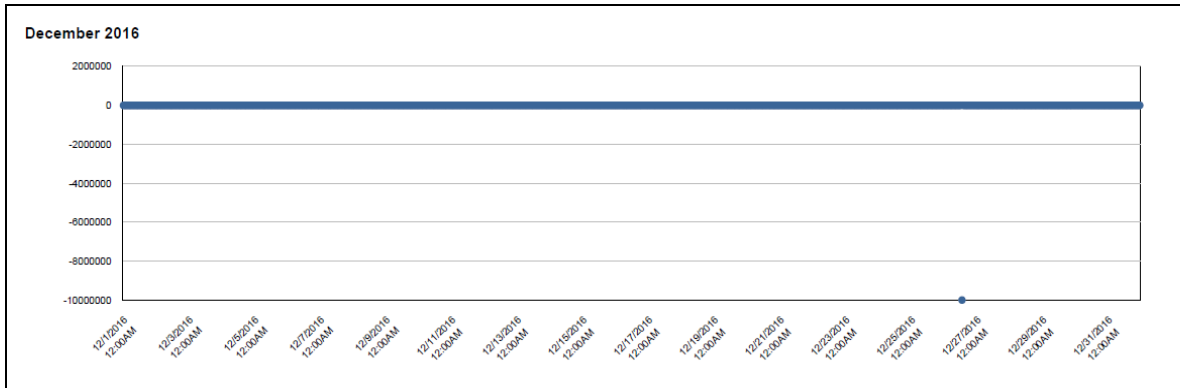
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	Large negative value for kWh.	12/26/2016

Quantitative descriptions and comments

The counter on the electric meter #007517 appears to have rolled over the 9,999,999 mark causing the total kWh for the month to appear negative. The kWh for 12/26/2016 was estimated by adjusting for this meter roll over.

Explanatory Figure: Time series plots of hourly ELE energy consumption from utilities office. (December 2016)



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 December 2016

Building No.	Building Name	MeterID	Type
0290	Wells Residence Hall	001984	CHW
		001988	HHW
0291	Rudder Residence Hall	002132	CHW
		002136	HHW
0293	Appelt Residence Hall	002062	CHW
		002066	HHW
0353	Bright Aerospace Building	002746	CHW
0433	Mosher Residence Hall	009083	ELE
		002485	CHW
		002489	HHW
0441	Krueger Residence Hall	002504	CHW
		002500	HHW
0443	Oceanography & Meteorology Building	006388	CHW
		006392	HHW
0517	DPC Annex	006567	HHW
0446	Rudder Theatre Complex	002977	ELE
		002980	ELE
		004297	CHW
		004309	HHW
		005878	CHW
0482	Fermier Hall	005881	HHW
		007557	ELE
0484	Chemistry Building	007557	ELE
0496	Utilities & Energy Services Central Office	007706	ELE
		006929	CHW
		006933	HHW
		002672	CHW
0499	Engineering Innovation Center	002683	HHW
		001484	ELE
0506	Nagle Hall	003619	CHW
		003623	HHW
		004288	CHW
0512	All Faiths Chapel	004288	CHW

Building No.	Building Name	Meter	Type
0524	Blocker Building	002918	HHW
652	Neeley Residence Hall	002147	CHW
		002151	HHW
740	McNew Laboratory	005874	ELE
		005974	CHW
		005968	HHW
815	Entomology Research Lab	006043	CHW
880	TVMC-Small Animal Building	005962	HHW
1026	Veterinary Medicine Administration	006053	HHW
1146	Biological Control Facility	005887	CHW
1156	Physical Plant Administration & Shops	007679	CHW
		007683	HHW
1184	Veterinary Anatomic Pathology	001445	ELE
1197	Veterinary Research Building	006355	ELE
		006359	ELE
1504	Reynolds Medical Sciences Building	003975	ELE
		003989	CHW
		003993	HHW
		007575	CHW
1558	Cox-McFerrin Center for Aggie Basketball	007577	HHW
		000363	ELE
1560	Student Recreation Center	000366	ELE
		002933	CHW
		002937	HHW
		006351	ELE
1601	International Ocean Discovery Building	006382	CHW
		008144	CHW
		008145	HHW
1604	Offshore Technology Research Center	006660	ELE

Wells Residence Hall (TAMU Bldg #290)

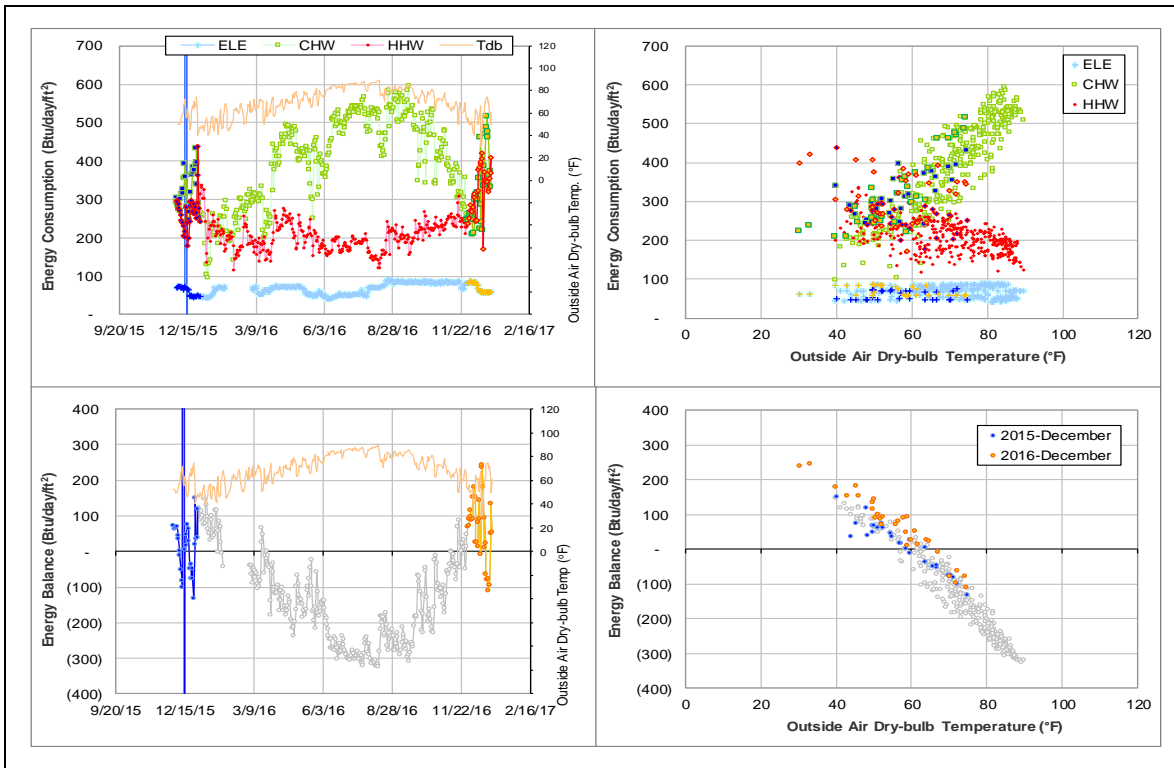
Detected issues in the energy balance and/or the consumption data

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, 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)

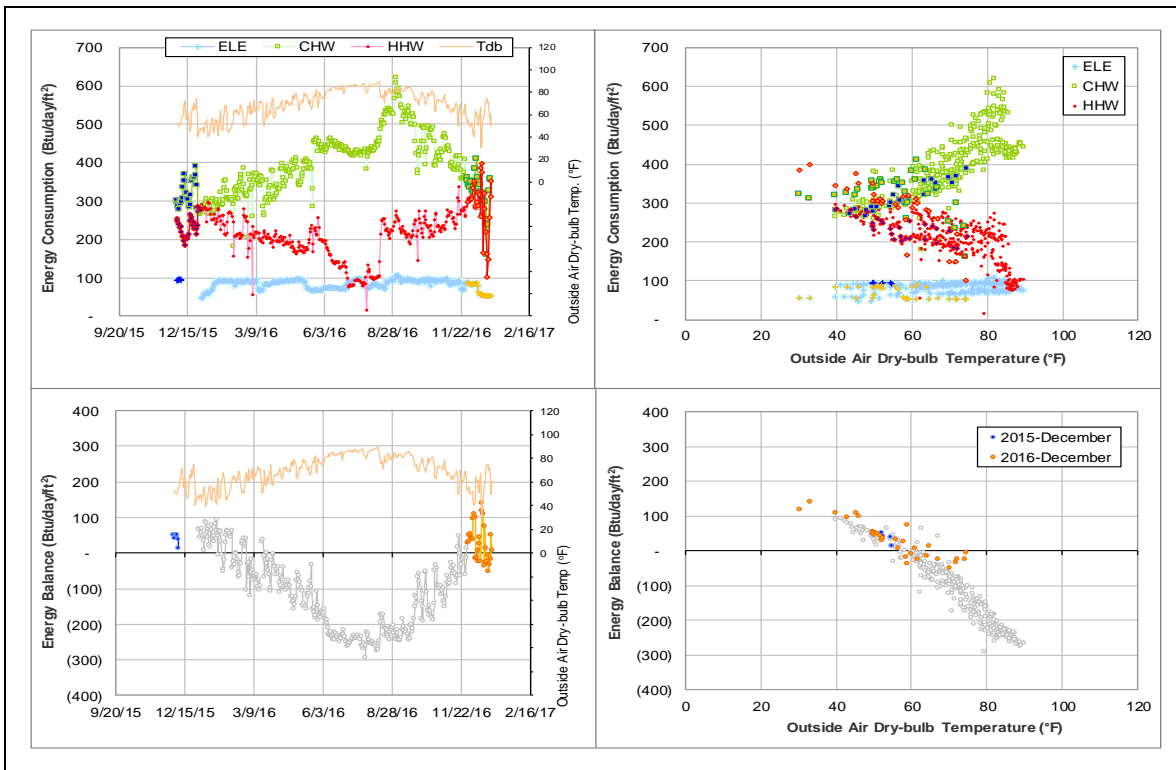
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	Sudden increase by 150 Btu/day/ft ² .	Since 8/2016
HHW	Sudden increase by 100 Btu/day/ft ² .	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.

Explanatory Figure: 13 months energy balance plot with original data



Appelt Residence Hall (TAMU Bldg #293)

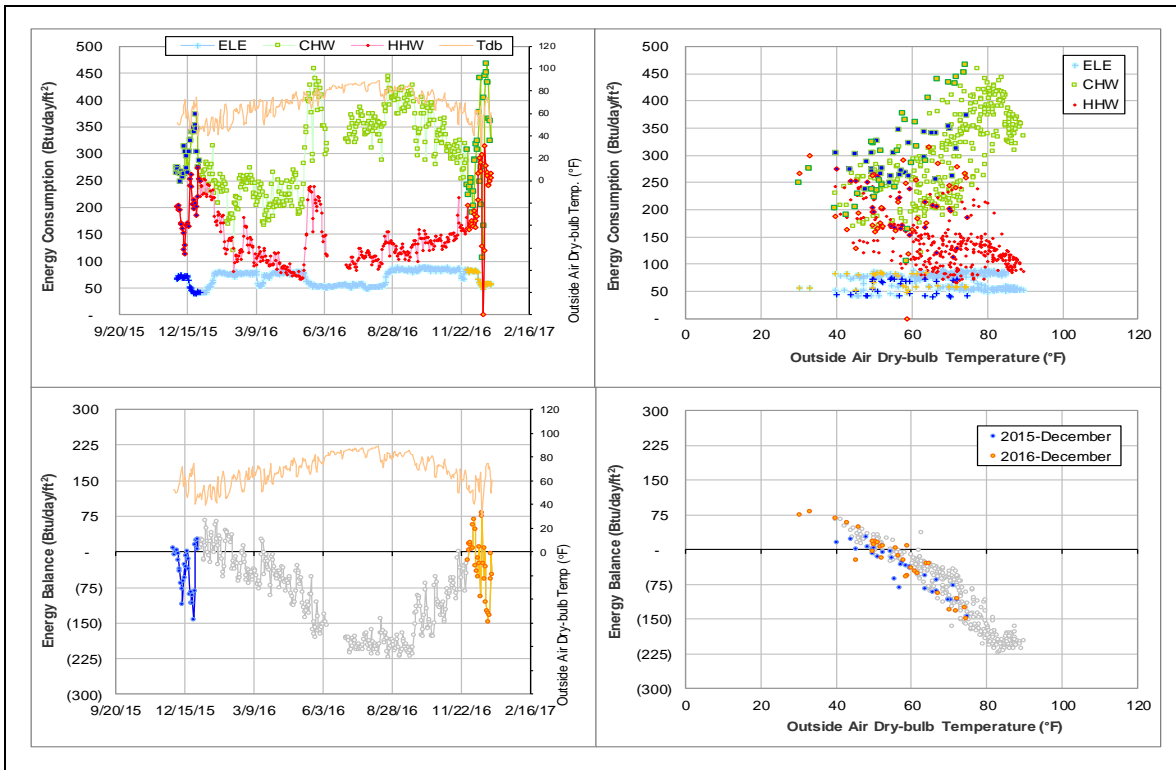
Detected issues in the energy balance and/or the consumption data

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)

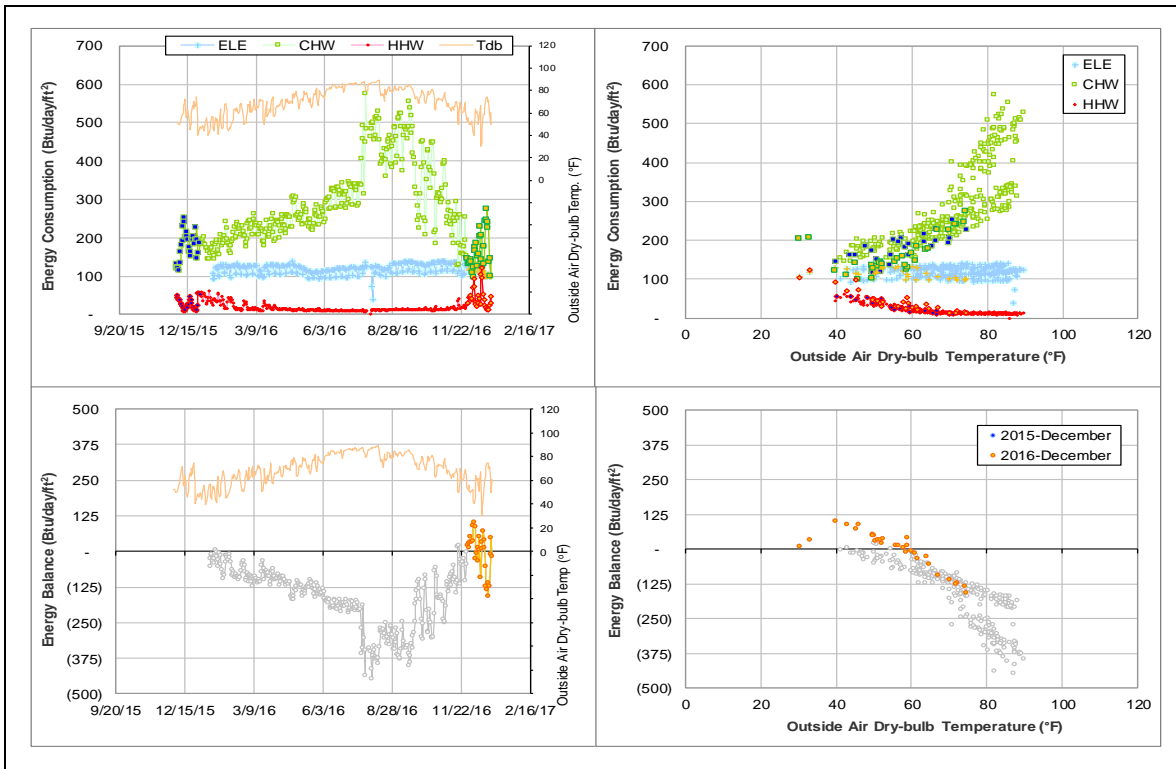
Detected issues in the energy balance and/or the consumption data

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



Mosher Residence Hall (TAMU BLDG # 433)

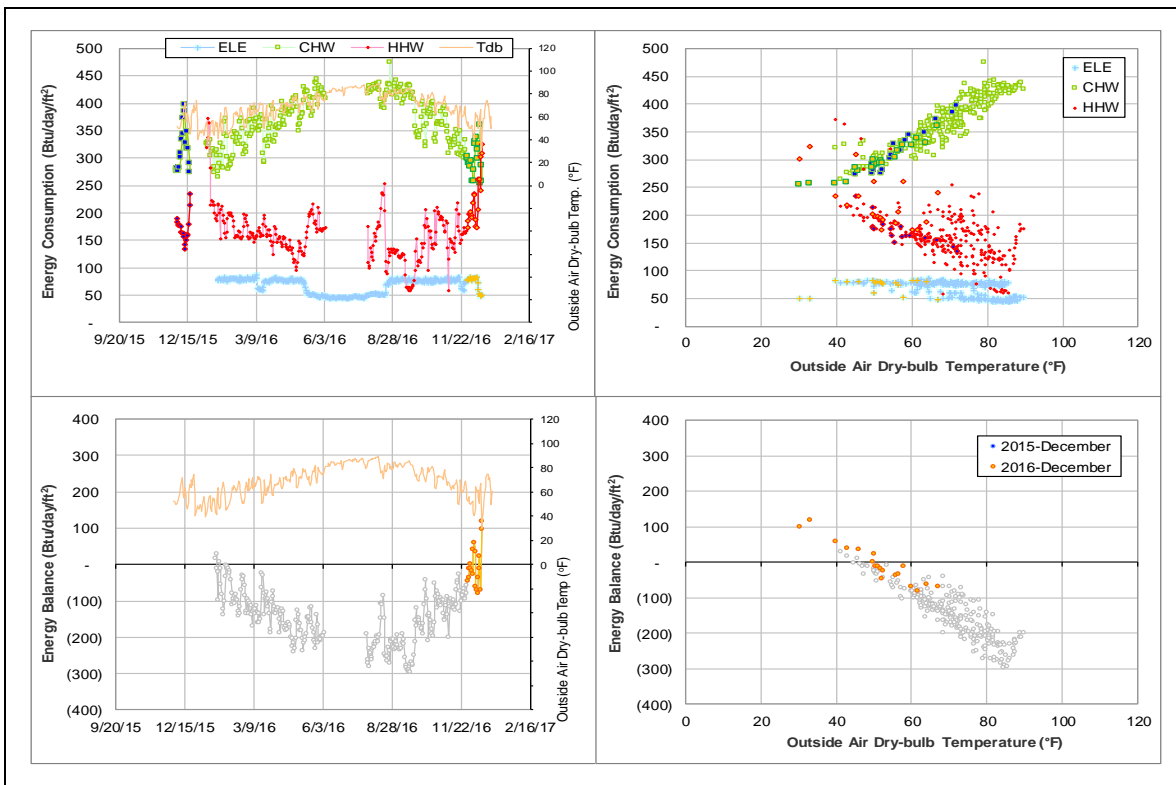
Detected issues in the energy balance and/or the consumption data

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

Comments

The ELE meter (MID 009083) replaced old meter (MID 000290) since January 2016. After that, the consumption decreased from 105 Btu/day/ft² to 80 Btu/day/ft² (approximately 25%). At near 40°F compared to 11/2014, CHW increased slightly by about 25Btu/day/ft² and HHW decreased slightly by about 25 Btu/day/ft². HHW started to scatter since 5/2016 (shortly before the missing period). The cross-point temperature decreased further from near 55°F to lower than 50°F now. It is suggested to investigate these meters.

Explanatory Figure: 13 months energy balance plot with original data



Krueger Residence Hall (TAMU Bldg #441)

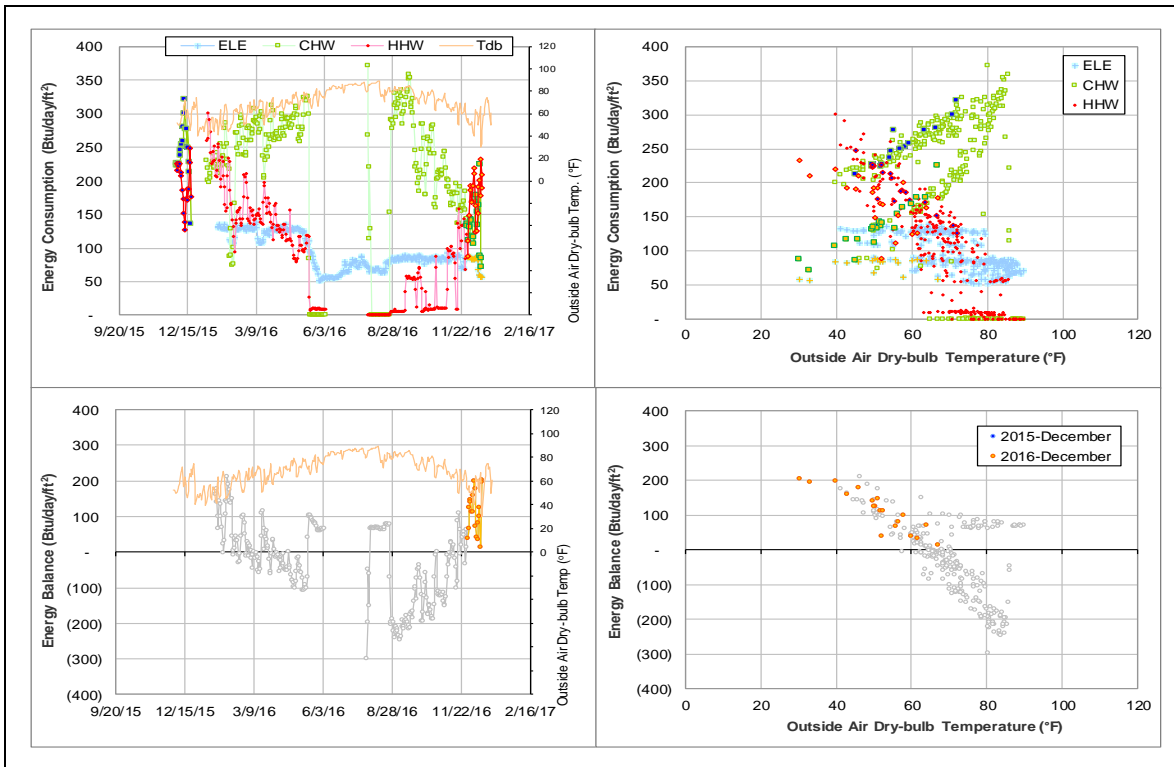
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW/HHW	The consumption significantly decreased after a missing and faulty period.	Since September 2016

Comments

The CHW and HHW consumption decreased significantly after a missing and faulty period. More data are needed to verify the new pattern. However, the missing data are estimated based on the new pattern.

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



Oceanography & Meteorology Building (TAMU Bldg #443)

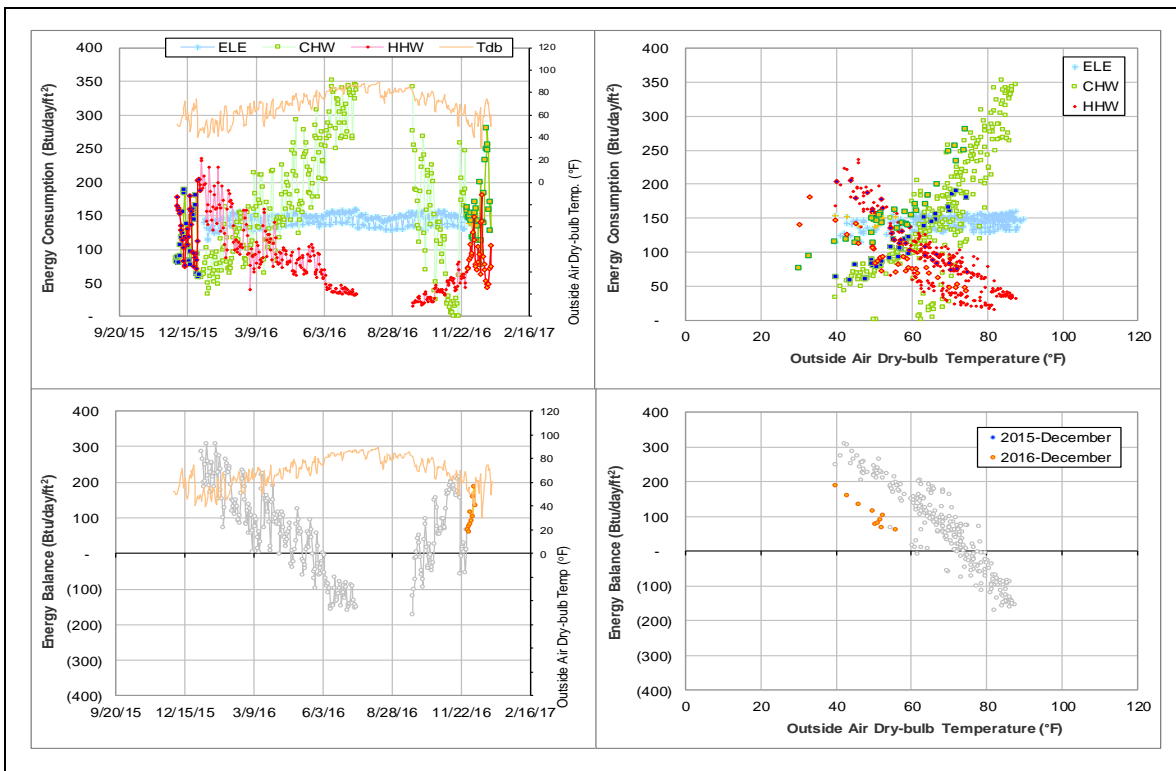
Detected issues in the energy balance and/or the consumption data

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.



Rudder Theatre Complex (TAMU Bldg #446)

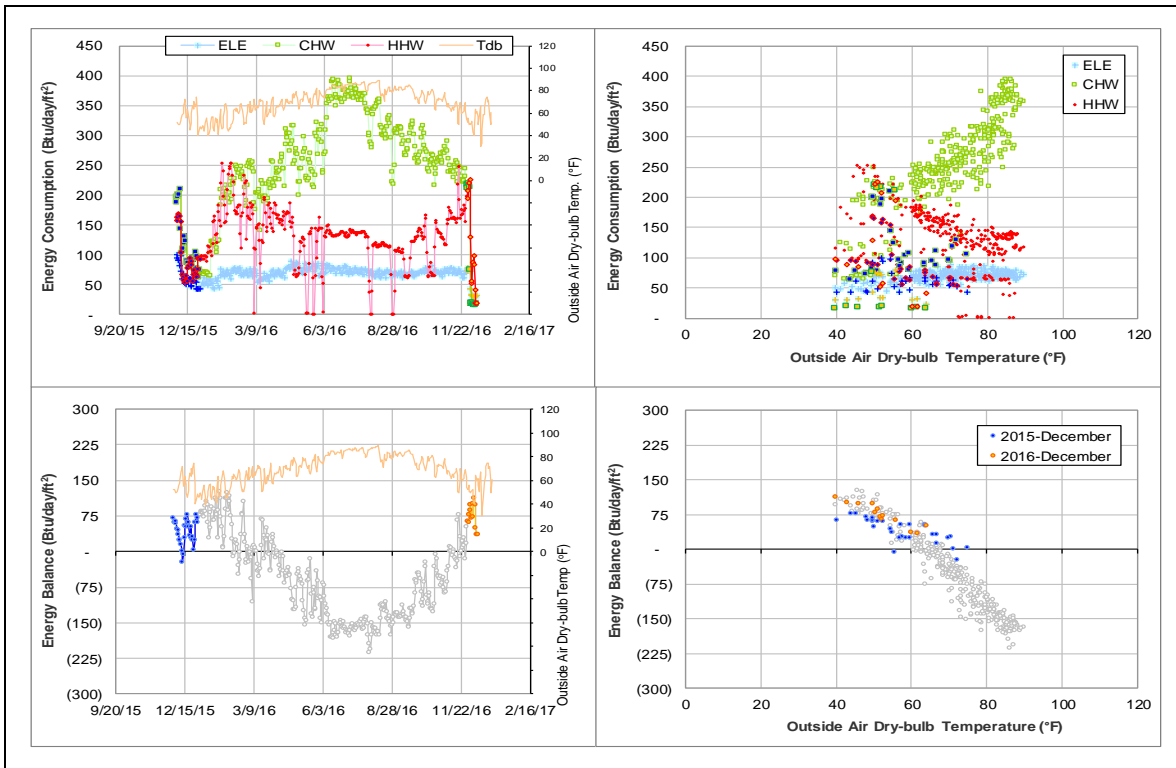
Detected issues in the energy balance and/or the consumption data

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

Comments

The building seems to have been closed and all utilities dropped to a very low level. This pattern also appeared in the previous year. This is not suspected to be a meter malfunction.

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



DPC Annex (TAMU BLDG # 517)

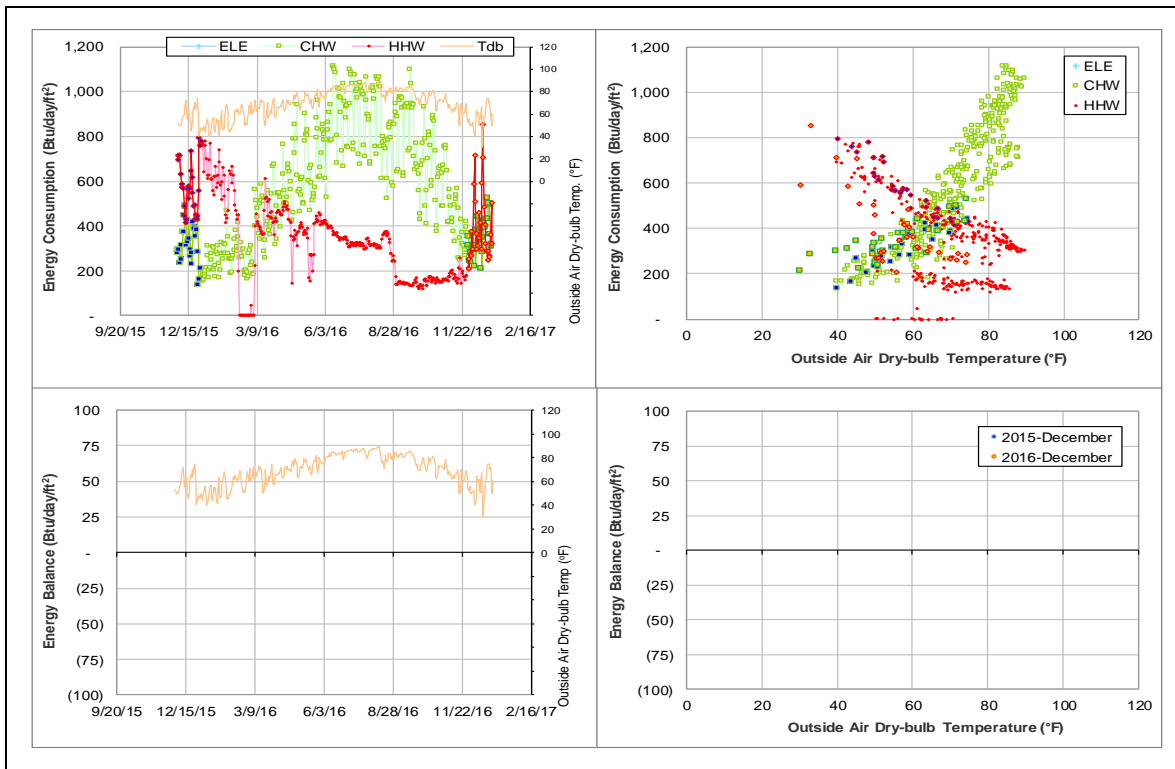
Detected issues in the energy balance and/or the consumption data

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

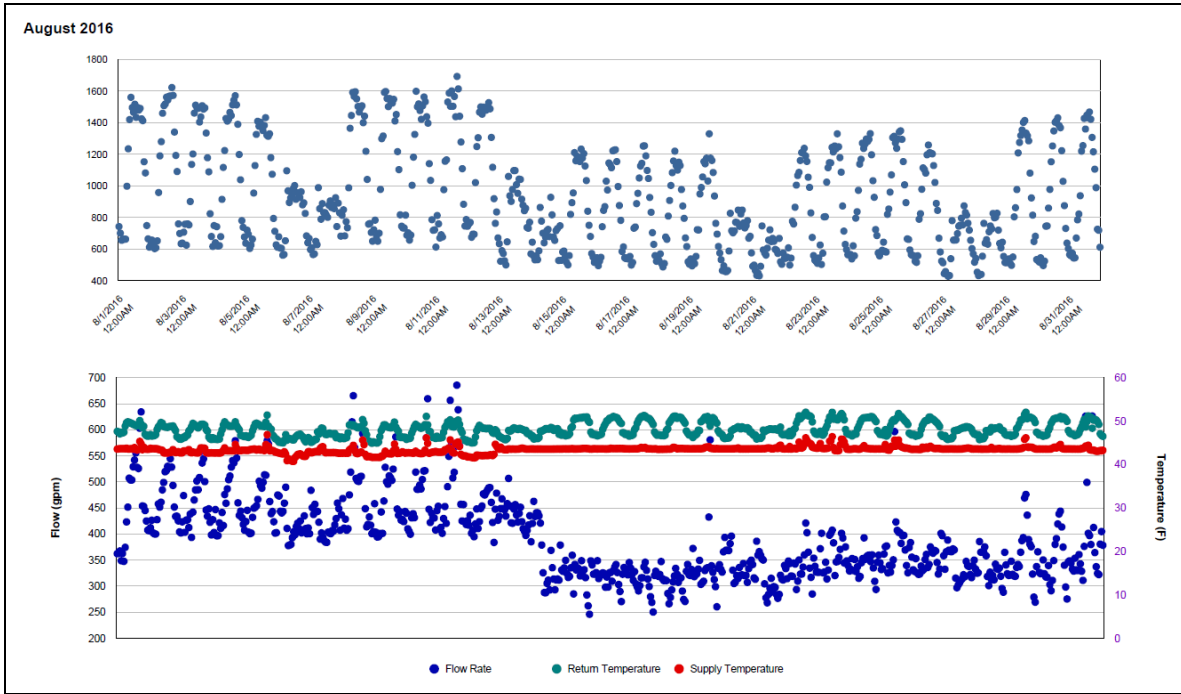
Comments

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

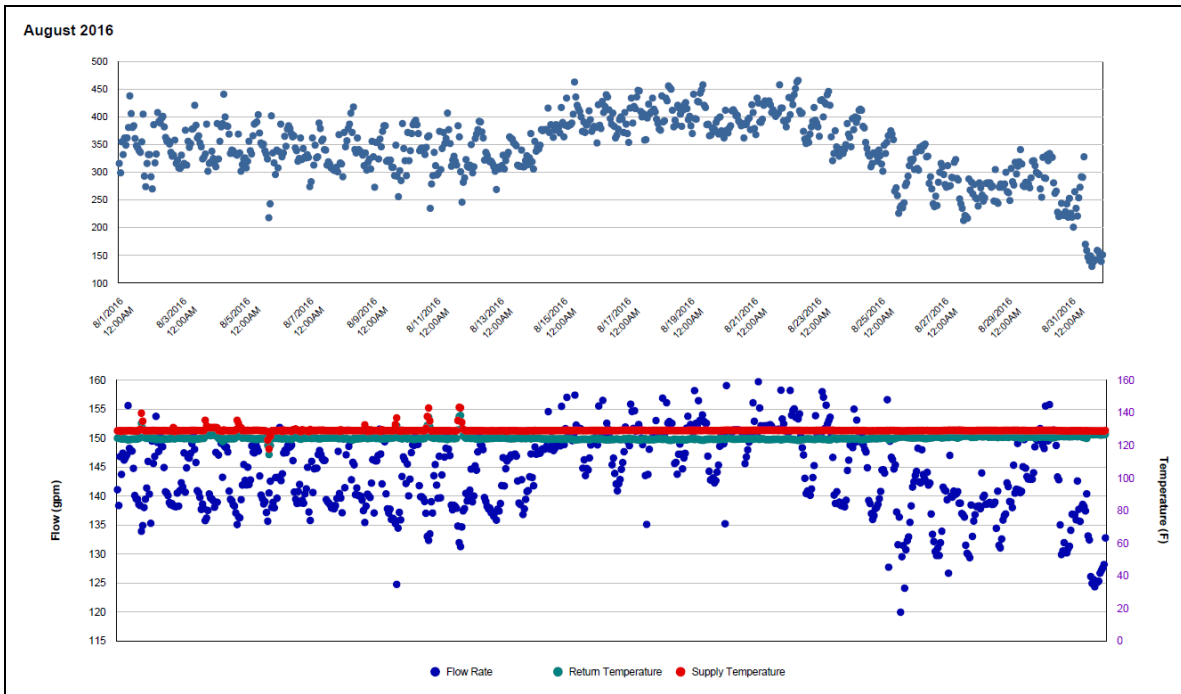
Explanatory Figure: 13 months energy balance plot with original data



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)



Fermier Hall (TAMU Bldg #482)

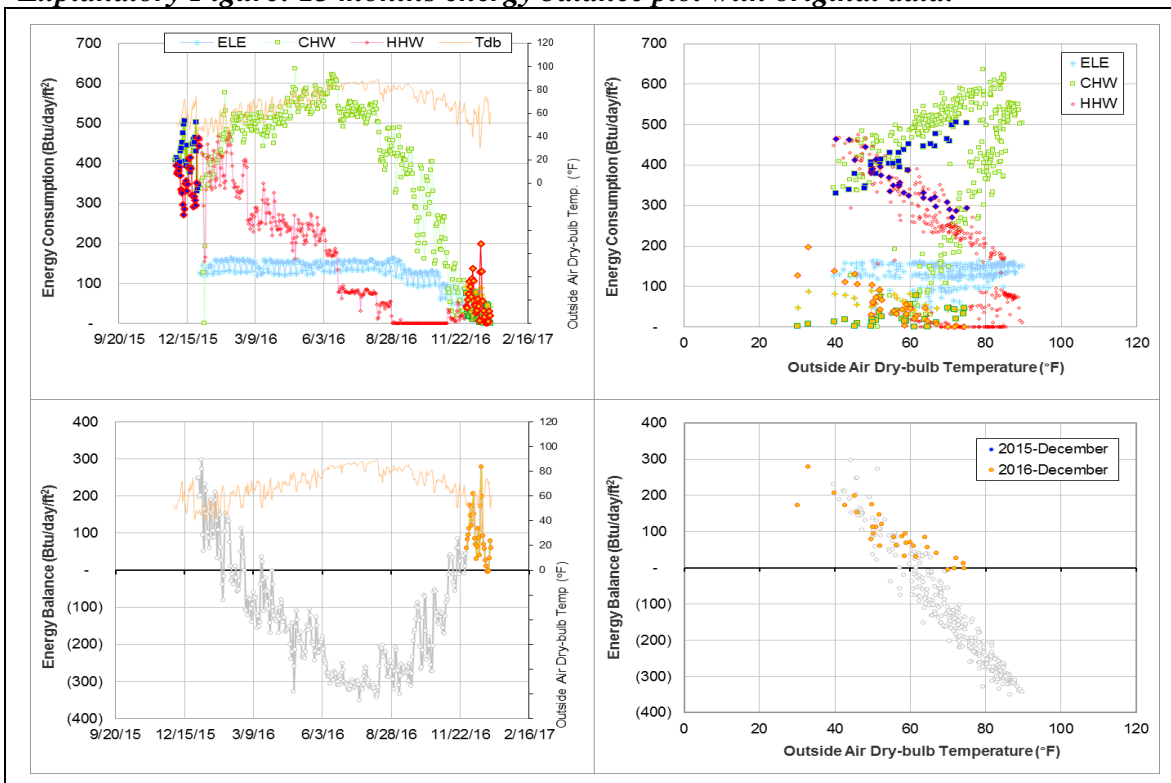
Detected issues in the energy balance and/or the consumption data

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)

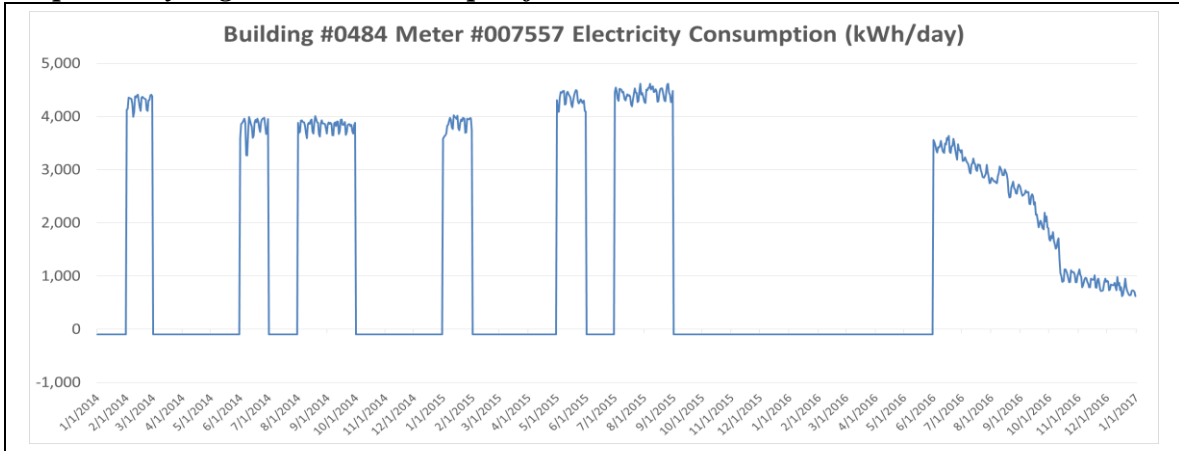
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
ELE	The ELE consumption level has decreased significantly.	6/1/2016 – 12/31/2016

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

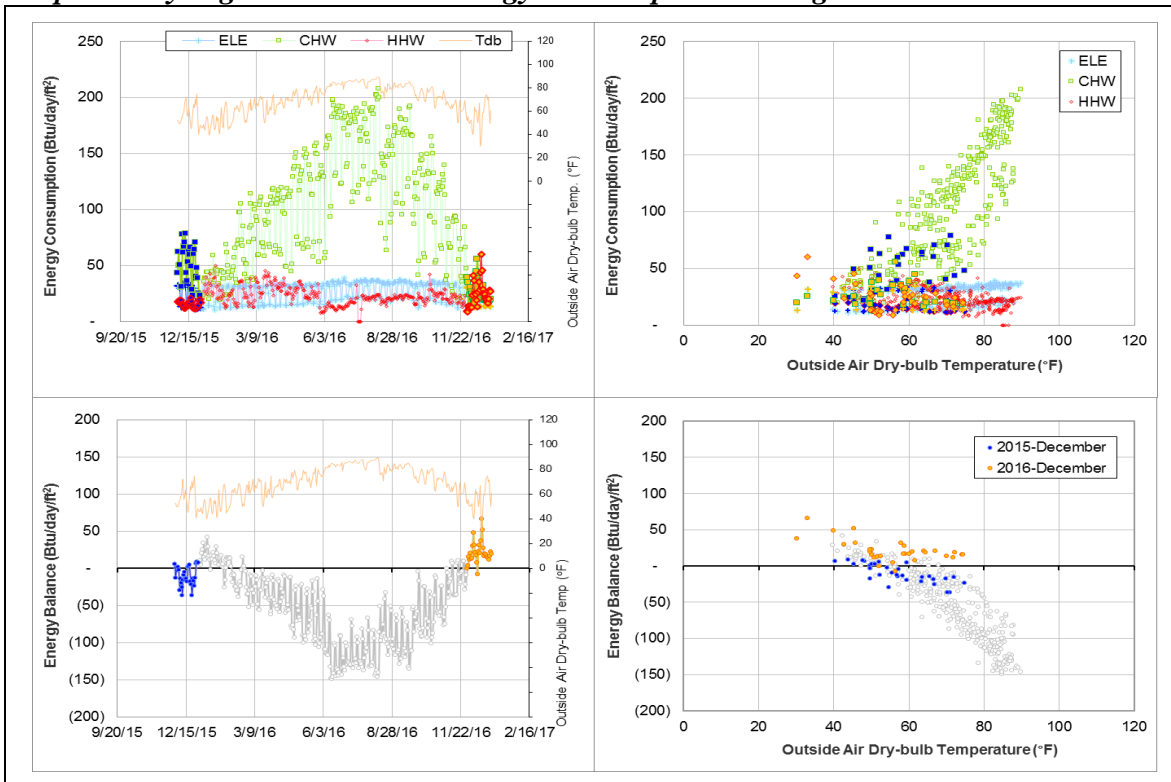
Data Type	Description of data behaviors	Period
ELE, CHW, and HHW	The energy use per unit floor area was low compared to other buildings.	Since the data became available on 7/1/2012

Comments

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

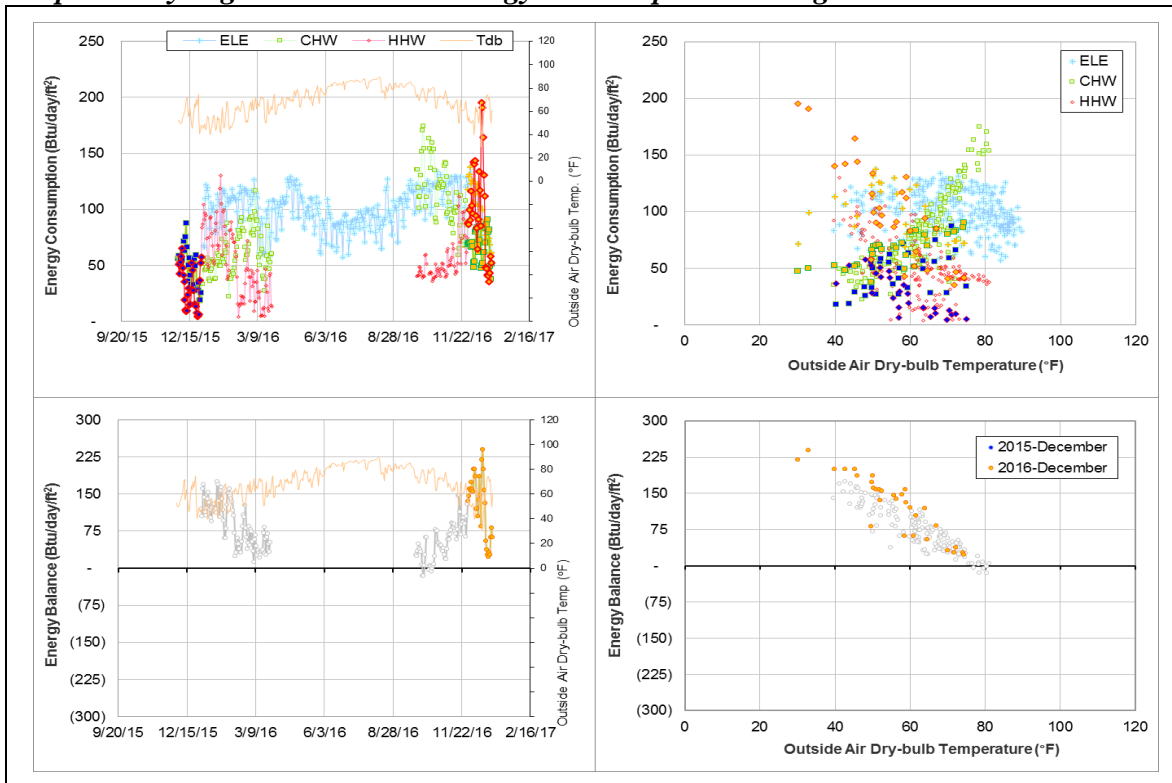
Detected issues in the energy balance and/or the consumption data

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)

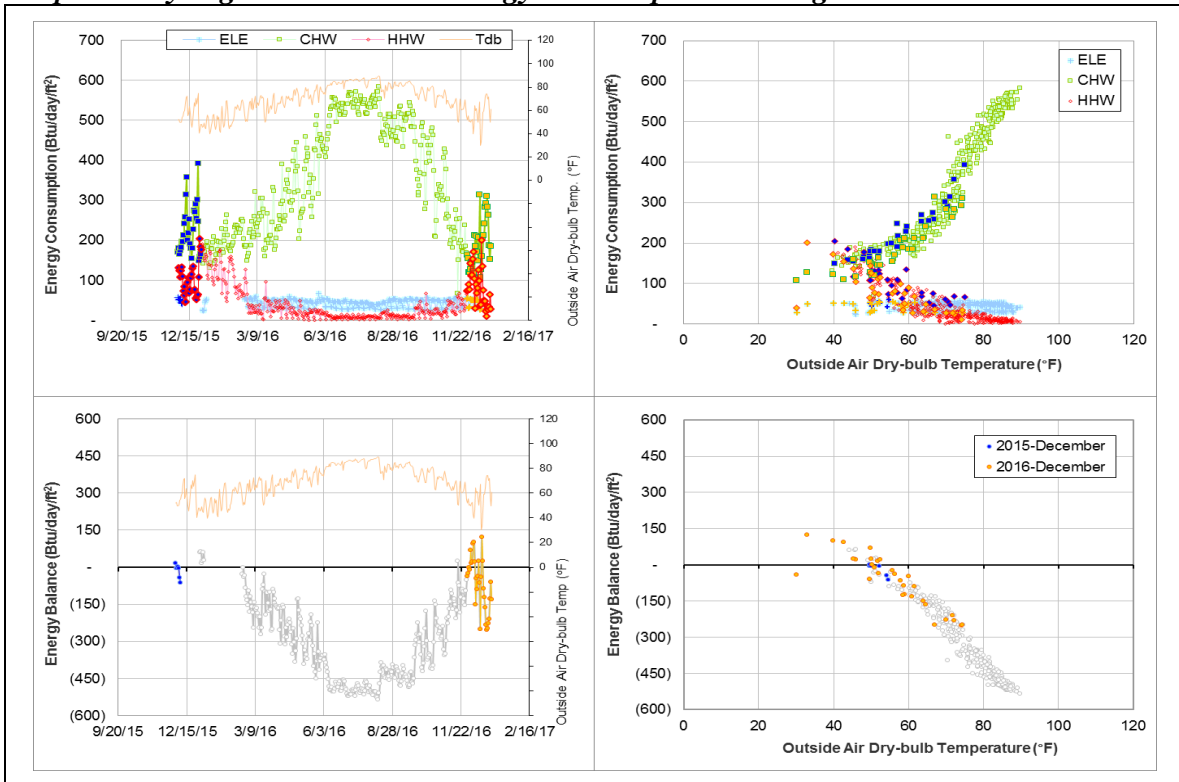
Detected issues in the energy balance and/or the consumption data

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/ft² lower than the levels in typical office buildings on campus, and this might be a metering error or this meter might not cover the whole building.

Explanatory Figure: 13 months energy balance plot with original data



All Faiths Chapel (TAMU Bldg #512)

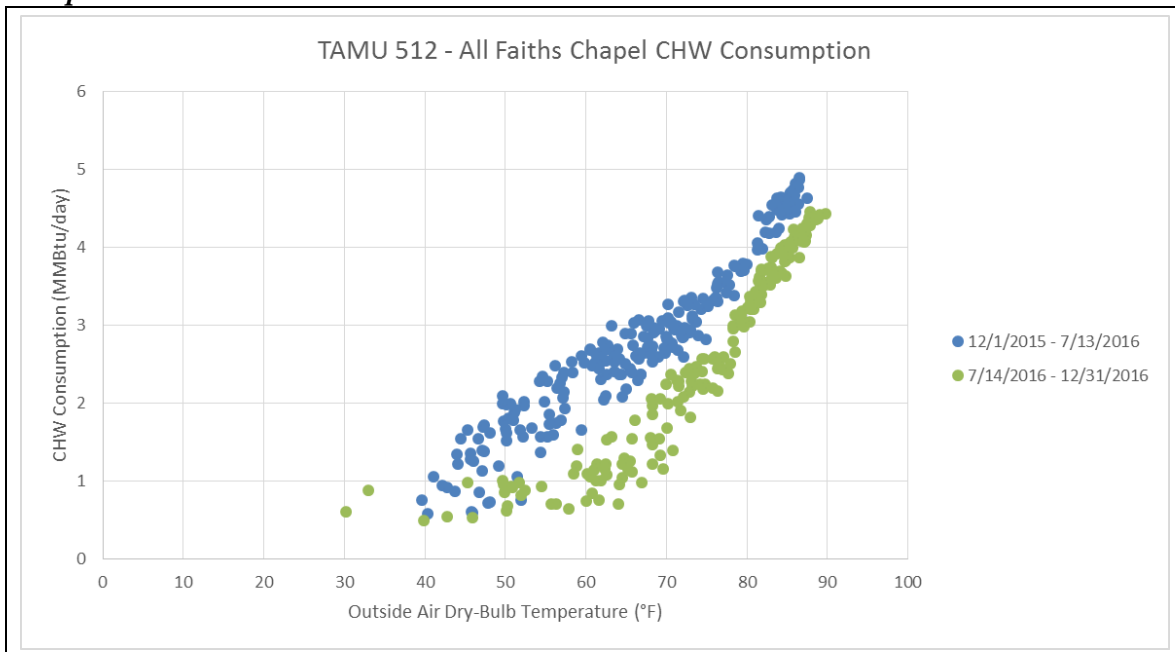
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	The CHW consumption level decreased.	7/14/2016 – Ongoing

Comments

Starting around 7/14/2016, the CHW consumption level has decreased dropping out of the main pattern. More data is needed to see if the pattern continues.

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



Blocker Building (TAMU Bldg #524)

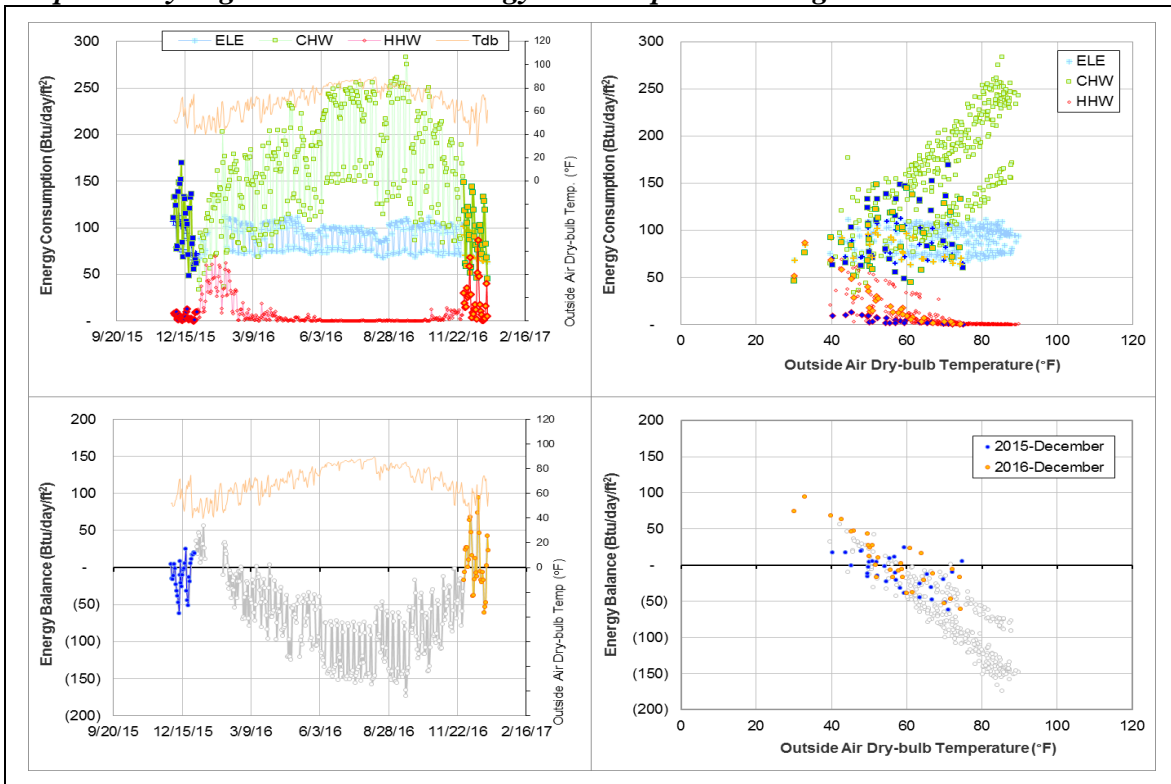
Detected issues in the energy balance and/or the consumption data

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

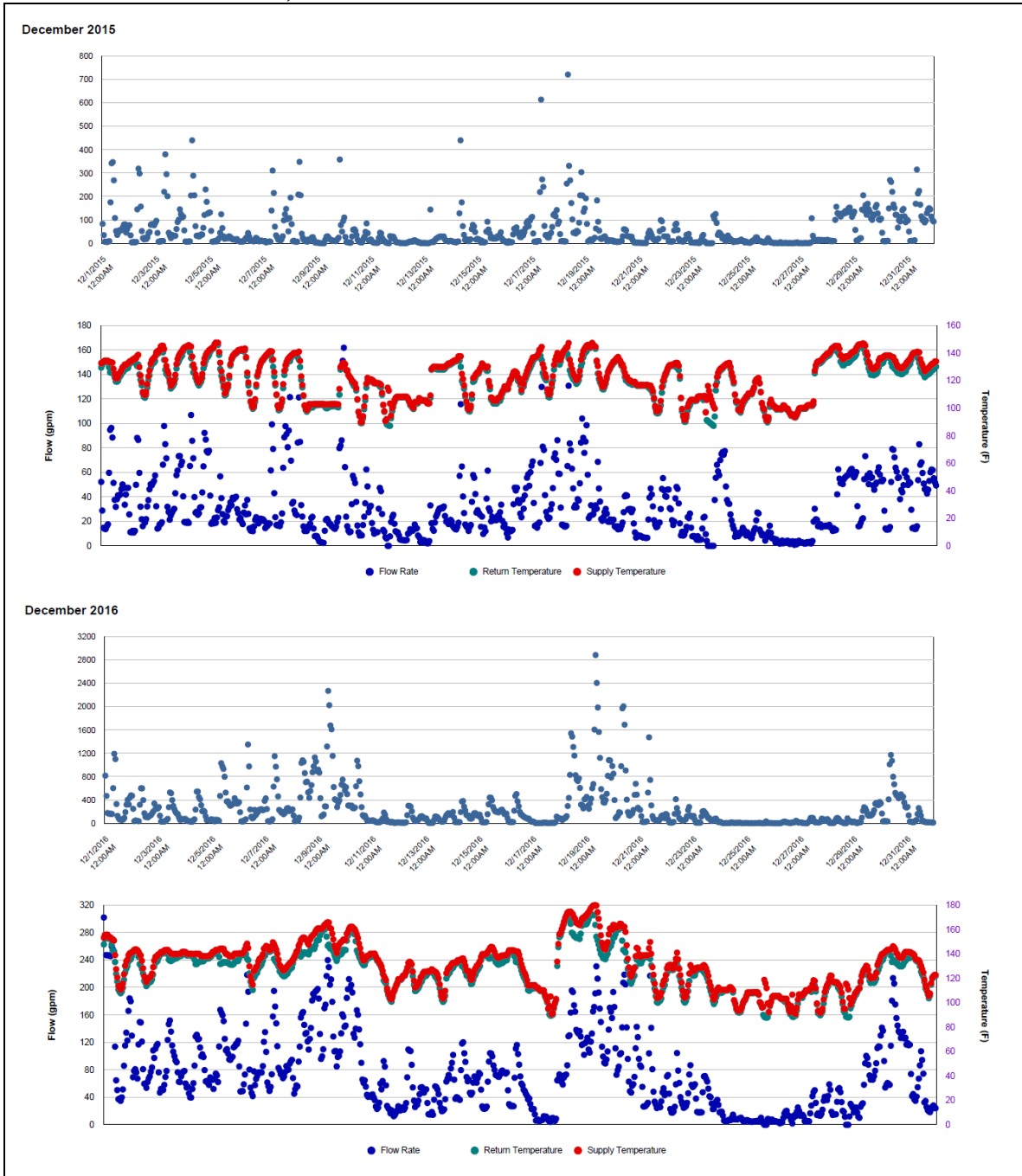
Comments

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: December 2015, bottom: December 2016)



Neeley Residence Hall (TAMU Bldg #652)

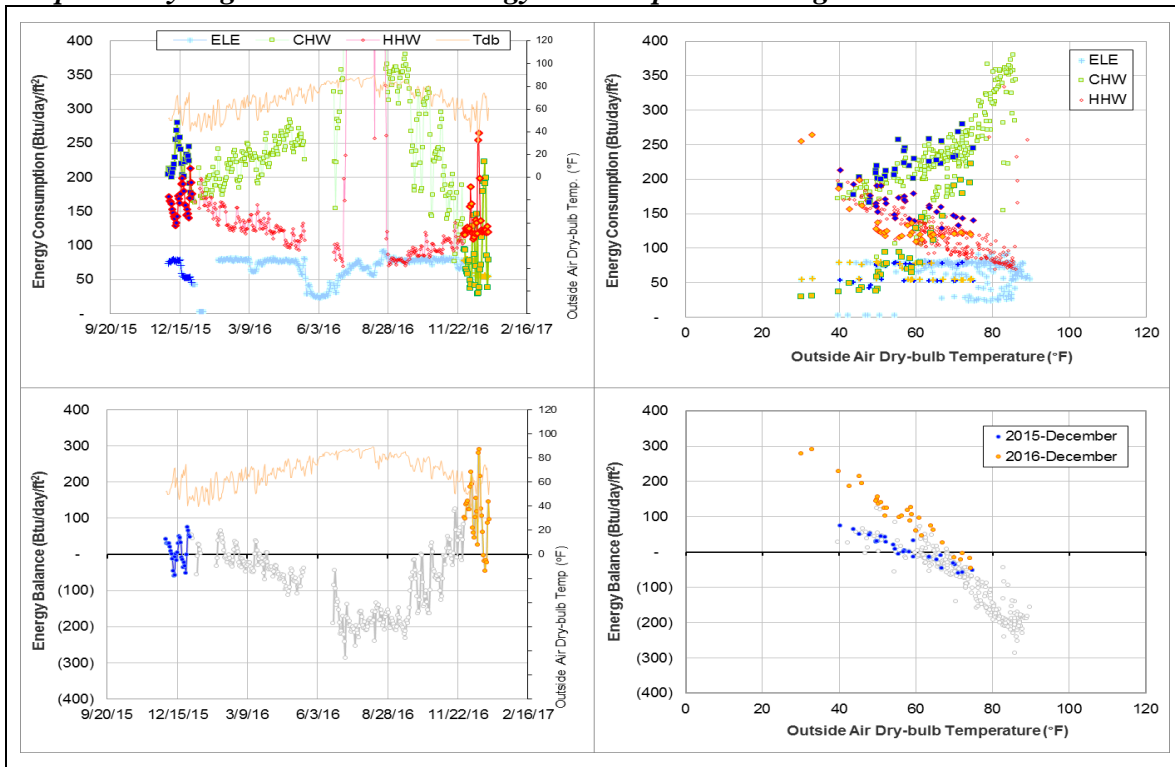
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW/HHW	The consumption level decreased.	8/25/2016 – Ongoing

Comments

Since the HVAC system renovation in this summer the CHW and HHW consumption has decreased after 8/25/2016, especially in the low temperature range. The cross-point temperature of energy balance shifted to more reasonable range. (From ~60°F to ~68°F). More data is needed to verify the new pattern.

Explanatory Figure: 13 months energy balance plot with original data



McNew Laboratory (TAMU Bldg #740)

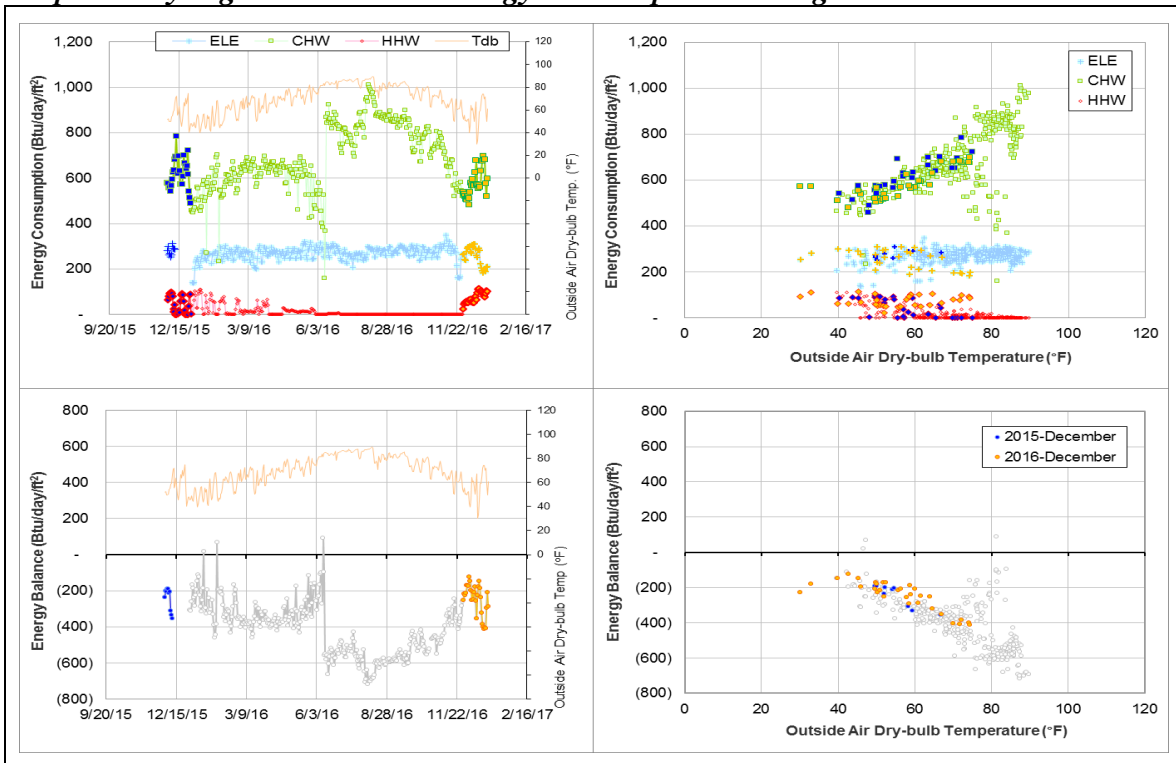
Detected issues in the energy balance and/or the consumption data

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)

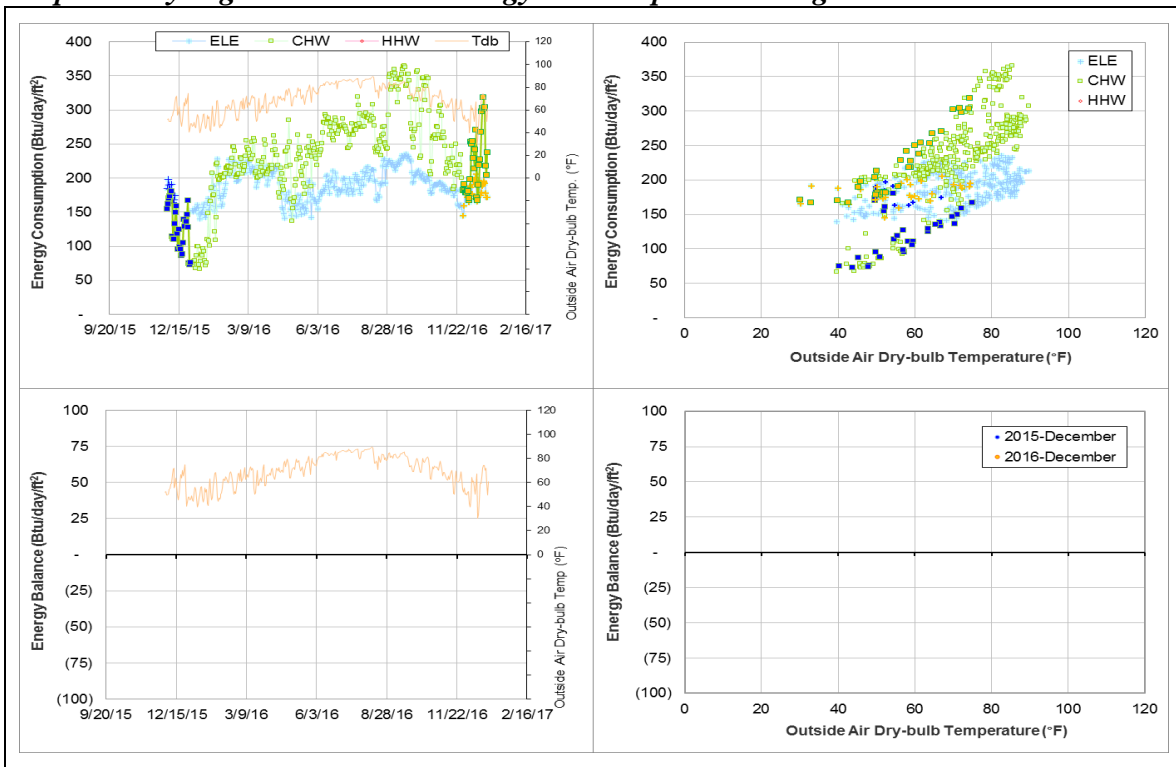
Detected issues in the energy balance and/or the consumption data

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 becoming steeper. Higher consumption levels are being reach 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



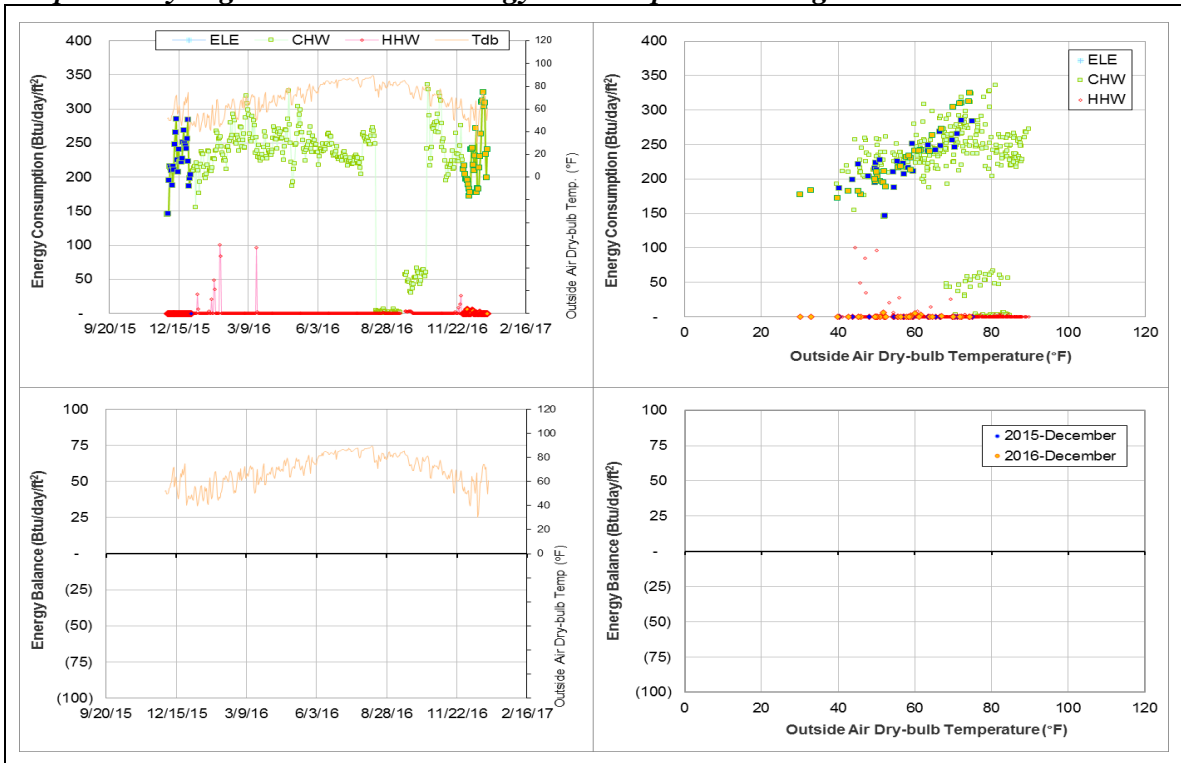
TVMC-Small Animal Building (TAMU Bldg# 880)

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)

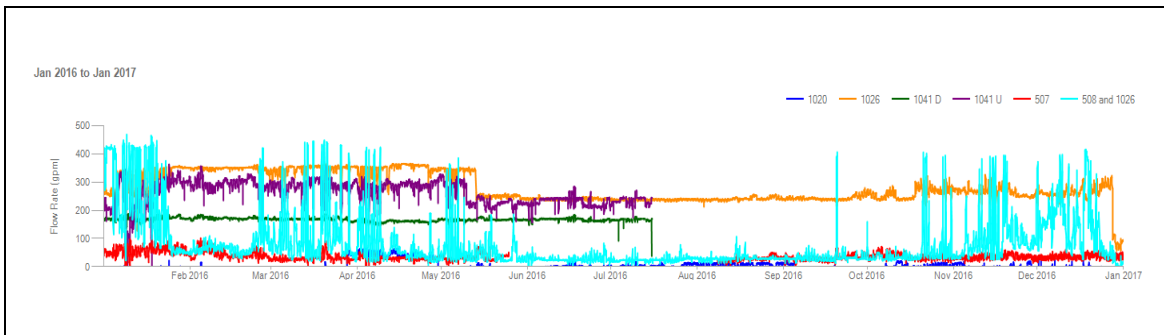
Detected issues in the energy balance and/or the consumption data

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 1/1/2016–1/1/2017. The combined HHW metered for Bldg #1026 and #508 (light blue) is lower than the standalone HHW meter for only Bldg #1026 (dark blue).



Biological Control Facility (TAMU Bldg# 1146)

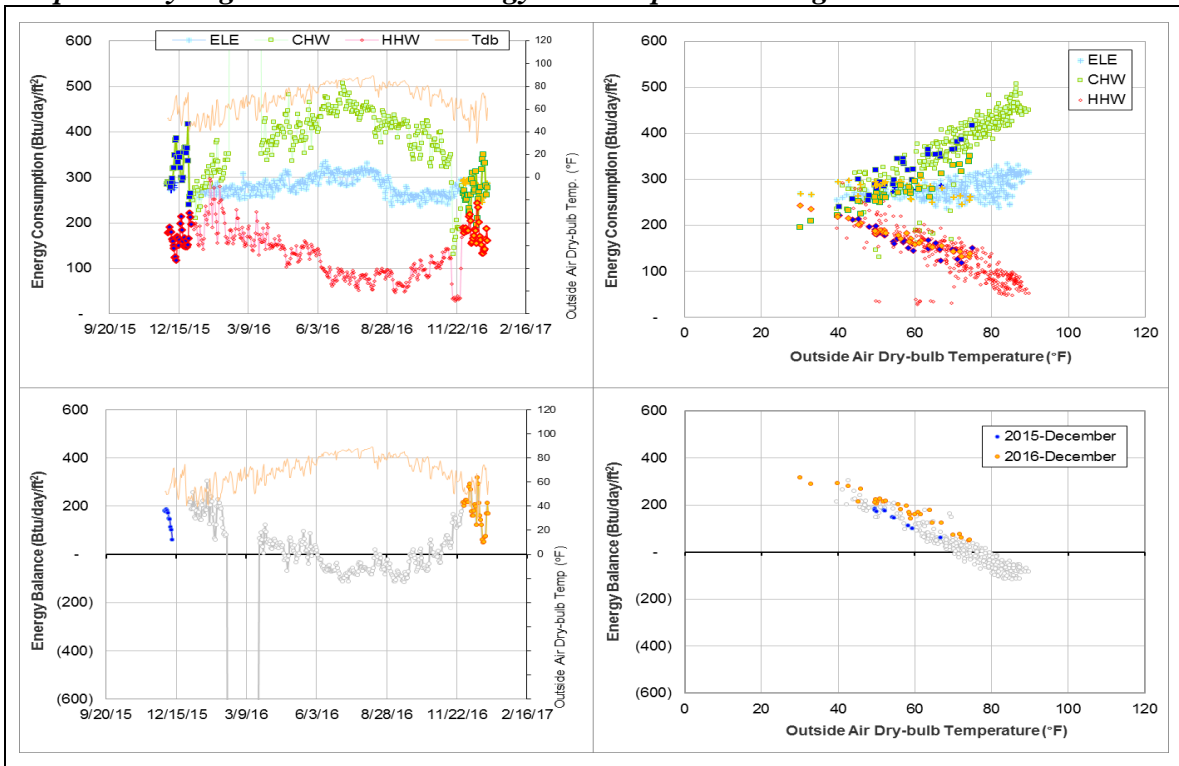
Detected issues in the energy balance and/or the consumption data

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)

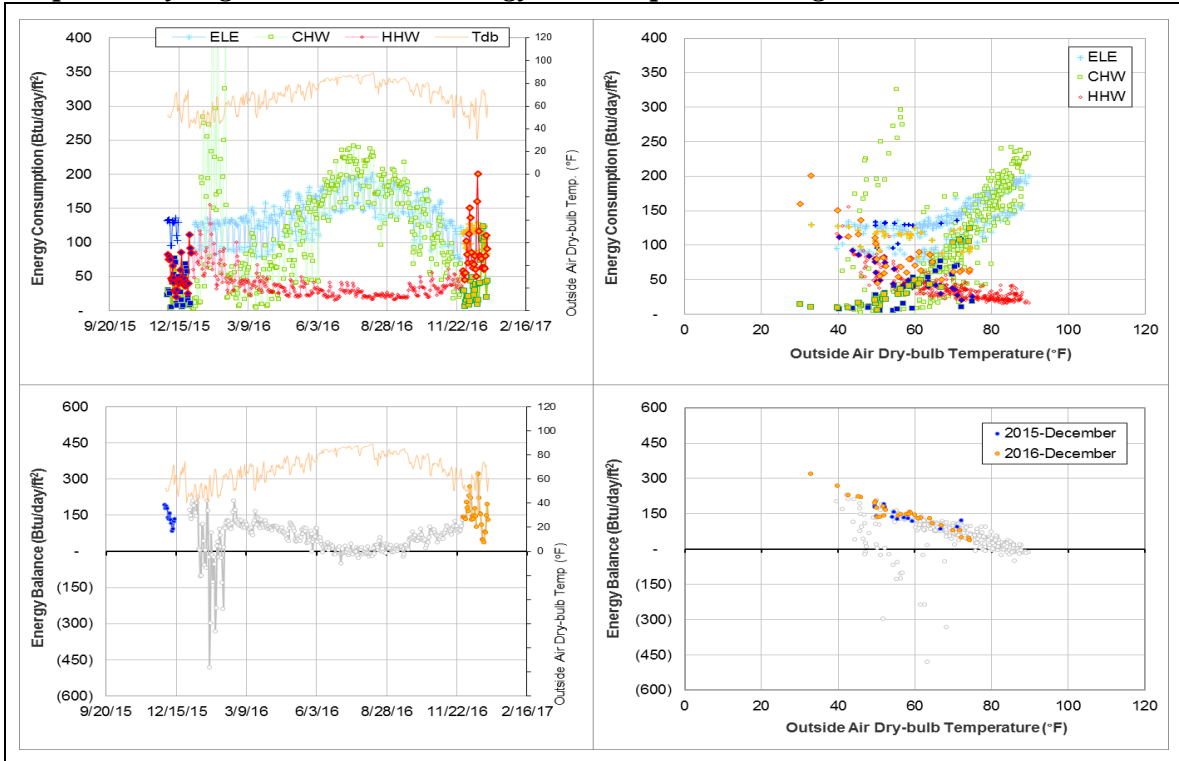
Detected issues in the energy balance and/or the consumption data

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)

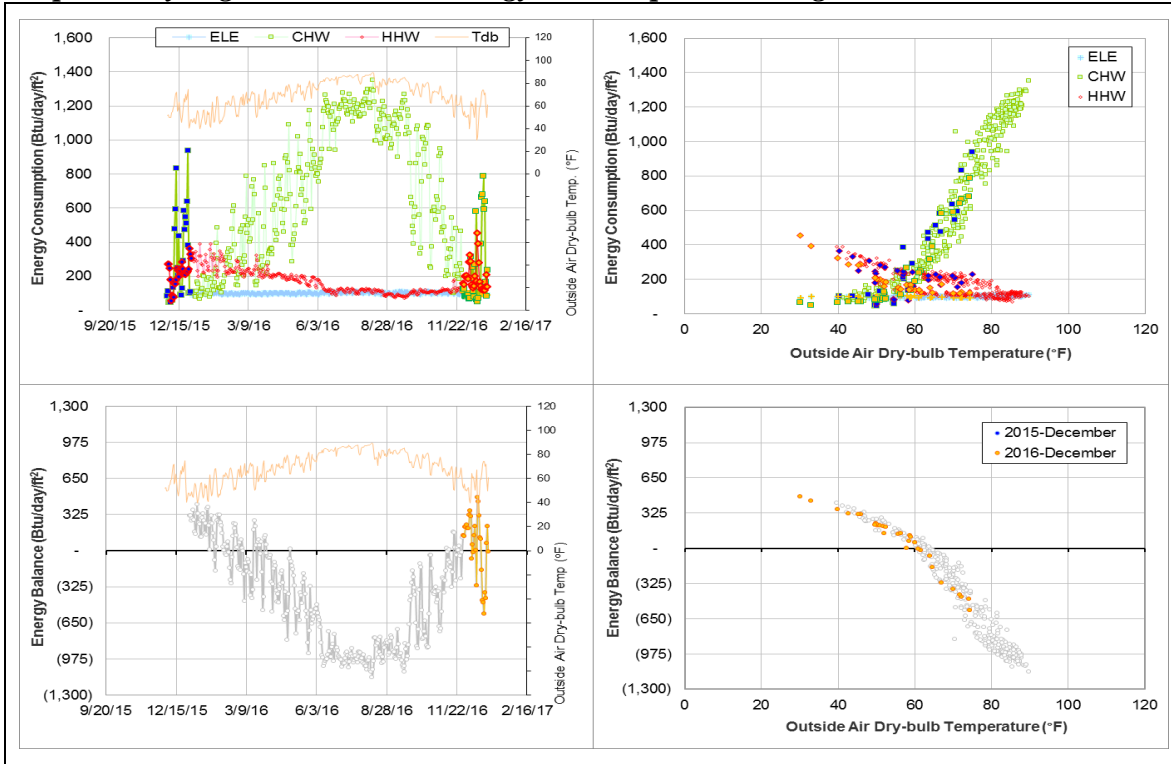
Detected issues in the energy balance and/or the consumption data

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/ft² to 1.40 W/ft²), which is low for a veterinary laboratory building on the campus. This seems to be the reason for the low level of the energy balance load. The temperature-axis intercept of the energy balance is around 62°F.

Explanatory Figure: 13 months energy balance plot with original data



Reynolds Medical Sciences Building (TAMU Bldg# 1504)

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

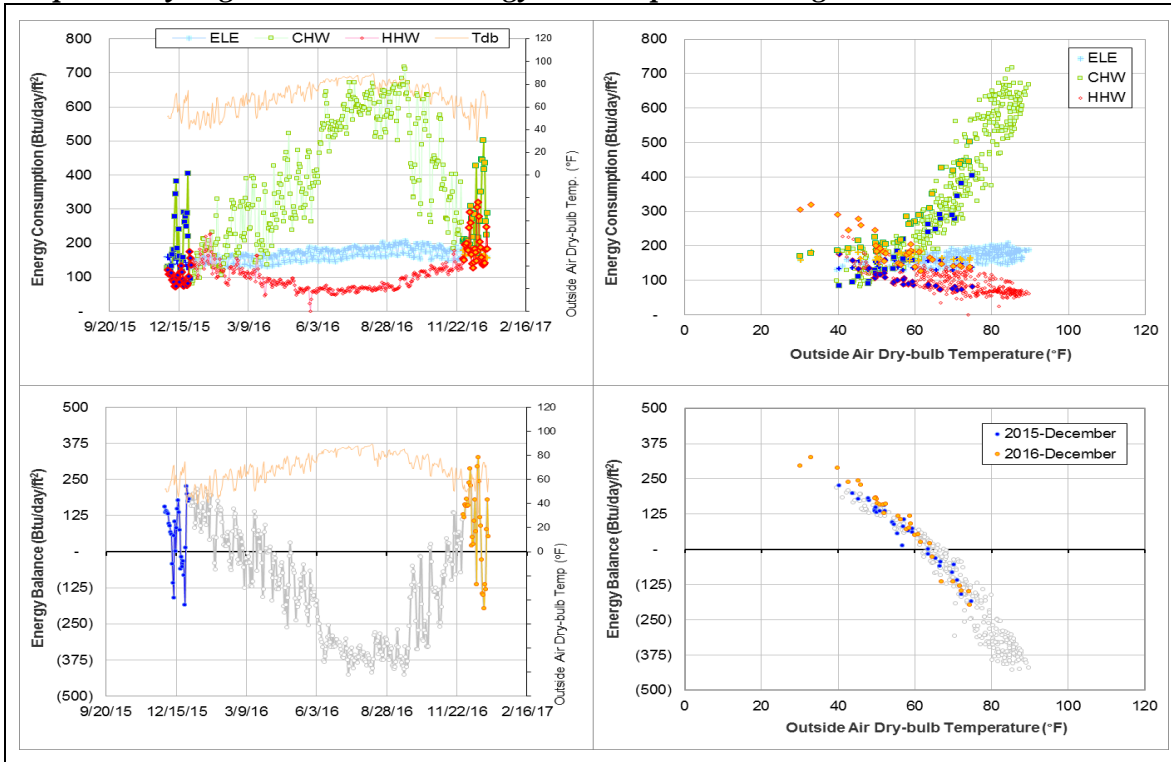
Data Type	Description of data behaviors	Period
ELE	Increase in energy consumption pattern.	September 2016 – Ongoing
CHW	Slight increase in energy consumption pattern.	September 2016 – Ongoing
HHW	Increase in energy consumption pattern	September 2016 – Ongoing

Comments

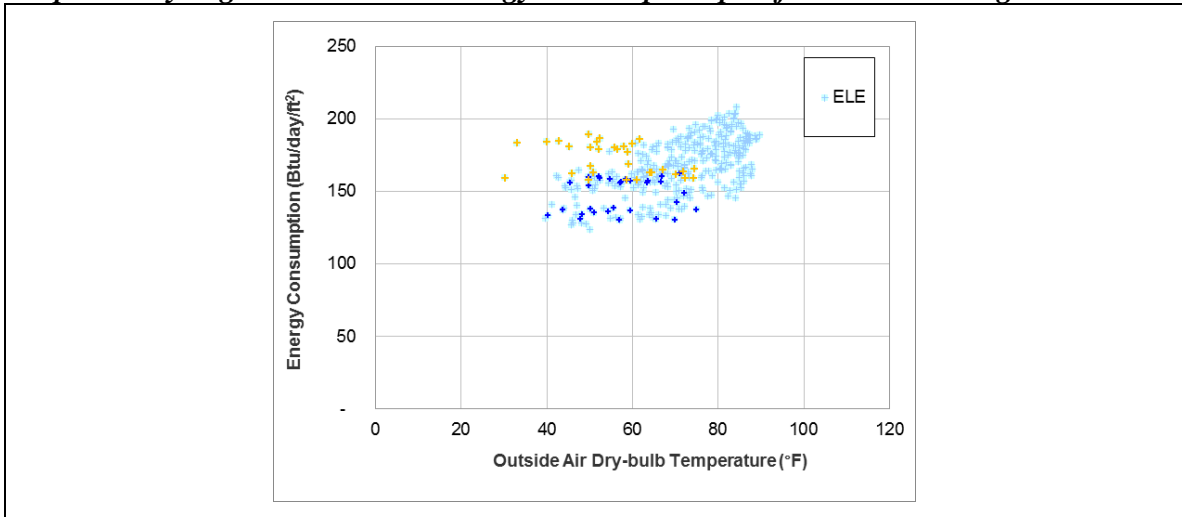
The HHW energy consumption pattern has increased by approximately 40 Btu/day/ft² starting in September 2016. Around the same time the CHW and ELE energy consumption also shows a slight increase. Even though the energy consumption has increased, the energy balance for the building is still within the range of the previous months.

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)

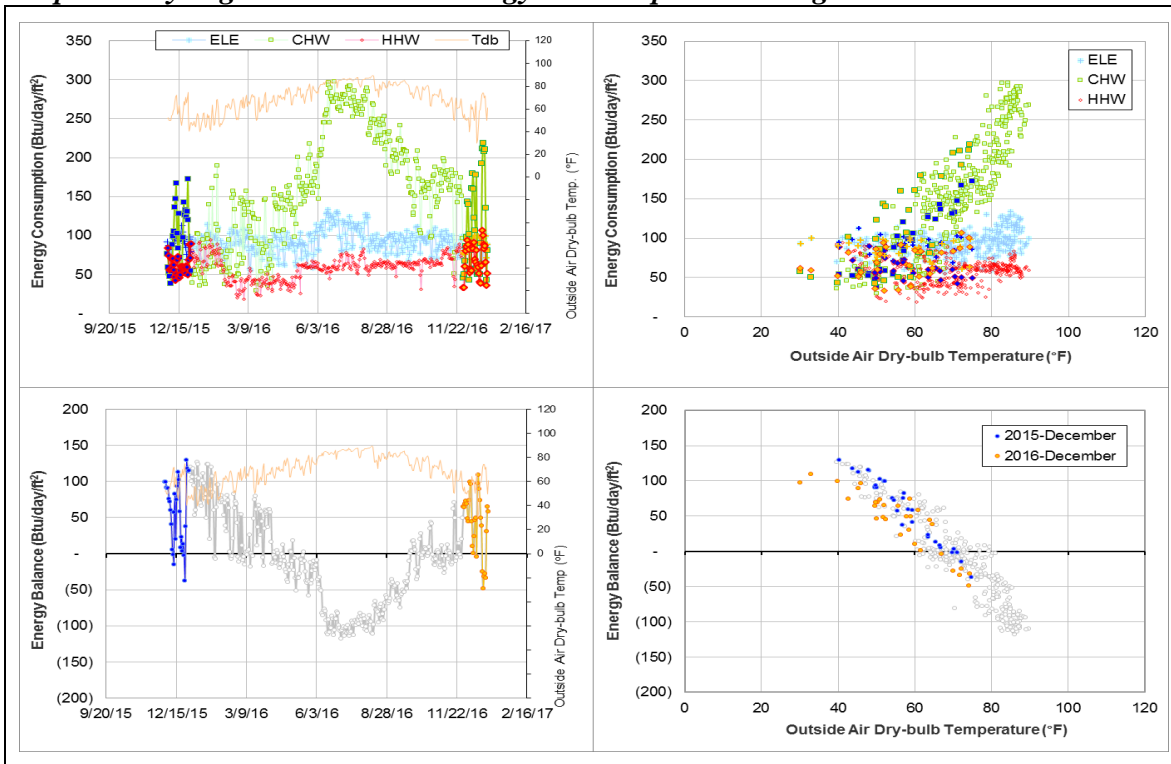
Detected issues in the energy balance and/or the consumption data

Data Type	Description of data behaviors	Period
CHW	Increase in energy consumption pattern	11/5/2016 – Ongoing
HHW	Increase in energy consumption pattern	11/5/2016 – Ongoing

Comments

The CHW and HHW energy consumption patterns appear to be shifting to a higher level. The CHW consumption is showing an increase in warmer temperatures by about 40 Btu/day/ft², and the HHW consumption is showing an increase of 10 – 15 Btu/day/ft².

Explanatory Figure: 13 months energy balance plot with original data



Student Recreation Center (TAMU Bldg# 1560)

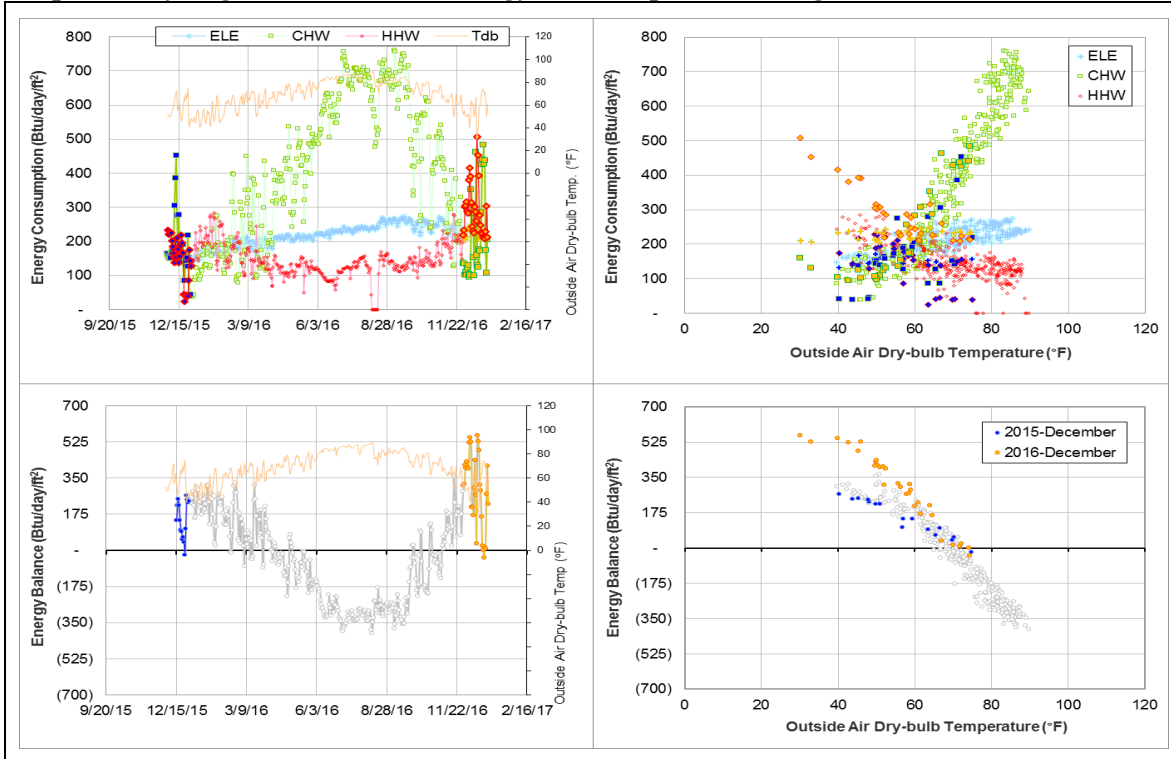
Detected issues in the energy balance and/or the consumption data

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)

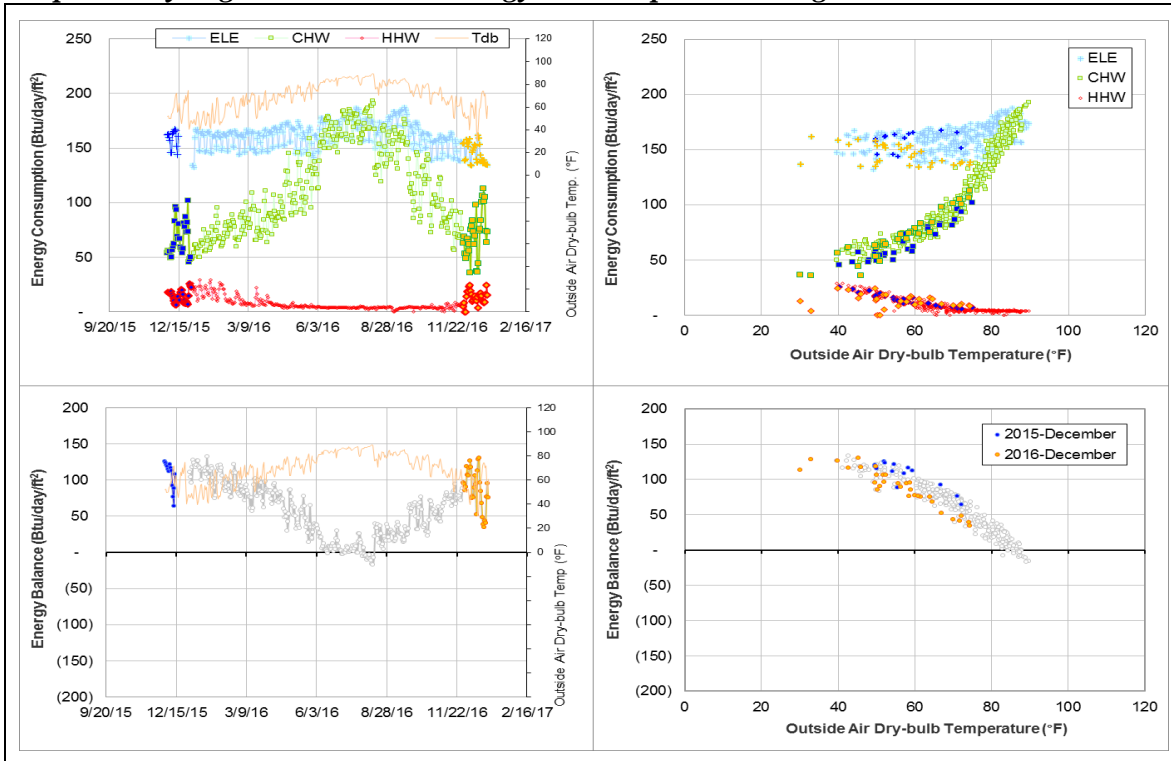
Detected issues in the energy balance and/or the consumption data

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 40 – 200 Btu/day/ft². 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)

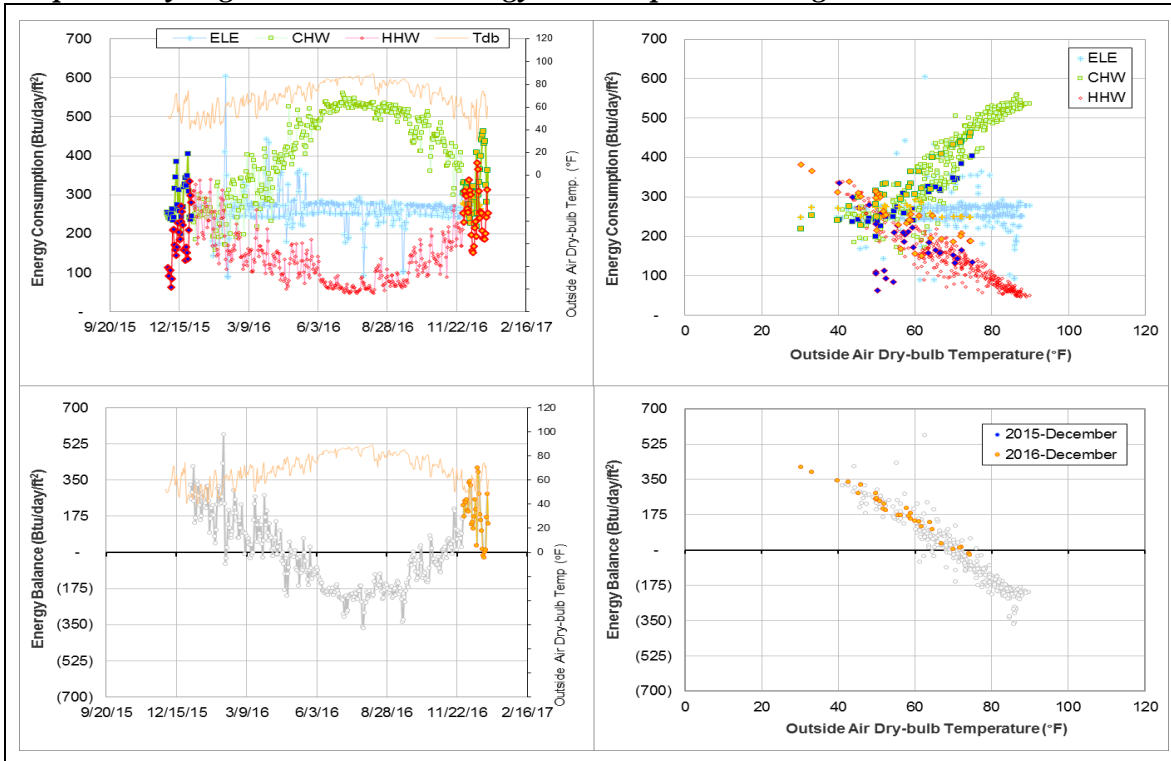
Detected issues in the energy balance and/or the consumption data

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

Both CHW and HHW consumption level is higher than that of last year in this month. It appears that new consumption patterns are developing and at a slightly higher level.

Explanatory Figure: 13 months energy balance plot with original data



III. Time Series Plots for December 2016 Consumption

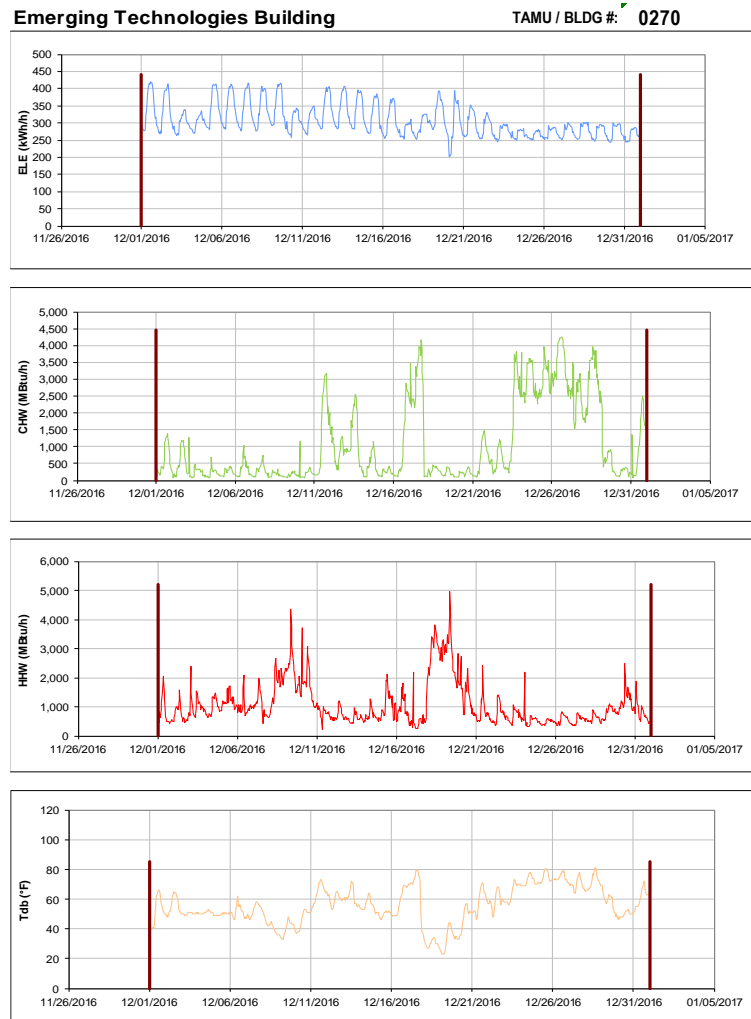


Figure III-1 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Emerging Technologies Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

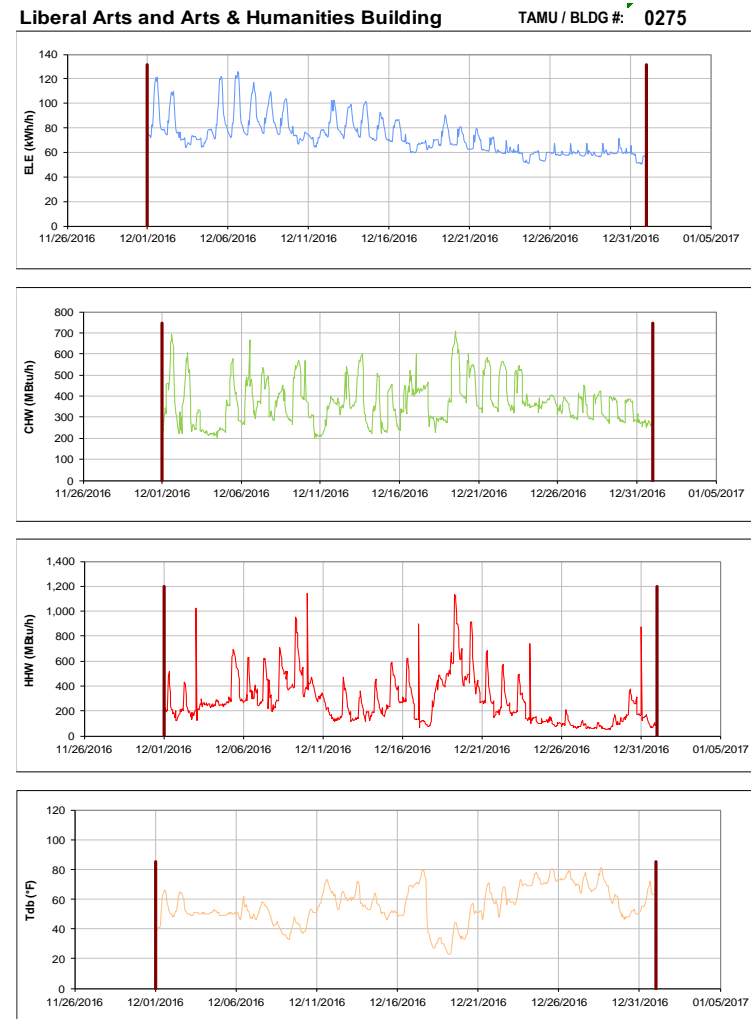


Figure III-2 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Liberal Arts and Arts & Humanities Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

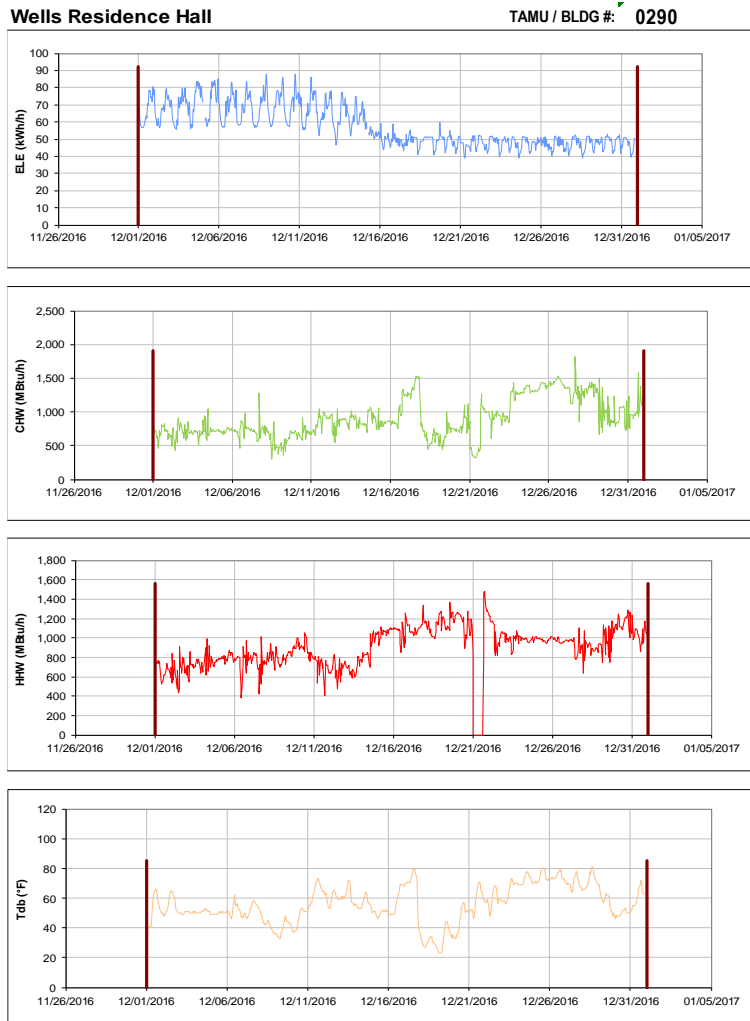


Figure III-3 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wells Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

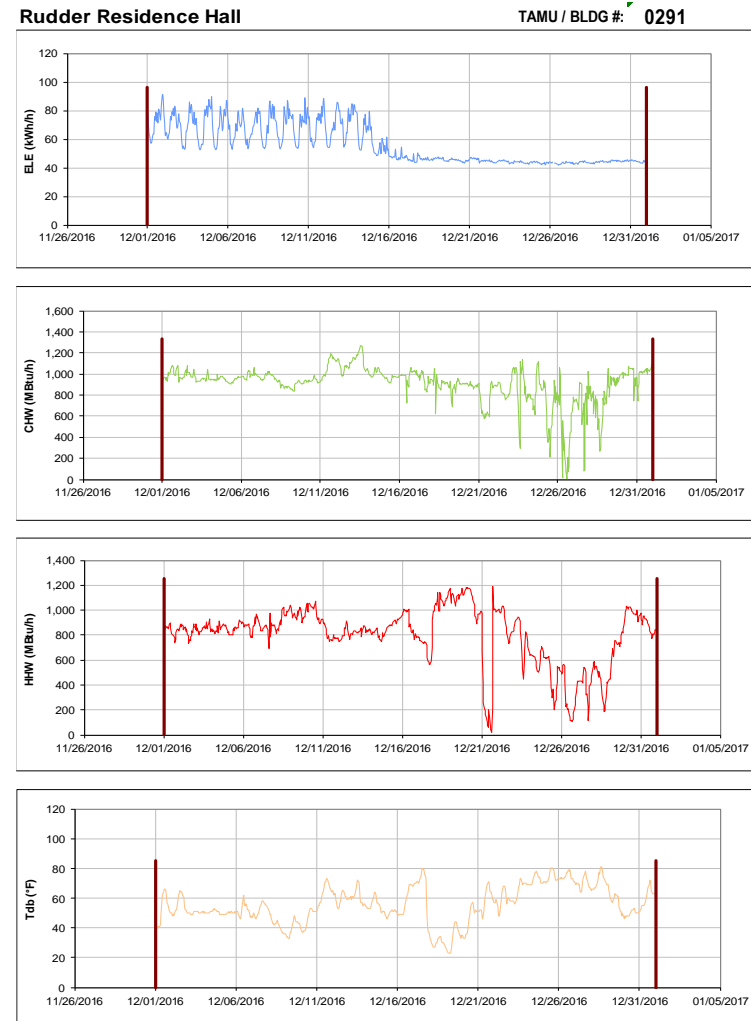


Figure III-4 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

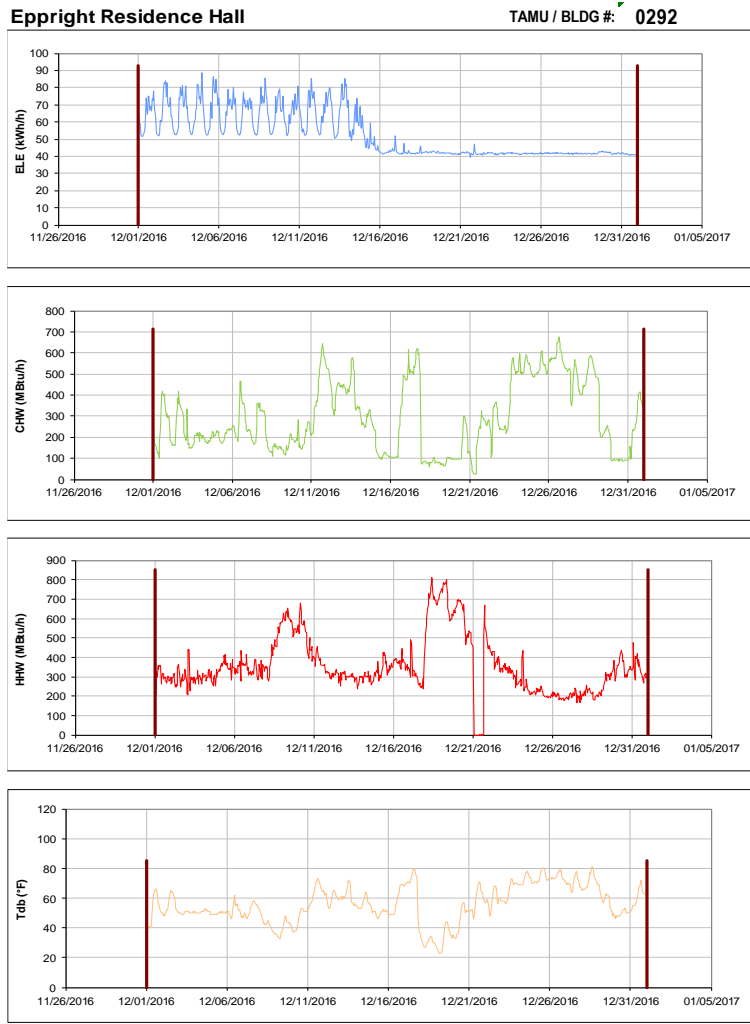


Figure III-5 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Eppright Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

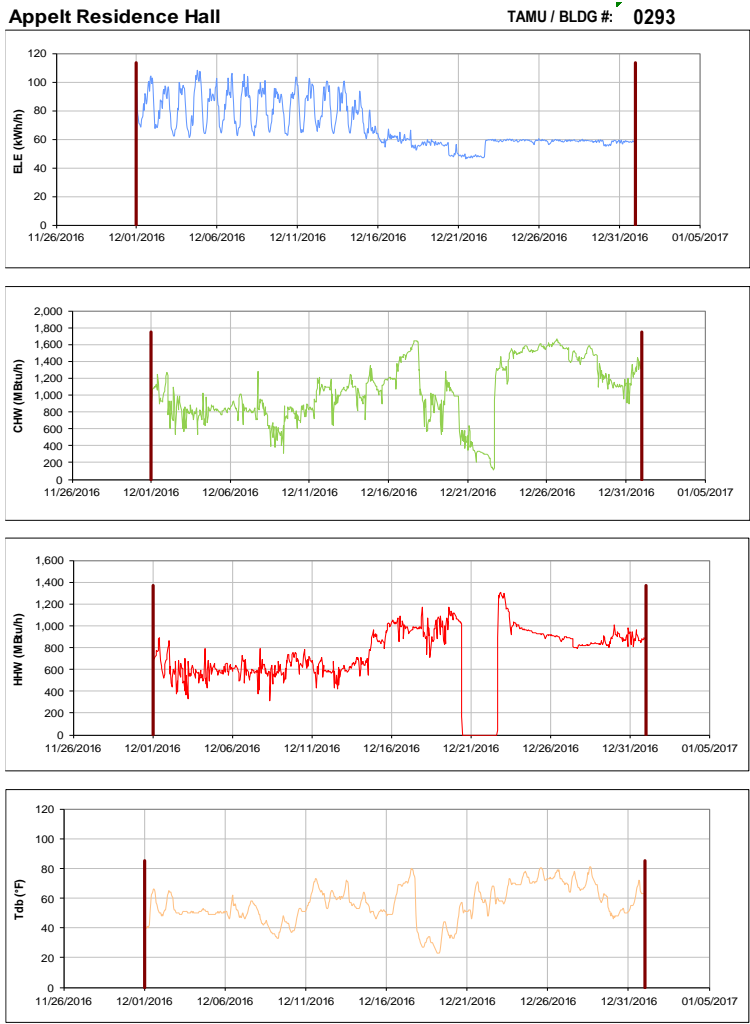


Figure III-6 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Appelt Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

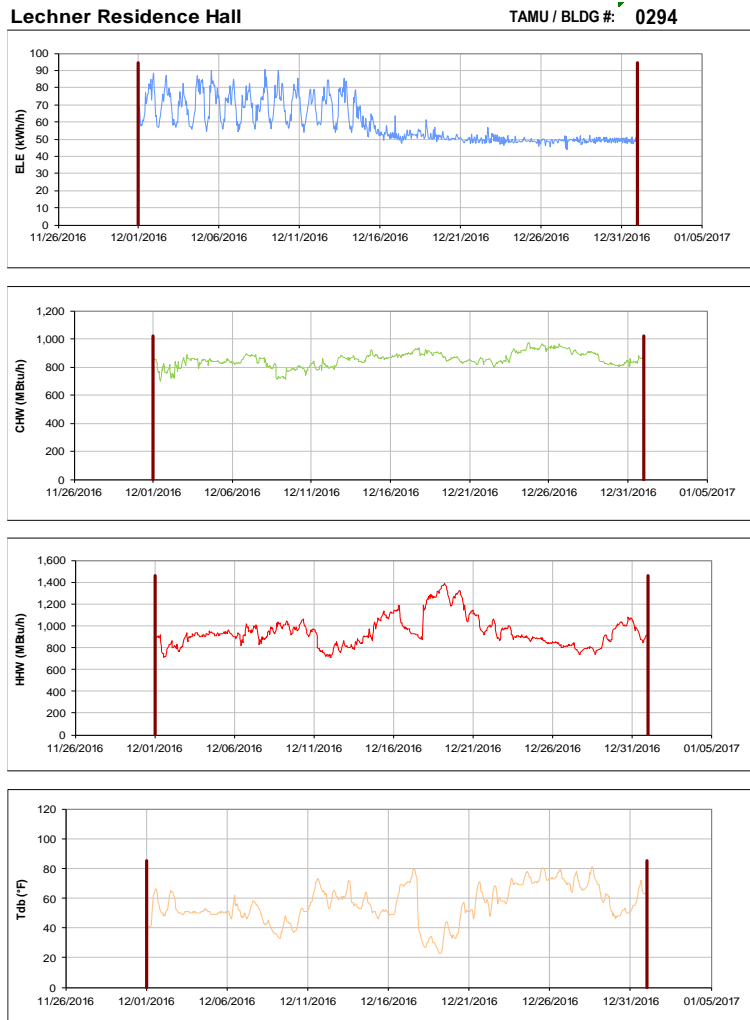


Figure III-7 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lechner Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

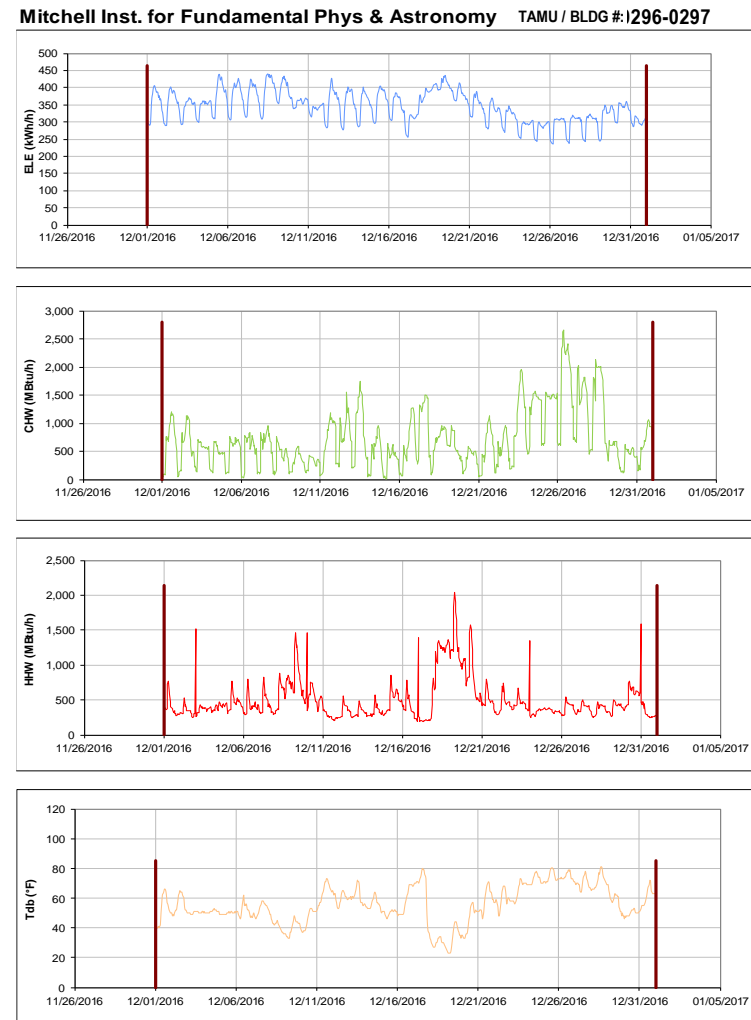


Figure III-8 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mitchell Inst. for Fundamental Phys & Astronomy during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

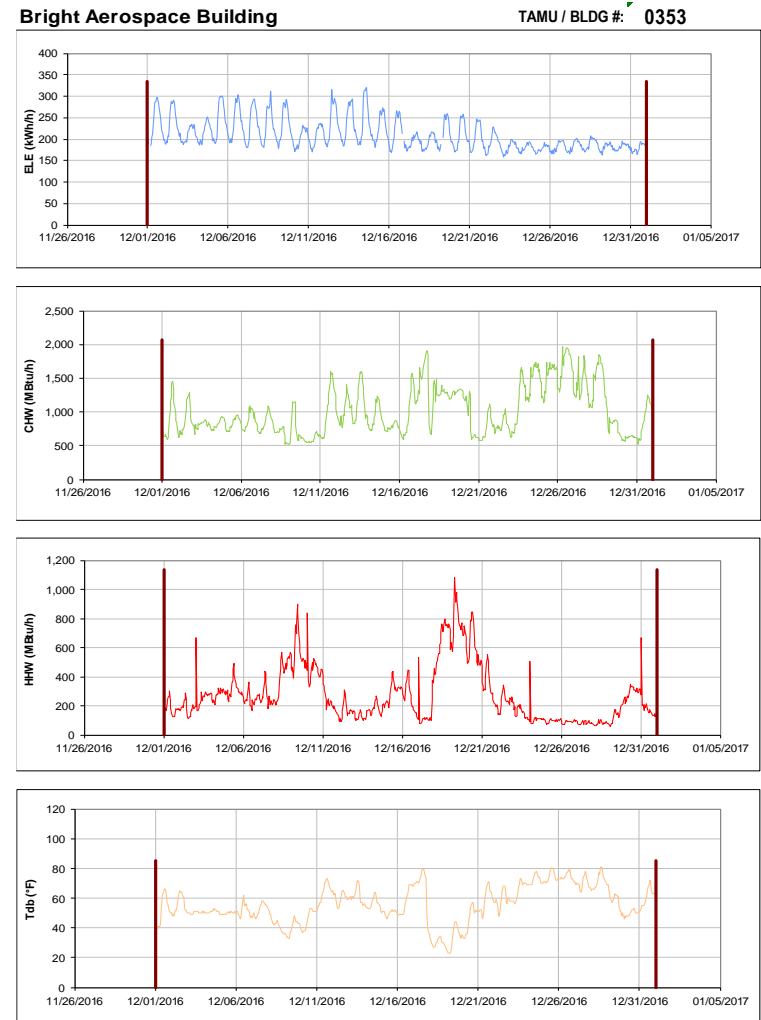


Figure III-10 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bright Aerospace Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

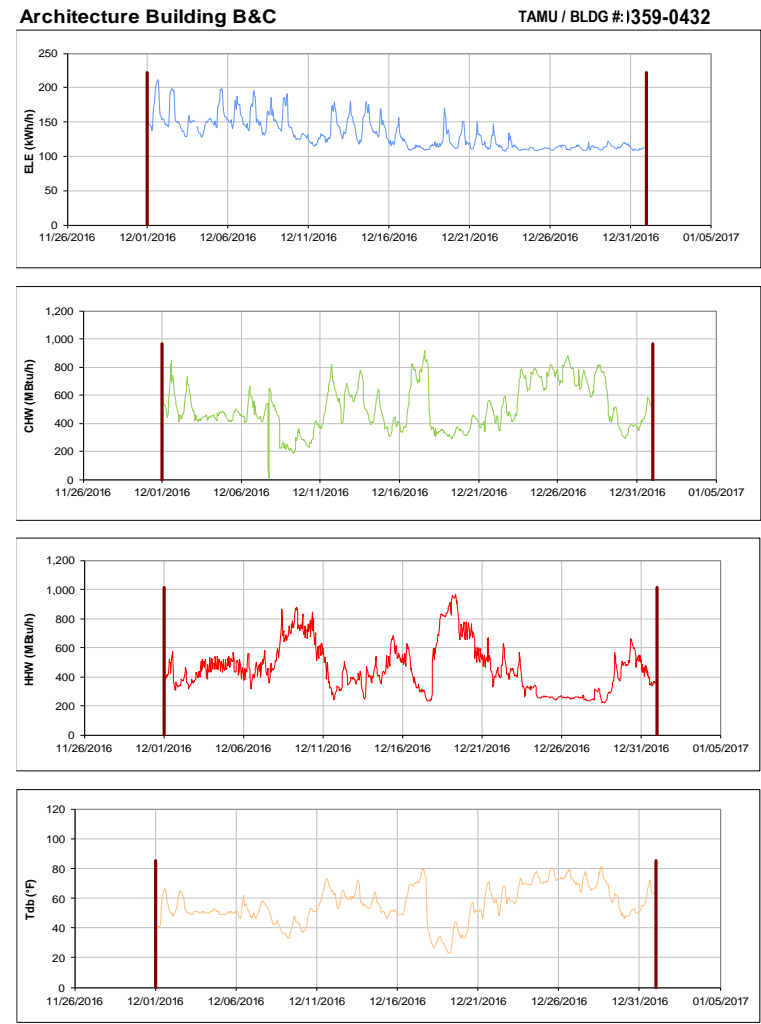


Figure III-12 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building B&C during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

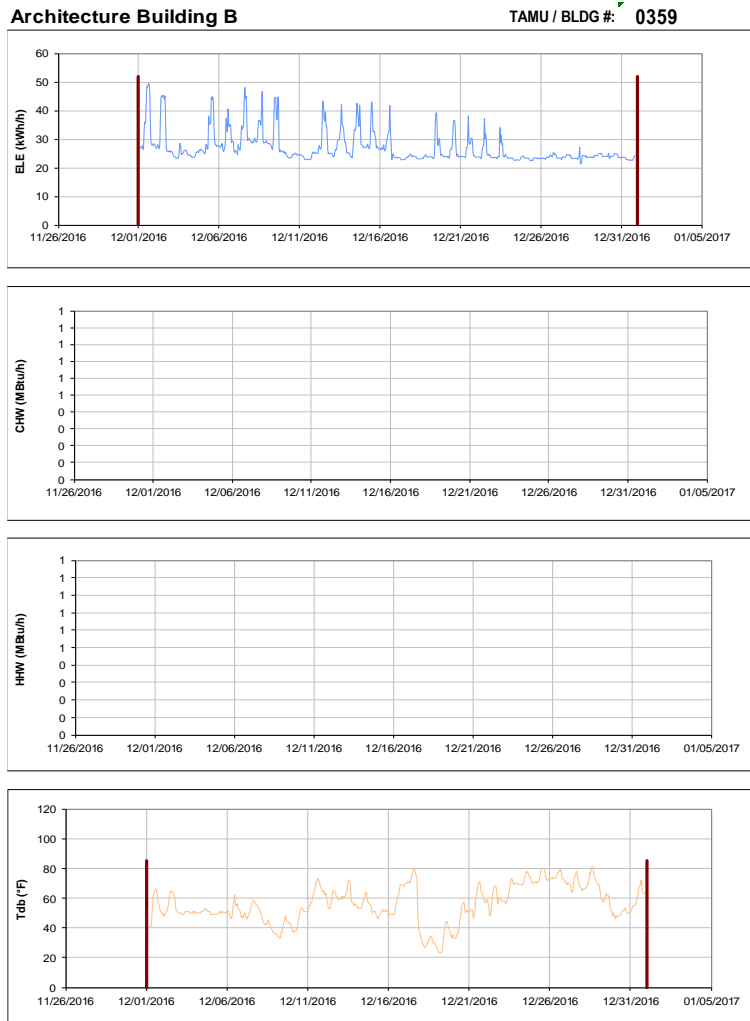


Figure III-13 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building B during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

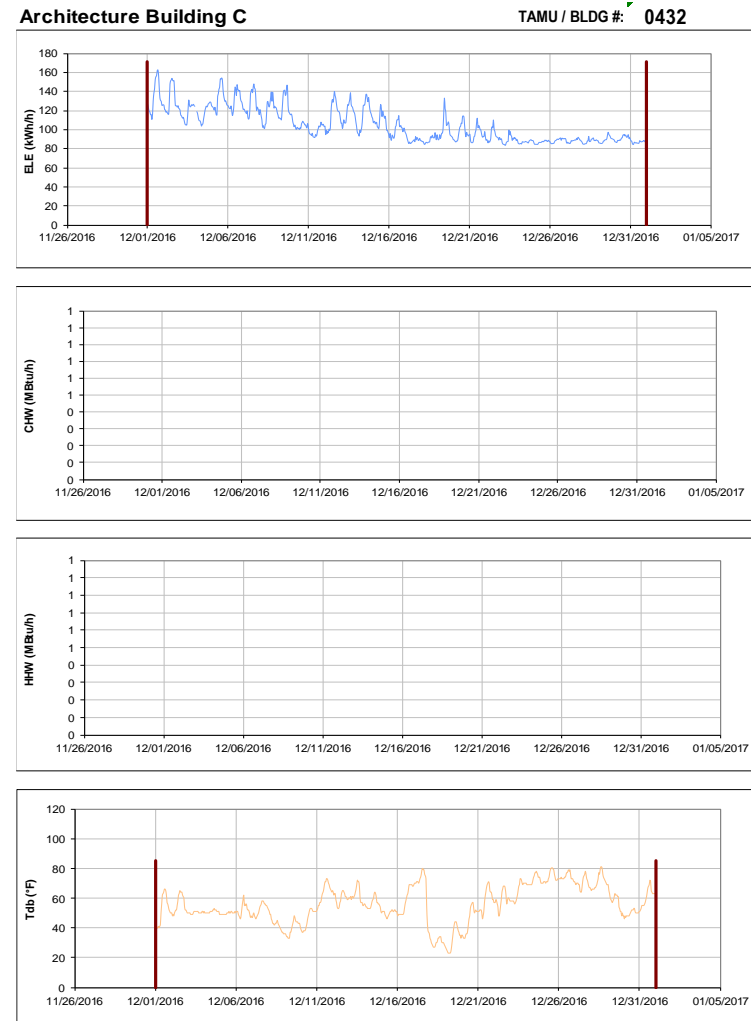


Figure III-14 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Architecture Building C during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

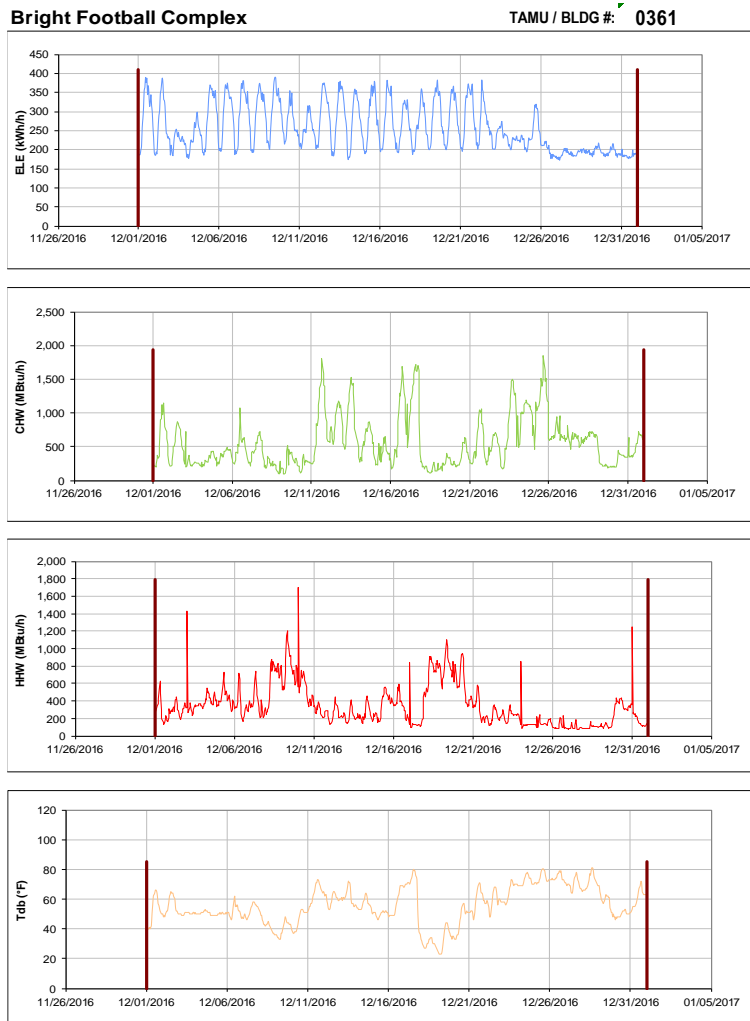


Figure III-15 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bright Football Complex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

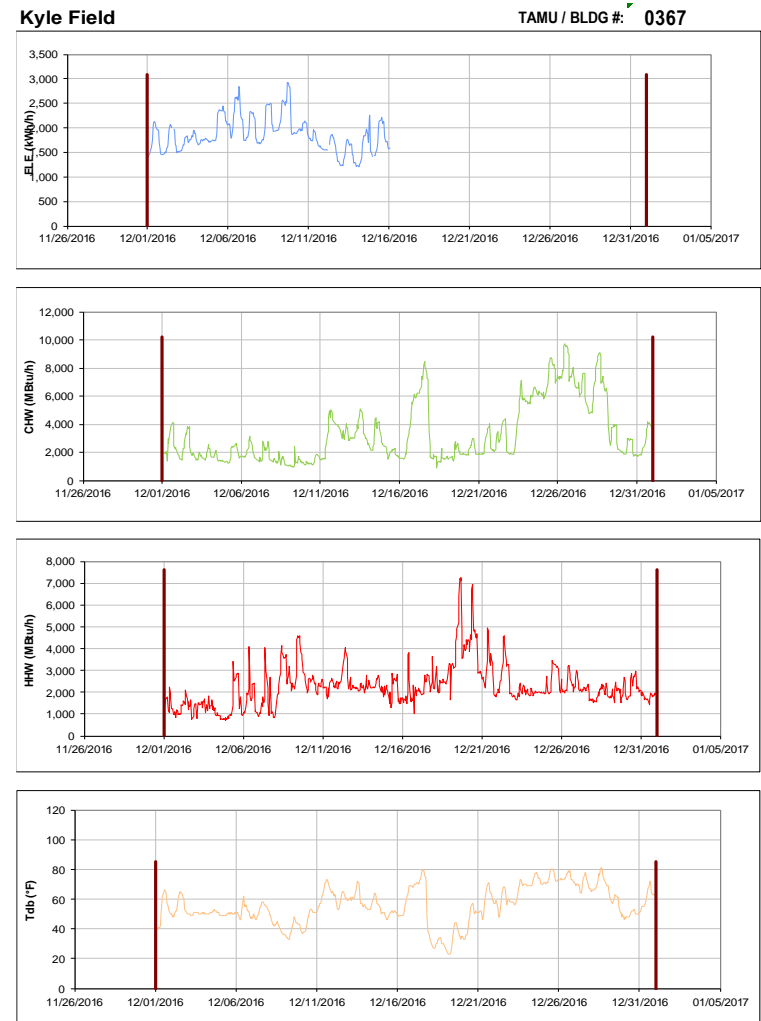


Figure III-16 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kyle Field during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Chemistry Building Addition

TAMU / BLDG #: 0376

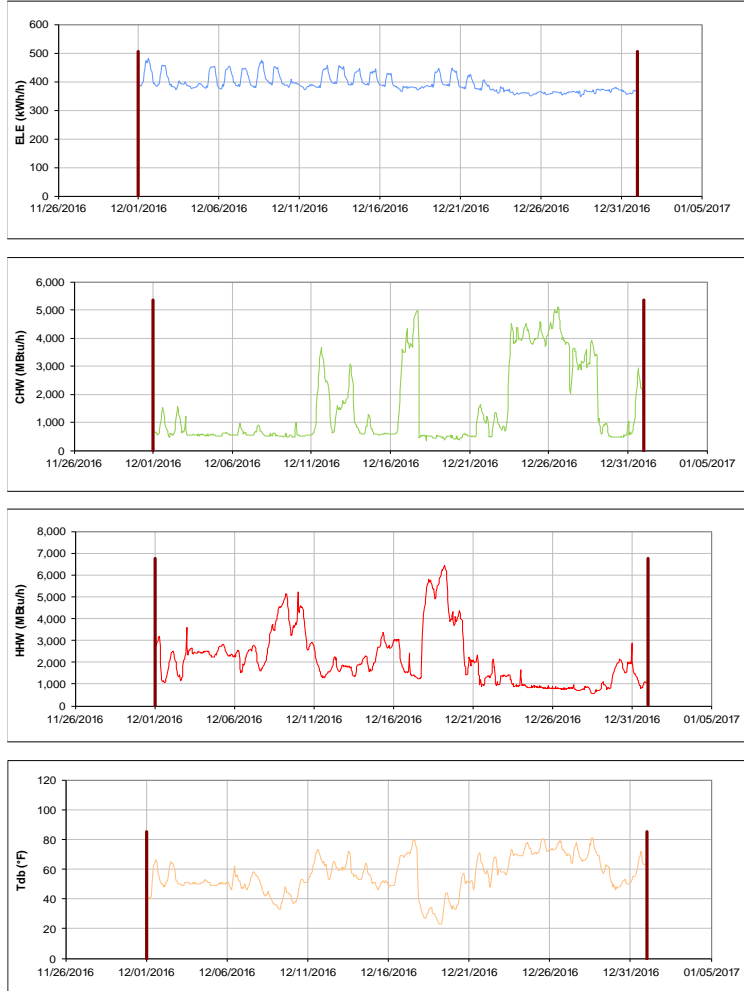


Figure III-17 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Chemistry Building Addition during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Koldus Building

TAMU / BLDG #: 0383

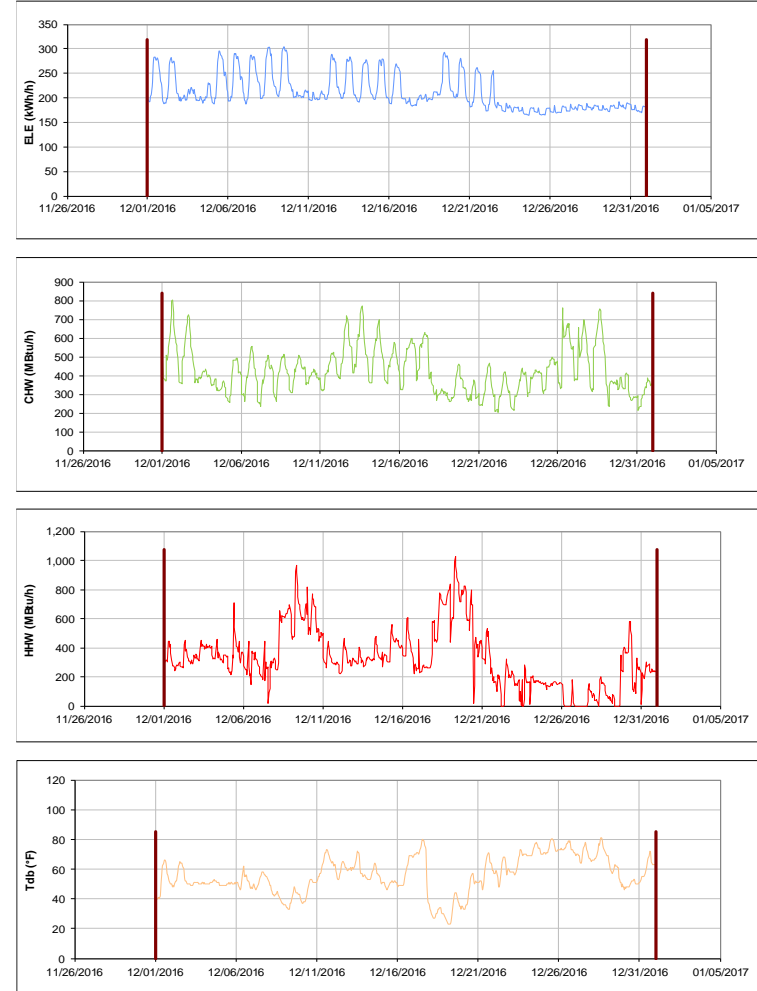


Figure III-18 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Koldus Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

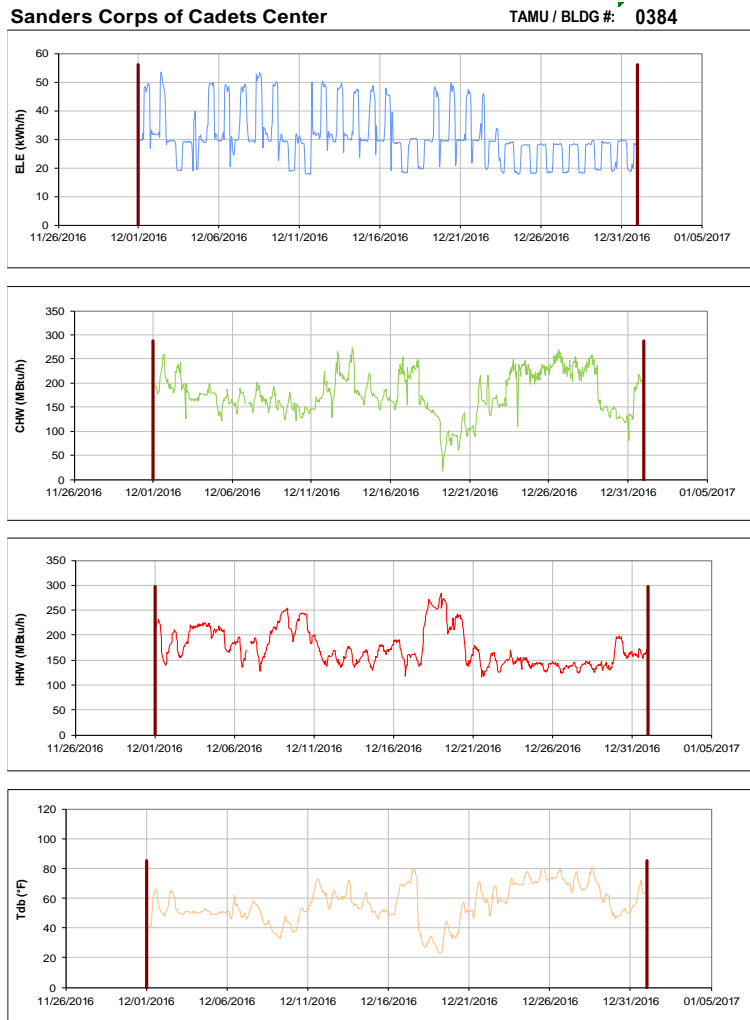


Figure III-19 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Sanders Corps of Cadets Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

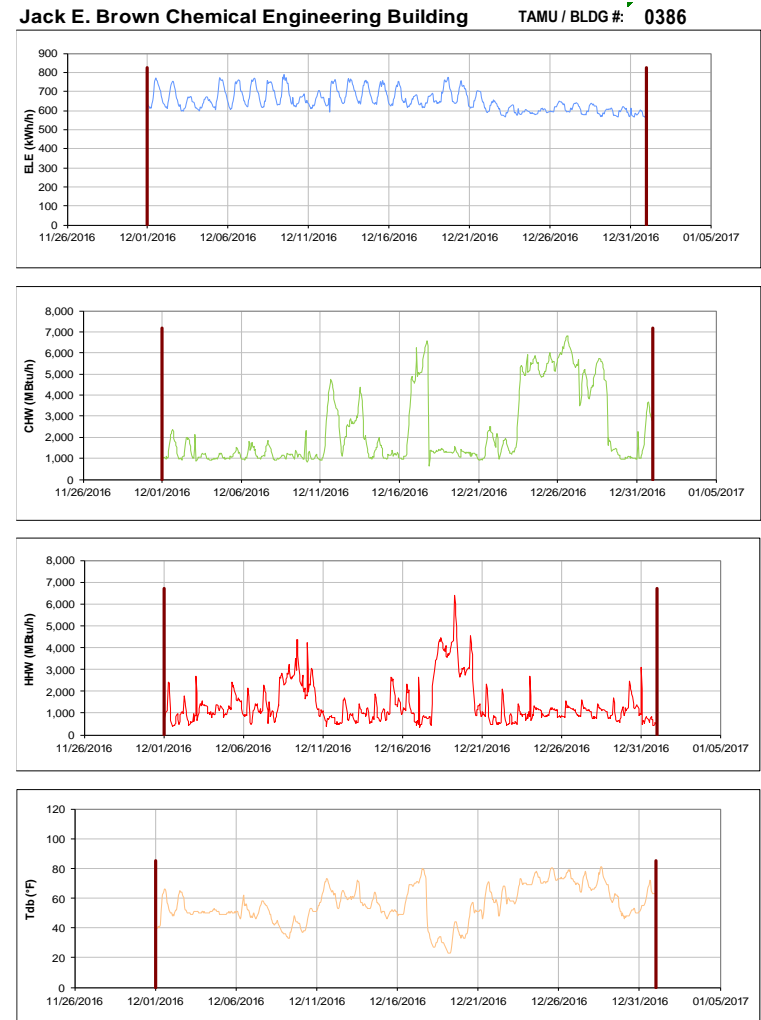


Figure III-20 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Jack E. Brown Chemical Engineering Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Richardson Petroleum Engineering Building TAMU / BLDG #: 0387

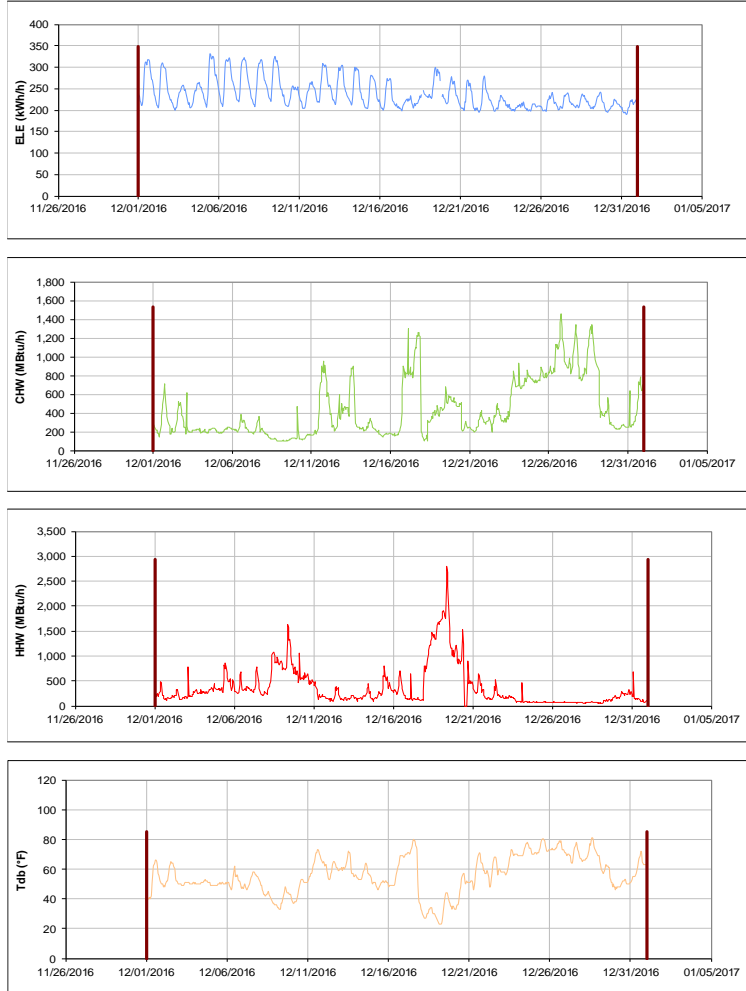


Figure III-21 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Richardson Petroleum Engineering Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

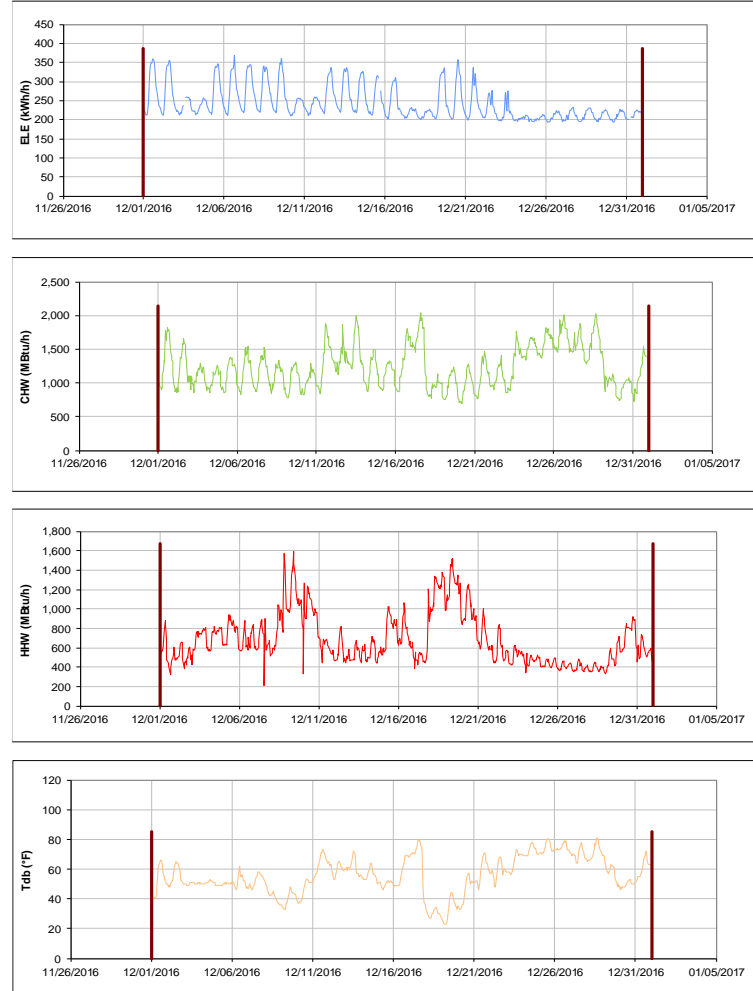


Figure III-22 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for James J. Cain'51 and Mechanical Engineering Office Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

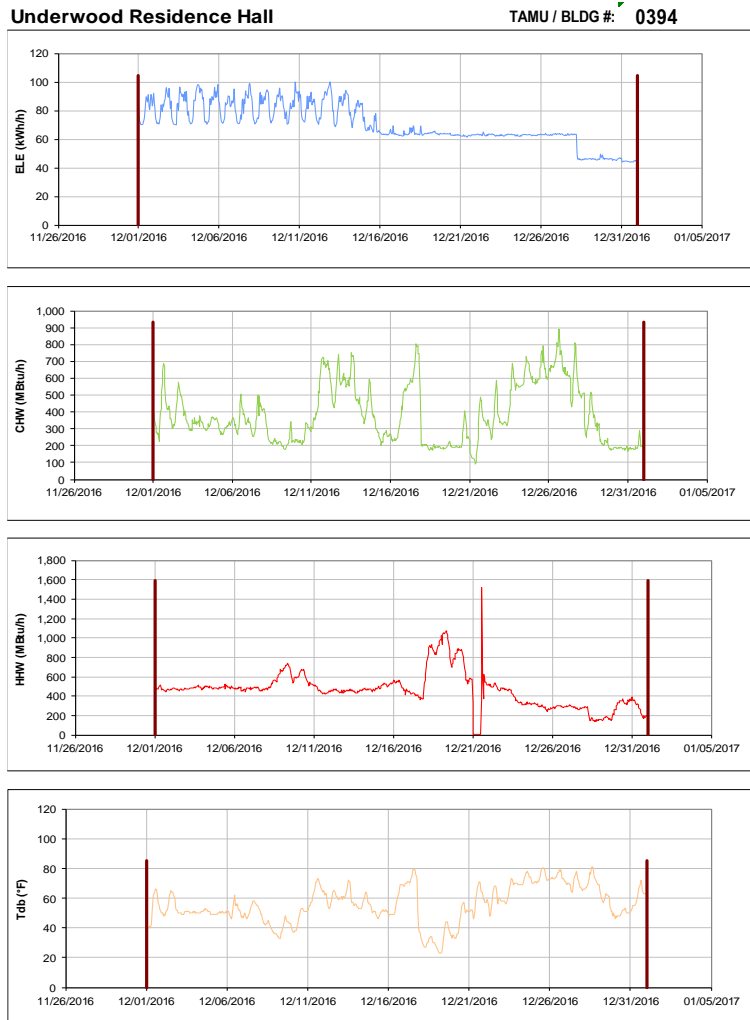


Figure III-23 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Underwood Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

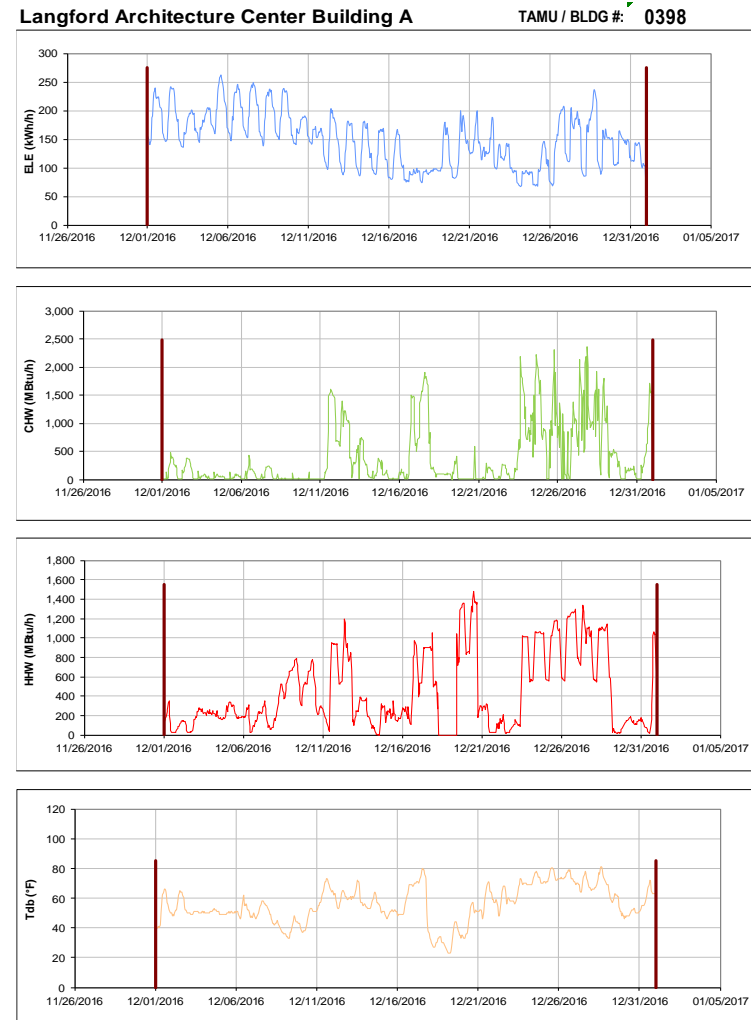


Figure III-24 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Langford Architecture Center Building A during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

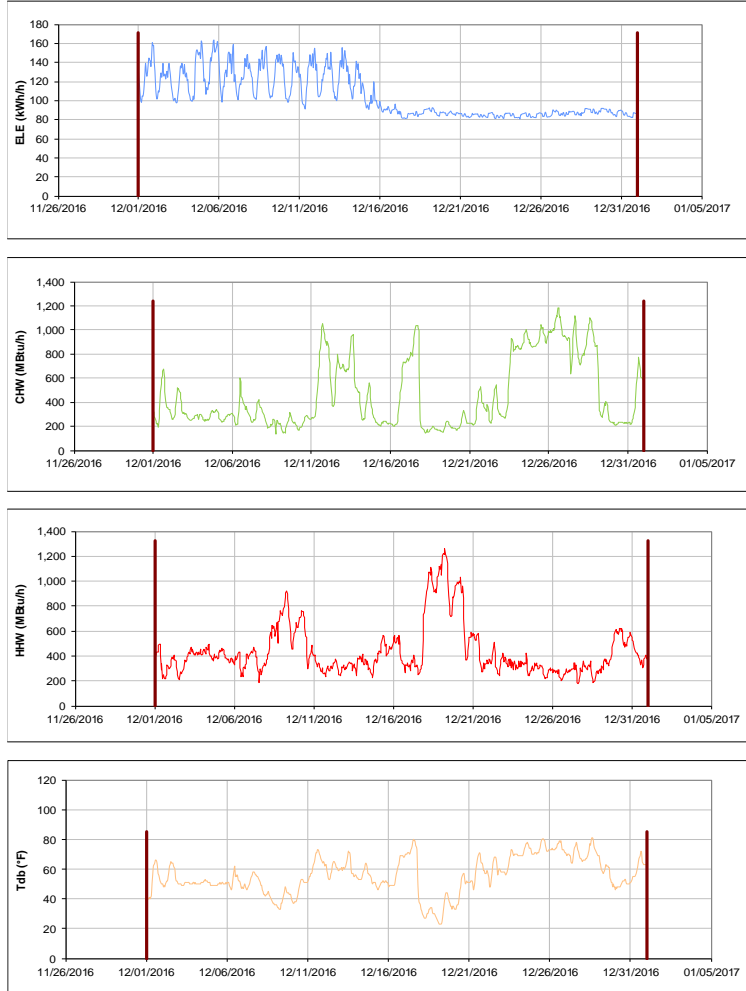


Figure III-25 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Spence Hall, Briggs Hall, and Ash II LLC during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Spence Hall Dorm 1 TAMU / BLDG #: 0400

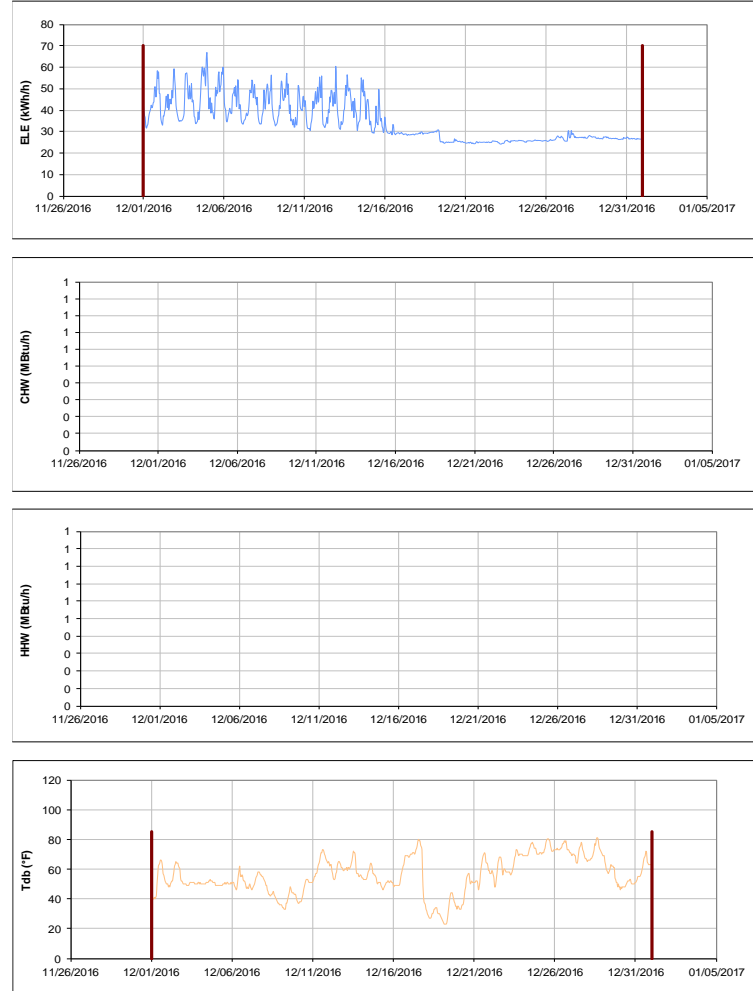


Figure III-26 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Spence Hall Dorm 1 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

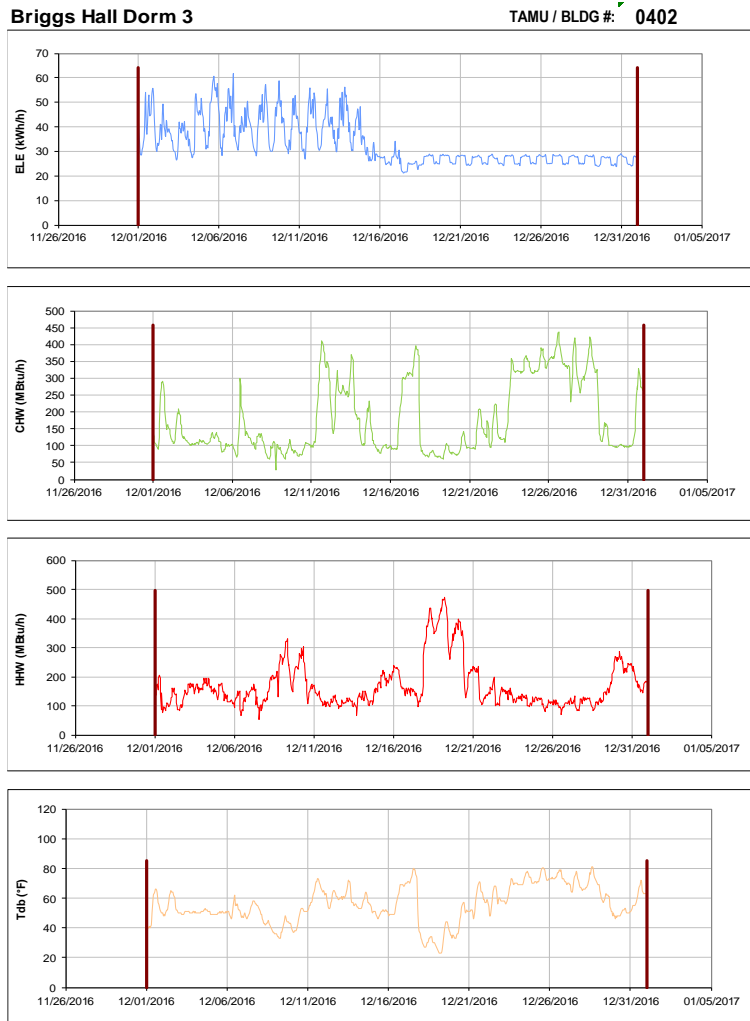


Figure III-27 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Briggs Hall Dorm 3 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

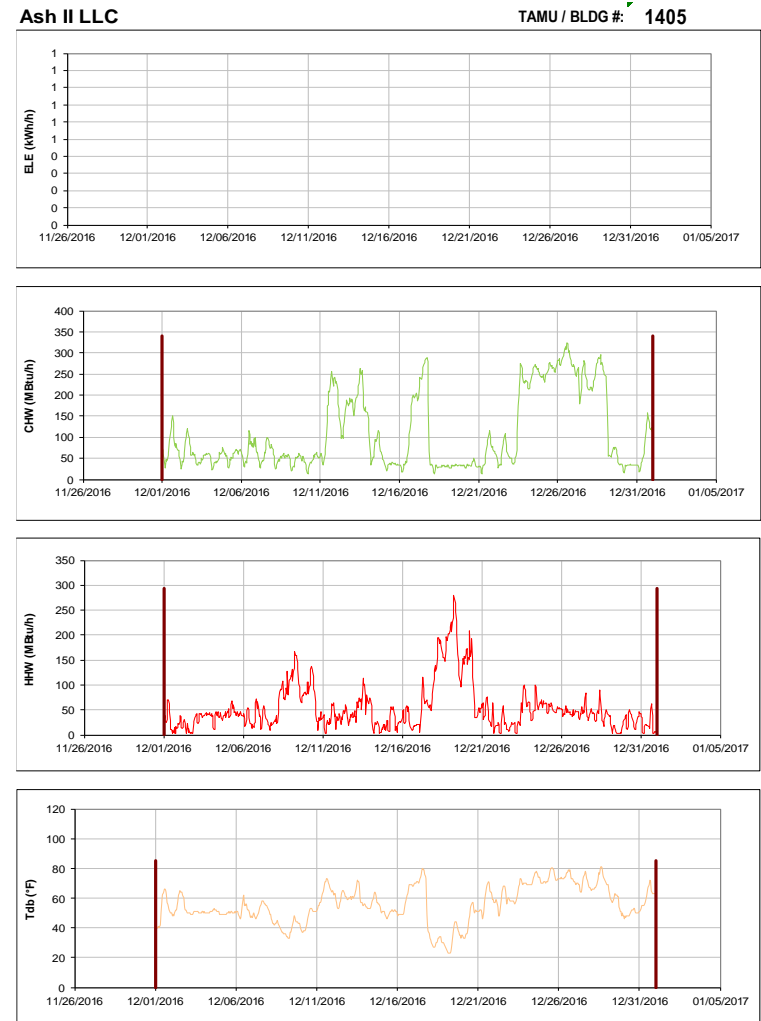


Figure III-28 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Ash II LLC during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

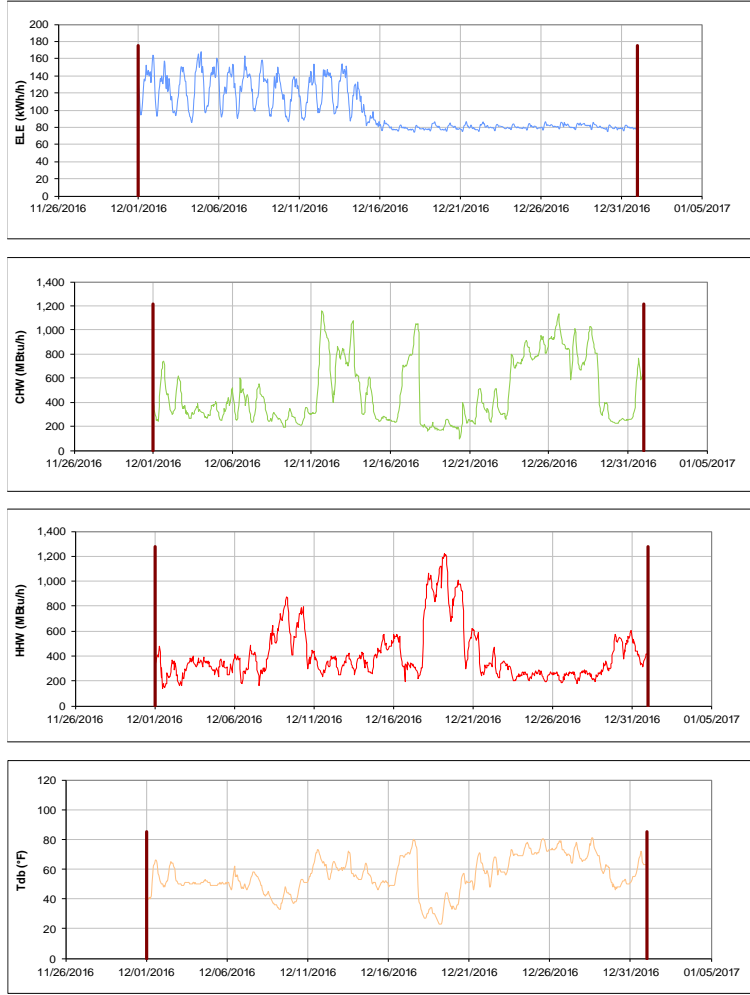


Figure III-29 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kiest Hall, Fountain Hall, and Plank LLC during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Kiest Hall Dorm 2 TAMU / BLDG #: 0401

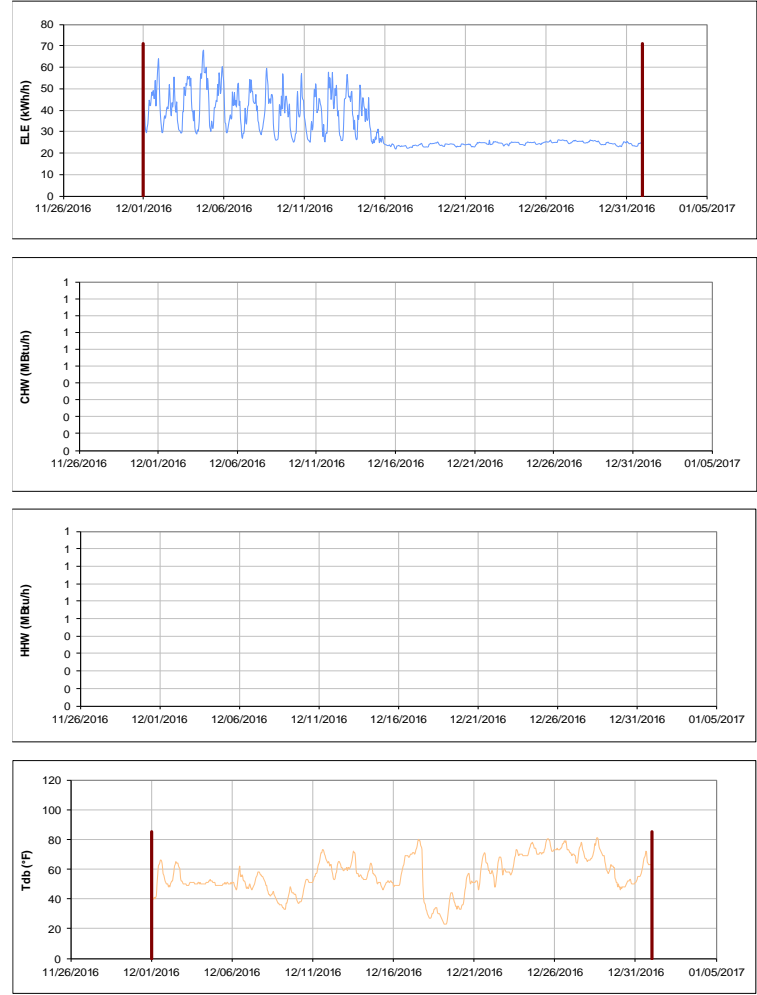


Figure III-30 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kiest Hall Dorm 2 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

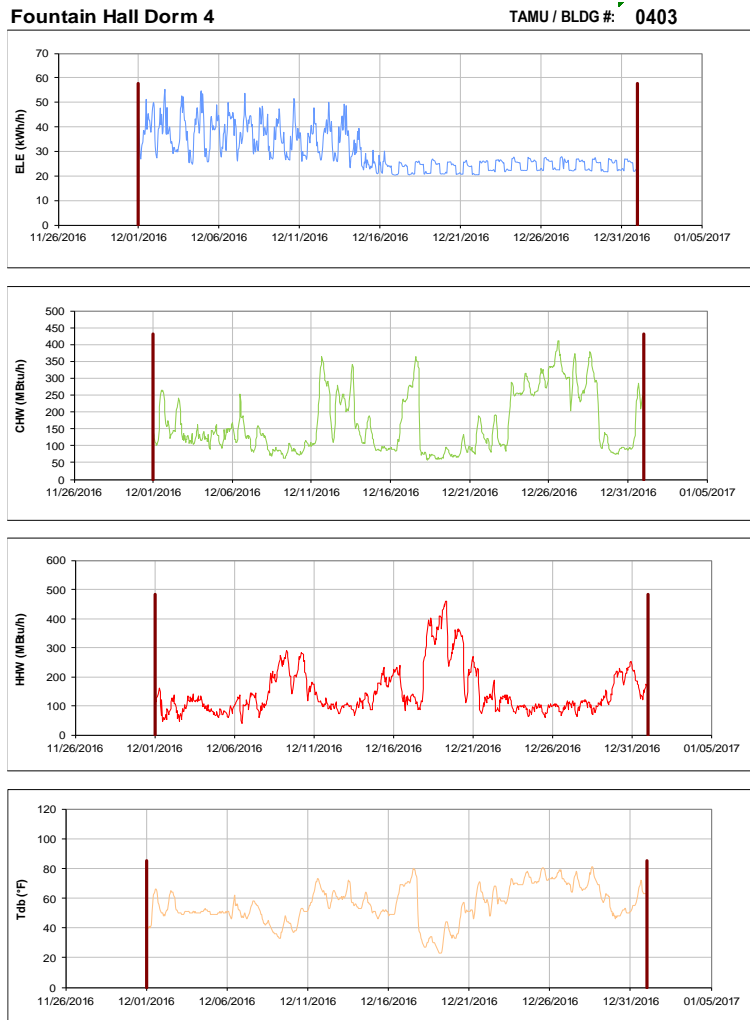


Figure III-31 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Fountain Hall Dorm 4 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

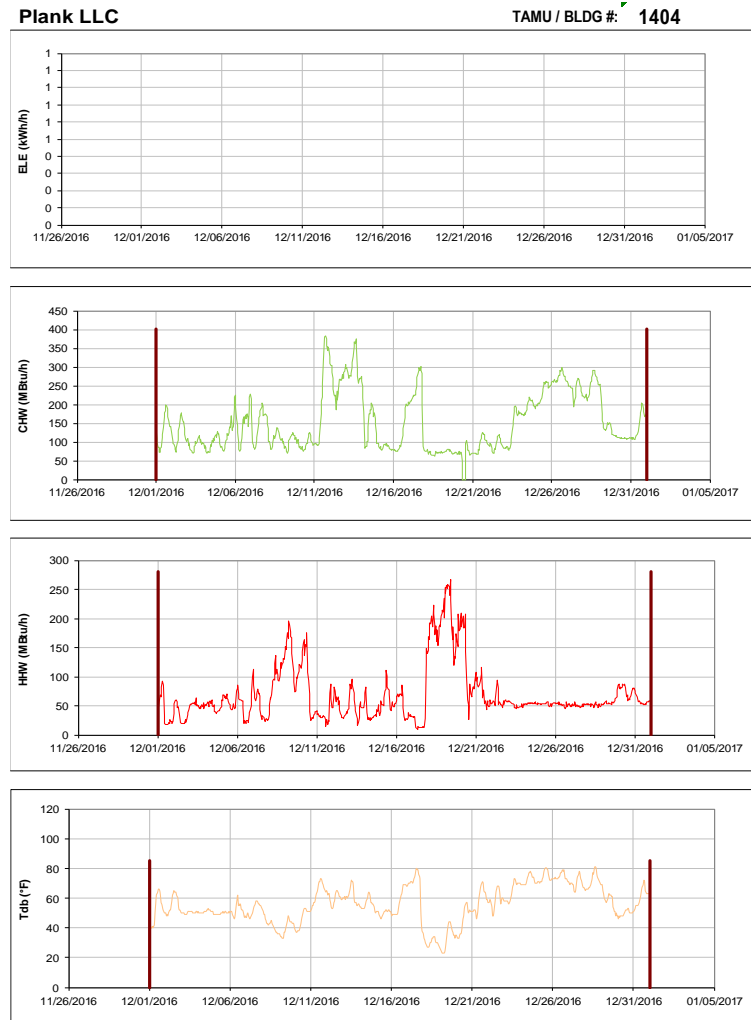


Figure III-32 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Plank LLC during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

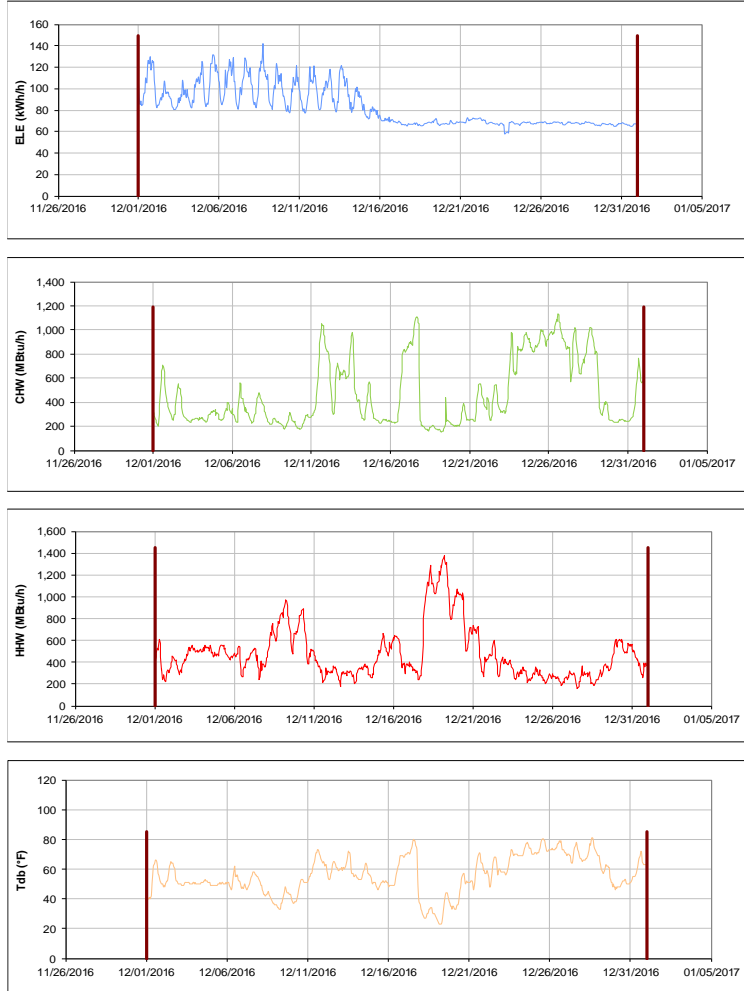


Figure III-33 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gainer Hall, Leonard Hall and Ash LLC during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Gainer Hall Dorm 5 TAMU / BLDG #: 0404

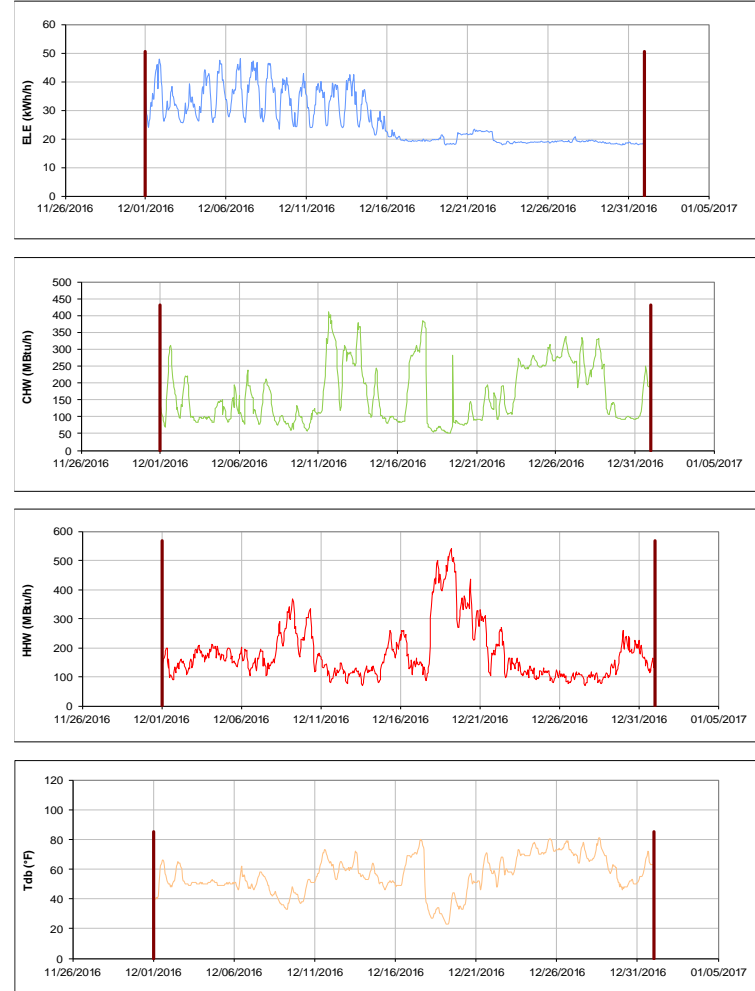


Figure III-34 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gainer Hall Dorm 5 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Leonard Hall - Dorm 7

TAMU / BLDG #: 0406

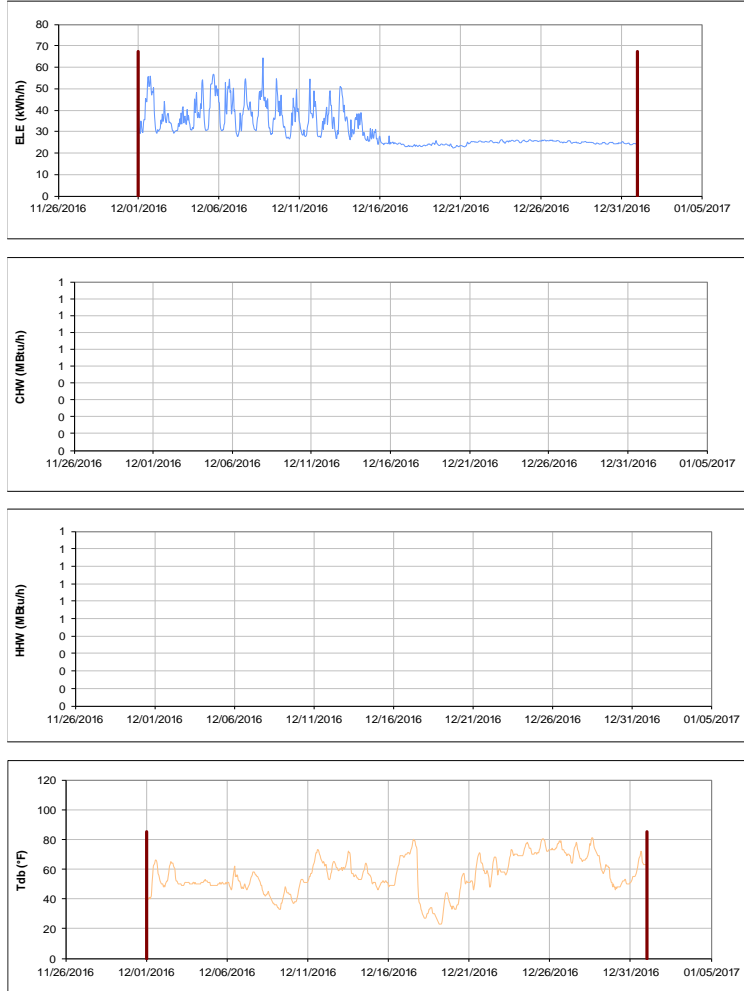


Figure III-35 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Leonard Hall - Dorm 7 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

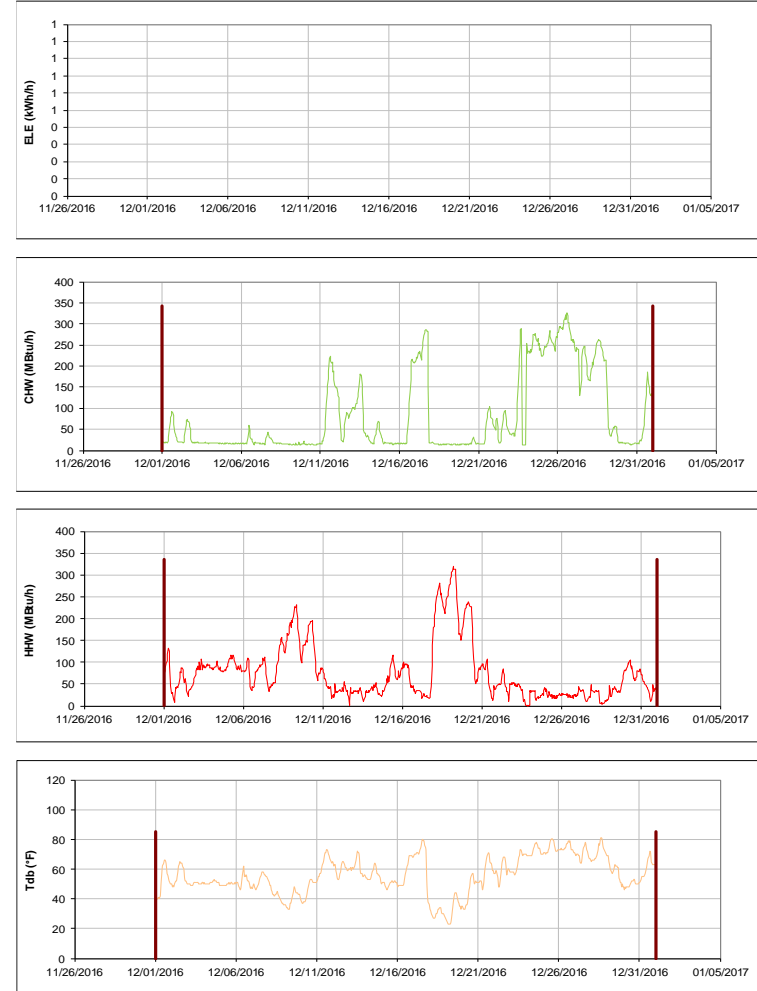


Figure III-36 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for H. Grady Ash, Jr. '58 Leadership Learning Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

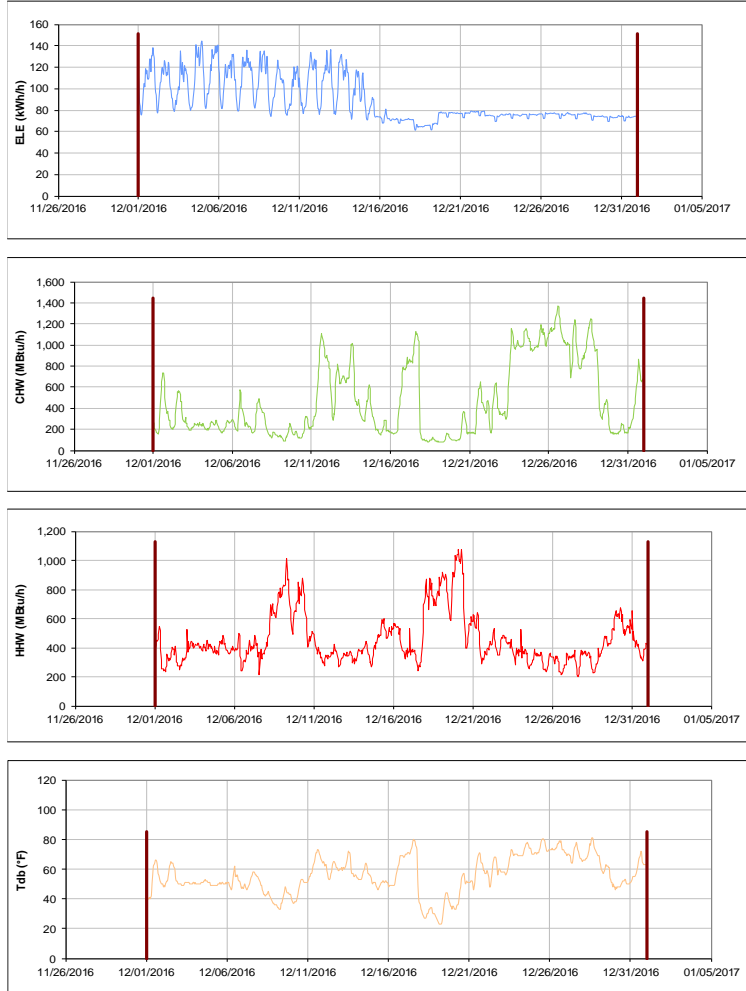


Figure III-37 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Lacy Hall - Dorm 6 TAMU / BLDG #: 0405

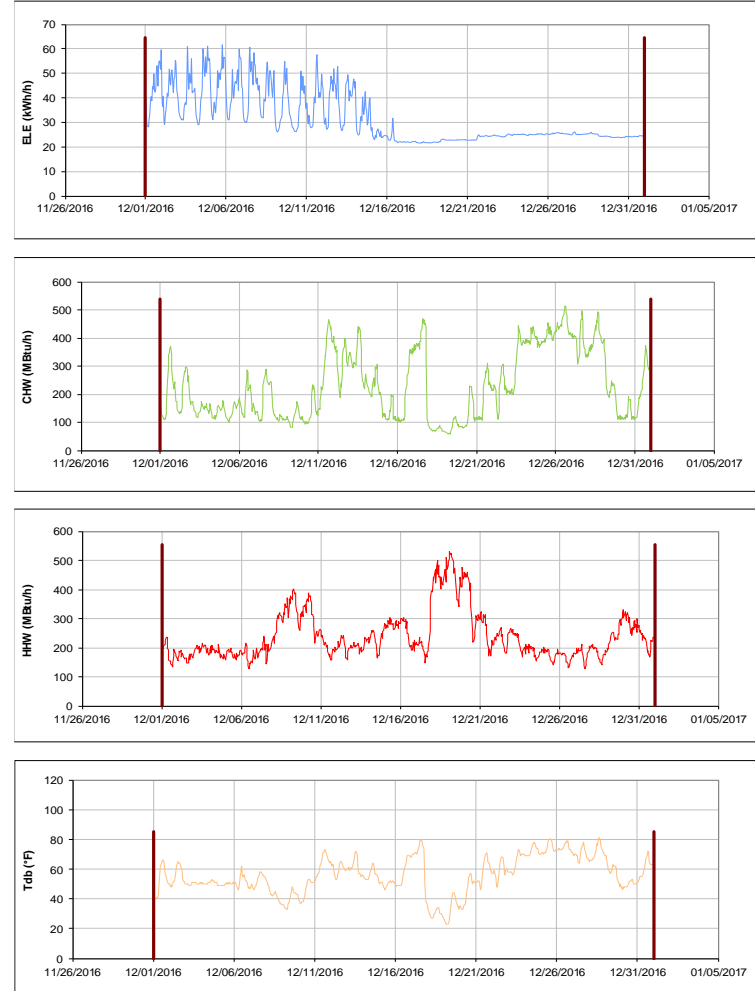


Figure III-38 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Lacy Hall - Dorm 6 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Harrell Hall - Dorm 8

TAMU / BLDG #: 0407

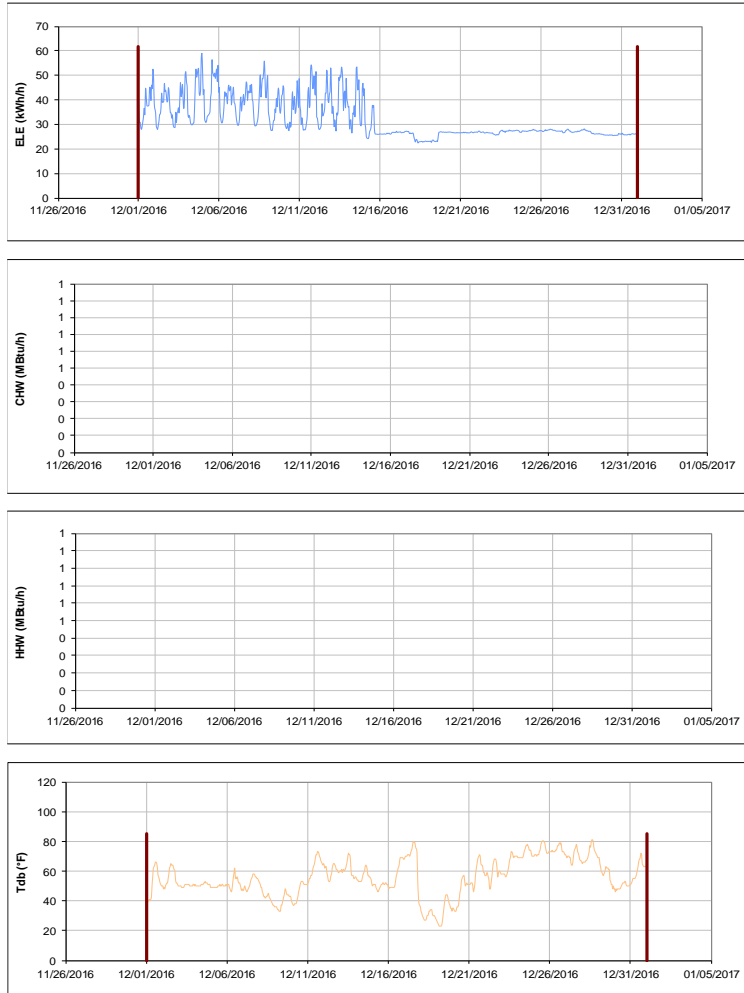


Figure III-39 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrell Hall - Dorm 8 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Buzbee Leadership Learning Center

TAMU / BLDG #: 1402

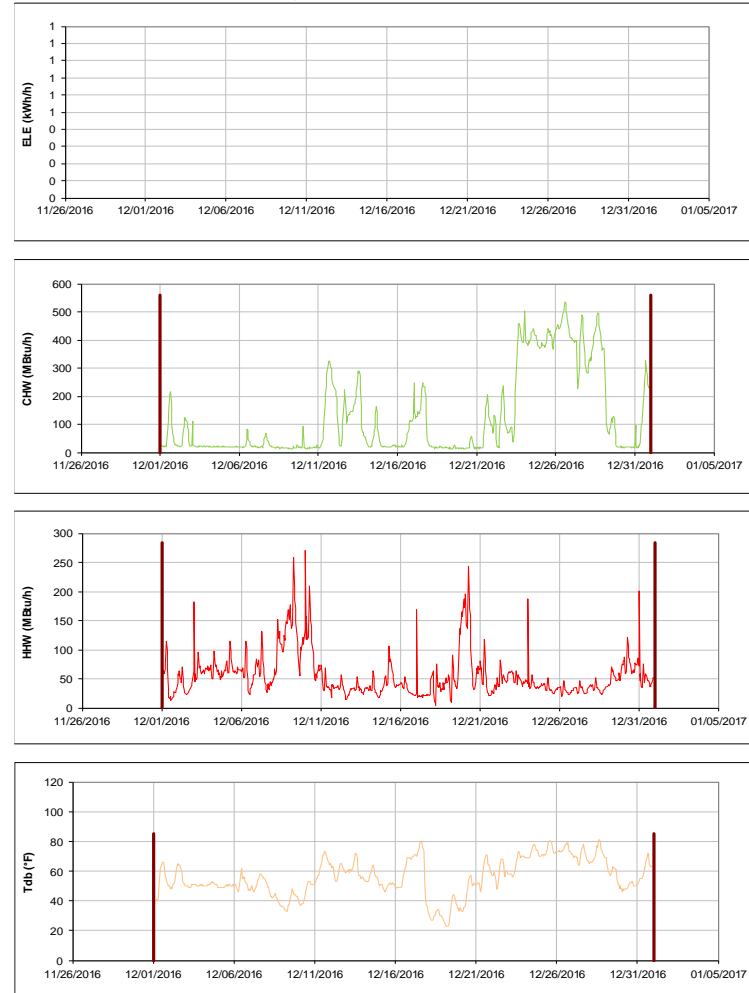


Figure III-40 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Buzbee Leadership Learning Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

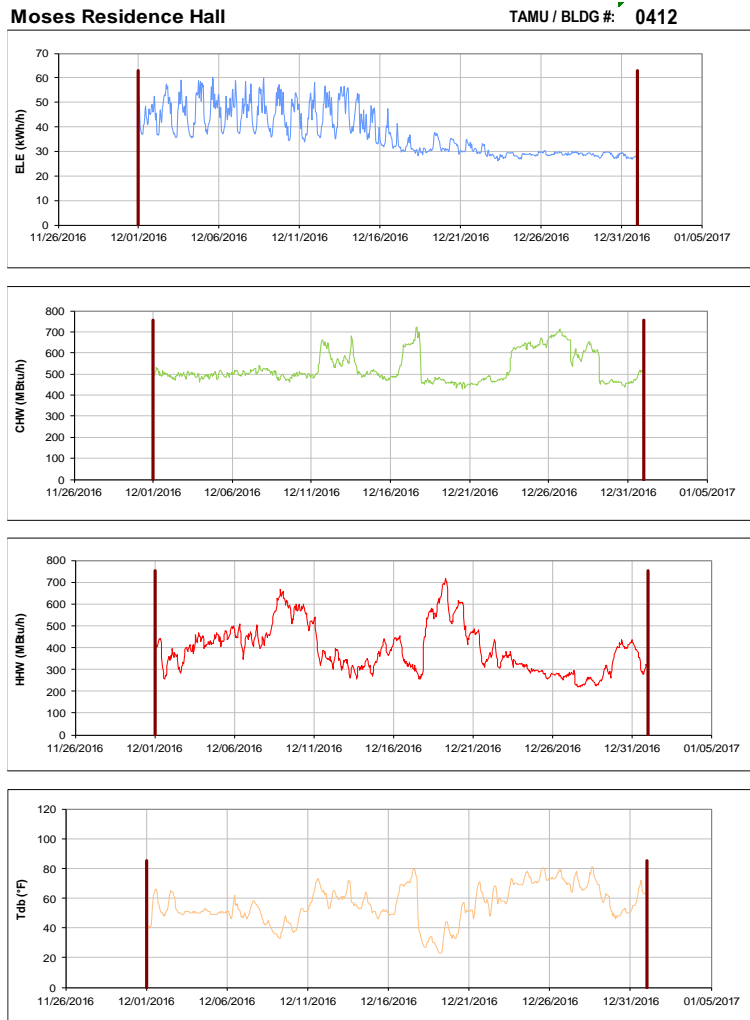


Figure III-41 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Moses Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

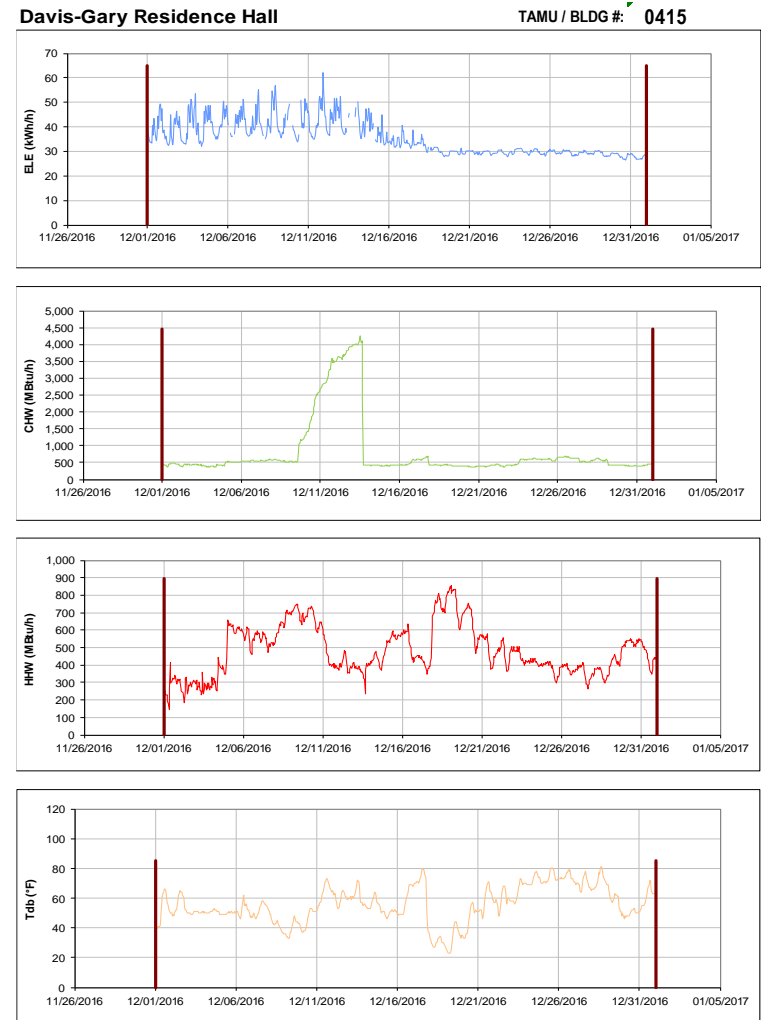


Figure III-42 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Davis-Gary Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

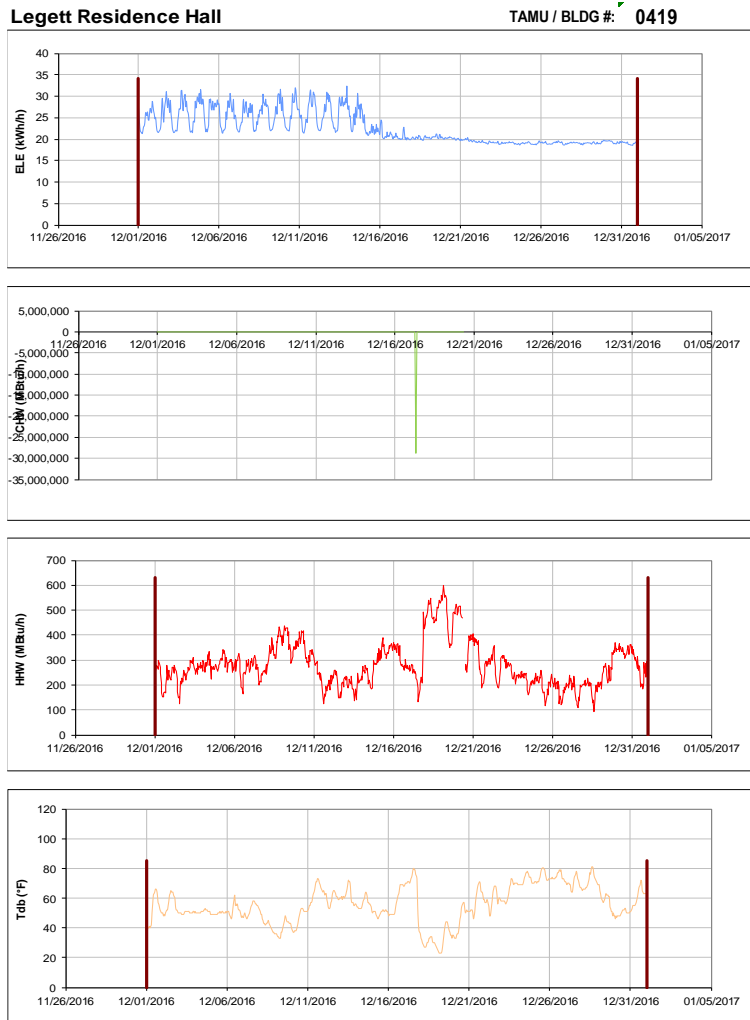


Figure III-43 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Legett Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

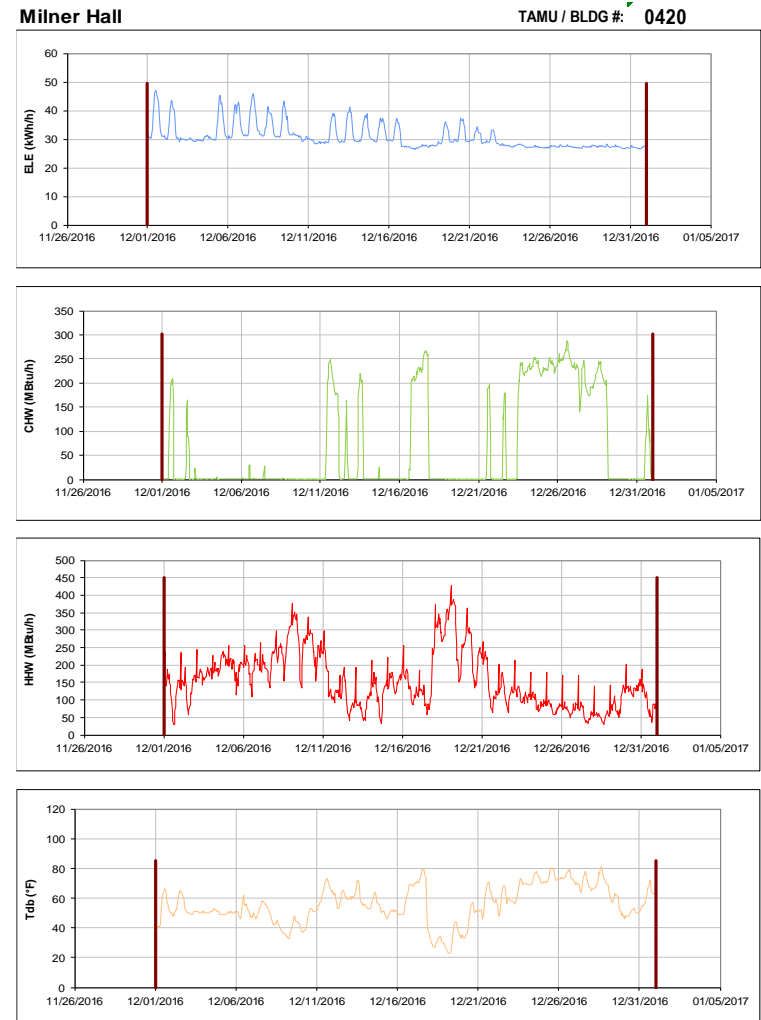


Figure III-44 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Milner Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

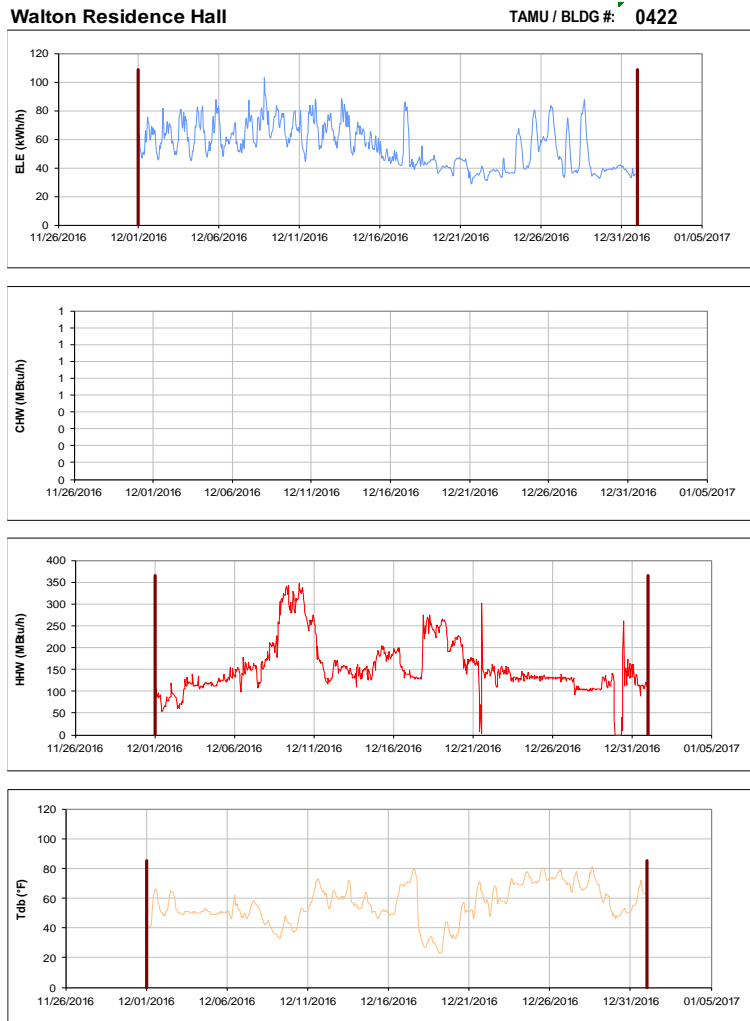


Figure III-45 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Walton Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

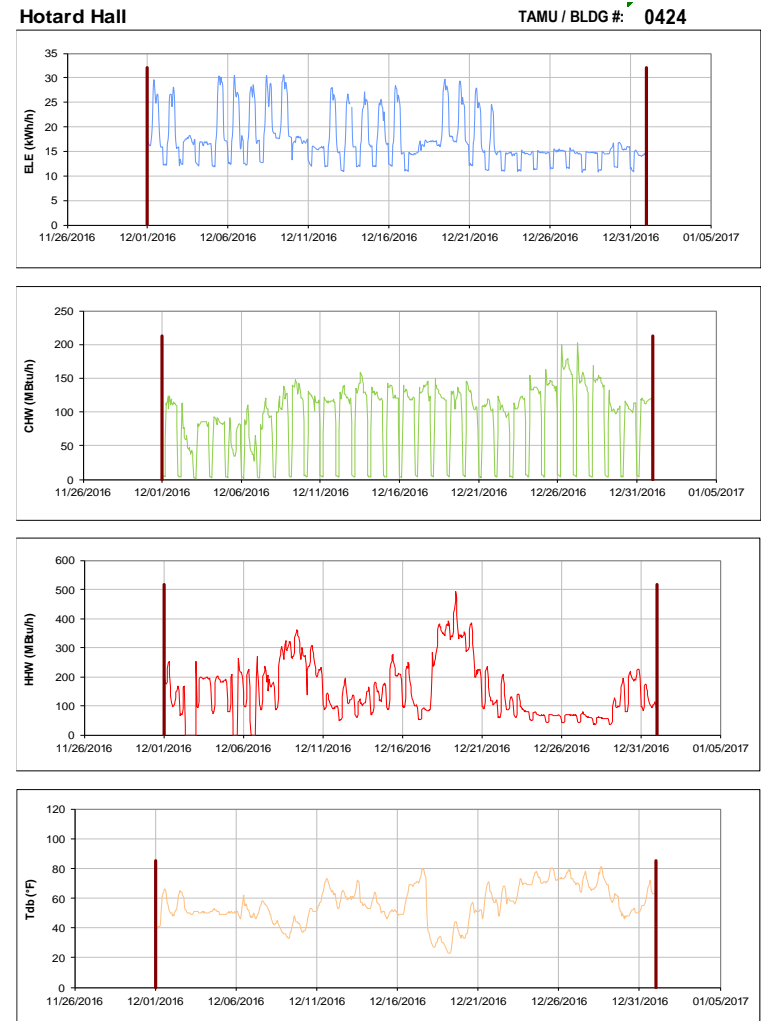


Figure III-46 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hotard Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

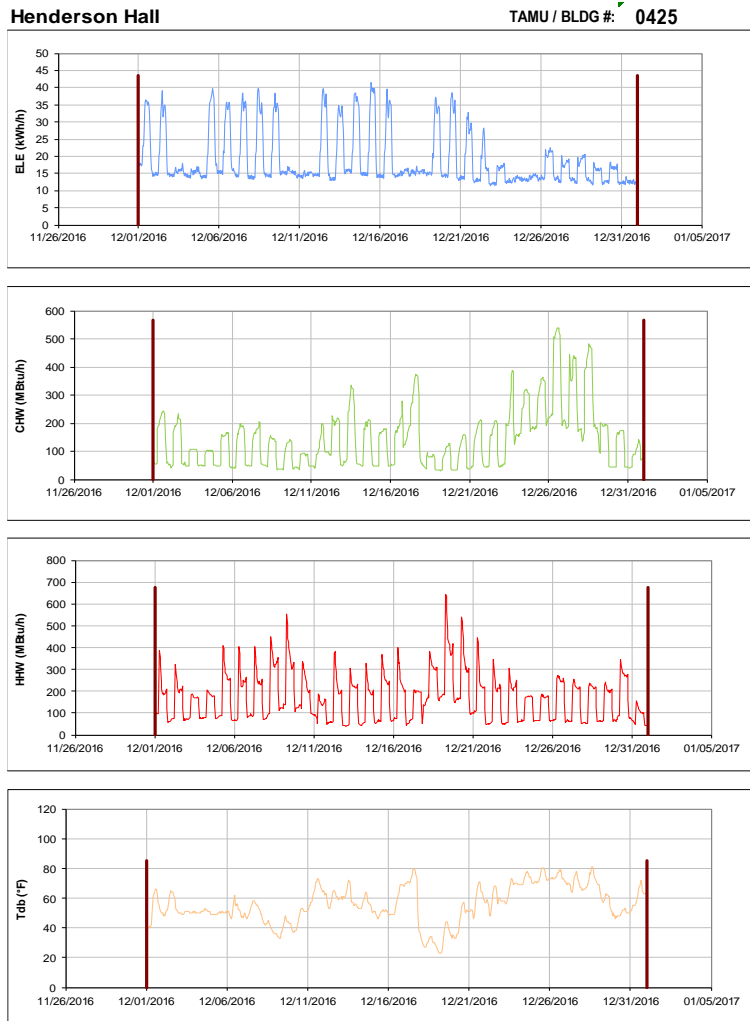


Figure III-47 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Henderson Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

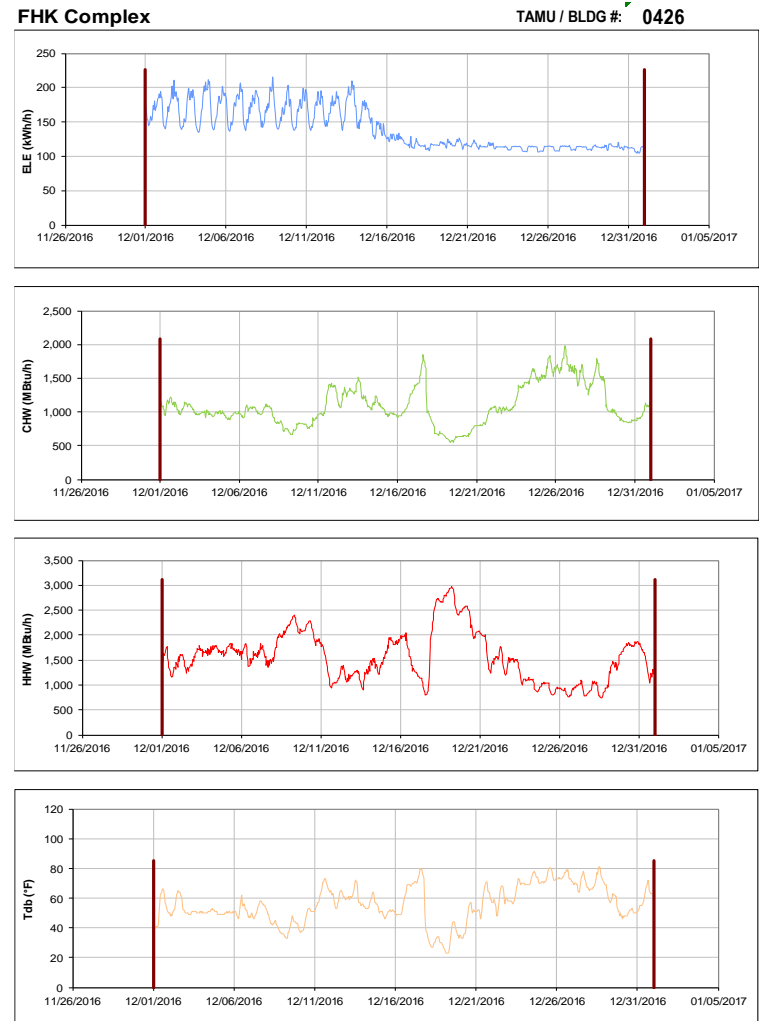


Figure III-48 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for FHK Complex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Schumacher Residence Hall

TAMU / BLDG #: 0430

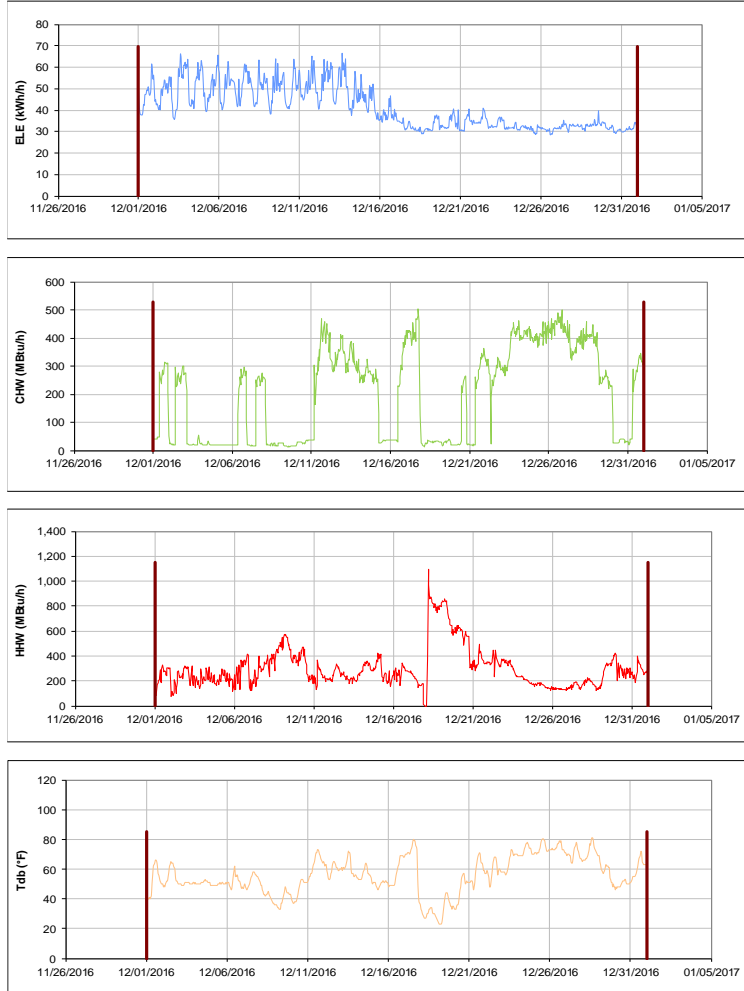


Figure III-49 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Schumacher Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Mosher Commons Krueger Dunn Aston

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

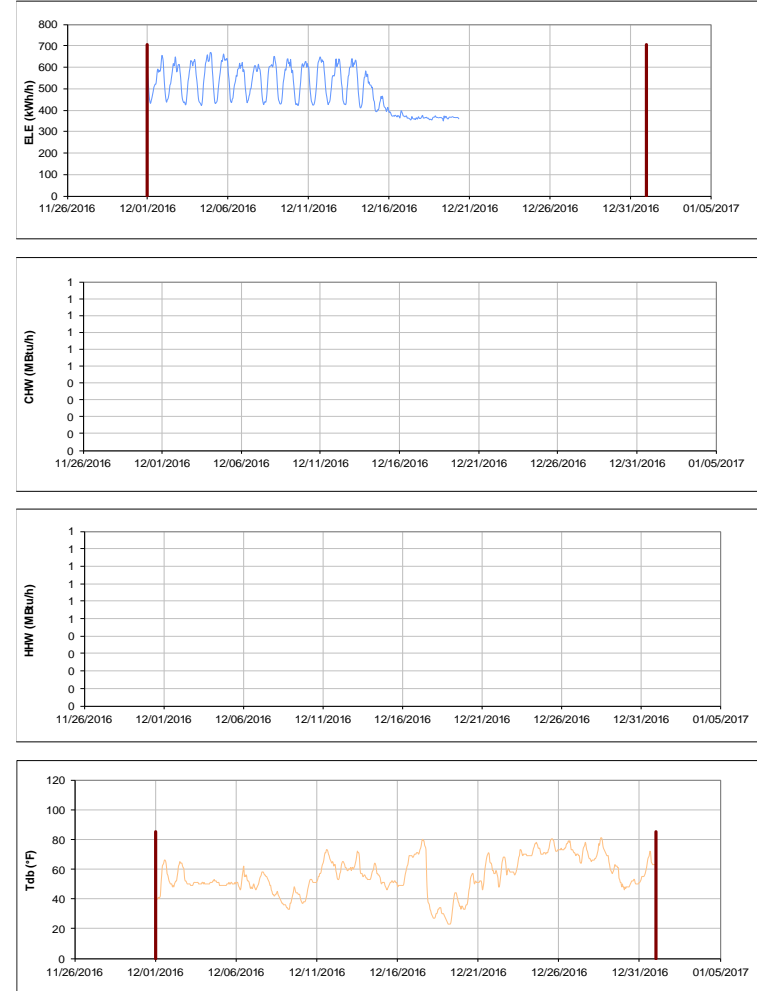


Figure III-50 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mosher Commons Krueger Dunn Aston during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

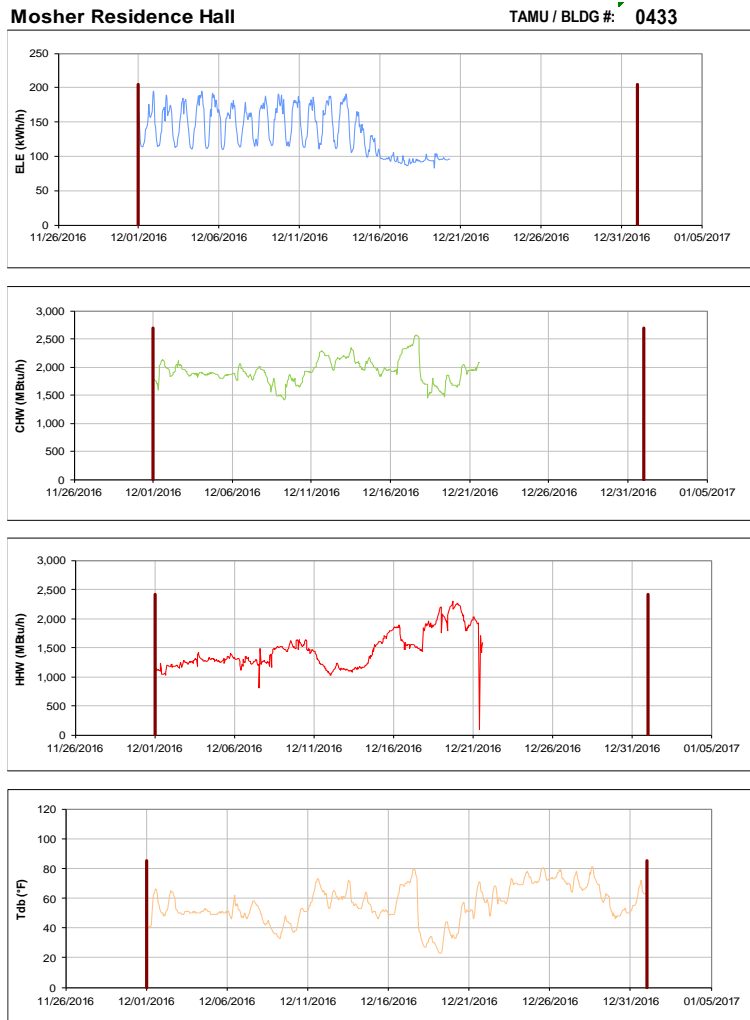


Figure III-51 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Mosher Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

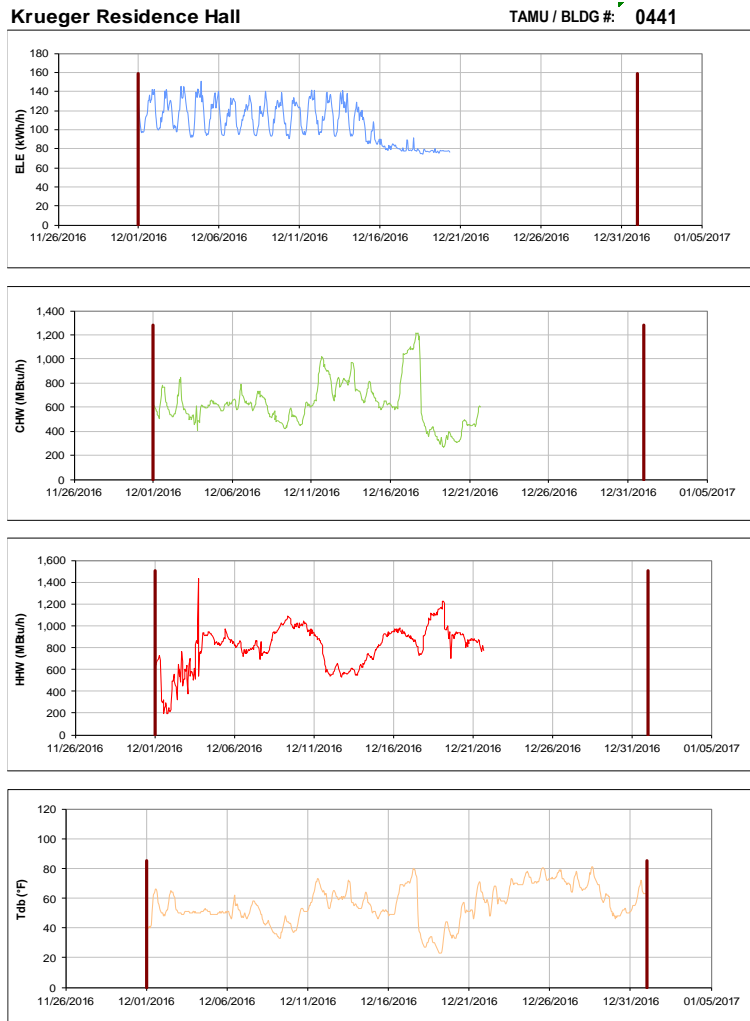


Figure III-53 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Krueger Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

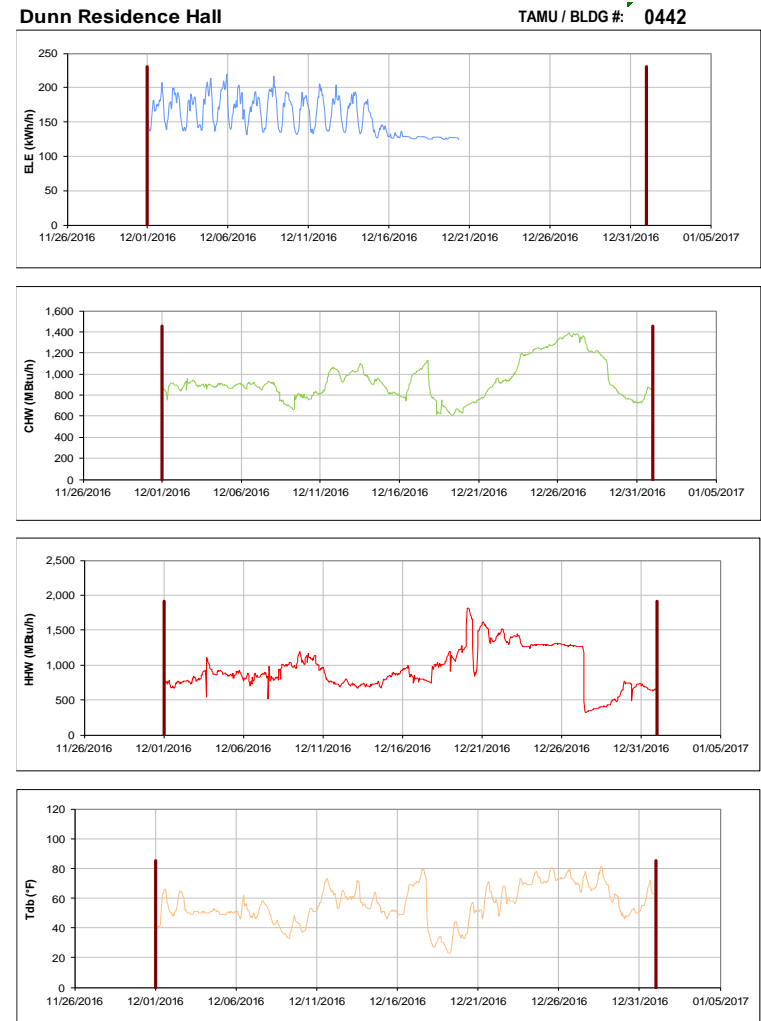


Figure III-54 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Dunn Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

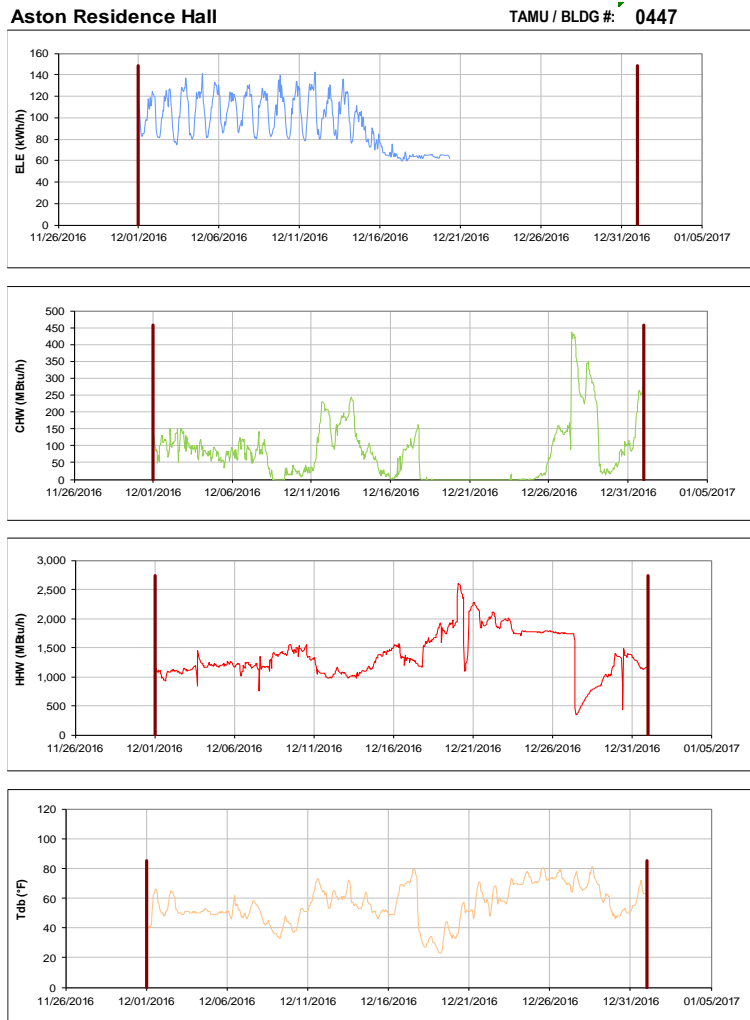


Figure III-55 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Aston Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-56 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Luedecke Building (Cyclotron) during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Harrington Education Center Office Tower TAMU / BLDG #: 0435

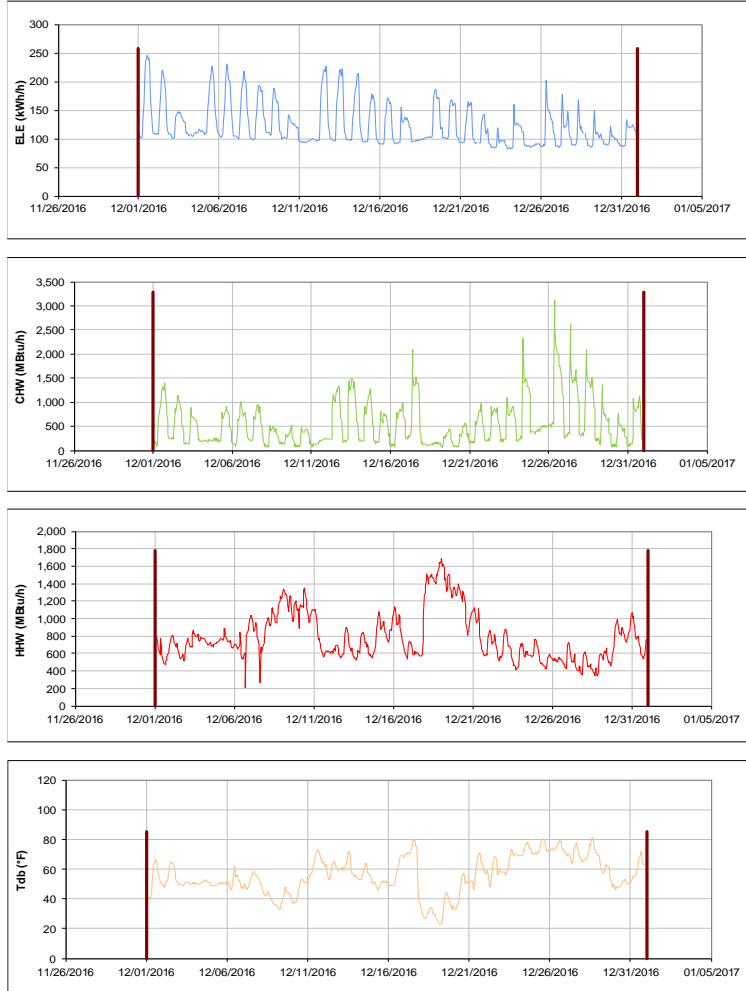


Figure III-57 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrington Education Center Office Tower during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

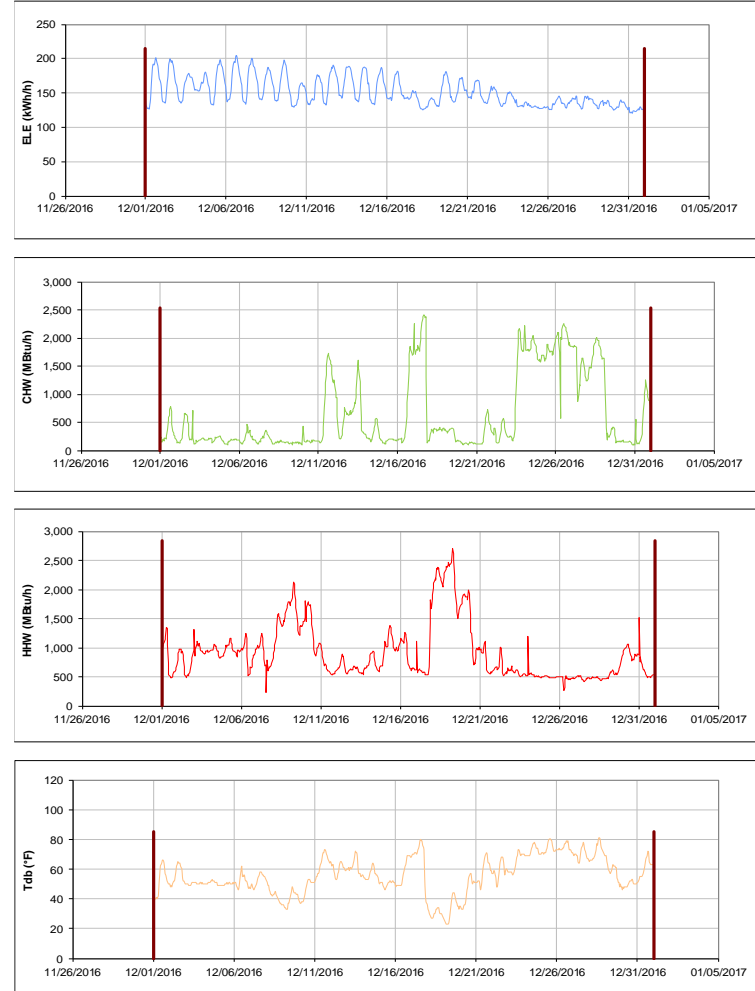


Figure III-58 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed-McDonald and Engineering Innovation Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

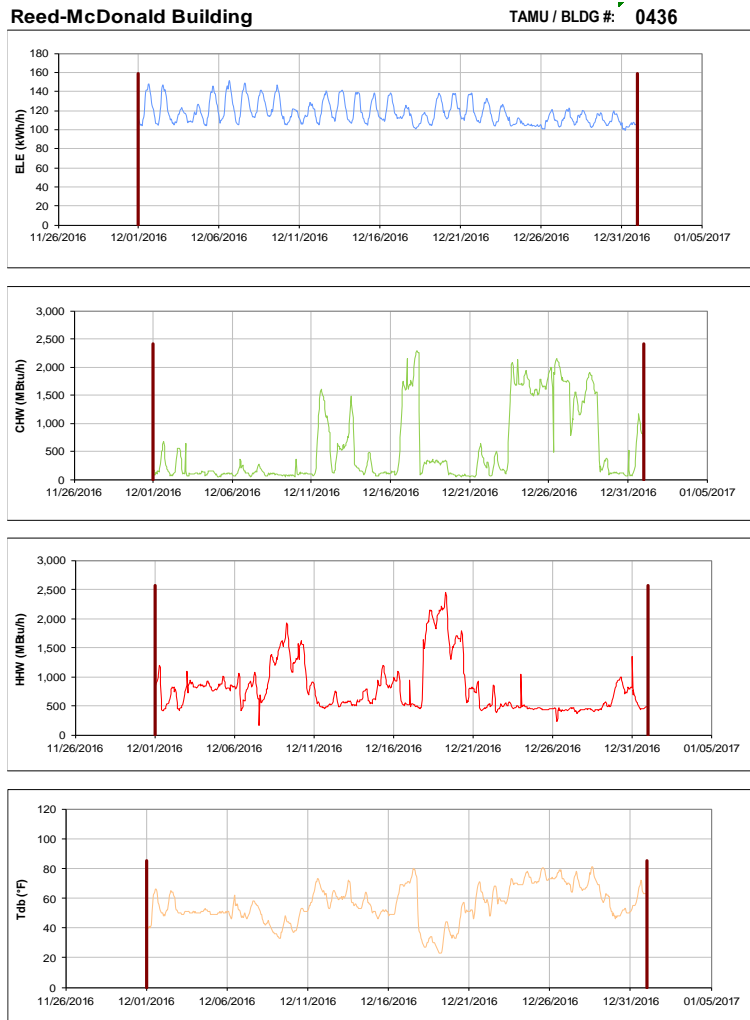


Figure III-59 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed-McDonald Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

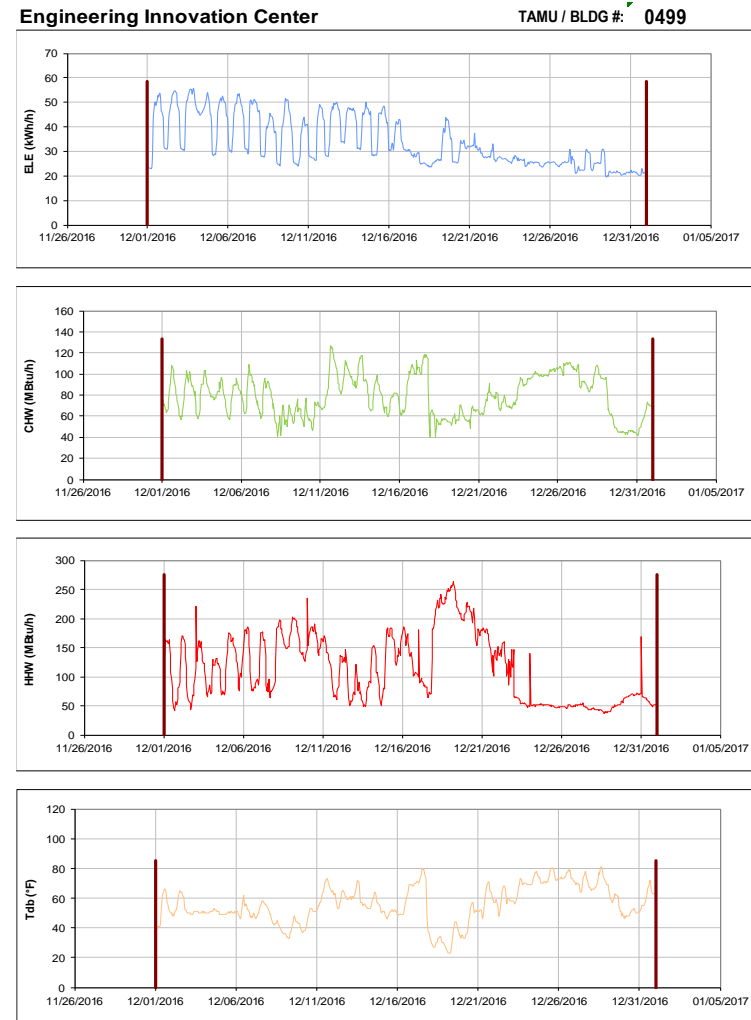


Figure III-60 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Engineering Innovation Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Harrington Education Center Classroom Building TAMU / BLDG #: 0438

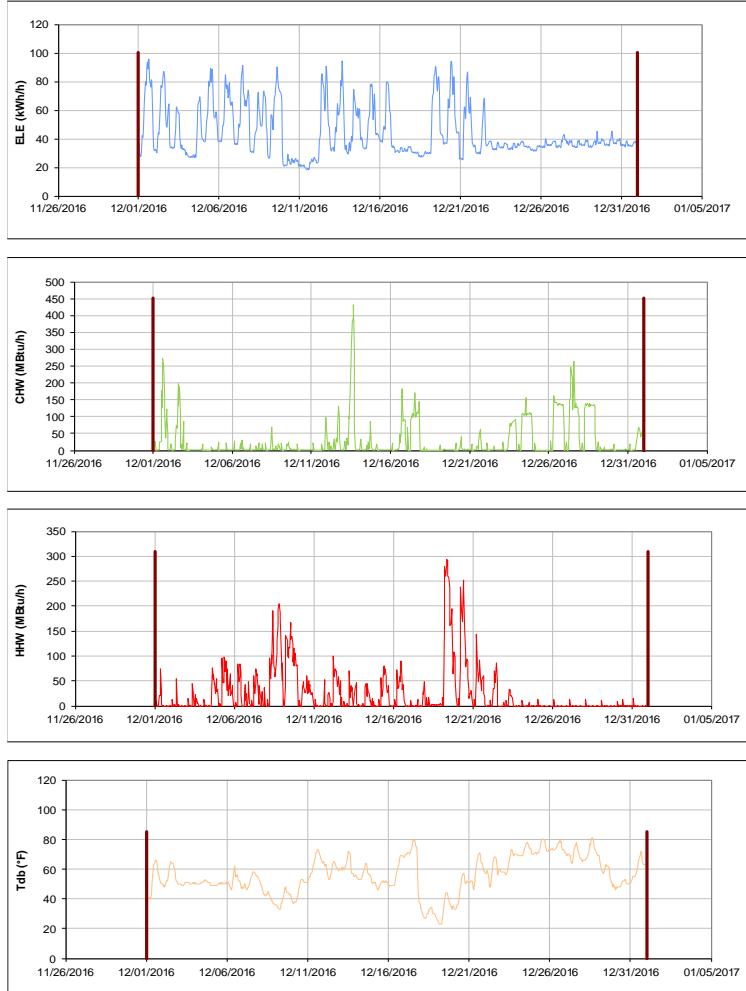


Figure III-61 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Harrington Education Center Classroom Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Oceanography & Meteorology Building TAMU / BLDG #: 0443

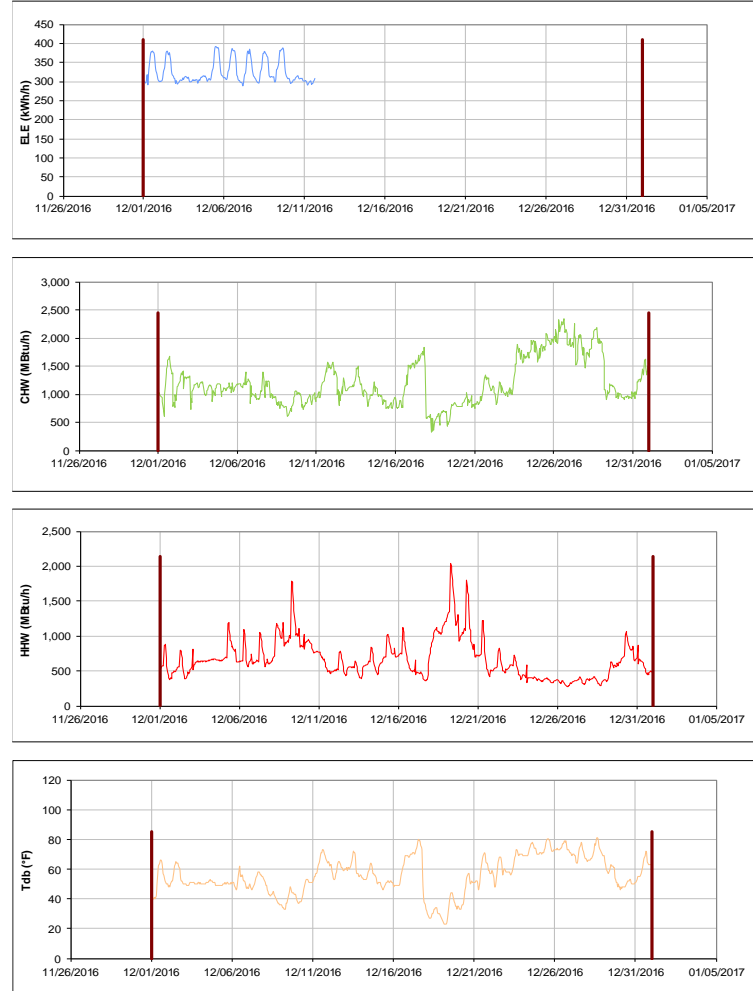


Figure III-62 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Oceanography & Meteorology Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

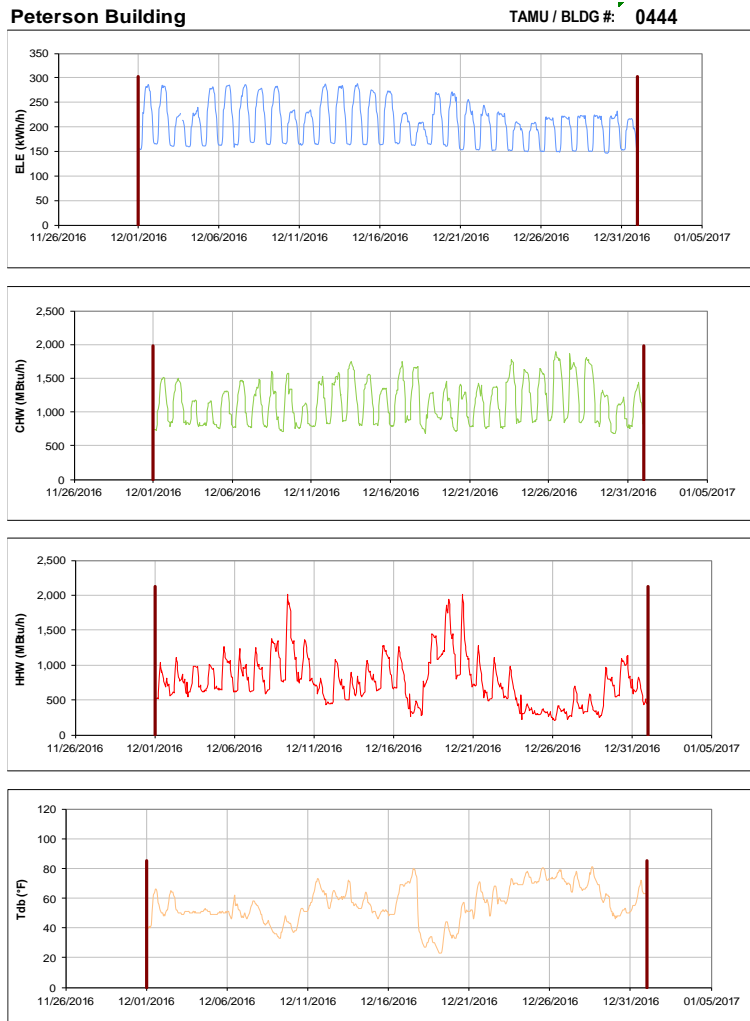


Figure III-63 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Peterson Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

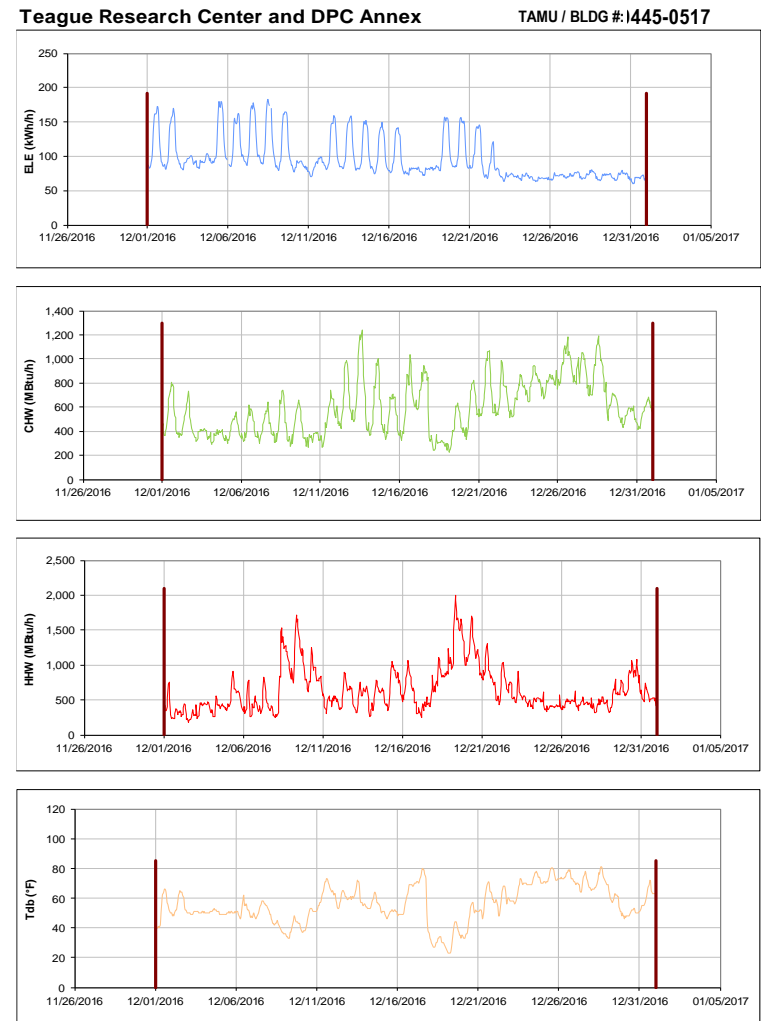


Figure III-64 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Teague Research Center and DPC Annex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Teague Research Center

TAMU / BLDG #: 0445

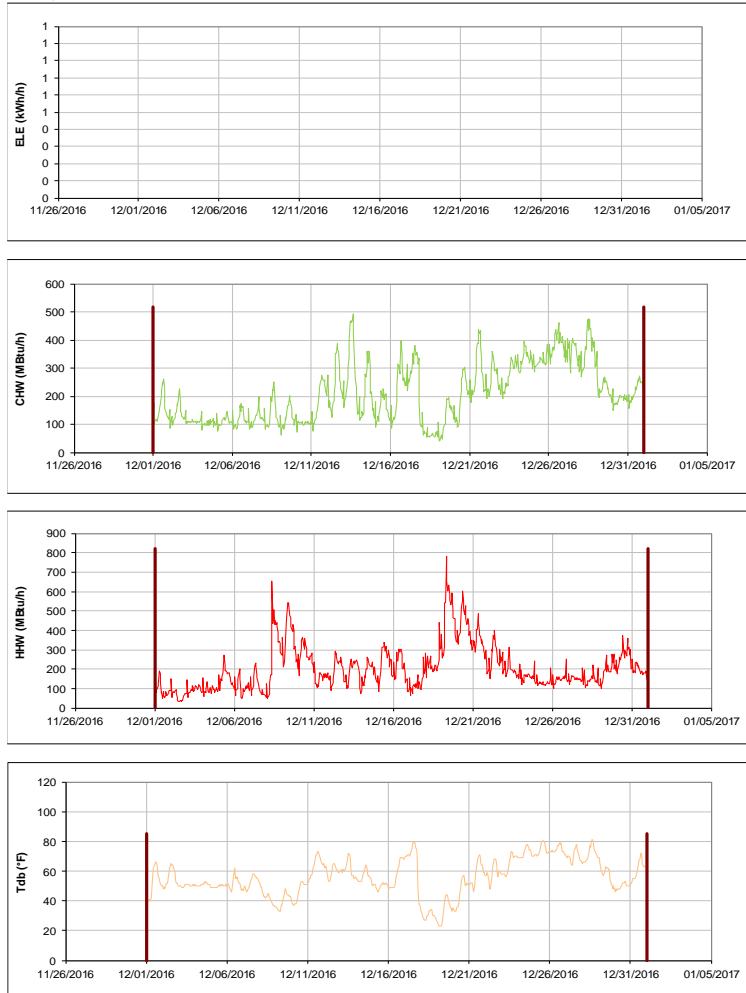


Figure III-65 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Teague Research Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

DPC Annex

TAMU / BLDG #: 0517

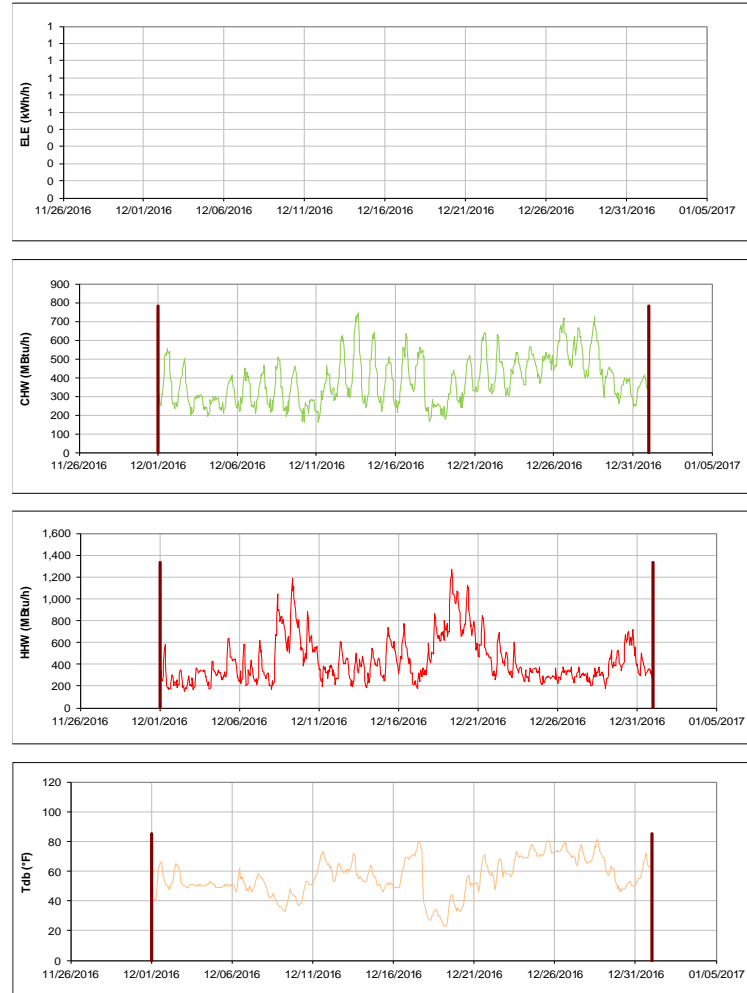


Figure III-66 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for DPC Annex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

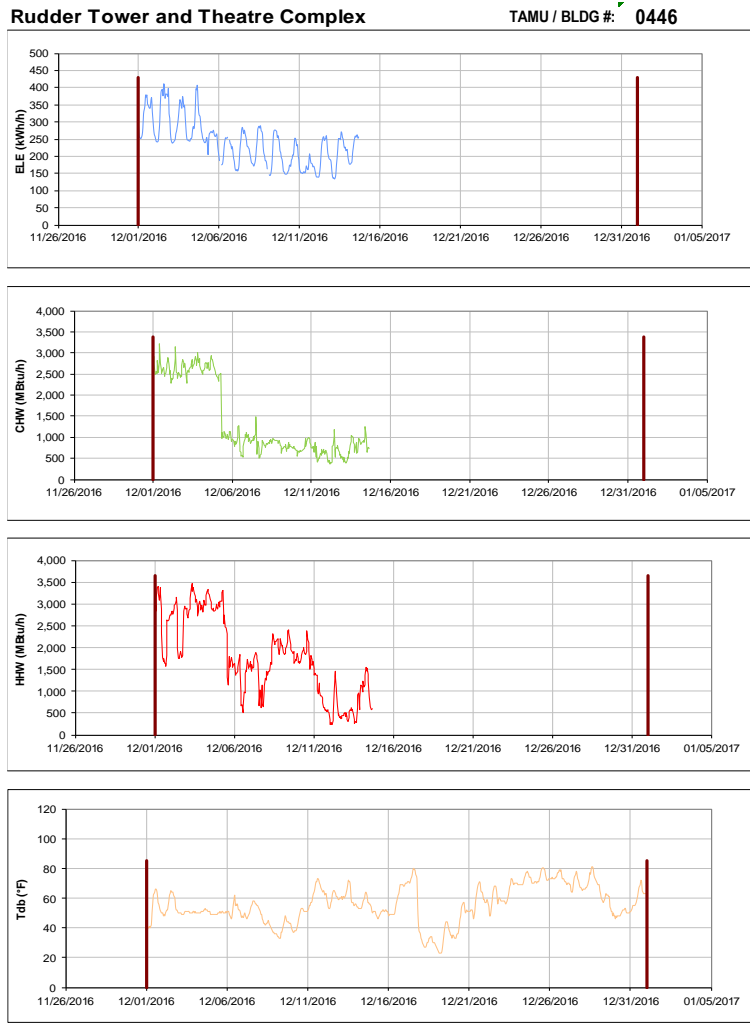


Figure III-67 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Tower and Theatre Complex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

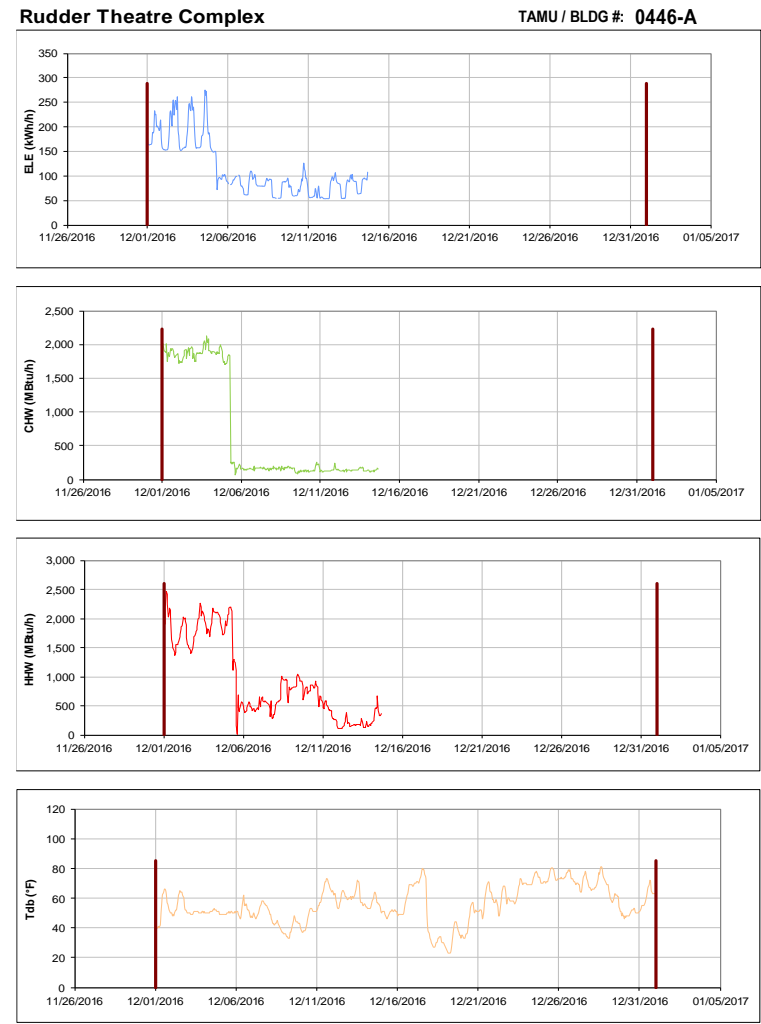


Figure III-68 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Theatre Complex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

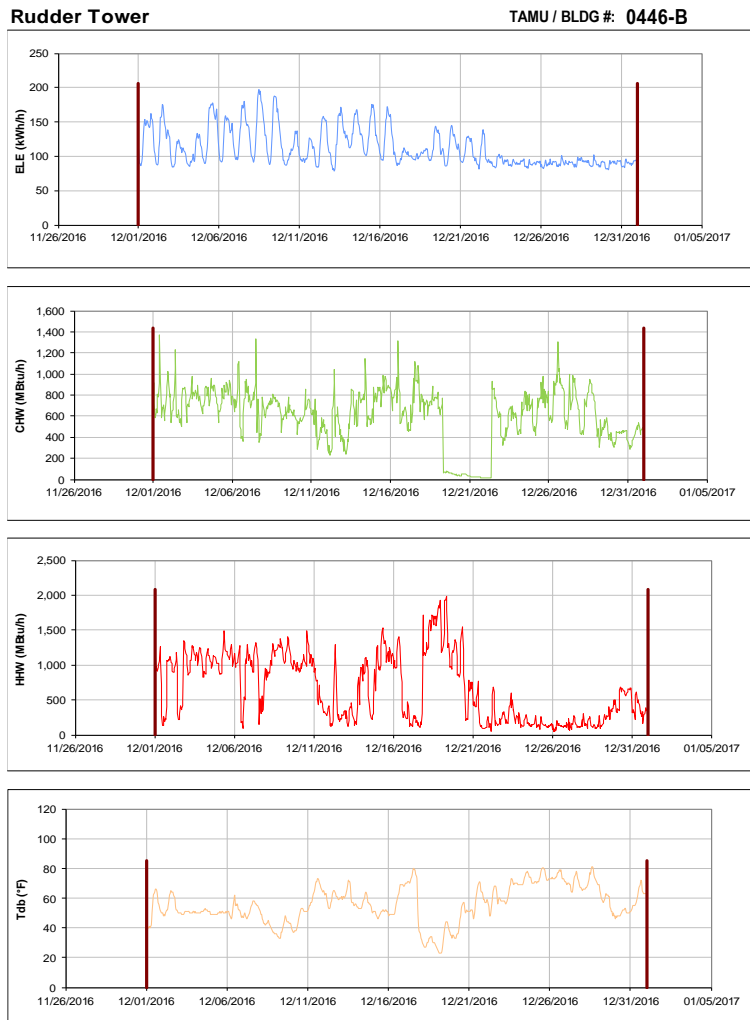


Figure III-69 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rudder Tower during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

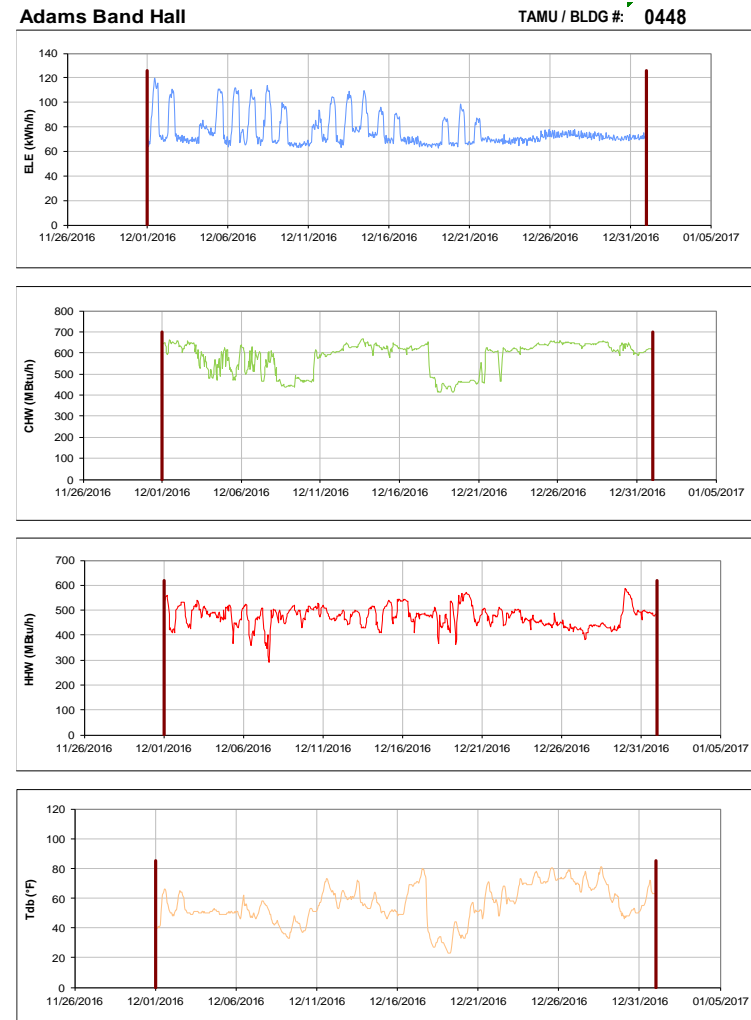


Figure III-70 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Adams Band Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

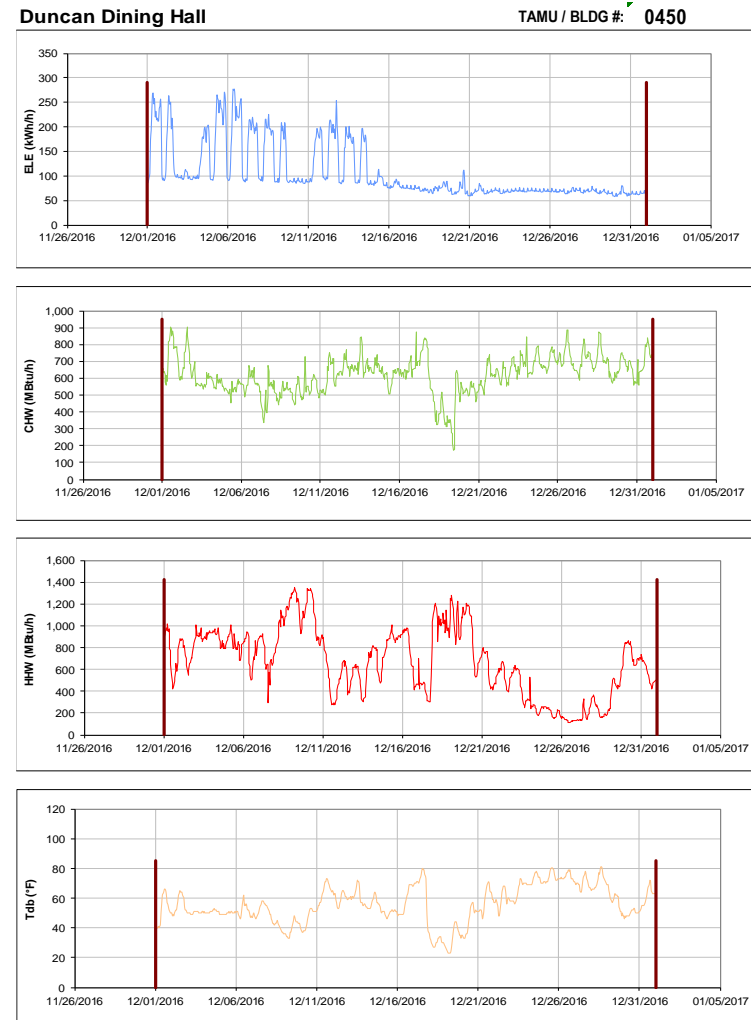


Figure III-72 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Duncan Dining Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

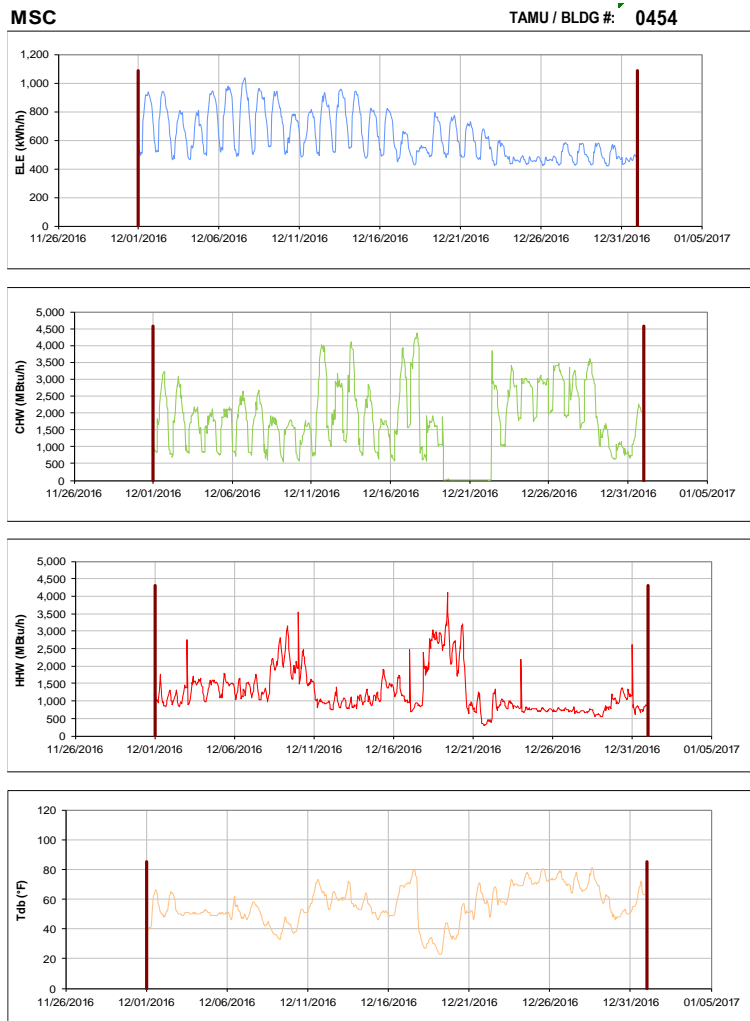


Figure III-73 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for MSC during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

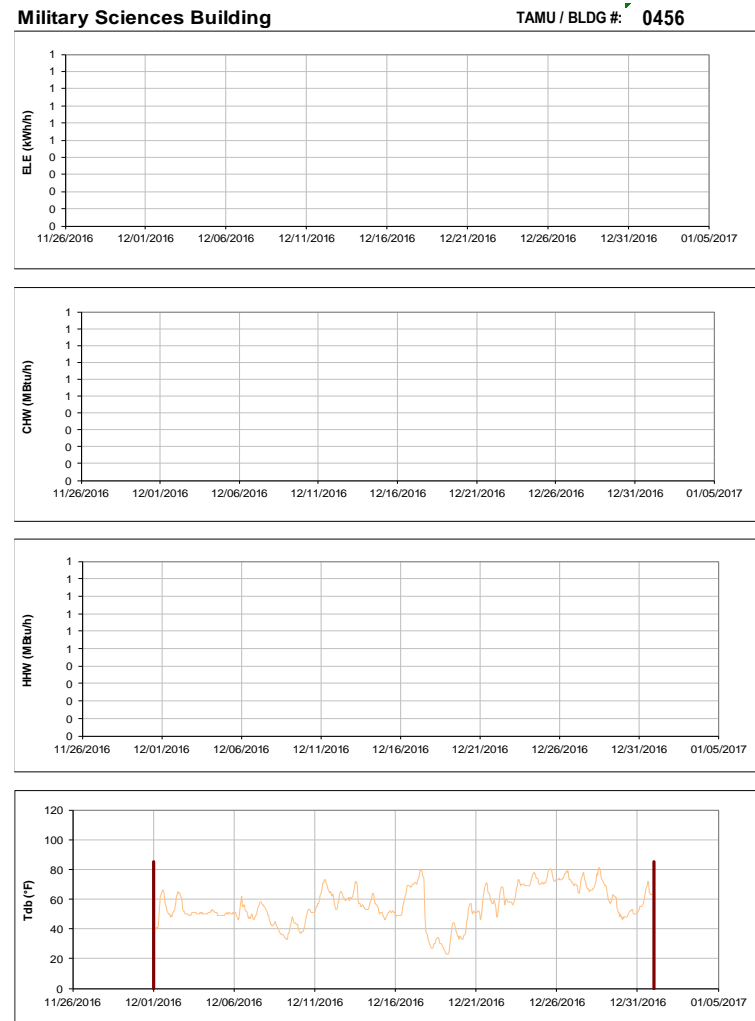


Figure III-74 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Military Sciences Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

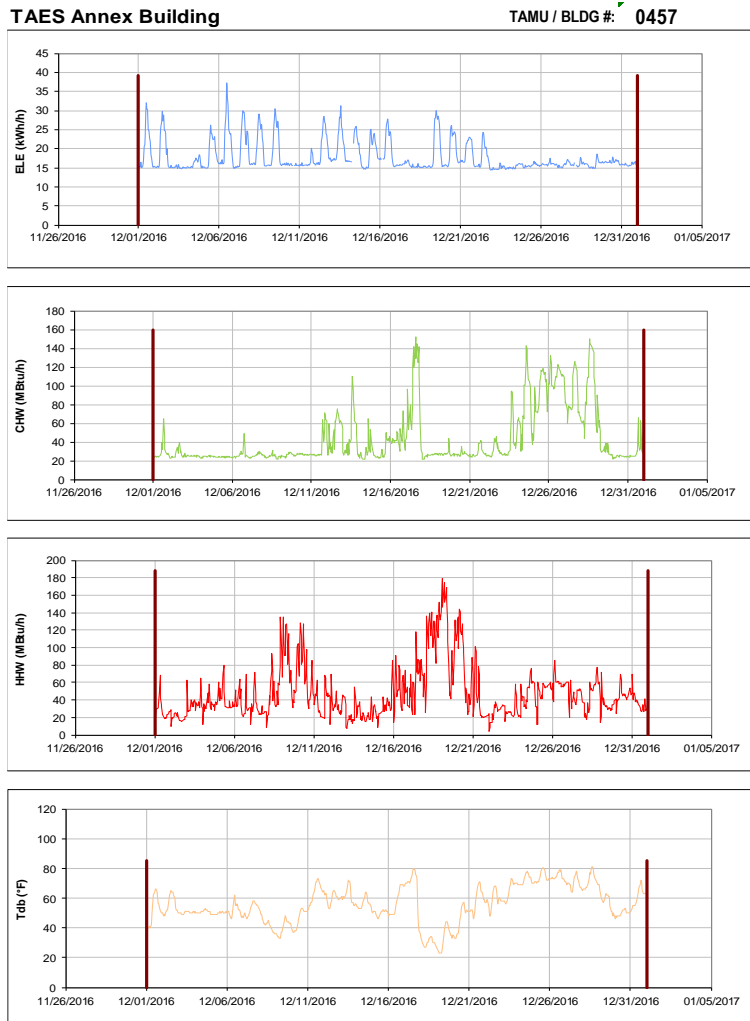


Figure III-75 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TAES Annex Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

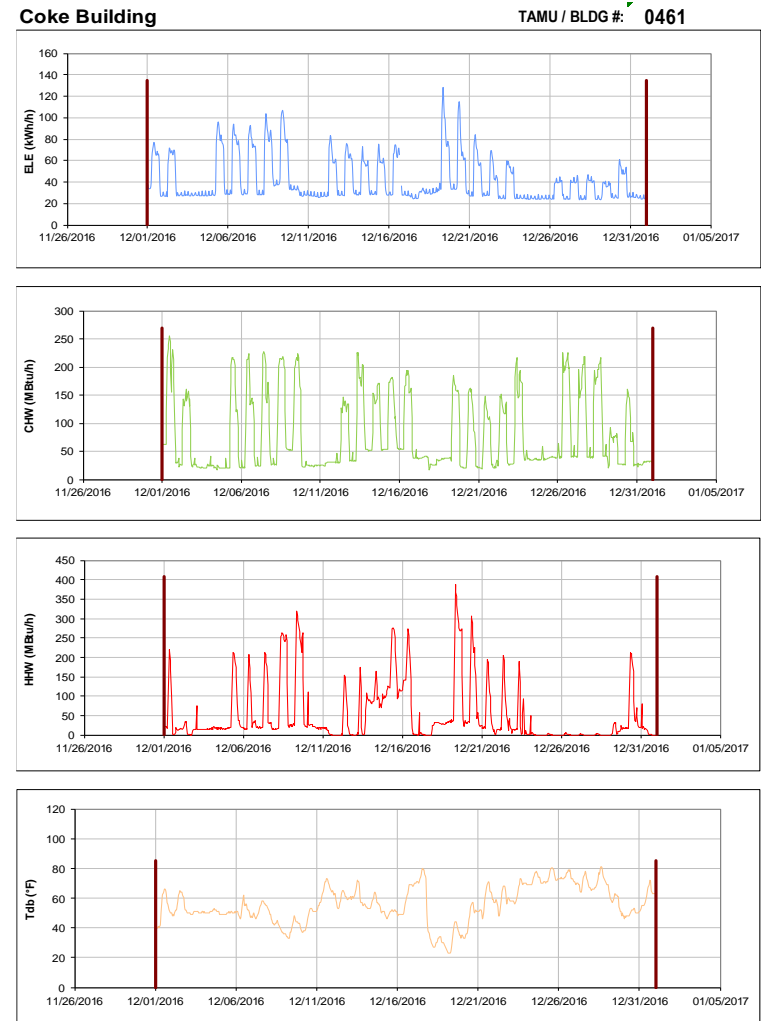


Figure III-76 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Coke Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

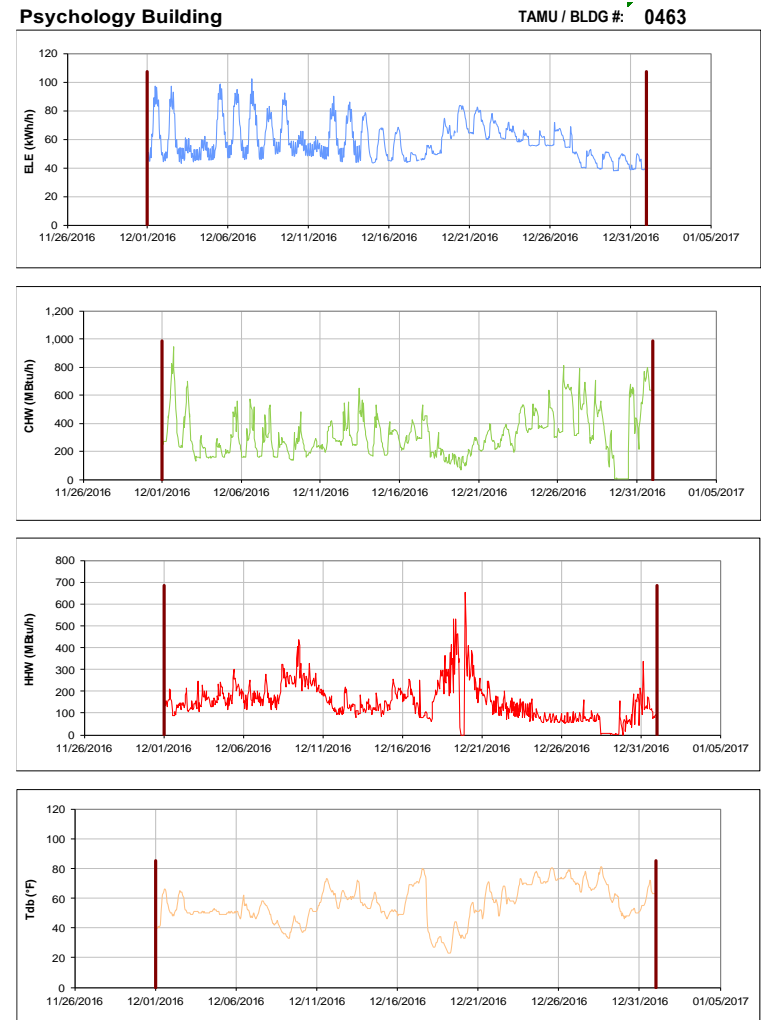


Figure III-78 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Psychology Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

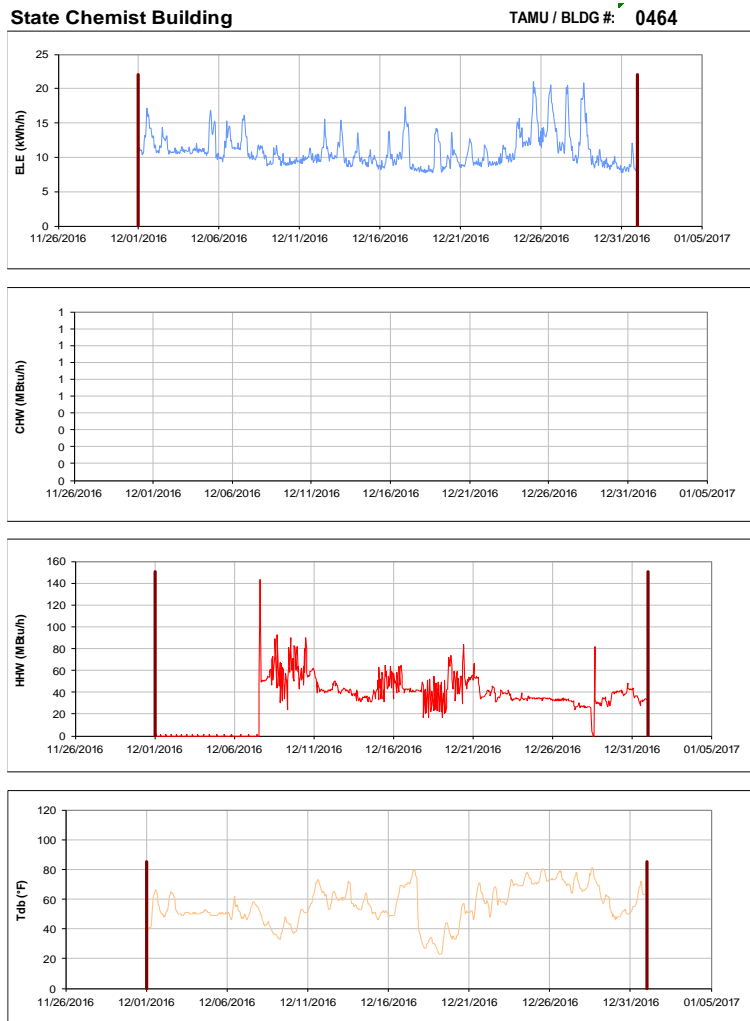


Figure III-79 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for State Chemist Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

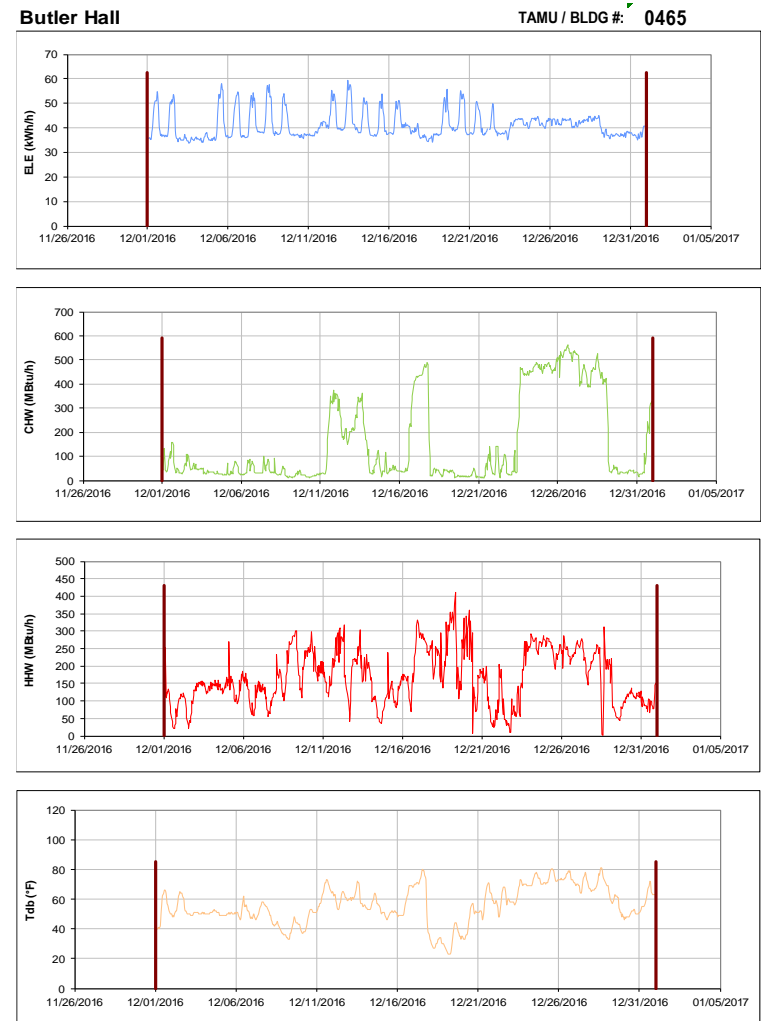


Figure III-80 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Butler Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

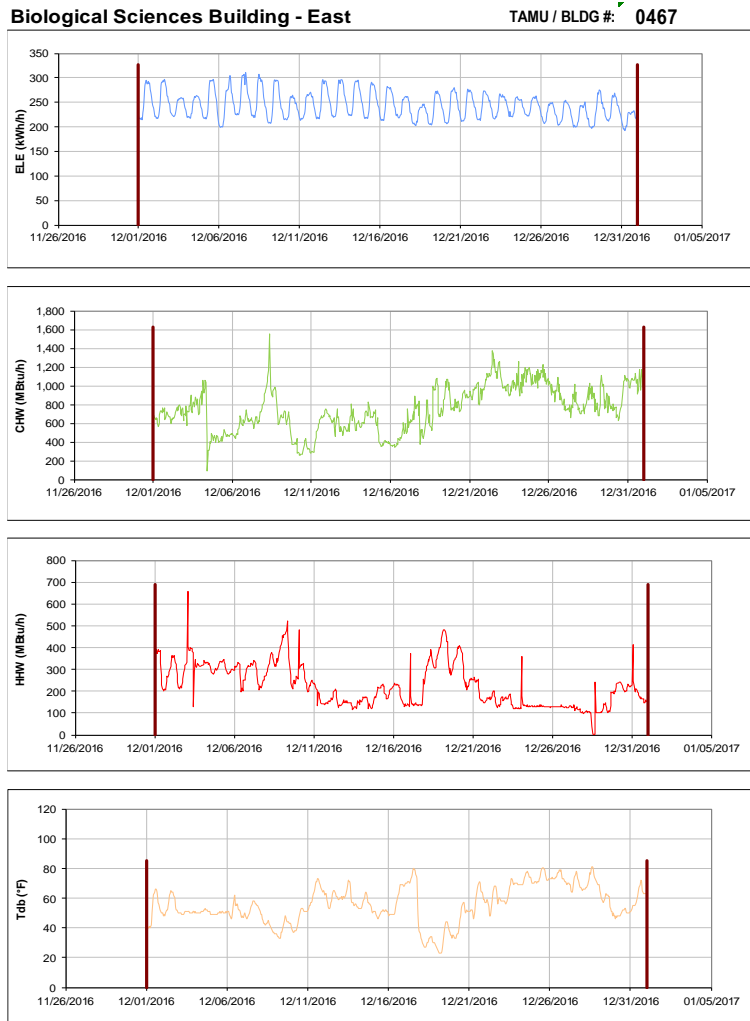


Figure III-81 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biological Sciences Building - East during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

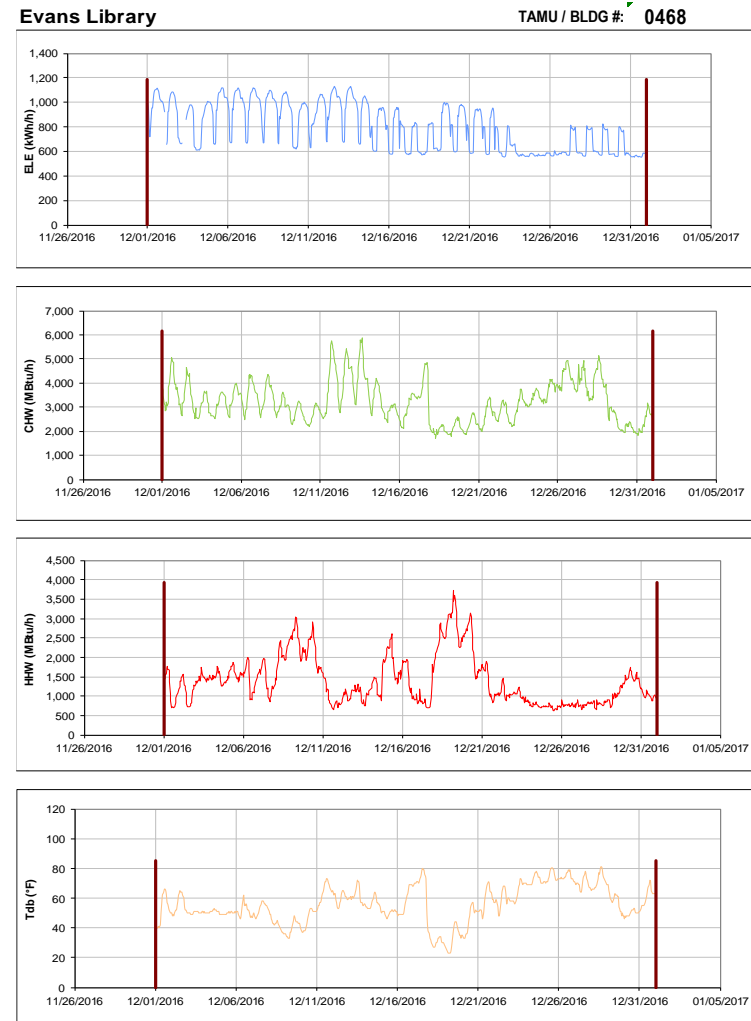


Figure III-82 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Evans Library during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

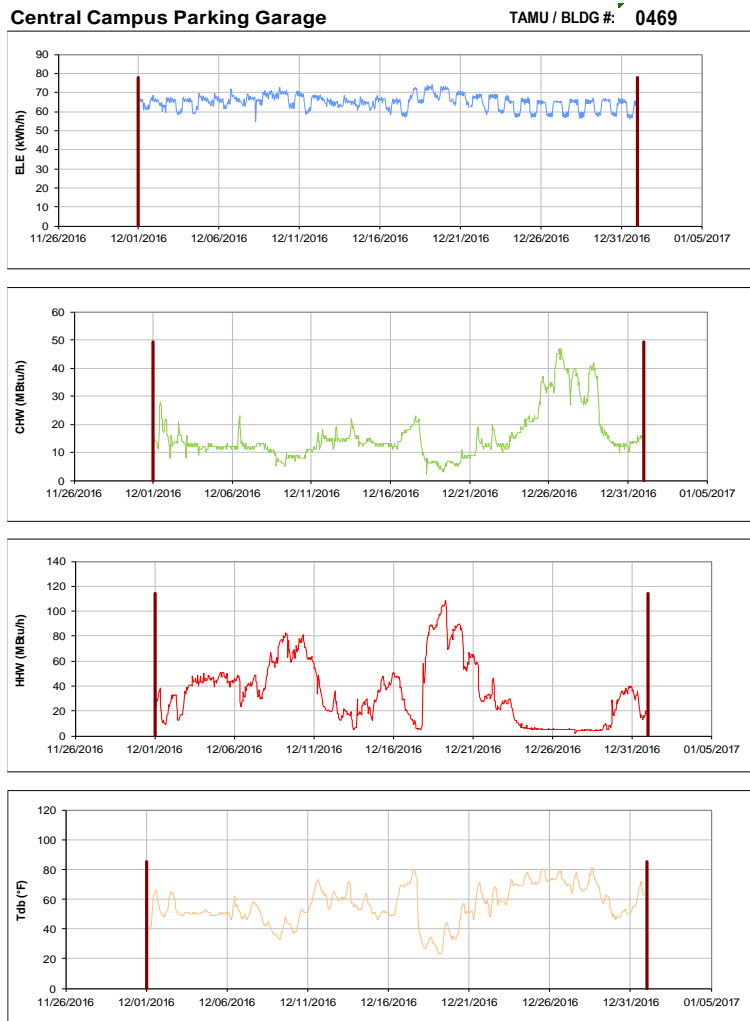


Figure III-83 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Central Campus Parking Garage during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

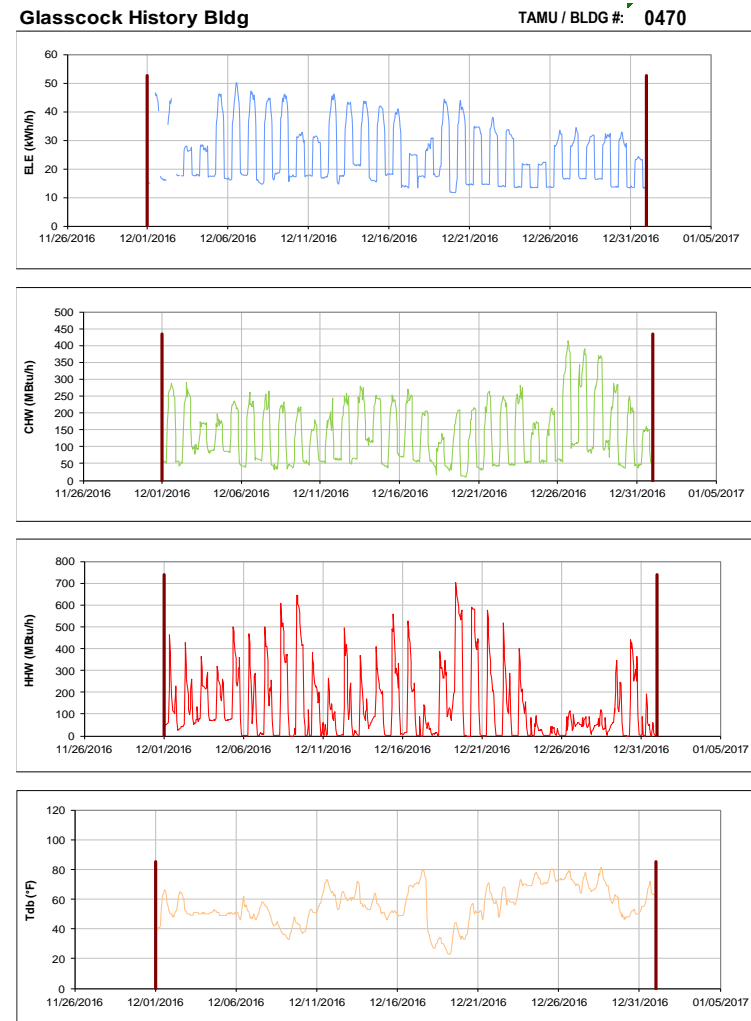


Figure III-84 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Glasscock History Bldg during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

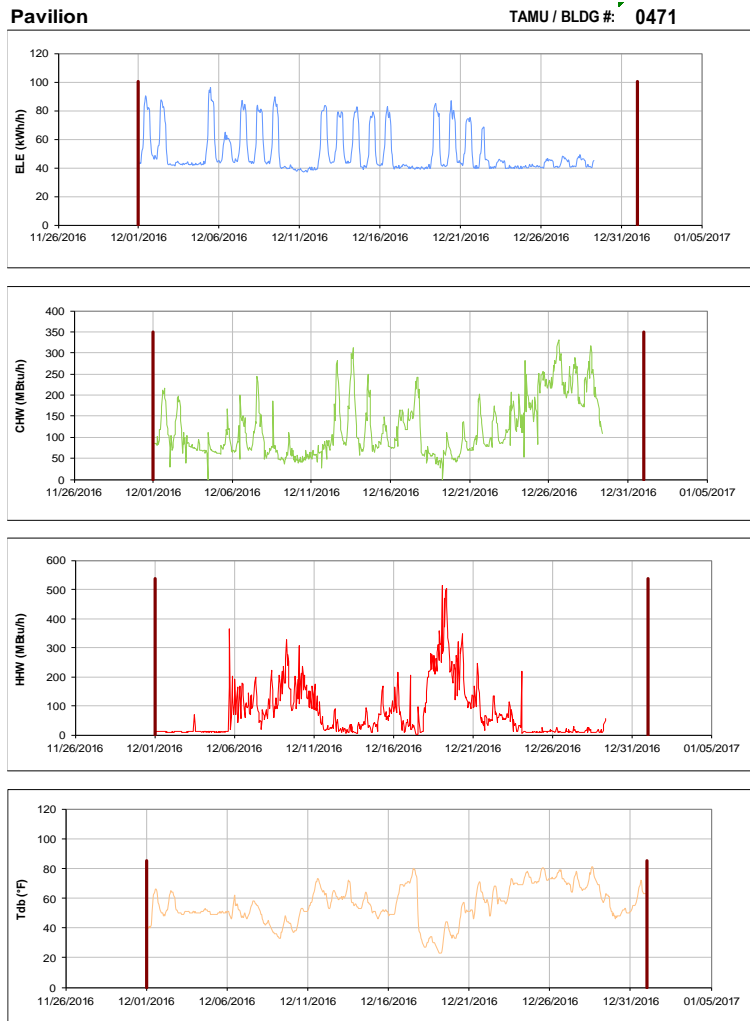


Figure III-85 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Pavilion during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

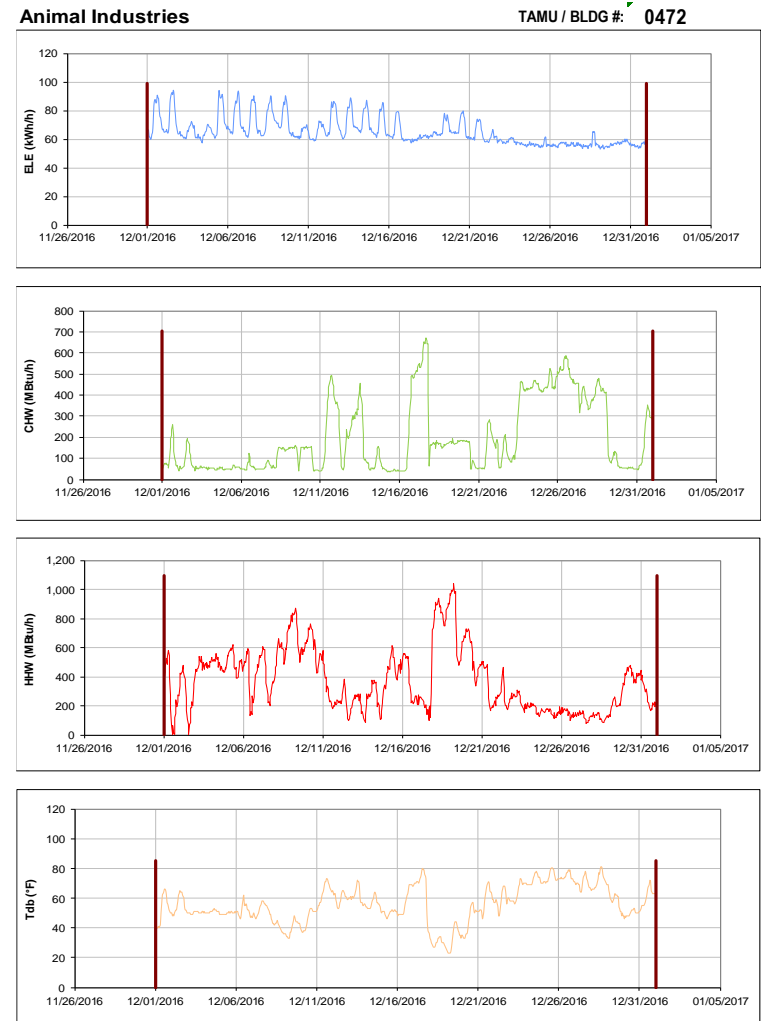


Figure III-86 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Animal Industries during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

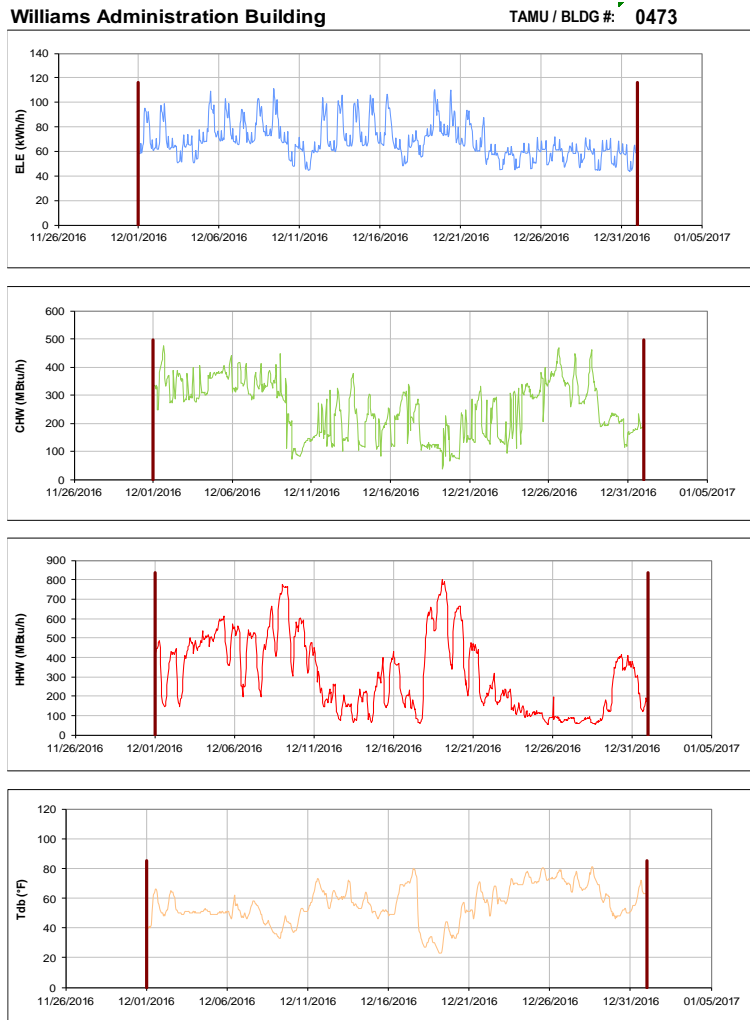


Figure III-87 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Williams Administration Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

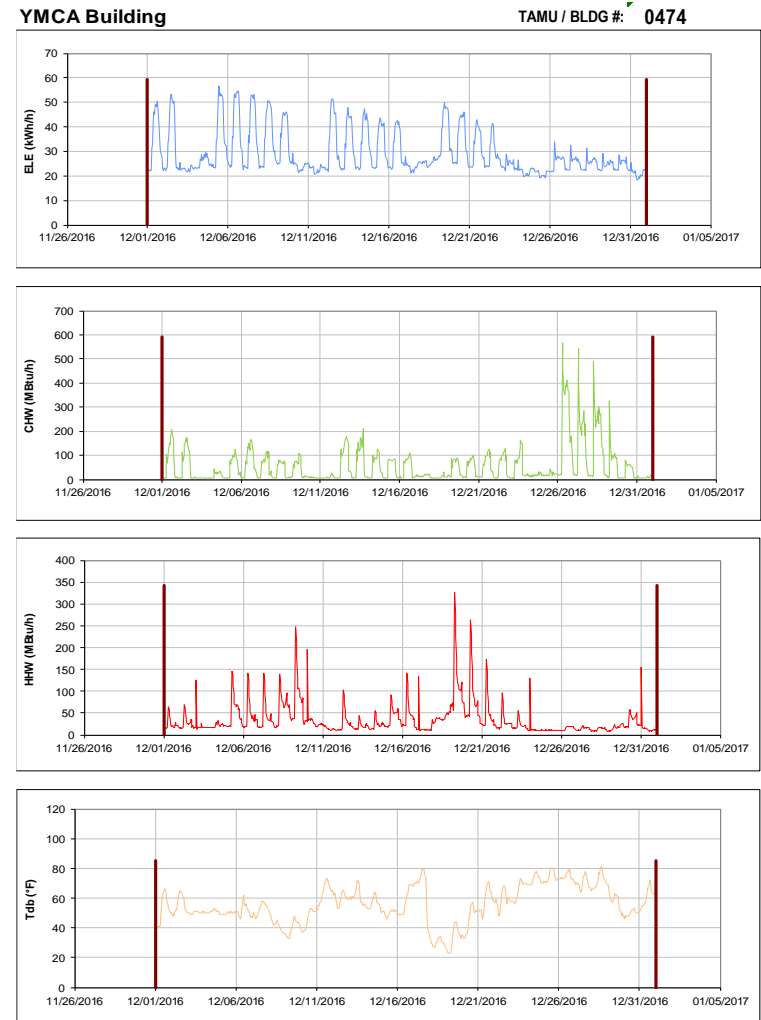


Figure III-88 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for YMCA Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

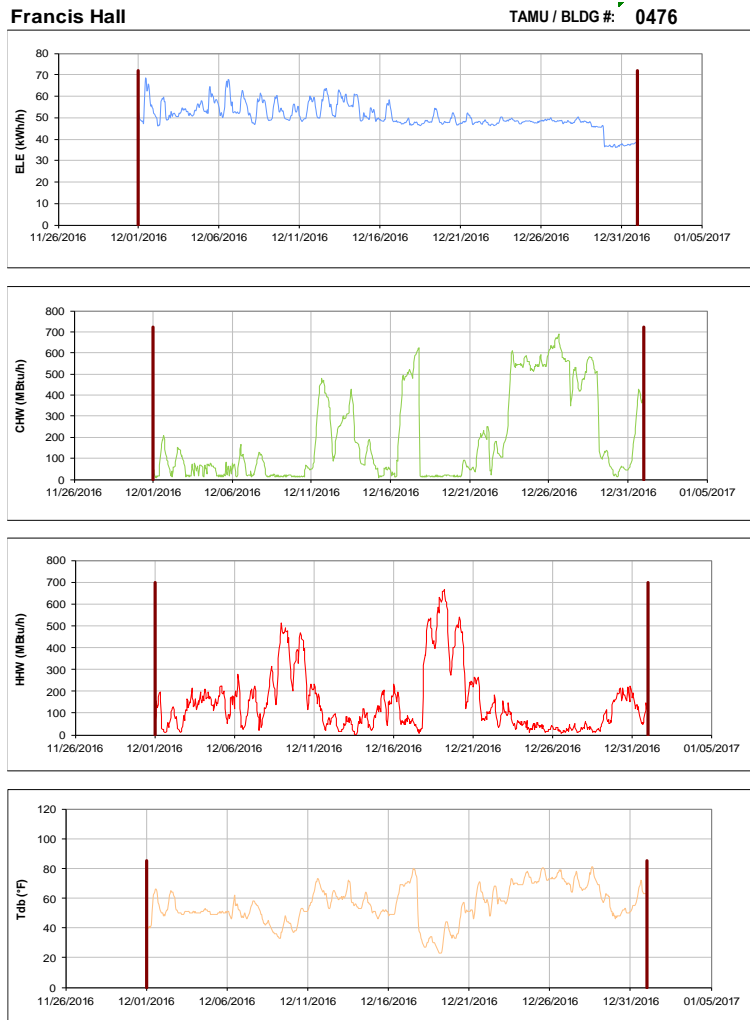


Figure III-89 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Francis Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

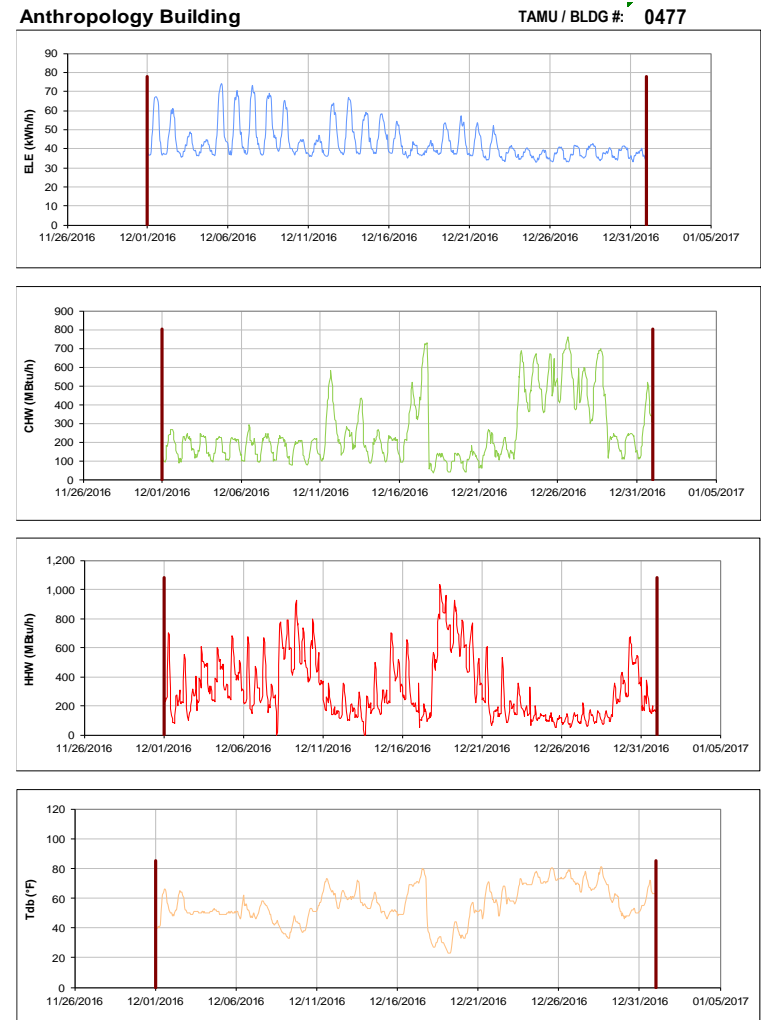


Figure III-90 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Anthropology Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

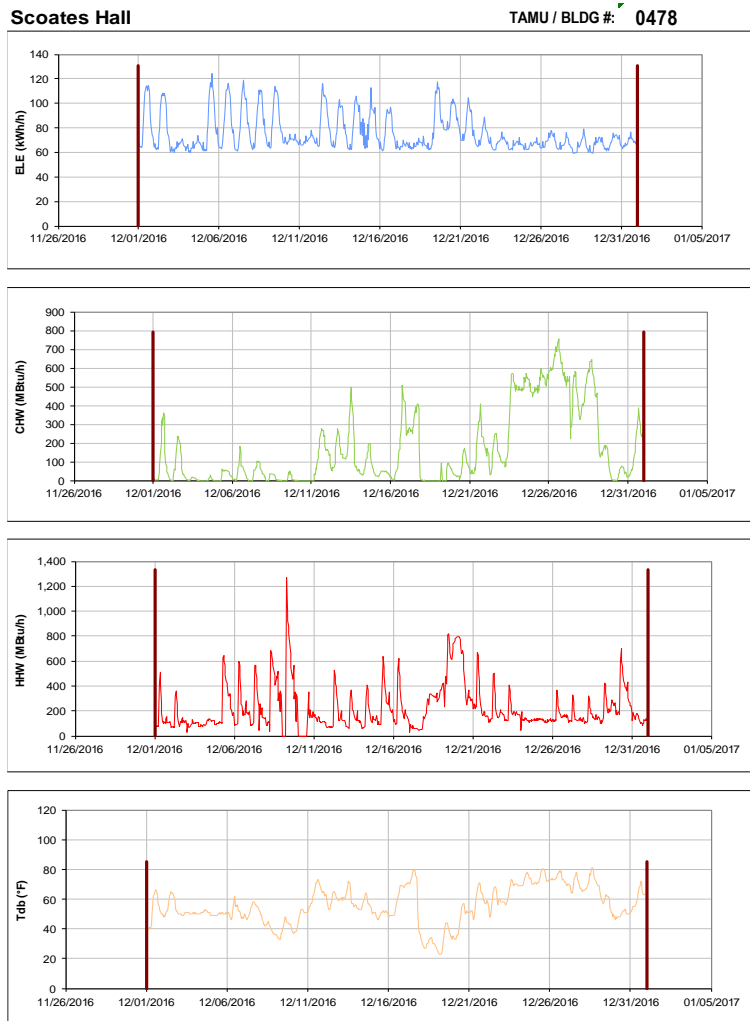


Figure III-91 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Scoates Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

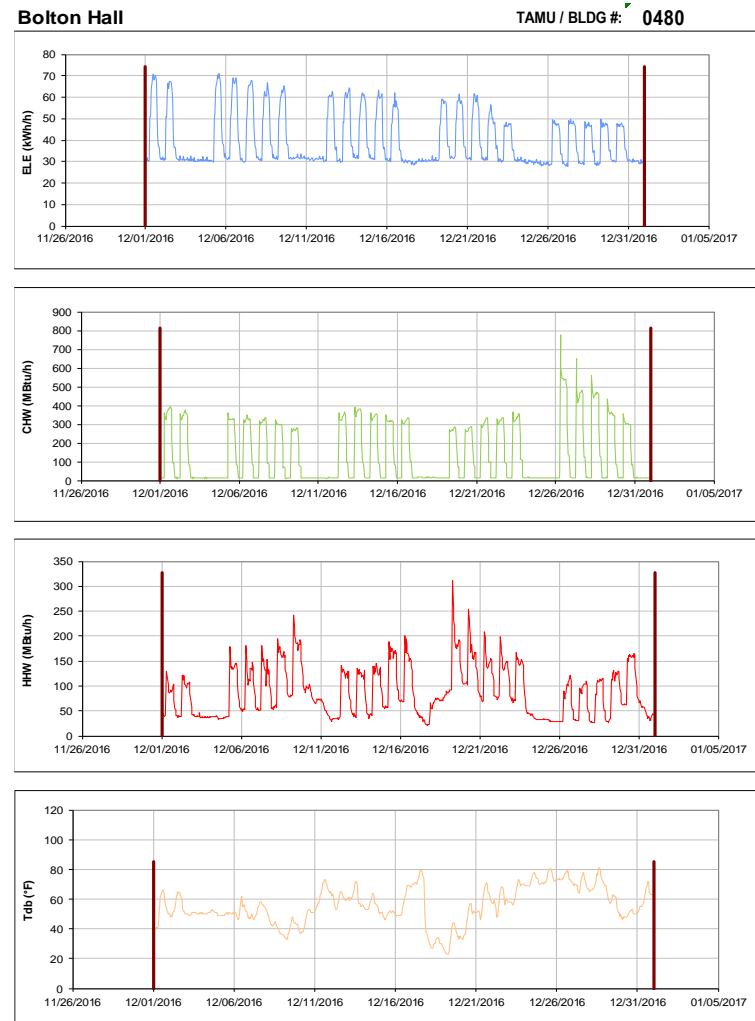


Figure III-92 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Bolton Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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 December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Fermier Hall

TAMU / BLDG #: 0482

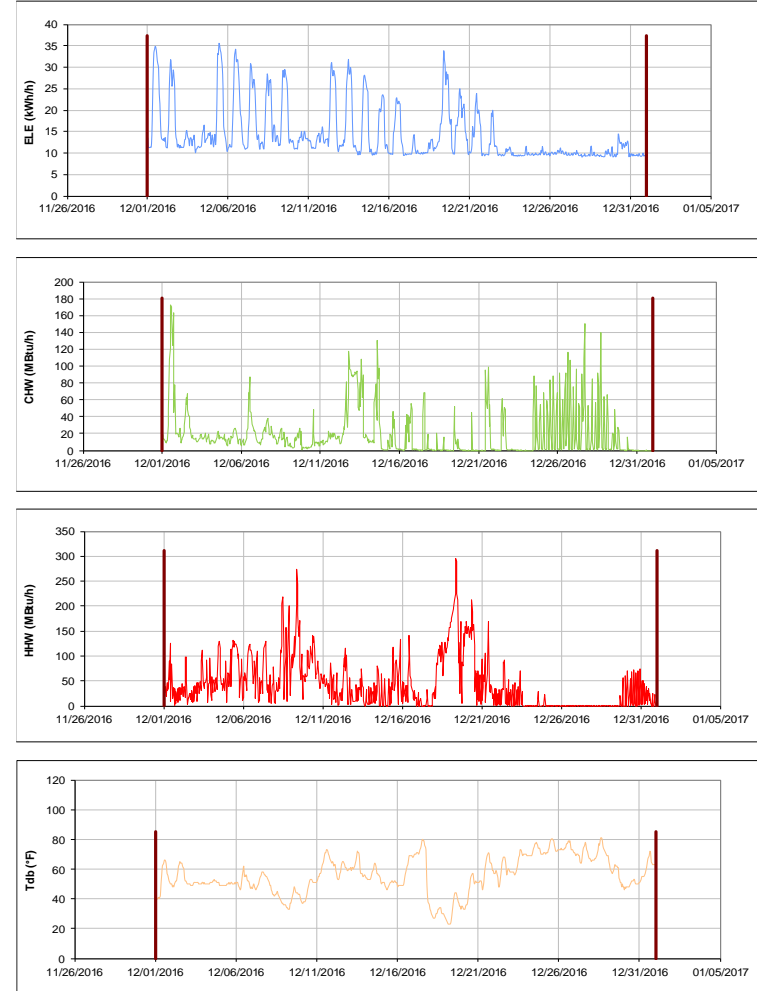


Figure III-94 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Fermier Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

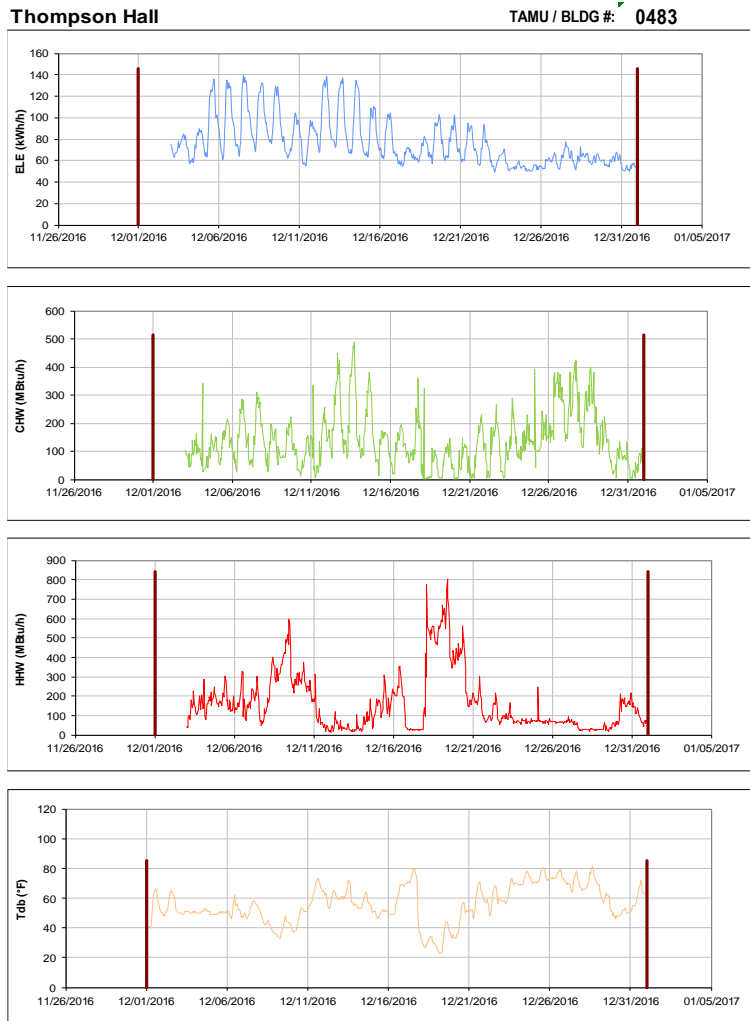


Figure III-95 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Thompson Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

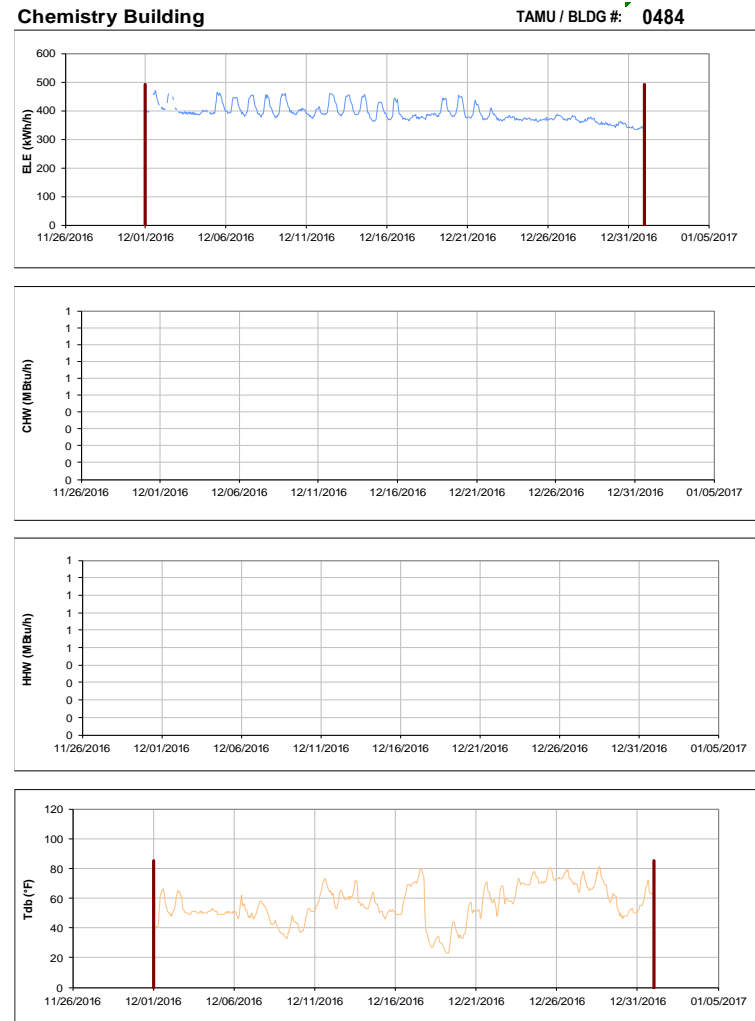


Figure III-96 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Chemistry Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-97 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Halbutoy Geosciences Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

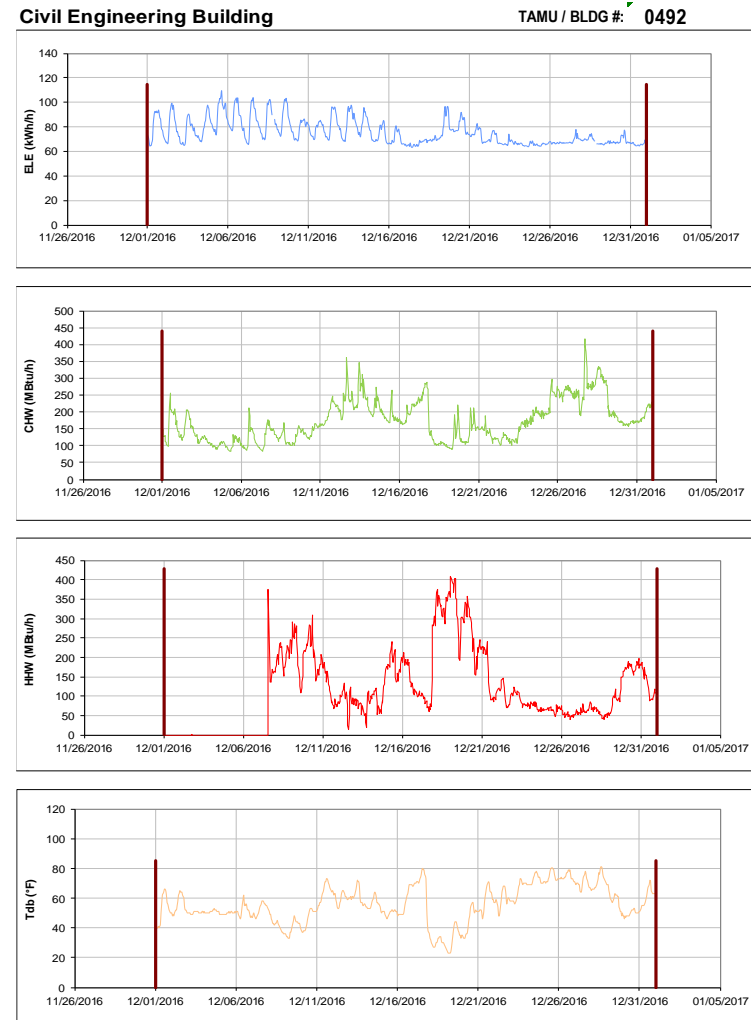


Figure III-98 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Civil Engineering Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

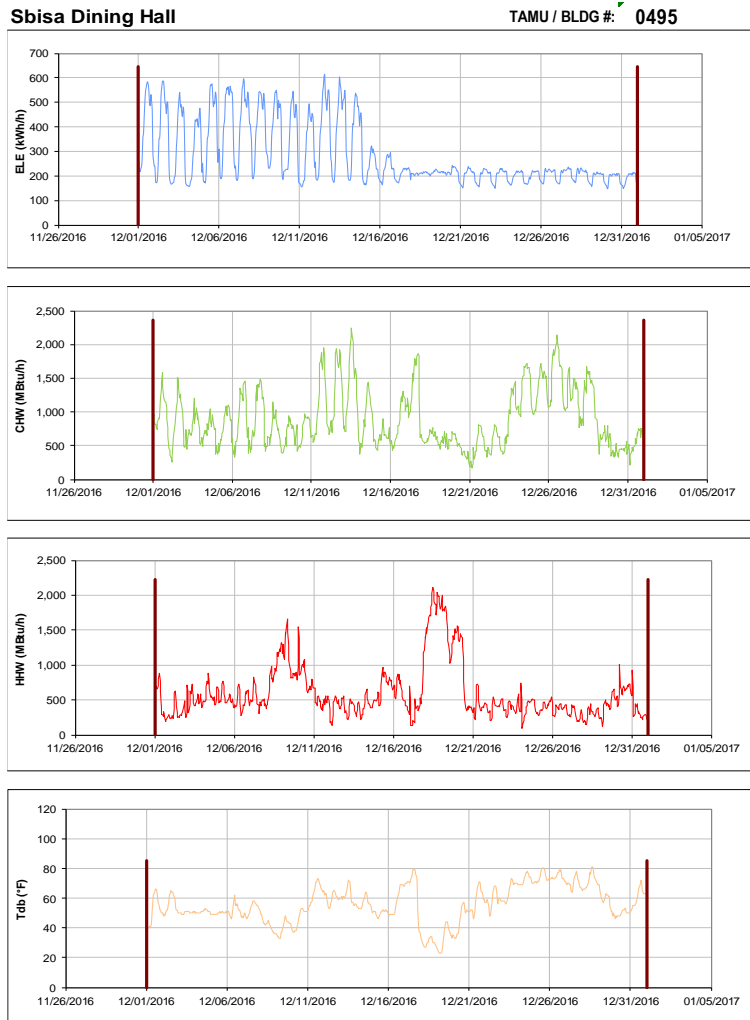


Figure III-99 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Sbisa Dining Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-100 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities & Energy Services Central Office during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

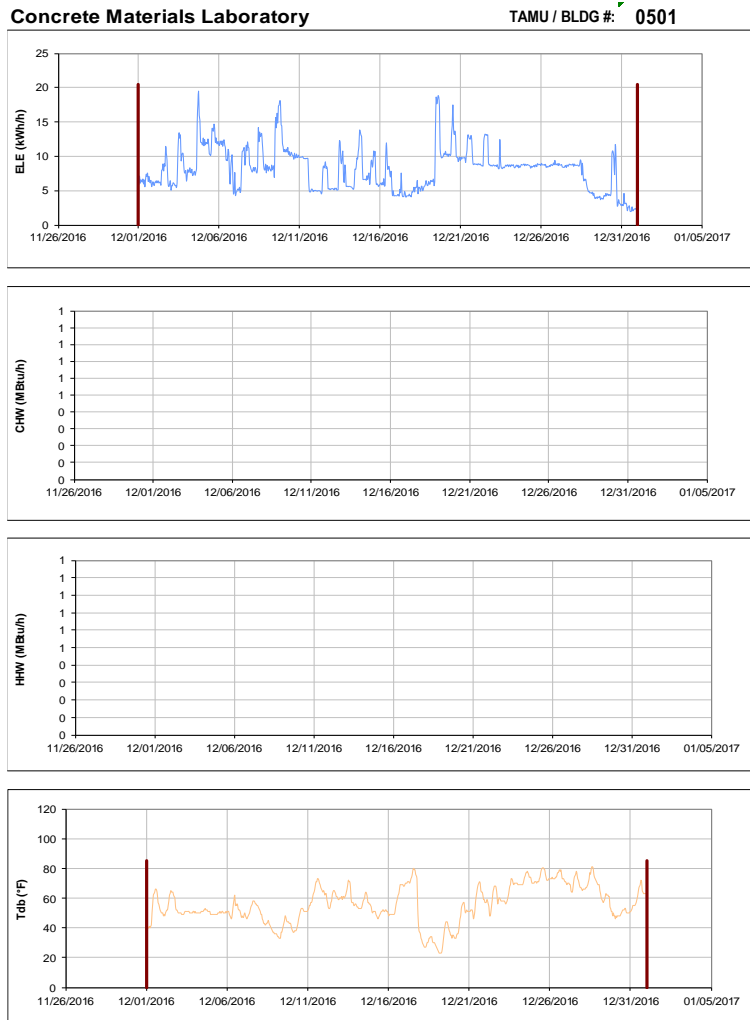


Figure III-101 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Concrete Materials Laboratory during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

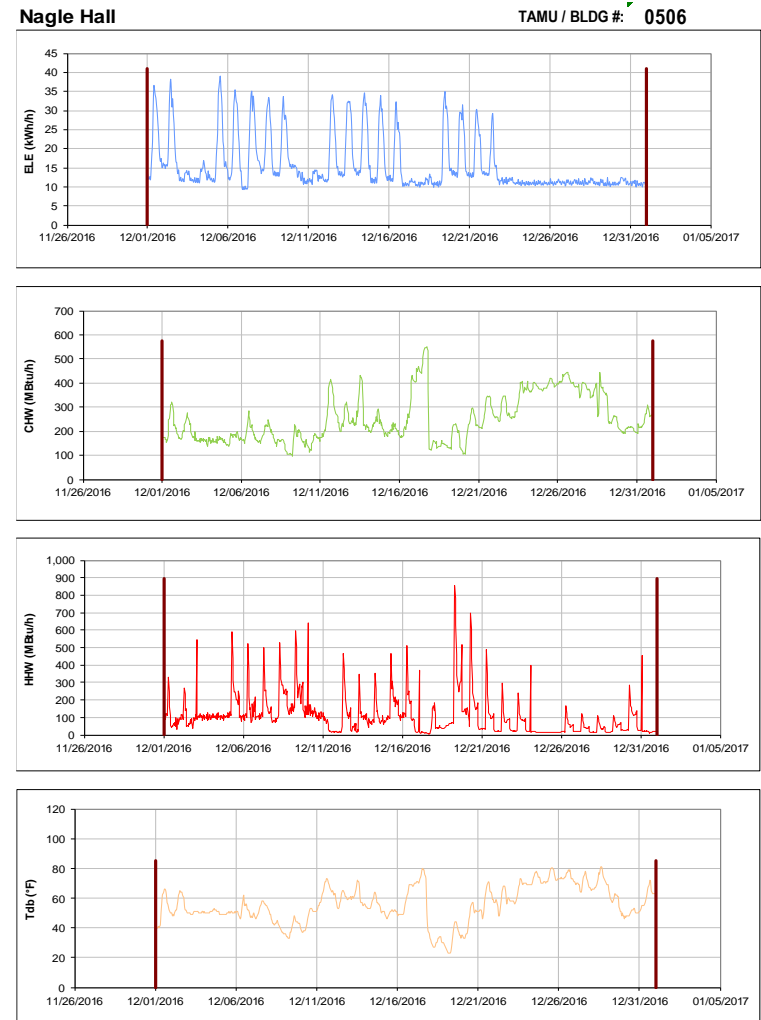


Figure III-102 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Nagle Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

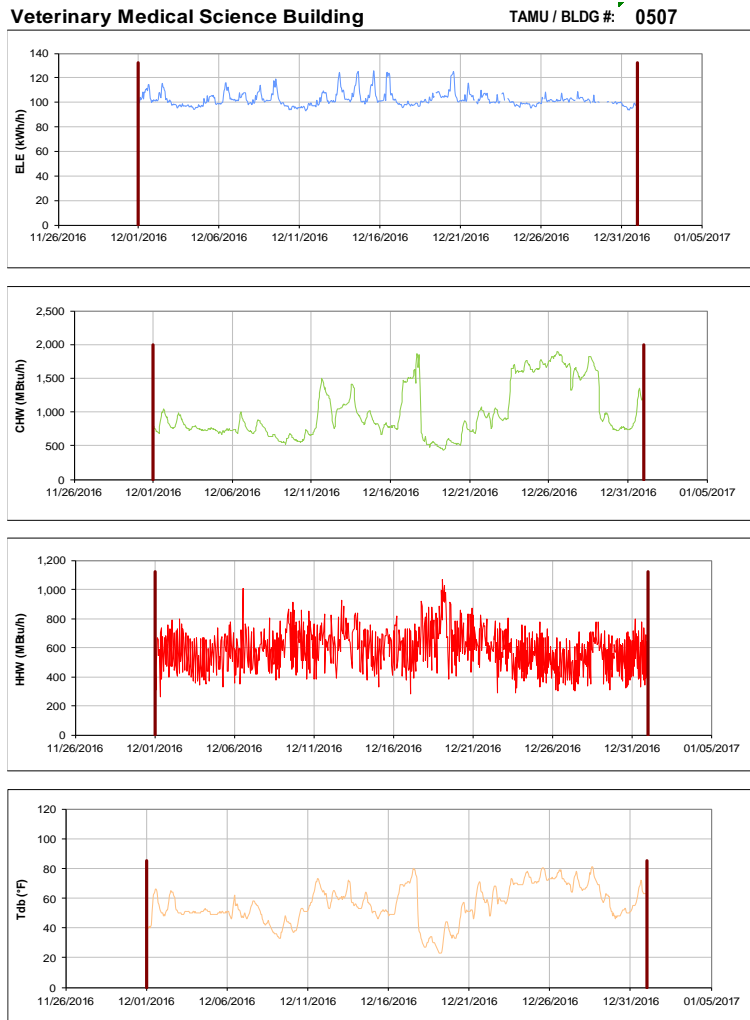


Figure III-103 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medical Science Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

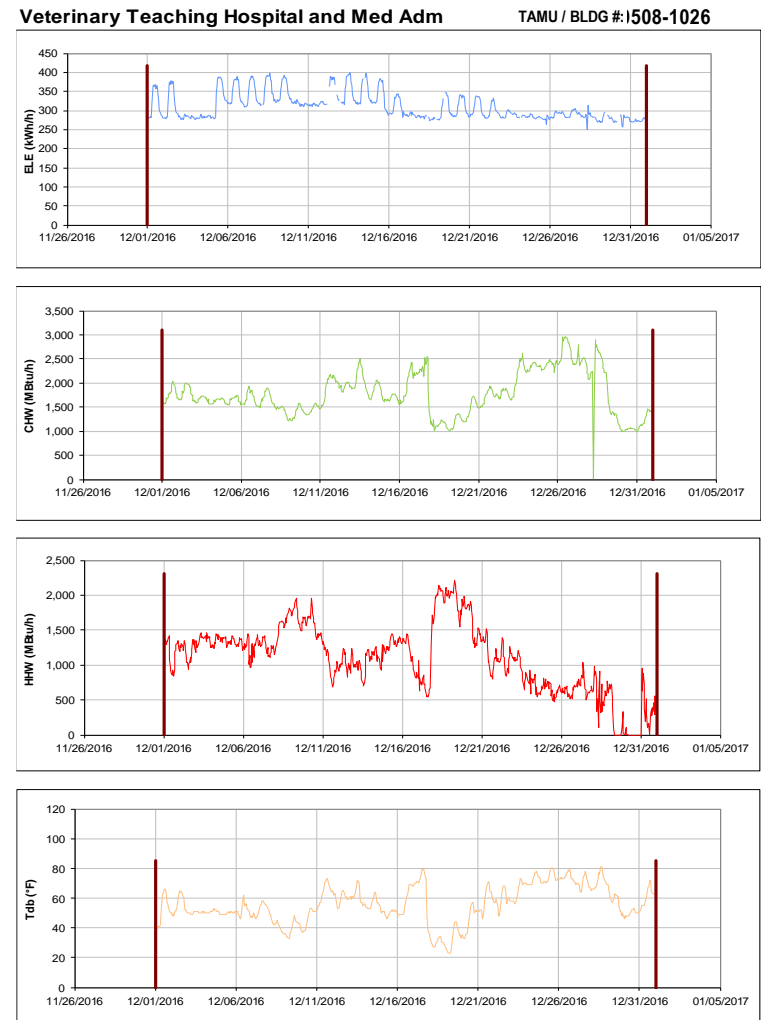


Figure III-104 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Teaching Hospital and Med Adm during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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



Figure III-106 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Heep Laboratory Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-107 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for All Faiths Chapel during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

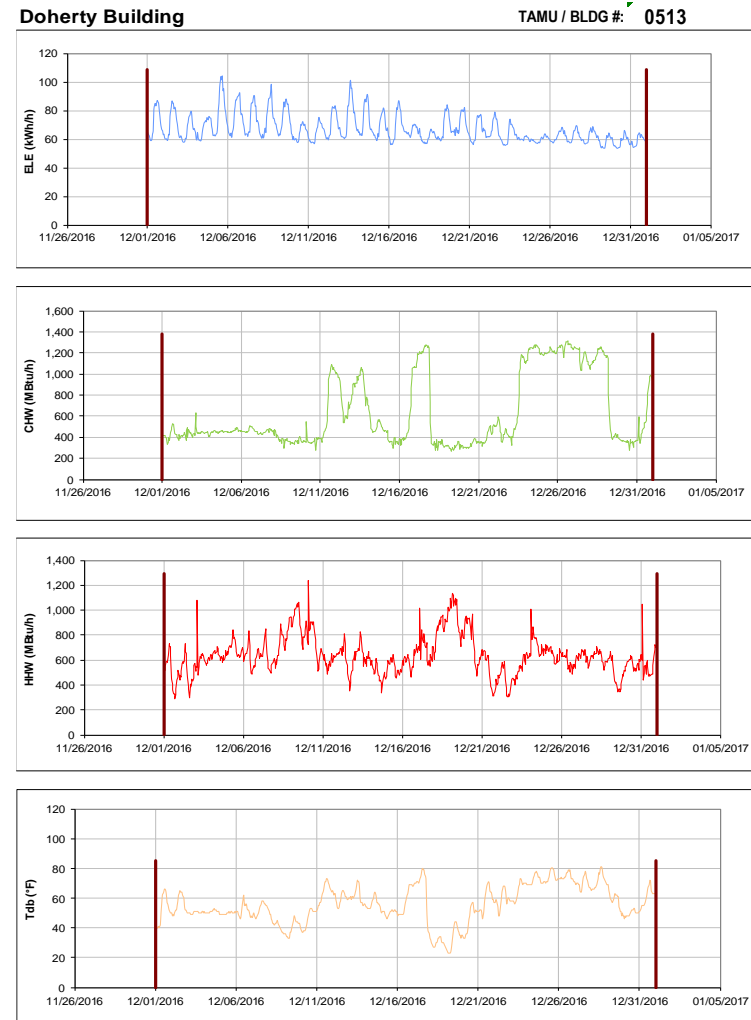


Figure III-108 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Doherty Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Munnerlyn Astronomy & Space Sciences Engineering / BLDG #: 0514

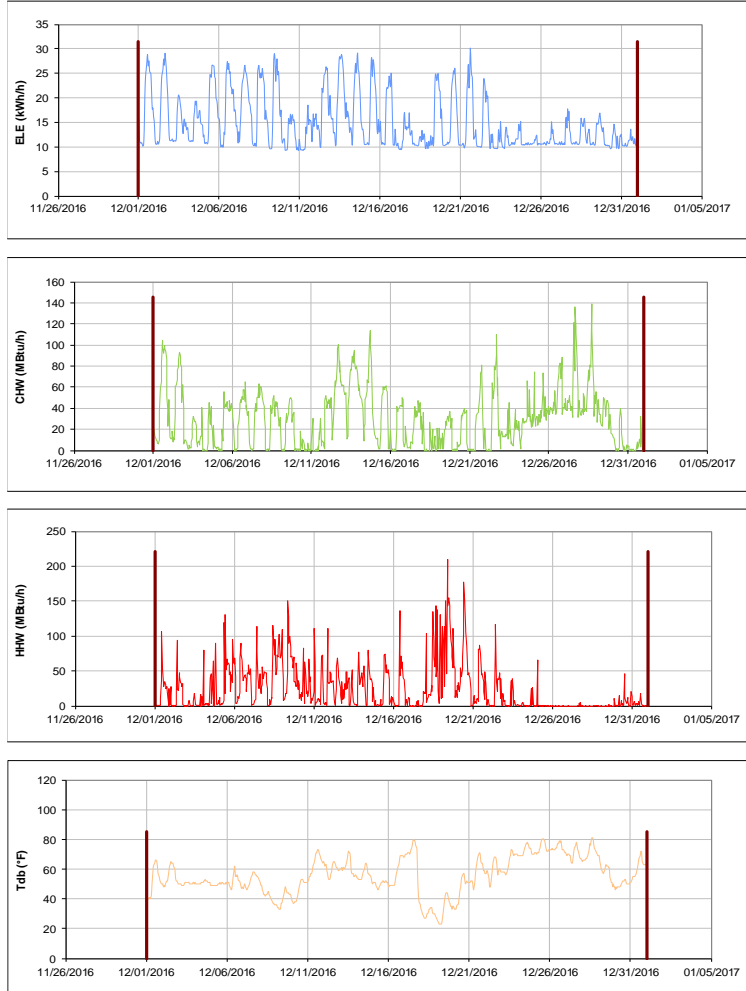


Figure III-109 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Munnerlyn Astronomy & Space Sciences Engineering during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Computing Services Center / BLDG #: 0516

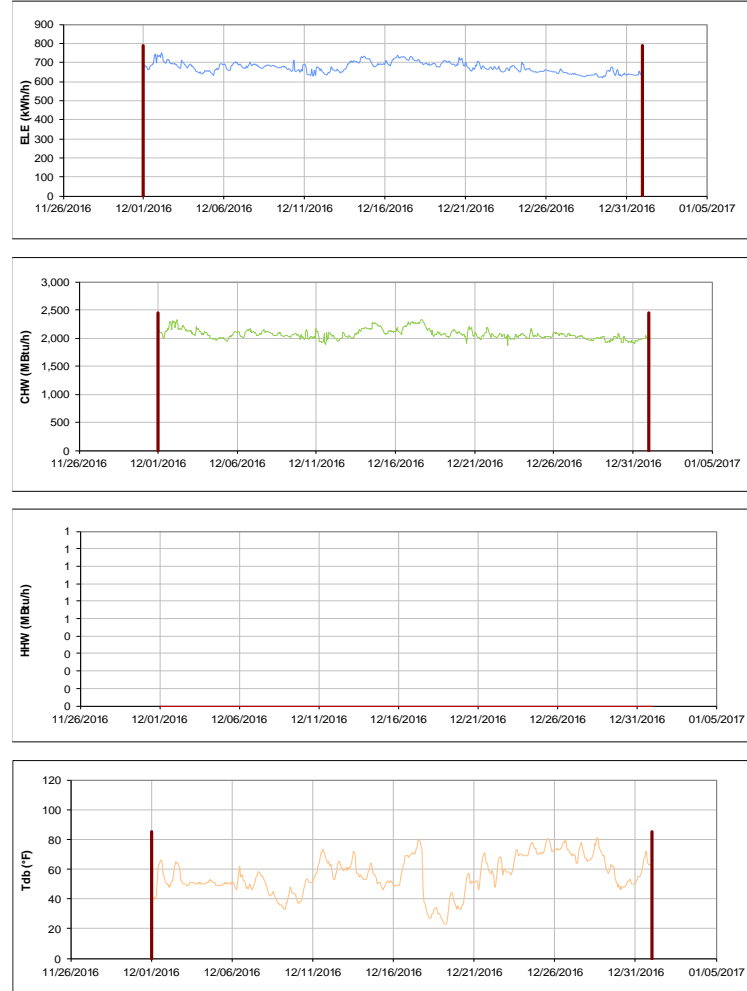


Figure III-110 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Computing Services Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-111 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Beutel Health Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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



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

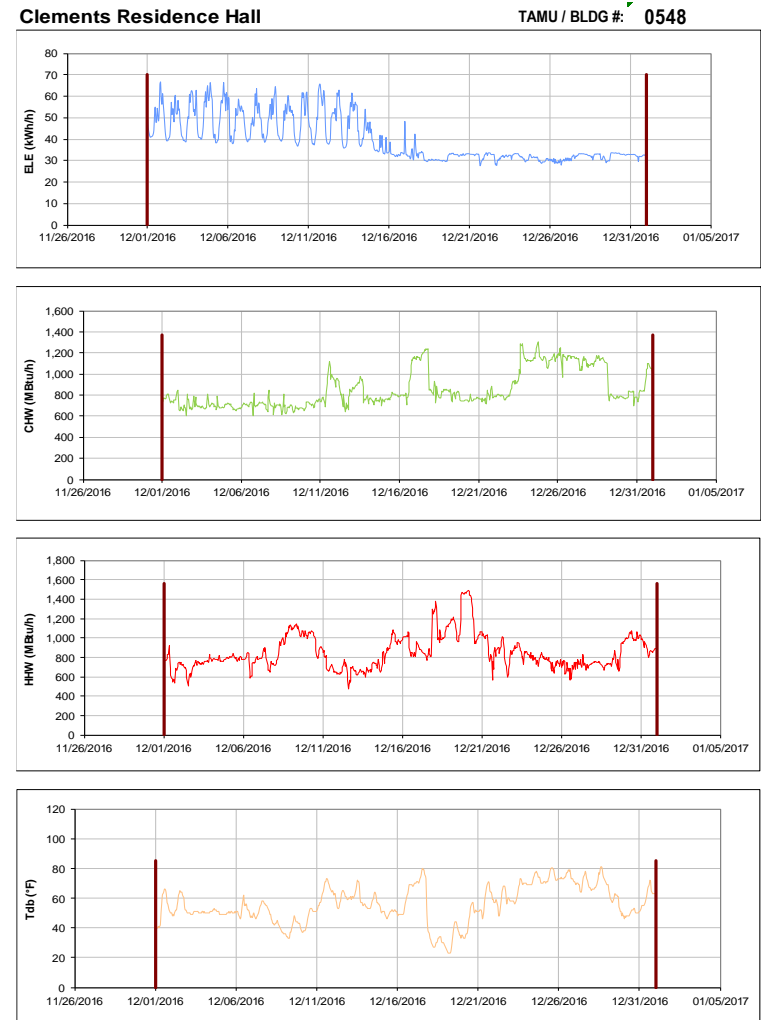


Figure III-114 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Clements Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

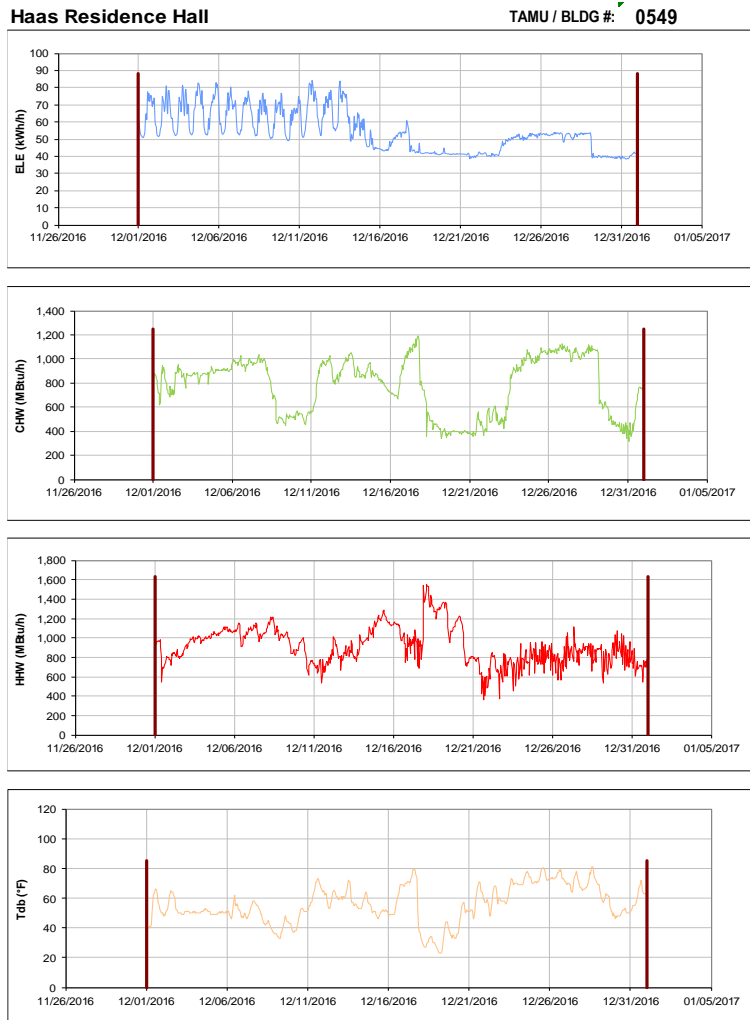


Figure III-115 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Haas Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

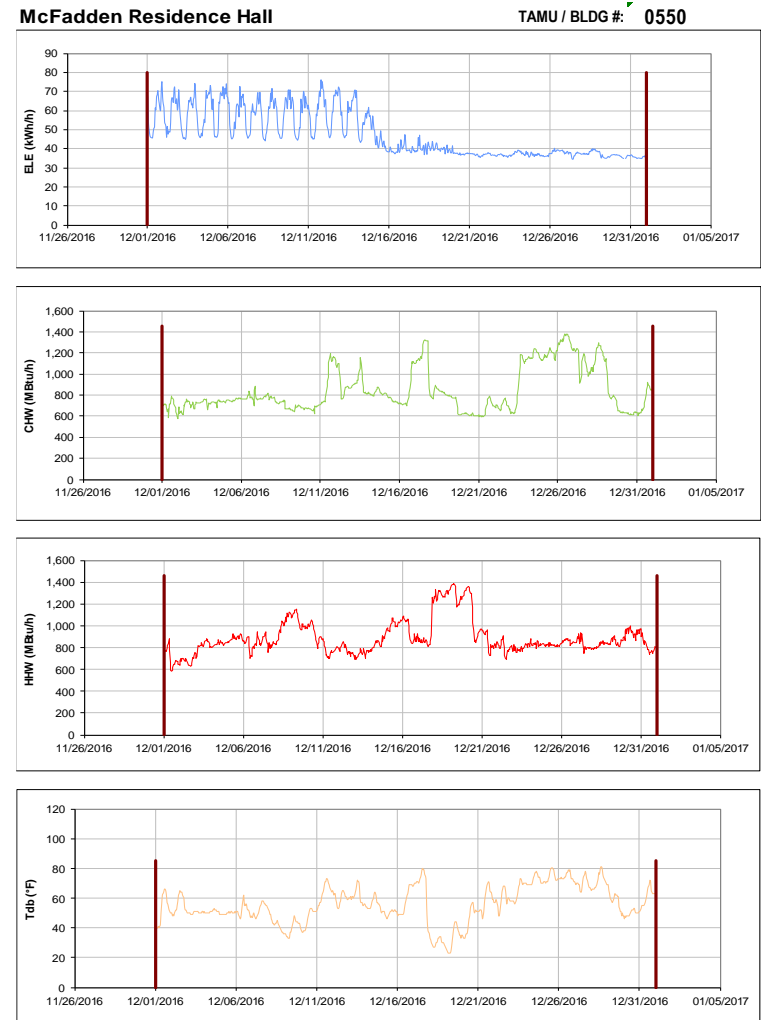


Figure III-116 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for McFadden Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

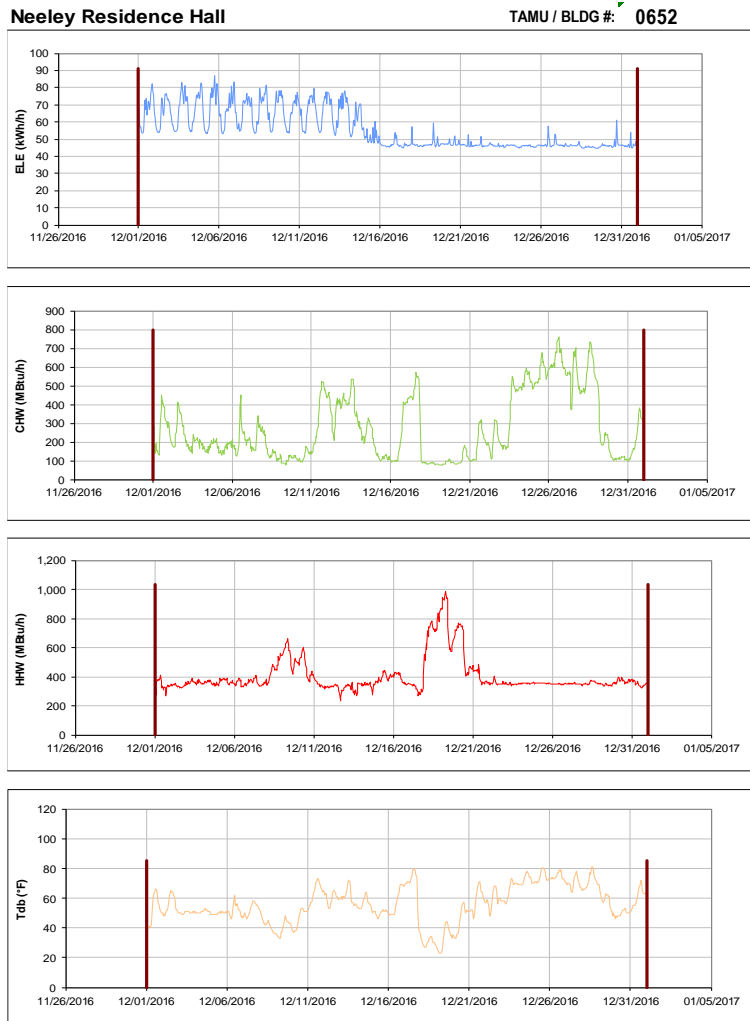


Figure III-117 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Neeley Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

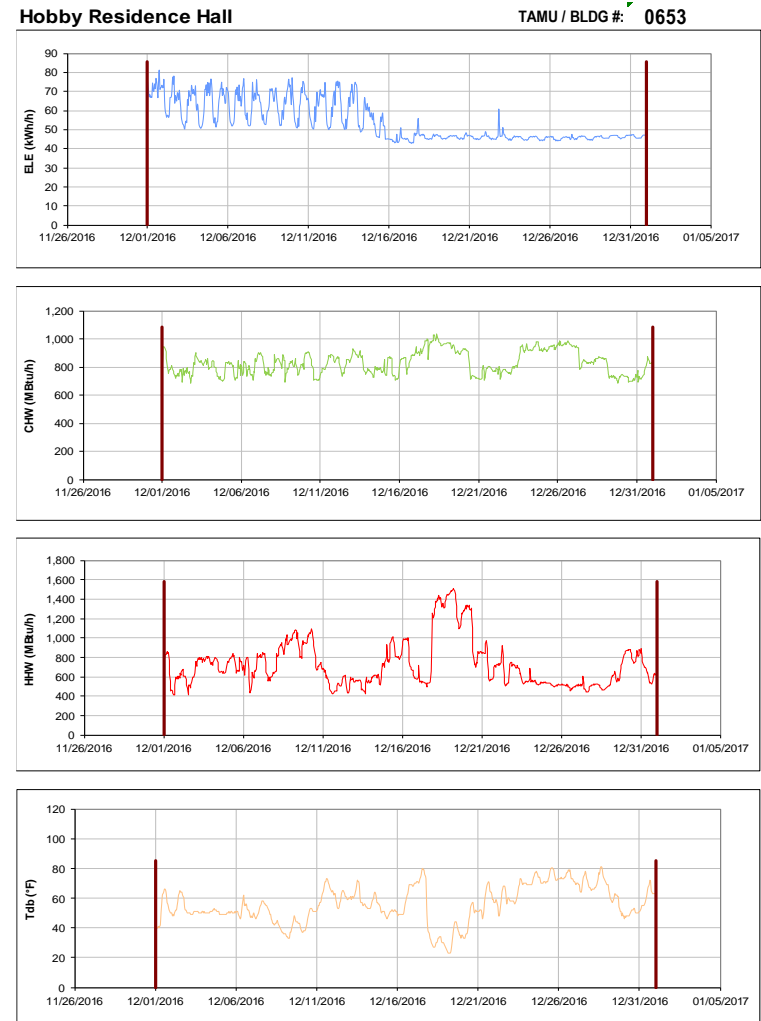


Figure III-118 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hobby Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

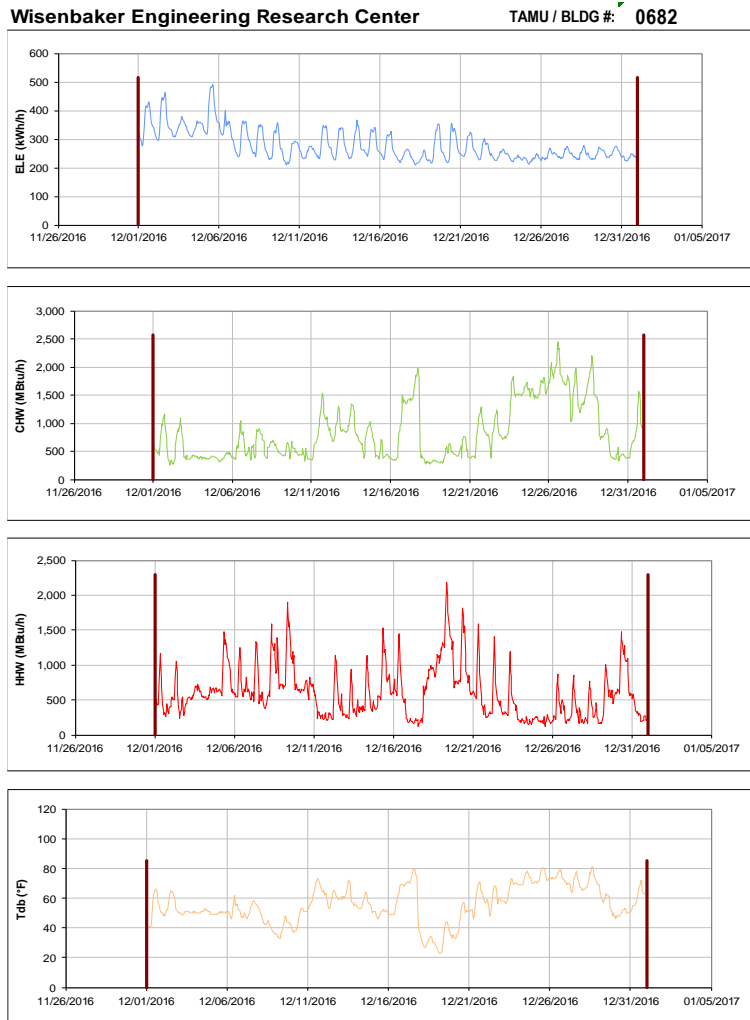


Figure III-119 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Wisembaker Engineering Research Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

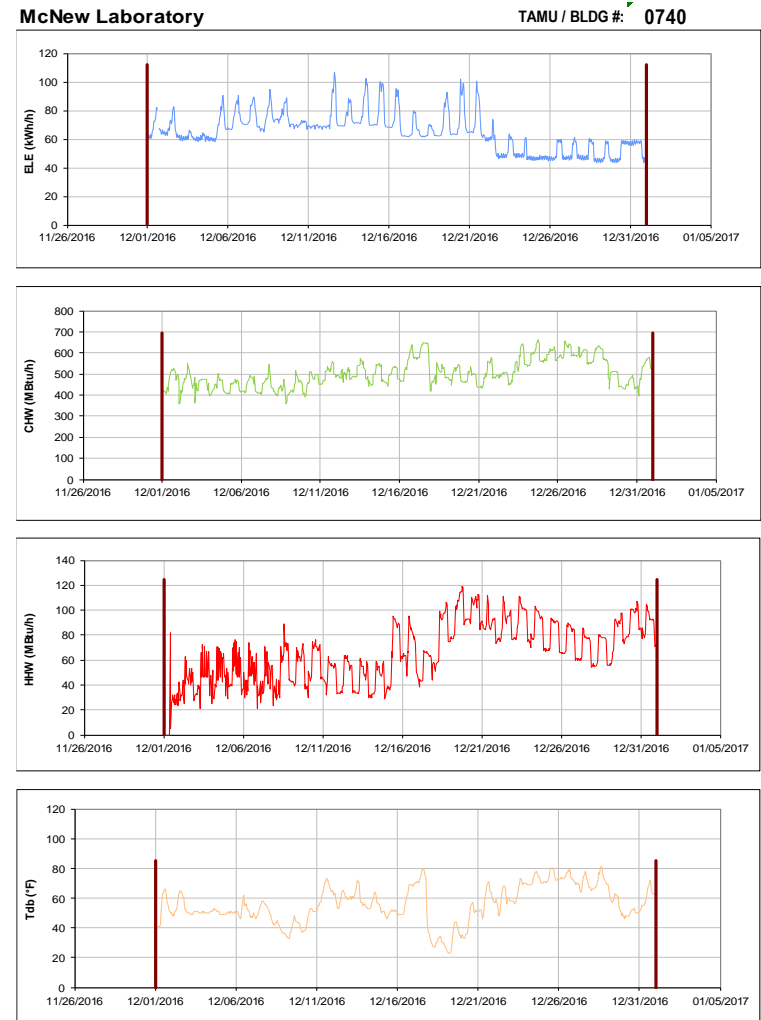


Figure III-120 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for McNew Laboratory during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Soil Testing Labs

TAMU / BLDG #: 0806

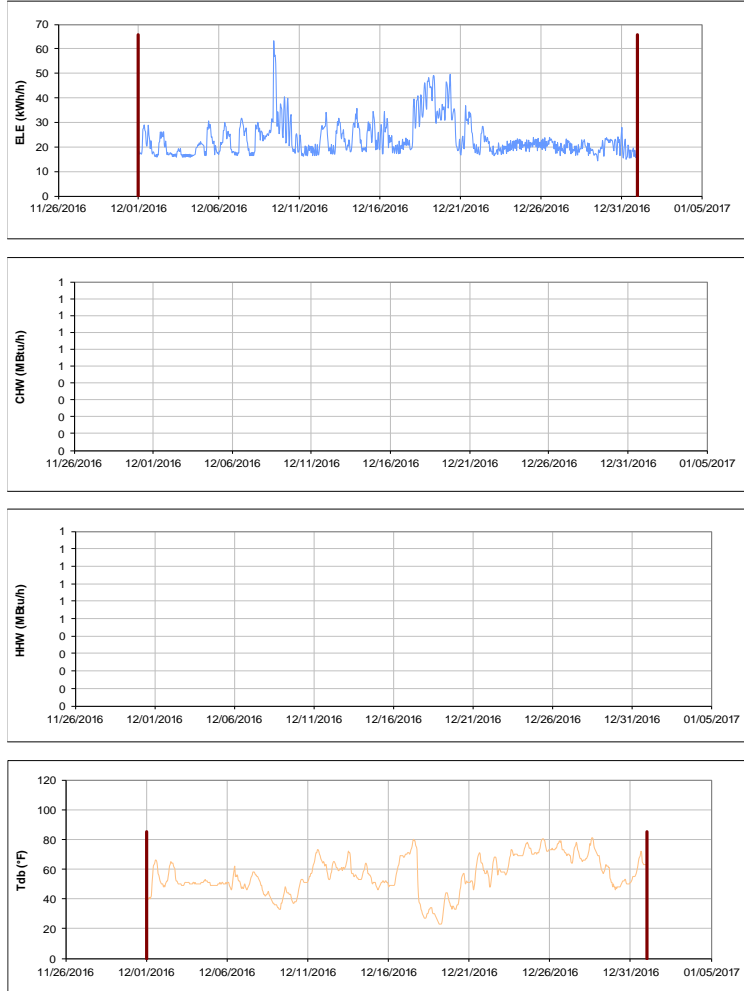


Figure III-121 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Soil Testing Labs during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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 December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

TVMC-Small Animal Building

TAMU / BLDG #: 0880

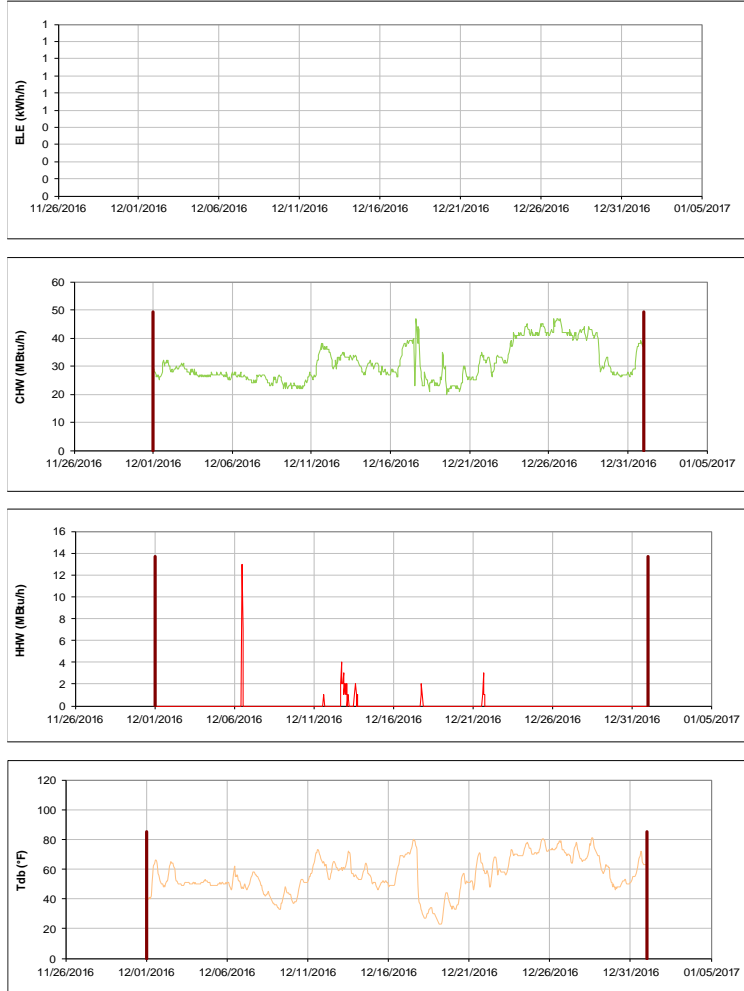


Figure III-123 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TVMC-Small Animal Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Laboratory Animal Care Building

TAMU / BLDG #: 0972

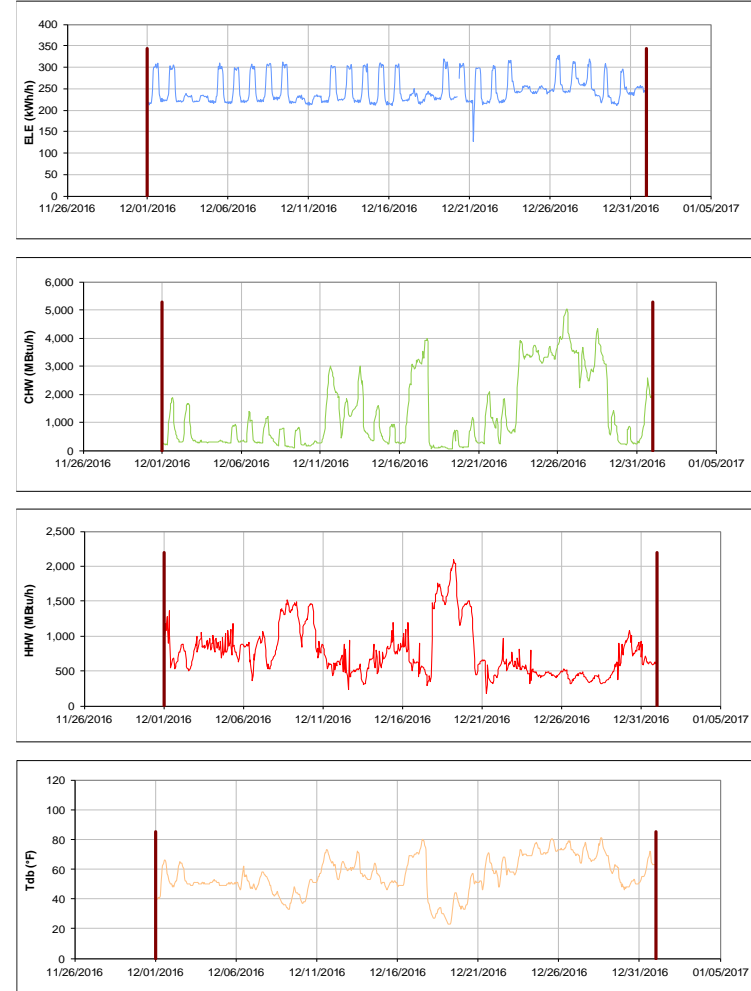


Figure III-124 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Laboratory Animal Care Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

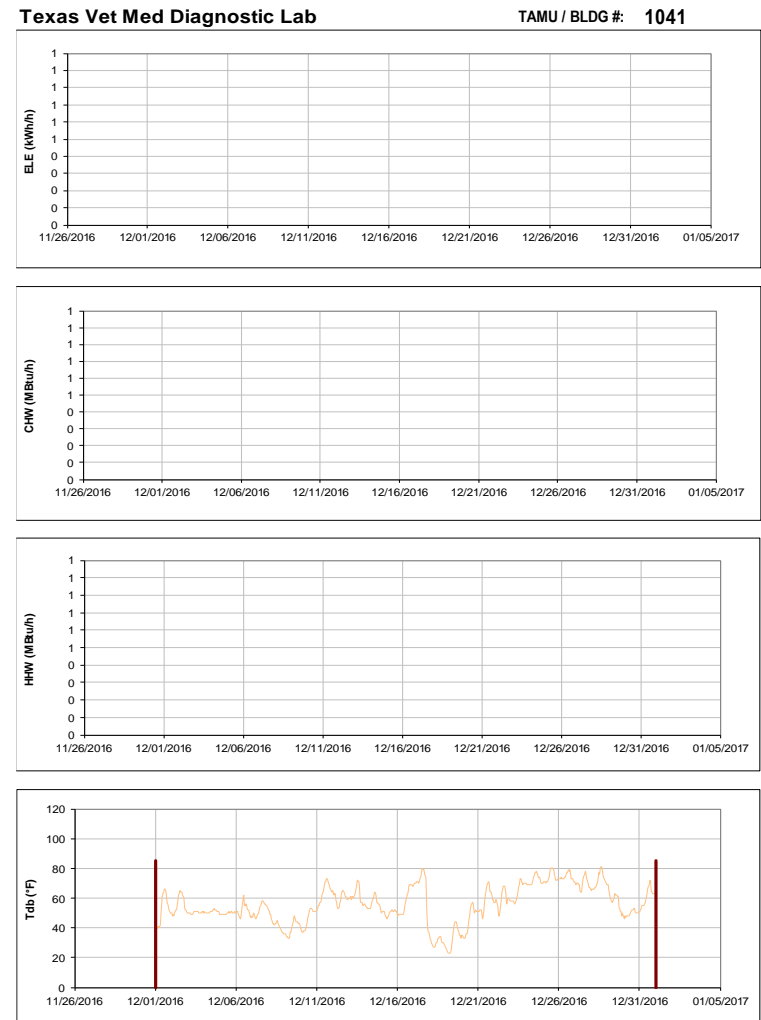


Figure III-126 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas Vet Med Diagnostic Lab during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

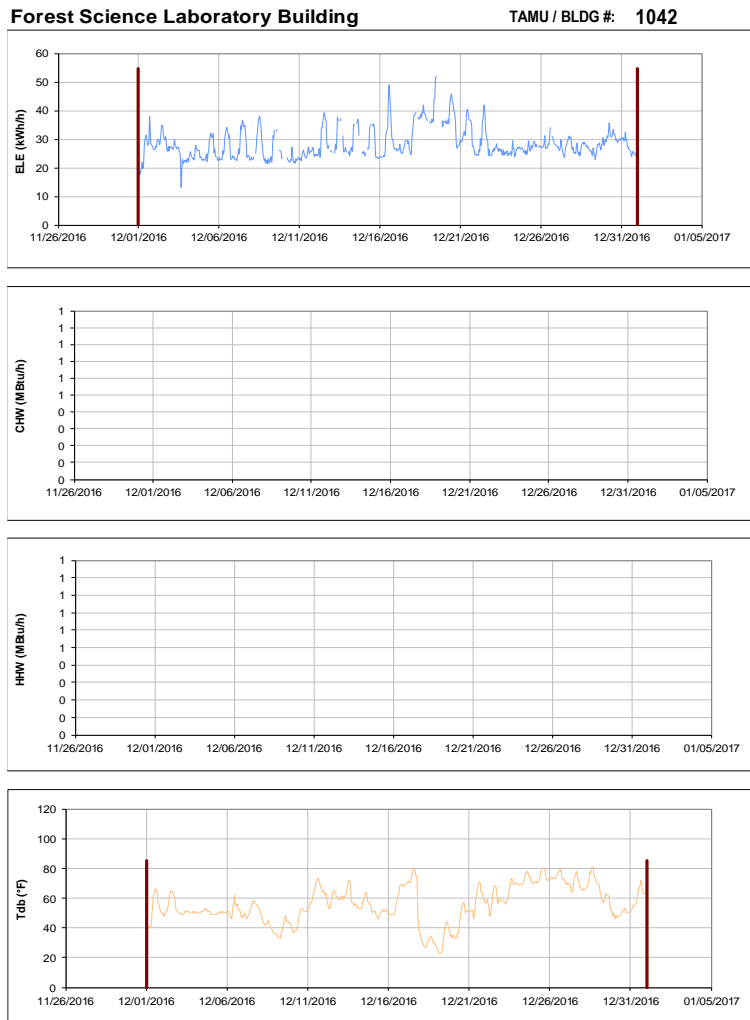


Figure III-127 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Forest Science Laboratory Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

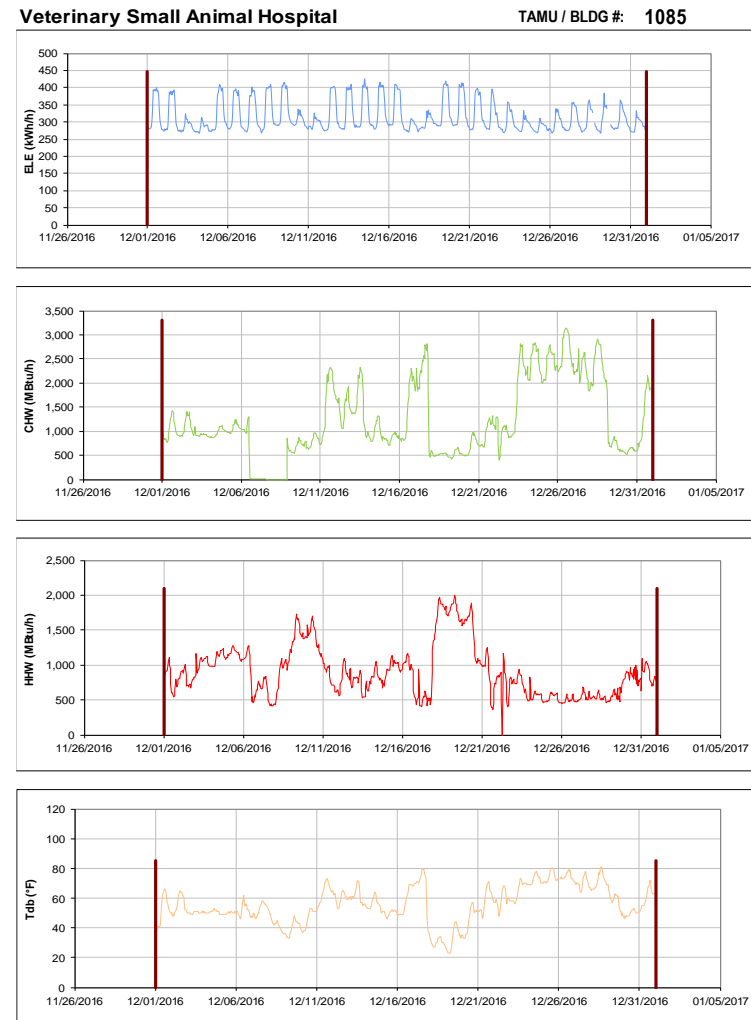


Figure III-128 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Small Animal Hospital during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

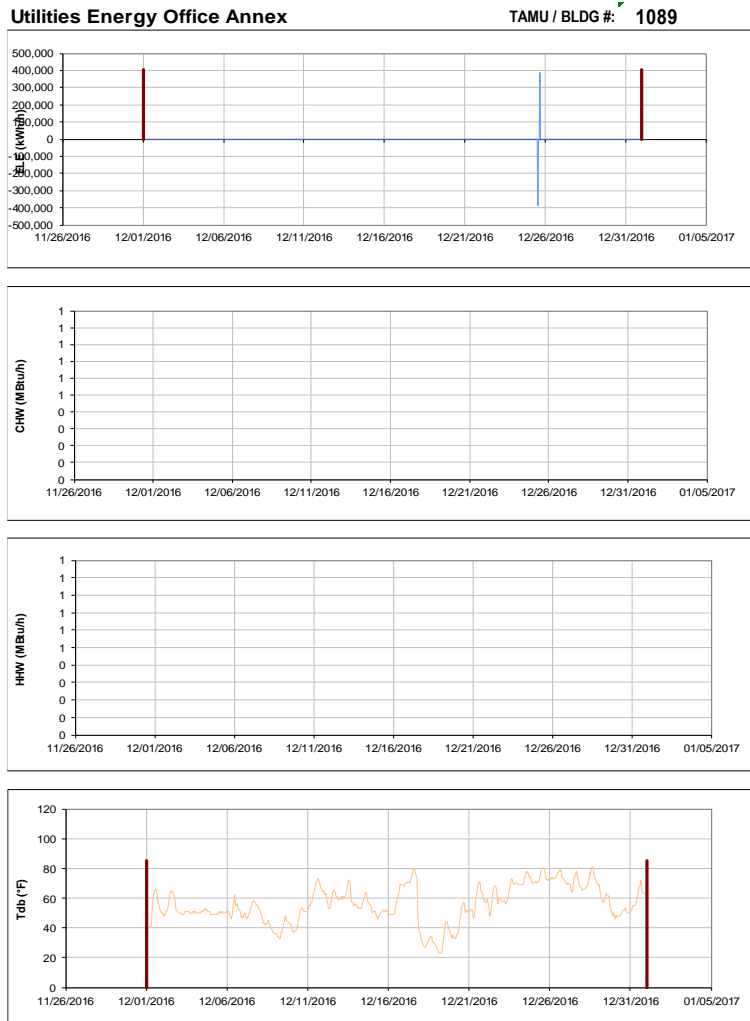


Figure III-129 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities Energy Office Annex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

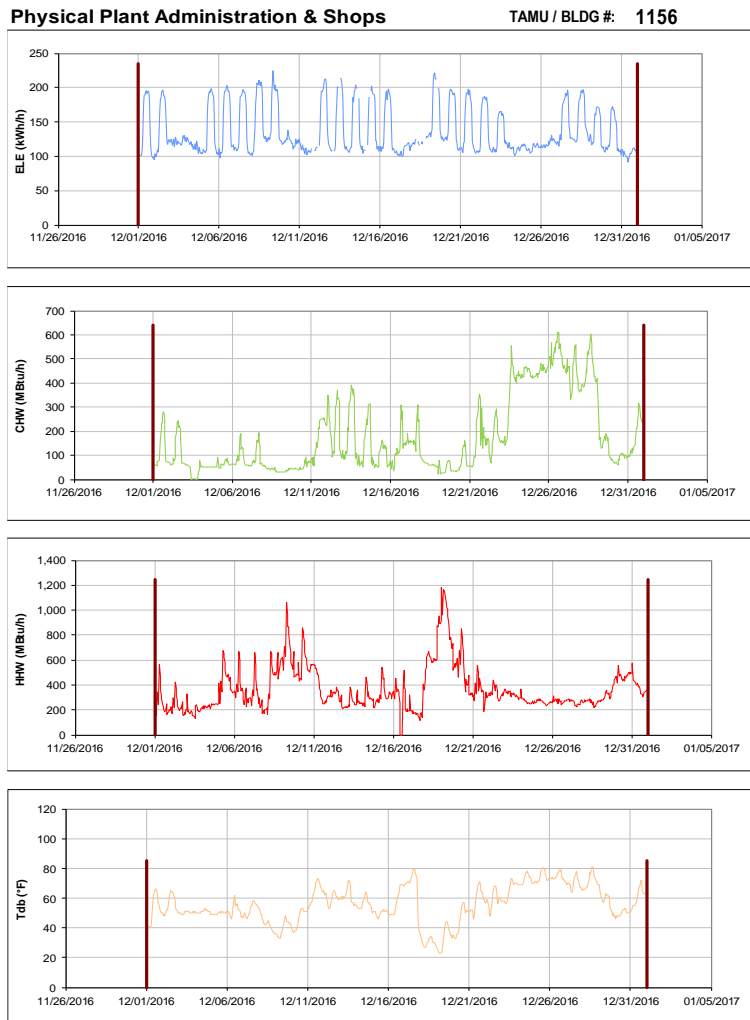


Figure III-131 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Physical Plant Administration & Shops during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

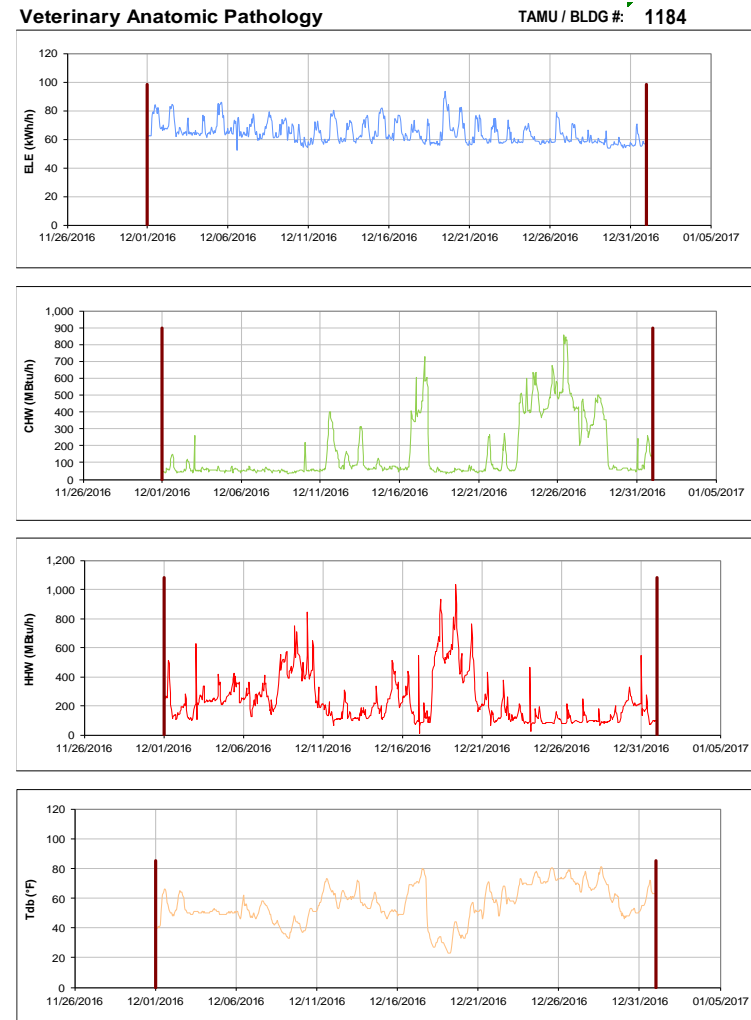


Figure III-132 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Anatomic Pathology during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

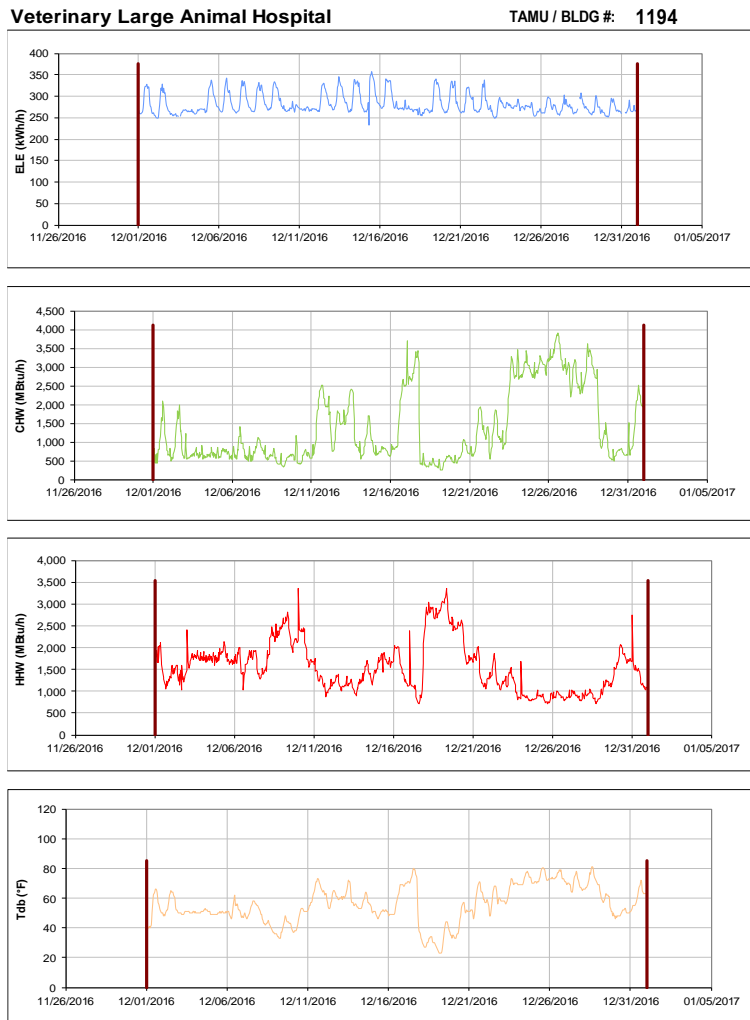


Figure III-133 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Large Animal Hospital during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

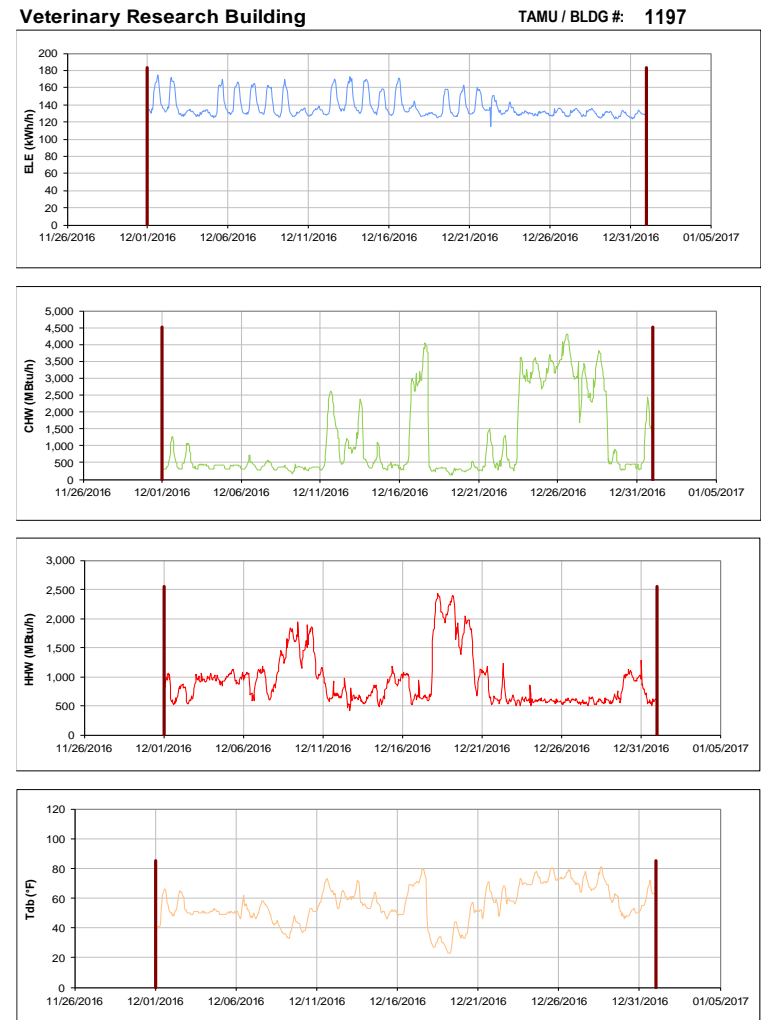


Figure III-134 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Research Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Hullabaloo Residence Hall

TAMU / BLDG #: 1416

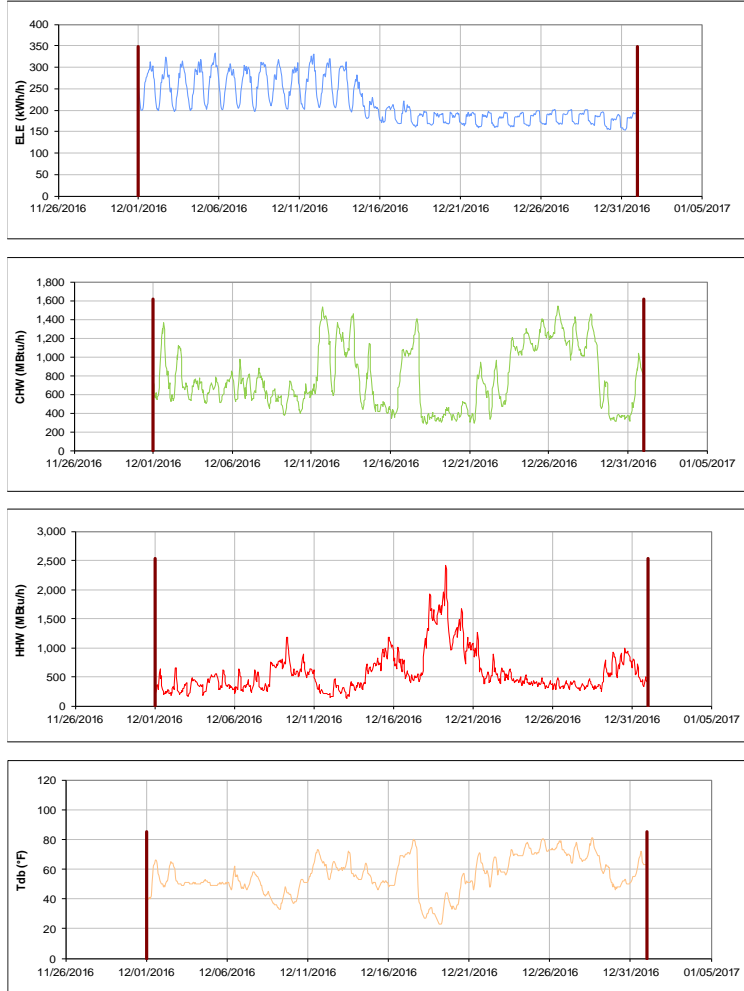


Figure III-135 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Hullabaloo Residence Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

University Apartments - Laundry at the Gardens

TAMU / BLDG #: 1450

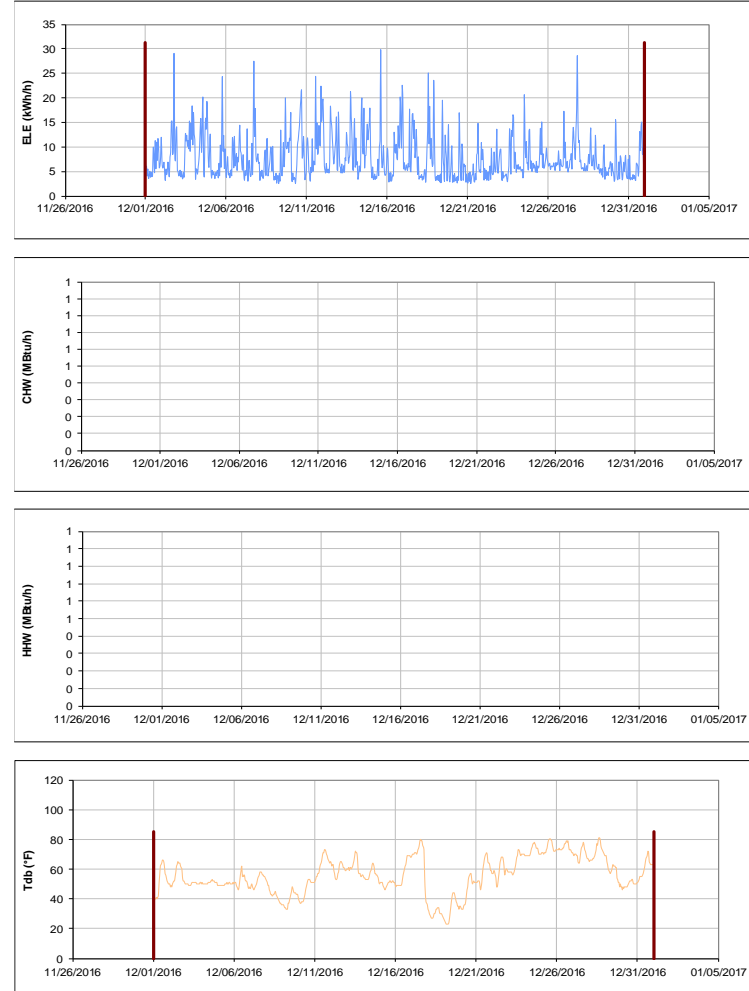


Figure III-136 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - Laundry at the Gardens during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

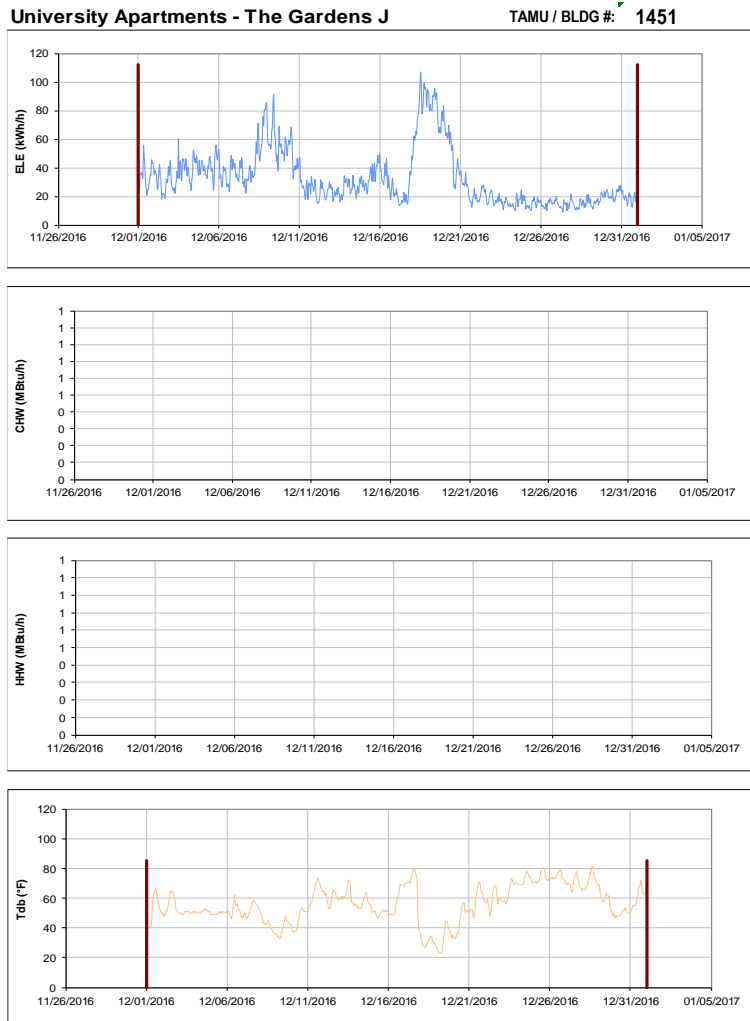


Figure III-137 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens J during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

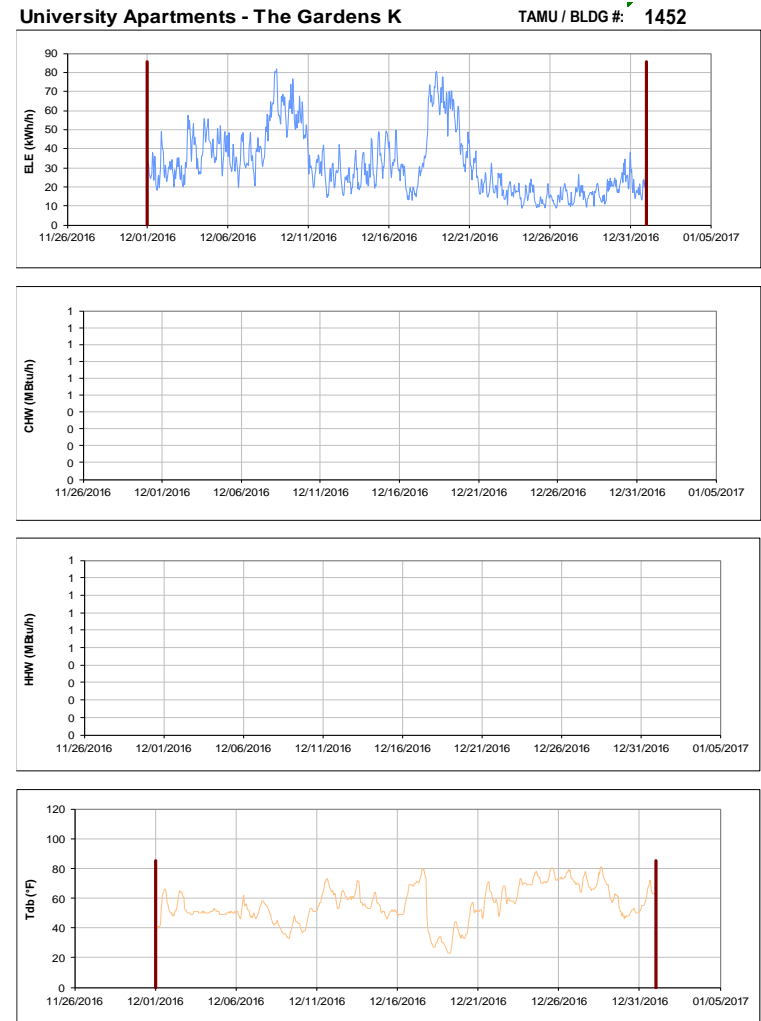


Figure III-138 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens K during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

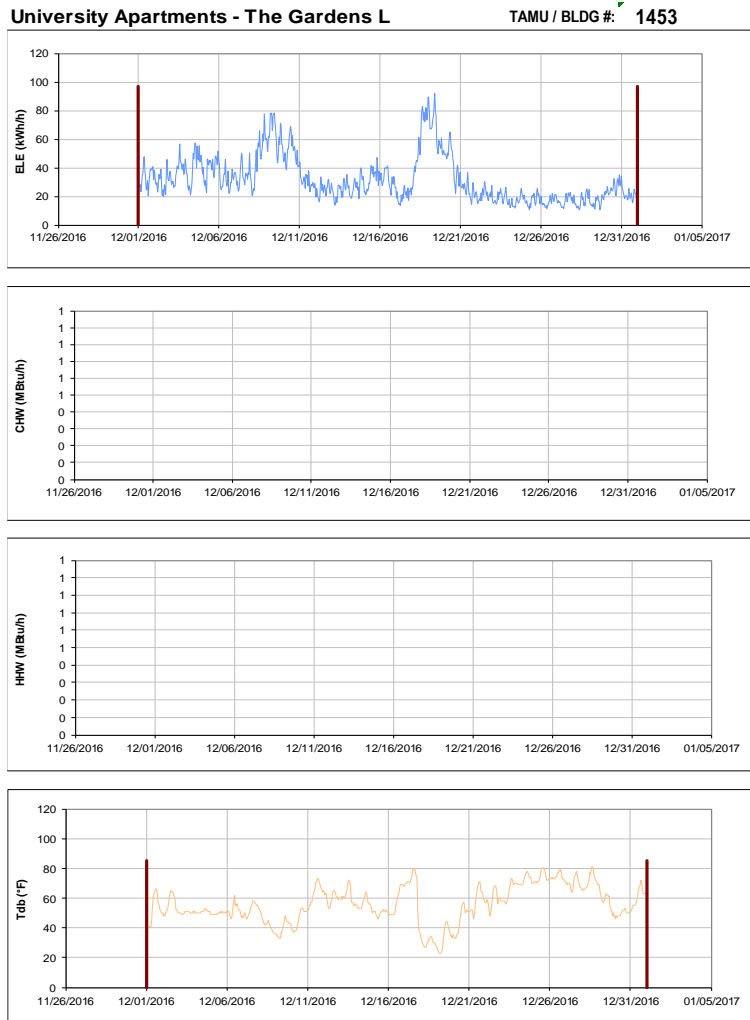


Figure III-139 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens L during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

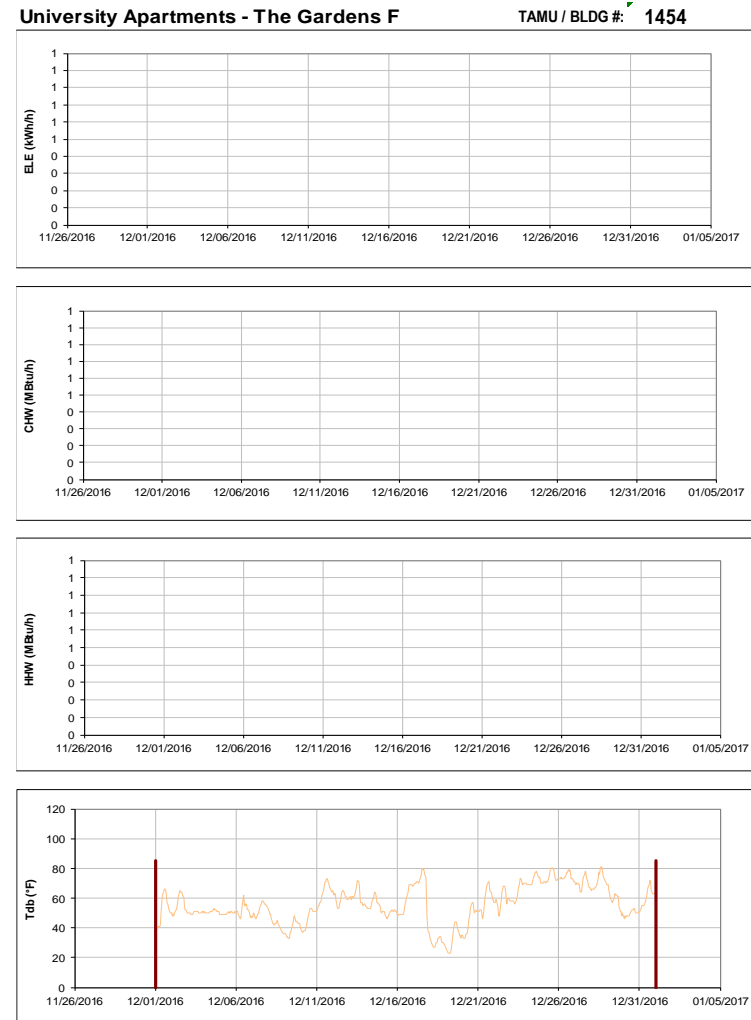


Figure III-140 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens F during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

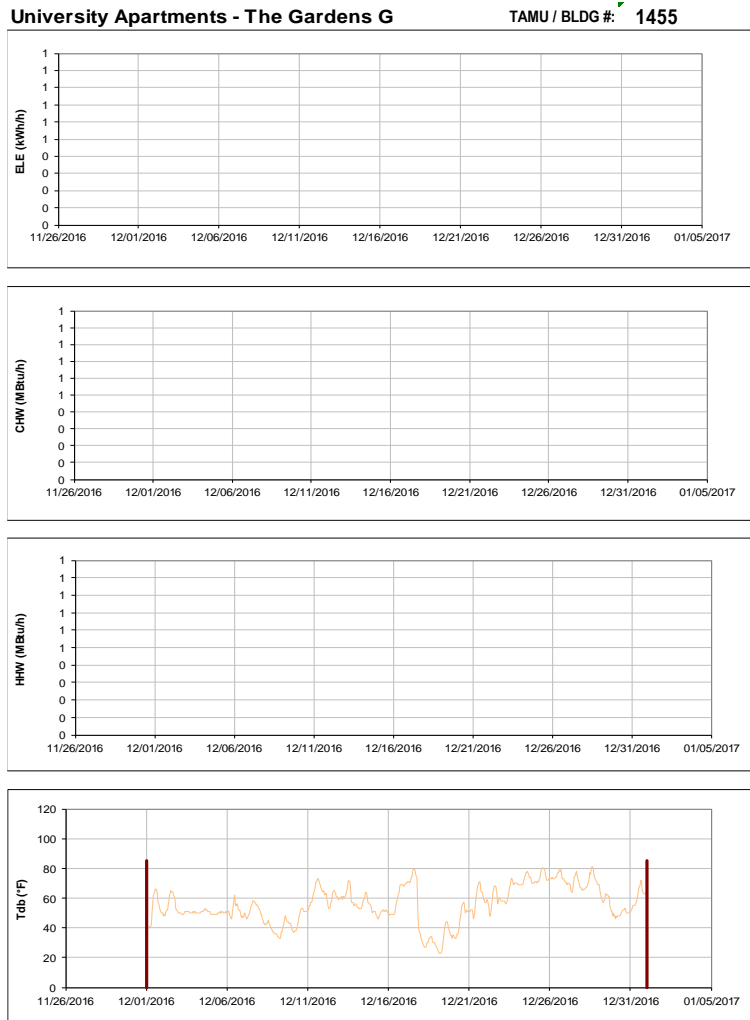


Figure III-141 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens G during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

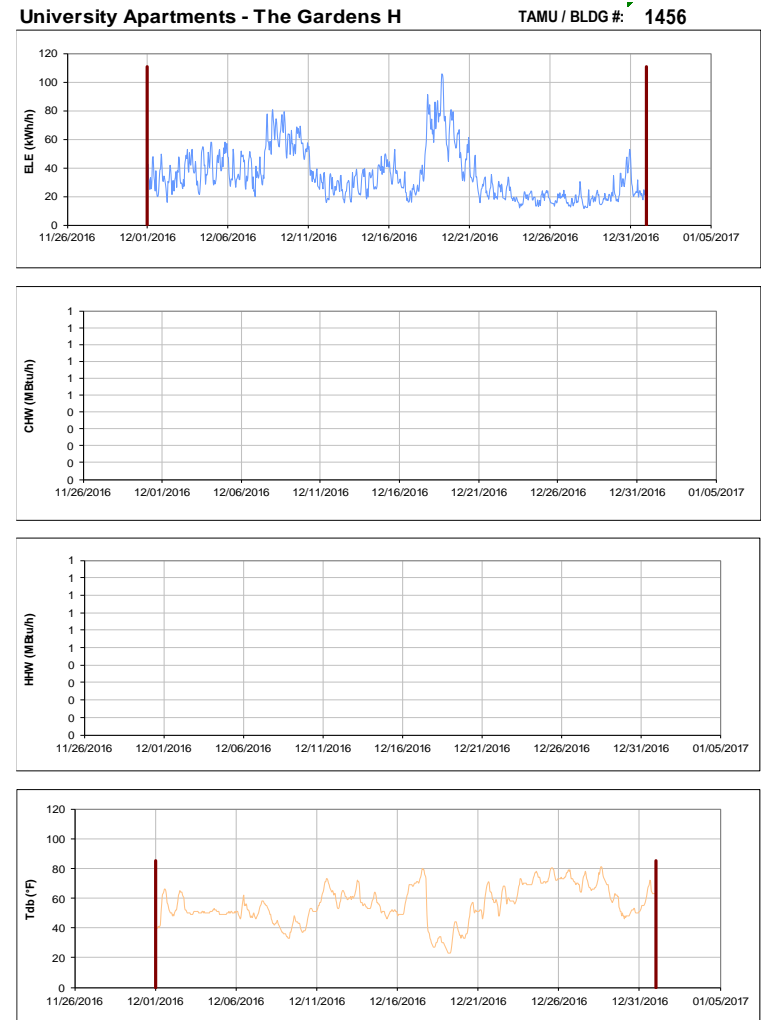


Figure III-142 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens H during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

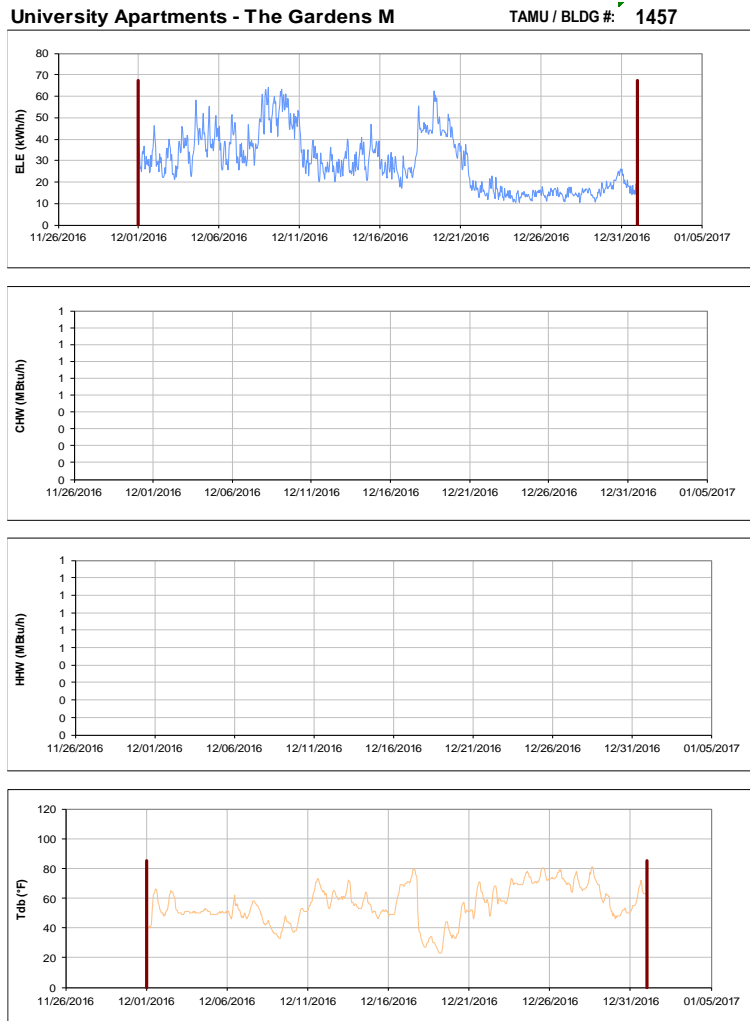


Figure III-143 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens M during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

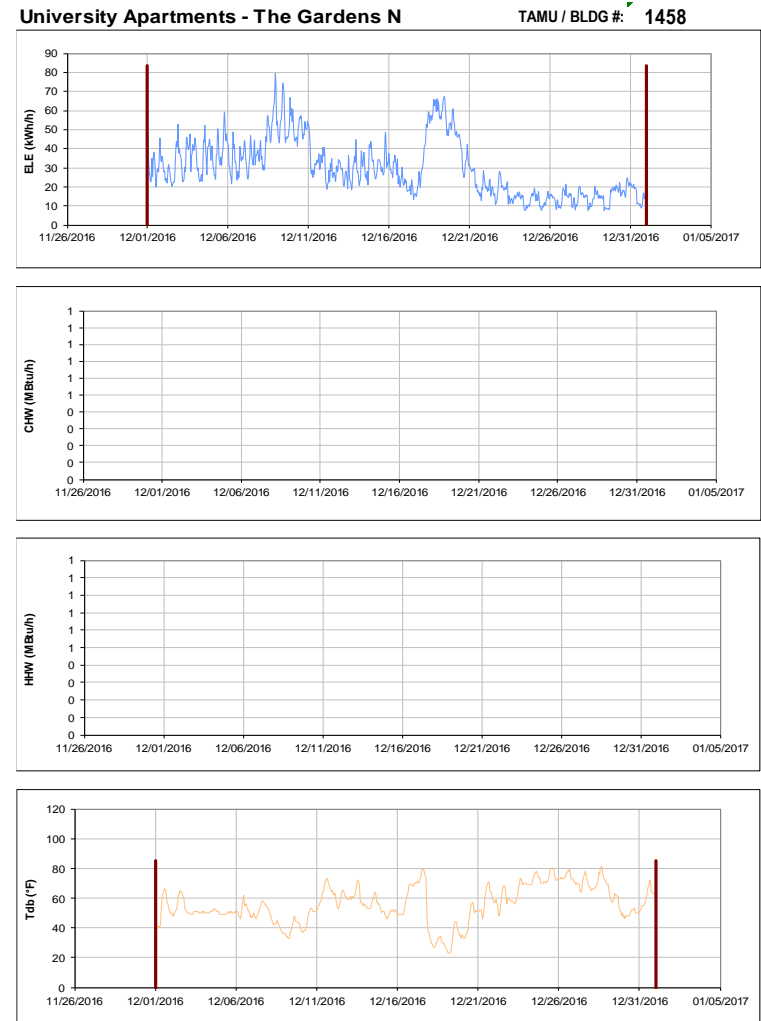


Figure III-144 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens N during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

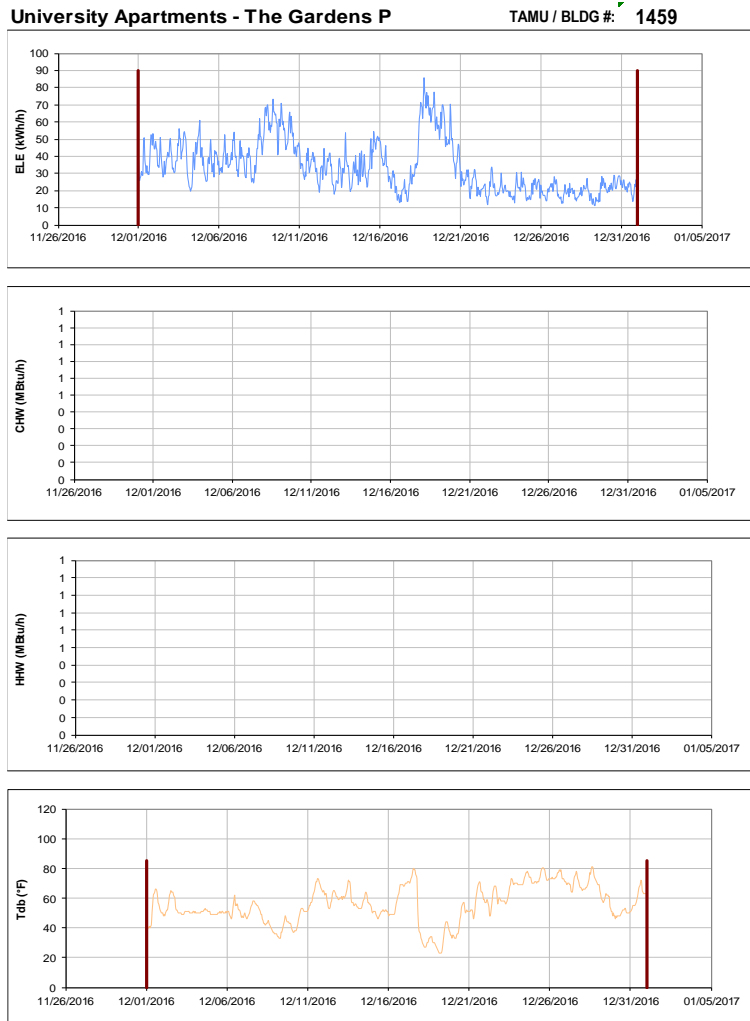


Figure III-145 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens P during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

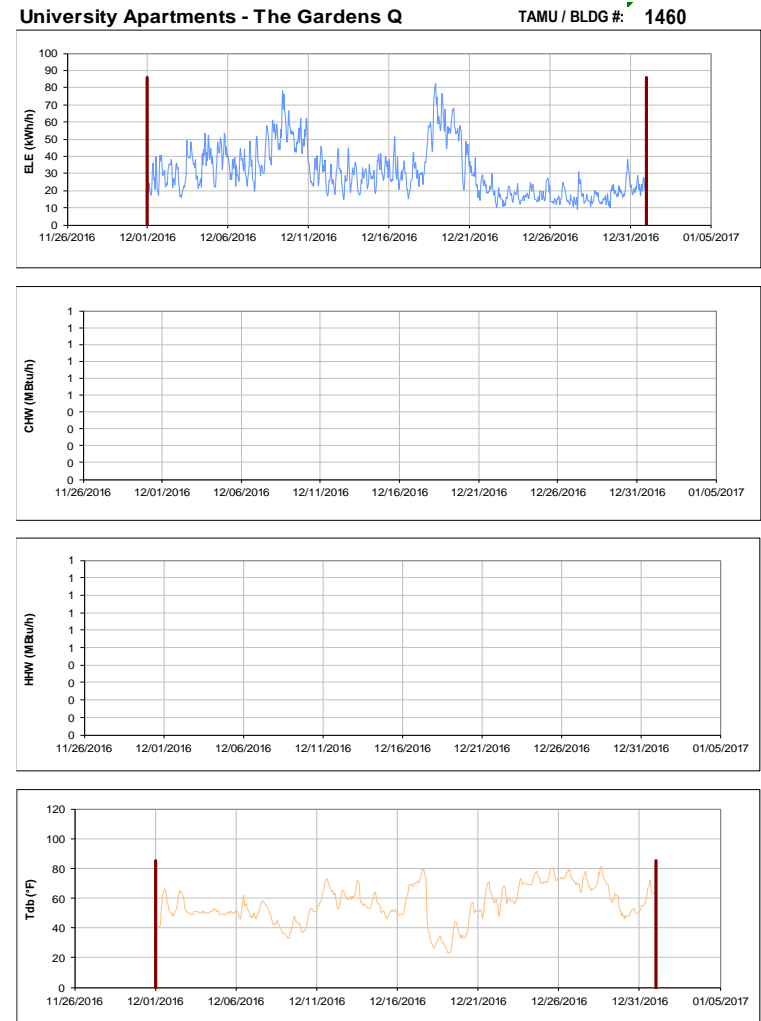


Figure III-146 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for University Apartments - The Gardens Q during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

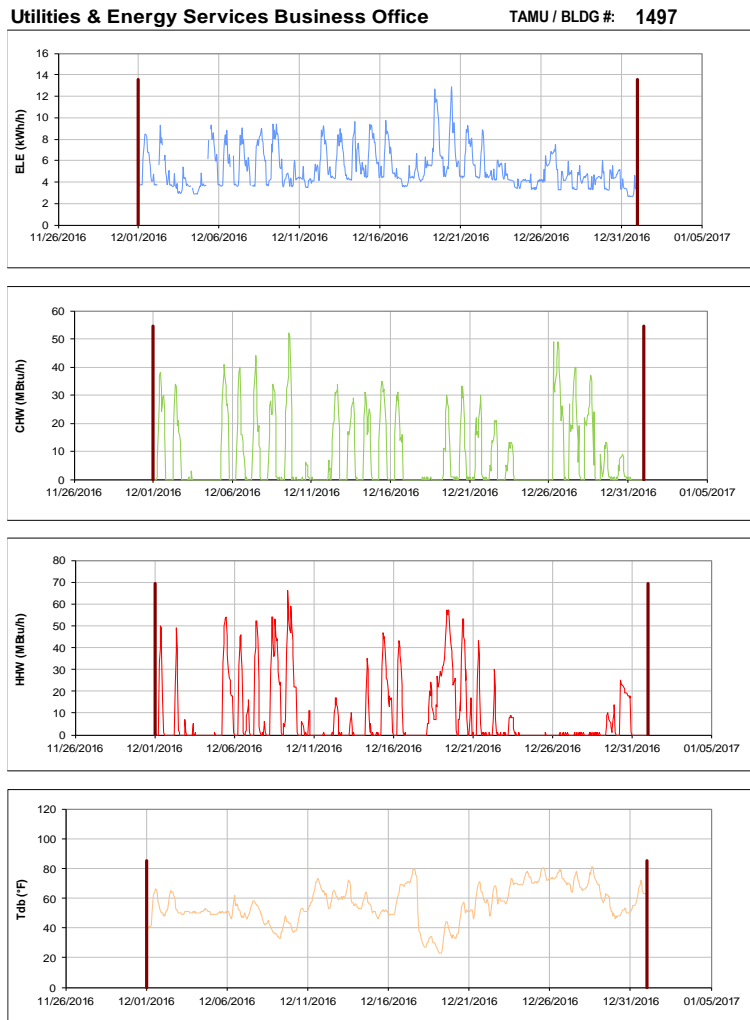


Figure III-147 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Utilities & Energy Services Business Office during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-148 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Kleberg Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

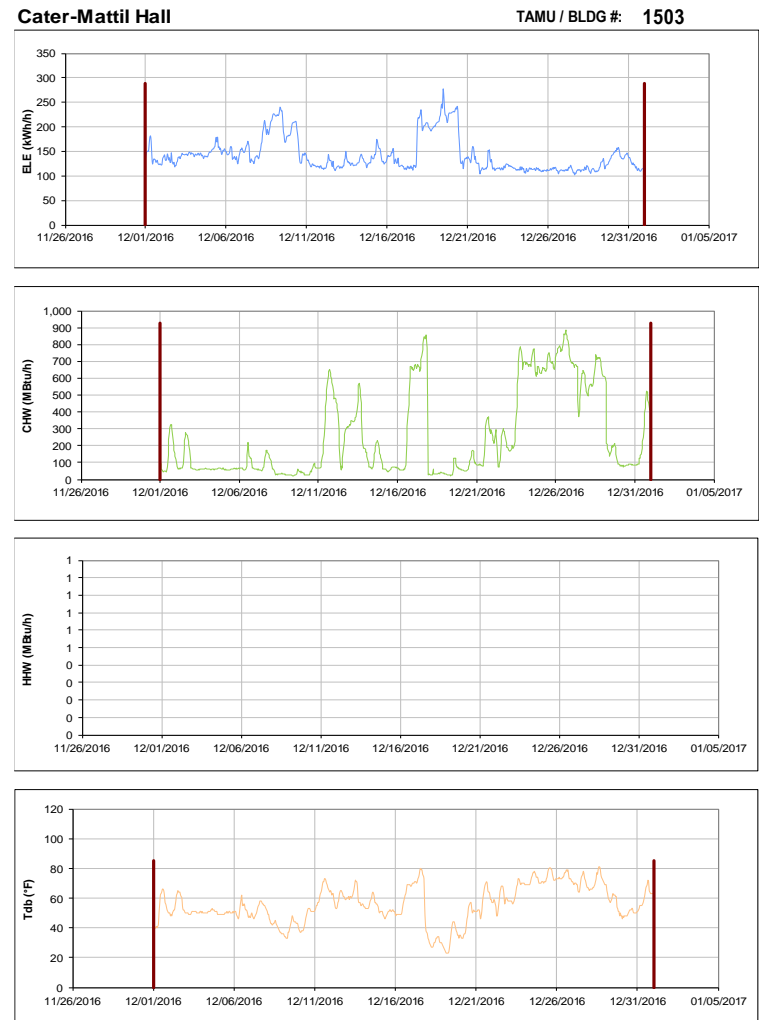


Figure III-150 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cater-Mattil Hall during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-151 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reynolds Medical Sciences Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

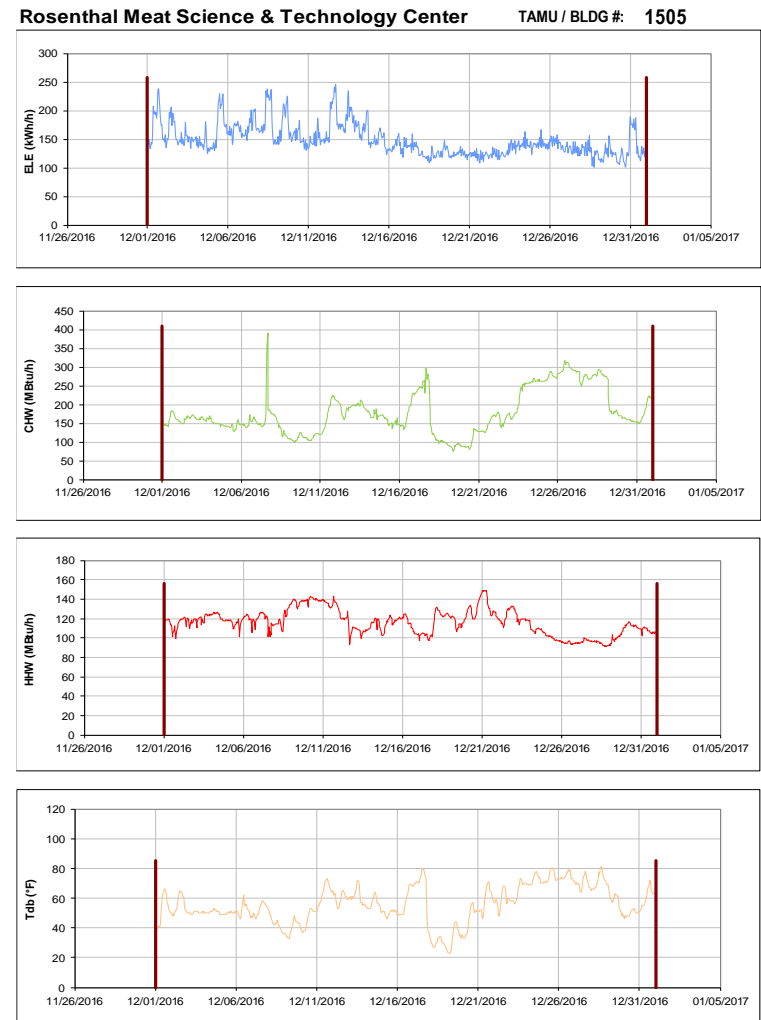


Figure III-152 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Rosenthal Meat Science & Technology Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

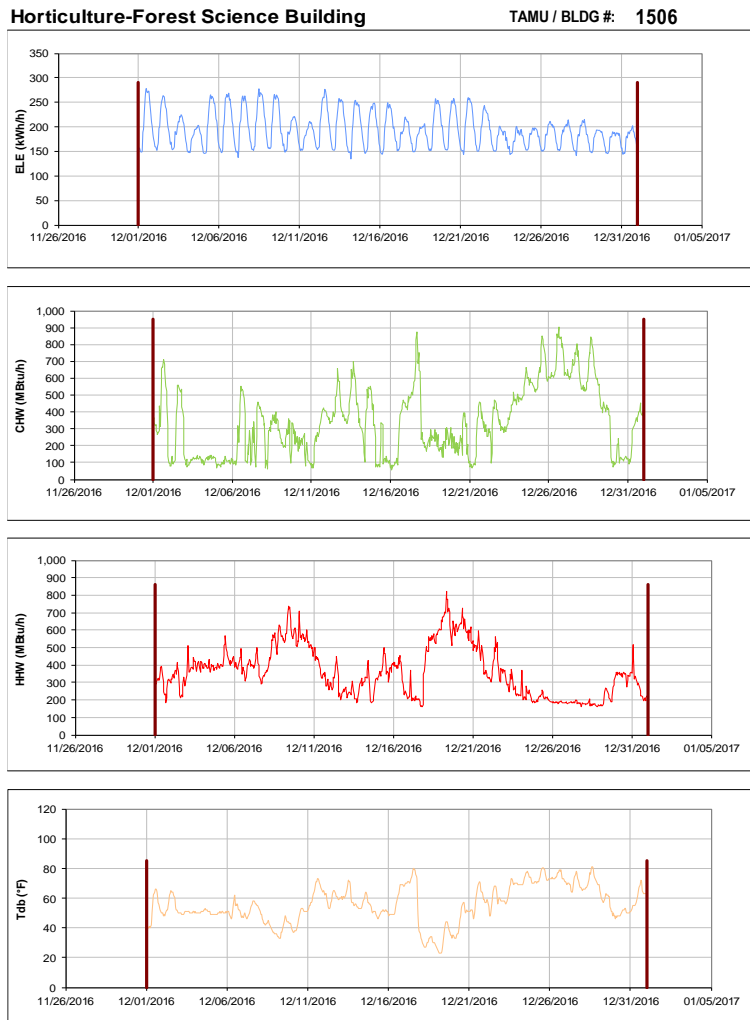


Figure III-153 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Horticulture-Forest Science Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

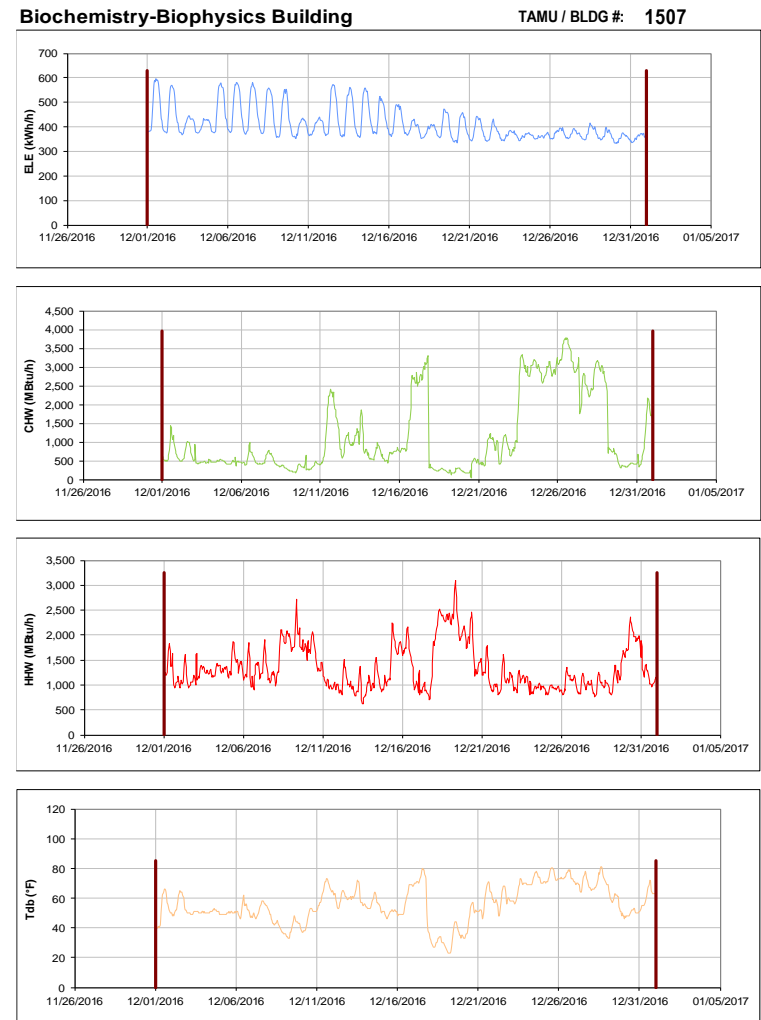


Figure III-154 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Biochemistry-Biophysics Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

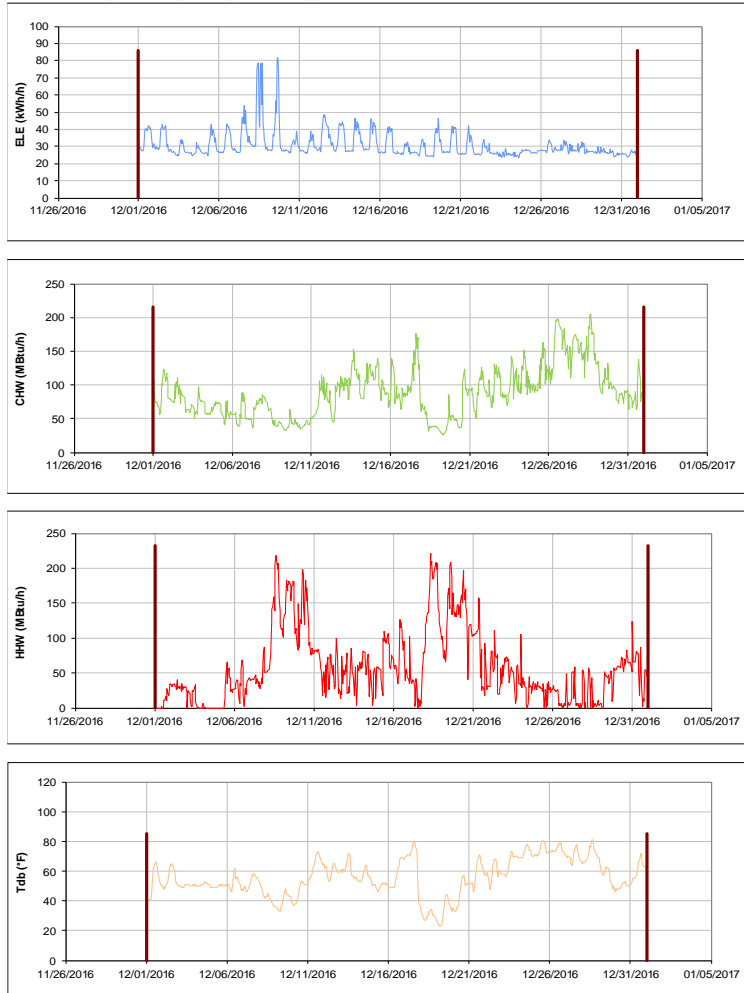


Figure III-155 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Price Hobgood Ag. Engineering Research Lab during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Medical Sciences Library TAMU / BLDG #: 1509

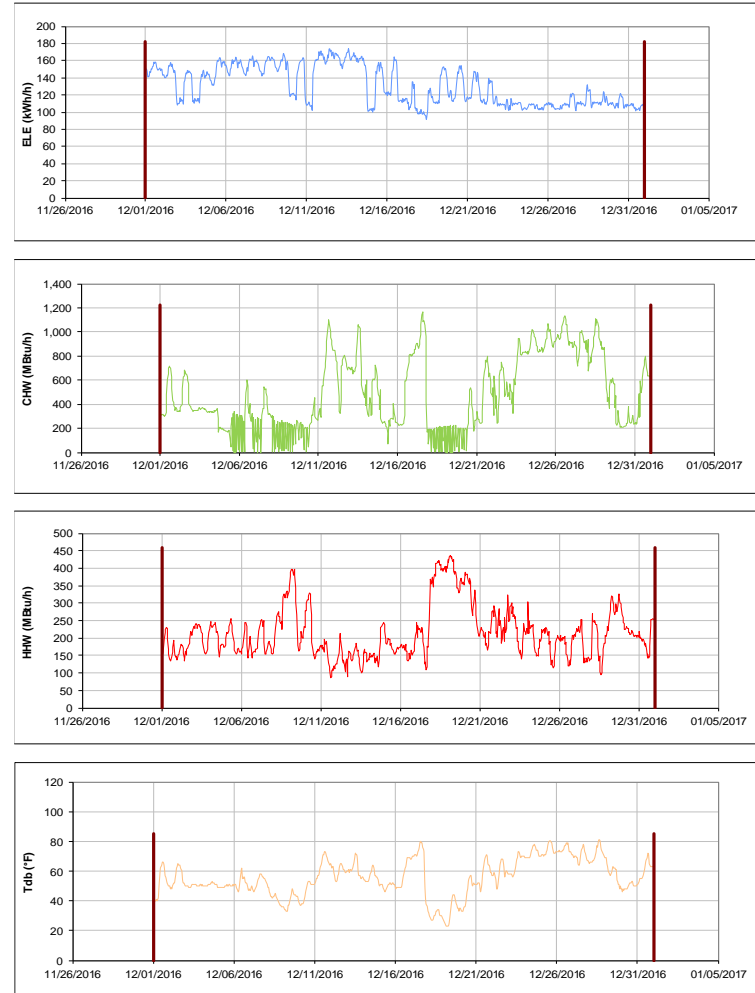


Figure III-156 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Medical Sciences Library during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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



Figure III-158 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for West Campus Library Facility during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

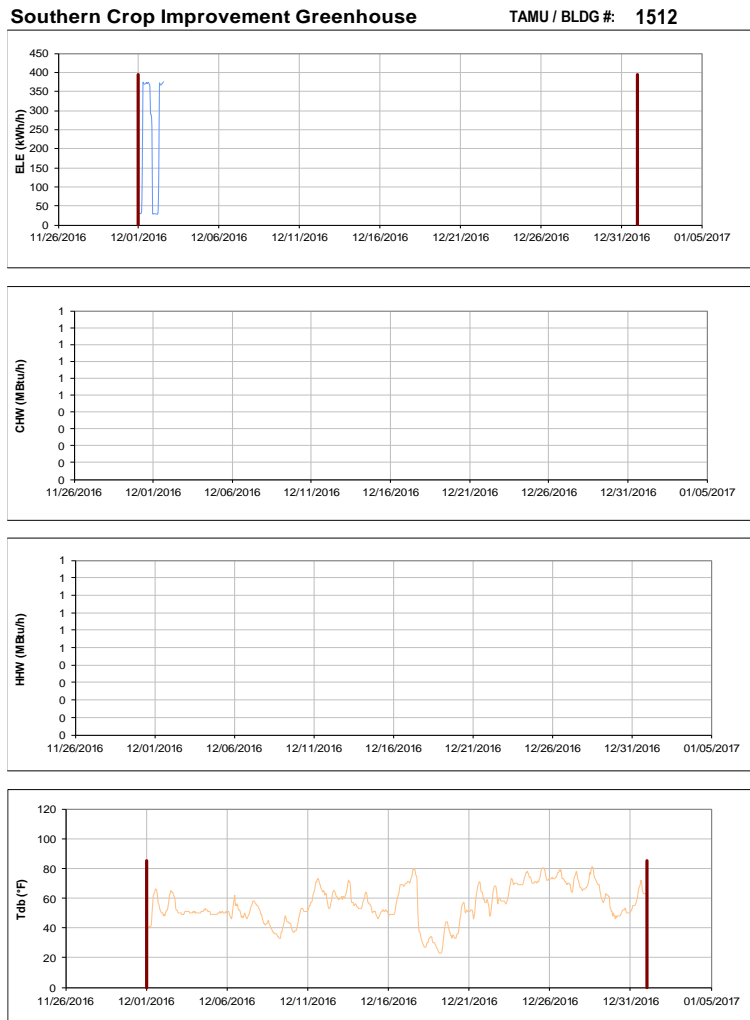


Figure III-159 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Southern Crop Improvement Greenhouse during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

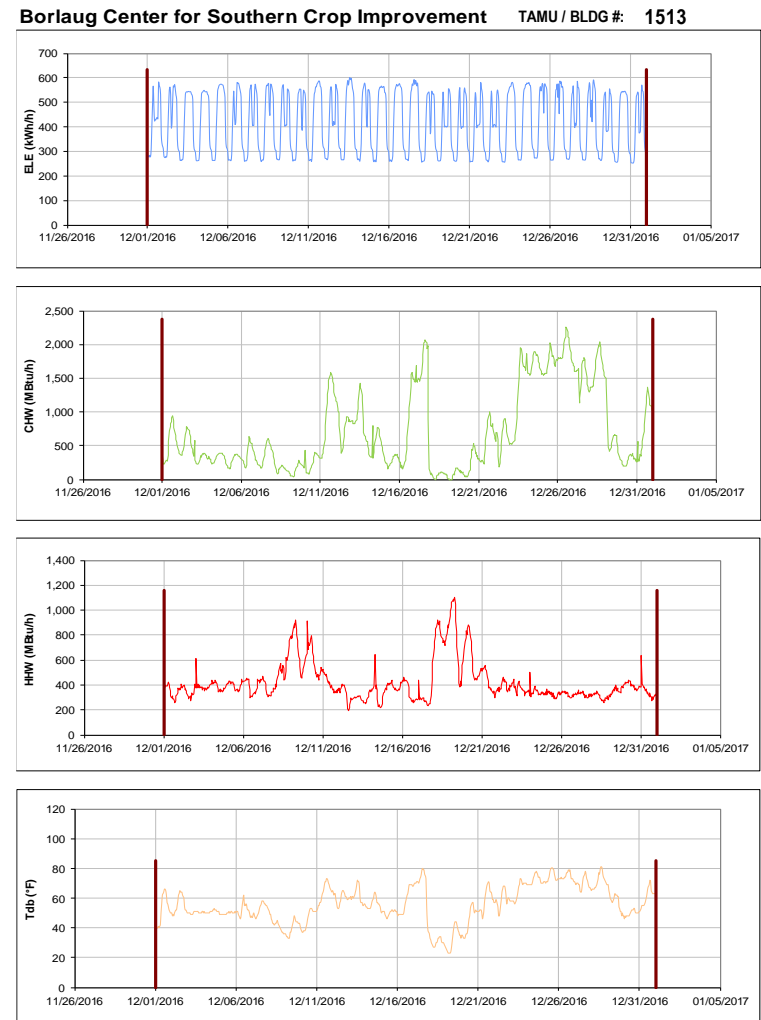


Figure III-160 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Borlaug Center for Southern Crop Improvement during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

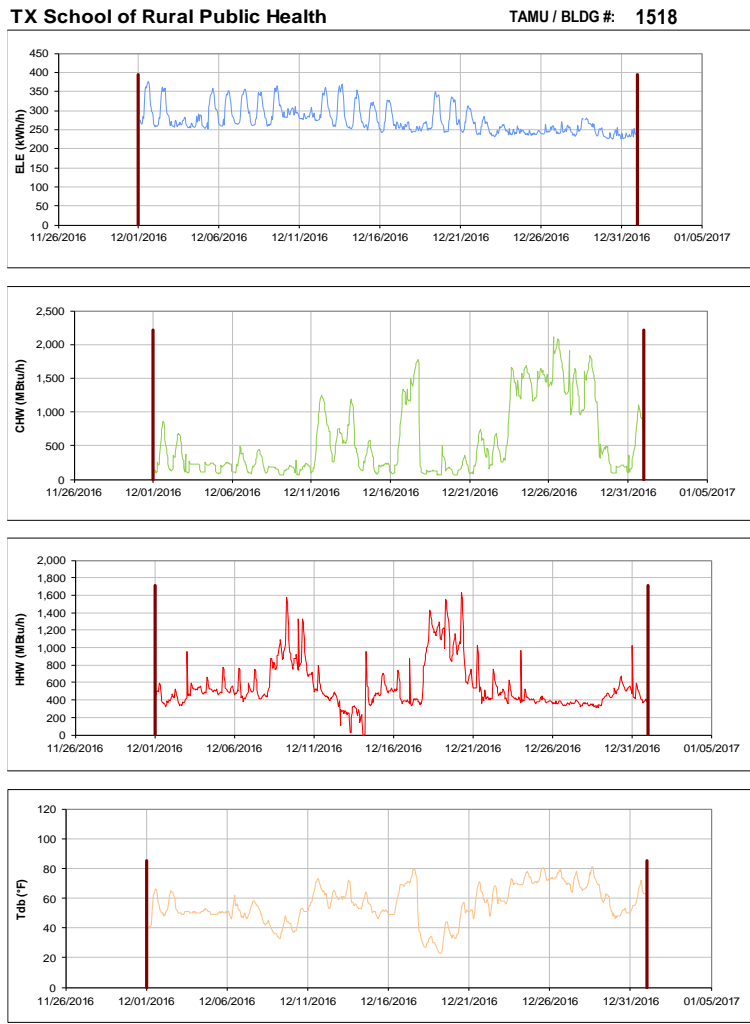


Figure III-161 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TX School of Rural Public Health during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-162 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Nuclear Magnetic Resonance Facility during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

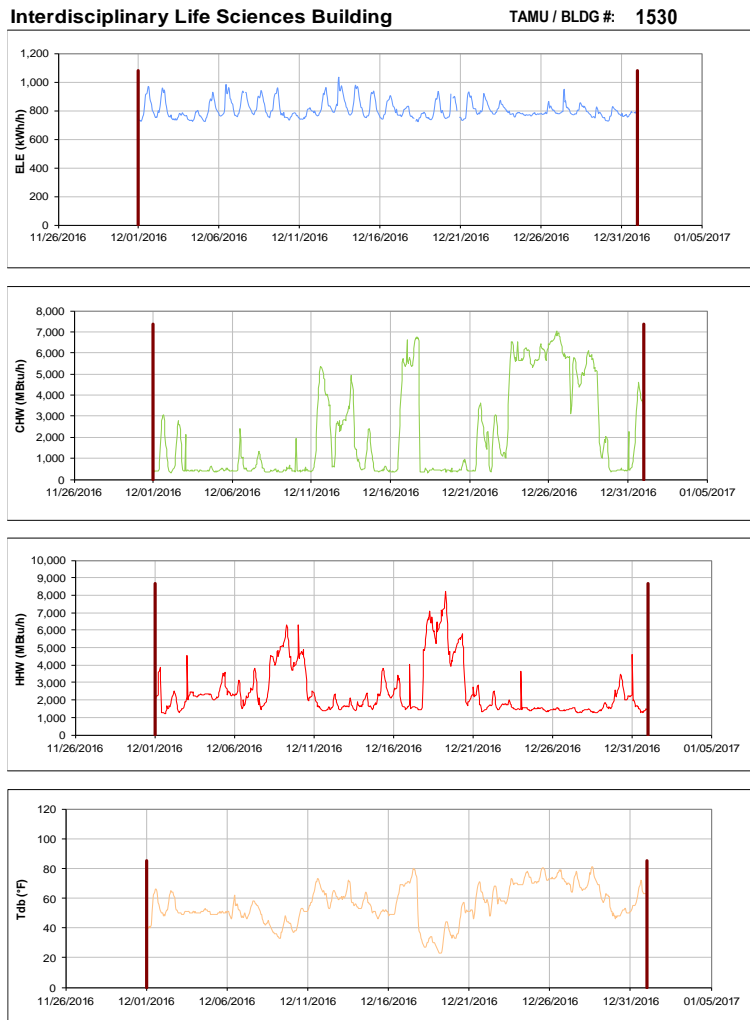


Figure III-163 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Interdisciplinary Life Sciences Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-164 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture and Life Sciences Building during the Month of December 2016 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 December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

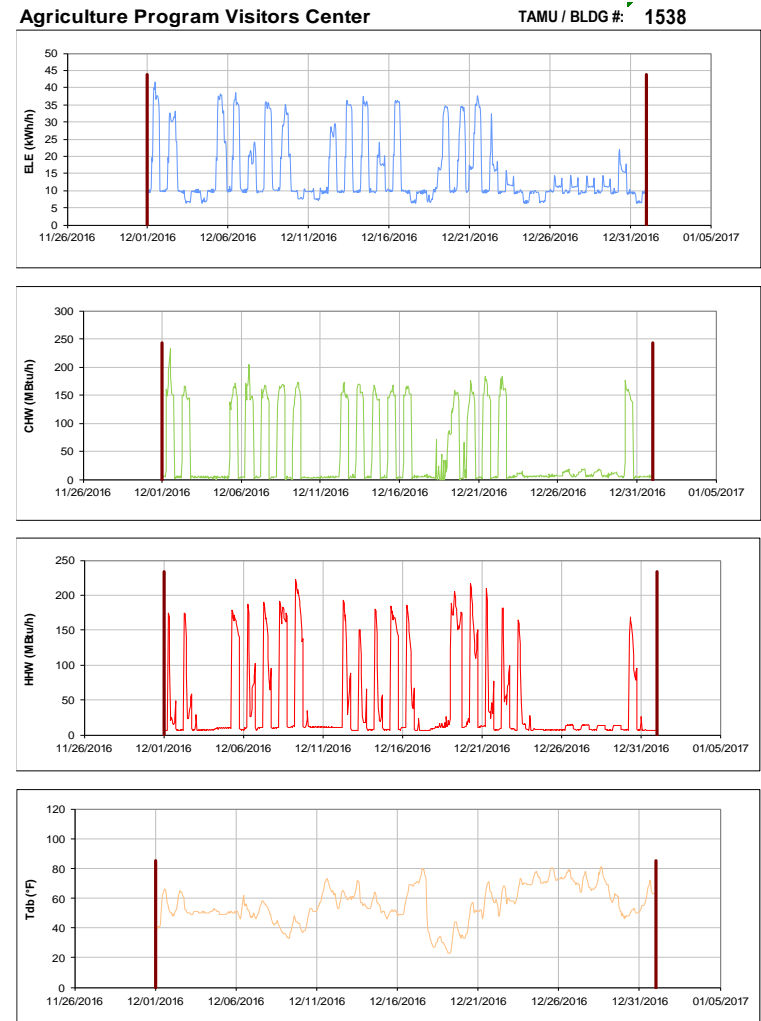


Figure III-166 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Agriculture Program Visitors Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Physical Education Activity Program Building TAMU / BLDG #: 1540

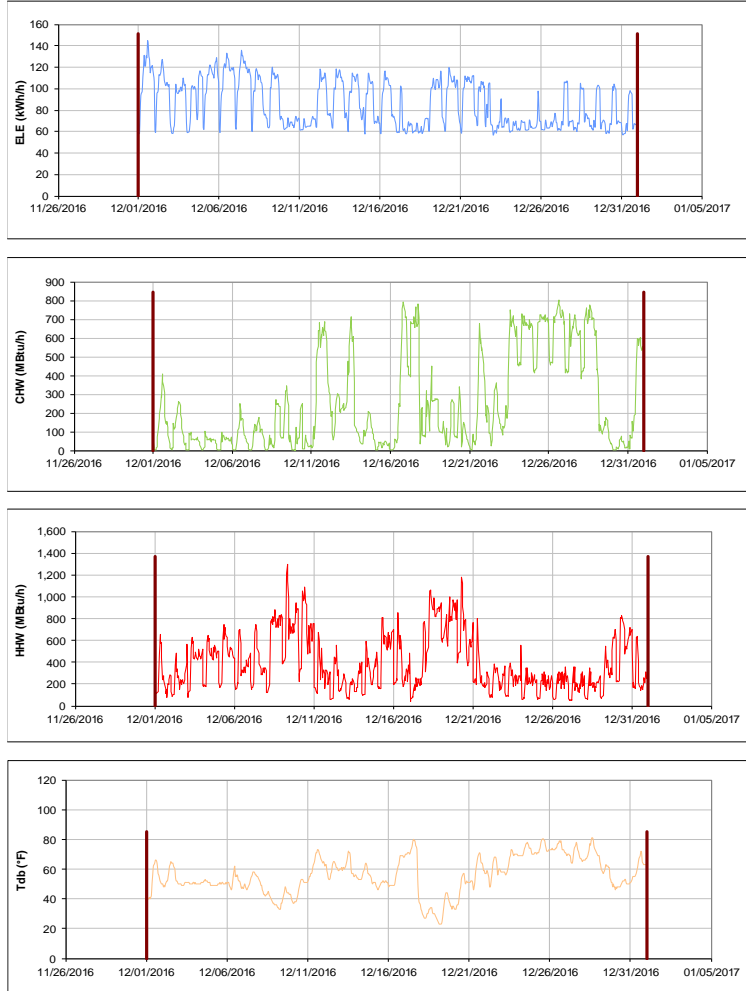


Figure III-167 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Physical Education Activity Program Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Human Clinical Research Building TAMU / BLDG #: 1542

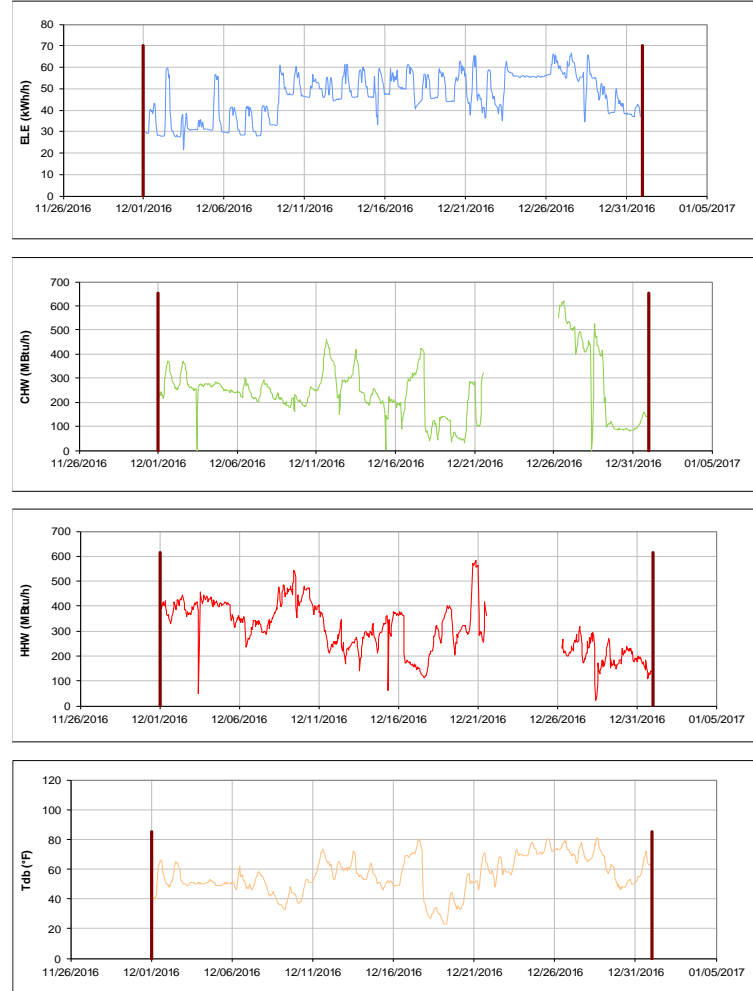


Figure III-168 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Human Clinical Research Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Cain Garage

TAMU / BLDG #: 1544

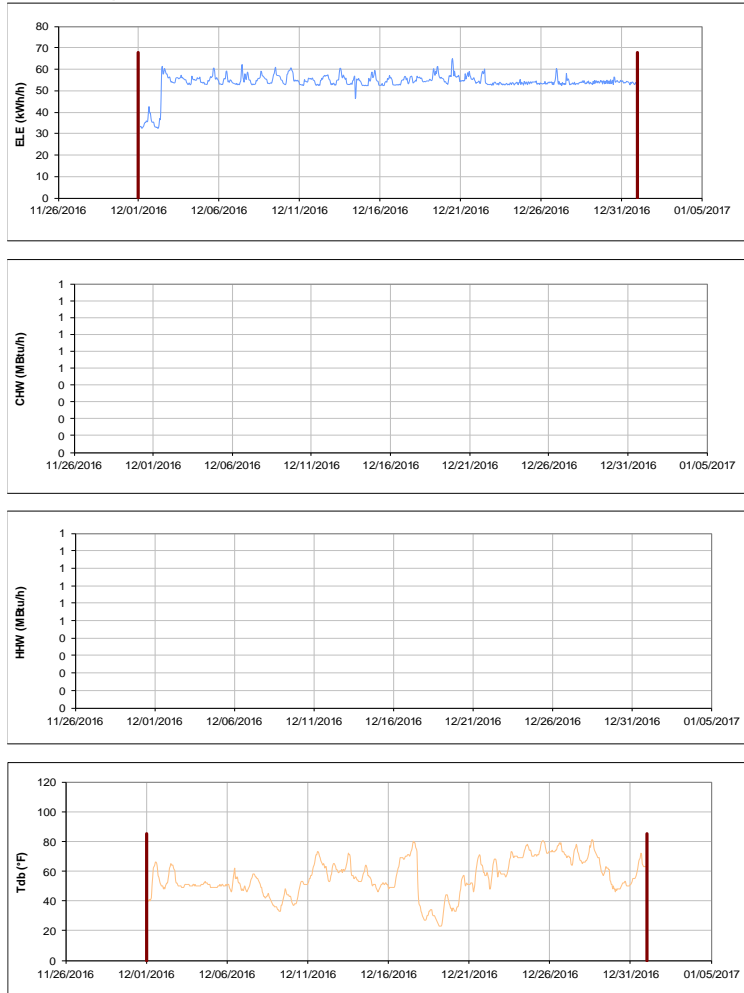


Figure III-169 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cain Garage during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Olsen Field at Bluebell Park

TAMU / BLDG #: 1550

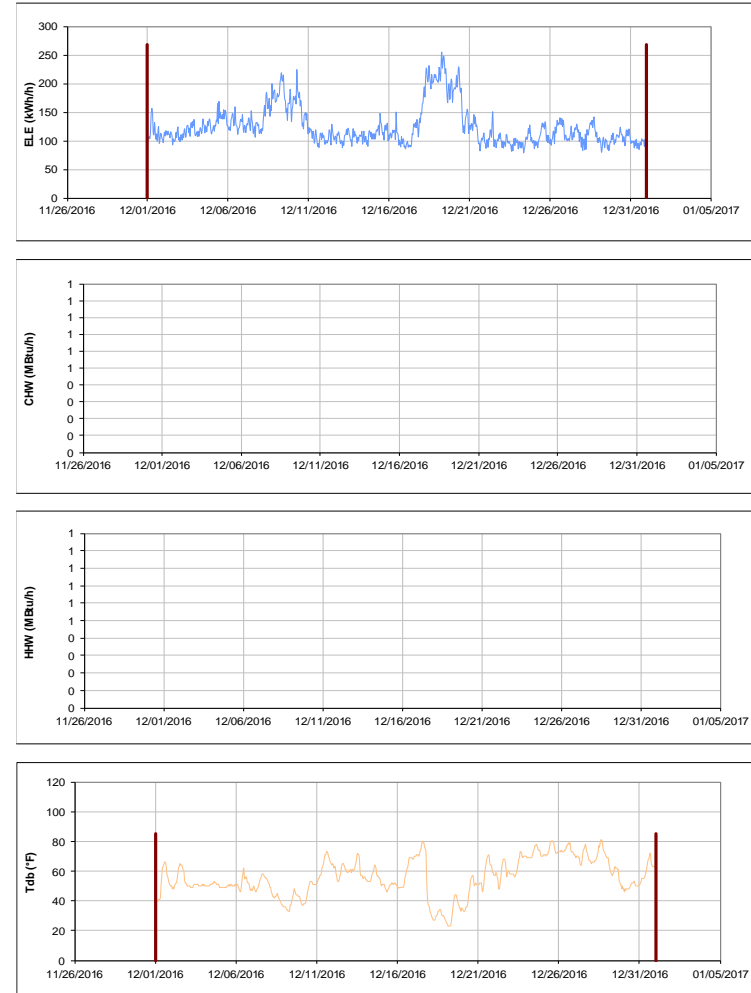


Figure III-170 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Olsen Field at Bluebell Park during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

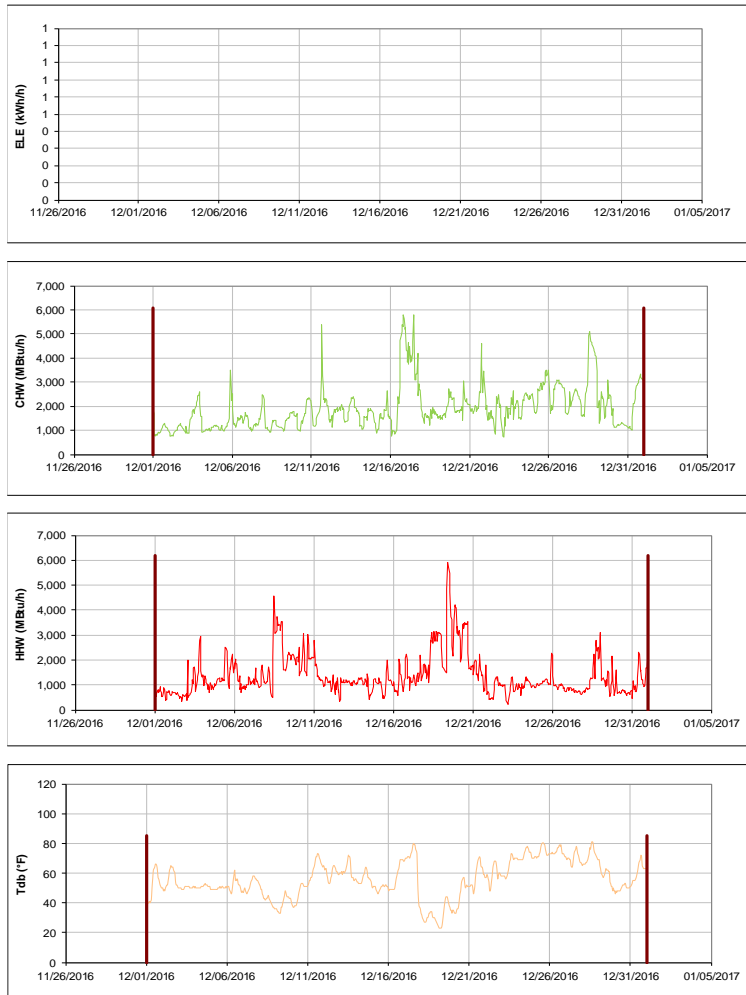


Figure III-171 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Reed Arena and Cox-McFerrin Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

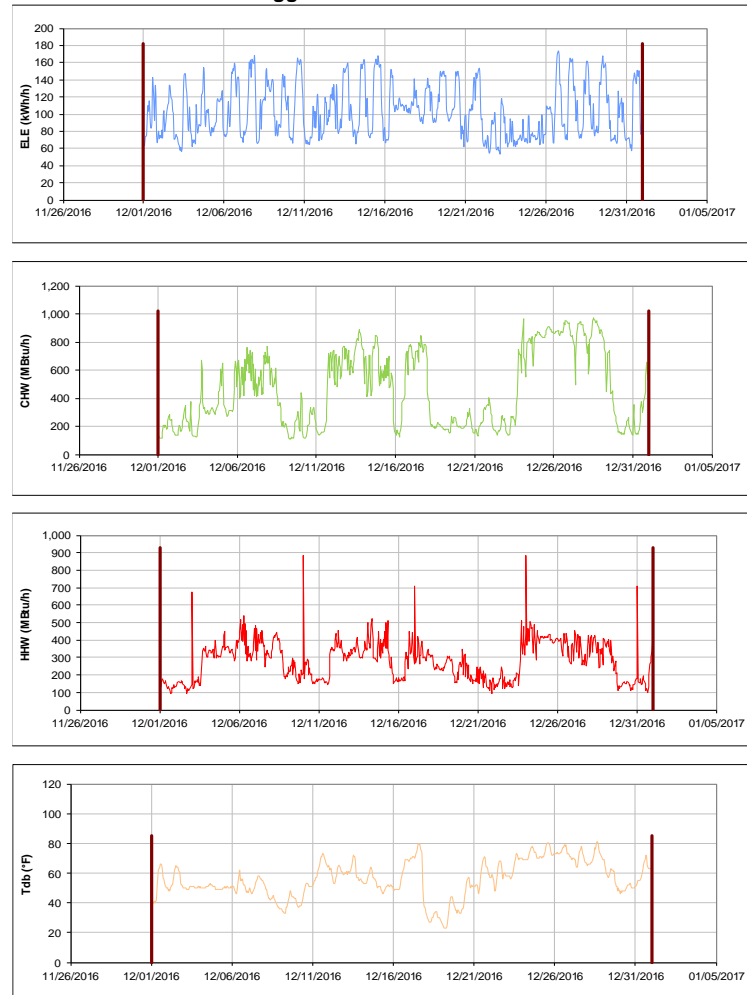


Figure III-172 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Cox-McFerrin Center for Aggie Basketball during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

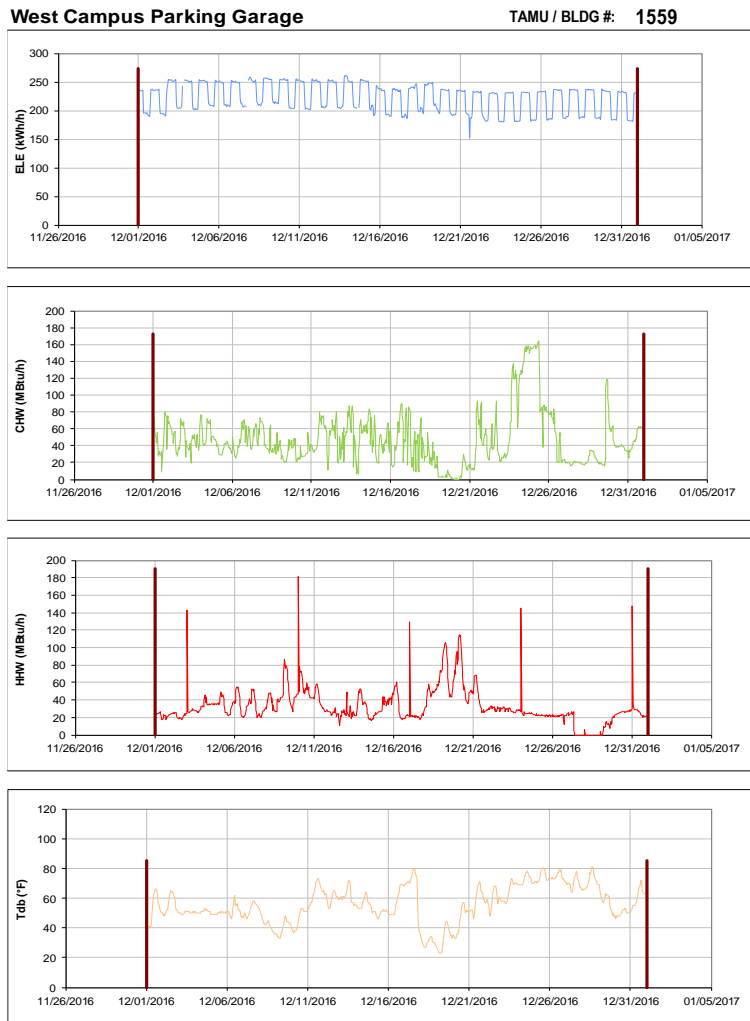


Figure III-173 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for West Campus Parking Garage during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

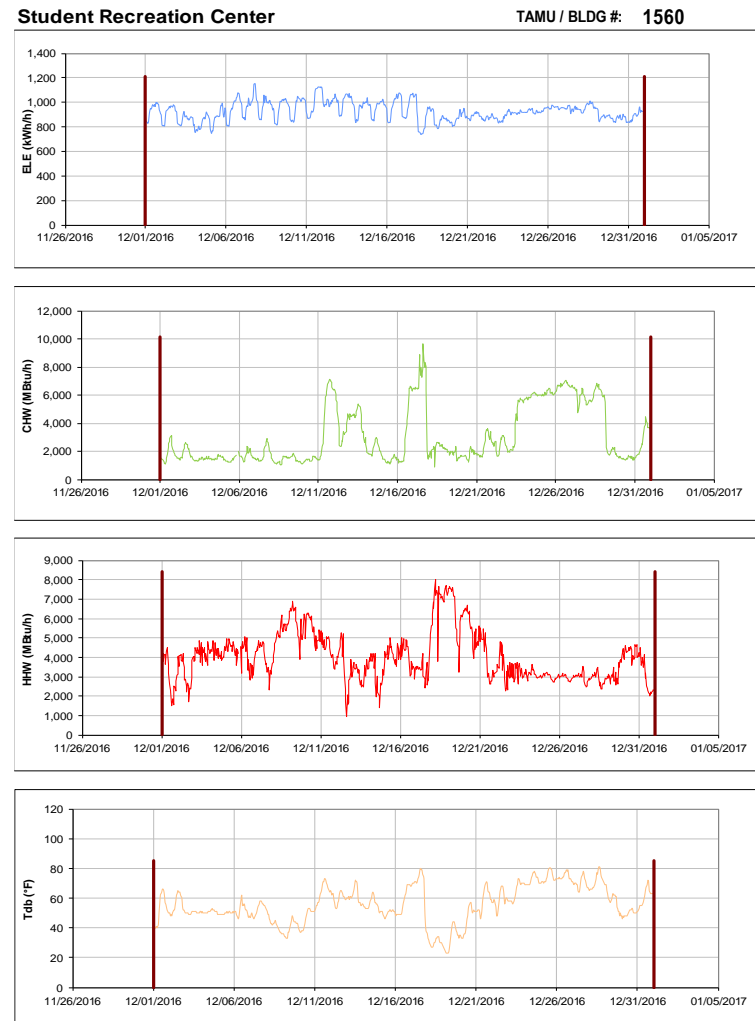


Figure III-174 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Student Recreation Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

White Creek Apartment 1 and White Creek Apts Activity Center / BLDG #: 589-1590

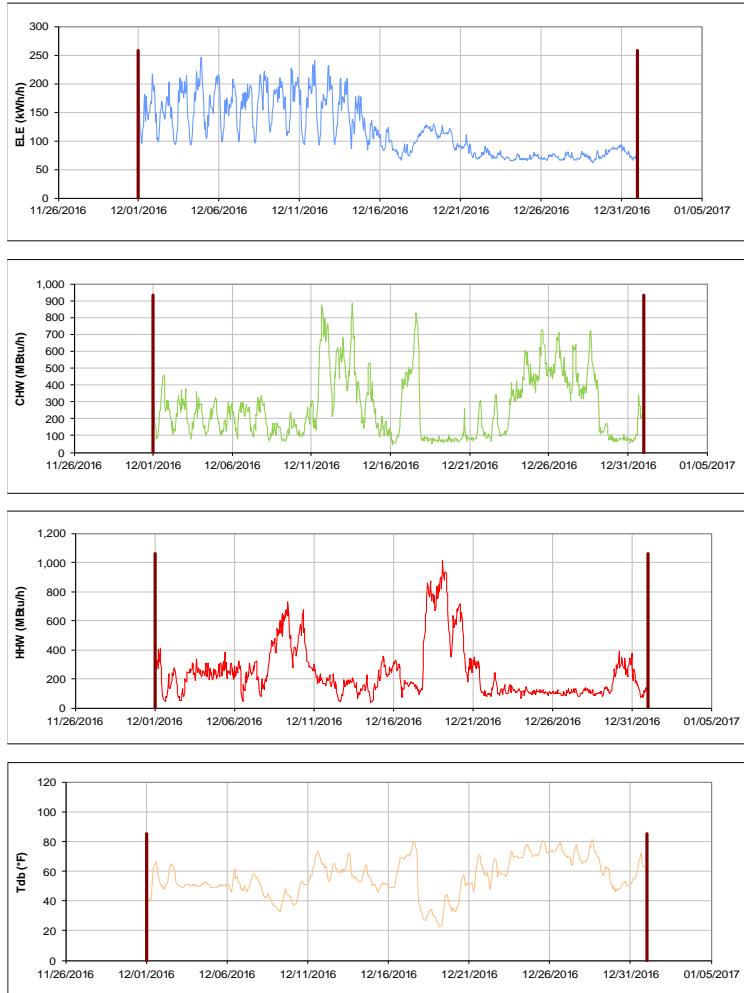


Figure III-175 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 1 and White Creek Apts Activity Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

White Creek Apartment 2 TAMU / BLDG #: 1591

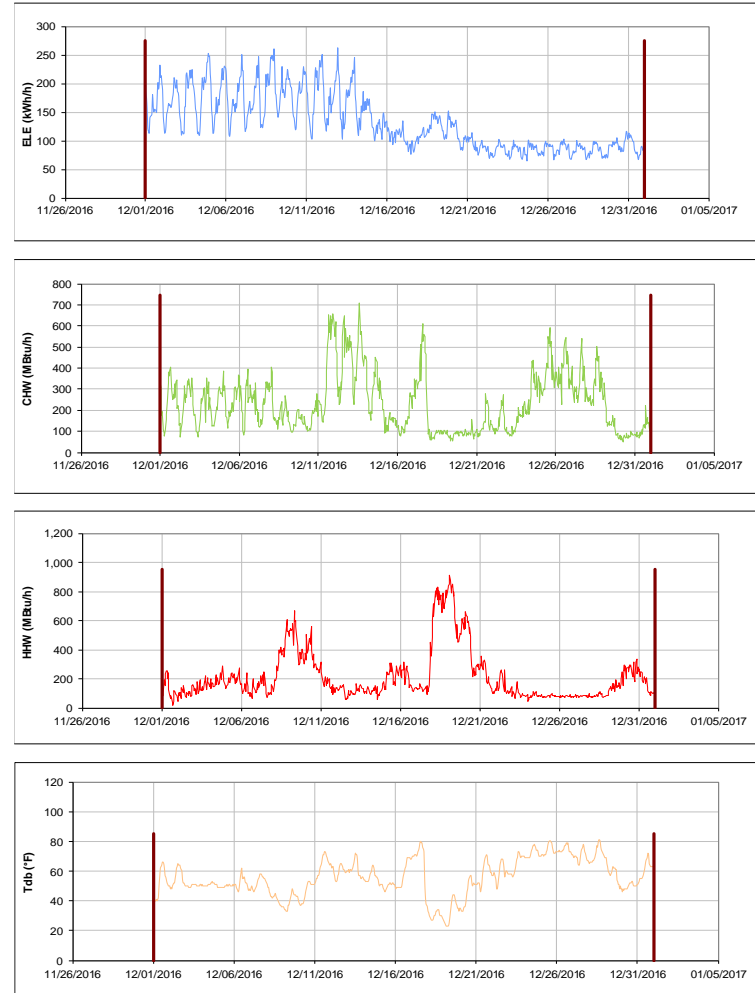


Figure III-176 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 2 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

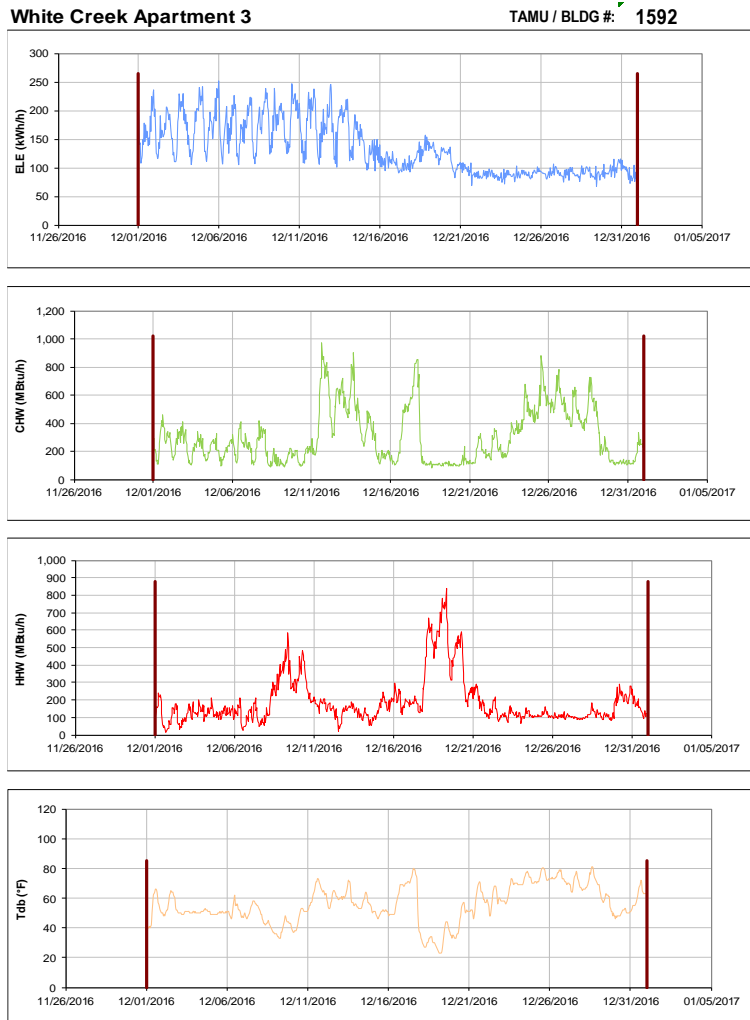


Figure III-177 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for White Creek Apartment 3 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

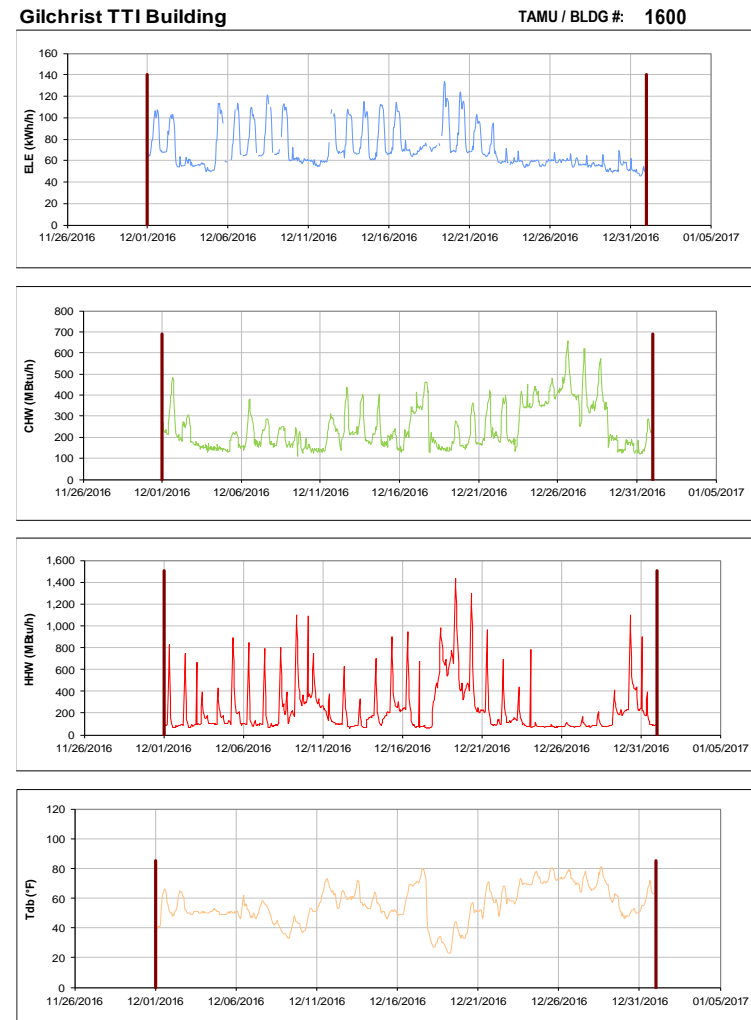


Figure III-178 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Gilchrist TTI Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



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

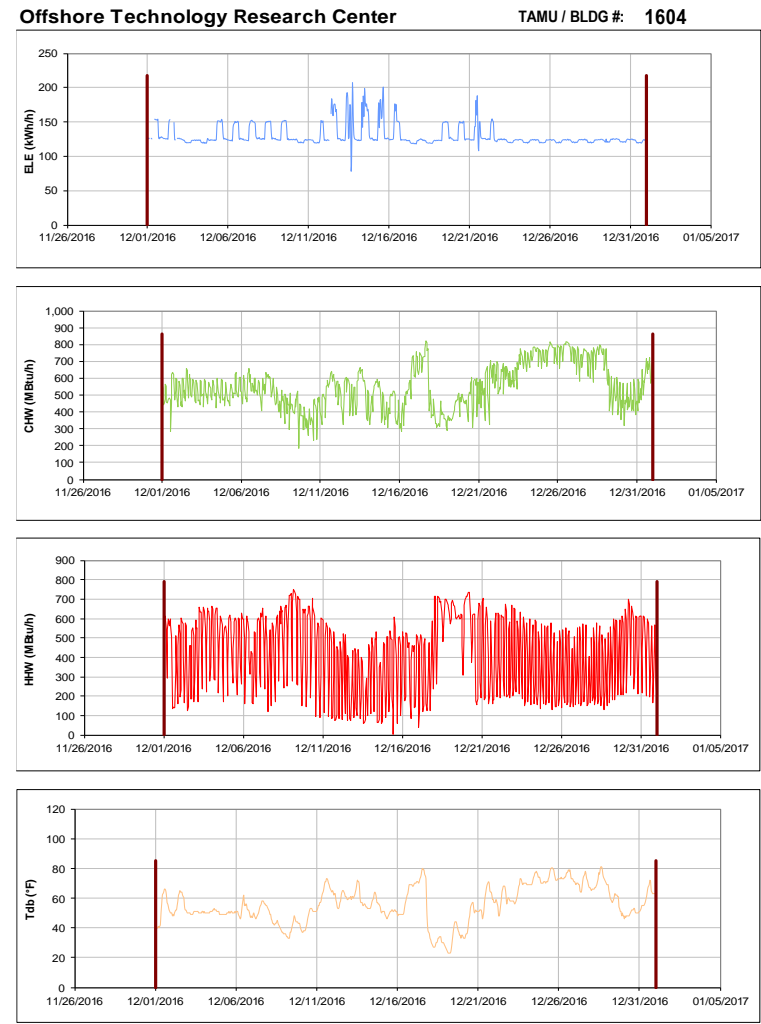


Figure III-180 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Offshore Technology Research Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

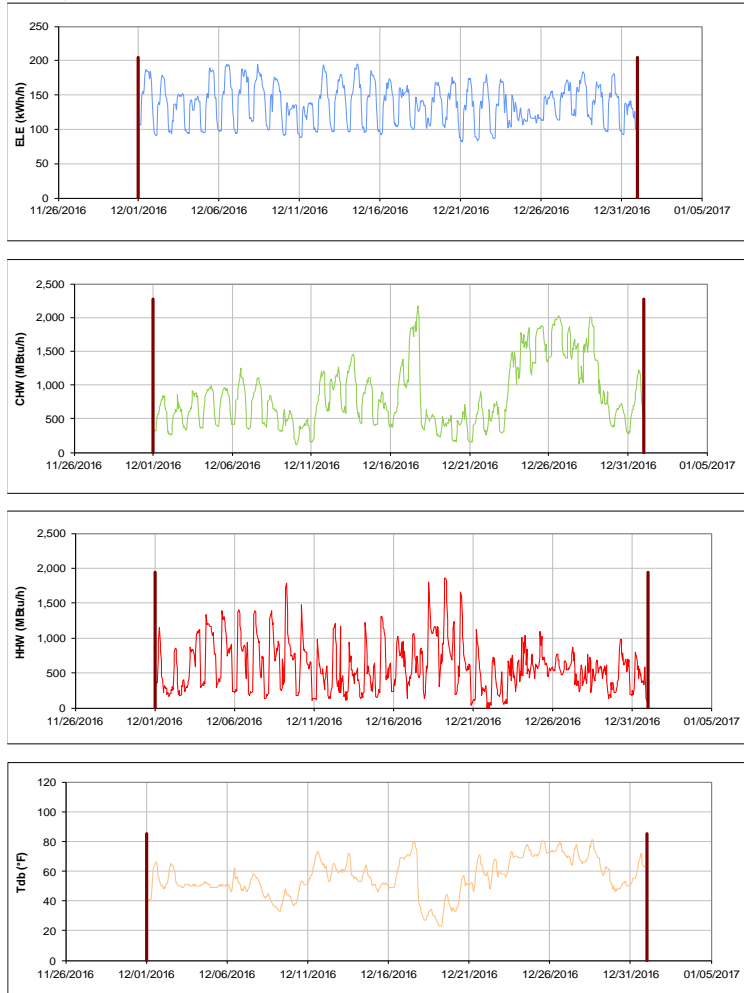


Figure III-181 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for George Bush Presidential Library & Museum during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Allen Building TAMU / BLDG #: 1607

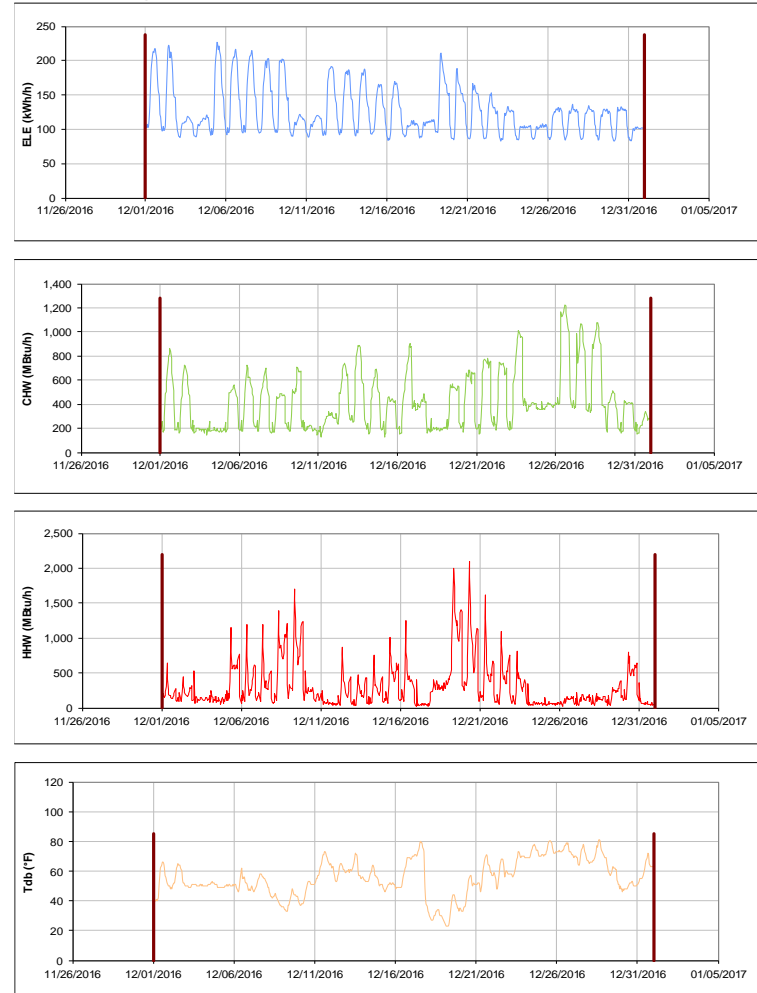


Figure III-182 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Allen Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

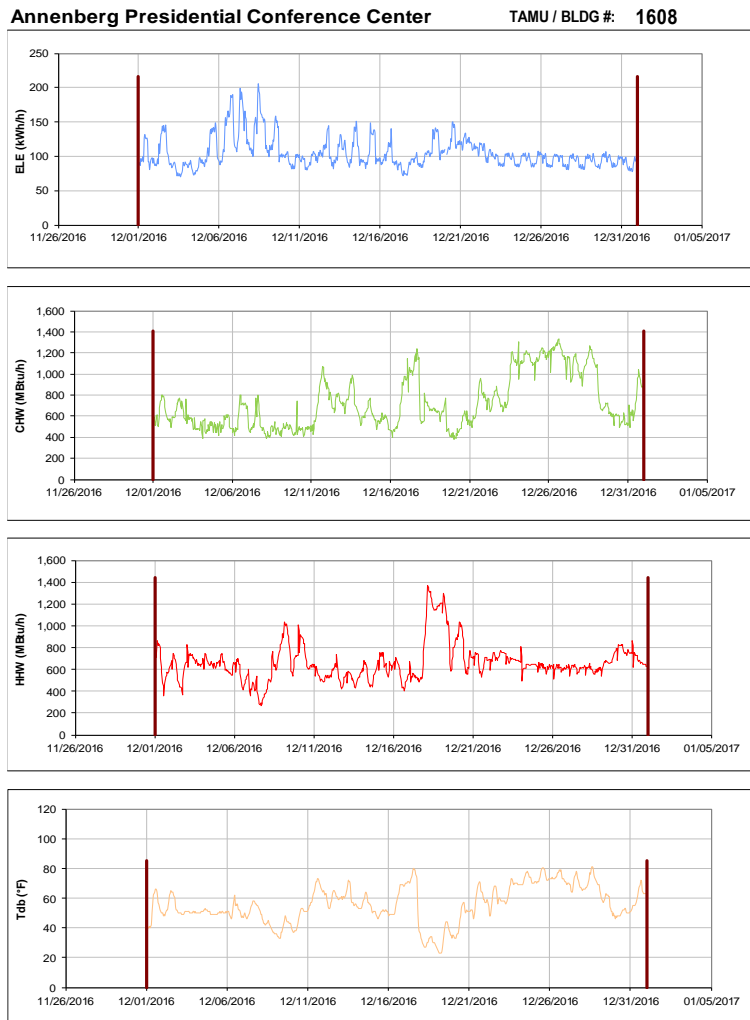


Figure III-183 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Annenberg Presidential Conference Center during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

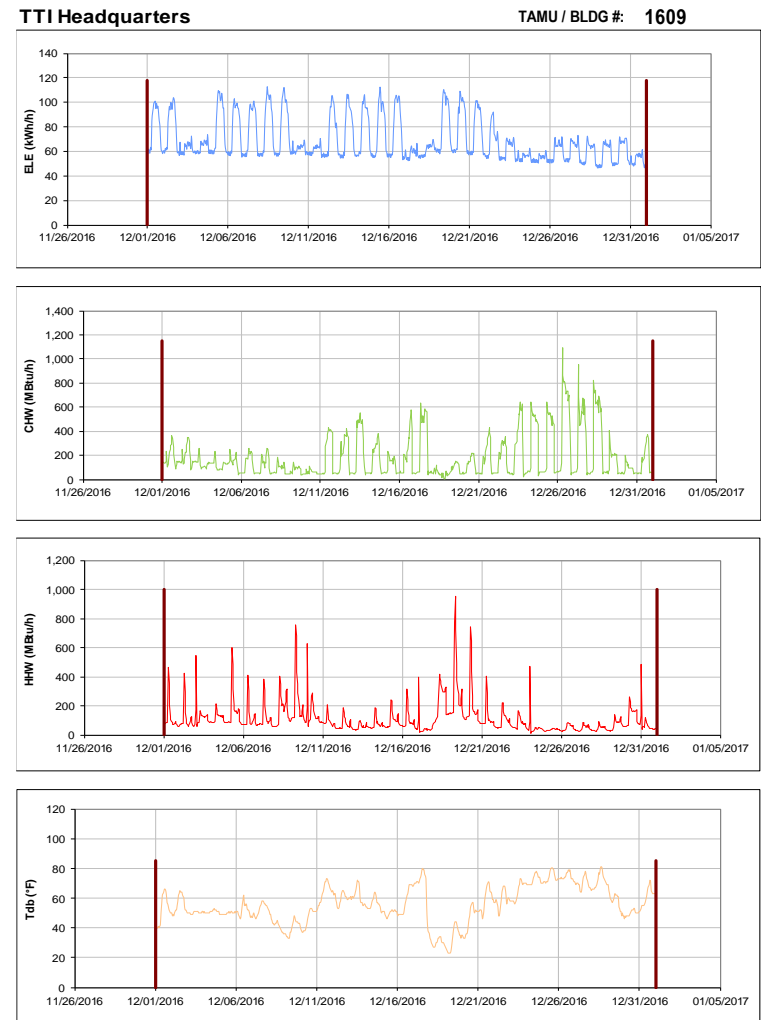


Figure III-184 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for TTI Headquarters during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-185 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Engineering Research Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

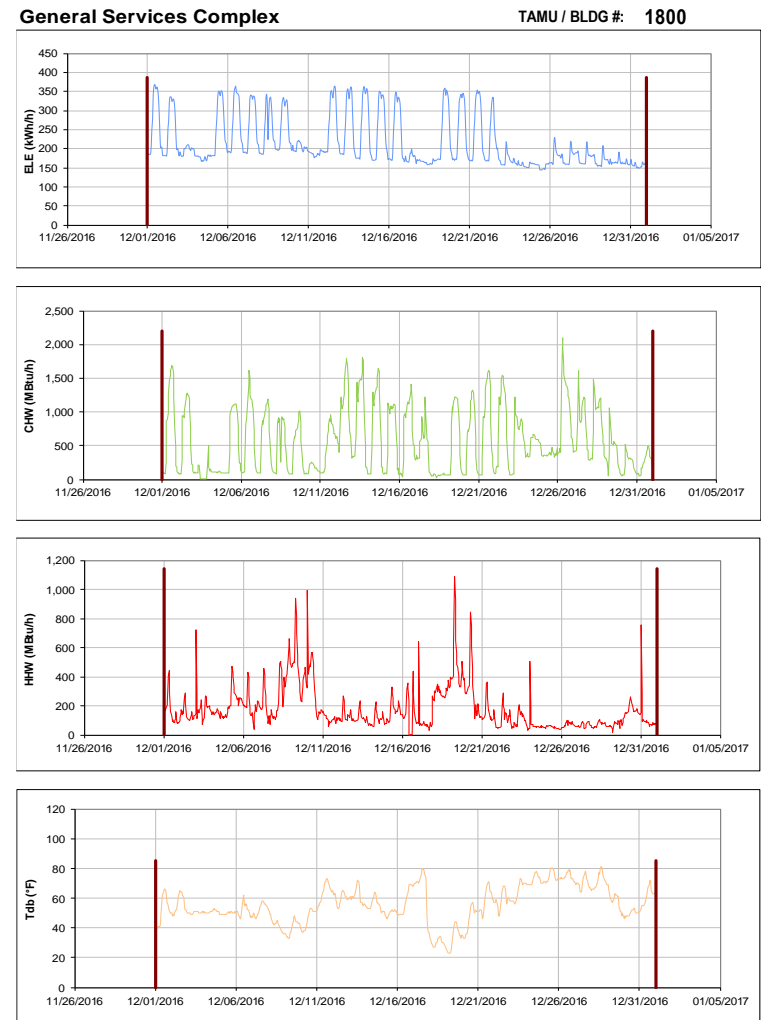


Figure III-186 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for General Services Complex during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

New TVMDL

TAMU / BLDG #: 1809

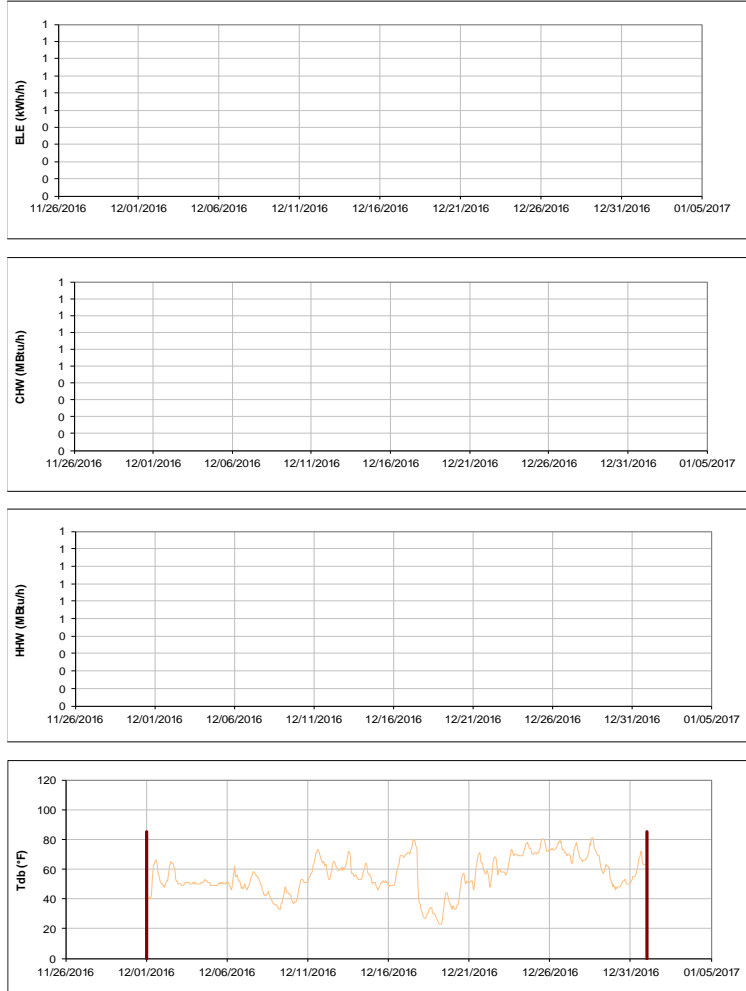


Figure III-187 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for New TVMDL during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Office of the State Chemist Building

TAMU / BLDG #: 1810

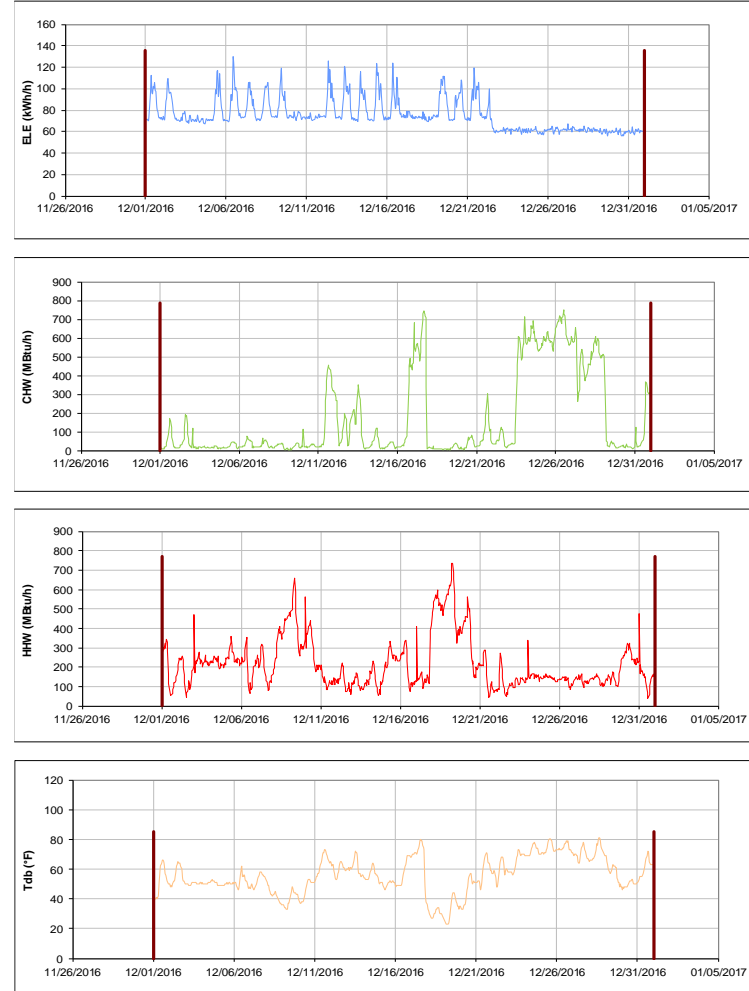


Figure III-188 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Office of the State Chemist Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

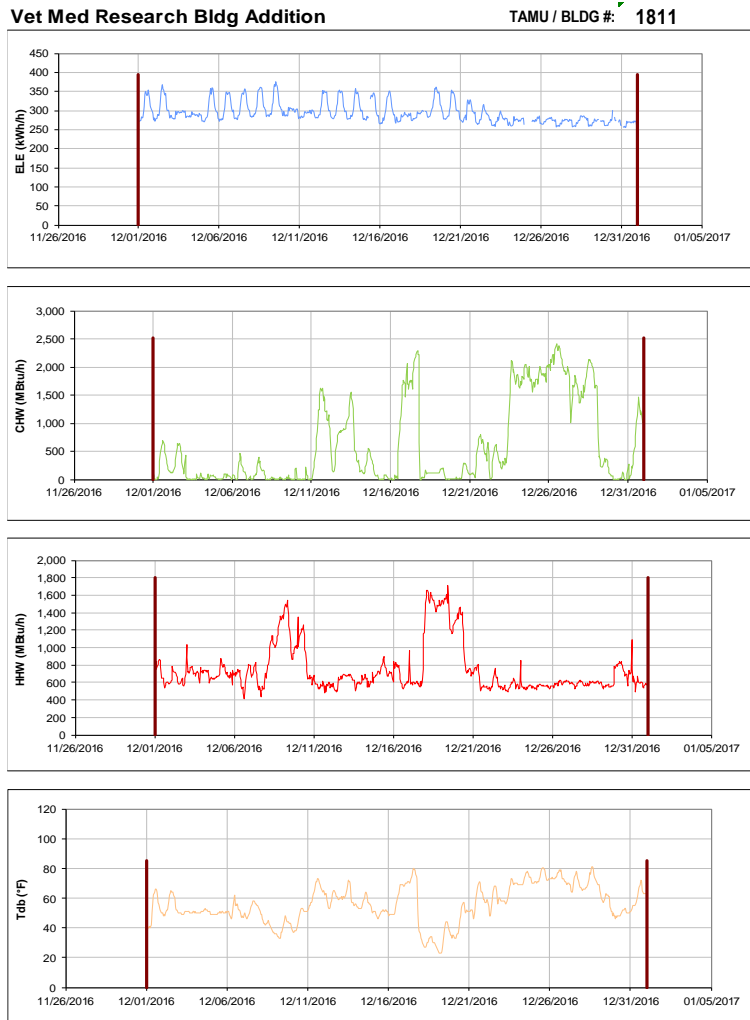


Figure III-189 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Vet Med Research Bldg Addition during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-190 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Veterinary Medicine Building 1, 2, and 3 during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

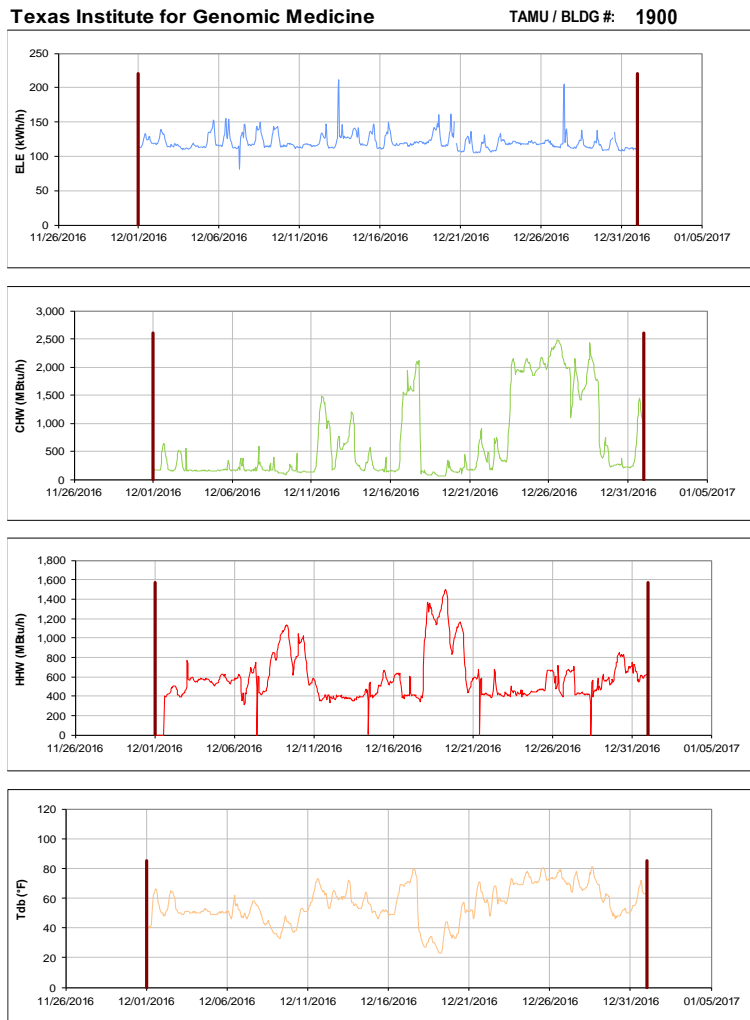


Figure III-191 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas Institute for Genomic Medicine during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

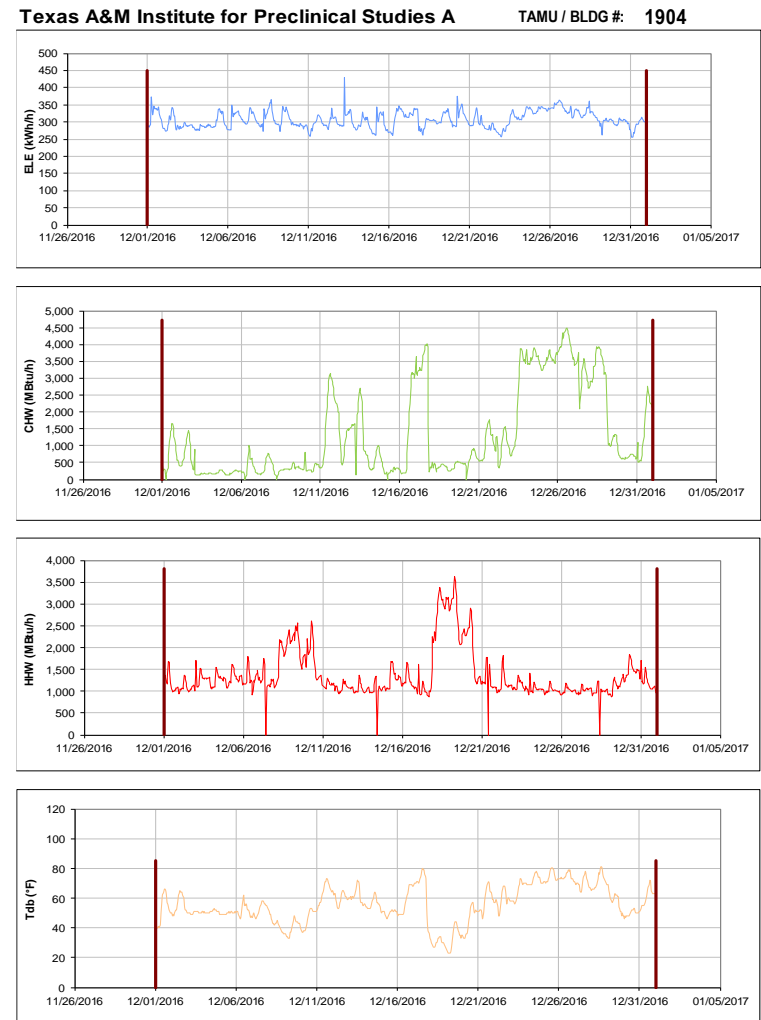


Figure III-192 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Texas A&M Institute for Preclinical Studies A during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

National Center for Therapeutics Manufacturing TAMU / BLDG #: 1910

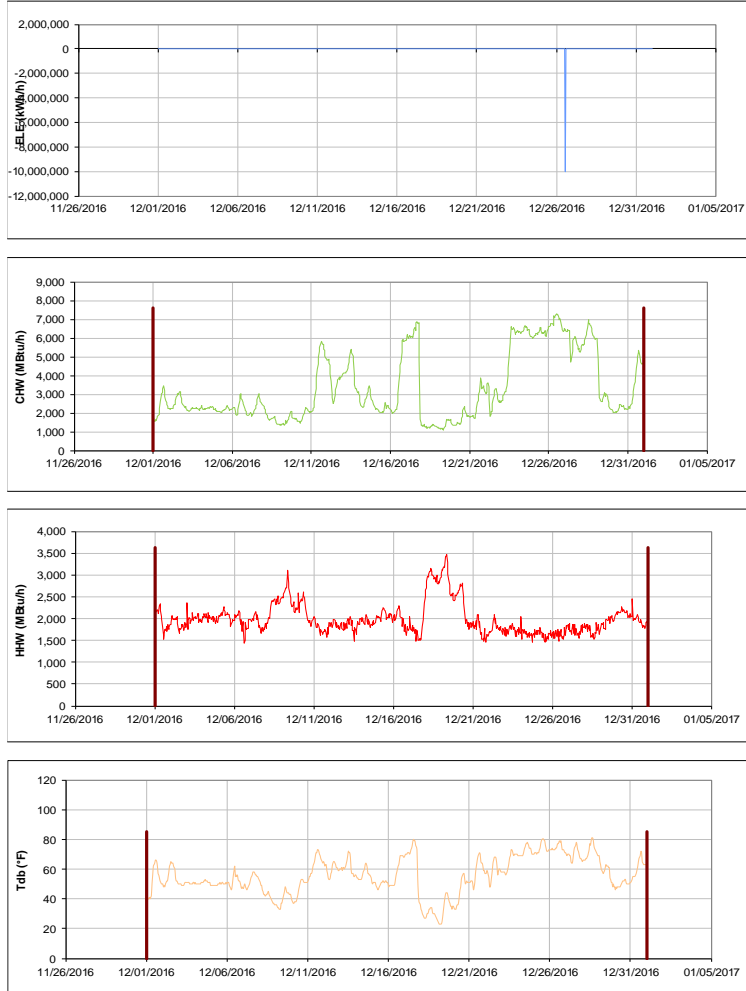


Figure III-193 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for National Center for Therapeutics Manufacturing during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

Multi-Species Research Building TAMU / BLDG #: 1911

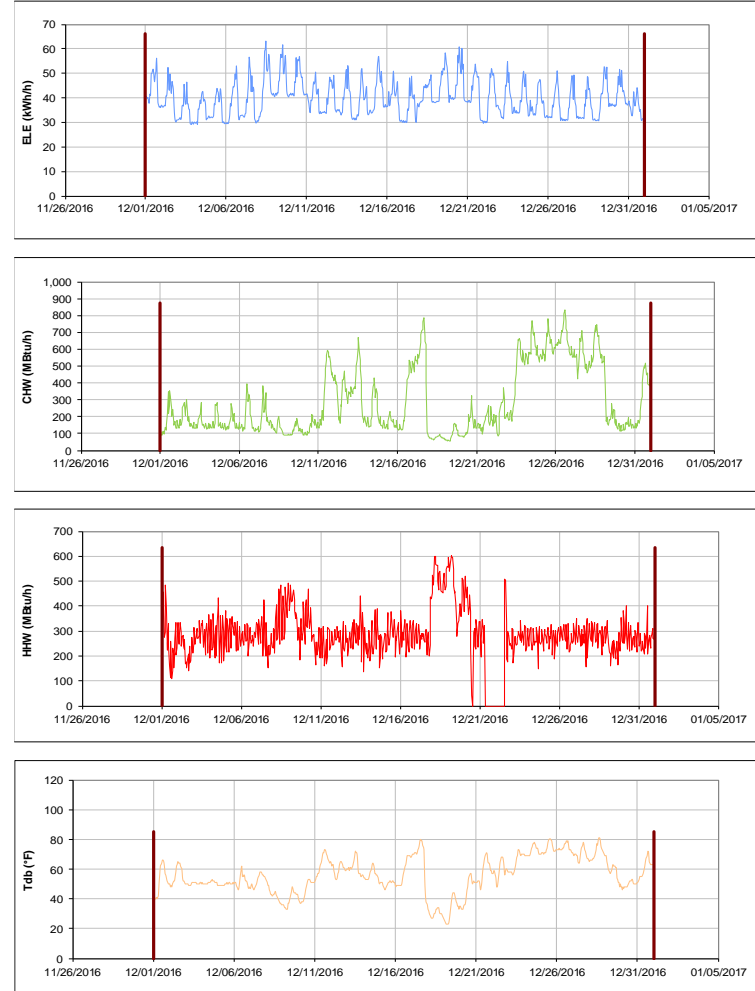


Figure III-194 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for Multi-Species Research Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

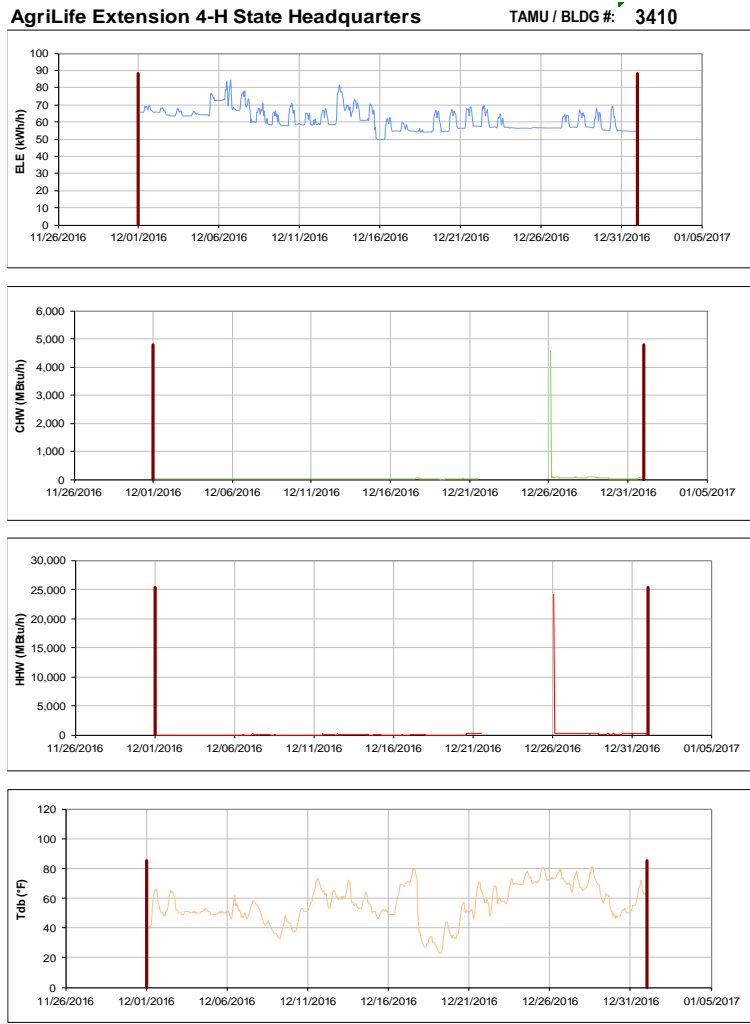


Figure III-195 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for AgriLife Extension 4-H State Headquarters during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX



Figure III-196 Hourly Whole Building Electricity, Chilled Water, and Hot Water Consumption for NCTM Manufacturing Building during the Month of December 2016 and the Corresponding Hourly Outdoor Dry Bulb Temperature for College Station, TX

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

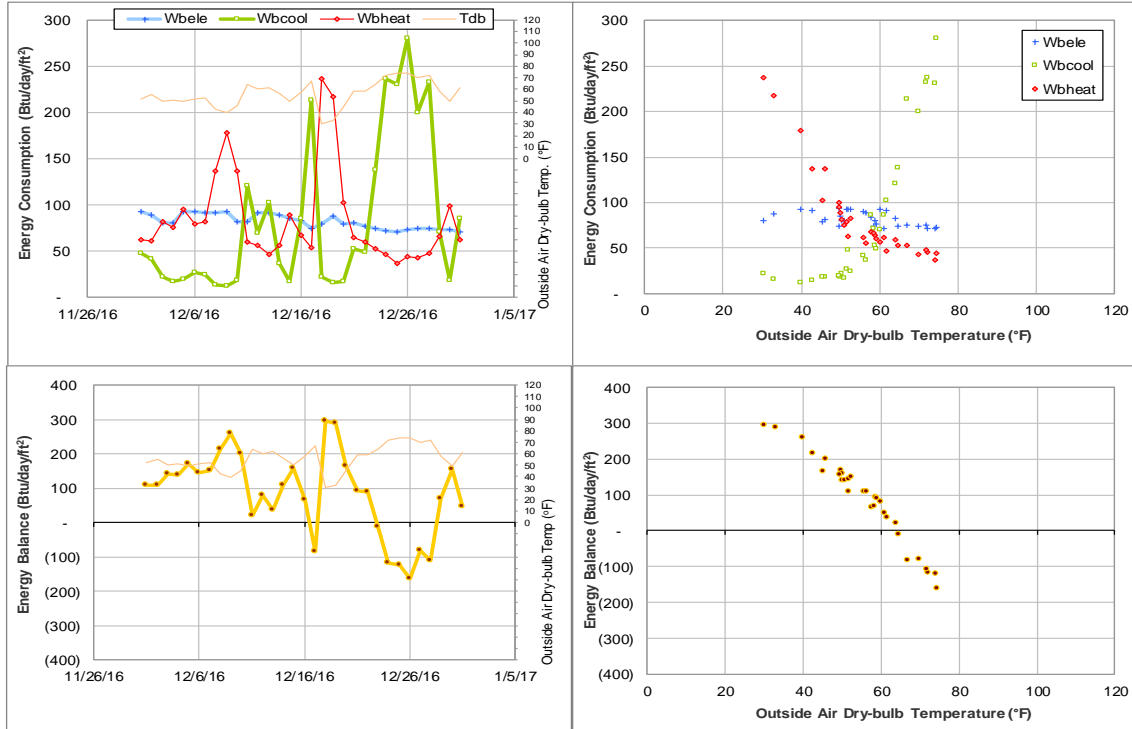


Figure IV-1 Emerging Technologies Building TAMU BLDG # 270 Energy Balance Plot during December 2016

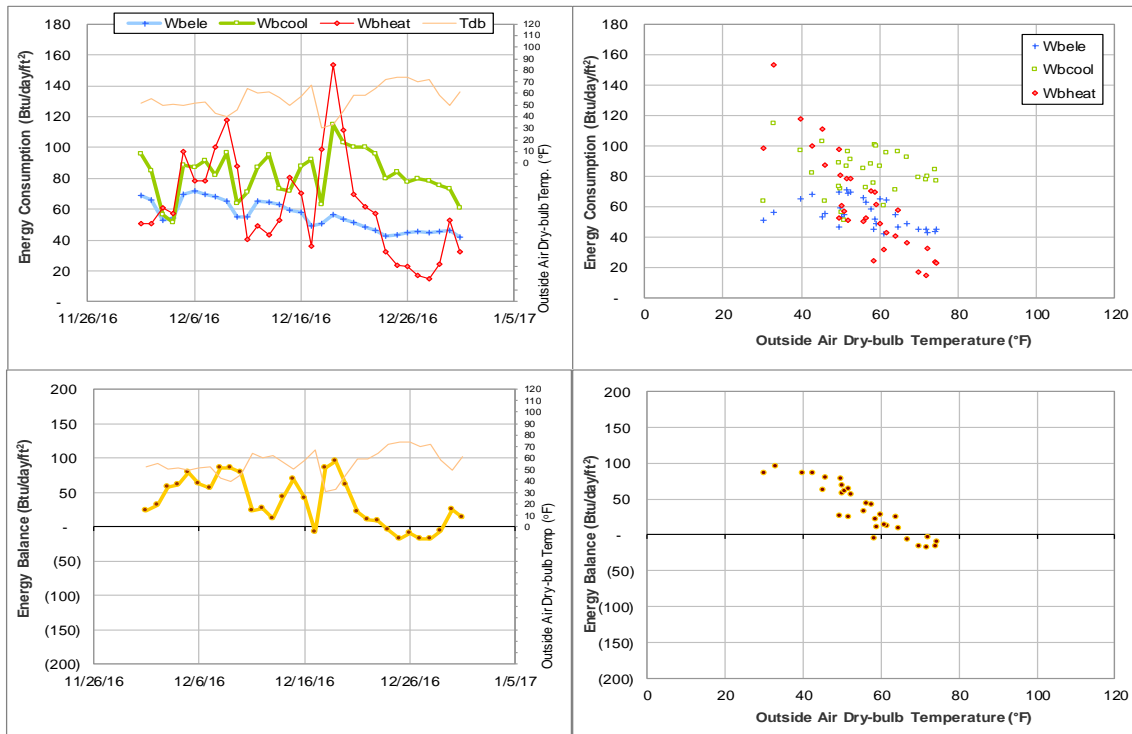


Figure IV-2 Liberal Arts and Arts & Humanities Building TAMU BLDG # 275 Energy Balance Plot during December 2016

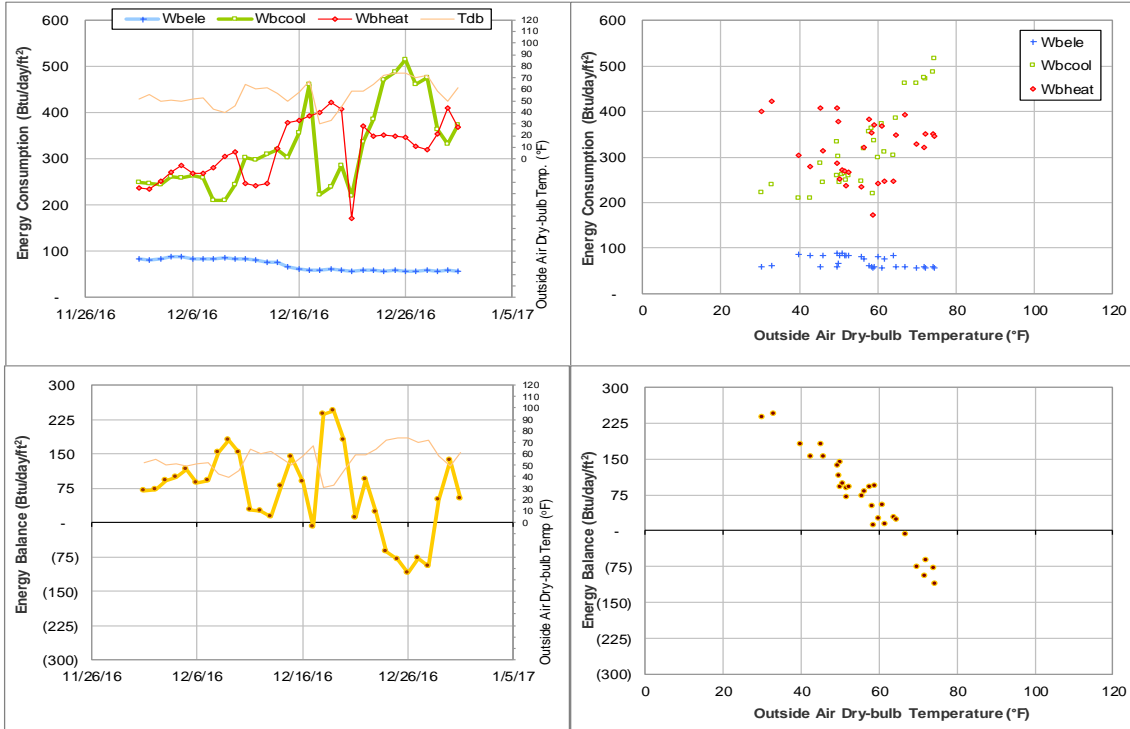


Figure IV-3 Wells Residence Hall TAMU BLDG # 290 Energy Balance Plot during December 2016

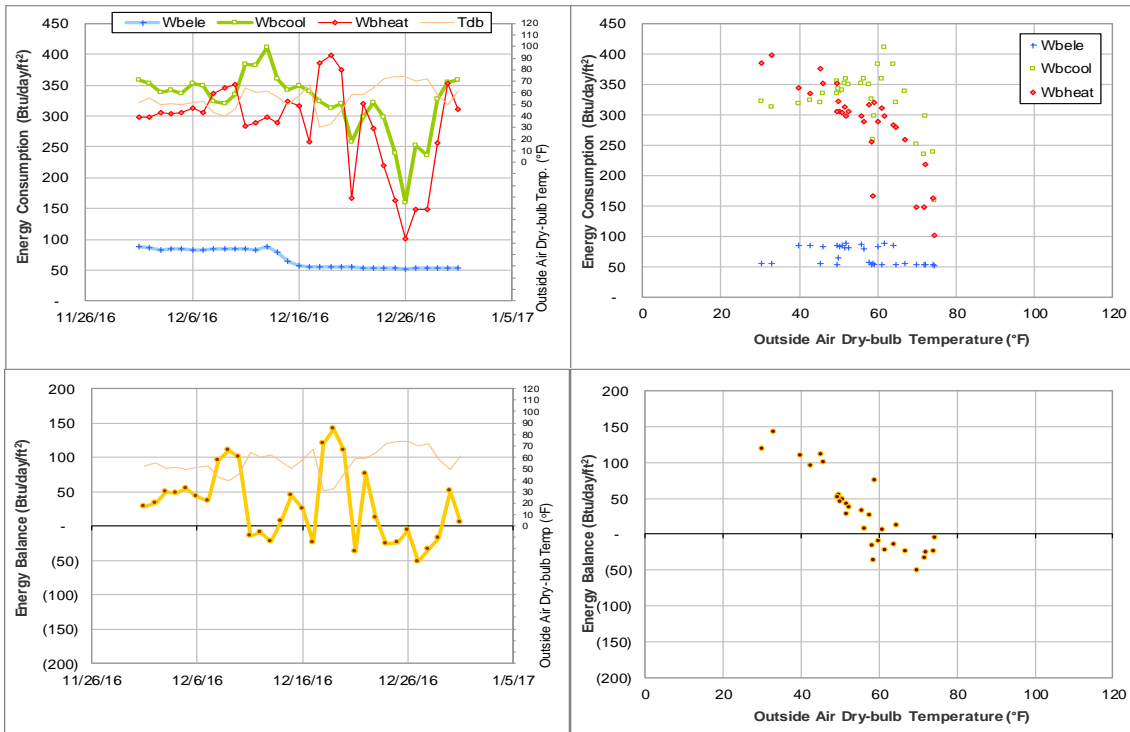


Figure IV-4 Rudder Residence Hall TAMU BLDG # 291 Energy Balance Plot during December 2016

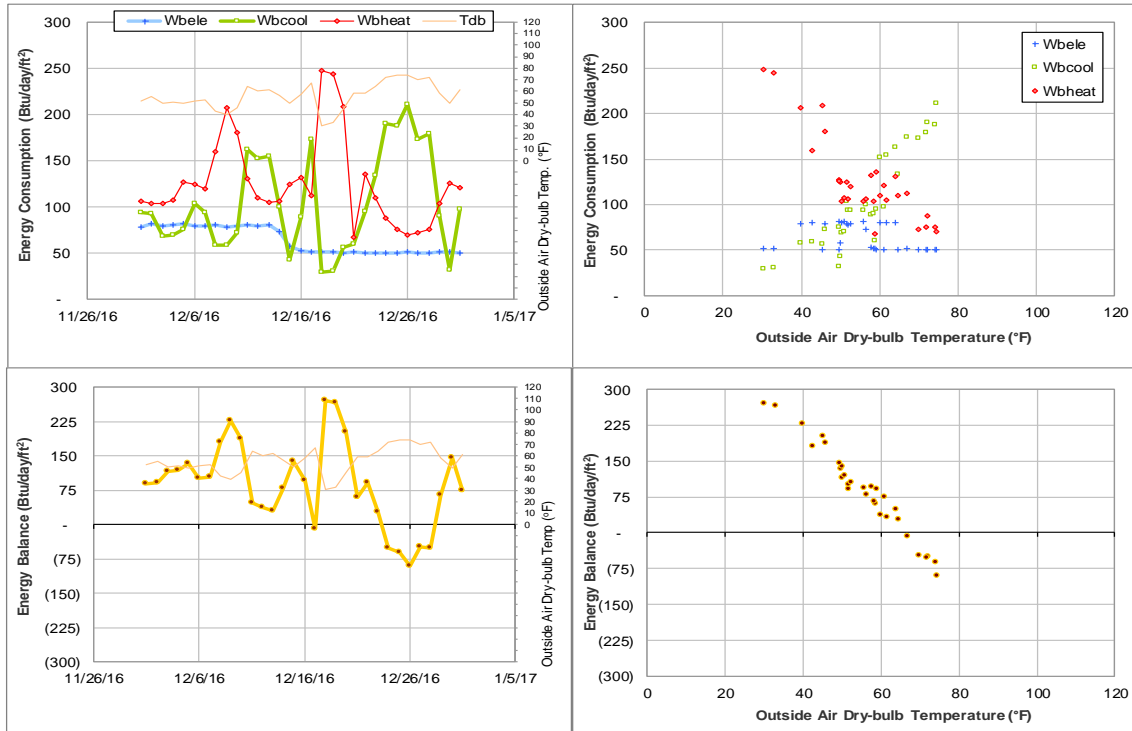


Figure IV-5 Upright Residence Hall TAMU BLDG # 292 Energy Balance Plot during December 2016

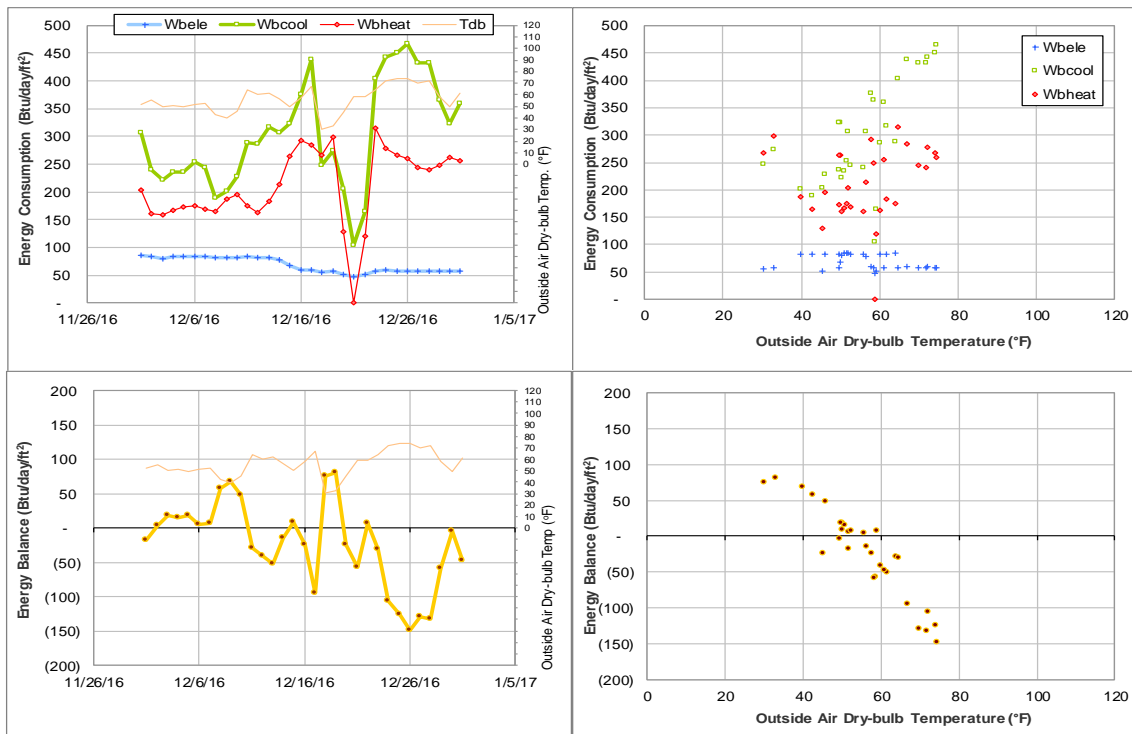


Figure IV-6 Appelt Residence Hall TAMU BLDG # 293 Energy Balance Plot during December 2016

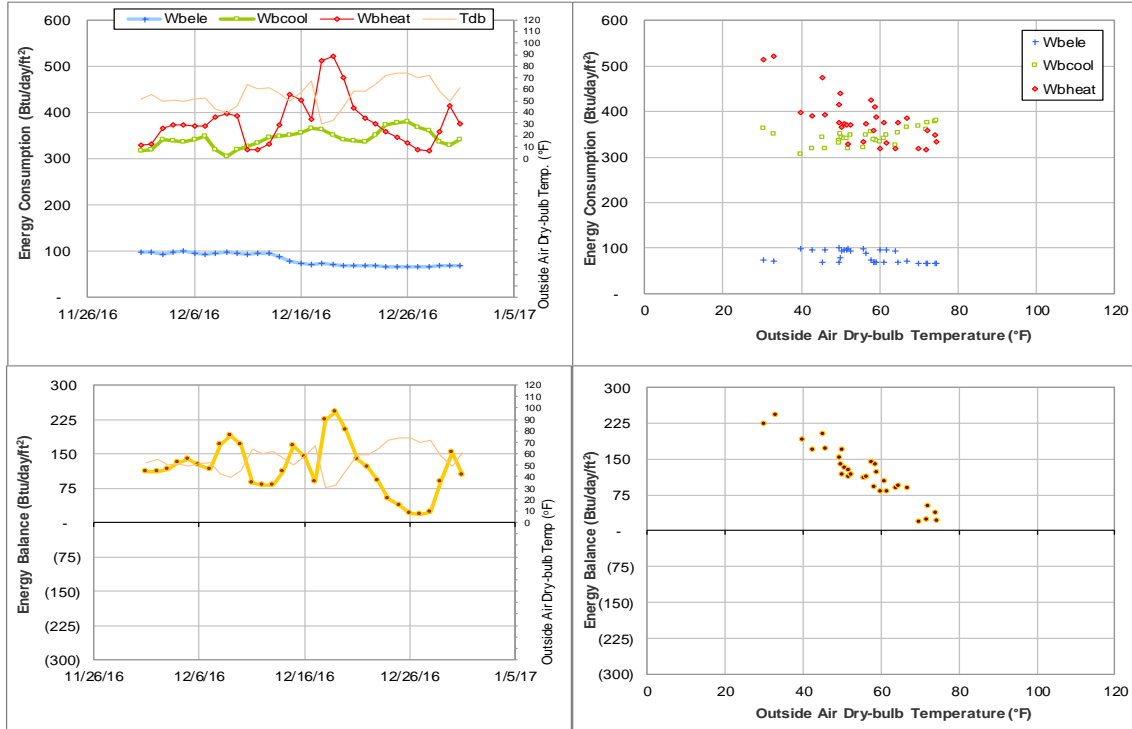


Figure IV-7 Lechner Residence Hall TAMU BLDG # 294 Energy Balance Plot during December 2016

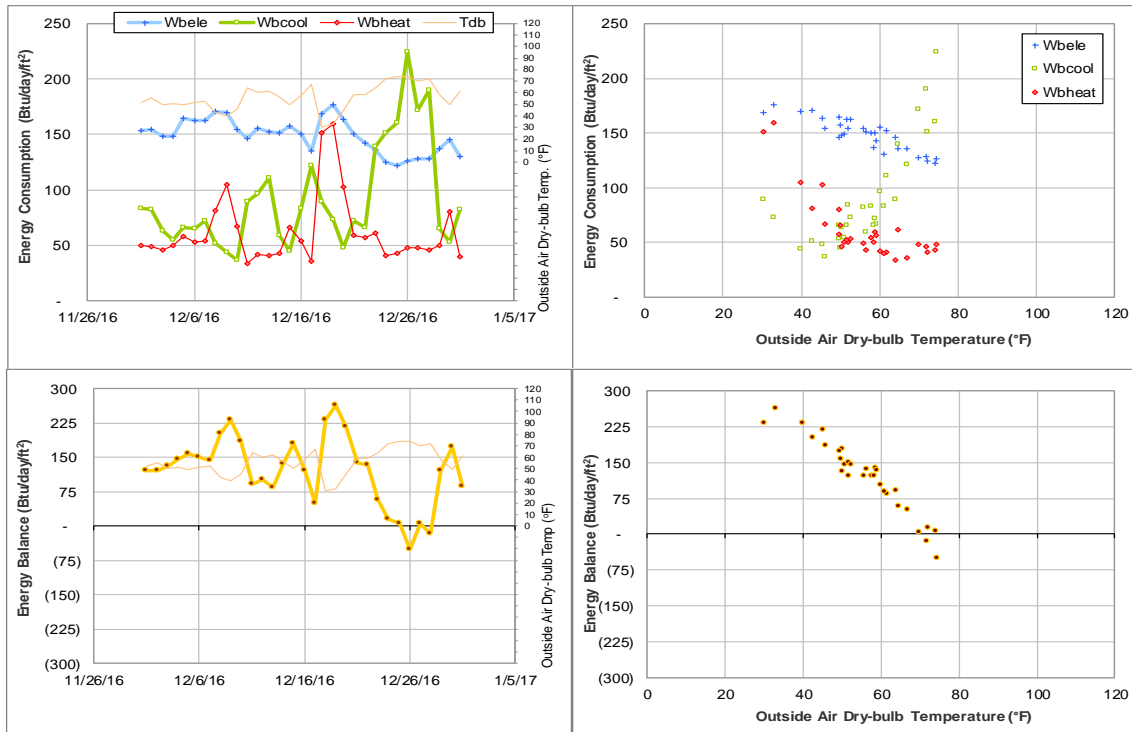


Figure IV-8 Mitchell Inst. for Fundamental Phys & Astronomy TAMU BLDG # 296 Energy Balance Plot during December 2016

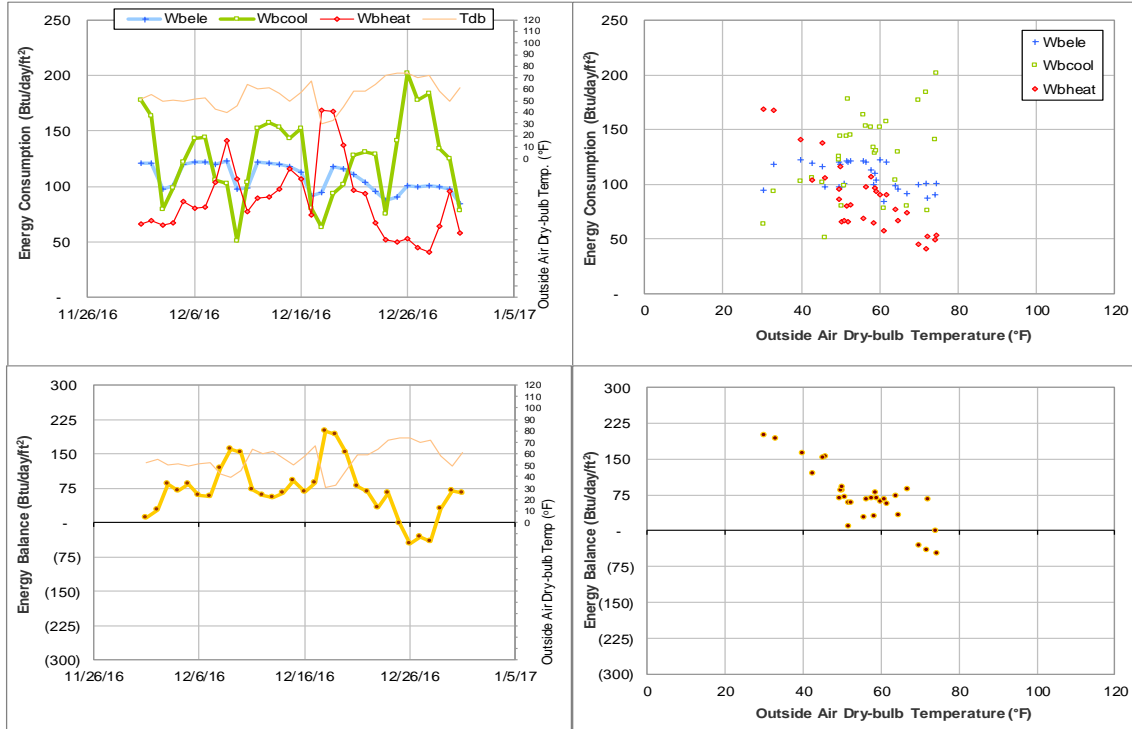


Figure IV-9 CE TTI Office & Lab Building TAMU BLDG # 325 Energy Balance Plot during December 2016

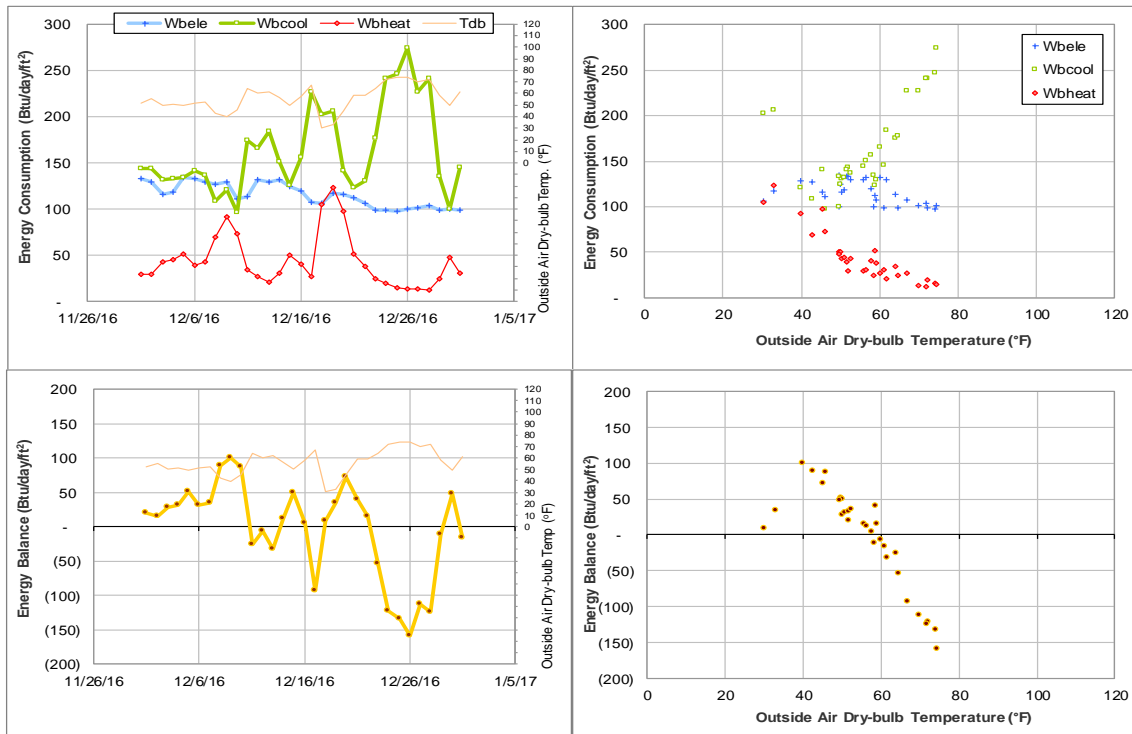


Figure IV-10 Bright Aerospace Building TAMU BLDG # 353 Energy Balance Plot during December 2016

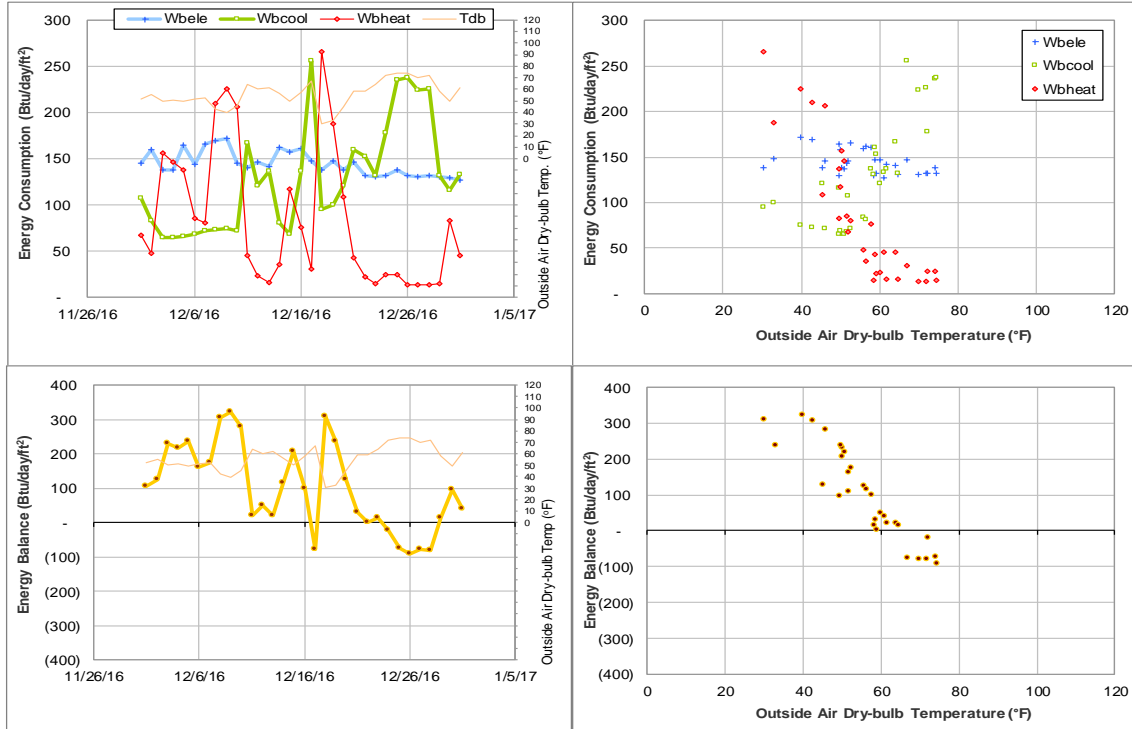


Figure IV-11 Davis Football Player Development Center TAMU BLDG # 358 Energy Balance Plot during December 2016

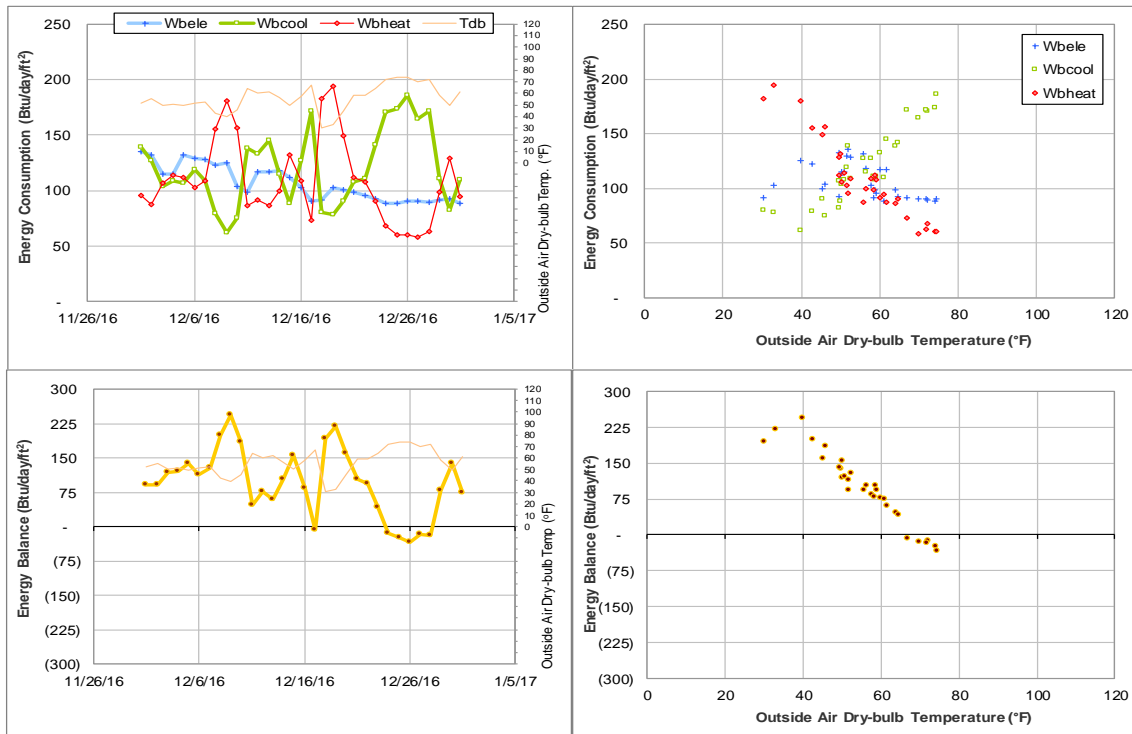


Figure IV-12 Architecture Building B&C TAMU BLDG # 359 and 432 Energy Balance Plot during December 2016

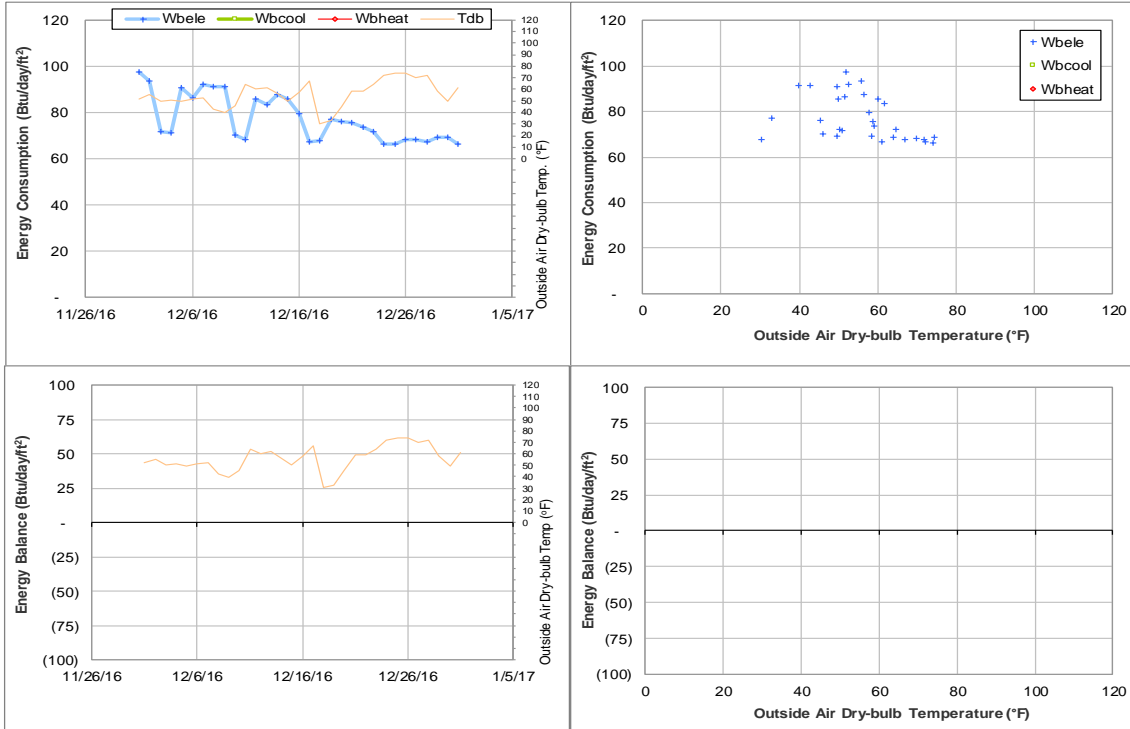


Figure IV-13 Architecture Building B TAMU BLDG # 359 Energy Balance Plot during December 2016

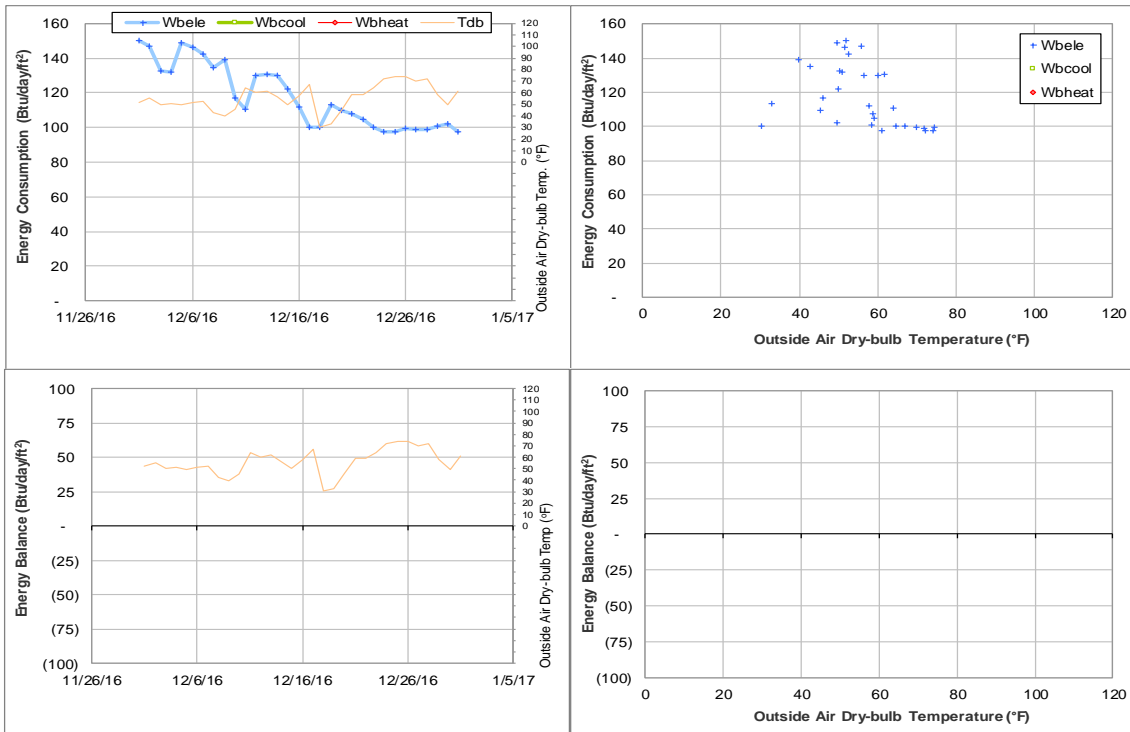


Figure IV-14 Architecture Building C TAMU BLDG # 432 Energy Balance Plot during December 2016

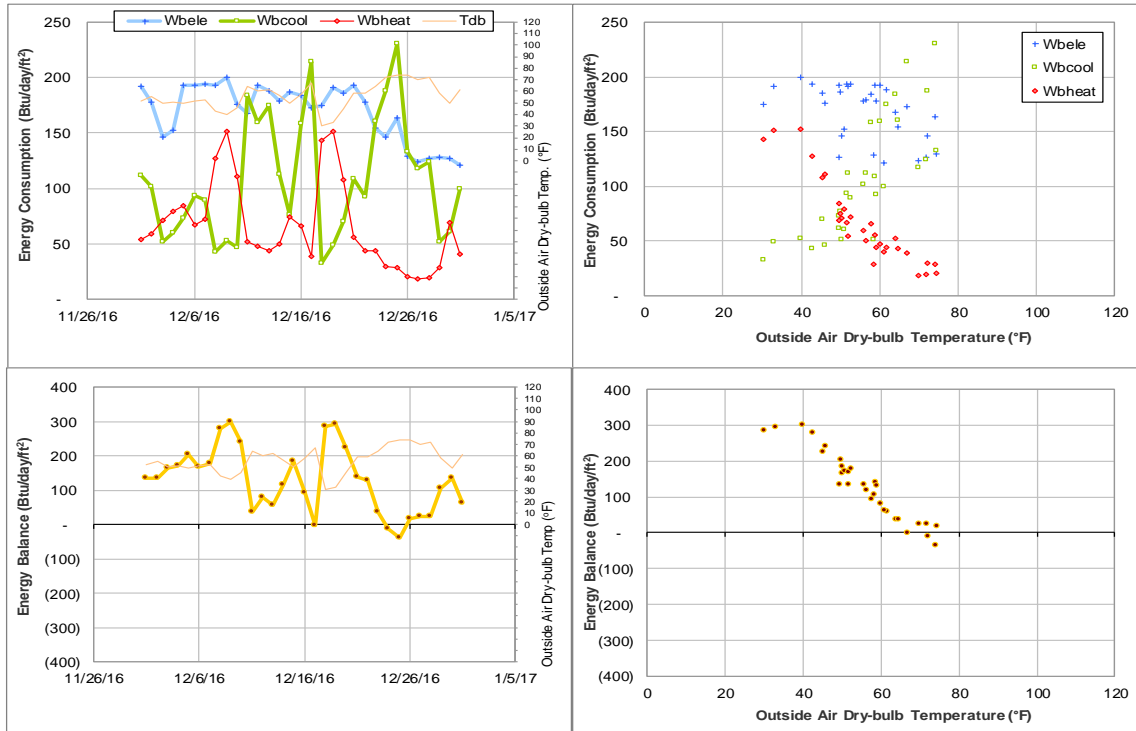


Figure IV-15 Bright Football Complex TAMU BLDG # 361 Energy Balance Plot during December 2016

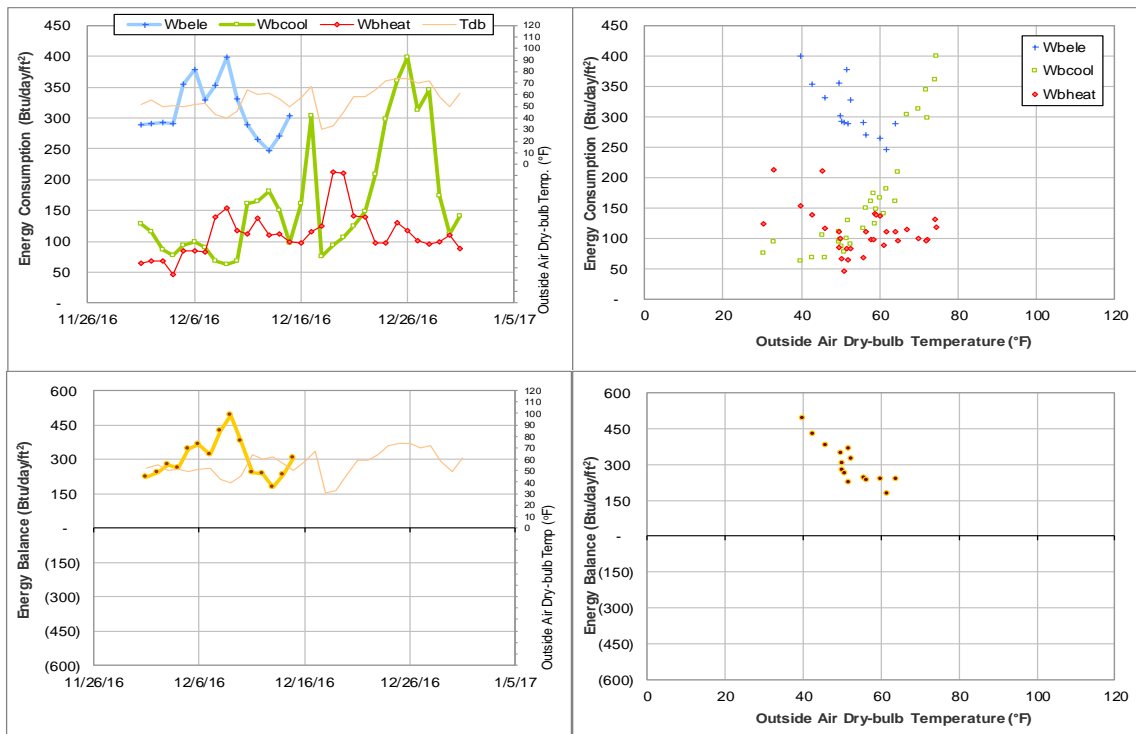


Figure IV-16 Kyle Field TAMU BLDG # 367 Energy Balance Plot during December 2016

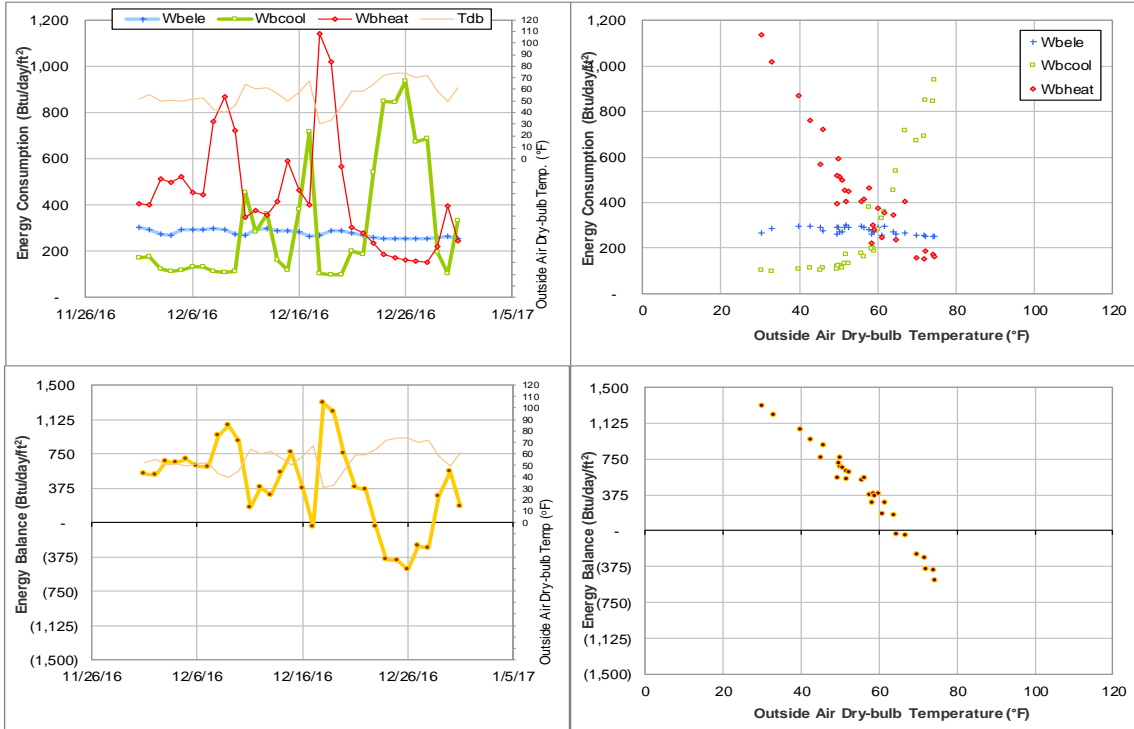


Figure IV-17 Chemistry Building Addition TAMU BLDG # 376 Energy Balance Plot during December 2016

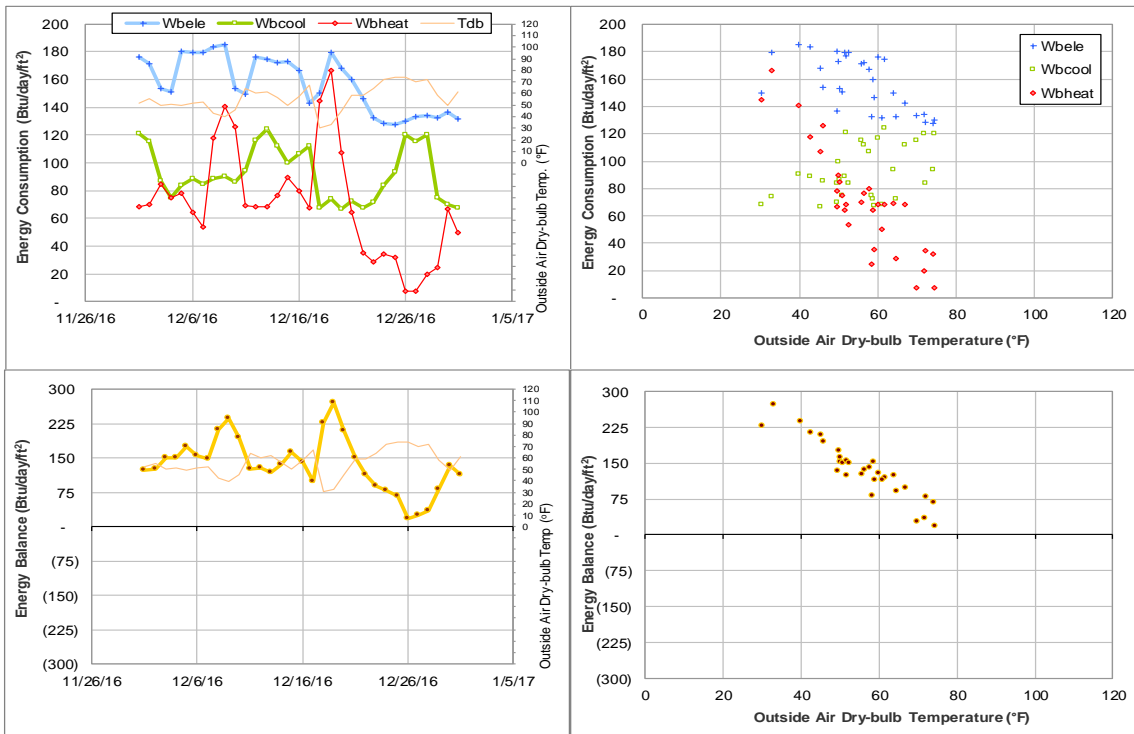


Figure IV-18 Koldus Building TAMU BLDG # 383 Energy Balance Plot during December 2016

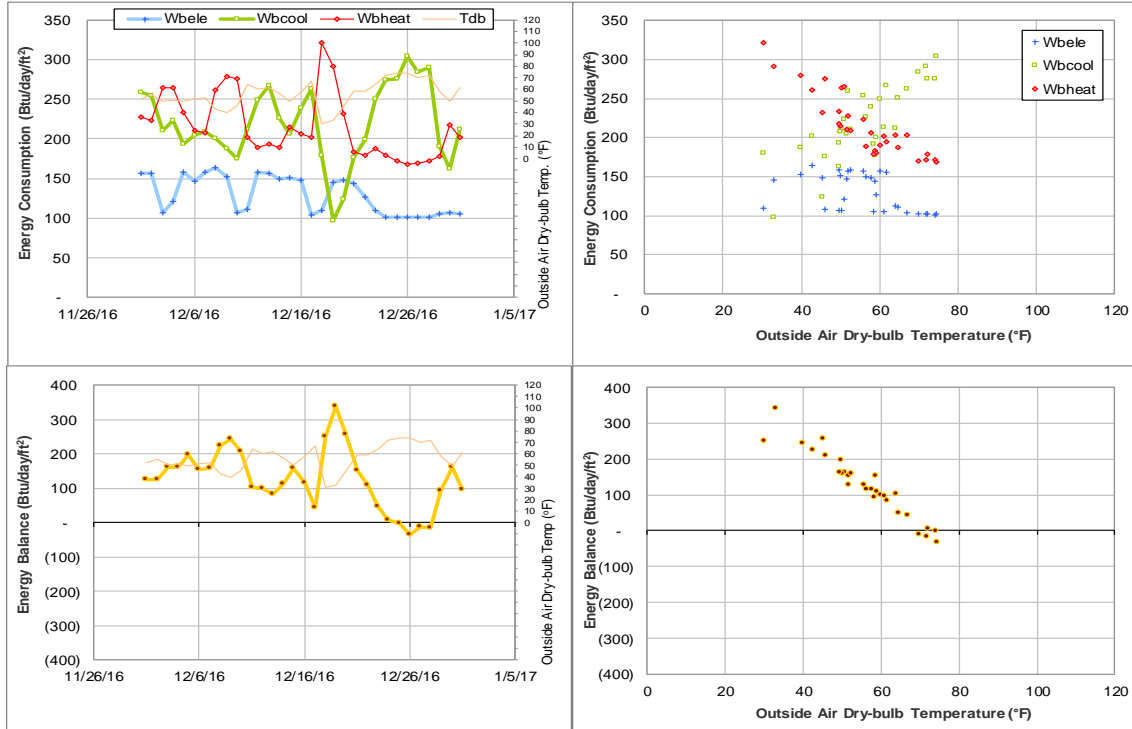


Figure IV-19 Sanders Corps of Cadets Center TAMU BLDG # 384 Energy Balance Plot during December 2016

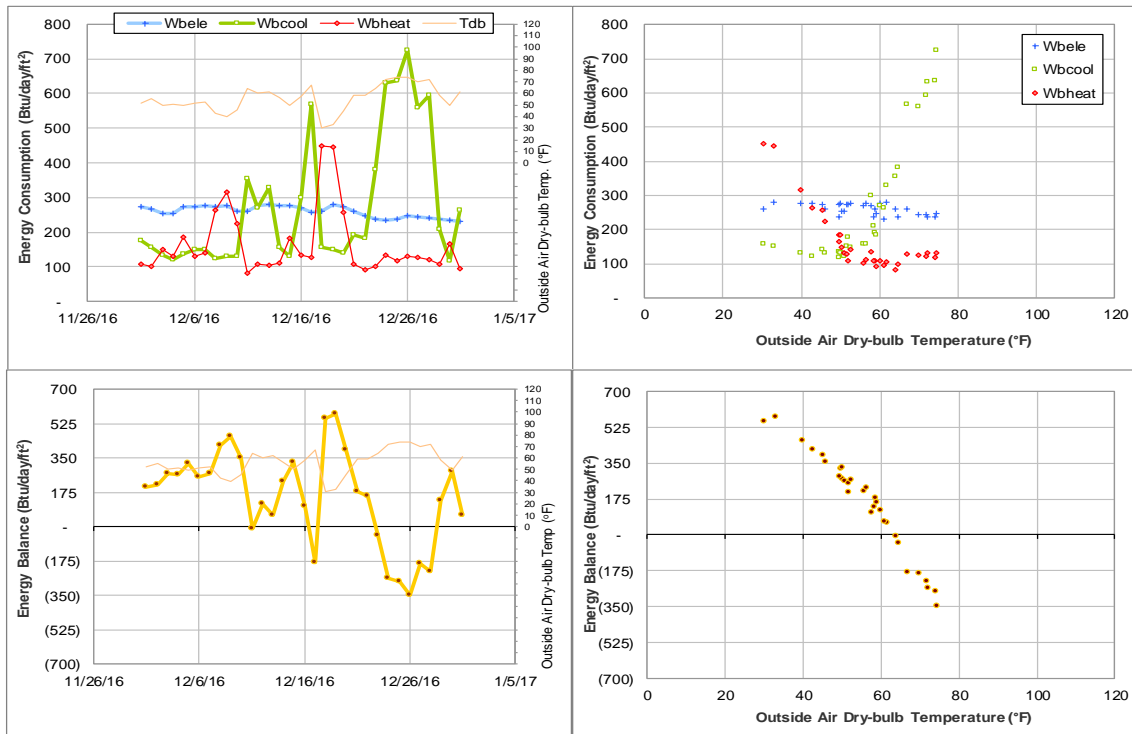


Figure IV-20 Jack E. Brown Chemical Engineering Building TAMU BLDG # 386 Energy Balance Plot during December 2016

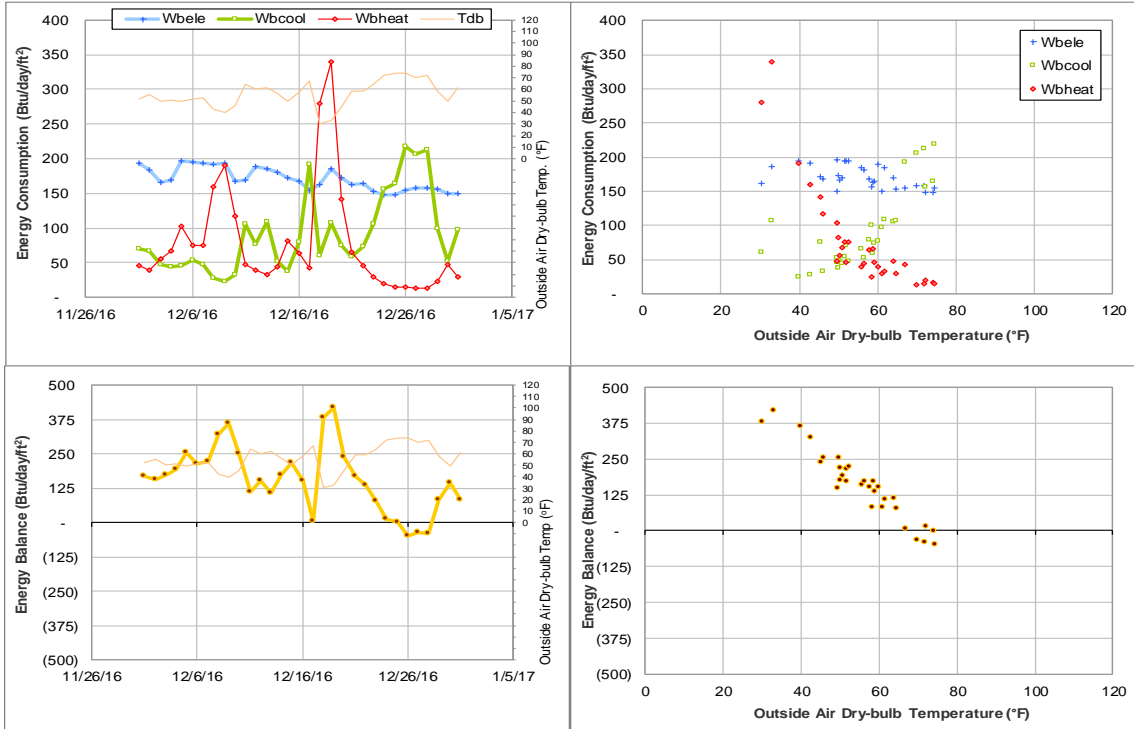


Figure IV-21 Richardson Petroleum Engineering Building TAMU BLDG # 387 Energy Balance Plot during December 2016

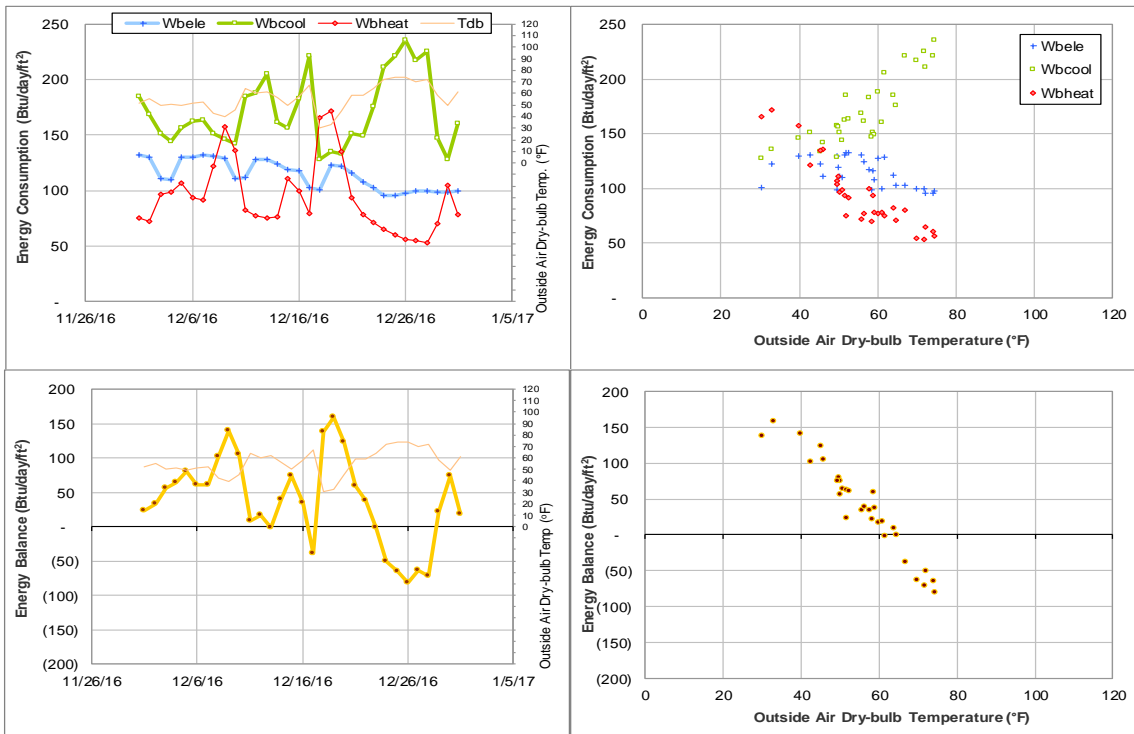


Figure IV-22 James J. Cain'51 and Mechanical Engineering Office Building TAMU BLDG # 391 Energy Balance Plot during December 2016

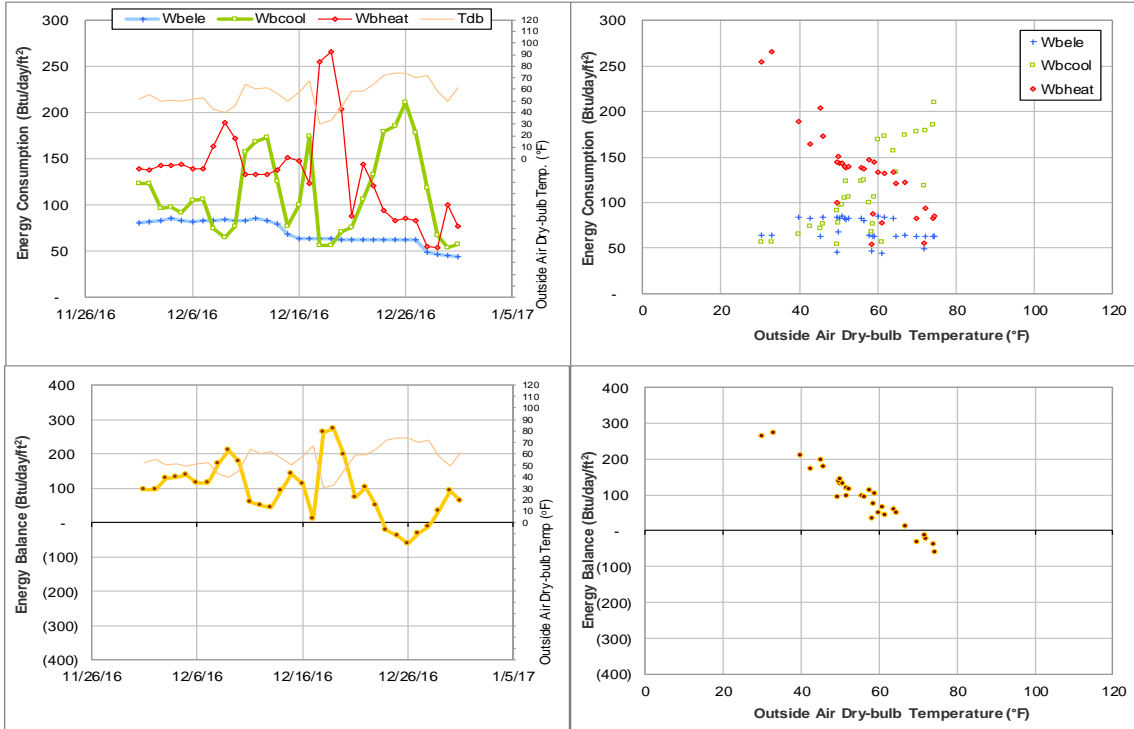


Figure IV-23 Underwood Residence Hall TAMU BLDG # 394 Energy Balance Plot during December 2016

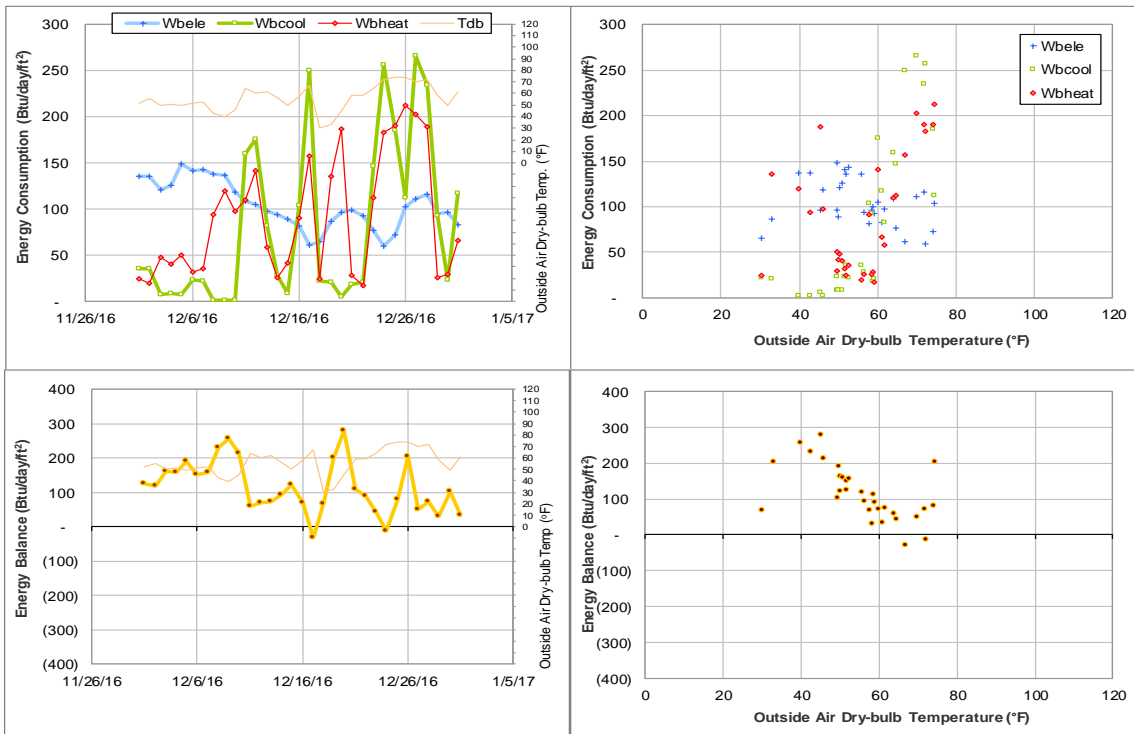


Figure IV-24 Langford Architecture Center Building A TAMU BLDG # 398 Energy Balance Plot during December 2016

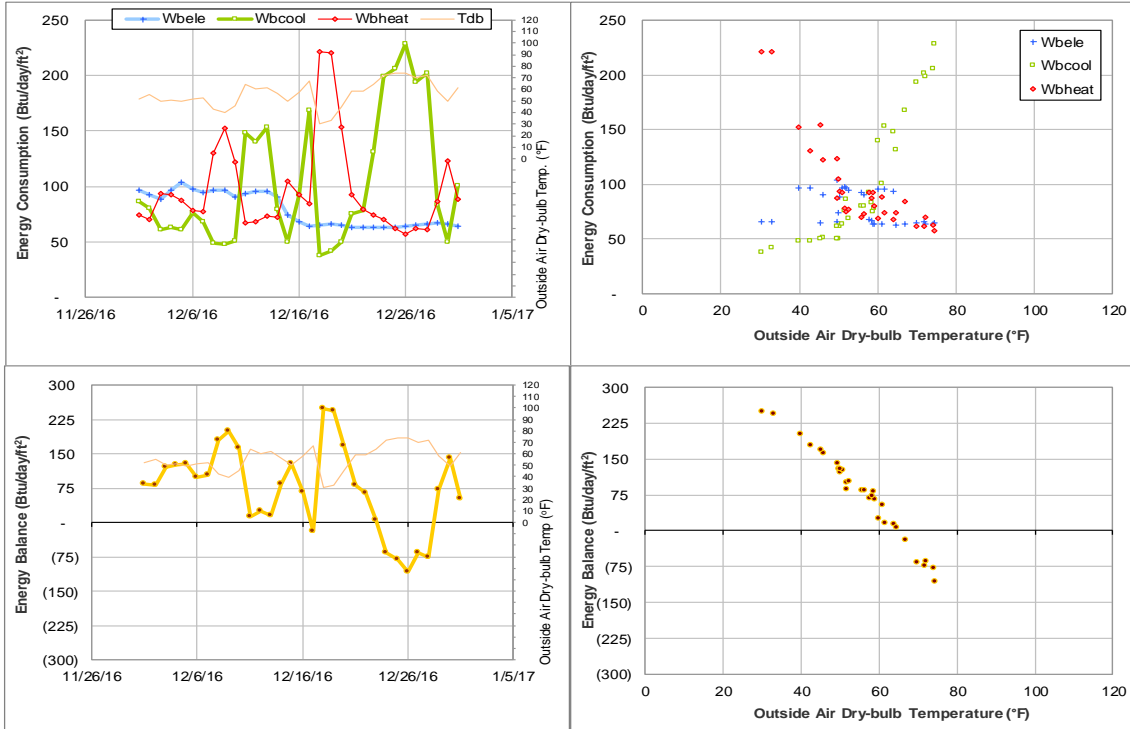


Figure IV-25 Spence Hall, Briggs Hall, and Ash II LLC TAMU BLDG # 400, 402, and 1405 Energy Balance Plot during December 2016

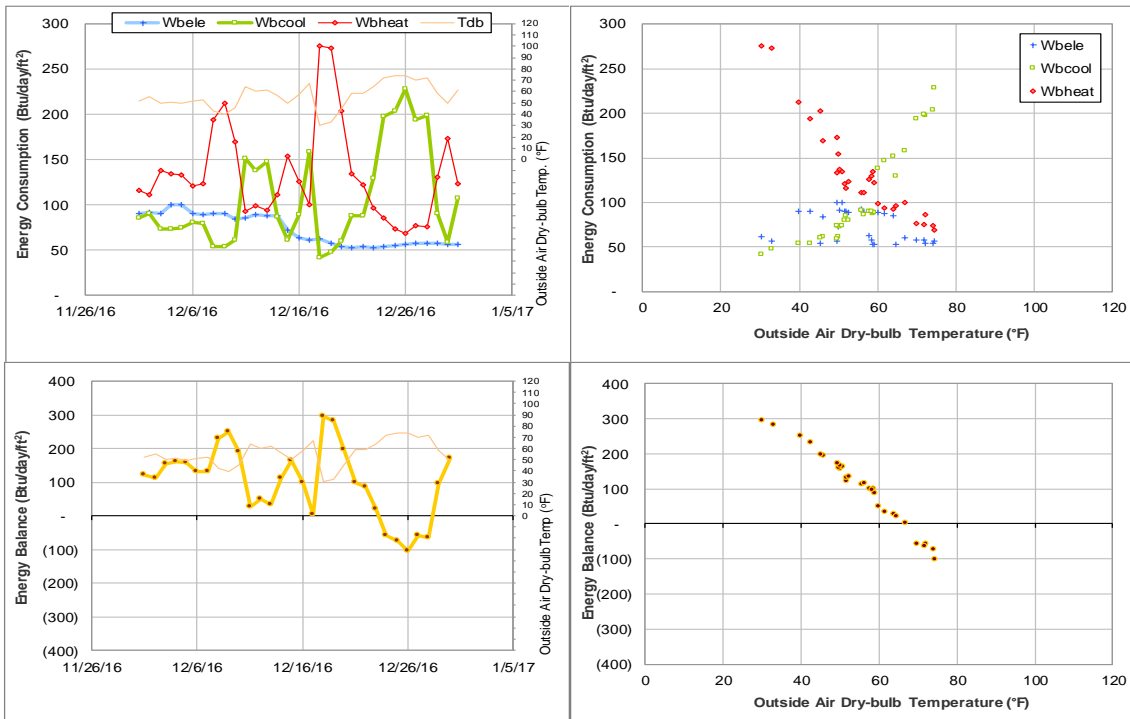


Figure IV-26 Spence Hall Dorm 1 TAMU BLDG # 400 Energy Balance Plot during December 2016

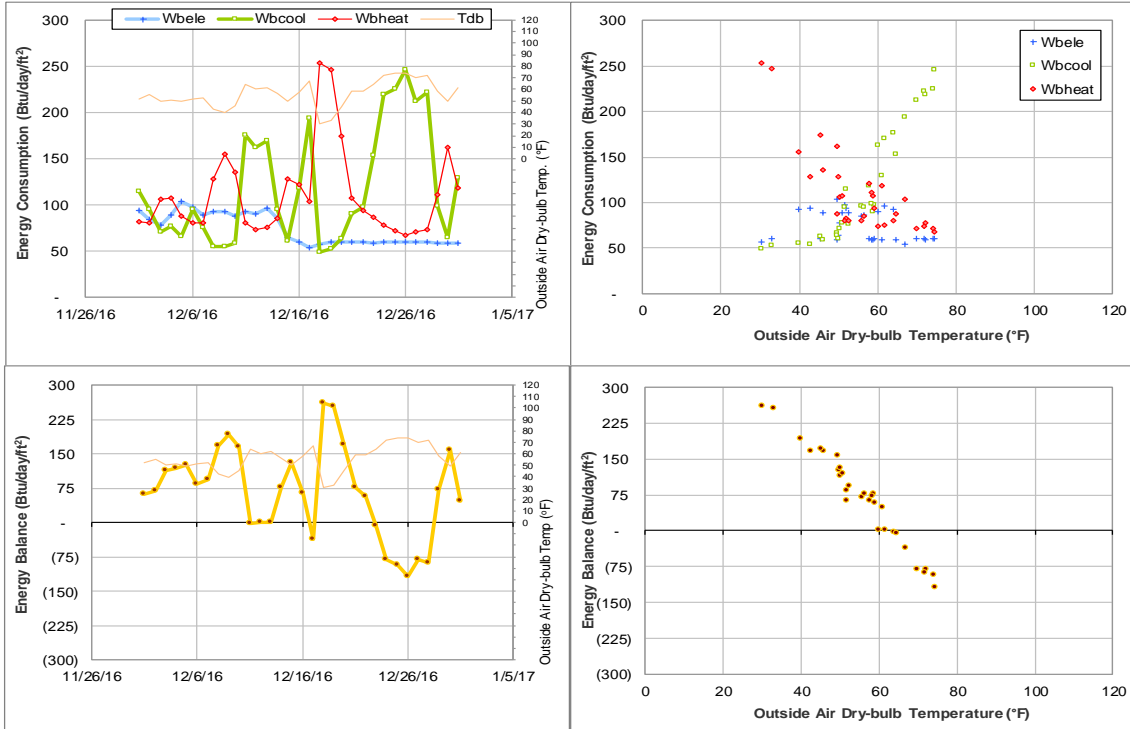


Figure IV-27 Briggs Hall Dorm 3 TAMU BLDG # 402 Energy Balance Plot during December 2016

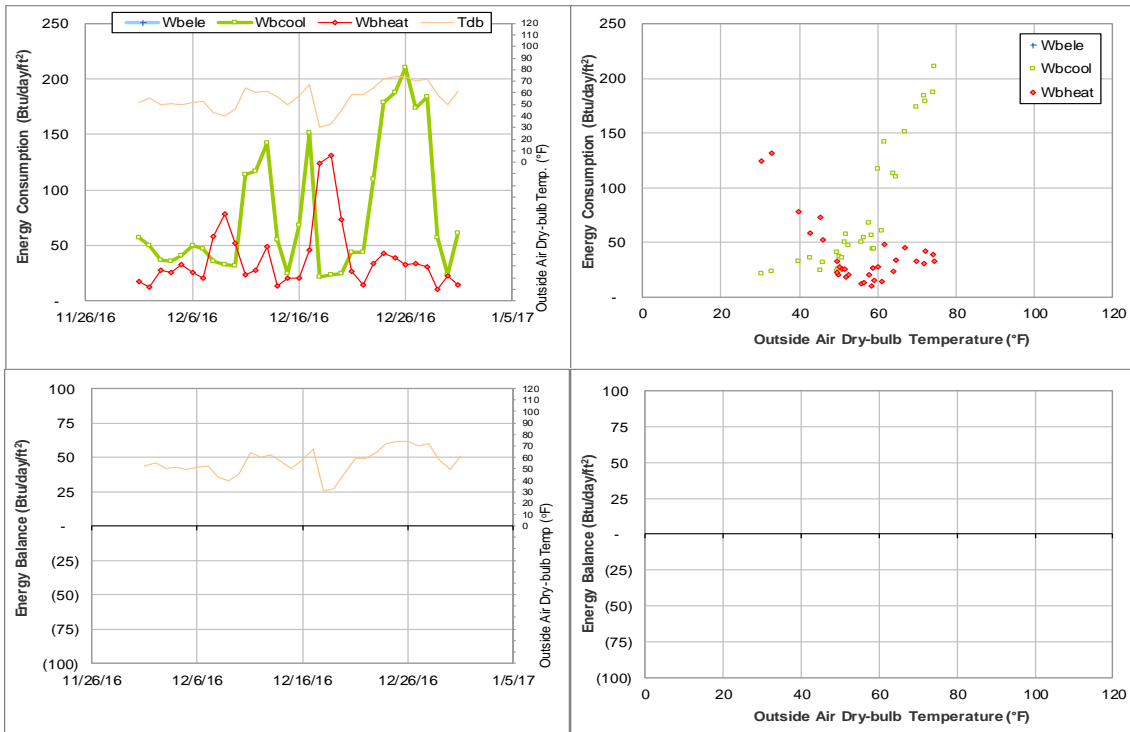


Figure IV-28 Ash II LLC TAMU BLDG # 1405 Energy Balance Plot during December 2016

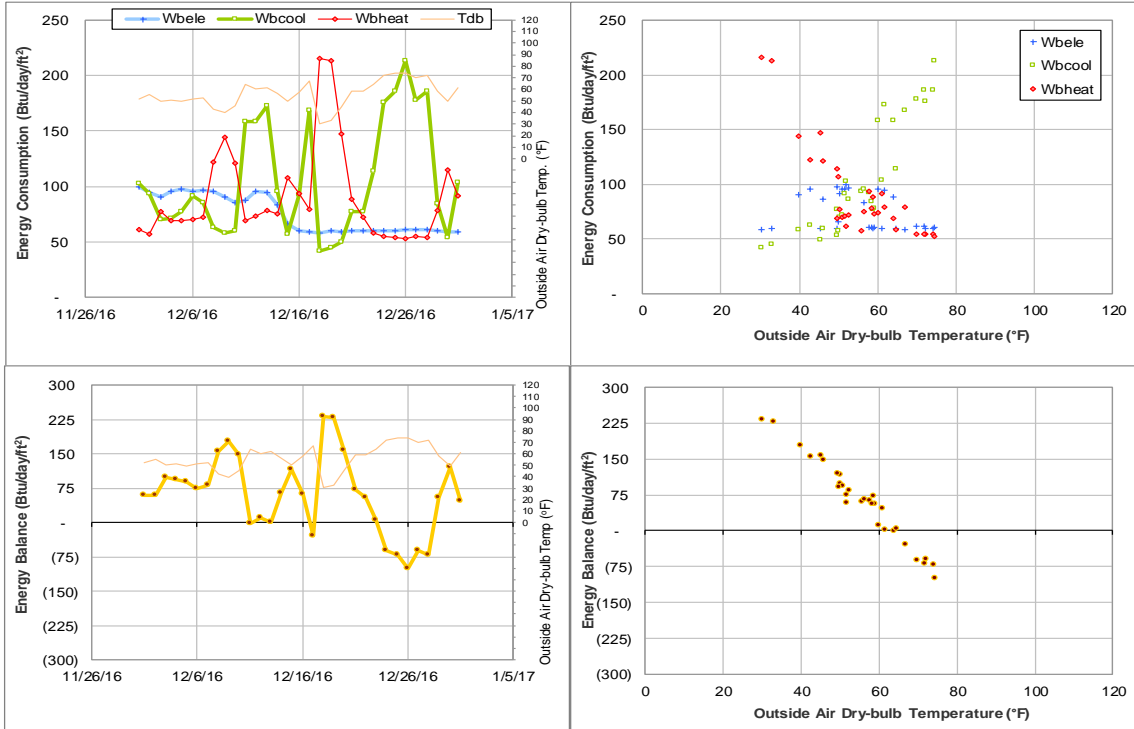


Figure IV-29 Kiest Hall, Fountain Hall, and Plank LLC TAMU BLDG # 401, 403, 1404 Energy Balance Plot during December 2016

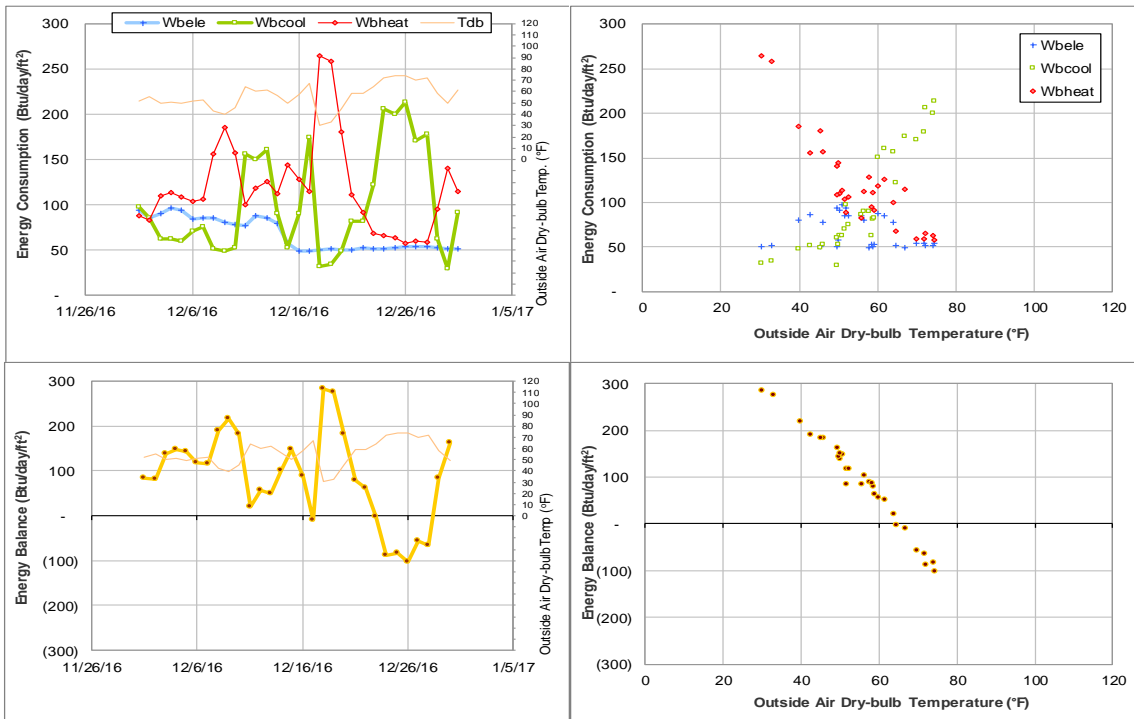


Figure IV-30 Kiest Hall Dorm 2 TAMU BLDG # 401 Energy Balance Plot during December 2016

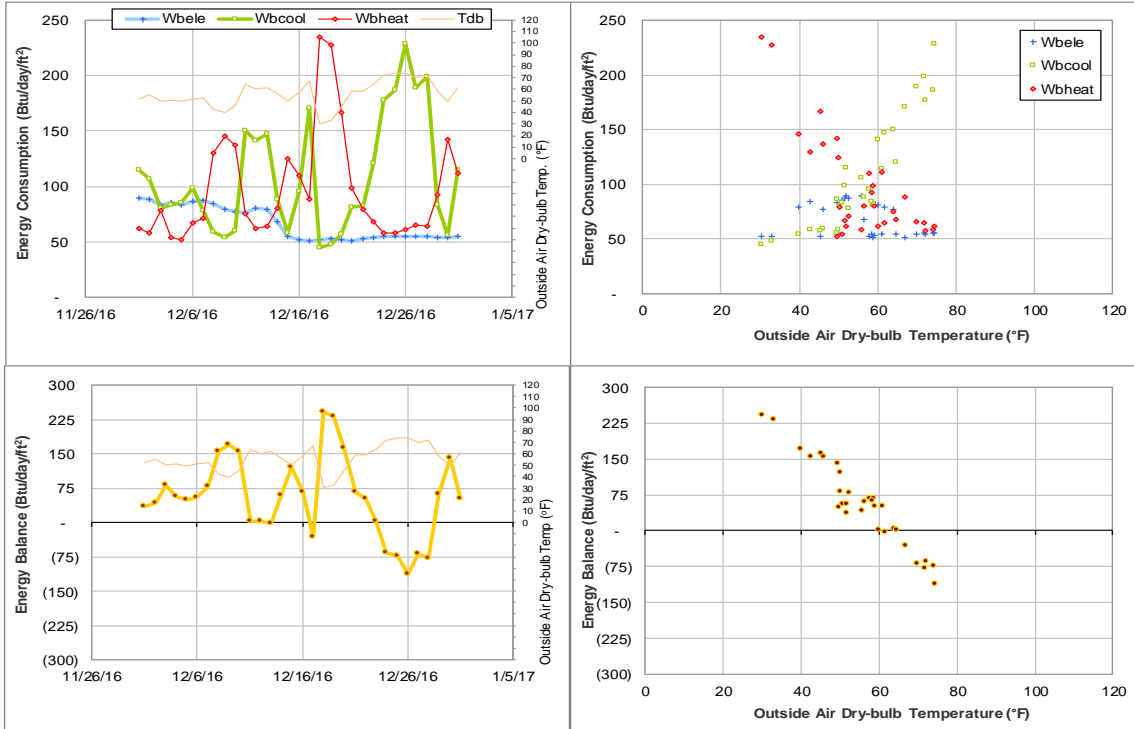


Figure IV-31 Fountain Hall Dorm 4 TAMU BLDG # 403 Energy Balance Plot during December 2016

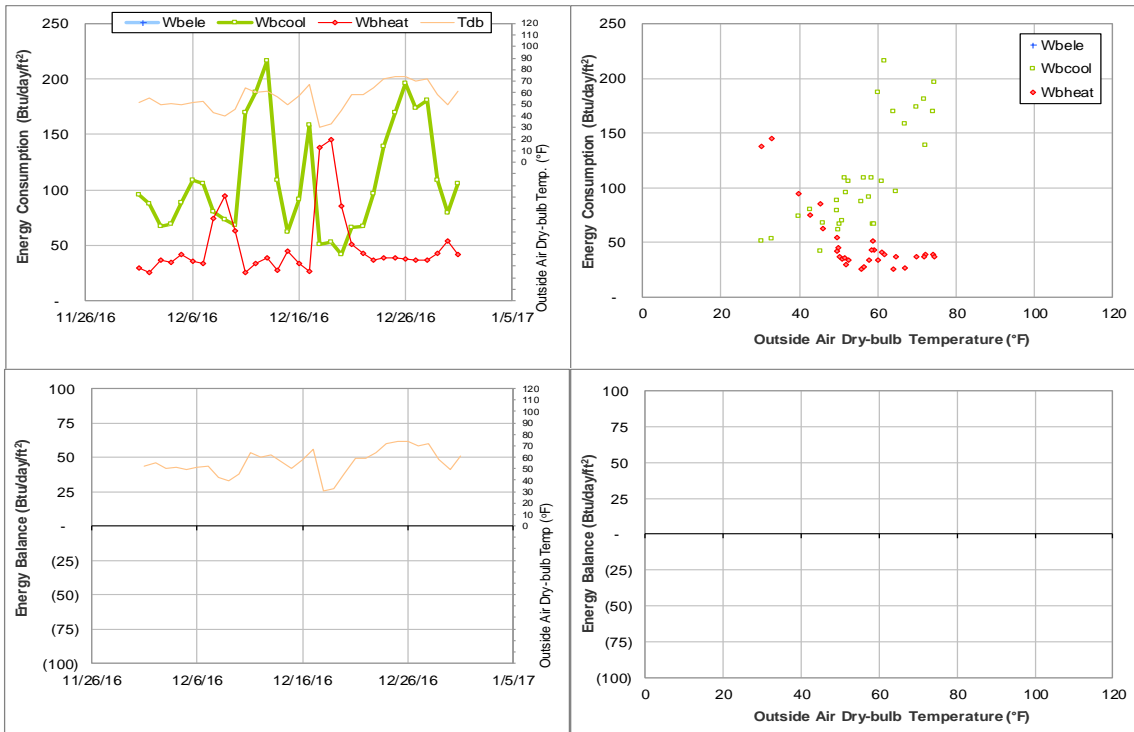


Figure IV-32 Plank LLC TAMU BLDG # 1404 Energy Balance Plot during December 2016

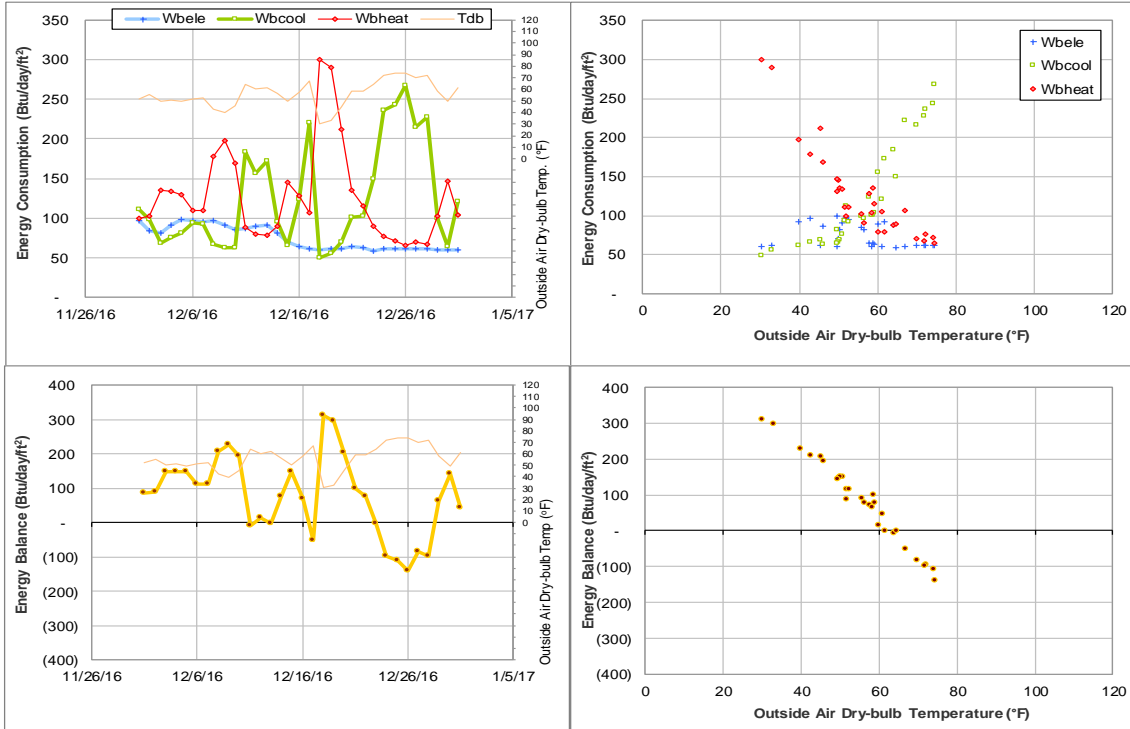


Figure IV-33 Gainer Hall, Leonard Hall and Ash LLC TAMU BLDG # 404, 406, 1403 Energy Balance Plot during December 2016

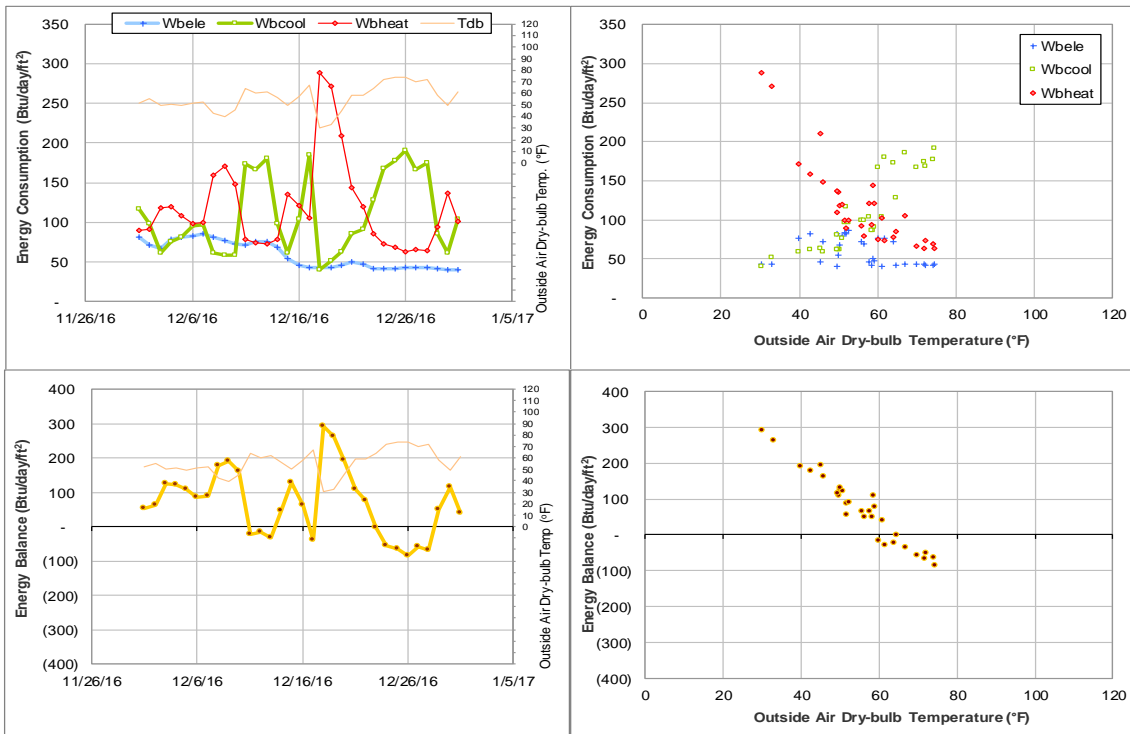


Figure IV-34 Gainer Hall Dorm 5 TAMU BLDG # 404 Energy Balance Plot during December 2016

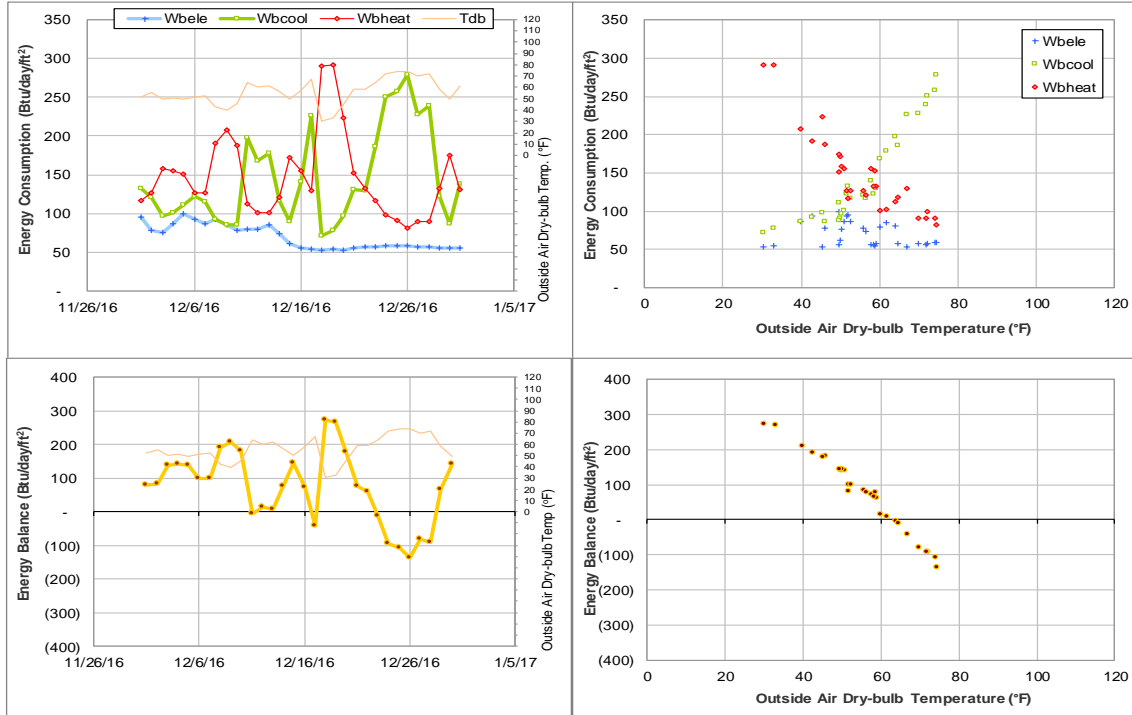


Figure IV-35 Leonard Hall - Dorm 7 TAMU BLDG # 406 Energy Balance Plot during December 2016

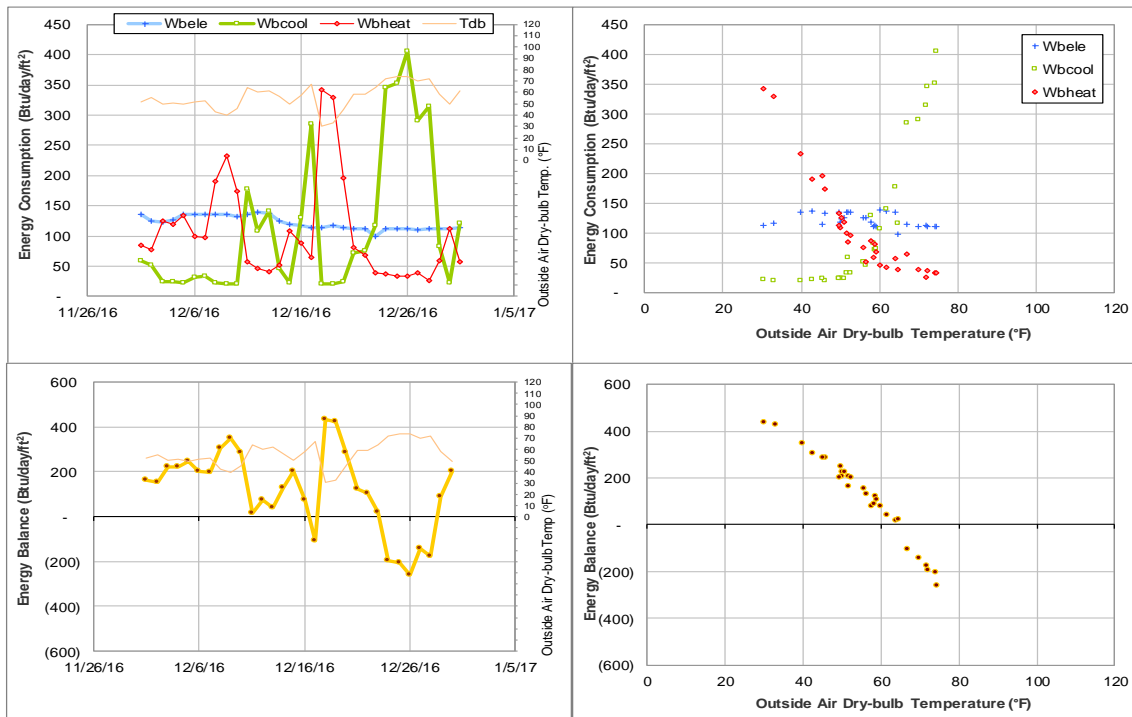


Figure IV-36 H. Grady Ash, Jr. '58 Leadership Learning Center TAMU BLDG # 1403 Energy Balance Plot during December 2016

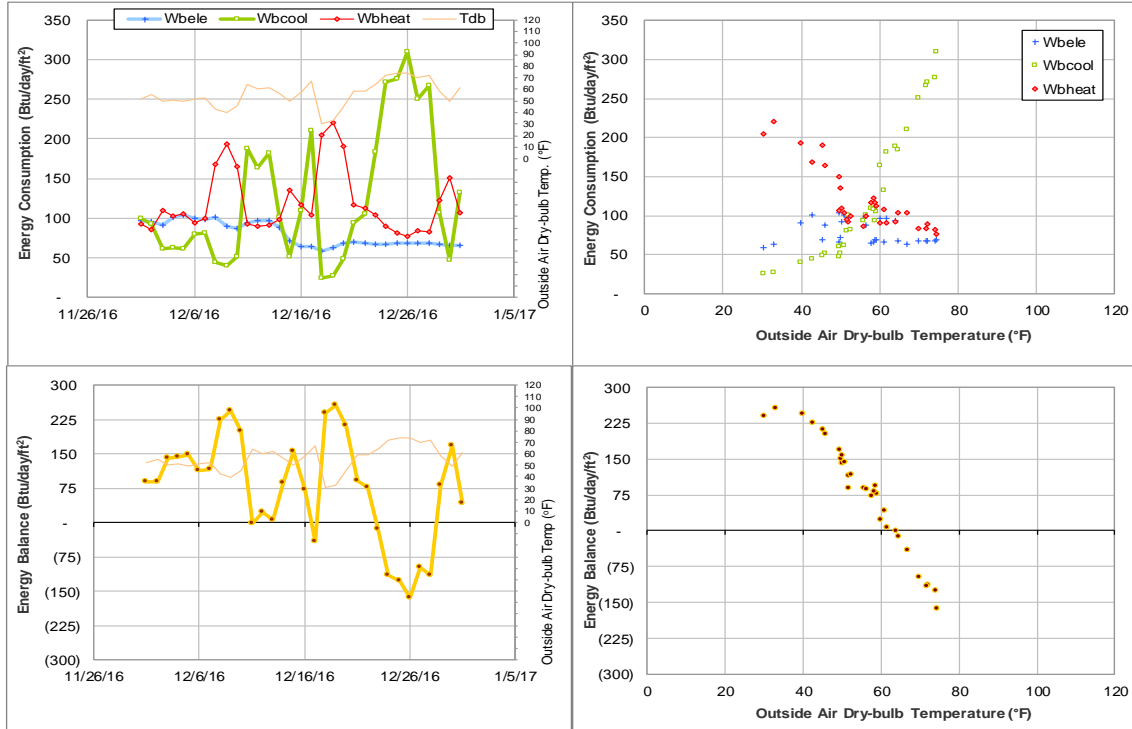


Figure IV-37 Lacy Hall - Dorm 6, Harrell Hall and Leadership Learning Center TAMU BLDG # 405, 407, 1402 Energy Balance Plot during December 2016

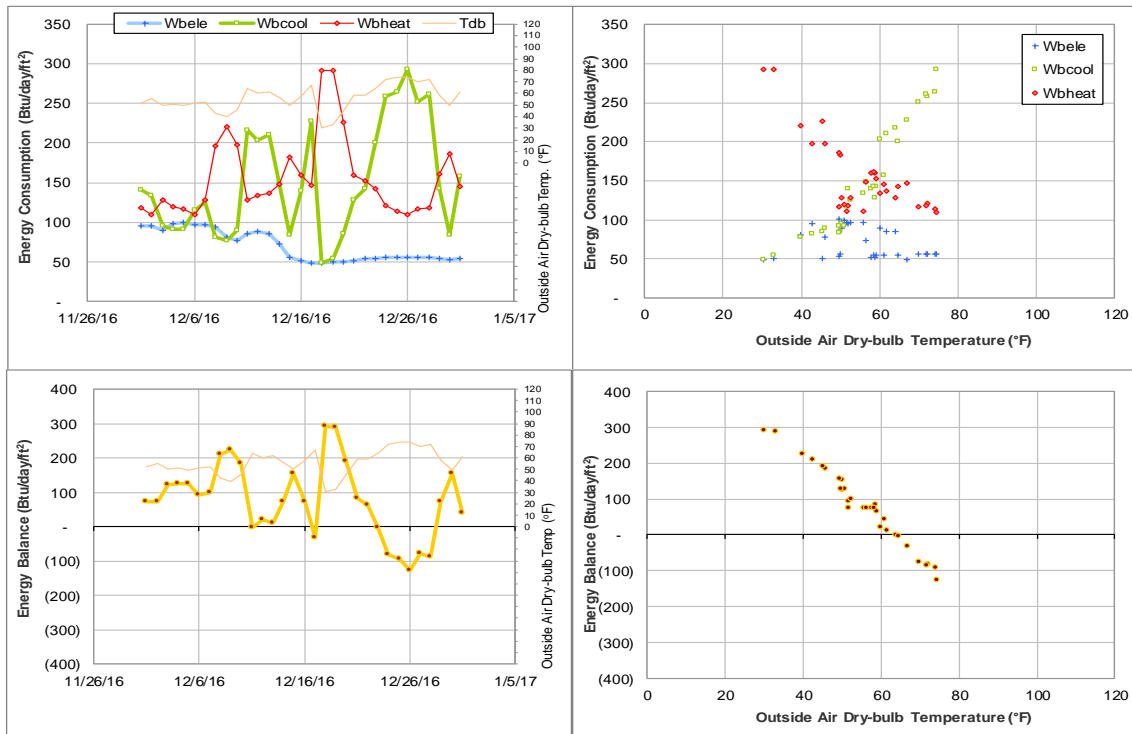


Figure IV-38 Lacy Hall - Dorm 6 TAMU BLDG # 405 Energy Balance Plot during December 2016

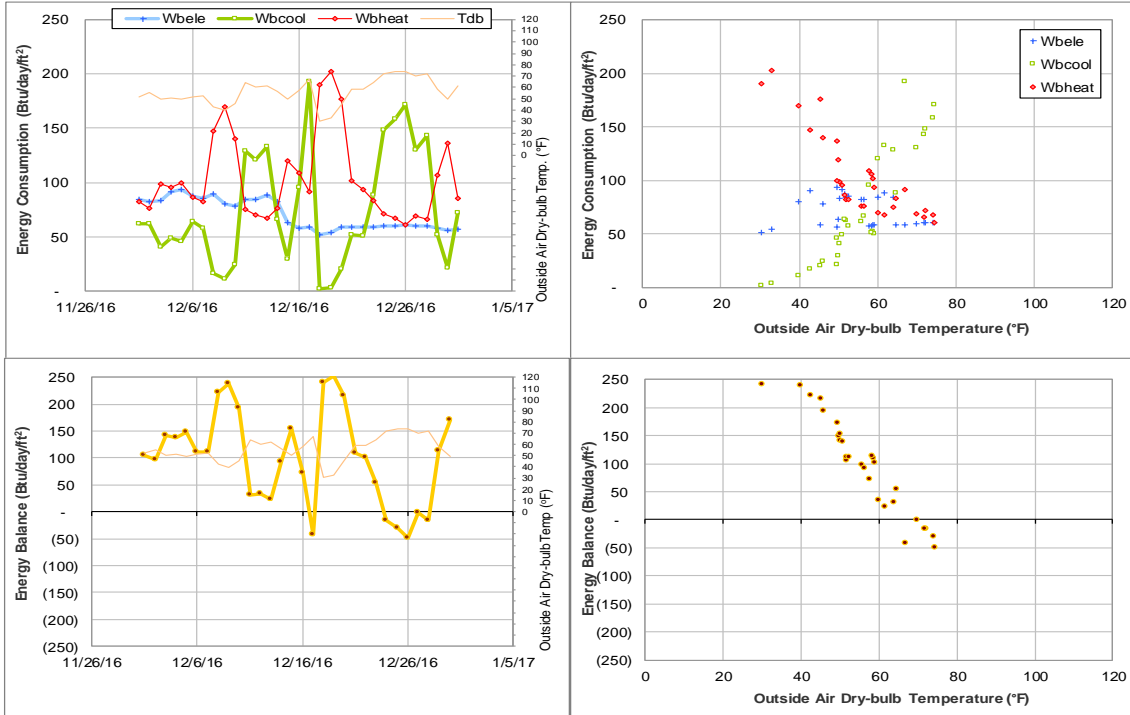


Figure IV-39 Harrell Hall - Dorm 8 TAMU BLDG # 407 Energy Balance Plot during December 2016

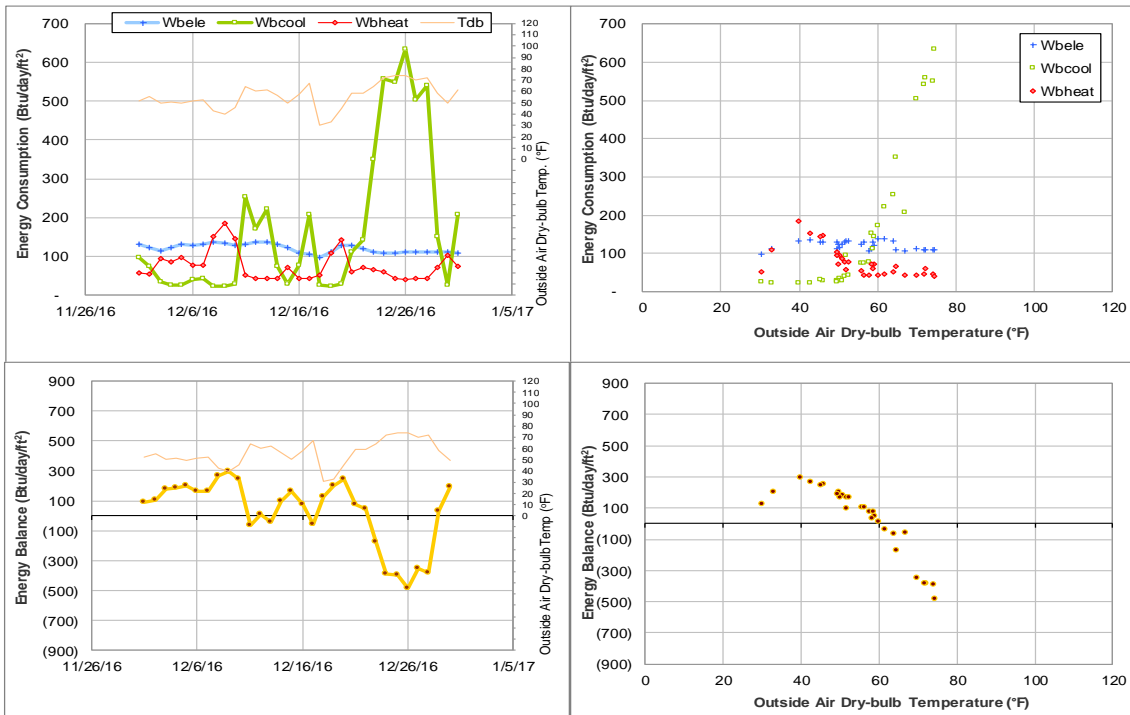


Figure IV-40 Buzbee Leadership Learning Center TAMU BLDG # 1402 Energy Balance Plot during December 2016

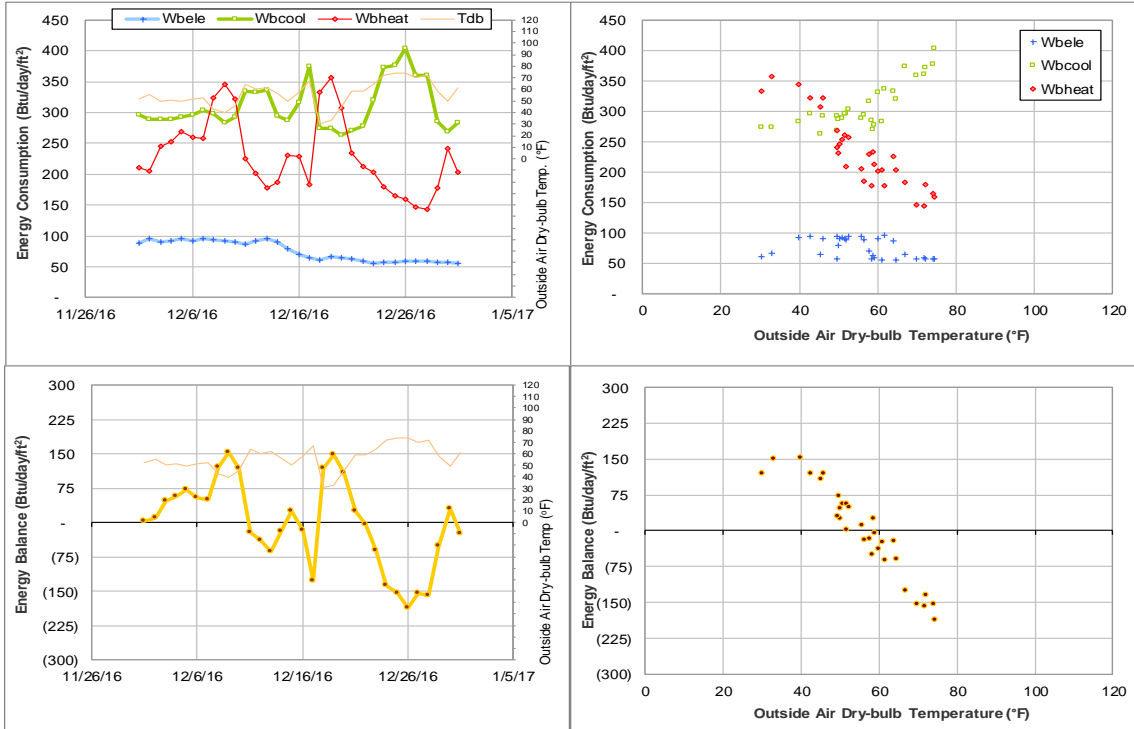


Figure IV-41 Moses Residence Hall TAMU BLDG # 412 Energy Balance Plot during December 2016

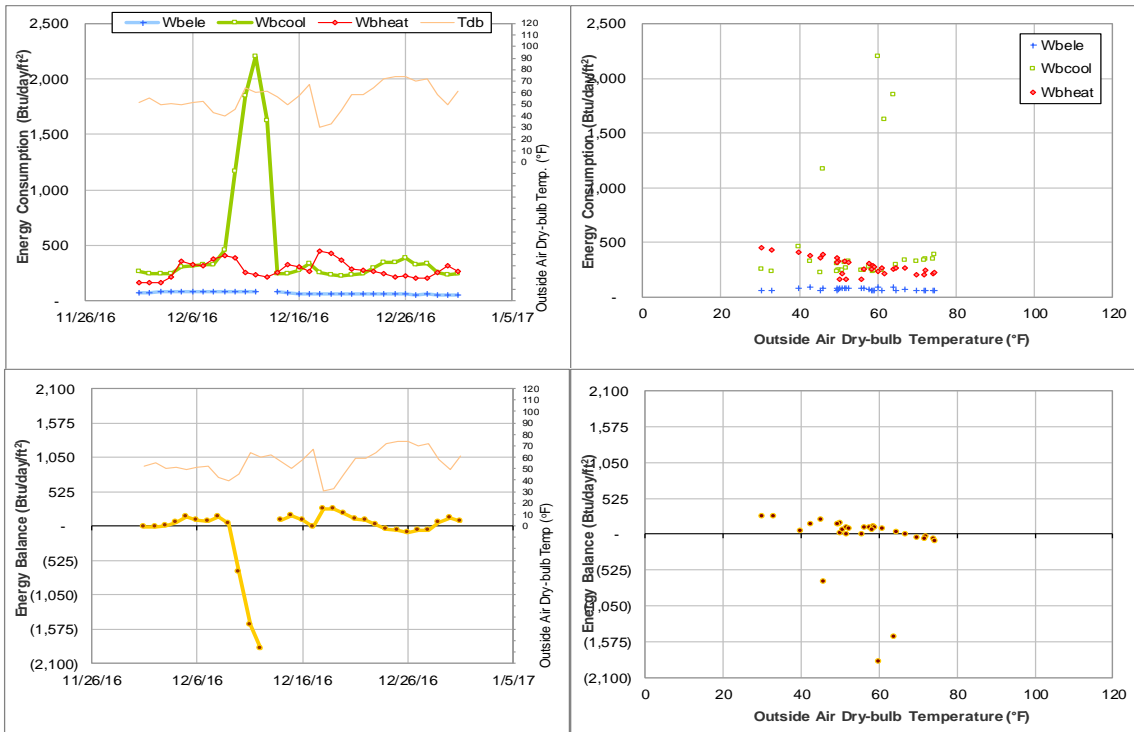


Figure IV-42 Davis-Gary Residence Hall TAMU BLDG # 415 Energy Balance Plot during December 2016

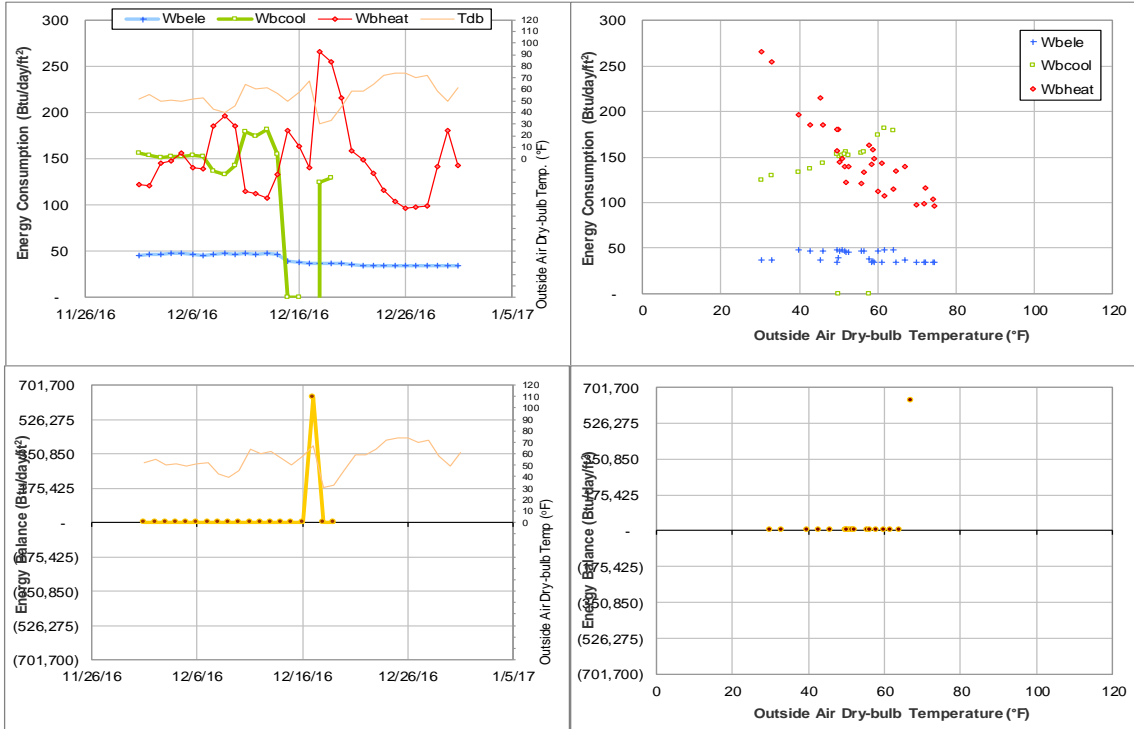


Figure IV-43 Legett Residence Hall TAMU BLDG # 419 Energy Balance Plot during December 2016

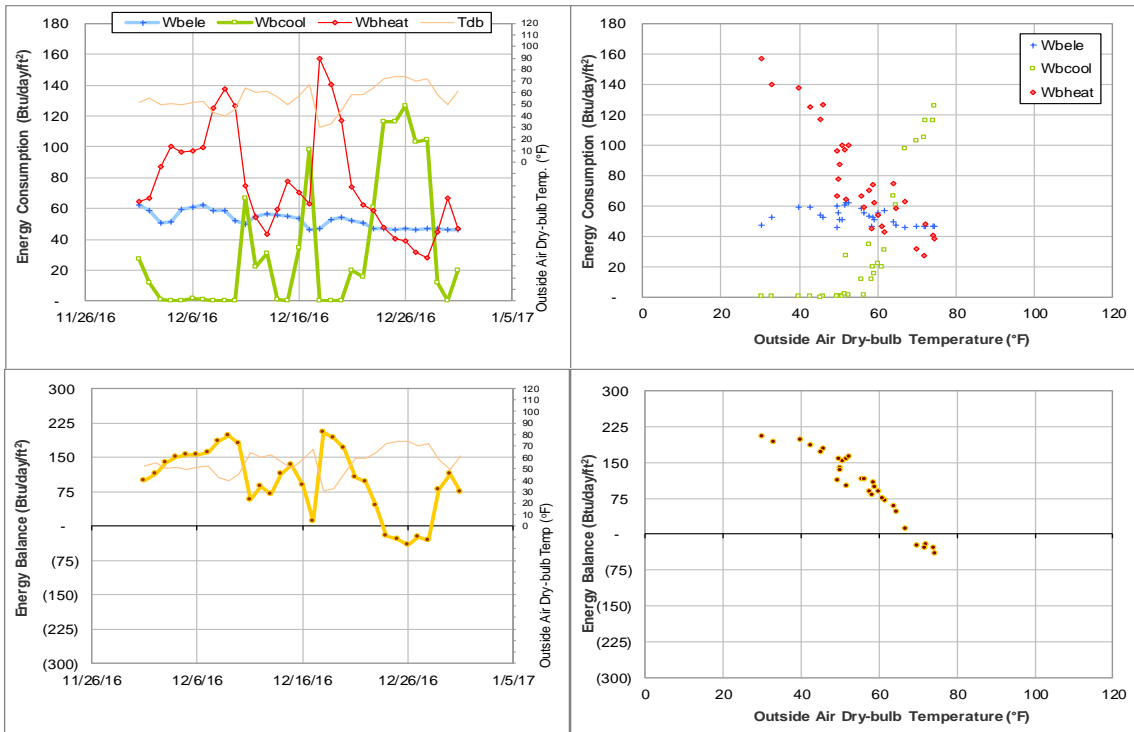


Figure IV-44 Milner Hall TAMU BLDG # 420 Energy Balance Plot during December 2016

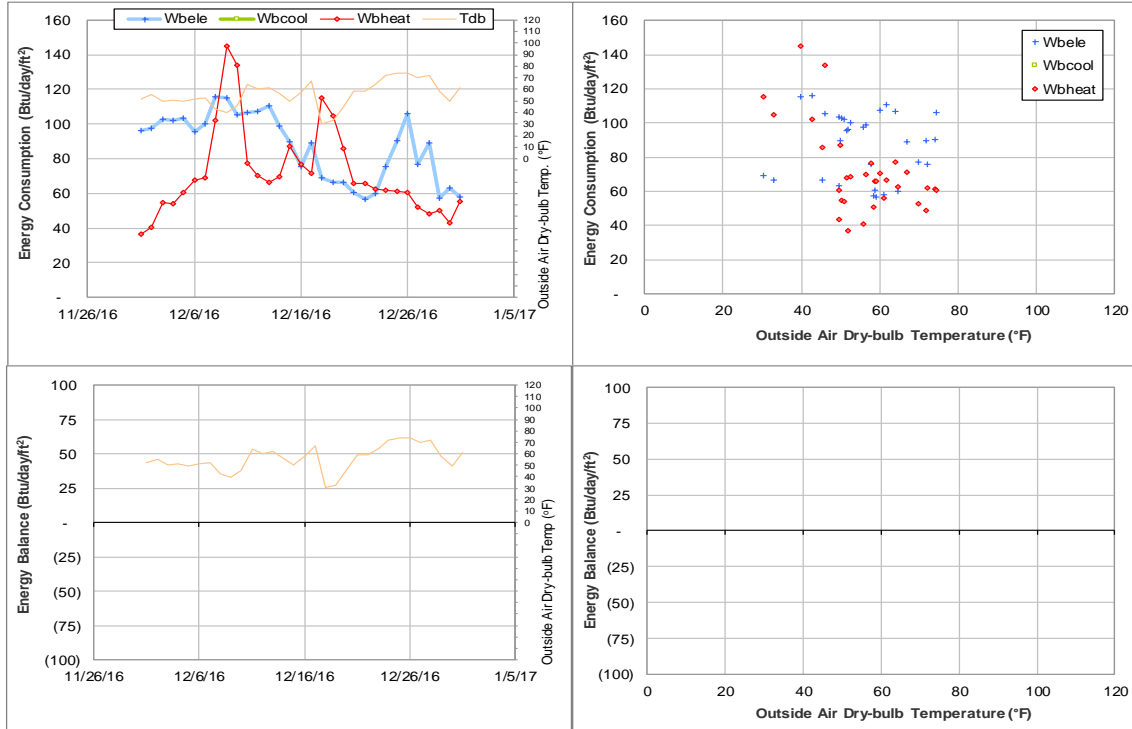


Figure IV-45 Walton Residence Hall TAMU BLDG # 422 Energy Balance Plot during December 2016

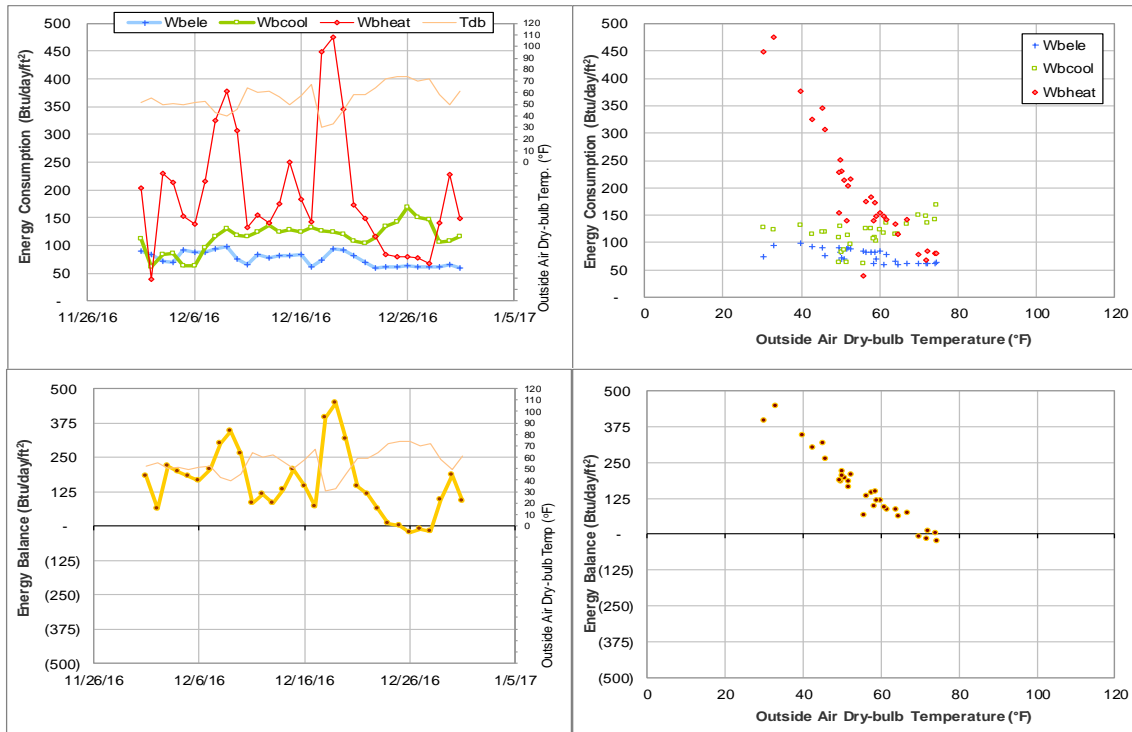


Figure IV-46 Hotard Hall TAMU BLDG # 424 Energy Balance Plot during December 2016

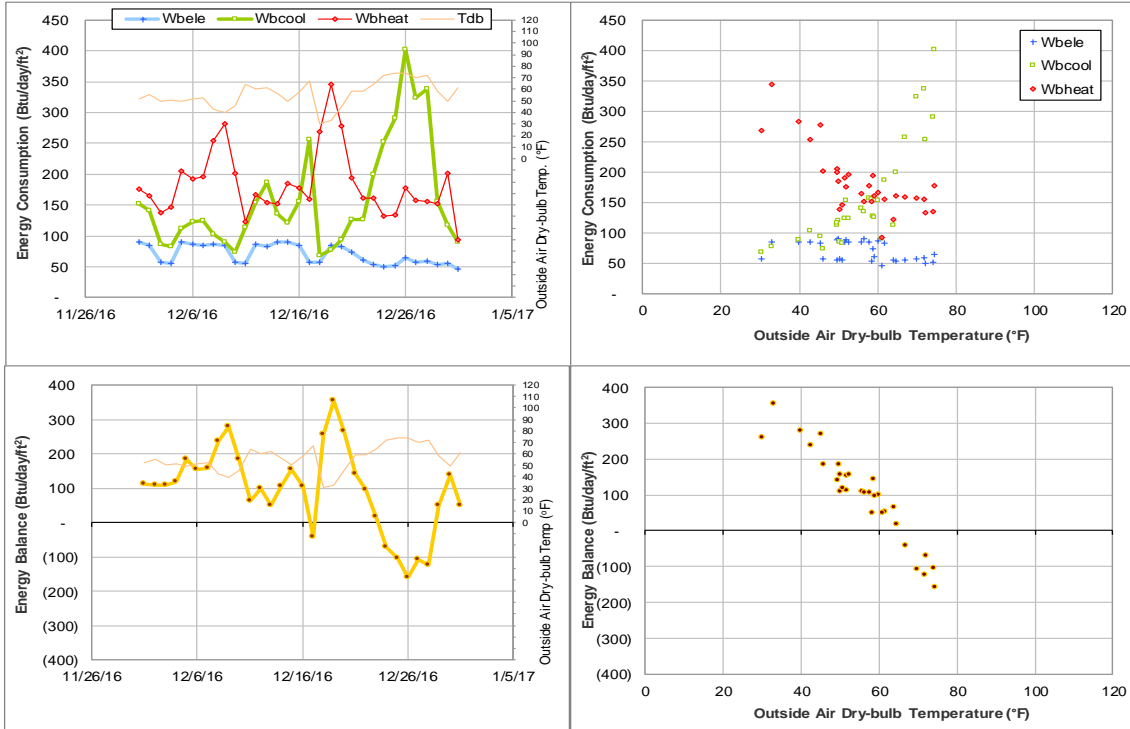


Figure IV-47 Henderson Hall TAMU BLDG # 425 Energy Balance Plot during December 2016

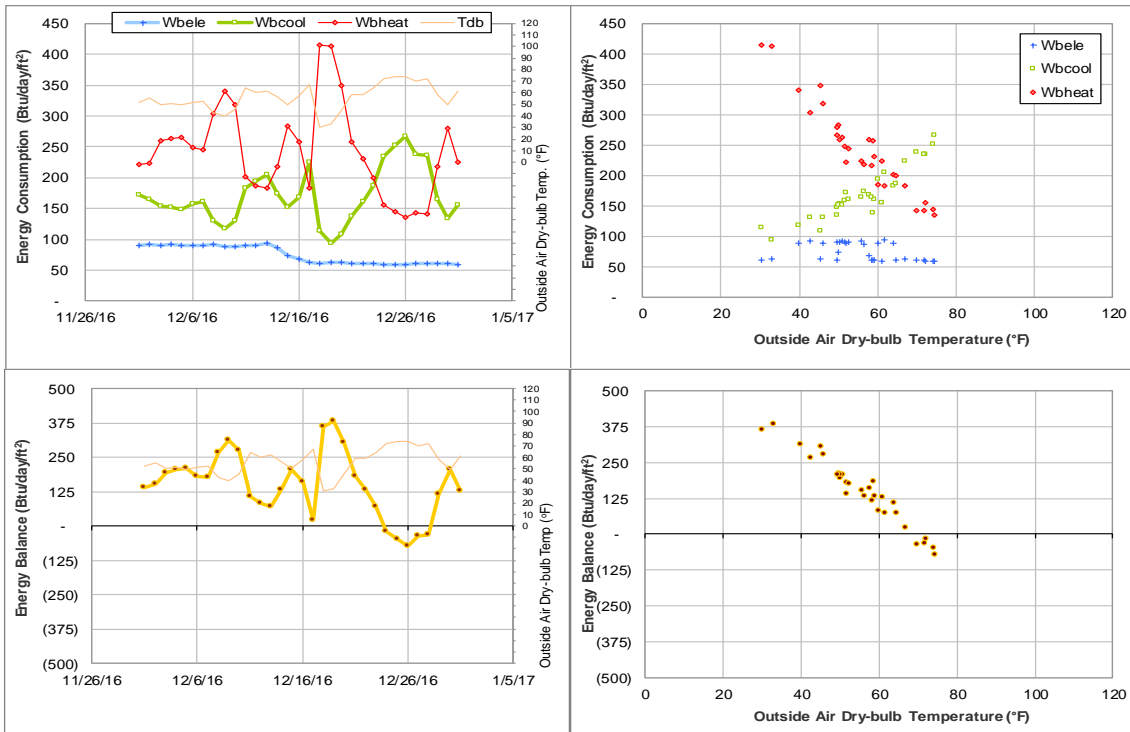


Figure IV-48 FHK Complex TAMU BLDG # 426 Energy Balance Plot during December 2016

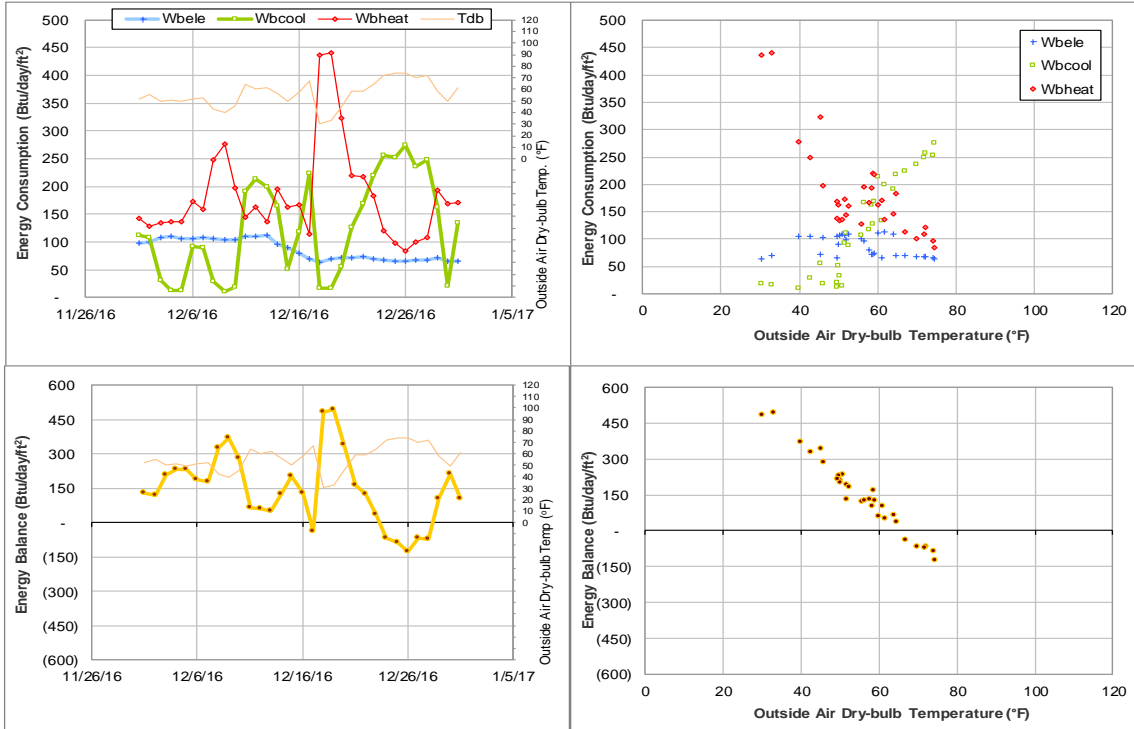


Figure IV-49 Schumacher Residence Hall TAMU BLDG # 430 Energy Balance Plot during December 2016

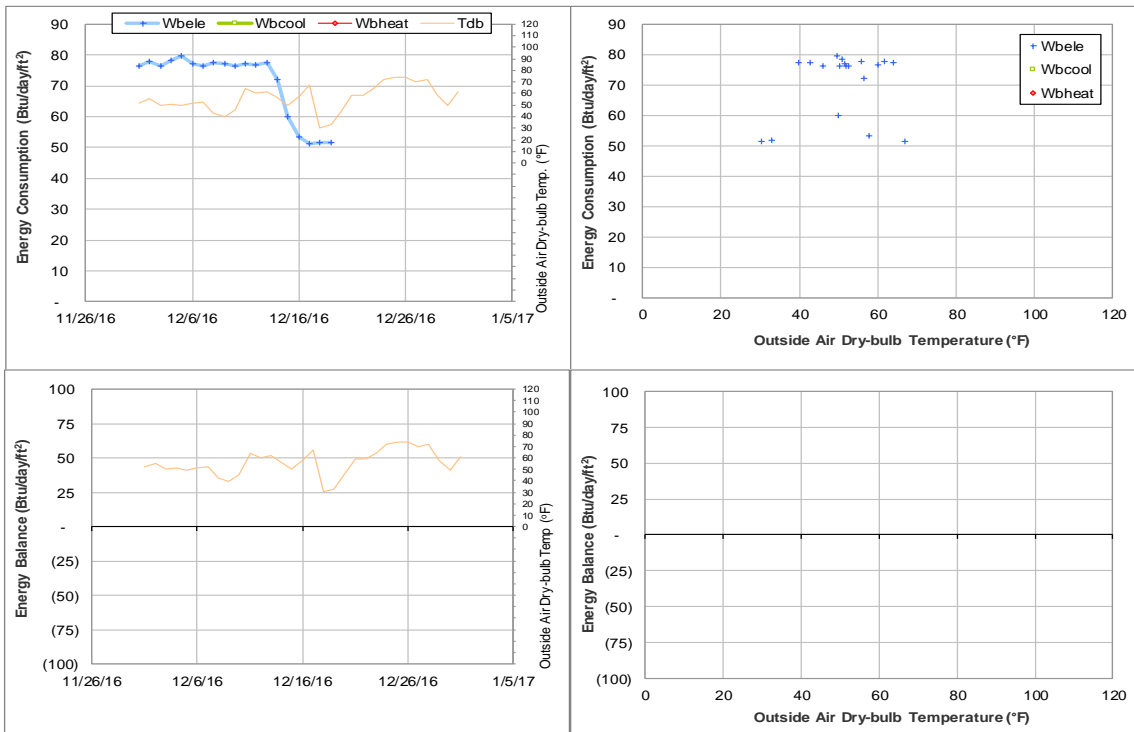


Figure IV-50 Mosher Commons Krueger Dunn Aston TAMU BLDG # 433, 440, 441, 442 and 447 Energy Balance Plot during December 2016

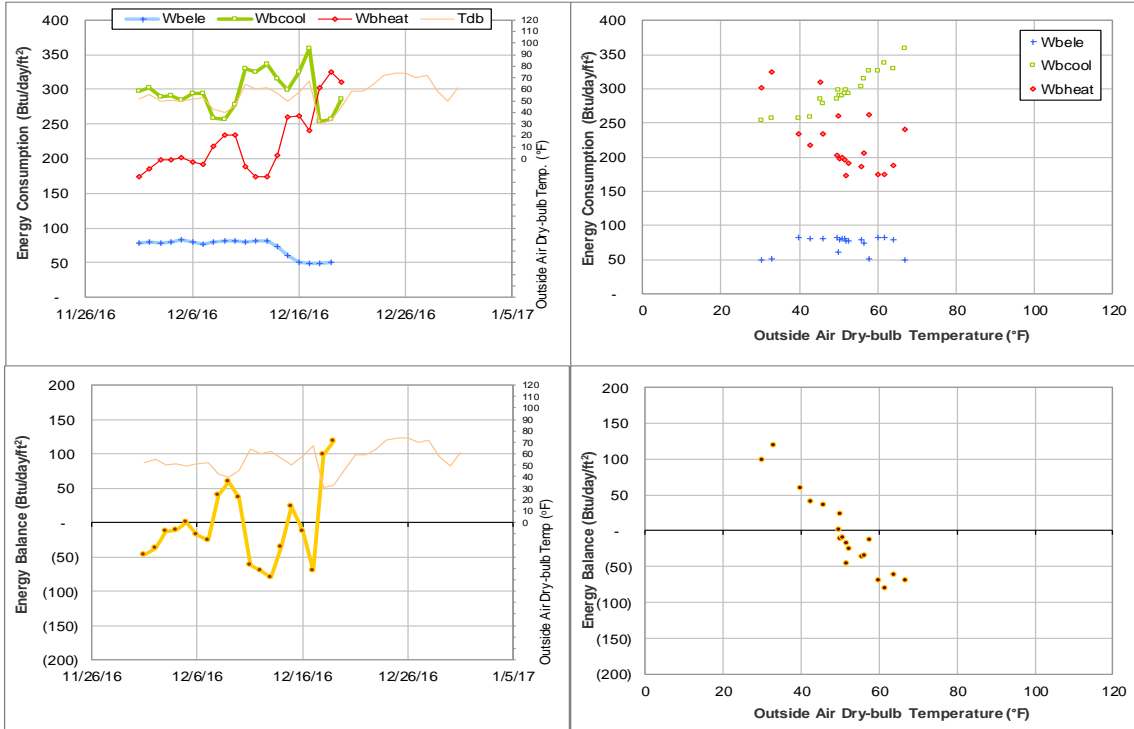


Figure IV-51 Mosher Residence Hall TAMU BLDG # 433 Energy Balance Plot during December 2016

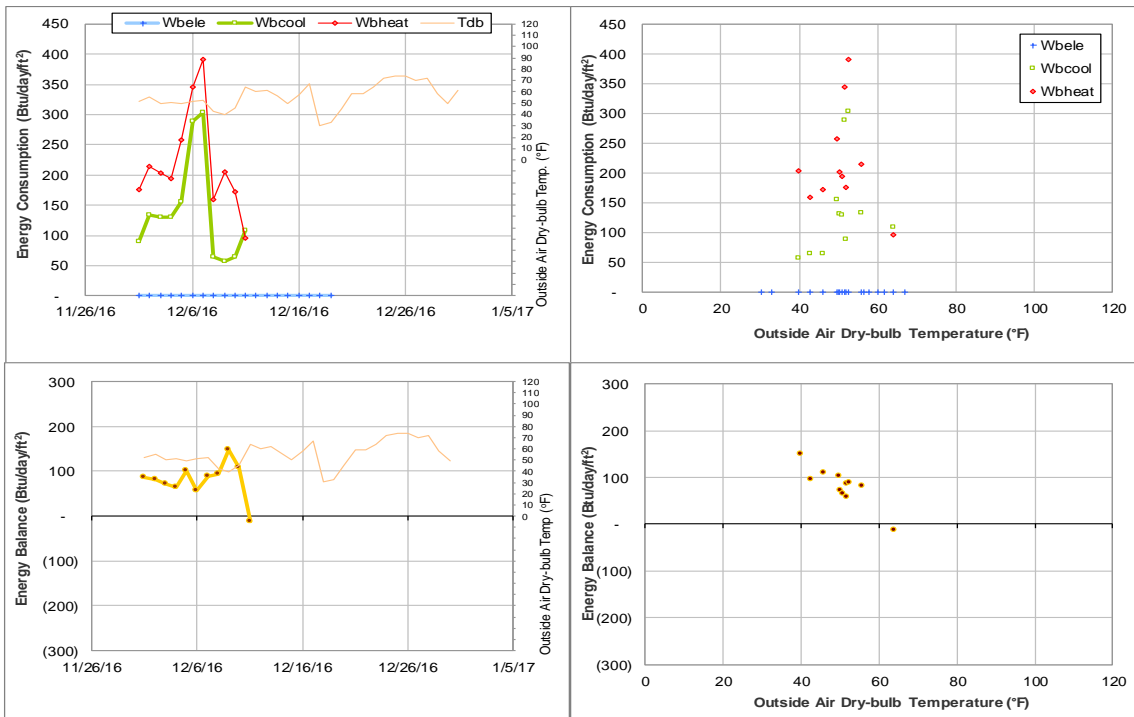


Figure IV-52 Commons Hall TAMU BLDG # 440 Energy Balance Plot during December 2016

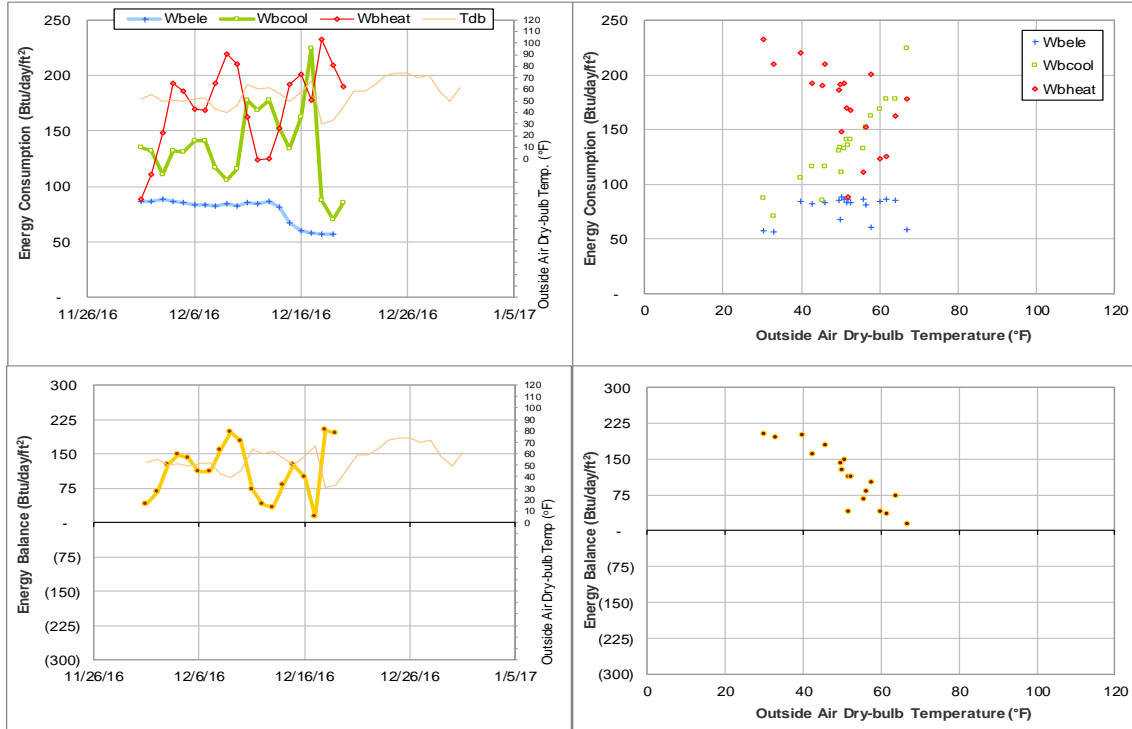


Figure IV-53 Krueger Residence Hall TAMU BLDG # 441 Energy Balance Plot during December 2016

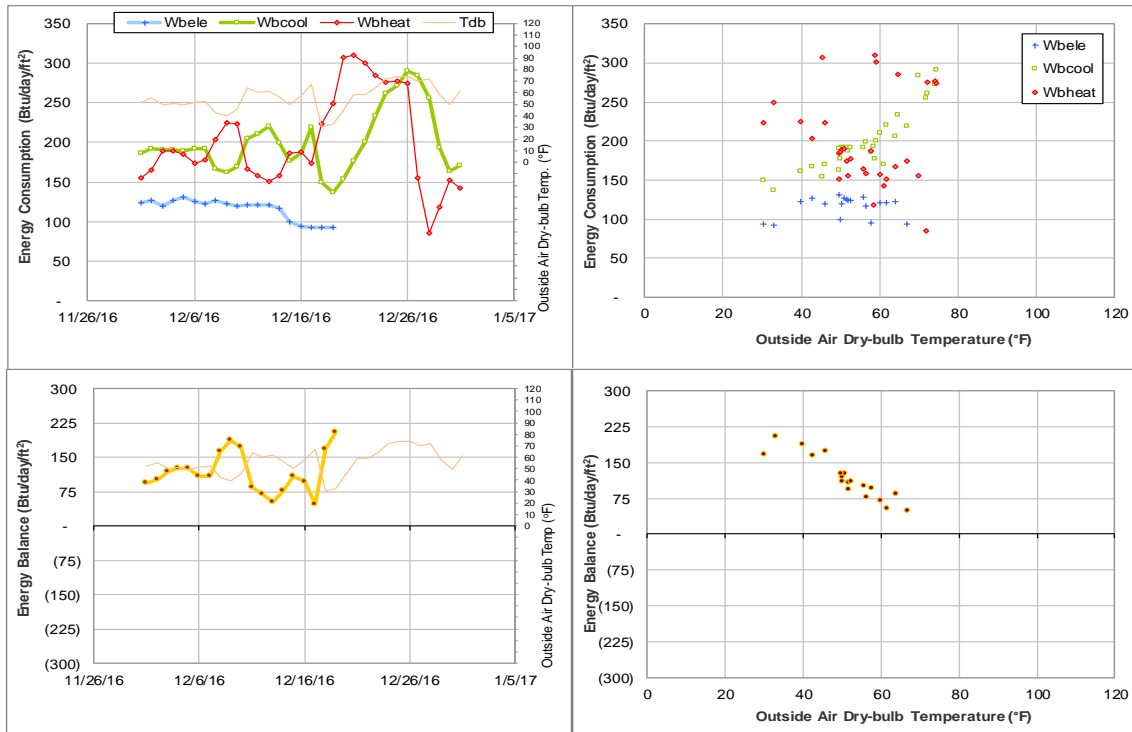


Figure IV-54 Dunn Residence Hall TAMU BLDG # 442 Energy Balance Plot during December 2016

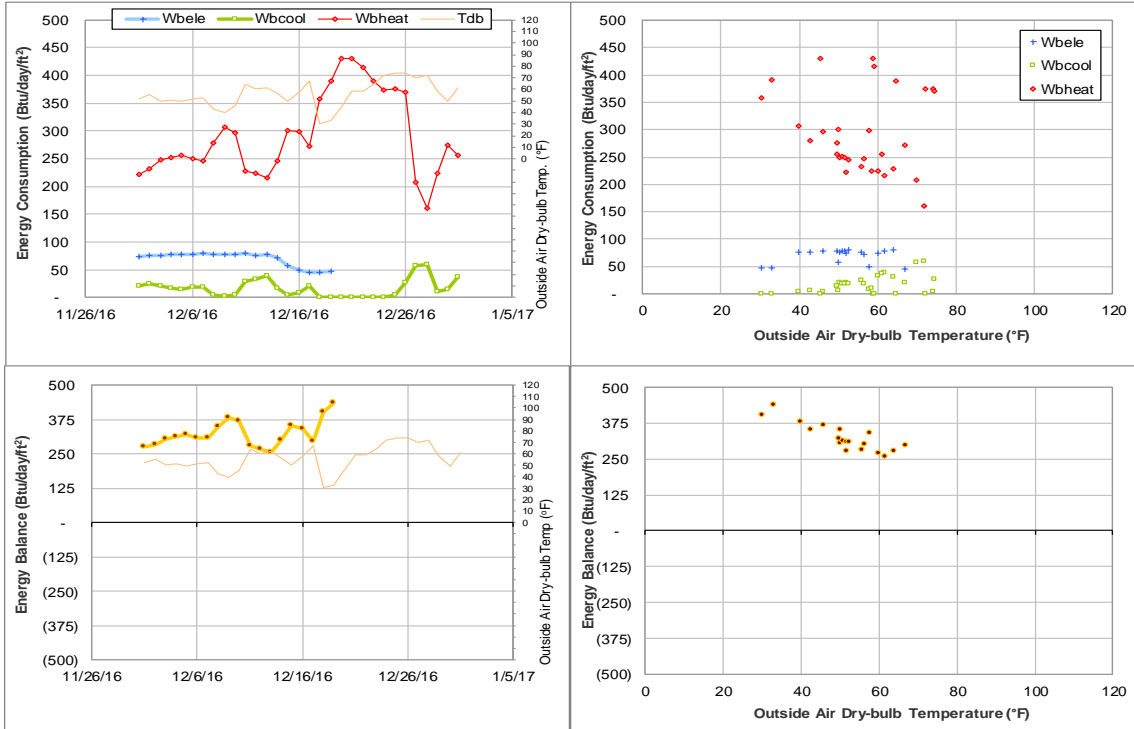


Figure IV-55 Aston Residence Hall TAMU BLDG # 447 Energy Balance Plot during December 2016

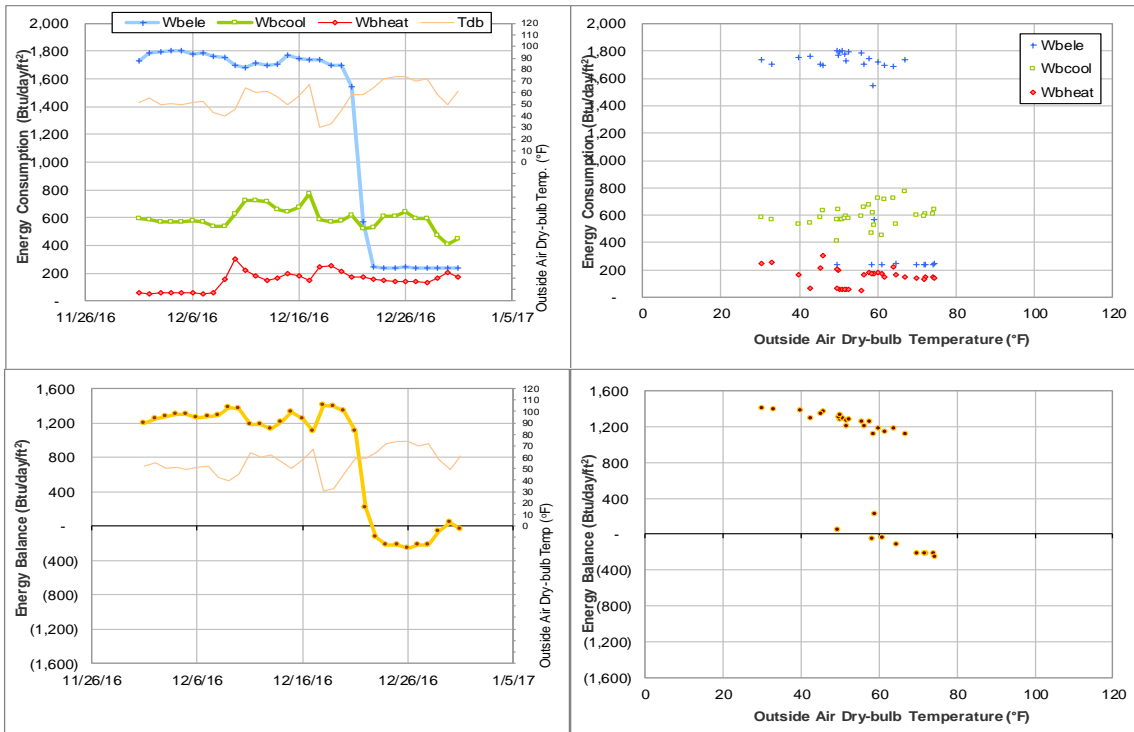


Figure IV-56 Luedcke Building (Cyclotron) TAMU BLDG # 434 Energy Balance Plot during December 2016

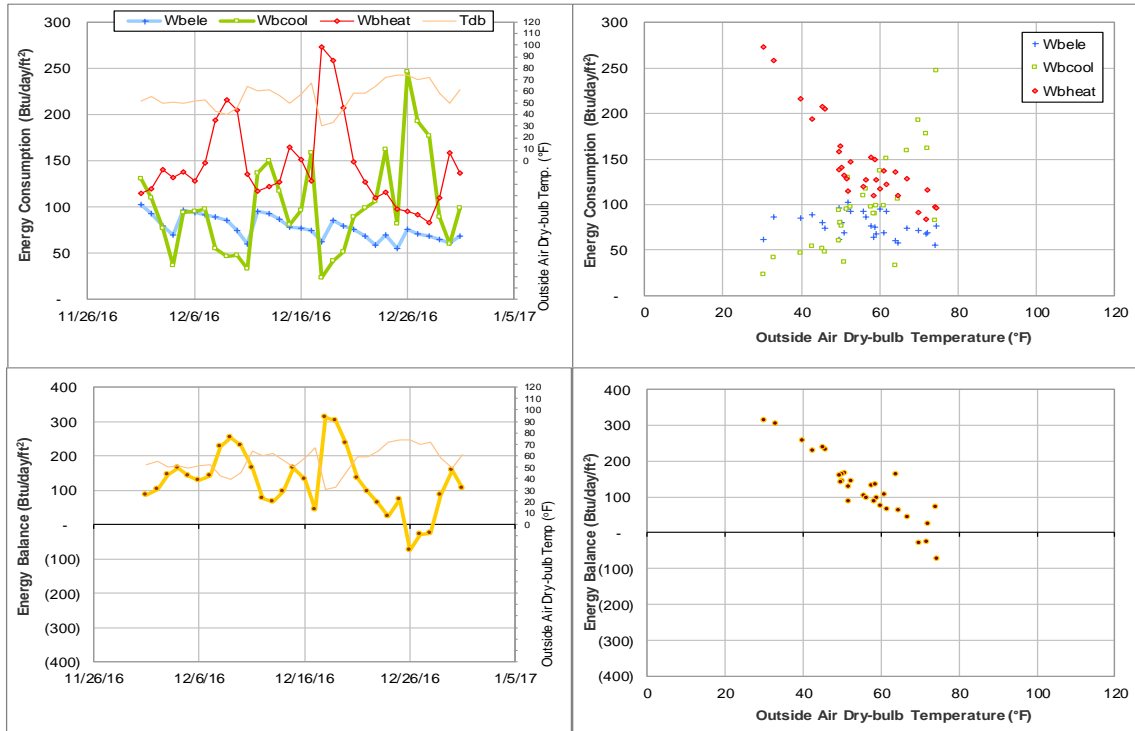


Figure IV-57 Harrington Education Center Office Tower TAMU BLDG # 435 Energy Balance Plot during December 2016

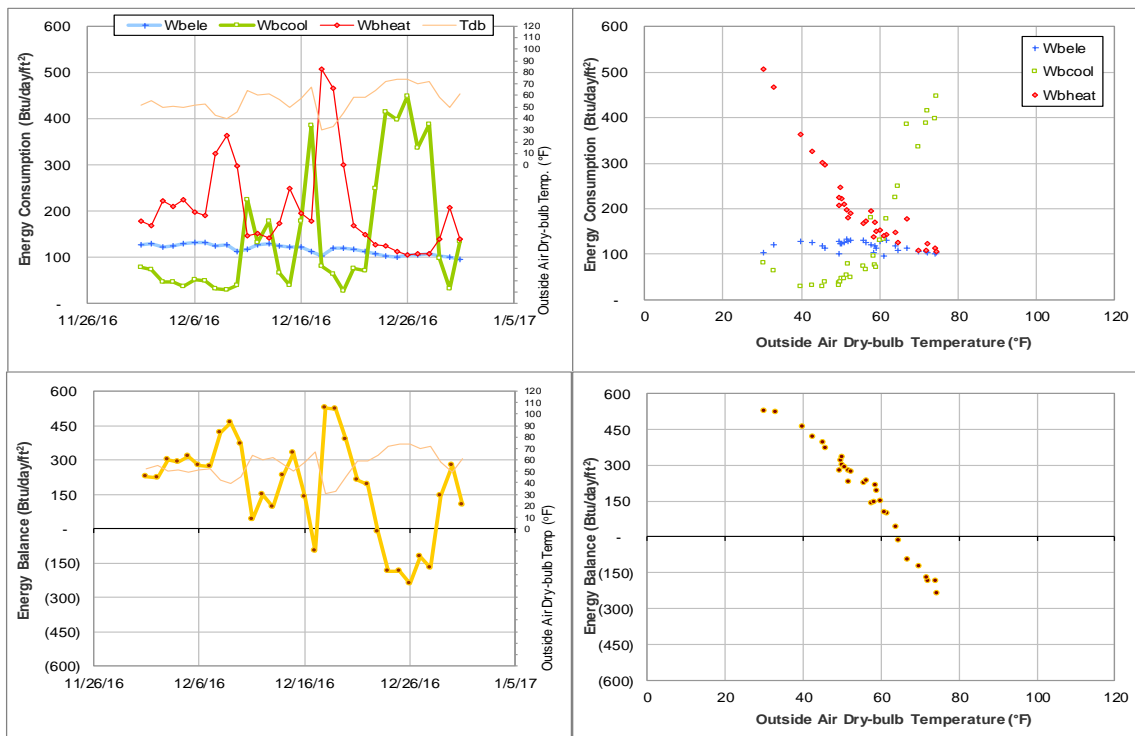


Figure IV-58 Reed-McDonald and Engineering Innovation Center TAMU BLDG # 436 and 499 Energy Balance Plot during December 2016

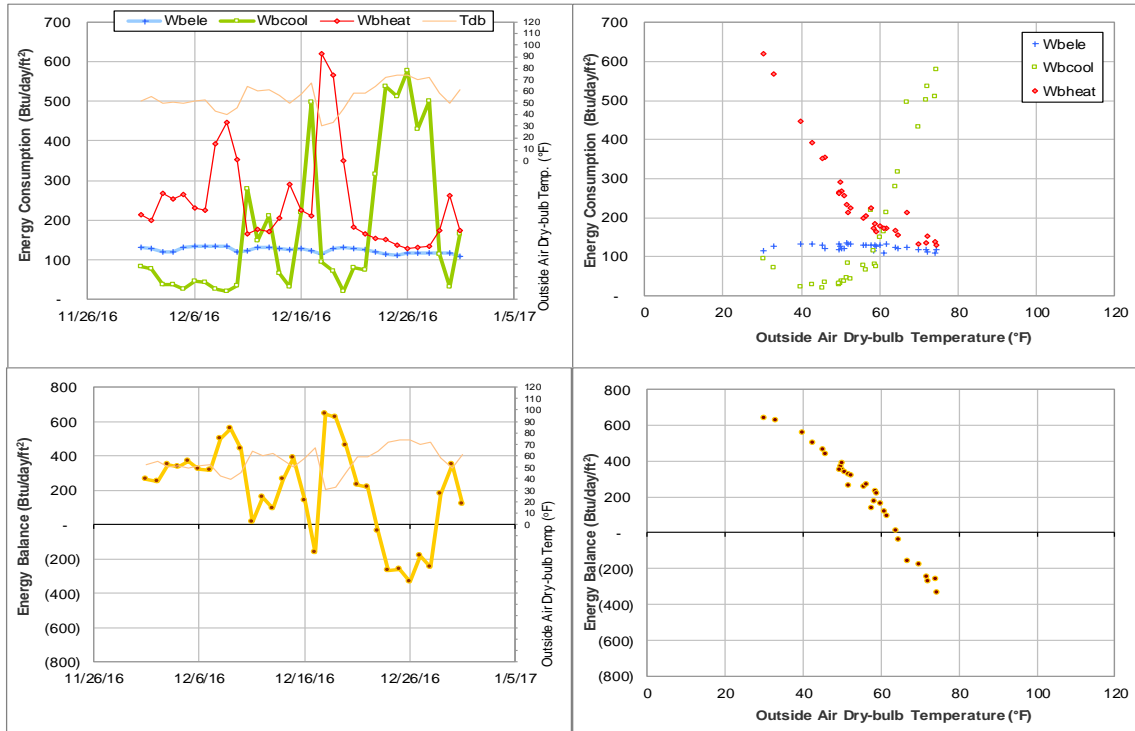


Figure IV-59 Reed-McDonald Building TAMU BLDG # 436 Energy Balance Plot during December 2016

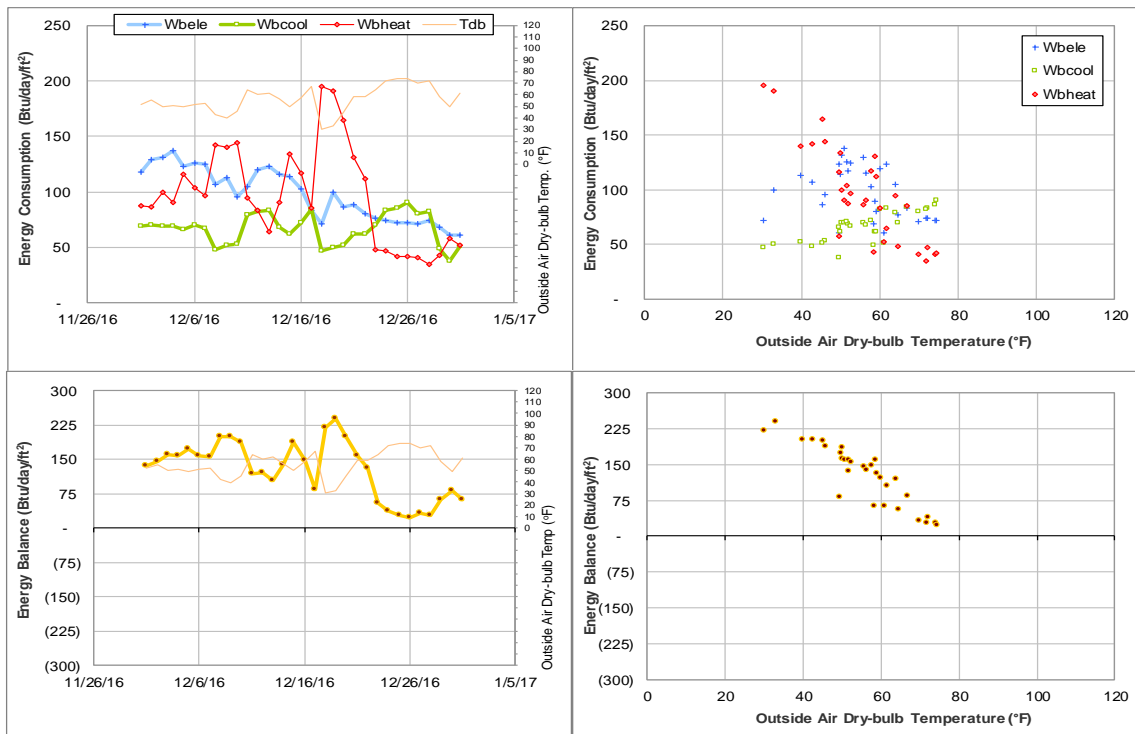


Figure IV-60 Engineering Innovation Center TAMU BLDG # 499 Energy Balance Plot during December 2016

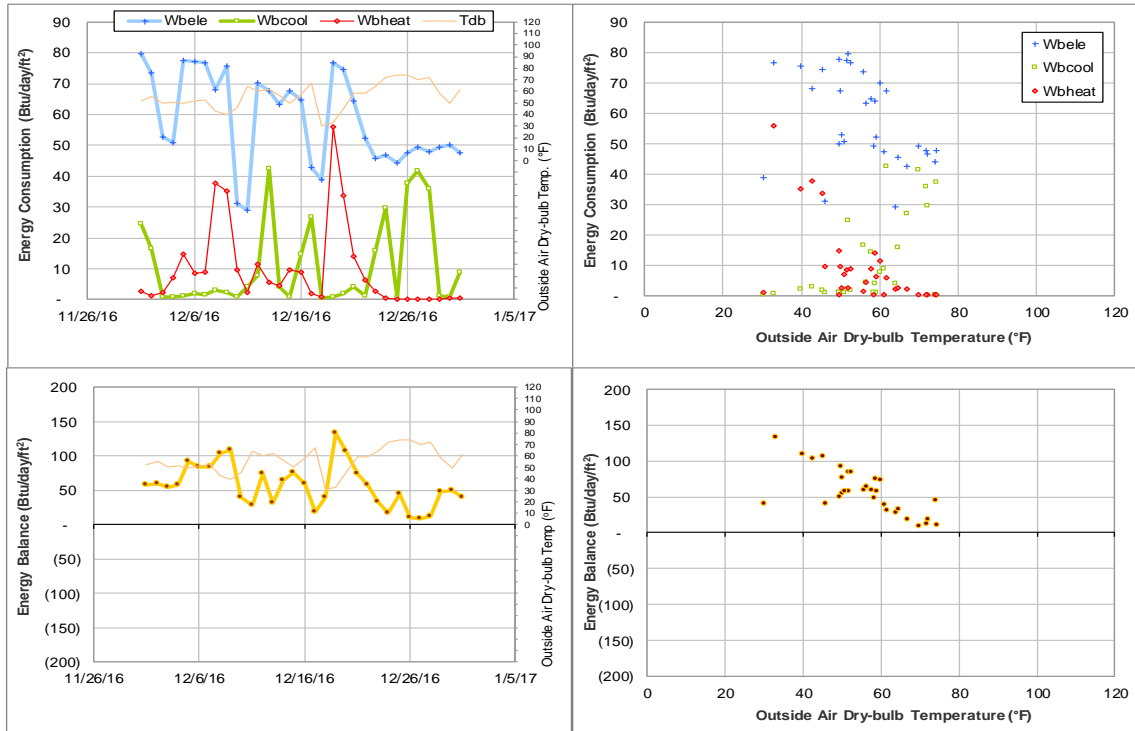


Figure IV-61 Harrington Education Center Classroom Building TAMU BLDG # 438 Energy Balance Plot during December 2016

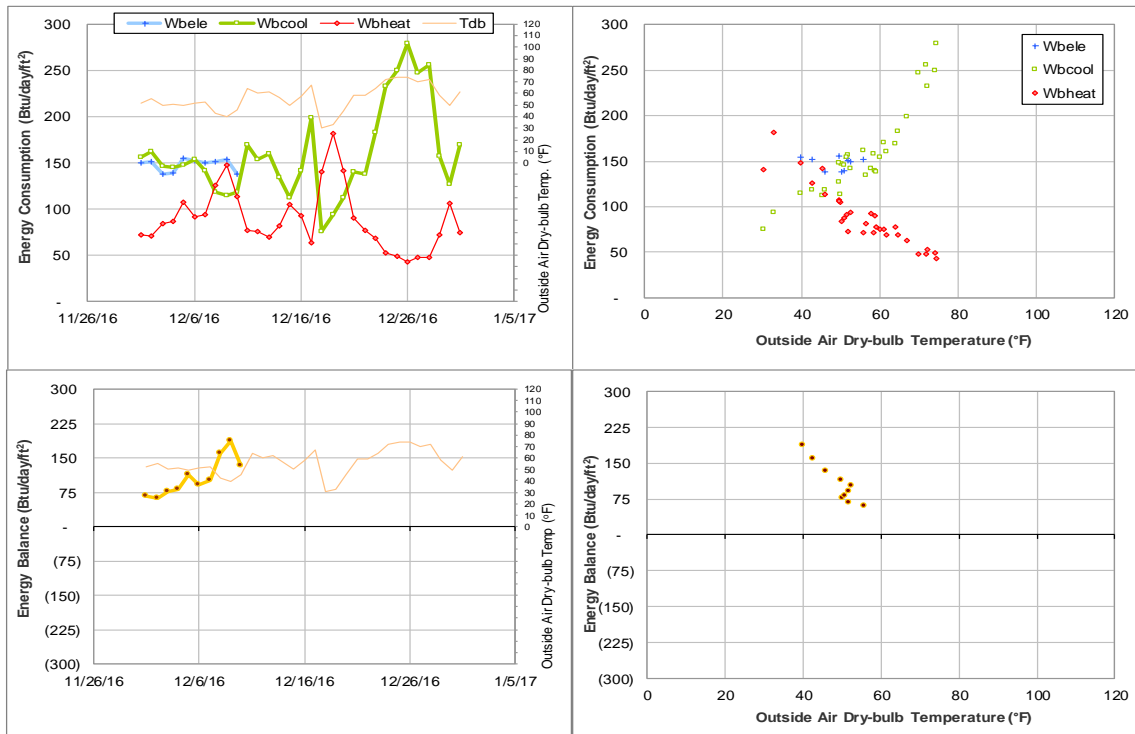


Figure IV-62 Oceanography & Meteorology Building TAMU BLDG # 443 Energy Balance Plot during December 2016

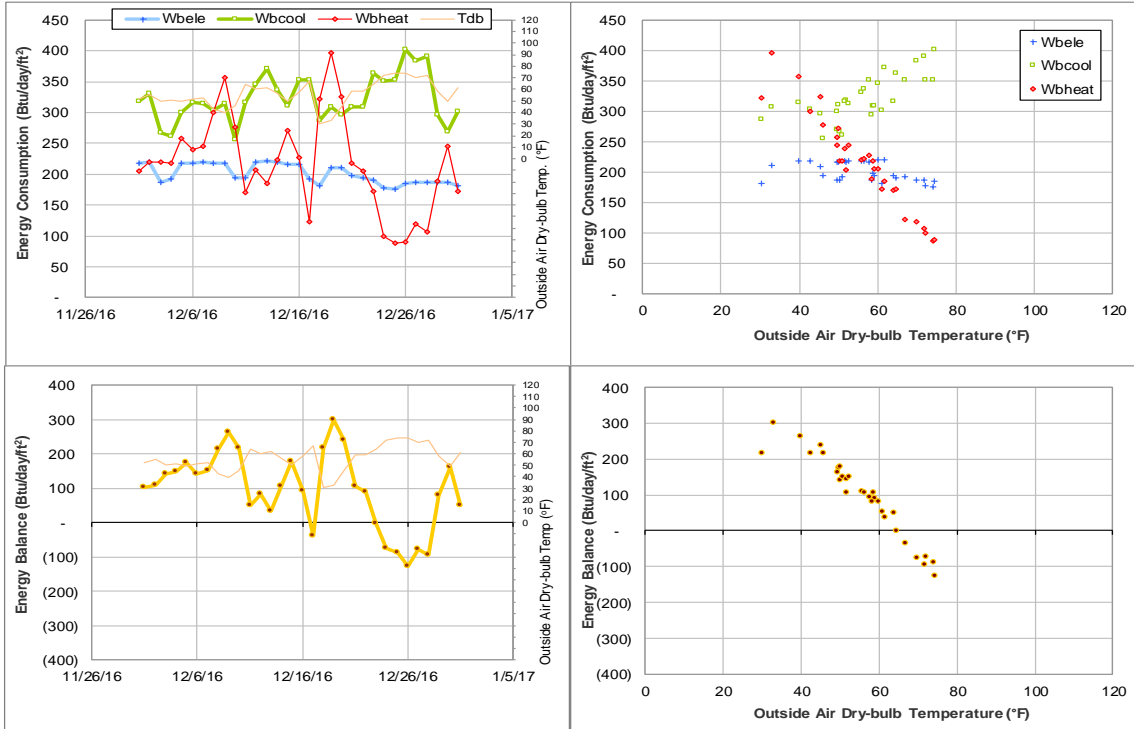


Figure IV-63 Peterson Building TAMU BLDG # 444 Energy Balance Plot during December 2016

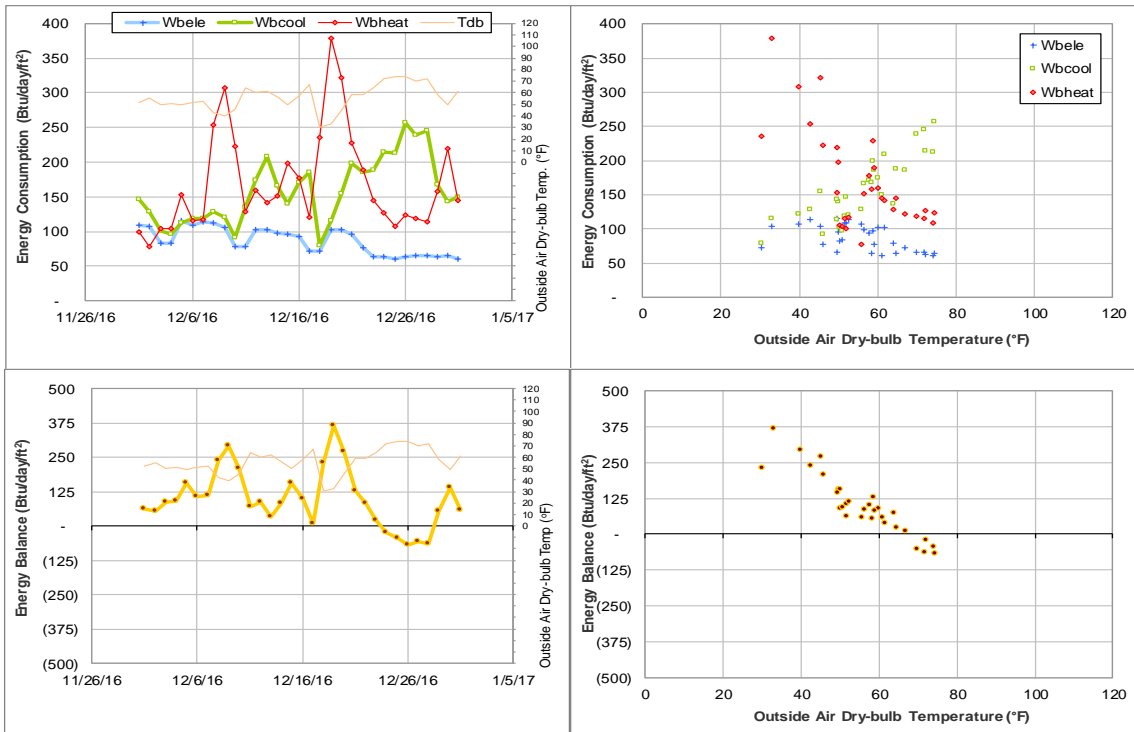


Figure IV-64 Teague Research Center and DPC Annex TAMU BLDG # 445 and 517 Energy Balance Plot during December 2016

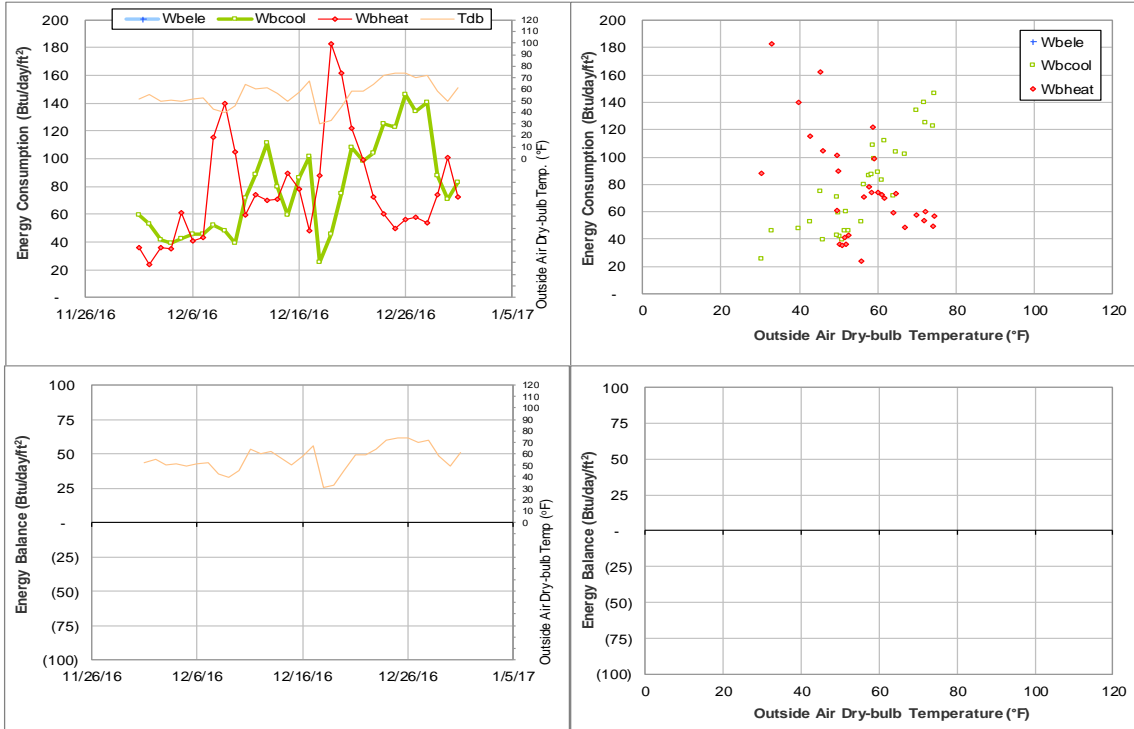


Figure IV-65 Teague Research Center TAMU BLDG # 445 Energy Balance Plot during December 2016

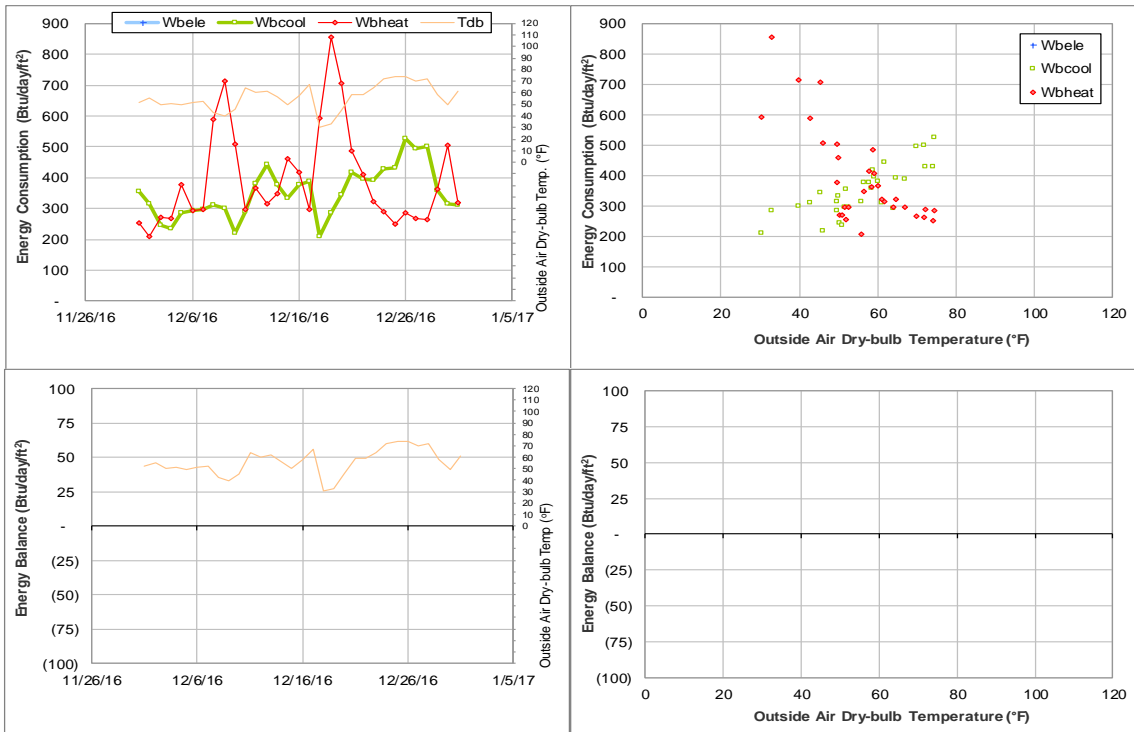


Figure IV-66 DPC Annex TAMU BLDG # 517 Energy Balance Plot during December 2016

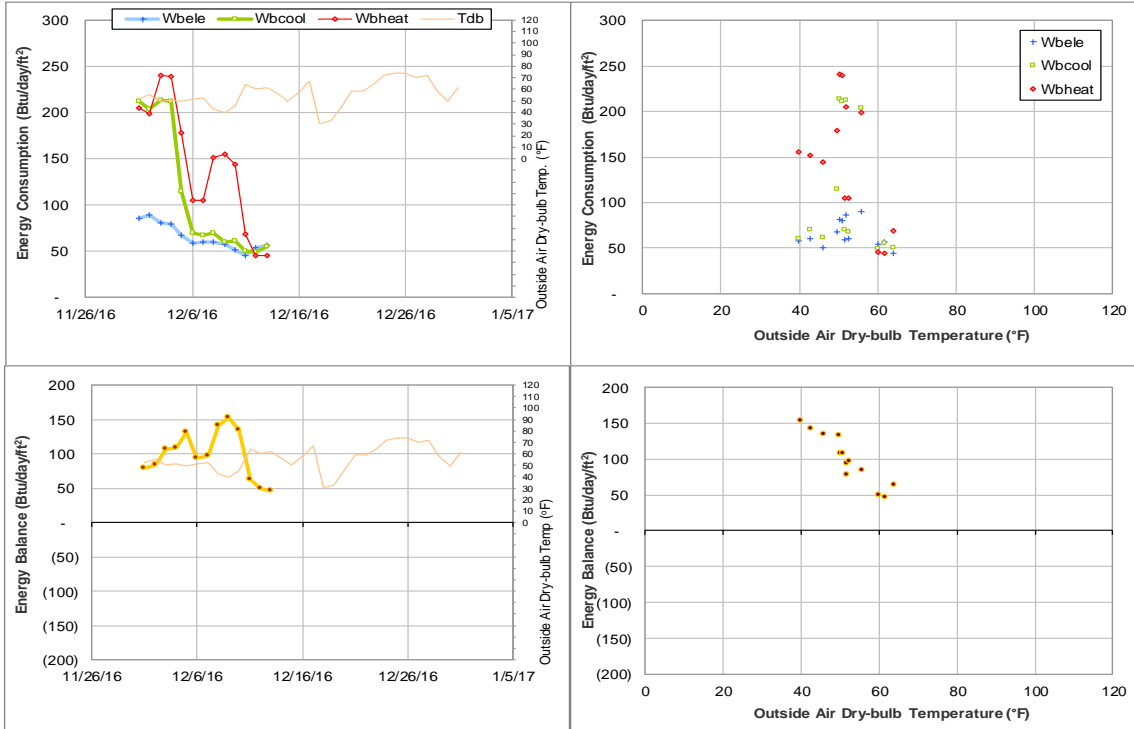


Figure IV-67 Rudder Tower and Theatre Complex TAMU BLDG # 446 Energy Balance Plot during December 2016

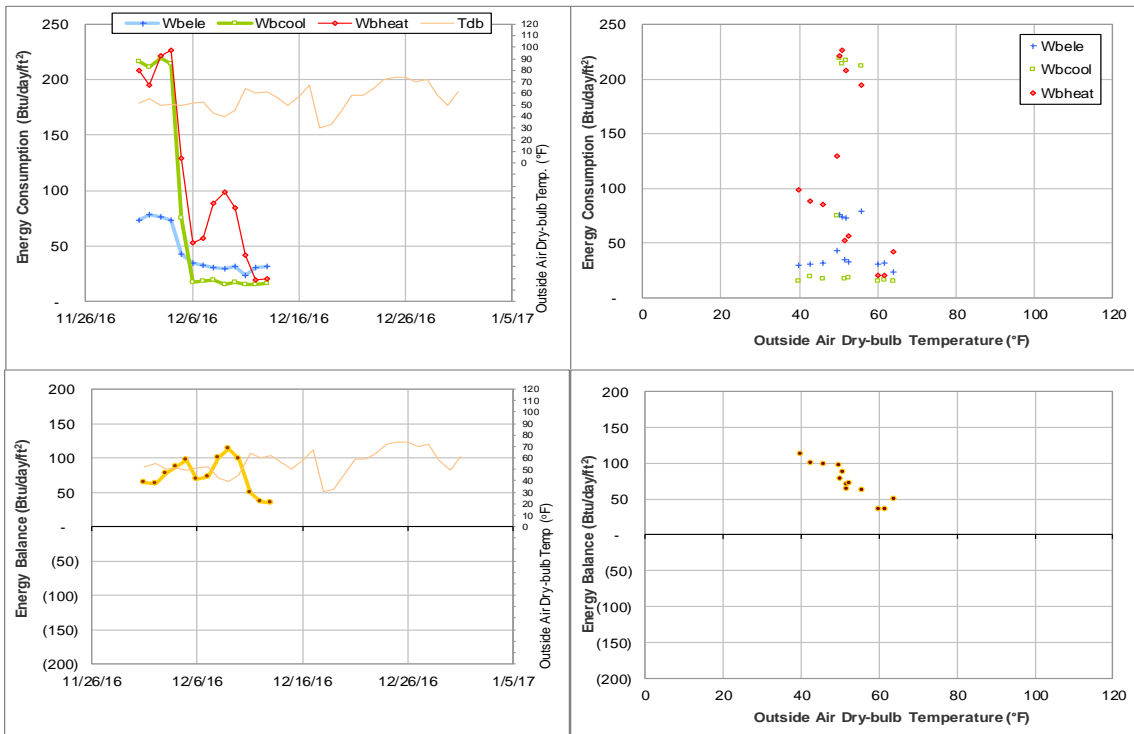


Figure IV-68 Rudder Theatre Complex TAMU BLDG # 446 Energy Balance Plot during December 2016

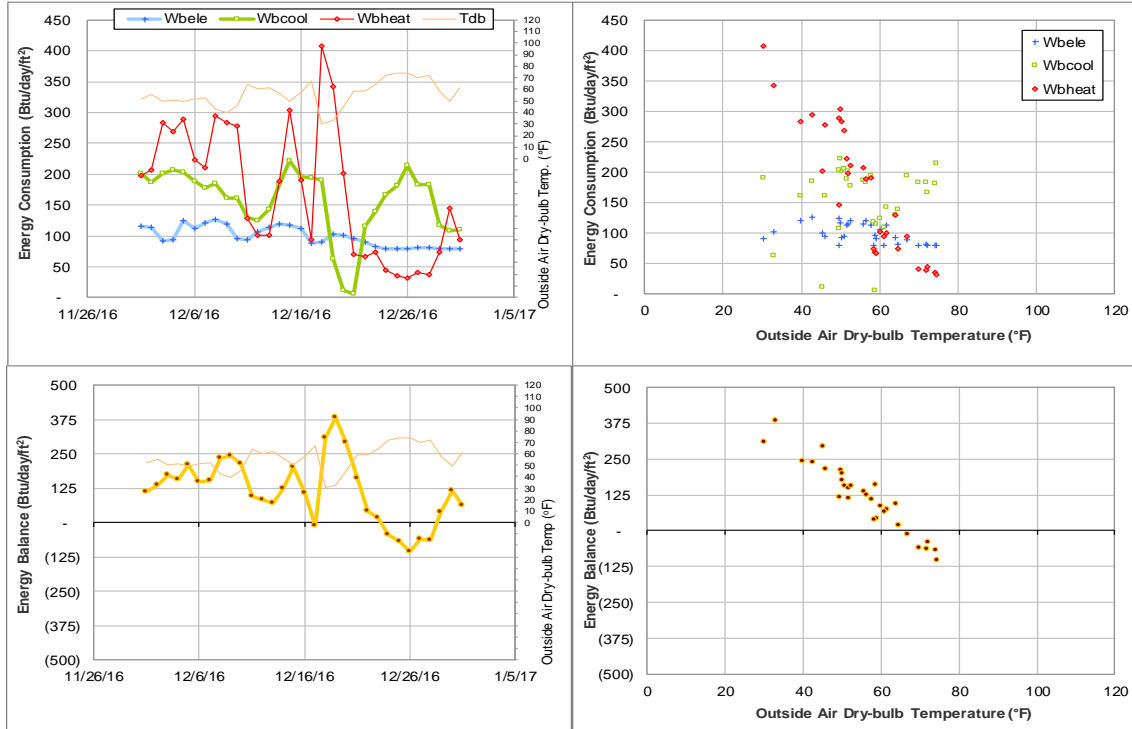


Figure IV-69 Rudder Tower TAMU BLDG # 446 Energy Balance Plot during December 2016

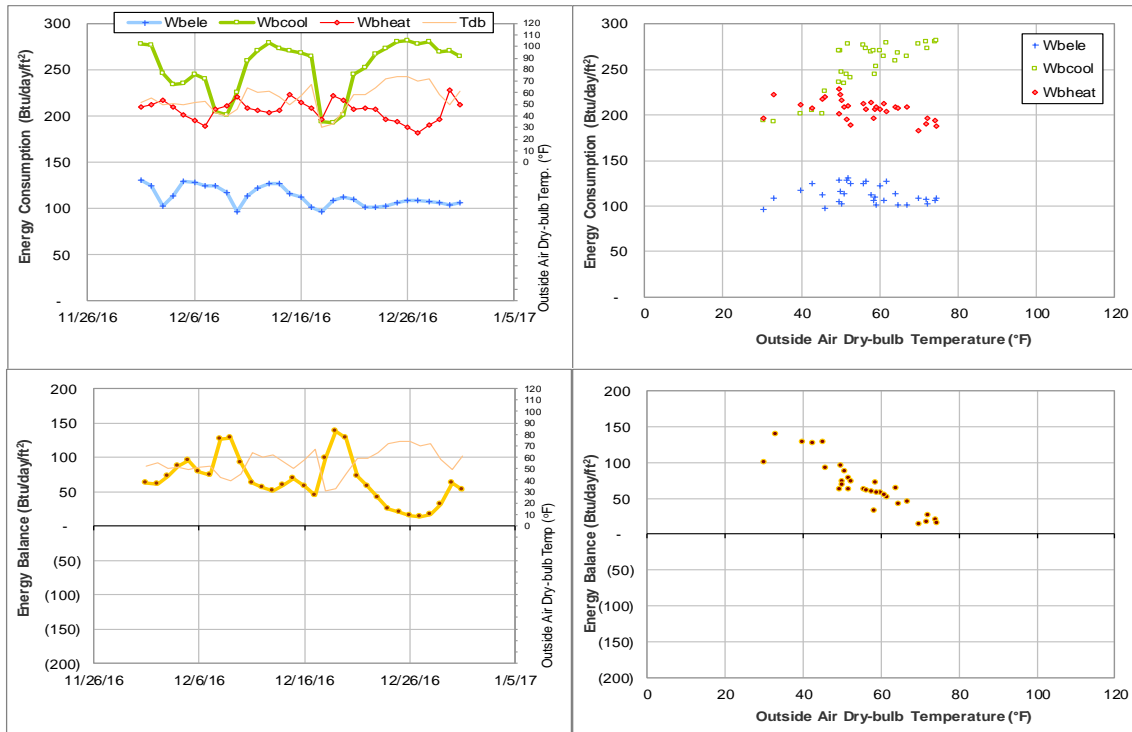


Figure IV-70 Adams Band Hall TAMU BLDG # 448 Energy Balance Plot during December 2016

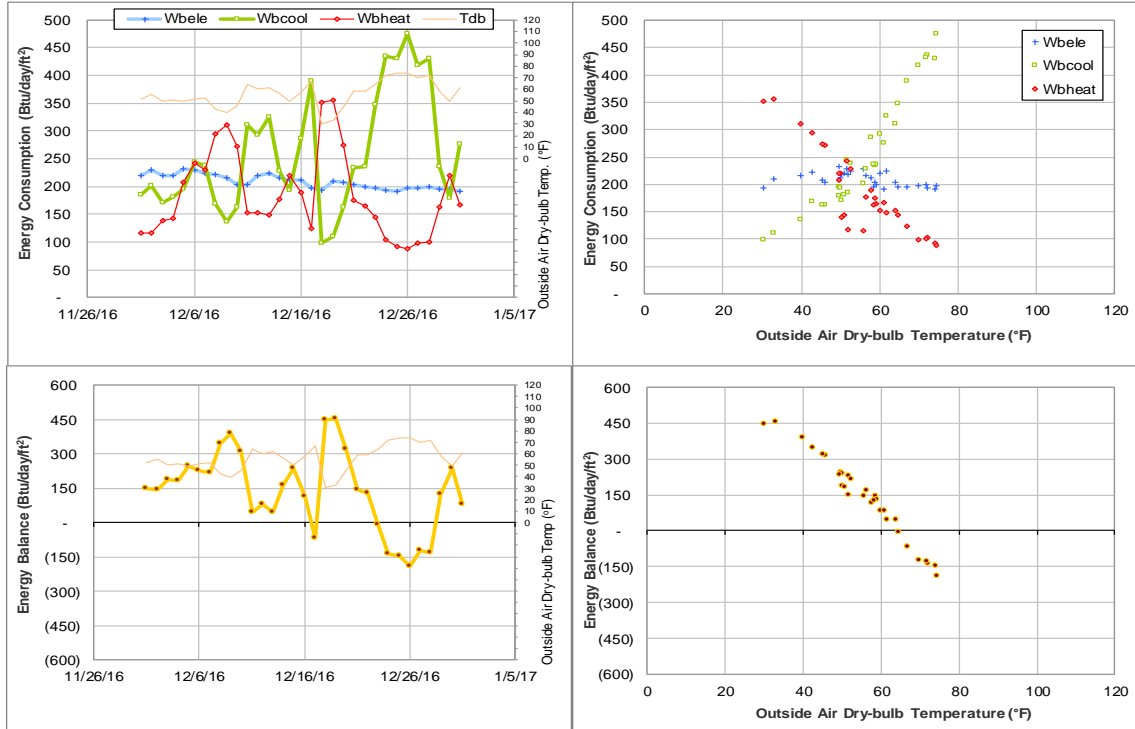


Figure IV-71 Biological Sciences Building - West TAMU BLDG # 449 Energy Balance Plot during December 2016

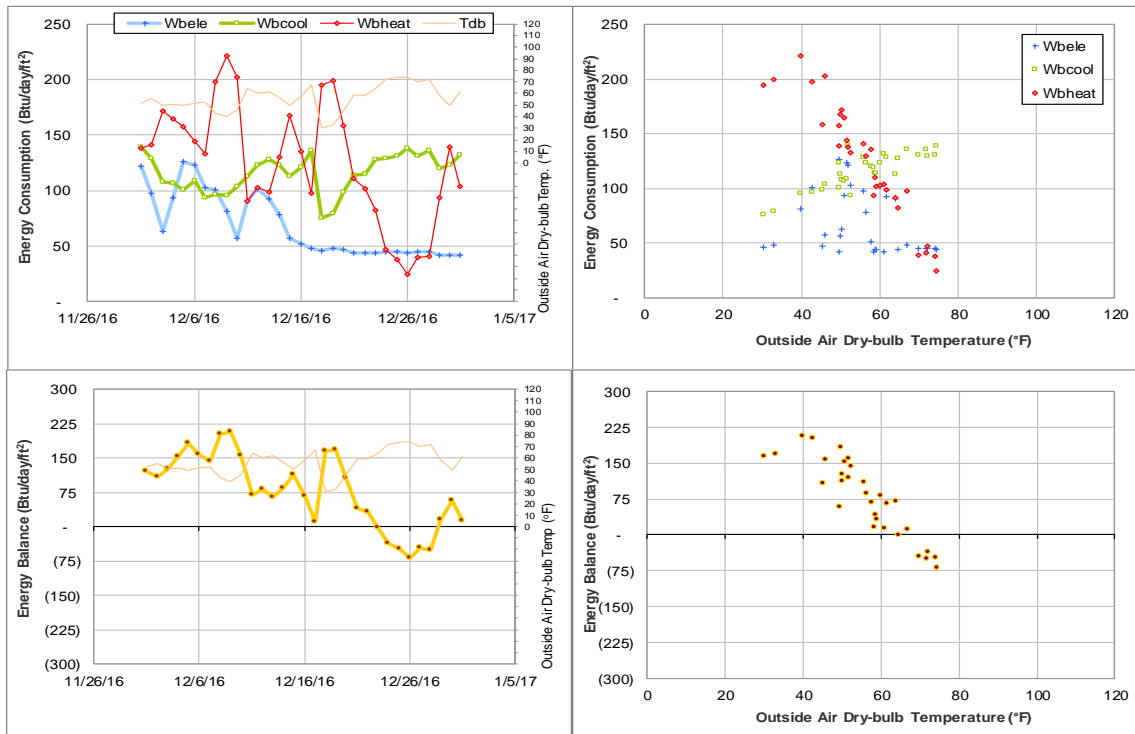


Figure IV-72 Duncan Dining Hall TAMU BLDG # 450 Energy Balance Plot during December 2016

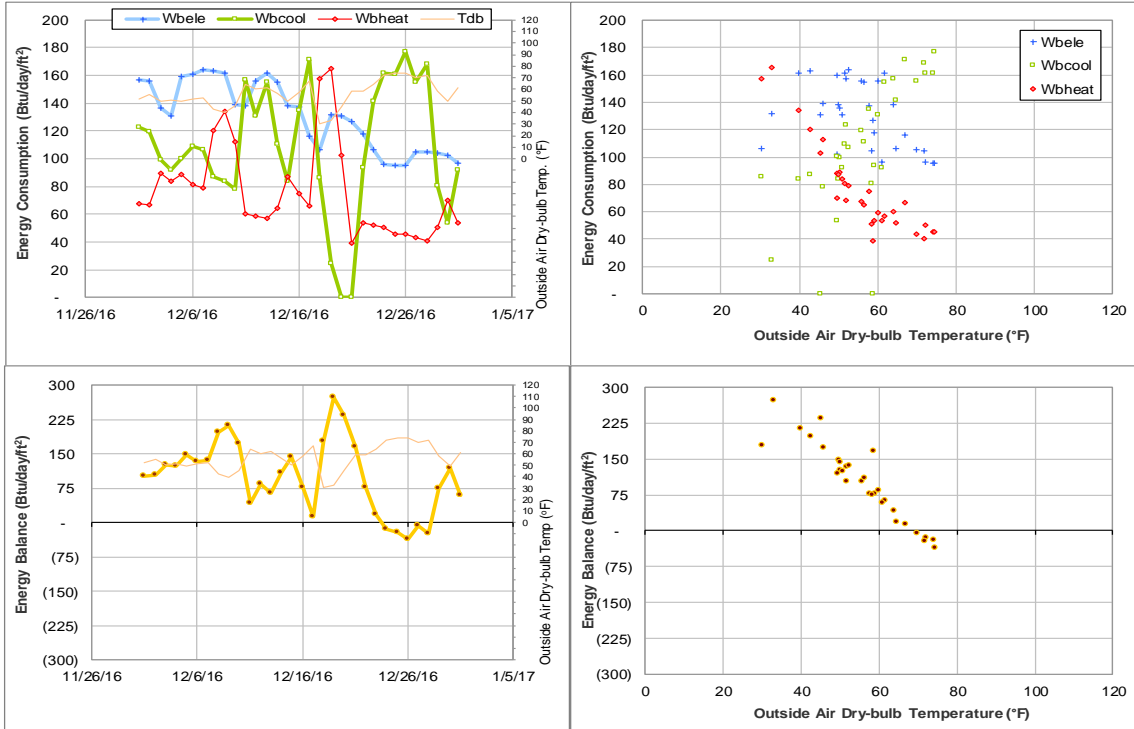


Figure IV-73 MSC TAMU BLDG # 454 Energy Balance Plot during December 2016

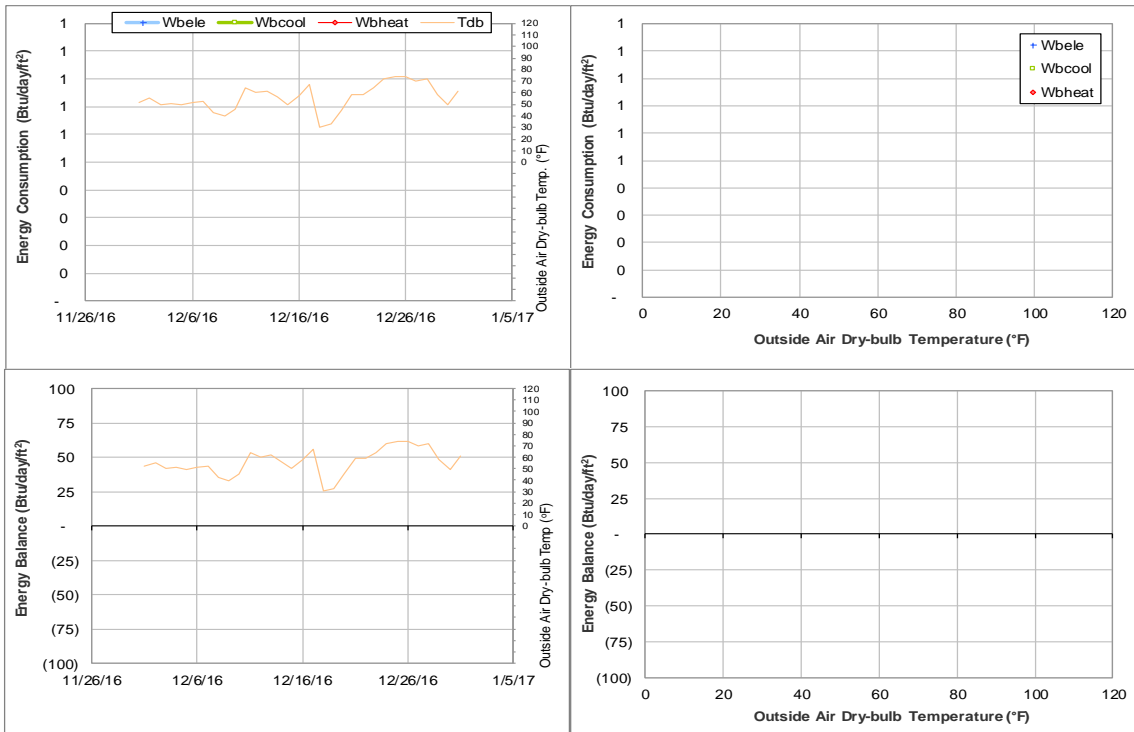


Figure IV-74 Military Sciences Building TAMU BLDG # 456 Energy Balance Plot during December 2016

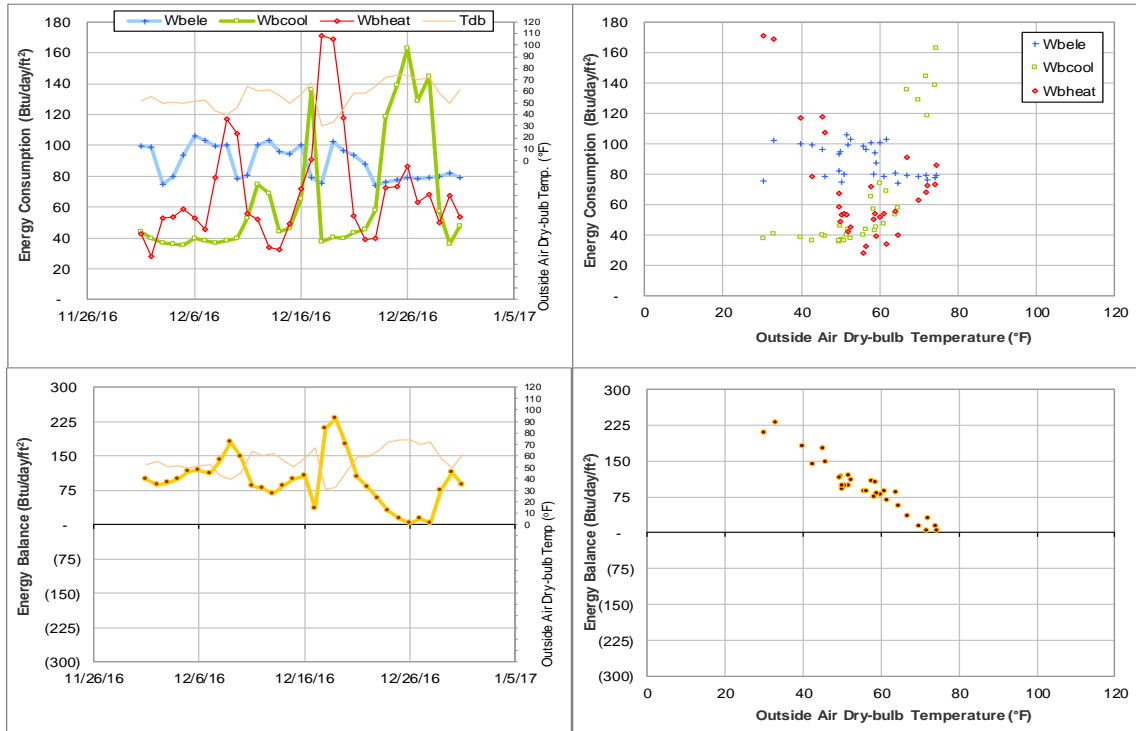


Figure IV-75 TAES Annex Building TAMU BLDG # 457 Energy Balance Plot during December 2016

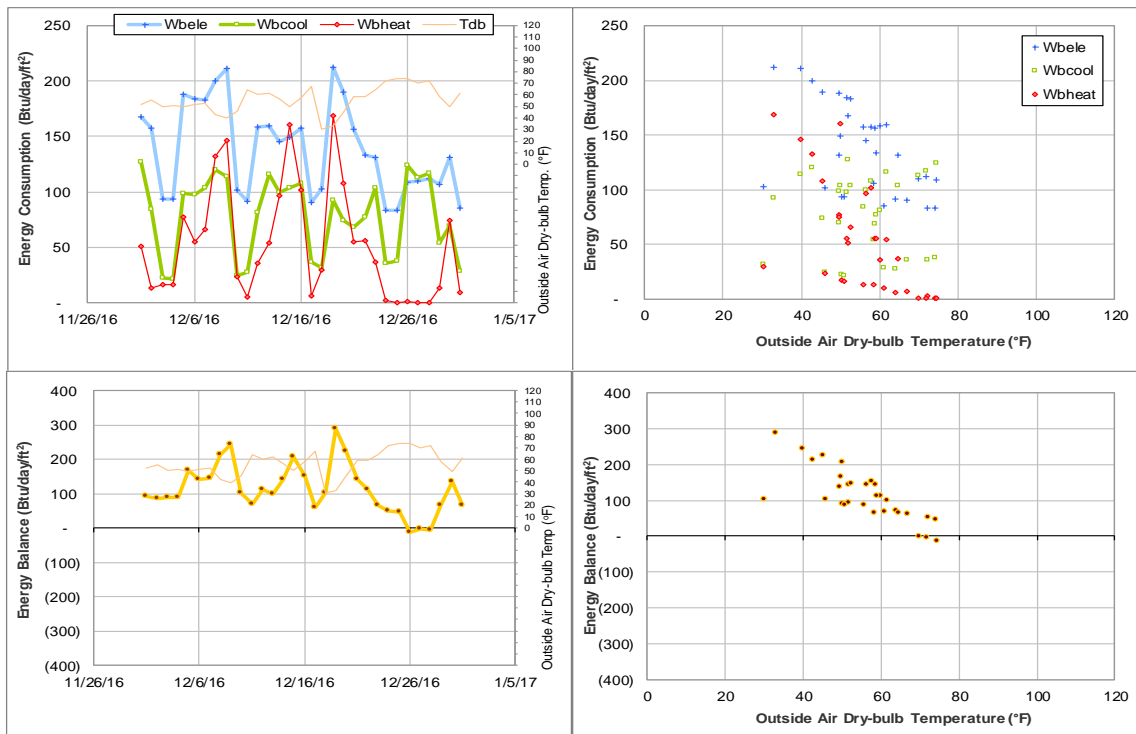


Figure IV-76 Coke Building TAMU BLDG # 461 Energy Balance Plot during December 2016

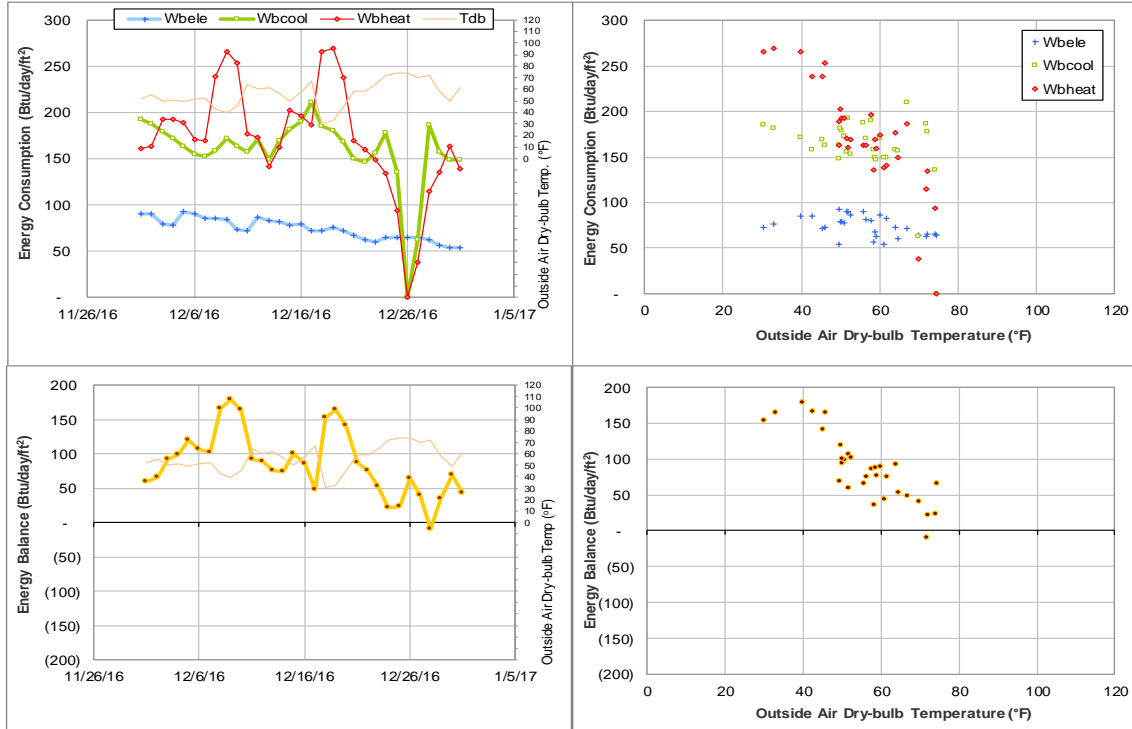


Figure IV-77 Academic Building TAMU BLDG # 462 Energy Balance Plot during December 2016

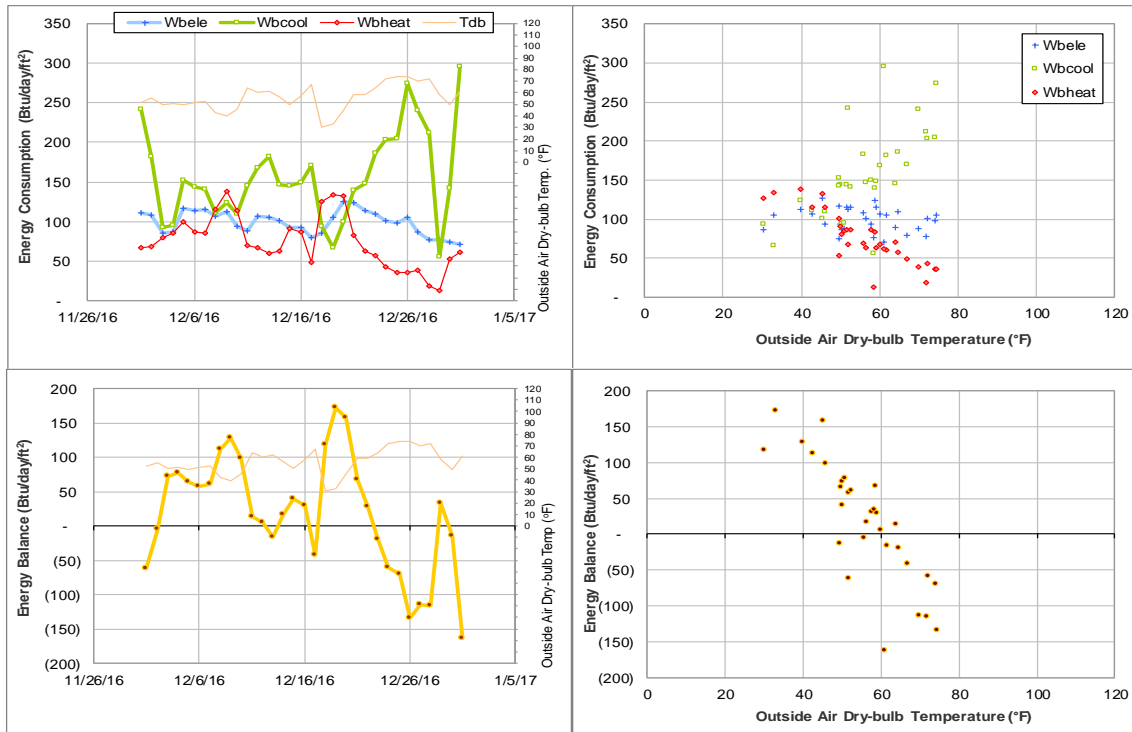


Figure IV-78 Psychology Building TAMU BLDG # 463 Energy Balance Plot during December 2016

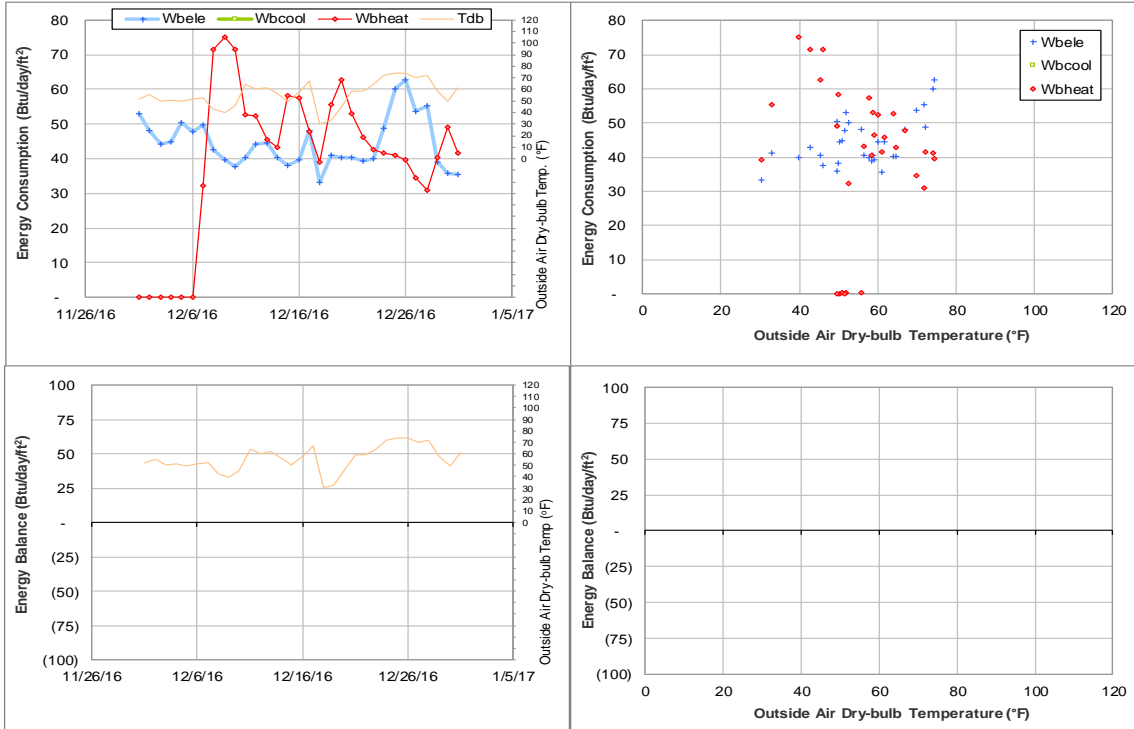


Figure IV-79 State Chemist Building TAMU BLDG # 464 Energy Balance Plot during December 2016

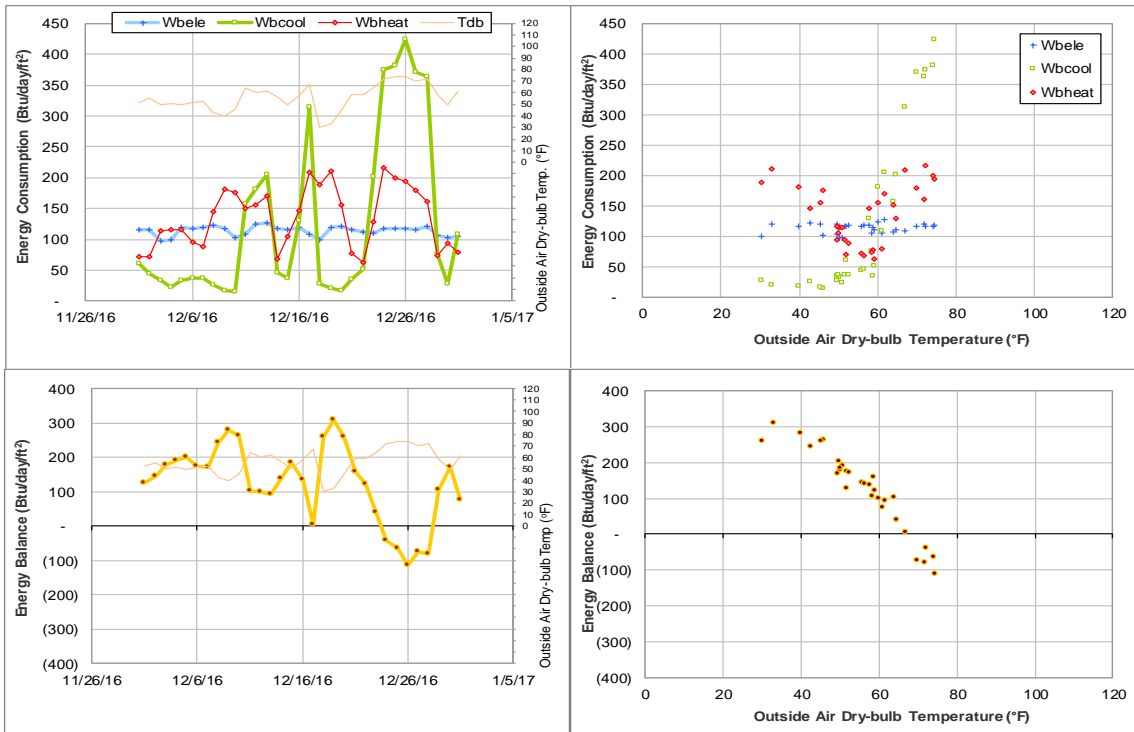


Figure IV-80 Butler Hall TAMU BLDG # 465 Energy Balance Plot during December 2016

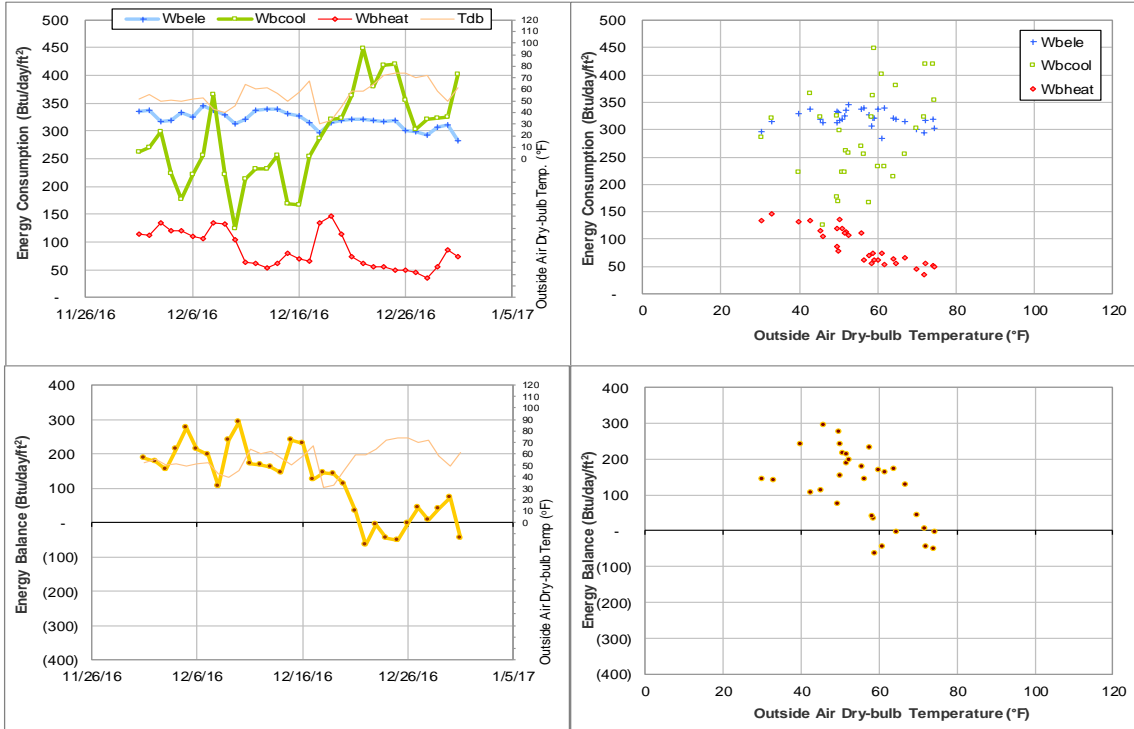


Figure IV-81 Biological Sciences Building - East TAMU BLDG # 467 Energy Balance Plot during December 2016

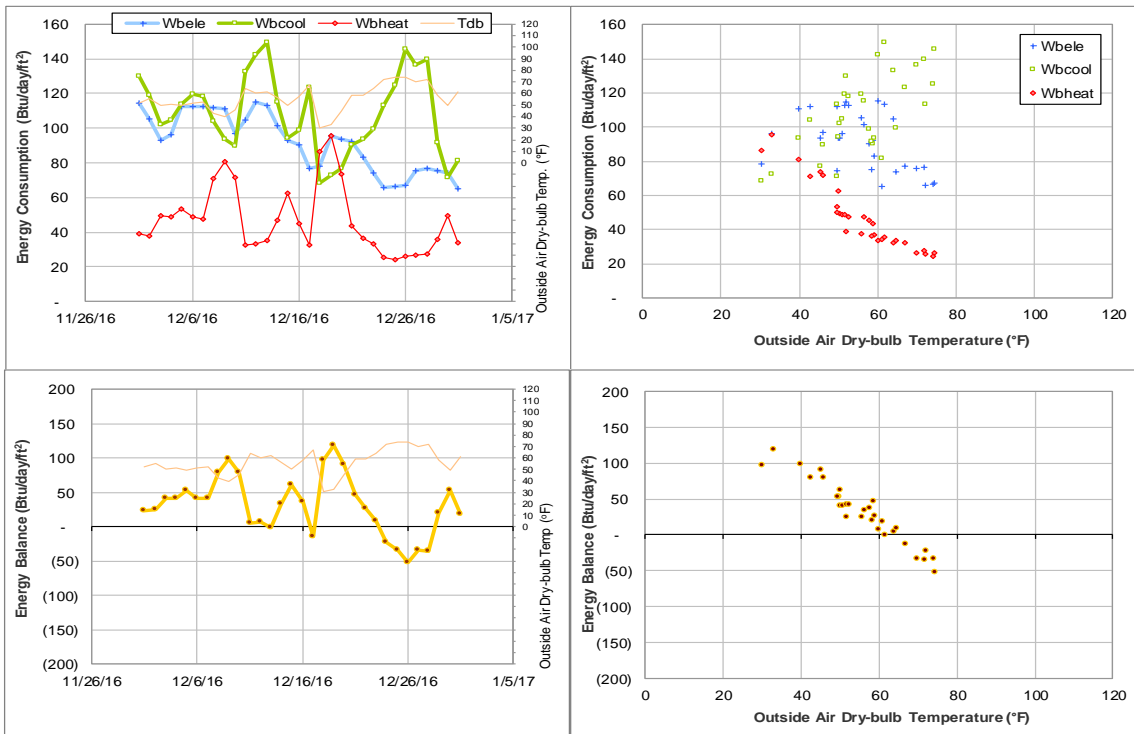


Figure IV-82 Evans Library TAMU BLDG # 468 Energy Balance Plot during December 2016

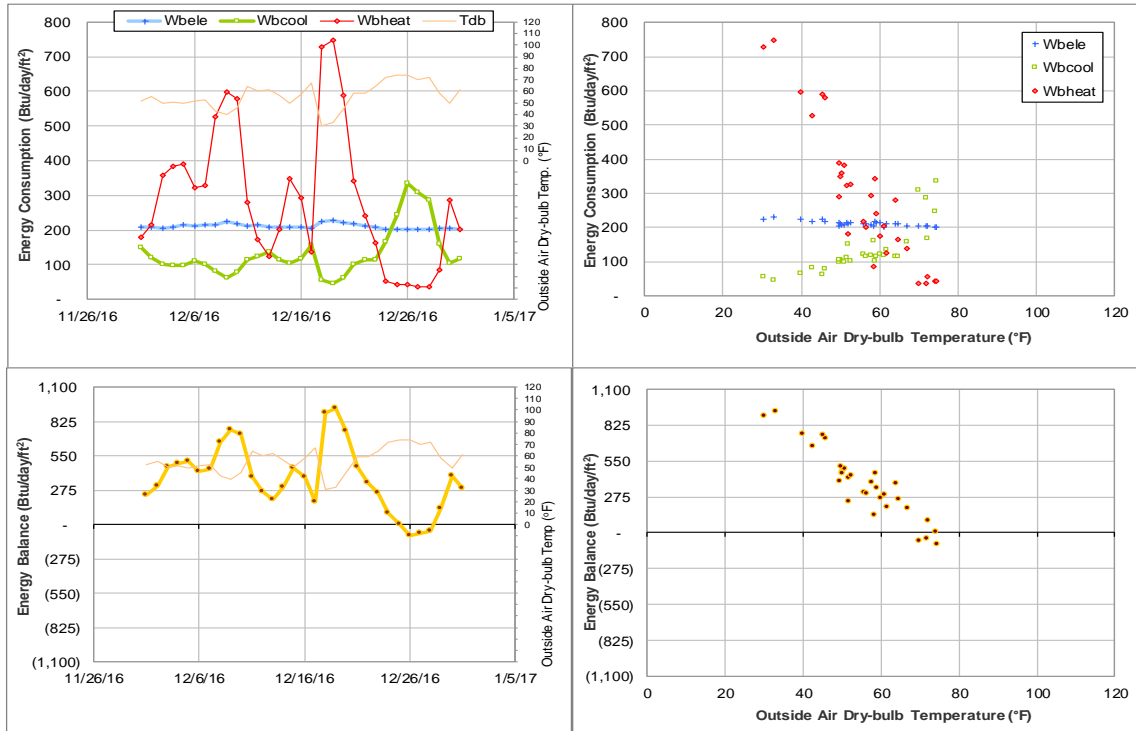


Figure IV-83 Central Campus Parking Garage TAMU BLDG # 469 Energy Balance Plot during December 2016

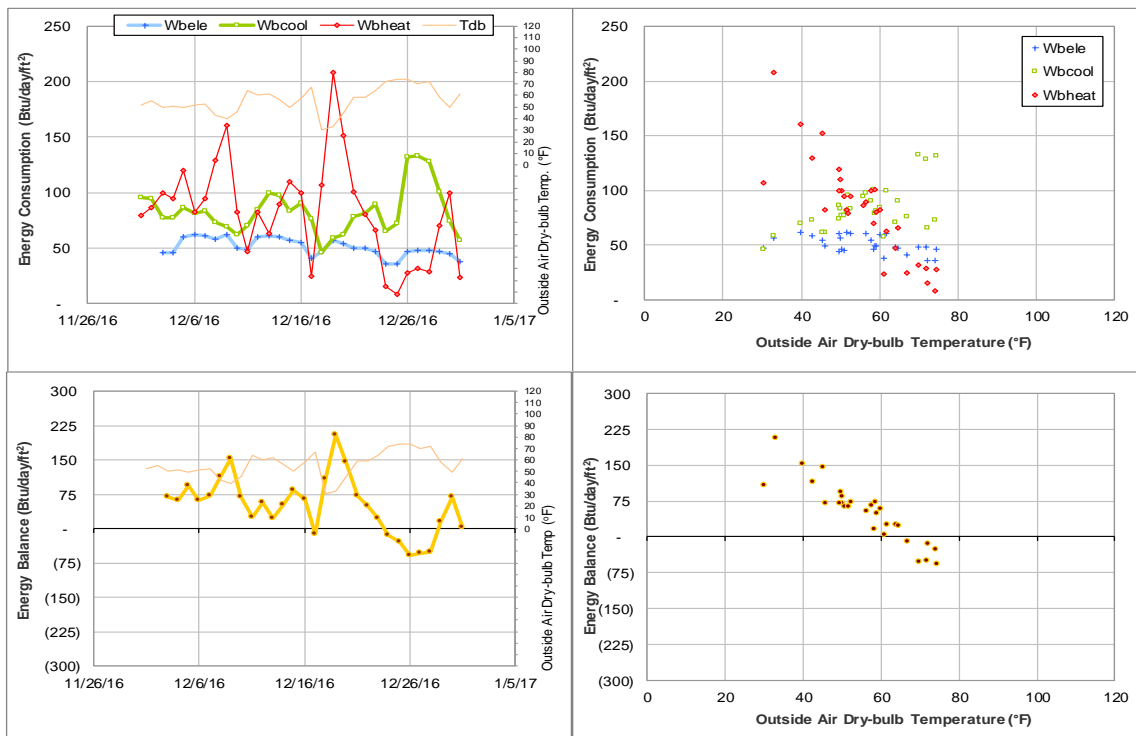


Figure IV-84 Glasscock History Bldg TAMU BLDG # 470 Energy Balance Plot during December 2016

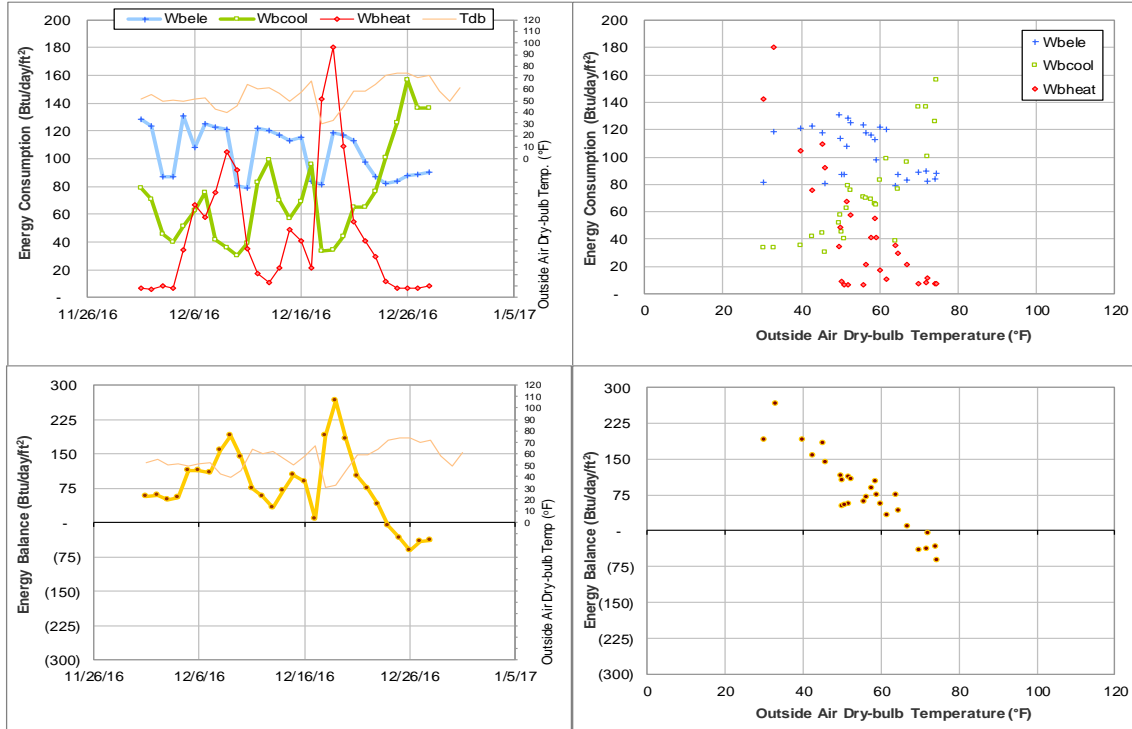


Figure IV-85 Pavilion TAMU BLDG # 471 Energy Balance Plot during December 2016

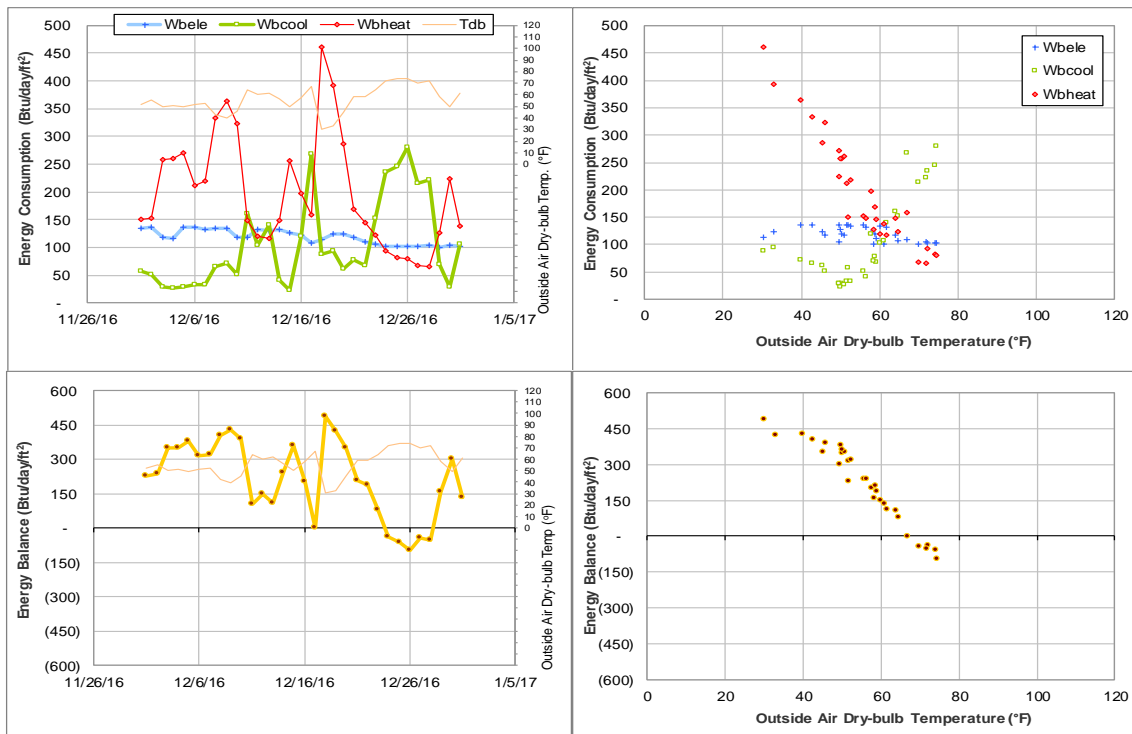


Figure IV-86 Animal Industries TAMU BLDG # 472 Energy Balance Plot during December 2016

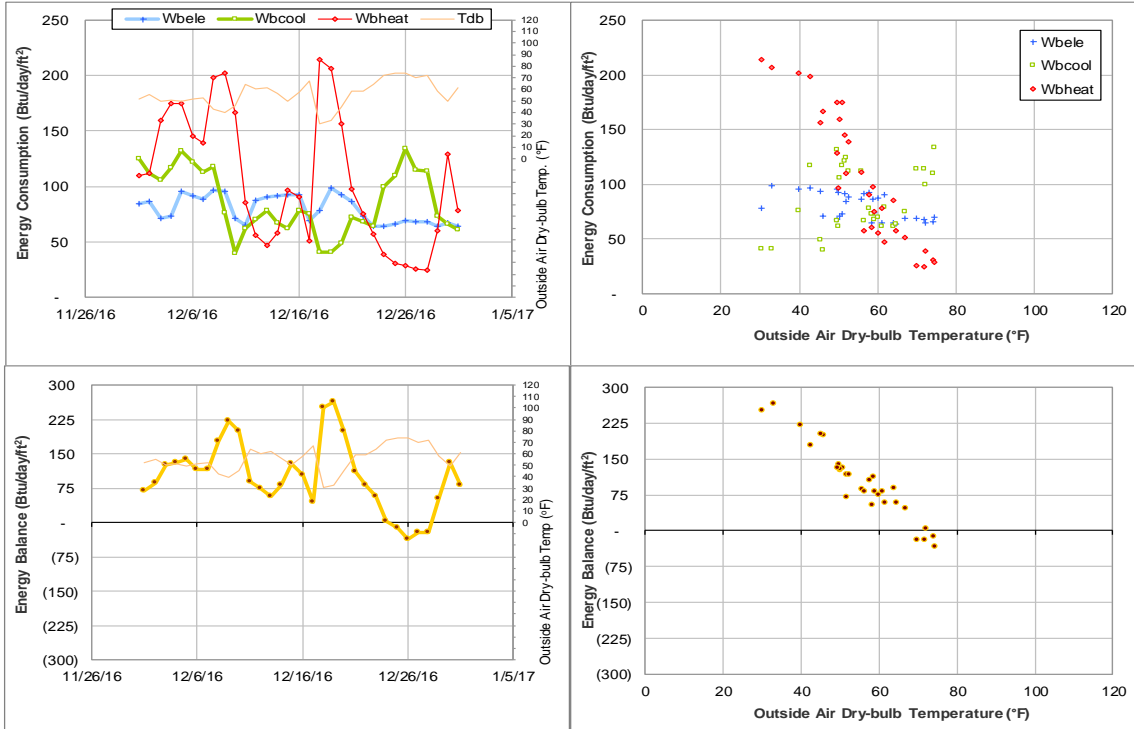


Figure IV-87 Williams Administration Building TAMU BLDG # 473 Energy Balance Plot during December 2016

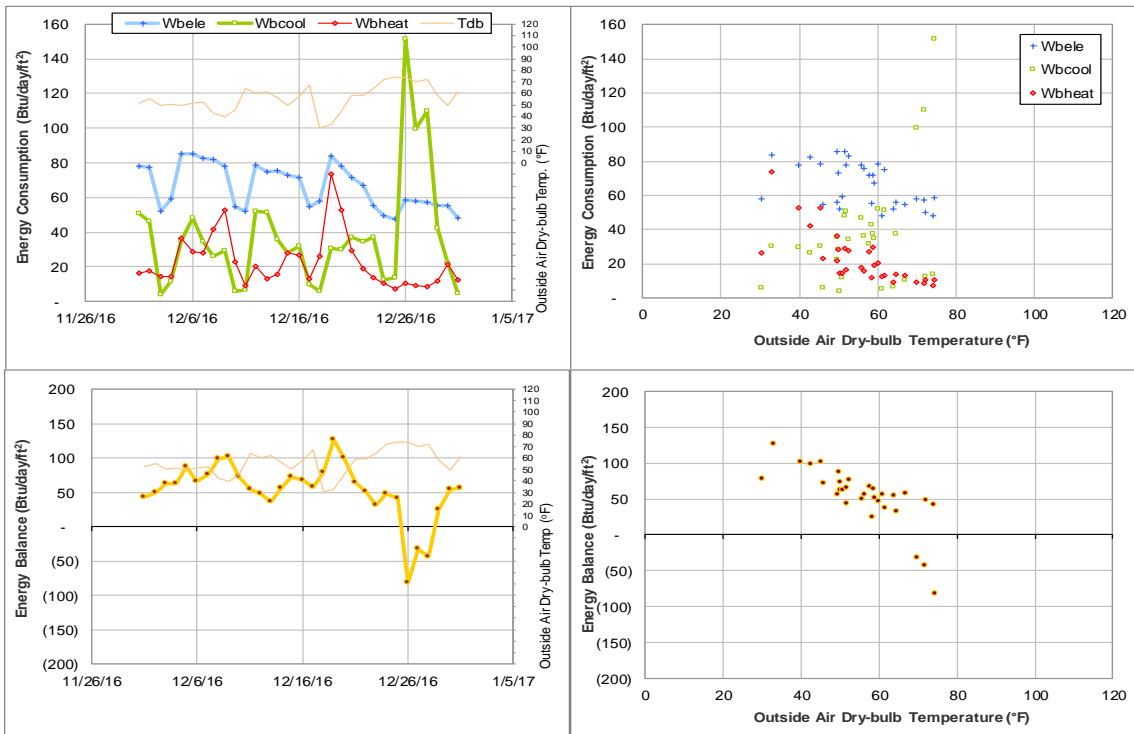


Figure IV-88 YMCA Building TAMU BLDG # 474 Energy Balance Plot during December 2016

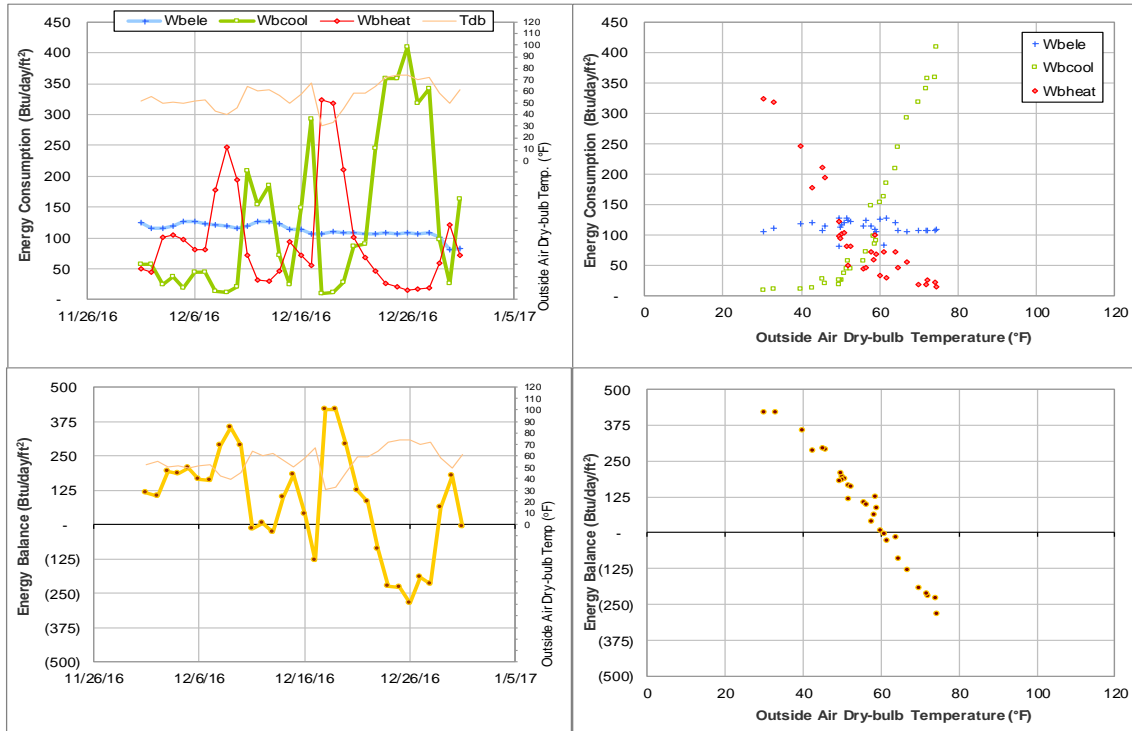


Figure IV-89 Francis Hall TAMU BLDG # 476 Energy Balance Plot during December 2016

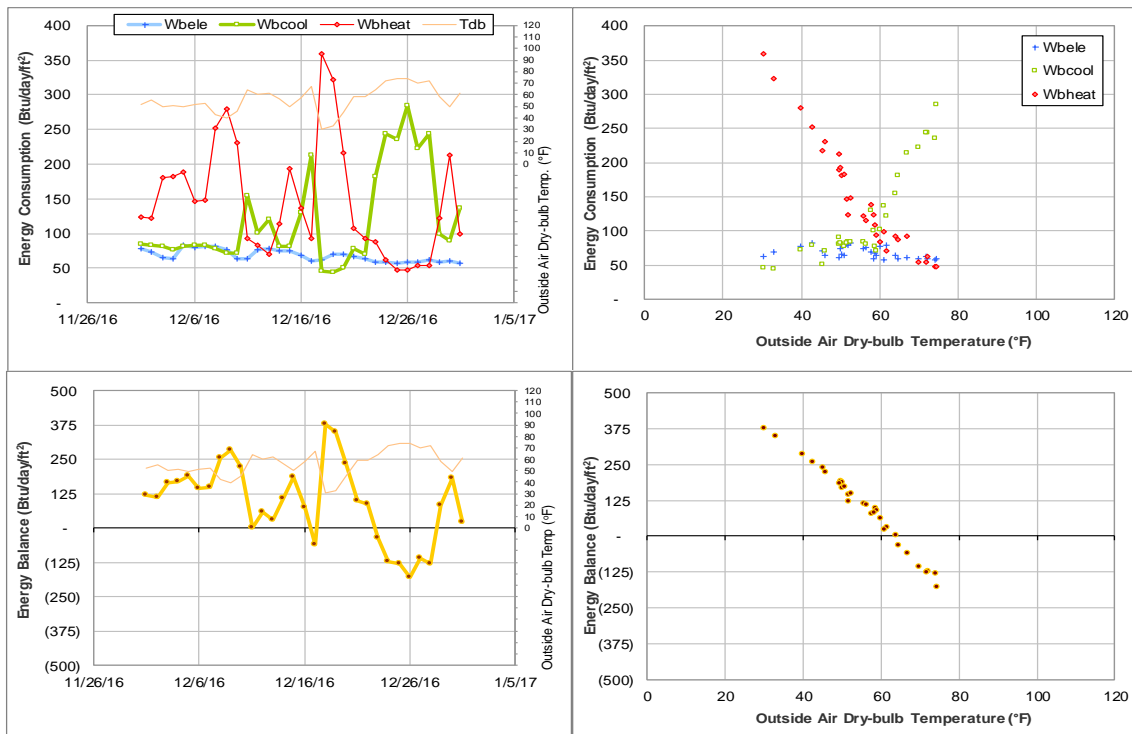


Figure IV-90 Anthropology Building TAMU BLDG # 477 Energy Balance Plot during December 2016

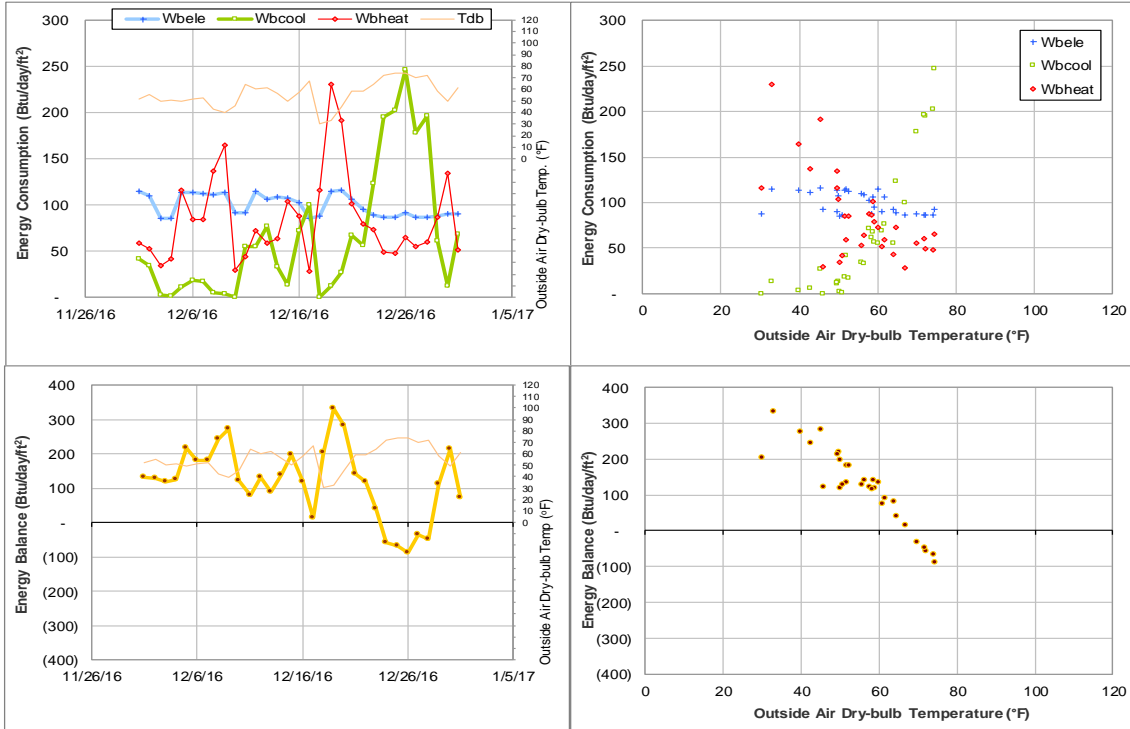


Figure IV-91 Scoates Hall TAMU BLDG # 478 Energy Balance Plot during December 2016

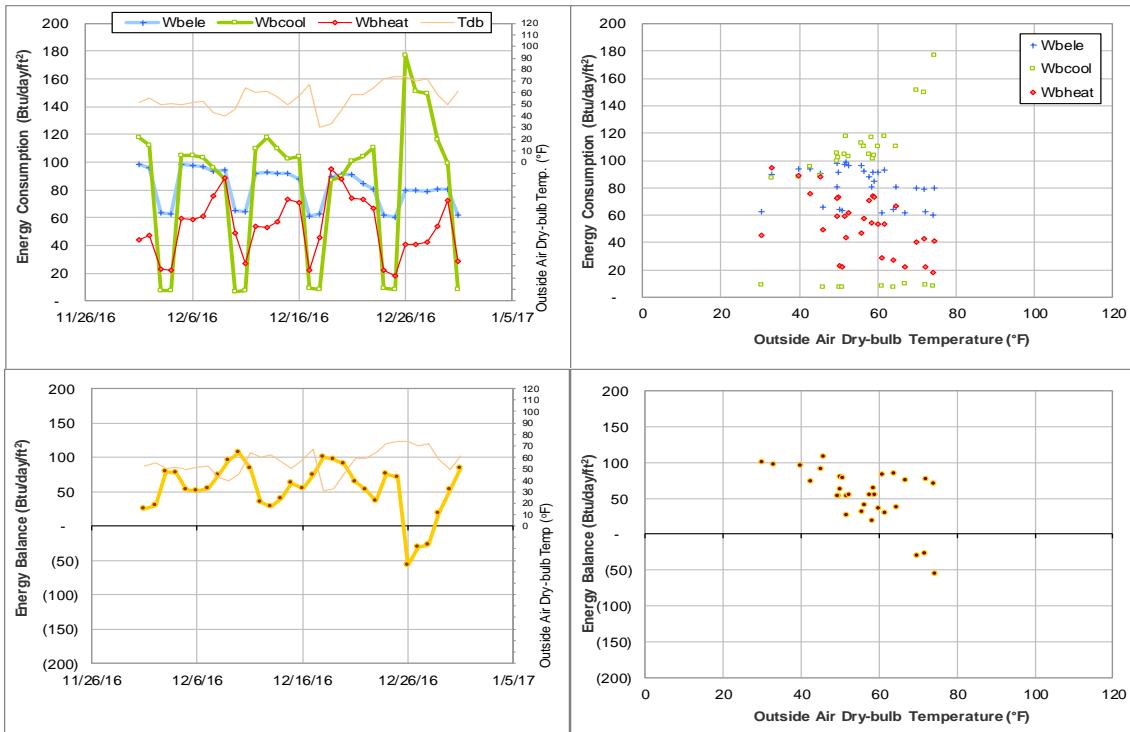


Figure IV-92 Bolton Hall TAMU BLDG # 480 Energy Balance Plot during December 2016

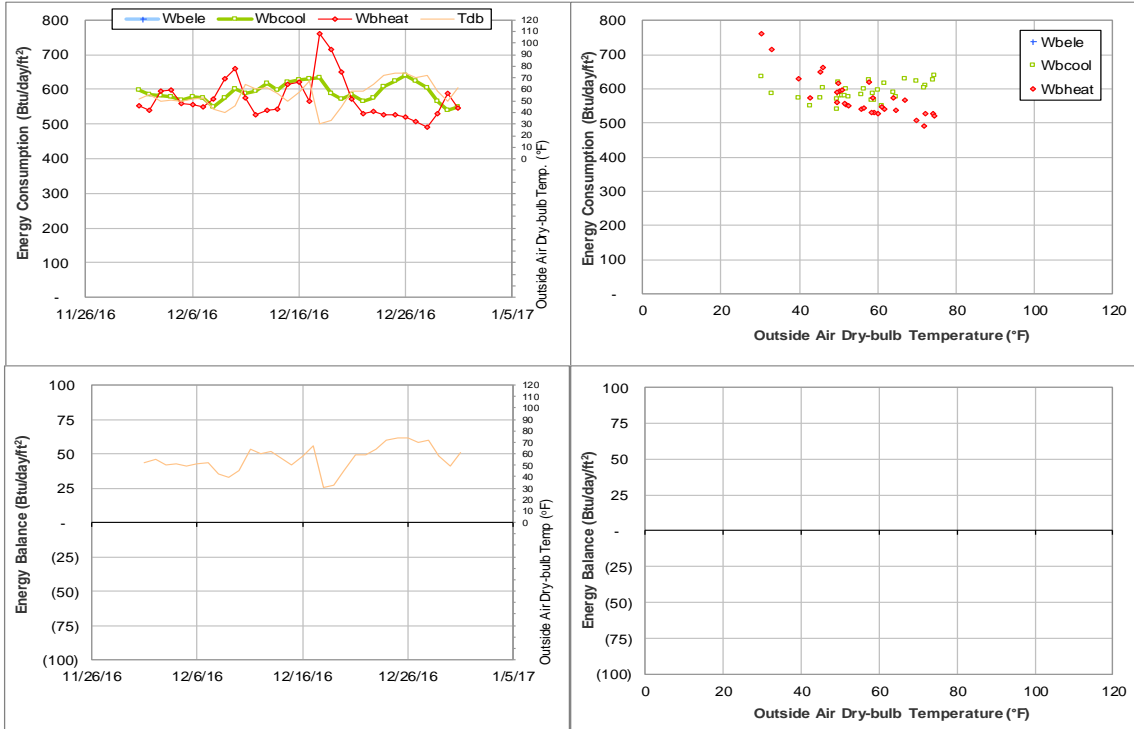


Figure IV-93 Heaton Hall TAMU BLDG # 481 Energy Balance Plot during December 2016

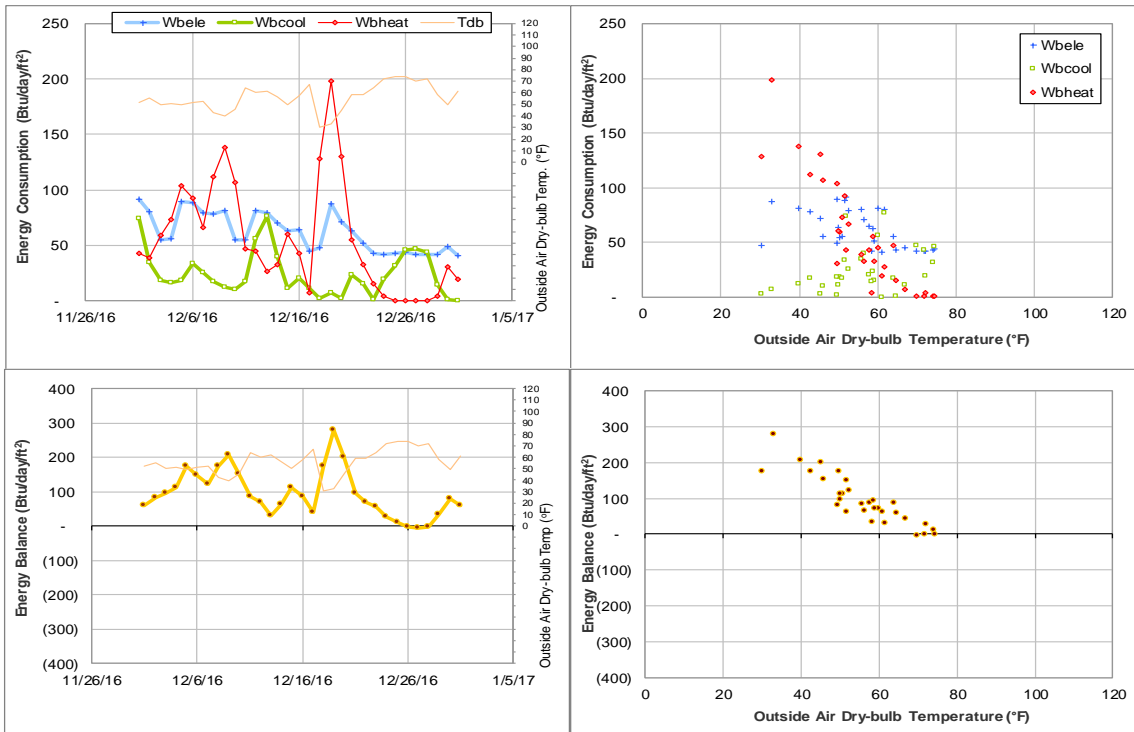


Figure IV-94 Fermier Hall TAMU BLDG # 482 Energy Balance Plot during December 2016

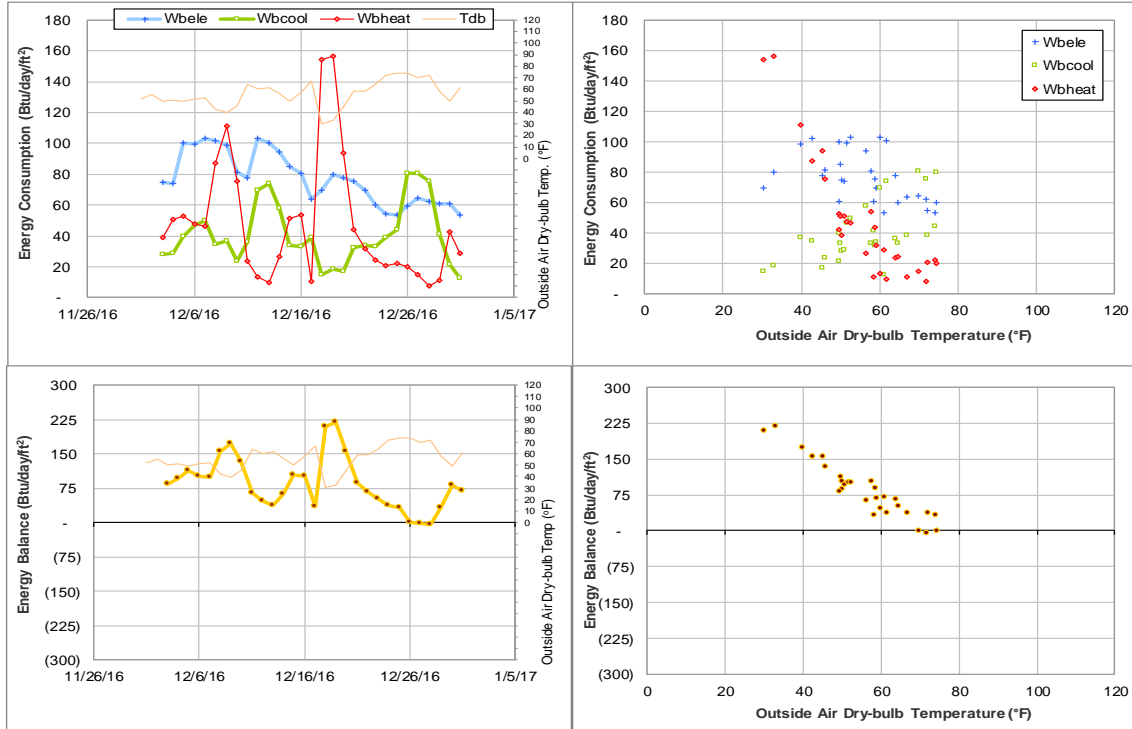


Figure IV-95 Thompson Hall TAMU BLDG # 483 Energy Balance Plot during December 2016

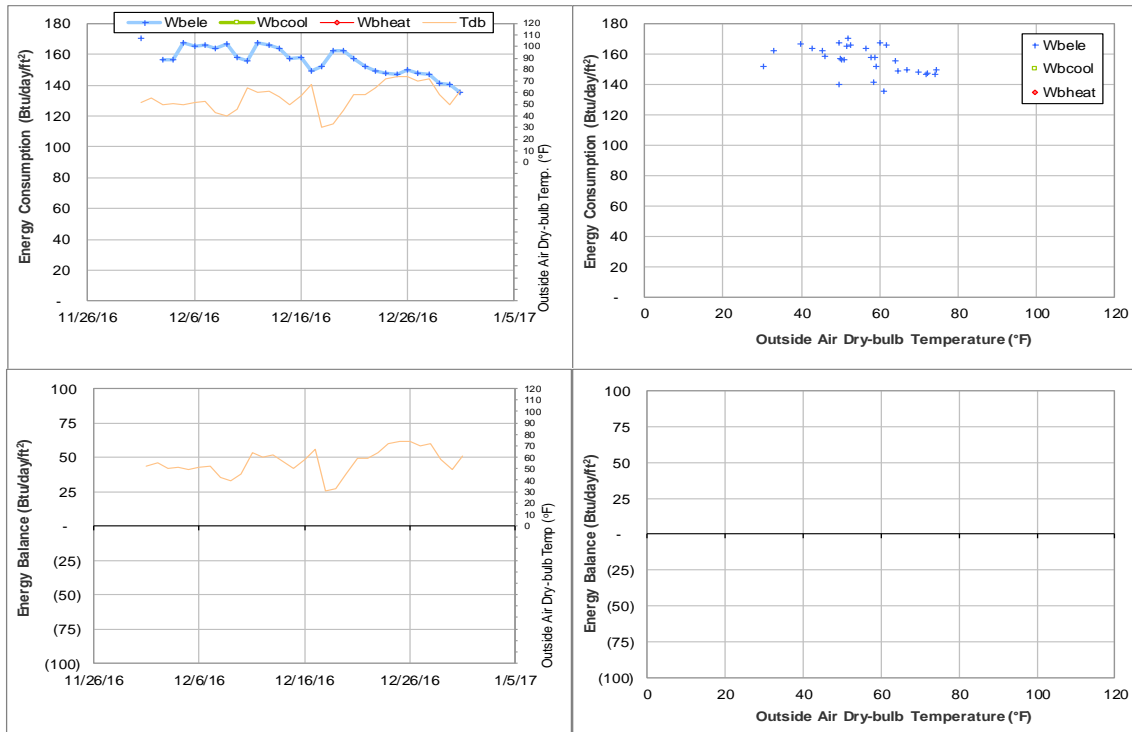


Figure IV-96 Chemistry Building TAMU BLDG # 484 Energy Balance Plot during December 2016

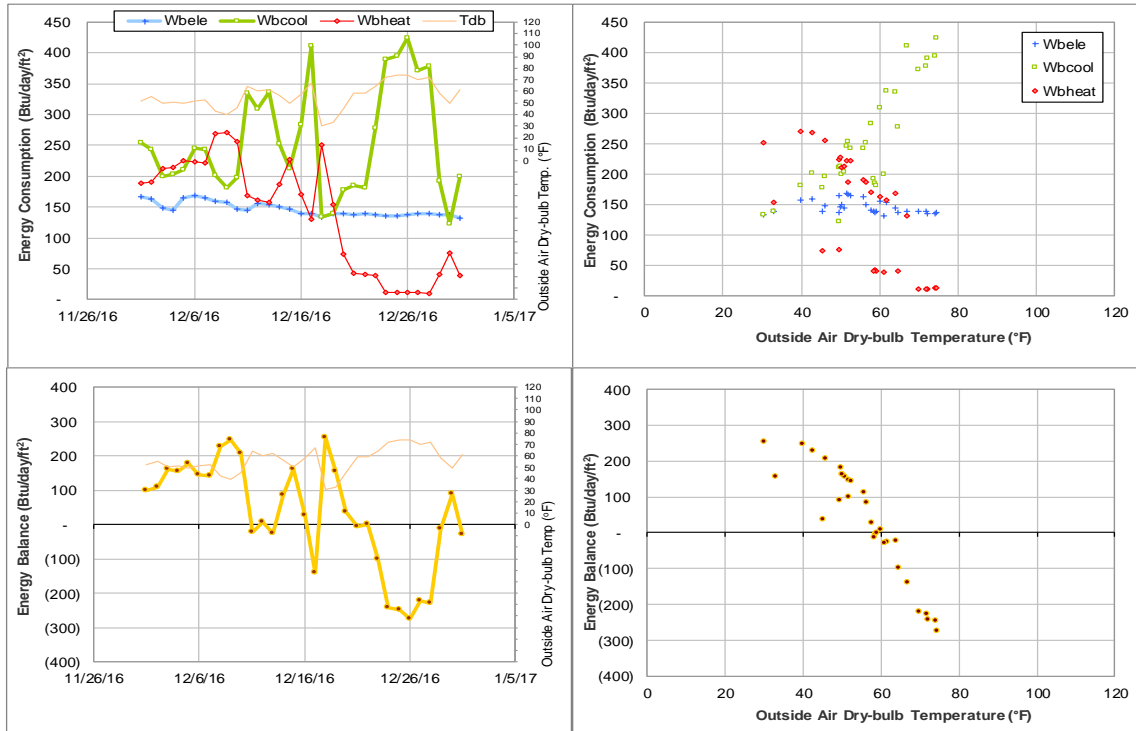


Figure IV-97 Halbuty Geosciences Building TAMU BLDG # 490 Energy Balance Plot during December 2016

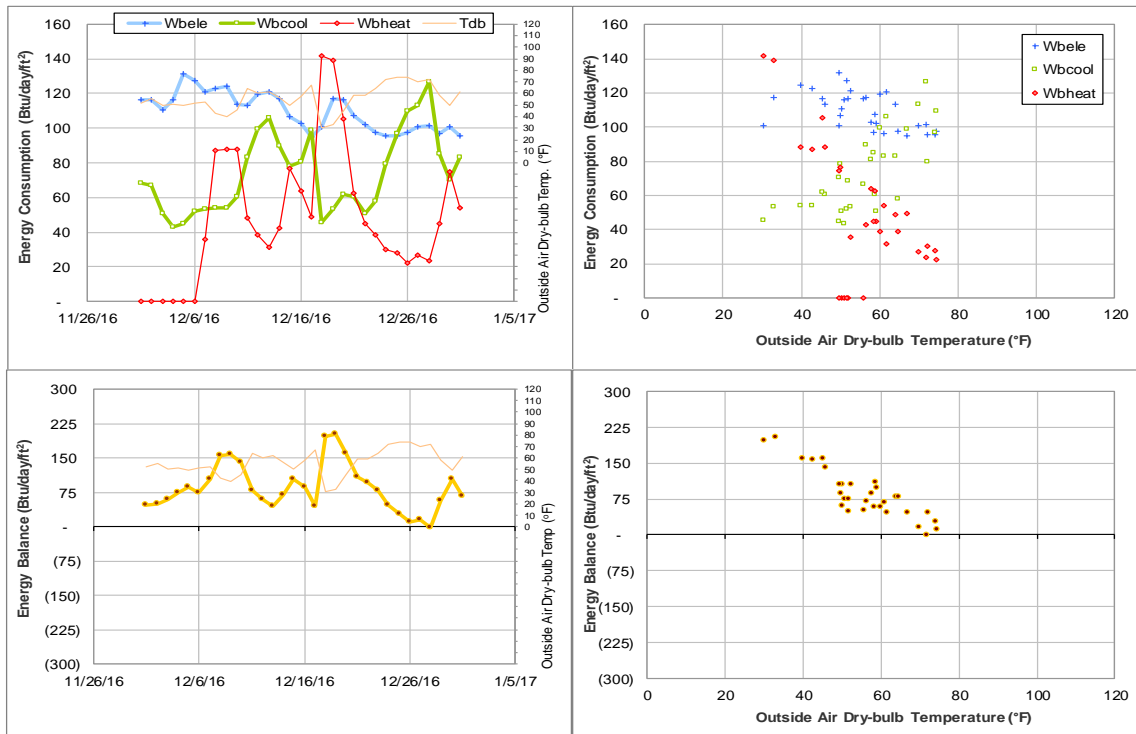


Figure IV-98 Civil Engineering Building TAMU BLDG # 492 Energy Balance Plot during December 2016

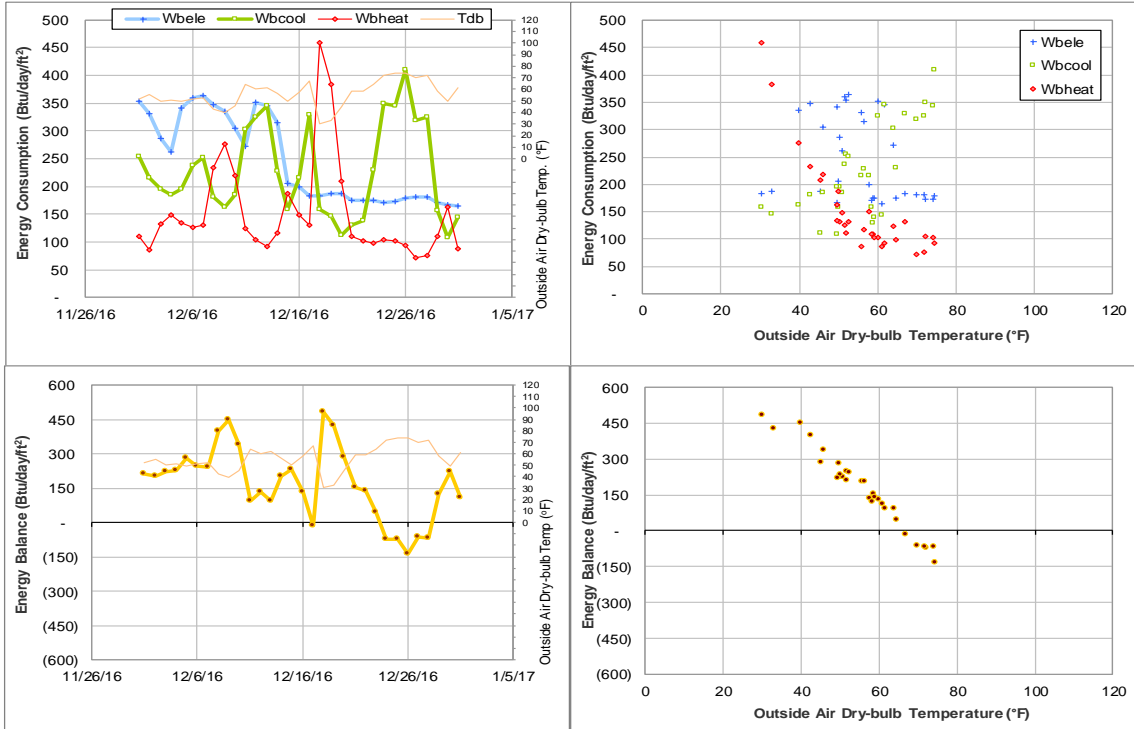


Figure IV-99 Sbisa Dining Hall TAMU BLDG # 495 Energy Balance Plot during December 2016

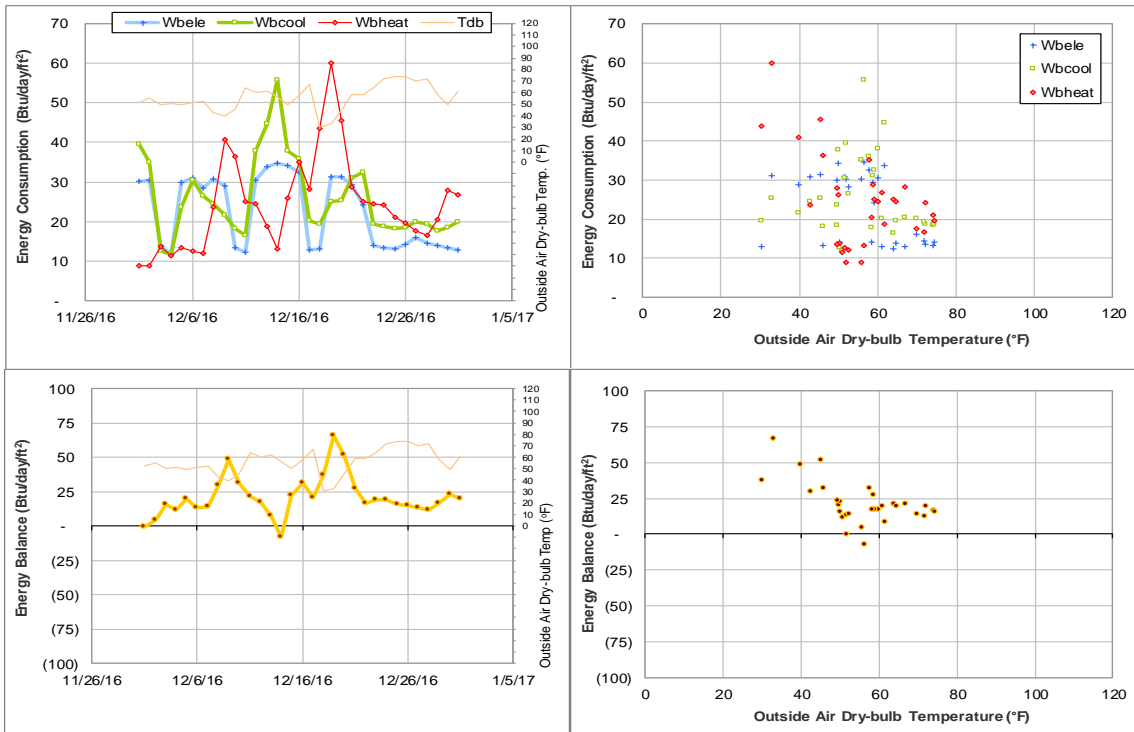


Figure IV-100 Utilities & Energy Services Central Office TAMU BLDG # 496 Energy Balance Plot during December 2016

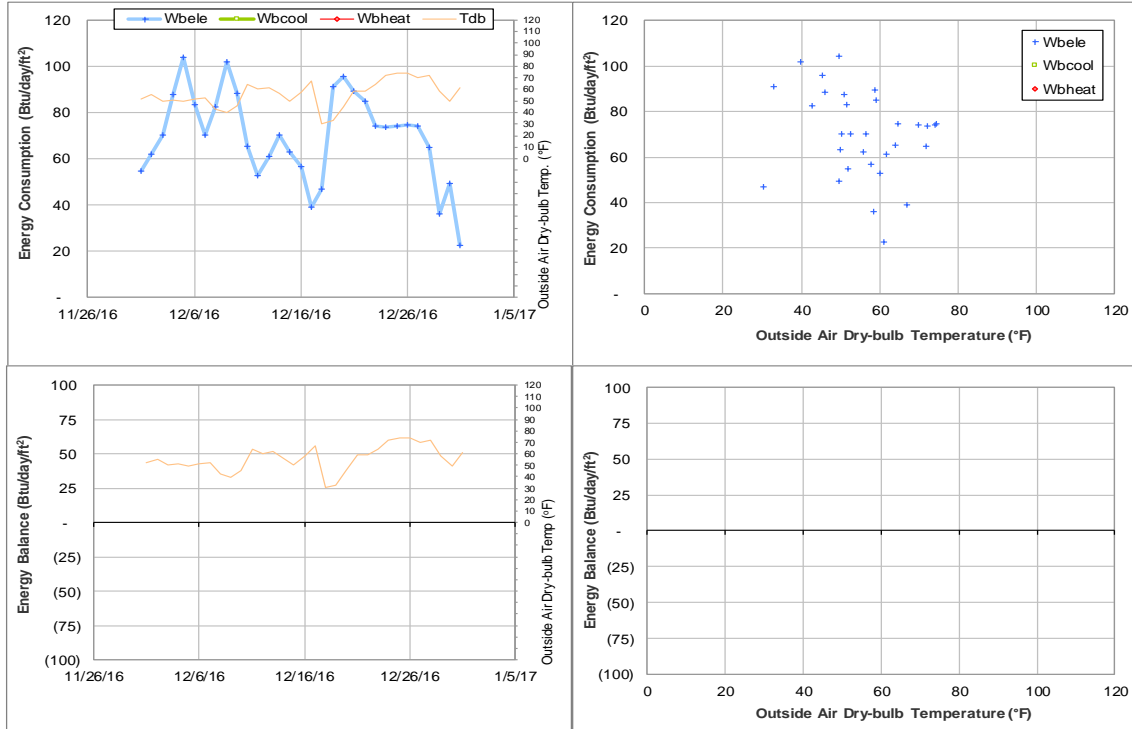


Figure IV-101 Concrete Materials Laboratory TAMU BLDG # 501 Energy Balance Plot during December 2016

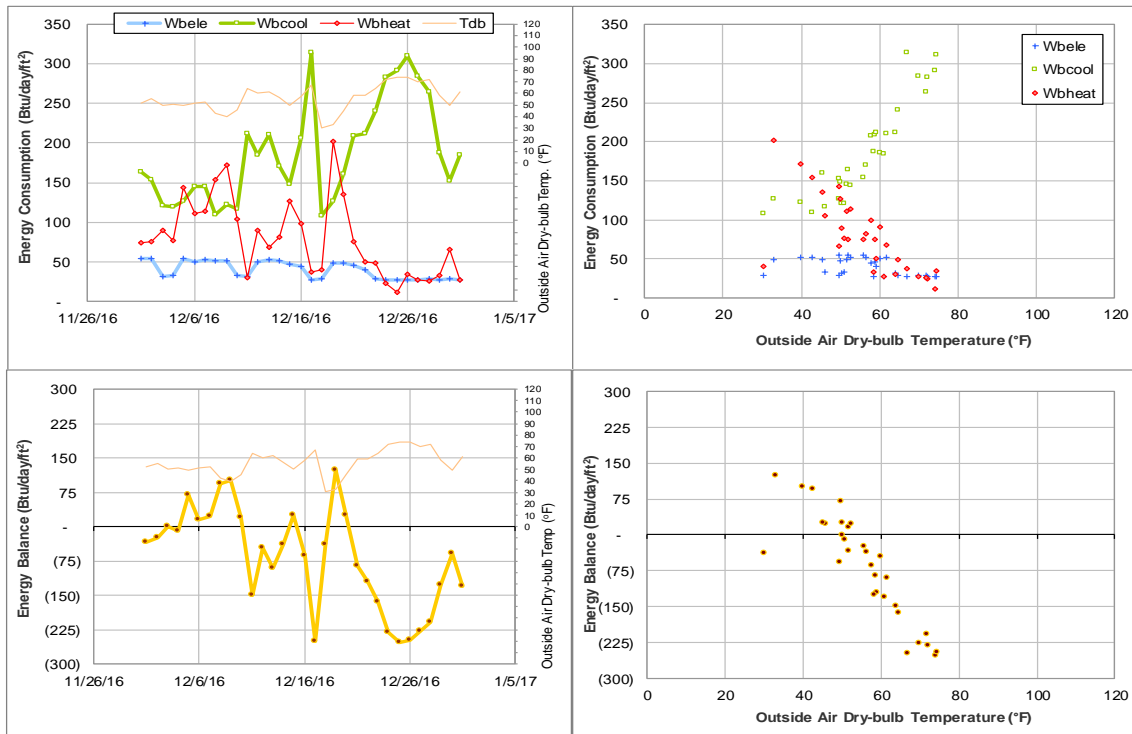


Figure IV-102 Nagle Hall TAMU BLDG # 506 Energy Balance Plot during December 2016

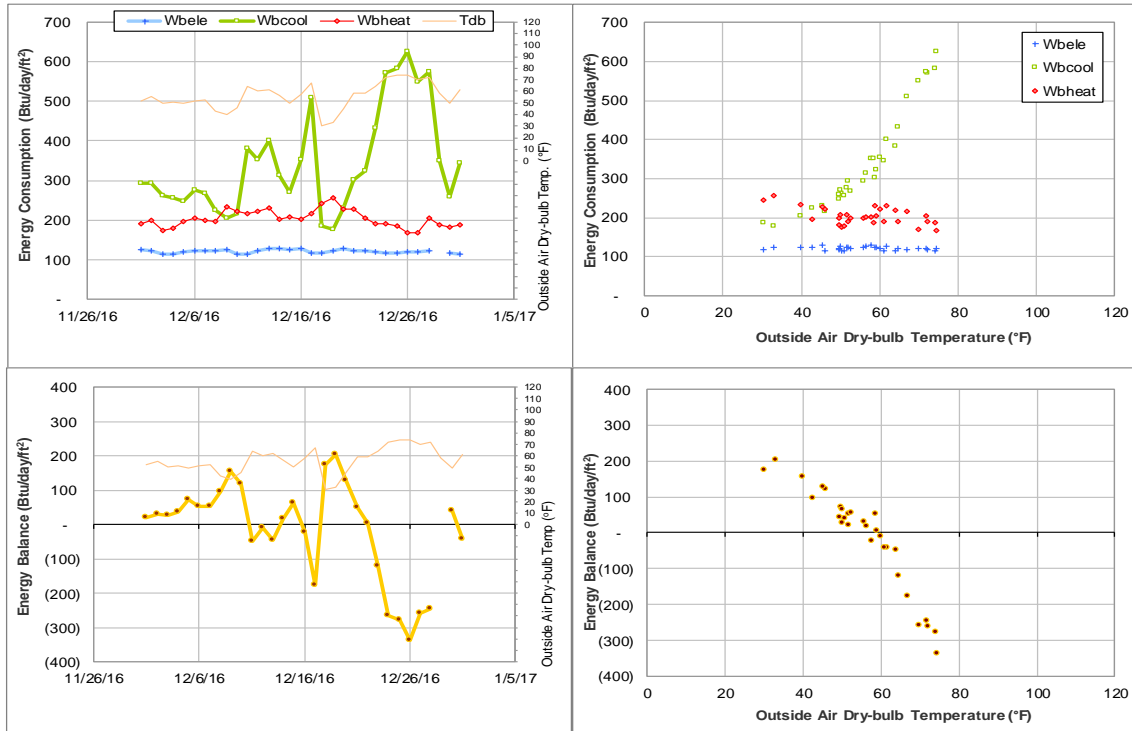


Figure IV-103 Veterinary Medical Science Building TAMU BLDG # 507 Energy Balance Plot during December 2016

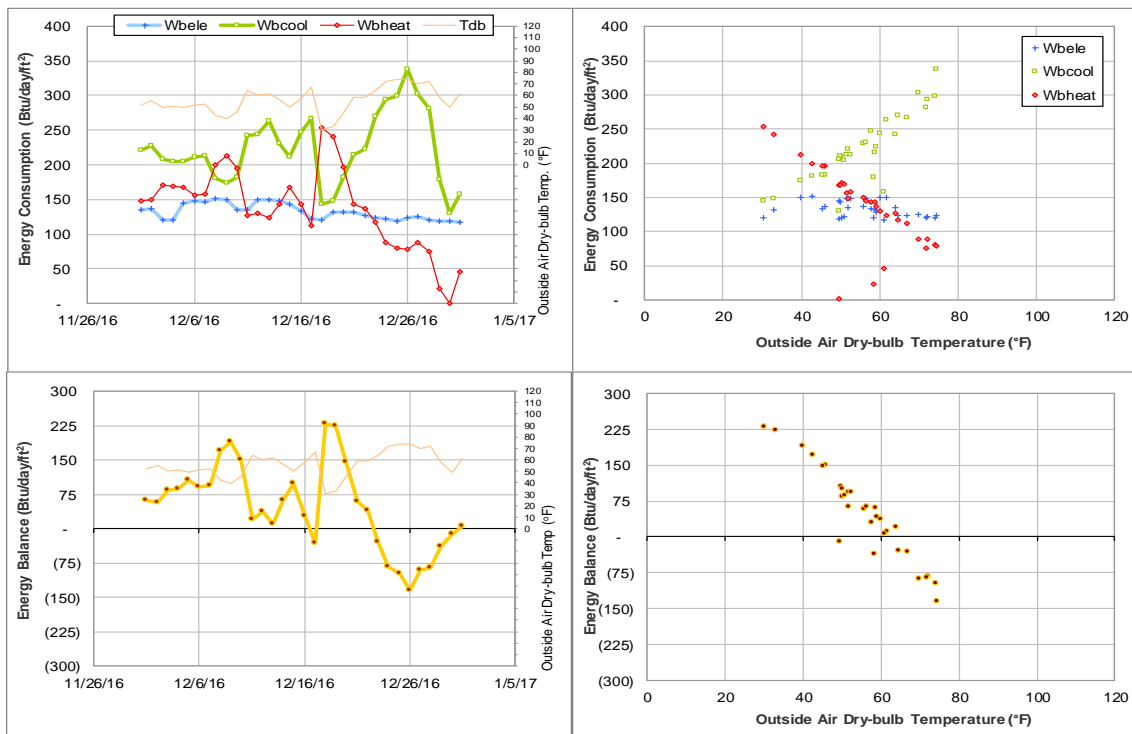


Figure IV-104 Veterinary Teaching Hospital and Med Adm TAMU BLDG # 508 and 1026 Energy Balance Plot during December 2016

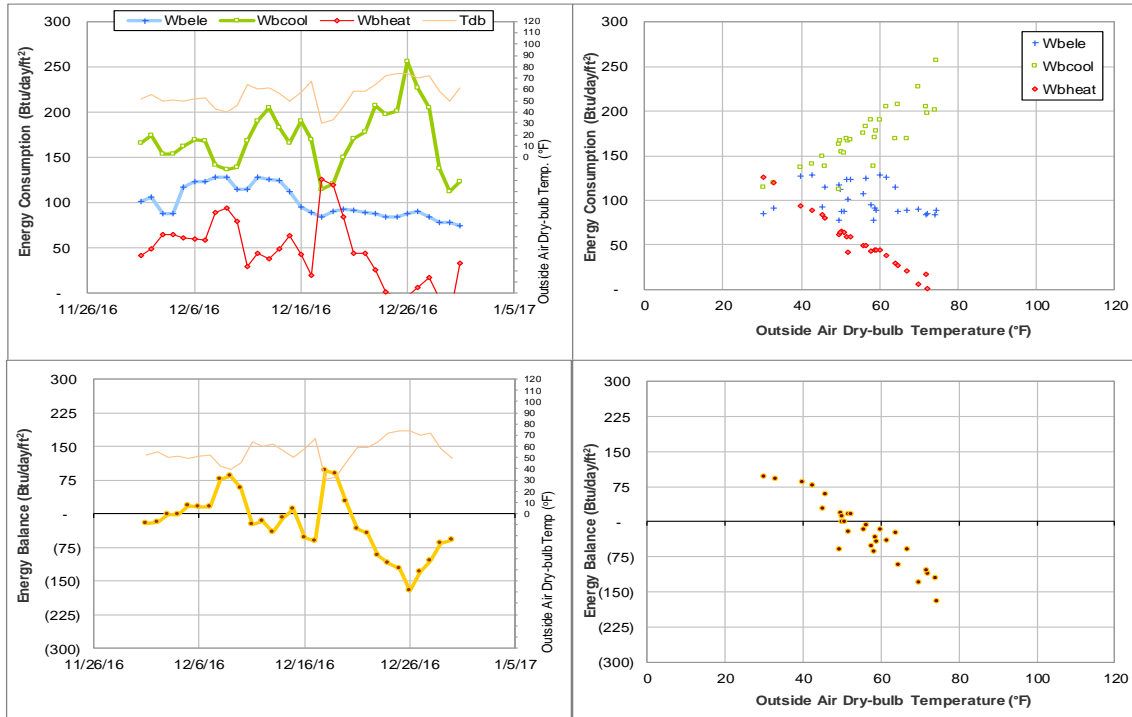


Figure IV-105 Veterinary Teaching Hospital TAMU BLDG # 508 Energy Balance Plot during December 2016

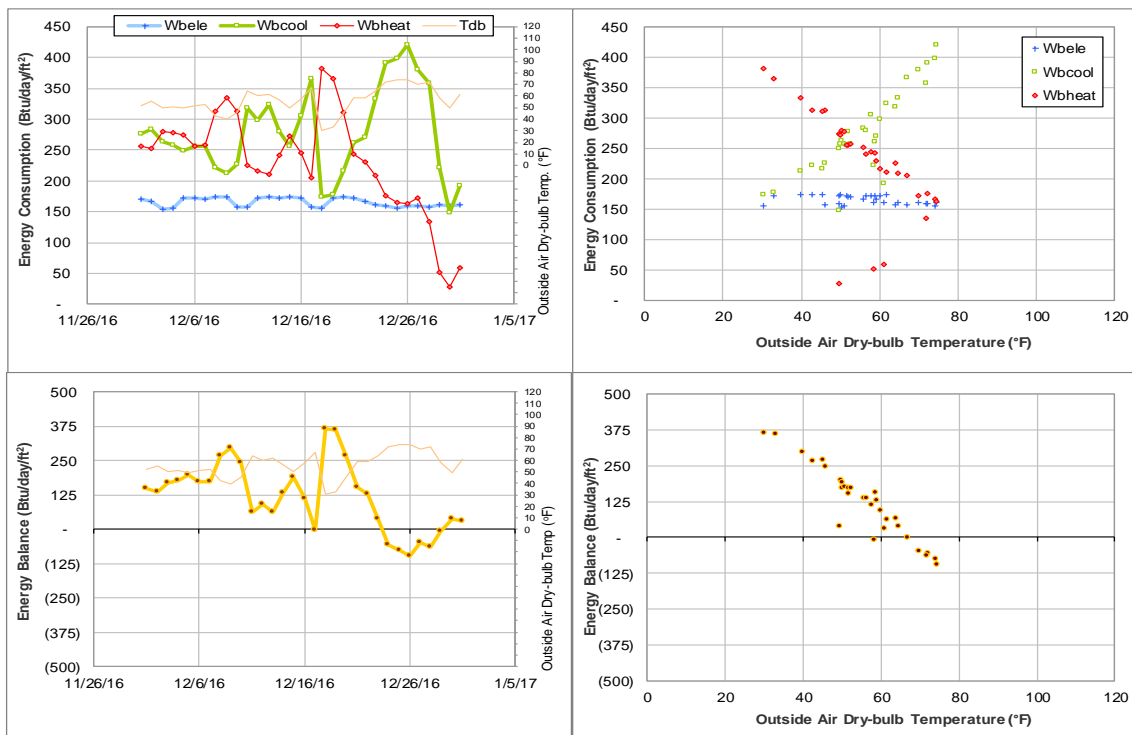


Figure IV-106 Veterinary Medicine Administration TAMU BLDG # 1026 Energy Balance Plot during December 2016

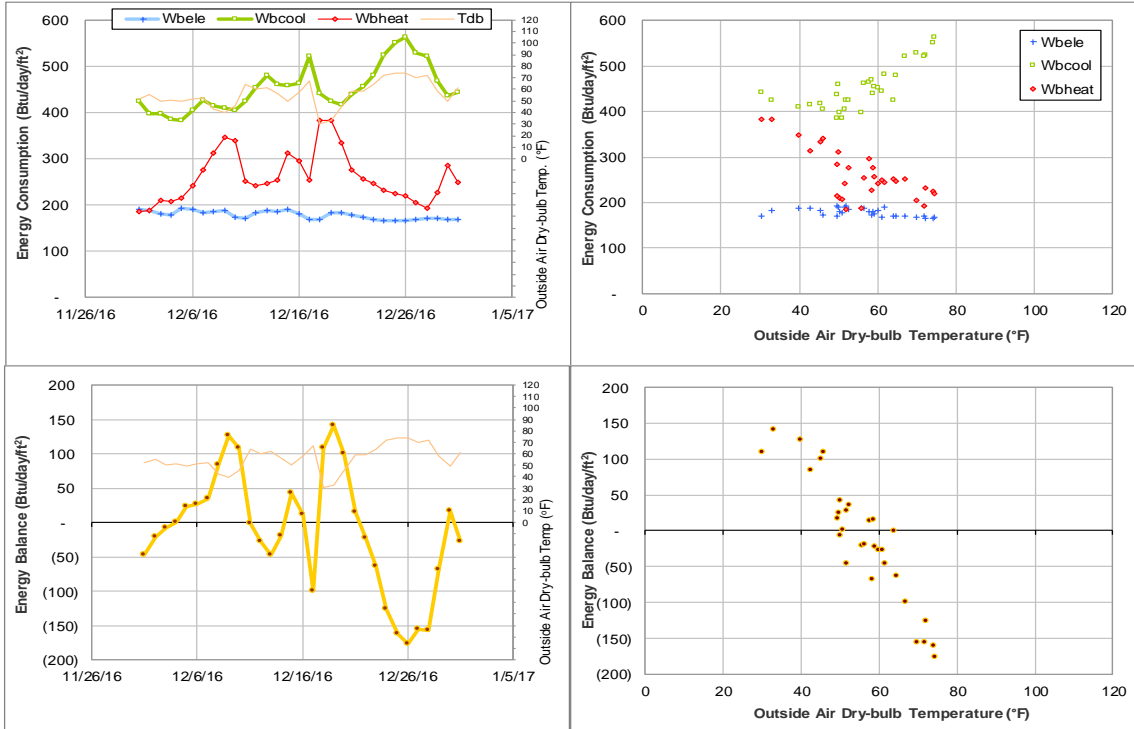


Figure IV-107 Heep Laboratory Building TAMU BLDG # 511 Energy Balance Plot during December 2016

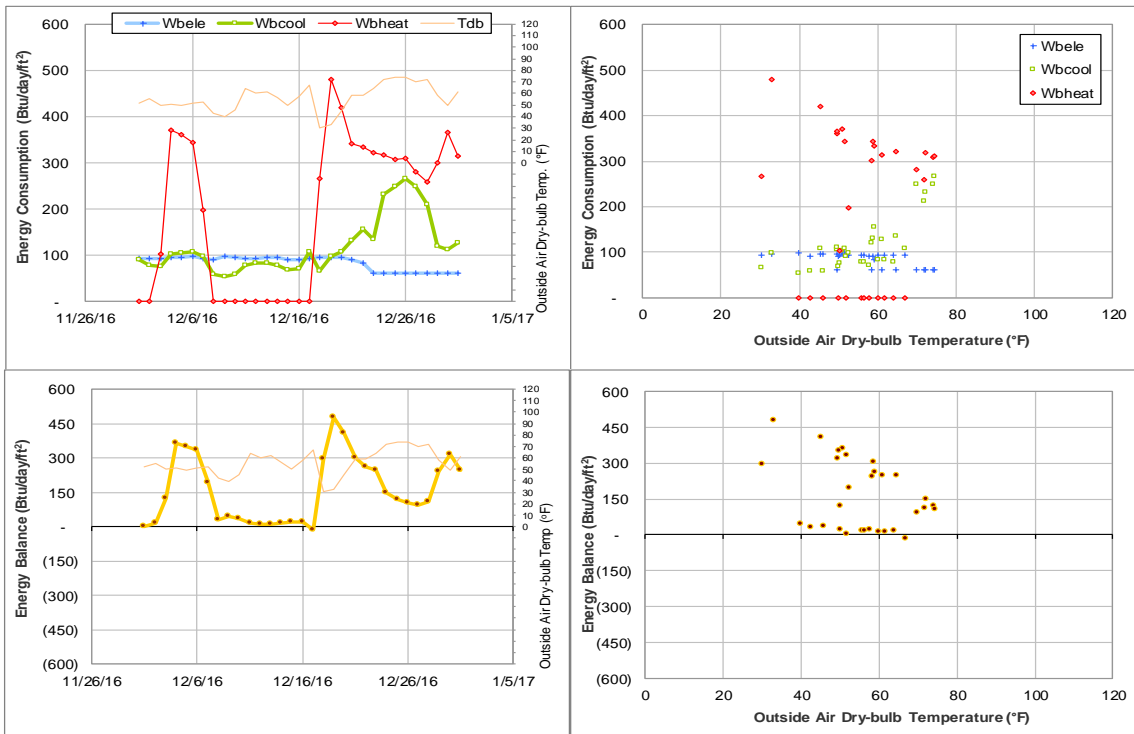


Figure IV-108 All Faiths Chapel TAMU BLDG # 512 Energy Balance Plot during December 2016

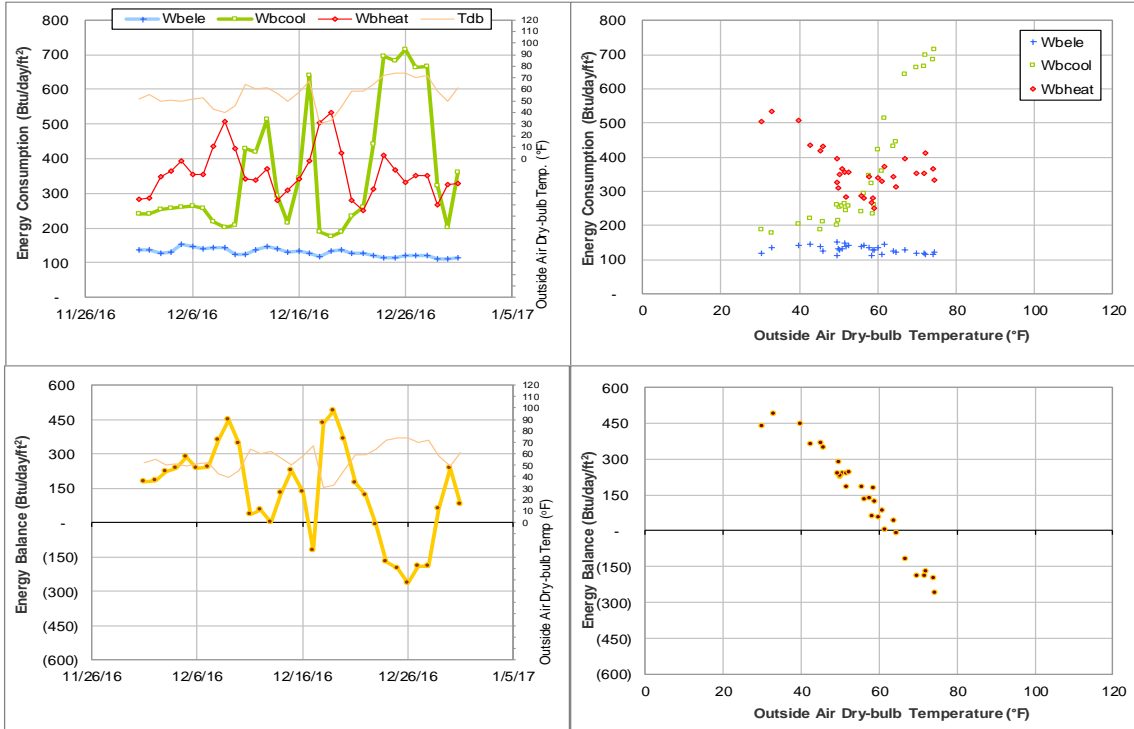


Figure IV-109 Doherty Building TAMU BLDG # 513 Energy Balance Plot during December 2016

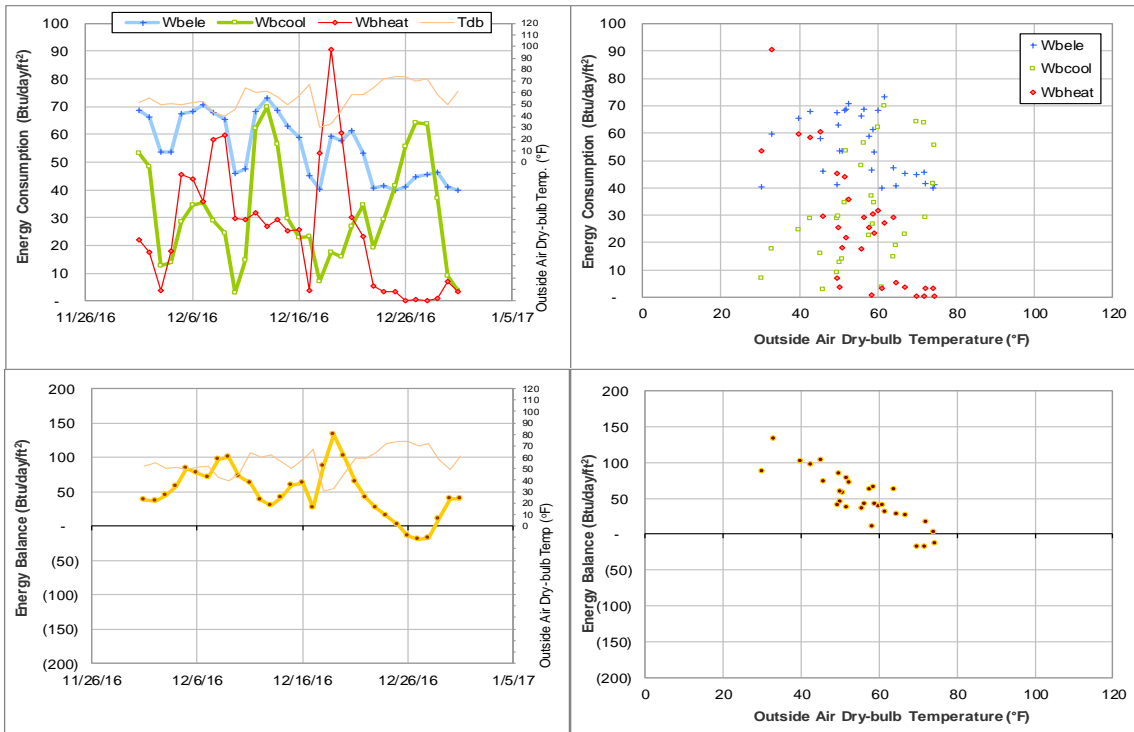


Figure IV-110 Munnerlyn Astronomy & Space Sciences Engineering TAMU BLDG # 514 Energy Balance Plot during December 2016

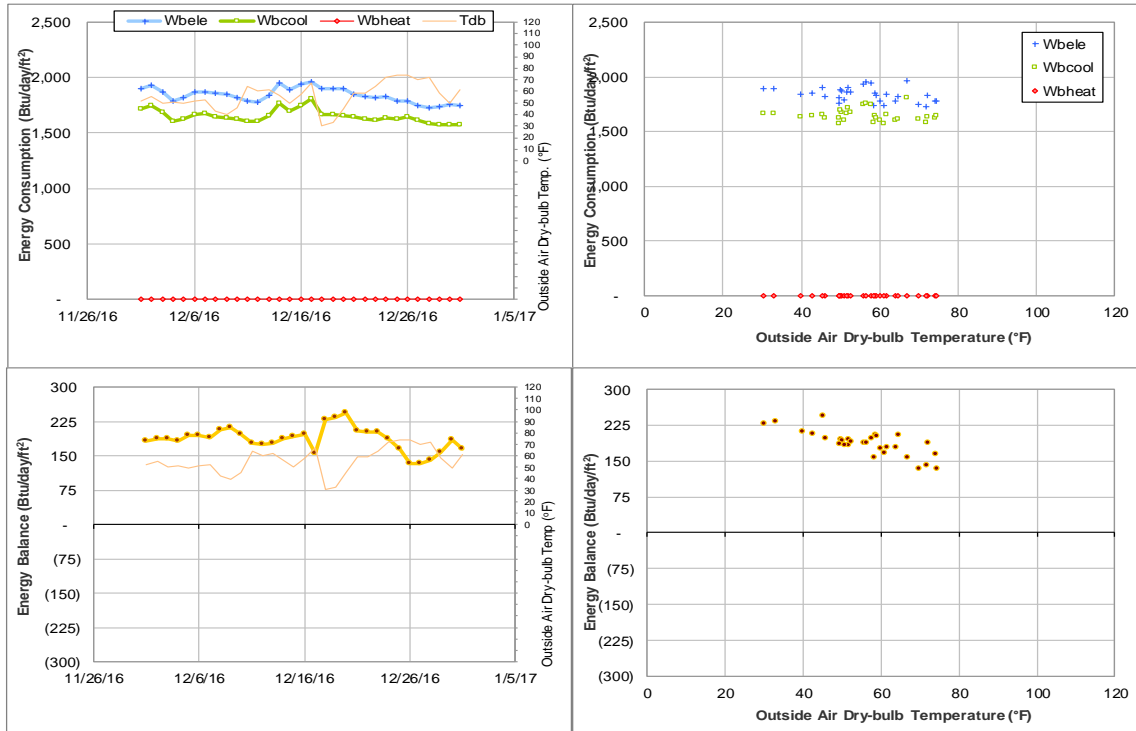


Figure IV-111 Computing Services Center TAMU BLDG # 516 Energy Balance Plot during December 2016

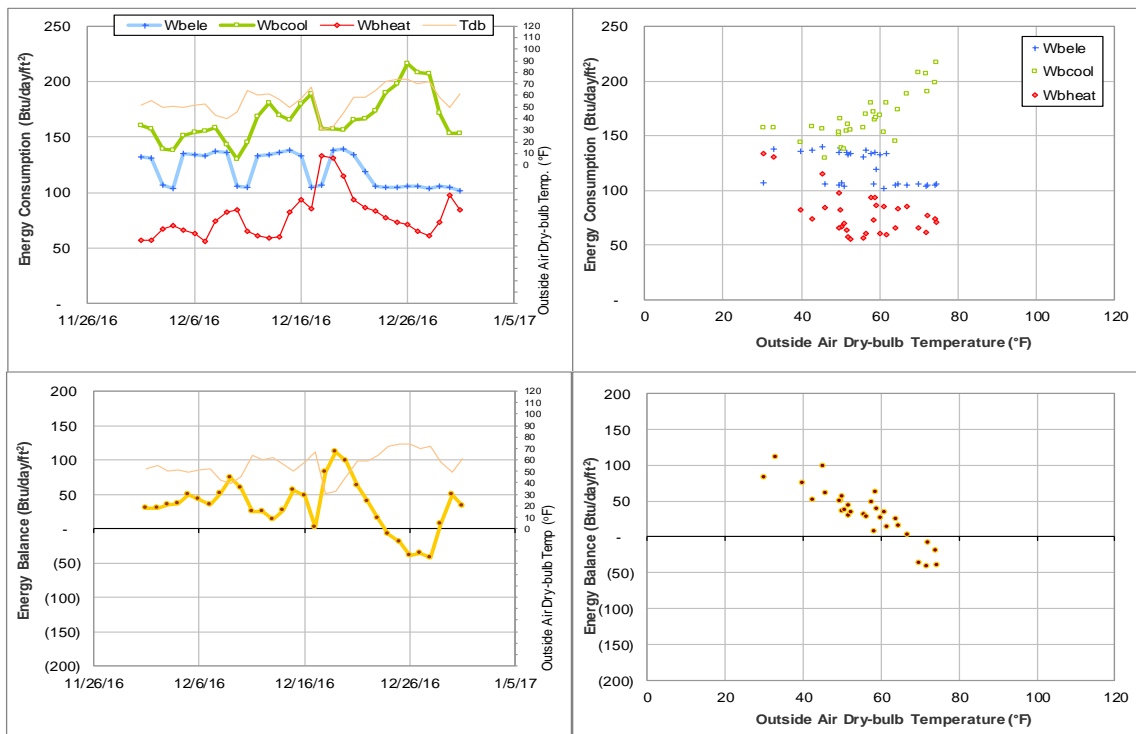


Figure IV-112 Beutel Health Center TAMU BLDG # 520 Energy Balance Plot during December 2016

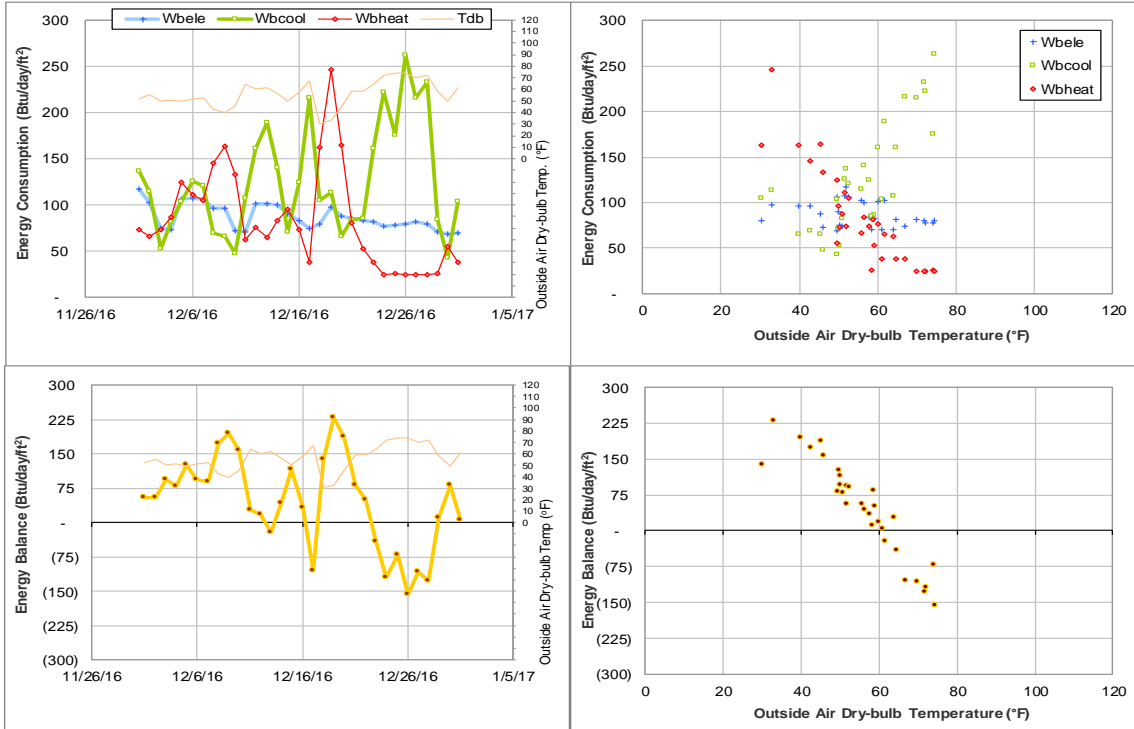


Figure IV-113 Heldenfels Hall TAMU BLDG # 521 Energy Balance Plot during December 2016

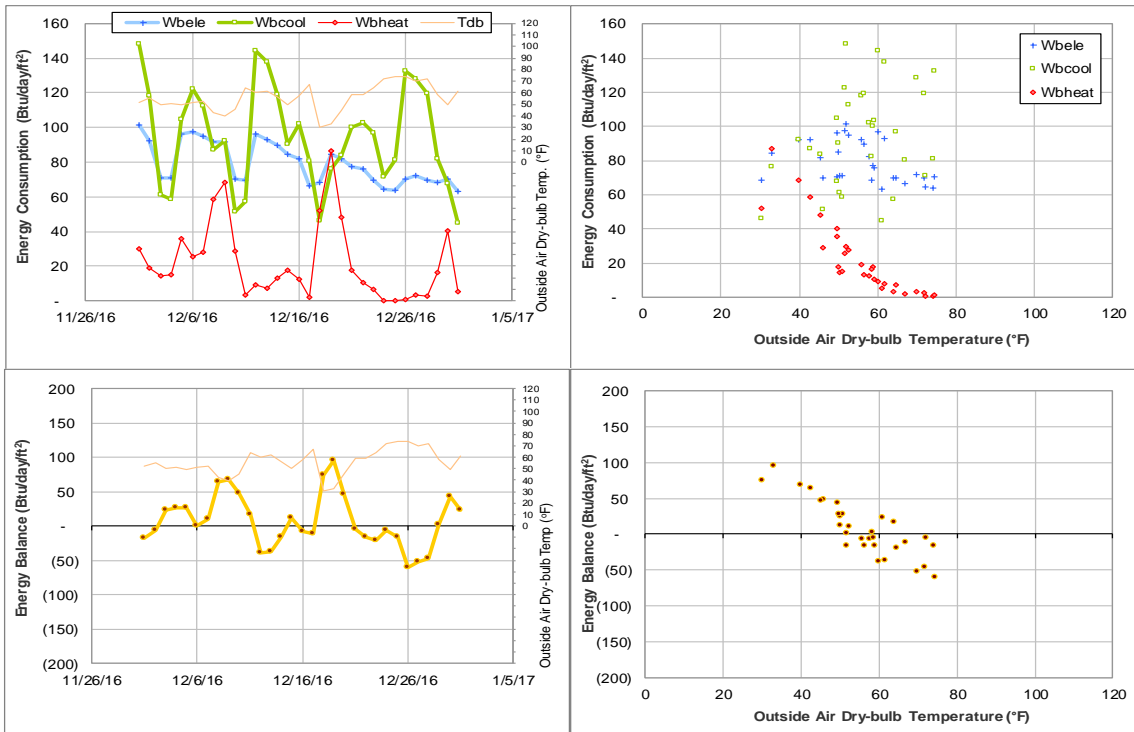


Figure IV-114 Blocker building TAMU BLDG # 524 Energy Balance Plot during December 2016

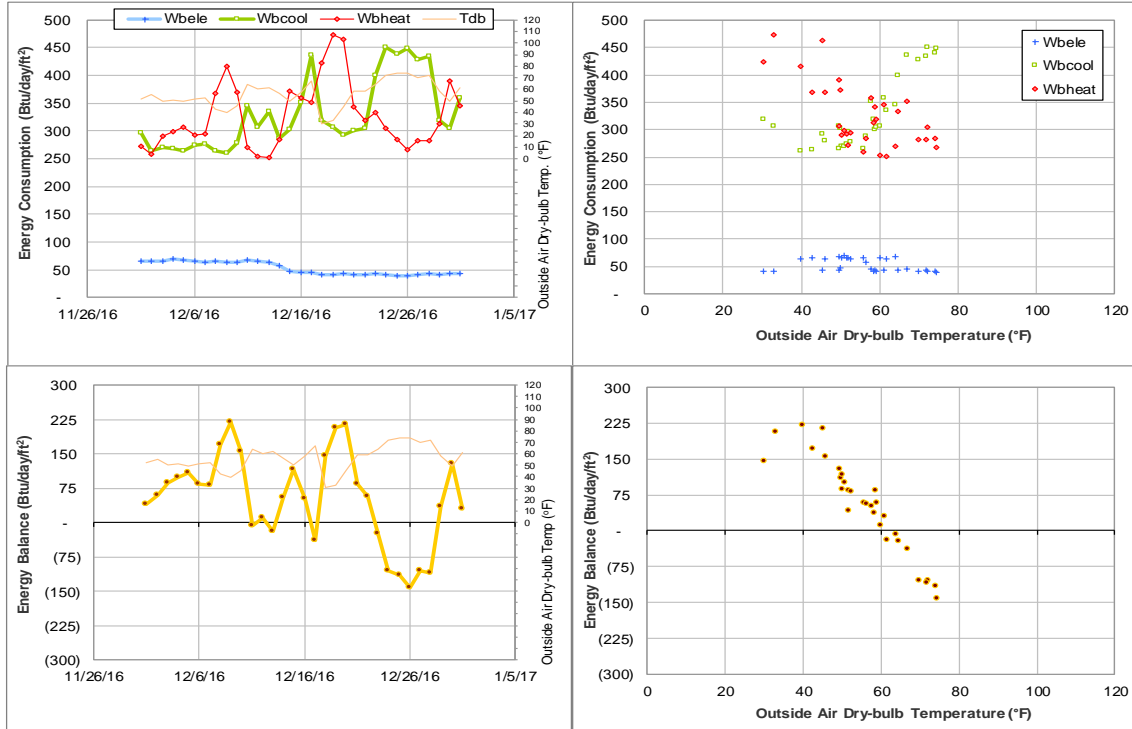


Figure IV-115 Clements Residence Hall TAMU BLDG # 548 Energy Balance Plot during December 2016

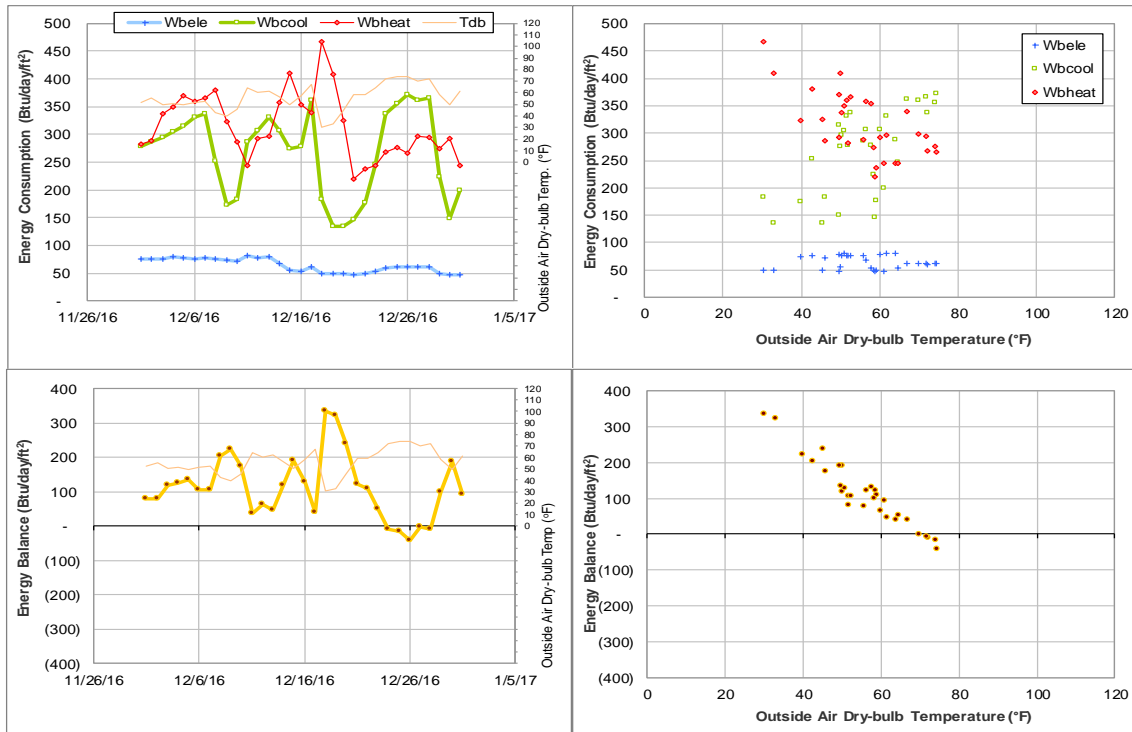


Figure IV-116 Haas Residence Hall TAMU BLDG # 549 Energy Balance Plot during December 2016

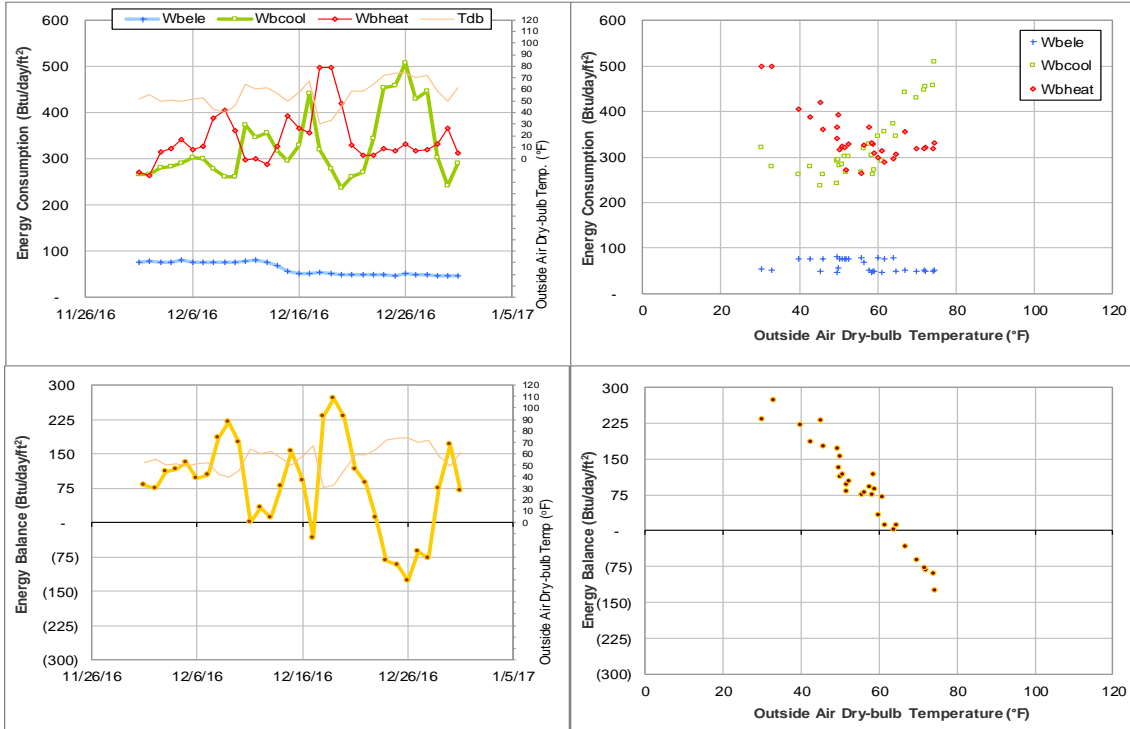


Figure IV-117 McFadden Residence Hall TAMU BLDG # 550 Energy Balance Plot during December 2016

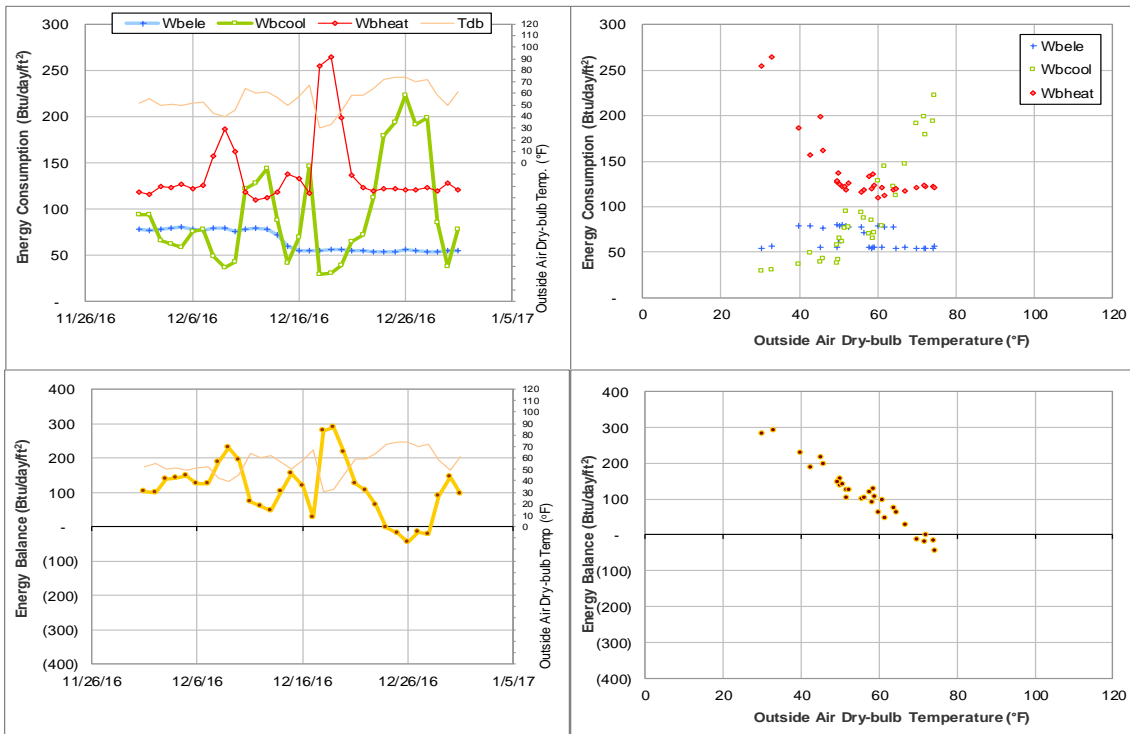


Figure IV-118 Neeley Residence Hall TAMU BLDG # 652 Energy Balance Plot during December 2016

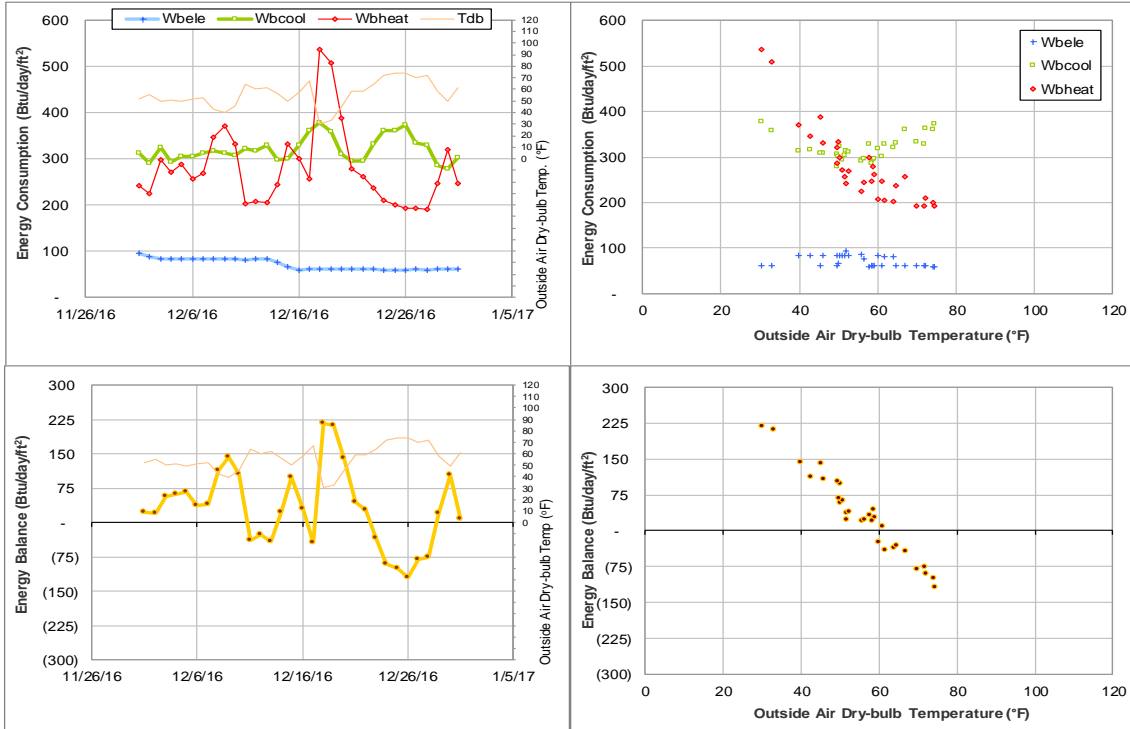


Figure IV-119 Hobby Residence Hall TAMU BLDG # 653 Energy Balance Plot during December 2016

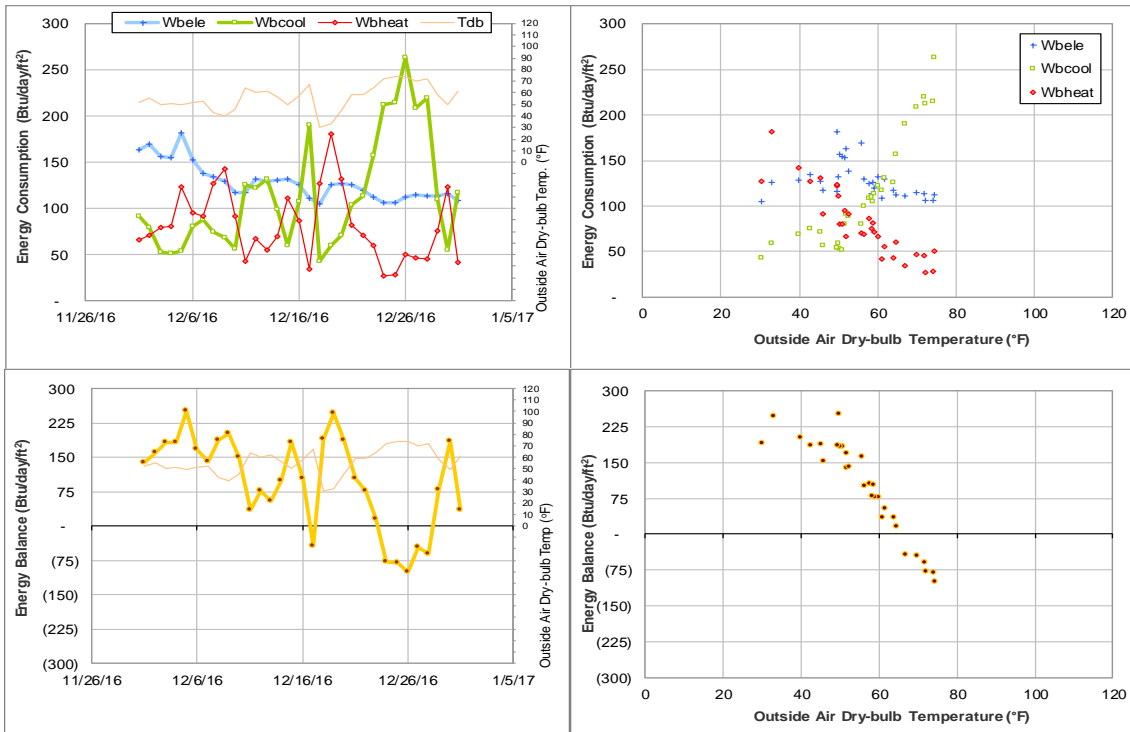


Figure IV-120 Wisenbaker Engineering Research Center TAMU BLDG # 682 Energy Balance Plot during December 2016

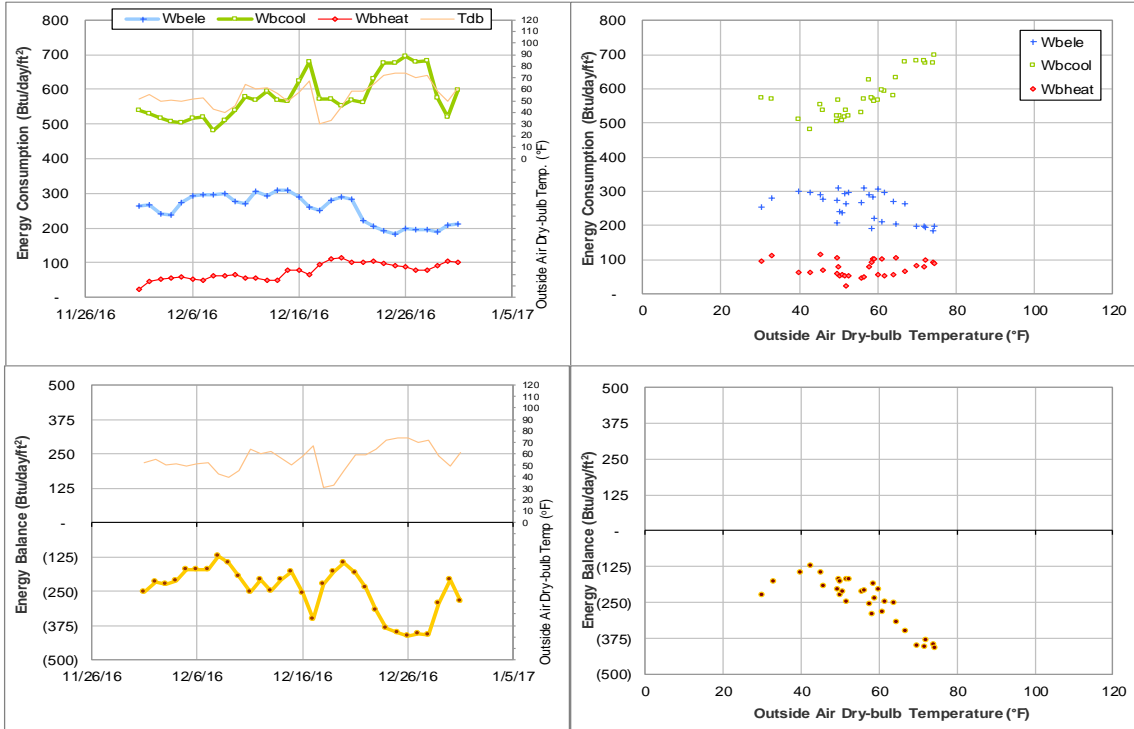


Figure IV-121 McNew Laboratory TAMU BLDG # 740 Energy Balance Plot during December 2016

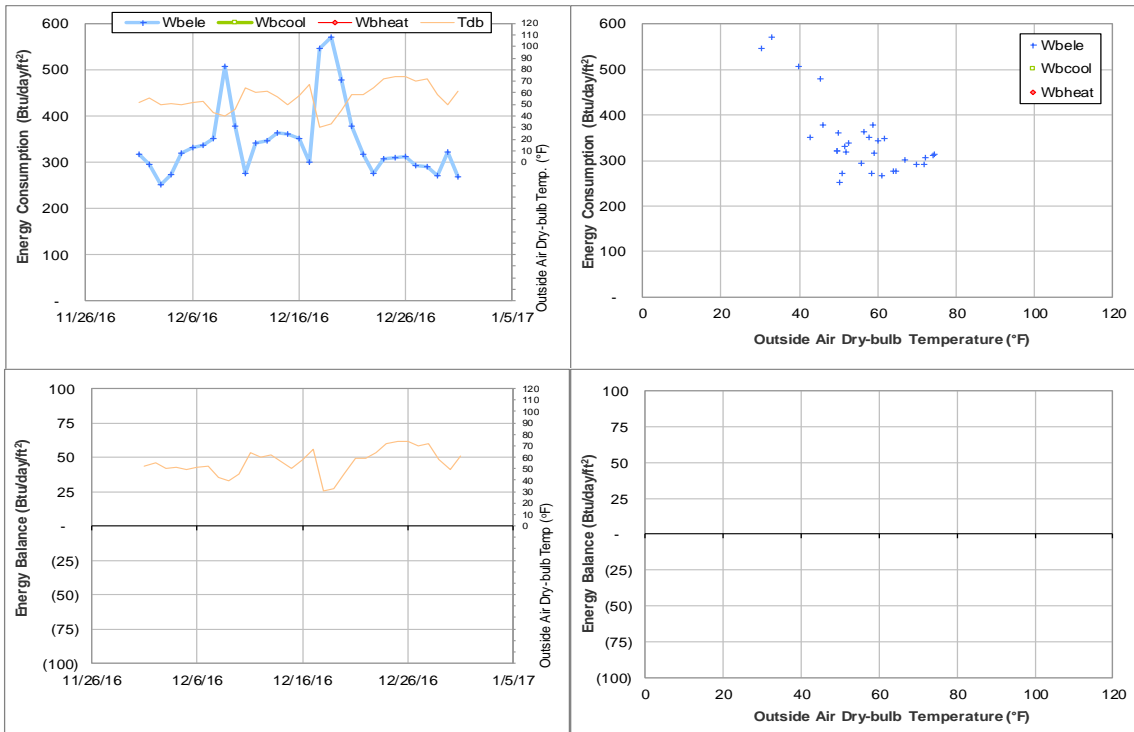


Figure IV-122 Soil Testing Labs TAMU BLDG # 806 Energy Balance Plot during December 2016

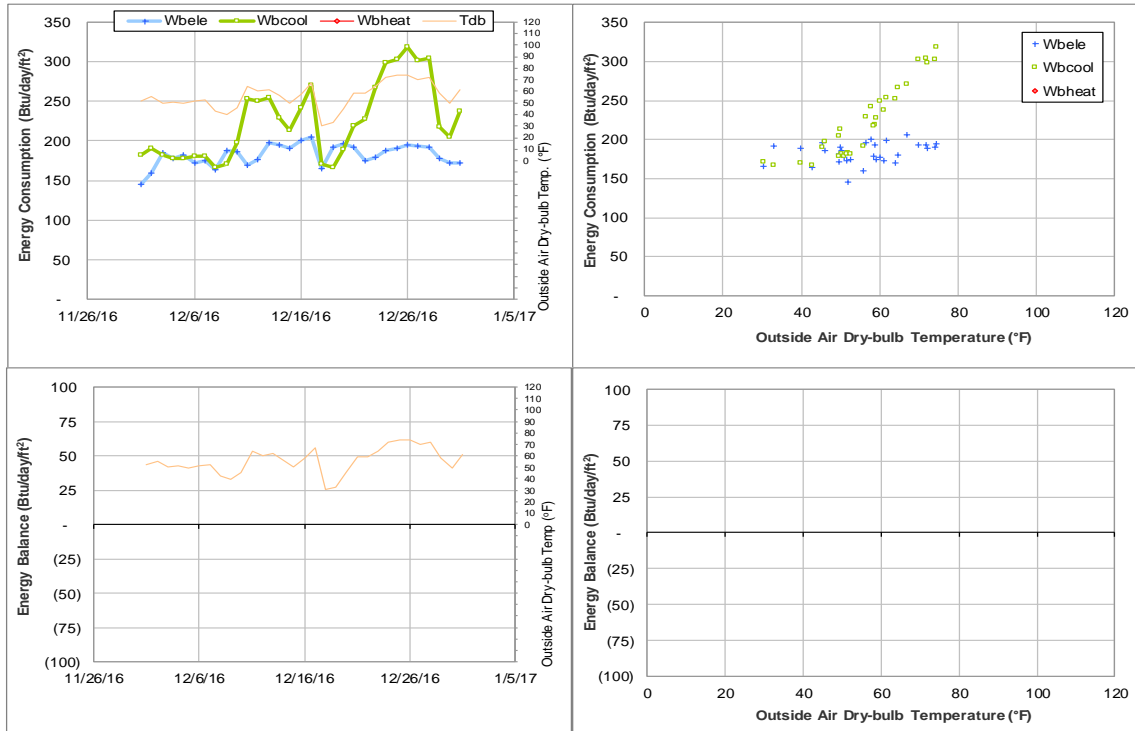


Figure IV-123 Entomology Research Lab TAMU BLDG # 815 Energy Balance Plot during December 2016

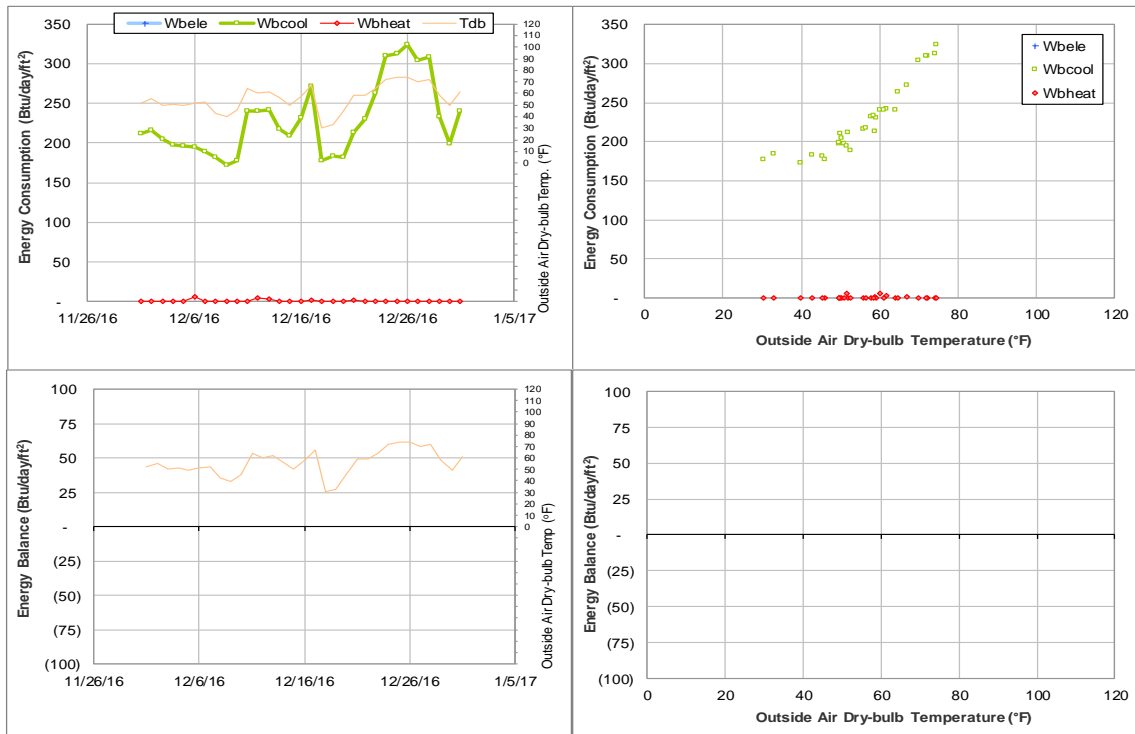


Figure IV-124 TVMC-Small Animal Building TAMU BLDG # 880 Energy Balance Plot during December 2016

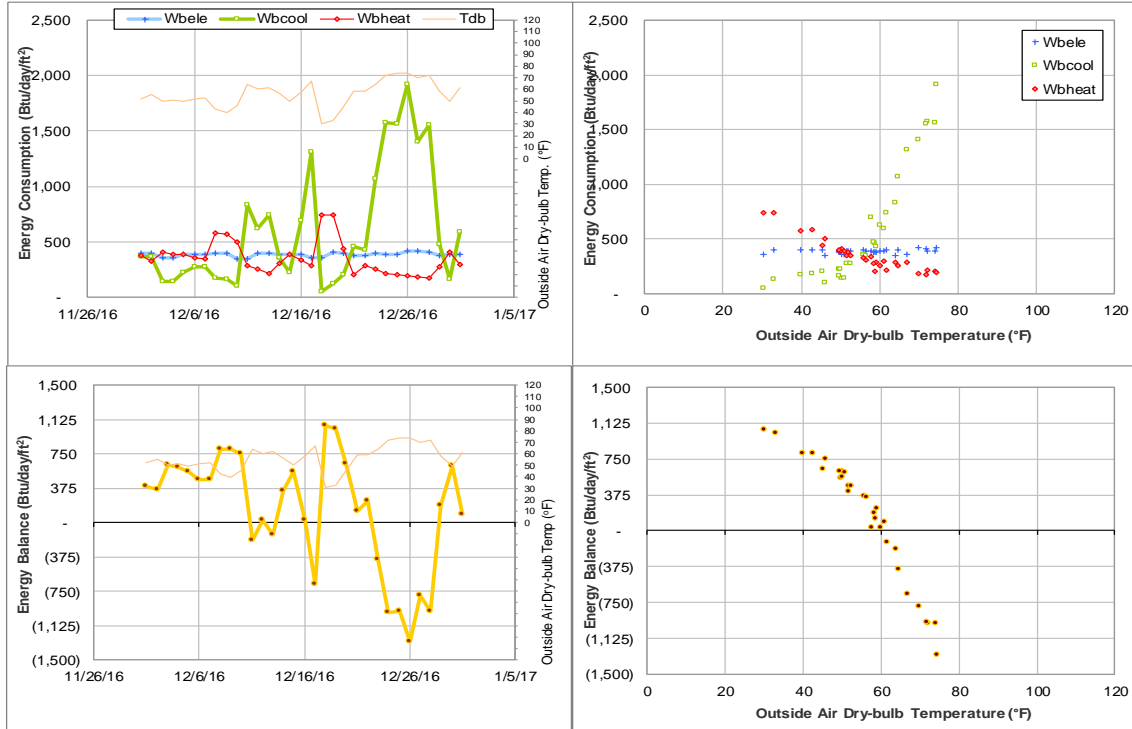


Figure IV-125 Laboratory Animal Care Building TAMU BLDG # 972 Energy Balance Plot during December 2016

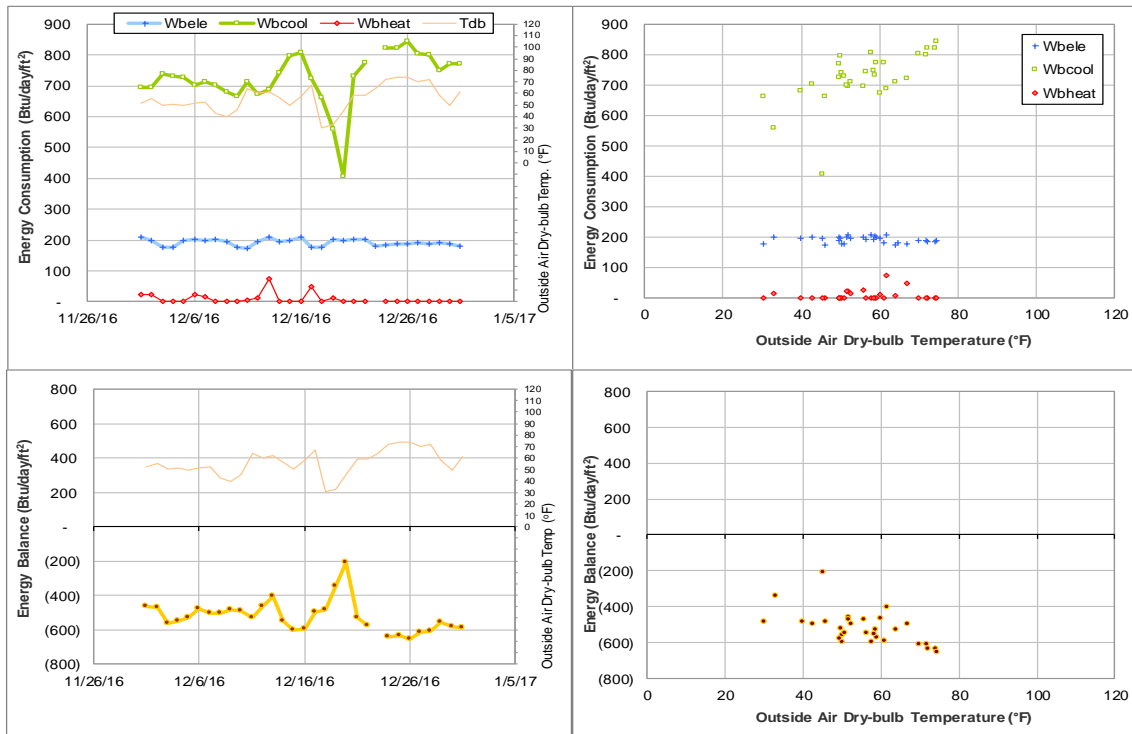


Figure IV-126 Vivarium III TAMU BLDG # 1020 Energy Balance Plot during December 2016

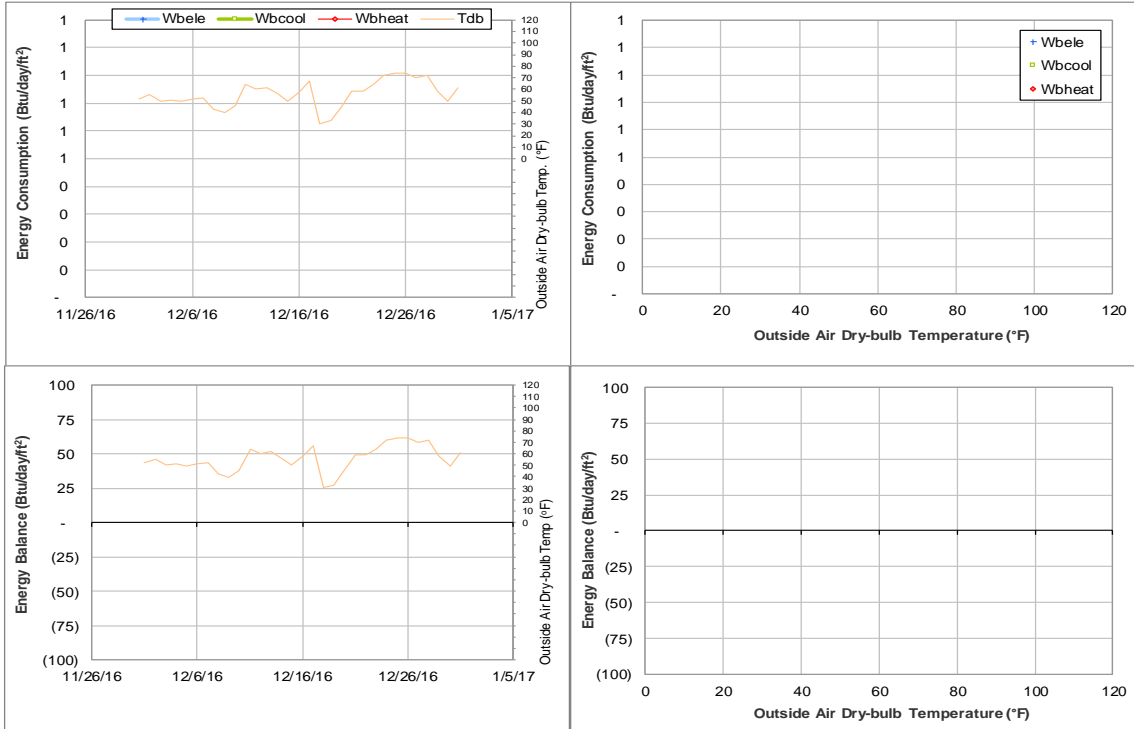


Figure IV-127 Texas Vet Med Diagnostic Lab TAMU BLDG # 1041 Energy Balance Plot during December 2016

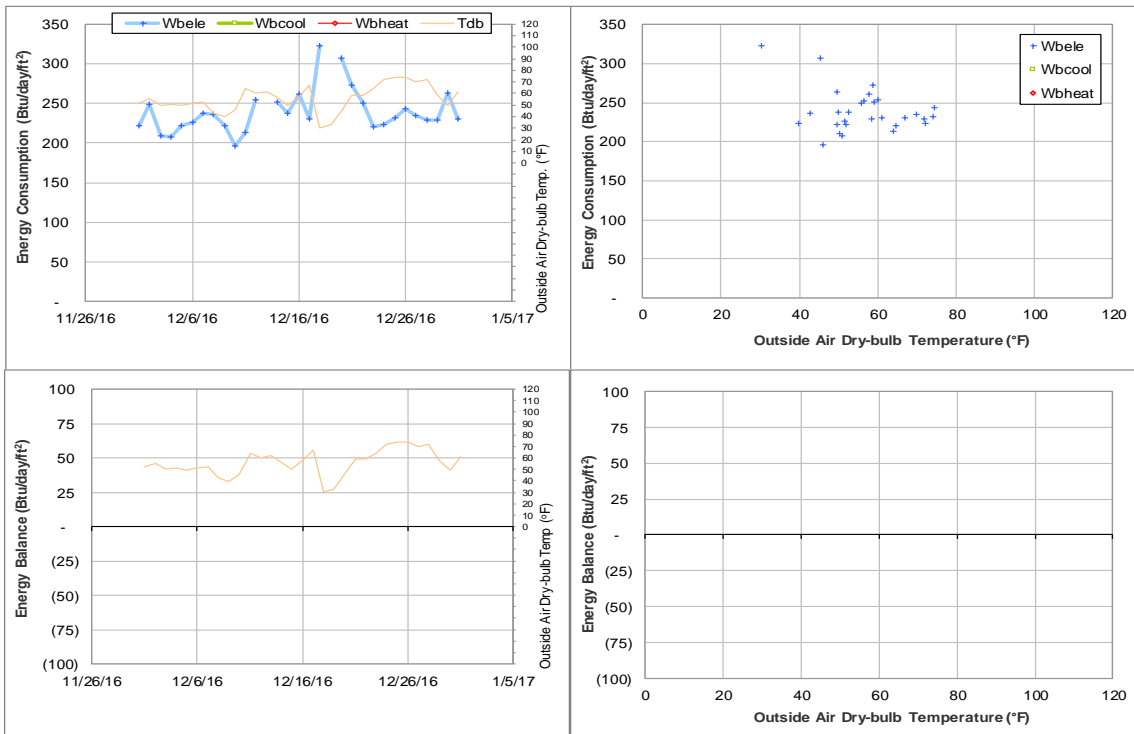


Figure IV-128 Forest Science Laboratory Building TAMU BLDG # 1042 Energy Balance Plot during December 2016

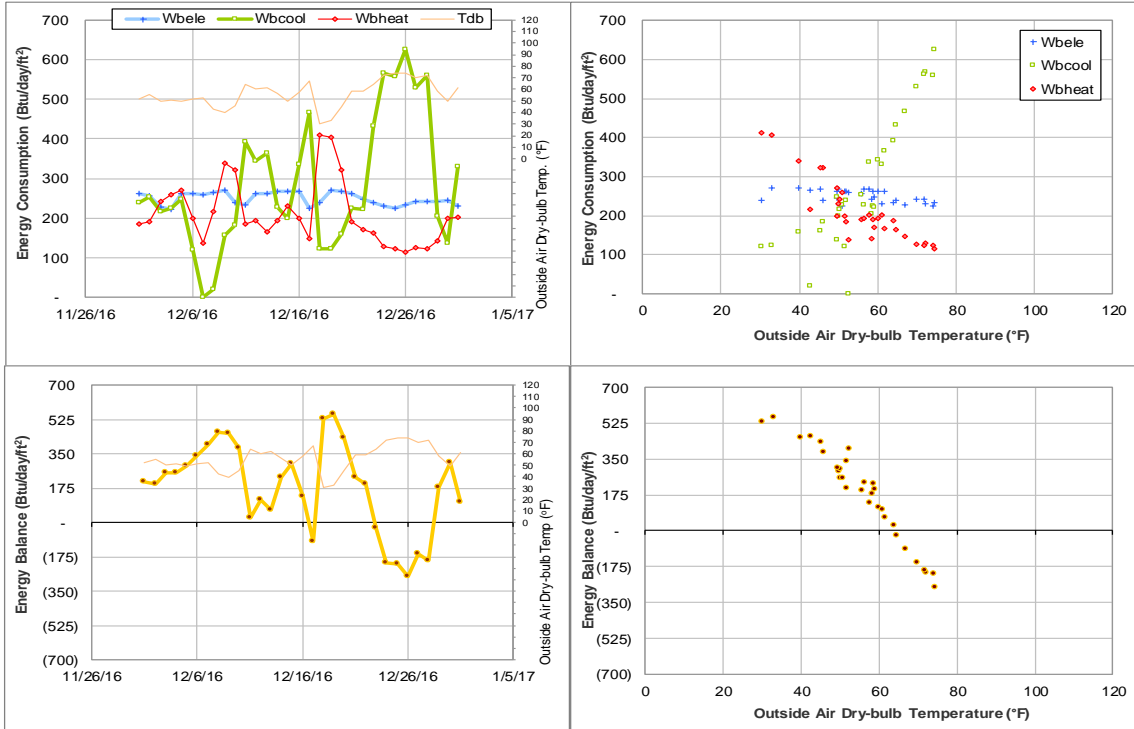


Figure IV-129 Veterinary Small Animal Hospital TAMU BLDG # 1085 Energy Balance Plot during December 2016

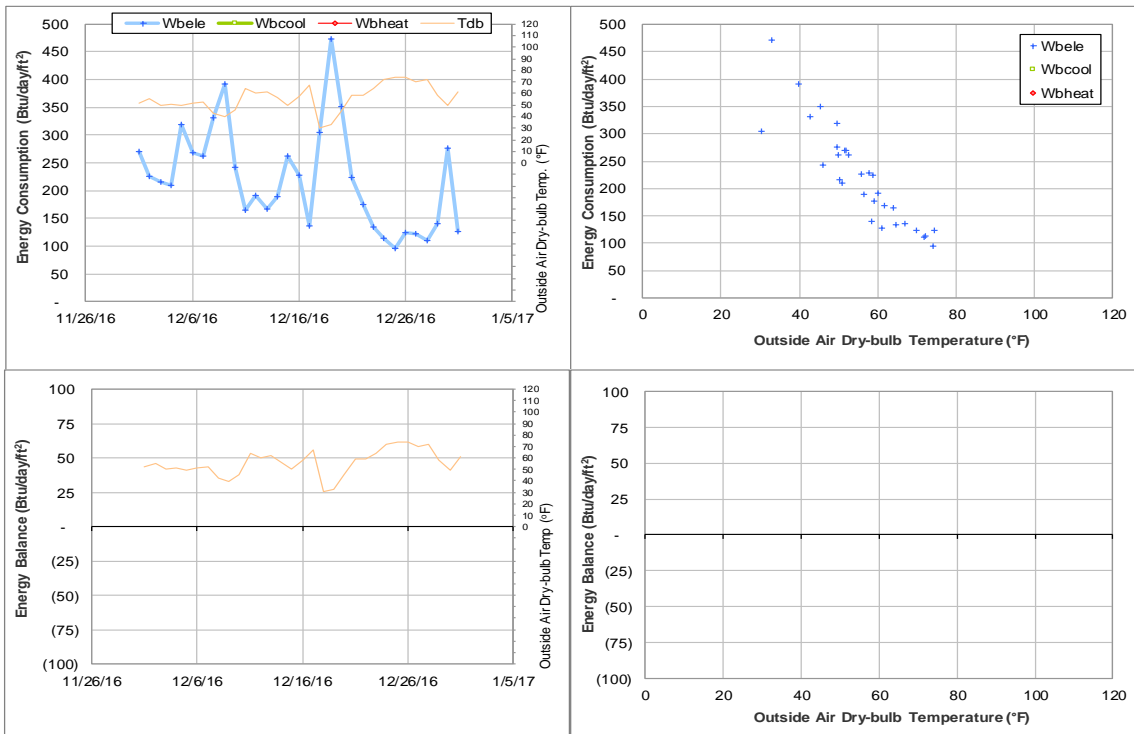


Figure IV-130 Utilities Energy Office Annex TAMU BLDG # 1089 Energy Balance Plot during December 2016

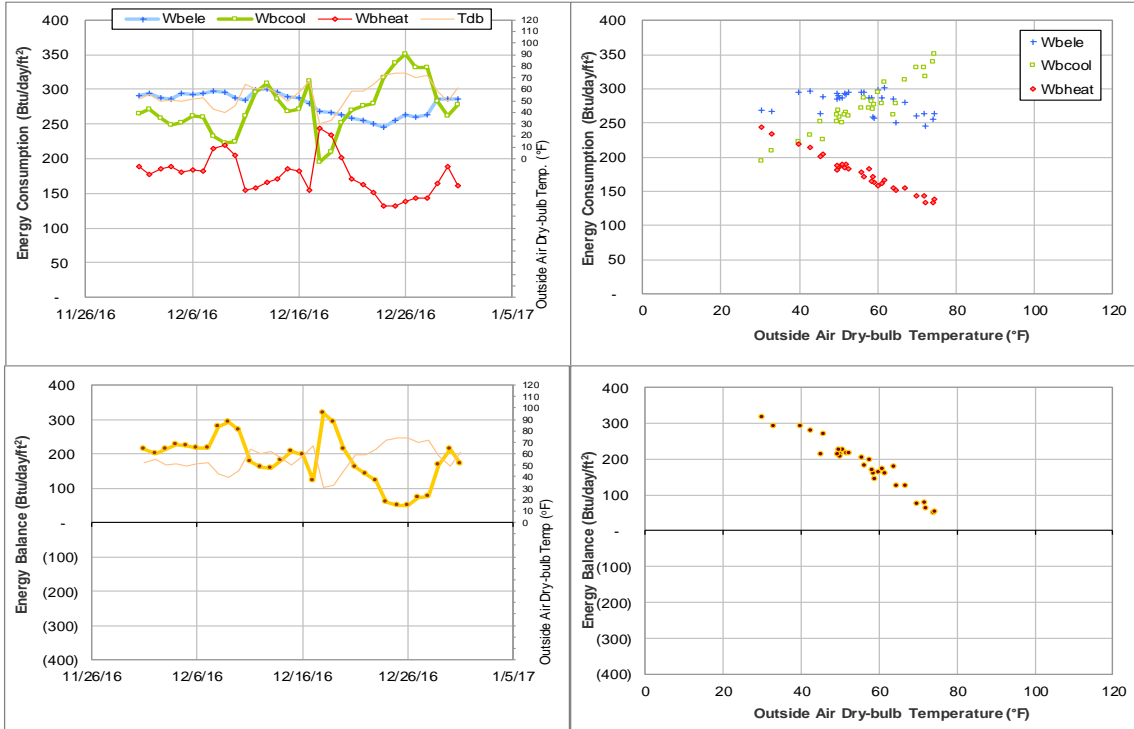


Figure IV-131 Biological Control Facility TAMU BLDG # 1146 Energy Balance Plot during December 2016

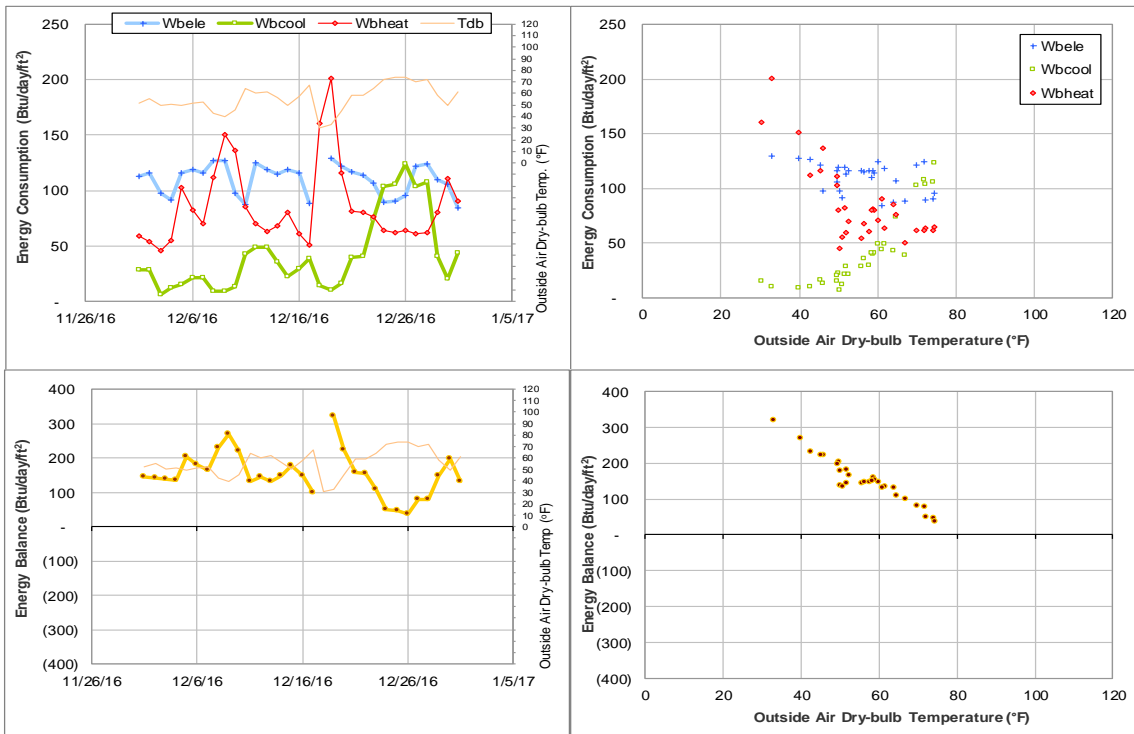


Figure IV-132 Physical Plant Administration & Shops TAMU BLDG # 1156 Energy Balance Plot during December 2016

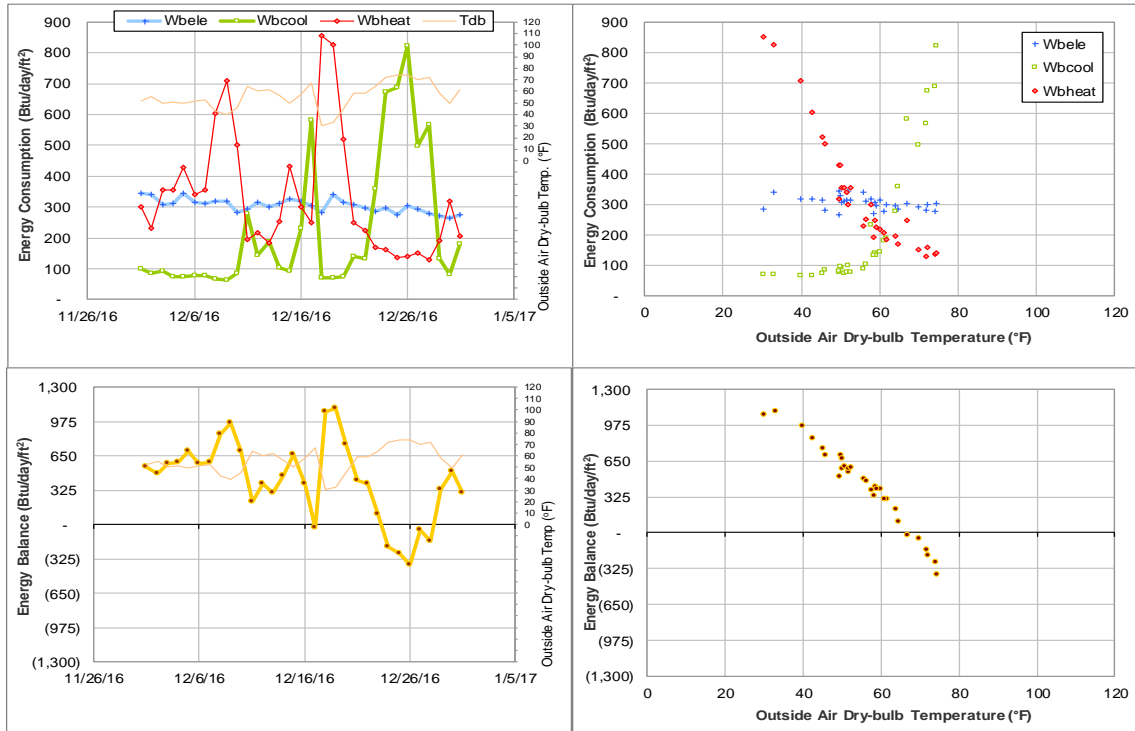


Figure IV-133 Veterinary Anatomic Pathology TAMU BLDG # 1184 Energy Balance Plot during December 2016

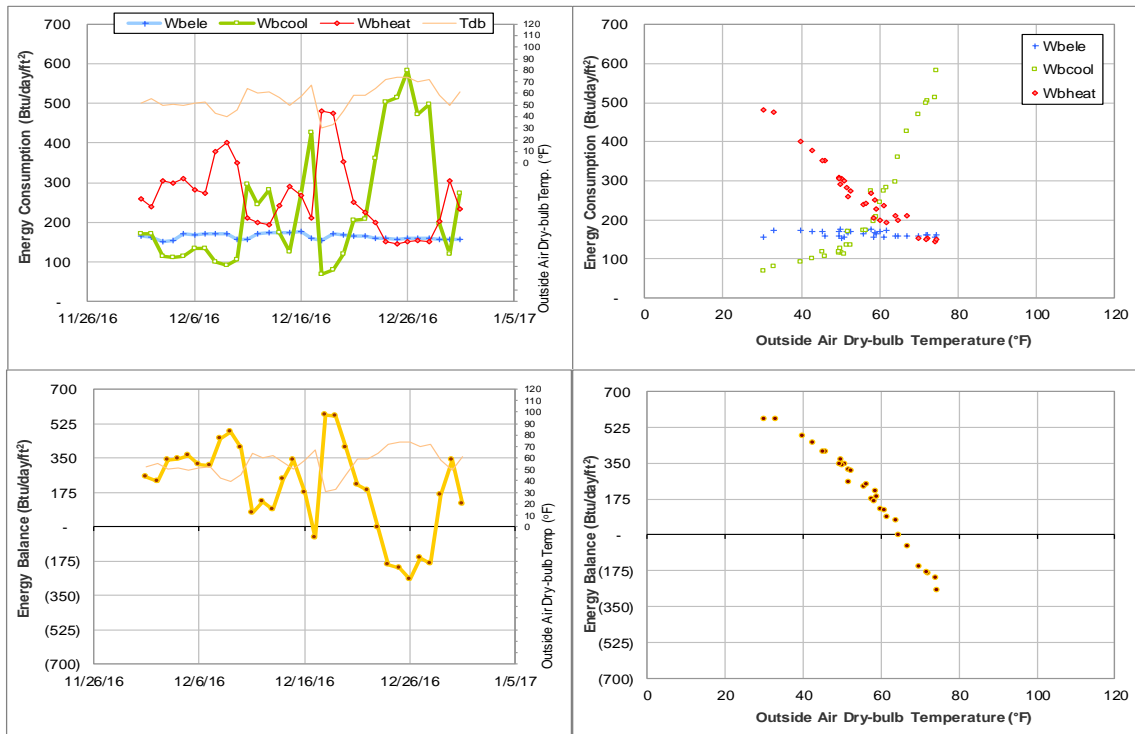


Figure IV-134 Veterinary Large Animal Hospital TAMU BLDG # 1194 Energy Balance Plot during December 2016

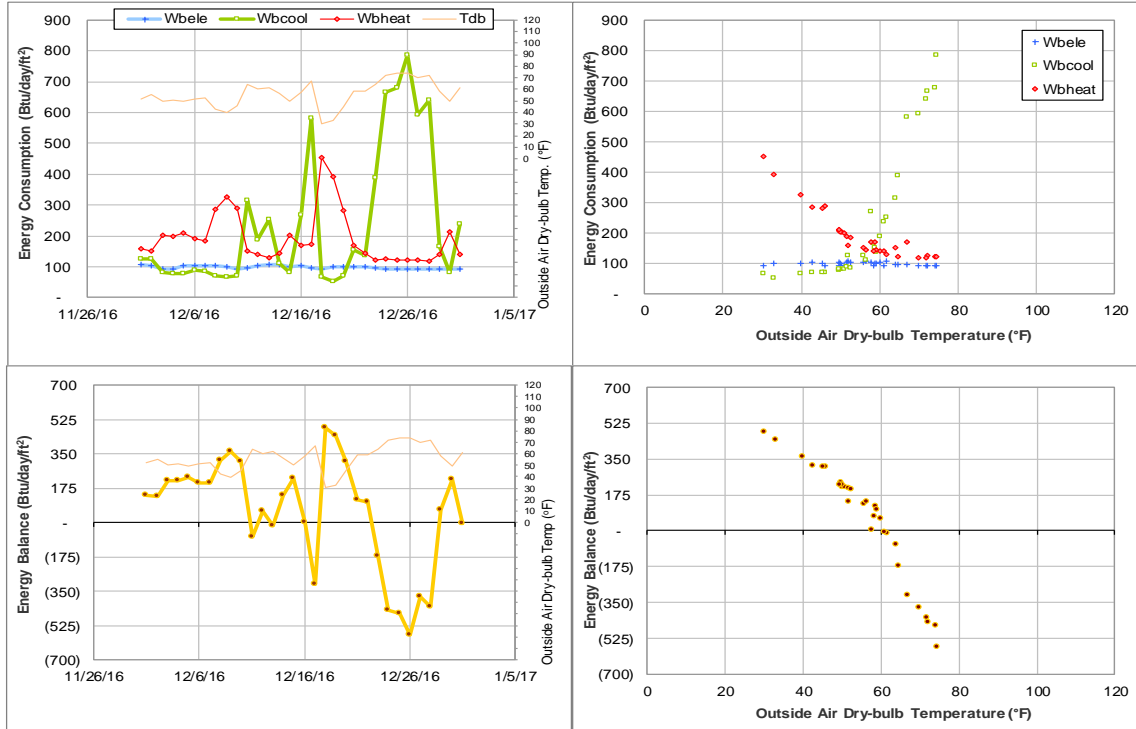


Figure IV-135 Veterinary Research Building TAMU BLDG # 1197 Energy Balance Plot during December 2016

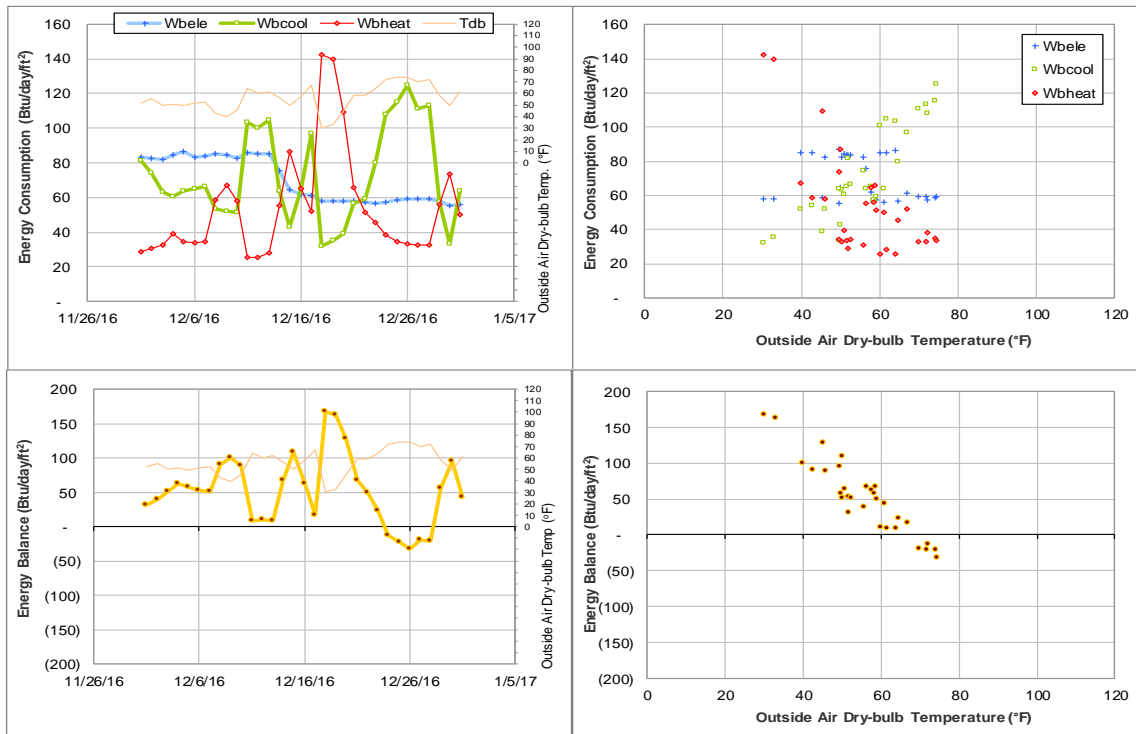


Figure IV-136 Hullabaloo Residence Hall TAMU BLDG # 1416 Energy Balance Plot during December 2016

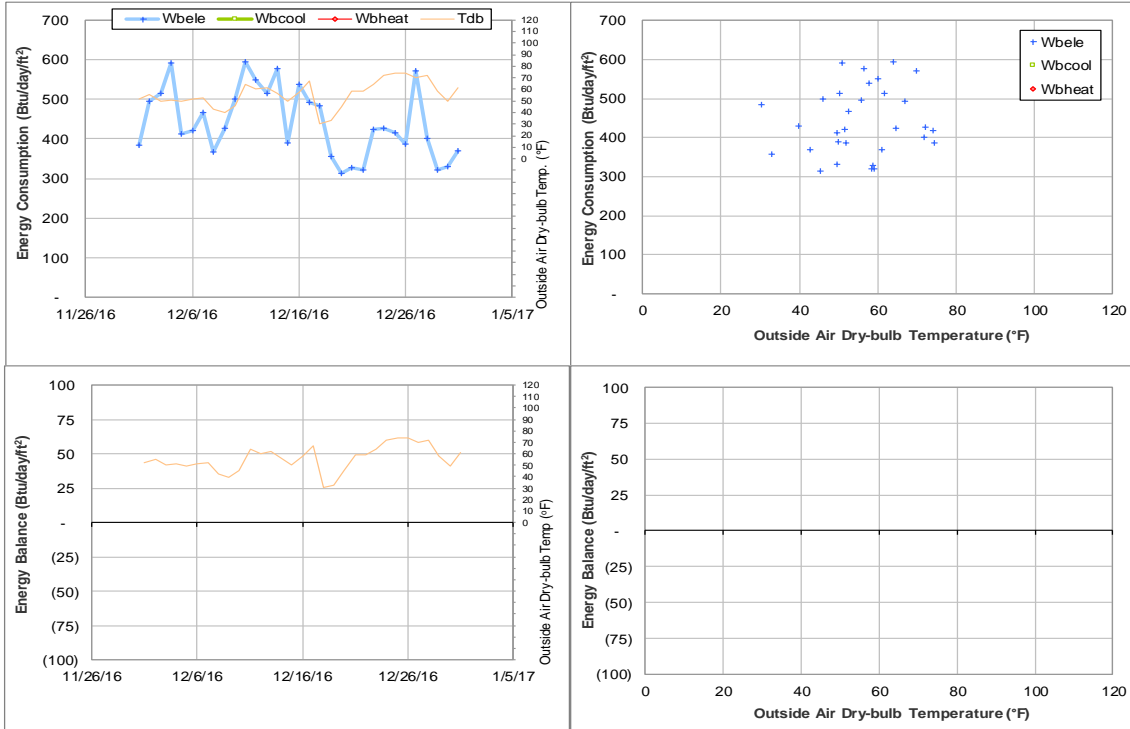


Figure IV-137 University Apartments - Laundry at the Gardens TAMU BLDG # 1450 Energy Balance Plot during December 2016

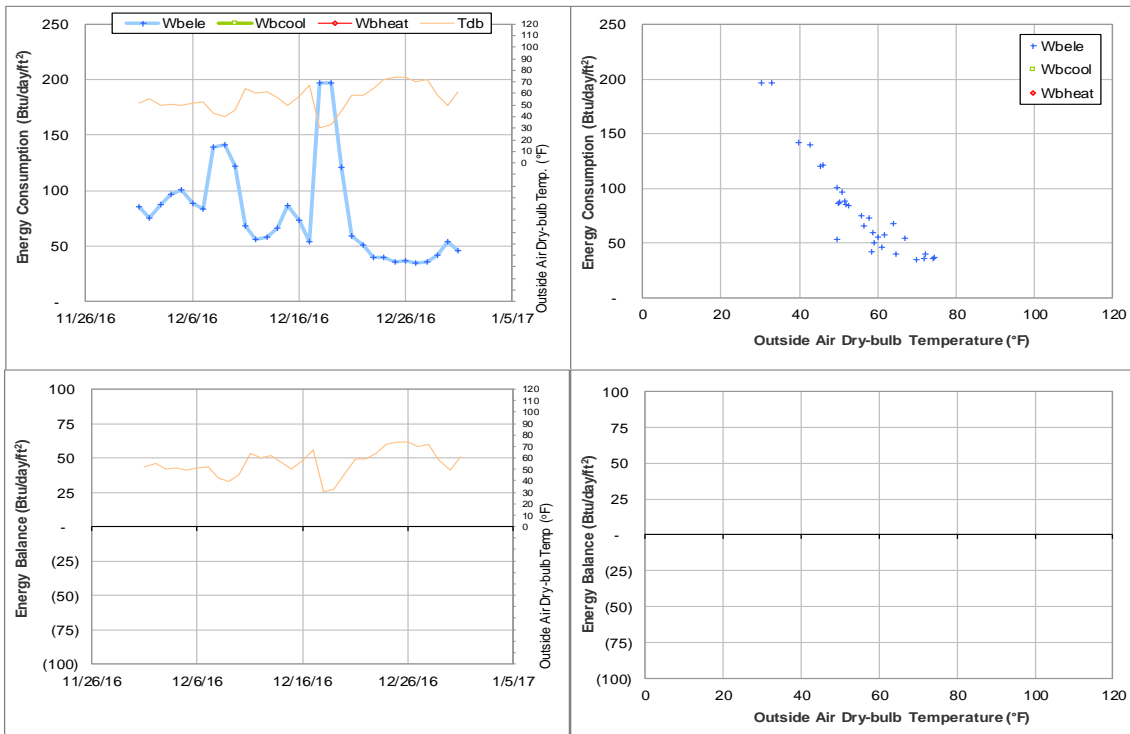


Figure IV-138 University Apartments - The Gardens J TAMU BLDG # 1451 Energy Balance Plot during December 2016

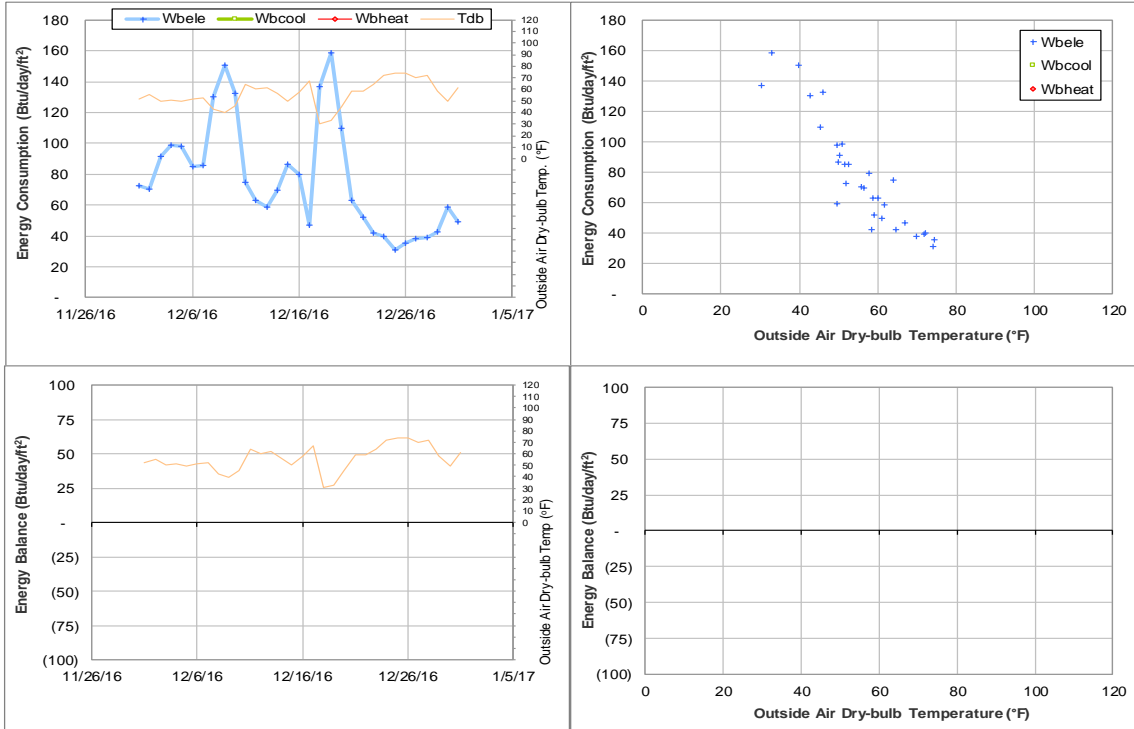


Figure IV-139 University Apartments - The Gardens K TAMU BLDG # 1452 Energy Balance Plot during December 2016

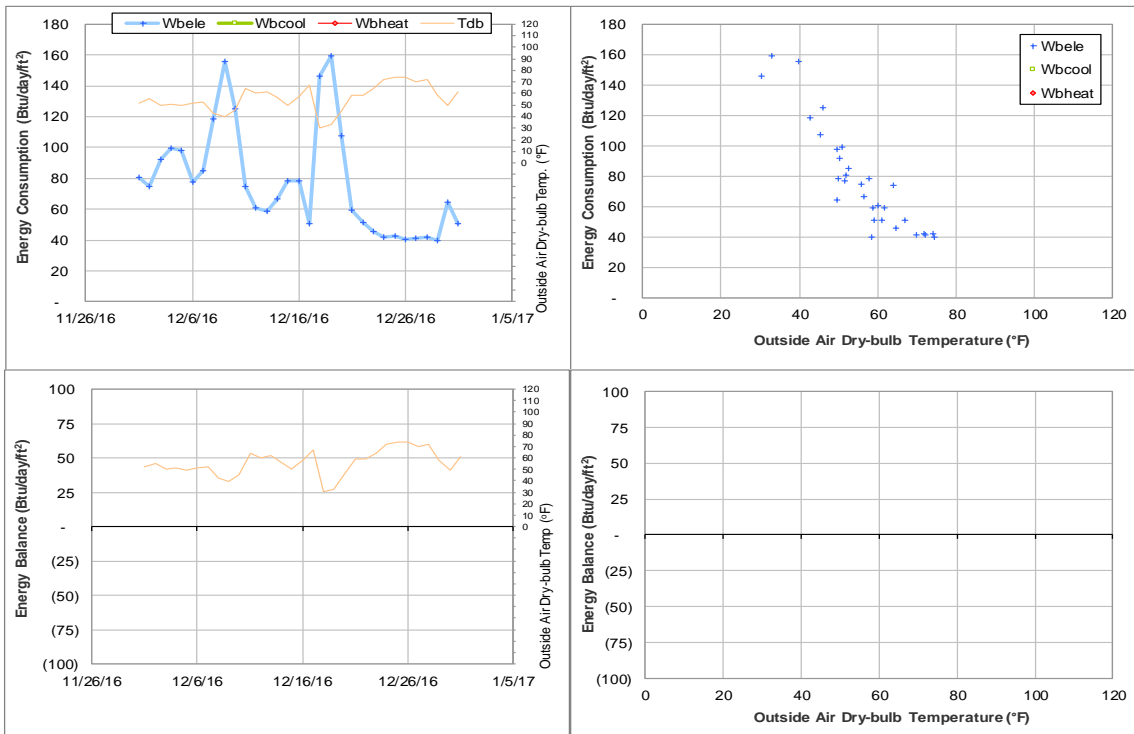


Figure IV-140 University Apartments - The Gardens L TAMU BLDG # 1453 Energy Balance Plot during December 2016

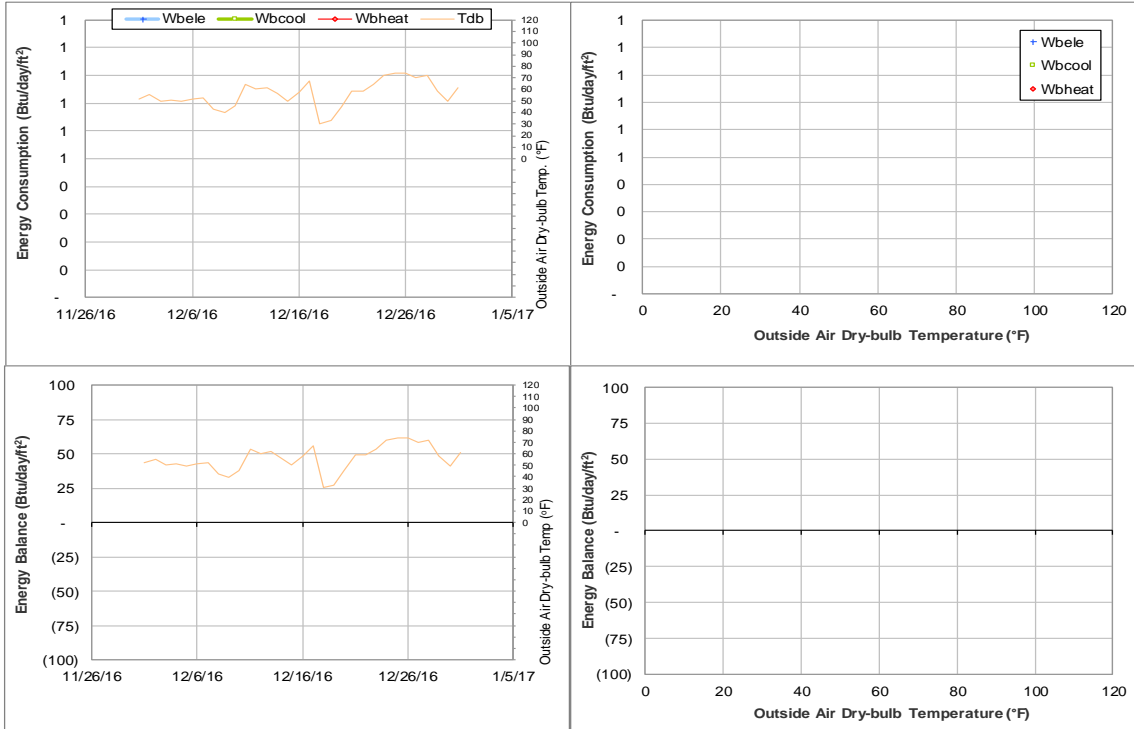


Figure IV-141 University Apartments - The Gardens F TAMU BLDG # 1454 Energy Balance Plot during December 2016

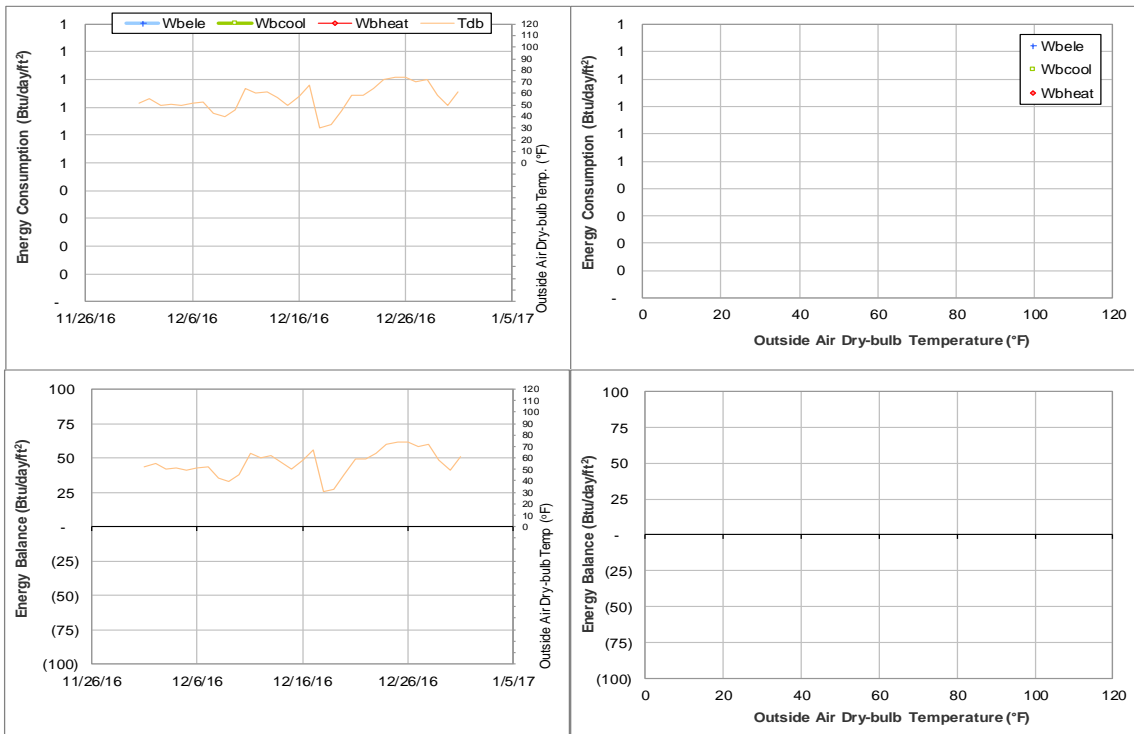


Figure IV-142 University Apartments - The Gardens G TAMU BLDG # 1455 Energy Balance Plot during December 2016

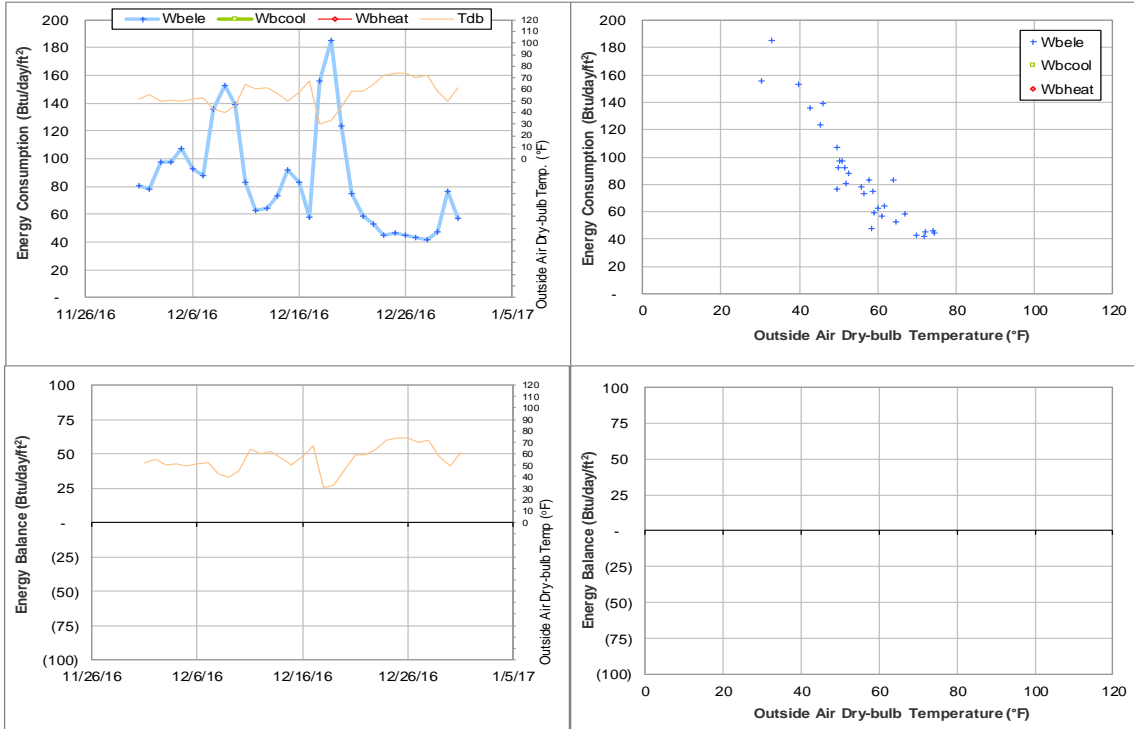


Figure IV-143 University Apartments - The Gardens H TAMU BLDG # 1456 Energy Balance Plot during December 2016

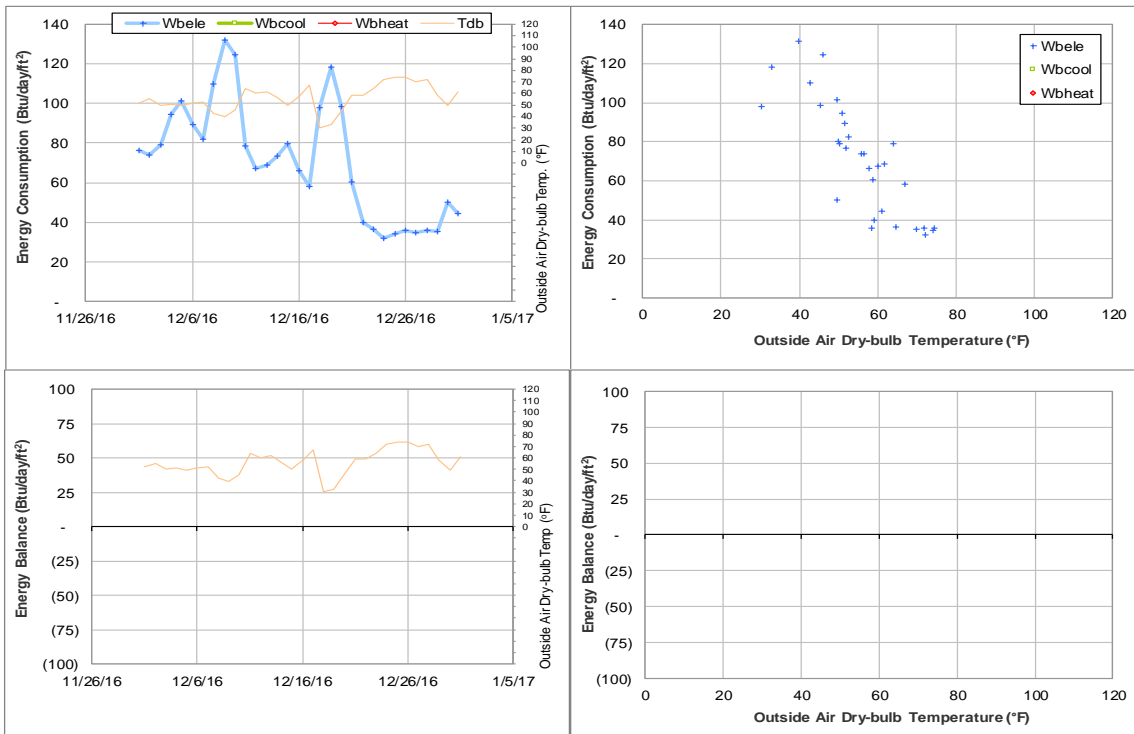


Figure IV-144 University Apartments - The Gardens M TAMU BLDG # 1457 Energy Balance Plot during December 2016

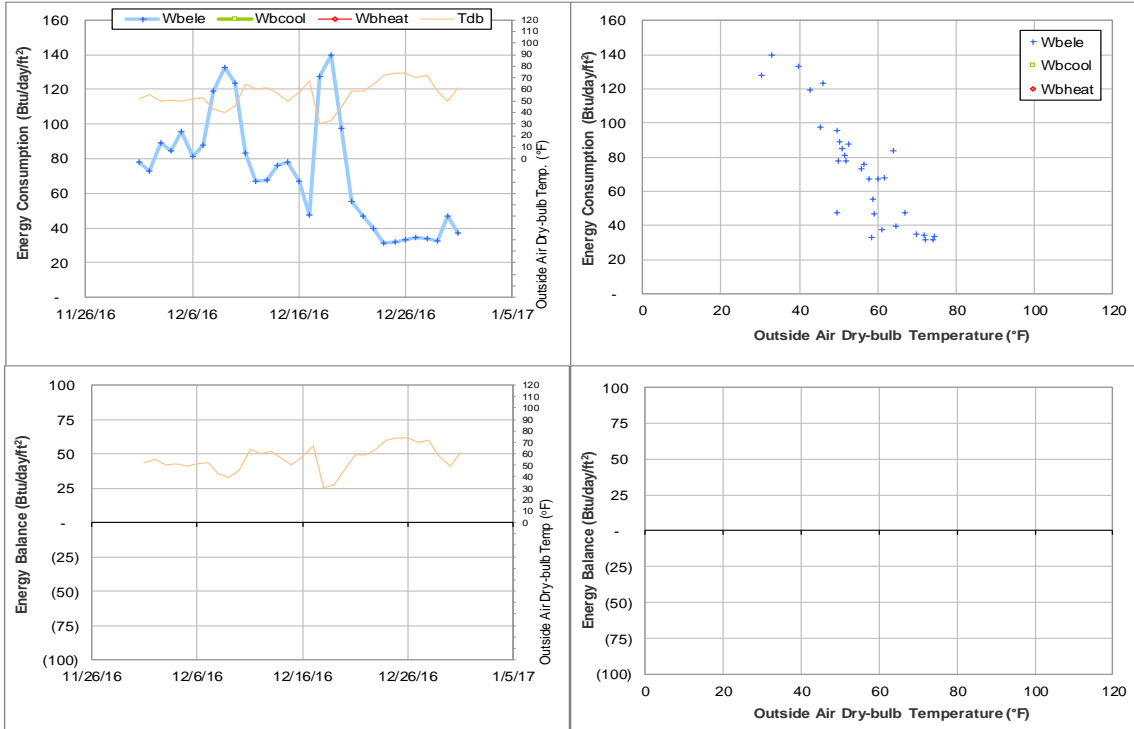


Figure IV-145 University Apartments - The Gardens N TAMU BLDG # 1458 Energy Balance Plot during December 2016

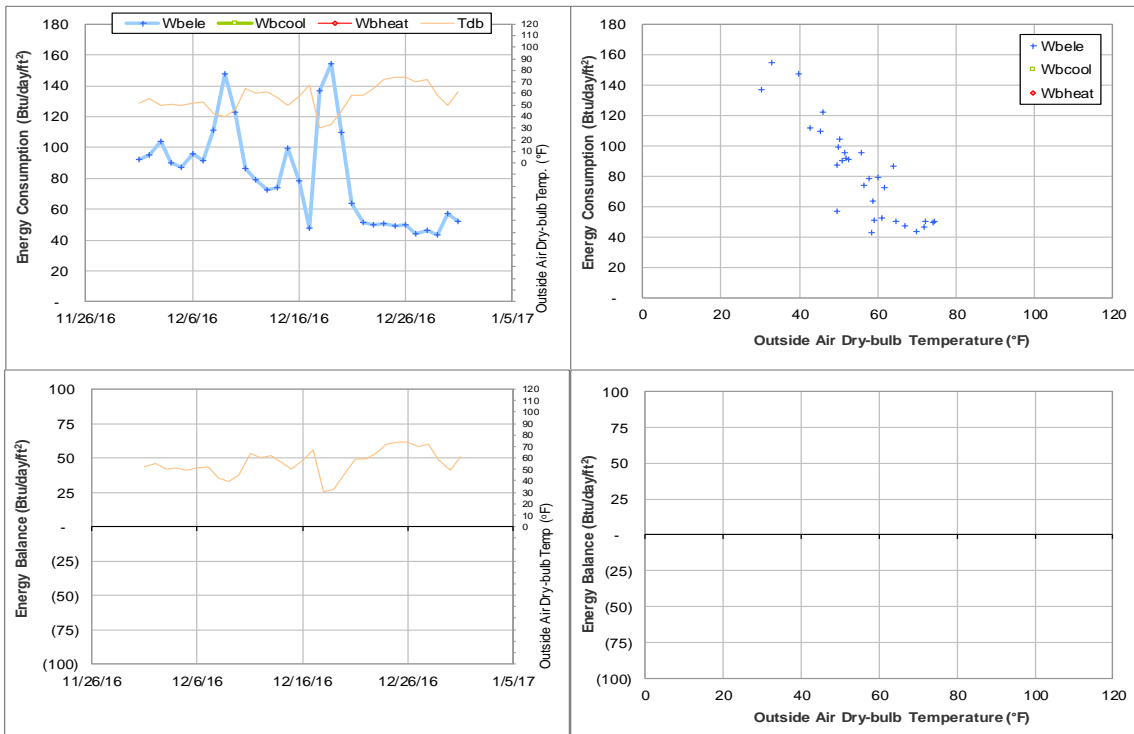


Figure IV-146 University Apartments - The Gardens P TAMU BLDG # 1459 Energy Balance Plot during December 2016

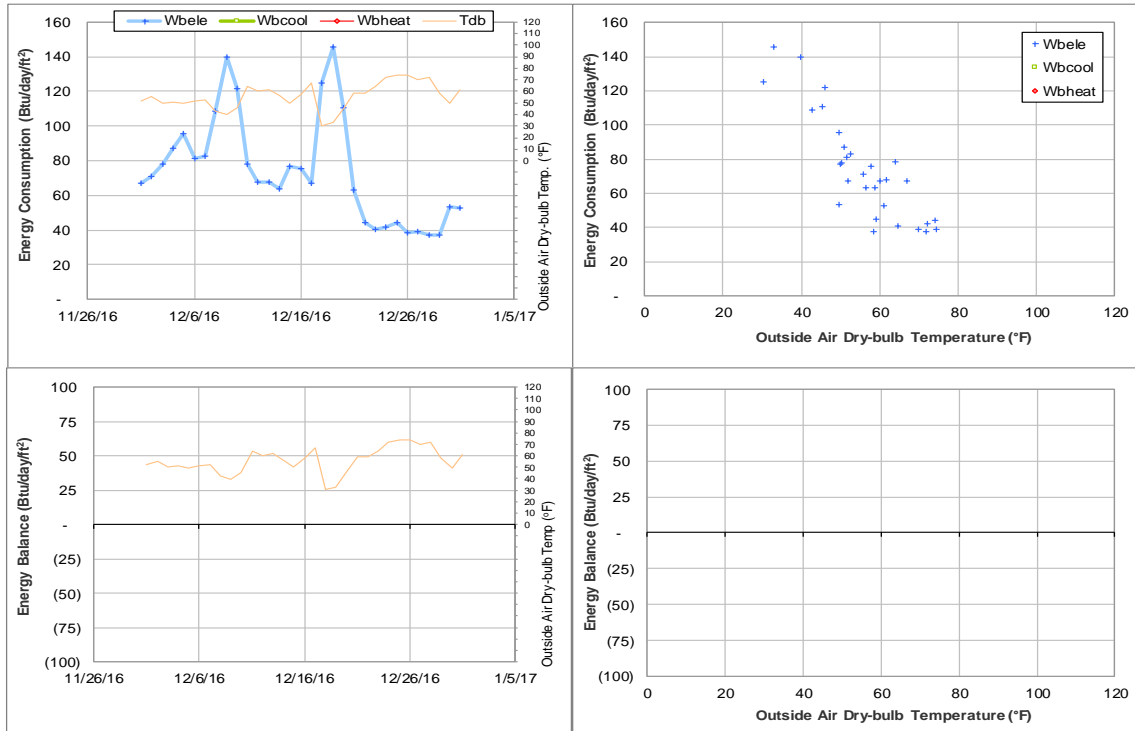


Figure IV-147 University Apartments - The Gardens Q TAMU BLDG # 1460 Energy Balance Plot during December 2016

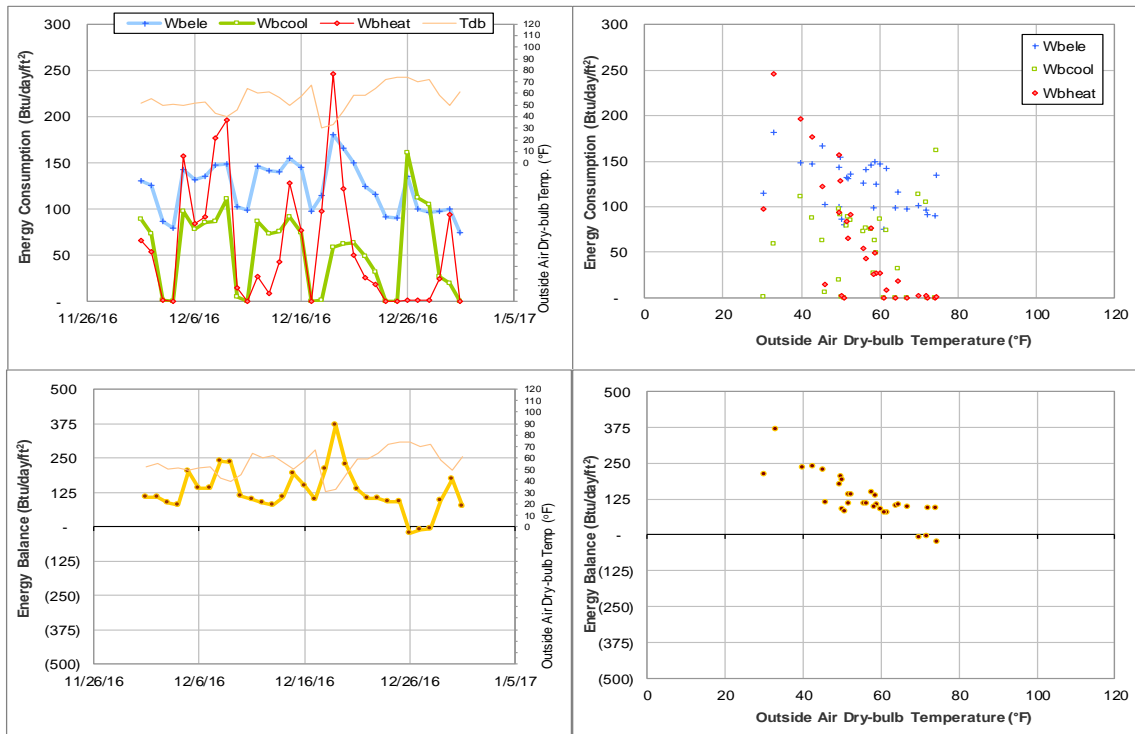


Figure IV-148 Utilities & Energy Services Business Office TAMU BLDG # 1497 Energy Balance Plot during December 2016

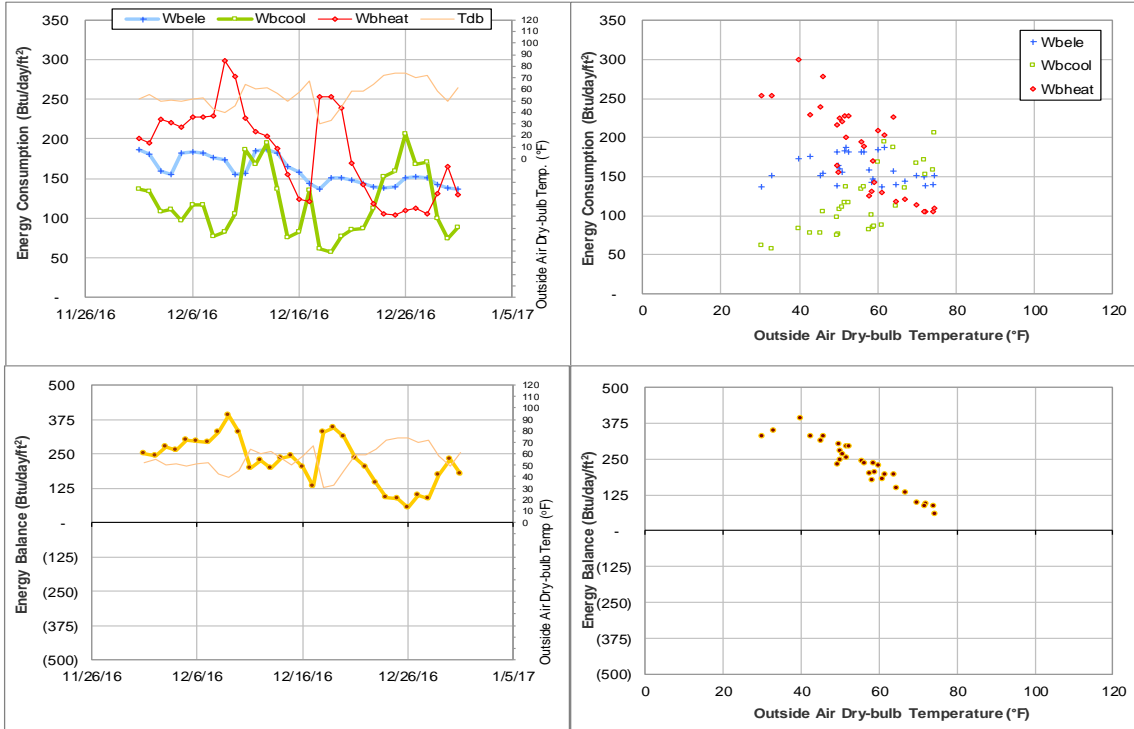


Figure IV-149 Kleberg Center TAMU BLDG # 1501 Energy Balance Plot during December 2016

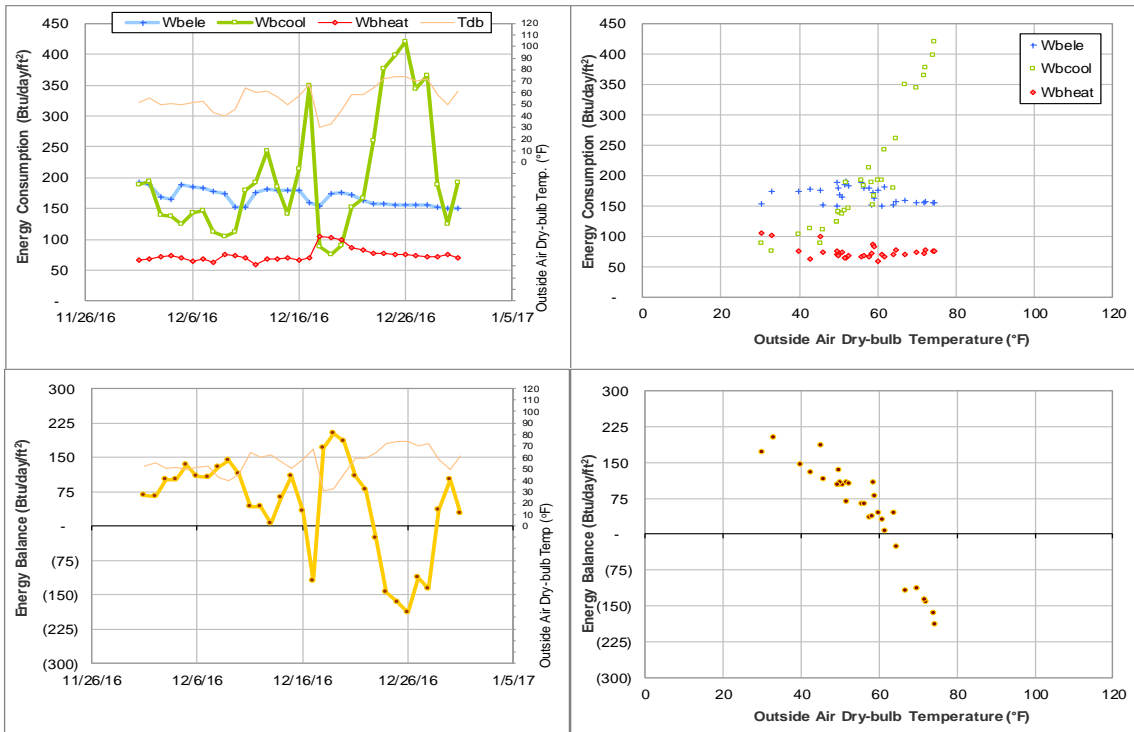


Figure IV-150 Heep Center TAMU BLDG # 1502 Energy Balance Plot during December 2016

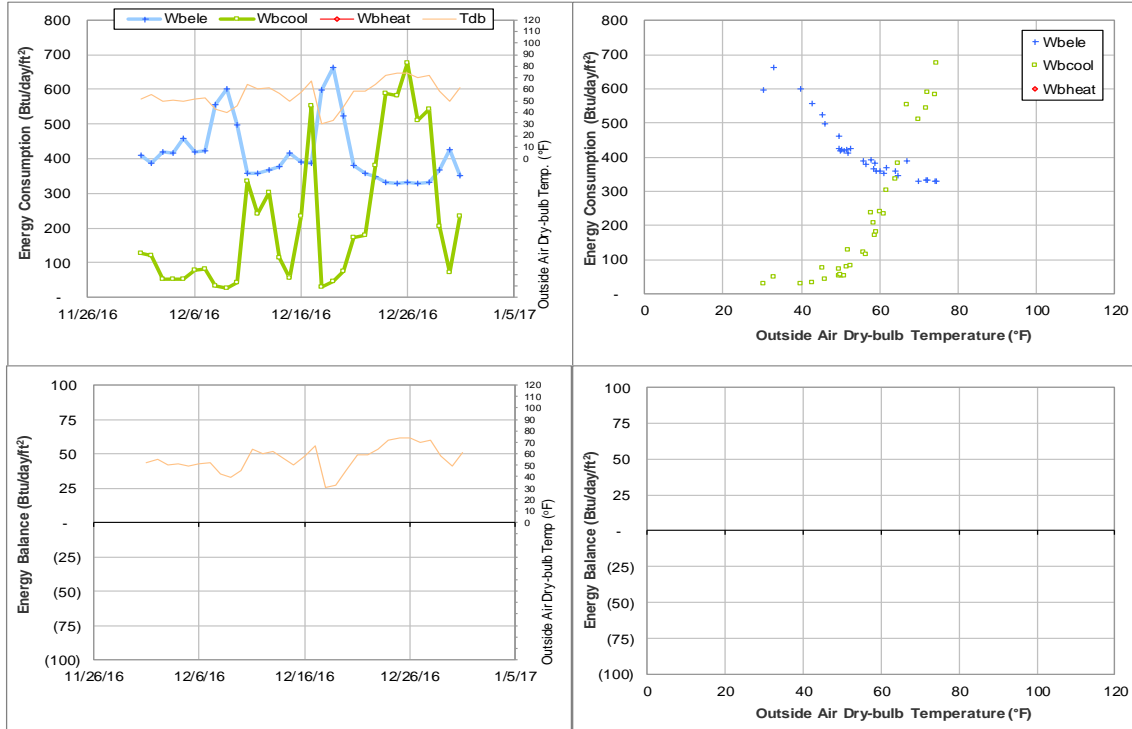


Figure IV-151 Cater-Mattil Hall TAMU BLDG # 1503 Energy Balance Plot during December 2016

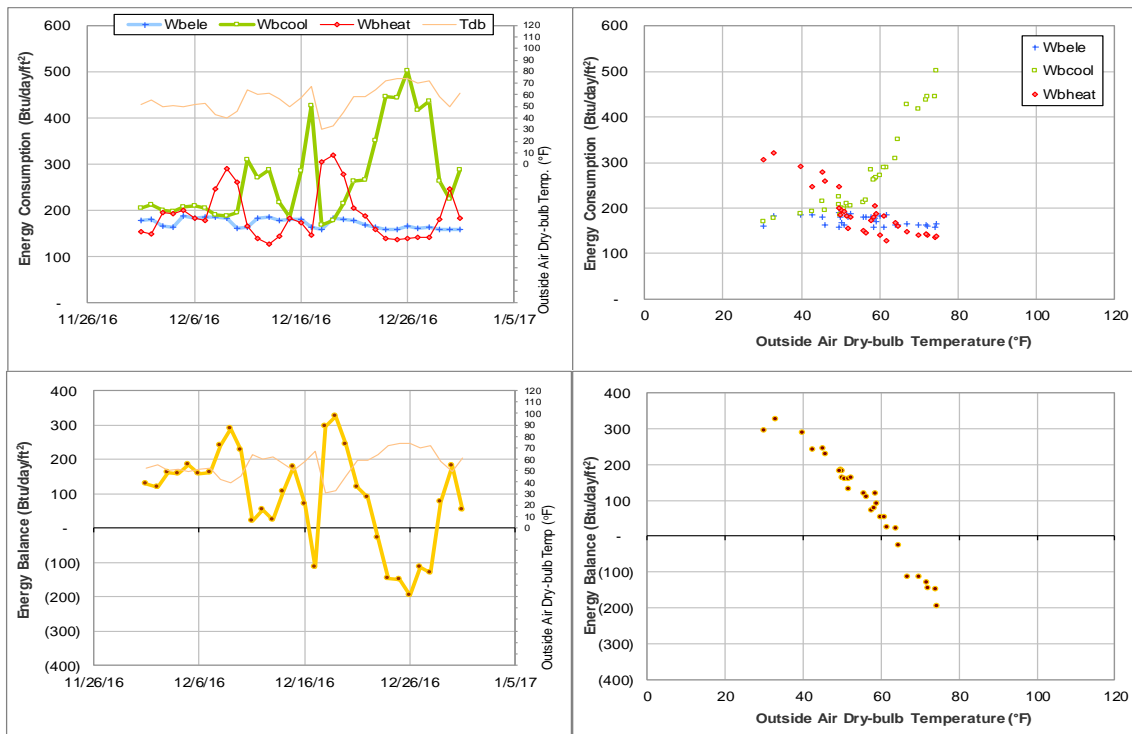


Figure IV-152 Reynolds Medical Sciences Building TAMU BLDG # 1504 Energy Balance Plot during December 2016

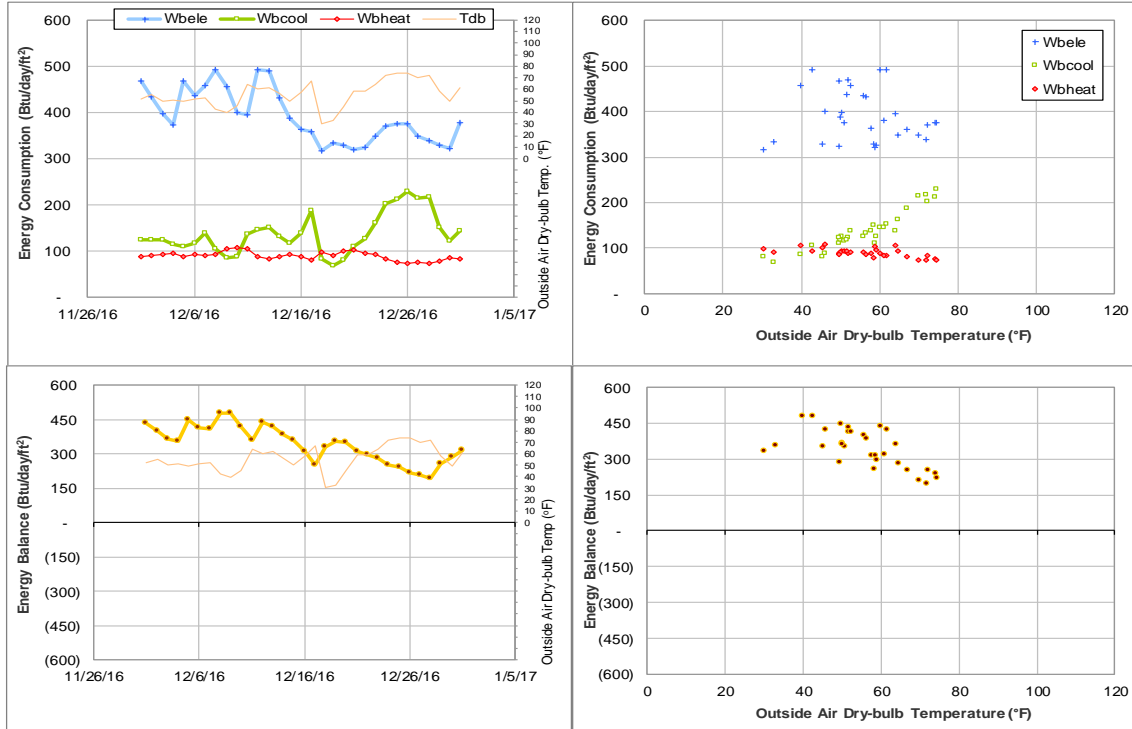


Figure IV-153 Rosenthal Meat Science & Technology Center TAMU BLDG # 1505 Energy Balance Plot during December 2016

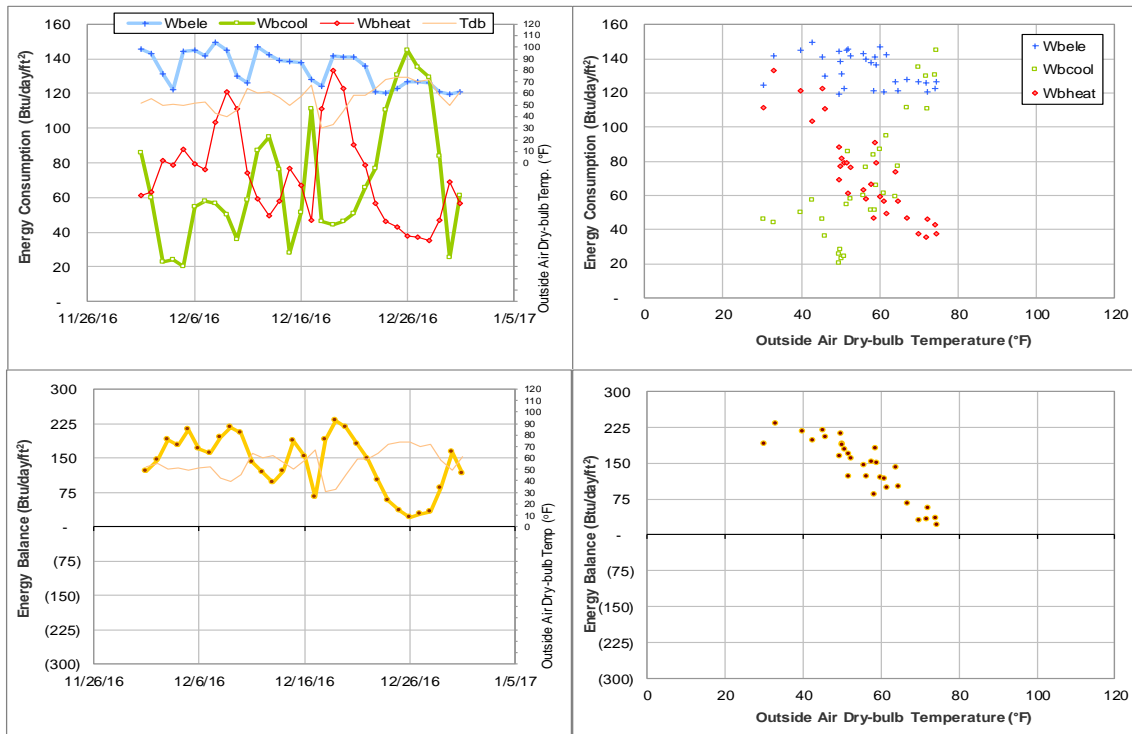


Figure IV-154 Horticulture-Forest Science Building TAMU BLDG # 1506 Energy Balance Plot during December 2016

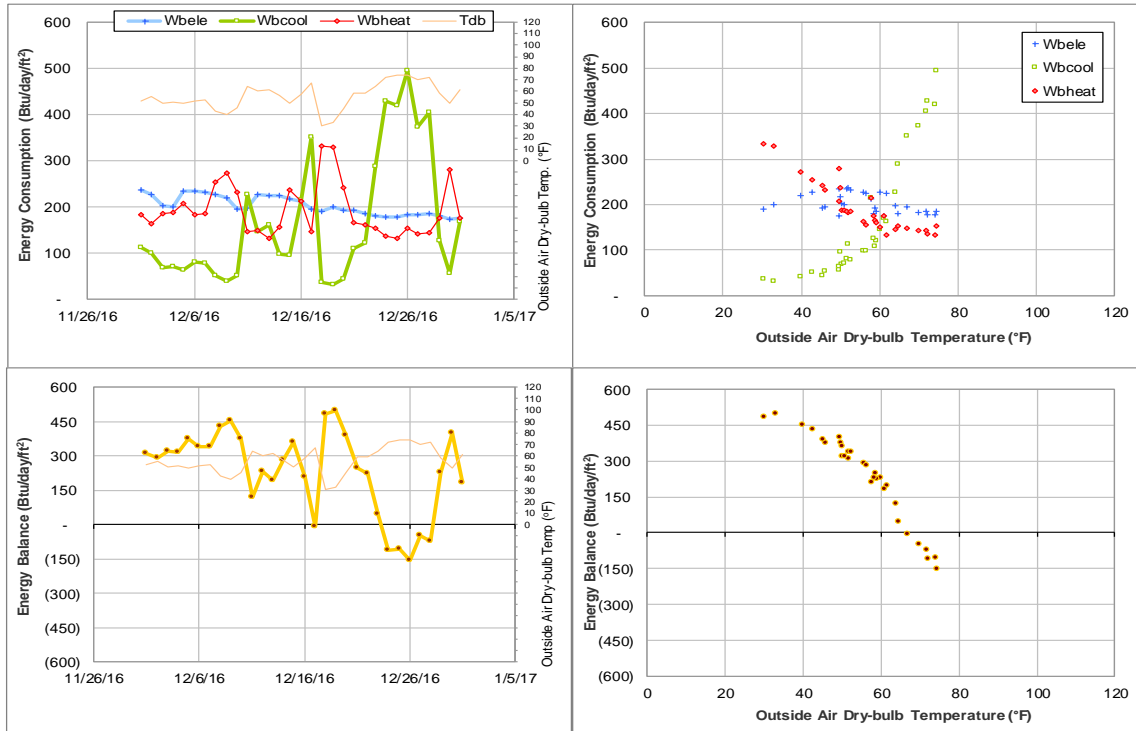


Figure IV-155 Biochemistry-Biophysics Building TAMU BLDG # 1507 Energy Balance Plot during December 2016

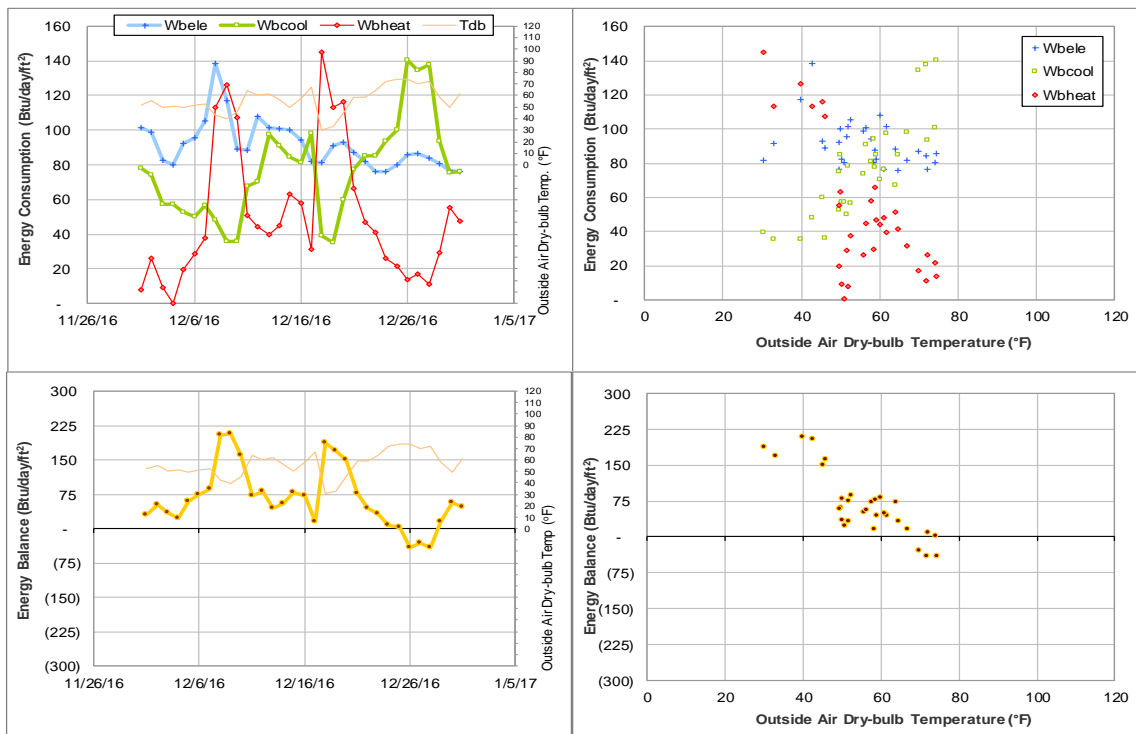


Figure IV-156 Price Hobgood Ag. Engineering Research Lab TAMU BLDG # 1508 Energy Balance Plot during December 2016

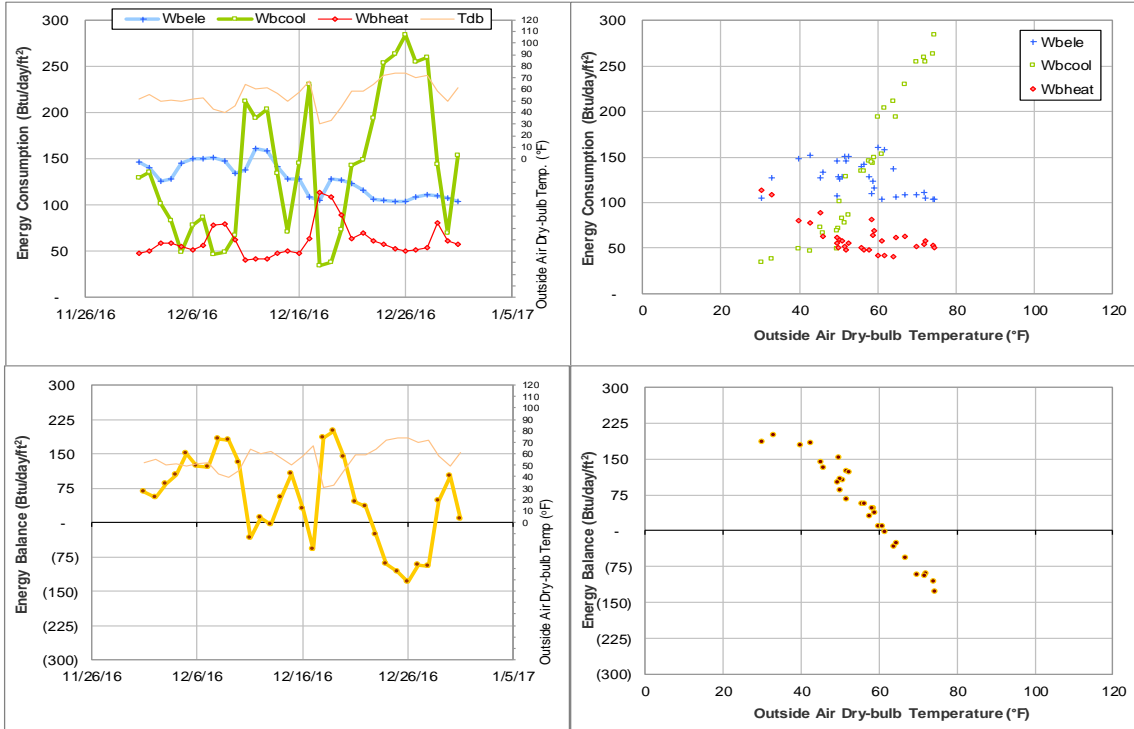


Figure IV-157 Medical Sciences Library TAMU BLDG # 1509 Energy Balance Plot during December 2016

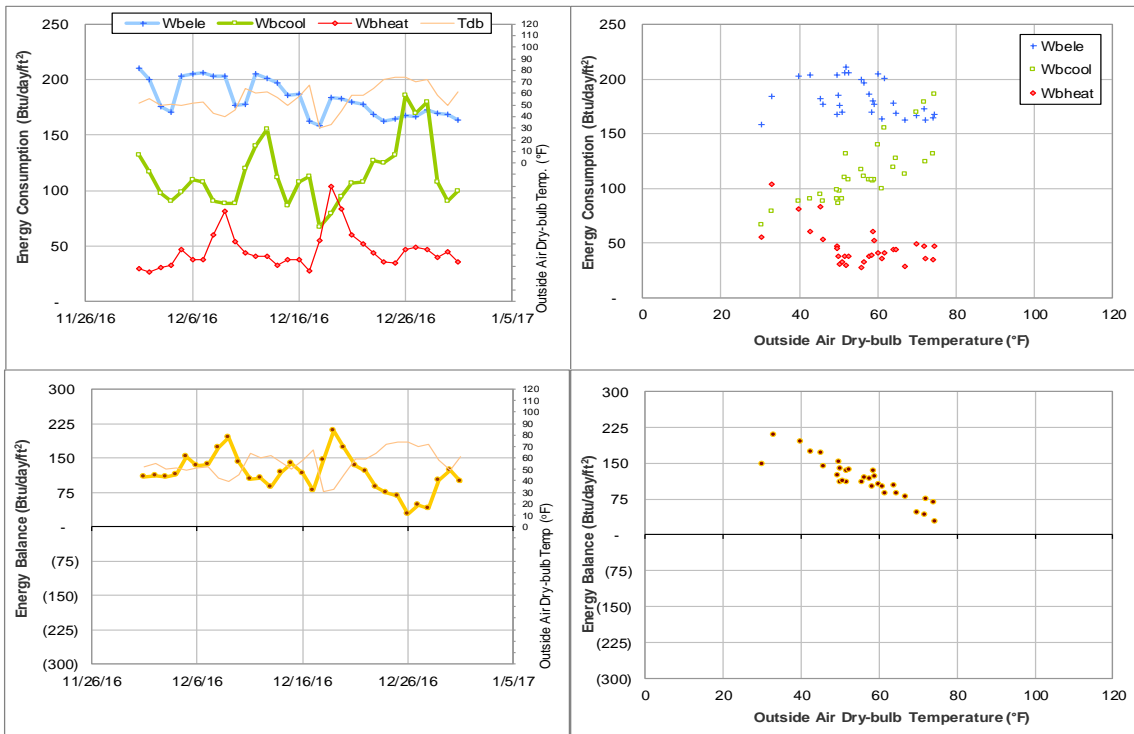


Figure IV-158 Wehner Building TAMU BLDG # 1510 Energy Balance Plot during December 2016

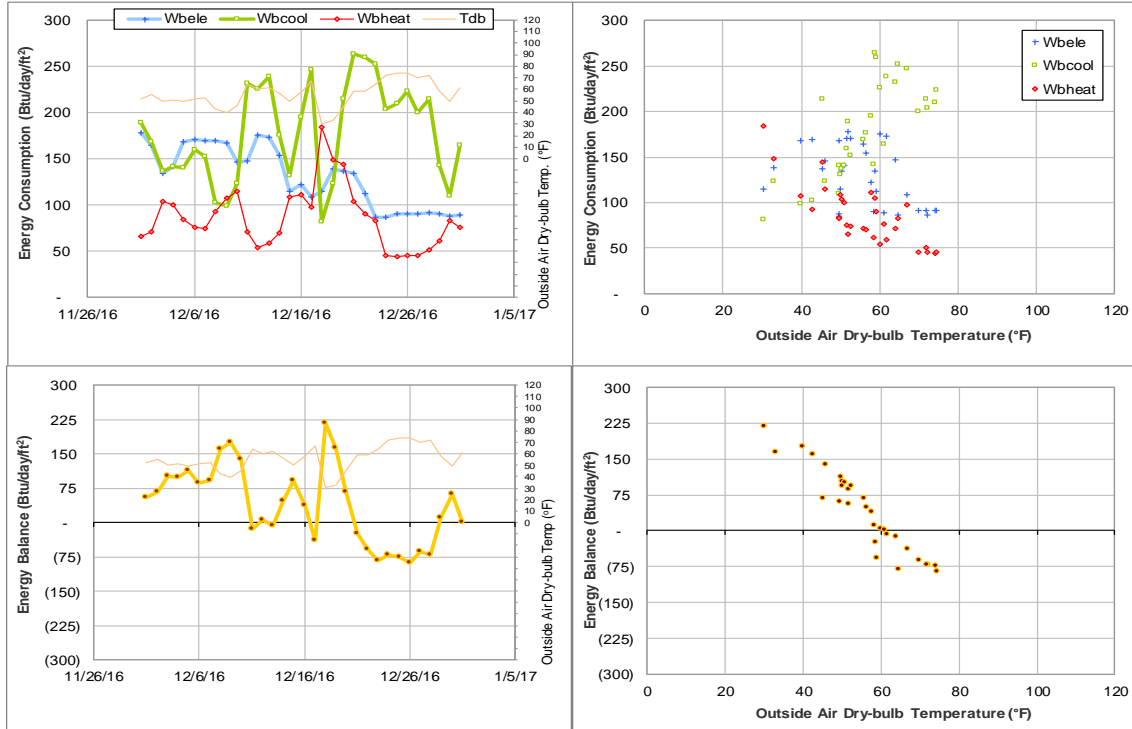


Figure IV-159 West Campus Library Facility TAMU BLDG # 1511 Energy Balance Plot during December 2016

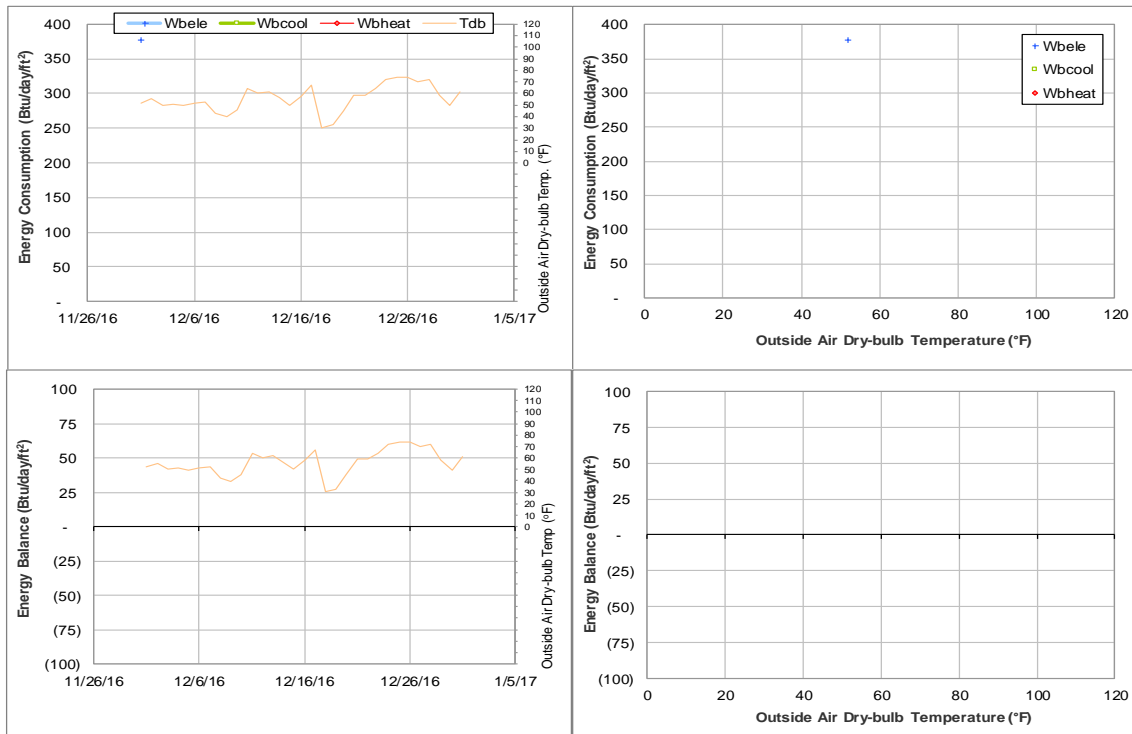


Figure IV-160 Southern Crop Improvement Greenhouse TAMU BLDG # 1512 Energy Balance Plot during December 2016

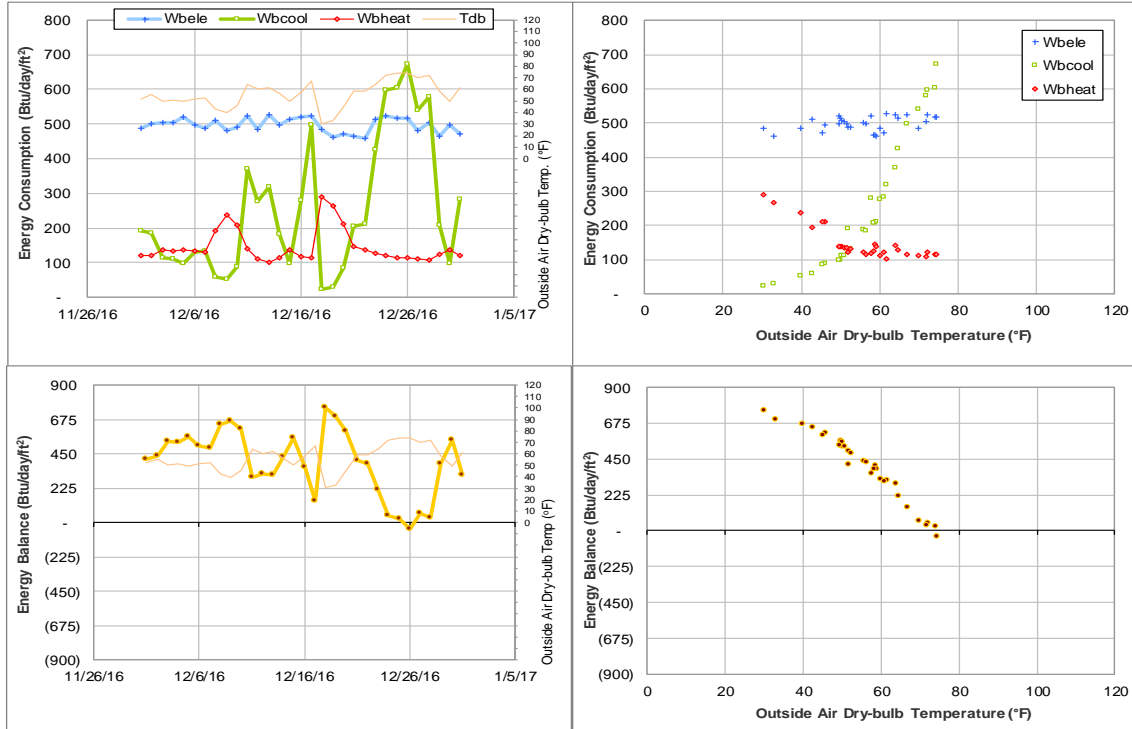


Figure IV-161 Borlaug Center for Southern Crop Improvement TAMU BLDG # 1513 Energy Balance Plot during December 2016

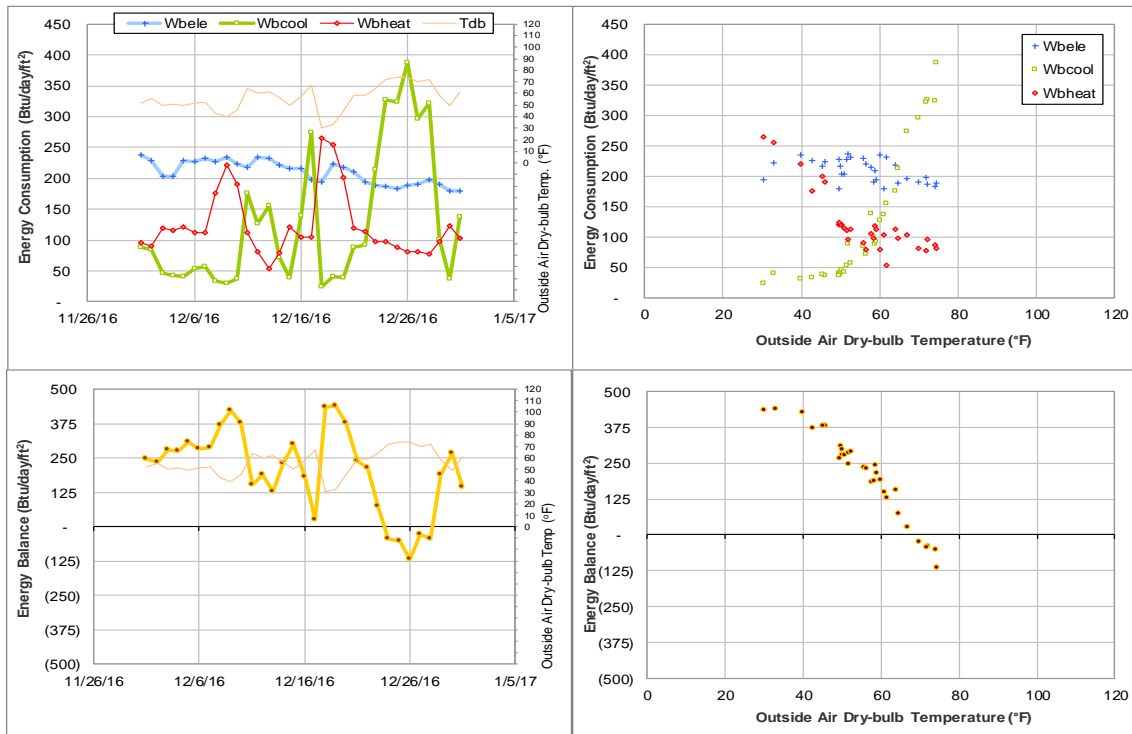


Figure IV-162 TX School of Rural Public Health TAMU BLDG # 1518 Energy Balance Plot during December 2016

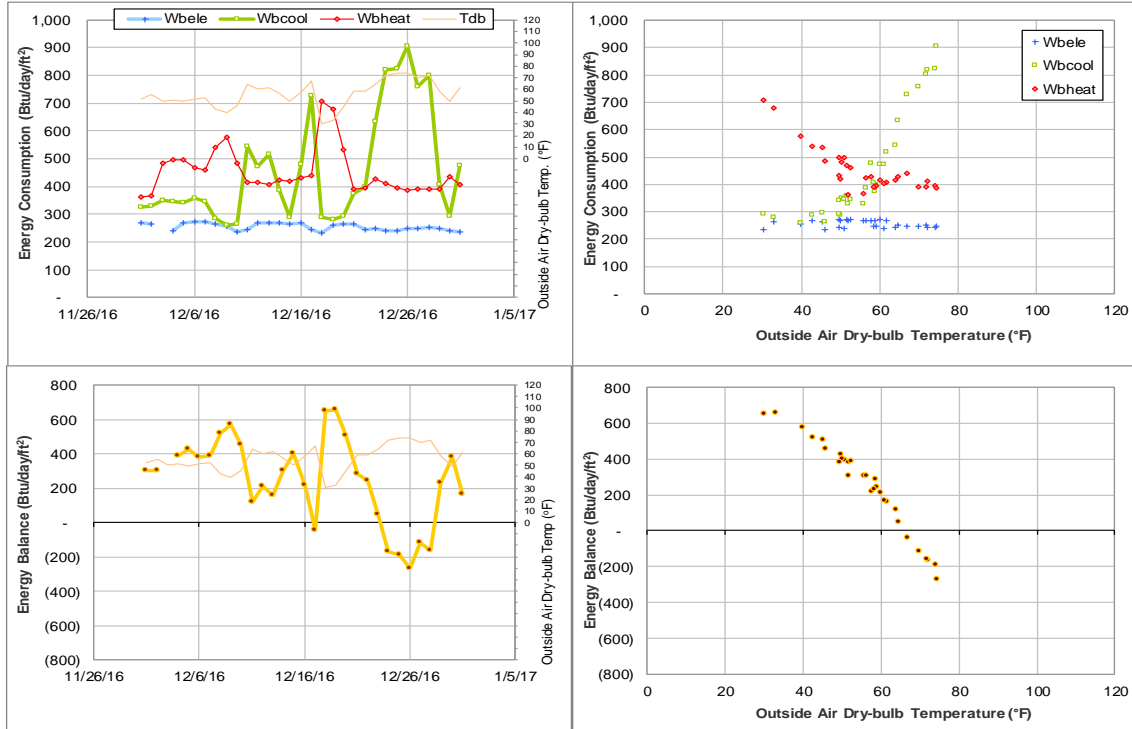


Figure IV-163 Nuclear Magnetic Resonance Facility TAMU BLDG # 1525 Energy Balance Plot during December 2016

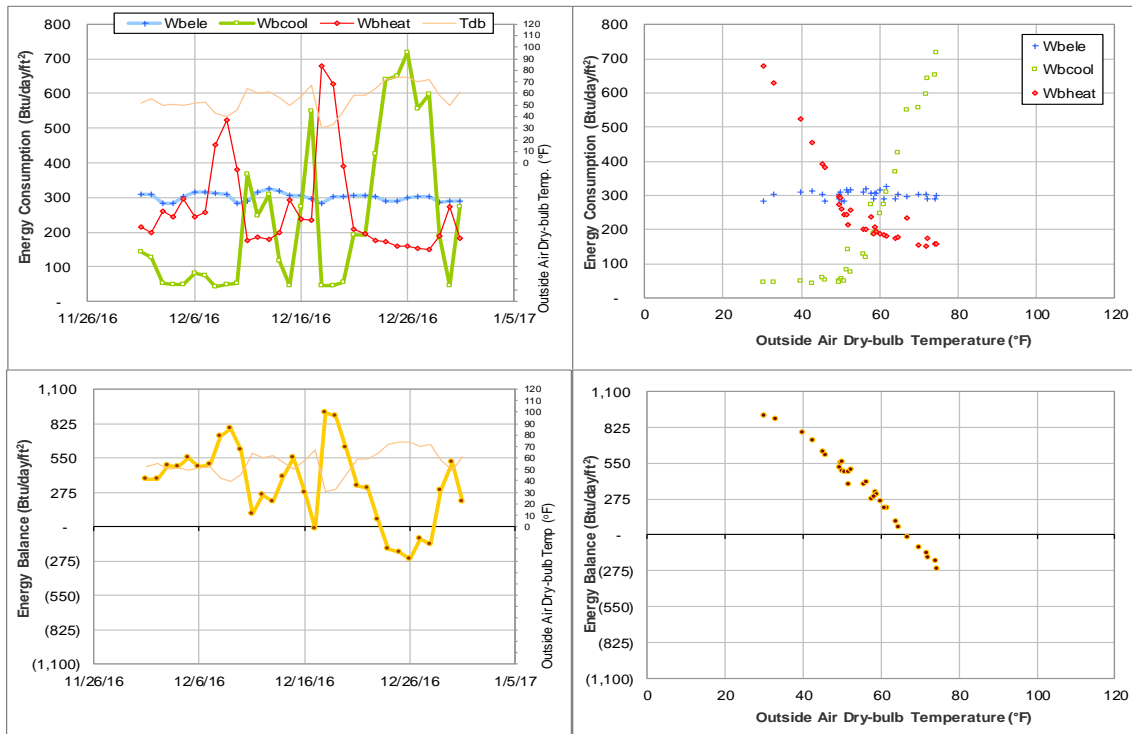


Figure IV-164 Interdisciplinary Life Sciences Building TAMU BLDG # 1530 Energy Balance Plot during December 2016

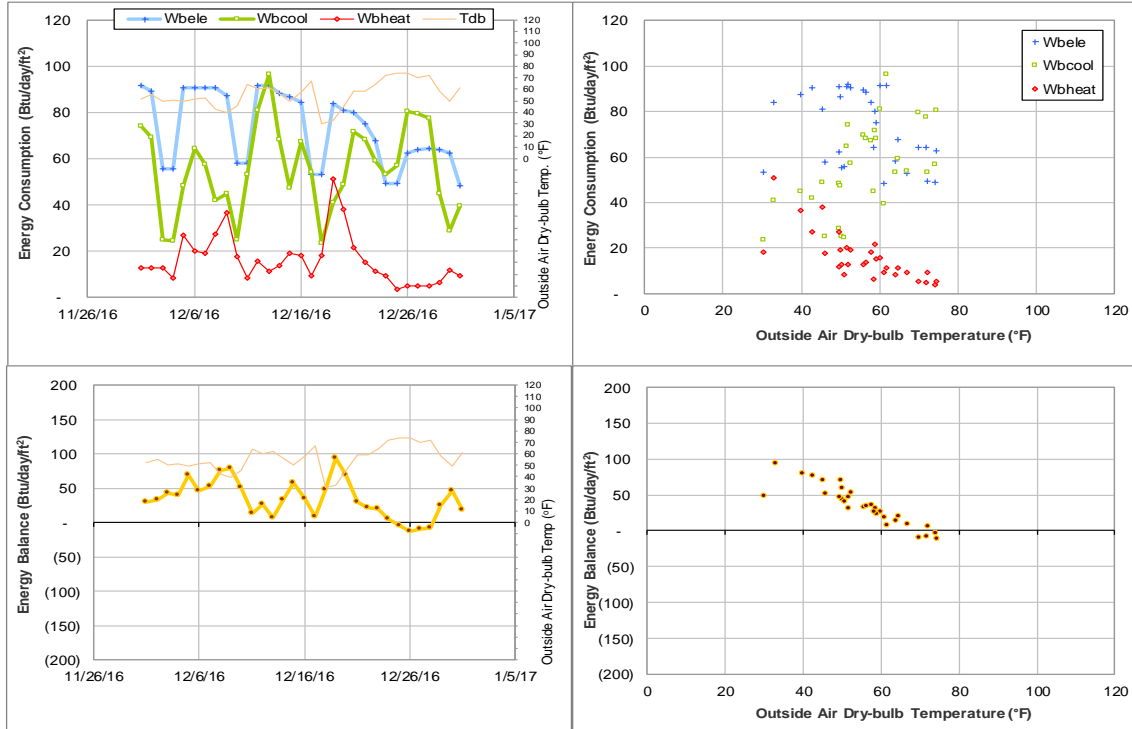


Figure IV-165 Agriculture and Life Sciences Building TAMU BLDG # 1535 Energy Balance Plot during December 2016

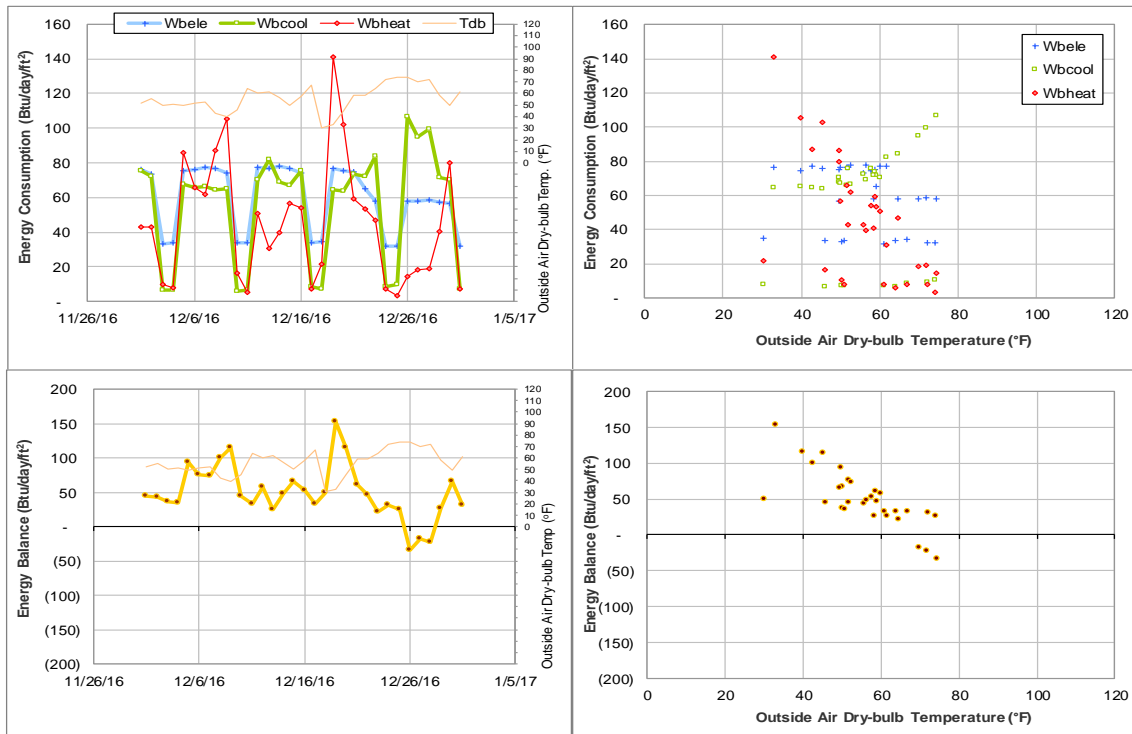


Figure IV-166 AgriLife Services Building TAMU BLDG # 1536 Energy Balance Plot during December 2016

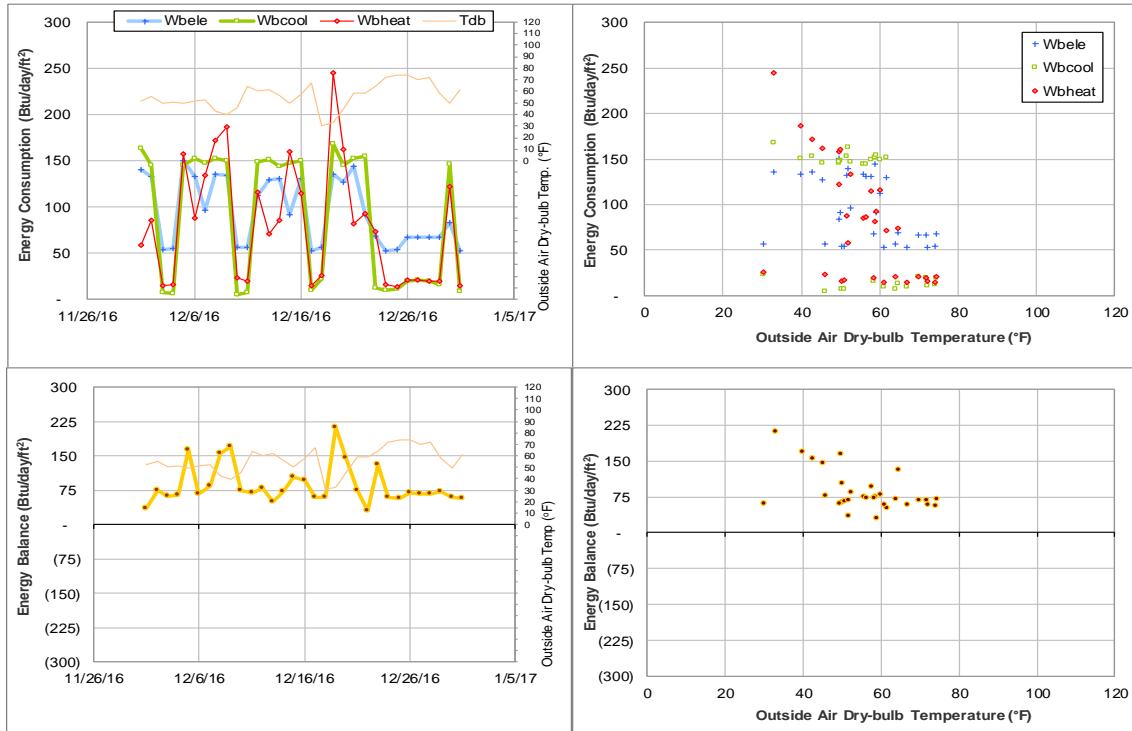


Figure IV-167 Agriculture Program Visitors Center TAMU BLDG # 1538 Energy Balance Plot during December 2016

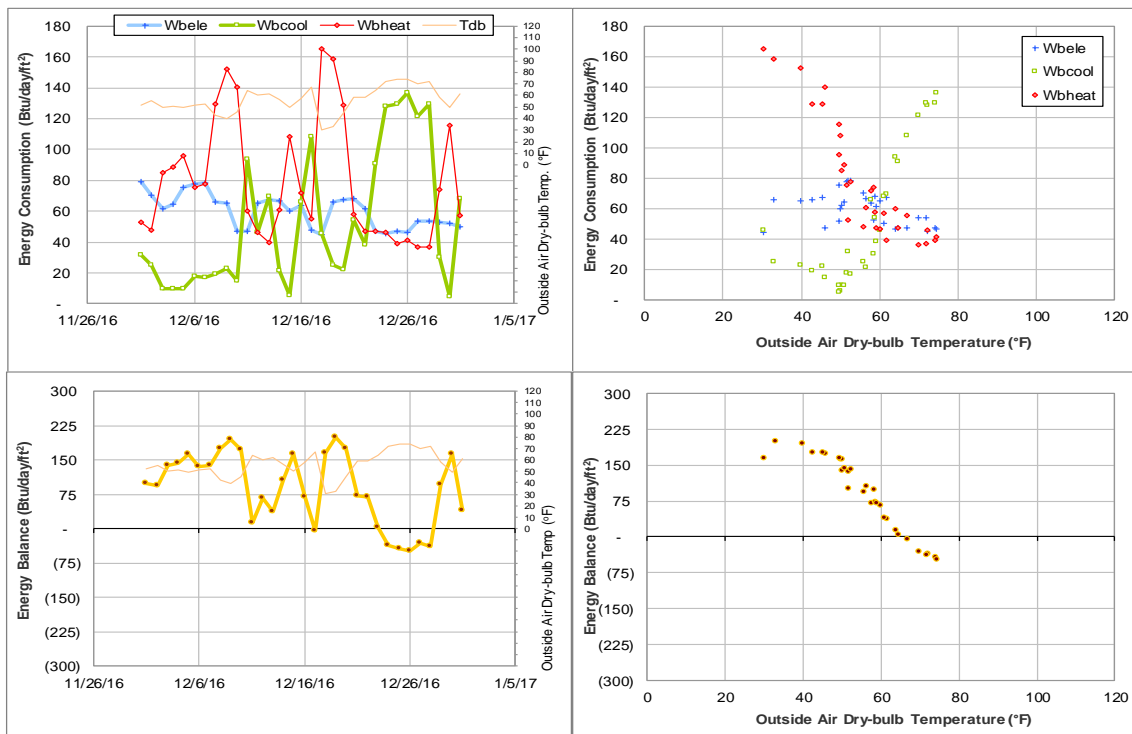


Figure IV-168 Physical Education Activity Program Building TAMU BLDG # 1540 Energy Balance Plot during December 2016

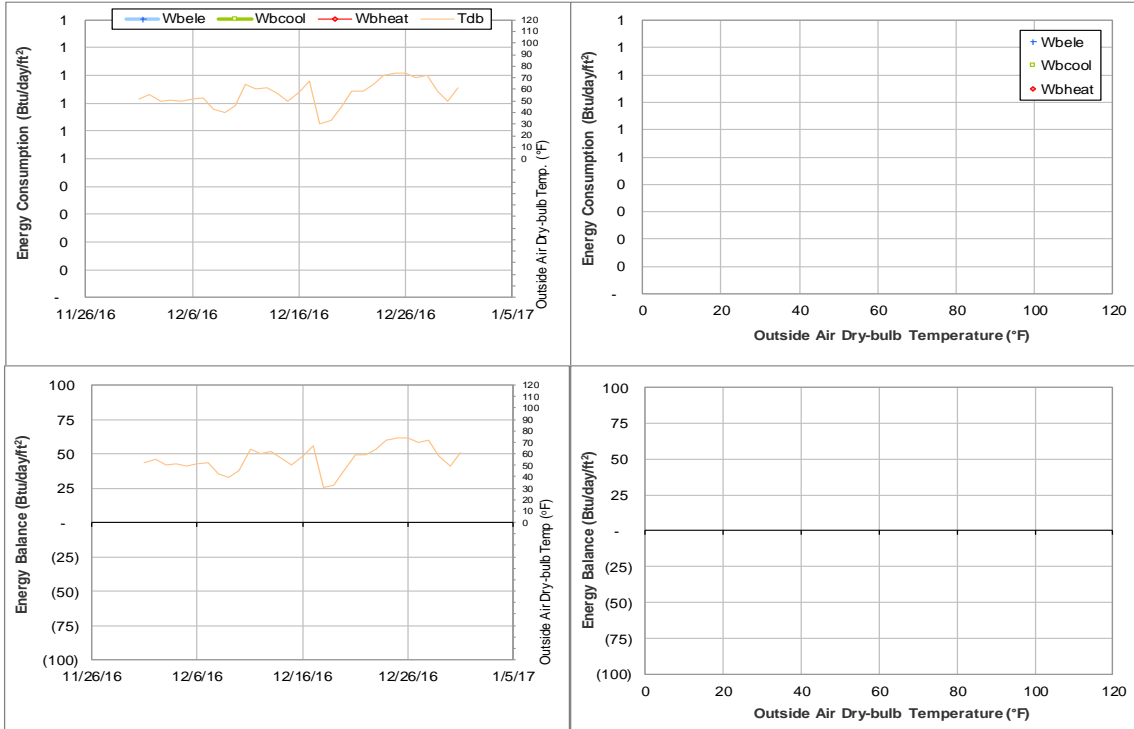


Figure IV-169 Human Clinical Research Building TAMU BLDG # 1542 Energy Balance Plot during December 2016

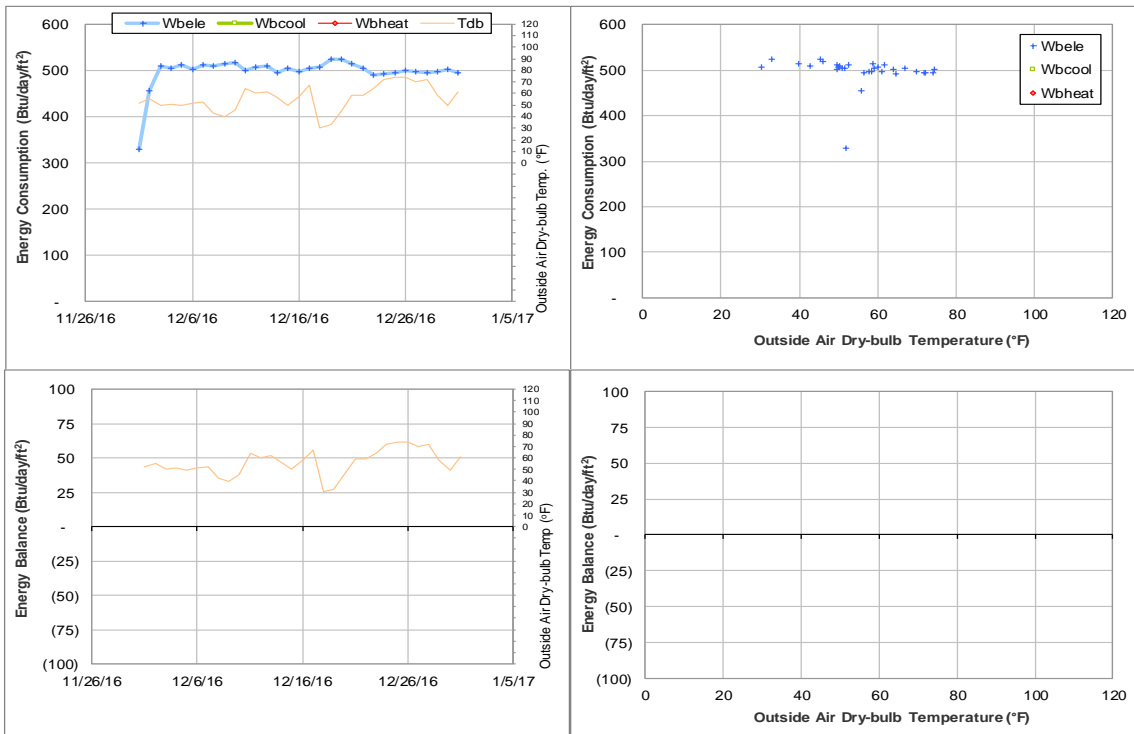


Figure IV-170 Cain Garage TAMU BLDG # 1544 Energy Balance Plot during December 2016

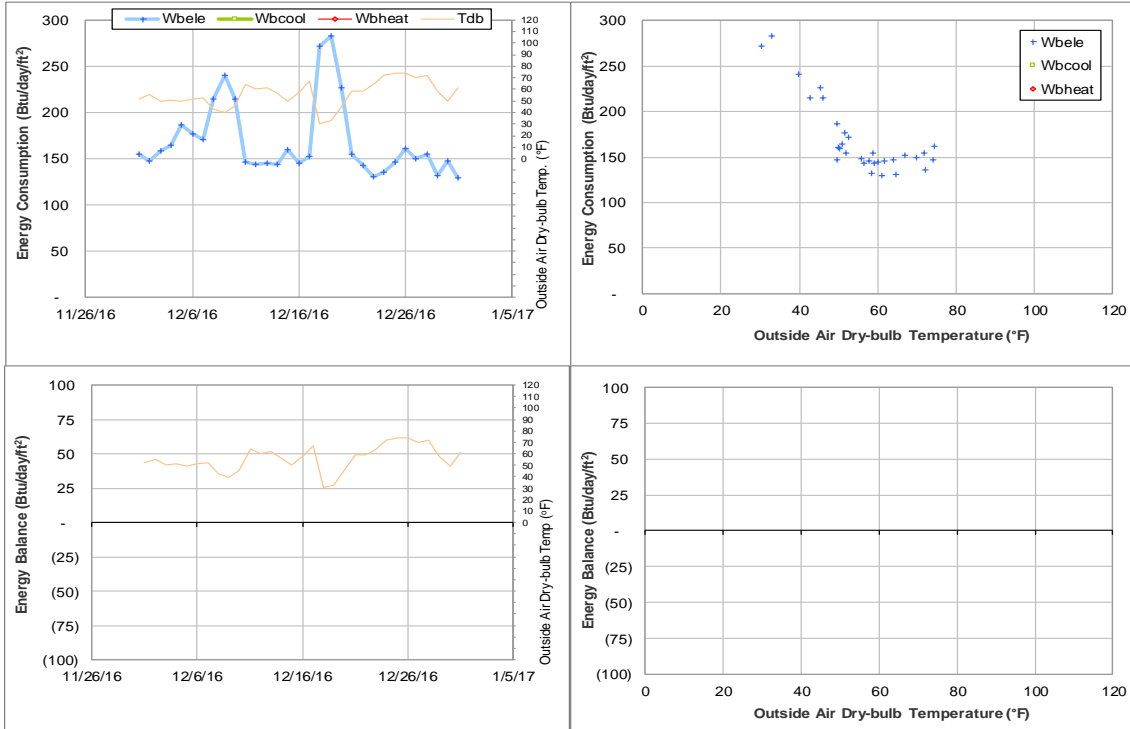


Figure IV-171 Olsen Field at Bluebell Park TAMU BLDG # 1550 Energy Balance Plot during December 2016

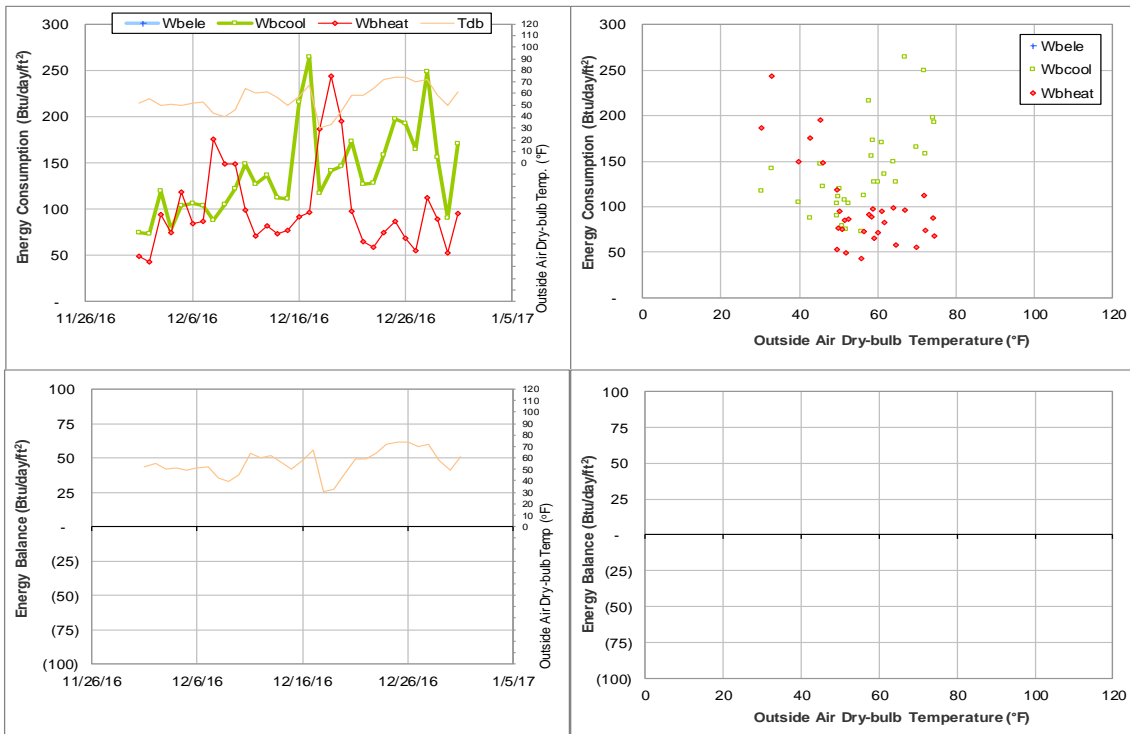


Figure IV-172 Reed Arena and Cox-McFerrin Center TAMU BLDG # 1554 and 1558 Energy Balance Plot during December 2016

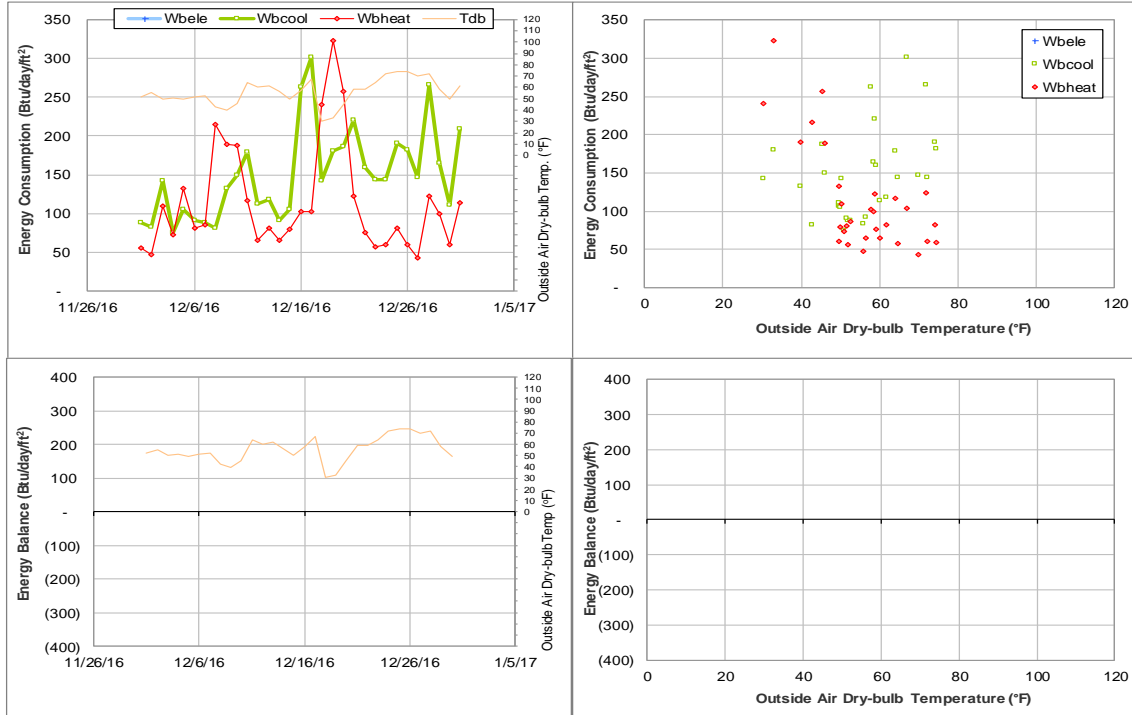


Figure IV-173 Reed Arena and Cox-McFerrin Center TAMU BLDG # 1554 Energy Balance Plot during December 2016

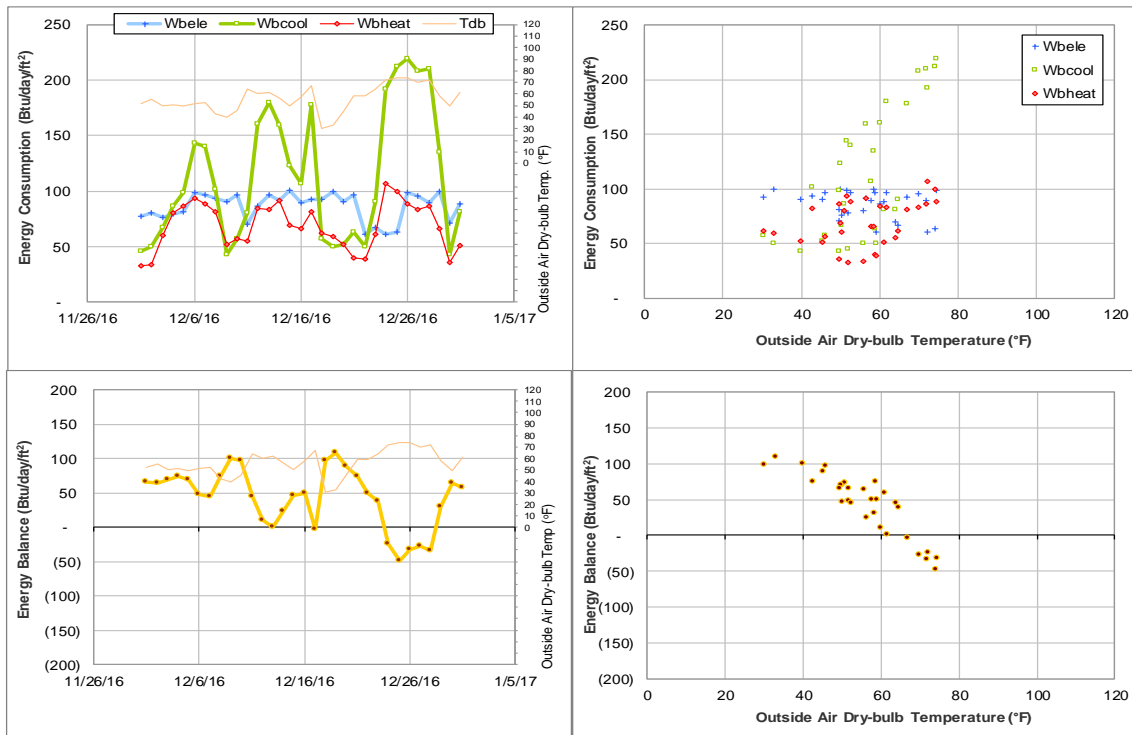


Figure IV-174 Cox-McFerrin Center for Aggie Basketball TAMU BLDG # 1558 Energy Balance Plot during December 2016

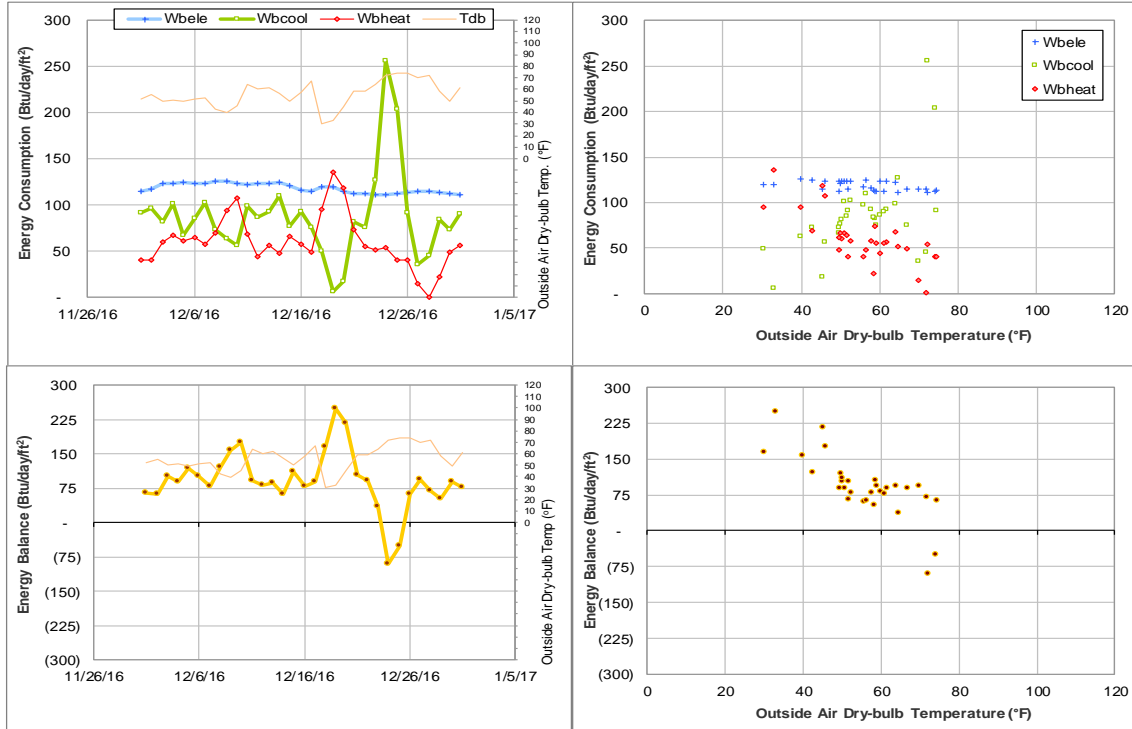


Figure IV-175 West Campus Parking Garage TAMU BLDG # 1559 Energy Balance Plot during December 2016

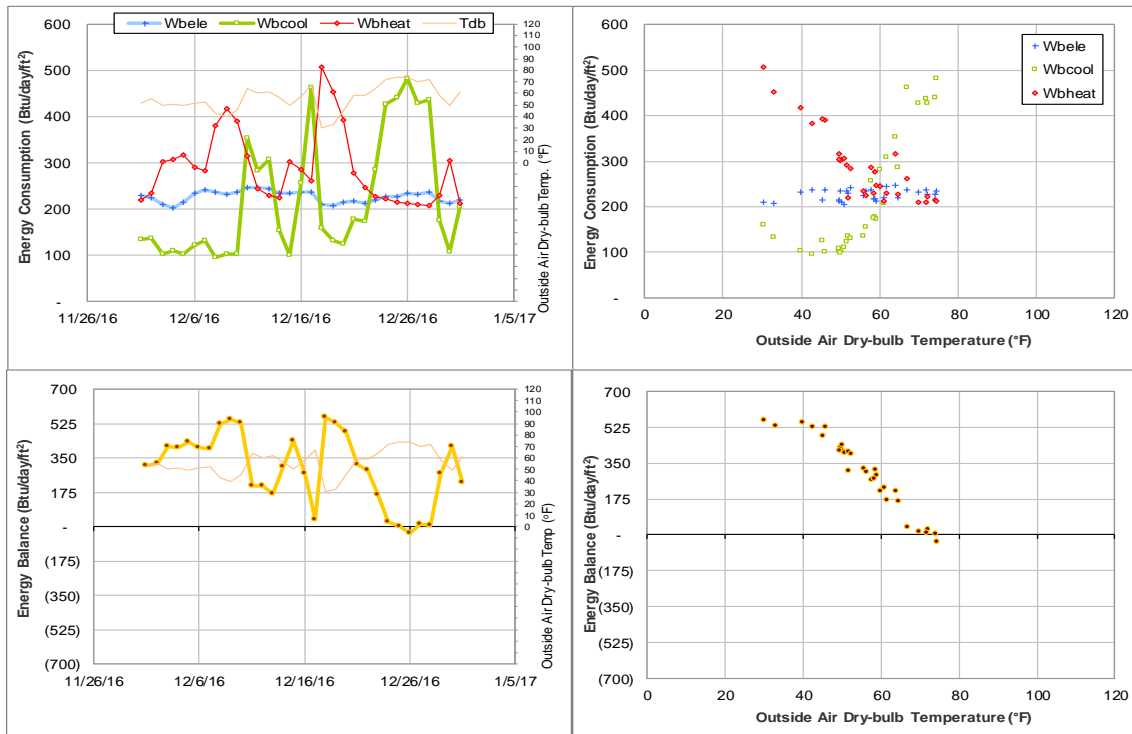


Figure IV-176 Student Recreation Center TAMU BLDG # 1560 Energy Balance Plot during December 2016

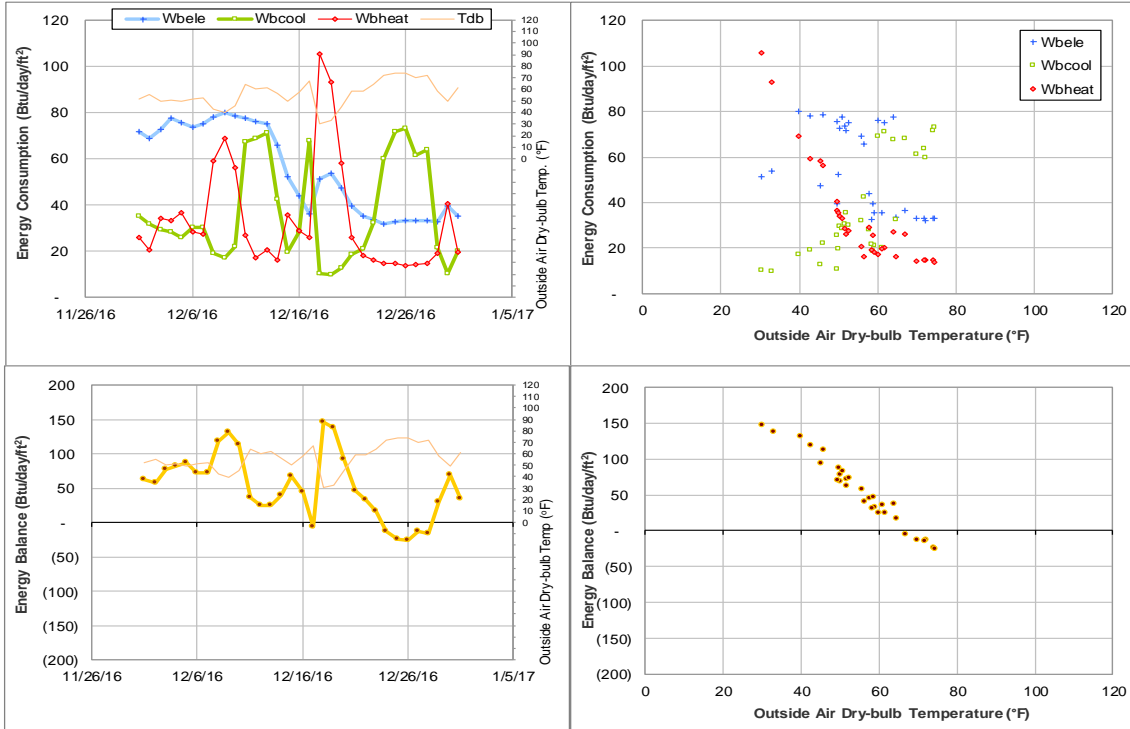


Figure IV-177 White Creek Apartment 1 and White Creek Apts Activity Center TAMU BLDG # 1589 Energy Balance Plot during December 2016

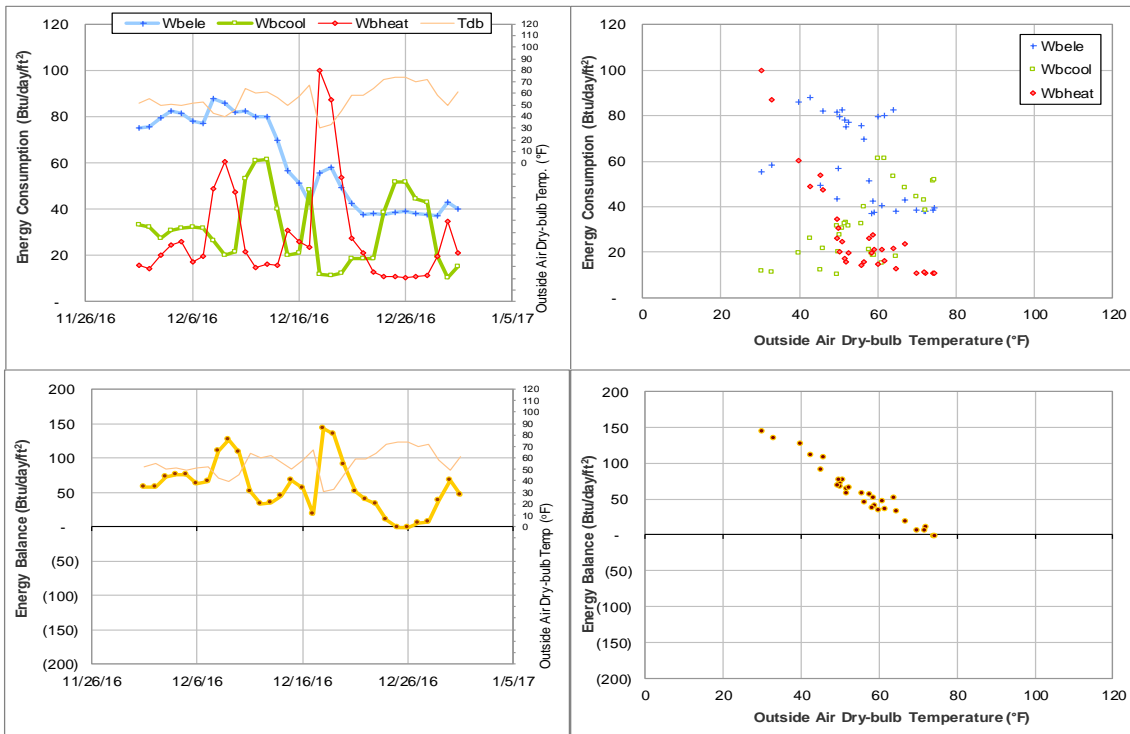


Figure IV-178 White Creek Apartment 2 TAMU BLDG # 1591 Energy Balance Plot during December 2016

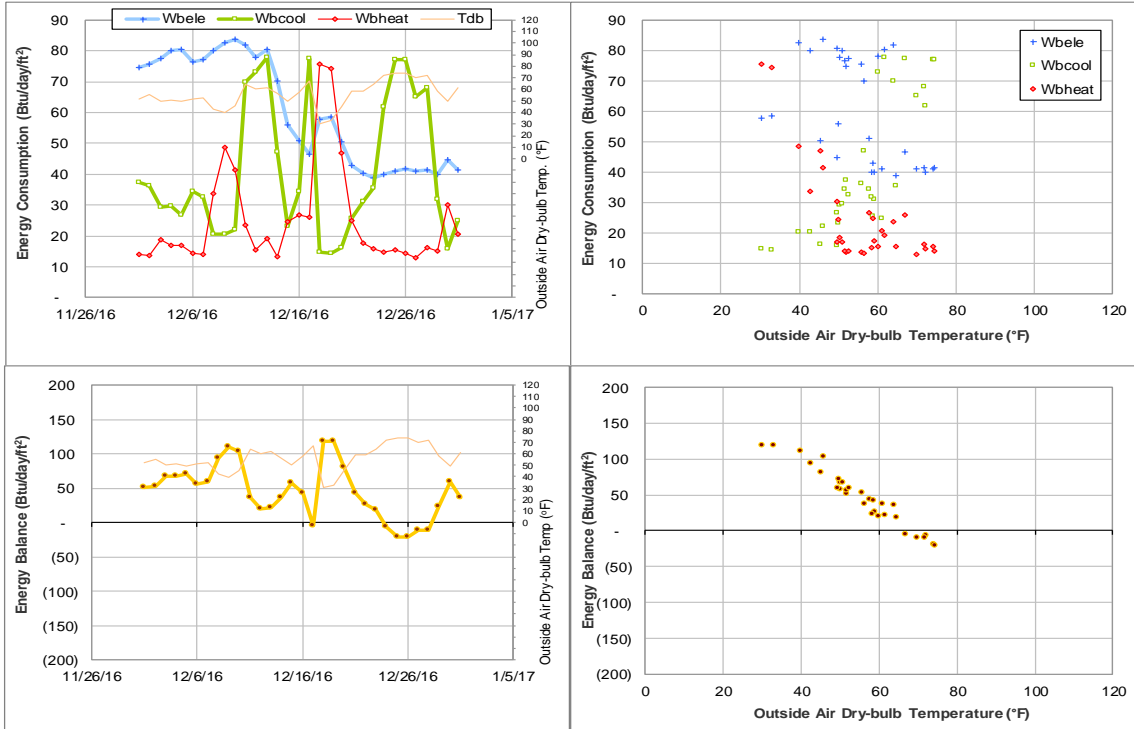


Figure IV-179 White Creek Apartment 3 TAMU BLDG # 1592 Energy Balance Plot during December 2016

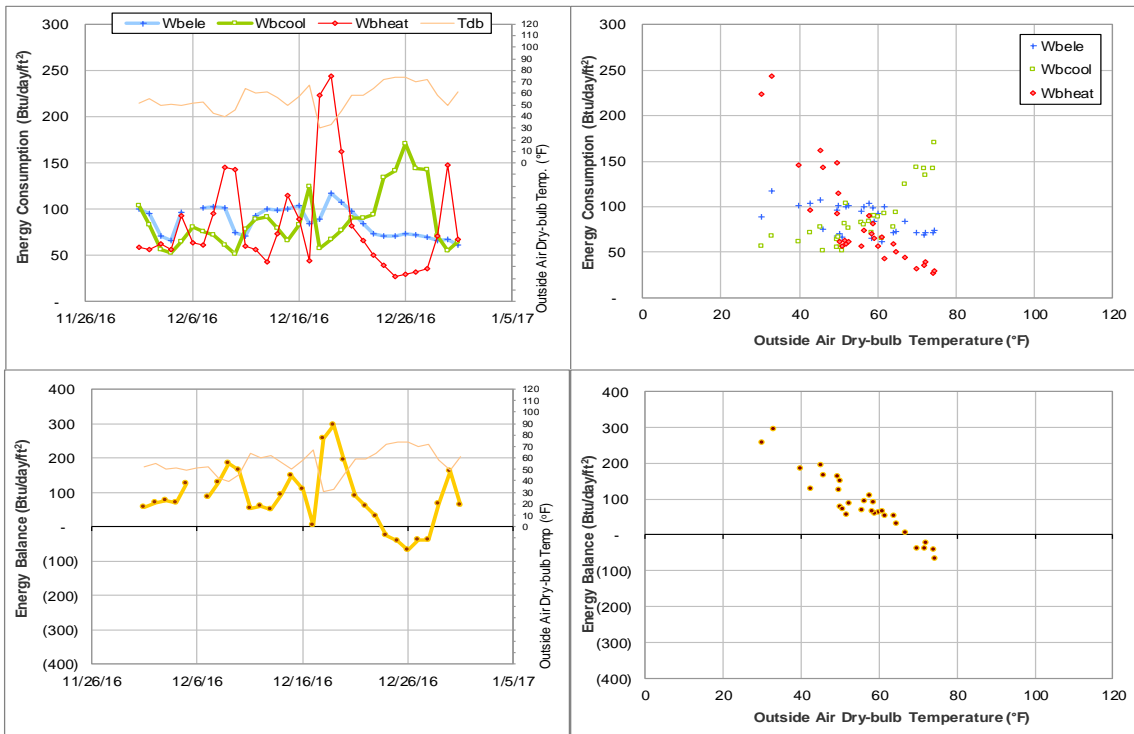


Figure IV-180 Gilchrist TTI Building TAMU BLDG # 1600 Energy Balance Plot during December 2016

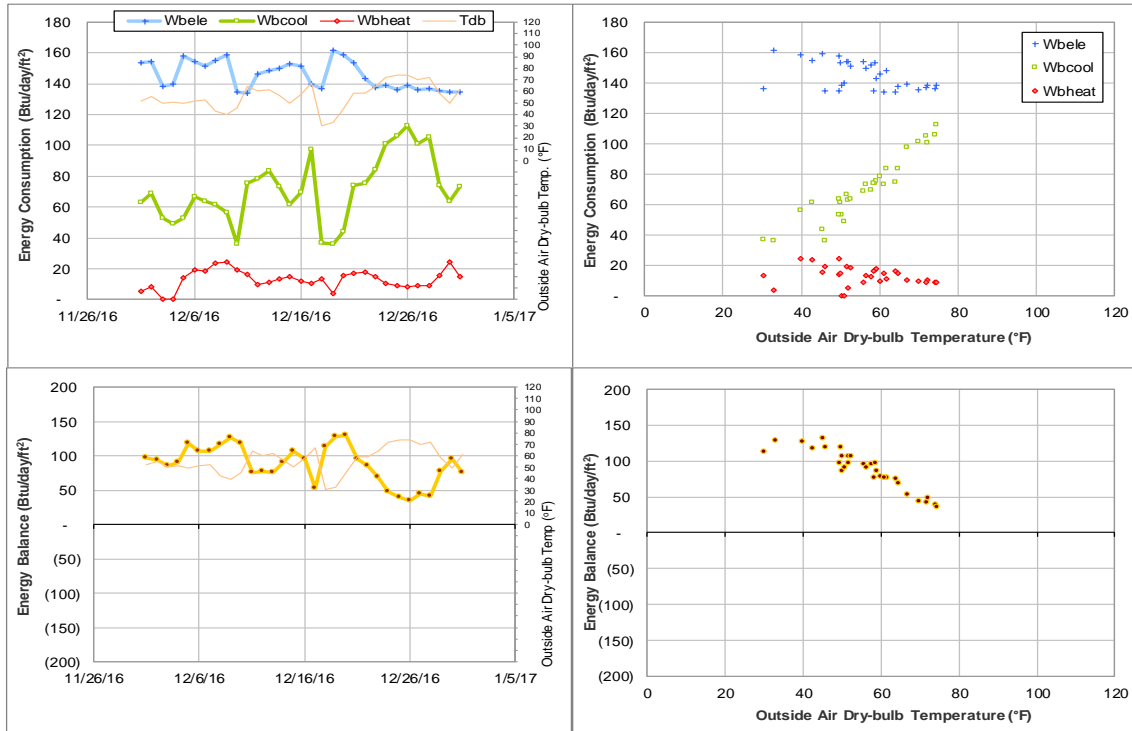


Figure IV-181 International Ocean Discovery Building TAMU BLDG # 1601 Energy Balance Plot during December 2016

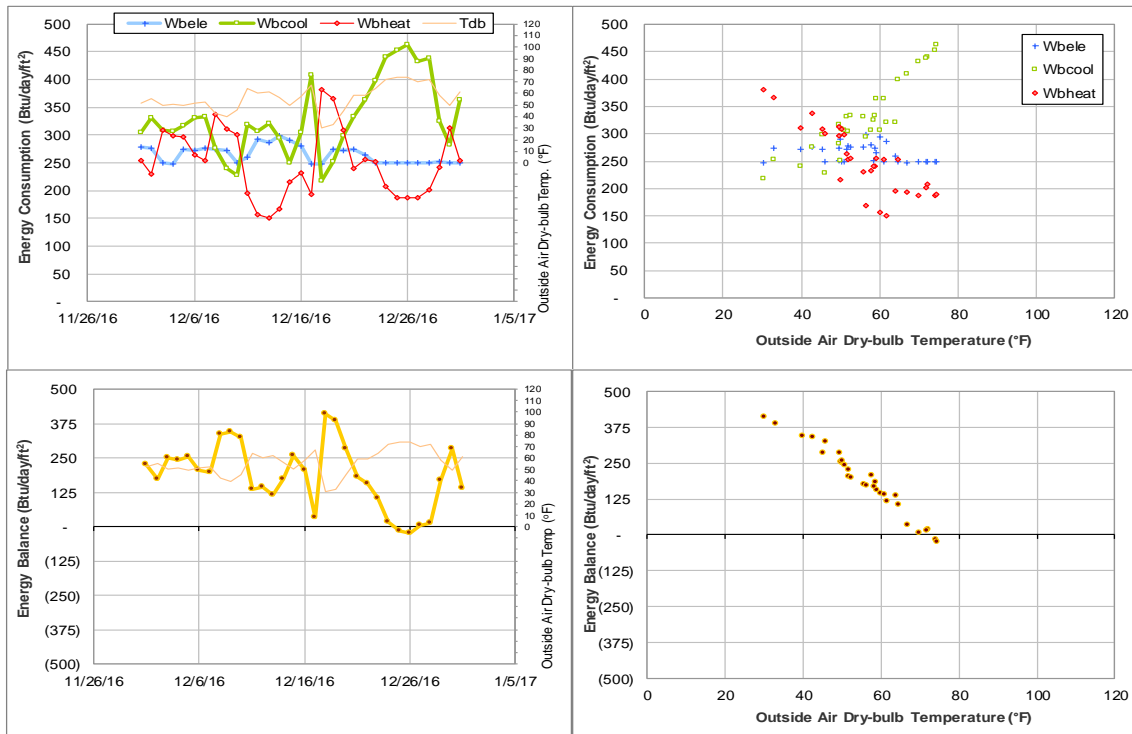


Figure IV-182 Offshore Technology Research Center TAMU BLDG # 1604 Energy Balance Plot during December 2016

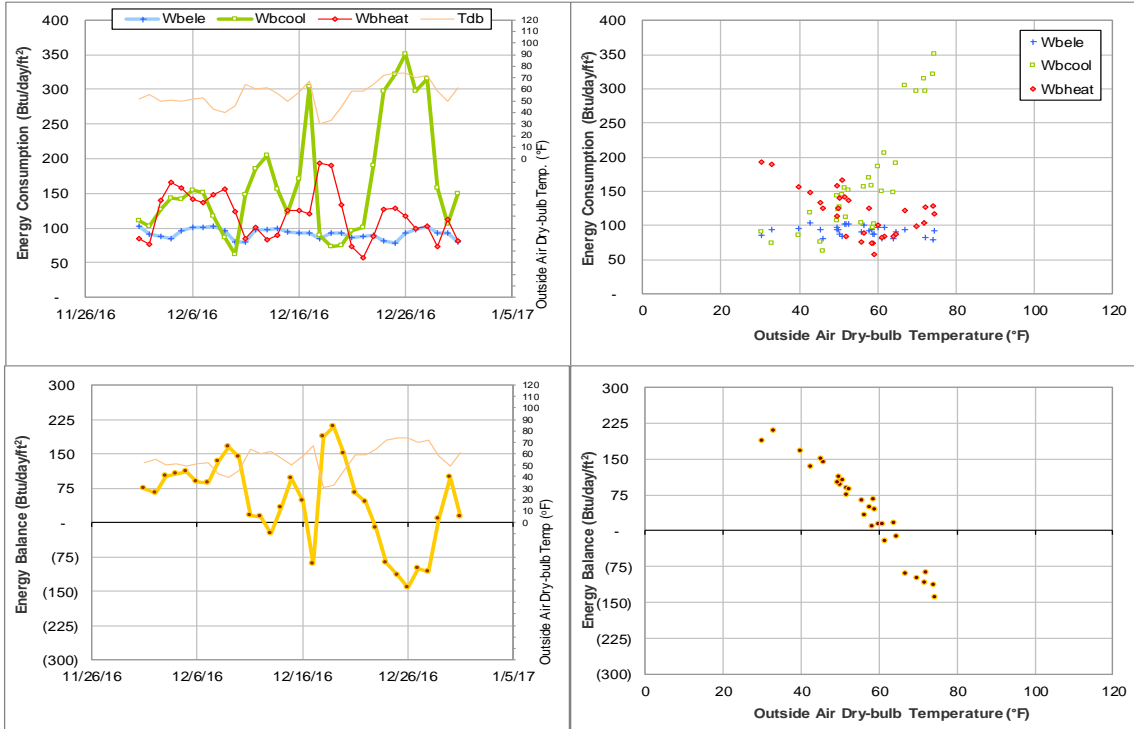


Figure IV-183 George Bush Presidential Library & Museum TAMU BLDG # 1606 Energy Balance Plot during December 2016

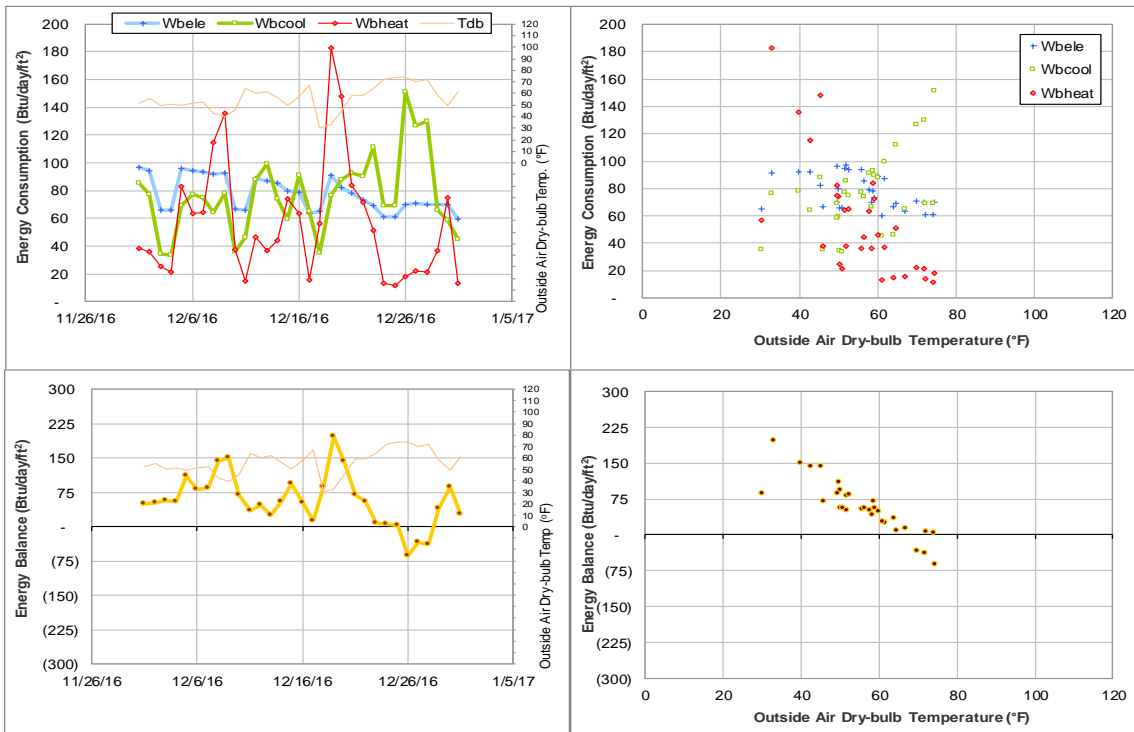


Figure IV-184 Allen Building TAMU BLDG # 1607 Energy Balance Plot during December 2016

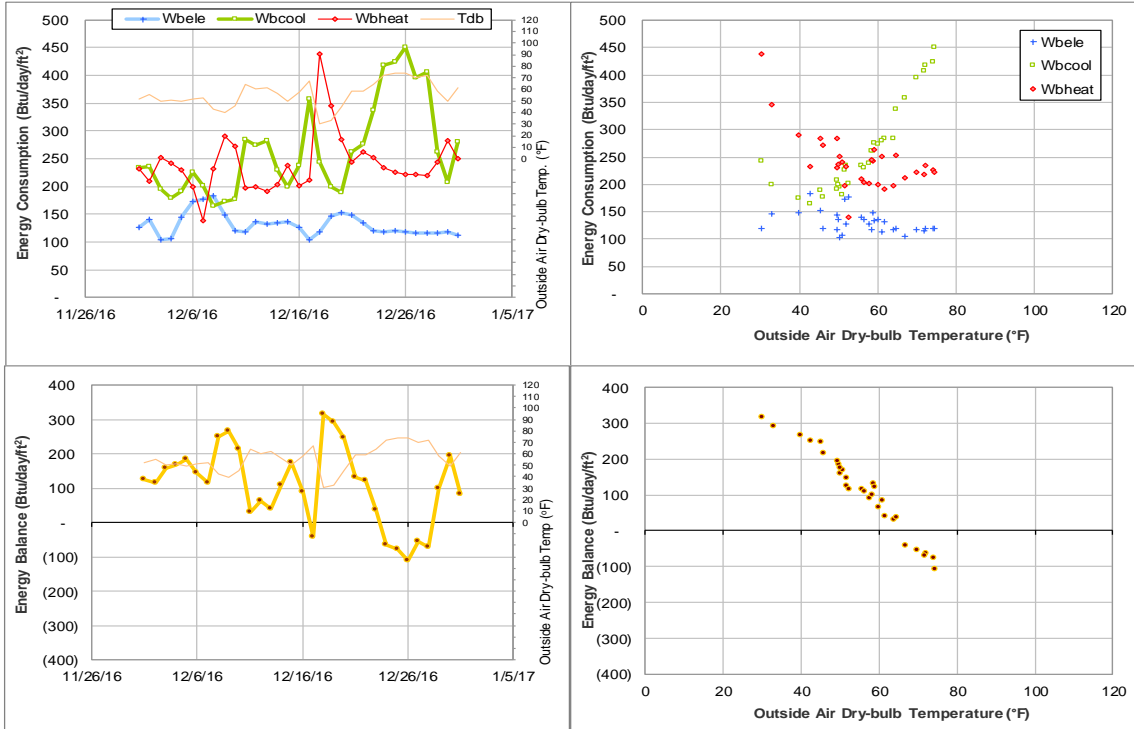


Figure IV-185 Annenberg Presidential Conference Center TAMU BLDG # 1608 Energy Balance Plot during December 2016

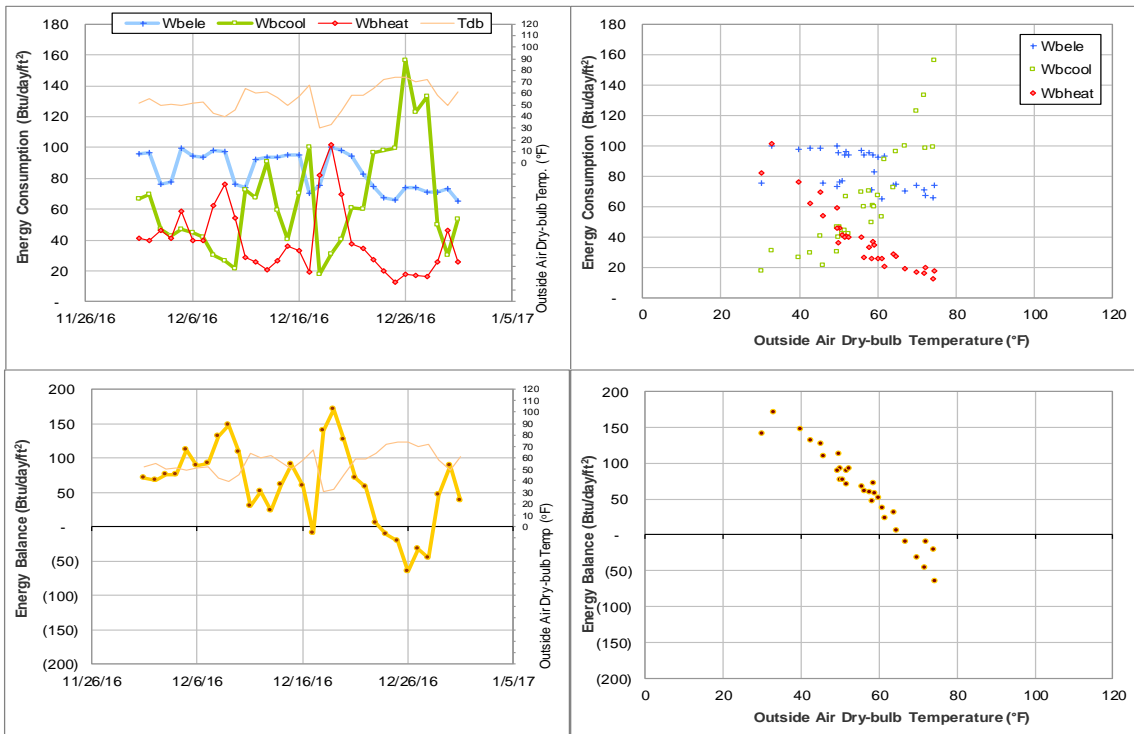


Figure IV-186 TTI Headquarters TAMU BLDG # 1609 Energy Balance Plot during December 2016

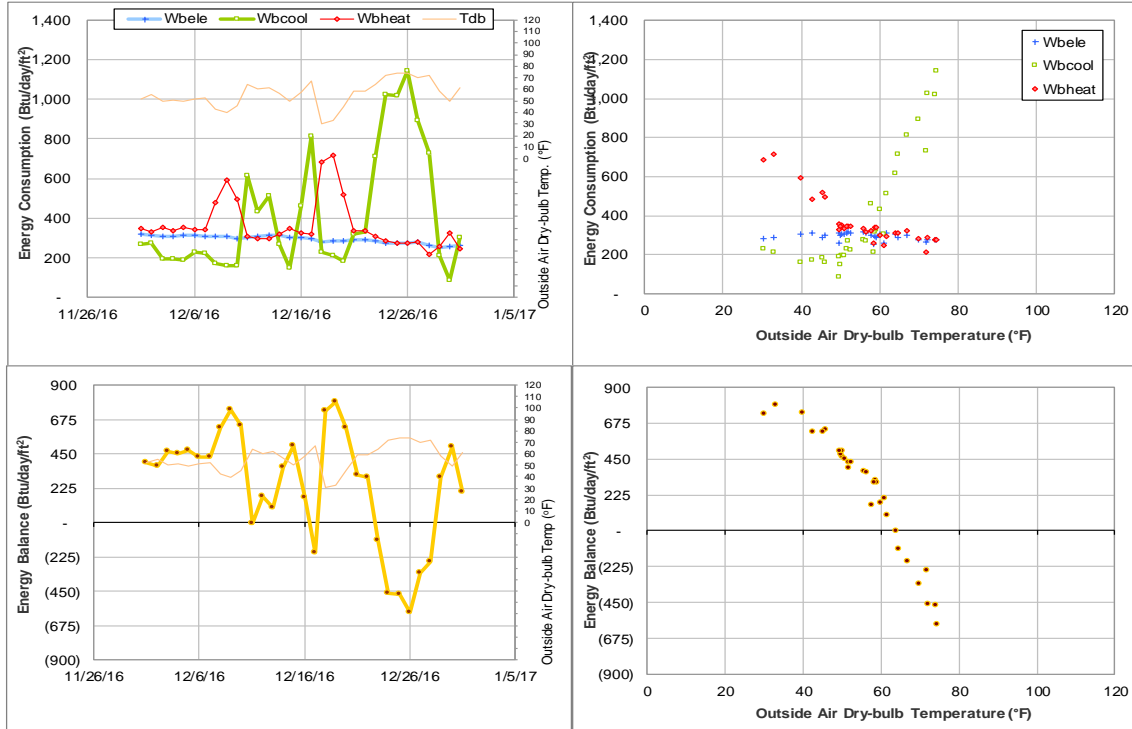


Figure IV-187 Engineering Research Building TAMU BLDG # 1611 Energy Balance Plot during December 2016

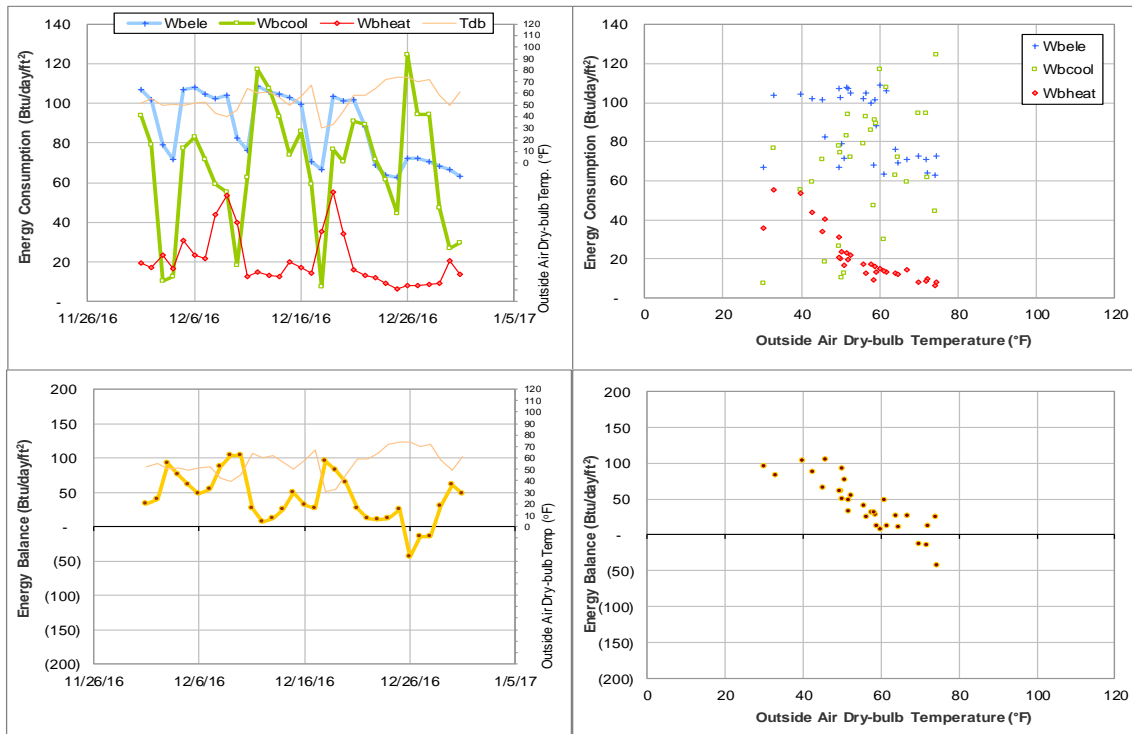


Figure IV-188 General Services Complex TAMU BLDG # 1800 Energy Balance Plot during December 2016

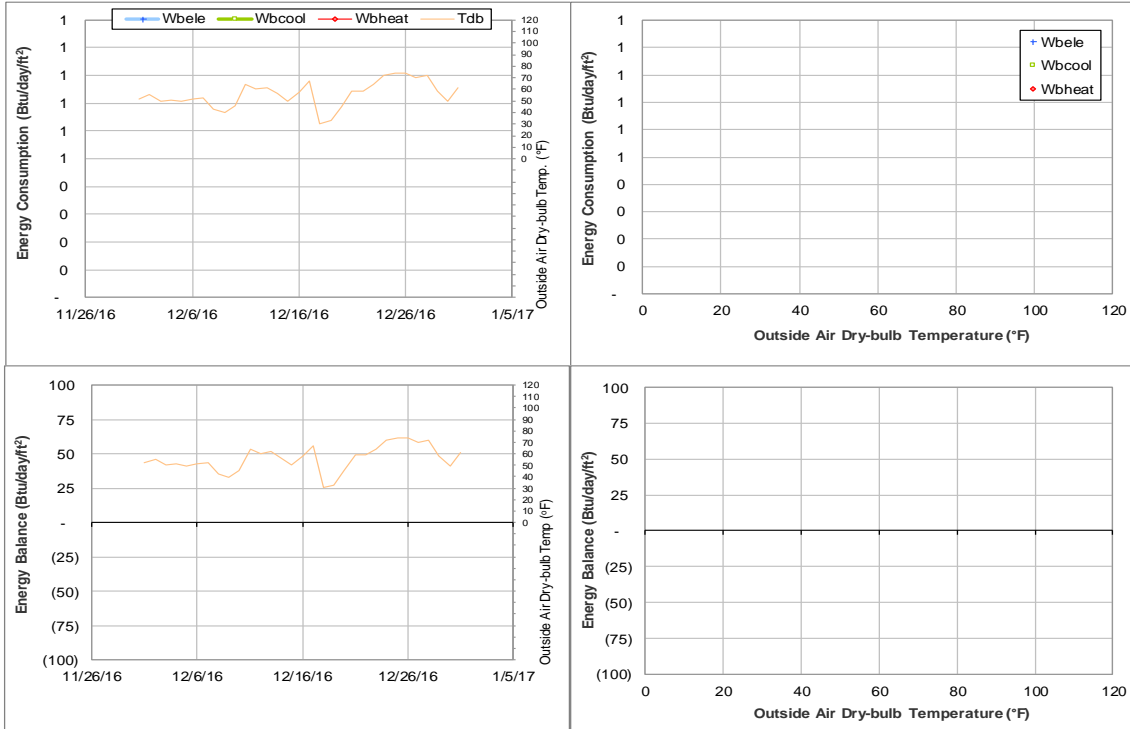


Figure IV-189 New TVMDL TAMU BLDG # 1809 Energy Balance Plot during December 2016

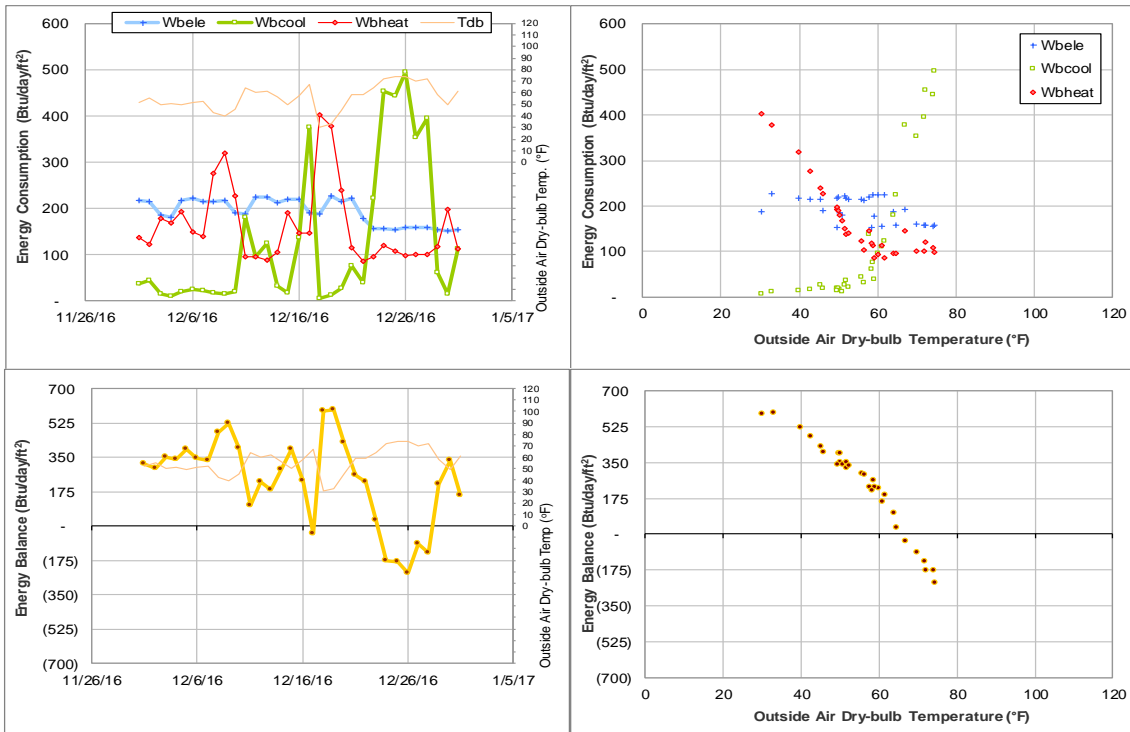


Figure IV-190 Office of the State Chemist Building TAMU BLDG # 1810 Energy Balance Plot during December 2016

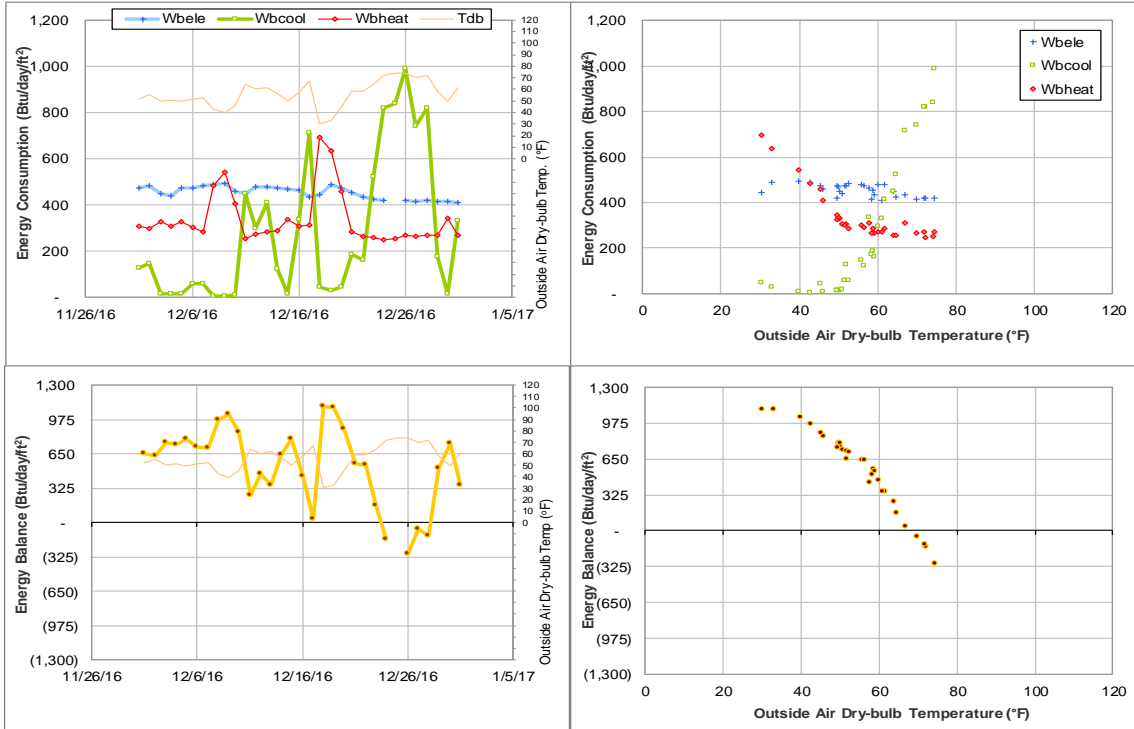


Figure IV-191 Vet Med Research Bldg Addition TAMU BLDG # 1811 Energy Balance Plot during December 2016

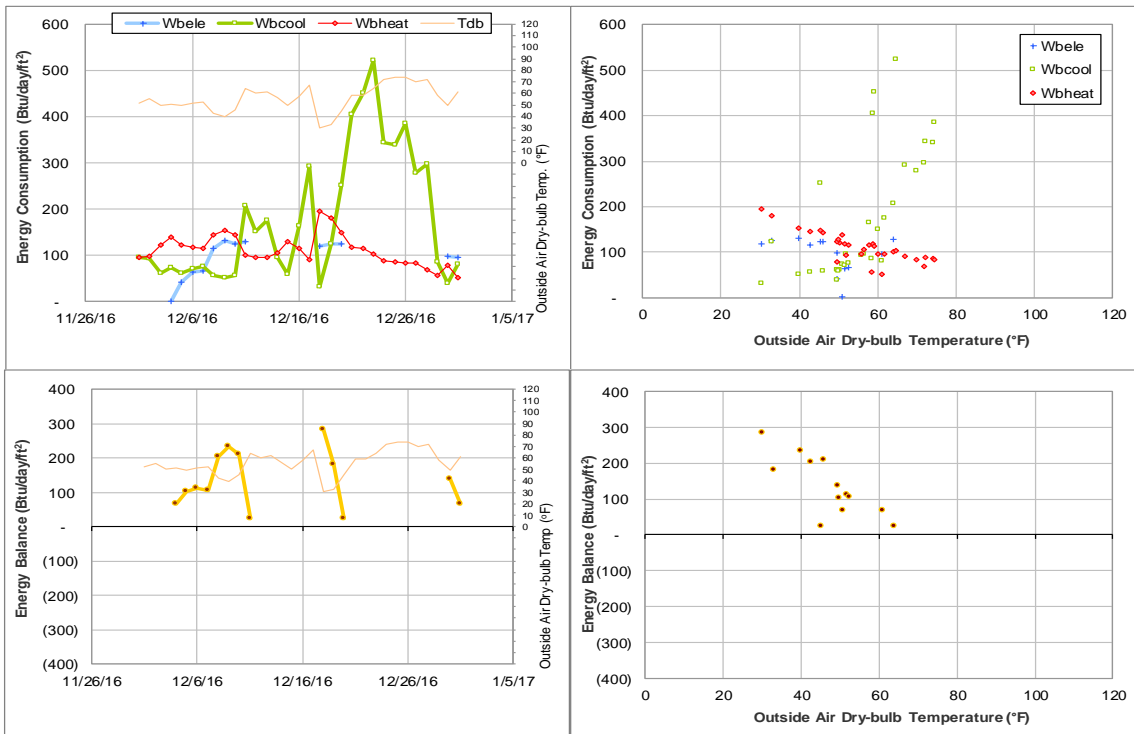


Figure IV-192 Veterinary Medicine Building 1, 2, and 3 TAMU BLDG # 1812 Energy Balance Plot during December 2016

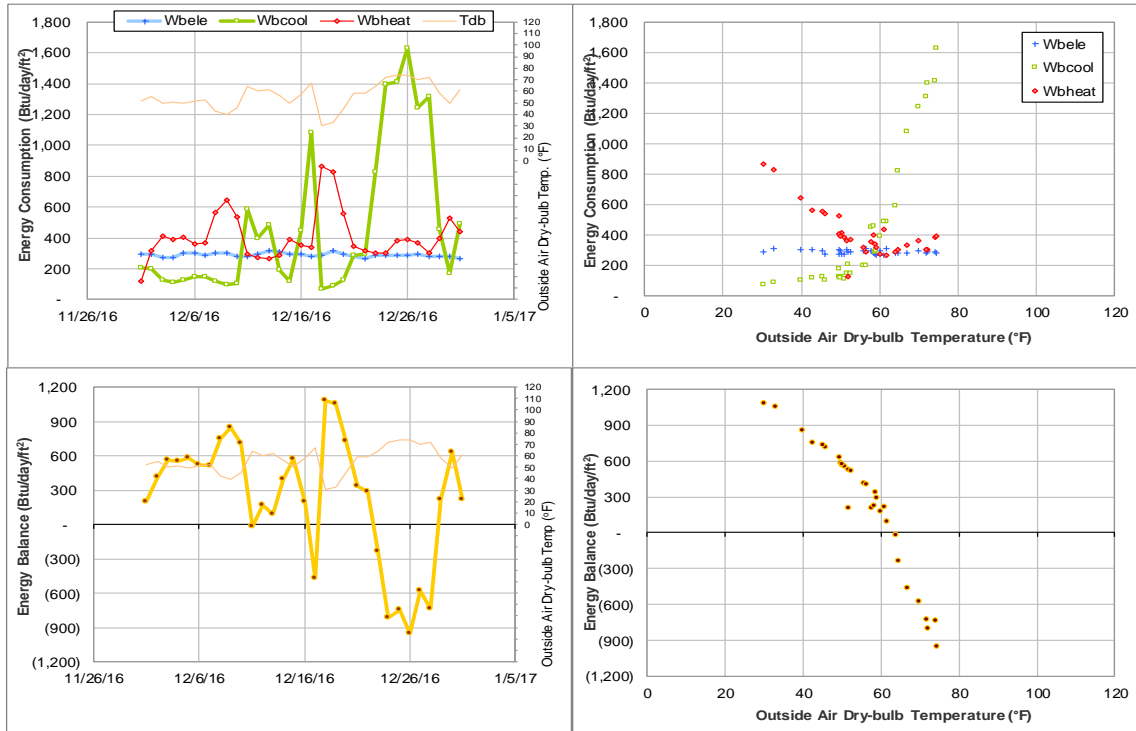


Figure IV-193 Texas Institute for Genomic Medicine TAMU BLDG # 1900 Energy Balance Plot during December 2016

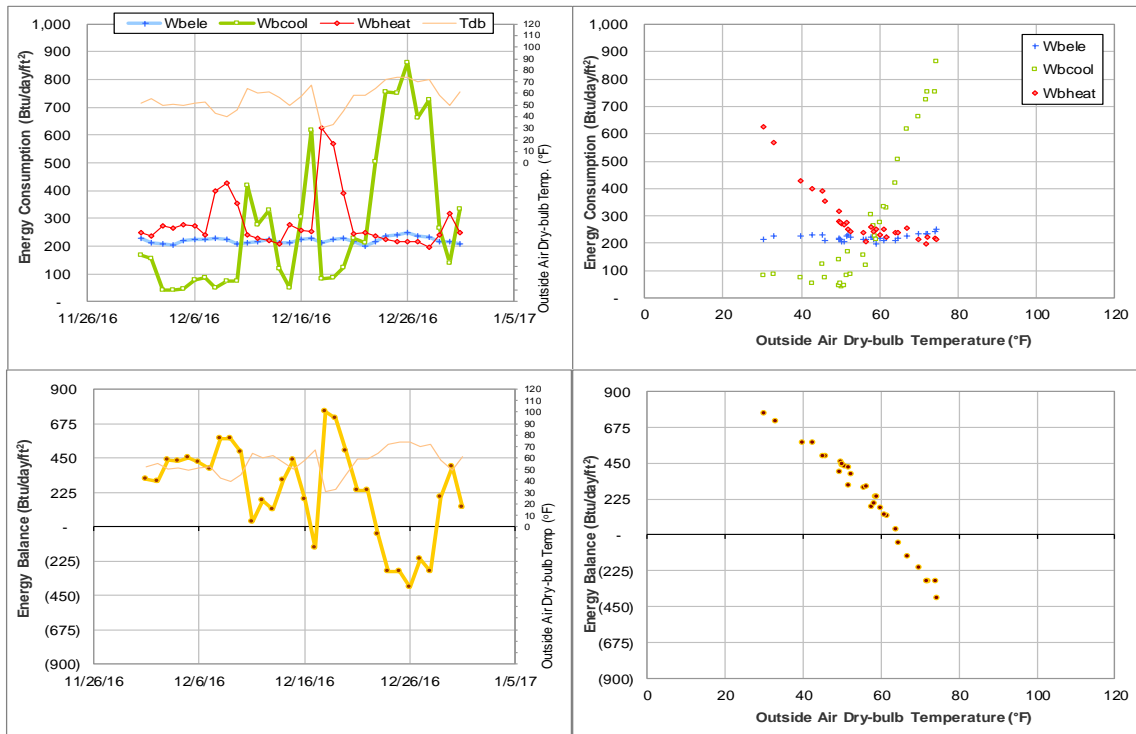


Figure IV-194 Texas A&M Institute for Preclinical Studies A TAMU BLDG # 1904 Energy Balance Plot during December 2016

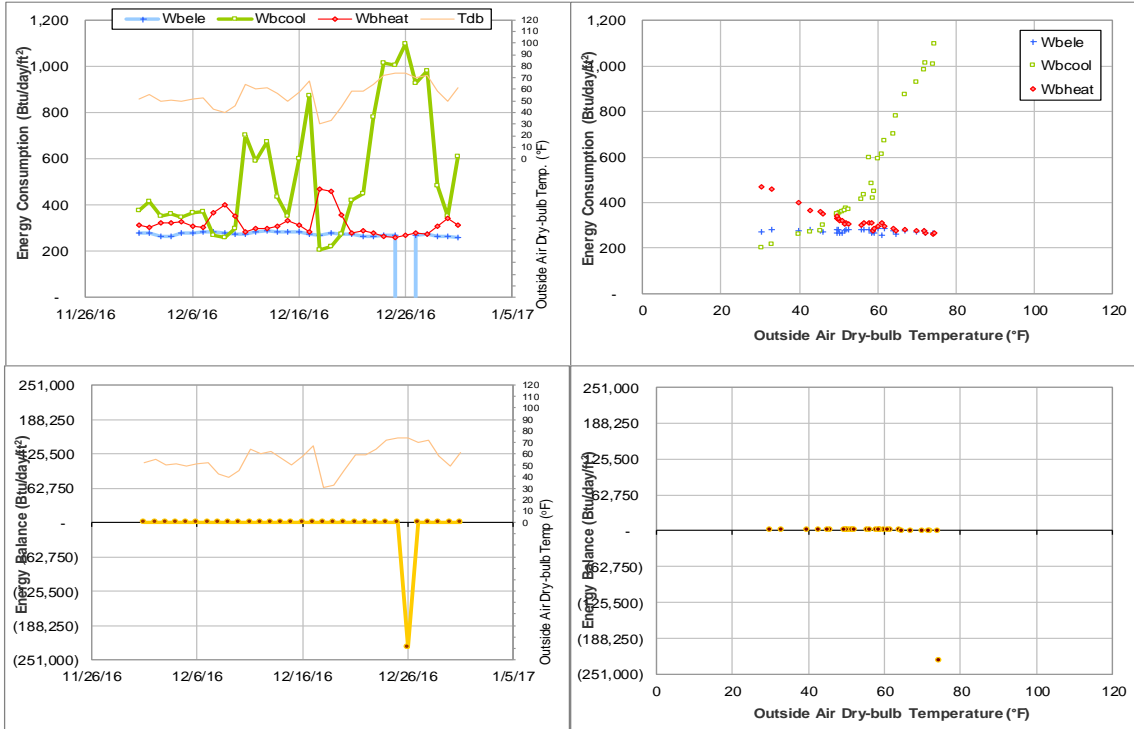


Figure IV-195 National Center for Therapeutics Manufacturing TAMU BLDG # 1910 Energy Balance Plot during December 2016

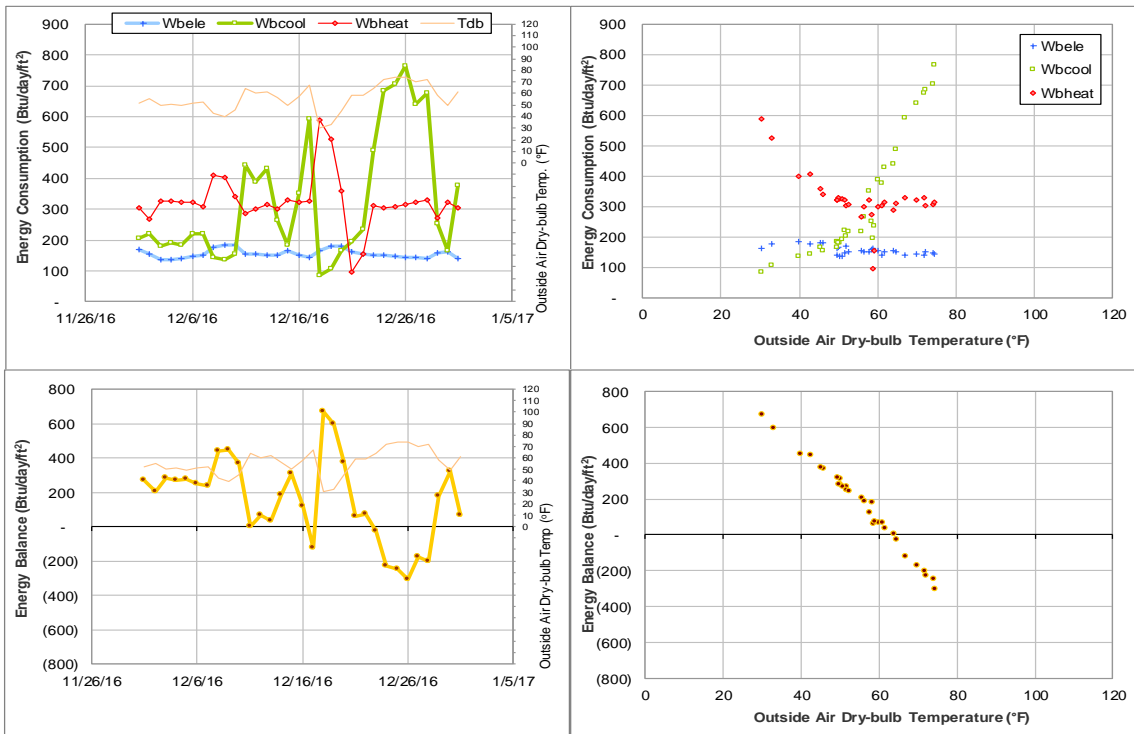


Figure IV-196 Multi-Species Research Building TAMU BLDG # 1911 Energy Balance Plot during December 2016

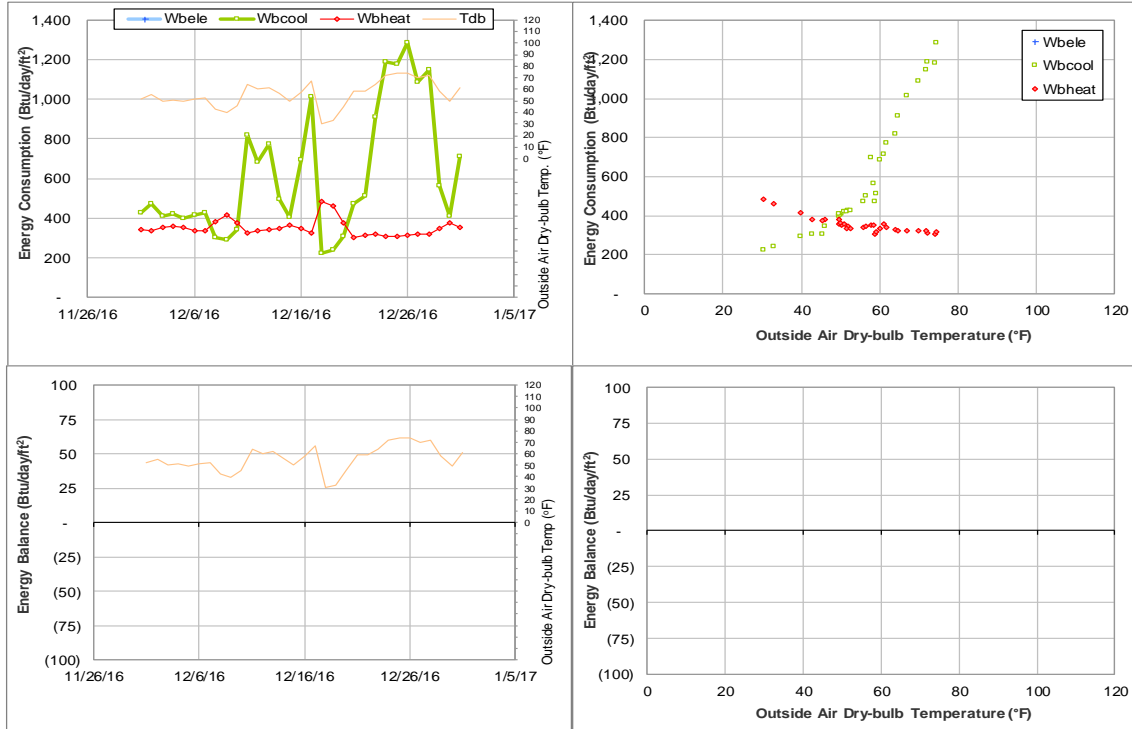


Figure IV-197 NCTM Manufacturing Building TAMU BLDG # 10226 Energy Balance Plot during December 2016

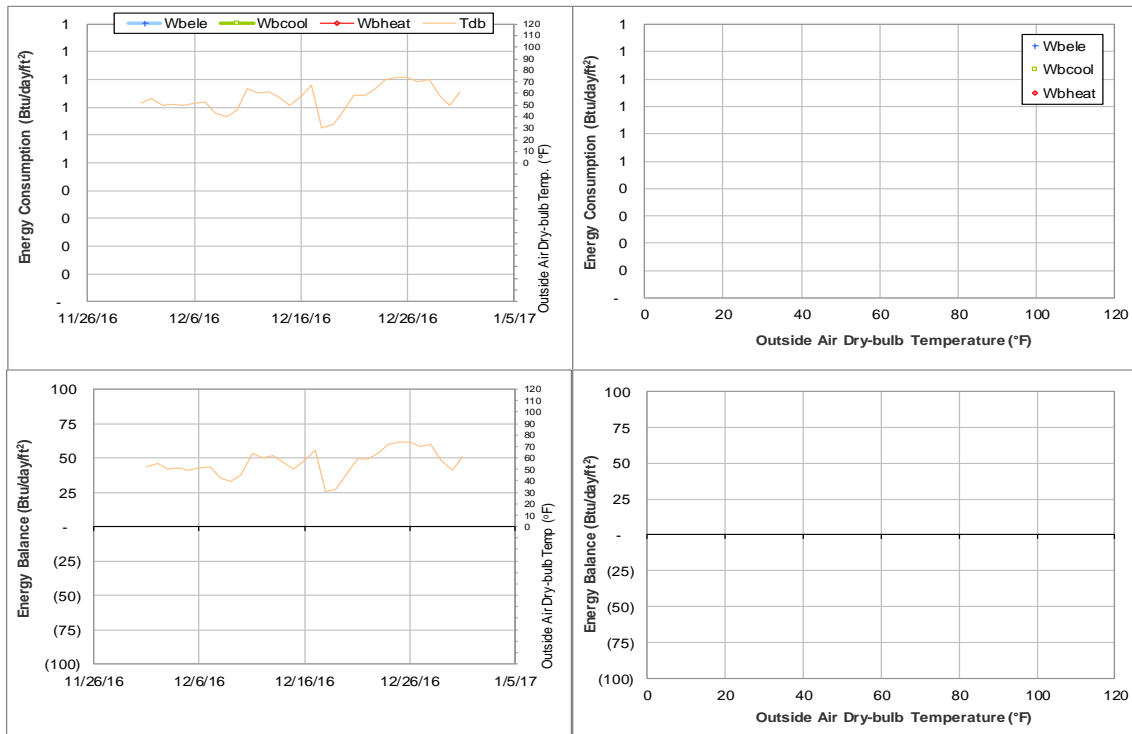


Figure IV-198 AgriLife Extension 4-H State Headquarters TAMU BLDG # 3410 Energy Balance Plot during December 2016

**V. Energy Balance Plots with Filled-in data for
December 2016 Consumption**

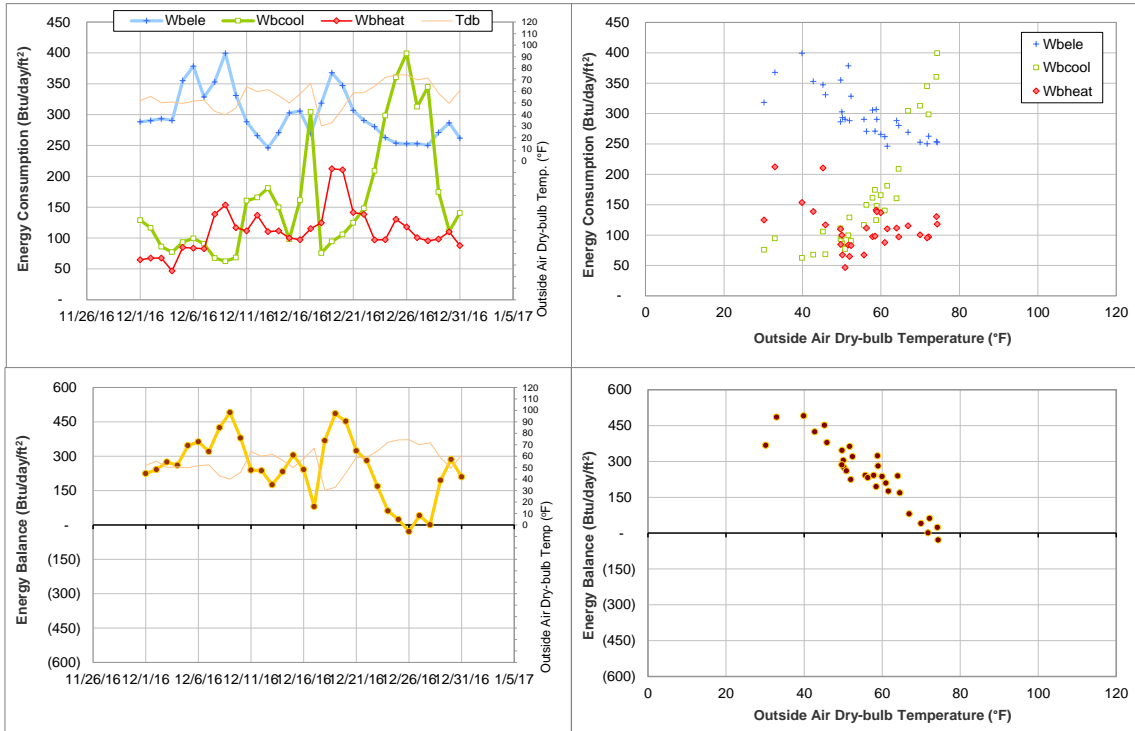


Figure V-1 Kyle Field TAMU BLDG # 367 Energy Balance Plot during December 2016

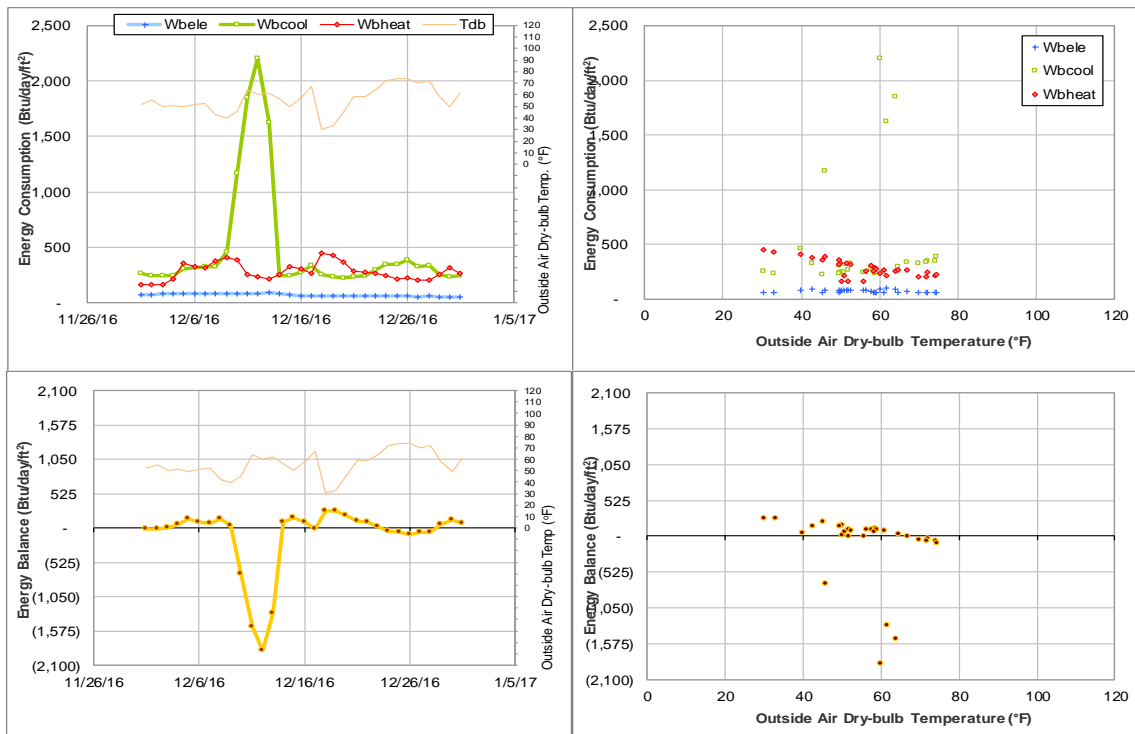


Figure V-2 Davis-Gary Residence Hall TAMU BLDG # 415 Energy Balance Plot during December 2016

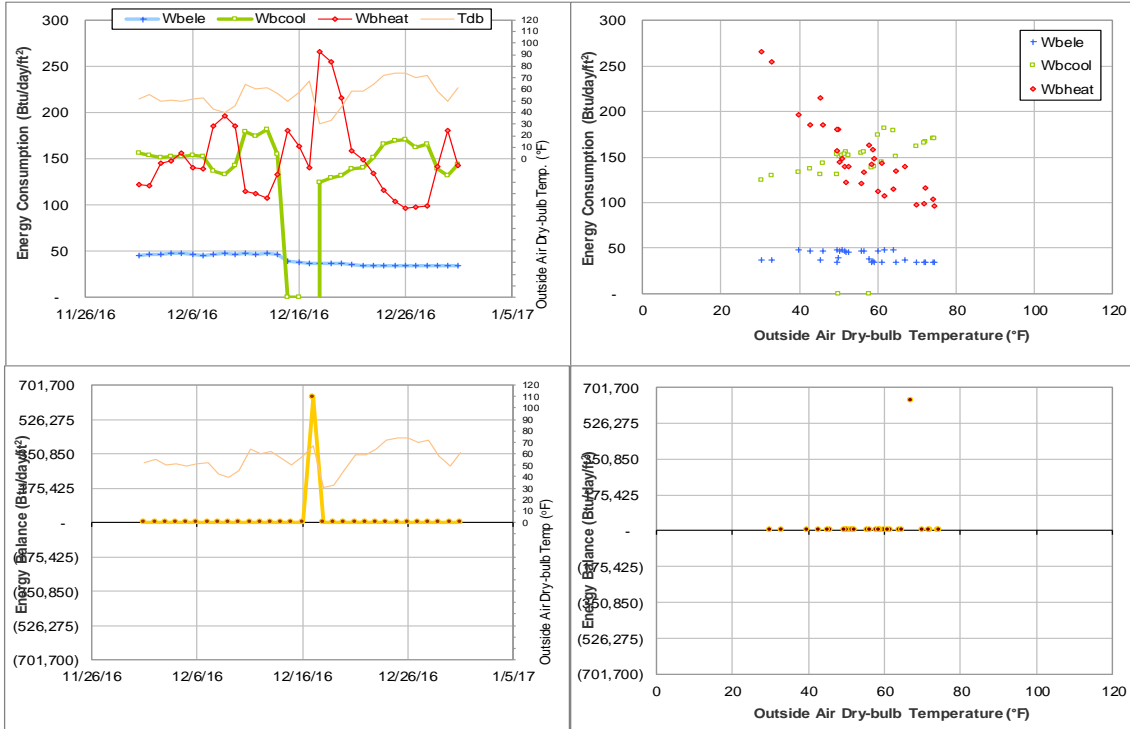


Figure V-3 Legett Residence Hall TAMU BLDG # 419 Energy Balance Plot during December 2016

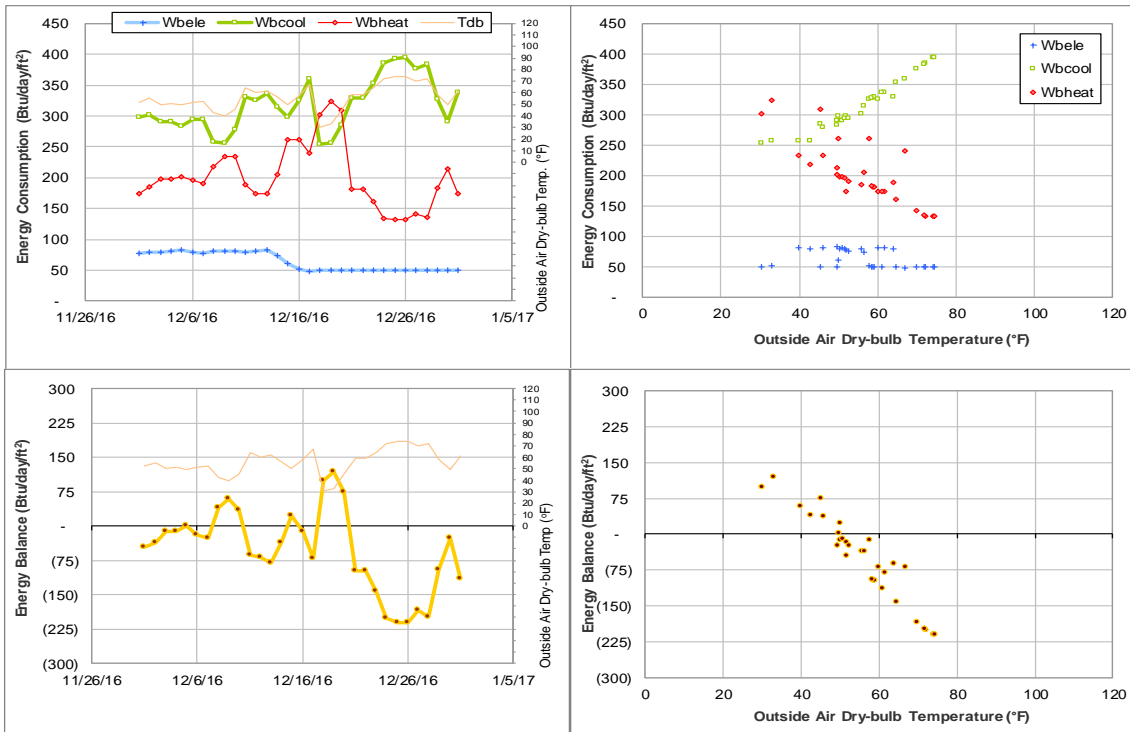


Figure V-4 Mosher Residence Hall TAMU BLDG # 433 Energy Balance Plot during December 2016

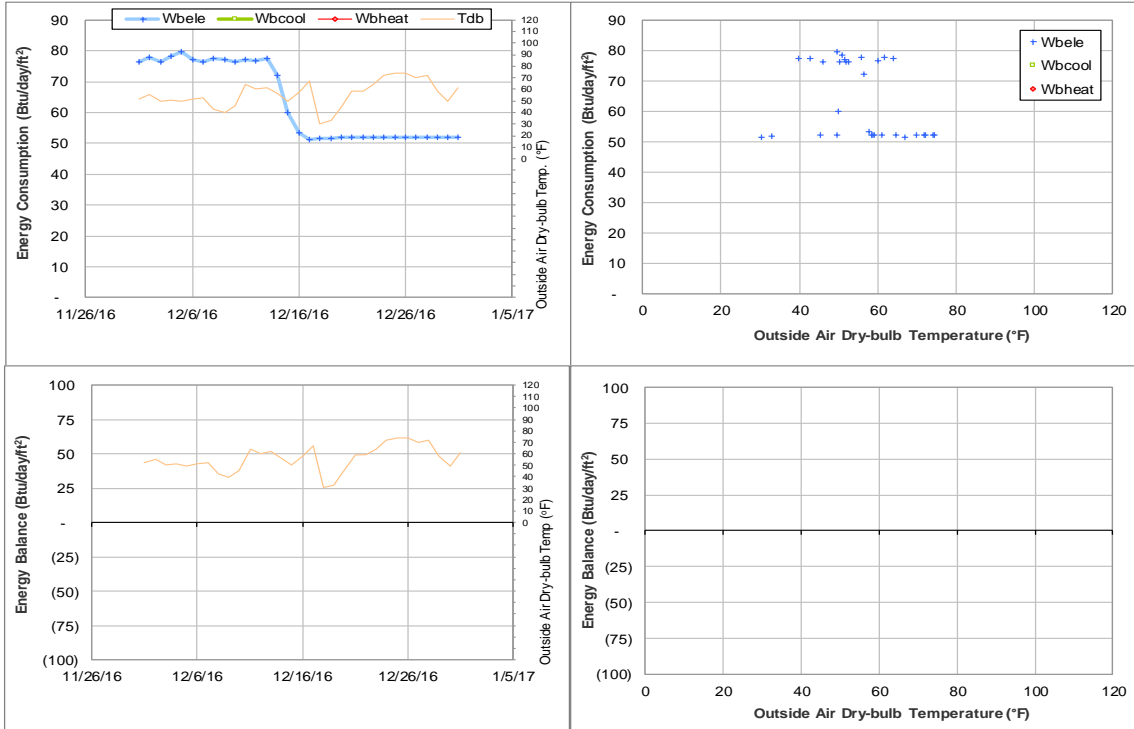


Figure V-5 Moshier Commons Krueger Dunn Aston TAMU BLDG # 433 Energy Balance Plot during December 2016

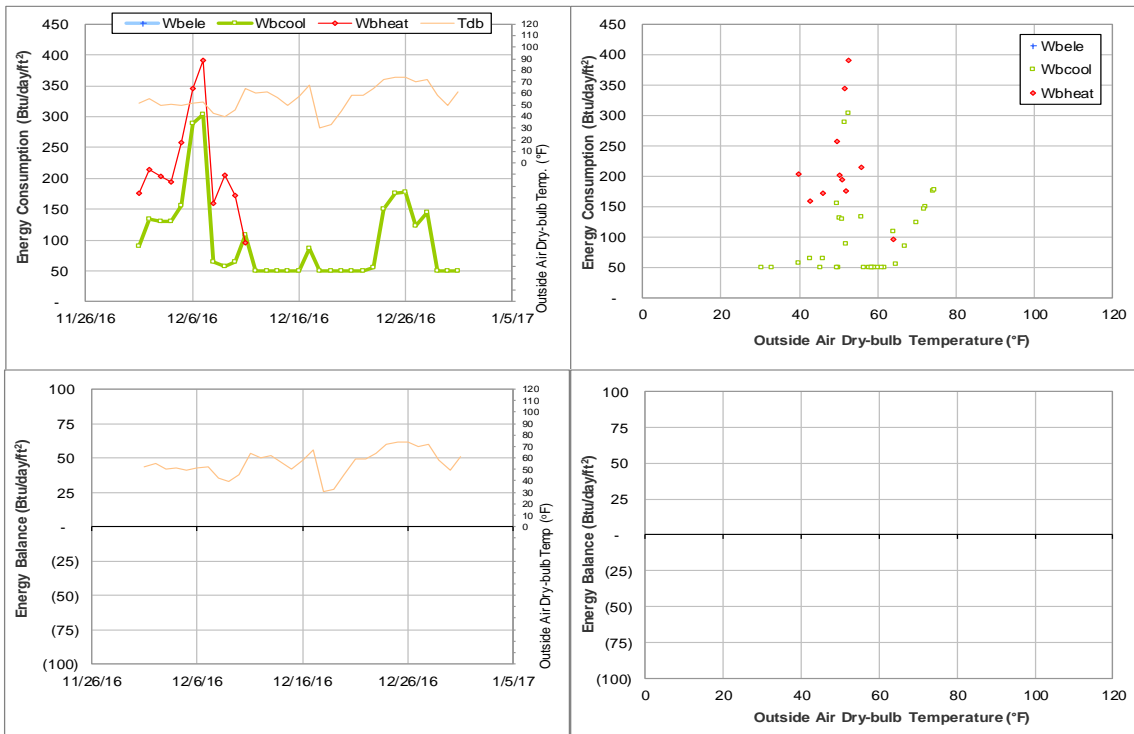


Figure V-6 Commons Hall TAMU BLDG # 440 Energy Balance Plot during December 2016

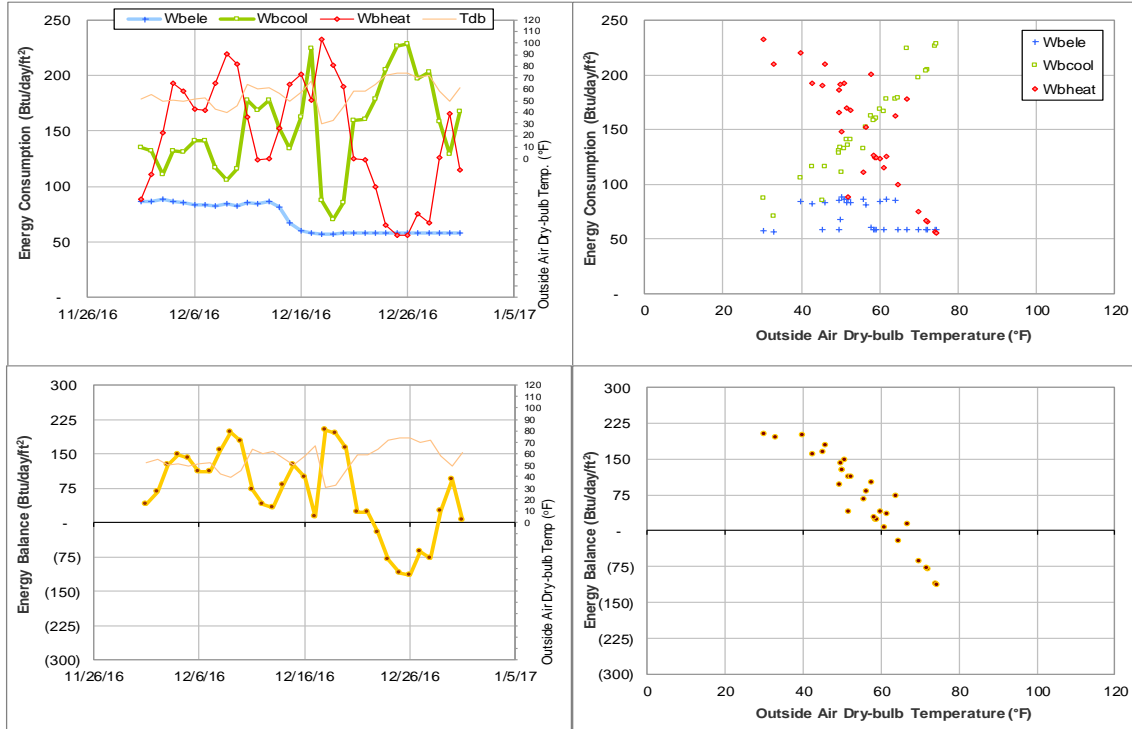


Figure V-7 Krueger Residence Hall TAMU BLDG # 441 Energy Balance Plot during December 2016

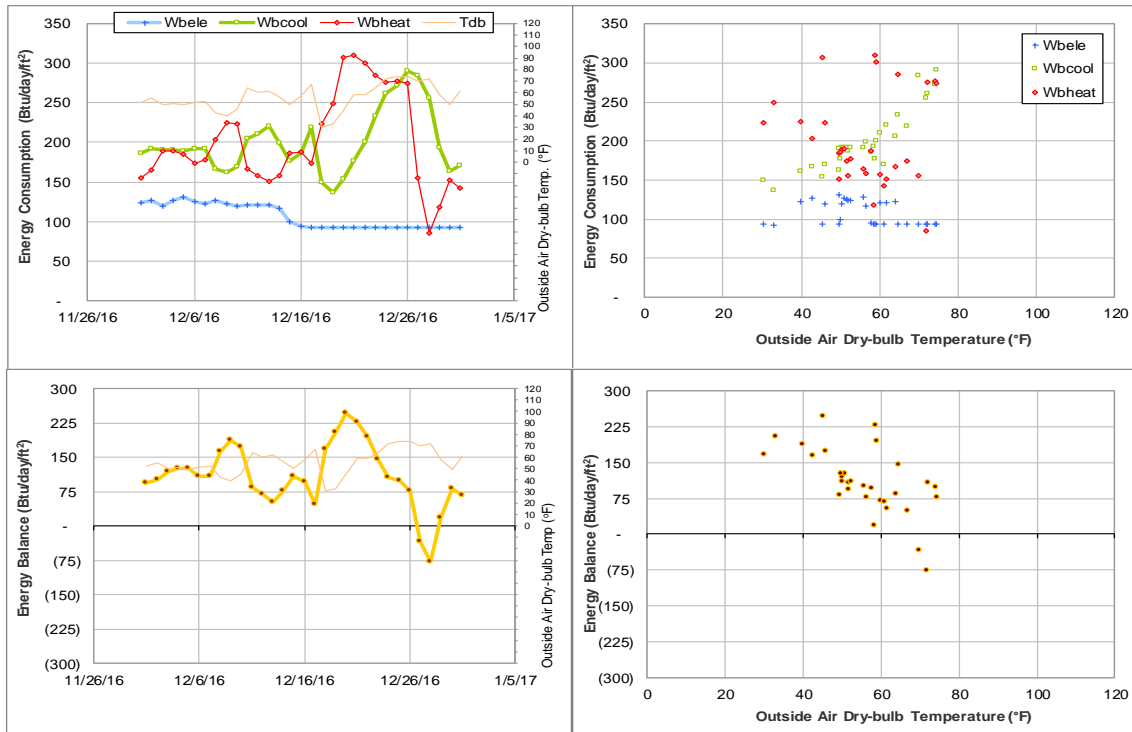


Figure V-8 Dunn Residence Hall TAMU BLDG # 442 Energy Balance Plot during December 2016

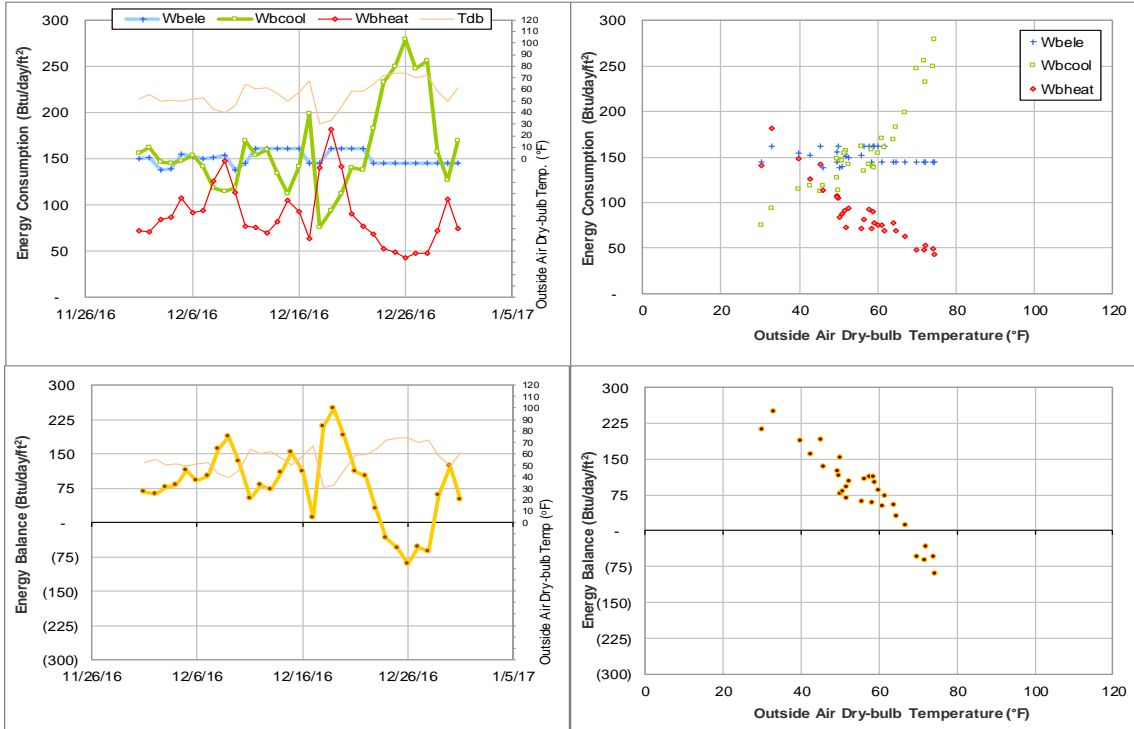


Figure V-9 Oceanography & Meteorology Building TAMU BLDG # 443 Energy Balance Plot during December 2016

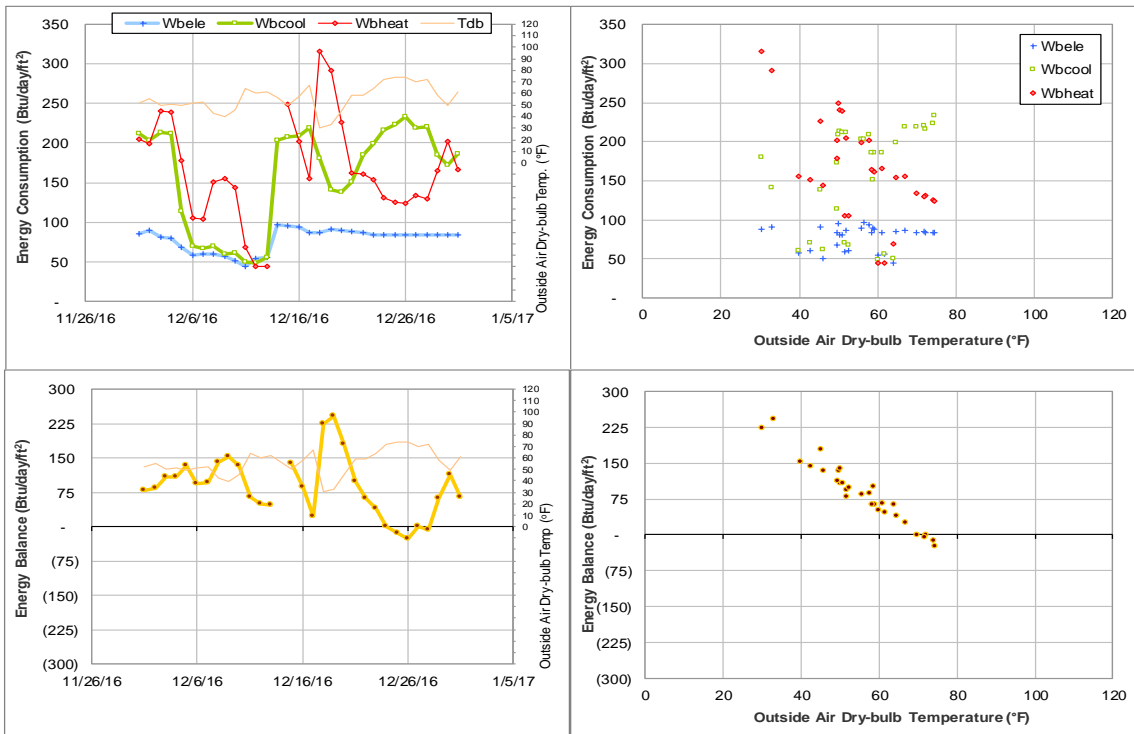


Figure V-10 Rudder Tower and Theatre Complex TAMU BLDG # 446 Energy Balance Plot during December 2016

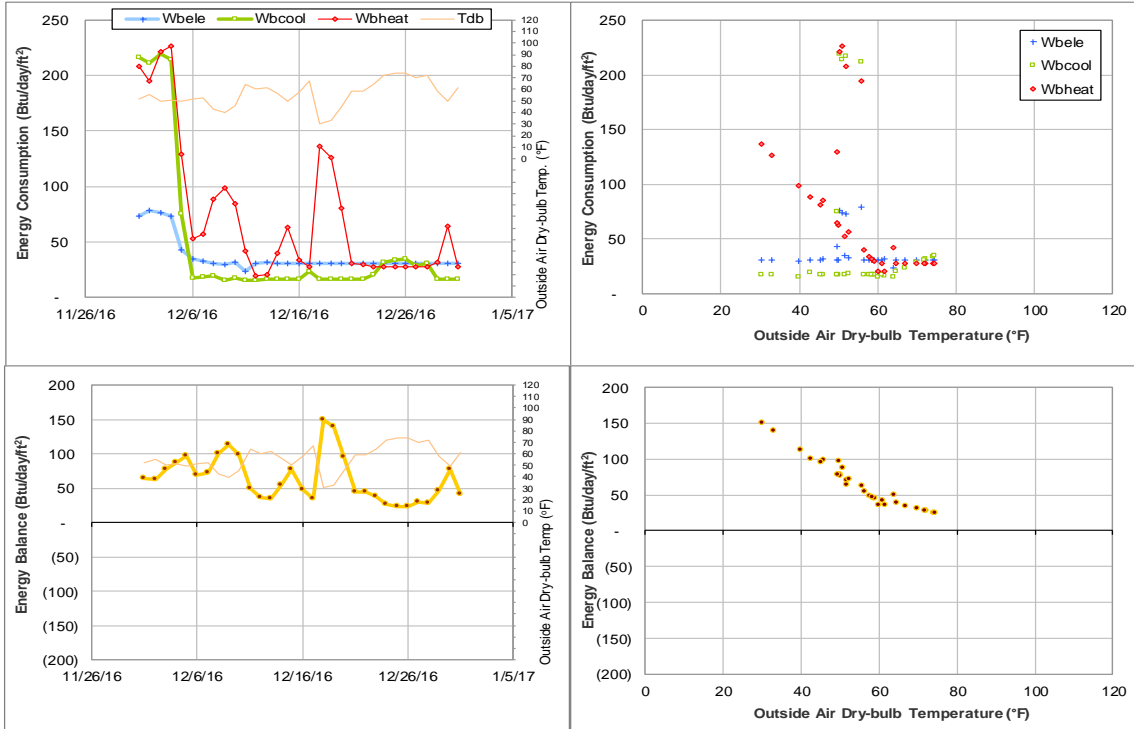


Figure V-11 Rudder Theatre Complex TAMU BLDG # 446 Energy Balance Plot during December 2016

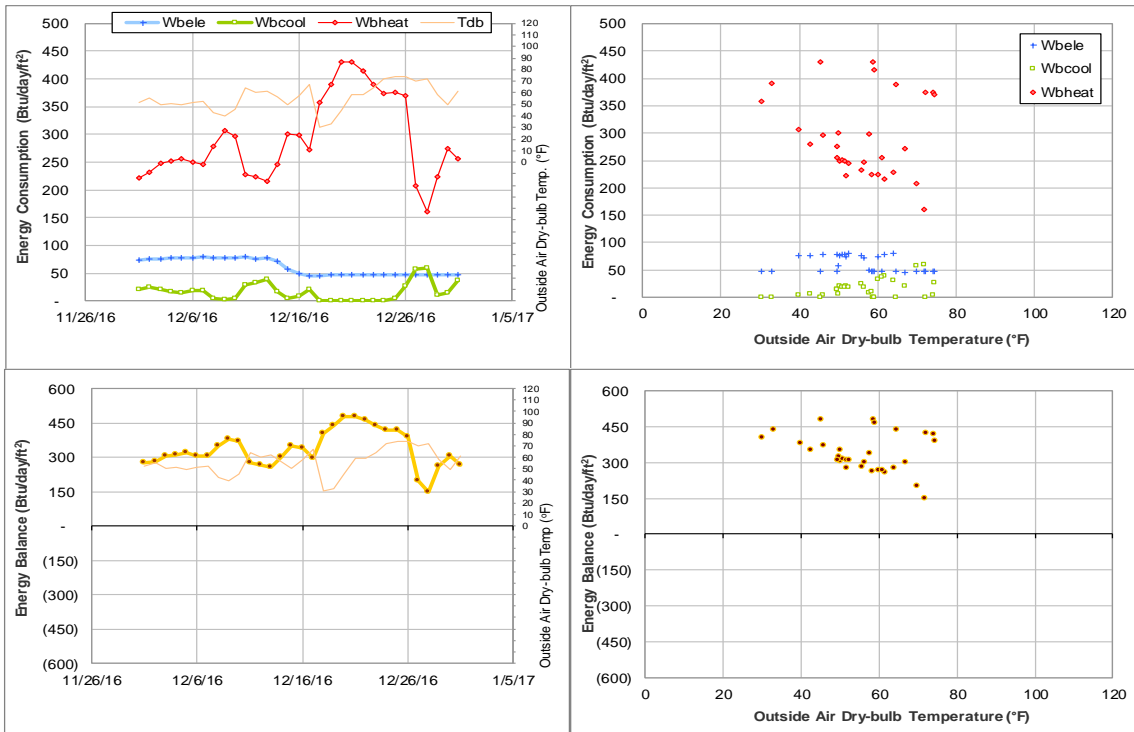


Figure V-12 Aston Residence Hall TAMU BLDG # 447 Energy Balance Plot during December 2016

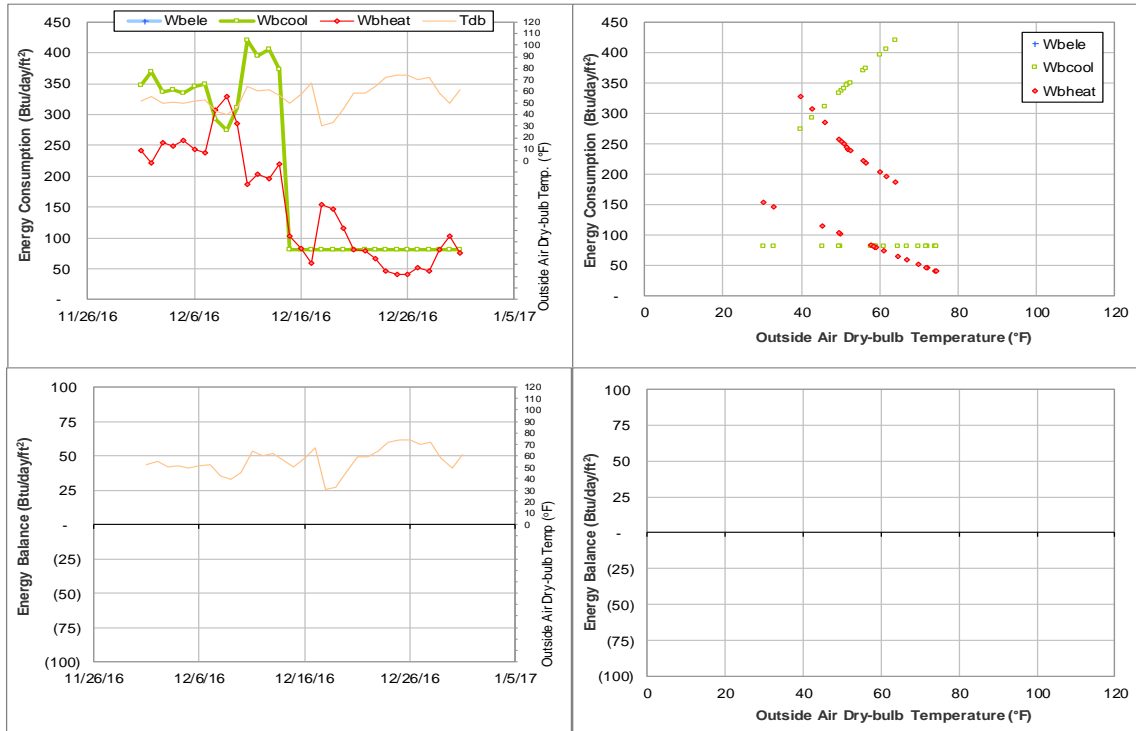


Figure V-13 Military Sciences Building TAMU BLDG # 456 Energy Balance Plot during December 2016

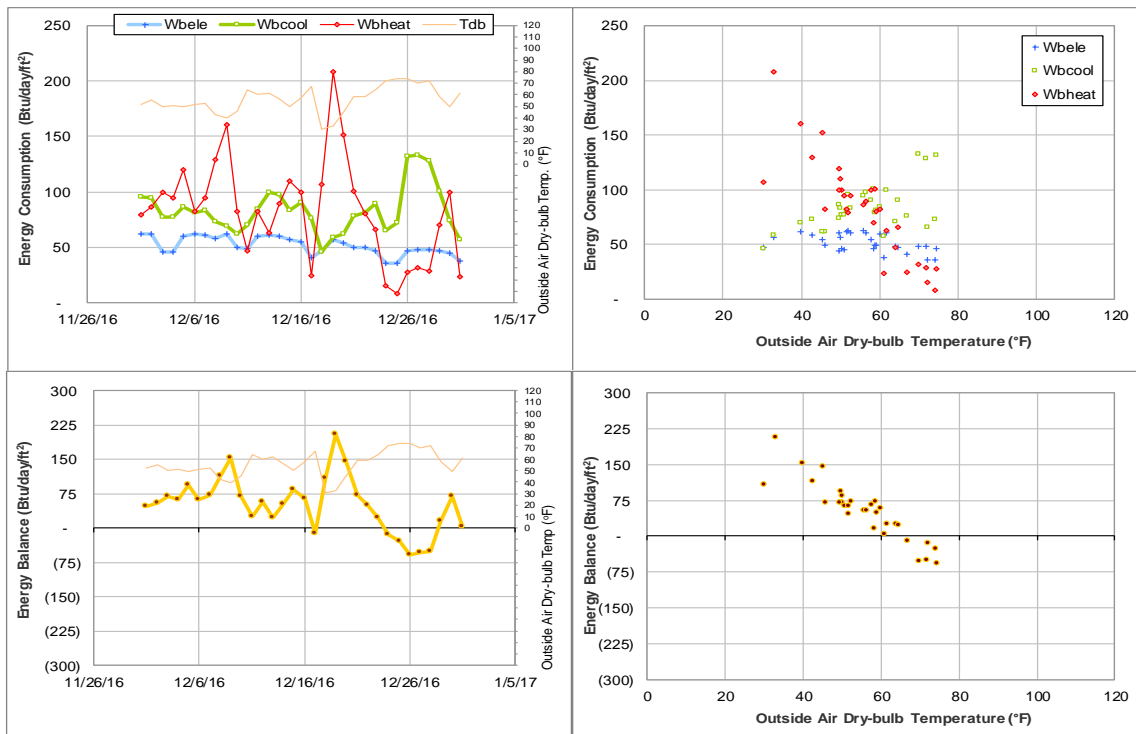


Figure V-14 Glasscock History Bldg TAMU BLDG # 470 Energy Balance Plot during December 2016

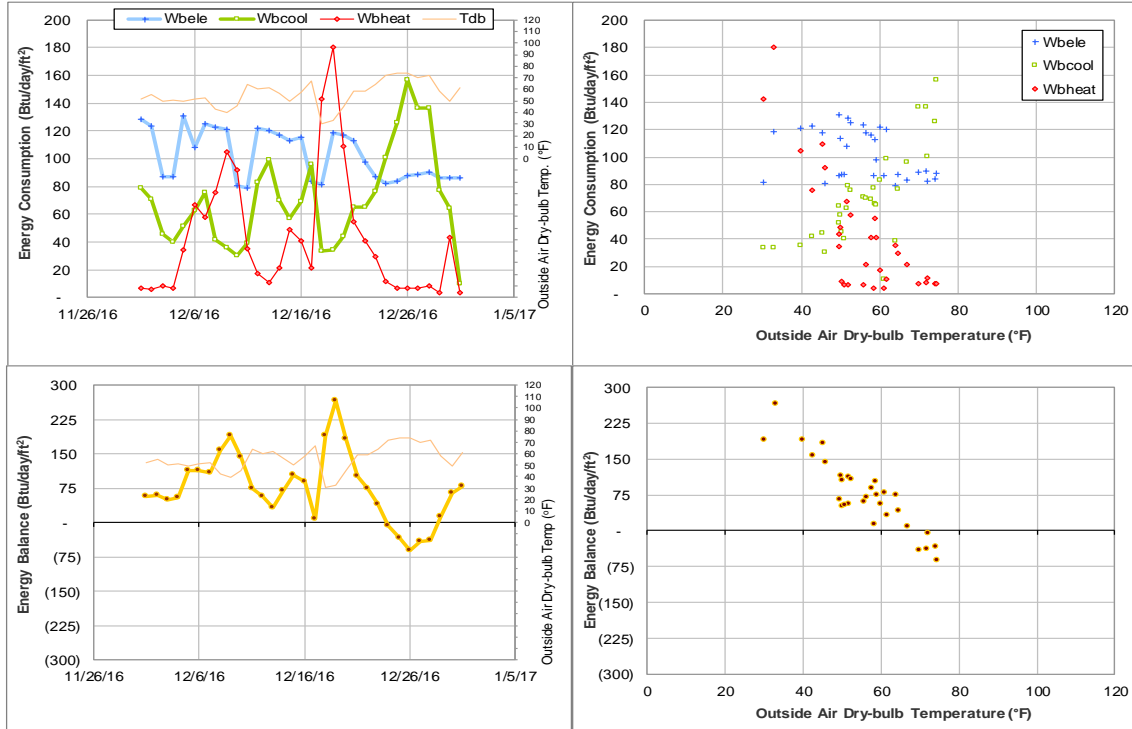


Figure V-15 Pavilion TAMU BLDG # 471 Energy Balance Plot during December 2016

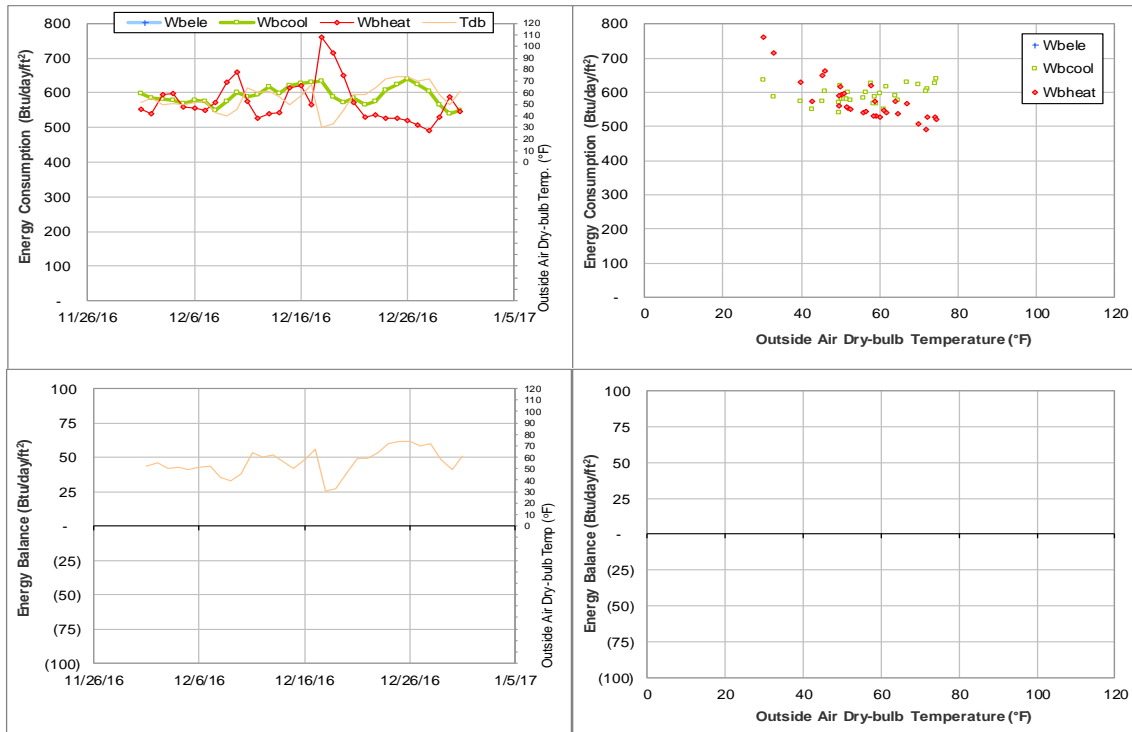


Figure V-16 Heaton Hall TAMU BLDG # 481 Energy Balance Plot during December 2016

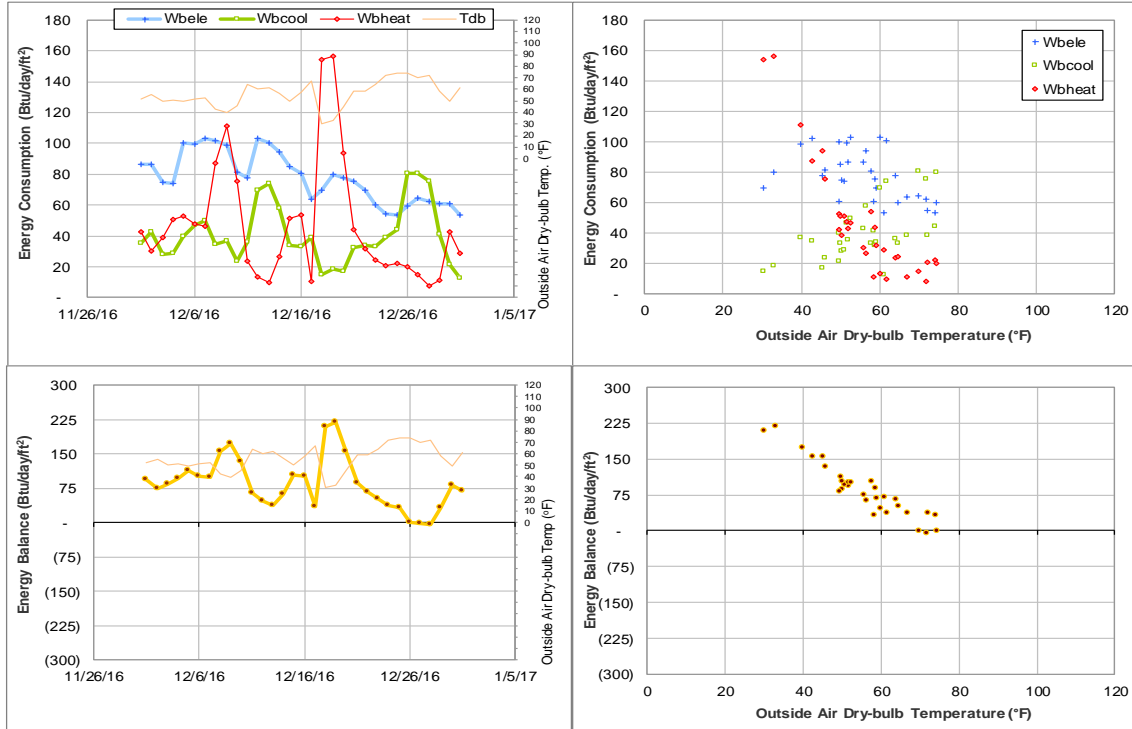


Figure V-17 Thompson Hall TAMU BLDG # 483 Energy Balance Plot during December 2016

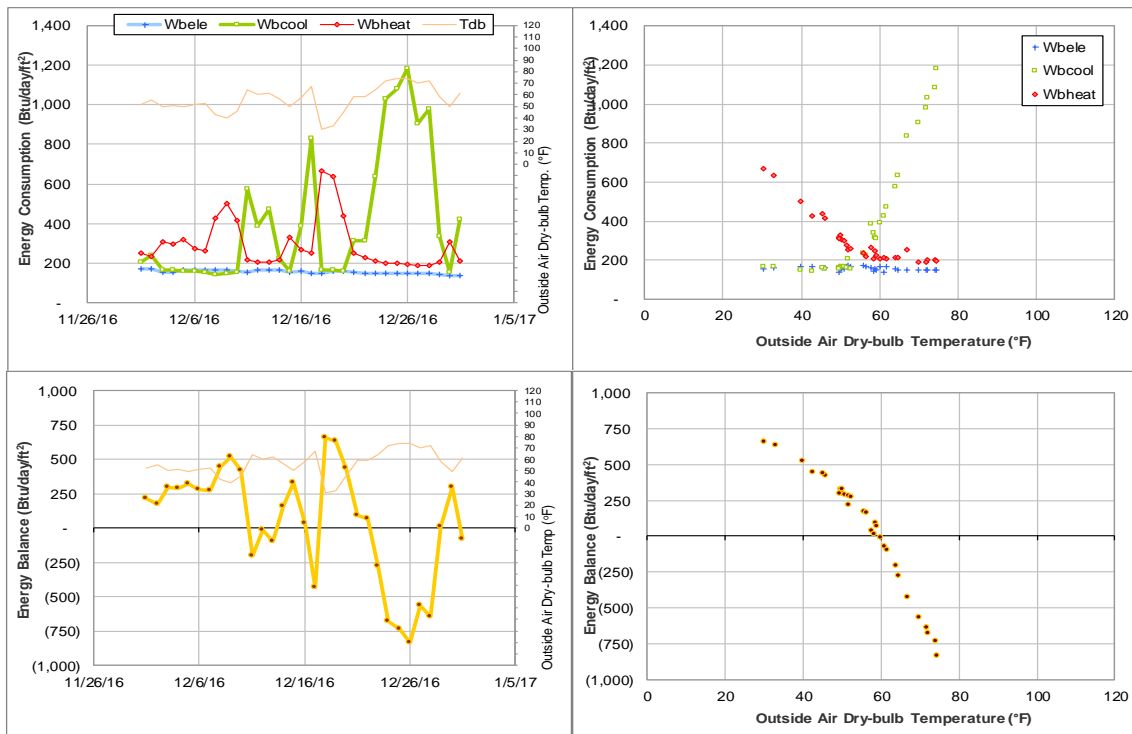


Figure V-18 Chemistry Building TAMU BLDG # 484 Energy Balance Plot during December 2016

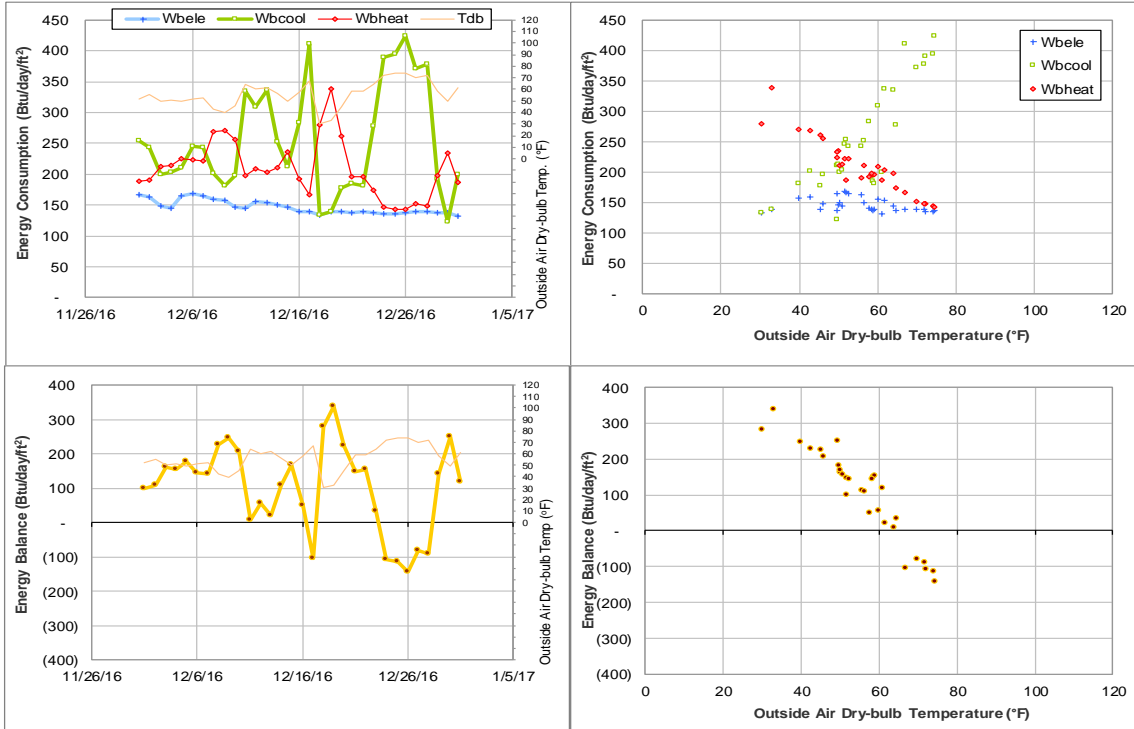


Figure V-19 Halbouty Geosciences Building TAMU BLDG # 490 Energy Balance Plot during December 2016

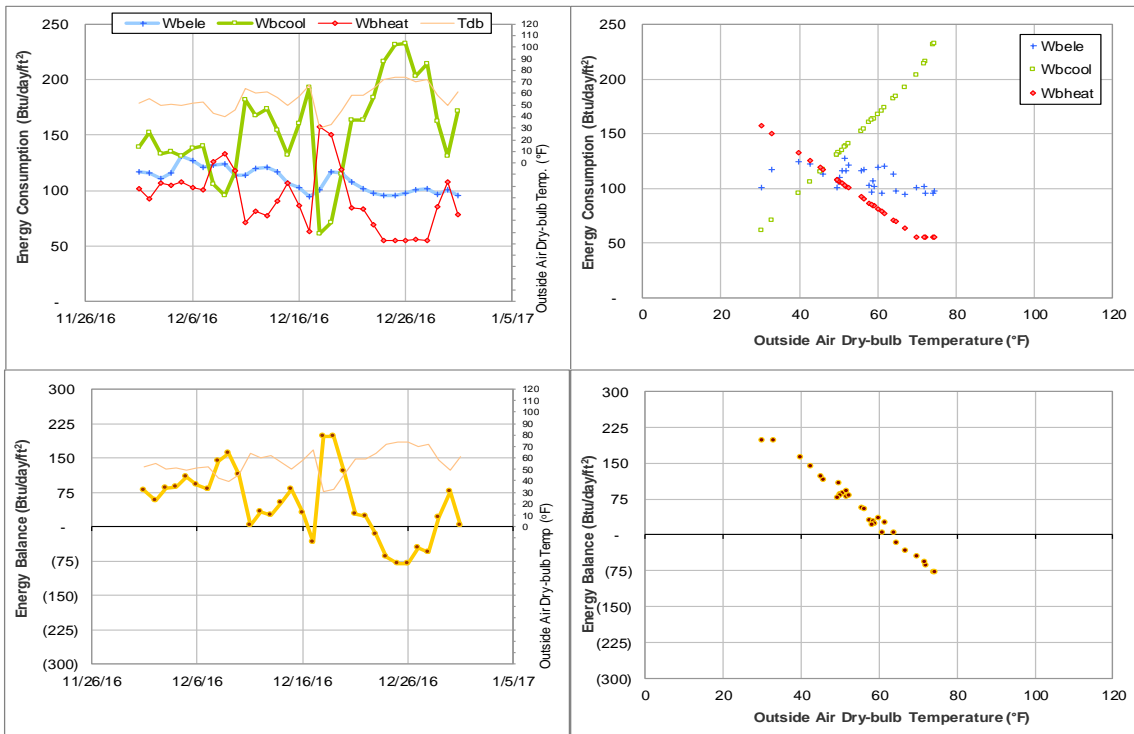


Figure V-20 Civil Engineering Building TAMU BLDG # 492 Energy Balance Plot during December 2016

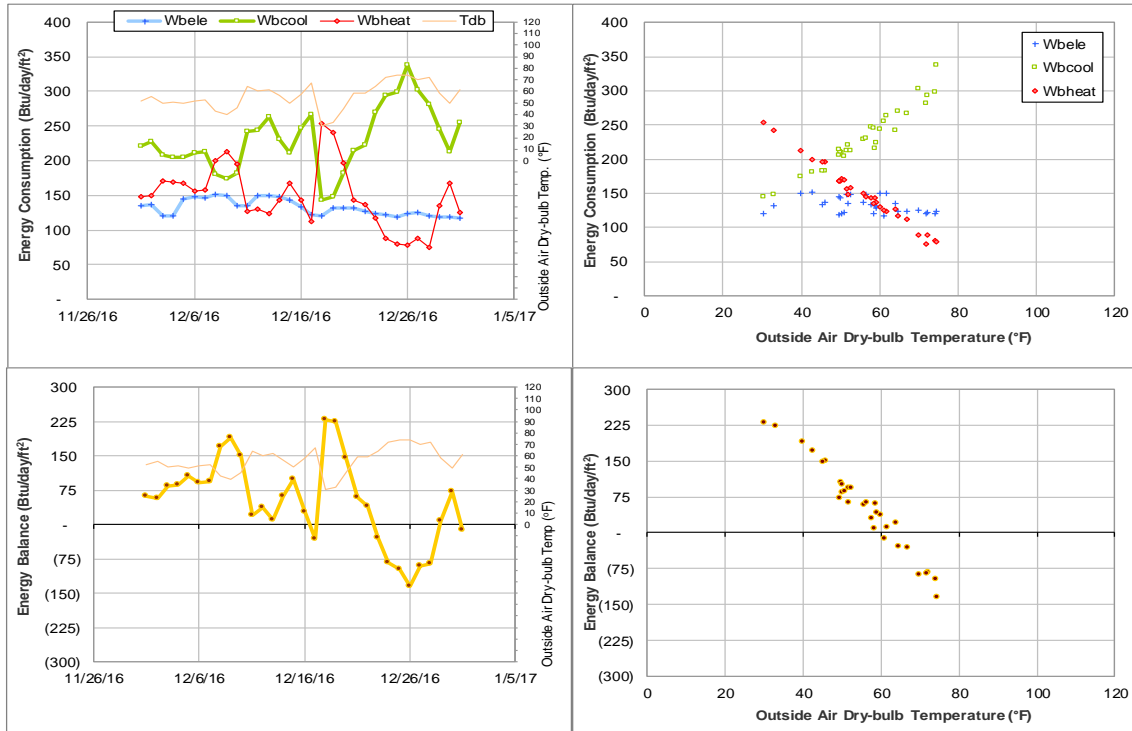


Figure V-21 Veterinary Teaching Hospital and Med Adm TAMU BLDG # 508 Energy Balance Plot during December 2016

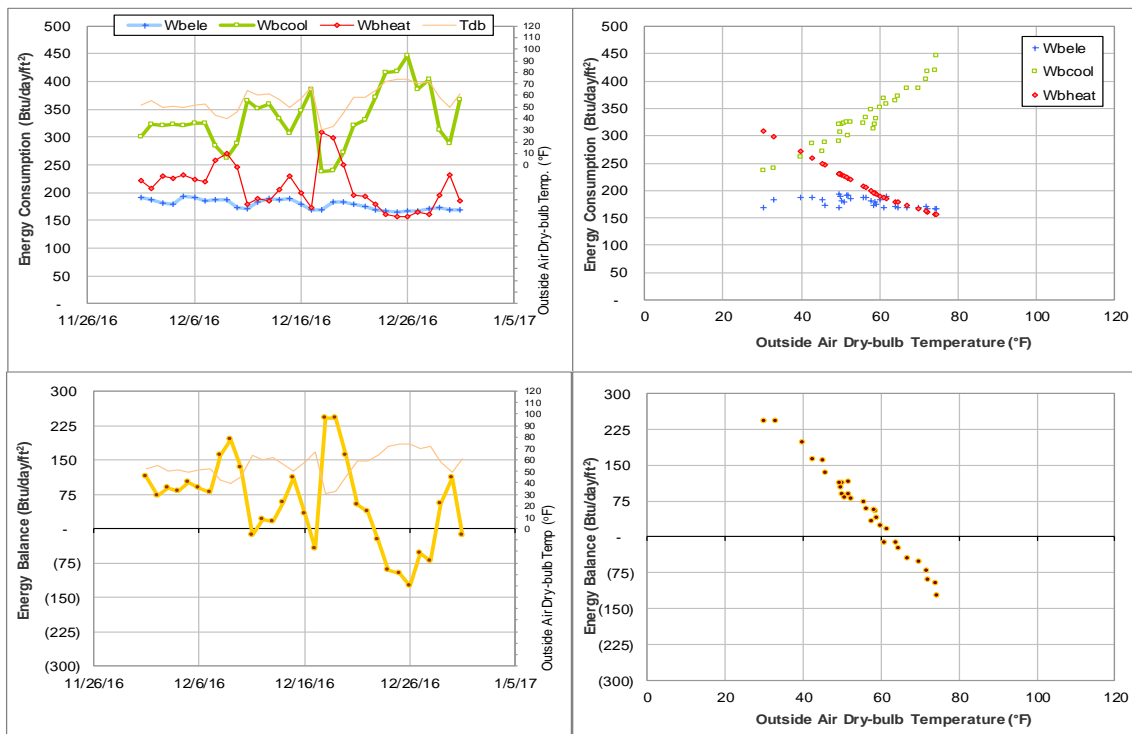


Figure V-22 Heep Laboratory Building TAMU BLDG # 511 Energy Balance Plot during December 2016

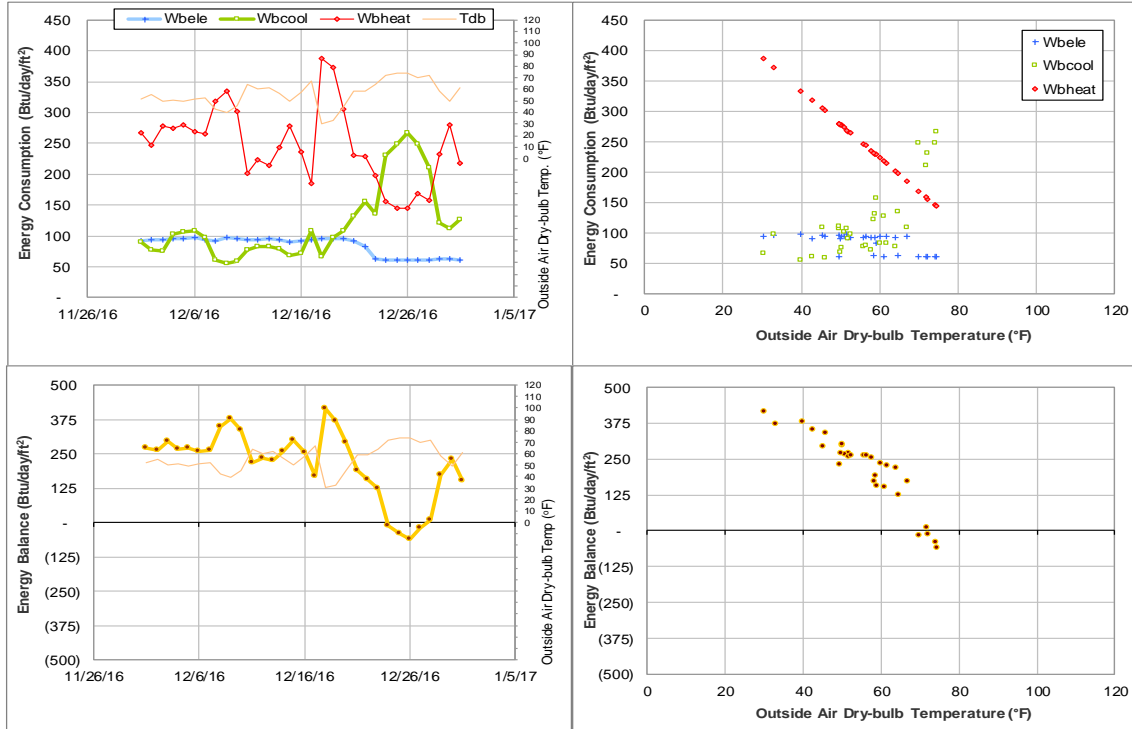


Figure V-23 All Faiths Chapel TAMU BLDG # 512 Energy Balance Plot during December 2016

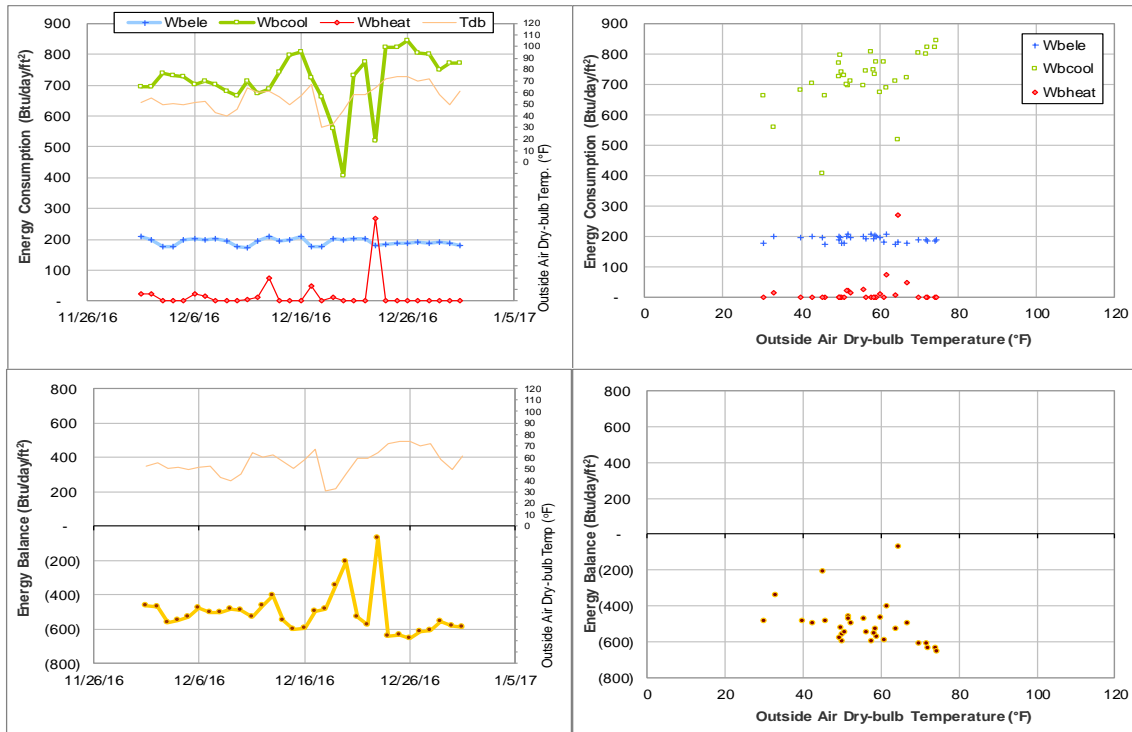


Figure V-24 Vivarium III TAMU BLDG # 1020 Energy Balance Plot during December 2016

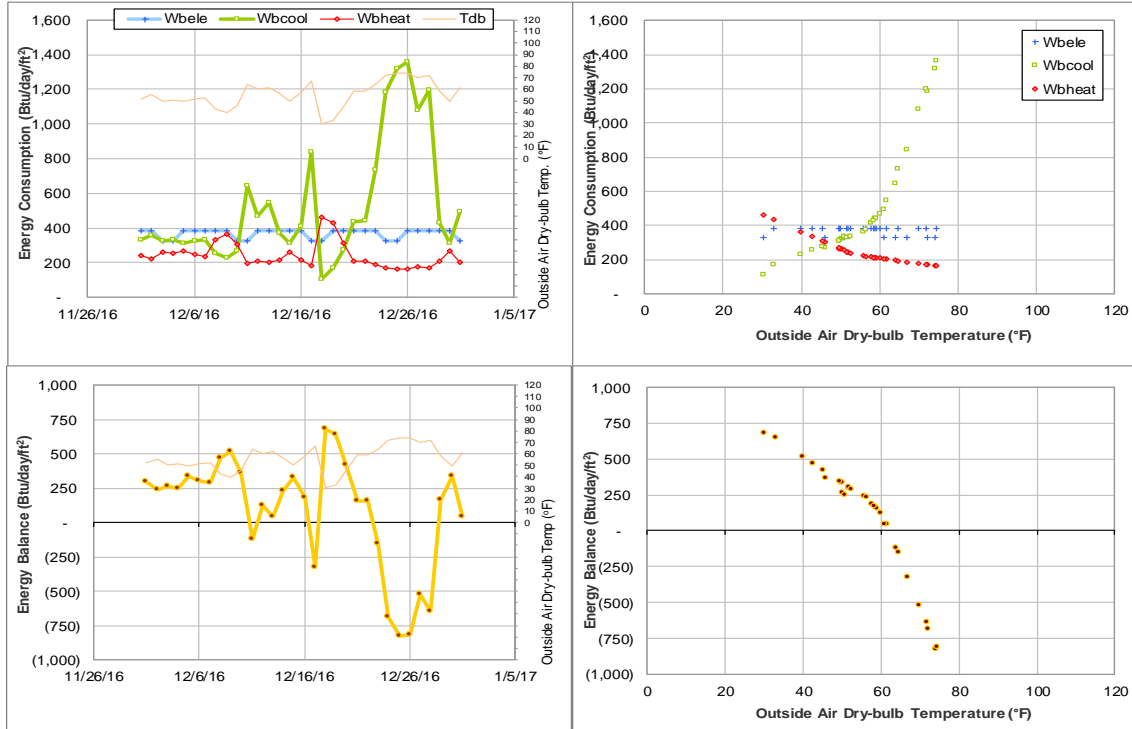


Figure V-25 Texas Vet Med Diagnostic Lab TAMU BLDG # 1041 Energy Balance Plot during December 2016

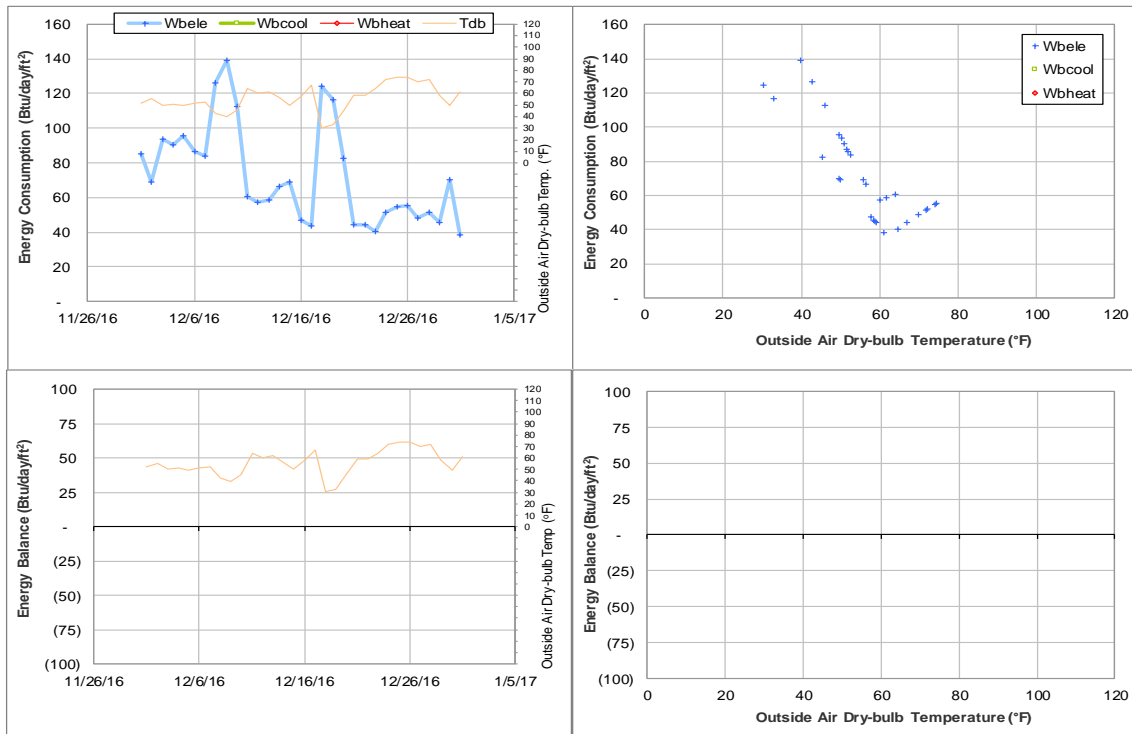


Figure V-26 University Apartments - The Gardens F TAMU BLDG # 1454 Energy Balance Plot during December 2016

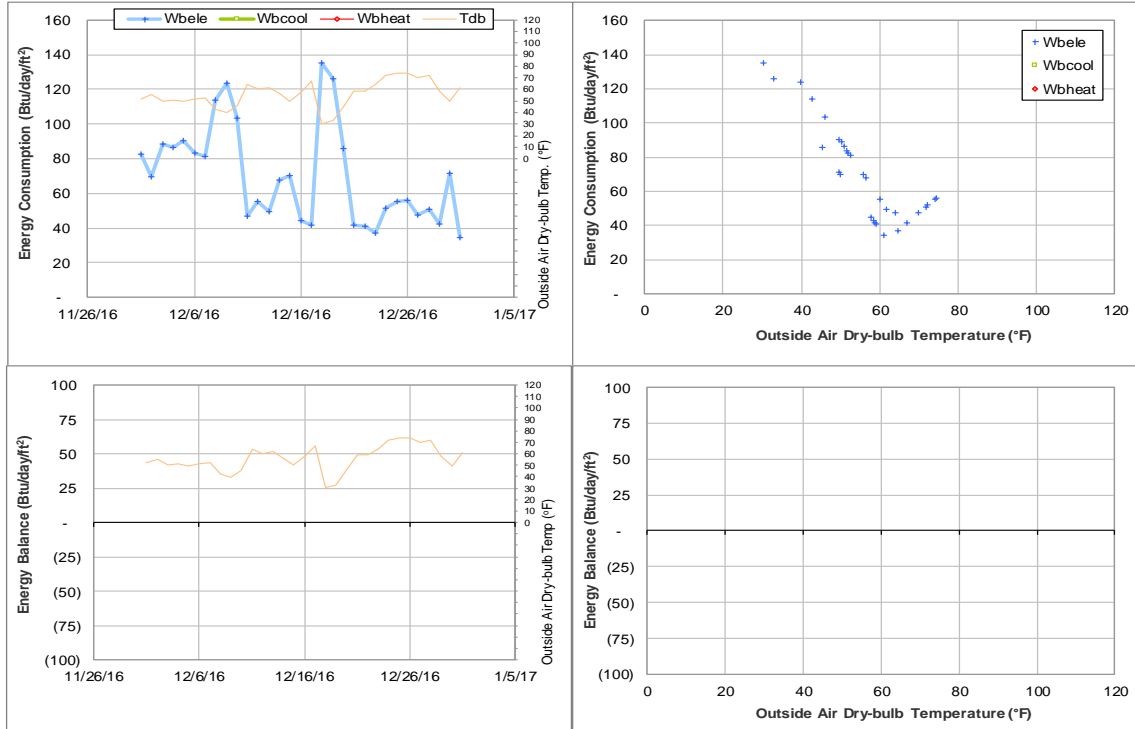


Figure V-27 University Apartments - The Gardens G TAMU BLDG # 1455 Energy Balance Plot during December 2016

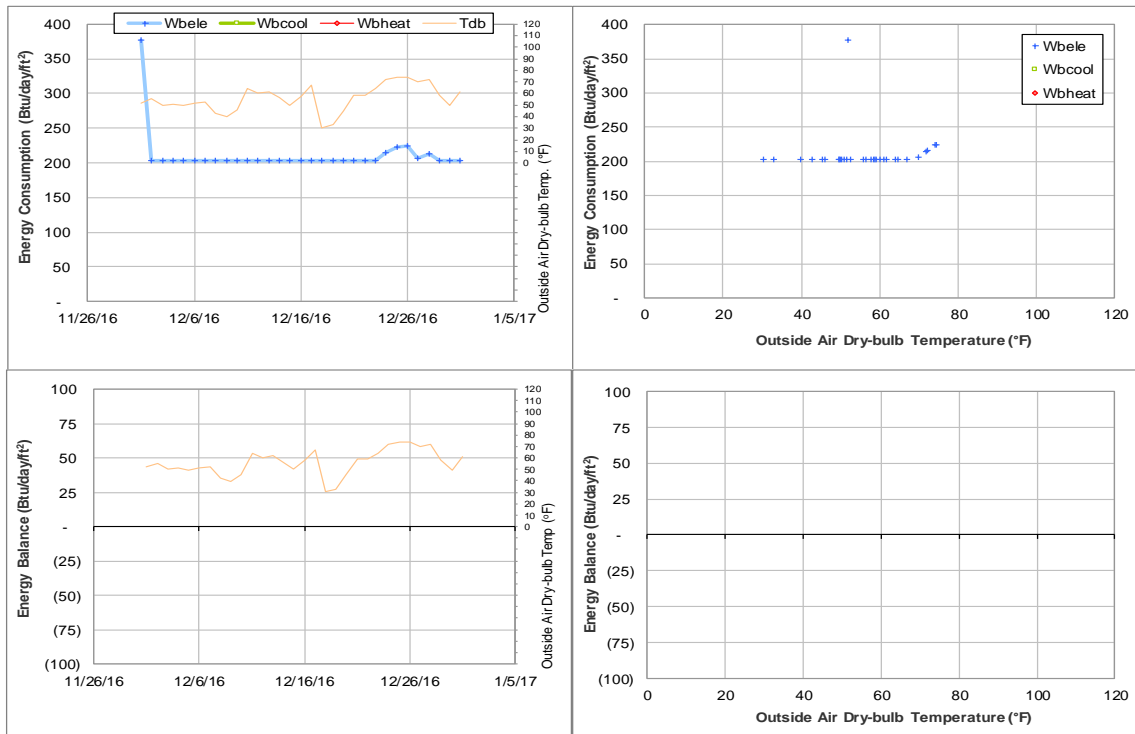


Figure V-28 Southern Crop Improvement Greenhouse TAMU BLDG # 1512 Energy Balance Plot during December 2016

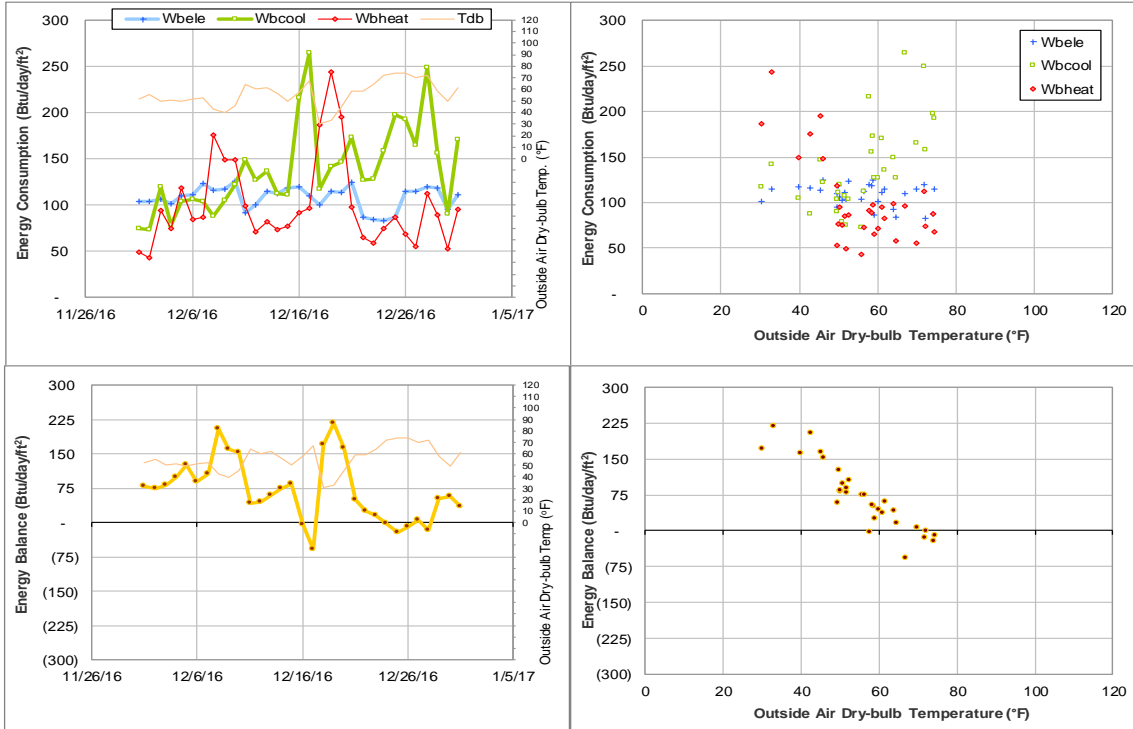


Figure V-29 Reed Arena and Cox-McFerrin Center TAMU BLDG # 1554 Energy Balance Plot during December 2016

VI. Appendix

ENERGY ANALYSIS GROUP



ENERGY SYSTEMS LABORATORY
TEXAS A&M ENGINEERING EXPERIMENT STATION

Project: TAMU: Energy Analysis*

Report: Energy Consumption Data Quality Assurance/Quality Control
Assessment Report for the Month of December 2016

Prepared for:

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

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

Date: January 2017

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