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MEMORANDUM

To: Tyler Brudny, W Capital Group, LLC

From: Barb Ohlsen

Project: Wisconsin Focus on Energy
Design Assistance
Cannery Trail Residences, LLC, Eau Claire, WI

Project No.: 4019395

Date: August 6, 2019

Subject: Notes from the Results Meeting held August 6, 2019. Persons whose names are listed at the end of this document will receive notes from the meeting. The names of those who attended the meeting are shown in **bold**.

Summary: The purpose of the meeting was to review the Design Assistance program and energy conservation opportunities associated with the Cannery Trail Residences, LLC project. Focus on Energy presented results at the meeting.

Item: **Design Assistance Overview**

- Focus on Energy facilitates a collaborative approach with the project team to evaluate energy savings strategies that are cost-effective and make sense for the owner's business.
- The intent of the process is to explore and quantify a number of alternative envelope, lighting, and mechanical materials and systems with the goal of selecting design strategies that demonstrate the highest value.
- Energy analysis results may be used to form the basis of custom incentives from Wisconsin Focus on Energy.

Action: None

Item: Building Summary

See attached building summary.

Action: None

Item: Strategy and Incremental Cost Information

The project team reviewed the strategy results and associated incremental cost information provided by Focus on Energy and assembled bundles of strategies based on current design and group discussion.

- Josh Hansen to review HVAC strategies and advice on bundle groupings.
- Tyler Brudney to provide tax-ID for ownership entity. DONE
- Tyler Brudney to advise Eric Runner to register as Focus On Energy Trade Ally.
- The design team selected energy-efficiency strategies for bundle 2 to represents the current design.

Action: The above changes are now incorporated and the revised results, incentives, and paybacks are shown in the attached table.

Item: Energy Utility Service and Rates

- Xcel Energy , a participating Focus on Energy utility, will provide electric service for the building.
- Xcel Energy , a participating Focus on Energy utility, will provide natural gas service for the building.
- Average electric and gas rates for the state of Wisconsin shall be used for the Design Assistance program.

Action: None

Item: Owner Incentive

The Design Assistance program provides an incentive to the owner to help reduce the upfront costs associated with the addition of energy-saving strategies evaluated and verified by the program. The owner incentive is not intended to cover all increases in construction costs.

Tyler Brudney was identified as the recipient of the owner incentive.

Action: **Focus on Energy** to provide Cannery Trail Residence, LLC with the owner incentive following occupancy and program verification.

Item: Design Team Incentive

The Design Assistance program provides an incentive to the design team for their participation in the following activities: (1) attendance at formal meetings; (2) transfer of building architectural/engineering design information; and (3) development of applicable energy conservation strategies' incremental costs (incremental as compared to the base building design). Please note that the design team incentive is not intended to cover actual system(s) design or re-design associated with energy conservation strategies. The design team incentive will be paid out to the person identified as design team lead upon completion of the Bundle Requirements Document.

Eric Runner was identified as the design team lead.

Action: **Focus on Energy** to provide Royal Construction with the design team incentive upon completion of the Bundle Requirements Document.

Item: **Verification Phase**

Verification, a process that seeks to assure that one of the bundles is implemented, will be laid out in detail in the coming weeks but will generally include the following:

- Project Team notifies Focus on Energy of the bundle selection.
- Focus on Energy sends a Bundle Requirements Document to the project team, tailored to the selected bundle strategies.
- Focus on Energy processes design team incentive and sends payment to design team lead.
- Project Team sends Construction Documents to Focus on Energy, electronic format preferred.
- Project Team sends State of Wisconsin approved COMCheck submittal to Focus on Energy.
- Project Team sends requested equipment submittals to Focus on Energy.
- Field verification of select projects of installed strategies once the building is completed and occupied.
- Report by Focus on Energy as to status of strategy implementation.
- Focus on Energy provides incentive payment.

The purpose of the verification phase is to assist the project team and Focus on Energy toward realizing the energy conservation goals of the program and increasing the likelihood that the incentive proposed during the design phase is achieved upon completion of the project.

Item: **Next Steps**

Action: **Project Team** to select a bundle using the form provided with these minutes and forward the form to Focus on Energy by August 19.



Building Summary

Building Summary		
Location	Eau Claire, WI	
Narrative		
Space Asset Areas	Area	Number of Stories
Circulation	8,250 ft²	3
Apartments	56,700 ft²	3
Common Areas	1,930 ft²	1
Garage	28,300 ft²	1
Total	95,180 ft²	4
Systems Summary		
Envelope	Wood frame walls with batt insulation and insulating sheathing, Wood truss roof with blown in insulation in attic space. R-value to be IBC minimum.	
Glazing	Low e insulated glazing with standard SHGC. Vinyl clad.	
Lighting	Primarily LED lighting.	
Service Water Heating	Gas fired – to be verified	
Hours of Operation	24/7	
HVAC Scenario A: Electric Coils	Apartments, Circulation, Common Areas : Packaged single zone with electric coil heating and DX cooling; Garage: Packaged single zone with gas furnace	
HVAC Scenario B: Heat Pumps	Apartments, Circulation, Common Areas: Air source heat pump heating and cooling with electric backup heat; Garage: Packaged single zone with gas furnace	
Utilities		
Electric Utility	Xcel Energy	
Gas Utility	Xcel Energy	
Schedule		
Construction Documents Complete	07/31/2019	
Construction Start	08/01/2019	
Occupancy	07/01/2020	
Baseline Reference	ASHRAE 90.1-2013 Appendix G	
Other Notes		

Results for HVAC 1

			Savings versus Baseline		
			Bundle 1	Bundle 2	Bundle 3
Project Name:	Cannery Trail Residences, LLC	Energy Cost Savings	\$13,977	\$21,881	\$31,549
Building Type:	Multifamily	Peak kW Savings	12.9	13.4	32.6
Area:	95,180 ft ²	kWh Savings	23,269	72,733	114,014
		Gas Savings (Therm)	13,689	14,671	19,455
HVAC Scenario A:	Apartments, Circulation, Common Areas :				
Electric Coils	Packaged single zone with electric coil heating and DX cooling; Garage: Packaged single zone with gas furnace				
		Incremental 1 st Cost	\$45,734	\$99,945	\$188,013
		Projected Incentive	\$13,292	\$20,458	\$29,413
		Payback with Incentive	2.3	3.6	5.0
		EUI (KBtu/ft ² /yr)	52.4	49.6	43.1

Strategy	Savings				Incremental First Cost	Payback	Bundle 1	Bundle 2	Bundle 3
	Peak kW	kWh	Gas (Therm)	Energy Cost					
Mechanical									
Apartments Magik Packs									
Electronically commutated motor with constant speed	-0.5	5,581	0	\$804	\$20,979	26.1		x	x
Fan system power at 0.27 W/cfm	0.4	6,468	0	\$935	\$2,268	2.4			
Fan system power at 0.24 W/cfm	0.8	12,857	0	\$1,855	\$4,536	2.4			
Fan system power at 0.21 W/cfm	1.3	19,161	0	\$2,766	\$6,804	2.5			
5% improved DX cooling efficiency	4	3,816	0	\$548	\$10,631	19.4			
10% improved DX cooling efficiency	7.6	7,284	0	\$1,051	\$21,263	20.2	x	x	
20% improved DX cooling efficiency	13.9	13,353	0	\$1,925	\$42,525	22.1			x
30% improved DX cooling efficiency	19.2	18,489	0	\$2,668	\$63,788	23.9			
Programmable thermostats for Apartments	-46.5	25,554	0	\$3,688	\$2,840	0.8		x	x
Common Areas and Circulation									
Electronically commutated motor with constant speed	0.1	6,985	0	\$1,007	\$3,767	3.7			
Electronically commutated motor with variable speed	0.8	32,218	0	\$4,653	\$3,767	0.8			x
Fan system power at 0.85 BHP/1000cfm	0.4	5,738	0	\$826	\$407	0.5	x		
Fan system power at 0.75 BHP/1000cfm	0.6	11,281	0	\$1,627	\$814	0.5		x	
Fan system power at 0.66 BHP/1000cfm	1	16,637	0	\$2,402	\$1,222	0.5			

Strategy	Savings				Incremental First Cost	Payback	Bundle 1	Bundle 2	Bundle 3
	Peak kW	kWh	Gas (Therm)	Energy Cost					
5% improved DX cooling efficiency	0.5	338	0	\$50	\$1,909	38.2	x		
10% improved DX cooling efficiency	1	642	0	\$92	\$3,818	41.5		x	
20% improved DX cooling efficiency	1.8	1,162	0	\$168	\$7,635	45.4			x
30% improved DX cooling efficiency	2.4	1,588	0	\$230	\$11,453	49.8			
High efficiency DX compressor part load performance	1	2,058	0	\$297	\$3,818	12.9		x	
Premium efficiency DX compressor part load performance	4.5	3,427	0	\$495	\$12,471	25.2			x
Sensible heat recovery	3.6	15,171	0	\$2,188	\$4,072	1.9			
Total heat recovery	2.2	2,812	0	\$403	\$8,531	21.2			
Demand control ventilation for Common Areas	2.4	1,908	0	\$276	\$762	2.8			x
Occupancy sensor control of zone temperature for Common Areas	0.3	461	0	\$64	\$459	7.2			x
Garage MAU									
Sensible heat recovery	-5.3	-14,007	10,061	\$5,777	\$11,320	2.0			x
CO sensor control of ventilation	0	12,827	9,656	\$9,337	\$2,264	0.2	x	x	x
Direct-fired furnace	0	0	5,091	\$3,948	\$0	0.0	x	x	x
Architectural									
Apartments									
Wall R 20	3.7	7,115	0	\$1,025	\$8,802	8.6			x
Wall R 24	8.1	15,528	0	\$2,241	\$23,137	10.3			
Roof R 40	0.6	1,182	0	\$168	\$5,545	33.0			x
Roof R 50	3.5	7,051	0	\$1,017	\$41,585	40.9			
Roof R 60	5.6	10,942	0	\$1,580	\$77,625	49.1			
Glazing high solar gain w/ argon, non-metal frame	5.8	9,100	0	\$1,313	\$19,688	15.0		x	x
Glazing medium solar gain w/ argon, non-metal frame	7.2	2,995	0	\$432	\$30,133	69.8			
Common Areas									
Wall R 16	0	50	0	\$4	\$45	11.3	x	x	
Wall R 20	0.2	422	0	\$61	\$526	8.6			x
Wall R 24	0.3	674	0	\$97	\$1,006	10.4			
Roof R 24	0.4	662	0	\$95	\$599	6.3			
Roof R 30	0.8	1,515	0	\$216	\$1,735	8.0	x	x	
Roof R 36	1.3	2,068	0	\$297	\$4,007	13.5			
Roof R 40	1.5	2,339	0	\$336	\$5,521	16.4			x
Roof R 50	1.8	2,822	0	\$406	\$9,307	22.9			
Roof R 60	2.2	3,141	0	\$449	\$13,092	29.2			
Glazing high solar gain w/ argon, metal frame	0.2	240	0	\$33	\$463	14.0		x	x

Strategy	Savings				Incremental First Cost	Payback	Bundle 1	Bundle 2	Bundle 3
	Peak kW	kWh	Gas (Therm)	Energy Cost					
Glazing medium solar gain w/ argon, metal frame	0.2	28	0	\$1	\$709	100+			
Glazing high solar gain, improved metal frame	0.2	424	0	\$60	\$647	10.8			
Glazing medium solar gain, improved metal frame	0.3	190	0	\$27	\$942	34.9			
Glazing high solar gain, non-metal frame	0.5	745	0	\$106	\$1,122	10.6			
Glazing medium solar gain, non-metal frame	0.4	545	0	\$77	\$1,422	18.5			
Glazing low solar gain, non-metal frame	0.6	273	0	\$39	\$1,834	47.0			
Glazing high solar gain w/ argon, non-metal frame	0.7	1,043	0	\$149	\$1,710	11.5	x		
Glazing medium solar gain w/ argon, non-metal frame	0.7	851	0	\$121	\$2,060	17.0			
Glazing low solar gain w/ argon, non-metal frame	0.7	614	0	\$88	\$2,489	28.3			
Circulation									
Wall R 16	0.1	173	0	\$26	\$193	7.4	x	x	
Wall R 20	1	1,600	0	\$229	\$2,247	9.8			x
Wall R 24	1.7	2,548	0	\$369	\$4,301	11.7			
Roof R 24	0.5	972	0	\$137	\$821	6.0			
Roof R 30	1.1	2,210	0	\$320	\$2,375	7.4	x	x	
Roof R 36	1.6	3,021	0	\$434	\$5,485	12.6			
Roof R 40	1.8	3,426	0	\$492	\$7,558	15.4			x
Roof R 50	2.3	4,124	0	\$594	\$12,740	21.4			
Roof R 60	2.5	4,577	0	\$658	\$17,923	27.2			
Glazing high solar gain w/ argon, metal frame	0.8	960	0	\$138	\$1,980	14.3		x	x
Glazing medium solar gain w/ argon, metal frame	1	302	0	\$42	\$3,031	72.2			
Garage									
Wall R 16	0	0	24	\$19	\$1,060	55.8	x	x	x
Wall R 20	0	0	225	\$174	\$12,363	71.1			
Wall R 24	0	0	353	\$273	\$23,666	86.7			
Roof R 24	0	0	51	\$41	\$2,072	50.5			
Roof R 30	0	0	118	\$92	\$5,998	65.2			
Roof R 36	0	0	163	\$126	\$13,850	100+			
Roof R 40	0	0	185	\$144	\$19,085	100+			
Roof R 50	0	0	224	\$174	\$32,172	100+			
Roof R 60	0	0	250	\$194	\$45,259	100+			
Lighting									
Apartments									
Lighting power in Apartments reduced to 0.99 W/ft²	1.4	3,104	0	\$447	\$1,331	3.0			

Strategy	Savings				Incremental First Cost	Payback	Bundle 1	Bundle 2	Bundle 3
	Peak kW	kWh	Gas (Therm)	Energy Cost					
Lighting power in Apartments reduced to 0.88 W/ft²	2.9	6,173	0	\$891	\$3,035	3.4			
Lighting power in Apartments reduced to 0.77 W/ft²	4.2	9,220	0	\$1,330	\$6,918	5.2	x	x	
Lighting power in Apartments reduced to 0.66 W/ft²	5.7	12,255	0	\$1,768	\$15,771	8.9			x
Lighting power in Apartments reduced to 0.55 W/ft²	7	15,258	0	\$2,201	\$35,951	16.3			
Common Areas									
Dimming daylighting control, 25% of space	0	179	0	\$25	\$137	5.5			
Dimming daylighting control, 50% of space	0	356	0	\$49	\$274	5.6			
Dimming daylighting control, 75% of space	0.1	528	0	\$75	\$412	5.5		x	
Dimming daylighting control, 100% of space	0.1	701	0	\$100	\$549	5.5			x
Occupancy sensor controls, 25% of space	0	307	0	\$43	\$121	2.8			
Occupancy sensor controls, 50% of space	0	605	0	\$85	\$241	2.8	x		
Occupancy sensor controls, 75% of space	0	902	0	\$130	\$362	2.8		x	
Occupancy sensor controls, 100% of space	0.1	1,199	0	\$172	\$483	2.8			
Vacancy sensor controls, 25% of space	0	358	0	\$49	\$121	2.5			
Vacancy sensor controls, 50% of space	-0.1	706	0	\$99	\$241	2.4			
Vacancy sensor controls, 75% of space	0.2	1,051	0	\$152	\$362	2.4			x
Vacancy sensor controls, 100% of space	0.1	1,395	0	\$200	\$483	2.4			
Lighting power in Common Areas reduced to 0.66 W/ft²	0	406	0	\$58	\$45	0.8			
Lighting power in Common Areas reduced to 0.58 W/ft²	0.2	805	0	\$115	\$103	0.9	x		
Lighting power in Common Areas reduced to 0.51 W/ft²	0.3	1,197	0	\$171	\$235	1.4		x	
Lighting power in Common Areas reduced to 0.44 W/ft²	0.3	1,587	0	\$228	\$537	2.4			x
Lighting power in Common Areas reduced to 0.37 W/ft²	0.3	1,973	0	\$283	\$1,224	4.3			
Circulation									
Occupancy sensor controls, 25% of space	-0.1	1,697	0	\$244	\$516	2.1	x		
Occupancy sensor controls, 50% of space	-0.2	3,386	0	\$487	\$1,031	2.1		x	
Occupancy sensor controls, 75% of space	-0.2	5,027	0	\$724	\$1,547	2.1			x
Occupancy sensor controls, 100% of space	-0.3	6,627	0	\$955	\$2,063	2.2			

Strategy	Savings				Incremental First Cost	Payback	Bundle 1	Bundle 2	Bundle 3
	Peak kW	kWh	Gas (Therm)	Energy Cost					
Lighting power in Circulation reduced to 0.66 W/ft²	0.2	2,240	0	\$323	\$194	0.6			
Lighting power in Circulation reduced to 0.58 W/ft²	0.4	4,435	0	\$641	\$442	0.7	x	x	
Lighting power in Circulation reduced to 0.51 W/ft²	0.7	6,554	0	\$945	\$1,007	1.1			x
Lighting power in Circulation reduced to 0.44 W/ft²	1	8,629	0	\$1,245	\$2,295	1.8			
Lighting power in Circulation reduced to 0.37 W/ft²	1.2	10,626	0	\$1,532	\$5,231	3.4			
Garage									
Occupancy sensor controls, 50% of space	0.3	2,603	-28	\$356	\$1,415	4.0	x	x	
Occupancy sensor controls, 75% of space	0.7	5,863	-63	\$794	\$3,184	4.0			x
Occupancy sensor controls, 100% of space	1.1	9,113	-100	\$1,238	\$4,953	4.0			
Lighting power in Garage reduced to 0.19 W/ft²	0.6	4,817	-52	\$655	\$664	1.0	x	x	
Lighting power in Garage reduced to 0.17 W/ft²	1.1	9,633	-106	\$1,309	\$1,515	1.2			x
Lighting power in Garage reduced to 0.15 W/ft²	1.7	14,449	-160	\$1,961	\$3,453	1.8			
Lighting power in Garage reduced to 0.13 W/ft²	2.2	19,265	-216	\$2,613	\$7,872	3.0			
Lighting power in Garage reduced to 0.11 W/ft²	2.8	24,078	-274	\$3,263	\$17,944	5.5			
Service Water Heating									
Facility									
85% SWH efficiency	0	0	431	\$335	\$1,237	3.7			
90% SWH efficiency	0	0	920	\$715	\$2,475	3.5	x		
95% SWH efficiency	0	0	1,257	\$975	\$3,712	3.8		x	x
Gas fired on-demand SWH	0	0	577	\$446	\$7,614	17.1			
Apartments									
WaterSense showerheads	0	0	760	\$588	\$1,420	2.4		x	x

Results for HVAC 2

			Savings versus Baseline		
			Bundle 4	Bundle 5	Bundle 6
Project Name:	Cannery Trail Residences, LLC	Energy Cost Savings	\$20,481	\$29,665	\$39,954
Building Type:	Multifamily	Peak kW Savings	12.9	13.4	32.6
Area:	95,180 ft ²	kWh Savings	68,321	126,651	172,213
		Gas Savings (Therm)	13,689	14,671	19,455
HVAC Scenario B:	Apartments, Circulation, Common Areas: Air source heat pump heating and cooling with electric backup heat; Garage: Packaged single zone with gas furnace				
Heat Pumps		Incremental 1 st Cost	\$38,360	\$95,799	\$179,720
		Projected Incentive	\$7,638	\$27,468	\$36,979
		Payback with Incentive	1.5	2.3	3.6
		EUI (KBtu/ft ² /yr)	50.8	47.7	41.1

Strategy	Savings				Incremental First Cost	Payback	Bundle 4	Bundle 5	Bundle 6
	Peak kW	kWh	Gas (Therm)	Energy Cost					
Mechanical									
Apartments Magik Packs									
Electronically commutated motor with constant speed	-0.5	6,808	0	\$984	\$20,979	21.3		x	x
Fan system power at 0.27 W/cfm	0.4	9,086	0	\$1,310	\$2,268	1.7			
Fan system power at 0.24 W/cfm	0.8	18,117	0	\$2,617	\$4,536	1.7			
Fan system power at 0.21 W/cfm	1.3	27,147	0	\$3,920	\$6,804	1.7			
5% improved heat pump cooling efficiency	4	8,071	0	\$1,167	\$5,330	4.6			
10% improved heat pump cooling efficiency	7.6	15,327	0	\$2,214	\$10,660	4.8	x	x	
20% improved heat pump cooling efficiency	13.9	27,807	0	\$4,014	\$21,319	5.3			x
30% improved heat pump cooling efficiency	19.2	38,089	0	\$5,499	\$31,979	5.8			
5% improved heat pump heating efficiency	0	2,514	0	\$362	\$3,544	9.8	x		
10% improved heat pump heating efficiency	0	4,501	0	\$649	\$7,088	10.9		x	
20% improved heat pump heating efficiency	0	7,113	0	\$1,028	\$14,175	13.8			x
30% improved heat pump heating efficiency	0	8,198	0	\$1,185	\$21,263	17.9			
Programmable thermostats for Apartments	-46.5	34,758	0	\$5,020	\$2,840	0.6		x	x
Common Areas and Circulation									
Electronically commutated motor with constant speed	0.1	6,830	0	\$986	\$3,767	3.8			

Strategy	Savings			Energy Cost	Incremental First Cost	Payback	Bundle 4	Bundle 5	Bundle 6
	Peak kW	kWh	Gas (Therm)						
Electronically commutated motor with variable speed	0.8	27,741	0	\$4,004	\$3,767	0.9			x
Fan system power at 0.85 BHP/1000cfm	0.4	5,794	0	\$838	\$407	0.5	x		
Fan system power at 0.75 BHP/1000cfm	0.6	11,386	0	\$1,643	\$814	0.5		x	
Fan system power at 0.66 BHP/1000cfm	1	16,944	0	\$2,445	\$1,222	0.5			
High efficiency DX compressor part load performance	1	2,058	0	\$297	\$3,818	12.9		x	
Premium efficiency DX compressor part load performance	4.5	3,427	0	\$495	\$12,471	25.2			x
5% improved heat pump cooling efficiency	0.5	606	0	\$88	\$957	10.9	x		
10% improved heat pump cooling efficiency	1	1,142	0	\$165	\$1,914	11.6		x	
20% improved heat pump cooling efficiency	1.8	2,061	0	\$298	\$3,828	12.8			x
30% improved heat pump cooling efficiency	2.4	2,816	0	\$408	\$5,742	14.1			
5% improved heat pump heating efficiency	0	203	0	\$29	\$636	21.9	x		
10% improved heat pump heating efficiency	0	375	0	\$52	\$1,273	24.5		x	
20% improved heat pump heating efficiency	0	618	0	\$91	\$2,545	28.0			x
30% improved heat pump heating efficiency	0	758	0	\$109	\$3,818	35.0			
Sensible heat recovery	3.6	14,687	0	\$2,121	\$4,072	1.9			
Total heat recovery	2.2	2,612	0	\$377	\$8,531	22.6			
Demand control ventilation for Common Areas	2.4	1,584	0	\$229	\$762	3.3			x
Occupancy sensor control of zone temperature for Common Areas	0.3	375	0	\$54	\$459	8.5			x
Garage MAU									
Sensible heat recovery	-5.3	-14,005	10,061	\$5,780	\$11,320	2.0			x
CO sensor control of ventilation	0	12,832	9,656	\$9,339	\$2,264	0.2	x	x	x
Direct-fired furnace	0	0	5,091	\$3,948	\$0	0.0	x	x	x
Architectural									
Apartments									
Wall R 20	3.7	4,323	0	\$626	\$8,802	14.1			x
Wall R 24	8.1	9,539	0	\$1,376	\$23,137	16.8			
Roof R 40	0.6	706	0	\$100	\$5,545	55.4			x
Roof R 50	3.5	4,320	0	\$627	\$41,585	66.3			
Roof R 60	5.6	6,670	0	\$963	\$77,625	80.6			
Glazing high solar gain w/ argon, non-metal frame	5.8	5,839	0	\$842	\$19,688	23.4		x	x
Glazing medium solar gain w/ argon, non-metal frame	7.2	3,226	0	\$467	\$30,133	64.5			

Strategy	Savings			Energy Cost	Incremental First Cost	Payback	Bundle 4	Bundle 5	Bundle 6
	Peak kW	kWh	Gas (Therm)						
Common Areas									
Wall R 16	0	39	0	\$5	\$45	9.0	x	x	
Wall R 20	0.2	345	0	\$50	\$526	10.5			x
Wall R 24	0.3	552	0	\$81	\$1,006	12.4			
Roof R 24	0.4	544	0	\$79	\$599	7.6			
Roof R 30	0.8	1,252	0	\$181	\$1,735	9.6	x	x	
Roof R 36	1.3	1,720	0	\$248	\$4,007	16.2			
Roof R 40	1.5	1,952	0	\$282	\$5,521	19.6			x
Roof R 50	1.8	2,379	0	\$343	\$9,307	27.1			
Roof R 60	2.2	2,663	0	\$384	\$13,092	34.1			
Glazing high solar gain w/ argon, metal frame	0.2	194	0	\$29	\$463	16.0		x	x
Glazing medium solar gain w/ argon, metal frame	0.2	16	0	\$2	\$709	100+			
Glazing high solar gain, improved metal frame	0.2	345	0	\$50	\$647	12.9			
Glazing medium solar gain, improved metal frame	0.3	150	0	\$22	\$942	42.8			
Glazing high solar gain, non-metal frame	0.5	611	0	\$90	\$1,122	12.5			
Glazing medium solar gain, non-metal frame	0.4	442	0	\$64	\$1,422	22.2			
Glazing low solar gain, non-metal frame	0.6	214	0	\$30	\$1,834	61.1			
Glazing high solar gain w/ argon, non-metal frame	0.7	855	0	\$124	\$1,710	13.8	x		
Glazing medium solar gain w/ argon, non-metal frame	0.7	690	0	\$100	\$2,060	20.6			
Glazing low solar gain w/ argon, non-metal frame	0.7	491	0	\$71	\$2,489	35.1			
Circulation									
Wall R 16	0.1	175	0	\$26	\$193	7.4	x	x	
Wall R 20	1	1,697	0	\$245	\$2,247	9.2			x
Wall R 24	1.7	2,720	0	\$394	\$4,301	10.9			
Roof R 24	0.5	829	0	\$118	\$821	7.0			
Roof R 30	1.1	1,926	0	\$277	\$2,375	8.6	x	x	
Roof R 36	1.6	2,693	0	\$389	\$5,485	14.1			
Roof R 40	1.8	3,067	0	\$443	\$7,558	17.1			x
Roof R 50	2.3	3,750	0	\$542	\$12,740	23.5			
Roof R 60	2.5	4,204	0	\$607	\$17,923	29.5			
Glazing high solar gain w/ argon, metal frame	0.8	977	0	\$140	\$1,980	14.1		x	x
Glazing medium solar gain w/ argon, metal frame	1	180	0	\$25	\$3,031	100+			
Garage									
Wall R 16	0	0	24	\$19	\$1,060	55.8	x	x	x
Wall R 20	0	0	225	\$174	\$12,363	71.1			

Strategy	Savings				Incremental First Cost	Payback	Bundle 4	Bundle 5	Bundle 6
	Peak kW	kWh	Gas (Therm)	Energy Cost					
Wall R 24	0	0	353	\$273	\$23,666	86.7			
Roof R 24	0	0	51	\$41	\$2,072	50.5			
Roof R 30	0	0	118	\$92	\$5,998	65.2			
Roof R 36	0	0	163	\$126	\$13,850	100+			
Roof R 40	0	0	185	\$144	\$19,085	100+			
Roof R 50	0	0	224	\$174	\$32,172	100+			
Roof R 60	0	0	250	\$194	\$45,259	100+			
Lighting									
Apartments									
Lighting power in Apartments reduced to 0.99 W/ft ²	1.4	4,268	0	\$617	\$1,331	2.2			
Lighting power in Apartments reduced to 0.88 W/ft ²	2.9	8,484	0	\$1,225	\$3,035	2.5			
Lighting power in Apartments reduced to 0.77 W/ft ²	4.2	12,689	0	\$1,832	\$6,918	3.8	x	x	
Lighting power in Apartments reduced to 0.66 W/ft ²	5.7	16,928	0	\$2,444	\$15,771	6.5			x
Lighting power in Apartments reduced to 0.55 W/ft ²	7	21,149	0	\$3,055	\$35,951	11.8			
Common Areas									
Dimming daylighting control, 25% of space	0	190	0	\$28	\$137	4.9			
Dimming daylighting control, 50% of space	0	378	0	\$55	\$274	5.0			
Dimming daylighting control, 75% of space	0.1	561	0	\$81	\$412	5.1		x	
Dimming daylighting control, 100% of space	0.1	746	0	\$109	\$549	5.0			x
Occupancy sensor controls, 25% of space	0	345	0	\$51	\$121	2.4			
Occupancy sensor controls, 50% of space	0	681	0	\$97	\$241	2.5	x		
Occupancy sensor controls, 75% of space	0	1,020	0	\$149	\$362	2.4		x	
Occupancy sensor controls, 100% of space	0.1	1,359	0	\$197	\$483	2.4			
Vacancy sensor controls, 25% of space	0	402	0	\$57	\$121	2.1			
Vacancy sensor controls, 50% of space	-0.1	795	0	\$115	\$241	2.1			
Vacancy sensor controls, 75% of space	0.2	1,189	0	\$172	\$362	2.1			x
Vacancy sensor controls, 100% of space	0.1	1,583	0	\$230	\$483	2.1			
Lighting power in Common Areas reduced to 0.66 W/ft ²	0	452	0	\$66	\$45	0.7			
Lighting power in Common Areas reduced to 0.58 W/ft ²	0.2	894	0	\$130	\$103	0.8	x		
Lighting power in Common Areas reduced to 0.51 W/ft ²	0.3	1,340	0	\$194	\$235	1.2		x	

Strategy	Savings				Incremental First Cost	Payback	Bundle 4	Bundle 5	Bundle 6
	Peak kW	kWh	Gas (Therm)	Energy Cost					
Lighting power in Common Areas reduced to 0.44 W/ft²	0.3	1,784	0	\$258	\$537	2.1			x
Lighting power in Common Areas reduced to 0.37 W/ft²	0.3	2,220	0	\$320	\$1,224	3.8			
Circulation									
Occupancy sensor controls, 25% of space	-0.1	1,673	0	\$243	\$516	2.1	x		
Occupancy sensor controls, 50% of space	-0.2	3,324	0	\$480	\$1,031	2.1		x	
Occupancy sensor controls, 75% of space	-0.2	4,920	0	\$711	\$1,547	2.2			x
Occupancy sensor controls, 100% of space	-0.3	6,505	0	\$940	\$2,063	2.2			
Lighting power in Circulation reduced to 0.66 W/ft²	0.2	2,189	0	\$316	\$194	0.6			
Lighting power in Circulation reduced to 0.58 W/ft²	0.4	4,332	0	\$626	\$442	0.7	x	x	
Lighting power in Circulation reduced to 0.51 W/ft²	0.7	6,371	0	\$920	\$1,007	1.1			x
Lighting power in Circulation reduced to 0.44 W/ft²	1	8,369	0	\$1,208	\$2,295	1.9			
Lighting power in Circulation reduced to 0.37 W/ft²	1.2	10,297	0	\$1,487	\$5,231	3.5			
Garage									
Occupancy sensor controls, 50% of space	0.3	2,603	-28	\$355	\$1,415	4.0	x	x	
Occupancy sensor controls, 75% of space	0.7	5,863	-63	\$798	\$3,184	4.0			x
Occupancy sensor controls, 100% of space	1.1	9,113	-100	\$1,242	\$4,953	4.0			
Lighting power in Garage reduced to 0.19 W/ft²	0.6	4,817	-52	\$655	\$664	1.0	x	x	
Lighting power in Garage reduced to 0.17 W/ft²	1.1	9,633	-106	\$1,309	\$1,515	1.2			x
Lighting power in Garage reduced to 0.15 W/ft²	1.7	14,449	-160	\$1,963	\$3,453	1.8			
Lighting power in Garage reduced to 0.13 W/ft²	2.2	19,265	-216	\$2,614	\$7,872	3.0			
Lighting power in Garage reduced to 0.11 W/ft²	2.8	24,078	-274	\$3,264	\$17,944	5.5			
Service Water Heating									
Facility									
85% SWH efficiency	0	0	431	\$335	\$1,237	3.7			
90% SWH efficiency	0	0	920	\$715	\$2,475	3.5	x		
95% SWH efficiency	0	0	1,257	\$975	\$3,712	3.8		x	x
Gas fired on-demand SWH	0	0	577	\$446	\$7,614	17.1			
Apartments									
WaterSense showerheads	0	0	760	\$588	\$1,420	2.4		x	x

Bundle Results Summary

Bundled Annual Savings

Bundle Description	Peak kW Savings	% Peak kW Savings	kWh Savings	% kWh Savings	Gas Savings (Therm)	% Gas Savings	Energy Cost Savings
Bundle 1	13	9	23,269	3	13,689	42	\$13,977
Bundle 2	13	9	72,733	8	14,671	45	\$21,881
Bundle 3	33	22	114,014	12	19,455	59	\$31,549
Bundle 4	13	9	68,321	7	13,689	42	\$20,481
Bundle 5	13	9	126,651	14	14,671	45	\$29,665
Bundle 6	33	22	172,213	19	19,455	59	\$39,954

Simple Payback with Incentive

Bundle Description	Energy Cost Savings	Incremental First Cost	Electric Incentive	Gas Incentive	Total Incentive	Payback in Years (after incentive)
Bundle 1	\$13,977	\$45,734	\$3,025	\$10,267	\$13,292	2.3
Bundle 2	\$21,881	\$99,945	\$9,455	\$11,003	\$20,458	3.6
Bundle 3	\$31,549	\$188,013	\$14,822	\$14,591	\$29,413	5.0
Bundle 4	\$20,481	\$38,360	\$3,543*	\$4,095*	\$7,638*	1.5*
Bundle 5	\$29,665	\$95,799	\$16,465	\$11,003	\$27,468	2.3
Bundle 6	\$39,954	\$179,720	\$22,388	\$14,591	\$36,979	3.6

* The Design Assistance incentive cannot reduce the simple payback below 1.5 years. The incentive for Bundle 4 has been reduced to reach the 1.5 year threshold.

Key Model Inputs

Core Definition

Space Asset Area	Type	Area (ft²)	Floors	Units	Arrangement	Flr/Flr Height
Circulation	Common Areas - Multifamily	8,250	3	n/a	Hosted	12
Apartments	Apartments - Low Rise	56,700	3	71	Stacked	12
Common Areas	Common Areas - Multifamily	1,930	1	n/a	Hosted	12
Garage	Garage - Enclosed	28,300	1	n/a	Adjacent / Grade	10

Schedules

Space Asset Area	People Density (ft²/person)	Daily Use							Hours per Day	Applicable Months											
		S	M	T	W	T	F	S		J	F	M	A	M	J	J	A	S	O	N	D
<u>Circulation</u>	n/a	●	●	●	●	●	●	●	24	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<u>Apartments</u>	380.0	●	●	●	●	●	●	●	16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<u>Common Areas</u>	100.0	●	●	●	●	●	●	●	16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<u>Garage</u>	n/a	●	●	●	●	●	●	●	24	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- Full Use
- Partial Use
- No Use

Thermostat

Space Asset Area	Heating Set Point (°F)		Cooling Set Point (°F)	
	Occupied	Unoccupied	Occupied	Unoccupied
<u>Circulation</u>	70	60	75	80
<u>Apartments</u>	70	70	75	75
<u>Common Areas</u>	70	60	75	80
<u>Garage</u>	50	50	80	85

Ventilation Requirements

Space Asset Area	Outside Air Per Person (ft ³ /min/person)	Outside Air Per Area (ft ³ /min/ft ²)	Exhaust Flow Per Area (ft ³ /min/ft ²)	Air Changes (ACH)	
				Occupied	Unoccupied
<u>Circulation</u>	0.0	0.06	0.00	n/a	n/a
<u>Apartments</u>	5.0	0.06	0.10	n/a	n/a
<u>Common Areas</u>	5.0	0.06	0.00	n/a	n/a
<u>Garage</u>	0.0	0.00	0.75	n/a	n/a

Power & Process Load

Space Asset Area	Power Density (W/ft ²)	Process Load	
	Equipment	Load (Btu/hr/ft ²)	Fuel Source
<u>Circulation</u>	0.10	0.00	Gas
<u>Apartments</u>	0.62	0.00	Gas
<u>Common Areas</u>	0.50	0.00	Gas
<u>Garage</u>	0.00	0.00	Gas

Utility Rates

Fuel	Utility	Conversion factor	Rate
Electric	Xcel Energy	1	Average rate: \$0.1444 per kWh
Gas	Xcel Energy	1	Average rate: \$0.78 per therm

Wisconsin Focus on Energy, Design Assistance

Bundle Selection Form for Cannery Trail Residences, LLC, Eau Claire, WI

Please select a bundle below, note any required modifications, and complete the contact information. After completion, please return this form to Focus on Energy.

Focus on Energy

Attn: Bundle Selection Team

Email: bundleselection@twgi.com

Or fax to 952.938.1480

Goal Date: August 19, 2019

After reviewing the results and incentives as outlined in this document, we have chosen the following bundle for implementation. We hereby request that Focus on Energy note this selection, which will begin the verification process.

Bundle compositions and payback analysis are included for reference.

Please Select One

HVAC 1

Bundle 1 ☐

Bundle 2 ☐

Bundle 3 ☐

HVAC 2

Bundle 4 ☐

Bundle 5 ☐

Bundle 6 ☐

Please note any special circumstances or bundle modifications here:

Name

Company

Date

Copies:

Attendees shown in **bold**.

Name	Company	Email	Phone
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