



Upton Community Center

Building Committee Meeting

April 6, 2021

AGENDA

- **Updates on Design – Interior Renderings**
- **Update on Energy Model**
- **Update on LEED**



FRIENDS

BOOK

SALE



FRIENDS

BOOK

SALE















CHILDREN'S SPACE



CHILDREN'S SPACE





















ENERGY MODEL



Garcia, Galuska & DeSousa
Consulting Engineers Inc.
375 Faunce Corner Road, Suite D, Dartmouth, MA 02747-1258

Energy Cost savings of 33.8% and an Energy Use Savings of 41.6%.
This would equate to 13 LEED v4.0 points for EAc1.

Upton Community Center - LEED v4.0 Energy Savings Summary

Baseline	Description	Annual Elec. Cons. (kWh)	Annual Gas Cons. (MBTU)	Annual Electric Cost	Annual Gas Cost	Combined Utility Cost	Annual Utility \$/s.f.	Annual kBTU/s.f. (EUI)	Combined Expense Savings*	Energy Cost Savings Percentage**	Energy Savings Percentage***
LEED v4.0 Baseline	1. ASHRAE Standard 90.1-2010 Envelope (Wall Insulation R-13 + R-7.5 c.i., Roof Insulation R-20 c.i., Windows 0.55 U-Value/0.40 SHGC, Curtainwall 0.45 U-Value/0.40 SHGC) 2. ASHRAE Standard 90.1-2010 Mechanical Systems (System 3 - Packaged Constant Volume Single-Zone Rooftop Units) 3. ASHRAE Standard 90.1-2010 Lighting Systems (1.18 w/s.f.) 4. ASHRAE Standard 90.1-2010 Domestic Hot Water Heaters	180,120	509.5	\$36,672	\$4,612	\$41,284	\$2.66	72.38	-	-	-

Option	Description	Annual Elec. Cons. (kWh)	Annual Gas Cons. (MBTU)	Annual Electric Cost	Annual Gas Cost	Combined Utility Cost	Annual Utility \$/s.f.	Annual kBTU/s.f. (EUI)	Combined Expense Savings*	Energy Cost Savings Percentage**	Energy Savings Percentage***
Design Building	1. Design Mechanical Systems (Displacement Ventilation Systems with High-Efficiency Gas-Fired Boiler Plant) 2. Design Envelope Assemblies (Wall Insulation R-20 cavity + R-3.8 c.i., Roof Insulation R-30 c.i., Operable Windows 0.30 U-Value/0.40 SHGC, Fixed Windows 0.25 U-Value/0.40 SHGC) 3. Design High-Efficiency Lighting Systems (0.70 w/s.f.) 4. Design Domestic Hot Water Heaters	123,800	234.5	\$25,205	\$2,123	\$27,328	\$1.76	42.30	\$13,956	33.8%	41.6%

*Combined expense savings is the difference between the combined annual expense of the baseline and building in comparison.

**Energy cost savings percentage is the difference between the annual energy costs of the baseline and building in comparison.

***Energy savings percentage is the difference between the annual energy consumption of the baseline and building in comparison.

Note 1: Values based on energy model performed for HVAC System Life Cycle Cost Analysis purposes. A 30% safety factor should be applied for budgeting purposes to account for potential variances to the actual operation of the building. Per ASHRAE Standard 90.1:

Neither the proposed building performance nor the baseline building performance are predictions of actual energy consumption or costs for the proposed design after construction. Actual experience will differ from these calculations due to variations such as occupancy, building operation and maintenance, weather, energy use not covered by this procedure, changes in energy rates between design of the building and occupancy, and the precision of the calculation tool.

LEED SCORECARD

LEED V4.0 rating system, 46 points + 7 maybe. Certifiable, with potential to push to Silver.



LEED v4 for BD+C: New Construction and Major Renovation Project Checklist

Project Name: Upton Community Center
Date: 5-Apr-21

Y ? N
1

Credit Integrative Process

1

3	1	12	Location and Transportation	16
			Credit LEED for Neighborhood Development Location	16
1			Credit Sensitive Land Protection	1
		2	Credit High Priority Site	2
		5	Credit Surrounding Density and Diverse Uses	5
		5	Credit Access to Quality Transit	5
	1		Credit Bicycle Facilities	1
1			Credit Reduced Parking Footprint	1
1			Credit Green Vehicles	1

3	3	4	Sustainable Sites	10
Y			Prereq Construction Activity Pollution Prevention	Required
	1		Credit Site Assessment	1
		2	Credit Site Development - Protect or Restore Habitat	2
1			Credit Open Space	1
1	2		Credit Rainwater Management	3
		2	Credit Heat Island Reduction	2
1			Credit Light Pollution Reduction	1

6	0	5	Water Efficiency	11
Y			Prereq Outdoor Water Use Reduction	Required
Y			Prereq Indoor Water Use Reduction	Required
Y			Prereq Building-Level Water Metering	Required
2			Credit Outdoor Water Use Reduction	2
3		3	Credit Indoor Water Use Reduction	6
		2	Credit Cooling Tower Water Use	2
1			Credit Water Metering	1

14	1	18	Energy and Atmosphere	33
Y			Prereq Fundamental Commissioning and Verification	Required
Y			Prereq Minimum Energy Performance	Required
Y			Prereq Building-Level Energy Metering	Required
Y			Prereq Fundamental Refrigerant Management	Required
		6	Credit Enhanced Commissioning	6
13		5	Credit Optimize Energy Performance	18
		1	Credit Advanced Energy Metering	1
1	1		Credit Demand Response	2
		3	Credit Renewable Energy Production	3
		1	Credit Enhanced Refrigerant Management	1
		2	Credit Green Power and Carbon Offsets	2

5	0	8	Materials and Resources	13
Y			Prereq Storage and Collection of Recyclables	Required
Y			Prereq Construction and Demolition Waste Management Planning	Required
		5	Credit Building Life-Cycle Impact Reduction	5
1		1	Credit Building Product Disclosure and Optimization - Environmental Product Declarations	2
1		1	Credit Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1		1	Credit Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit Construction and Demolition Waste Management	2

10	2	4	Indoor Environmental Quality	16
Y			Prereq Minimum Indoor Air Quality Performance	Required
Y			Prereq Environmental Tobacco Smoke Control	Required
	2		Credit Enhanced Indoor Air Quality Strategies	2
3			Credit Low-Emitting Materials	3
1			Credit Construction Indoor Air Quality Management Plan	1
	1	1	Credit Indoor Air Quality Assessment	2
1			Credit Thermal Comfort	1
1	1		Credit Interior Lighting	2
		3	Credit Daylight	3
1			Credit Quality Views	1
1			Credit Acoustic Performance	1

3	0	3	Innovation	6
2		3	Credit Innovation	5
1			Credit LEED Accredited Professional	1

2	0	2	Regional Priority	4
1			Credit Regional Priority: Outdoor Water Use Reduction (>1)	1
1			Credit Regional Priority: Optimize Energy Performance (>7)	1
		1	Credit Regional Priority: Specific Credit	1
		1	Credit Regional Priority: Specific Credit	1

46	7	57	TOTALS	Possible Points: 110
Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110				



Thank You