Measure Name	Measure Value	% Energy Savings	% GHG Savings	% Peak Savings	npv_total_per_m_sq	bc_step_code_tedi_kwh_per_m_sq	Envelope ($/m2)	Heating & Cooling ($/m2)	Lighting ($/m2)	SHW ($/m2)	Ventilation & Ductwork ($/m2)	Total ($/m2)
:shw_scale	0.25	29.60	17.90	4.10	587.38	39.29	0.00	0.00	0.00	2.30	0.00	2.30
:shw_scale	0.5	19.70	11.90	1.70	596.52	38.77	0.00	0.00	0.00	1.80	0.00	1.80
:dcv_type	CO2_based_DCV	17.30	5.90	0.70	618.23	12.39	0.00	0.00	0.00	0.00	-12.00	-12.00
:erv_package	Plate-All	13.00	6.90	0.70	605.39	21.34	0.00	0.00	0.00	0.00	0.00	0.00
:erv_package	Plate-Existing	13.00	6.90	0.70	605.39	21.34	0.00	0.00	0.00	0.00	0.00	0.00
:erv_package	Rotary-All	12.50	6.40	0.50	606.08	21.62	0.00	0.00	0.00	0.00	0.00	0.00
:erv_package	Rotary-Existing	12.50	6.40	0.50	606.08	21.62	0.00	0.00	0.00	0.00	0.00	0.00
:shw_scale	0.75	9.90	5.90	0.60	605.66	38.27	0.00	0.00	0.00	1.30	0.00	1.30
:electrical_loads_scale	0.5	4.50	11.50	14.70	599.60	40.21	0.00	0.50	0.00	0.00	0.20	0.70
:lights_scale	0.50	2.70	6.70	14.40	605.97	39.16	0.00	0.40	0.00	0.00	0.20	0.60
:boiler_eff	Viessmann Vitocrossal 300 CT3-17 96.2% Efficient Condensing Gas Boiler	2.40	1.30	0.00	613.56	37.77	0.00	0.00	0.00	0.00	0.00	0.00
:dcv_type	Occupancy_based_DCV	1.90	0.90	0.00	619.36	34.99	0.00	0.00	0.00	0.00	-5.20	-5.20
:infiltration_scale	0.5	1.60	0.30	0.20	614.36	34.67	0.00	0.50	0.00	0.00	0.00	0.50
:nv_type	add_nv	1.40	2.80	2.50	633.54	37.86	0.00	0.00	0.00	0.00	-21.80	-21.80
:shw_eff	Natural Gas Power Vent with Electric Ignition	1.40	0.80	0.00	614.35	37.77	0.00	0.00	0.00	0.00	0.00	0.00
:fixed_wind_solar_trans	0.3	1.20	6.80	15.90	600.47	42.38	-3.50	6.80	0.00	0.00	2.80	6.10
:fixed_wind_solar_trans	0.4	1.00	5.00	11.10	604.57	40.59	-1.80	4.50	0.00	0.00	1.80	4.40
:fixed_wind_solar_trans	0.2	0.80	8.00	19.80	595.90	44.38	-1.60	7.70	0.00	0.00	3.10	9.20
:fixed_wind_solar_trans	0.5	0.70	2.70	5.80	609.87	39.04	-1.80	3.10	0.00	0.00	0.80	2.10
:daylighting_type	add_daylighting_controls	0.50	0.90	9.40	620.46	37.85	0.00	0.10	-6.90	0.00	0.30	-6.20
:adv_dx_units	Lennox Model L Ultra High Efficiency	0.10	0.30	2.80	613.82	37.77	0.00	0.00	0.00	0.00	1.20	1.20
:adv_dx_units	Carrier WeatherExpert	0.10	0.30	2.10	615.66	37.77	0.00	0.00	0.00	0.00	-0.60	-0.60
:ground_floor_cond	0.379	0.10	0.00	-0.40	618.37	37.45	-2.80	0.00	0.00	0.00	0.00	-2.90
:ext_wall_cond	0.183	0.10	0.00	0.00	616.40	37.61	-1.10	0.00	0.00	0.00	0.00	-1.00
:ext_roof_cond	0.121	-0.10	0.00	0.00	615.09	37.81	0.40	0.00	0.00	0.00	0.00	0.40
:ext_roof_cond	0.138	-0.20	-0.10	-0.10	613.65	37.99	2.00	0.00	0.00	0.00	0.00	2.00
:ext_wall_cond	0.21	-0.20	-0.10	-0.10	613.14	38.24	2.60	-0.10	0.00	0.00	-0.10	2.50
:ext_roof_cond	0.142	-0.20	-0.10	-0.10	613.42	38.03	2.20	0.00	0.00	0.00	0.00	2.20
:ext_roof_cond	0.162	-0.30	-0.20	-0.10	611.71	38.23	4.10	-0.10	0.00	0.00	0.00	4.10
:ext_wall_cond	0.193	-0.60	-0.40	-0.20	610.64	38.55	5.70	-0.20	0.00	0.00	-0.10	5.40
:ext_roof_cond	0.183	-0.60	-0.40	-0.20	611.77	38.45	4.50	-0.20	0.00	0.00	-0.10	4.20
:fixed_window_cond	1.6	-0.70	-0.20	0.00	599.15	39.00	16.90	-0.20	0.00	0.00	-0.10	16.60
:ext_roof_cond	0.227	-0.90	-0.60	-0.30	610.48	38.89	6.70	-0.80	0.00	0.00	-0.10	5.80
:ext_wall_cond	0.247	-0.90	-0.40	-0.20	609.37	39.12	7.00	-0.20	0.00	0.00	-0.20	6.70
:ext_wall_cond	0.278	-1.50	-0.70	-0.30	608.48	39.87	8.50	-0.40	0.00	0.00	-0.20	8.00
:ext_wall_cond	0.314	-2.00	-0.90	-0.40	604.81	40.75	12.90	-0.60	0.00	0.00	-0.80	12.00
:fixed_window_cond	2.2	-3.70	-1.10	0.10	560.12	43.84	58.40	-0.90	0.00	0.00	-0.50	57.10
:fixed_window_cond	2.4	-4.70	-1.50	0.10	552.83	45.50	66.90	-1.60	0.00	0.00	-0.50	65.00
:airloop_economizer_type	DifferentialEnthalpy	-21.00	-8.20	0.10	628.01	71.85	0.00	0.00	0.00	0.00	0.00	0.00
:airloop_economizer_type	DifferentialDryBulb	-21.10	-8.30	0.10	628.13	71.84	0.00	0.00	0.00	0.00	0.00	0.00
:ecm_system_name	HS13_ASHP_VRF	0.00	0.00	0.00	710.12	40.56	0.00	0.00	0.00	0.00	0.00	0.00
:ecm_system_name	HS14_CGSHP_FanCoils	0.00	0.00	0.00	753.81	36.40	0.00	0.00	0.00	0.00	0.00	0.00
:ecm_system_name	HS11_ASHP_PTHP	0.00	0.00	0.00	627.58	40.58	0.00	0.00	0.00	0.00	0.00	0.00
:ecm_system_name	HS08_CCASHP_VRF	0.00	0.00	0.00	718.67	40.56	0.00	0.00	0.00	0.00	0.00	0.00
:ecm_system_name	HS12_ASHP_Baseboard	0.00	0.00	0.00	617.08	37.80	0.00	0.00	0.00	0.00	0.00	0.00
:ecm_system_name	HS09_CCASHP_Baseboard	0.00	0.00	0.00	623.57	37.80	0.00	0.00	0.00	0.00	0.00	0.00

Sensitivity of :ext_roof_cond by EUI

Sensitivity of :ext_roof_cond by Costing

Sensitivity of :erv_package by EUI

Sensitivity of :erv_package by Costing

Sensitivity of :fixed_window_cond by EUI

Sensitivity of :fixed_window_cond by Costing

Sensitivity of :electrical_loads_scale by EUI

Sensitivity of :electrical_loads_scale by Costing

Sensitivity of :shw_scale by EUI

Sensitivity of :shw_scale by Costing

Sensitivity of :dcv_type by EUI

Sensitivity of :dcv_type by Costing

Sensitivity of :infiltration_scale by EUI

Sensitivity of :infiltration_scale by Costing

Sensitivity of :ground_floor_cond by EUI

Sensitivity of :ground_floor_cond by Costing

Sensitivity of :ext_wall_cond by EUI

Sensitivity of :ext_wall_cond by Costing

Sensitivity of :adv_dx_units by EUI

Sensitivity of :adv_dx_units by Costing

Sensitivity of :shw_eff by EUI

500

cost_equipment_heating_and_cooling_total_cost_per_m_sq
cost_equipment_lighting_total_cost_per_m_sq
cost_equipment_shw_total_cost_per_m_sq
cost_equipment_ventilation_total_cost_per_m_sq
cost_equipment_thermal_bridging_total_cost_per_m_sq
cost_equipment_envelope_total_cost_per_m_sq

400

300

$/M2

329.068   329.068

200

100

45.307   45.307
5.017   5.017
39.764   39.764
58.838   58.838

0

NECB_Default   Natural Gas Power Vent with Electric Ignition
:shw_eff

500

:ecm_system_name
● HS13_ASHP_VRF
● NECB_Default
● HS14_CGSHP_FanCoils
● HS11_ASHP_PTHP
● HS08_CCASHP_VRF
● HS12_ASHP_Baseboard
● HS09_CCASHP_Baseboard

490

480

cost_equipment_total_cost_per_m_sq

470

460

−0.04   −0.02   0.00   0.02   0.04
baseline_energy_percent_better

Sensitivity of :ecm_system_name by EUI

0.6

energy_eui_cooling_gj_per_m_sq
energy_eui_heating_gj_per_m_sq
energy_eui_fans_gj_per_m_sq
energy_eui_heat_recovery_gj_per_m_sq
energy_eui_interior_lighting_gj_per_m_sq
energy_eui_interior_equipment_gj_per_m_sq
energy_eui_water_systems_gj_per_m_sq
energy_eui_pumps_gj_per_m_sq

0.5

0.004   0.005   0.004   0.005   0.004   0.012   0.237

0.237   0.237   0.237   0.237   0.237   0.237

GJ/M2

0.4

0.3

0.063   0.063   0.063   0.063   0.063   0.063
0.036   0.036   0.036   0.036   0.036   0.036
0.009   0.009   0.009   0.009   0.009   0.237   0.009
0.021   0.041   0.021   0.041   0.021   0.063   0.041

0.2

0.103   0.103   0.152   0.147   0.145   0.036   0.179
0.009
0.024
0.1   0.066

0.034   0.038   0.036   0.038   0.034   0.025   0.039
0.0

HS08_CCASHP_VRF HS09_CCASHP_Baseboard HS11_ASHP_PTHP HS12_ASHP_Baseboard HS13_VRF HS14_CGSHP_FanCoils NECB_Default
:ecm_system_name

Sensitivity of :ecm_system_name by Costing

Sensitivity of :fixed_wind_solar_trans by EUI

Sensitivity of :fixed_wind_solar_trans by Costing

Sensitivity of :chiller_type by EUI

Sensitivity of :chiller_type by Costing

Sensitivity of :nv_type by EUI

Sensitivity of :nv_type by Costing

Sensitivity of :daylighting_type by EUI

Sensitivity of :daylighting_type by Costing

:boiler_eff

Sensitivity of :boiler_eff by EUI

Sensitivity of :boiler_eff by Costing

Sensitivity of :airloop_economizer_type by EUI

Sensitivity of :airloop_economizer_type by Costing

Sensitivity of :lights_scale by EUI

Sensitivity of :lights_scale by Costing