



P³I Analysis
of
Individual HVAC Control
Better / Best Design Alternatives
within the
P³I Platform®
School Building Baseline Model

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1. Executive Summary

*This P³I.GLOBAL - P³I Analysis represents the evaluation of BETTER and BEST **Individual HVAC Control DESIGN** performance outcome alternatives as compared to our P³I Platform[®] Lowest-First-Cost Minimum-Code (LFCMC) marketplace representable School Building baseline. This P³I Analysis focuses on making transparent the Natural / Environmental (Planet), Human / Social (People), and Economic / Financial (Profit) Impact asset value creation potential available when generationally-responsible best practices are deployed. The information that follows is segmented into specific Planet, People, Profit Impact dollar value outputs and are further broken into who (asset Owner, asset Occupant, or Community) benefits.*

No specific solutions are highlighted in this P³I Analysis, although P³I.GLOBAL utilized real world experience to model the most cost-effective materials, means, and methods necessary to achieve the performance objectives.

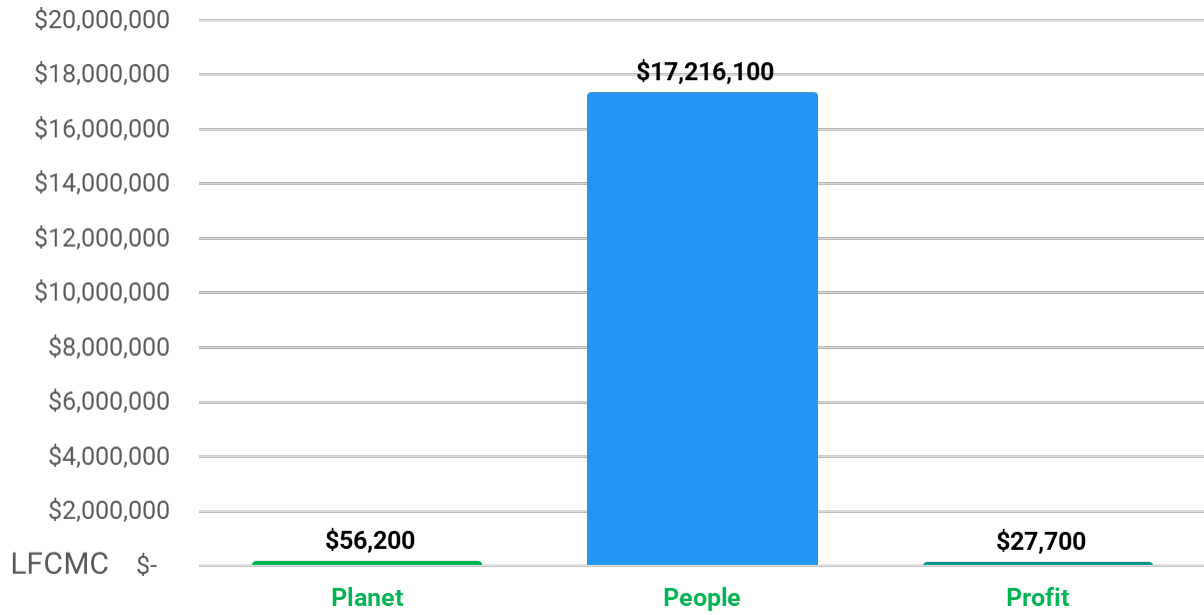
As a reminder:

- 1. “BETTER” alternatives represent what the marketplace can easily achieve with an experienced team and minimal capital expenditure.*
- 2. “BEST” alternatives represent performance outcomes achievable with proven, mature, readily-available, off-the-shelf solutions that typically require significant additional upfront capital expenditure.*

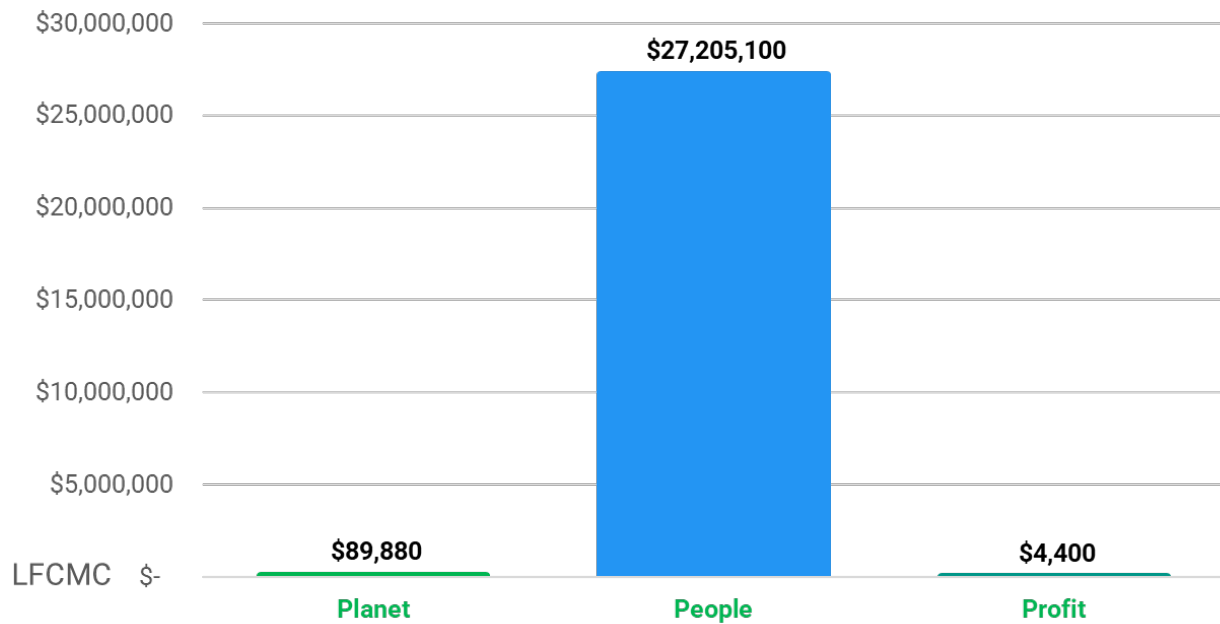
P³I.GLOBAL is focused on accelerating deployment of existing solution that have immediate marketplace relevance and impact. Therefore, P³I.GLOBAL has chosen NOT to include theoretical performance outcomes based on what if scenarios in our P³I Platform[®]. The marketplace struggles to get to BETTER. The P³I Platform[®] will help it get to BEST. If you need a custom investment grade analysis of your existing or next project, the following link will take you to our P³I.GLOBAL website where you can pick the right solution for you: www.p3i.global/P3IAnalysis

School Typology			Individual HVAC Control	
Design Inputs	Units	Base Case	Better HVAC Controllability	Best HVAC Controllability
Electricity Use	EUI (kBtu / ft2)	51.3		
Electricity Use Change	%	0%	5%	8%
LCCA	\$	\$0	\$100,000	\$200,000
Materials	kg CO2e	4,013,528.44		
Renewable Energy	kWh	0		
Carbon Offsets	Tonnes	0		
RECs	MWh	0		
Recreation	Amenity Types	None		
Ground Cover	% Green Space	25%		
Potable Water Use	Gallons	1,790,000		
Rainwater Harvesting	Gallons	0		
Graywater Reuse	Gallons	0		
Ventilation Rate	CFM / person	13.8		
Thermal Comfort Controls	% of Employees	25%	55%	100%
Winter Setpoint Temp	Fahrenheit	70	71	72
Summer Setpoint Temp	Fahrenheit	75	74	72
Filtration	MERV Rating	6		
Interior Lighting Controls	% of Employees	25%		
Daylighting Availability	% of Employees	55%		
Quality Views	% of Employees	100% - Level 1		
Roofing	SRI	5.5		
Bicycle Facilities	Facilities Provided	None		
Green Vehicles	# EV Chargers	0		
Other Costs / Benefits	\$	\$0		

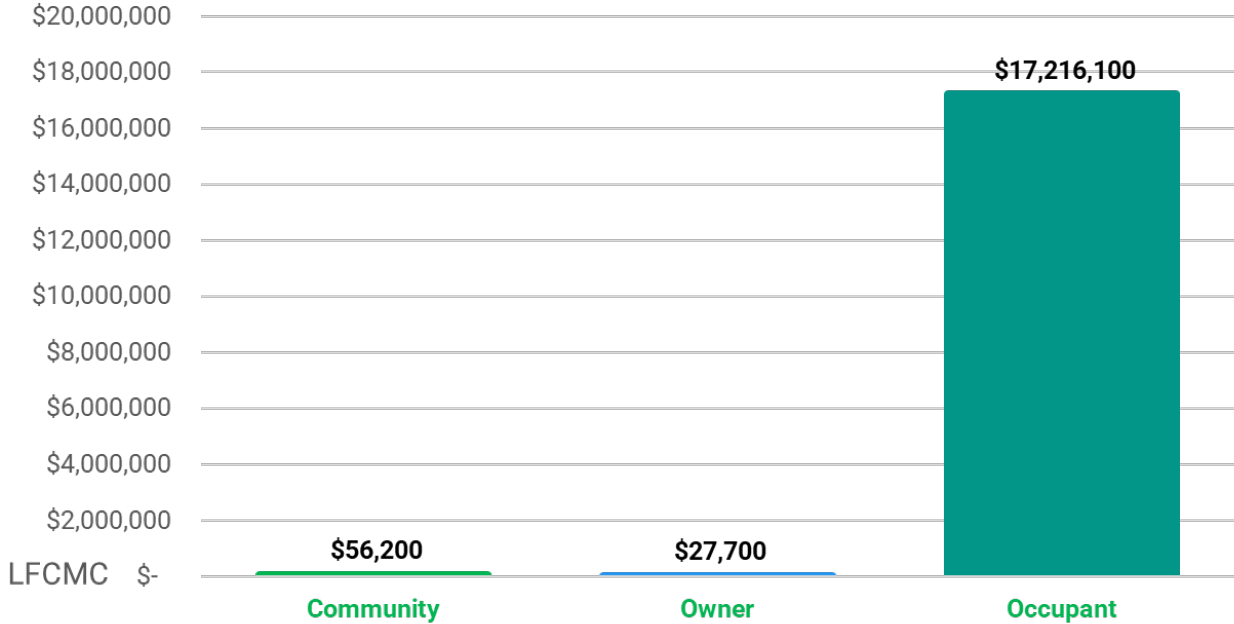
P³I - NPV Dollar Impacts by Planet People Profit Type, Better HVAC Controllability



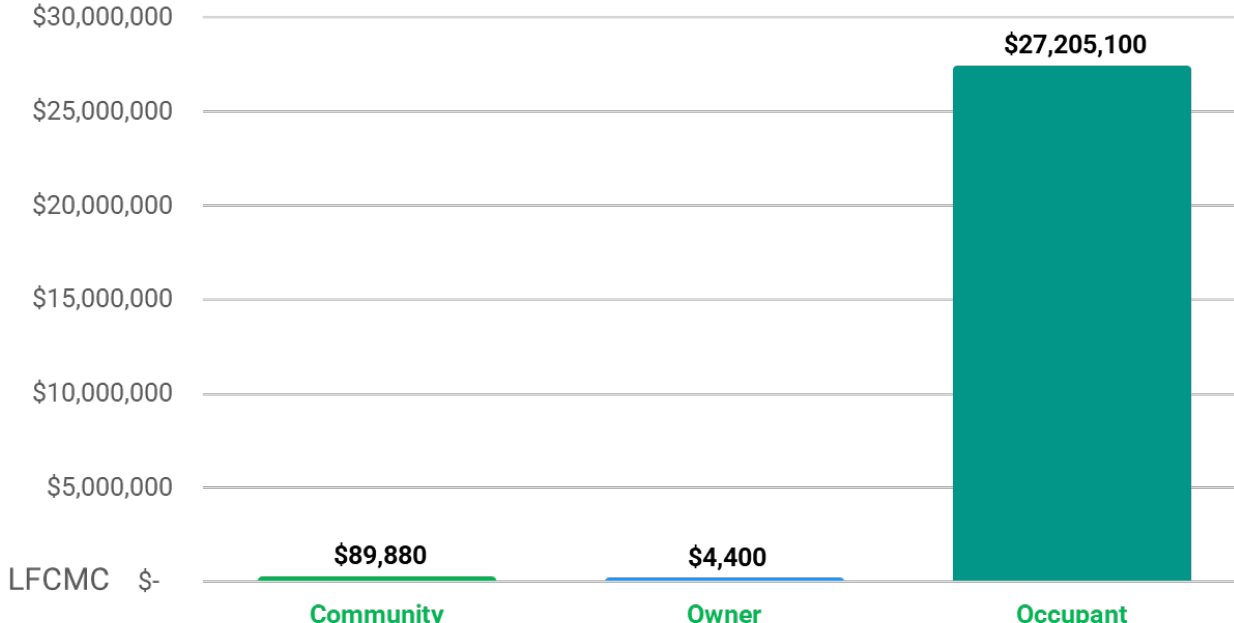
P³I - NPV Dollar Impacts by Planet People Profit Type, Best HVAC Controllability



P3I - NPV Dollar Impacts by Planet People Profit Stakeholders, Better HVAC Controllability



P3I - NPV Dollar Impacts by Planet People Profit Stakeholders, Best HVAC Controllability



Better HVAC Controllability Results

Table of Results Metrics

Metric	Result
Net Present Value (NPV)	\$17,300,000
Sustainable Return on Investment (SROI)	17300.0%
Benefit Cost Ratio (BCR)	174.0

Detailed Cost/Benefit Analysis Outputs:

The following table presents individual modeled **Cost/Benefit Categories** organized by **Stakeholders** (Owner, Community, and Occupant), **Cost/Benefit Types** (Environmental, Social, and Financial), and output as 50-year lifetime Net Present Values (**NPV**) dollar impacts.

Table of Combined Category, Stakeholder, Type, and NPV Impacts

Cost Benefit Category	Stakeholder	Benefit/Cost Type	Lifetime NPV
Financial Savings from Electricity	Owner	Financial	\$127,700
Social Value Air Pollution	Community	Environmental	\$3,800
GHG Emissions	Community	Environmental	\$52,400
Upfront Capital Costs	Owner	Financial	-\$100,000
Health	Occupant	Social	\$229,200
Productivity	Occupant	Social	\$367,900
Student Productivity	Occupant	Social	\$16,619,000

Carbon Footprint

Carbon Emissions Reductions by Feature

The following table shows the total tonnes of carbon equivalent reduced by the design for each feature, compared to the Base Case.

Feature	Tonnes of CO ₂ Equivalents
---------	---------------------------------------

Mechanical	232.51113661111592
Electrical	0
Water Analysis	0

Carbon Story

The following table contains the total tonnes of carbon equivalent generated, avoided, captured by vegetation, and offset by the design across the entire study period. The carbon quantities shown in the table are absolute values (they are not relative to the base case).

The embodied carbon refers to the equivalent carbon embodied in the building materials, that goes from the energy spent on the extraction of the raw materials to shipping and installation. The operational carbon is divided between the carbon generated due to energy consumption and water usage.

Feature	Tonnes of CO2 Equivalents
Carbon Emitted During Operations (Energy Consumption)	11,786
Embodied Carbon (Building Materials)	11,564
Carbon Sequestered by On-Site Vegetation	-39
Carbon Emitted During Operations (Water Consumption)	66

Best HVAC Controllability Results

Table of Results Metrics

Metric	Result
Net Present Value (NPV)	\$27,299,380
Sustainable Return on Investment (SROI)	13649.7%
Benefit Cost Ratio (BCR)	137.5

Detailed Cost/Benefit Analysis Outputs:

The following table presents individual modeled **Cost/Benefit Categories** organized by **Stakeholders** (Owner, Community, and Occupant), **Cost/Benefit Types** (Environmental, Social, and Financial), and output as 50-year lifetime Net Present Values (**NPV**) dollar impacts.

Table of Combined Category, Stakeholder, Type, and NPV Impacts

Cost Benefit Category	Stakeholder	Benefit/Cost Type	Lifetime NPV
Financial Savings from Electricity	Owner	Financial	\$204,400
Social Value Air Pollution	Community	Environmental	\$6,080
GHG Emissions	Community	Environmental	\$83,800
Upfront Capital Costs	Owner	Financial	-\$200,000
Health	Occupant	Social	\$371,900
Productivity	Occupant	Social	\$542,200
Student Productivity	Occupant	Social	\$26,291,000

Carbon Footprint

Carbon Emissions Reductions by Feature

The following table shows the total tonnes of carbon equivalent reduced by the design for each feature, compared to the Base Case.

Feature	Tonnes of CO ₂ Equivalents
Mechanical	372.0178185777851
Electrical	0
Water Analysis	0

Carbon Story

The following table contains the total tonnes of carbon equivalent generated, avoided, captured by vegetation, and offset by the design across the entire study period. The carbon quantities shown in the table are absolute values (they are not relative to the base case).

The embodied carbon refers to the equivalent carbon embodied in the building materials, that goes from the energy spent on the extraction of the raw materials to shipping and installation. The

operational carbon is divided between the carbon generated due to energy consumption and water usage.

Feature	Tonnes of CO2 Equivalents
Carbon Emitted During Operations (Energy Consumption)	11,646
Embodied Carbon (Building Materials)	11,564
Carbon Sequestered by On-Site Vegetation	-39
Carbon Emitted During Operations (Water Consumption)	66

Appendix A

The following tables show each design alternative along with the base case inputs for comparison.

Better HVAC Controllability, Reference Case

Clean Energy	Base Case	Design Case
Renewable Energy		
Are there tax or local utility incentives?	Yes	No
What is the value of annual tax credits for installing renewable energy systems?	0 Dollars	0 Dollars
What is the duration of this program?	1 Years	1 Years
What is the value of annual local utility incentives for installing renewable energy systems?	0 Dollars	0 Dollars
What is the duration of this program?	1 Years	1 Years
Is renewable energy sold to the grid?	Yes	No
How much renewable energy is being sold to the grid per year?	0 kWh	0 kWh
What is the wholesale price?	0 \$/kWh	0 \$/kWh
What is the annual premium above wholesale price, if any?	0 Percent	0 Percent
What is the length of the contract for this premium?	50 Years	50 Years
Renewable Energy Production Items		

Carbon Offsets		
Annual carbon equivalent emissions addressed by carbon offsets	0 Tonnes	0 Tonnes
Start year of carbon offsets purchase	2021 Years	2021 Years
Contract length	0 Years	0 Years
Annual growth in the number of carbon offsets purchased	0 Percent	0 Percent
Price of carbon offsets	0 \$/tonne	0 \$/tonne
Annual real growth rate in price of carbon offsets purchased	0 Percent	0 Percent
Renewable Energy Credits (RECs)		
Location where the REC generated	TX	TX
Annual amount of electricity addressed by renewable energy credits	0 MWh	0 MWh
Start year of RECs purchase	2021 Years	2021 Years
Length of the contract	0 Years	0 Years
Annual growth in the number of RECs purchased	0 Percent	0 Percent
Price of renewable energy credits	0 \$/MWh	0 \$/MWh
Annual real growth rate in price of RECs purchased	0 Percent	0 Percent
Energy Storage		

Energy storage	0 kWh	0 kWh
Useful life of battery/storage system	0 Years	0 Years
Weekday electricity usage schedule	None	7 am. to 6 pm.
Weekend electricity usage schedule	None	7 am. to 6 pm.

Energy Module	Base Case	Design Case
	Electrical - Interior Lighting - Electricity Annual electricity consumption: 260025.01 kWh	Electrical - Interior Lighting - Electricity Annual electricity consumption: 260025.01 kWh
	Electrical - Plug Load/Equipment - Natural Gas Annual electricity consumption: 462.68 MMBtu	Electrical - Plug Load/Equipment - Natural Gas Annual electricity consumption: 462.68 MMBtu
	Mechanical - Heating - Natural Gas Annual electricity consumption: 43.56 MMBtu	Mechanical - Heating - Natural Gas Annual electricity consumption: 41.382 MMBtu
	Mechanical - Fans - Electricity Annual electricity consumption: 156442.42 kWh	Mechanical - Fans - Electricity Annual electricity consumption: 148620.299 kWh
	Water - Domestic Hot Water - Electricity Annual electricity consumption: 9701.36 kWh	Water - Domestic Hot Water - Electricity Annual electricity consumption: 9701.36 kWh
	Water - Domestic Hot Water - Natural Gas Annual electricity consumption: 125.89 MMBtu	Water - Domestic Hot Water - Natural Gas Annual electricity consumption: 125.89 MMBtu
	Mechanical - Pumps - Electricity Annual electricity consumption: 138.97 kWh	Mechanical - Pumps - Electricity Annual electricity consumption: 132.0215 kWh
	Mechanical - Cooling - Electricity	Mechanical - Cooling - Electricity

	Annual electricity consumption: 412362.29 kWh	Annual electricity consumption: 391744.17549999995 kWh
	Electrical - Exterior Lighting - Electricity Annual electricity consumption: 16645.93 kWh	Electrical - Exterior Lighting - Electricity Annual electricity consumption: 16645.93 kWh
	Electrical - Plug Load/Equipment - Electricity Annual electricity consumption: 462825.89 kWh	Electrical - Plug Load/Equipment - Electricity Annual electricity consumption: 462825.89 kWh

Mechanical	Base Case	Design Case
Ventilation		
What is the building ventilation rate?	13.8 cfm/person	13.8 cfm/person
Thermal Comfort		
Percent of employees who have access to thermal comfort controls	25 Percent	55 Percent
What is the setpoint temperature inside the building in the winter?	70 Degrees (Fahrenheit)	71 Degrees (Fahrenheit)
What is the setpoint temperature inside the building in the summer?	75 Degrees (Fahrenheit)	74 Degrees (Fahrenheit)
Filtration		
What is the MERV efficiency rating of your filters?	MERV rating: 6 Occupant Percent: 100%	MERV rating: 6 Occupant Percent: 100%

Life Cycle Cost Analysis Module	Base Case	Design Case
		HVAC Controls Initial Capital Costs: 100000 Dollars One-time O&M Costs: 0 Dollars

Electrical	Base Case	Design Case
Interior Lighting		
What percentage of employees have access to lighting controls?	25 Percent	25 Percent
Daylighting		
Indicate the proportion of employees (percent) that have access to daylighting during the day, or the spatial daylighting autonomy (sDA) value of the space or building.	55 Percent	55 Percent

Materials Module	Base Case	Design Case
Building Material Embodied Carbon	11563799 Tonnes of CO ₂ eq	11563799 Tonnes of CO ₂ eq

Other Costs and Benefits	Base Case	Design Case

Envelope	Base Case	Design Case
	New Roof Area: 100 Percent Built-Up Roof SRI: 5.5	New Roof Area: 100 Percent Built-Up Roof SRI: 5.5

Interiors	Base Case	Design Case
View 1 no vegetation	100 Percent	100 Percent
View 2 no vegetation	0 Percent	0 Percent
View 3 no vegetation	0 Percent	0 Percent
View 4 no vegetation	0 Percent	0 Percent
View 5 no vegetation	0 Percent	0 Percent
View 1 with vegetation	0 Percent	0 Percent
View 2 with vegetation	0 Percent	0 Percent
View 3 with vegetation	0 Percent	0 Percent
View 4 with vegetation	0 Percent	0 Percent
View 5 with vegetation	0 Percent	0 Percent

Transportation	Base Case	Design Case
Bicycles		
Bicycle Facilities	None	None
Green Vehicles		
DCFC Chargers (50kW)	0	0
DCFC Chargers (150kW)	0	0
DCFC Chargers (350kW)	0	0
Level 2 Chargers	0	0

Water Analysis	Base Case	Design Case
Water analysis input type		Percent Reduction

What is the targeted percent decrease in potable water used from a local utility?	0 Percent	0 Percent
What is the amount of potable water used from a local utility?	1790000 Gallons	1790000.0 Gallons
What is the amount of potable water used from an on-site source?	0 Gallons	0.0 Gallons
What is the targeted percent decrease in on-site potable water?	0 Percent	0.0 Gallons
What percent of on-site potable water is from groundwater?	0 Percent	0 Percent
What is the annual amount of rainwater harvesting?	0 Gallons	0 Gallons
What is the annual amount of graywater reuse?	0 Gallons	0 Gallons

Best HVAC Controllability, Reference Case

Clean Energy	Base Case	Design Case
Renewable Energy		
Are there tax or local utility incentives?	Yes	No
What is the value of annual tax credits for installing renewable energy systems?	0 Dollars	0 Dollars
What is the duration of this program?	1 Years	1 Years
What is the value of annual local utility incentives for installing renewable energy systems?	0 Dollars	0 Dollars

What is the duration of this program?	1 Years	1 Years
Is renewable energy sold to the grid?	Yes	No
How much renewable energy is being sold to the grid per year?	0 kWh	0 kWh
What is the wholesale price?	0 \$/kWh	0 \$/kWh
What is the annual premium above wholesale price, if any?	0 Percent	0 Percent
What is the length of the contract for this premium?	50 Years	50 Years
Renewable Energy Production Items		
Carbon Offsets		
Annual carbon equivalent emissions addressed by carbon offsets	0 Tonnes	0 Tonnes
Start year of carbon offsets purchase	2021 Years	2021 Years
Contract length	0 Years	0 Years
Annual growth in the number of carbon offsets purchased	0 Percent	0 Percent
Price of carbon offsets	0 \$/tonne	0 \$/tonne
Annual real growth rate in price of carbon offsets purchased	0 Percent	0 Percent
Renewable Energy Credits (RECs)		

Location where the REC generated	TX	TX
Annual amount of electricity addressed by renewable energy credits	0 MWh	0 MWh
Start year of RECs purchase	2021 Years	2021 Years
Length of the contract	0 Years	0 Years
Annual growth in the number of RECs purchased	0 Percent	0 Percent
Price of renewable energy credits	0 \$/MWh	0 \$/MWh
Annual real growth rate in price of RECs purchased	0 Percent	0 Percent
Energy Storage		
Energy storage	0 kWh	0 kWh
Useful life of battery/storage system	0 Years	0 Years
Weekday electricity usage schedule	None	7 am. to 6 pm.
Weekend electricity usage schedule	None	7 am. to 6 pm.

Energy Module	Base Case	Design Case
	Electrical - Interior Lighting - Electricity Annual electricity consumption: 260025.01 kWh	Electrical - Interior Lighting - Electricity Annual electricity consumption: 260025.01 kWh
	Electrical - Plug Load/Equipment - Natural Gas Annual electricity consumption: 462.68 MMBtu	Electrical - Plug Load/Equipment - Natural Gas Annual electricity consumption: 462.68 MMBtu
	Mechanical - Heating - Natural Gas	Mechanical - Heating - Natural Gas

	Annual electricity consumption: 43.56 MMBtu	Annual electricity consumption: 40.0752 MMBtu
	Mechanical - Fans - Electricity Annual electricity consumption: 156442.42 kWh	Mechanical - Fans - Electricity Annual electricity consumption: 143927.0264 kWh
	Water - Domestic Hot Water - Electricity Annual electricity consumption: 9701.36 kWh	Water - Domestic Hot Water - Electricity Annual electricity consumption: 9701.36 kWh
	Water - Domestic Hot Water - Natural Gas Annual electricity consumption: 125.89 MMBtu	Water - Domestic Hot Water - Natural Gas Annual electricity consumption: 125.89 MMBtu
	Mechanical - Pumps - Electricity Annual electricity consumption: 138.97 kWh	Mechanical - Pumps - Electricity Annual electricity consumption: 127.8524 kWh
	Mechanical - Cooling - Electricity Annual electricity consumption: 412362.29 kWh	Mechanical - Cooling - Electricity Annual electricity consumption: 379373.3068 kWh
	Electrical - Exterior Lighting - Electricity Annual electricity consumption: 16645.93 kWh	Electrical - Exterior Lighting - Electricity Annual electricity consumption: 16645.93 kWh
	Electrical - Plug Load/Equipment - Electricity Annual electricity consumption: 462825.89 kWh	Electrical - Plug Load/Equipment - Electricity Annual electricity consumption: 462825.89 kWh

Mechanical	Base Case	Design Case
Ventilation		
What is the building ventilation rate?	13.8 cfm/person	13.8 cfm/person

Thermal Comfort		
Percent of employees who have access to thermal comfort controls	25 Percent	100 Percent
What is the setpoint temperature inside the building in the winter?	70 Degrees (Fahrenheit)	72 Degrees (Fahrenheit)
What is the setpoint temperature inside the building in the summer?	75 Degrees (Fahrenheit)	72 Degrees (Fahrenheit)
Filtration		
What is the MERV efficiency rating of your filters?	MERV rating: 6 Occupant Percent: 100%	MERV rating: 6 Occupant Percent: 100%

Life Cycle Cost Analysis Module	Base Case	Design Case
		HVAC Controls Initial Capital Costs: 200000 Dollars One-time O&M Costs: 0 Dollars

Electrical	Base Case	Design Case
Interior Lighting		
What percentage of employees have access to lighting controls?	25 Percent	25 Percent
Daylighting		
Indicate the proportion of employees (percent) that have access to daylighting during	55 Percent	55 Percent

the day, or the spatial daylighting autonomy (sDA) value of the space or building.		
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Materials Module	Base Case	Design Case
Building Material Embodied Carbon	11563799 Tonnes of CO ₂ eq	11563799 Tonnes of CO ₂ eq

Other Costs and Benefits	Base Case	Design Case
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Envelope	Base Case	Design Case
	New Roof Area: 100 Percent Built-Up Roof SRI: 5.5	New Roof Area: 100 Percent Built-Up Roof SRI: 5.5

Interiors	Base Case	Design Case
View 1 no vegetation	100 Percent	100 Percent
View 2 no vegetation	0 Percent	0 Percent
View 3 no vegetation	0 Percent	0 Percent
View 4 no vegetation	0 Percent	0 Percent
View 5 no vegetation	0 Percent	0 Percent
View 1 with vegetation	0 Percent	0 Percent
View 2 with vegetation	0 Percent	0 Percent
View 3 with vegetation	0 Percent	0 Percent
View 4 with vegetation	0 Percent	0 Percent
View 5 with vegetation	0 Percent	0 Percent

Transportation	Base Case	Design Case
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Bicycles		
Bicycle Facilities	None	None
Green Vehicles		
DCFC Chargers (50kW)	0	0
DCFC Chargers (150kW)	0	0
DCFC Chargers (350kW)	0	0
Level 2 Chargers	0	0

Water Analysis	Base Case	Design Case
Water analysis input type		Percent Reduction
What is the targeted percent decrease in potable water used from a local utility?	0 Percent	0 Percent
What is the amount of potable water used from a local utility?	1790000 Gallons	1790000 Gallons
What is the amount of potable water used from an on-site source?	0 Gallons	0.0 Gallons
What is the targeted percent decrease in on-site potable water?	0 Percent	0.0 Gallons
What percent of on-site potable water is from groundwater?	0 Percent	0 Percent
What is the annual amount of rainwater harvesting?	0 Gallons	0 Gallons
What is the annual amount of graywater reuse?	0 Gallons	0 Gallons

Appendix B

The following tables include: (i) general inputs, and (ii) location specific advanced inputs.

General Inputs

Input Name	Value	Unit
Project Type	New Building / Majorly Renovated	
Gross Floor Area of Building or Space	100,000	ft ²
Building Type	Middle School (100%)	
- Expected Number of Classes in the Building	50	
Site Area	4	Acres
Construction Start Date	01/01/2023	
Construction Duration	0.1	Years
Operations Duration	50	Years

Advanced Inputs

Financial Costs

Input Name	Value	Unit
Discounting		
Project Discount Rate	2	Percent/year
Utility Carbon Costs		
Carbon Price (Electricity Users)	0	\$/tonne
Carbon Price (Natural Gas Users)	0	\$/tonne
Currency		

Conversion value of 1 US Dollar	1	USD
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Social Costs

Input Name	Value	Unit
Pollutants		
Social Cost CO ₂	252	\$/tonne
Social Cost CH ₄	2,313	\$/tonne
Social Cost N ₂ O	71,359	\$/tonne
Social Cost NO _x	11,034.44	\$/tonne
Social Cost SO ₂	26,389.03	\$/tonne
Social Cost VOCs	2,469.8	\$/tonne
Social Cost PM _{2.5}	267,848.66	\$/tonne
Water		
Social Value of Groundwater	1,021.34	\$/Acre-Foot
Social Value of Surface water	21.59	\$/Acre-Foot

Energy Utility Inputs

Input Name	Value	Unit
Electricity		
Utility Cost	0.031591403931619855	\$/kBtu
Price Forecast Growth	0	Percent/year
NO _x	3.4800631823291927e-05	kg/kBtu
SO ₂	3.1369364249743416e-05	kg/kBtu
VOCs	1.14327944484592e-06	kg/kBtu

CO ₂	0.08273729226353492	kg/kBtu
CH ₄	6.223401869764918e-06	kg/kBtu
N ₂ O	9.01310868393578e-07	kg/kBtu
PM _{2.5}	4.099840965698062e-06	kg/kBtu
Grid Emission Projections for Electricity (Year over Year / Target Year).	Percent per year	
Expected reduction in carbon emissions	0	Percent/year
Natural Gas		
Utility Cost	0.010279605899999997	\$/kBtu
Price Forecast Growth	0	Percent/year
NO _x	5.47868e-05	kg/kBtu
SO ₂	2.668e-07	kg/kBtu
VOCs	2.4458e-06	kg/kBtu
CO ₂	0.05306	kg/kBtu
CH ₄	1e-06	kg/kBtu
N ₂ O	1e-07	kg/kBtu
PM _{2.5}	2.5348e-06	kg/kBtu
Expected reduction in carbon emissions	0	Percent/year

Clean Energy Inputs

Input Name	Value	Unit
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Water Utility Inputs

Input Name	Value	Unit
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Utility Settings		
From Ground Water Sources	0	Percent
From Surface Water Sources	100	Percent
Percent of water used for wastewater charges by utility providers	100	Percent
Electricity usage for Supply of Utility Water	1,940	kWh/Million Gallons
Wastewater Treatment Process at Treatment Plant	Greater than secondary	
Electricity Usage for Wastewater Treatment by Treatment Plant	2,690	kWh/Million Gallons
Type of Storm Sewer System Connected to Site	MS4	
Percent of Storm Water Sent into Local Water Bodies	100	Percent
Percent Rainfall Leaving Site as Runoff (excluding on-site water capture)	100	Percent
Is wastewater being treated by an off-site wastewater treatment plant?	Yes	
Financial		
Water Utility Cost	0.0056	\$/Gallon
Growth in Price of Water	2.596	Percent/year
Wastewater Utility Cost	0.0053	\$/Gallon
Growth in Price of Wastewater	2.9005	Percent/year

Occupant Inputs

Input Name	Value	Unit
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General		
Value of Statistical Life	10,083,117.11	Dollars
Medical CPI Growth	2	Percent/year
Annual non-accidental death rate	785.4	Deaths per 100,000 people
By Building Type		
Middle School (100%)		
Expected Number of Employees in the Building	150	Employees
Average Annual Building Wage	56,609	\$/year
Hours spent in the building	8	Hours/day
Number of Visitors per Day	300	Visitors/day
Average Time Spent per Visit per Day	2	Hours/day
Salary Expenditures per Student	4,478.17	\$/year
Test Score Standard Deviation	16.45	Percent
Transportation		
Number of employees commuting by bicycle	0.6	Employees
Average commute distance (one-way) by employees	3.29	Miles
Days of bicycle commuting per week by employees	2.8	Days
Number of transient occupants commuting by bicycle	0	Occupants
Average commute distance (one-way) by transient occupants	0	Miles

Days of bicycle commuting per week by transient occupants	2.8	Days
Indoor Air Quality		
Local indoor PM _{2.5} emissions	10.23133	µg/m ³
Local indoor PM ₁₀ emissions	31.3	µg/m ³

Climate

Input Name	Value	Unit
RCP (Representative Concentration Pathway)		
Climate Change Scenario	RCP 4.5	
Recreational Days		
Number of Sunny Days	145	Days/Year

Envelope and Landscape

Input Name	Value	Unit
Site		
Predominant Site Soil Type	Sandy Clay	
Roof		
Area of Roof	50,000	ft ²

Result Settings

Input Name	Value	Unit
Architecture 2030 Settings		
Percent Reduction Target	80	Percent

Architecture 2030 Reporting Units	imperial	
HDD	0	Degrees (Fahrenheit)
CDD	0	Degrees (Fahrenheit)
Use Zero Tool defaults	Yes	
Government Spending		
Enable Government Spending	Yes	
Default Benefit/Cost		
Show \$0 Values In The Results	No	
Health	Occupant	
Absenteeism	Occupant	
Productivity	Occupant	
Student Productivity	Occupant	
Financial Savings from Water	Owner	
Social Value of Water	Community	
Financial Savings from Natural Gas	Owner	
Financial Savings from Electricity	Owner	
Social Value CACs	Community	
Carbon Emissions	Community	
Social Value Air Pollution	Community	
Incentives	Owner	
Tax Credits	Owner	
Renewable Energy Revenue	Owner	
Operations and Maintenance Costs	Owner	
Residual Value of Assets	Owner	

Salvage Value	Owner	
Replacement Costs	Owner	
Upfront Capital Costs	Owner	