Buildings of Excellence Design Competition

Cost Data Presentation - March 2021

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

Overview

- Data Collection and Strategies
- Aggregated Cost Analysis
- Project Specific Analysis
- Observations
- Presentation of Appendices

Buildings of Excellence Design Completion Overview Presentation

Introductory overview is provided in a separate presentation

- **Program Goals**
- **Project Requirements**
- **Awarded Project Overview**

Cost Data Collection

Cost data being collected goes beyond just project budgets

Financials

- Overall building first cost
- Overall building incremental first cost
- Performance related tax credits
- Non-Performance related tax credits
- NYSERDA incentives
- Project Soft costs vs. Hard Costs
- Performance related costs breakouts
  - Space Conditioning
  - Envelope
  - DHW
  - Appliances
  - Engineering and Design

Building Attributes

- System types and classifications
- Performance path
- Construction methods
- Critical component identification
- Building Height
- Renewables
- # Units (Dwelling, sleeping, congregate, other)
- Sq.Ft.
- All Electric
- Net Zero

Market

- Energy Equity and Affordability
- Disadvantaged Communities
- Equity and Inclusivity
- Climate Justice
- Environmental Justice Area
- LMI/Market Rate
- Regional Economic Development Council (REDC)
- Building use

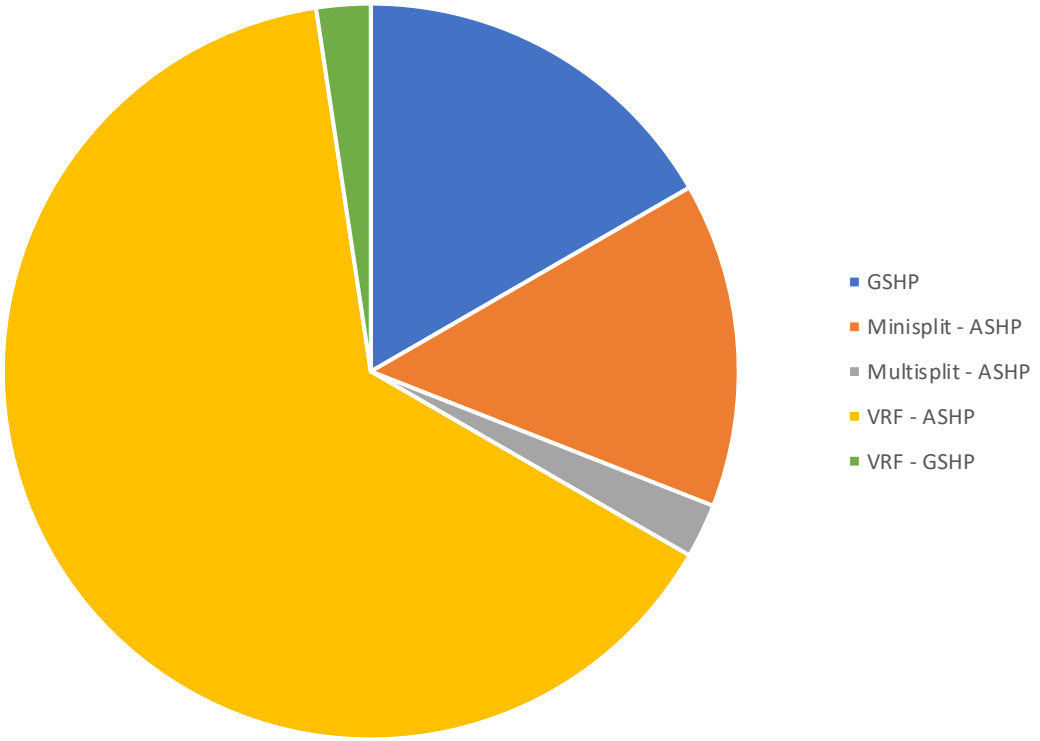
Building Performance

- Source energy with renewables
- Source energy without renewables
- Annual predicted energy cost
- Annual predicted demand charges
- Annual predicted operational cost

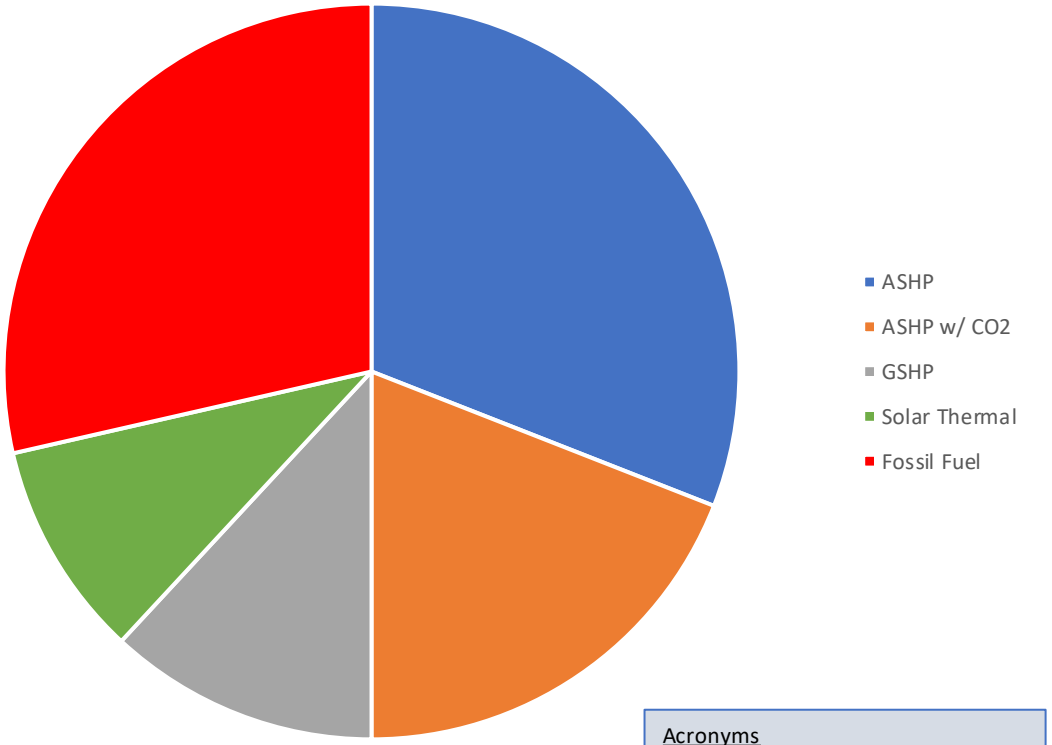
Cost data is updated monthly and published on the Buildings of Excellence Winners page

Building Systems by Project Count

Buildings of Excellence Space Conditioning Distribution



Buildings of Excellence DHW Distribution

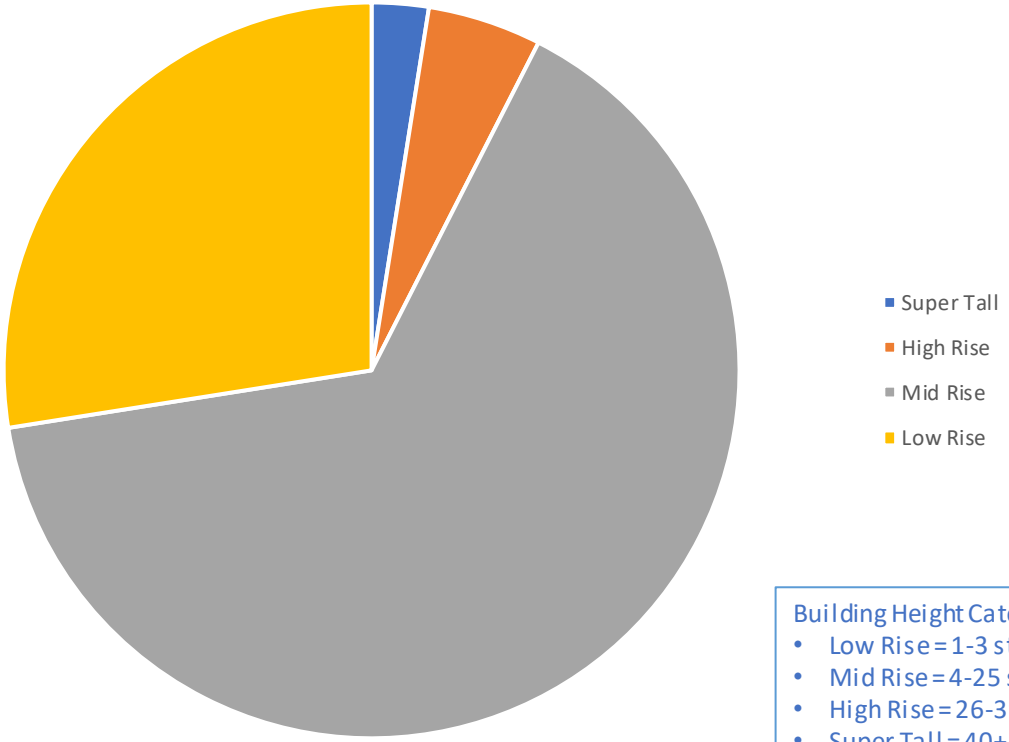


Note: Charts show Round 1 and Round 2 Projects

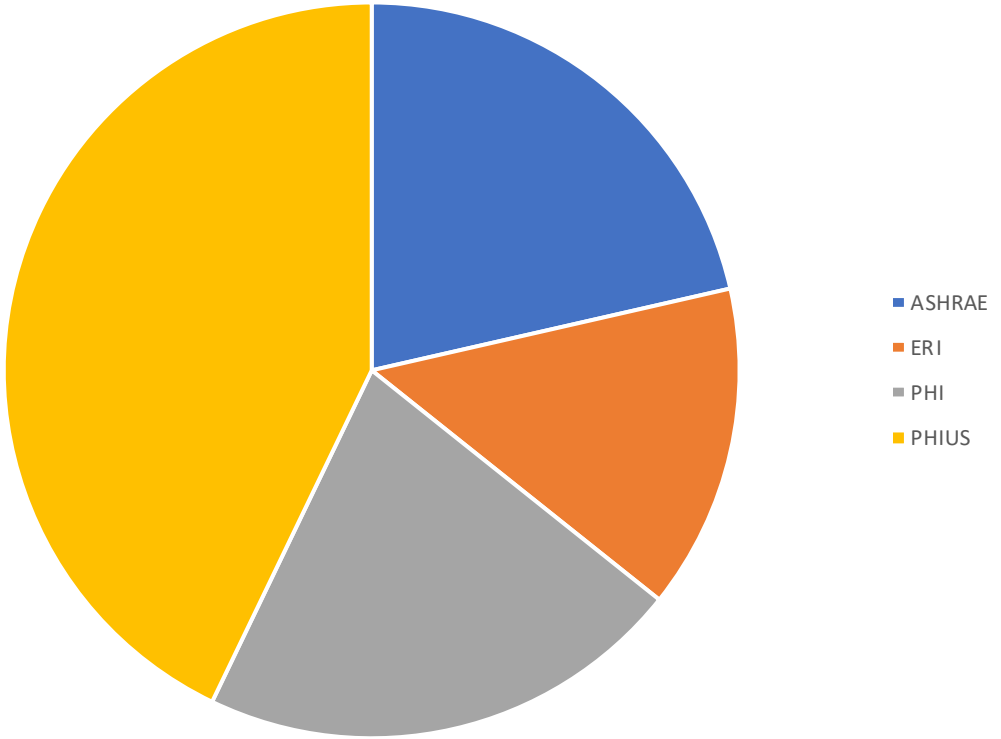
Acronyms
GSHP – Ground Source Heat Pump
ASHP – Air Source Heat Pump
VRF – Variable Refrigerant Flow
DHW – Domestic Hot Water
CO2 – Carbon Dioxide

Building Attributes by Project Count

Buildings of Excellence Height Classification Distribution



Buildings of Excellence Performance Path Distribution

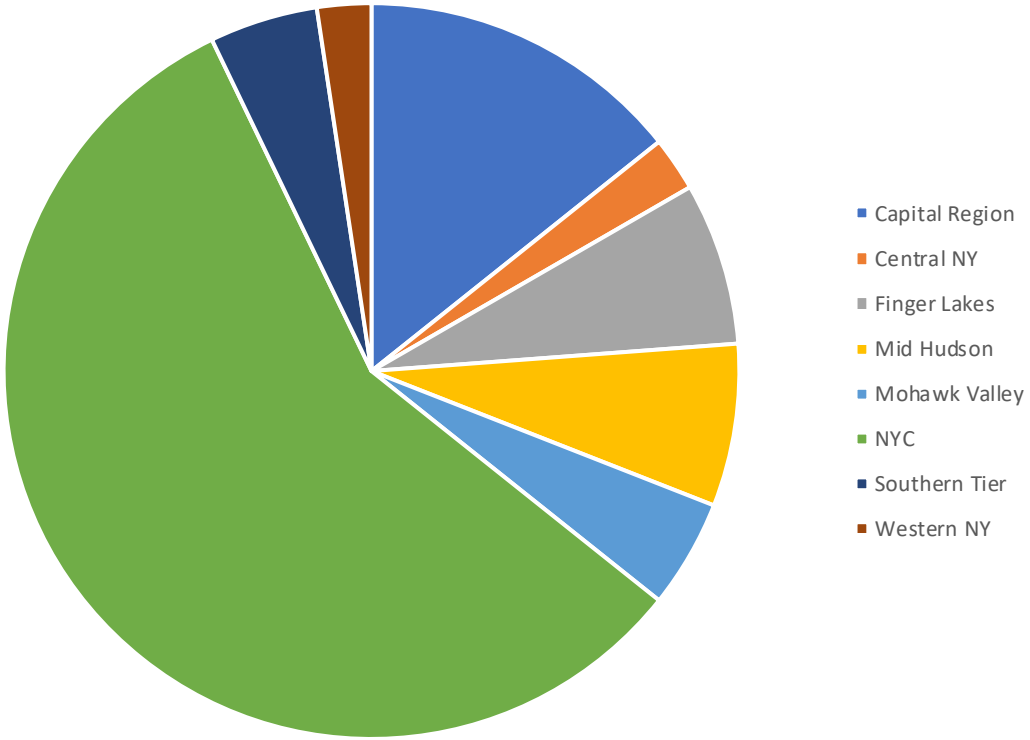


Building Height Categories:
- Low Rise = 1-3 stories
- Mid Rise = 4-25 stories
- High Rise = 26-39 stories
- Super Tall = 40+ stories

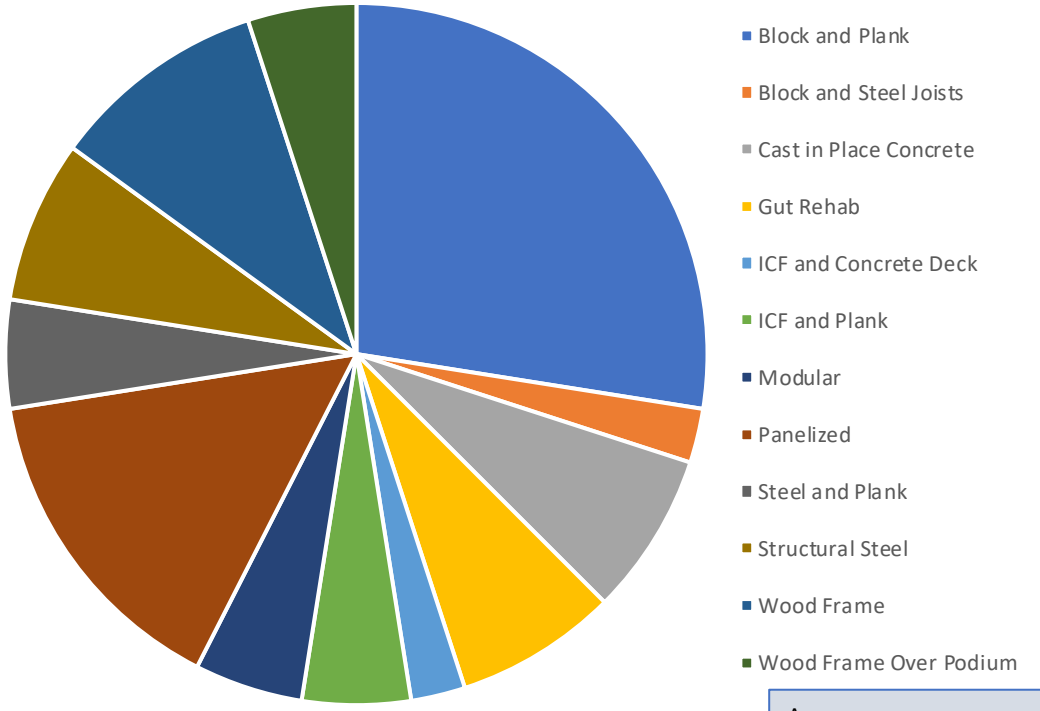
Note: Charts show Round 1 and Round 2 Projects

Building Attributes by Project Count

Buildings of Excellence Regional Distribution



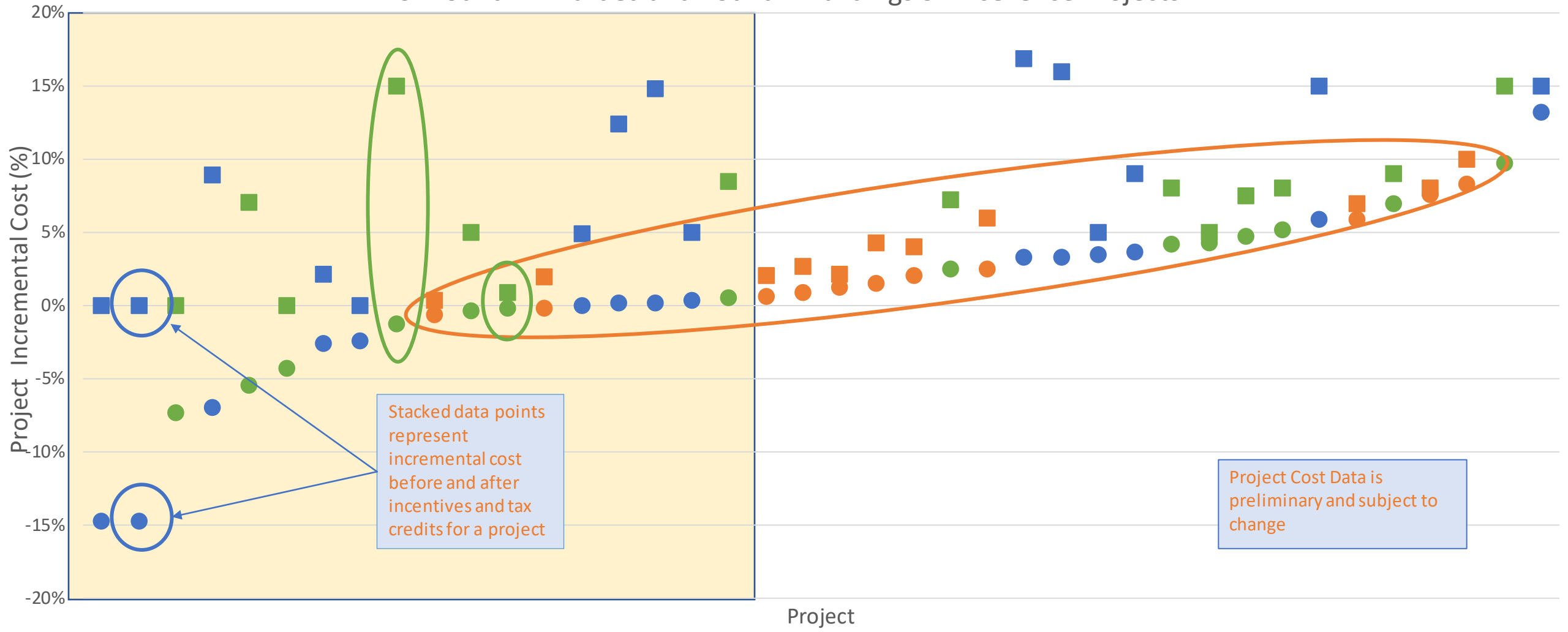
Buildings of Excellence Structural Envelope Distribution



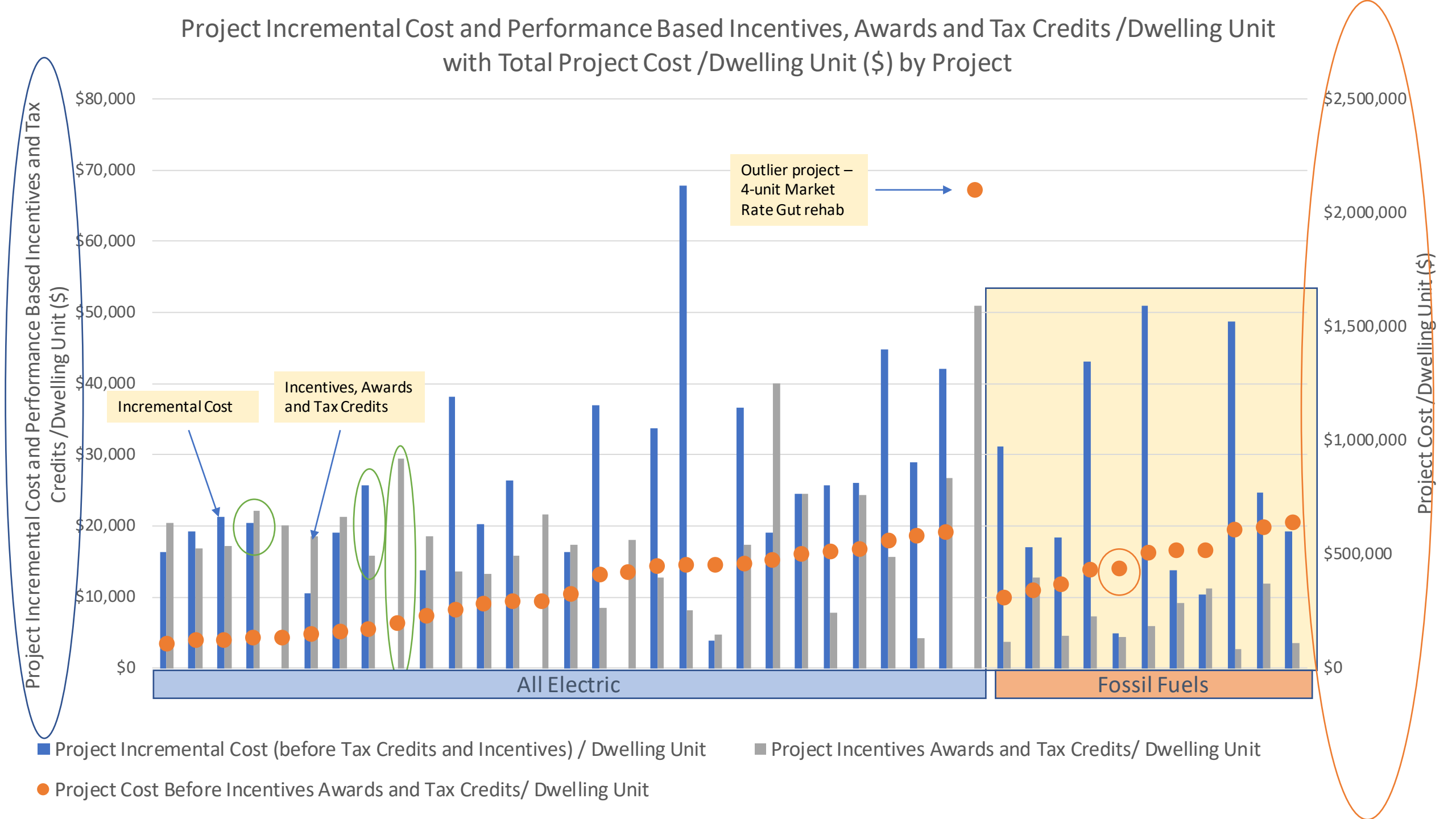
Acronyms
ICF – Insulated Concrete Form

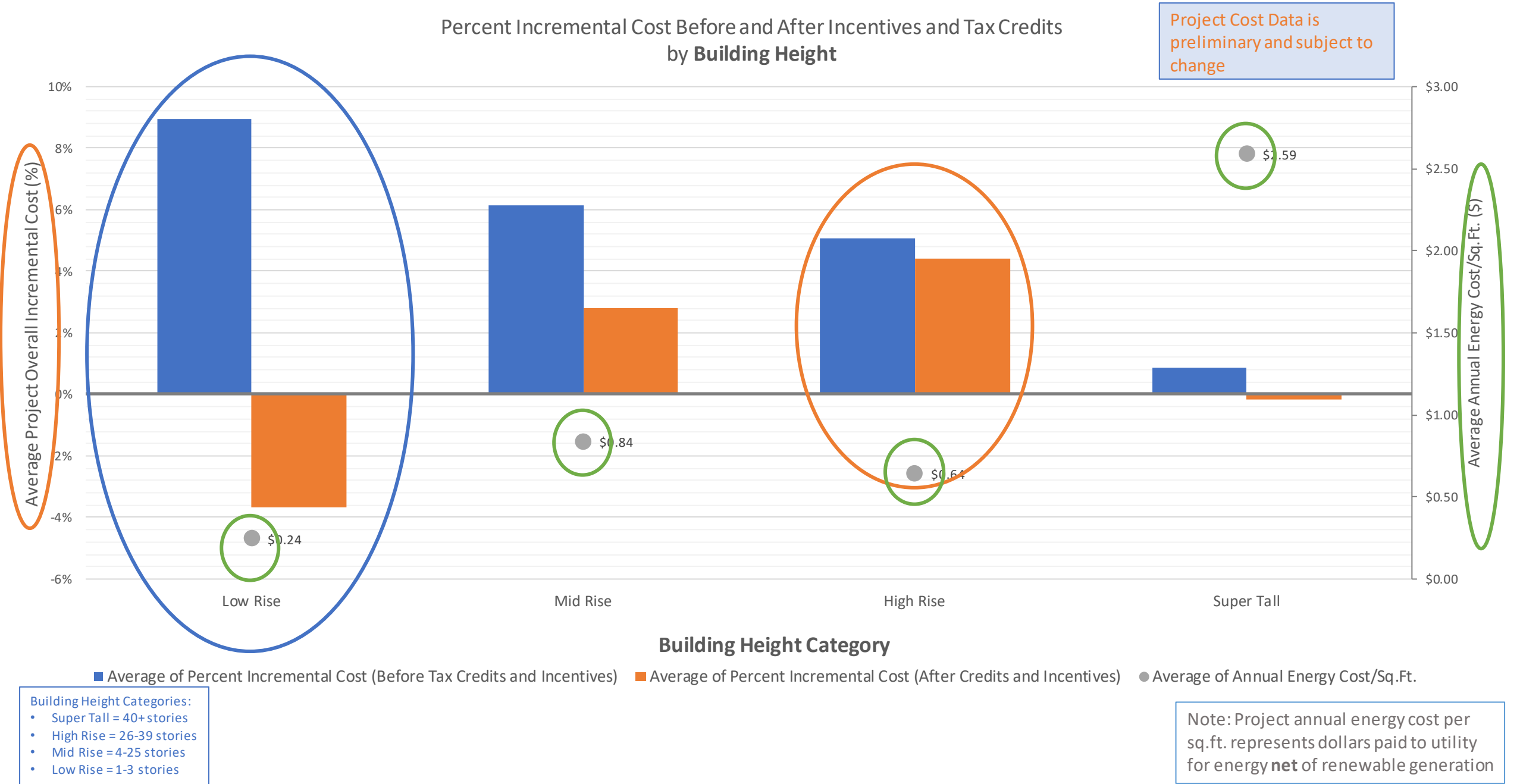
Note: Chart shows Round 1 and Round 2 Projects

Percent Incremental Cost Before and After Incentives and Tax Credits for Round 1 Awarded and Round 2 Buildings of Excellence Projects

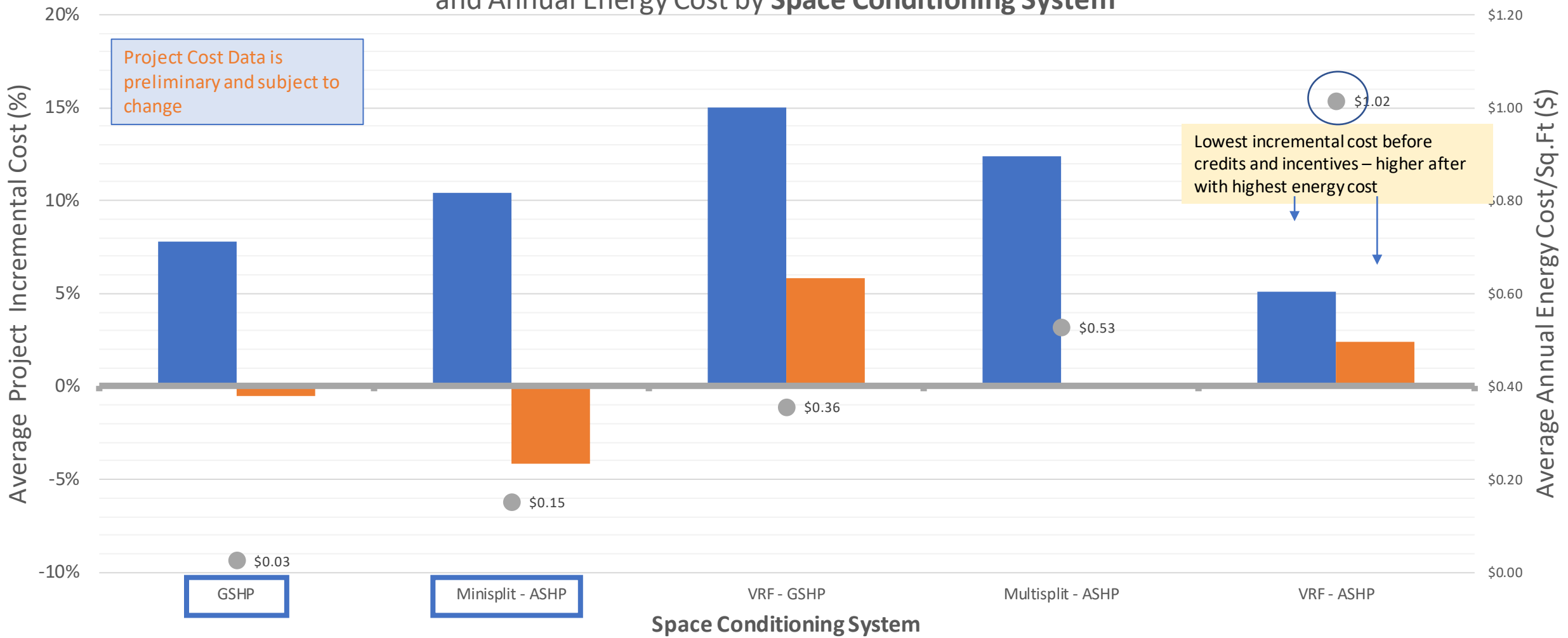


- Incremental Cost (Before Tax Credits and Incentives) - All Electric - BOE1
- Incremental Cost (After Credits and Incentives) - All Electric - BOE1
- Incremental Cost (Before Tax Credits and Incentives) - All Electric - BOE2
- Incremental Cost (After Credits and Incentives) - All Electric - BOE2
- Incremental Cost (Before Tax Credits and Incentives) - Fossil Fuels - BOE1
- Incremental Cost (After Credits and Incentives) - Fossil Fuels - BOE1


Project Incremental Cost and Performance Based Incentives, Awards and Tax Credits /Dwelling Unit with Total Project Cost /Dwelling Unit ($) by Project
Project Incremental Cost and Performance Based Incentives and Tax Credits /Dwelling Unit ($)
Project Cost /Dwelling Unit ($)
$80,000
$70,000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$0
$2,500,000
$2,000,000
$1,500,000
$1,000,000
$500,000
$0
Outlier project – 4-unit Market Rate Gut rehab
Incremental Cost
Incentives, Awards and Tax Credits
All Electric
Fossil Fuels
Project Incremental Cost (before Tax Credits and Incentives) / Dwelling Unit
Project Incentives Awards and Tax Credits/ Dwelling Unit
Project Cost Before Incentives Awards and Tax Credits/ Dwelling Unit


Percent Incremental Cost Before and After Incentives and Tax Credits
by **Building Height**
Project Cost Data is preliminary and subject to change
Average Project Overall Incremental Cost (%)
10%
8%
6%
4%
2%
0%
-2%
-4%
-6%
$3.00
$2.50
$2.00
$1.50
$1.00
$0.50
$0.00
Average Annual Energy Cost/Sq.Ft. ($)
$0.24
$0.84
$0.64
$1.59
Low Rise
Mid Rise
High Rise
Super Tall
Building Height Category
Average of Percent Incremental Cost (Before Tax Credits and Incentives)
Average of Percent Incremental Cost (After Credits and Incentives)
Average of Annual Energy Cost/Sq.Ft.
Building Height Categories:
• Super Tall = 40+ stories
• High Rise = 26-39 stories
• Mid Rise = 4-25 stories
• Low Rise = 1-3 stories
Note: Project annual energy cost per sq.ft. represents dollars paid to utility for energy **net** of renewable generation

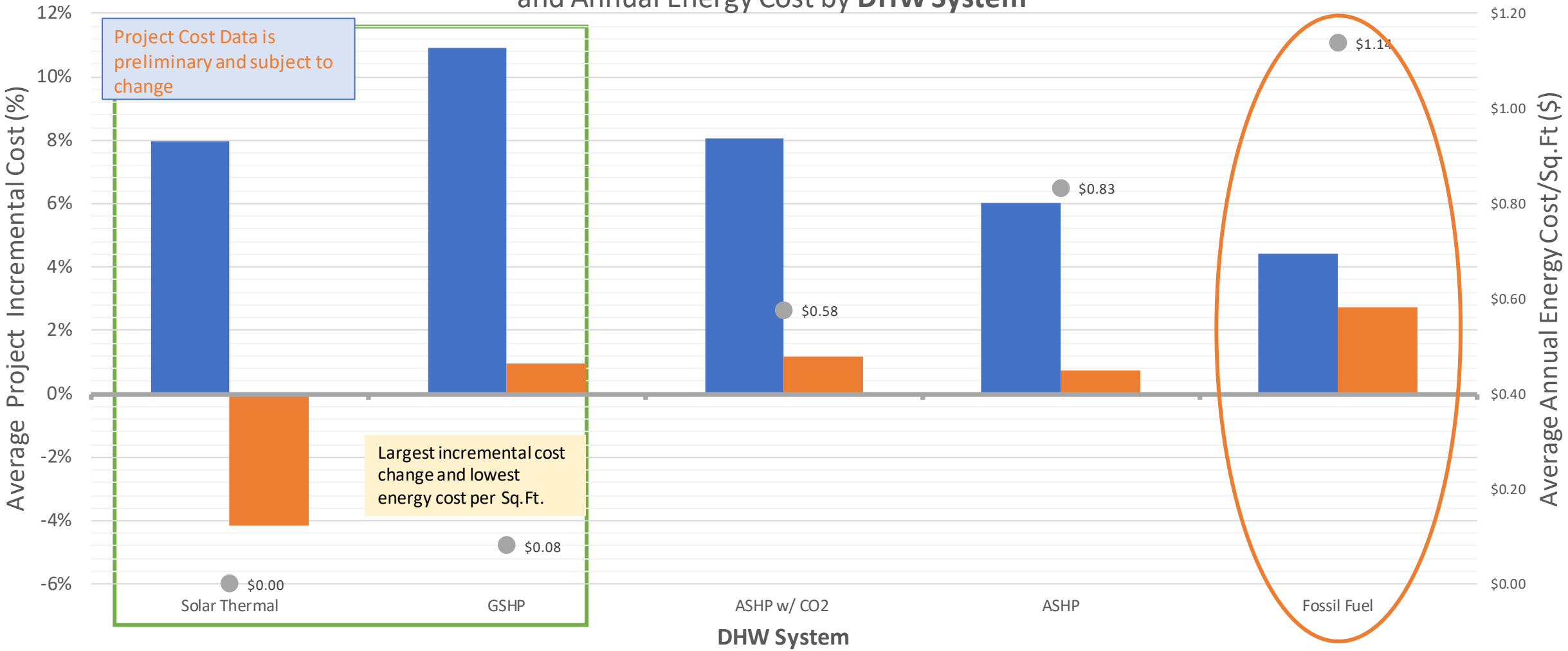
Percent Incremental Cost Before and After Incentives and Tax Credits and Annual Energy Cost by **Space Conditioning System**



Acronyms
GSHP – Ground Source Heat Pump
ASHP – Air Source Heat Pump
VRF – Variable Refrigerant Flow

Note: Project annual energy cost per sq.ft. represents dollars paid to utility for energy **net** of renewable generation

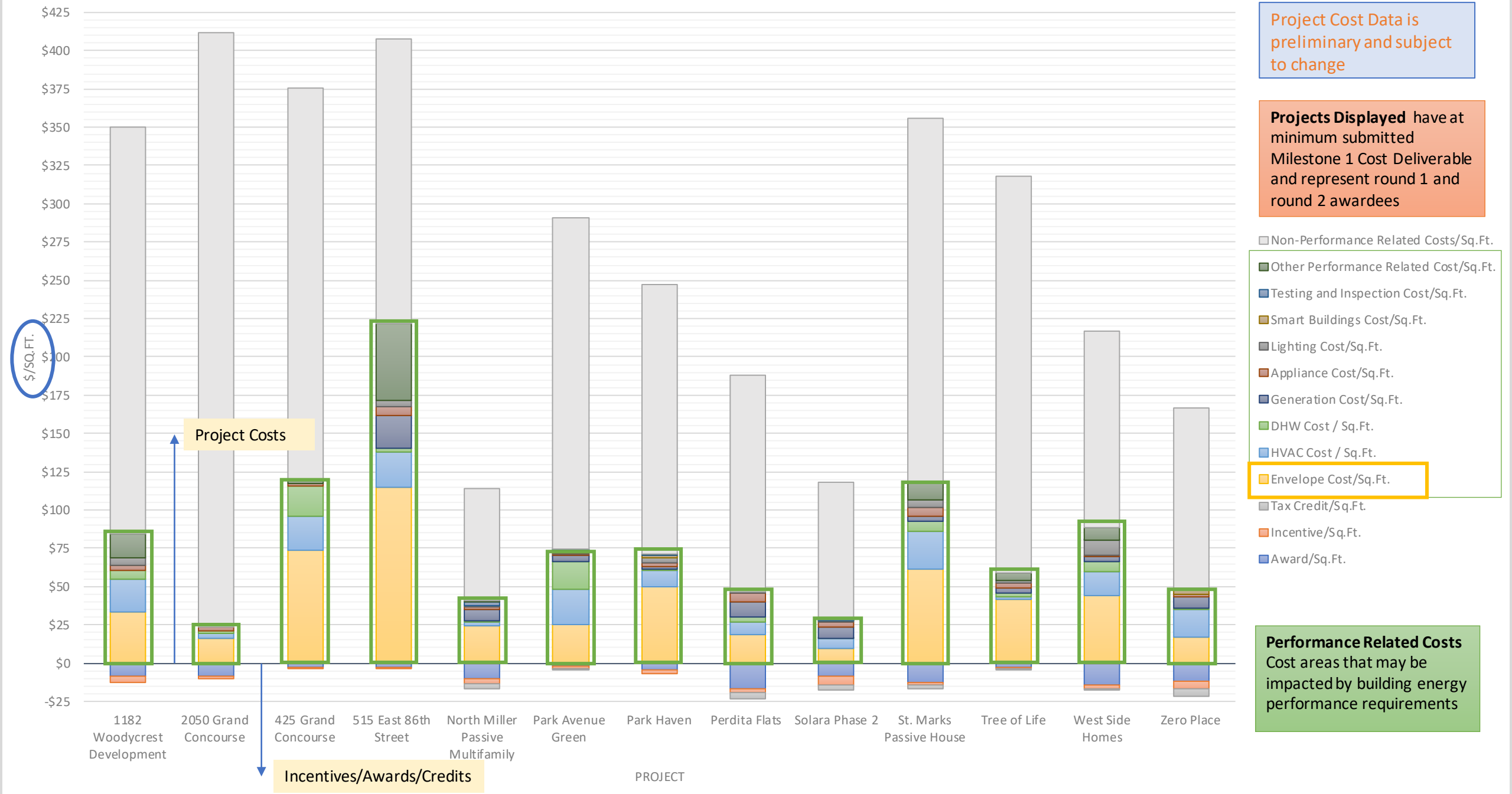
Percent Incremental Cost Before and After Incentives and Tax Credits and Annual Energy Cost by **DHW System**



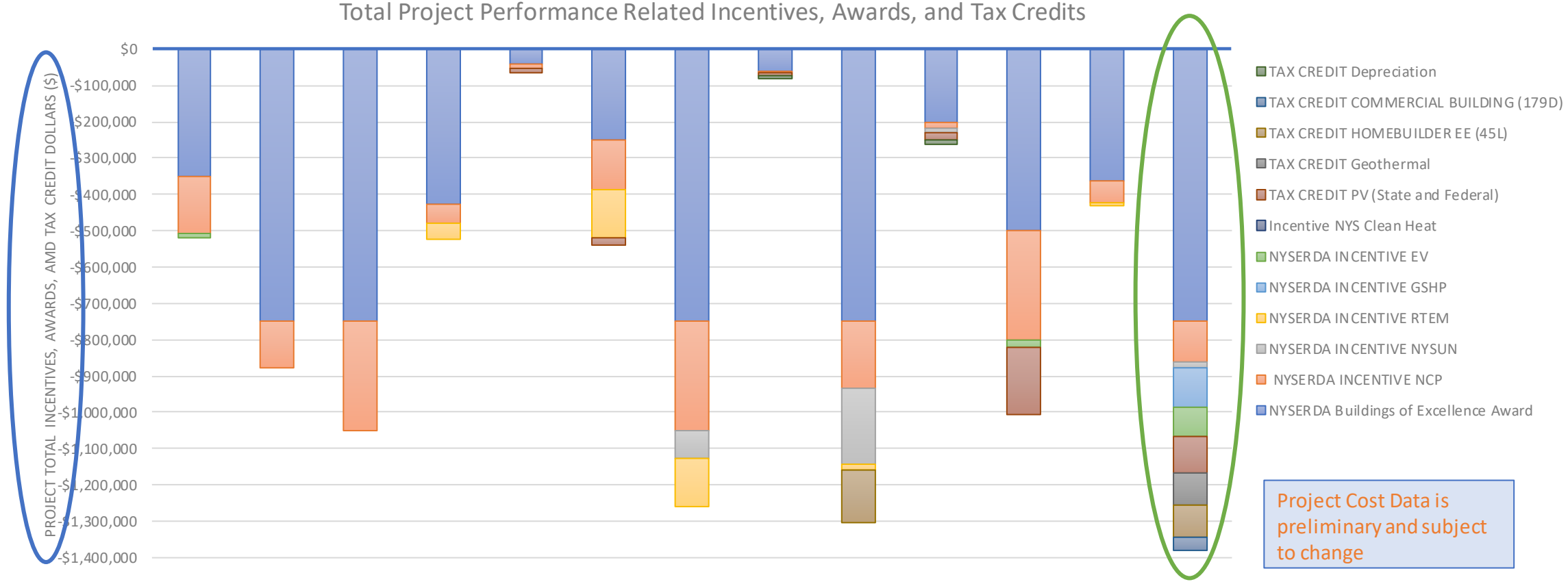
Acronyms
GSHP – Ground Source Heat Pump
ASHP – Air Source Heat Pump
VRF – Variable Refrigerant Flow
DHW – Domestic Hot Water
CO2 – Carbon Dioxide

Note: Project annual energy cost per sq.ft. represents dollars paid to utility for energy **net** of renewable generation

Total Project Performance Related Costs, Non-Performance Related Costs, Incentives, Awards, and Tax Credits Per Sq.Ft.



Total Project Performance Related Incentives, Awards, and Tax Credits

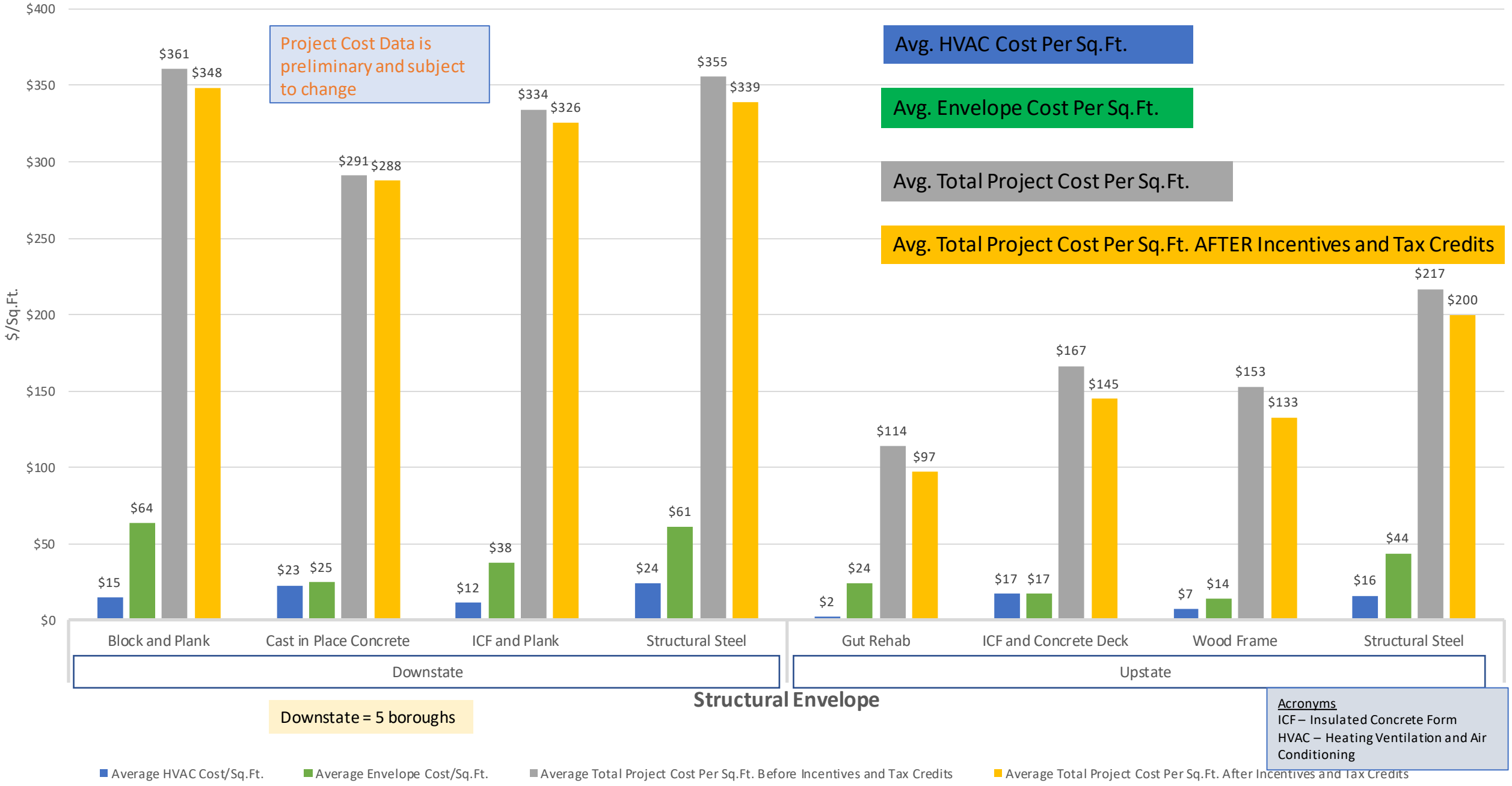


Project Cost Data is preliminary and subject to change

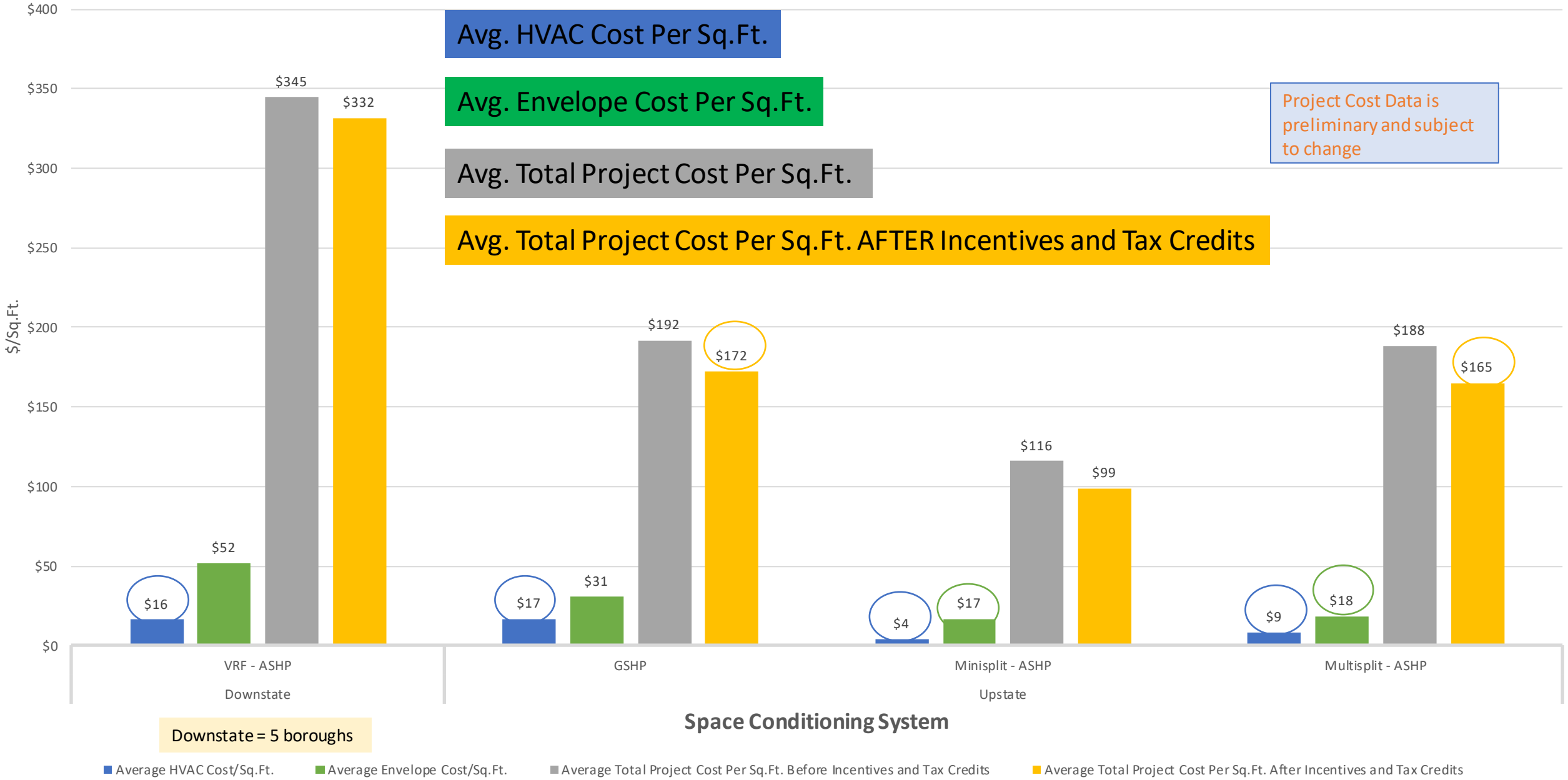
	1182 Woodycrest Development	2050 Grand Concourse	425 Grand Concourse	515 East 86th Street	North Miller Passive Multifamily	Park Avenue Green	Park Haven	Perdita Flats	Solara Phase 2	St. Marks Passive House	Tree of Life	West Side Homes	Zero Place
TAX CREDIT Depreciation	$0	$0	$0	$0	$0	$0	$0	-$7,500	$0	-$11,156	$0	$0	$0
TAX CREDIT COMMERCIAL BUILDING (179D)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	-$32,400
TAX CREDIT HOMEBUILDER EE (45L)	$0	$0	$0	$0	$0	$0	$0	$0	-$144,000	$0	$0	$0	-$92,000
TAX CREDIT Geothermal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	-$85,000
TAX CREDIT PV (State and Federal)	$0	$0	$0	$0	-$14,255	-$20,400	$0	-$7,433	$139,035	-$18,750	-$185,526	$0	-$104,000
Incentive NYS Clean Heat	$0	$0	$0	$0	$0	$0	$0	$0	$99,000	$0	$0	$0	$0
NYSERDA INCENTIVE EV	-$12,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	-$20,000	$0	-$80,000
NYSERDA INCENTIVE GSHP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	-$109,340
NYSERDA INCENTIVE RTEM	$0	$0	$0	-$47,118	$0	-$132,000	-$130,000	$0	-$14,400	$0	$0	-$9,450	$0
NYSERDA INCENTIVE NYSUN	$0	$0	$0	$0	$0	$0	-$78,200	$0	-$209,250	-$13,608	$0	$0	-$15,000
NYSERDA INCENTIVE NCP	-$157,700	-$126,920	-$300,000	-$52,500	-$12,600	-$138,600	-$300,000	-$6,400	-$184,800	-$14,400	-$300,000	-$60,000	-$110,700
NYSERDA Buildings of Excellence Award	-$350,931	-$750,000	-$750,000	-$425,000	-$39,467	-$250,000	-$750,000	-$59,976	-$750,000	-$203,082	-$500,000	-$362,620	-$750,000

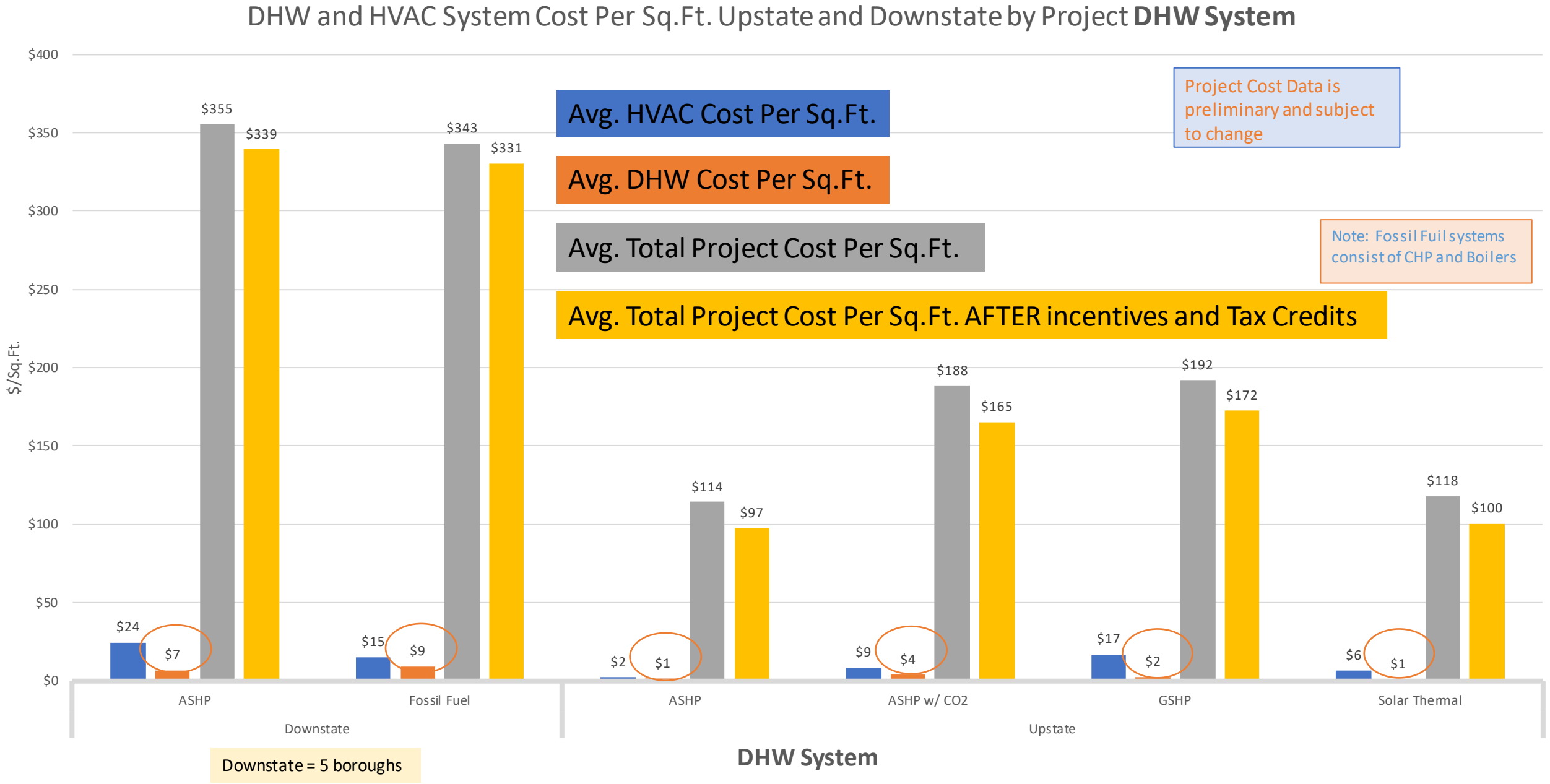
LIHTC, historic tax credits, property tax abatements, and other non-performance based financial benefits are EXCLUDED from this presentation

Envelope and HVAC System Cost Per Sq.Ft. Upstate and Downstate by Project **Structural Envelope**



HVAC System and Envelope Cost Per Sq.Ft. Upstate and Downstate by Project **Space Conditioning System**




DHW and HVAC System Cost Per Sq.Ft. Upstate and Downstate by Project DHW System
Avg. HVAC Cost Per Sq.Ft.
Avg. DHW Cost Per Sq.Ft.
Avg. Total Project Cost Per Sq.Ft.
Avg. Total Project Cost Per Sq.Ft. AFTER incentives and Tax Credits
Project Cost Data is preliminary and subject to change
Note: Fossil Fuil systems consist of CHP and Boilers
$/Sq.Ft.
$400
$350
$300
$250
$200
$150
$100
$50
$0
$24
$7
$355
$339
$15
$9
$343
$331
$2
$1
$114
$97
$9
$4
$188
$165
$17
$2
$192
$172
$6
$1
$118
$100
ASHP
Fossil Fuel
ASHP
ASHP w/ CO2
GSHP
Solar Thermal
Downstate
Upstate
Downstate = 5 boroughs
DHW System
Average HVAC System Cost/Sq.Ft.
Average DHW System Cost/Sq.Ft.
Average Total Project Cost Per Sq.Ft. Before Incentives and Tax Credits
Average Total Project Cost Per Sq.Ft. After Incentives and Tax Credits

Observations

- **Incentives and tax credits are more impactful for projects with certain building attributes**
  - Low Rise
  - All Electric
  - Geothermal
- **Space Conditioning**
  - VRF-ASHP are overwhelmingly the most popular space conditioning solution
  - Projects using VRF-ASHP show:
    - Highest annual energy cost per sq.ft. of HVAC options
    - Lowest incremental construction cost **before** incentives and tax credits
    - Higher incremental construction cost **after** incentives and tax credits
  - GSHP
    - GSHP projects are more cost effective **after** incentives and tax credits
    - Projects average the lowest annual energy cost per sq.ft.
- **Observations on incremental construction costs after tax credits and incentives**
  - Almost half of all BoE projects resulted in <0% incremental cost
- **Electrified DHW**
  - Many projects are still able to achieve a <0% incremental construction cost after tax credits and incentives
  - Electrified DHW projects see lower average cost of energy for building operation when renewables are factored into the cost
  - ASHP, Solar Thermal, and GSHP systems have the lowest DHW system Cost per Sq.Ft across projects with detailed cost submittals

Acronyms
GSHP – Ground Source Heat Pump
ASHP – Air Source Heat Pump
HVAC – Heating Ventilation and Air Conditioning
VRF – Variable Refrigerant Flow
DHW – Domestic Hot Water
CO2 – Carbon Dioxide

Appendices

- Appendix A – Awarded Project Cost Detail
- Appendix B – Awarded Project Summaries
- Appendix C – Building Systems Illustrations and Definitions
- Appendix D – Understanding the Data

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Appendix A

Awarded Project Cost Detail

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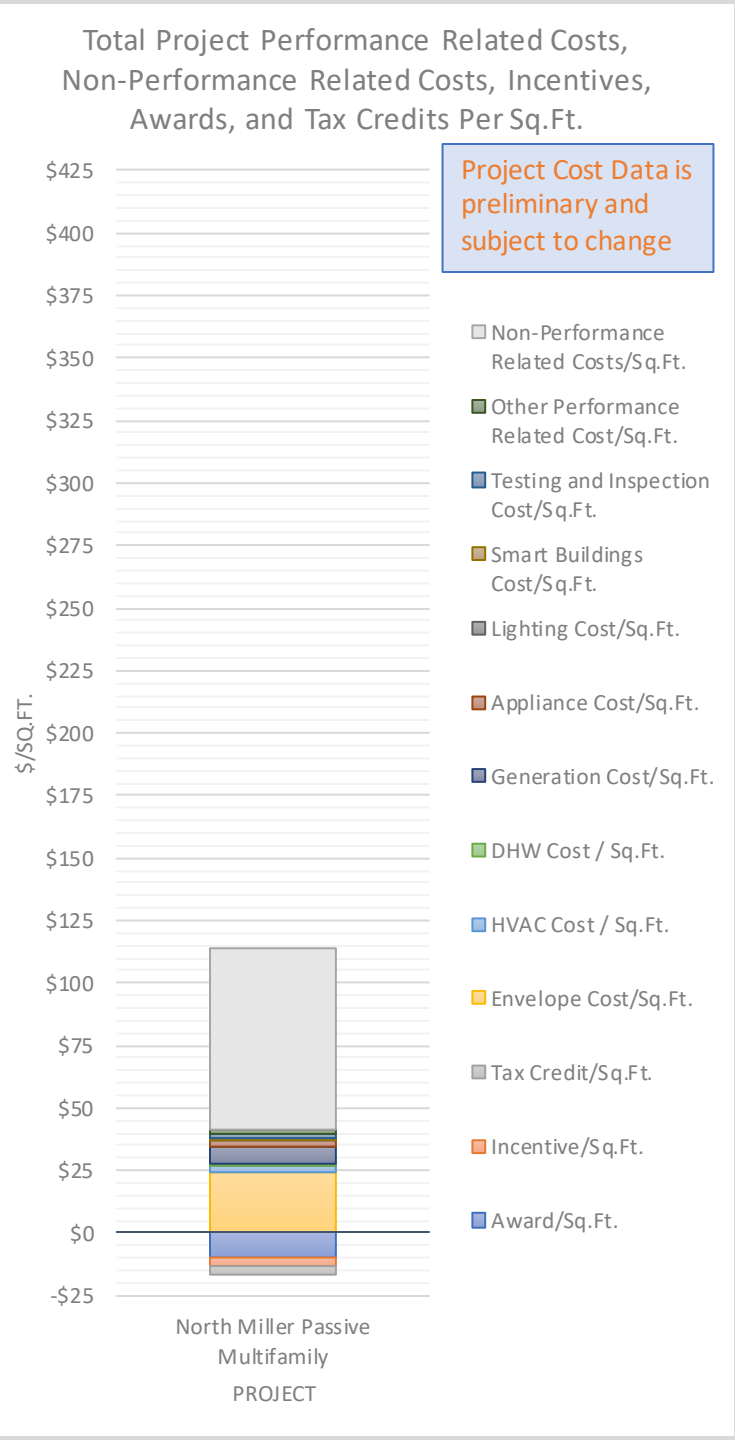
North Miller Passive

Newburgh, New York

Technical attribute summary:

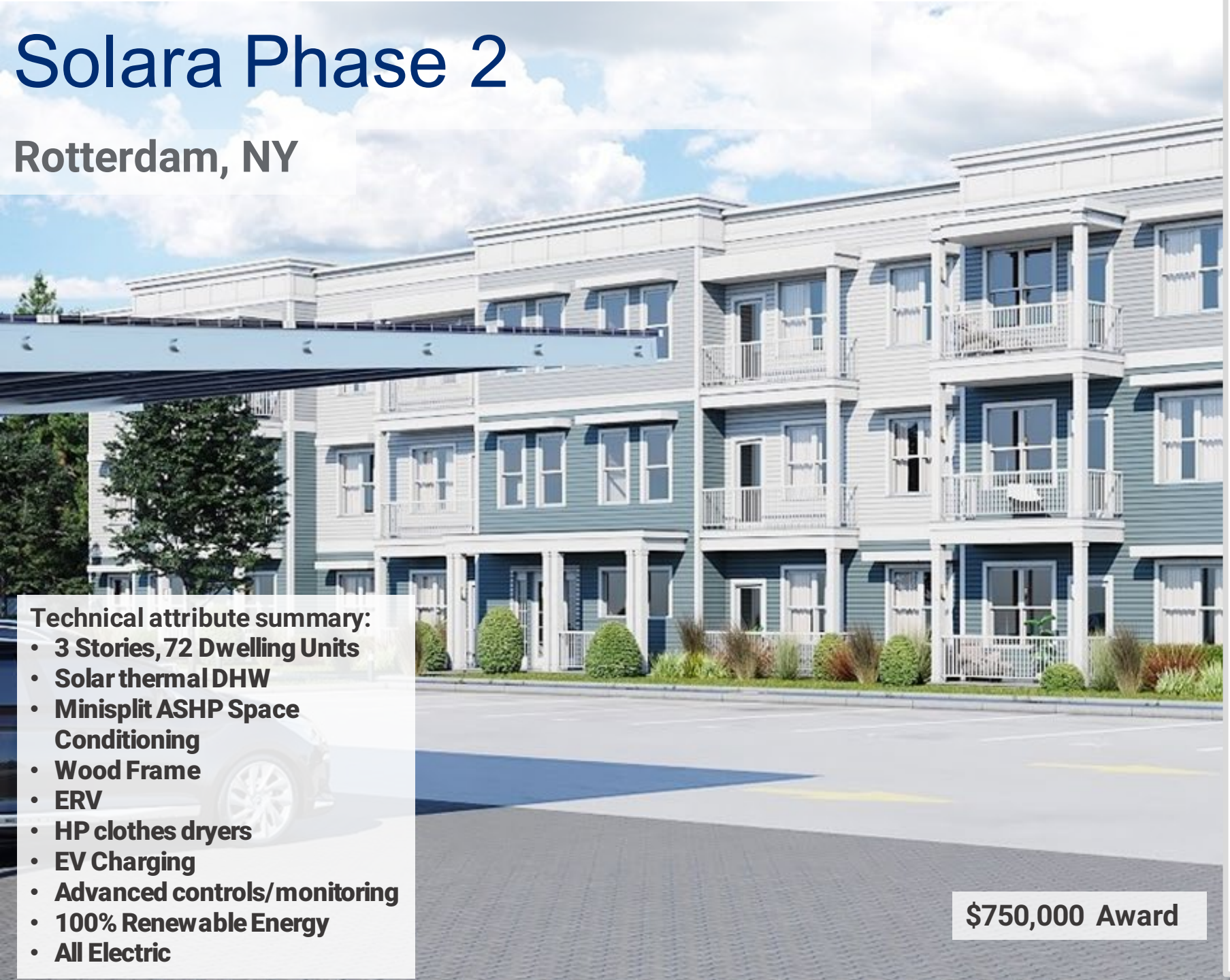
- 3 Dwelling Units
- LMI
- Exceptionally low-cost gut rehab
- Fully electrified
- Minisplit ASHP Space Conditioning
- ASHP DHW
- ERV
- Advanced controls/monitoring
- 100% Renewable Energy

$39,720 Award



Solara Phase 2

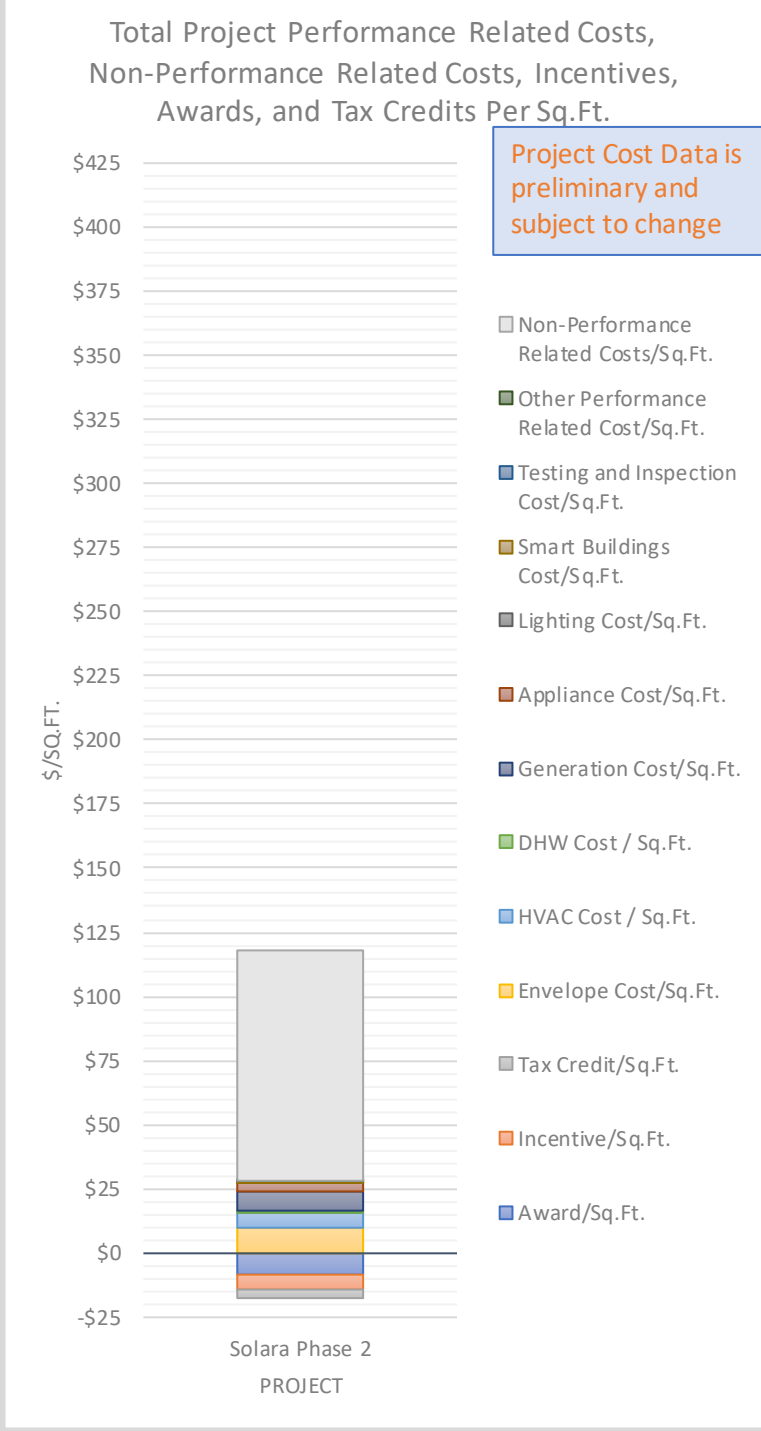
Rotterdam, NY



Technical attribute summary:

- 3 Stories, 72 Dwelling Units
- Solar thermal DHW
- Minisplit ASHP Space Conditioning
- Wood Frame
- ERV
- HP clothes dryers
- EV Charging
- Advanced controls/monitoring
- 100% Renewable Energy
- All Electric

$750,000 Award



Zero Place

New Paltz, NY

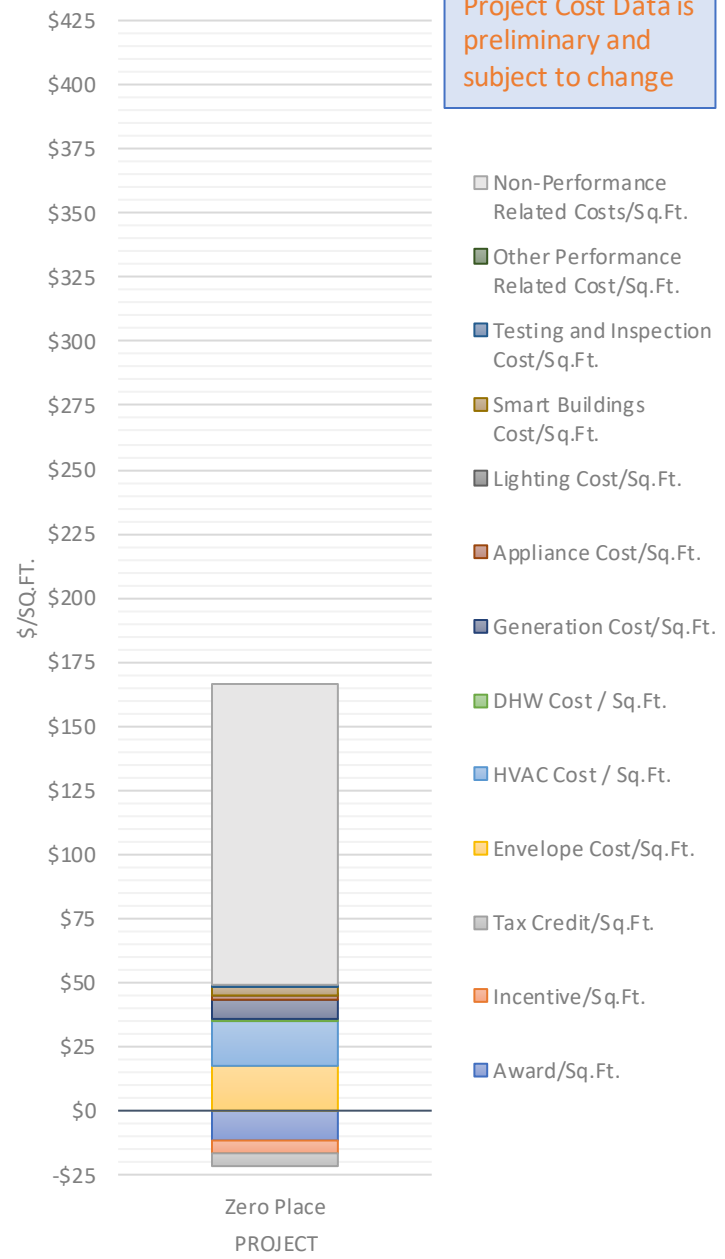
Technical attribute summary:

- 4 Stories, 46 Dwelling Units
- GSHP DHW
- GSHP Space Conditioning
- ICF
- ERV
- EV Charging
- Advanced controls/monitoring
- 100% Renewable Energy
- All Electric

$750,000 Award

Total Project Performance Related Costs, Non-Performance Related Costs, Incentives, Awards, and Tax Credits Per Sq.Ft.

Project Cost Data is preliminary and subject to change



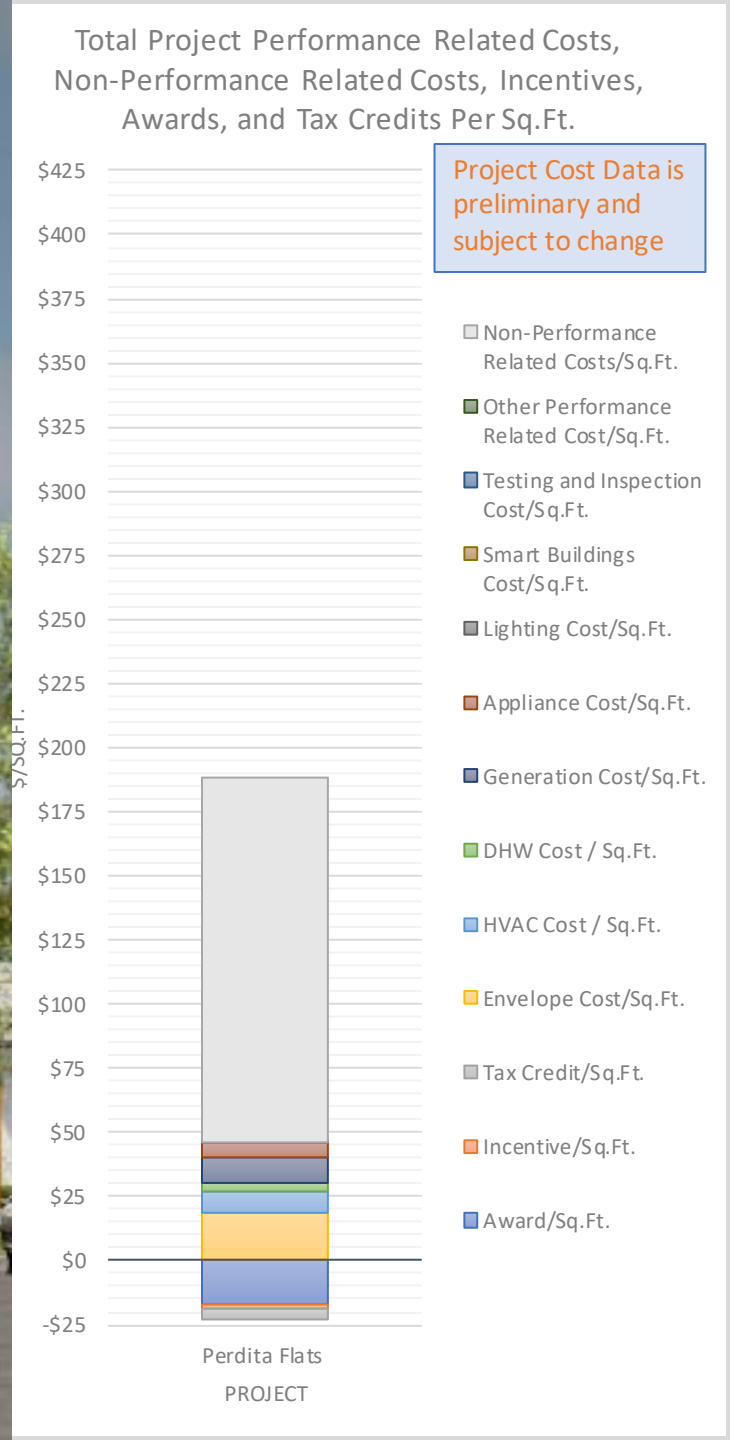
Perdita Flats

Ithaca, NY

Technical attribute summary:

- **3 Stories, 4 Dwelling Units**
- **ASHP w/ CO2 DHW**
- **Multisplit ASHP Space Conditioning**
- **Wood Frame**
- **ERV**
- **Advanced controls/monitoring**
- **100% Renewable Energy**
- **All Electric**

$70,560 Award



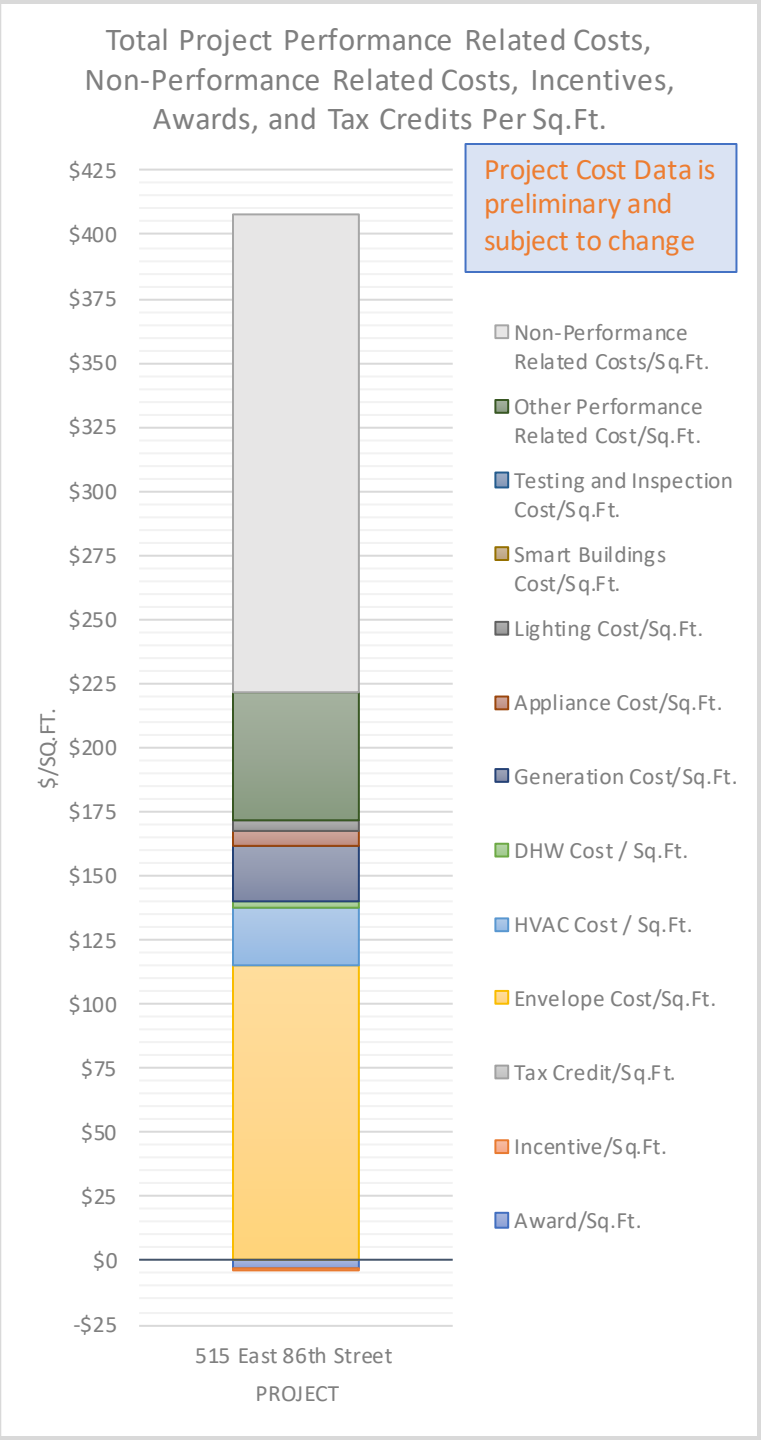
515 East 86th

New York, NY

Technical attribute summary:

- **22 Stories, 140 Dwelling Units**
- **Condensing Boiler DHW**
- **VRF Space Conditioning**
- **ERV**
- **HP clothes dryers**

$500,000 Award



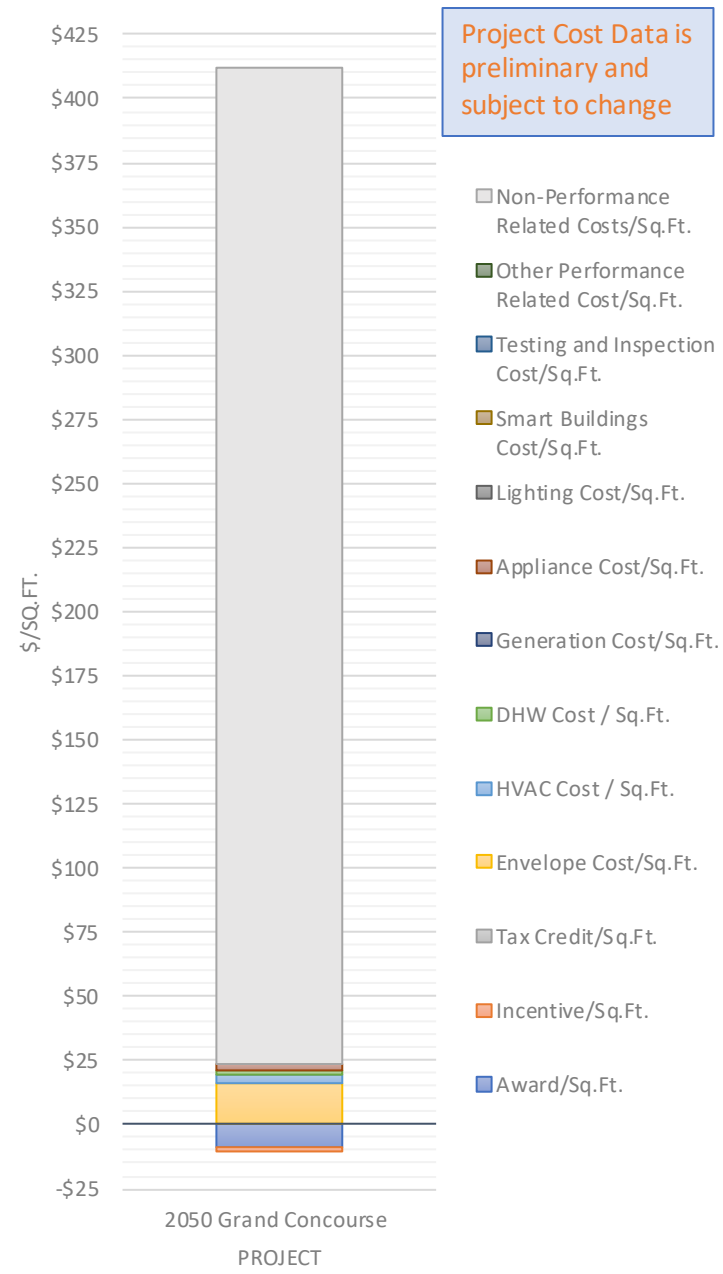
2050 Grand Concourse

Bronx, NY

Technical attribute summary:

- **13 Stories, 96 Dwelling Units**
- **LMI**
- **Ultra-high efficiency condensing storage tank DHW**
- **VRF ASHP Space Conditioning**
- **ERV**
- **Advanced controls/monitoring**

$750,000 Award



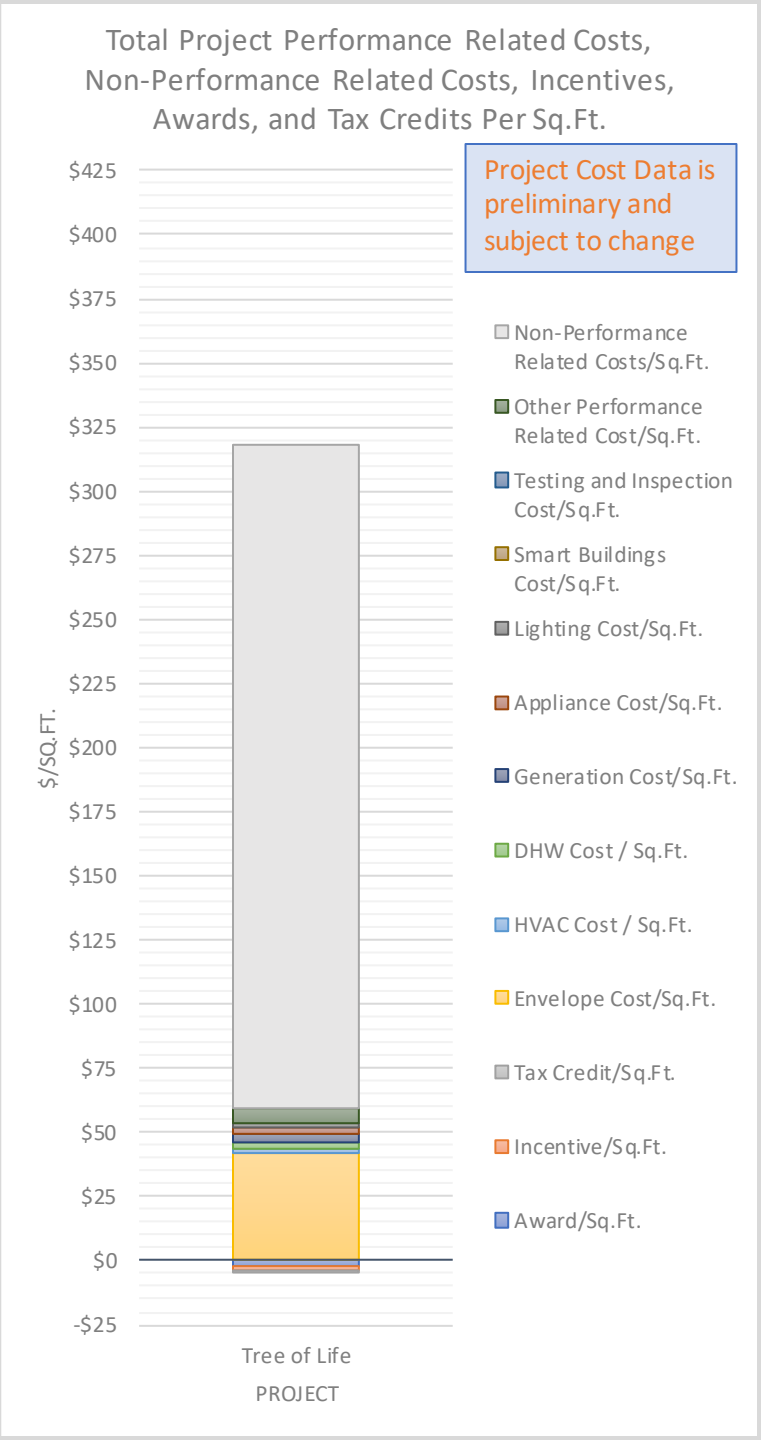
Tree of Life

Jamaica, NY

Technical attribute summary:

- 12 Stories, 174 Dwelling Units
- LMI
- CHP DHW
- VRF ASHP Space Conditioning
- ICF
- ERV
- Advanced controls/monitoring
- 19% Renewable Energy

$500,000 Award



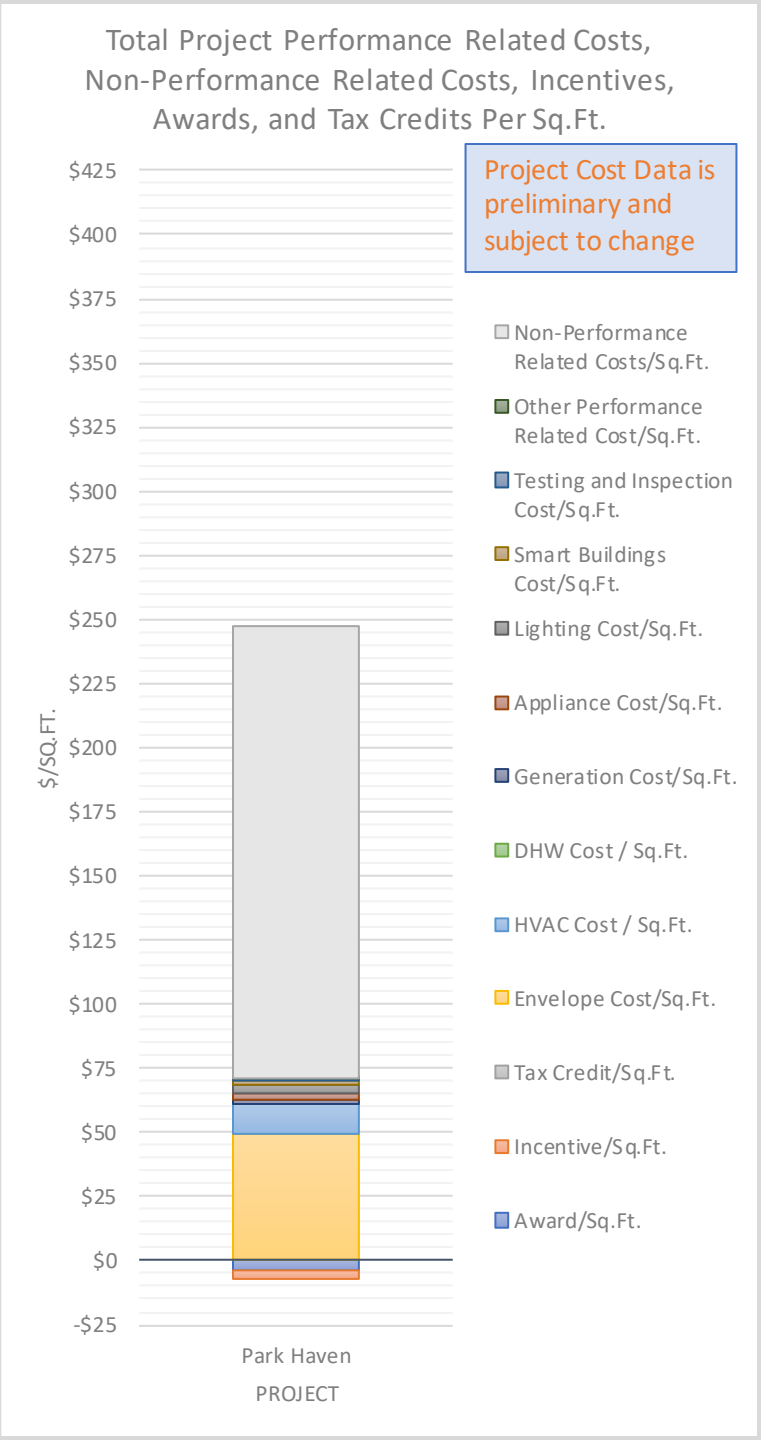
Park Haven

Bronx, NY

Technical attribute summary:

- **10 Stories, 178 Dwelling Units**
- **LMI**
- **Natural Gas DHW**
- **VRF ASHP Space Conditioning**
- **ERV**
- **Advanced controls/monitoring**
- **4% Renewable Energy**

$750,000 Award



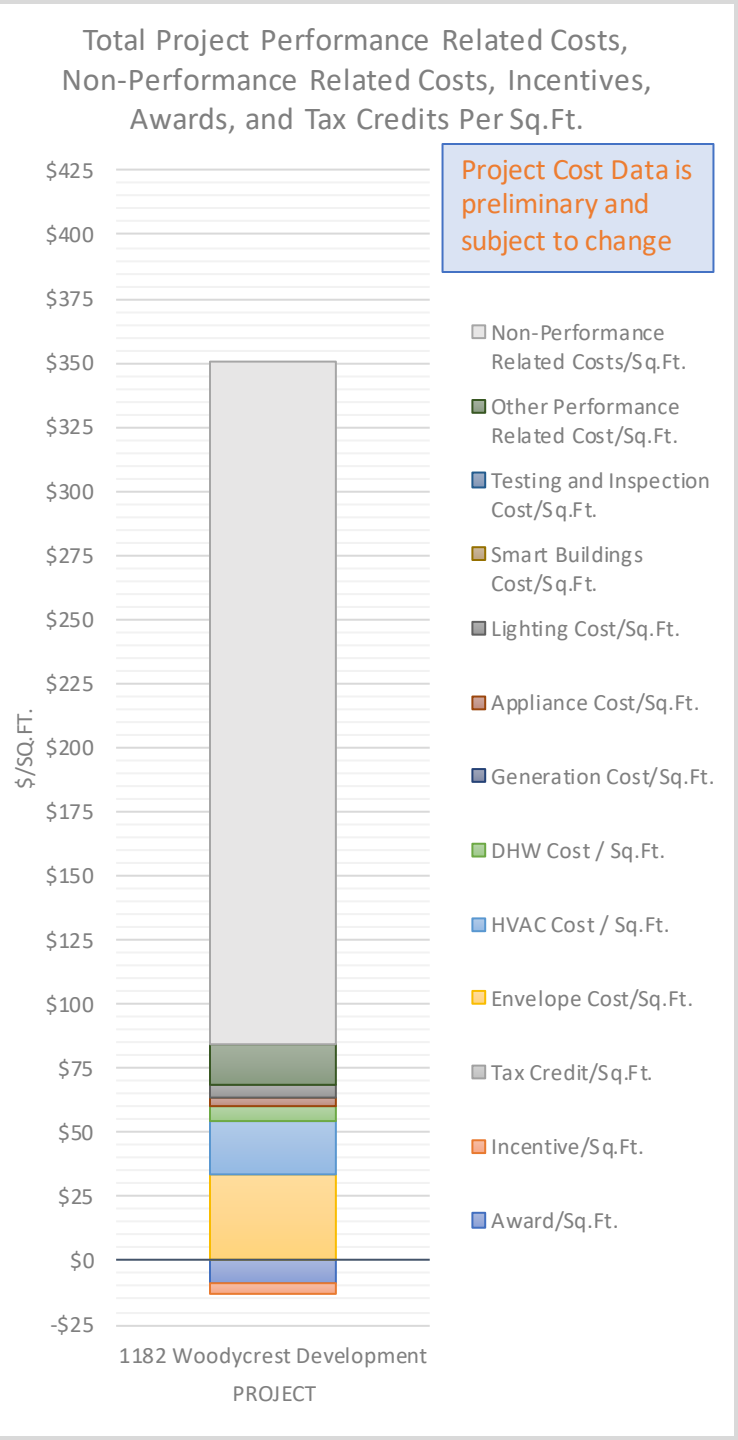
1182 Woodycrest

Bronx, NY

Technical attribute summary:

- 9 Stories, 45 Dwelling Units
- ICF Construction
- VRF ASHP Space Conditioning
- ERV
- Replicable Model
- LMI

$412,860 Award



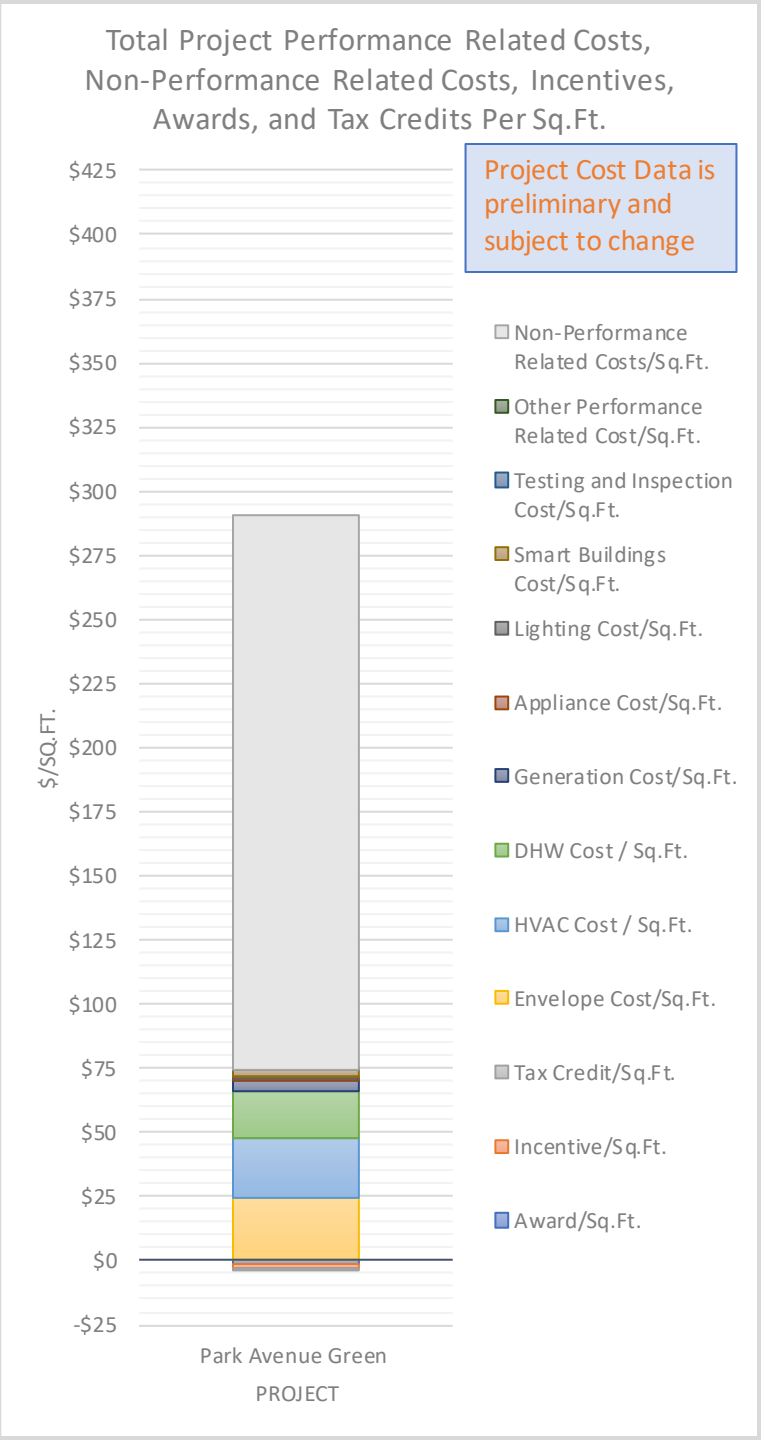
Park Avenue Green

Bronx, NY

Technical attribute summary:

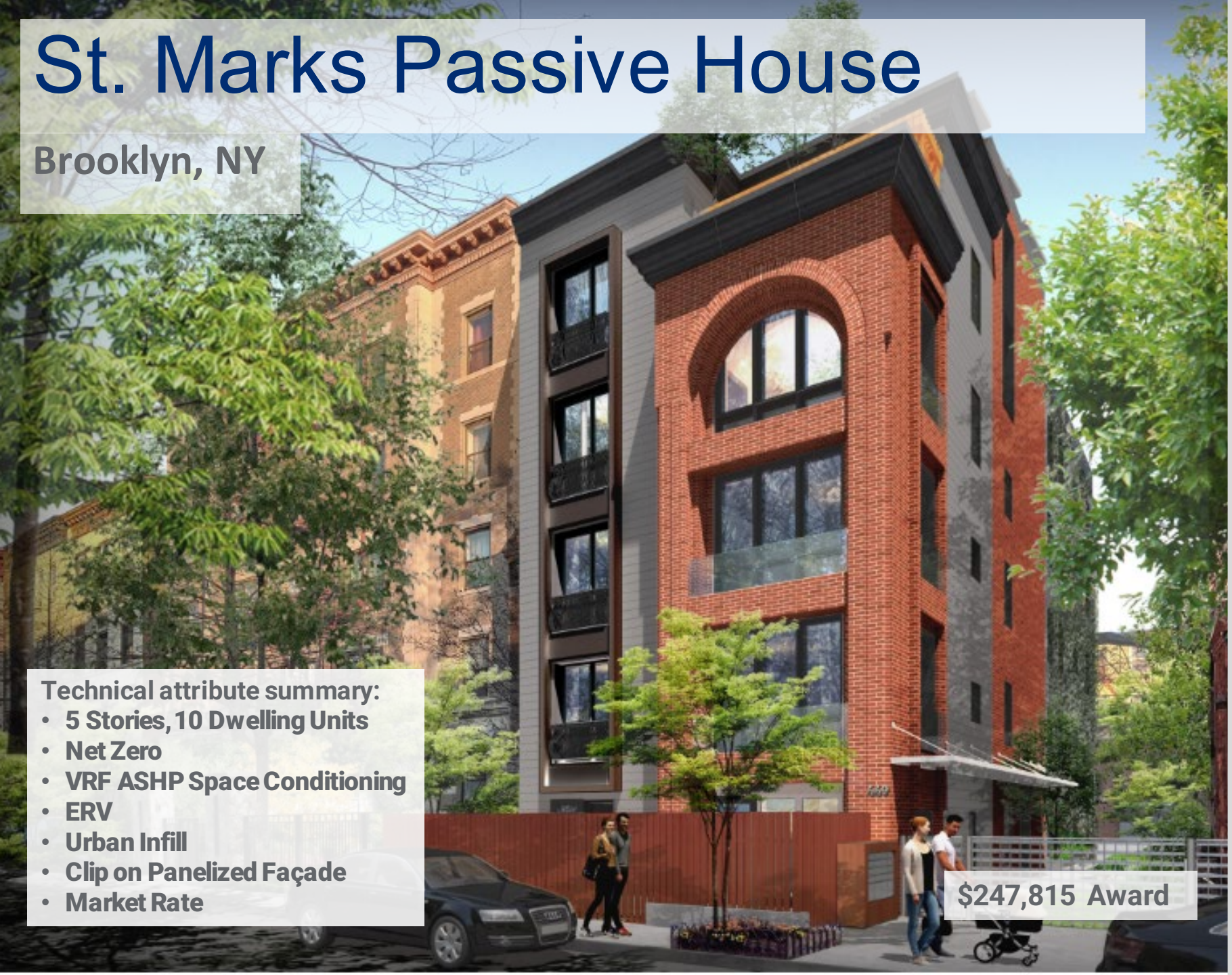
- 15 Stories, 154 Dwelling Units
- LMI
- Natural Gas DHW
- VRF ASHP Space Conditioning
- ERV
- Advanced controls/monitoring
- Comparison to "Sister Building"

$250,000 Award



St. Marks Passive House

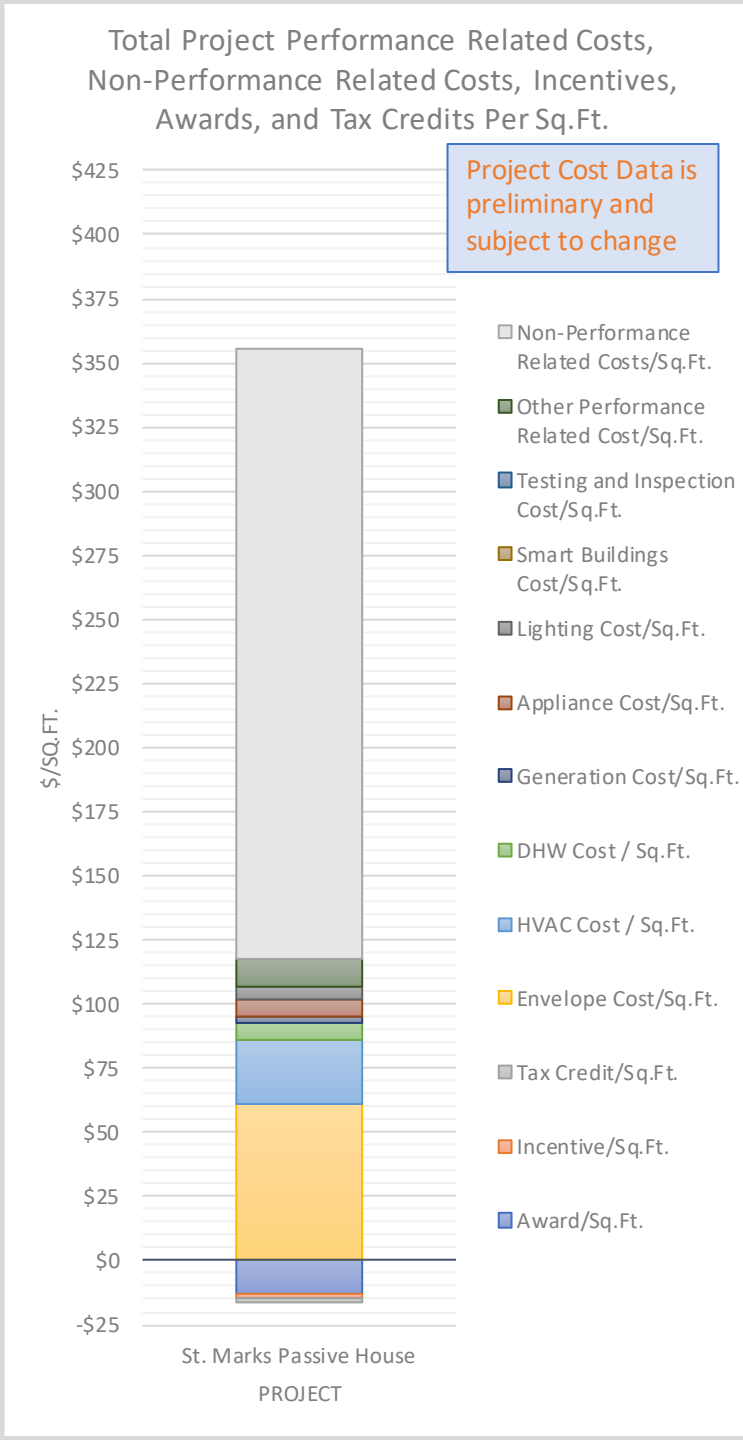
Brooklyn, NY



Technical attribute summary:

- 5 Stories, 10 Dwelling Units
- Net Zero
- VRF ASHP Space Conditioning
- ERV
- Urban Infill
- Clip on Panelized Façade
- Market Rate

$247,815 Award



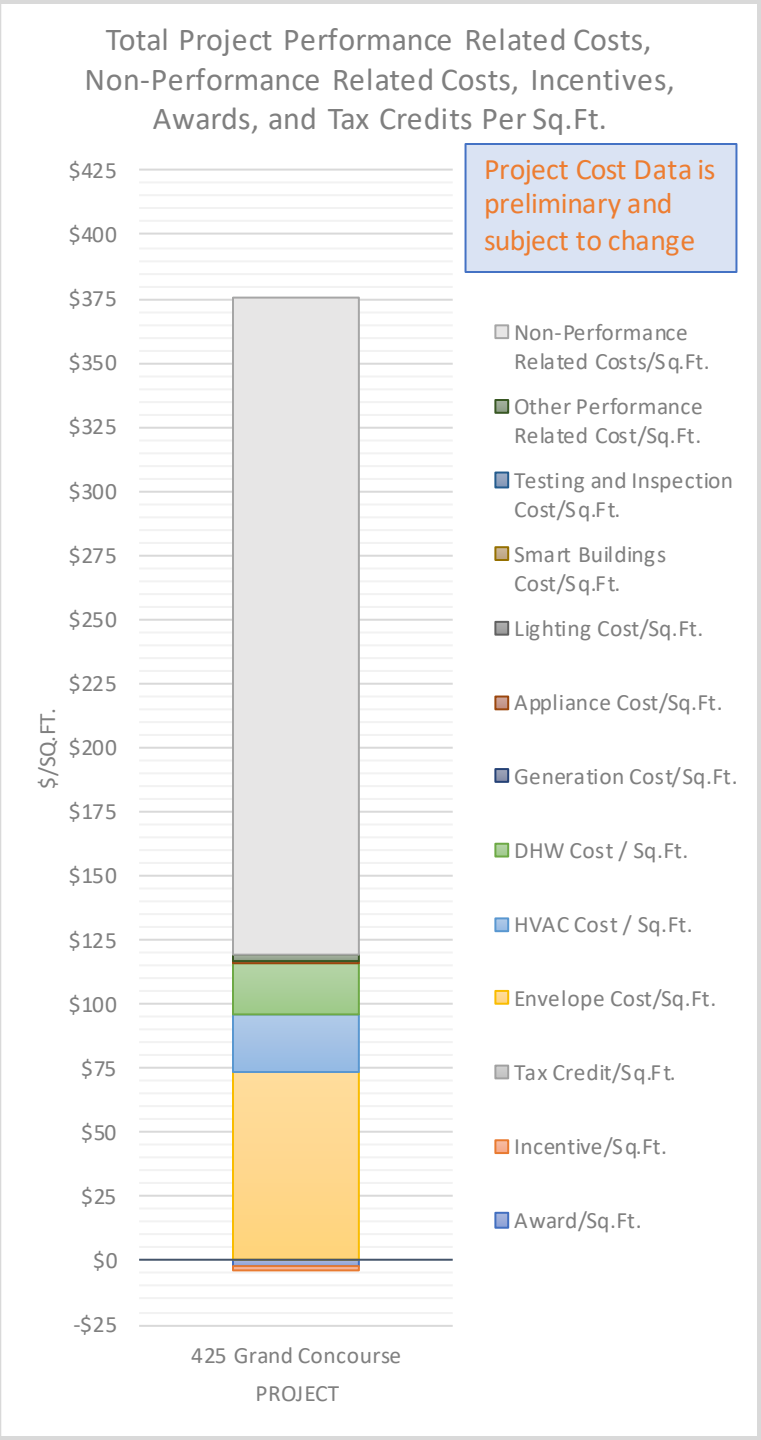
425 Grand Concourse

Bronx, NY

Technical attribute summary:

- 26 Stories, 277 Dwelling Units
- LMI
- Natural Gas DHW
- VRF ASHP Space Conditioning
- ERV
- Mixed Use
- Smart Building Controls

$750,000 Award



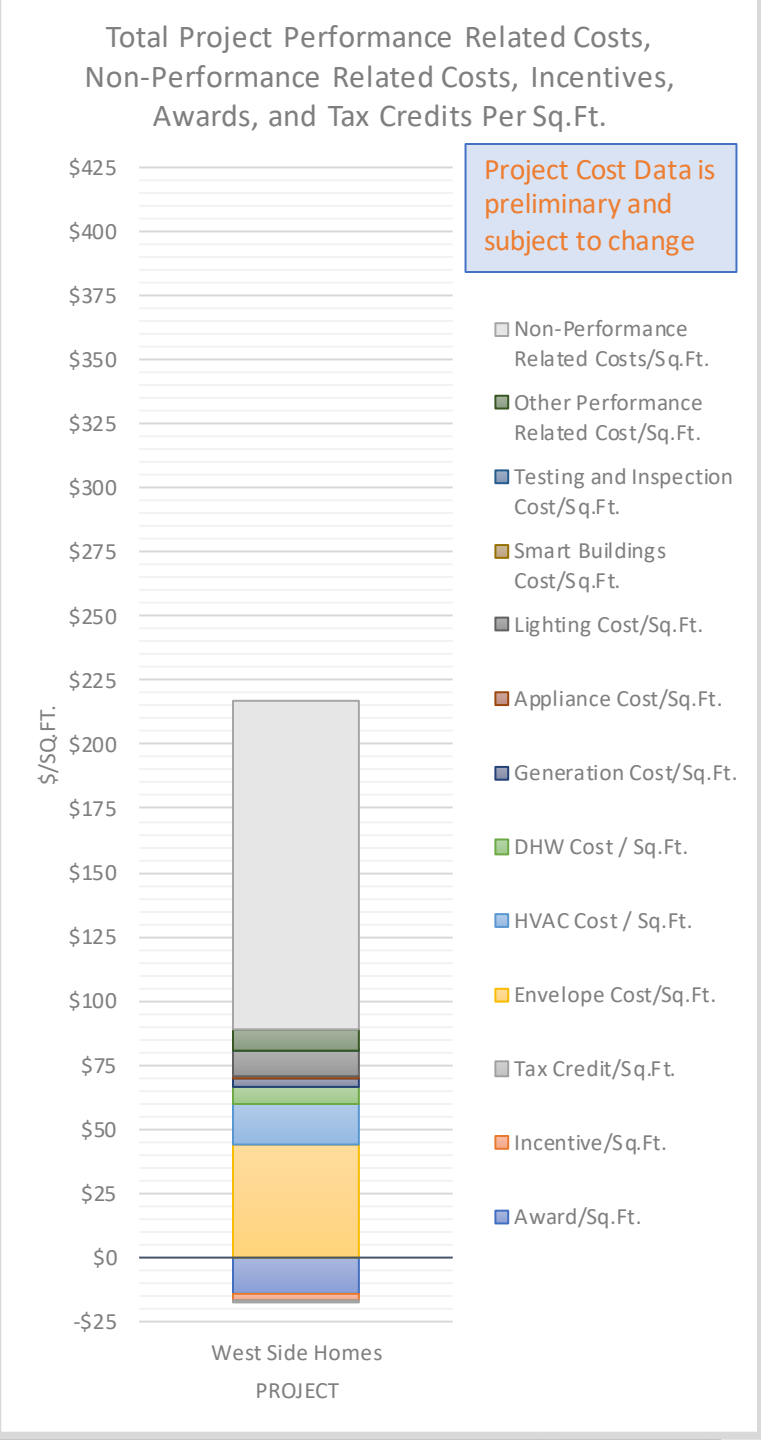
West Side Homes

Buffalo, NY

Technical attribute summary:

- 3 Stories, 15 Dwelling Units
- LMI
- GSHP Space Conditioning and DHW
- ERV
- Panelized Construction
- Smart Building Controls
- Net Zero

$363,620 Award



Appendix B

Awarded Project Summaries

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

Round 1

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

North Miller Passive

Newburgh, NY

Under Construction
$39,720 Award

- Stephen Taya Property Management
- Northeast Projects LLC

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
3	1	3	Gut Rehab	3,972	3,972	Central Hudson	Central Hudson	Mid Hudson	No	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
Minisplit - ASHP	ERV	ASHP	SHPO, with continuous insulation inside or out	Yes	Urban	Yes	No	PHIUS	PHIUS, PHIUS Source Zero, EPA Energy Star, DOE Zero Energy Ready homes, EPA WaterSense & IndoorAirPlus	LMI

North Miller Passive Multifamily honors Newburgh's existing historic townhouses while delivering high-performance benefits of comfort, indoor air quality, and durability. The improved project will upgrade the building to Net Zero designation benefiting not only the building occupants, but also the building owner. The business case includes: 1) scarcity of affordable housing, 2) negligible property costs / low capital requirements; and 3) owner-paid utility model which allows the project to turn utility savings into income. Because this combination of factors is common in Newburgh and other financially distressed areas, this project can serve as an example to be replicated by other developers and lenders.

Technical attribute summary: Exceptionally low-cost gut rehab, indicating replicability, fully electrified with ASHP for HVAC and dhw, ERV, smart buildings controls.

Solara Phase 2

Rotterdam, NY

Late Design
$750,000 Award

Bruns Associates, LLC
Black Mountain Architecture

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
72	3	3	New	92,484	92,484	Nat'l Grid	NA	Capital Region	No	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
Minisplit - ASHP	ERV	Solar Thermal	Zip Wall, polyiso	Yes	Suburban	Yes	No	ERI	EPA ENERGY STAR, DOE Zero Energy Homes	Market rate

Solara Apartments in Rotterdam, NY is a leading example of market-rate net zero energy housing using conventional materials and technologies. The apartments are designed to radically reduce energy use through extensive air sealing, continuous exterior insulation, air source heat pumps for heating and cooling, energy recovery ventilation, premium windows, and solar hot water. Photovoltaic solar panels will produce 100% of Solara's energy. The apartments feature attractive, "all-inclusive" living with all utilities included in the monthly rent. Solara demonstrates that market-rate green multifamily buildings are superior to conventional multifamily buildings and provide an enhanced living environment without sacrificing comfort and convenience.

Technical attribute summary: PV, solar thermal dhw, ASHP, ERV, HP clothes dryers, EV, advanced controls/monitoring strategy for energy, humidity, IAQ, all-in rental model.

Village Grove

Trumansburg, NY

Under Construction
$932,280 Award

Ithaca Neighborhood Housing Services
Sustainable Comfort

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
40	1	2	New	46,614	46,614	NYSEG	NA	Southern Tier	No	N/A

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
GSHP	ERV	GSHP	Panelized wall and floor system	Yes	Suburban	Yes	No	PHIUS	PHIUS, EPA ENERGY STAR, Indoor AirPlus, DOE Zero Energy Ready Homes, EGC	LMI

Village Grove is the proposed development of a highly energy efficient forty-unit affordable multifamily rental building in Trumansburg, NY, to be developed by INHS. The building will be one of the first affordable housing developments in upstate New York to attain Passive House certification and utilize ground source heat pumps, and plans to achieve NetZero through the purchase of off-site community solar. Village Grove will serve as a model to other affordable housing developers of the financial, environmental and social benefits of energy efficiency upgrades.

Technical attribute summary: GSHP for space conditioning and DHW, ERV, replicable panelized wall and floor system, cost effective, PV through contract acquisition, all-in-one rental and utility model, individual energy consumption tracking.

425 Grand Concourse

Bronx, NY

Late Design
$750,000 Award

Trinity Financial, Inc
Dattner Architects D.C.P.

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
277	1	26	New	310,758	264,033	ConEd	ConEd	NYC	No	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	Central condensing natural gas-boiler	Cont. Mineral Wool with CMU back up	No	Urban	No	Yes	PHIUS + 2015	PHIUS, EGC	LMI

425 Grand Concourse is an ambitious mixed-use, mixed-income high-rise multifamily project being certified under the PHIUS+ 2015 standard. Passive House provides a promising path to a building with greatly reduced energy consumption and greenhouse gas emissions, and at the same time to an increased quality of life. As there is currently limited data on Passive House high-rise construction cost, performance and economic viability, this project aims to show that Passive House is a replicable solution by providing much of the needed data, details, construction methods and lessons learned to the high-density housing development and construction community.

Technical attribute summary: 277-unit PHIUS, VRF, ERV, Smart Buildings controls.

Sendero Verde

New York, NY

Late Design
$750,000 Award

SV-A Owners LLC
Handel Architects

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
384	1	37	New	386,895	357,029	ConEd	ConEd	NYC	Yes	?

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	Central condensing Boiler with 4 zone recirculation	Cast in place concrete with steel stud back up, mineral wool, R-value 24.5	No	Urban	No	Yes	PHI	PHI, EGC	LMI

Sendero Verde Building A (SV-A) will be a transformative affordable housing and mixed-use development in New York City that will be a leader in sustainability and energy efficient design upon its completion. In an effort to drastically cut the carbon emissions of the building, the design team is committed to achieving Passive House certification. As a result of SV-A's superior quality of design, its' residents will not only realize energy cost savings, but will also be living in a building with enhanced indoor air quality, comfort, and resiliency. Congruent to the project's goals of achieving Passive House certification, the SV-A project team is employing both financing and design strategies to ensure the project is both cost-effective and replicable for future development. A significant marketing effort has already begun for this project with numerous publications and presentations highlighting how it will excel as a leader in sustainable and energy efficient affordable housing development. This thorough marketing effort is only expected to continue and likely ramp up as the project progresses through development and ultimately post-occupancy operation.

Technical attribute summary: Large HPD PH Pilot (383 unit), small PV array, VRF, ERV

Affordable and Sustainable Multifamily Housing for City of Hudson

City of Hudson, NY

Early Design
$1,000,000 Award

Galvan Initiatives Foundation, Inc.
Urban Architectural Initiatives

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
84	1	5	New	95,896	91,630	Nat Grid	Nat Grid	Capital Region	No	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	ASHP w/ CO2	Panelized wall assemblies	No	Urban	Yes	Yes	PHIUS	PHIUS	LMI

The Hudson Passive Community project is an all new 84-unit mixed-use project encompassing Net Zero energy goals in the City of Hudson. This project will address the severe housing crisis in the city, while also setting an example in the community for drastic energy use reduction, walkable community, and active residential life.

Technical attribute summary: Panelized wall assemblies by reliable manufacturer, advanced combination ASHP system for space conditioning (HVAC w/ energy recovery, ventilation and humidity controls), CO2 DHW, lower costs projected, PV, larger project incorporates adaptive re-use of existing buildings.

Rheingold Senior Housing

Brooklyn, NY

Late Design
$750,000 Award

Southside United HDFC
Magnusson Architecture & Planning

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
94	1	8	New	73,728	73,728	ConEd	NA	NYC	Yes	?

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	Condensing Tankless - Electrified options under review	Stone wool & foam glass insulation, glass fiber panel rain screen	No	Urban	No	No	ASHRAE	EGC	LMI

Demonstrating truly integrated design to facilitate delivery of a wholly sustainable senior housing community on budget, Southside United HDFC – Los Sures presents Rheingold Senior Housing, a 94-unit North Brooklyn affordable-housing development that meets sustainability goals in diverse categories. Commitment to passive-house design and verification principles, as well as deep-rooted investment in its residents and surrounding community, drove the project to achieve 47% source-energy savings and 44% energy-cost savings, while also providing superior indoor air quality through its highly efficient mechanical systems, robust building envelope, and meticulous choice of materials. Going one step further, the project team carefully chose construction materials with low embodied energy and long-term durability, making this innovative building truly an environmental and community asset from its first day of occupancy. Los Sures, the residents, and the local community will share and learn from this innovative space for years to come.

Technical attribute summary: PV, VRF, ERV, stone wool and foam glass insulation, glass fiber panelized rain screen, 'active design'.

Geneva Solar Village

Geneva, NY

Early Design
$1,000,000 Award

The Solar Village Company
Sustainable Comfort

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
72	6	3	New	69600	69600	NYSEG	NA	Central NY	No	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
Minisplit - ASHP	ERV	ASHP	Panelized	Yes	Urban	Yes	No	ERI	EPA ENERGY STAR	LMI

Solar Pods are the continuation of the modular, net-zero model of buildings first seen at the development of a high performance, net-zero modular community in Geneva, NY called the Lake Tunnel Solar Village. Building upon the efforts of the single-family home community, Solar Pods looks to take the lessons learned from Lake Tunnel Solar Homes to reach full net-zero energy and drive the cost effectiveness of a high-performance building. The project will push the market forward by sharing operation financials and energy performance of the project, to show the transition to high performance buildings is possible.

Technical attribute summary: Modular (Geneva), PV, unique integration of ASHP to support space conditioning ERV, ASHP pre-heat of dhw, induction cooktop, HP clothes dryer, Smart buildings monitoring & controls.

La Central Building C

Bronx, NY

Early Design
$1,000,000 Award

Hudson Hub II LLC (Hudson Companies, BRP Companies, ELH-TKC LLC, Breaking Ground, and Comunilife)

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
168	1	13	New	166,711	159,076	ConEd	ConEd	NYC	Yes	?

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	ASHP	Cavity and cont. ext. mineral wool	Yes	Urban	No	Yes	PHI	PHI, LEED	LMI

La Central Building C, a 100% affordable housing development, will be a leader in sustainability among all development types across the state of New York upon its completion. In an effort to drastically cut the carbon emissions of the building, the design team is committed to achieving Passive House certification and is currently evaluating the feasibility of achieving the Passive House Plus standard by designing an all-electric building. As a result of Building C's superior quality of design, its residents will not only realize energy cost savings over a typical new-construction affordable housing development but will also be living in a building with enhanced indoor air quality, comfort, and resiliency. Congruent to the project's goals of achieving Passive House certification, the Building C project team is employing both financing and design strategies to ensure the project is both cost-effective and replicable for future development.

Technical attribute summary: VRF, ERV, (potential) central HP water heating under review. Induction cooktop, PV.

Flow Chelsea 211 West 29th Street

New York, NY

Under Construction
$500,000 Award

Bernstein Real Estate
ZH Architects

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
55	1	24	New	64,725	55,672	ConEd	ConEd	NYC	No	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	Gas	Panelized Taktl cement bd rain screen, mineral wool, AAC block walls/insulation & EPS EIFS over AAC	No	Urban	No	Yes	PHI	PHI	Market Rate & LMI & 421A

211 W 29th street or "Flow Chelsea" is a 24-story Passive House development by Bernstein Real Estate (BRE) that will be a 24 story mixed use building in Manhattan. By meeting stringent Passive House criteria, 211 W 29th street will provide a new standard of comfort, quality in the competitive NYC rental market. As the tallest infill PH project in the city and with a mix of market rate and inclusionary / 421A rentals, Flow Chelsea provides an ideal template for other future developments. Those living and working at 211 W 29th will be in one of the most energy efficient buildings in the city, while BRE, as the developers enjoy reduced utility costs and the benefits of durable, high end construction.

Technical attribute summary: PV, VRF, ERV, induction cooktop, HP clothes dryers, panelized Taktl cement bd rain screen, mineral wool, AAC block walls/insulation.

Park Haven

Bronx, NY

Late Design
$750,000 Award

The Community Builders, Inc.,
Bright Power

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
178	1	10	New	180,155	157,525	ConEd	ConEd	NYC	Yes	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	Gas roof HWH	R-25 exterior walls	No	Urban	No	Yes	ASHRAE	EGC	LMI

Park Haven is a high-performance new construction in its late stage of design to be erected in The Bronx, NY. It will be 10 stories high, with 178 dwelling units, 180,155 gross square feet, and designed to the rigorous Passive House Standards. This building design will be implementing advanced, climate-specific design strategies to reduce energy use and carbon emissions. The Community Builders are seeking funding under Buildings of Excellence (RFP 3928) to pilot real-time energy management equipment and services at the property in order to ensure it is successfully maintained and operated at peak performance. Data collected will provide detailed information on the usage patterns of high-performance building systems to all arms of the TCB organization, both informing ongoing operational costs and underwriting for future developments, supporting the successful transition to the operations and property management team, and engaging residents to promote responsible energy use.

Technical attribute summary: PV, VRF, ERV, focus on smart buildings controls and monitoring

Park Avenue Green

Bronx, NY

Completed within 3 years
$250,000 Award

Omni New York, LLC
Bright Power

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
154	1	15	New	163,743	159,146	ConEd	ConEd	NYC	Yes	?

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	CHP and Demand Recirculation	EIFS -Majority thickness is 7”	No	Urban	No	Yes	PHIUS	PHIUS, 2015 Enterprise Green Communities & ENERGY STAR MFHR	LMI

Park Avenue Green is a recently constructed PHIUS+ 2015 Certified building. With 15 stories, 154 dwelling units, and approximately 164,000 gross square feet, it is the world’s largest PHIUS+ Certified project by height, number of units, and square footage. Park Avenue Green is located directly adjacent to Morris I Apartments, a similarly sized new construction development. Omni New York is seeking funding under Buildings of Excellence (RFP 3928) to perform an energy usage comparison of these two buildings. The goal of this comparison is to collect granular data on energy use across both buildings in order to quantify the energy savings benefits of Passive House construction versus standard building techniques in multifamily housing.

Technical attribute summary: Recently completed PHIUS building adding smart buildings controls to improve performance, and to allow data capture to compare performance with sister building constructed following standard practices

HELP One

Brooklyn, NY

Early Design
$1,000,000 Award

HELP USA
Curtis + Ginsberg Architects

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
178	1	10	New	193,500	182,700	ConEd	Nat Grid	NYC	Yes	?

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	Central Condensing Boilers	Cont. XPS insulation at Brick & mineral wool at /fiber cement panels	No	Urban	No	Yes	ASHRAE	EGC & ENERGY STAR MFHR	LMI

HELP ONE, located on Sutter Avenue between Snediker Avenue and Hinsdale Street in Brooklyn, will be permanent housing with 178 dwelling units (each with a dedicated bathroom and kitchen) and accessory uses. HELP ONE is designed with VRFs, Energy Star appliances, water conserving plumbing fixtures, thick insulation, and LED lighting. These features will provide greater comfort and improved air quality for residents and will result in lower annual operating costs. With funding from NYSERDA's Buildings of Excellence competition, ERVs and solar panels would be added, providing further benefits to residents and DHS.

Technical attribute summary: VRF, ERV, modest PV (5% of predicted load).

Bushwick Alliance

Brooklyn, NY

Late Design
$402,220 Award

RiseBoro Community Partnership
STAT Architecture PC

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
20	1	4	New	20,111	20,111	ConEd	NA	NYC	Yes	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	ASHP w/ CO2	Panelized rain screen	Yes	Urban	Yes	No	PHIUS	PHIUS	LMI

Bushwick Alliance is an affordable housing project to be developed in 2020 by RiseBoro Community Partnership and St. Nicks Alliance, two local non-profits with a long history of community service. The all electric, carbon-neutral building at 63 Stockholm St. will have 20 units of deeply affordable rental housing, with passive house design, solar panels, hot water via heat pumps, and a culture of sustainability. This high profile project is a crucial opportunity to prove an all electric sustainable design model to NYC housing agencies and that sustainable and cost effective buildings are possible for our city's most vulnerable populations.

Technical attribute summary: PV, CO2 dhw, panelized rain screen.

Linden Grove

Brooklyn, NY

Early Design
$1,000,000 Award

Blue Sea Development Company, LLC
Chris Benedict, R.A

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
170	2	9	New	125,230	125,230	ConEd	Nat Grid	NYC	Yes	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	CHP	Modular	No	Urban	No	No	PHIUS	PHIUS, EGC, LEED Platinum, NGBS Gold, ENERGY STAR, Active Design Verified, FitWell	LMI

The New York City Housing Authority (NYCHA) and Department of Housing Preservation and Development (HPD) selected Blue Sea Development and Gilbane Development, through a competitive RFP process, to develop Linden Grove: a 155-unit, affordable housing development for low- and very-low income seniors. To help address the critical need for affordable housing, Linden Grove will demonstrate a fundamental proof of concept: the technical feasibility of affordable, Passive House certified, modular construction. The thirteen-story, volumetric modular, structure will serve as a prototype for a building system that can be deployed across NYCHA's underdeveloped land holdings and throughout the State.

Technical attribute summary: Modular, PV, VRF, ERV, USB outlets, Mt. Sinai health study (CHP for DHW).

Creekview Apartments

Canandaigua, NY

Early Design
$1,000,000 Award

Baldwin Real Estate Development Corp.
Sustainable Comfort

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
96	12	2	New	93,668	93,668	RG&E	NYSEG	Finger Lakes	No	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF - GSHP	ERV	GSHP	3" polyiso panels	Yes	Suburban	Yes	No	ERI	PHIUS+ 2015, EPA ENERGY STAR, DOE Zero Energy Ready	LMI

CreekView Apartments Phase II is the continuation of the development of a high performance, passive house community in Canandaigua. Building upon the efforts of the recently completed Phase I which is certified to PHIUS+ 2015 , Phase II looks to take the lessons learned from Phase I to reach full Net-Zero energy, continuing to drive the cost effectiveness of high-performance building. The project will reach Net-Zero via on site solar PV in combination with a common ground source heat pump loop serving VRF heat pump units for heating, cooling, and ground source water to water heat pumps for hot water heating, combined with the same passive house levels of insulation enjoyed in Phase I. These strategies are not only repeatable, but able to be widely employed across the state.

Technical attribute summary: PV, GSHP coupled to VRF, GSHP-coupled dhw, EV, insulated foundation system, 'all-in' rental model for major utilities -allowing owner to capture economic benefits associated with high performance buildings and systems.

2050 Grand Concourse

Bronx, NY

Late Design
$750,000 Award

Unique People Services, Inc.
Magnusson Architecture and Planning PC

# of Dwellings	# of Buildings	# of stories	New or Gut Rehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
96	1	13	New	86,173	75,520	ConEd	ConEd	NYC	Yes	?

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	Ultra-high efficient condensing storage water tank	Above grade walls: Brick and Metal panel with R-16 Continuous insulation.	No	Urban	No	Yes	ASHRAE	LEED Gold	LMI

The project is targeting LEED Gold certification and is currently scoring 73.5 LEED Homes credits. The design team plans to incorporate several innovative strategies to promote whole building environmental well-being, sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. It will be well connected to public transportation and amenities that are easily accessible and within walking distance providing an opportunity for an active lifestyle and an excellent complement to the local community.

Technical attribute summary: Smart buildings/monitoring focused, all LED lighting, lighting controls in all common spaces (including bi-level and occupancy sensors), daylighting along main circulation, all energy star qualified appliances, photovoltaic panels providing power to community facility, electric heat pump/ VRF heating and cooling throughout building, R-16 continuous stone wool insulation at all above grade exterior walls facilitated by standoff clips supporting brick relieving angles at brick and composite sub framing at metal cladding (also reducing thermal bridging), R-12 continuous foundation insulation, R-30 average roof insulation as well as high efficiency UPVC windows and window walls.

Perdita Flats

Ithaca, NY

Under Construction
$70,560 Award

Perdita Flats Development, LLC,
STREAM Collaborative

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
4	1	3	New	3,528	3,528	NYSEG	NA	Southern Tier	No	?

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
Minisplit - ASHP	ERV	ASHP w/ CO2	R-45 for exterior wall, R-60 for roof, triple-pane windows	Yes	Urban	Yes	No	ERI	ENERGY STAR v3.1	Market Rate

Perdita Flats is a three-story, four-unit zero energy residential building constructed on an empty corner lot in Ithaca, New York. Using an integrated design approach, Perdita Flats incorporates passive, renewable, resilient, and sustainable solutions to demonstrate all that is possible with available commercial technology and best building strategies. The space conditioning and dhw will use a very low global warming impact systems and strategies, and use only electricity to take advantage of the clean electric grid in Upstate New York. The rest of the electricity use will be provided by renewables annually, so the building will be zero energy. We believe the system choices and strategies in this project will reduce GWP to minimal.

Technical attribute summary: Unique ground heat exchange proposed to pre-condition fresh air ventilation along with energy recovery ventilation after then. Further, this air will be heated CO2 refrigerant Sanden ASHP a and cooled and dehumidify by a dehumidifier. There will be mini electric baseboards in the apartments to be used for as supplement or back-up. DHW will be provided only by CO2 refrigerant Sanden ASHP. All electric, Solar PV, presented as simple building geometry, optimum WWR, reflective white interior wall paint, wedging windows for more daylight, low-cost/replicable, market-rate.

Zero Place

New Paltz, NY

Late Design
$750,000 Award

Net-Zero Development, LLC
Integral Building & Design, Inc.

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
46	1	4	New	63,320	54,860	Central Hudson	Central Hudson	Mid Hudson	No	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
GSHP	ERV	GSHP	ICF	Yes	Urban	Yes	Yes	ERI	DOE Zero Energy; EPA ENERGY STAR Homes, Indoor airPLUS, USGBC LEED	Market Rate

Zero Place will provide an affordable model to accelerate the construction of mixed-use, zero-energy buildings. This project integrates a host of innovative energy efficiency technologies including thermal enclosure enhancements, renewable heating/cooling systems, heat-recovery ventilation and an advanced solar electric system designed to generate enough power to meet the building's annual energy needs. Critically, the Zero Place team is committed to providing an open framework for others to replicate and improve upon their success. It is both the hope and intention to make these buildings a mainstream standard throughout New York.

Technical attribute summary: GSHP for space conditioning utilizing a common ground loop coupled to unitary Water-to-Air HP units. The common loop will also be coupled to Water-to-Water HP units and thermal storage tanks for the central DHW system to serve the entire building. The common loop is powered by a central pump station consisting of two high efficiency, variable speed circulators. The ventilation consists of unitary ERV's with fresh air distributed through the HVAC ductwork. The renewable energy consists of a set of high output Solar PV arrays on roof and solar awnings. Thermal enclosure consists of ICF Walls, Spay Foam slabs and roof areas, and High-R fenestration. Resilient construction strategies for long-term durability. All-in rental model, smart building controls, display monitors to (anonymously) share consumption, CO2-activated demand-controlled ventilation, Heat Pump clothes dryers, induction cooktops, (20) EV car charging stations plus e-bike charging stations. Market-rate with and 5 affordable housing units

Westgate Apartments

Rochester, NY

Early Design
$1,000,000 Award

Providence Housing Development Corp
SWBR Architecture, Engineering & Landscape Architecture, D.P.C

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
80	1	4	New	81000	81000	RG&E	RG&E	Finger Lakes	No	?

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
Minisplit - ASHP	ERV	ASHP w/ CO2	R-12.6 cont Zip with R21 cavity wall R-70 Roof	Yes	Urban	Yes	No	PHIUS	PHIUS, EPA ENERGY STAR, Indoor AirPlus, DOE Zero Energy Ready Homes, EGC	LMI

Westgate Apartments is a single new construction, infill apartment building proposed at the southwest corner of Chili Avenue and Brooks Avenue in the Town of Gates developed by Providence Housing. This affordable transit-oriented development (TOD) will be constructed to Passive House (PHIUS+ 2018) standards and will be used as training grounds for contractors throughout the region. To reduce energy use and carbon emissions the project team has included increased insulation levels, high-efficiency mechanical systems, innovative Sanden DHW, energy recovery ventilation, solar photovoltaics (PV), densification, electrification, and possible on-site electric car sharing.

Technical attribute summary: ASHP for space conditioning, ERV, innovative Sanden CO2 dhw system, induction cooktop, PV (combination of on-site and off-site arrays to cover at least 60% of projected loads, possibly up to NZE), on-site electric car-share with EV charging stations, all-in rental model with smart building controls, energy monitoring and display.

Engine 16

New York, NY

Late Design
$197,010 Award

223 East 25th Street LLC
Baxt Ingui Architects

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
4	1	4	Gut Rehab	13,134	10,450	ConEd	NA	NYC	No	?

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
Minisplit - ASHP	ERV	ASHP	SHPO	Yes	Urban	No	Yes (Community Facility)	PHI	PHI/ EnerPHit	Market Rate

Engine 16 is a special building with a rich history. The design celebrates and extends the architectural features while adapting a new use as a multifamily residential building with a community facility. This alone makes for an interesting building, but as a certified Passive House with renewables, Engine 16 becomes a potential beacon project. New York City is overwhelmed with buildings similar in scale and use, making this a perfect exemplary project to share the systematic approach that Baxt Ingui Architects and their consultants have implemented on 15 Passive rowhouses. Our goal is to collaborate with NYSERDA in this effort to replicate the adaptive reuse process and help educate others on resilient, energy efficient building strategies.

Technical attribute summary: Exceptional design of an adaptive re-use / gut rehab, ASHP for HVAC, ERV, HP for dhw, PV, induction cooktop, smart buildings controls, market-rate.

1182 Woodycrest Development

Bronx, NY

Under Construction
$412,860 Award

Woodycrest Apartments LLC
Altanova LLC

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
45	1	9	New	41,286	41,286	ConEd	ConEd	NYC	Yes	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	Condensing Boilers	Panelized ICF	No	Urban	No	No	PHIUS	PHIUS, EGC	LMI

The Woodycrest project is building upon The Bluestone Organization's experience with low energy intensity and advanced clean energy buildings to refine a model of low-income housing that is beneficial for the people who live in it, the developers that own and operate it, the public funding which finances it and the environment in general. Scaling up the core Passive House strategies of airtightness, robust panelized thermal envelope and energy recovery and pairing with advanced VRF air source heat pumps and on-site solar PV electricity generation in a nine story 45 unit high rise setting, the project is setting the stage for future efficient developments in the tight confines on New York City's small lots and strict code restrictions.

Technical attribute summary: VRF, ERV, EV, panelized ICF, PV, lower cost & replicable.

Tree of Life

Jamaica, NY

Under Construction
$500,000 Award

First Jamaica Community & Urban Development Corp.
GF55 Architects LLP

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
174	1	12	New	213,423	156,200	ConEd	National Grid	NYC	Yes	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	CHP	Panelized ICF, AeroBarrier	No	Urban	No	Yes	PHIUS	PHIUS, EGC	LMI

The Tree of Life Development in Jamaica, Queens is the latest development project by The Bluestone Organization (Bluestone). Tree of Life is a 12-story affordable, mixed income, mixed-use residential and community facility building. It will include 174 affordable rental units, 9,600 gross square feet owned and operated by the First Jamaica Community and Urban Development Corporation, a not-for-profit organization providing community service programs in Jamaica, and 15,400 square feet to be leased and operated as a health care facility to a not-for-profit operator. The building has achieved PHIUS pre-certification and is currently under construction. Based on the energy model, the building's source energy is 3,824 kWh/person/year, a 38% improvement over the PHIUS requirement.

Technical attribute summary: PV, VRF, ERV, (CHP for DHW), panelized ICF, AeroBarrier, lower cost & replicable.

St. Marks Passive House

Brooklyn, NY

Late Design
$247,815 Award

Masmore Corporation
Cycle Architecture + Planning

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
10	1	5	New	15928	15928	ConEd	Nat Grid	NYC	Yes	***NO***

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	ASHP	Manufactured & panelized clip on facade	Yes	Urban	Yes	No	PHI	PHI	Market Rate

First and foremost, this project at 669 St Marks Avenue is a real estate venture by a European developer who saw the potential for a sound investment in Brooklyn: a place that is densely populated, well-served by amenities and services. In addition, the developer's attitude that a well-designed and highly energy efficient building is already business as usual in Europe helped power Cycle Architecture's two Certified Passive House Designers to meet pre-certification standards for a Passive House certification on this project currently seeking approvals from authorities on this 9 unit multifamily residential building.

Technical attribute summary: Unique but replicable urban infill project, focus on resilient design, healthy/safe/comfortable living environment, manufactured & panelized clip-on façade, VRF, ERV, EV, PV, battery storage, market-rate.

Street Smart

Brooklyn, NY

Early Design
$89,260 Award

369 Manhattan
ZH Architects

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
4	1	4	New	4,463	4,463	ConEd	NA	NYC	No	?

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	ASHP w/ CO2	Panelized rain screen, foam glass foundation/insulation	Yes	Urban	No	No	PHI	PHI	Market Rate

369 Manhattan Avenue is a four-unit multi-family building that reclaims an open parking lot and transforms the lives of its residents and its neighbors. It will be beautiful, because no one wants to live or work in an ugly building. It will be comfortable, healthy, and quiet to live in. It will be constructed from common building materials, using common construction methods, and populated with state of the art, off the shelf building materials and components. It will be Passive House certified, consuming 90 percent less energy to heat and cool than a normal code compliant building. It will be durable and low maintenance, constructed to last 100 years. It will be cost effective to run, economical to maintain, and it will be a place people will want to live in. But most importantly 369 Manhattan Avenue will be a teacher, helping people become aware of the benefits of a new type of building that is economical to build, easy to replicate, desirable to live in, and transformative in its efficiency and resource use.

Technical attribute summary: PV, CO2 dhw, VRF, ERV, induction cooktop, HP clothes dryers, panelized rain screen, foam glass foundation fill/insulation.

The Seventy Six Phase 1

Albany, NY

Early Design
$658,020 Award

South End Development
Garrison-Architects

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
88	1	8	New	156,159	94,499	Nat Grid	Nat Grid	Capital Region	Yes	?

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
GSHP	ERV	Solar Thermal	Modular	Yes	Urban	Yes	Yes	PHIUS	PHIUS, Living Building Challenge Water Petal, ILFI Zero Energy	Affordable (60%)

The Seventy-Six complex is in schematic design. Phase 1 is part of a larger 3 Phase Masterplan for the redevelopment of the block as the first major new project being done in Albany's South End. The project aims for ground-breaking sustainable performance and breathtaking futuristic design that shows that green building can be engaging, creative, healthy, and exciting. The project team is made up of leaders in the green building movement with over 20 years experience specific to sustainable, net zero, modular housing and a long commitment to Passive House and Architecture 2030 goals.

Technical attribute summary: Modular, PV, ASHP, GSHP, ERV, solar thermal

515 East 86th Street

New York, NY

Under Construction
$500,000 Award

Carrera RS, LLC
Arquitectonica New York, P.C.

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
140	1	22	New	139,412	139,412	ConEd	ConEd	NYC	No	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	Central condensing natural gas-boiler	AAC block, panelized rain screen façade and EIFS	No	Urban	No	Yes	PHI	PHI	Market Rate & Affordable

The 515 East 86th Street project is a 140 unit, 140,000 square foot apartment building under construction in the Upper East Side of New York City that is designed to the Passive House standard. Using integrated project delivery along with passive design principles and efficient mechanical systems, the project will achieve significant energy savings and high occupant comfort while overcoming inherent design hurdles, all without compromising the architectural design intent. It is projected to produce 0.0010 tCO2eq/gsf.yr, significantly lower than the recently created carbon cap targets for NYC for 2024, 2030, and 2050.

Technical attribute summary: Exterior envelope includes use of AAC blocks and panelized rain screen façade and EIFIS, VRF & ERV, condensing clothes dryers. IAQ, CO2 monitoring identified as feature. Exceptionally detailed presentation of costs for critical components indicates a willingness to share financial details. Majority market-rate project with 25% of units identified as 'affordable', serving low- and middle- income renters

Linden Boulevard Phase II

Brooklyn, NY

Late Design
$1,000,000 Award

Real Builders, Inc.
Radson Development

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
160	1	8	New	174,715	144,985	ConEd	NA	NYC	No	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
VRF	ERV	ASHP	5 different w all assemblies	Yes	Urban	No	No	ASHRAE	EGC & ENERGY STAR MFHR	LMI

Linden Boulevard will provide 160 units to low-income residents in Brooklyn. If awarded funding through the NYSERDA Buildings of Excellence program, Linden Boulevard Phase II will achieve total electrification through the use of highly efficient, low carbon emitting mechanical strategies. Heating and cooling will be provided to tenants and common spaces through Variable Refrigerant Flow heat pump (VRF), with heat recovery. Ventilation for common spaces will be supplied through Energy Recovery Ventilators (ERVs). Most notably, the domestic hot water system will be an all-electric four-part plan consisting of solar thermal, air cooled hot water electric heat pumps, geothermal water cooled electric heat pump, and domestic water pre-heating, utilizing waste heat from the VRF system.

Technical attribute summary: VRF, ERV, unique dhw: HP's, coupled with solar thermal, VRF heat recovery, ground coupled loop and solar thermal array with HW storage.

Round 2

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

The Rise

Brooklyn, NY

Early Design
$1,000,000 Award

The Rise Owner LLC - Xenolith Partners LLC
Magnusson Architecture and Planning PC

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
75	1	7	New	65,071	65,071	ConEd	Nat'l Grid	NYC	Yes	TBD

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
ASHP	ERV	ASHP	Rooftop gardens, Stonewool wall & roof insulation, foamglass underslab	Yes	Urban	No	No	PHI Classic	PHI Classic, EGC 2020, WELL Certification by earning 2020 EGC cert.	LMI

Proposer's Summary: The Rise is a fully electric, mixed-use building with supportive and affordable housing for justice-involved families. The development is designed to Passive House and Enterprise Green Communities standards, and as part of the Governor's Vital Brooklyn Initiative, it will offer cost-effective solutions that reduce energy consumption, improve health, and build resilience in Brownsville, Brooklyn. Featuring state of the art heat pump water heaters for domestic hot water, VRF heat pumps for heating and cooling, energy recovery ventilators, solar PV system for on-site energy generation, smart building monitoring, rooftop gardens, a greenhouse, and green roofs and walls, The Rise will promote sustainable living and help the industry advance towards a low carbon future.

Technical attribute summary: ASHP (VRF), Solar PV, ERV, centralized ASHP DHW, electric dryer, electric cooktop, smart buildings controls.

Baird Road Apartments

Perinton, NY

Early Design
$1,000,000 Award

PathStone Corporation
Sustainable Comfort

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
76	1	2	New	74,196	74,196	RG&E	RG&E	Finger Lakes	No	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
ASHP	ERV	CO2 ASHP	cellulose insulation in walls and ceiling, Panelized Pre-fab Walls, unique shallow foundation system reduces concrete volume	Yes	Suburban	Yes	No	PHIUS	PHIUS+ 2018, PHIUS+ Source Zero, Well Certification, EPA IndoorAir Plus, DOE ZERH, EGC 2020 Plus	LMI

Proposer's summary: PathStone's proposed Baird Road Apartments is a 76-unit apartment building for seniors as a part of a larger development in Perinton, NY. Using air source heat pumps, shared ERVs, shared heat-pump water heaters, and roof-mounted solar, the project is designed to be fossil fuel free. The project achieves Net-Zero energy through PHIUS+2018, and features health and wellness through Enterprise Green Communities 2020 and WELL Certification. Additionally, the project prioritizes the use of low carbon materials and emphasizes resiliency with the inclusion of battery storage for demand control and backup systems. The project achieves this with no up-front out-of-pocket costs to the developer, and superior long-term financial benefits.

Technical attribute summary: Solar PV, Air Source Heat Pump – Heating, Panelized Pre-fab Walls, Unique Shallow Foundation, Batteries for storage and demand, Hot Water, Heat Pump Clothes Dryer, ER Ventilation System, Vehicle Charging Stations

Bethany Terraces Senior Houses

Brooklyn, NY

Early Design
$810,400 Award

RiseBoro Community Partnership
Paul A. Castrucci, Architect PLLC

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
58	1	4	New	40,520	40,520	ConEd	Nat'l Grid	NYC	Yes	Yes

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
HP	ERV	HP	Modular construction to reduce carbon emissions terraced garden design at front elevation	Yes	Urban	No	No	PHIUS	PHIUS+ 2018, EGC, IndoorAir Plus,	LMI

Proposer's summary: Bethany Terraces is a proposed, all-electric affordable housing building that will be a model for the Passive House + Renewables approach to Net Zero Capable buildings. Building on the team's considerable experience with low energy buildings, the project will realize deep energy and carbon reductions, provide a healthy and comfortable interior environment with dramatic architectural connection of social spaces to exterior gardens, and be inherently resilient. Harnessing the benefits of modular construction, the project will be economical to construct and replicable throughout New York State. The monitoring and marketing for the project will help the team disseminate the strategies for future projects.

Technical attribute summary: Modular, ASHP (VRF), ASHP DHW linked with water source HP, ERV, Solar PV, smart buildings controls – including ventilation controls

Court Square

Long Island City, NY

Early Design
$1,000,000 Award

Court Square 45th Ave. LLC
Ettinger Engineering Associates

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
285	1	47	New	350,844	265,874	ConEd	ConEd	NYC	No	TBD

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
ASHP	ERV	CO2 ASHP	TBD	Yes	Urban	No	Yes	ASHRAE	LEED	Market Rate

Proposer's summary: Court Square is a 'super-tall' mixed use building containing thirty-eight floors of luxury condominium dwelling units, nine floors of core and shell office space, a future city library and future retail space. The project embodies sustainable luxury re-imagined to meet today's energy and climate based challenges and serves a leading example of how all of the above can be realized seamlessly together. The project will fully electrify its HVAC and DHW systems with water-source heat pumps and heat pump boilers for the residential space and heat-recovery VRF units for the offices. A combination of both may/will be used for retail/library spaces. The project will certify as LEED Gold under MFMR protocol and will incorporate induction cooktops, heat pump dryers and smart learning thermostats in all residential units. The project is actively studying the implementation of view smart tinting windows, smart lighting controls integrated with thermostats, window shades/associated infrastructure and hybrid heat pumps to continue to optimize energy performance.

Proposed Technical attribute summary: Air source heat pump, heat pump clothes dryer, induction cooktop, Solar PV, ASHP central boiler

DeKalb Commons - St. Nicks

Brooklyn, NY

Early Design
$1,000,000 Award

St. Nicks Alliance
Magnusson Architecture and Planning

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
82	2	8	New	86,610	86,610	ConEd	ConEd	NYC	Yes	TBD

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
ASHP	ERV	HP-based DHW	Open-joint rain screen over continuous stone/mineral wool above-grade, foam-glass aggregate below grad insulation.	Yes	Urban	Possilby	No	PHIUS	Green Communities Criteria, PHIUS, Energy Star Multi-family	LMI

Proposer's summary: This project incorporates the most replicable, attractive, and effective strategies to provide a project with near net zero operational energy, on-site generation, innovative embodied carbon reduction measures across multiple material sectors, decarbonization and full electrification, actionable management tools, healthy living and resiliency in the affordable housing sector. Supported by an experienced team of designers, consultants, verifiers, engineers, and tradespeople with Passive House Certifications and expertise, nonprofit community developers St. Nicks Alliance and Bedford Stuyvesant Restoration Corporation brings forth a pair of buildings called Dekalb Commons, which will serve as an exemplary project for replicable and healthy decarbonization with useful data points for tracking, including between the two buildings themselves, serving as an example for both affordable and market-rate buildings seeking to produce the emerging generation of truly sustainable communities. Aiding in this effort, NYSERDA's partnership in this project will elevate the work of quantified sustainability from cradle to cradle at a critical moment for the affordable-housing sector.

Technical attribute summary: Solar PV, Air Source Heat Pump, Electric Cooktops, HP-based DHW

Linden Boulevard III

Brooklyn, NY

Early Design
$1,000,000 Award

Radson Development
Magnusson Architecture and Planning PC

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
156	1	8	New	155,212	143,712	ConEd	ConEd	NYC	No	TBD

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
ASHP	Balanced Ventillation	ASHP	PH-level exterior envelope, sunshades, mineral wool exterior wall insulation (no foams)	Yes	Urban	No	No	ASHRAE	Green Communities Criteria	LMI

Proposer's summary: Linden Boulevard Phase III is currently in the early design phase. It will be 8-stories with 156 affordable residential units. The building lot is located within walking distance of public transportation and numerous amenities. With a gross floor area of 144, 858 square feet, tenants will be provided many common facilities including: a community room, supportive services meeting rooms, a playroom, a common laundry room, bicycle storage, and an outdoor terrace courtyard accessible by all tenants. In conjunction with Buildings of Excellence, the building is pursuing Enterprise Green Communities.

Linden Boulevard Phase III will be financed through the New York City Housing Development Corporation (HDC) and the Department of Housing Preservation & Development's (HPD) Extremely Low- and Low-Income Affordability Program (ELLA), as well as the NYC 15/15 Rental Assistance Program.

Linden Boulevard III will be an efficient, zero carbon emitting and sustainable building. The project team is ecstatic to be a part of such an innovative building that will advance energy efficiency in New York City's built environment and provide residents with a healthy, safe, and comfortable living environment. If awarded, the Buildings of Excellence funding will greatly contribute to the innovative, efficient design strategies. Without the funding and due to financial constraints for affordable housing, certain strategies may have the be reconsidered.

Technical attribute summary: Solar PV, Air Source Heat Pump, Heat Pump Clothes Dryer, Induction Cooktop

Solara Luxury Apartments Phase III

Rotterdam, NY

Late Design
$750,000 Award

Bruns Realty Group
Black Mountain Architecture

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
72	3	3	New	92,484	92,484	Nat'l Grid	Nat'l Grid	Capital Region	No	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
ASHP	ERV	HP Solar Thermal	Switched from poly iso and spray foam insulation to 100% cellulose; use of low-carbon concrete;	Yes	Suburban	Yes	No	ANSI/RESNET (ERI)	ENERGY STAR Certified Homes; design based on PH standards - providing WUFI-Passive and PHPP modeling; IndoorAir Plus;	Market Rate

Proposer's summary: Solara Apartments Phase III in Rotterdam, NY represents an evolution of market-rate, low-carbon, net zero energy housing, using conventional materials and technologies. The design reduces embodied carbon through responsible and climate resilient material and assembly specifications such as cellulose insulation, concrete with a high percentage of fly ash, and low-carbon wallboard. The design radically reduces operational energy use through extensive air sealing, air source heat pumps for heating and cooling, energy recovery ventilation, and solar hot water. Photovoltaic solar panels offset 100% of Solara's electric use on an annual basis. Solara demonstrates that low-carbon market-rate multifamily buildings provide an enhanced living environment without sacrificing comfort or convenience.

Technical attribute summary: ASHP, Solar thermal DHW w ASHP back-up, ERV, Solar PV, Smart Buildings Controls, HP clothes dryers, electric ENERGY STAR appliances, EV charging stations

The Seventy-Six, Building C

Albany, NY

Early Design
$1,000,000 Award

South End Development
Garrison-Architects

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
69	1	7	New	77,609	68,769	Nat'l Grid	Nat'l Grid	Capital Region	Yes	TBD

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
GSHP	ERV	Solar Thermal	Fully modular, triple net zero	Yes	Urban	Yes	Yes	PHIUS+ 2018	PHIUS+ 2018, Living Building Challenge (LBC) Water Petal; International Living Futures Institute (ILFI) Zero Energy.	LMI

Proposer's summary: The Seventy-Six Complex, in the Early Stage of Schematic Design, has been a dream of the South End Development (SED) team for decades. This proposal addresses Building C, a 77,609 gross square foot seven-floor mixed-use structure with 89% residential program and 69 dwelling units including studio, one- two- and three-bedroom units, duplexes, and adaptive re-configuration design to provide flexibility for future uses. The majority of units (>60%) will be designated affordable housing. Building C is part of a four-building masterplan for this block, bounded by 2nd Avenue & Krank Street. The project brings ground-breaking triple net zero sustainability, resiliency, and beauty to the deserving South End community. As a proof of concept, this project demonstrates that conscious building can be regenerative, creative, healthy, integrated, and inspiring. By pushing the envelope of what a building can be and the purpose it can serve, The Seventy-Six Complex adds high-performance affordable housing and mixed-use community resources in a replicable and quickly delivered model.

Technical attribute summary: Modular, GSHP, Solar Thermal DHW, ERV, Solar PV, Wind Turbines, induction cooktops, HP clothes dryers, E* appliances. 'Triple Net Zero' (net zero energy, water and waste), energy management system

Hudson Hill

Yonkers, NY

Early Design
$1,000,000 Award

Westhab, Inc
Amie Gross Architects

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
113	1	6	New	120,799	101,142	ConEd	ConEd	Mid Hudson	Yes	TBD

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
ASHP	ERV	ASHP	Sheeps wool for cavity insulation	Yes	Urban	No	No	ASHRAE	ENERGY STAR MFNC	LMI

Proposer's summary: Hudson Hill will prove itself to be a true Building of Excellence by furthering markets for highly efficient, low-carbon building materials and technologies. With a fully electric, wood-framed design, the project will increase adoption of heat pump water heater technology and exemplify novel insulation materials such as sheep's wool. A robust and airtight thermal envelope with triple-pane windows, along with a large rooftop solar array, will reify the achievability of efficiency and deep energy savings in affordable housing, while also providing safe, secure, and quality residences to an underserved community in the City of Yonkers..

Technical attribute summary: Solar PV, Air Source Heat Pump, ERV, HPWH, ENERGY STAR Appliances, Electric Dryers, Electric Cooktop, modest EV charging

Great Oaks Mixed Use Eco-Park

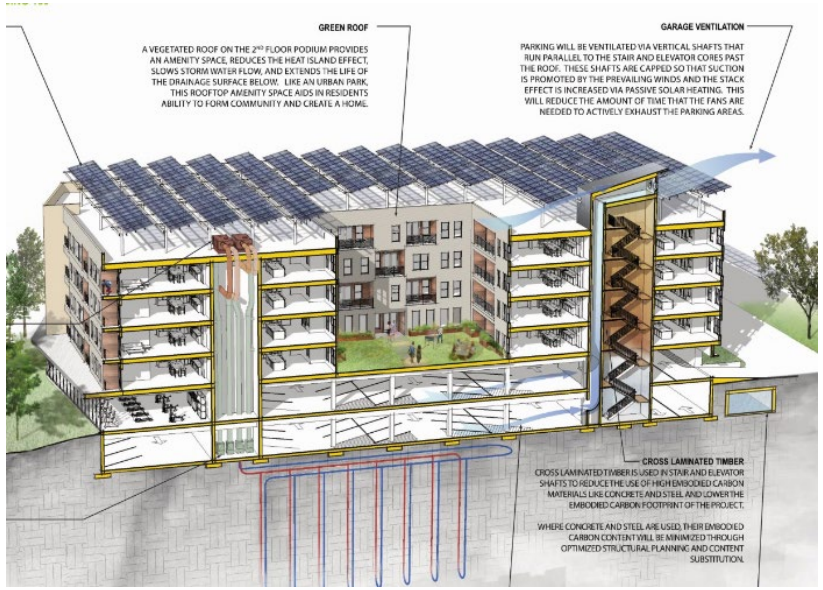
Albany, NY

Early Design
$1,000,000 Award

Rosenblum Development Corporation
Re:Vision Architecture

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
96	1	5	New	158,271	97,271	Nat'l Grid	Nat'l Grid	Capitol Region	No	No

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
GSHP	ERV	CO2 GSHP	Wood fiber insulation under consideration by design team.	Yes	Suburban	Yes	Yes	PHIUS	PHIUS+ 2018, PHIUS+ Source Zero, Well Certification, EGC 2020 Plus	Market Rate



Proposer's summary: Building 150 will be constructed at RDC's Great Oaks Office Park, which is ideally situated in an urban-adjacent location on the border of the City of Albany and Town of Guilderland in New York's Capital Region. Great Oaks is currently comprised of three office buildings in a natural, park-like setting that are impeccably maintained to retain a first-class appeal inside and out. The proposed +/-160,000 sqft., five-story mid-rise building will provide 96 residential units and robust amenity space including a café/market space, fitness center, indoor bicycle storage, and elevated courtyard. Tenants of Building 150 will also enjoy access to the park's groomed trail, picnic areas, immediate mass transit, and walkability to shopping, dining and other conveniences. By maximizing onsite solar PV and the prescribed benefits from planned Passive House (PHIUS+ 2018) and PHIUS+ Source Zero certifications, Building 150 will achieve lower embodied carbon, superior comfort, net-zero energy use, and resiliency for future climate hurdles. Particularly relevant post-COVID-19, the air-tight envelope coupled with continuous filtered ventilation makes Building 150 more resilient to airborne disease. Furthermore, the new residential development activates underutilized landscape and parking areas while maintaining the current level of green space, which comprises over 30% of the property.

Technical attribute summary: All Electric, Solar PV, Ground Source Heat Pump, Heat Pump-based Domestic Hot Water, Heat Pump Dryers, Induction Cooktops

Cooper Park Commons – Building 2

Brooklyn, NY

Early Design
$1,000,000 Award

Maspeth Manager LLC
Steven Winter Associates

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
311	1	18	New	358,845	342,659	ConEd	ConEd	NYC	Yes	TBD

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
HP	ERV	HP	stone wool insulation	Yes	Urban	No	No	PHI Classic	LEED for Homes v4 Gold	LMI

Proposer's summary: Cooper Park Commons Building 2, a 100% affordable housing development, will be a leading example of sustainability and energy efficiency. In an effort to minimize the carbon emissions of the building, the design team is committed to achieving LEED for Homes v4 Gold and Passive House Classic certifications. As a result of Building 2's focus on sustainable design, it will not only achieve energy cost

Cooper Park Commons: Building 2 2 savings over a typical new-construction affordable housing development, but will also provide enhanced indoor air quality, comfort, health, and resiliency for the tenant community. The project team is committed to pursuing these design features in a cost-efficient manner and maximizing the operating expense savings they yield. The project will also utilize a broad array of funding sources that are available for mixed-use developments such as this. This will create a financially replicable model for sustainable affordable housing developments. By successfully achieving LEED v4 Gold and Passive House standards and incorporating strategies for top-tier maintenance and operation, the team believes this will be a model project for enhancing sustainability at other community-driven campus-style developments.

Technical attribute summary: Solar PV, VRF, Standard Electric Exhaust Dryers, Conduction Cooktops

Colonial II Apartments Revitalization

Rome, NY

Early Design
$1,000,000 Award

Beacon Communities Development, LLC.
New Ecology, Inc.

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
99	1	7	Gut Rehab	66,525	66,525	Nat'l Grid	Nat'l Grid	Mohawk Valley	No	TBD

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
GSHP	ERV	CO2 HP	Re-use of existing bldg structure, panelized wall assembly	Yes	Urban	Possibly	No	ASHRAE	National Green Bldg. Standard v2020 Silver (committed) & Gold, possibly Emerald expected; ENERGY STAR MFNC	LMI

Proposer's summary: Beacon is proposing to redevelop the Colonial II building, with plans which surpass the standards for carbon reduction and energy efficiency set by the first project and push the building towards net zero energy and net zero carbon. Like Colonial I, this gut renovation project will involve establishment of a tighter thermal envelope, addition of LED light fixtures, installation of high-efficiency equipment, and thermostat upgrades in each apartment. The renovated of Colonial II will also feature heating and cooling service from on-site geothermal wells connected to individual ground source heat pumps, individual energy recovery ventilators to provide fresh air and exhaust stale air, central heat pump hot water heaters with a recirculation loop, and a vast solar photovoltaic array to cover 98% of the annual electricity production in the building.

Technical attribute summary: Gut rehab, GSHP, Solar PV meeting 98% of annual energy use, ERV, CO2 HP DHW, electric ENERGY STAR appliances

West Side Homes

Buffalo, NY

Early Design
$363,620 Award

Buffalo Neighborhood Stabilization Company, Inc
Sustainable Comfort

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
15	1	3	New	18,131	18,131	Nat'l Grid	Nat'l Grid	Western NY	Yes	TBD

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
GSHP	ERV	GSHP	Panelized	Yes	Urban	Yes	No	PHIUS + 2018	PHIUS+ Zero Source, PHIUS+ 2018, Well Certification, EGC 2020 Plus	LMI

Proposer's summary: The Buffalo Neighborhood Stabilization Company Inc (BNSC), the housing development arm of PUSH Buffalo, proposes to develop 15 units of housing on Buffalo's West Side that is targeting certification with Passive House Institute US (PHIUS), and pursuing the NYSERDA Low Rise New Construction Program Tier III Net Zero certification, 2020 Enterprise Green Communities, and WELL Building Certification. By coordinating housing and sustainability work, West Side Homes addresses both human and ecosystem health, creates a resilient project that addresses future heat, precipitation, and drought events, and uses renewable energy sources to avoid increased greenhouse gas emissions.

Technical attribute summary: Panelized walls w/Zip Sheathing, polyiso & cellulose; GSHP, ERV, Solar PV, battery storage, net zero energy, electric dryers and stoves, smart buildings energy management

Johnson Park Green Community Apartments

Utica, NY

Early Design
$1,000,000 Award

Rockabill
SWBR

# of Dwellings	# of Buildings	# of stories	New or GutRehab	Total SF	Residential SF	Electric Utility	Gas Utility	REDC	DEC Env.Justice	Downtown Revitalization Initiative
62	3	3	New	56,219	56,219	Nat'l Grid	Nat'l Grid	Mohawk Valley	Yes	TBD

Space Conditioning	Ventilation	DHW	Building Envelope	All Electric	Urban or Suburban	Net Zero	Mixed Use	Performance Path	Other 3rd party certs.	Occupancy
ASHP	ERV	CO2 HP	Panelized walls, low-carbon slab, mineral wool insulation.	Yes	Urban	Yes	No	PHIUS+ 2018	LEED	LMI

Proposer's summary: The new residential development consists of three buildings ideally situated around the Johnson Park Center Green in Utica, New York. With duplex/townhome, garden, and loaded corridor apartment style housing typologies, Johnson Park Green Community will have a space apt for every type of occupant and household, particularly the vulnerable population living below area median income. The three buildings will utilize similar thermal envelope components and mechanical systems, but will highlight the specific application of these standardized and prefabricated systems to varying building/housing typologies. This approach and process will serve useful for future projects looking to successfully achieve Passive House certification standards to a variety of building types while adhering to cost constraints. The project will serve as a Passive House tool kit for inner-city medium-density affordable housing development.

Technical attribute summary: Air Source Heat Pump Heating, CO2 Heat Pump, Electric Dryers, Induction Cooktops

Appendix C

Building System Illustrations and Definitions

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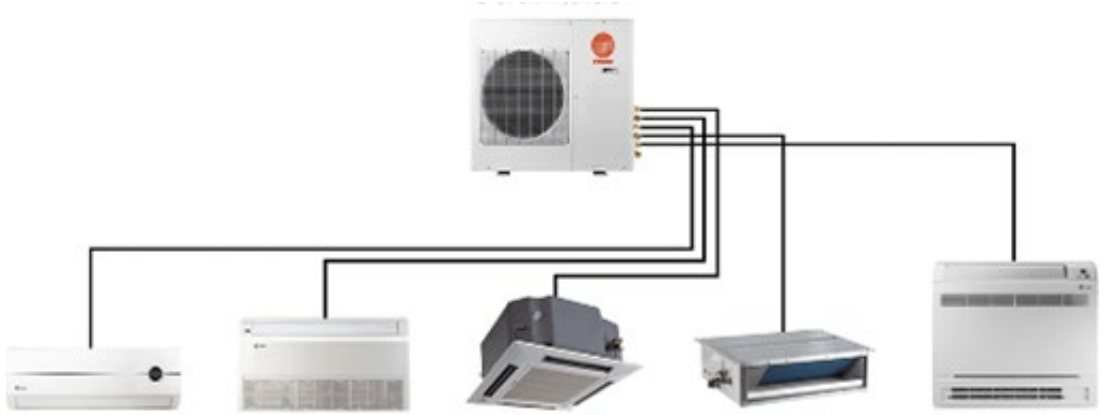
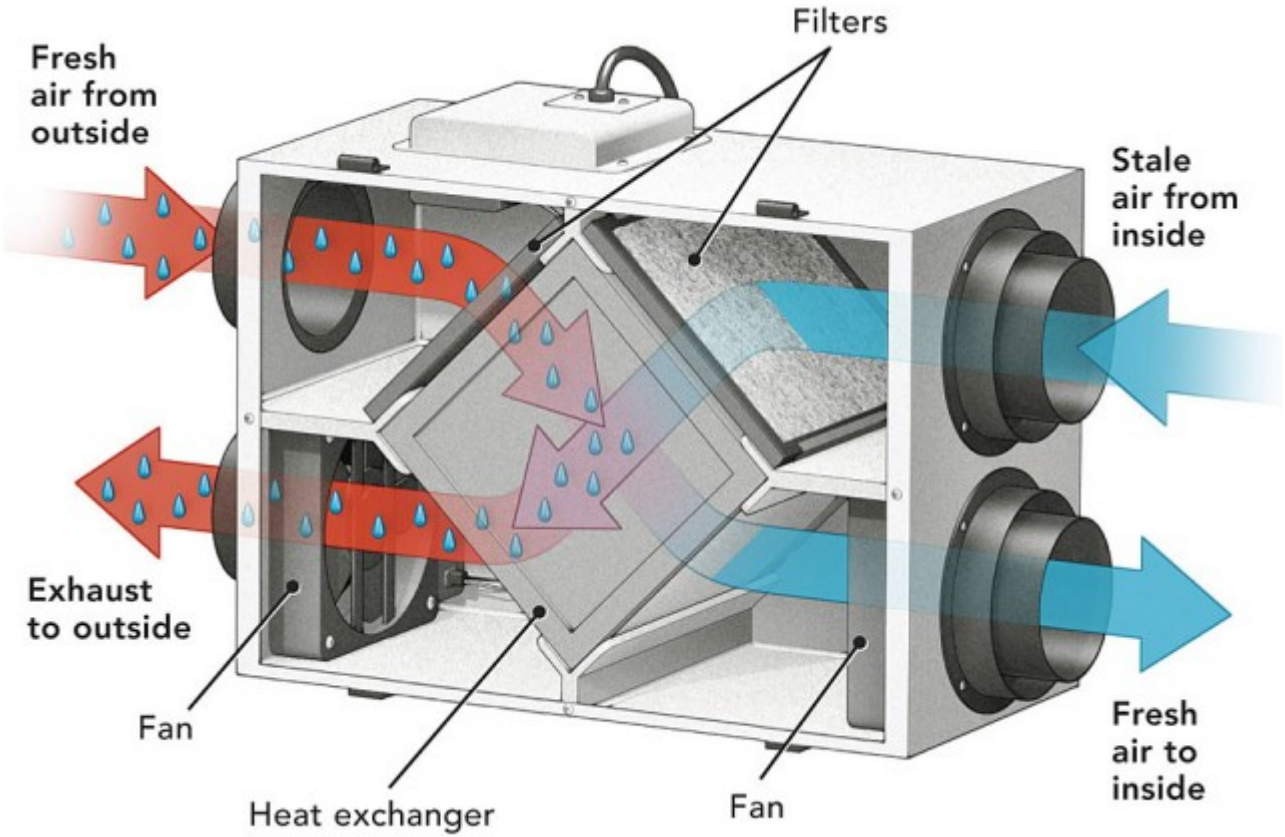
ASHP Space Conditioning System Types

- Minisplit
  - One Condenser – One Line Out – One Head
  - <65 kbtu/hour
- Multisplit
  - One Condenser – Multiple Lines Out – Multiple Heads
  - <65 kbtu/hour
- VRF
  - Multiple Condensers – Multiple Lines Out – Multiple Heads
  - >65 kbtu/hour



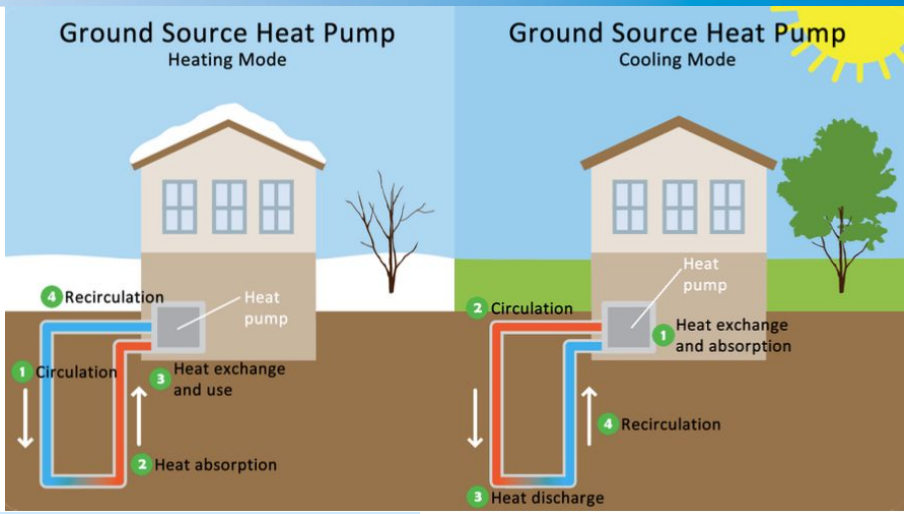
Ventilation System Types

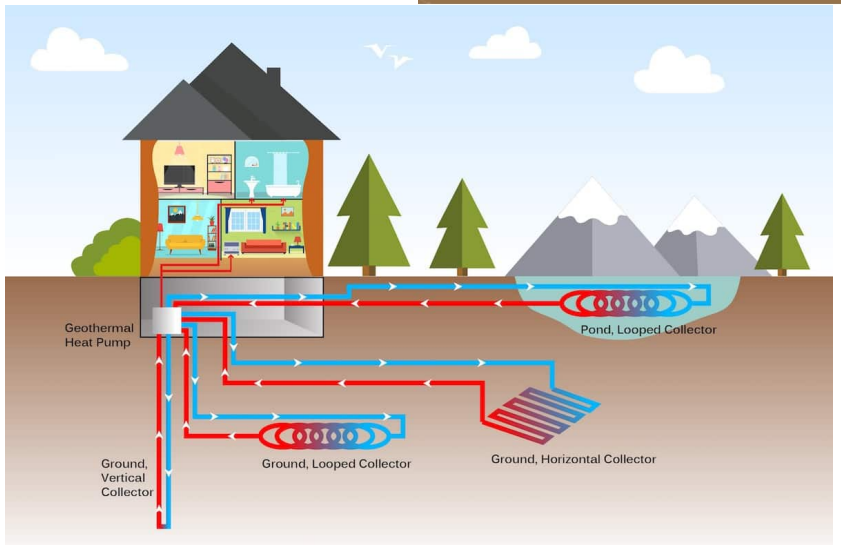
- Heat Recovery Ventilation (HRV)
  - Exchanges heat between inside and outside air
- Energy Recovery Ventilation (ERV)
  - Exchanges heat between inside and outside are
  - Limits humidity exchanged between inside and outside



GSHP Systems Explained

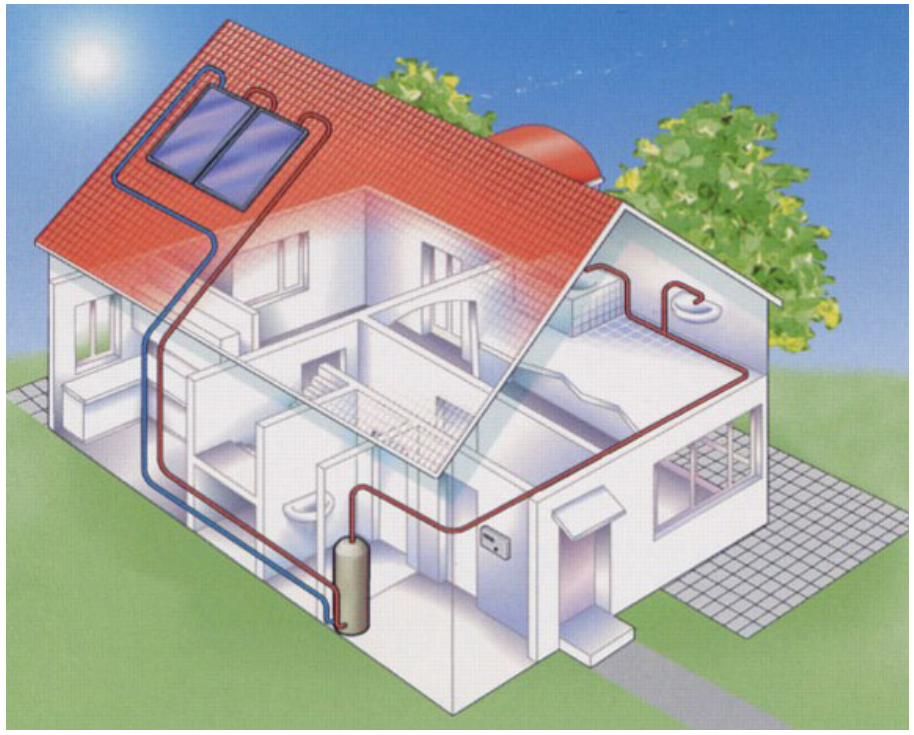
- Heat pump system that uses geothermal energy to control loop temperature
  - Temperatures underground are naturally consistent
  - Geothermal energy cools water loop in the summer and heats water loop in the winter
- Various loop types may be used
- Provides space and water heating
- Extremely efficient solution





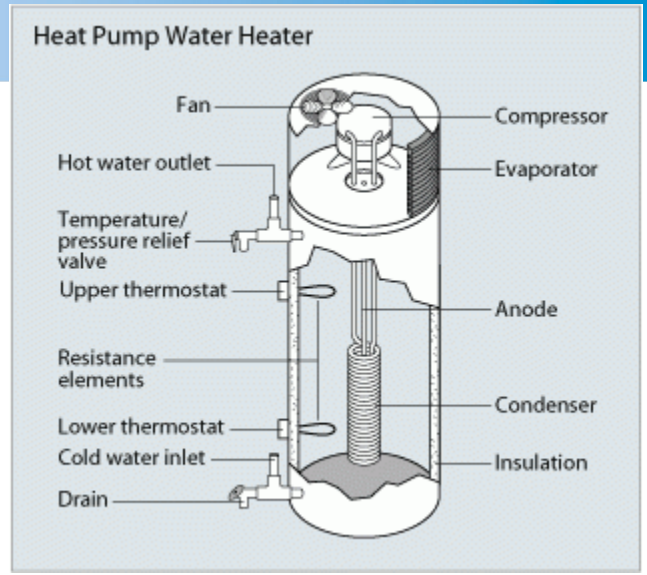
Solar Thermal Explained

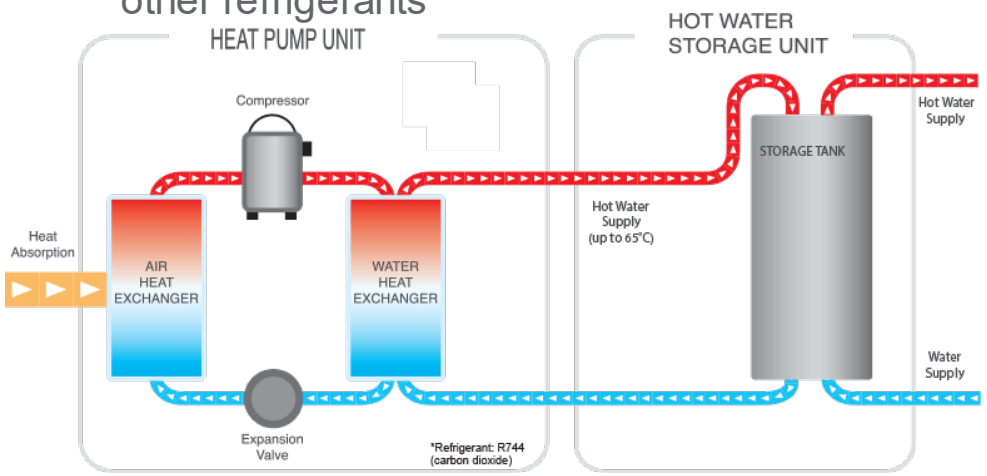
- Collect thermal energy from the sun to heat water
- Often require a backup system



ASHP DHW System Types

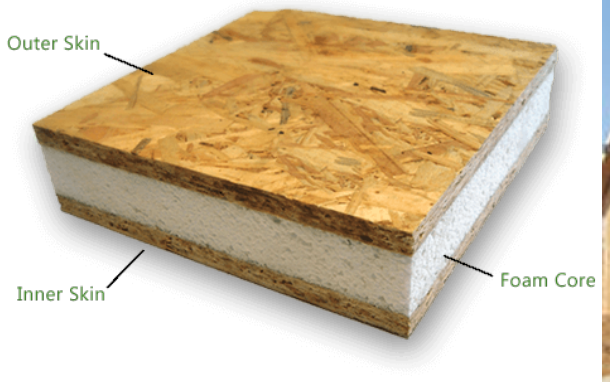
- Unitary Heat Pump Water Heater
  - Heat pump above storage tank
  - Requires enough space to access heat from the air and
  - Will not perform efficiently if in a cold location
  - If sufficient space is not available, units may be ducted
  - Utilize refrigerants
- CO2 Heat Pump Water Heater
  - Heat pump installed separate from the storage tank (2 piece system)
  - CO2 Refrigerant which functions efficiently across a wide temperature range and has a low global warming potential when compared with other refrigerants



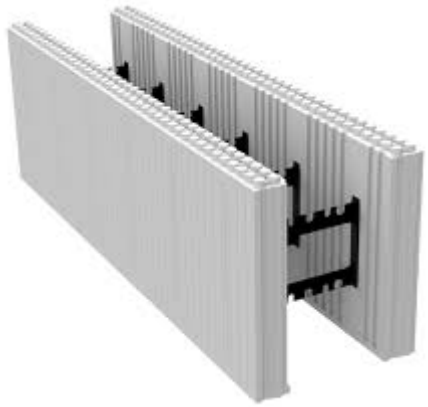


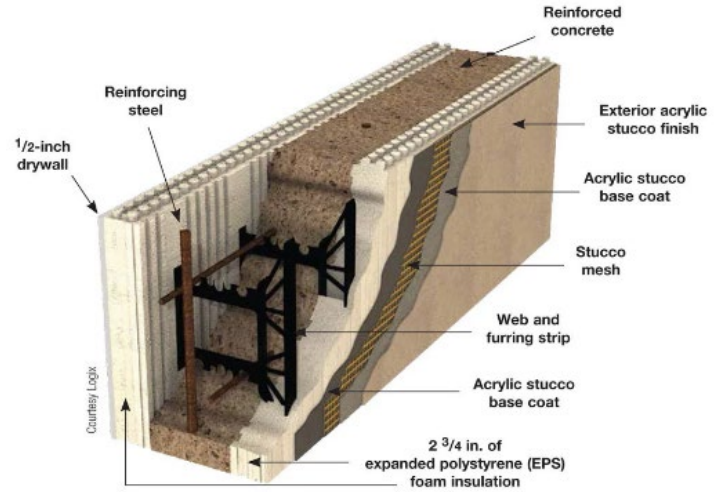
Manufactured Envelope Systems

- Structural Insulated (SIPS) Panels
  - Premanufactured panels
  - Foam sandwiched between structural exterior sheathing



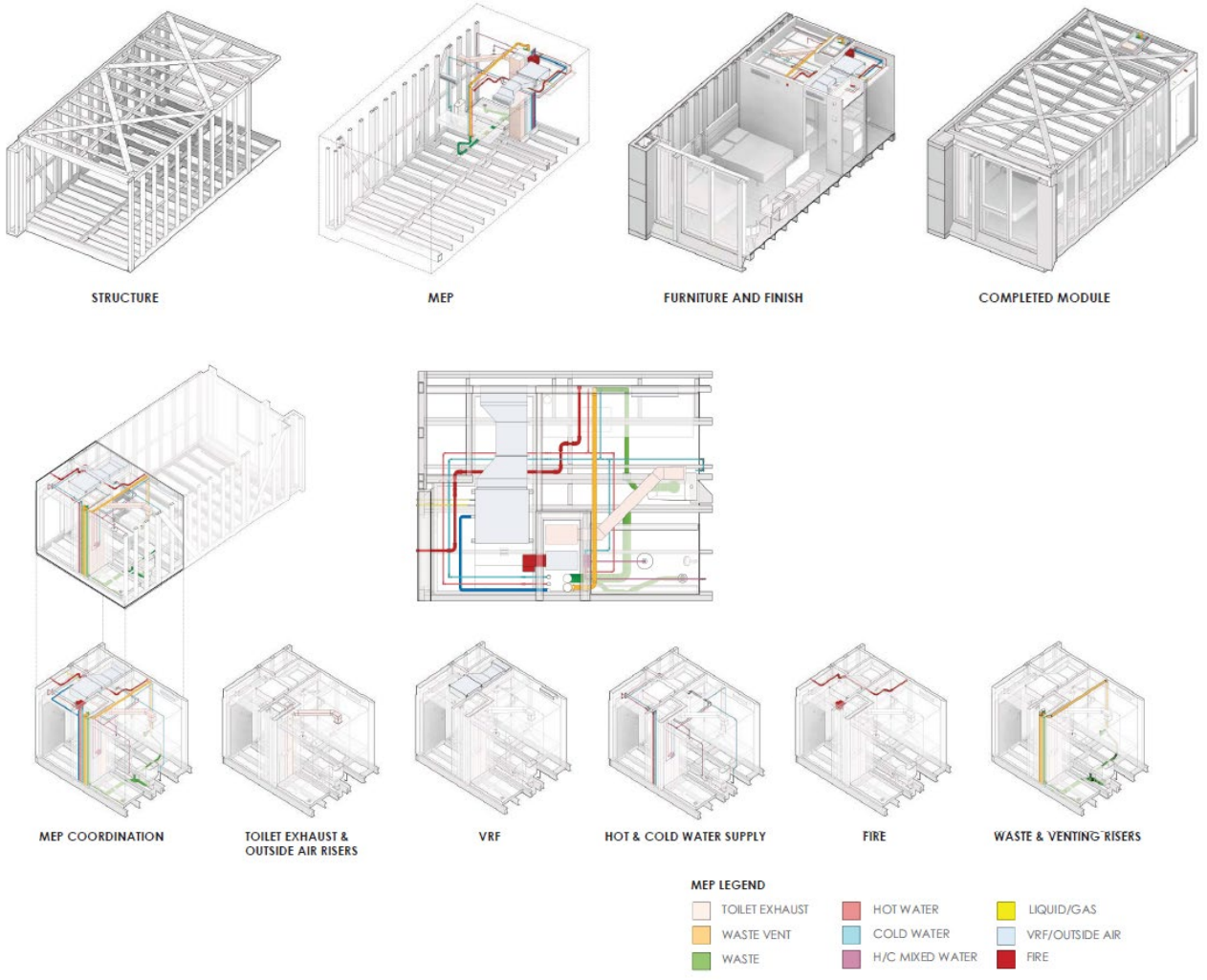
- Insulated Concrete Form (ICF)
  - Foam blocks are connected and filled with concrete
  - Panels can be pre-filled with concrete and delivered to site





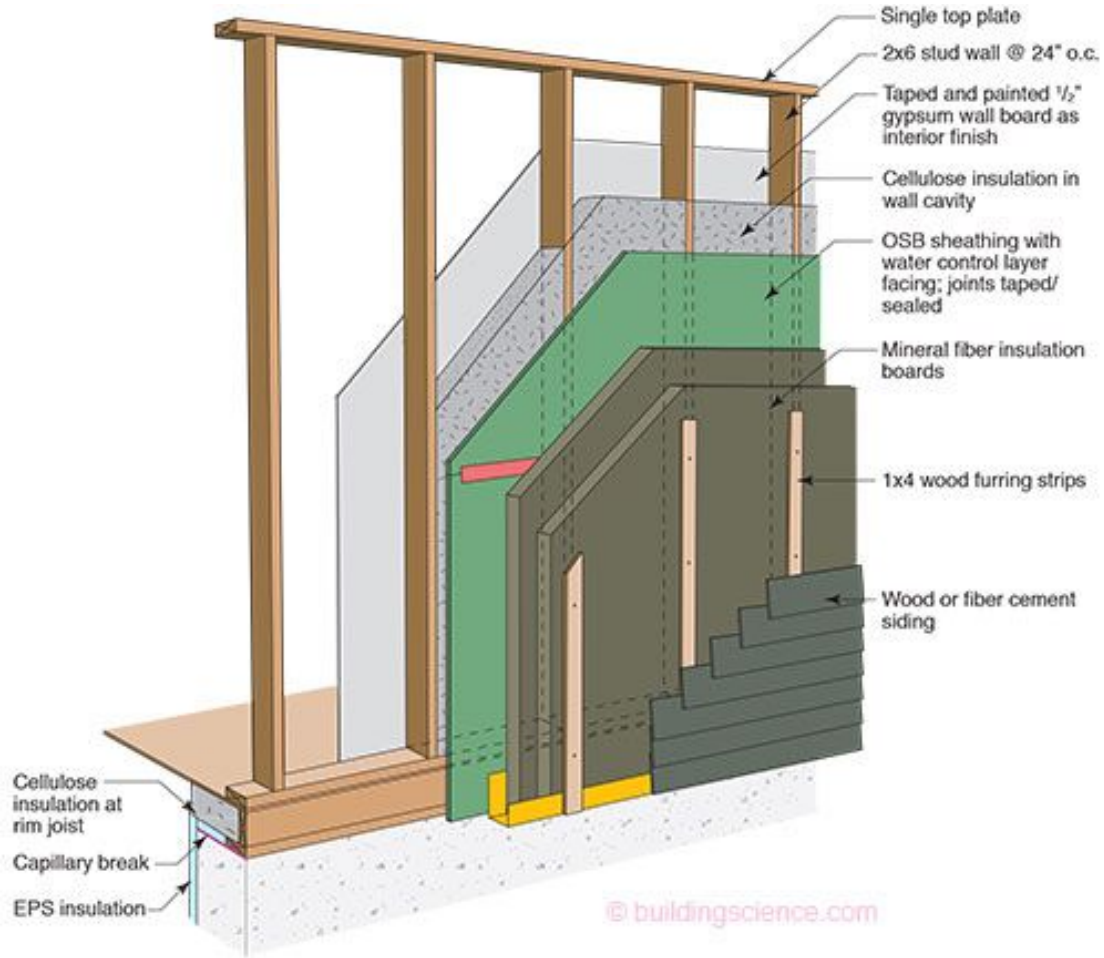
Offsite Construction Modular

- Modular Construction
  - Offsite volumetric construction
  - Modules can be constructed as shell only or incorporate levels of finishing



Offsite Construction Panelized

- Manufactured panels with varying degrees of finishing
  - Electrical and mechanical connections
  - Windows and doors
  - Drywall
  - External barriers



Appendix D – Understanding the Data

All project data included is preliminary and subject to change. As projects progress, data will be updated and shared on NYSERDA's Building of Excellence web page.

- Project information stage is a reference to completeness of project submittals.
- Where projects claimed incremental cost within a range, the high end of that range was selected for analysis.
- "Incremental Cost" is defined as the dollar amount differential to a project's budget related to carbon neutral and net zero construction practices when compared to that projects stated baseline construction code per the developer submitted data.
- Building of Excellence project baseline construction code is defined as the NYS Energy Conservation Construction Code (ECCC) for the year that the project was permitted.
- Incremental cost values have been provided by the project teams as estimates related to their understanding of the project baseline.
- Incremental cost % after incentives and tax credits is calculated:
- =(estimated incremental cost $ - anticipated NYSERDA incentive $ – anticipated project tax credits $) /estimated building cost $
- Where % incremental cost is negative, incentives and tax credits exceed the dollar amount of estimated incremental cost
- Cost and incremental cost data being collected for Buildings of Excellence projects is preliminary and based on project estimates.
- All Buildings of Excellence projects utilize Electrified Space Conditioning despite being identified as not all electric.
- Energy Costs identified are pulled from project model values – NOT building measurements.
- Where provided, Low to Moderate Income (LMI) Tax Abatements have been excluded from this analysis.
- If a field is blank the project has not yet provided that information to NYSERDA.

Reminder!

Cost data is updated monthly on the Buildings of Excellence Winners page

Thank You

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