PHASE 3: THE BATTERY  2017: reflecting the sky
PHASE 3: THE BATTERY  2017: Thermal Image
PHASE 3: THE BATTERY  2017

$169/sf
### ACTUAL RENTS ACHIEVED

<table>
<thead>
<tr>
<th>SF/UNIT</th>
<th>101</th>
<th>102</th>
<th>103</th>
<th>104</th>
<th>105</th>
<th>106</th>
<th>107</th>
<th>108</th>
<th>109</th>
<th>110</th>
<th>111</th>
<th>112</th>
<th>113</th>
<th>114</th>
<th>115</th>
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</thead>
<tbody>
<tr>
<td>Total Rent</td>
<td>$2.77</td>
<td>$2.99</td>
<td>$2.52</td>
<td>$2.99</td>
<td>$2.73</td>
<td>$2.99</td>
<td>$2.69</td>
<td>$2.99</td>
<td>$2.73</td>
<td>$2.99</td>
<td>$2.73</td>
<td>$2.99</td>
<td>$2.73</td>
<td>$2.99</td>
<td>$2.73</td>
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<tr>
<td>Average Rent</td>
<td>$2.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>

### AS-BUILT EXPENSES

#### CAPITAL 2 COSTS

<table>
<thead>
<tr>
<th>DESCRIPTION OF WORK</th>
<th>15-Jun</th>
<th>ACTUAL VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete/Site/Excavation</td>
<td>$172,000.00</td>
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<tr>
<td>Windows/Doors/Panelized</td>
<td>$336,778.76</td>
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<tr>
<td>Rough Carpentry</td>
<td>$195,032.69</td>
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<tr>
<td>Finish Carpentry</td>
<td>$37,296.00</td>
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<tr>
<td>Cabinetry/Appliances/Fixtures</td>
<td>$284,284.77</td>
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<tr>
<td>Insulation</td>
<td>$39,500.00</td>
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<tr>
<td>Roofing Greenroof</td>
<td>$119,400.00</td>
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<tr>
<td>Exterior Cladding</td>
<td>$221,619.51</td>
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<tr>
<td>Drywall, Metal Studs</td>
<td>$118,630.95</td>
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<tr>
<td>Interior Doors/Frames/Hardware</td>
<td>$43,142.86</td>
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<tr>
<td>Flooring</td>
<td>$151,625.40</td>
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<tr>
<td>Paint</td>
<td>$48,000.00</td>
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<tr>
<td>Specialties: Steel</td>
<td>$55,500.00</td>
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<tr>
<td>Fire Sprinklers</td>
<td>$44,000.00</td>
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<tr>
<td>Plumbing</td>
<td>$130,000.00</td>
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<tr>
<td>HVAC: Air-sourced</td>
<td>$0.00</td>
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<tr>
<td>HVAC Geothermal, VRF</td>
<td>$312,208.00</td>
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<tr>
<td>Electric</td>
<td>$158,379.00</td>
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<td>General Reqs</td>
<td>$238,256.00</td>
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<tr>
<td>OH &amp; Profit</td>
<td>$102,143.00</td>
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<tr>
<td>Soft Costs</td>
<td>$315,998.44</td>
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<tr>
<td>Contingencies</td>
<td>$230,724.00</td>
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</tr>
<tr>
<td>SOLAR: structure, panels, racking</td>
<td>$284,284.77</td>
<td></td>
</tr>
</tbody>
</table>

#### TOTAL | $3,664,986.44 |

Average Rent: $2.77sf

**COSTS: Hard** $169/sf

**Total Sf:** 17910 sf
PHASE 3: THE BATTERY 2017
PHASE 3: THE BATTERY  2017
PHASE 3: THE BATTERY 2017
PHASE 3: THE BATTERY  2017
PHASE 3: THE BATTERY  2017
PHASE 3: THE BATTERY  2017
PHASE 3: THE BATTERY 2017
## Passive House verification

**Building:**
- **Capital Flats II**
- **Street Address:** 152-158 W Laurel Street / 935-937 W Hancock Street
- **City, State, Zip:** Philadelphia, PA
- **Country:** USA
- **Building type:** apartment building
- **Climate:** PHILA INT AP PA
- **Altitude of building site (feet above sea level):** 17

**Home owner / Client:**
- **Street Address:**
- **City, State, Zip:**

**Architecture:**
- **Street Address:** 111 W Norris Street
- **City, State, Zip:** Philadelphia, PA 19122

**Mechanical system:**
- **Street Address:**
- **City, State, Zip:**
- **Year of construction:** 2016
- **Interior temperature winter:** 68.0 °F
- **Interior temperature summer:** 77.0 °F
- **No. of dwelling units:** 25
- **No. of occupants:** 53.0
- **Spec. capacity:** 11 BTU/F per ft² TFA
- **Treated floor area:** 16,782 ft²

**Spec. building demands with reference to the treated floor area**
- **Space heating**
  - **Heating demand:** 2.35 kBTU/(ft²yr)
  - **Heating load:** 2.97 BTU/(hr.ft²)
- **Space cooling**
  - **Overall specific. space cooling demand:** 6.11 kBTU/(ft²yr)
  - **Cooling load:** 2.75 BTU/(hr.ft²)
- **Frequency of overheating (> 77 °F)**: [%]
- **Primary energy**
  - **Heating, cooling, dehumidification, DHW, lighting, electrical appliances:** 45.2 kBTU/(ft²yr)
  - **DHW, space heating and auxiliary electricity:** 24.6 kBTU/(ft²yr)
- **Specific primary energy reduction through solar electricity**

**Airtightness**
- **Pressurization test result n₅₀:** 0.53 l/h

**Passive House?** yes

---

**PHIUS+ 2015 Multi-Family Calculator**

**PV Utilization**

- **Site electricity (kWh/yr):** 84,085
- **Output from PV Watts (kWh/yr):** 98,554
- **Annual PV Output/Annual Electricity Demand:** 1.17
- **Utilization fraction from utilization curve:** 0.334
- **Primary Energy offset by PV (kBTU/ft²yr):** 21.15

**Primary Energy** 45 kBTU/sf/yr

**Site Energy:** 84,085 kWh/yr

---

**PHASE 3: THE BATTERY 2017**
## Passive House verification

**Building:**
- **Capital Flats II**
- 152-158 W Laurel Street / 935-937 N Hancock Street
- Philadelphia, PA

**Documents:**
- PHIUS+ 2015 Multi-Family Calculator
- PHUS INT AP PA
- 210 mods x 370 watts = 77 kW system

### Site Electricity
- **Site electricity (kWh/yr):** 84,085
- **Output from PV (kWh/yr):** 98,554

### Annual PV Output/Annual Electricity Demand
- **Annual PV Output/Annual Electricity Demand:** 1.17

### Utilization fraction from utilization curve
- **Utilization fraction:** 0.334

### Primary Energy offset by PV (kBTU/ft²yr)
- **Primary Energy offset by PV (kBTU/ft²yr):** 21.15

### Annual Primary Energy Consumption
- **Annual Primary Energy Consumption:** 45 kBTU/ft²

---

**PHASE 3: THE BATTERY 2017**

**Passive House Verification**

**Building:**
- **Building:** Capital Flats II
  - **Street Address:** 152-158 W Laurel Street / 935-937 N Hancock Street
  - **City, State, Zip:** Philadelphia, PA

**Output from PV:**
- **Output from PV (kWh/yr):** 98,554

**Annual PV Output/Annual Electricity Demand:**
- **Annual PV Output/Annual Electricity Demand:** 1.17

**Utilization fraction from utilization curve:**
- **Utilization fraction:** 0.334

**Primary Energy offset by PV (kBTU/ft²yr):**
- **Primary Energy offset by PV (kBTU/ft²yr):** 21.15

**Annual Primary Energy Consumption:**
- **Annual Primary Energy Consumption:** 45 kBTU/ft²

**Site Energy:**
- **Site Energy:** 84,085 kWh/yr
- **Output from PV:** 98,554 kWh/yr

**NET-POSITIVE! 👍**
PHASE 3: THE BATTERY  2017
PHASE 3: THE BATTERY  2017
BANK FLATS 2017: shared work space
BANKS 2018: shared work space
BANK FLATS 2017: shared work space
BIRDSEYE VIEW

BANK FLATS 2018: 30 units and retail

Copper Flats 2020: 70 units
BANK FLATS 2018: 30 units and retail
- 30 Apartments (300-500sf)
- 24,141 sf
- R34 walls
- R 54 roof/floors
- .13 Uvalue windows
- .6 SHGC
- *DE-Centralized* VentilationERV
- *SEMI-DE-Centralized* Hot Water
- *DE-Centralized* heating/cooling
- *DE-Centralized* Electric Metering
- 89 kw PV array to get to Net Zero

**PROJECT SPECS**

BANK FLATS  2018: 30 units and retail
- 30 Apartments (300-500sf)
- 24,141 sf
- R34 walls
- R 54 roof/floors
- .13 Uvalue windows
- .6 SHGC
- **DE-Centralized VentilationERV**
- **SEMI-DE-Centralized Hot Water**
- **DE-Centralized heating/cooling**
- **DE-Centralized Electric Metering**
- 89 kw PV array to get to Net Zero

**PROJECT SPECS**

**BANK FLATS  2018: 30 units and retail**

$158/sf
- 30 Apartments (300-500sf)
- 24,141 sf
- R34 walls
- R 54 roof/floors
- .13 Uvalue windows
- .6 SHGC
- **DE-Centralized VentilationERV**
- **SEMI-DE-Centralized Hot Water**
- **DE-Centralized heating/cooling**
- **DE-Centralized Electric Metering**
- 89 kw PV array to get to Net Zero

### BANK FLATS COSTS

<table>
<thead>
<tr>
<th>DESCRIPTION OF WORK</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site/Excavation/Concrete</td>
<td>$204,100.50</td>
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<tr>
<td>Rough Carpentry</td>
<td>$669,015.80</td>
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<tr>
<td>Steel</td>
<td>$50,000.00</td>
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<tr>
<td>Roofing</td>
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<tr>
<td>Exterior Cladding</td>
<td>$230,250.00</td>
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<tr>
<td>Insulation</td>
<td>$97,138.87</td>
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<td>Drywall Tape &amp; Finish</td>
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<tr>
<td>Doors, Frames &amp; Hardware</td>
<td>$57,565.00</td>
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<tr>
<td>Finish Carpentry &amp; Accessories</td>
<td>$93,836.00</td>
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<tr>
<td>Kitchen/Vanity</td>
<td>$140,140.00</td>
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<td>Appliances/Fixtures/Faucets</td>
<td>$139,076.00</td>
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<tr>
<td>Bath Fixtures</td>
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<td>Painting</td>
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<td>Flooring</td>
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<td>Electrical</td>
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<td>General Conditions</td>
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<td>OH/Profit</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$3,830,797.30</strong></td>
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</table>

**Total Sf:** 24,141 sf  
**COSTS: Hard** $158/sf

BANK FLATS 2018: 30 units and retail
BANK FLATS 2018: 30 units and retail
BANK FLATS 2018: 30 units and retail
BANK FLATS 2018: 30 units and retail