Incorporating Resiliency into the Existing Affordable Housing Stock

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National Housing Trust
About NHT

The National Housing Trust protects, improves and maintains existing affordable housing so that low-income families can live in quality neighborhoods with access to opportunities.

Policy Innovation
Lending
Real Estate Development
Energy Solutions
NHT Communities
About Us

• Own & Operate approximately 5,000 affordable rental units along the East Coast and Illinois.

• NHT Communities has achieved green certification (Enterprise, Earthcraft or other) on approximately 2/3 of units, 2,500 units, in its portfolio.

• First Green Certified property in DC (Galen Terrace)

• Typically reduce energy consumption >20%.
Climate Resiliency:
Testing the Waters
## The First Step

<table>
<thead>
<tr>
<th></th>
<th># of Units</th>
<th>Type</th>
<th>Development Phase</th>
<th>Last Rehab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Villages of East River</td>
<td>202</td>
<td>Low Rise</td>
<td>Hold Period</td>
<td>15+</td>
</tr>
<tr>
<td>Copeland Manor</td>
<td>61</td>
<td>Low Rise</td>
<td>Operation</td>
<td>6</td>
</tr>
<tr>
<td>Channel Square</td>
<td>223</td>
<td>High Rise</td>
<td>Operation</td>
<td>2</td>
</tr>
<tr>
<td>Meridian Manor</td>
<td>32</td>
<td>Low Rise</td>
<td>Redevelopment</td>
<td>14</td>
</tr>
<tr>
<td>R Street</td>
<td>130</td>
<td>Low Rise</td>
<td>Operation</td>
<td>7</td>
</tr>
<tr>
<td>Galen Terrace</td>
<td>84</td>
<td>Low Rise</td>
<td>Operation</td>
<td>12</td>
</tr>
</tbody>
</table>
Case Study: Villages of East River

Property Break Down:

- 202 Units
- Scatter Site Property in SE Washington DC
- Buy and Hold
- Rehab planned for 2021
- Property in need of extensive work
## Key Findings:

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Example</th>
<th>Already in Rehab Scope?</th>
<th>Correlated Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood</td>
<td>Stormwater Management</td>
<td>Yes</td>
<td>DOEE Requirements</td>
</tr>
<tr>
<td>Mold</td>
<td>Mold Remediation</td>
<td>Yes</td>
<td>Code Requirement</td>
</tr>
<tr>
<td>Extreme Heat/Power Outage</td>
<td>Cool Roof</td>
<td>Yes</td>
<td>DOEE Requirements</td>
</tr>
<tr>
<td>Power Outage</td>
<td>Maintain Power to Critical Systems</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>Water Outage</td>
<td>Access to potable water</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>Emergency Planning</td>
<td>Develop Emergency Management Manual</td>
<td>Yes</td>
<td>Enterprise Green Communities</td>
</tr>
<tr>
<td>Accessibility</td>
<td>Create ramp at entryway</td>
<td>Yes</td>
<td>Section 504 ADA</td>
</tr>
<tr>
<td>Ventilation</td>
<td>High Efficiency Balanced Ventilation</td>
<td>No</td>
<td>Enterprise Green Communities</td>
</tr>
</tbody>
</table>
Conclusions

- Best opportunity = redevelopment
- Identify resiliency measures early
  - Capital needs assessments
- Integrate into existing development process
- Significant program overlap (specific to DC)
NHT Renewable
Solar for Affordable Housing
Saving with Renewable Energy

- Design, Finance, and Installation of solar asset across multiple affordable housing rooftops under one project.

- Offering between 10-30% returns, Development Fees, and Asset Management Fees

- 5 Megawatts Completed, generating $1.8 million per year in renewable energy and incentives, saving the properties $360,000 per year (20%).

- 20 Megawatts under development, including partnerships with...
  - CPDC
  - Bridge Housing Corporation
  - Jonathan Rose Companies
  - Urban Atlantic
  - Silver Street Development Corporation

- Services include...
  - Co-Development
  - Ownership
  - Lending
  - Asset Management

Copeland Manor Apartments, Washington, D.C.

Common Area Utility Savings: $10,000/year
Resident Utility Savings: $30/month/resident
NHT Renewable DC 5

NHT/E Properties Impacted: 5
Solar Thermal Systems: 2
Solar Photovoltaic Systems: 4
Total Project Cost: $1.3 million
Photovoltaic: 300,000 kwh/year
Thermal: 10,000 therms/year
Project Completion: Q4 2014

Galen Terrace
Copeland Manor
St. Dennis Apartments

R Street Apartments
Meridian Manor
Denver Housing Authority

2 Megawatts of community solar in Denver, Colorado
Channel Renewable

NHT/E Properties Impacted: 1
Solar Thermal Systems: 1
Solar Photovoltaic Systems: 6
Total Project Cost: $1.5 million
Photovoltaic: 320,000 kw/year
Thermal: 2,000 therms/year
Project Completion: Q4 2016
NHT Ingenuity DC 1

1.5 Megawatts of solar on 24 properties in Washington, D.C.
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