New York City Housing Authority Study

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Background and Introduction

A Snapshot of NYCHA's Portfolio

- Provide affordable housing for 1,661,596 residents of NYC
- Through leasing: 1,601,259 residents
- Section 8 Subsidies: 60,337 residents
- 18% of NYCHA's buildings are owned by NYCHA
- 60% of NYCHA's buildings were built before 1970

Projection of NYCHA Capital Needs over the next two decades

- The graph on the right side represents the percentage of deterioration of NYCHA's housing stock for years 2018-2029. By 2027 we can see that 90% of the NYCHA units will have a very high cost of repairs. It is evident that the time is of essence and the delay more expensive will sell itself to fix the issues.

Financial Pedigree of NYCHA

Current Status

NextGen NYCHA

- In May 2019, Mayor Bill de Blasio announced NextGen NYCHA
- 10-year plan to improve NYCHA housing and operations

- Build to Preserve
- 2Part to Preserve
- Transfer to Preserve

NYCHA 2.0

- 10-year plan to replace $24 billion need for vital repairs
- Renovations of 100,000 units
- Objectives: PHL, PHL, HPH
- Budget to Preserve
- Transfer to Preserve

Findings - Physical Needs Assessment

Need 1: Apartments

1. Kitchen renovation
   - Energy saving refrigerator (HSE)
   - Extra cost for changing refrigerator: $63,000 (100 units)
   - Total electricity cost saved: $717
   - Payback period of 5 years

2. Bathroom renovation
   - Integrated bathroom design
   - Water saving: 12 gallons per person/day, 975 gallons annually on average of 237 units

3. Piping system renovation
   - High water loss
   - Reduce heat loss and can raise water temperature - Cooling Facilities
   - Material Cost: $22 - $35 per ft.
   - Energy Saving: $10.6 million in cost for NYCHA

Need 2: Architectural

Rooftops at NYCHA - Disadvantages

- Cost to Repair
- Water leaks lead to:
  - Increase in building maintenance
  - Change in wind patterns
  - Loss of roof due to expansion and contraction
  - High heating and cooling expenses

- Total roof area (all NYCHA developments): 27 Million Sq. ft.
- Equivalent to: building area of Empire State Building

Green Roofs

- Dependent on the accessibility and structural capacity of roof we either can go with a traditional green roof or a more extensive green roof
- Green roof maintained by community flaps, NYCHA residents

Need 3: Mechanical Systems

NYCHA’s 2nd largest need, estimated at $5.31 Billion
- Heating plants are the major concern area which require about $1.13 Billion
- Around $3.18 Billion remaining due to the lack of detailed studies on the needs

Proposed Solution: Geothermal System for Heating and Cooling

- It is a clean and efficient renewable energy technology used to heat and cool a home. It makes advantage of the relatively constant temperature of the earth, improving unity as it is a source of air for heat. When cooling, heat is extracted from the building and disposed into the earth; when heating, heat is extracted from the earth and pumped into the space.

Social Benefits:

- Stabilization for geothermal systems, translates into the building occupants
- Revenues for the community due to budget cuts and rate in fuel prices to the tenants

Financial:

- Budget for FY 2018 And The Four Year Financial Plan FY

Need 4: Conveying System

Reported Malfunctions

- 23 East 10th Street - Elevator breakdown at least four times a month
- Brooklyn 177 Sands Street - Elevators out of service for 6 days
- 41,000 plus public housing residents at greater risk of elevator accidents

Audit Report - Findings

- Response to residents outrage needs improvement
- Prevention measures not consistently performed
- Operating outage date and performance measure

Reasons for Malfunctions

- 3D mechanisms impact 1000 plus elevators: unaligned mechanisms
- Training plan only for 3 sites
- Managerial issues more than technical issues

Social Benefits:

- Train unemployed NYCHA residents as mechanics
- Mechanic training at NYCHA Training Center
- Monthly Elevator Feedback
- App + Customer Service
- Encourage erroneous use

LOGISTICS AND PHASING

NYCHA has a vacancy rate of 25% and there is a trust deficit between NYCHA and its tenants as the tenants fear that they will be displaced during the renovations. We have tried to address these concerns in the proposed solutions.

OPTION 1 - Tenant in place

- No foreclosures or rent increases
- Tens of thousands who are displaced
- Deterrents for future development

OPTION 2 - Tenant in Onsite Modular housing

- Prefabricated, hence quick installation time
- Can be installed in parking lots, temporary
- More modular units, faster the renovation - 50% less cost of GIS vs. Time
- Units can be shifted to other campuses, so the effective cost comes down over time
- Preserves the social and community networks of the tenants as they are onsite.