



COLUMBIA | CBIPS

Center for Buildings, Infrastructure and Public Space

NYC Housing Authority

Under the guidance of

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“Tear down the old, build up the new. Down with rotten antiquated rat holes. Down with hovels, down with disease, down with fire traps, let in the sun, let in the sky, a new day is dawning, a new life, a new America.”

- Mayor Fiorello H. LaGuardia

Mayor Fiorello H. LaGuardia speaking at the dedication of the Harlem River Houses in 1937. The development had 577 apartments. N.Y.C. Housing Authority

Agenda

1. What is the problem?
2. What has been done?
3. What could be done?

NYCHA - New York City Housing Authority



- ❖ Provides affordable housing for 600,000 residents of NYC
 - Through leasing
 - Section 8 vouchers
- ❖ 8% of the rental housing stock in NYC is owned by NYCHA
- ❖ 60% of NYCHA's buildings were built before 1970s
- ❖ NYCHA has as a vacancy rate of 0.6% and a waiting list of over 200,000 families.

A Snapshot of NYCHA's portfolio



Units
177,666



Total Square Footage
175,174,242



Buildings
2,553



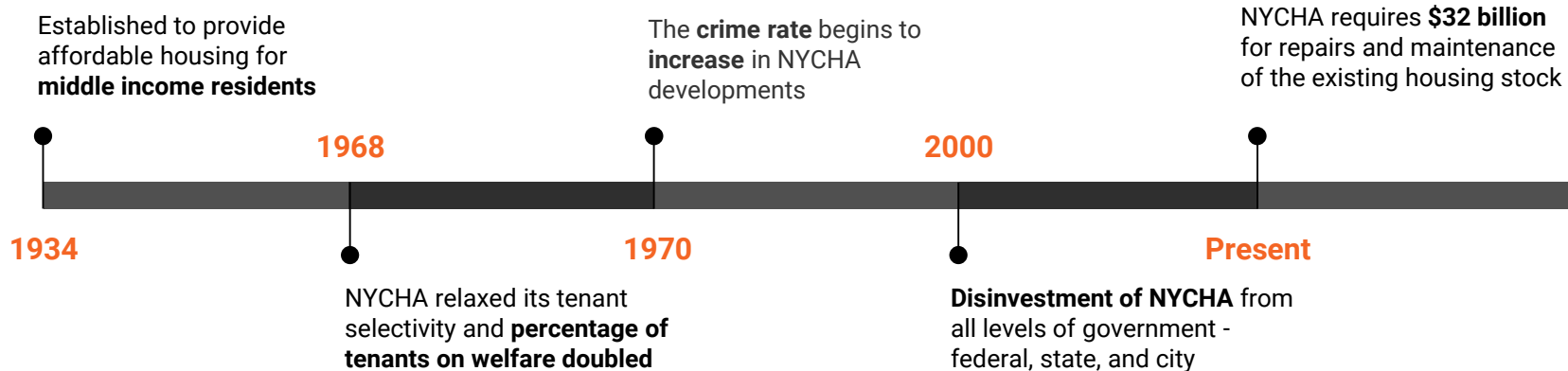
Acreage
2,473

Map of NYCHA Developments

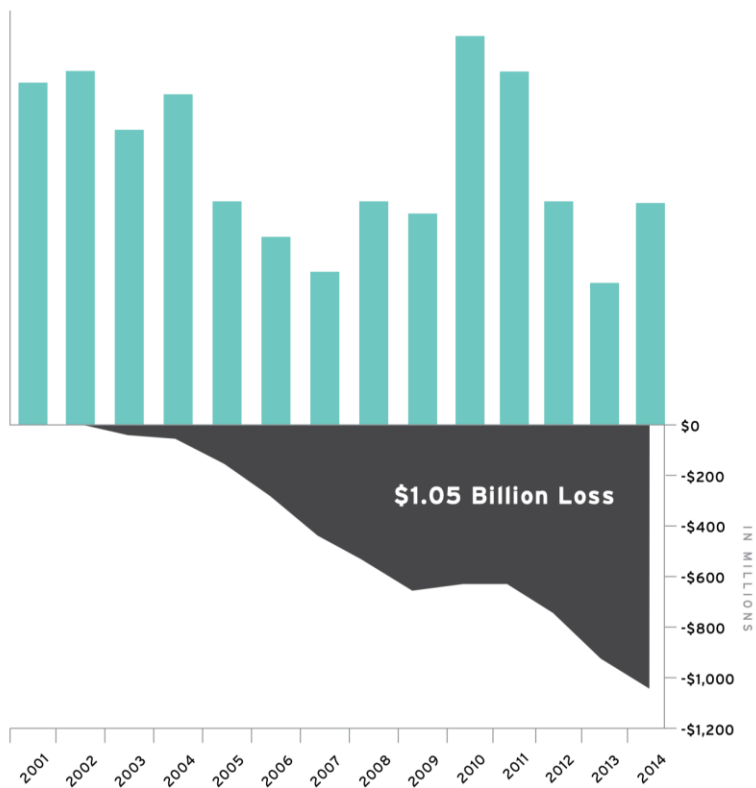


1. What is the problem?

NYCHA Timeline

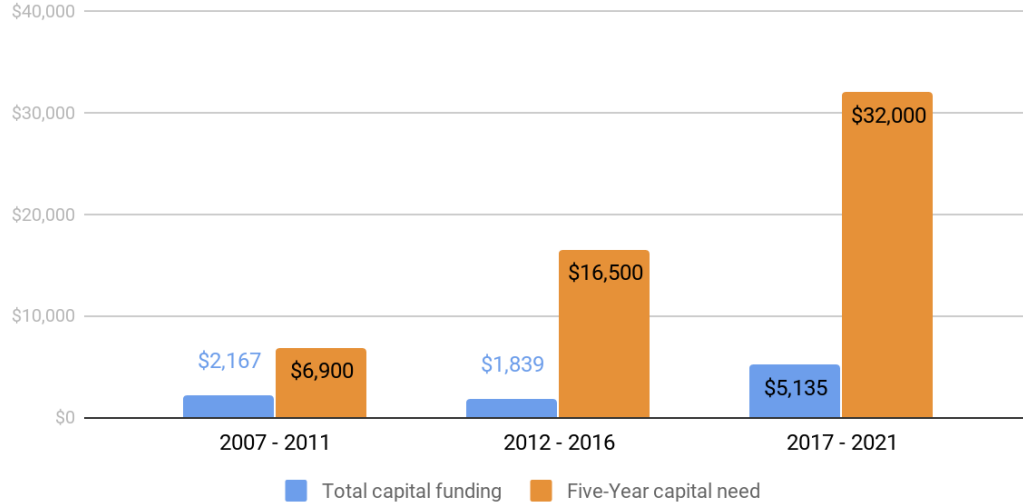


Financial



- Chronic underfunding in both operational and capital subsidies over the past two decades
- Operating funding loss of \$1.05 billion
- Capital funding loss of \$1.5 billion

NYCHA Capital Funds from All Sources vs Capital Needs, 2002 -2022 (dollars in billions)



Source:- Budget for FY 2018 And The Four Year Financial Plan FY 2019-2022, 2017 Physical Needs Assessments, 2011 Physical Needs Assessments.

Financial

- NYCHA conducts physical needs assessments every five years
- Only a small portion is addressed, this has caused the capital needs to balloon to unsustainable levels



Operational

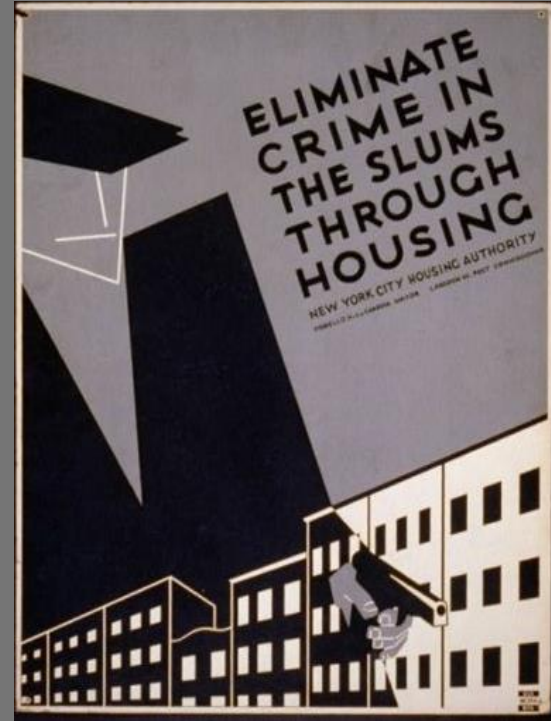
- Inefficient procurement process - “two-step” sealed bidding
- High cost of operations

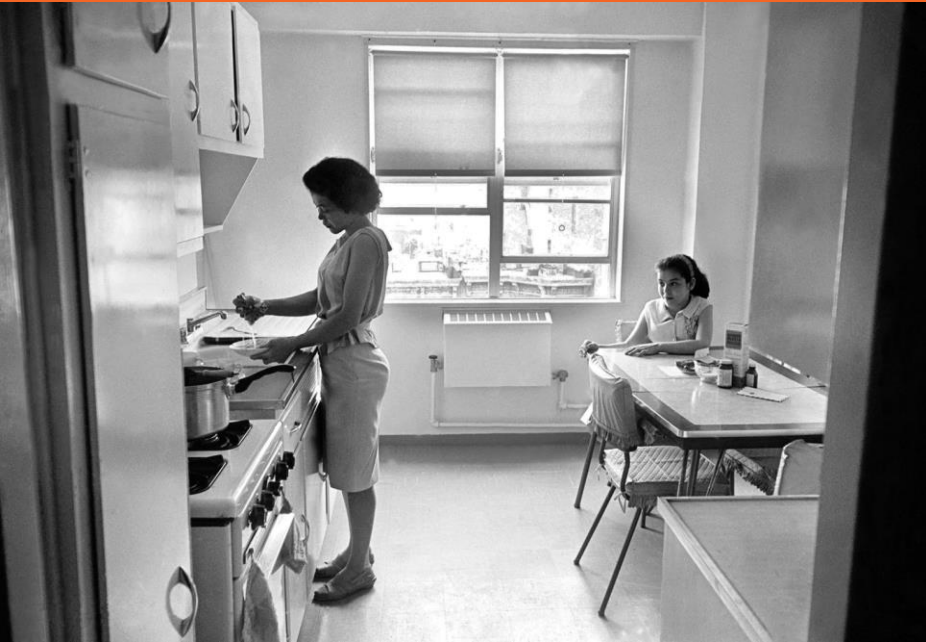
Sources: New York City Housing Authority, *Comprehensive Annual Financial Report for the Years Ended December 31, 2015 and 2014* (October 2016); New York City Rent Guidelines Board, *2017 Income and Expense Study* (March 2017).

PAST



PRESENT ???





The Colberg family apartment in 1965

Robert Walker/The New York Times



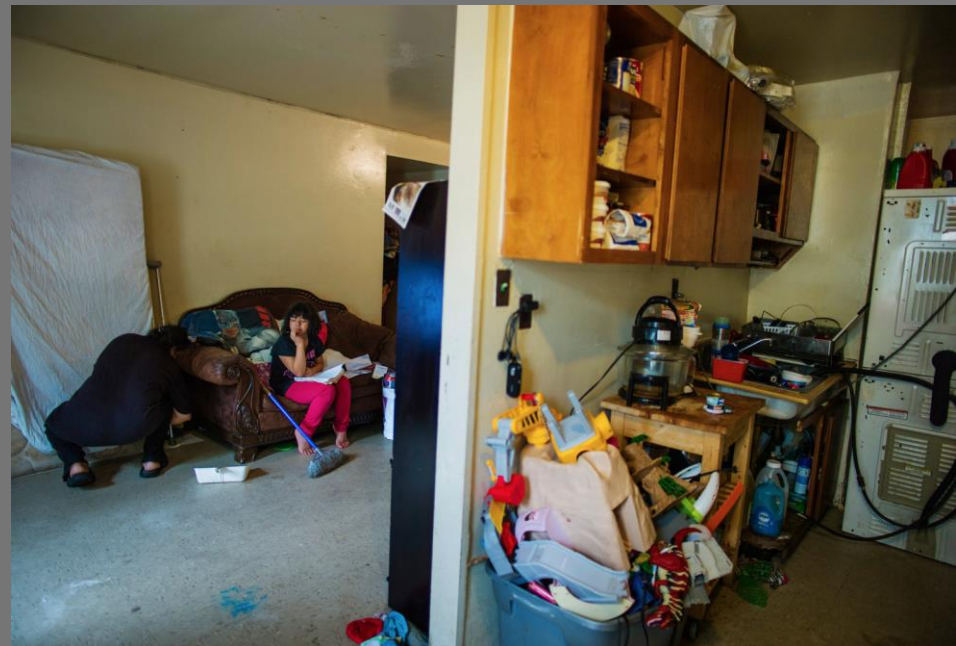
Patricia Elcock, 59, used an open oven to heat the apartment she shared with her grandson Michael this winter

Sam Hodgson for The New York Times



The Frasier family in their living room in King Towers in Harlem in 1972

Chester Higgins Jr./The New York Times



In this apartment in the Bronx, sewage flows into the apartment when it rains and water leaks from the roof

Ángel Franco/The New York Times

2. What has been done?

NextGen NYCHA

- ❖ In **May 2015**, Mayor Bill de Blasio announced NextGeneration NYCHA
- ❖ **10-year strategic plan** to improve NYCHA housing and operations

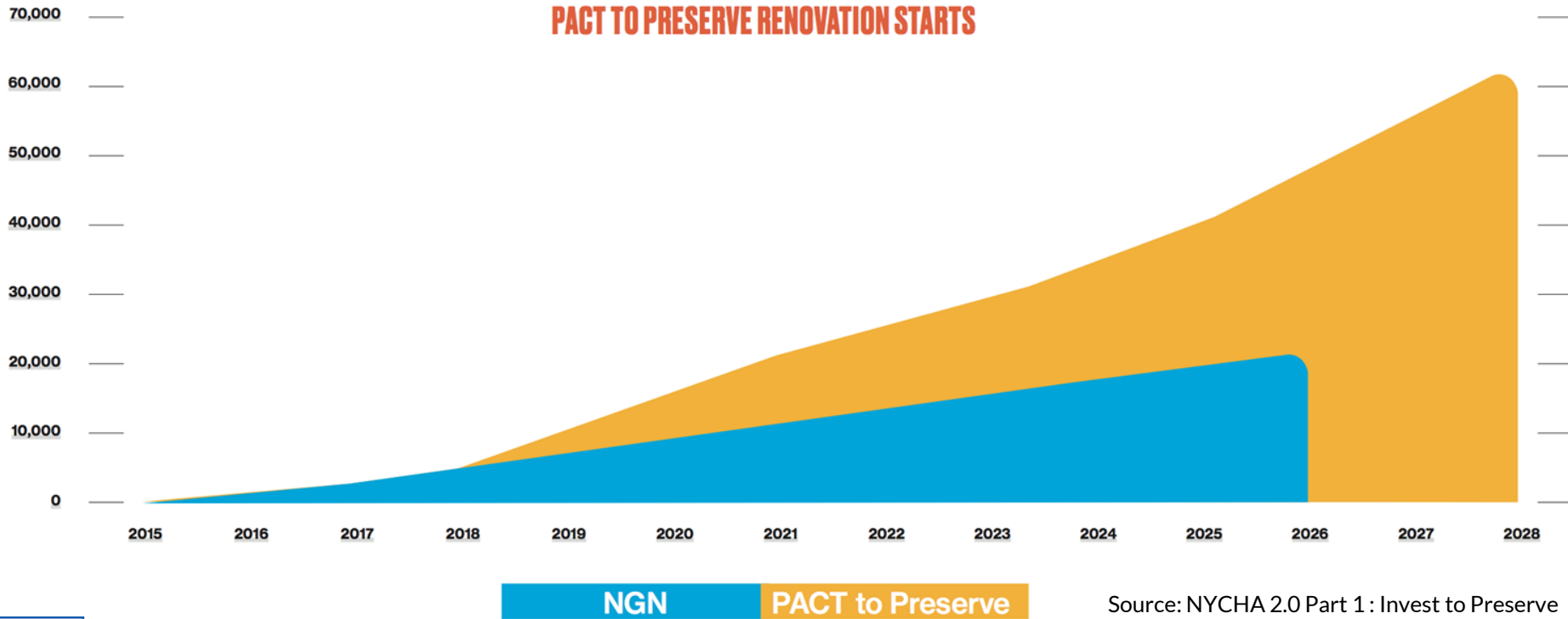
NYCHA 2.0

- ❖ Announced on **December 12, 2018** to accelerate the NYCHA NextGen plan
- ❖ Ten-year plan to resolve **\$24 billion** need for vital repairs
- ❖ Renovations of **175,000 units**
- ❖ Launch new strategies for lead paint, mold, elevator, heat and vermin issues

Objectives

1. Pact to Preserve
2. Build to Preserve
3. Transfer to Preserve

Pact to Preserve

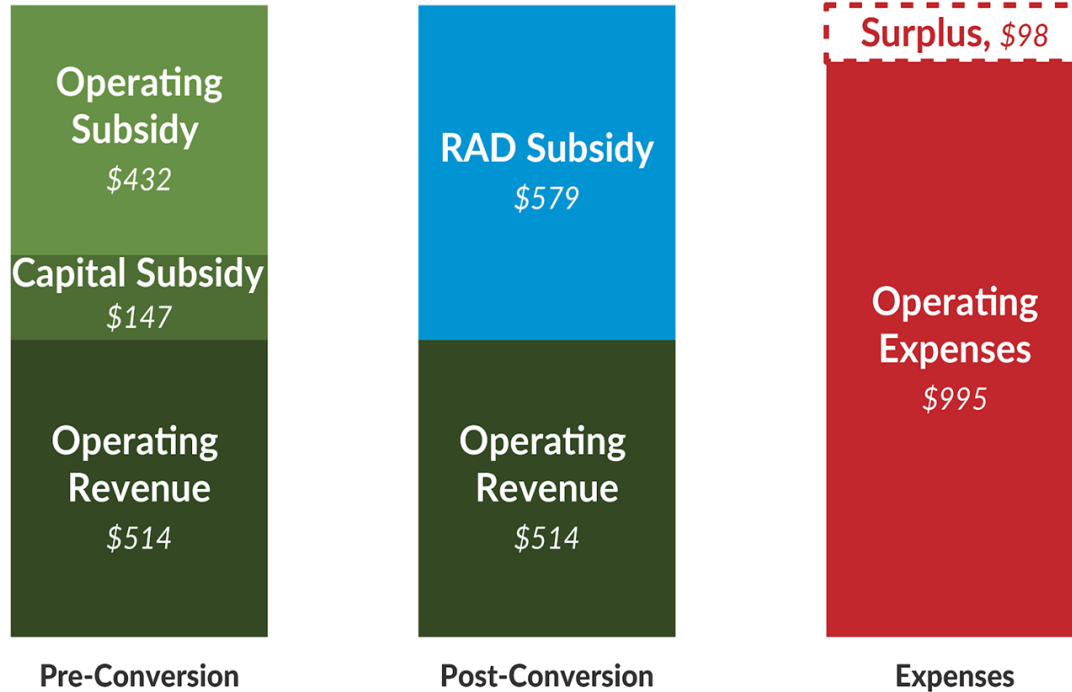


Source: NYCHA 2.0 Part 1: Invest to Preserve

PACT and Rental Assistance Demonstration (RAD)

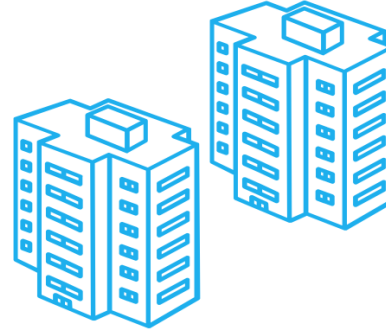
- Conversion of Public Housing to Section 8 vouchers
- Done via Public-Private Partnerships
- All the capital needs in the Physical Needs Assessment (PNA)
are covered while renovating
- Residents have the same rights as in public housing with the
advantages of a private firm managing the building

NYCHA Average Monthly Per-Unit Rents, Subsidies, and Expenses, Pre- and Post-Conversion Under RAD, 2016

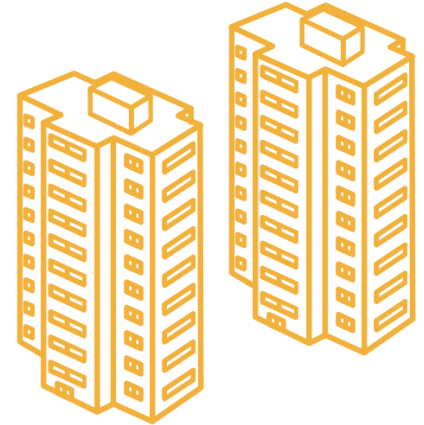


Build to Preserve

NEW CONSTRUCTION AT TULIP TOWERS SITES



**SCENARIO 1:
CURRENT ZONING**



**SCENARIO 2:
UPZONING TO ALLOW TALLER BLDGS.**

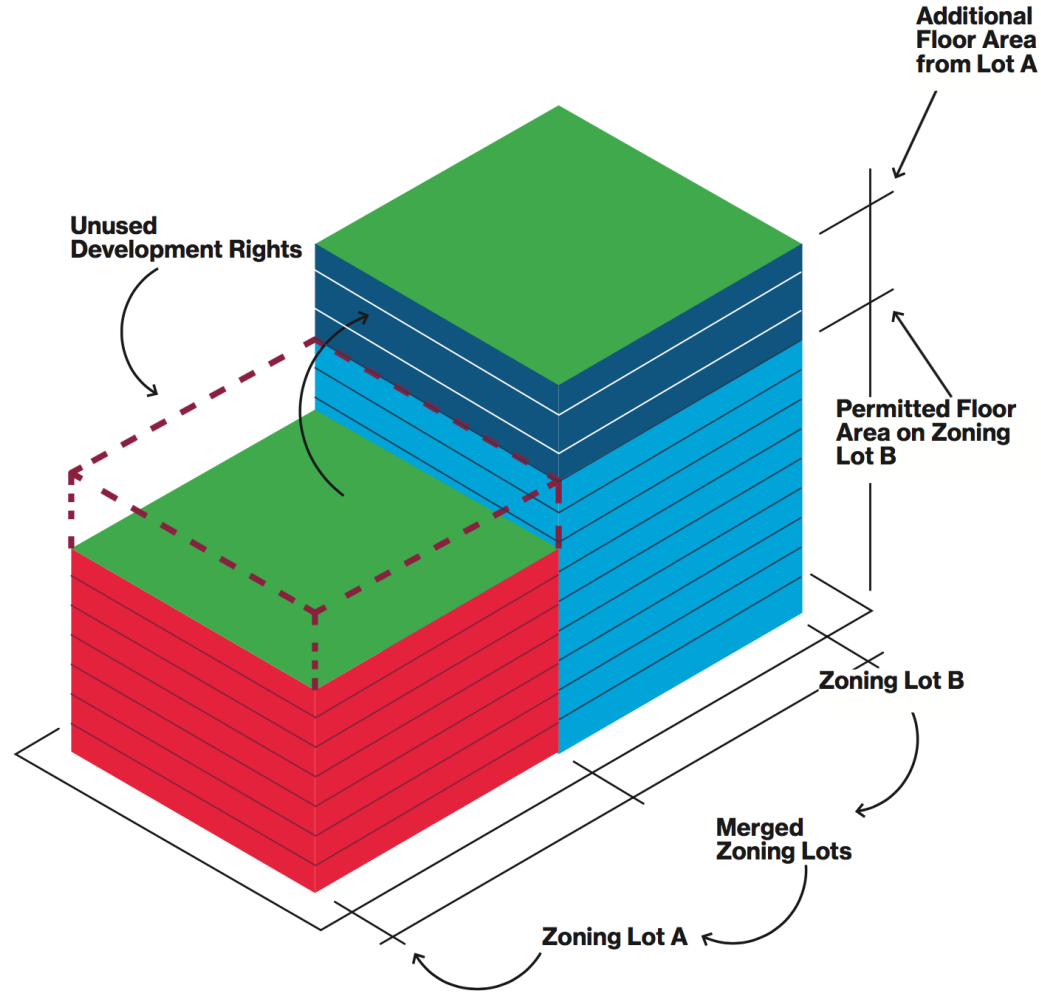
NYCHA Public Housing Apartments Preserved	500	750
Total New Apartments	430	650
New Affordable Apartments (30%)	130	195
New Market-Rate Apartments (70%)	300	455

Results

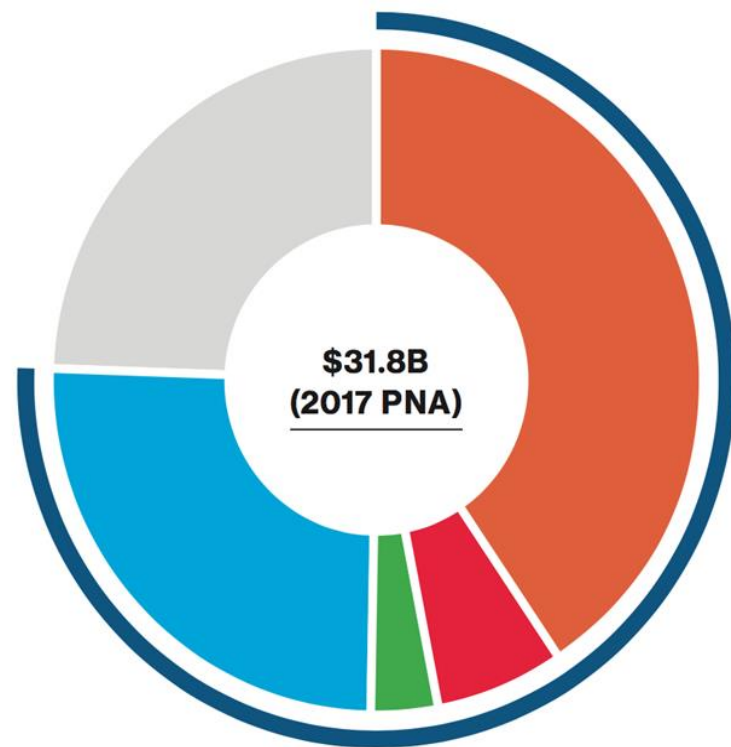
Full renovations completed at Tulip Towers

Full renovations completed at Tulip Towers & Daisy Gardens

Transfer to Preserve



NYCHA 2.0 INITIATIVE	NEED ADDRESSED	TIMING
I. PACT to Preserve	\$12.8B	10 Years
II. Build to Preserve	\$2B	10 Years
III. Transfer to Preserve	\$1B	10 Years
Existing Funding	\$7.9B	
City (Mayor's Initiative + City Capital)	\$1.4B	5 Years
State	\$450M	**
Federal (Capital Plan + FEMA + EPC)	\$3.6B***	10 Years
City (Consent Decree)	\$2.2B	10 Years
Total NYCHA 2.0	\$23.8B	
Remaining Need	\$8B	



* Exact PNA reduction will likely range between 75% and 62% depending on the rate of PNA growth. Pie chart assumes that PNA grows at inflation (3% per year).

** Exact timeline to be determined.

*** 5-year funding is \$2.1B. \$3.6B is a forward-looking estimate assuming current annual funding rate.

Physical Needs Assessment (PNA)

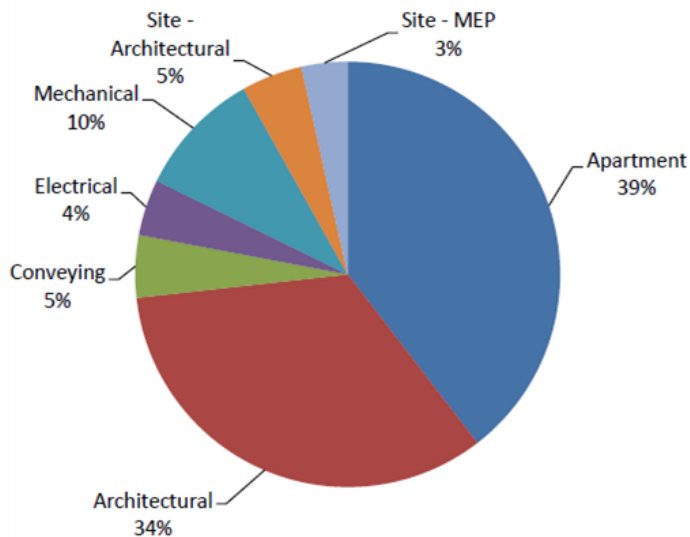


- In 2016, NYCHA engaged a joint venture between STV Incorporated and AECOM USA to perform a Physical Needs Assessment (PNA) of all NYCHA buildings
- Collected data for 10 months, May 2016 - Feb 2017, 325 developments, representative sample of more than 20,000 apartments
- PNA data was gathered using a software application called Mobile Validity® on iPads

Areas of Concern Identified

Table ES-1. Total Costed Actions in First 5 Years by Discipline and Rank Order

Discipline	Cost ¹ (\$000,000)	Percentage	Included Components
Apartment	\$12,579	39.6	Kitchen, bathroom, floor, doors, etc.x
Architectural	\$10,711	33.7	Exterior (roofing, parapet, entry doors, etc.), and Interior (common areas, interior stairs, etc.)
Mechanical	\$3,058	9.6	Boilers, piping, radiators, etc.
Elevators	\$1,510	4.7	Elevators
Site - Architectural	\$1,471	4.6	Fencing, playgrounds, sidewalks, etc.
Electrical	\$1,358	4.3	Lighting, panelboards, generators, etc.
Site - Mechanical and Electrical	\$1,114	3.5	Site lighting, underground piping, etc.
Total	\$31,801	100.0	



Note: 1. \$000,000 = \$ million. \$12,579 in the table above = \$12,759,000,000, or roughly \$12.8 billion

3. What could be done?

Proposal Outline

- ❖ Need 1: Apartments
- ❖ Need 2: Architecture
- ❖ Need 3: Mechanical Systems
- ❖ Need 4: Elevators
- ❖ Need 5: Site - Architecture
- ❖ Community Development
- ❖ Logistics & Phasing

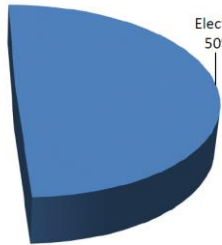
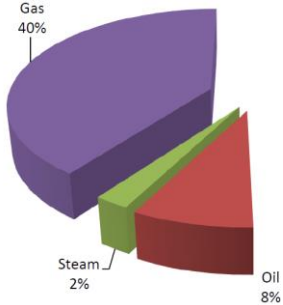
Need No.1 : Apartments (40%)

Aging appliances



Low energy efficiency
(high cost)

Poor user experience

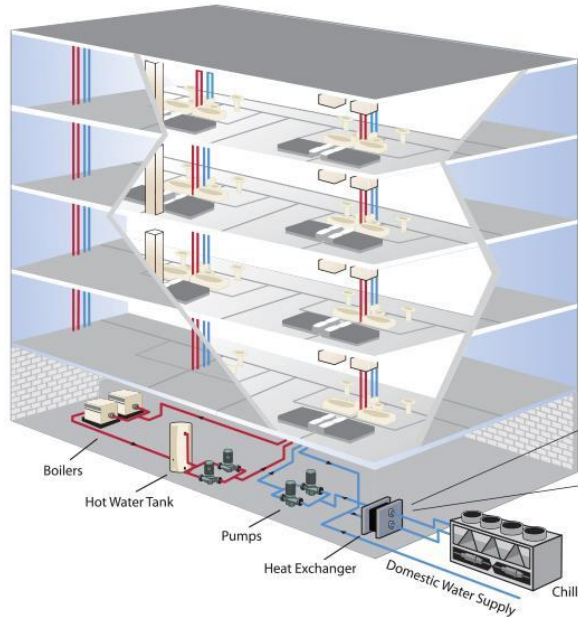


Ceiling/wall damage
Aging piping system



Solution

Upgrade to IPS (Integrated Piping System)



- Resolve the aging problem once and for all
- Use domestic water system for heating and cooling

Double-wall plate heat exchanger ensures integrity of the potable water supply*

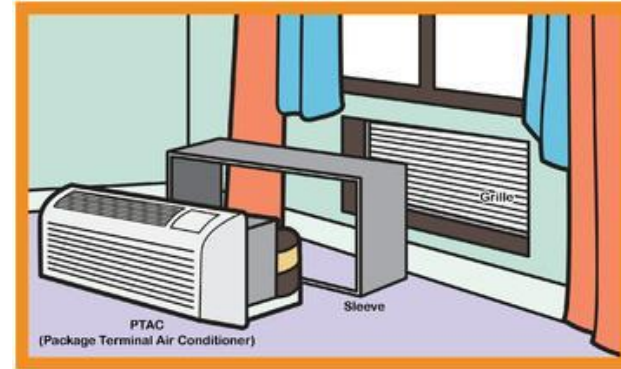
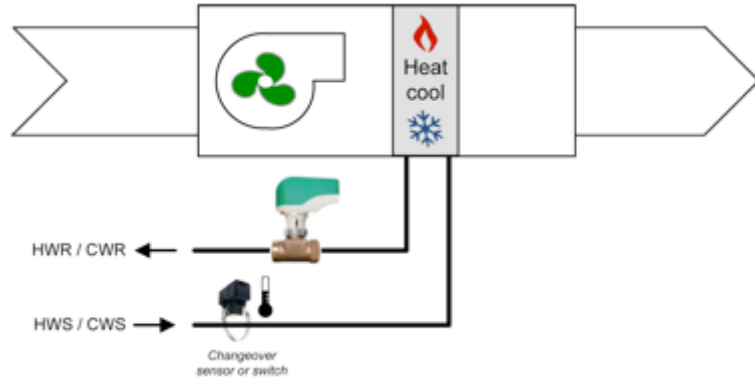
The #1 concern must always be to maintain the safety and integrity of the potable water supply. The Integrated Piping System's double-wall plate heat exchanger fully isolates the chilled water supply from the domestic water at all times.

Solution

Existing Solution of NYCHA

Two-pipe fan-coil system +

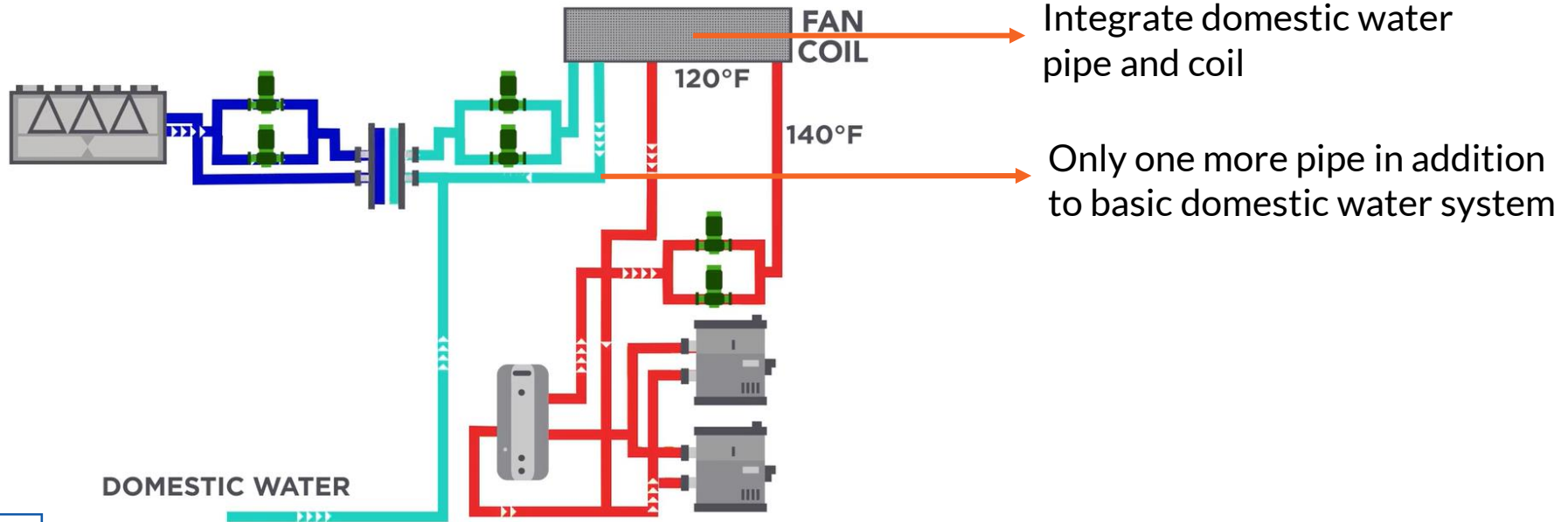
PTAC (Packaged Terminal Air Conditioner)



- Not cheap enough (two more pipes + fan coil unit + PTAC)
- High maintenance
- Low energy efficiency (high operating cost)

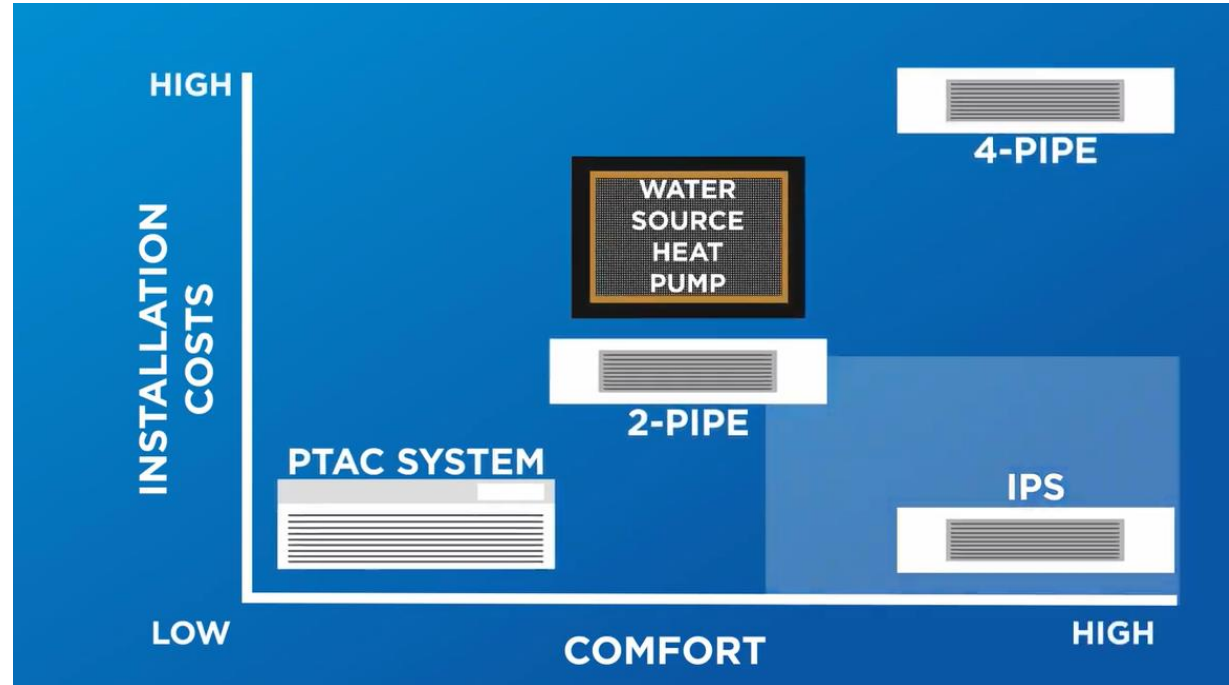
Solution

Upgrade to IPS (Integrated Piping System)



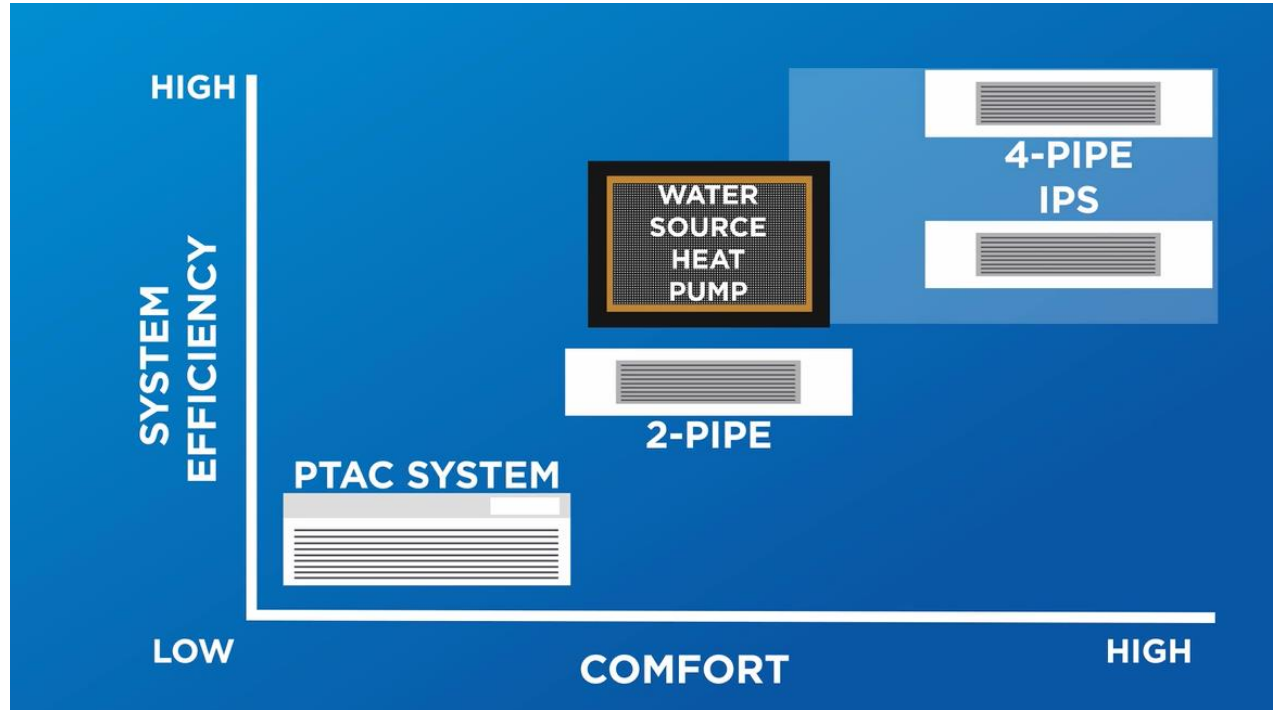
Solution

Installation Costs for Upgrade to IPS (Integrated Piping System)



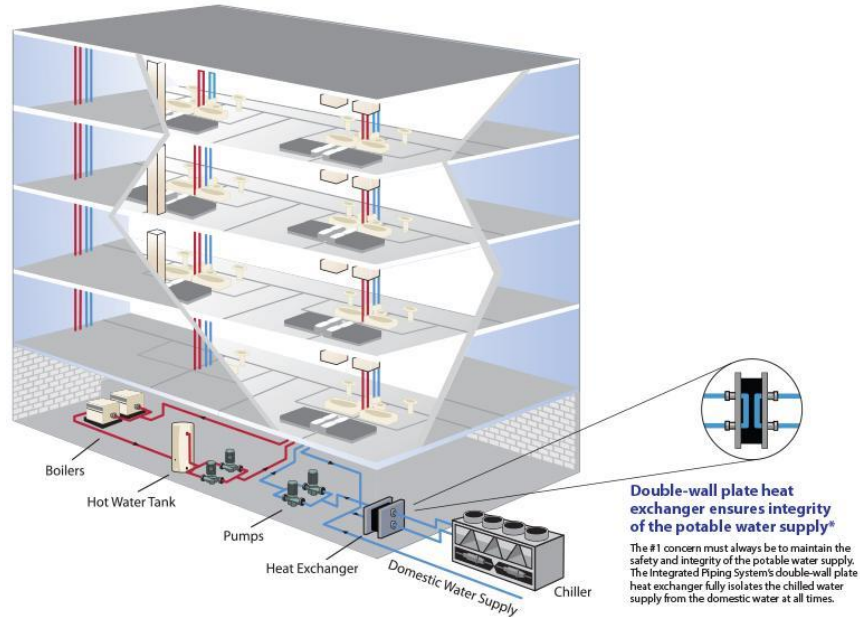
Solution

System Efficiency for Upgrade to IPS (Integrated Piping System)



Solution

Upgrade to IPS (Integrated Piping System)



- Low installation and operating cost
- High comfort
- High energy efficiency
- The disruption of this upgrade will be minimized during a renovation project.

Solution

Highly energy-efficient refrigerator (Haier)

- Basic Cost: \$448
- Energy Cost: 0.6 kWh per day (+/- 15%)

Savings	Energy (MMBtu/year)	Money (\$000/year)
Refrigerator replacement	122,823	\$14,064

Based on NYCHA PNA 2017



Integrated design of bathroom and kitchen



Save/year	Before	After
Water	40.15 m ³	25.55 m ³
Cost	\$60	\$38

Kitchen and Bathroom Renovation

Cost Categories

- Materials
- Alteration
- City permits
- Design
- Demolition and site prep
- Installation
- Overhead cost

Cost Analysis

- Direct material
- Direct labor
- Fixed cost
- Logistics

Energy Performance

- Refrigerator
- Integrated design

Cost Categories

- Materials

ITEM	LOW-RANGE	MID-RANGE	HIGH-RANGE
Cabinets	\$130 per linear foot	\$1,000 per linear foot	\$2,000 per linear foot
Appliances package (range, fridge, dishwasher, microwave)	\$2,000	\$5,000	\$17,000 - \$26,000
Vent hood	\$200	\$500	\$2,000 and up
Countertop	\$5 per sq/ft	\$50 per sq/ft	\$100 per sq/ft
Backsplash	\$3 per sq/ft	\$15 per sq/ft	\$35 per sq/ft and up
Flooring (tile)	\$3 per sq/ft	\$15 per sq/ft	\$35 per sq/ft and up
Kitchen sink	\$150	\$500	\$2,000 and up
Cabinet hardware	\$5 per piece	\$30 per piece	\$300 and up per piece
Lighting	\$50 per piece	\$200 per piece	\$500 and up per piece

ITEM	LOW-RANGE	MID-RANGE	HIGH-RANGE
Wall and floor tile	\$3 per sq/ft	\$15 per sq/ft	\$35 per sq/ft and up
Sink	\$50	\$150	\$500 and up
Vanity	\$250	\$1,000	\$2,000 and up
Sink and shower fixtures	\$40 per fixture	\$100 per fixture	\$350 and up, per fixture
Bathtub	\$150	\$600	\$2,000 - \$3,000
Shower enclosure	\$350	\$1,000	\$2,000
Toilet	\$150	\$400	\$1,000 and up
Medicine cabinet	\$50	\$150	\$500 and up
Accessories (hooks, towel bars, toilet-paper holder)	\$10 per item	\$50 per item	\$100 and up
Lighting	\$25 per fixture	\$150 per fixture	\$300 and up
Ceiling vent	\$50	\$200	\$500 and up
Radiant floor heating	\$6 per sq/ft	\$8 per sq/ft	\$12 per sq/ft

Kitchens

Bathrooms

Cost Categories



- Alteration Agreement
 - Scope of work
 - Insurance: selection of contractor
 - Timeline: 10 am - 4pm
 - Wet-over-dry rule
- City permits
 - Plumbing services: **\$2,000 – \$3,500** and higher
 - Plumbing permits: up to **\$2,000** and as high as **\$5,000** per permit
 - exceeds a minor repair or a direct swap of a similar fixture
 - Electrical permits: **\$900**
 - Asbestos inspection: **\$500 to \$1,000**
 - Depends on plumbing plan

Cost Categories

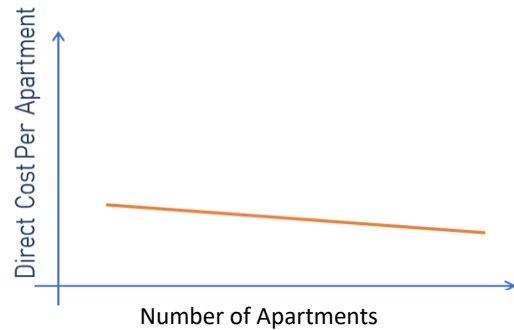
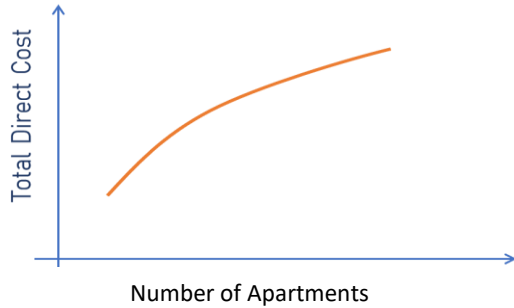


- Design
 - Detailed drawings of layout, plumbing, cabinetry, appliances, etc.
 - Approximately **\$22,000** for a kitchen and **\$25,000** for a bathroom
- Demolition and site prep
 - Kitchen and bathroom, respectively
 - **\$600-\$900** for wall and floor protection
 - **\$1,000** for waterproofing steps
- Installation
 - Approximately **30% of the material cost**
- Overhead Cost
 - Management during construction

Cost Analysis

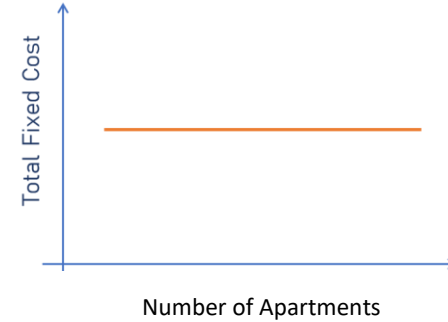
Materials | Demolition and Site Preparation | Installation

- **Direct Material and Labor**



Design | Overhead Cost

- **Fixed Cost**

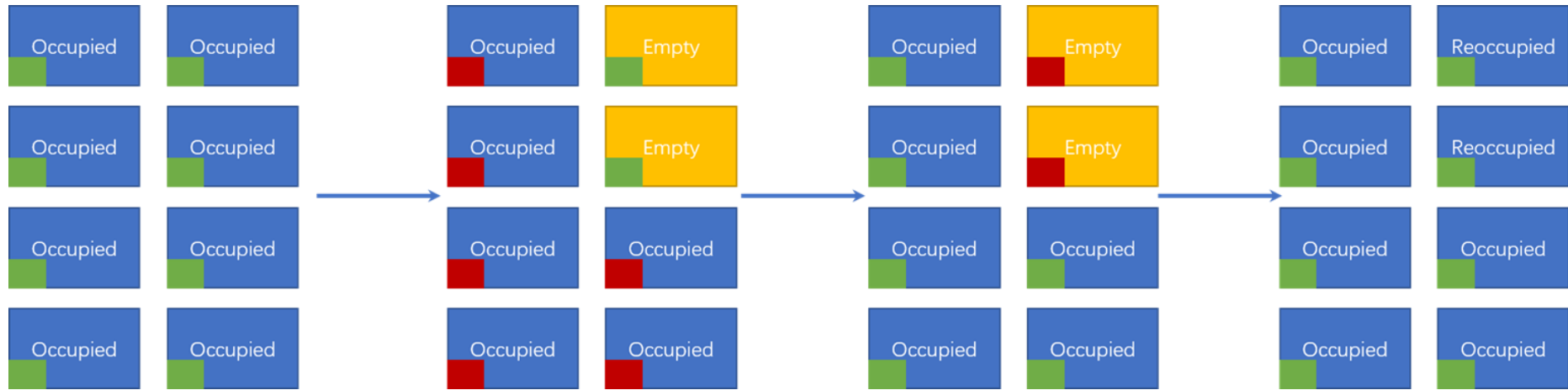


Logistics

Increase the number of apartments involved in one renovation project.



Reduce cost per apartment (How?)



- Complete renovation of eight apartments in two construction periods
- Reduce replacement from eight apartments to two apartments

Energy Performance

Highly energy-efficient refrigerator (Haier)

- Basic Cost: \$448
- Energy Cost: 0.6 kWh per day (+/- 15%)

Savings	Energy (MMBtu/year)	Money (\$000/year)
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Based on NYCHA PNA 2017



Integrated design of bathroom and kitchen



Save/year	Before	After
Water	40.15 m ³	25.55 m ³
Cost	\$60	\$38

Need No.2 : Architecture



- NYCHA's 2nd largest need, estimated at **\$10.7 Billion**
- Roofs are a major area of concern, and require approximately \$1.4 Billion
- Repairs to/replacement of exterior components (roofs, parapets, chimneys, windows, awnings, main front doors) and interior components (lobby and corridor floors, walls, and ceilings)

Interior Renovation

Proposed guideline:

- Meeting with community and building staff
- Surveying and presenting design options to the community
- Community participation in review and decision-making
- Weekly field meetings

Roof Replacement



Coal Tar Roof

Metal Standing Seam



*The Best Roof for Solar Panels - 5 Common Materials
*Design Guidelines

Metal Roofing

- Allow rain water to flow
- Water-resistant
- Reduce energy consumption
- With standing seam, compatible with solar panels

Need 3: Mechanical



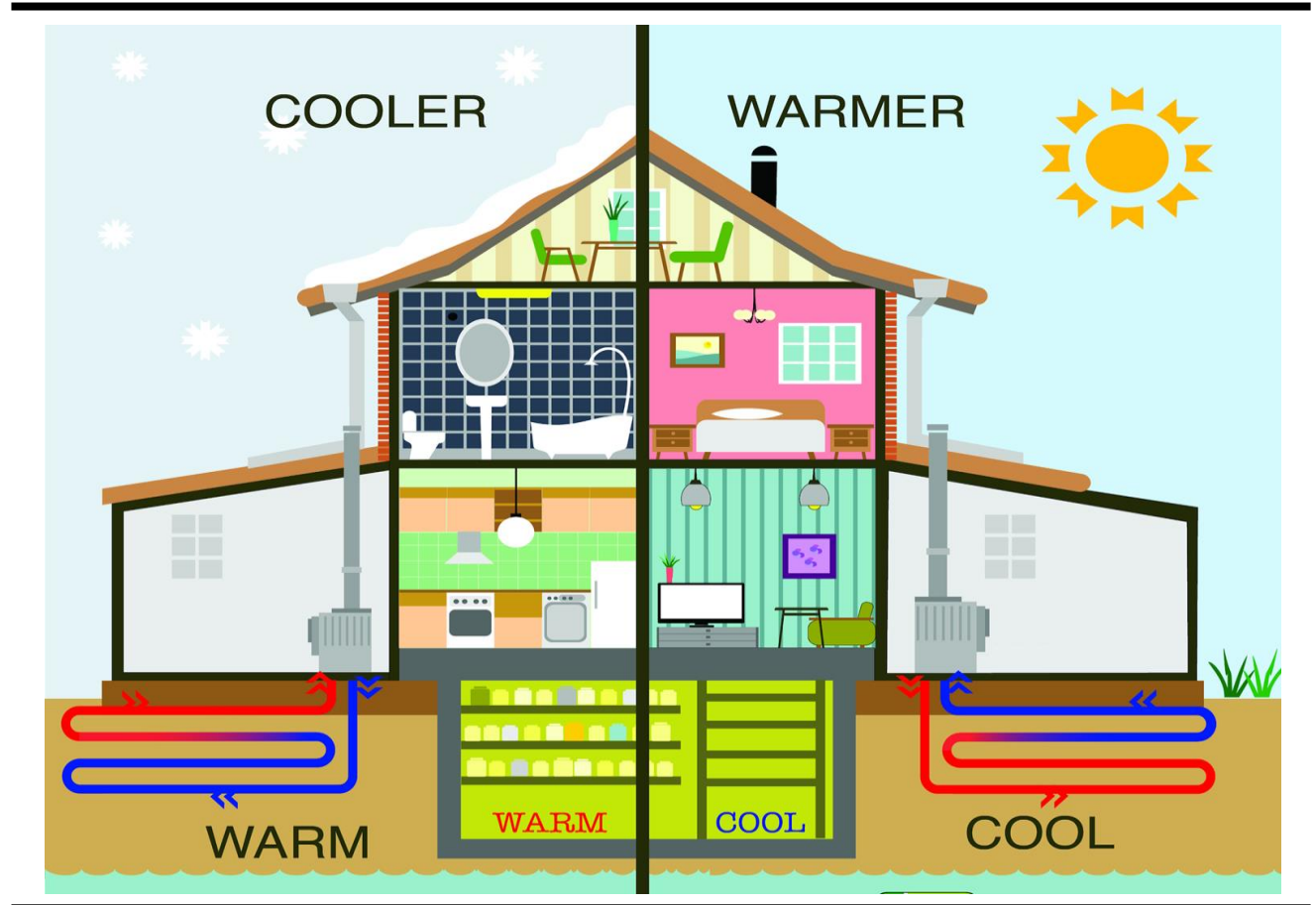
- NYCHA's 3rd largest need, estimated at **\$3.1 Billion**
- Heating plants are a major area of concern, and require approx. **\$1.33 Billion**
- Heating plants and related components (boilers, burners, gauges, pumps, etc.); radiators; air conditioners; heating and ventilating fans; hot water heaters; potable water, drain, sewer and gas piping
- 744 boilers have Remaining Useful Life (RUL) of 5 years or less



Need No.4 : Elevators

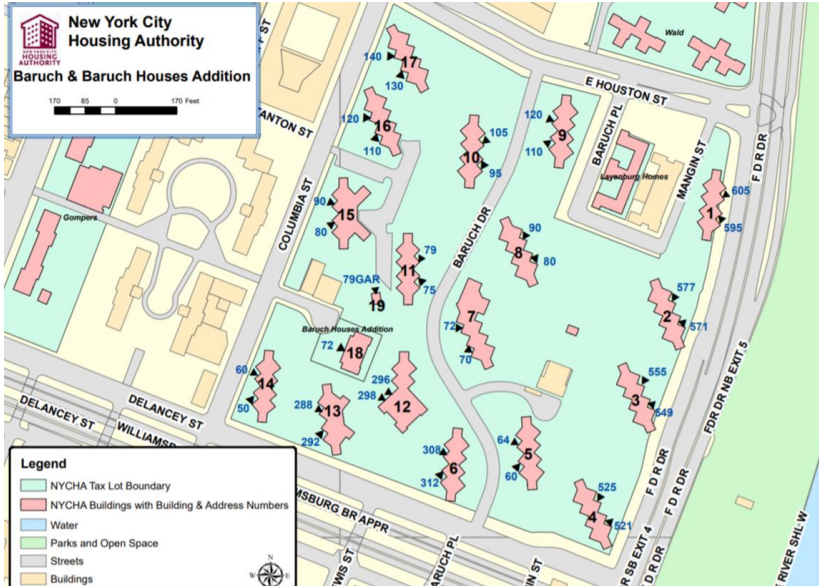
- NYCHA's 4th largest need, estimated at **\$1.5 Billion**
- Roughly 50% of NYCHA residential buildings are 7 stories or more, and about 9% are buildings of 17-31 stories

Proposed solution: Geothermal System for Heating and Cooling



Reference: https://energync.org/wp-content/uploads/2017/03/Geothermal_Heat_Pump_House_Infographic.jpg

NYC Geothermal Pre-feasibility Tool



Baruch Campus



Geothermal System	Standing Column Well	Closed Loop	Open Loop**
Geological and Technical Suitability (Yes/No)	Yes	Yes	Yes
Potential Capacity (Tons)	13,980	7,534	4,194
Full System Feasible (Yes/No)	Yes	Yes	No
Hybrid System Feasible (Yes/No)	N/A	N/A	No
Carbon Footprint Reduction (Tons CO2e)	5,339	5,385	
Annual Cost of Carbon (\$)	726,065	732,306	0
Annual Potential Savings with Geothermal System (\$)	1,503,196	1,525,660	0
Projected Incremental Payback with Carbon Credit (Years)	21	7	
Projected Incremental Payback without Carbon Credit (Years)	30	10	

NOTE: The City's critical infrastructure, such as water tunnels, shafts, or appurtenant facilities are regulated by the New York City Department of Environmental Protection ("DEP"). DEP is in the process of promulgating rules to require that any boring, drilling or excavation to a depth of 50 feet in the borough of the Bronx or north of 135th Street in the borough of Manhattan or to a depth of 100 feet in any other location / borough in New York City first be reported to DEP. Please send written notification of intention to drill or excavate to: Chief of Site Connection and Plan Review, Bureau of Water and Sewer Operations, 9605 Horace Harding Expy, 3rd Floor, Flushing, NY 11368-4100

NYCHA Campuses

Baruch

Dyckman

Fulton

Johnson

King Towers

Manhattanville

Rangel

Vladeck

Wagner

Washington

- Annual potential savings with closed loop geothermal system: \$4,679,137
- Reduction in carbon footprint: 16,913 tons of CO2
- On average, incremental payback time with carbon credit is 7 years, and 10 years without

Social Benefits

- LEED Certification: 19 points for optimized energy efficiency, up to 7 points for onsite renewable energy, and 2 points for green power. Helps reach NY's 40×30 and 80×50 goals
- Reduces stress on the community due to budget cuts and rise of fuel prices in the future
- Non-monetary benefits such as a sense of pride for NYCHA and its residents. Improve its negative reputation by tackling the issue of climate change
- Major part of the geothermal system is underground, and the land on top can still be used for various activities

Financing

- New York State Energy Research and Development Authority (NYSERDA) is making \$26.5 million available for the installation of cutting-edge, renewable energy technology
- Governor Cuomo announced proposal for \$15 Million rebate program for renewable heating and cooling technology
- Regional Greenhouse Gas Initiative (RGGI) offering incentives for decrease in carbon emissions. Has raised \$3.143 Billion which will be used for investments in energy- efficient technologies
- Department of Energy (DOE) as grants, with millions of dollars available for geothermal systems

Regulatory Requirements

- The New York State Department of Environmental Conservation (NYSDEC) Division of Mineral Resources requires a mining permit for drilling activity below a depth of 500 feet and can take up to 8 weeks for review in addition to review by the Department of Parks
- Surveys for every 100 feet of drilling

Potential Obstacles

- If open-loop is considered, a highly-detailed report on the potential effects of such a system to underground water is required
- The initial costs of exploring drilling and installing a geothermal system are high

Elevator Malfunctions

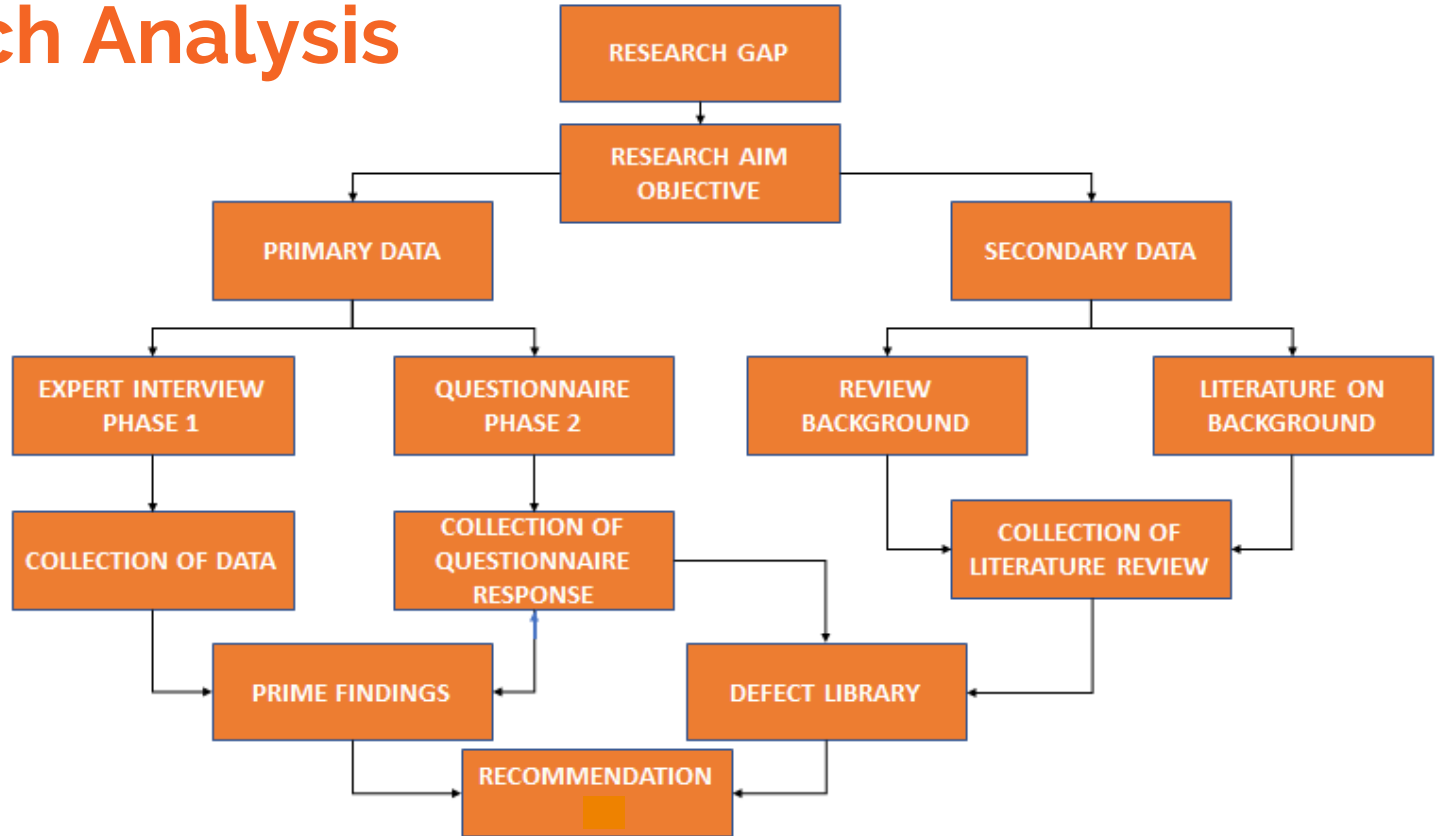
Issues Reported:

- 70 East 108th Street - Elevator breakdown at least four times a month
- 177 Sands Street - Brooklyn Elevator out of service for six days
- 400,000-plus public housing residents at greater risk of elevator accidents

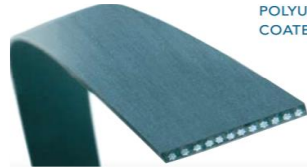
Reasons for Elevator Malfunction

- Funding - NYCHA's elevator requires \$1.5 billion for repair and replacement
- 10 unskilled mechanics inspect 3,000-plus elevators

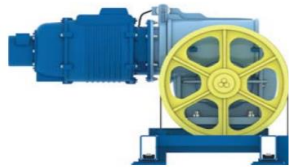
Research Analysis



Technical Modifications



POLYURETHANE-COATED STEEL BELTS



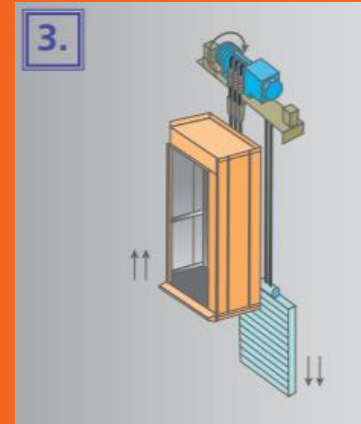
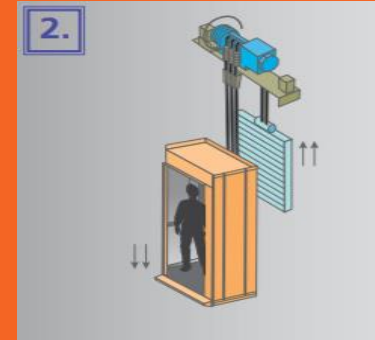
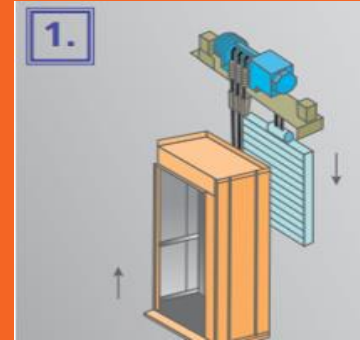
30"
BEFORE



GEARLESS MACHINE

4"
GEN2 MOD

Conceptual Modifications



Feasibility for Elevators

Location

City

New York City

Buildings of Bernard M. Baruch Houses

Building	Floors	Year
 Baruch Houses Addition	23	1977
 Baruch Houses II	14	1959
 Baruch Houses III	14	1959
 Baruch Houses IV	14	1959
 Baruch Houses IX	14	1959
 Baruch Houses V	14	1959
 Baruch Houses VI	14	1959
 Baruch Houses VII	14	1959
 Baruch Houses VIII	14	1959
 Baruch Houses X	14	1959
 Baruch Houses XII	14	1959
 Baruch Houses XIV	14	1959
 Baruch Houses XVI	14	1959
 Baruch Houses XVII	14	1959
 Baruch Houses XI	13	1959
 Baruch Houses XIII	13	1959
 Baruch Houses XV	13	1959
 Baruch Houses I	7	1959

Baruch Houses: typically 7- to 12-story buildings; some are 23-stories

Cost of installing elevator varies with the height of the building:

- 6-story building: \$125,000
- 7- to 12-story building: \$150,000 - \$175,000
- Interior finishes: \$7,500 - \$30,000



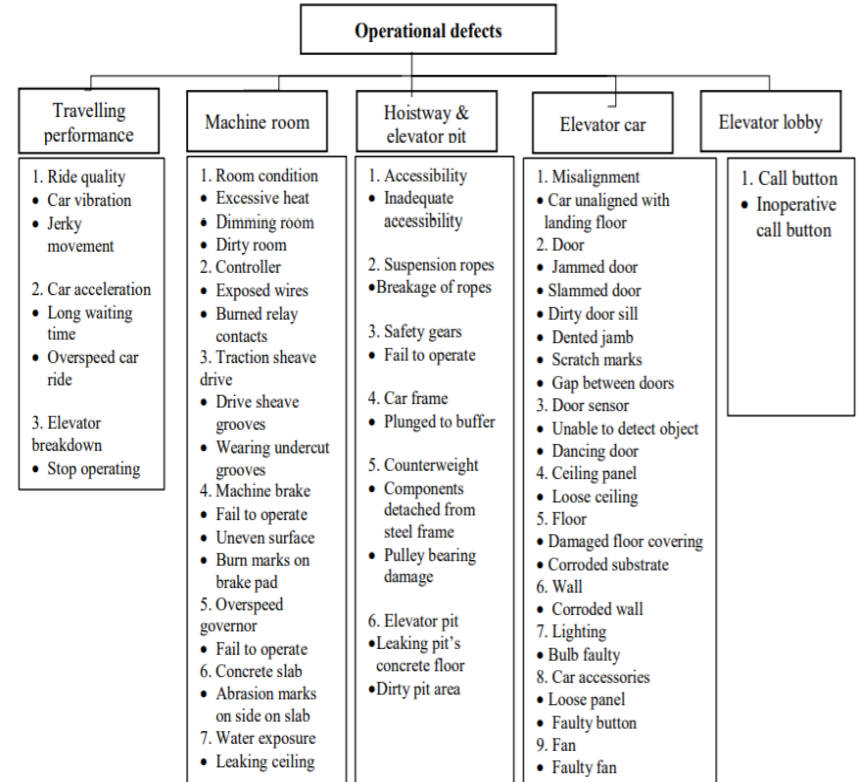
Maintenance and Repair Costs



- The average cost of a service call for an elevator or stair lift is \$120
- The cost of labor to repair an elevator averages \$75 per hour
- An inspection fee or certification of safety varies by municipality, and averages \$150 for an elevator
- With routine maintenance an elevator lasts 20 - 30 years

Task	Highest Avg. Cost
Door hardware (Electrical)	\$800
Door hardware (Mechanical)	\$1,200
Replace landing entrance doors	\$2,800
Piston	\$3,000
Travelling cables	\$3,000
Cab operating panels	\$4,000
Cab wiring	\$4,000
Replace controller wiring	\$4,000
Piston gripper installation	\$15,000
Motor replacement	\$11,500

Typical Elevator Repairs



Modernization - Replacement of Elevator Parts

Upgrade fixtures and railings inside: **\$200 - \$300**

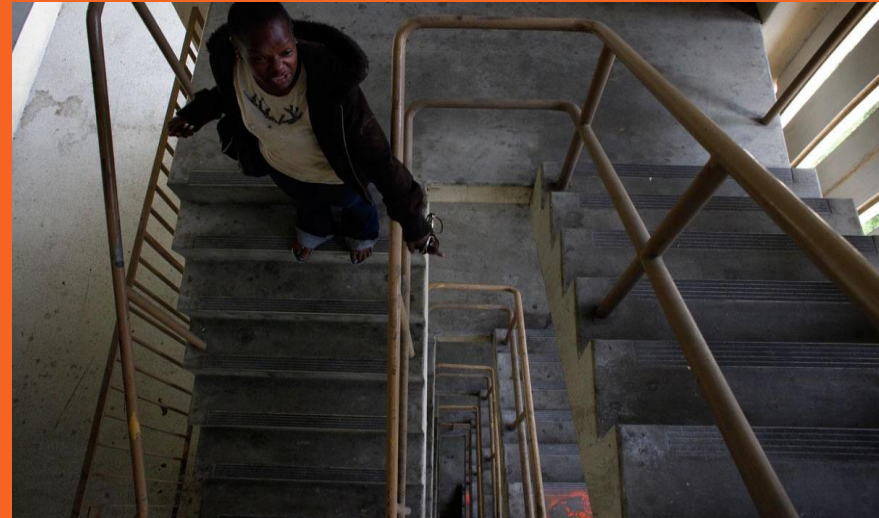
Replace cab control system: **\$8,000 - \$10,000**

Installation of a new motor or piston: **\$10,000 - \$15,000**

There are several advantages to modernization:

- Improved energy efficiency
- Reduced wait times
- Faster and smoother ride
- Improved safety and reliability
- Reduced calls to service company
- Updated look and feel
- Minimized noise and vibration

Staircase Revamp



Need 5: Architecture - Site and MEP -Site

- Architecture - Site (Landscape) and MEP - Site represent 8% of the total needs
- \$2.6 Billion investment needed to cover these needs
- Includes parks, landscaping, fencing, sidewalks, streets, parking lots
- Site Mechanical consists primarily of underground piping (installed during construction)
- Site Electrical consists of site lighting

Site Architecture (Landscape)

- Floodable parks improve landscapes and resiliency
- Efficient use of land



Resilient landscape project: Yanweizhou Park in Jinhua City, China.

source: Landezine, 2015

Architectural and Site

- Bioswale/Sidewalk as shown in the picture
- Sidewalks is one of the main needs in the Architectural and Site category



Landscape resilient project in the city of Jinhua City, China.(Landezine, 2015)

Electrical and Site

- Smart post
- LED touchscreen for public information and “panic button”
- Wi-Fi connection
- Security camera
- Independent of the current electrical system
- Reduces carbon footprint



(Municipality of Grecia, 2019)

Adopt a NYCHA development program

- No money involved
- Improvement of NYCHA landscapes
- Private firms have the opportunity to show off their work and promote themselves
- Public-Private Partnerships



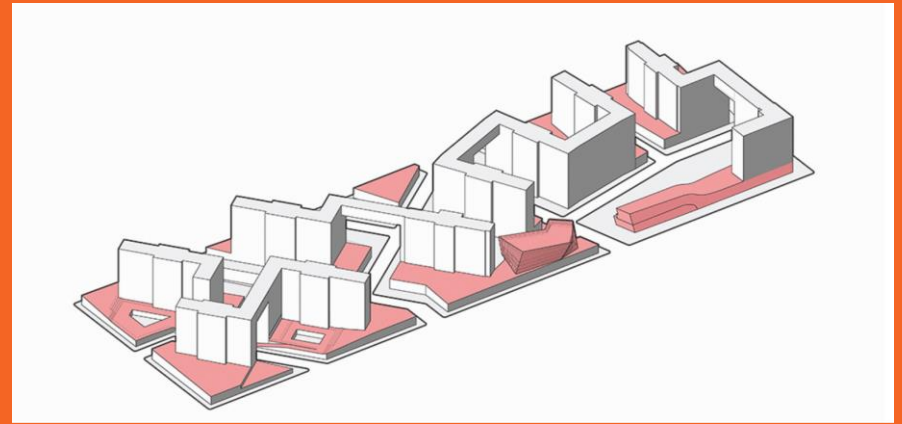
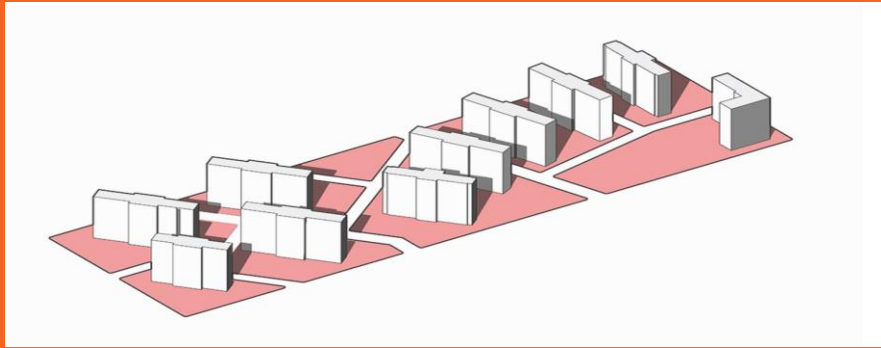
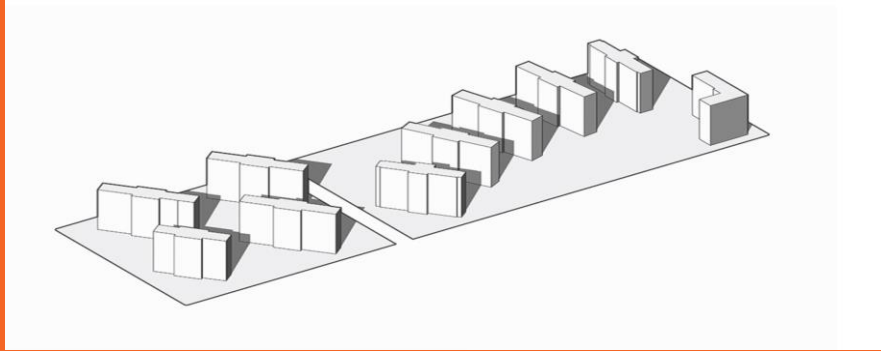
NYCHA Johnson Project, taken from the corner of 112th St & Lexington Ave.



Members of Lambda Chi Alpha Fraternity at Tarleton State University participate in the Texas Department of Transportation's Adopt-a-Highway program

Disrupting the Superblock

- NYCHA developments are towers-in-the-park superblocks, where buildings cover less than one-quarter of the site
- Integrating the isolated campuses into the neighborhood fabric
- Creating more dynamic public spaces, adding new housing units
- Activating the street edge to repair the disconnection of the isolated block housing



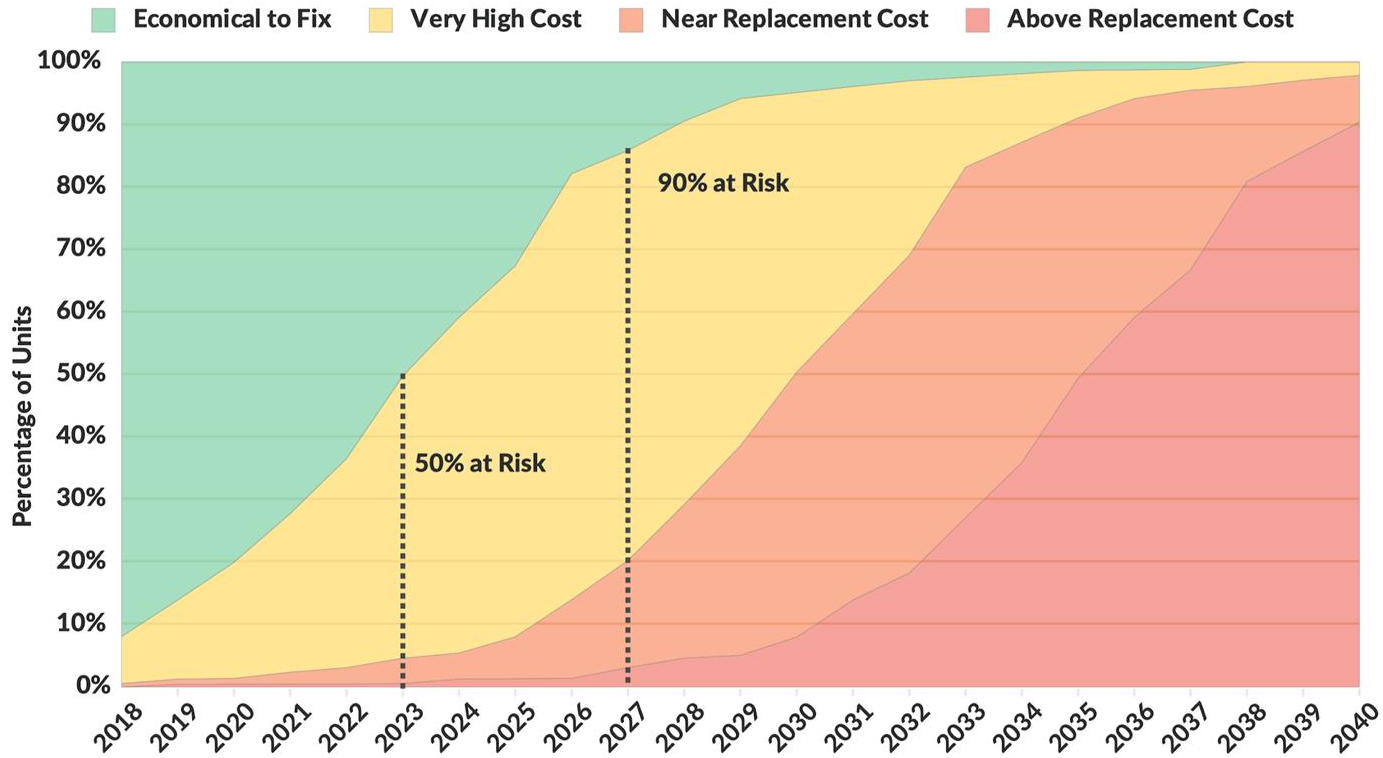


Phasing and Logistics

Two options proposed:

1. Tenant in place
2. Tenant shifted to adjacent building

Projection of NYCHA Capital Needs if They Continue to Grow at Current Rate, 2018-2040



Note: Assumes construction costs and replacement costs grow at 4 percent annually and capital needs grow at an average annual rate of 10.6 percent, which was the annualized rate of growth between the 2011 and 2017 physical needs assessments.

Sources: CBC staff analysis of New York City Housing Authority, 2017 *Physical Needs Assessment and Development Data Book 2017* (December 2017).

Gaining Public Trust

- Develop good faith among residents
- First renovate common spaces such as corridors, lobbies, and elevators to gain the trust of people
- Develop proof-of-concept to test the market

1. Tenant In Place

1. Renovate empty apartments first, then move people incrementally
2. Dividing apartments with kitchen and toilet on one side and other rooms on the other
 - Create a common hospitality space for food services (lobbies, basement, etc.)
 - In case of space shortage food trucks can be used
 - Temporary pantries on each floor
 - Temporary toilets provided at regular intervals

2. Tenant Shifted to Adjacent Building

- NYCHA 2.0 - private developers to build new towers on NYCHA sites
- Towers to consist of both affordable and market-rate housing
- Current tenants can be shifted to these new apartments
- Old apartments can then be renovated and allocated to others
- Skepticism of NYCHA residents eliminated by providing them with new apartments within the same complex

Community Involvement

“NYCHA engaged **32,688** residents in Authority initiatives via outreach events, canvassing and resident meetings.” Number of NYCHA-operated senior centers is **14** and the utilization is 132%. (*Preliminary Mayor’s Management Report*, Feb. 2019)

32,688 of 400,000 represents 8.172% of NYCHA residents
14 of 325 represents 4.31% of NYC senior centers

“The long tenure of residents in public housing (average **23** years)...” (*Preliminary Mayor’s Management Report*, Feb. 2019)

Percent of families with one or more employed: **46.9%** (Residents Data Summary)

Community Involvement

Public space

Community meetings

Job placement

Activity centers

Social events

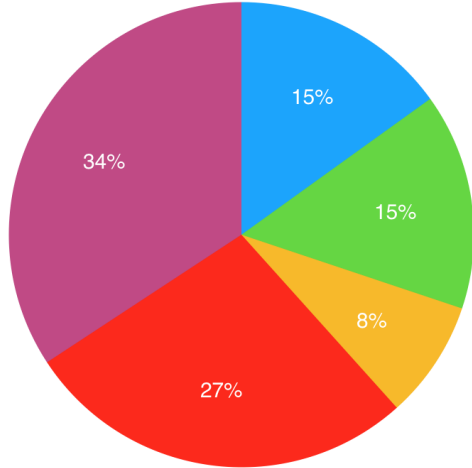
Mentoring programs

The method to involve community in mixed-use developments: step-by-step, engage architects and local government working jointly **on behalf of vulnerable residents**. (Suggested by “New York Has a Public Housing Problem. Does London Have an Answer?” *New York Times*, March 2, 2019)

“People need to be educated about how to see themselves as part of a community that has a stake in the upkeep and safety of these places.”

Public Recognition

- Lead: Count
- Regulation: Count
- Solution: Count
- Condition: Count
- Misconduct: Count



NYCHA News in The New York Times

	Lead	Misconduct	Solution	Regulation	Condition
	Count:	Count:	Count:	Count:	Count:
	11	6	11	20	25
Key words	Dispute the blood test	Possessed appliances	London	HUD and money	No heat for 10 years
Key words	Toxic dust	Drank and sex	Michael Che raise fund	Sanitation chief named as chairwoman	Mold, lead, leaks and broken locks
Key words	Decline in # of children	Staff sex parties	Bring it private	Cold hypocrisy	conditions from the ground level
Key words	Inquiry to health department	Scandal of Olatoye	Marketable food skills	Federal monitor	\$31.8 billion for 325 developments
Key words	Lead tests	Olatoye resign	Duomo: City pay for repair	Crisis	Oral history
Key words	820 children under 6 tested high for lead	Police patrols draw scrutiny	Advocate called for coop b/t Cuomo and de Blasio	Reject deal to overhaul	Leaky roof and lead paint
Key words	Endangering residents		\$82 million for boilers	Noncompliance in other areas	Lawsuit with poor living condition
Key words	New lead inspection		Private developers for 500 units	Separate inquiry	Playground perils
Key words	Lead-paint testimony		Private donors	Expected to federal monitor	Lawsuit with poor living condition
Key words	Filed false paperwork on lead paint inspections		New housing plan	Federal monitor and \$1 billion for repairs	Refund for heating

Thank you!

Any questions?

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