



ILLINOIS
Preservation Through Energy Efficiency
Road Show

September 29, 2015 • Gleacher Center • Chicago, Illinois

Jeffery Parkway A Lean Green Machine in South Shore

Sponsored by:

MacArthur
Foundation



- Owner: Nautilus Investments
- Year of construction: 1928
- Heating system: Steam Boiler
- Heating fuel: Natural Gas
- Building type: 7-story brick building with 55 units, mostly studios
- Energy Assessment performed in September 2009



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Table 1 Recommended retrofits

Recommendation	Cost (\$)	Savings (therms/yr)	Savings* (\$/yr)	Simple payback (yr)	Retrofit lifetime (yr)	SIR
1. Air-seal basement exterior walls, windows, doors, plumbing chases	3,000	1,500	1,500	2	20	10.0
2. Replace water heater	10,000	1,500	1,500	6.7	20	3.0
3. Air-seal, insulate roof to R-49	13,800	3,500	3,500	3.9	20	5.1
4. New steam boiler with controls and automated fresh combustion air louver	55,000	3,500	3,500	15.7	30	1.9
TOTAL**	81,800	10,000	10,000	8.2	26.7[†]	

* Assumes \$1.00 per therm of natural gas or \$0.10 per kWh of electricity. 1 therm = 29 kWh

** Totals may not match due to rounding. [†] Weighted average by cost.

Table 2 Estimated overall savings

	Natural gas	Electricity
Current use	41,000 therms/yr	kWh/yr
Retrofitted use	31,000 therms/yr	kWh/yr
Reduction	24%	0%
Total savings	\$10,000/year	
Investment cost	\$81,800	
Simple payback	8 years	

*Electricity data was unavailable

Jeffery Parkway Before



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ILLINOIS HOUSING
DEPARTMENT

ILLINOIS
HOUSING
COUNCIL

Energy efficiency upgrades completed:

- Installed new steam boiler
- Installed new boiler controls with indoor temperature sensors
- Replaced hot water heaters with high efficiency model
- Insulated steam and domestic hot water pipes

Financing through CIC and grants from People's Gas for insulation and hot water heater replacement



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Actual energy savings

Reduction in annual natural gas
Costs: **69%**

Cost savings: **\$36,200/yr**

Simple payback based on
actual savings to date: **3 years**



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PUTTING IT ALL TOGETHER

Preservation Through Energy Efficiency

Road Show

September 28th, 2015

Chicago, IL

Julie Klump

Vice President of Design and Technical Services

Preservation of Affordable Housing, Inc.

Non-Profit Developer and Owner



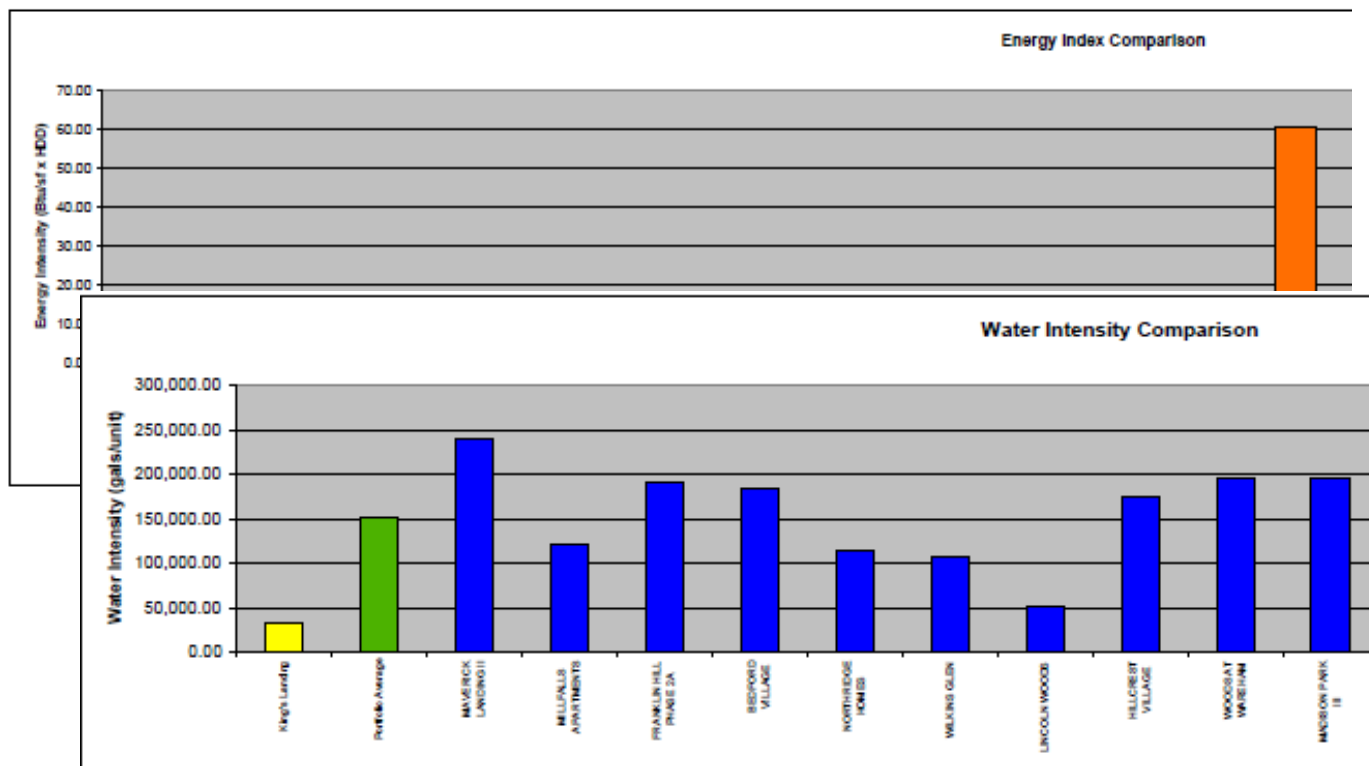
King's Landing



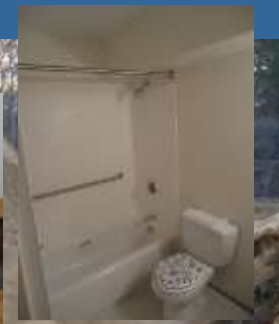
Sources & Uses

First Mortgage	\$ 4,300,000	Acquisition	\$ 9,900,000
4% LIHTC Equity	\$ 2,852,410	Construction	\$ 6,361,750
Seller Financing	\$ 9,900,000	Reserves	\$ 1,573,615
State Tax Credits	\$ 3,377,500	Soft Costs & Developer's Fee	\$ 3,103,700
			\$ 20,939,065
Operations	\$ 272,168		
Deferred Developer Fee	\$ 236,987		
	\$ 20,939,065		

Pretty Good!



Scope of Work



Gravel at pati
Wastewater T
Exterior - Arc
A/C Sleeve Int
Window Repl
Siding and Tri
Exterior Door
Balcony Railin
Scrape and Pa
Building Moul
New WWTP C

Interior-Arch
Community B
Community B
Community B
Common Stai
Accessible Un
Bathroom Res
Unit Entry Do
Aluminum Bli
only

New Vinyl Flooring at LR/DRs, Carpet at BRs

and Heat Detection in corridors

Devices for hearing impaired

Building Envelope Upgrades

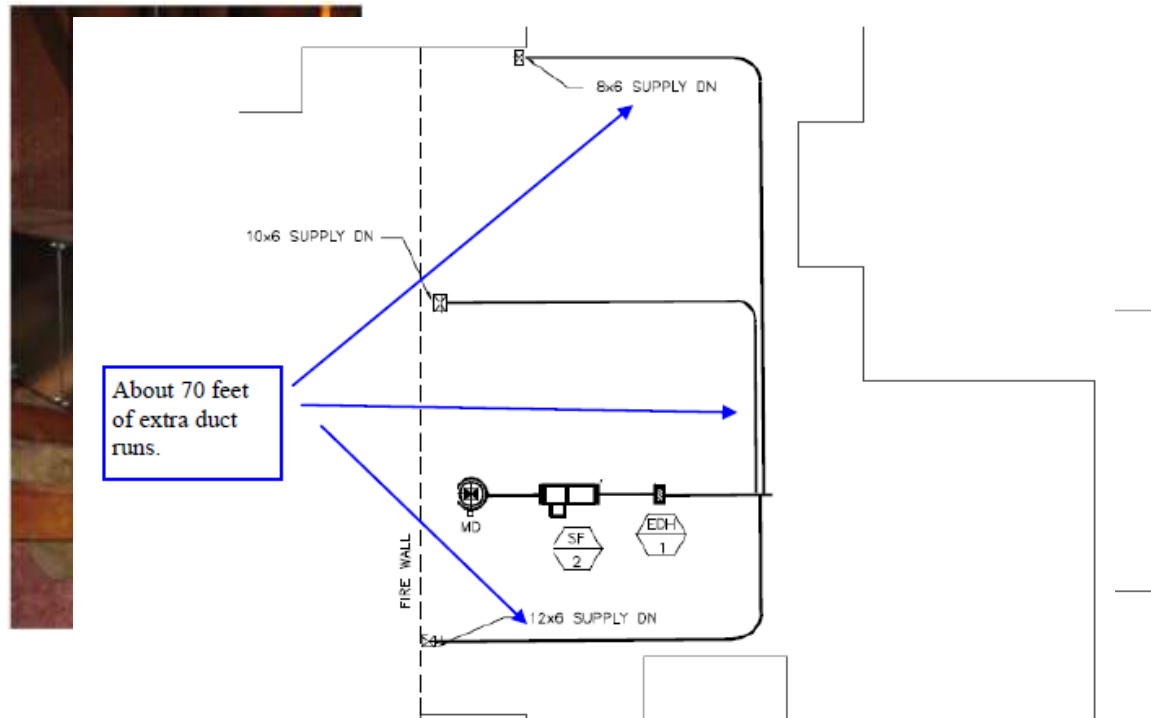
Building	Date	Flow CFM 50	ACH 50	
3	9-19-13	9119	7.60	<p>38% Reduction</p>
3	3-12-14	5612	4.68	
8	9-19-13	10036	8.10	<p>34% Reduction</p>
8	3-12-14	6581	5.31	



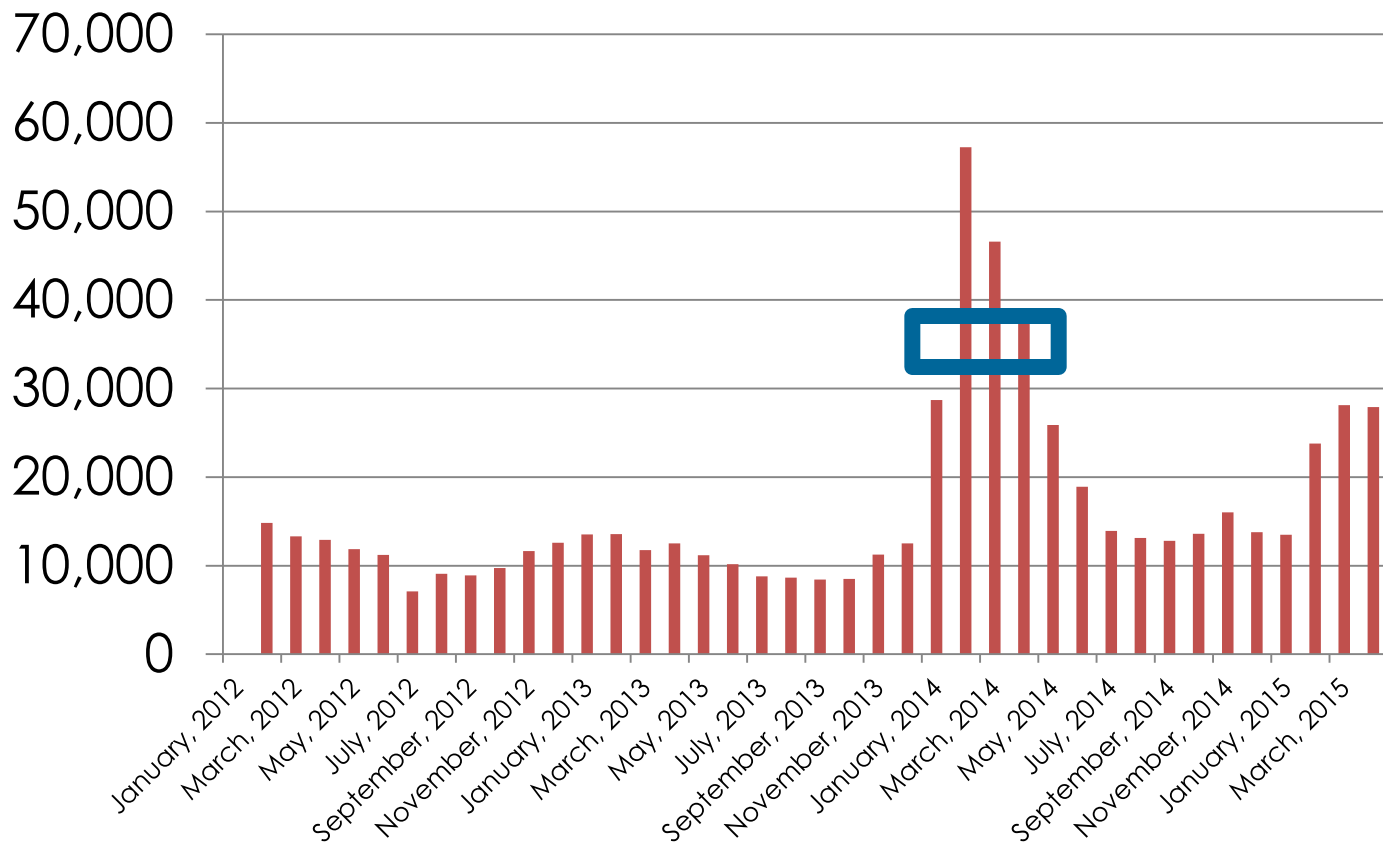
Unit Ventilation



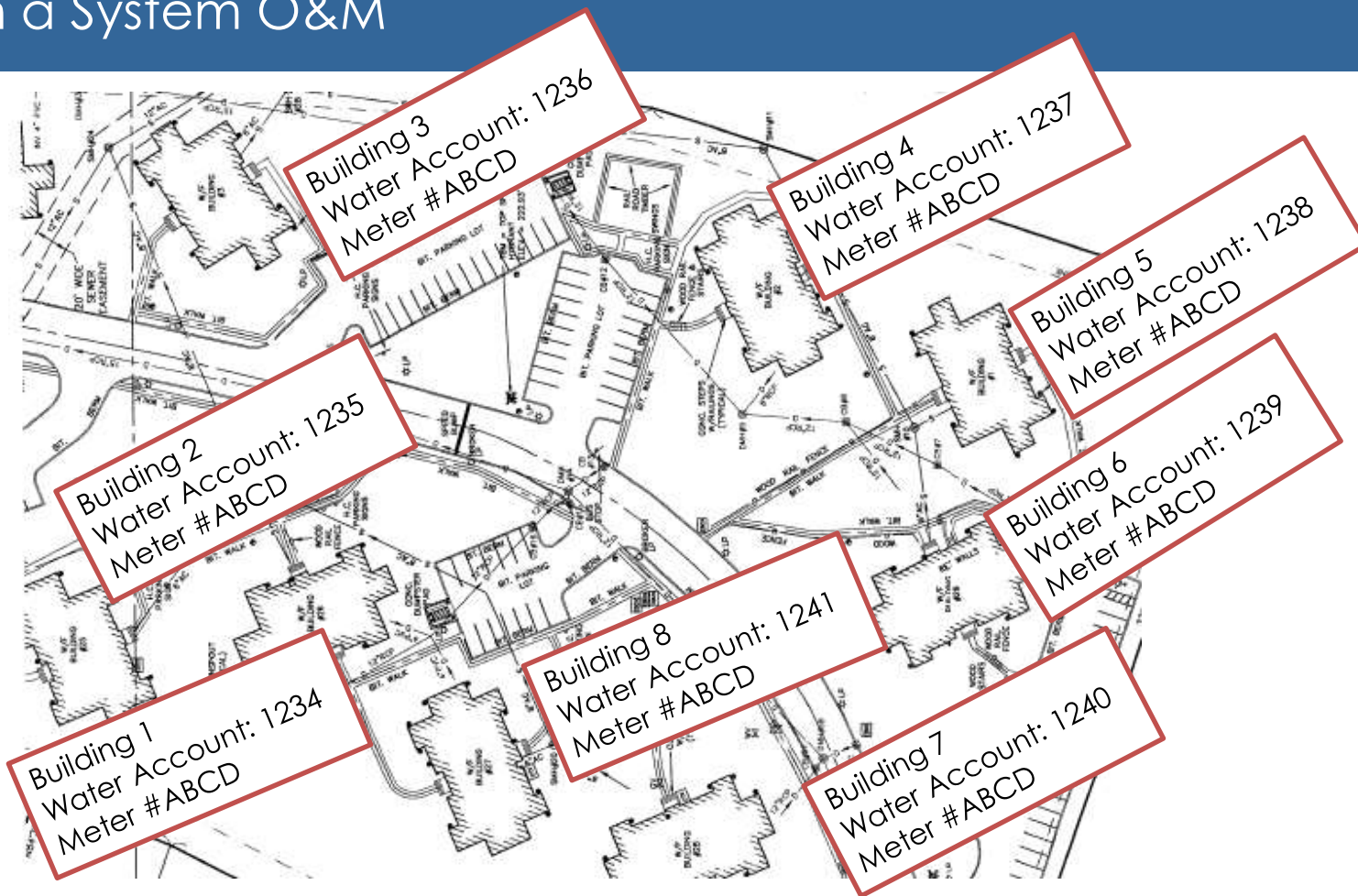
Building Ventilation



How to irritate a property manager 101



Invest in a System O&M



What Equipment is On Site

Domestic Water Heating	Space Heating
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Domestic Water Heating

The following questions relate to the domestic water heating system for resident showers and sinks. The hot water can be provided by a boiler or furnace). If the domestic water is circulated by pumps, please provide information for the pumps.

SECTION A: Domestic Hot Water System Type

1. What domestic hot water system(s) does your property have?

- Central Domestic Water Heater (typically located in a central location)
- Individual Hot Water Heaters (located in residential units)

SECTION B: Central Domestic Water Heating

If your property has a central hot water heater system, please provide the following information:

2. What is the fuel source for domestic water heating system?

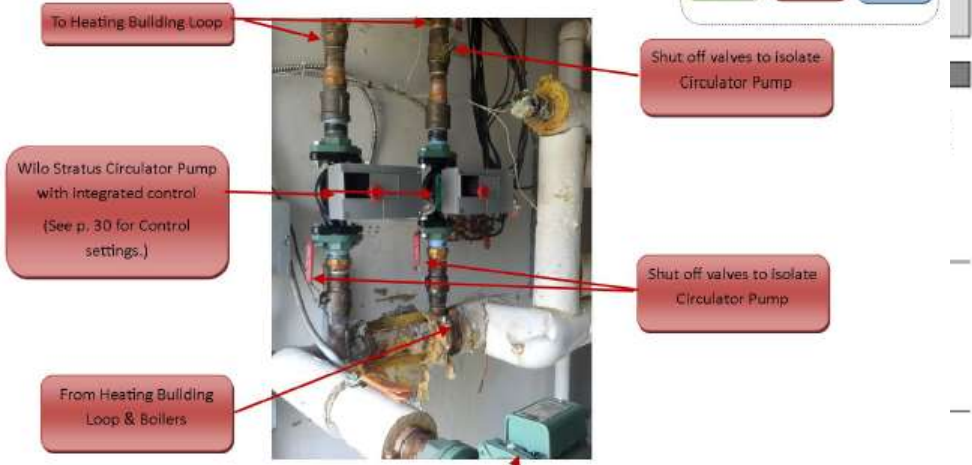
- Natural Gas
- Electric
- Oil
- Propane
- I don't know (describe in text box provided)

text box

System: Pump (Heat and DHW)

Legend for pictures

System (Both Heat and DHW)	Heat	DHW
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How Do I Take Care of Equipment?

Domestic Hot Water System Troubleshooting

Apartment & Common Area

General - Mechanical

Request a list of occupant complaints; heating, cooling, IAQ and DHW

Calibrate and clean sensors;
- Temperature

Re-commissioning of apartment equipment (cooling with heating/cooling/AHU/DHW Cx).

Check and test all components of an apartment during an apartment turnover; I.E. prior to new tenants.
- Thermostats & Radiator valve response

- DHW supply response

- Exhaust Fans

- Windows & Doors (Open and close - create a seal)
Thermostats - Calibrate

Exhaust Fans - check & clean grill in apartment & exhaust on roof/wall

Exhaust Fans - check airflow from unit

5	Check boiler tanks for leaks with dye pill.	Repl
6	Check hot water temperature.	Call



Recommended Controls Settings

Wilo Stratus Pumps for Building Heating Water Circulation

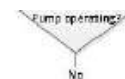
Settings:

- Control method: Variable differential pressure (recommended for best efficiency)
- Maximum pressure setpoint: 10 to 18 feet head
- Night setback mode: ON

Tekmar Boiler Controls (Model 264)

Settings:

- Outdoor design temp: OUT DSGN 10°F
- Indoor design: BOIL INDR 68°F
- Minimum supply: BOIL MIN 130°F
- Maximum supply: BOIL MAX 200°F
- Warm weather shutdown, occupied: 70°F
- Warm weather shutdown, unoccupied: 70°F
- DHW mode setting: MODE DHW 1
(DHW system in parallel with space heat system, and no DHW priority)
- Boiler supply temperature for DHW production: DHW XCHG OCC 180°F
- DHW tank setpoint: 150°F.
(This is high so there is enough hot water for tenants. There would a better efficiency at a lower temperature setting if peak demand can be met.)



Thank you!

Julie Klump

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617-449-1017

BUFFETT PLACE



September 29, 2015

BRINSHORE

BUFFETT PLACE

BACKGROUND

- Single Room Occupancy Hotel built in 1927
- Located in upper income Lakeview neighborhood near Wrigley Field
- Bldg was center of crime and drug use—but also affordable housing for people on the verge of homelessness
- City acquired property after previous owner deeded the property over in lieu of paying violation fees in excess of \$1 million
- RFP Process with supportive housing as a priority for selection

PHOTOS – BEFORE RENOVATION



BRINSHORE

PHOTOS – BEFORE RENOVATION



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BRINSHORE

THRESHOLDS

- 50+ year history as a mental health service provider
- Nationally recognized leader in homeless outreach and housing
- More than 800 people currently served in agency housing at 60+ locations
- Employment services
- More than 6,000 people receive services from Thresholds annually – all living in the community



BRINSHORE DEVELOPMENT, LLC

- Established 1994
- Based in Northbrook, IL
- 4,300 units in 75 residential communities valued at over \$1 billion
- Specializing in mixed income rental and for sale housing
- Focus on partnering with government agencies, housing authorities, institutions and nonprofits
- Active in eight states



BRINSHORE

PROJECT OVERVIEW

- Partnership of Thresholds and Brinshore
- 51 units of affordable, supportive housing for persons at risk of homelessness or with mental illness
- Rooftop and courtyard gardens provide a relaxing and therapeutic environment
- 1,800 ft² of retail space with UrbanMeadows as anchor
- Extensive, on-site supportive services provided by The Thresholds
- Sustainable design features
- Groundbreaking 3rd Qtr 2012

BRINSHORE

GREEN FEATURES

- Enterprise Green Communities certified, Energy Star certified, meets Chicago Green Homes Three Star checklist
- Green roof covers 50% of the roof
- 12-panel solar thermal system that provides 70% of the building's hot water needs
- 1,600 linear square feet of heavy timbers salvaged from building by the Rebuilding Exchange that were used to build tables, benches, mirrors and coat racks for the units
- Units are 100% visitable and 20% are accessible
- 100% smoke-free building

BRINSHORE

GREEN FEATURES

- Solar thermal system with twelve 4'x10' collectors and 1 500-gallon storage tank



BRINSHORE

PROJECT SOURCES

- Project Sources include
 - ✓ LIHTC
 - ✓ State Donation Tax Credits
 - ✓ Illinois Permanent Supportive Housing Grant Funds
 - ✓ Federal Home Loan Bank Affordable Housing Program Funds
 - ✓ Solar Thermal Grant
 - ✓ Deferred Developer Fee
- Chicago Housing Authority provides project based rental assistance vouchers for all units

TENANT SELECTION

- Tenant Selection
 - Disability preference
 - Cross referencing with wait lists from CHA and Illinois
 - Illinois State Referral Network has priority for 8 units
 - CHA has priority for 43 units

INTEGRATED SUPPORTIVE SERVICES

- Six-person case management team on-site for 51 residents
- 24/7 clinical staff availability
- Psychiatrist part of team and on site regularly
- Linkage to physical healthcare, medication management and other wellness services
- Center for recovery within blocks hosting groups and socialization
- Supported Employment Program specialist on site
- All supportive services funded by Medicaid Reimbursement or donations

PHOTOS – AFTER RENOVATION



BRINSHORE

PHOTOS – AFTER RENOVATION



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PHOTOS – AFTER RENOVATION



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