



CITY OF
PITTSBURGH
PROPERTY CONDITION REPORT



B032 – Jefferson Recreation Center
605 Redknap Street
Pittsburgh, Pennsylvania 15212

June 2014



Massaro
www.massarocms.com

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1 Executive Summary

1.1 General Description

The City of Pittsburgh contracted with MCMS to provide a Property Condition Assessment (PCA) in order to prepare a Property Condition Report (PCR) of the subject property, located in the Central Northside neighborhood at 605 Redknapp Street, Pittsburgh, PA. A walk-through survey of the subject property was conducted on June 20, 2013.

The subject property consists of a 2-story former single-family residence which was altered in 1953 and converted for use as a neighborhood recreation facility. Minor modifications to the interior have occurred over time. The property is on a 0.5 Acre municipal lot that includes outdoor recreation facilities and abuts a residential neighborhood.

1.2 General Physical Condition - FAIR

The general physical condition of properties is typically categorized as:

- **New** – Constructed within the last year.
- **Good** – Well constructed and maintained, without significant deficiencies.
- **Fair** – Apparent deferred maintenance issues and deficiencies that can be remedied at reasonable cost.
- **Poor** – Inadequately constructed and/or maintained, with substantial deficiencies that require significant cost and scope of work to remedy. Some items may require additional detailed analysis and testing to fully define the deficiency.
- **Derelict** – State of deficiencies and failure to maintain renders the property unfit for use and may pose direct hazard to occupants and/or the general public. For these properties, either major rehabilitation or demolition and replacement will be required.

Generally, the property appears to have been constructed within typical industry standards for the building type and period of construction. However, based on the findings of this PCA, the subject property is considered to be in **FAIR** overall condition. The major deficiencies and deferred maintenance issues are as follows:

- The site drainage at the upper terrace appears inadequate and is not functioning properly.
- Fire alarm and EM lighting systems are deficient.

1.3 Recommendations – Table 1

See various sections of this Report for details. For the Summary of Recommendations see Table 1, Attached.

Section	Item	Quantity	Unit	Unit Cost	Cycle Replacement	Replacement %	Immediate Total	Short-Term Total
3.1	SITE							
a	Storm water control improvements.	1	EA	\$15,000				\$15,000
b	Modify guardrails to meet code.	1	EA	\$3,000			\$3,000	
c	Seal joints at basketball courts	1	EA	\$7,500				\$7,500
d	Remove overgrown vegetation	1	EA	\$0				\$0
3.2	SUBSTRUCTURE							
3.3	SHELL							
a	Monitor the NW parapet for movement	1	EA	\$2,000				\$2,000
b	SE corner - seal and protect beam	1	EA	\$2,500				\$2,500
c	Repair existing roof defects	1	EA	\$2,000			\$2,000	
d	Replace roofing and flashing system (5yr)	1,320	SF	\$28				\$36,300
3.4	INTERIORS							
a	Modify stair rails for code compliance.	1	EA	\$10,000			\$10,000	
3.5	SERVICES							
	Plumbing							
a	Install backflow preventer, replace PRV	1	EA	\$3,300			\$3,300	
	HVAC							
b	Provide combustion air ductwork per code.	1	EA	\$3,500			\$3,500	
	Fire Protection							
c	Fire Alarm and EM Lighting improvements	1	EA	\$10,000			\$10,000	
	Electrical							
d	Install cover plate at site lighting pole	1	EA	\$500			\$500	
3.6	EQUIPMENT AND FURNISHINGS							
3.7	SPECIAL CONSTRUCTION							
TOTALS							\$32,300	\$63,300

2 Team, Purpose and Scope

2.1 PCA Team

Team Lead, Site, Architectural, Accessibility, Drawings:

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Enclosure (Roof and Exterior Walls):

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2.2 PCA Purpose & Scope

Massaro Construction Management Services (MCMS) is providing Property Condition Assessment (PCA) services in general accordance with the ASTM E2018-08 *Standard Guide for Property Condition Assessments; Baseline Property Condition Assessment*. This standard is widely recognized in the real estate industry as a benchmark tool for evaluating the condition of real property. The City of Pittsburgh is undertaking a multi-year effort to complete PCA's with the following goals:

- Gain greater insight into the current scope and condition of their real property assets.
- Quantify physical deficiencies and immediate repair needs along with short and medium term capital reserve needs for preservation of those assets.
- Identify opportunities to implement Energy Efficiency Measures (ECM) to reduce energy use and hence, energy and/or demand costs.

The general scope of work in a typical PCA includes the following tasks:

- Document Review and Interviews
- Walk-Through Survey
- Opinion of Probable Costs
- Property Condition Report

2.3 Document Review and Interviews

Documents provided by the Owner include: Architectural drawings dated 1953 and 1954. Although formal interviews were not performed the Point of Contact (POC) Mr. Henry Cafardi, Facilities Maintenance Supervisor, was available to answer questions.

2.4 Walk-Through Survey

The scope of the walk-through survey was limited to representative visual observations of site and property improvements and should NOT be considered all-inclusive. It is conducted without protective clothing, exploratory probing, removal or relocation of materials, testing, or the use of equipment, such as ladders (except as required for roof access), stools, scaffolding, metering/testing equipment, or devices of any kind. Out-of scope issues include but are not limited to:

- Operating, measurement and/or testing of any building systems.
- Assessment of any process-related equipment or systems.
- Assessing components of systems that are not readily observable.
- Entering limited access or confined spaces.
- Accessing pitched roof areas or any roof area that appears unsafe.
- Determining applicability of Life Safety/Fire Protection code requirements.

2.5 Opinion of Probable Costs

Replacement, repairs, and routine maintenance of various building components and systems are discussed in various sections of this report and opinions of their probable costs are summarized for the evaluation period in the attached tables. Per ASTM E2018-08; costs indicated should be considered preliminary, order of magnitude budgets. Actual costs most probably will vary from those contained within depending on such matters as type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, whether a physical deficiency is repaired in part or replaced in whole, phasing of the work (if applicable), quality of contractor, quality of project management exercised, market conditions, and whether competitive pricing is solicited, etc. Certain opinions of probable costs can not be developed within the scope of this assessment without further study. Where applicable, the opinion of the probable costs for further study will be included.

- **Immediate Costs** are to remedy those deficiencies that require immediate action as the result of any of the following:
 - material existing or potential unsafe condition
 - material building or fire code violations
 - conditions that if left uncorrected have the potential to result in or contribute to critical element or system failure within one year or will result most probably in a significant escalation of its remedial cost.
- **Short-Term Costs** are to remedy physical deficiencies, such as deferred maintenance, that may not warrant immediate attention, but require repairs or replacements that should be undertaken on a priority basis in addition to routine preventative maintenance. Unless noted otherwise, generally the time frame for such repairs is 1-2 years. Such opinions of probable costs may include costs for testing, exploratory probing, and further analysis; or these services may be evaluated separately.

2.6 Property Condition Report (PCR)

The Property Condition Report documents the findings of the PCA. This report is for the use of this Client only, for the stated purpose above. Specific language in the descriptions of the various PCA processes, intent, scopes of work, and/or definitions throughout Section 1-2 of this PCR are excerpted directly in whole or in part from the ASTM E2018-08 Standard (herein the 'Standard') document without specific attribution. All rights remain with the ASTM. In the event of any discrepancy between statements in this Report and the Standard, the scope and intent in the respective sections of the Standard shall govern. A complete copy of the Standard may be made available upon request.

2.7 Additional Scope Considerations

For this assessment, in addition to the baseline PCA tasks, further considerations are taken into account and additional deliverables are included as follows:

- **Schematic Floor Plans** – Produced using Autodesk Revit™ Building Information Modeling (BIM) software, and including limited field check of representative dimensions and documentation of changes to layout. These drawings and associated floor area information provide a helpful quick reference tool for General Services and Architectural Division staff. They are schematic in nature and should NOT be considered complete documentation of as-built conditions. City develop a BIM Standard and/or Computer Aided Facilities Management (CAFM) program in the future, this initial modeling effort can be further enriched and aligned with those initiatives.
- **Energy Audit** – Level 1, Walk-Through Analysis, per the *Procedures for Commercial Building Energy Audits, 2nd Ed.* Published by the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE). This Audit provides an overview of building systems and their functional operation, benchmarks the Energy Use Index (EUI) of the subject property against comparables, identifies low/no-cost changes to current Operations and Maintenance (O&M) process to provide savings, and identifies potential capital improvements for further study.

3 Element Descriptions and Observations

3.1 Site

Overall, the Site is in Fair condition.

1. Topography and Drainage – This naturally sloping site was improved with large retaining walls that create two level terraces. The retaining walls are almost continuous along the entire perimeter of the lot. The upper (cut) terrace holds the building pad and an adjacent playground with play structure. The roof drains along the south wall and on to the surface along the south side of the building. There is inadequate storm water control infrastructure at the upper terrace, and evidence of ponding is apparent. The lower (fill) terrace holds the athletic courts and an additional playground with play structure.

Recommendation: Install storm water control measures to capture water from downspouts and provide additional surface drainage to reduce or eliminate areas of ponding.

2. Access and Egress – Pedestrian access only is available to the property and the Rec Center itself. There is no vehicle access or on-site parking. Egress from the Rec Center is available at both levels to grade, with additional egress by way of external stair from the upper level. Exit stair guardrails do not meet current code requirements for dimensions and openings.

Recommendation: Modify guardrails to meet code.

3. Paving, Curbing and Parking – The asphalt paving is generally in Fair condition. The concrete paving is in Good condition but does not drain properly, see above. The playground surfaces are generally in Fair condition. The basketball courts are generally in Fair condition. These court areas have ½" longitudinal and diagonal cracks. The cracks have exposed the sub base material revealing approximately ¾" bituminous surface. No parking is available on site. Concrete curbs, stairs and walks are in Fair condition. The courts are illuminated by pole-mounted floodlights.

Recommendation: Seal joints at basketball courts.

4. Landscaping and Appurtenances – Landscaping and plantings consist primarily of sloping area with wild grass and several deciduous trees. Tall trees overhang the Rec Center roof and deposit debris on the roof leading to gutter overflow when not maintained. Chain-link fencing throughout is in Fair condition. Plantings overhang and conceal much of the retaining walls along the south end of the property.
5. Site Amenities / Accessory Structures- The retaining walls at the north and south ends of the site are in Fair condition.

3.1 Site: Photos



ST1 – Main entrance – Looking south from Redknap St.



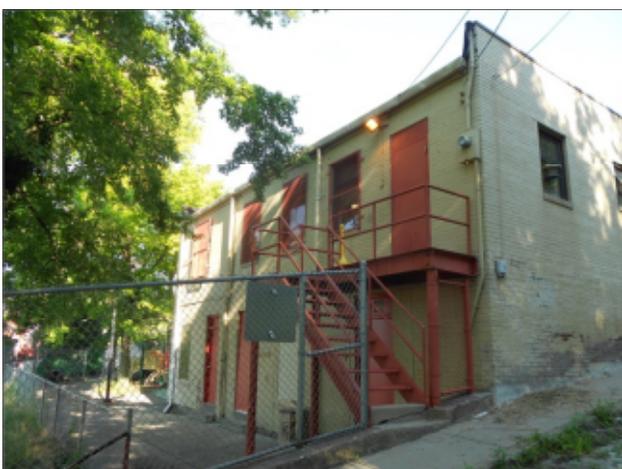
ST2 - Upper site – looking north at upper playground



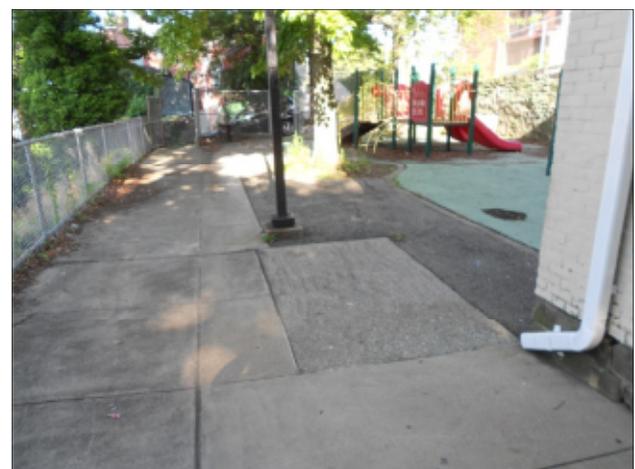
ST3 – Upper site - looking NE



ST4 - Upper site - looking east



ST5 – Upper site – looking NW



ST6 – Upper site – looking west

3.1 Site: Photos - Continued



ST7 – Upper site looking south to lower site



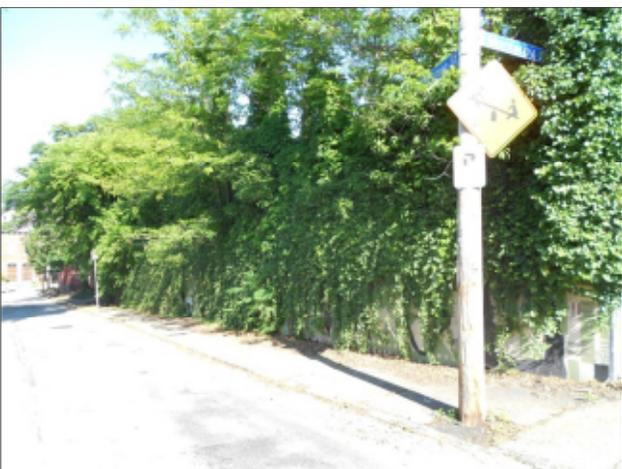
ST8 – Lower site looking NE at stairs to upper site



ST9 – Lower site looking west



ST10 – Lower site retaining walls – looking north up Monterey St.



ST11 – Lower site retaining walls – looking west on W. Jefferson St.



ST12 – Lower site retaining walls – looking north up Ehlers Way

3.2 Substructure

1. Foundation
 - 1.1. Constructed of Masonry with a small void by the SE Door. (3"x4" Void)
 - 1.2. East and West Retaining walls have a few light vertical cracks and scaling of the wall coating
 - 1.3. East Stair Case is on the exterior and steel framed is in generally good condition, except the bottom tread is concrete and has light spalling.
 - 1.4. The Substructure is generally in Good condition.

3.3 Shell

1. Overall the Shell appears to be in Fair condition.
2. Building Frame
 - 2.1. NW corner has bulging bricks and patched step cracking from NW past the mid-point in the SE direction. The parapet is leaning inwards and has caused a diagonal warp in the roofing material.
 - 2.2. The wood floor joist and steel beams are in good condition.
 - 2.3. The 2x8 rafters on 16" centers roof joists are in good condition.
 - 2.4. The SE corner of the bottom floor wall has lost its coating and reveals a steel beam supporting the top floor with moderate rust
3. Building Walls
 - 3.1. Construction: The building masonry walls are constructed with a painted brick veneer with a cinder block back up. Wall penetrations include: 5 metal man doors, 14 windows (1 glass block, 9 with security screens). All doors have metal frames.
 - 3.2. Window & Door Lintels have light rust
 - 3.3. Condition: Overall, the building walls appear to be in Fair condition.
 - 3.4. Recommendations:
 - 3.4.1. Short-term Costs:
 - 3.4.1.1. Monitor the NW Parapet and top section for movement: \$0
 - 3.4.1.2. Correct the moisture problem at SW corner to prevent steel beam deterioration. \$250
4. Roof
 - 4.1. Roof Deck
 - 4.1.1. Construction: The metal roof decking is constructed of 1" wood sheathing on 2" x 8" joists (observed in 2nd floor closet). The roof deck slopes from front to rear.
 - 4.1.2. Condition: No conditions were observed that would indicate deck problems.
 - 4.2. Roof Insulation
 - 4.2.1. Construction: No core cuts were taken.
 - 4.2.2. Condition: The insulation (if any) is assumed to be in poor condition since the existing roof appears to have been installed over an existing roof system.
 - 4.3. Roof Membrane

4.3.1. Construction: The roof system is constructed of a single ply, APP modified bitumen membrane, torch applied, with a black granule surface. This membrane appears to have been installed over top of an existing roof system.

4.3.2. Condition: The roof membrane appeared in fair condition. The system was not installed to industry standards. A few burn marks were observed. A few soft spots were felt on the roof surface.

4.4. Membrane flashings

4.4.1. Construction: The perimeter and curb flashings are constructed with the same modified bitumen membrane as used on the roof.

4.4.2. Condition: The membrane flashing system is in fair to poor condition. The flashing is loose from the wall and buckled (wrinkles) in some areas. The flashing extends up and over top the metal coping. The flashing was not installed to industry standards.

4.5. Perimeter Terminations

4.5.1. Construction: The building walls extend above the roof line creating a parapet wall on the north (front), east and west sides and are terminated with metal coping that has been covered by membrane flashing. The building wall on the south (rear) side ends at the roof line and is terminated with a metal drip edge that has been roofed over.

4.5.2. Condition: I could not observe the metal coping or drip edge except for the exterior face. It appears the metal terminations were part of the previous roof system and left in place when the current system was installed.

4.6. Roof Top Penetrations

4.6.1. One chimney, 4 pipes, 2 surface mounted condensers with a pipe portal penetrate the roof.

4.6.2. Condition: The penetrations are in fair condition. Previously reported leaks were around the chimney area – no obvious defects were observed.

4.7. Drainage System

4.7.1. Construction: The roof slopes to and drains into a hanging gutter system on the south (rear) wall. The gutter contains three drops with downspouts. There is apparent slope in the gutter. The slope is provided by building construction.

4.7.2. Condition: The gutter contains debris and overflows during a rain causing water to enter the building at the door below. Two of the downspouts drain into standpipes. One downspout empties onto the ground level paved area.

4.8. Access

4.8.1. Access to the roof can only be gained by extension ladder at the exterior.

CONCLUSIONS

No current leaks are reported in the building.

The brick walls are in poor to fair condition. Some repairs have been made. The paint is peeling in some areas. A few small areas of brick are blistered. The doors and windows are in fair condition.

The roof decking appears to be in good condition. We did not observe any signs that would suggest a serious problem with the decking system at this time.

The roof membrane and flashing systems are in fair to poor condition. The loose and buckled flashing should be monitored and repaired until the roof is replaced.

The metal coping and drip edge are covered with roof membrane and should be monitored and repaired until the roof is replaced.

The roof top units and penetrations are in fair condition.

The drainage system is in fair condition. The gutter should be cleaned and continue to be cleaned twice yearly.

With proper maintenance and corrective repairs, it is our opinion that the roofing system is in a maintainable condition for the next five years.

Estimates:

1 year: Repair existing roof defects - Estimated cost: \$1,000. Paint areas of peeling paint - Estimated cost: None (perform with in-house personnel). Inspect roofs and walls yearly and remove debris from the gutter system – Estimated cost: None (perform with in-house personnel)

5 year: Replace roofing and flashing system – Estimated cost: \$23,760 (1,320 SF x \$18/SF)

10 year: Maintain a pro-active maintenance program. Inspect the roof system and walls on a regular schedule – minimum twice a year (late spring and late fall). Estimated cost: none (perform in-house)

3.3 Shell Photos



SH1 – Wood floor joists with steel beam support



SH2 – SE corner, loss of wall coating reveals steel beam with moderate rust



SH3 – Patched step cracking in the joints



SH4 – NW corner bulge with parapet leaning towards east



SH5 – Recent mortar repairs at SE corner



SH6 – East end of roof looking south

3.3 Shell Photos - Continued



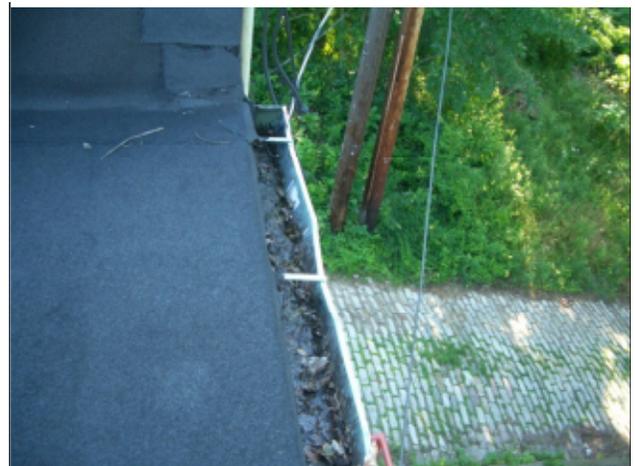
SH7 – Looking SW



SH8 – North (front) wall looking west



SH9 – West wall looking north – note loose flashing



SH10 – Debris in the gutter system



SH11 – South (rear) wall looking west, debris in gutter system



SH12 – Metal coping covered with membrane flashing

3.4 Interiors

Introduction

1. Interior Construction – Interior partitions are primarily concrete masonry construction. There is some interior cement plaster at the lower level. Additional gypsum drywall partitions enclose spaces at the upper level. Doors and frames are typically hollow metal with commercial grade hardware. Some doors to exterior have additional surface deadbolts. This may be a life safety concern. Overall the Interiors are in Good condition.

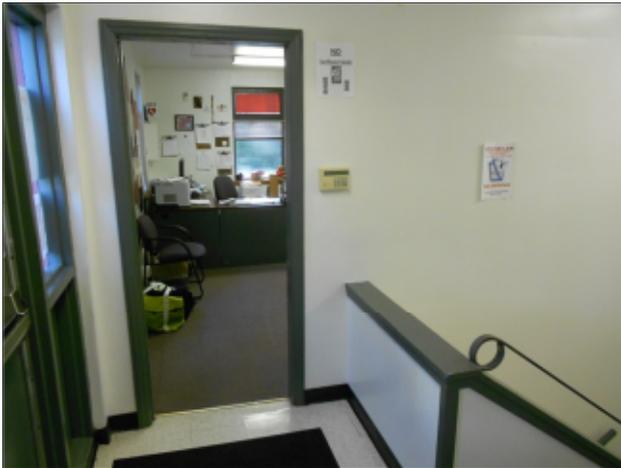
Recommendation: Verify that required egress door hardware meets code.

2. Stairs – There is one interior stair, of wood construction which is in Good condition. However, the handrails and guardrails do not meet the current code.

Recommendation: Modify the stair rails for code compliance.

3. Interior Finishes – Most flooring in the building is resilient tile. The office areas and restrooms have resilient tile flooring (Vinyl Composition Tile, or similar). Partitions are painted throughout. Ceilings are suspended type Acoustic Ceiling Tile (ACT), plaster, or paneling. The interior finishes are generally in Good condition.

3.4 Interiors: Photos



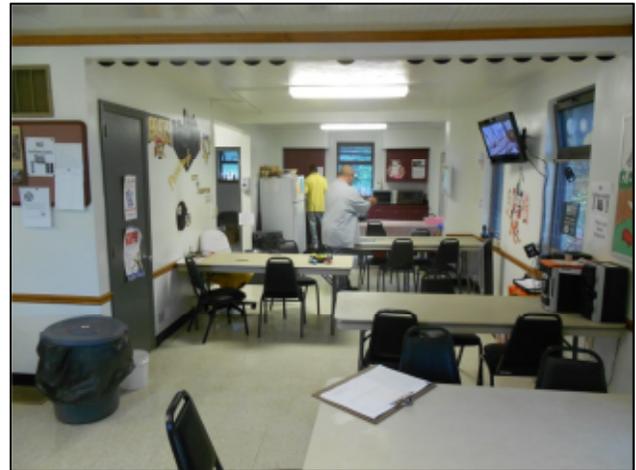
11 – Main entrance/upper level stair landing



12 – View down stairs from upper landing



13 – Upper level game room



14 – View looking east from game room to kitchen



15 – Kitchen and exit to exterior egress stair



16 – Staff office

3.4 Interiors: Photos Continued



17 - View down stairs to lower level



18 – Lower level recreation room



19 – Typical lower level restroom



110 – Typical lower level restroom



111 – Lower level egress door

3.5 Services

Building Plumbing Systems 4.5.3

1. Fixtures

- 1.1. General Description: The plumbing system is served by a combination of sanitary fixtures, supply and drain piping, water fountain, and supply water meter service.
- 1.2. Construction: Interior
 - 1.2.1. The ladies room has two (2) toilets, and one (1) lavatory sink.
 - 1.2.2. The men's room has: one (1) urinal, one (1) toilet, and one (1) lavatory sinks.
 - 1.2.3. The kitchen has one (1) stainless steel, double-bowl sink.
- 1.3. Condition Assessment
 - 1.3.1. Condition: Poor.
- 1.4. Performance Observations
 - 1.4.1. Energy and Sustainability: The outside water fountain runs continuously, wasting potable water and causing high sewage bills.

2. Domestic Water Production

- 2.1 Construction: The domestic water heating system is served by one (1) 40 gallon commercial water heater.
 - 2.1.1 Condition: Fair.

3. Utilities

- 3.1 General Description: Potable water supply
- 3.2 Construction
 - 3.2.1 Original meter, shut-off valve, and piping.
 - 3.2.2 No back-flow prevention.
- 3.3 Condition Assessment: Derelict.
 - 3.3.1 Pressure regulating valve (PRV) leaking.

4. Conclusions:

- 4.1 The plumbing systems are beyond their expected useful life. Routine maintenance should continue to extend serviceability.

5. Estimates: Suggested remedies and Opinion of probable cost

- 5.1 Immediate Costs
 - 5.1.1 Install back-flow preventer: \$1,200.
 - 5.1.2 Replace leaking PRV: \$1,000
- 5.2 Short-term Costs
 - 5.2.1 Add solenoid valve and timer for outside water fountain: \$1,300

3.5 Services Photos – Plumbing



P1 – Outside water fountain



P2 – Old damaged downspout pipe



P3 – Toilet: typical



P4 – Kitchen sink



P5 – Lavatory sink: typical



P6 – Urinal

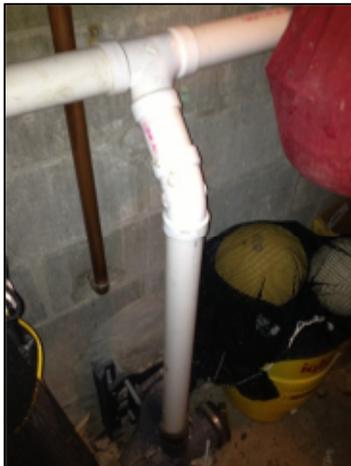
3.5 Services Photos – Plumbing Continued



P7 – Water meter and piping



P8 – Potable water piping: typical



P9 – Drain piping: typical



P10 – Water meter and piping

Building Mechanical Systems: HVAC

1. Heating and Cooling

1.1. The heating and cooling is provided by a central forced air system. The central system components are reported to be replacements for original building equipment.

1.2. Construction

1.2.1. Description: The central forced air system is comprised of two (2) Payne, gas fired furnaces (GFAHU) and two (2) roof mounted air-cooled condensing units (ACCU). The forced air system serves the entire building through a series of room terminal outlets connected to ductwork. The GFAHUs are located in the bottom floor mechanical equipment room (MER). They include a small, integral inlet filter sections and are controlled by an electronic, wall mounted thermostats. The GFAHU's are natural gas fired, natural draft type, including 'A' style cooling coils. The ACCUs are charged with R-22 refrigerant.

1.2.2. Room terminals and equipment

Room	H&C Terminals			Room Equip	Controls	Comments
	SA	RA	EA			
Top Floor:						
Kitchen	1	-	-	-	-	
Game Room-1	4	2	-	-	T-Stat	
Entry/Lobby	1	1	-	-	-	
Office	1	-	-	-	-	
Rest Room	-	-	1	-	-	
Bottom Floor:						
Landing	-	-	-	-	-	
Game Room-2	1	1	-	-	-	RA grill not connected
Women RR	1	1	1	-	-	
Men RR 1	1	-	1	-	-	
Hallway	-	-	-	-	-	
MER	-	-	-	-	T-Stat	

1.2.3. Deficiencies

- 1.2.3.1. There is no provision for ducted combustion air, this is a code violation.
- 1.2.3.2. Service clearance dimensions for GFAHUs are insufficient. This may be a code violation.
- 1.2.3.3. Supply and return air ductwork in the MER is not insulated.

1.3. Condition Assessment

- 1.3.1. Central natural gas furnace: Fair.
- 1.3.2. Air cooled condensing units (ACCU): Good.
- 1.3.3. Room Terminals: Poor.
- 1.3.4. Deficiencies

- 1.3.4.1. Insulation on roof-top ACCU lines is severely deteriorated. Condition: Derelict.
- 1.3.4.2. Return air grill in bottom-floor game room is dis-connected.

1.4. Performance Observations

- 1.4.1. Energy and Sustainability: The forced air heating system is consuming excess natural gas and electrical energy due to leaking ductwork, low set point temperatures (70f for cooling), lack of temperature set-back operation, and uncontrolled use of outside ventilation air. Resulting excess in energy consumption is estimated at 15% of the related utility bills.
- 1.4.2. Thermal Effectiveness: The heating units are reported to effectively maintain room conditions as required.
- 1.4.3. Indoor Air Quality (IAQ): There are no direct or indirect indications or reports of IAQ problems.

2. Ventilation

- 2.1. General Description: Ventilation is provided by a duct connection between an outside air (OA) louver the main return air (RA) duct.
- 2.2. Construction
 - 2.2.1. Galvanized ductwork without control damper, filtration, insulation, vapor barrier, or inlet hood.
- 2.3. Condition Assessment: Poor.

3. Utilities

- 3.1. General Description: Natural gas.
- 3.2. Construction
 - 3.2.1. Low pressure natural gas meter and associated threaded, black steel piping.
- 3.3. Condition Assessment: Fair.

4. Conclusion:

- 4.1. The HVAC system as a whole is in Fair condition. However, continued deferred maintenance will result in physical deterioration, performance degradation, and increased energy costs within the next 2-3 years.

5. Estimates: Suggested remedies and opinions of probable cost

- 5.1. De minimus conditions
 - 5.1.1. Reconnect return air grille in bottom floor game room.
- 5.2. Immediate Costs
 - 5.2.1. Install combustion air duct per code: \$3,500
- 5.3. Short-Term Costs
 - 5.3.1. Replace ACCU hot gas piping insulation: \$1,000
 - 5.3.2. Replace existing thermostats: \$1,000
 - 5.3.3. Add damper and timer to OA inlet: \$1,700

3.5 Services Photos – HVAC



H/C 1 – Central furnace GFAH: typical of 2



H/C 2 – Roof-top ACCUs



H/C 3 – Return air (RA) grille: typical



H/C 4 – Supply air (SA) grille: typical



H/C 5 – Restroom Exhaust air (EA) grille: typical



H/C 6 – Outside air (OA) inlet

3.5 Services Photos – HVAC



H/C 7 – Uninsulated ductwork



H/C 8 - Thermostat



H/C 9 – Deteriorated insulation: ACCU refrigerant piping



H/C 10 – Missing RA grille: bottom level game room

Building Electrical Systems

1. Interior Lighting

1.1. General Description: interior lighting is provided to the building by a combination of windows, plus recessed mount and surface mount florescent fixtures.

1.2. Construction: Top Floor

Name	Quan	Mount	Type	Length	Lamps	Type	Watts	Comments
Kitchen 8'AFF	1	Surface	Fluorescent	4'	4	T8	128	Man Switch, Mag Ballast,
Game Room 8'AFF	4	Surface	Fluorescent	4'	4	T12	640	Man Switch, Mag Ballast,
Entry/Lobby 8'AFF	2	Surface	Fluorescent	4'	4	T8	256	Man Switch, Mag Ballast,
Office 8'AFF	2	Surface	Fluorescent	4'	4	T8	256	Man Switch, Mag Ballast,
Rest Room 8'AFF	1	Surface	Fluorescent	4'	2	T8	64	Man Switch, Mag Ballast,

1.3. Construction: Bottom Floor

Name	Quan	Mount	Type	Length	Lamps	Type	Watts	Comments
Landing 8'AFF	1	Surface	Fluorescent	4'	2	T8	64	Man Switch, Mag Ballast,
Game Room 8'AFF	4	Recessed	Fluorescent	4'	4	T8	512	Man Switch, Mag Ballast,
Women RR 8'AFF	2	Surface	Fluorescent	4'	4	T8	256	Man Switch, Mag Ballast,
Men RR 8'AFF	2	Surface	Fluorescent	4'	4	T8	256	Man Switch, Mag Ballast,
Hallway 8'AFF	1	Recessed	Fluorescent	4'	4	T8	128	Man Switch, Mag Ballast,
MER 8'AFF	1	Suspend	Incandescent	na	1	A	100	Man Switch, Mag Ballast,

1.4. Condition Assessment: Interior

1.4.1. Condition: Fair

2. Exterior Lighting

2.1. Construction

Name	Fixtures	Mount	Type	Watts	Comments
Building	4	Surface	HPS	64	Photo cells inoperative
Man Doors	2	Surface	HPS	512	Photo cells inoperative
Rec Courts	3	Pole	MH	2,250	3 lamps per pole

2.2. Condition Assessment: Exterior

2.2.1. Condition: Poor.

2.2.2. Deficiencies

2.2.2.1. Electrical pull box cover plate missing at base of one (1) athletic court light pole. This is a serious safety issue.

2.3. Performance Observations

2.3.1. Energy and Sustainability: Building perimeter lights energized at 7:00am through 12 noon.

3. Power Distribution
 - 3.1. Construction and condition
 - 3.1.1. Distribution panels: Original to building. Condition-Fair.
 - 3.1.2. General Receptacles: Original to building. Condition-Poor.
 - 3.1.3. Ground Fault receptacles in kitchen area. Condition-Poor.

4. Utilities Service
 - 4.1. Construction
 - 4.1.1. One (1) 200 amp, 3-phase, 120-208 volt service.
 - 4.2. Condition Assessment
 - 4.2.1. Condition Power Service: Fair.
 - 4.2.2. Condition Electric Meter: Fair.

5. Conclusions:
 - 5.1. The interior electrical system as a whole is in Fair condition.

6. Estimates: Suggested remedies and Opinion of probable cost
 - 6.1. Immediate Costs
 - 6.1.1. Add cover plate at base of athletic court power pole
 - 6.2. Short-term Costs
 - 6.2.1. Replace exterior photo cells: \$1,500

3.5 Services Photos – Electrical: Lighting



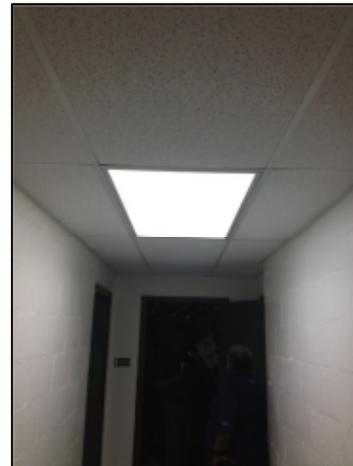
E1 – Top floor game room



E2 – Main office



E3 – Bottom floor game room



E4 – Bottom floor hallway



E5 – Athletic courts: typical



E6 – Athletic courts

3.5 Services Photos – Electrical: Service and Distribution Panels



E5 – Power Service



E6 – Power Service



E7 – Meter



E8 – Power breaker panel



E9 – Power distribution/breaker panel



E10 – Power distribution/breaker panel

Building Fire Protection and Life Safety Systems

1. Fire Extinguishers
 - 1.1. Construction
 - 1.1.1. Fire extinguishers are present in the bottom floor hallway only.
 - 1.2. Condition Assessment: good.
2. Alarm Systems
 - 2.1. No fire or smoke alarm system. No fire or smoke detectors. No fire pull-stations.
3. Smoke Evacuation System and Stairwell Pressurization
 - 3.1. No Smoke Evacuation System or Stairwell Pressurization.
4. Sprinklers and Standpipes
 - 4.1. No sprinkler system.
5. Fire Hydrant
 - 5.1. Construction: Located at roadway corner.
 - 5.2. Condition Assessment: Poor
6. Conclusions:
 - 6.1. The fire and smoke protection system is poorly maintained and is physically deficient relating to detection, alarming, reporting, and smoke evacuation.
7. Estimates: Suggested remedies and Opinions of probable cost
 - 7.1. Short-Term Costs
 - 7.1.1. Add fire extinguishers in top floor kitchen: \$250
 - 7.1.2. Add fire and smoke alarms:
 - 7.1.2.1. First floor: \$300
 - 7.1.2.2. Bottom floor: \$300
 - 7.1.3. Add fire alarm pull stations:
 - 7.1.3.1. First floor: \$3,000
 - 7.1.3.2. Bottom floor: \$3,000
 - 7.1.4. Add emergency lighting:
 - 7.1.4.1. First floor: \$1,700
 - 7.1.4.2. Bottom floor: \$1,700

3.5 Services – Fire Protection: Extinguishers and Emergency Lights



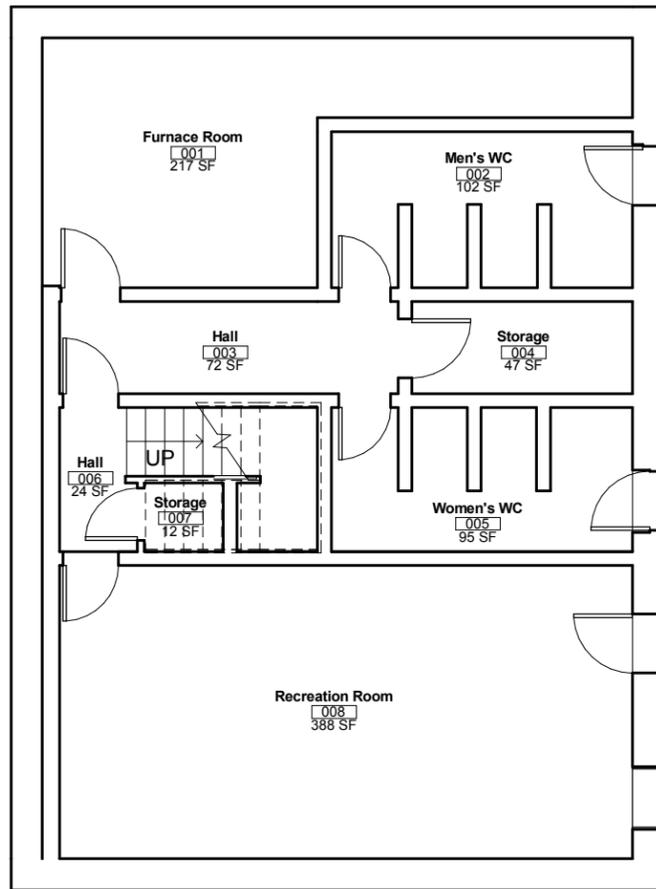
FP1 – Bottom floor hallway



FP2 – Bottom floor hallway



FP3 – Fire Hydrant



① Ground Floor Plan
1/8" = 1'-0"



The drawings and related digital files are a schematic rendition of the existing conditions of the facility only. Please verify exact field conditions before using these for further construction and renovation work.



Jefferson Recreation Center
City of Pittsburgh

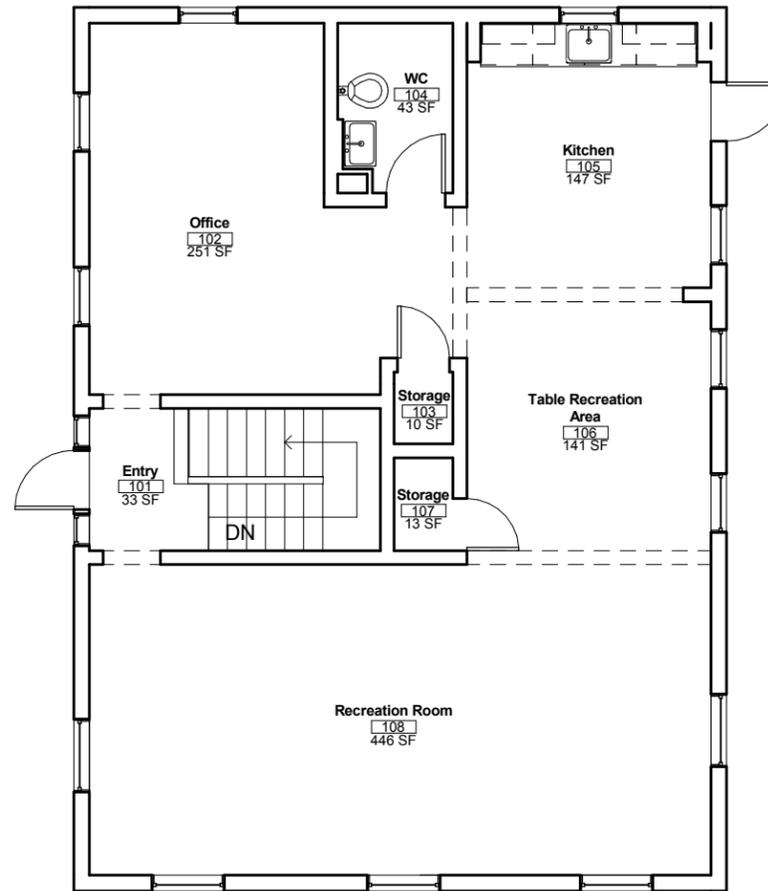
Ground Floor Plan

Date 06/24/13

Drawn by AS

A1.00

Scale 1/8" = 1'-0"



① L1 Floor Plan
1/8" = 1'-0"



The drawings and related digital files are a schematic rendition of the existing conditions of the facility only. Please verify exact field conditions before using these for further construction and renovation work.



Jefferson Recreation Center
City of Pittsburgh

L1 Floor Plan

Date 06/24/13

Drawn by AS

A1.10

Scale 1/8" = 1'-0"



① Site Plan
1/32" = 1'-0"

The drawings and related digital files are a schematic rendition of the existing conditions of the facility only. Please verify exact field conditions before using these for further construction and renovation work.



Jefferson Recreation Center
City of Pittsburgh

Site Plan		C1.01
Date	06/24/13	
Drawn by	AS	Scale 1/32" = 1'-0"

B032 – JEFFERSON RECREATION CENTER

Tier II: Abbreviated Accessibility Survey					
	Item	Yes	No	N/A	Comments
A. Building History					
1.	Has an ADA survey previously been completed for this property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2.	Have any ADA improvements been made to the property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3.	Does a Barrier Removal Plan exist for the property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.	Has the Barrier Removal Plan been reviewed/approved by an arms-length third party such as an engineering firm, architectural firm, building department, or other agency, etc.?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
5.	Has building ownership or building management reported receiving any ADA related complaints that have not been resolved?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6.	Is any litigation pending related to ADA issues?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
B. Parking					
1.	Are there sufficient accessible parking spaces with respect to the total number of reported spaces? (See Table X2.1)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.	Are there sufficient van-accessible parking spaces available (96 in. wide by 60 in. aisle)? (See Table X2.1)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.	Are accessible spaces marked with the International Symbol of Accessibility? Are there signs reading "Van Accessible" at van spaces?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.	Is there at least one accessible route provided within the boundary of the site from public transportation stops, accessible parking spaces, passenger loading zones, if provided, and public streets and sidewalks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.	Do curbs on the accessible route have depressed, ramped curb cuts at drives, paths and drop-offs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Does signage exist directing you to accessible parking and an accessible building entrance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
C. Ramps — N/A					
1.	If there is a ramp from parking to an accessible building entrance, does it meet slope requirements? (1:12 slope or less)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2.	Are ramps longer than 6 ft complete with railings on both sides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3.	Is the width between railings at least 36 in.?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.	Is there a level landing for every 30 ft horizontal length of ramp, at the top and at the bottom of ramps and switchbacks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
D. Entrances/Exits					
1.	Is the main accessible entrance doorway at least 32 in. wide?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NOT ACCESSIBLE
2.	If the main entrance is inaccessible, are there alternate accessible entrances?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.	Can the alternate accessible entrance be used independently?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4.	Is the door hardware easy to operate (lever/push type hardware, no twisting required, and not higher than 48 in. above floor)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Are main entry doors other than revolving doors available?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.	If there are two main doors in series, is the minimum space between the doors 48 in. plus the width of any door swinging into the space?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

FIG. X2.1 Abbreviated Accessibility Survey

Tier II: Abbreviated Accessibility Survey					
	Item	Yes	No	N/A	Comments
E. Paths of Travel					
1.	Is the main path of travel free of obstruction and wide enough for a wheelchair (at least 36 in. wide)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Does a visual scan of the main path of travel reveal any obstacles (phones, fountains, etc.) that protrude more than 4 in. into walkways or corridors?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Is at least one wheelchair-accessible public telephone available?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.	Are wheelchair-accessible facilities (toilet rooms, exits, etc.) identified with signage?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.	Is there a path of travel that does not require the use of stairs?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
F. Elevators - N/A					
1.	Do the call buttons have visual signals to indicate when a call is registered and answered?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Is the "UP" button above the "DOWN" button?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Are there visual and audible signals inside cars indicating floor change?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Are there standard raised and Braille markings on both jambs of each hoist way entrance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Do elevator doors have a reopening device that will stop and reopen a car door if an object or a person obstructs the door?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Do elevator lobbies have visual and audible indicators of car arrival?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Are elevator controls low enough to be reached from a wheelchair (48 in. front approach/54 in. side approach)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.	Are elevator control buttons designated by Braille and by raised standard alphabet characters (mounted to the left of the button)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9.	If a two-way emergency communication system is provided within the elevator cab, is it usable without voice communication?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
G. Toilet Rooms					
1.	Are common-area public toilet rooms located on an accessible route?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.	Are door handles push/pull or lever types?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3.	Are there audible and visual fire alarm devices in the toilet rooms?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.	Are corridor access doors wheelchair-accessible (at least 32 in. wide)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Are public toilet rooms large enough to accommodate a wheelchair turnaround (60 in. turning diameter)?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	UPPER FLR. ONLY
6.	In unisex toilet rooms, are there safety alarms with pull cords?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7.	Are toilet stall doors wheelchair-accessible (at least 32 in. wide)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8.	Are grab bars provided in toilet stalls?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
9.	Are sinks provided with clearance for a wheelchair to roll under (29 in. clearance)?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	UPPER FLR. ONLY
10.	Are sink handles operable with one hand without grasping, pinching, or twisting?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11.	Are exposed pipes under sinks sufficiently insulated against contact?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
H. Guestrooms - N/A					
1.	Are there sufficient reported accessible sleeping rooms with respect to the total number of reported guestrooms? (See Table X2.2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Are there sufficient reported accessible rooms with roll-in showers with respect to the total number of reported accessible guestrooms? (See Table X2.2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

FIG. X2.1 Abbreviated Accessibility Survey (continued)

4.3 ASHRAE Level-1 Energy Audit

Executive Summary

The building systems for the Jefferson Recreation Center have been analyzed and evaluated according to ASHRAE Level-1 methodology and reporting requirements.

The following sections are complimentary to the PCR with additional focus on energy costing, benchmarking, and remediation planning. The detailed information as provided is of an initial nature according to the level-1 structure.

Methodology, calculations, standards, and reference material are drawn from these industry publications:

1. ASHRAE Procedures for Commercial Building Energy Audits -2011 Second Edition
2. ANSI/ASHRAE Standard 105-2007: Standard Methods of Measuring, Expressing, and Comparing Building Energy Performance
3. DOE/EIA US Energy Information Administration: U.S. Commercial Building Energy Intensity -2003 Table 7b.
4. Energy Star Target Finder tool
5. "Commercial Energy Auditing Reference Handbook", Steven Doty, PE, CEM

Scope of Work

The scope-of-work associated with the ASHRAE Level-1 includes the following items.

- Conduct walk-through survey: Completed see - PCR
- Identify low-cost/no-cost recommendations: Completed see - PCR
- Identify capital improvements and potential EEM's: Completed - see PCR
- PEA analysis
- Energy Systems Condition Assessment
- Utility rate structure commodity programs
- EUI target and comparative evaluation
- Potential savings from new EUI target
- Proposed Action Plan: Phase #1

Preliminary Energy Analysis (PEA)

Historical Energy Consumption by Year and Type:

2011 - Electricity

YEAR: 2011

Month	Cooling Degree Days	Billed Demand (kW)	Electric Use (kWh)	Demand Cost (\$)	Total Bill (\$)
January	0	9.1	3680	-	\$323
February	0	8.3	3420	-	\$300
March	0	8.8	3360	-	\$298
April	21	12	3850	-	\$362
May	94	14.2	5040	-	\$475
June	182	13.8	6210	-	\$568
July	397	15.2	8400	-	\$747
August	206	12.8	5660	-	\$519
September	78	12.6	3980	-	\$386
October	0	10.2	3830	-	\$360
November	0	10.1	3880	-	\$363
December	0	10.8	4320	-	\$402
Annual Totals			55,630	\$0	\$5,104

2011 - Natural Gas

YEAR: 2011

Month	Heating Degree Days	MCF	Therms	Total Bill (\$)
January	1240	115.1	1151	\$1,146
February	917	94.4	944	\$946
March	781	76.1	761	\$755
April	350	27.3	273	\$287
May	138	6.2	62	\$80
June	12	2.2	22	\$45
July	0	3	30	\$53
August	1	3	30	\$31
September	87	8.4	84	\$45
October	401	42.8	428	\$194
November	532	13.3	133	\$152
December	849	176.1	1761	\$1,648
Annual Totals			5,679	\$5,381

2012 - Electricity

YEAR: 2012

Month	Cooling Degree Days	Billed Demand (kW)	Electric Use (kWh)	Demand Cost (\$)	Total Bill (\$)
January	0	8.7	1260	-	\$160
February	0	8.9	1270	-	\$161
March	4	15.6	1380	-	\$217
April	7	15.9	1200	-	\$204
May	114	16.3	2120	-	\$271
June	181	12.9	3900	-	\$369
July	347	14.9	6070	-	\$518
August	226	14.9	4660	-	\$424
September	110	13.9	2890	-	\$301
October	24	8	1010	-	\$110
November	0	7.9	1040	-	\$111
December	0	7.3	980	-	\$123
Annual Totals			27,780	\$0	\$2,968

2012 - Natural Gas

YEAR: 2012

Month	Heating Degree Days	MCF	Therms	Total Bill (\$)
January	993	29.9	299	\$347
February	860	24.2	242	\$271
March	430	15.8	158	\$182
April	456	13.2	132	\$154
May	60	4.8	48	\$67
June	29	0.8	8	\$25
July	0	0.7	7	\$25
August	1	0.7	7	\$25
September	107	0.6	6	\$24
October	343	10	100	\$126
November	719	18.2	182	\$213
December	795	20.9	209	\$218
Annual Totals			1,398	\$1,677

2013 - Electricity

YEAR: 2013

Month	Cooling Degree Days	Billed Demand (kW)	Electric Use (kWh)	Demand Cost (\$)	Total Bill (\$)
January	0	4.3	1130	-	\$118
February	0	4.1	1120	-	\$117
March	0	4	1000	-	\$109
April	22	3.8	850	-	\$98
May	92	12.6	960	-	\$162
June	-	14.1	3550	-	358.9
July	-	-	-	-	-
August	-	-	-	-	-
September	-	-	-	-	-
October	-	-	-	-	-
November	-	-	-	-	-
December	-	-	-	-	-
Annual Sub-Totals			8,610	\$0	\$963

2013 - Natural Gas

YEAR: 2013

Month	Heating Degree Days	MCF	Therms	Total Bill (\$)
January	988	29.9	299	\$305
February	998	30.1	301	\$307
March	911	29.1	291	\$297
April	360	14.2	142	\$153
May	151	2.6	26	\$42
June	-	2.2	-	\$38
July	-	-	-	-
August	-	-	-	-
September	-	-	-	-
October	-	-	-	-
November	-	-	-	-
December	-	-	-	-
Annual Sub-Totals			1,059	\$1,141

Energy Performance Summary

The EUI values include in the performance summary below have been calculated using ASHRAE forms and formulas. Due to the low sampling response for Public order and Safety facilities in the northeast sector, the direct and literal application of these calculations is not advisable. The sections that follow will establish more a realistic target value in the context of a phased energy reduction program. The significant differences in these EUI rating will be treated in terms of potential opportunity.

The total annual cost information data source is the client provided utility bill spread sheet.

ENERGY PERFORMANCE SUMMARY
 Commercial Building Energy Audit Sample Forms

Energy Type	Total Annual Use	Units	Conversion Multiplier	kBtu	Total Annual Cost (\$)
Electricity	29,000	kWh	3.412142	98,952	\$3,147.70
Natural Gas	1,514	Therms	100	151,417	\$1,834.58
Purchased Steam			0	-	
Purchased Hot Water			0	-	
Purchased Chilled Water			0	-	
Oil #:			0	-	
Propane			0	-	
Coal			0	-	
Thermal—On-Site Generated			0	-	
Other			0	-	
Electricity—On-Site Generated			0	-	
Thermal or Electricity—Exported			0	-	
			0	-	
Total				250,369	\$ 4,982.28

Gross Conditioned Area	2041.00
EUI (kBtu/ft ²)	122.67
<i>CBECS EUI (for comparable , kBtu/ft²)</i>	130
ECI (\$/ft ²)	\$ 0.95

Notes: The CBECS EUI for Public Assembly facilities is used.

Energy Systems Condition Assessment

The energy systems condition assessment is an additional effort beyond the scope of the ASTM PCA standard and the typical ASHRAE Level-1 requirements. It is a basis for a targeted audit as referred to in ASHRAE standard. This approach supplements the PCR and formal Level-1 to develop a credible EUI target and an actionable remediation program.

This section also provides an initial performance assessment of energy consuming systems and devices as part of the targeted audit effort.

HVAC System

Energy System Condition: Central Furnaces - **Poor**

HVAC System Deficiencies

- Combustion Efficiency: **Fair**
- Age: Nearing EUL see PCR
- Cooling ACCU EER: **Fair**
- Maintenance Condition: **Poor** see PCR
- Refrigeration Piping System Insulation: **Poor**

Control System Deficiencies

- Space Set-Point Control: **Poor**. Uncalibrated thermostat, excessive set-point temperatures, and open occupant adjustment
- Set-Back Controls: **None**
- Weekly Scheduling Controls: **None**

Energy Management System Deficiencies

- Active Energy Monitoring and Management System: **None**

Lighting System

Energy System Condition: Interior Lighting - **Poor**

Fixture Deficiencies

- Lamp Efficiency: **Good**
- Ballast Efficiency: **Poor**
- Age: Near EUL see PCR
- Maintenance Condition: **Poor** see PCR

Control System Deficiencies

- Occupancy Controls: **None**
- Weekly Scheduling Controls: **None**

Energy Management System Deficiencies

- Active Energy Monitoring and Management System: **None**

Potable Water System

Energy System Condition: Water heating and piping - **Derelict**

Heater System Deficiencies

- Combustion Efficiency: **Poor**
- Age: Near EUL see PCR
- Maintenance Condition: **Poor** see PCR
- Piping System Insulation: **None**

Control System Deficiencies

- Set-Back Controls: **None**
- Weekly Scheduling Controls: **None**

Energy Management System Deficiencies

- Active Energy Monitoring and Management System: **None**

Utility rate structure commodity programs

The energy billing and cost data received to date are understood to be directly from local, single source utility companies. Energy rate structures may be reduced through a commodity sourcing approach. Such an approach could include natural gas and electrical energy brokering services. While such services have been successful in reducing cost per kWh and MCF, additional risk of such approach must be carefully considered. It would be expected that energy rate costs could be reduced from 10-15% in a city wide contract. However, such saving would typically require Smart Metering and potential interruption in service, which may not be compatible or acceptable for emergency services facilities. However, full consideration should be given to 'bidding' Natural Gas supply as contractual arrangement may be more acceptable. Further, alternative energy supply opportunities should be explored as peak season interruption obligations are in a state of change, which often favors the consumer.

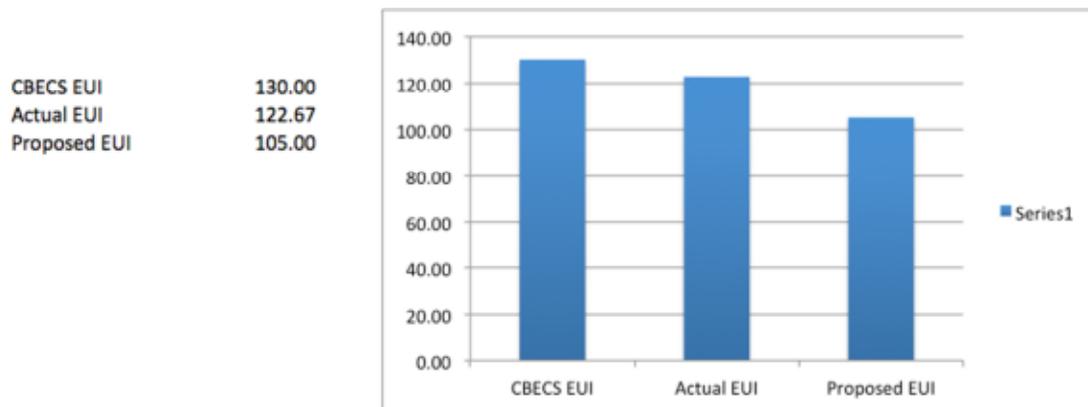
EUI target and comparative evaluation

The EUI for the Jefferson Recreation Center is calculated at 122.67 kBtu/Ft².

The CBECs (Commercial Building Energy Consumption Survey) and ‘Target Finder’ scores, calculated in the above ASHRAE Energy Performance Summary section, conflict with empirical evidence provided by utility consumption data, Degree-day weather patterns, and the energy systems condition assessment. However, these EUI ratings are useful as bracketing limits.

Basement areas are occasionally occupied, and without extensive terminal heating units, and are not treated formally as conditioned spaces.

An EUI of 105 is proposed as an initial working target pending level-2 modeling or future on-site system sub-metering and data logging efforts.



Potential savings from achieving proposed EUI target

Energy Type	Total Annual Use	Units	Conversion Multiplier	kBtu	Total Annual Cost (\$)
Electricity	24,823	kWh	3.412142	84,699	\$ 2,693.69
Natural Gas	1,296	therms	100	129,592	\$ 1,569.82
Purchased Steam			0	-	
Purchased Hot Water			0	-	
Purchased Chilled Water			0	-	
Oil #:			0	-	
Propane			0	-	
Coal			0	-	
Thermal—On-Site Generated			0	-	
Other			0	-	
Electricity—On-Site Generated			0	-	
Thermal or Electricity—Exported			0	-	
			0	-	
Total				214,290	\$ 4,263.51

Gross Conditioned Area*	2041.00
Actual EUI (kBtu/ft ²)	122.67
Proposed EUI (kBtu/ft ²)	105.00
Proposed ECI (\$/ft ²)	\$ 2.09

*Gross Conditioned Area includes the total interior building area.

Proposed action plan: Phase #1

Scope: Wireless, WEB based energy management system with wireless instruments including:

- Two (2) HVAC controllers
- Three (3) Lighting controls
- Set-point, set-back, and scheduling controls
- Insulate basement level domestic water piping
- Replace roof ACCU Refrigeration piping insulation