



Home Performance Report

T. Smith

Property Address:

115 E. Ogden
Naperville IL



Insight Property Services, Inc

**Joe Konopacki
115 E. Ogden Ave.
Ste#117-128**

**Naperville, IL 60563
630-878-4192**



Table of Contents

Cover Page..... 1

Table of Contents 3

Intro Page 4

Safety Items..... 5

Building Durability 7

Workscope Phase 1 9

1 Combustion Appliance Zone CAZ 12

2 Building Enclosure Performance/Ventilation ... 13

3 Exterior Moisture Management 18

4 Air Control Layers..... 20

5 Thermal Layer..... 27

Back Page 31

Date: 1/1/2013	Time: 08:00 AM	Report ID: MF/C - 120309 MBP 1
Property: 115 E. Ogden Naperville IL	Customer: T. Smith	Real Estate Professional:

In Attendance: Customer	Type of building: Multi-family	Building Faces: North
Weather: Clear	Ground/Soil surface condition: Dry	

Safety Items

**Customer**

T. Smith

Address115 E. Ogden
Naperville IL

The 6 unit building at 115 E. Ogden Ave in Naperville has performance and durability issues regarding high indoor humidity, window condensation and mold in the attic. Recommended improvements include improving attic ventilation, installing new bath fans vented to the outside, air sealing the attic and increasing its insulation to R-50. Window and patio door replacement in the units should follow. Replacing the common area doors and windows may follow. The common hydronic boiler and water heater may be upgraded to high-efficiency units proactively or if either unit requires repair.

1. Combustion Appliance Zone CAZ

1.0 Gas leaks - Inside**Unsafe**

Multiple gas leaks were detected near the water heater. A qualified individual should repair and re-test the gas leaks as soon as possible.

1.1 Chimney, Flue & Vent Piping (gas water heaters or heat systems)**Unsafe**

The open duct in the ceiling provides makeup air for the boiler and water heater. Recommend this duct be maintained clear and consult a qualified HVAC contractor with any issues.

1.4 CO Detector**Unsafe**

1. Combustion Appliance Zone CAZ



The average service life of a carbon monoxide detector is 2-3 yrs. Be sure to replace batteries yearly and replace the units entirely after 3 years. Recommend one CO detector near each CO source (water heater/ furnace, kitchen) and one within 15 feet of the bed rooms.

2. Building Enclosure Performance/Ventilation

2.5 Pests In Attic

Action Recommended



There are trails, feces and insulation moved around in the attic from a reported raccoon. Likely entry points seem to have been sealed. Recommend areas of soiled insulation be removed and any damage found be repaired before air sealing and insulating the attic.

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Building Durability



Customer
T. Smith

Address
115 E. Ogden
Naperville IL

2. Building Enclosure Performance/Ventilation

2.4 Modify Attic Ventilation

Action Recommended



(1) Ventilation of the attic serves two purposes, cooling the roof deck & attic space and ventilating moisture from the attic. Air sealing of the attic floor will address the majority of the moisture escaping to the attic. Keeping the roof deck cool minimizes icicle formation in the winter and attic temperatures in the summer.

The soffit vents are too few. 2 ft² (288 in²) of "Net-Free" soffit vent opening is required along each of the soffits for a total of 4 ft² of intake capacity for the attic. [Air Vent](#) has 16"x6" under-eave vents with 42 in² of net-free opening each. 7 of these would be needed along each side - total of 14.

The top of the roof should also have 4 ft² of net-free exhaust opening. The existing (5) roof vents have ~140 in², about 25% of the necessary 576 in². [Air Vent's ShingleVent II](#) provides 18 in² net-free per foot while deflecting driving wind, rain and snow. The existing roof vents may remain and can be eliminated when the shingles are next replaced.



(2) The attic currently does not contain wind baffles and only a few vent chutes. Recommend installing vent chutes with wind baffles between each rafter and seal the perimeter top plates with 2-part foam. This will halt wind washing through the fiber glass insulation and ensure a clear ventilation space when additional insulation is installed.

2.6 Other Safety Items

Action Recommended



The roof sheathing is discolored and mildewed along the north side of the building. Care should be taken by laborers in the attic to wear appropriate personal protective equipment including respirators. See Items 2.2, 2.4 and 4.1 regarding managing attic moisture.

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Workscope Phase 1



Customer
T. Smith

Address
115 E. Ogden
Naperville IL

This Summary is not the entire report. The complete report may include additional information of concern to the customer. It is recommended that the customer read the complete report.

2. Building Enclosure Performance/Ventilation

2.2 Exhaust Fans (bathroom, dryer, etc.) and venting

Action Recommended



(1) There are NO bath fan exhaust ducts through the walls or into the attic. It is likely that the bath fans are exhausting into the wall cavities. These wall cavities, in turn, are open to the attic and the likely source of the moisture in the attic.

Recommend new bath fans be installed in each bathroom, ducted up through the attic and out through dampered vents in the gable wall.

Each fan should be quiet (<1.5 sones) and have 80+cfm exhaust capacity. Suggest the fans be wired to the lights so they are used whenever someone uses the tub or shower. Fans with low continuous operation should be installed to provide fresh air exchange for each unit and the negative pressure generated in the unit would keep odors from drifting out into the halls.



(2) Air flow was identified in the ceilings of the lower units following the dryer vent and other penetrations to the outside. These openings should be sealed well and the dampered vents replaced as needed so they seal when closed.

3. Exterior Moisture Management

3.1 Flashings, Gutters and Drainage

3. Exterior Moisture Management

Repair or Replace



The gutters are in fair condition and seem to be managing rain water effectively. Recommend monitoring during rain events to determine whether additional downspouts are needed (wherever rain is spilling over gutters).

The downspouts around the exterior need attention. Recommend that all downspouts extend about 6 feet away from the building. This is to ensure that the drainage water does not seep into the ground and back to the foundation. Recommend repairing all connections between downspout assemblies to ensure that water is draining from top to bottom without any restrictions.

3.4 Exterior Cladding and Trim

Repair or Replace



Areas of mortar joint at the sills are open and allowing moisture into the wall. Recommend a qualified masonry contractor properly seal these joints with mortar or exterior grade sealant. All exterior caulk should be periodically inspected for any failures and re-caulked as needed.

4. Air Control Layers

4.0 Air seal the attic top plates, electrical and plumbing penetrations

Repair or Replace



As the framing dries over the years, the top plates of both interior and exterior walls allow large amounts of air to leak from the wall cavity and up into the attic. Recommend that these areas be sealed with a 2-part foam spray.

Penetrations in the form of plumbing penetrations, electrical conduit, boxes and fixtures should be exposed and sealed before additional insulating.

4.1 Seal/Insulate Attic Access

Repair or Replace



The attic hatch should be air sealed and insulated. The casing should be fastened securely to the ceiling and caulked at all corners & seams. Weather strip should be installed where the cover sits on the casing. The cover should have 8" of foam board fastened to the top, resulting in an R-40 assembly.

4.2 Thermal bypasses (between floors)

Repair or Replace



The stud cavity serving as a chase for the bathroom plumbing is a major air by-pass from the attic to the basement allowing cold air to fall and warm air to escape. Recommend the opening around the pipes be sealed with foam board and 1-part foam where the pipes leave the conditioned space. The area where the attic walls meet the attic ceiling should also be sealed to halt air flow between the wall cavities and the attic. This will also keep insulation from falling down into the walls, when the attic is insulated.

4.4 Walls as an Air Control Layer (paneling, beadboard, etc.)

Repair or Replace



The sleeve-unit air conditioners are a significant source of air leakage in the units. The cold metal surfaces also condense interior moisture, leading to mold/mildew on the painted surfaces. Recommend insulated AC covers be fabricated and installed on the interior. The sides of the cover should be permanently affixed while the insulated flat cover should remove and store easily.

4.6 Windows: Air leakage, seals and caulking

Repair or Replace



The aluminum windows are performing poorly - significant condensation and air leaks are obvious. After air sealing and insulating the attic, replacing the windows and patio doors is the next best opportunity to

4. Air Control Layers

improve the durability, performance and comfort of the building. Recommend windows with a low U-factor - <0.3 - with a thermally broken frame be installed by a qualified contractor and air sealed with foam and/or caulk to halt all window air leakage.

4.7 Exterior doors: Air leakage, weather stripping and seals

Repair or Replace



The wood entry doors are performing poorly - significant air leaks are obvious. After air sealing and insulating the attic and replacing unit windows, replacing the entry doors is the next best opportunity to improve the durability, performance and comfort of the building. Recommend doors with a low U-factor - <0.3 - with a thermally broken frame be installed by a qualified contractor and air sealed with foam and/or caulk to halt air leakage.

5. Thermal Layer

5.0 Recommended additional attic insulation

Repair or Replace



The attic currently has blown fiberglass insulation at about R - 15-20, below the current code minimum of R-38. Recommend the attic be insulated to a more cost effective R 50-60 with blown cellulose (settles to an air-impermeable mass - unlike fiber glass), **only after air sealing and attic ventilation** issues have been completed.

5.3 Window condition/integrity

Repair or Replace



Thermally conductive aluminum windows are condensing moisture and leading to mold & rot. Replacement windows should be thermally 'broken' with a low U-factor - <0.35 .

Building Analysts are not required to report on the following: Life expectancy of any component or system; The causes of the need for a repair; The costs of corrections; Any component or system that was not observed; The presence or absence of pests such as wood damaging organisms, rodents, or insects; or Cosmetic items, underground items, or items not permanently installed. Building Analysts are not required to: Offer warranties or guarantees of any kind; Calculate the strength, adequacy, or efficiency of any system or component; Enter any area or perform any procedure that may damage the property or its components or be dangerous to the Building Analyst or other persons; Operate any system or component that is shut down or otherwise inoperable; Operate any system or component that does not respond to normal operating controls; Disturb insulation, move personal items, panels, furniture, equipment, plant life, soil, snow, ice, or debris that obstructs access or visibility; Determine the presence or absence of any suspected adverse environmental condition or hazardous substance, including but not limited to mold, toxins, carcinogens, noise, contaminants in the building or in soil, water, and air; Determine the effectiveness of any system installed to control or remove suspected hazardous substances; Predict future condition, including but not limited to failure of components.

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1. Combustion Appliance Zone CAZ

Styles & Materials

CAZ Location (s):

Lower level

Items

1.0 Gas leaks - Inside

Unsafe

- Multiple gas leaks were detected near the water heater. A qualified individual should repair and re-test the gas leaks as soon as possible.



1.0 Picture 1



1.0 Picture 2

1.1 Chimney, Flue & Vent Piping (gas water heaters or heat systems)

Unsafe

- The open duct in the ceiling provides makeup air for the boiler and water heater. Recommend this duct be maintained clear and consult a qualified HVAC contractor with any issues.



1.1 Picture 1



1.1 Picture 2

1.2 Change gas dryer vent pipe to metal (solid, flexible)

Inspected

1.3 Smoke Detector

Inspected

The average service life of a smoke detector is 10 yrs. Be sure to replace batteries yearly and replace the units entirely after 10 years. Recommend one smoke detector per floor and one within 15 feet of the bed rooms.

1.4 CO Detector

Unsafe



The average service life of a carbon monoxide detector is 2-3 yrs. Be sure to replace batteries yearly and replace the units entirely after 3 years. Recommend one CO detector near each CO source (water heater/furnace, kitchen) and one within 15 feet of the bed rooms.

2. Building Enclosure Performance/Ventilation

Styles & Materials

Conditioned Space Volume (ft3):

62,631 Cubic Feet

Conditioned Space Floor Area (ft2):

7,196 Square Feet

Blower Door Diagnostics:

Measurement at CFM50= 4,886

Air Changes per hour ACH50= 4.68

Natural Air Changes per hour= 0.33 CFMn

Hours per Air Change = 3 hours

MVR Minimum Ventilation Requirement ASHRAE 62.2- 2007:

Option 1: CFM Fan Flow using MVG 207 CFM

Range Hood Exhaust:

None

Attic Ventilation:

Soffit Vents

Fixed ("mushroom") vents

Items

2.0 Rough outline of Air/Thermal boundary

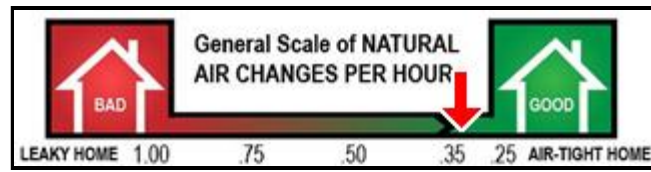
Surveyed

The "Thermal Boundary" of your building is what separates the conditioned air inside from the outside air, attic or attached, ventilated spaces. Typically the thermal boundary is made up of an air control layer (like gypsum board) and a thermal control layer (insulation). A thermal boundary has 6 sides (top, bottom, front, back and two sides). Anywhere along the thermal boundary that is not aligned properly (gaps or missing areas), energy loss can occur. Summer heat gain and winter heat loss can result from uncontrolled heat flow and air flow through these breaks in the thermal boundary. It is important to preserve and complete the air & thermal boundary by air sealing and insulating when remodeling.

2.1 Building Air Leakage measurement (CFM@50)

Surveyed

The blower door measured **4,886 CFM50** of air being pulled in through air leaks in your Building Envelope. This air is coming in through gaps, cracks, cavities in and around the components that make up the Building Envelope (which is typical of buildings that have not been air sealed). A conversion calculation was done to estimate your "Natural" Air Changes per Hour of **0.33 ACHn**. The entire volume of air in the building is exchanged approximately once every **3 hour(s)**. The goal is 1 air change every 3 hours or .35 ACHn.



2.1 Picture 1

2.2 Exhaust Fans (bathroom, dryer, etc.) and venting

Action Recommended



(1) There are NO bath fan exhaust ducts through the walls or into the attic. It is likely that the bath fans are exhausting into the wall cavities. These wall cavities, in turn, are open to the attic and the likely source of the moisture in the attic.

Recommend new bath fans be installed in each bathroom, ducted up through the attic and out through dampered vents in the gable wall.

Each fan should be quiet (<1.5 sones) and have 80+cfm exhaust capacity. Suggest the fans be wired to the lights so they are used whenever someone uses the tub or shower. Fans with low continuous operation should be installed to provide fresh air exchange for each unit and the negative pressure generated in the unit would keep odors from drifting out into the halls.



2.2 Picture 1



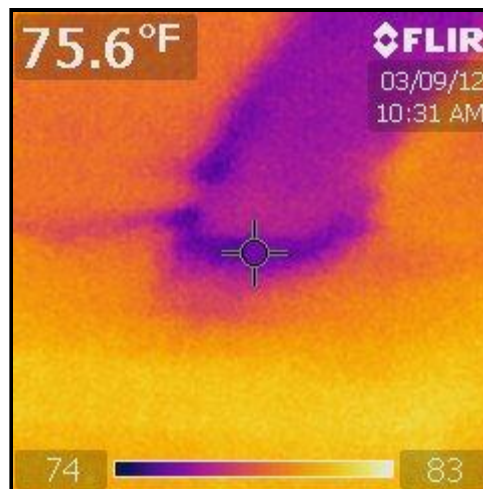
2.2 Picture 2



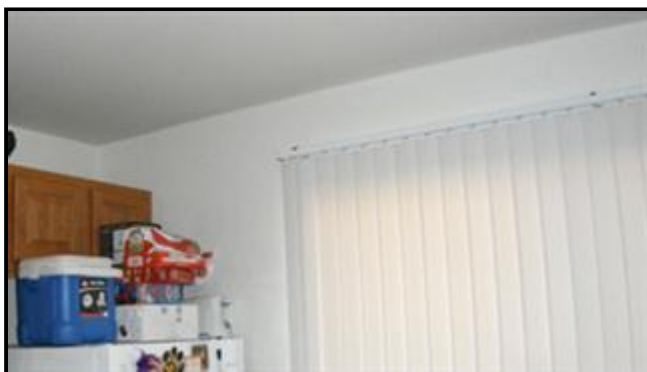
(2) Air flow was identified in the ceilings of the lower units following the dryer vent and other penetrations to the outside. These openings should be sealed well and the dampered vents replaced as needed so they seal when closed.



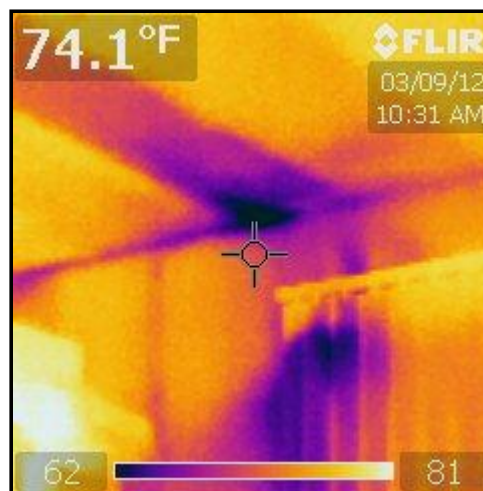
2.2 Picture 3



2.2 Picture 4



2.2 Picture 5



2.2 Picture 6



2.2 Picture 7

2.3 Exhaust hood for gas cooktops/stove and vented to the outside

Not Present

Hood vents in the units filter the air. They do not exhaust to the outside. In order to deal with cooking moisture the exhaust should be vented to the outside through a proper vented damper.

2.4 Modify Attic Ventilation

Action Recommended



(1) Ventilation of the attic serves two purposes, cooling the roof deck & attic space and ventilating moisture from the attic. Air sealing of the attic floor will address the majority of the moisture escaping to the attic. Keeping the roof deck cool minimizes icicle formation in the winter and attic temperatures in the summer.

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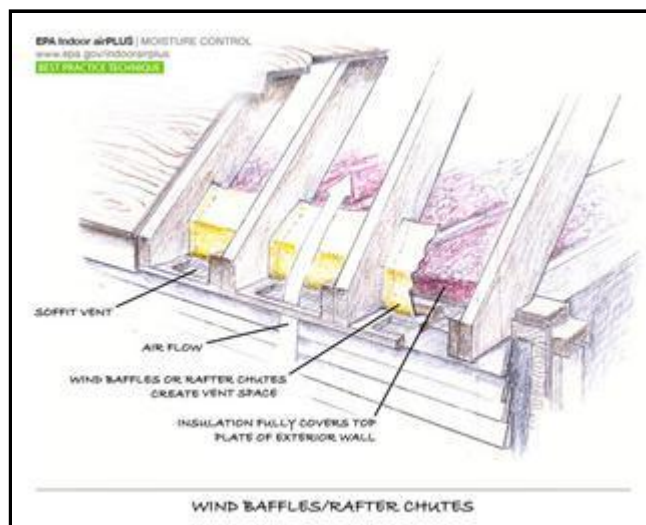
2.4 Picture 1



2.4 Picture 2 ShingleVent II



(2) The attic currently does not contain wind baffles and only a few vent chutes. Recommend installing vent chutes with wind baffles between each rafter and seal the perimeter top plates with 2-part foam. This will halt wind washing through the fiber glass insulation and ensure a clear ventilation space when additional insulation is installed.



2.4 Picture 3

2.5 Pests In Attic

Action Recommended



There are trails, feces and insulation moved around in the attic from a reported raccoon. Likely entry points seem to have been sealed. Recommend areas of soiled insulation be removed and any damage found be repaired before air sealing and insulating the attic.



2.5 Picture 1



2.5 Picture 2



2.5 Picture 3 Raccoon? trail



2.5 Picture 4

2.6 Other Safety Items

Action Recommended



The roof sheathing is discolored and mildewed along the north side of the building. Care should be taken by laborers in the attic to wear appropriate personal protective equipment including respirators. See Items 2.2, 2.4 and 4.1 regarding managing attic moisture.



2.6 Picture 1



2.6 Picture 2

3. Exterior Moisture Management

Styles & Materials		
Viewed roof covering from: Ground	Roof Covering: 3-Tab fiberglass	Roof Covering Color: Medium
Chimney (exterior): Metal Flue Pipe	Siding Material: Full brick	Foundation: Poured concrete Slab


Items

3.0 Roof Covering and Penetrations

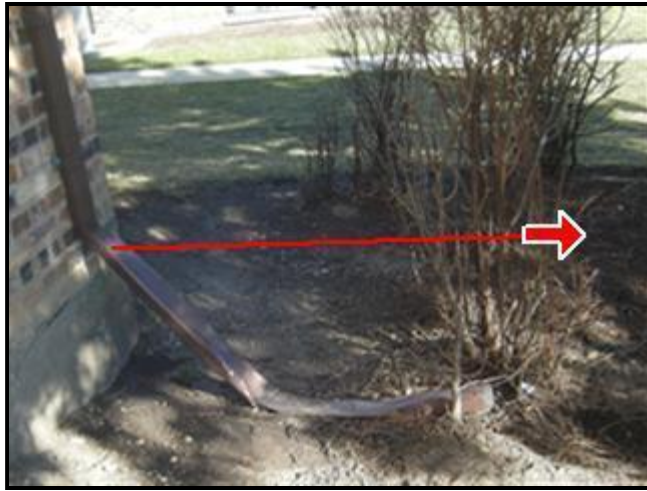
Inspected

3.1 Flashings, Gutters and Drainage

Repair or Replace

 The gutters are in fair condition and seem to be managing rain water effectively. Recommend monitoring during rain events to determine whether additional downspouts are needed (wherever rain is spilling over gutters).

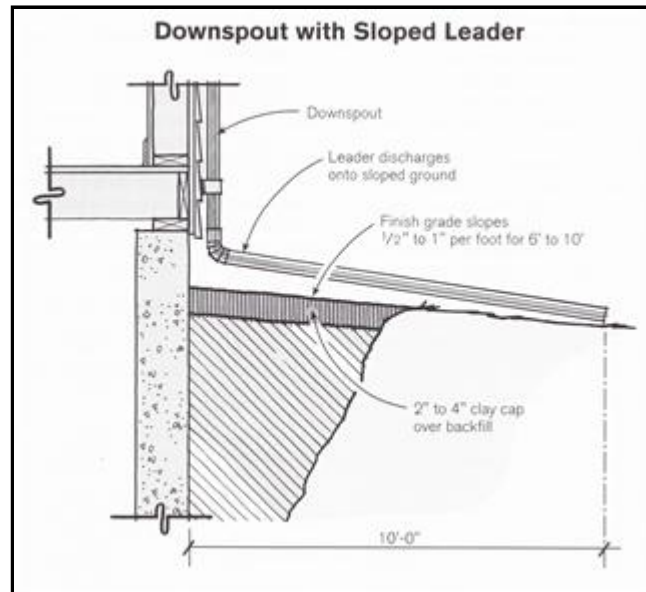
The downspouts around the exterior need attention. Recommend that all downspouts extend about 6 feet away from the building. This is to ensure that the drainage water does not seep into the ground and back to the foundation. Recommend repairing all connections between downspout assemblies to ensure that water is draining from top to bottom without any restrictions.



3.1 Picture 1 SE corner



3.1 Picture 2 NE corner



3.1 Picture 3

3.2 Window wells

Not Present

3.3 Grading not directing water away from structure

Inspected

3.4 Exterior Cladding and Trim

Repair or Replace

- Areas of mortar joint at the sills are open and allowing moisture into the wall. Recommend a qualified masonry contractor properly seal these joints with mortar or exterior grade sealant. All exterior caulk should be periodically inspected for any failures and re-caulked as needed.



3.4 Picture 1



3.4 Picture 2

3.5 Porch Stoop/Flooring or Steps allowing water to enter the building

Inspected

3.6 Foundation/Slab showing evidence of ground water intrusion

Inspected

3.7 Sump pump

Inspected

3.8 Active Leaks

Not Present

4. Air Control Layers

Styles & Materials

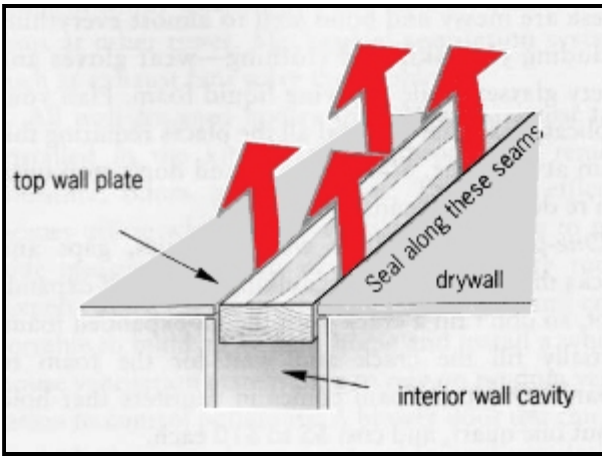
Ceiling Materials: Drywall	Wall Material: Drywall	Floor Material: Concrete Slab (Lower Level)
--------------------------------------	----------------------------------	-------------------------------------------------------

Items

4.0 Air seal the attic top plates, electrical and plumbing penetrations

Repair or Replace

- As the framing dries over the years, the top plates of both interior and exterior walls allow large amounts of air to leak from the wall cavity and up into the attic. Recommend that these areas be sealed with a 2-part foam spray.
- Penetrations in the form of plumbing penetrations, electrical conduit, boxes and fixtures should be exposed and sealed before additional insulating.



4.0 Picture 1



4.0 Picture 2



4.0 Picture 3



4.0 Picture 4



4.0 Picture 5



4.0 Picture 6 Gap along west & east walls in attic

4.1 Seal/Insulate Attic Access

Repair or Replace



The attic hatch should be air sealed and insulated. The casing should be fastened securely to the ceiling and caulked at all corners & seams. Weather strip should be installed where the cover sits on the casing. The cover should have 8" of foam board fastened to the top, resulting in an R-40 assembly.



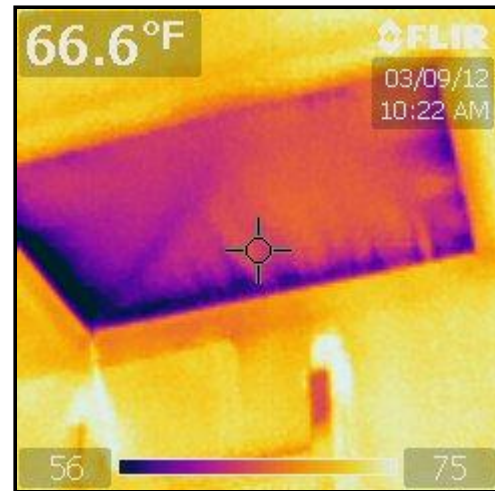
4.1 Picture 1



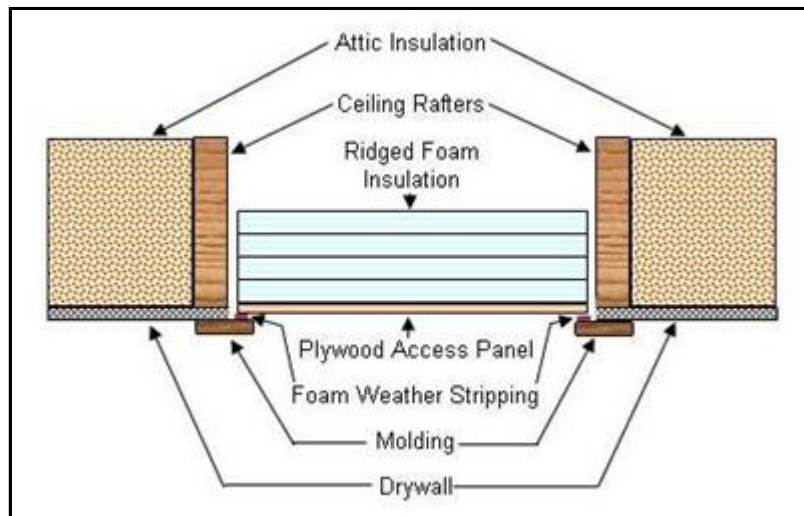
4.1 Picture 2



4.1 Picture 3



4.1 Picture 4



4.1 Picture 5

4.2 Thermal bypasses (between floors)

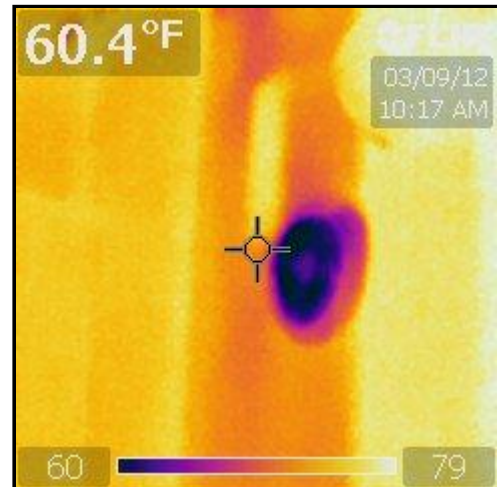
Repair or Replace

- The stud cavity serving as a chase for the bathroom plumbing is a major air by-pass from the attic to the basement allowing cold air to fall and warm air to escape. Recommend the opening around the pipes be sealed with foam board and 1-part foam where the pipes leave the conditioned space. The area where the attic walls

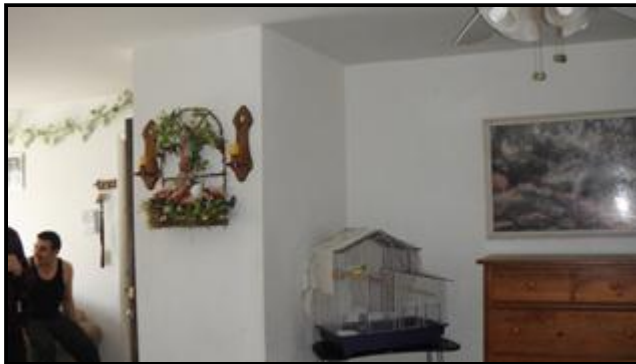
meet the attic ceiling should also be sealed to halt air flow between the wall cavities and the attic. This will also keep insulation from falling down into the walls, when the attic is insulated.



4.2 Picture 1



4.2 Picture 2



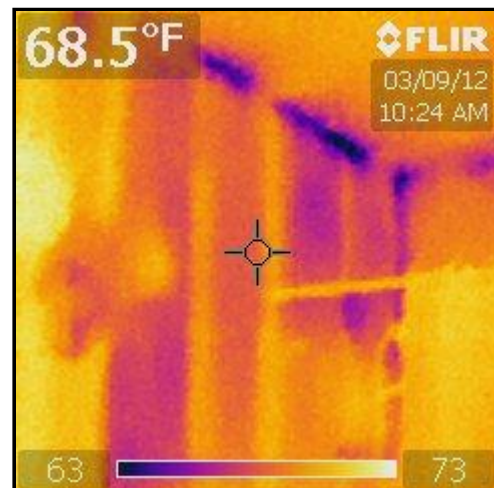
4.2 Picture 3



4.2 Picture 4



4.2 Picture 5




4.2 Picture 6

4.3 Rim Joist insulation and air sealing perimeter of floor system

Inspected

4.4 Walls as an Air Control Layer (paneling, beadboard, etc.)

Repair or Replace

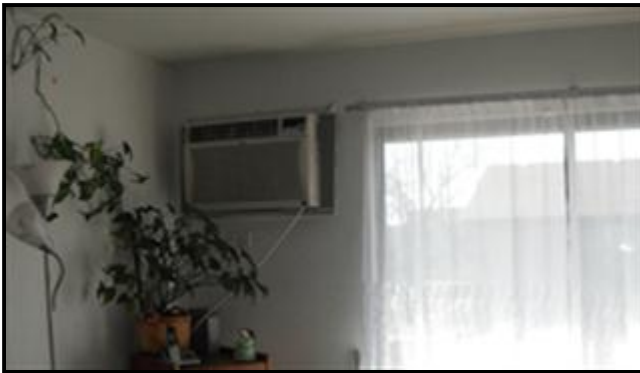
-  The sleeve-unit air conditioners are a significant source of air leakage in the units. The cold metal surfaces also condense interior moisture, leading to mold/mildew on the painted surfaces. Recommend insulated AC covers be fabricated and installed on the interior. The sides of the cover should be permanently affixed while the insulated flat cover should remove and store easily.



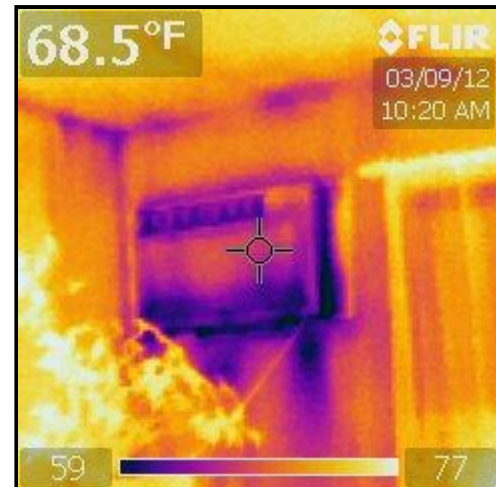
4.4 Picture 1



4.4 Picture 2



4.4 Picture 3




4.4 Picture 4

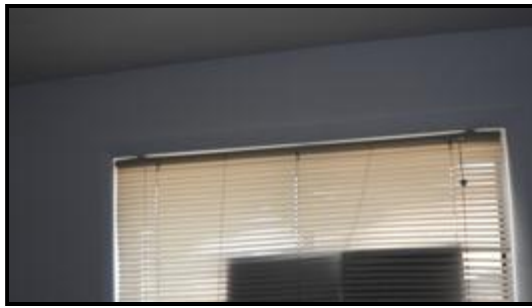
4.5 Air seal Baseboards

Inspected

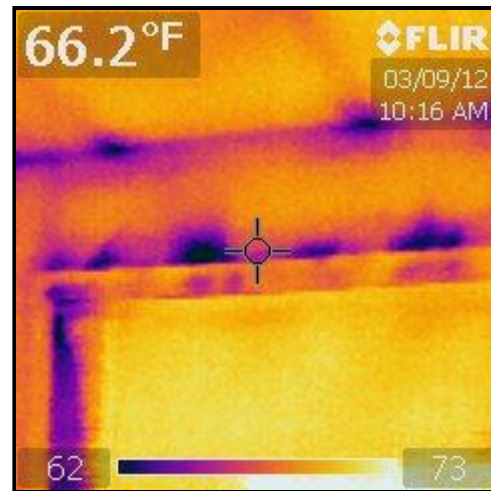
4.6 Windows: Air leakage, seals and caulking

Repair or Replace

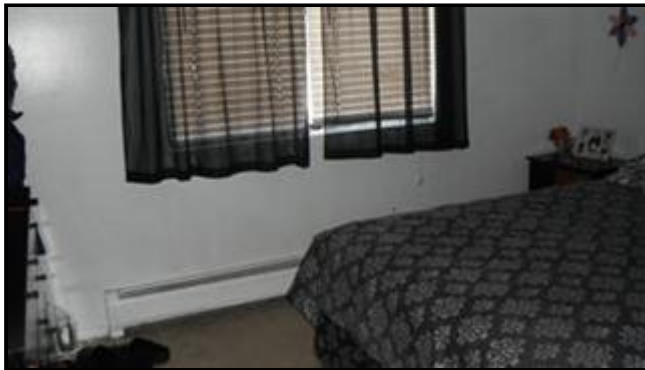
-  The aluminum windows are performing poorly - significant condensation and air leaks are obvious. After air sealing and insulating the attic, replacing the windows and patio doors is the next best opportunity to improve the durability, performance and comfort of the building. Recommend windows with a low U-factor - <0.3 - with a thermally broken frame be installed by a qualified contractor and air sealed with foam and/or caulk to halt all window air leakage.



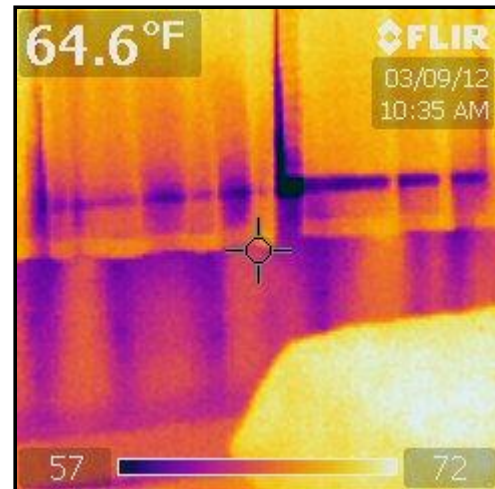
4.6 Picture 1



4.6 Picture 2



4.6 Picture 3



4.6 Picture 4

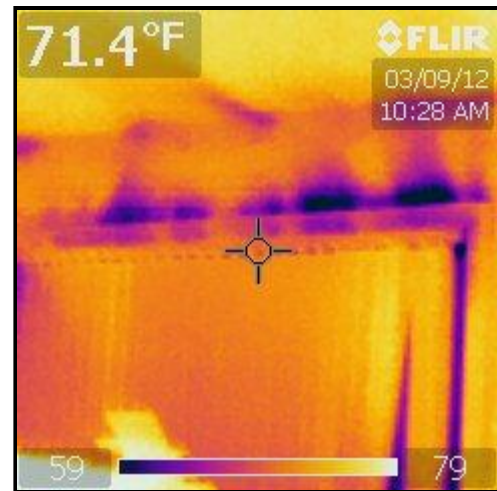
4.7 Exterior doors: Air leakage, weather stripping and seals

Repair or Replace

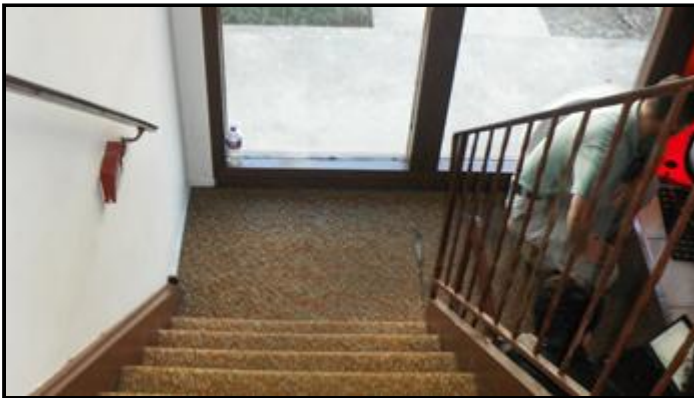
- The wood entry doors are performing poorly - significant air leaks are obvious. After air sealing and insulating the attic and replacing unit windows, replacing the entry doors is the next best opportunity to improve the durability, performance and comfort of the building. Recommend doors with a low U-factor - <0.3 - with a thermally broken frame be installed by a qualified contractor and air sealed with foam and/or caulk to halt air leakage.



4.7 Picture 1



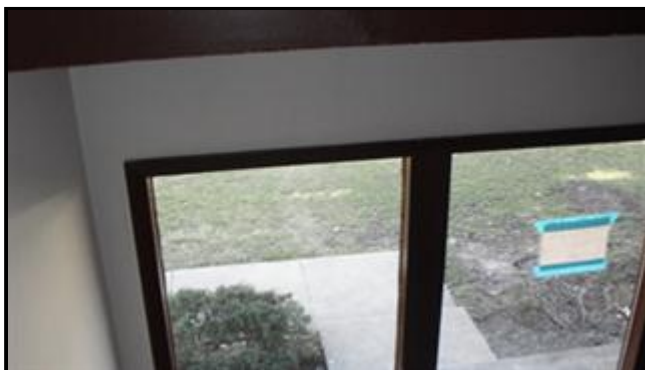
4.7 Picture 2



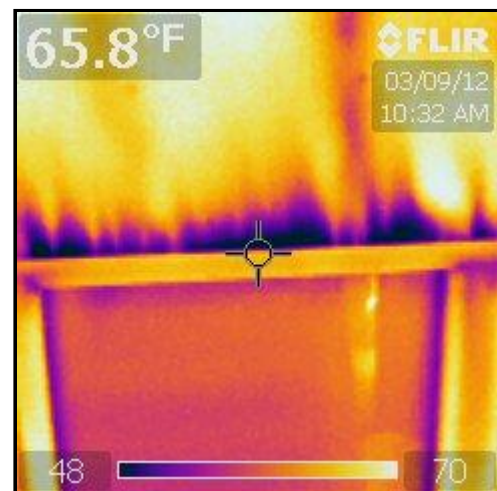
4.7 Picture 3



4.7 Picture 4



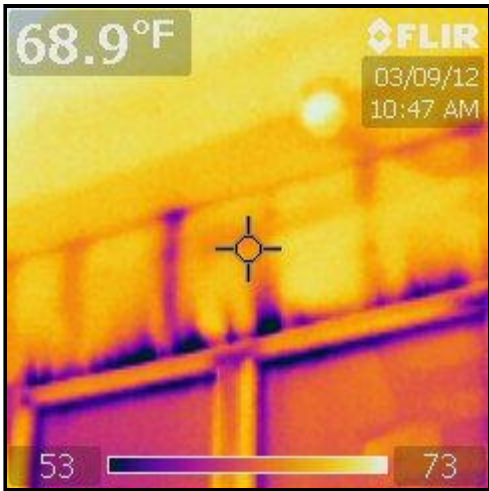
4.7 Picture 5



4.7 Picture 6



4.7 Picture 7



4.7 Picture 8



4.7 Picture 9

5. Thermal Layer

Styles & Materials

Attic Insulation/Effective R-Value:

Blown
Batt
Fiberglass
Poor condition
R 15-20

Floor System Insulation R-Value:

UNKNOWN

Window Types:

Double pane
Sliders
Aluminum

Glass Doors (part of windows):

Sliding Glass Doors

Items

5.0 Recommended additional attic insulation

Repair or Replace



The attic currently has blown fiberglass insulation at about R - 15-20, below the current code minimum of R-38. Recommend the attic be insulated to a more cost effective R 50-60 with blown cellulose (settles to an air-impermeable mass - unlike fiber glass), **only after air sealing and attic ventilation** issues have been completed.



5.0 Picture 1



5.0 Picture 2



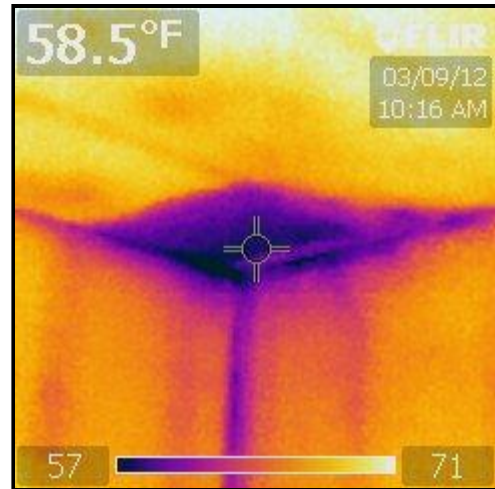
5.0 Picture 3



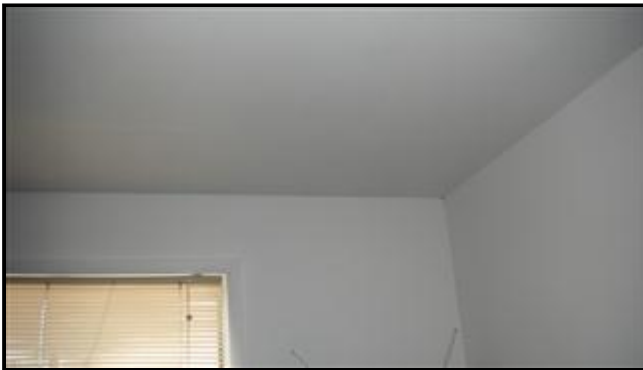
5.0 Picture 4



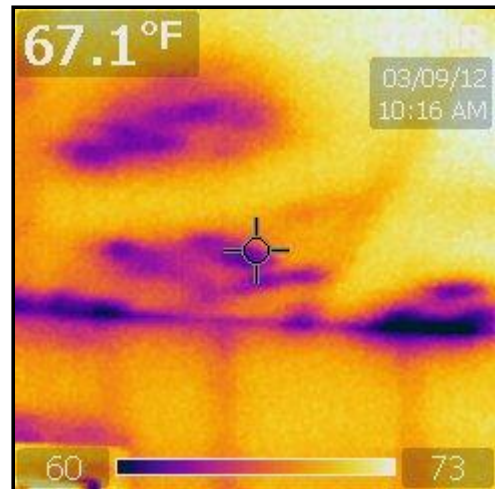
5.0 Picture 5



5.0 Picture 6



5.0 Picture 7



5.0 Picture 8

5.1 Wall cavity insulation (need for dense pack cellulose)

Inspected

5.2 Foundation/Crawlspace wall insulation

Not Present

5.3 Window condition/integrity

Repair or Replace



Thermally conductive aluminum windows are condensing moisture and leading to mold & rot. Replacement windows should be thermally 'broken' with a low U-factor - <0.35.



5.3 Picture 1



5.3 Picture 2

5.4 Double pane glass seal blown

Repair or Replace

For some of the windows, the seal between the two panes of glass has failed allowing moisture to get between the panes of glass. This causes the window's performance to be degraded. Individual glass-packs may be replaced if new windows will not be installed.



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