

## **EXISTING BUILDING REVIEW**

### **122-124 W. Mifflin Street**

Name: Fairchild Building Corporation

Built: 1925

#### Overview:

Reviews of this building were performed by the following companies:

Building Interior and Exterior	Wiss, Janney, Elstner Associates, Inc
Structural	Pierce Engineers, Inc.
Mechanical, Plumbing, Fire Protection	Henneman Engineering, Inc.
Electrical	Potter Lawson
Asbestos Inspection	Advanced Health & Safety LLC

#### History:

The Fairchild Building Corporation Building, also sometimes referred to as the Stark Building, was built in 1925. The two story building with a basement has served as an office building. The building is currently vacant.



View of Front Facade



View of Roof



Basement



Basement



First Floor: View toward entry at corner of West Mifflin Street and North Fairchild Street



First Floor: View of office area



Second Floor



Second Floor



Second Floor

**Wiss, Janney, Elstner Associates, Inc.**

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## **122–124 West Mifflin Street – Architectural Review**

Walk-Through Observations: December 16, 2011

Reported by: Kenneth M. Itle

WJE No. 2011.5656

This letter summarizes the WJE observations of architectural interior and exterior features of 122–124 West Mifflin Street, Madison, Wisconsin. The exterior survey was performed from grade and from accessible flat roof areas. The interior survey was conducted in accessible spaces. Additional investigation would be required to develop appropriate repair recommendations.

The building at 124 West Mifflin Street is a two-story limestone structure constructed in 1927, per city tax records. City records also indicate a major renovation in 1969, at which time it is assumed that most exterior windows and doors and almost all interior finishes were altered, as discussed further below. The rectangular building sits at the corner of Mifflin and Fairchild streets, with the street facades facing grid south (actually southeast) and grid west (actually southwest). The other two exterior walls are windowless brick masonry party walls to adjacent buildings.

### **Exterior**

The masonry exterior of the building is constructed of limestone, likely Indiana limestone (Figure 1). Ornamental features of the facade include decorative brass and glass exterior wall-mounted light fixtures and decorative iron balustrades below the second story windows above the entrances (Figure 2 and Figure 3).

Localized distress was observed in the limestone masonry. Portions of the stone near grade exhibit erosion and pitting of the face (Figure 4). Erosion of this type is often related to water splash-back from sidewalk paving, snow accumulation, and the use of de-icing salts. Dark staining was observed at the recessed entrances and at the parapet walls. Occasional cracked or open mortar joints are present throughout the facade. Cracking and spalling were observed at the head of many of the first floor window openings; this type of distress is likely related to corrosion of embedded steel lintels (Figure 5).

The windows generally consist of clear finish aluminum-framed fixed units with mirrored glass, likely dating to the circa 1969 renovation of the building. The original first floor transoms remain in place behind exterior board-ups. Also, original projecting sheet metal window hoods remain at the head of the first floor windows. The storefront facing Mifflin Street has a bronze frame and fluted bronze pilasters as window jambs and is likely original (Figure 6). The exterior entrance doors are clear-finish aluminum-framed units similar to the non-original storefronts and windows. Some broken glass secured with duct tape was observed at the windows of the building. Also, the circa 1969 aluminum units do not appear to be thermally broken and have monolithic (single layer, non-insulating) glazing.

The roof is covered by a relatively new EPDM rubber membrane (Figure 7). The roof membrane extends up the back face of the parapet walls to a termination bar below the limestone coping of the street facades

and to a sheet metal coping at the rear and side party walls. The roof drains to a single drain at the northwest corner.

### ***Potential Exterior Repairs***

Based on this limited survey, the limestone masonry of the street facades would require localized repairs to address spalling, cracking, loss of mortar, and staining. The condition of the embedded steel window lintels requires further study to evaluate existing conditions and determine an appropriate repair. The integration of the roof assembly with the cornice, parapet, and coping requires further study to provide a watertight envelope. If required by code, provision for overflow roof drainage will need to be created.

The window and door system at most areas dates to the late 1960s. It is likely not cost effective to retrofit the system for improved performance. Therefore, consideration could be given to replacing the windows and doors with new thermally improved aluminum-framed assemblies. The existing first floor transom windows and the one bay of bronze storefront at Mifflin Street appear intact and could be rehabilitated and reused.

### **Interior**

The interior of the basement, first, and second floors consists of office interiors, with carpeting or vinyl tile, wood-framed partition walls clad with gypsum board or wood paneling, suspended acoustic tile ceilings, flat panel hollow core wood doors, and simple wood trim (Figure 8). All of these materials apparently date to the circa 1969 renovation. The interior finishes are generally intact but worn.

Where observed at a few locations at the first and second floors, portions of the original ceilings consisting of plaster on expanded metal lath are present above the suspended acoustic tile ceilings. The original ceilings include boxed-beams and molded cornices (Figure 9). The full extent and condition of the original ceiling finish is not known. Also visible above the suspended ceiling at the first floor were original wood-framed transom windows.

### ***Potential Interior Repairs***

The existing interior finishes predominantly date to the late 1960s, although original ceilings and moldings are present at some locations. Repair or replacement of interior finishes would be necessary for continued use.

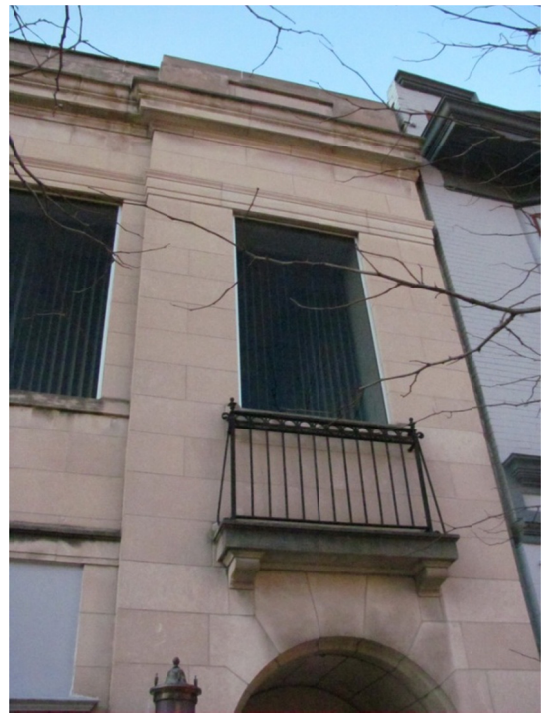
## Figures



*Figure 1. Overall view of 124 West Mifflin. The Mifflin Street facade is at right, while the Fairchild Street facade is at left.*



*Figure 2. Left. Decorative brass and glass exterior light fixture.*



*Figure 3. Right. Decorative iron balustrade.*



*Figure 4. Portions of the limestone masonry near grade exhibit erosion and pitting of the face.*



*Figure 5. Cracking and spalling of limestone masonry at the head of a first floor window opening.*



*Figure 6. The storefront facing Mifflin Street has a bronze frame and fluted bronze pilasters as window jambs.*



*Figure 7. Overview of the roof.*





*Figure 8. View of the interior.*



*Figure 9. The original plaster ceiling and cornice are present above the suspended acoustical ceiling system. Also note the original transoms at the first floor storefront.*



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Walk thru Evaluation of 122-124 W. Mifflin St.  
Madison, WI  
Date of Walk thru 11/18 and 12/2/2011. Date of report 12/7/2011  
PE Job #11272

## EXECUTIVE SUMMARY

1. Description of Structural System
  - a. Foundation Walls. Board formed poured concrete.
  - b. Floor/Roof Construction. Wood joists on steel beams.
  - c. Interior Columns. No interior columns were found
  - d. Party Walls. The north wall of this building goes with 124 Mifflin and does not share with 117 State. The east side of this building does not have a wall of its own but uses the 120 Mifflin wall to close the space. It is not a party wall.
2. Building Support
  - a. The building is supported off exterior masonry bearing walls on the north, south and west sides. Steel columns are placed along the east wall adjacent to the 120 Mifflin building to support the east/west spanning beams from 124 Mifflin.
3. Areas of Compromised Structure
  - a. Water Infiltration. Water infiltration was noted on the south wall at the water service entry point.
4. Floor. Roof Loading
  - a. Existing Structure Capacity. First floor live load capacity;45 psf. Second floor live load capacity;45 psf. Roof (snow) capacity 15 psf.
  - b. Proposed use. None. Building will be torn down.
  - c. Existing Use. Office building. Present day code live load requirement for a floor of 65 psf including partitions.
  - d. Roof (snow) load required capacity by present day codes-21 psf. Current code snow drifting requirement is 55 psf at the roof step.

## GENERAL COMMENTS

The building is two stories with a basement. Rough plan area size of the building is 40' x 60'. Estimated period of construction is the 1920's. No existing drawings were available. The building is vacant at the time of the report with the heating system functioning. The building is wood framed with stone masonry walls exposed on the west and south elevations. For the purposes of this report north/south is taken to parallel Fairchild Street

## BASEMENT

The basement walls are constructed of board formed concrete. Where exposed they appear in good condition and serviceable. No evidence of significant water infiltration is noted. The southwest grade level entry has a formed

concrete slab under the entry area. No water staining is noticed. Basement vents to street level have been blocked with styrofoam.

## FIRST FLOOR

The first floor framing is 2x12 wood joists at 12"oc. The joists span east/west and are supported on a center brick bearing wall running north/ south. The joist span is roughly 18'. The floor is diagonal 1x boards with a presumed wood flooring above that. A plaster ceiling is attached to the underside of the floor joists. Floor capacity is calculated based on wood design values from the period. No attempt has been made to assay the lumber to gain precise stress values. The live load capacity based on the joists is calculated at 45 psf. Present day code requirements for an office building would be 50 psf with an allowance of an additional 15 psf for partitions for a total of 65 psf. The floor gave no indication of vibration sensitivity.

The southwest entry at grade level is deteriorated. Patching tiles have been placed. The area probably leaks but with the concrete slab below this might never be noticed.

## SECOND FLOOR

The second floor is also constructed of wood joists. They measure 2x12 @ 16" oc and span north/south. They are supported on interior steel beam lines taken as a W21x 44. The steel beams bear on the brick bearing wythe at the west wall. Along the east wall the beams are supported on steel columns adjacent and stabilized into the building to the east. The steel beams clear span the first floor space and are placed at roughly 13' oc. The span for calculation is taken at 37'. The floor joists bear atop the steel beams. A plaster ceiling is placed below the wood joists with a later acoustical tile ceiling placed below that. Floor capacity is calculated at 80 psf based on the joists and 45 psf based on the steel beam. Again present day code required live load is  $50+15=65$  psf for office occupancy.

## ROOF FRAMING

The roof is wood framed with 2x 8 wood purlins at 24" oc. The purlins span north/south as with the floor below. They bear on steel beams which are located in line with the steel beam lines noted at the second floor. The roofing membrane is unballasted single ply. The roof slopes in the north/south direction to a drain located at the northwest corner. Roof live load capacity is calculated based on an estimate of present and previous roofing applications. The calculated capacity based on the purlins is 15 psf versus a code requirement of 21 psf.

## EXTERIOR WALLS

The west and south side exterior walls are limestone facing with brick backup and plaster inner facing. The brick wythe in these walls is bearing for the floor and roof construction. The east side of this building is framed. . The 122-124 Mifflin building does use the west wall of 120 Mifflin for stability. The north wall of 122-124 is masonry and is bearing for the wood floor and roof joists. It is a separate wall from the 117 State building.

Written by: Robert B. Corey, PE



**Photo 1** – Concrete basement wall at Mifflin / Fairchild corner



**Photo 2** – Typical steel girder (encased) supporting 2<sup>nd</sup> floor wood joists

## Existing Mechanical Conditions Narrative

### Fairchild Corporation Building 1925

#### Mechanical System

The heating and cooling system consists of four basement furnaces and two packaged rooftop units. Two furnaces serve the basement, two serve the first floor, and the rooftop units serve the second floor. Hot water is provided by a gas-fired domestic water heater in the basement. The roof is pitched to drain into a single roof drain. Four condensing units associated with the furnaces are located on the roof. The sanitary system is a mixture of newer and existing piping. The roof drains into one corner of the roof with a single roof drain.



One of four identical furnaces, the water heater, and gas meter



Condensing units serving the furnaces



One of two packaged rooftop units

### **Mechanical Infrastructure**

There is a single natural gas service to the building and a single domestic water service. The building has a sanitary sewer lateral and a storm sewer lateral exiting the basement. Natural gas, sanitary sewer and storm sewer utilities are from mains in N. Fairchild St. and the water service is from a main in W. Mifflin St. All utilities appear to serve only this building.

### **Condition Assessment**

The furnaces are new and are in very good condition. Roof mounted condensing units are of various types and sizes but all appear to be quite new. The packaged rooftop units are estimated to be about 10-15 years old which is about the normal life expectancy for that equipment. The domestic hot water heater is new and in very good condition. None of the hot water piping appears insulated. Sanitary piping is mostly cast iron and original.

### **Remarks**

While much of the HVAC equipment is new, there would be significant difficulty reusing any of it. This is due to the fact that temperature control zoning is likely less than ideal and modifications necessary to make the systems code compliant would be very difficult and costly, and likely impossible. The water heater could be used, assuming it would fit the new capacity requirements.

Written by: Kevin Lichtfuss, P.E.

# Potter Lawson

*Success by Design*

15 Ellis Potter Court  
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Walk Thru Evaluation of 122-124 West Mifflin Street

Date of Walk Thru: November 29, 2011

Date of Report: December 9, 2011

Potter Lawson Job No. 2010.23.00

## **Fairchild Building Corporation Building 1925**

### **Electrical System**

The building electrical service is 600amps at 120/208V, 3-phase, from MG&E and enters the basement from North Fairchild Street. The electrical distribution equipment is located in the basement, and there is one electrical meter for the building. Electrical panels distribute the power to building loads. A telephone private branch exchange and cabling was noted.

### **Electrical Infrastructure**

This building appears to have an independent electrical power system that does not connect to adjacent buildings. Refer to the attached drawings for approximate location of the electrical power utility entrance.

### **Condition Assessment**

Electrical equipment age is from the 1980's. The telephone PBX appeared to be from the 1980's. There were no noted obvious failures of electrical equipment, such as evidenced by heat or smoke discoloration. The MG&E electrical service equipment appeared to be in good condition.

Light fixtures were primarily fluorescent (about 1980's). Some light fixtures were missing or removed. Wiring devices also appeared to be from the 1980's. Branch circuits ranged from flexible metal conduit to EMT conduit. Although the condition of the branch circuit wiring is not known, it appeared that the installation was from the 1980's.

The telephone PBX cabling is supported by the suspended ceiling grid, which if constructed now would be a violation of the current code.

The electrical equipment appeared to be accessible for maintenance and repair.



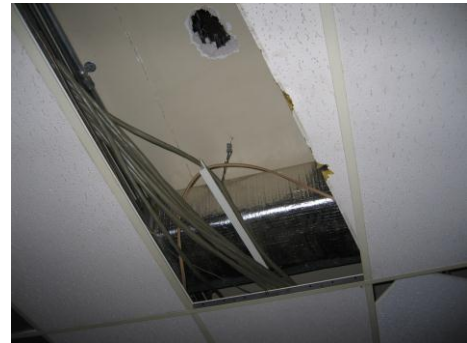
Electrical service in the basement.



Electrical panels on 2<sup>nd</sup> floor.



First floor lights.



Electrical cables on 2<sup>nd</sup> floor.

**Remarks**

The electrical systems in this building would be removed in their entirety if the proposed single building design concept was implemented. The National Electrical Code and MG&E rules require that a single electrical service power a single building.

Written by: John Dreher, PE



## ASBESTOS INSPECTION & BULK SAMPLING

### 122 West Mifflin Street, Madison, Wisconsin

Advanced Health & Safety LLC (AHS) was contacted to conduct an asbestos survey at the aforementioned property.

Mr. Robert J. Stigsell of AHS inspected the properties on November 8, 2011. The property was inspected for the presence of asbestos containing building materials. Bulk samples were taken for building materials found suspect to contain asbestos, as discussed. All samples were shipped overnight via Fed Ex. and were submitted to Triangle Environmental Services for analysis by Polarized Light Microscopy (PLM).

#### **Four separate categories of materials (if applicable) will be listed for the property:**

**The first list (List A)** will be of materials found to contain asbestos, which are **friable** or may become friable during demolition. It is **required** that these materials be removed by a certified asbestos abatement contractor prior to a demolition. **All asbestos materials in List A must be removed prior to a fire training burn.**

**The second list (List B)** will contain materials found to contain asbestos but are described as **Category II non-friable**. If the building is to be demolished, it is **required** that these materials be removed by a certified asbestos abatement contractor prior to a demolition. **All asbestos materials in List B must be removed prior to a fire training burn.**

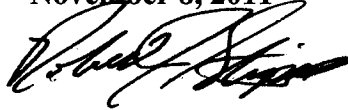
**The third list (List C)** will contain materials found to contain asbestos but are described as **Category I non-friable**. If the building is to be demolished, the materials may be able to remain in the building during demolition if proper steps are taken and they do not become friable. These proper steps include, but are not limited to: notifying the demolition contractor of the presence of asbestos, utilizing wet methods during demolition, notifying the landfill accepting the waste that not-friable Category I asbestos materials are present, and manifesting the waste. Also, if any of the building materials are to be recycled (ie, crushing concrete) than the asbestos must be removed from this building material. NESHAPS (DNR) does not regulate materials found at < 1% asbestos, however OSHA does still regulate materials that contain < 1% asbestos. If materials in List C are likely to be disturbed, the contractor shall ensure compliance with all appropriate OSHA regulations. **All asbestos materials in List C must be removed prior to a fire training burn.**

**The fourth list (List D)** will include materials that were sampled and found **not to contain asbestos**. **Removal is not required for these materials.**

*If any suspect materials are found during demolition/burn that has not been sampled during this inspection, Advanced Health & Safety should be contacted to assess the situation. Inaccessible areas may exist inside walls.*

**Building/Dwelling:** 122 West Mifflin St, Madison, WI  
**Building Type:** Residential/Commercial  
**Inspector:** Mr. Robert (Bob) J. Stigsell  
**Inspector Certification:** AII-03628  
**Certification Expires:** May 25, 2012  
**Inspection Date:** November 8, 2011

**Inspector Signature:**



**List A**

**Asbestos Containing Friable Materials  
(Required to be Abated prior to Demolition or Burning)**  
None

**List B**

**Asbestos Containing Category II Non-Friable Materials  
(Required to be Abated prior to Demolition or Burning)**  
None

**List C**

**Asbestos Containing Category I Non-Friable Materials  
(May Be Able To Remain In Building During Demo if Not Friable- Consult DNR)  
(These Materials Must Be Abated Prior To Burning)**  
9" White Floor Tile and Black Mastic on Back Stairs (Assumed Positive)- back stairs  
approximately 30 sq ft.

**List D**

**Materials Found Not To Contain Asbestos At 1% Or Greater  
(Both Tested or Known Not To Contain Asbestos)  
(No Abatement Required)**  
2' x 4' Ceiling Tile (Samples 1-3)  
Gray Base and Mastic (Samples 4-6)  
Drywall (Samples 7-9)  
Drywall Mud (Samples 10-12)  
2' x 4' Replacement Ceiling Tile (Samples 13-15)  
Brown Base and Brown Mastic (Samples 16-18)  
White Ceramic Tile Grout (Samples 19-21)  
Ceramic Tile Adhesive (Samples 22-24)  
2' x 4' Hallway Ceiling Tile (Samples 25-27)  
2' x 4' Bathroom Ceiling Tile (Samples 28-30)  
Plaster (Samples 31-37)  
Black Roofing Tar (Samples 38-40)  
Attic Insulation (Samples 41-43)  
Brown Stair Treads and Brown Mastic (Samples 44-46)  
Gray/Blue Terrazzo-Mifflin Side Steps (Samples 47-49)  
Ceramic Tile Grout (Samples 50-52)  
Tar Paper (Samples 53-55)

## ASBESTOS INSPECTION & BULK SAMPLING

### 124 West Mifflin Street, Madison, Wisconsin

Advanced Health & Safety LLC (AHS) was contacted to conduct an asbestos survey at the aforementioned property.

Mr. Robert J. Stigsell of AHS inspected the properties on November 8, 2011. The property was inspected for the presence of asbestos containing building materials. Bulk samples were taken for building materials found suspect to contain asbestos, as discussed. All samples were shipped overnight via Fed Ex. and were submitted to Triangle Environmental Services for analysis by Polarized Light Microscopy (PLM).

#### **Four separate categories of materials (if applicable) will be listed for the property:**

**The first list (List A)** will be of materials found to contain asbestos, which are **friable** or may become friable during demolition. It is **required** that these materials be removed by a certified asbestos abatement contractor prior to a demolition. **All asbestos materials in List A must be removed prior to a fire training burn.**

**The second list (List B)** will contain materials found to contain asbestos but are described as **Category II non-friable**. If the building is to be demolished, it is **required** that these materials be removed by a certified asbestos abatement contractor prior to a demolition. **All asbestos materials in List B must be removed prior to a fire training burn.**

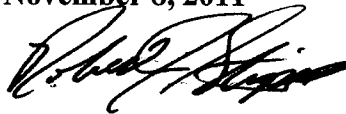
**The third list (List C)** will contain materials found to contain asbestos but are described as **Category I non-friable**. If the building is to be demolished, the materials may be able to remain in the building during demolition if proper steps are taken and they do not become friable. These proper steps include, but are not limited to: notifying the demolition contractor of the presence of asbestos, utilizing wet methods during demolition, notifying the landfill accepting the waste that non-friable Category I asbestos materials are present, and manifesting the waste. Also, if any of the building materials are to be recycled (ie, crushing concrete) than the asbestos must be removed from this building material. NESHAPS (DNR) does not regulate materials found at < 1% asbestos, however OSHA does still regulate materials that contain < 1% asbestos. If materials in List C are likely to be disturbed, the contractor shall ensure compliance with all appropriate OSHA regulations. **All asbestos materials in List C must be removed prior to a fire training burn.**

**The fourth list (List D)** will include materials that were sampled and found **not to contain** asbestos. **Removal is not required for these materials.**

*If any suspect materials are found during demolition/burn that has not been sampled during this inspection, Advanced Health & Safety should be contacted to assess the situation. Inaccessible areas may exist inside walls.*

**Building/Dwelling:** 124 West Mifflin Street, Madison, Wisconsin  
**Building Type:** Residential/Commercial  
**Inspector:** Mr. Robert (Bob) J. Stigsell  
**Inspector Certification:** AII-03628  
**Certification Expires:** May 25, 2012  
**Inspection Date:** November 8, 2011

**Inspector Signature:**



**List A**

**Asbestos Containing Friable Materials**

**(Required to be Abated prior to Demolition or Burning)**

Paper Insulation over 2 Lights in Basement Bathroom (Samples 40-42)

**List B**

**Asbestos Containing Category II Non-Friable Materials**

**(Required to be Abated prior to Demolition or Burning)**

Transite over Exterior Windows between 1st and 2<sup>nd</sup> Floors (Assumed Positive)

**List C**

**Asbestos Containing Category I Non-Friable Materials**

**(May Be Able To Remain In Building During Demo if Not Friable- Consult DNR)**

**(These Materials Must Be Abated Prior To Burning)**

9" Tan Floor Tile and Mastic in the Basement (Assumed Positive)- approx. 2,400 sq ft  
Drywall Mud (Samples 22-24) (<1% asbestos)

**List D**

**Materials Found Not To Contain Asbestos At 1% Or Greater**

**(Both Tested or Known Not To Contain Asbestos)**

**(No Abatement Required)**

Ceramic Tile Grout under 12" Tiles (Samples 1-3)

Drywall (samples 4-6)

2' x 4' Ceiling Tiles (Samples 7-9)

Plaster (Samples 10-15)

Carpet Mastic (Samples 16-18)

Black Tar paper under Carpet, over Wood Floor (Samples 19-21)

2'x 4' Bathroom Ceiling Tiles (Samples 25-27)

Ceramic Tile Grout (Samples 28-30)

Ceramic Tile Adhesive in Bathroom (Samples 31-33)

Tan Baseboard and Brown Mastic (Samples 34-36)

Brown Stair Treads and Brown Mastic (Samples 37-39)

Black Tar Paper under Wood Flooring (Samples 43-45)

Hard Fitting on Pipe 3 in Basement (Samples 46-48)

Gray with Gold Flecks Wall Plaster in Basement (Samples 49-51)  
Black Roofing Mastic (Samples 52-54)  
Gray Roofing Mastic (Samples 55-57)  
Brown Roofing Mastic (Samples 58-60)  
Green Roofing Mastic (Samples 61-63)  
Gray with Gold Flecks Wall Plaster in Basement (Samples 64-67)  
Brown Insulation (Samples 68-70)