Facility Condition Assessment
Pentwater Township / Village of Pentwater Offices

Project No. 190609
May 13, 2019




Fishbeck, Thompson, Carr & Huber, Inc.
engineers | scientists | architects | constructors

Facility Condition Assessment
Pentwater Township / Village of Pentwater Offices

Prepared For:
Pentwater Township
327 North Hancock St.
Pentwater, MI 49449

May 13, 2019
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List of Appendices

List of Abbreviations/Acronyms

A	Ampere
ADA	Americans with Disabilities Act
AH	Air Handler
BTUH	British Thermal Units per Hour
FCA	Facility Condition Assessment
FTCH	Fishbeck, Thompson, Carr & Huber, Inc.
HVAC	Heating, Ventilation and Air Conditioning
IT	Information Technology
LED	Light-Emitting Diode
MRC	Michigan Rehabilitation Code
NEC	National Electric Code
PVC	Polyvinyl Chloride
SF	Square feet

Executive Summary

Introduction

Pentwater Township and the Village of Pentwater retained Fishbeck, Thompson, Carr & Huber (FTCH) to conduct a Facility Condition Assessment (FCA), to provide an understanding of the current state of building systems and to identify major facility deficiencies. The assessment was based on a visual inspection of building infrastructure and analysis of available drawings, reports, and data provided by the Township and Village. Building envelope, structural, mechanical, plumbing, and electrical systems were evaluated. Interior architectural systems such as doors, finishes, and ceilings were not evaluated as a part of this report. FTCH was also retained to conduct a limited asbestos building inspection.

Assuming the existing use is grandfathered, state and local building codes do not require that any work be conducted at this time, so long as the existing use of space does not change. Any new work undertaken must comply with current building codes. The Michigan Rehabilitation Code (MRC) applies to any new work or proposed alterations. If alterations affect more than 50% of the building area, general compliance for the entire building will be required. Refer to Chapter 5 of the MRC (2015) for classification of Level 1, 2 and 3 alterations and corresponding requirements.

Conclusions

A number of major deficiencies exist that require immediate action: regardless of code requirements.

- Structural integrity of second floor north, south, and west walls has been compromised by water infiltration and degradation of brick walls. Falling brick is a danger to pedestrians and property. The walls are not code-compliant and cannot be guaranteed to withstand a design wind event, based on assumed capacity.
- Basement rubble foundation walls and bearing plates are in disrepair. Structural shoring efforts must be extended to include bearing conditions now compromised. To prevent further deterioration, basement walls must be repaired and waterproofed.
- Roof drainage is inadequate and must be upgraded to prevent water infiltration and accumulation of water leading to potential compromise of the roof's structural integrity.
- Asbestos-containing materials were detected throughout the building, even in renovated areas. **No renovation, demolition, or construction should take place without a full hazardous materials inspection**.

The basement is not occupiable by code due to insufficient ceiling height and clearances. It has no mechanical ventilation and is actively leaking in rain events. It is not barrier free, nor is there an accessible route provided.

The first floor has been improved to house Township and Village office functions, but exterior walls must be stabilized to prevent further deterioration and water infiltration. It is partially ADA-compliant.

The second floor is not suitable for use in its current state. No interior egress stair is provided, nor is an accessible route available. It has no heating, cooling, or mechanical ventilation. Extensive water infiltration is evident. Walls are not structurally sound. Should Pentwater Township, the Village of Pentwater, or any other entity wish to occupy the second floor, extensive repairs must be made to deem it suitable for use.

The total cost of repairs exceeds the cost of demolition and new construction.

General Observations

General

- The 12,300-square foot (SF) original office building was reportedly constructed in approximately 1910.
- The building is approximately 4,100 SF on each of three floors (basement, first floor, second floor). A small mezzanine overlooks the second floor.
- The building shares its south wall with a two-story retail building.
- The Township Hall occupies the west two thirds of the first floor. Village offices are located in the eastern third.
- The second story contains an abandoned gymnasium with approximately 20-foot ceilings and is currently accessed only by an exterior metal grate stair. No interior stair or elevator exists. A small mezzanine overlooks the second story.
- The building has a full basement, which is used for storage and is accessed by an interior stair or overhead door on the west façade.
- Original building drawings are not available. Floor plans were developed as part of a feasibility study conducted in 1989 by Tom Sturr Architect, which accurately portray existing building layout.

Architectural

- Exterior brick walls appear to have no air space and no internal drainage.
- Brick material on north, east and west walls is soft and porous. These walls have been painted.
- The east façade's exterior brick wythe is different than the rest of the building and is a durable material without significant signs of disrepair.
- First floor windows are not original. They are clad wood double hung style.
- Second floor windows are wood, single-pane, true divided lite.
- Exterior doors are aluminum. A relatively new steel overhead door is located on the west façade at basement level.
- Basement floor is concrete slab on grade.
- First and second floors are wood floor boards on wood joists. Most of the second floor is covered with wood athletic flooring.
- Roof access is from second floor mezzanine by way of a fixed wooden ladder and wooden roof opening.
- Roof is multi-ply modified bitumen with a mineral cap sheet, approximately 25 years old. Roof overflow is only achieved by emptying over the top of the parapet, presumably on the front and rear facades. The east façade has an asphalt-shingled mansard.
- Interior first floor partitions are wood or metal studs with gypsum board. Second floor partitions and perimeter walls are clad in plaster.

Accessibility

- The first floor is at grade, and generally accessible. Curb dub-downs are provided.
- The second floor and basement are not barrier free. An egress stair connects the main floor and basement, but no interior egress route exists between main and second floor.
- Door clearances, counter heights, and some door hardware items are not ADA-compliant.
- First floor restrooms do not have appropriate clearances to meet today's standards.
- First floor drinking fountains are not compliant with today's standards.

Structural

- The exterior walls above grade are bearing walls and are likely solid, multi-wythe brick walls with no reinforcing steel.
- The basement foundation walls are rubble stone masonry.
- First and second floor structures are wood joists bearing on the north and south exterior walls and a line of beams and columns running east-west roughly down the center of the building.
- The roof structure consists of steel bowstring trusses spanning from the south exterior wall to the north exterior wall. Spanning between the steel trusses are wood roof joists and wood ceiling joists.

Mechanical

Fire Protection System

- The building is not currently sprinkled.

Plumbing System

- A one-inch copper domestic water service entrance with meter is in the northeast corner of the basement. Plumbing system water lines are primarily uninsulated copper piping and appear to be in good condition. There may be remnants of galvanized steel water lines hidden within walls.
- There is a Toro irrigation controller mounted on a wall in the basement. The irrigation water service exits from the basement level along the east end of the north wall.
- The sanitary sewer leaves the building at the northeast corner of the basement. The sanitary drainage piping is primarily newer cast iron no-hub with stainless steel clamps and appears to be in good condition. There are some old cast iron hub and spigot pipes. There is also some newer PVC drainage piping. At the southwest corner of the basement, there is an old drainage pipe that appears to have leaked in the past and may still be leaking.
- There is a small sump pump located in the basement just east of where the vault base is. There is a large floor drain near the overhead door in the basement.
- The roof is drained through two roof drains located in the northeast and southeast corners. Drain piping is then routed down through the building to underground where it likely connects to the city storm sewer.
- The electric domestic tank type hot water heater located in the basement level in the northeast corner of the Boiler Room appeared to be in good condition. There is no hot water recirculation system.
- Plumbing fixtures appeared to be in relatively good condition.
- A natural gas service enters the building at the west end. Steel gas piping is then routed through the basement level to the gas fired heating boiler.

Heating Ventilating and Air Conditioning System (HVAC)

- The basement does not have any mechanical ventilation. The northwest corner room has hot water finned tube along the exterior wall for heating and a window style air conditioner for cooling. The remaining areas of the basement are not heated or cooled.
- The second floor has no HVAC system serving it.

- A new gas fired hi-efficiency hot water heating boiler and circulating pump system was installed in the basement boiler room earlier this year. The boiler is rated for 262,000 BTUH output. There are three heating water zone valves. This system circulates heating water throughout the main level and a limited amount to the lower level. Primarily copper piping is used for the heating water system. The heating water is piped to cabinet unit heaters located in or near the vestibules. It is also piped to baseboard finned tube radiation along the perimeter west, north, and east walls of the first floor. The baseboard finned tube and cabinet unit heaters appear to be in fair condition. It was reported that the heating system maintained the spaces at comfortable temperatures during the past winter season.
- There are three small air handlers (AH) located on the floor of the second level along the North wall. These AH's serve the three first floor areas (west end area, center area, east end area – Reference Photos M2 and M3). Each has an air-cooled condensing unit located on grade along the north wall with refrigerant piping routed up to a cooling coil in the AH's. This equipment appears to be in fairly good condition. The AH serving the center area of the main floor may have an electric heater in it also. Air is distributed from the AH's through supply and return ductwork located above the ceilings of the main level to ceiling mounted diffusers and grilles. Simple electric thermostats control the AH's. An electric steam humidifier located in the basement boiler room is connected to the AH system serving the first-floor west end. It is uncertain if it is functioning. The first-floor west end AH appeared to have some fresh outdoor air ducted to it from a north wall-mounted intake hood. It is uncertain if the other two AH's have the code required outdoor air supplied to them.

Electrical

- The building receives two electrical services. There is a 60A service for the emergency siren and a 200A service for the building itself.
- The building does not meet current Michigan Energy Code requirements for lighting control.
- Most of the lighting is fluorescent or incandescent.
- There is existing knob and tube wiring in the attic space of the building.
- The building does not have a fire alarm system.

Findings

Architectural

General Comments

- East wall is in good condition, but brick is soiled. Mortar is in fair to good condition for its age. (Reference Photos A1 and A2).
- Exterior walls show evidence of extensive water infiltration. Brick faces have popped off and portions of brick are missing, especially on the north wall and around the north, west, and south perimeter at the top of the wall. West wall has been covered with metal panel due to falling brick. Metal panel finish is compromised. (Reference Photos A3 - A6).
- Painted exterior finish on north, south and west walls act as a vapor barrier and traps water in the walls, which likely contributes to brick faces popping and mortar coming loose. (Reference photos A3 and A6).
- The basement is not suitable for occupiable space of any use, due to noncompliant clear height. Use as storage is appropriate, but fire separation may be required if other improvements trigger compliance.
- Basement window on west façade is wood. Paint has peeled significantly, and glazing compound is compromised.
- Rubble stone foundations are in varying states of disrepair. The nature of stone foundations makes them especially prone to water penetration. In some areas, the foundation walls have been parged as a form of repair, but parging is now separating from the wall, chipping, and crumbling. Some walls have been painted on the interior, which acts as a vapor barrier and can trap moisture inside the wall.
- The first floor is suitable for continued use as a business occupancy, pending structural floor reinforcement and exterior wall repairs as detailed in the structural section of this report.
- First floor joists show evidence of past water infiltration. This does not appear to be a continuing problem.
- First floor windows are generally in good condition. Stone sills have been painted. Paint is peeling; sealant has failed. (Reference Photo A9).
- The second floor is not suitable for use in its current state, due to the condition of exterior walls, the extent of water infiltration, and the extent of damage to interior finishes.
- Second floor plaster wall finish is severely compromised for entire height of wall, especially in northwest corner. (Reference Photo A7). Plaster at entire perimeter of second floor is compromised, wholly or partially. Second floor interior plaster partitions and ceilings are also cracked.
- Second floor windows are not insulated, some glass is broken, and there is evidence of sealant failure and water infiltration. (Reference Photo A8).
- Roof has mild to moderate mineral loss, which is expected for its age. The roof likely has 10-15 years of remaining life, if inspected and maintained properly. (Reference Photo A10).
- The roof seems to drain relatively well, but the capacity of roof drains is insufficient for the area of the roof. Roof drains are protected from clogging only by wire mesh, which is open at the top. (Reference Photos A11 and A12).
- Roof copings are clay tile, which is degrading and chipping. Sealant joints are compromised, allowing water infiltration into the wall. (Reference Photo A13).
- Roof structure shows signs of water damage. Unknown if cause has been remedied.
- Attic shows signs of past fire damage in a localized area at the west end of the catwalk. Roof boards have been replaced and structure appears to be intact.
- Light fixtures at the corner of the building have a junction box immediately adjacent to the roof drain, suggesting that in a rain event the box may become dangerously submerged. (Reference Photo A11).

Recommendations

- Perform minor tuckpointing of brick on east (front) façade (10%). Clean brick.
- If exterior north, south and west walls are to remain, strip exterior paint, replace compromised brick, ranging from selective repair to full-width replacement. Tuckpoint entire wall and coat with a breathable sealer. Replace coping. Strip plaster and lath from interior. Refer to structural section for more comprehensive study of these walls.
- Replace basement and second floor windows. At first floor windows, repair sills and recaulk entire perimeter.
- Upgrade the size of existing primary roof drains, add drains, and provide a secondary roof drainage system such as overflow drains or through-wall scuppers to minimize the risk of rainwater accumulating on the roof during heavy rainfall events. The accumulation of rainwater on the roof that is possible due to the current inadequacy of roof drainage poses both structural loading problems and water infiltration problems.
- Excavate around the perimeter of the building to repair the exterior face of the rubble stone foundation walls as required. Provide waterproofing on the exterior face of the foundation walls and provide foundation drainage around the perimeter of the building to slow the deterioration of the foundation walls. Remove parging and paint from interior wall face.

Accessibility

General Comments

- The second story is not suitable for use in its current state due to lack of interior access to this floor. The exterior metal grate stair is non-compliant, even as secondary / emergency egress.
- Second floor mezzanine access is not code compliant due to low clearance at landings and configuration of stair. The mezzanine is not suitable for use, except as a mechanical mezzanine.
- Restrooms are not accessible by today's standards. Plumbing fixture counts may not be adequate for building use.

Recommendations

- Add access to second floor, by way of two new stairs, in new stair towers (additions). Two code-compliant means of egress are required from this space. Stairs would require an area of refuge and would need to be in fire-rated enclosures.
- Add elevator to meet ADA requirements, in new tower (addition). Elevator would be required to service first and second floors at minimum. Basement access would be recommended for convenience of moving items to and from storage areas.
- Restrict access to second floor mezzanine.
- Reconfigure and replace restrooms to provide ADA-compliance in both Township and Village offices. Individual male and female restrooms would be required in each space. Provide compliant drinking fountains.
- Replace non-compliant door handles, closers, thresholds. Reconfigure walls to provide adequate latch and pull-side clearance.

Structural

General Comments

- Based on observations during the site visit, the age of the building, and construction typical of that timeframe, the exterior walls above grade are likely solid, multi-wythe brick walls with no reinforcing steel.
- There is visible deterioration of the north exterior brick wall. The visible deterioration is greatest near the top of the wall on the second floor. The deterioration is visible both on the exterior of the wall and in certain locations on the interior of the wall on the second floor where the lath and plaster has been removed. There is also visible deterioration on the exterior of the north wall around the windows, both on the first floor and second floor. (Reference photos S1 through S4)
- The exterior walls on the second floor are unbraced from the second floor to the roof, a height of approximately 20 feet. Given the poor condition of the brick, the current level of deterioration, the height of these walls, and the unknown condition of the connection between the walls and the roof structure, the existing walls may not have adequate capacity to resist wind pressures and snow and rain loads that the building would be required to resist under the current building code.
- The west exterior wall has been covered in metal siding, so the condition of the brick is not visible. At the time of the site visit, FTCH was told the siding was installed to prevent pieces of brick from falling off the wall.
- The roof is constructed of steel bowstring trusses spaced approximately 15 feet to 19 feet on center and spanning from the south exterior wall to the north exterior wall. The trusses appear to be supported on columns or pilasters on the second floor. The columns or pilasters are covered in wood trim, so their construction is not known. Spanning between the steel bowstring trusses are wood roof joists and wood ceiling joists, both spaced 24 inches on center typically. Wood deck boards span between the roof joists to support the roofing material and other roof loads. (Reference Photo S5).
- The roof drainage system consists of two primary roof drains located in the northwest and southwest corners of the roof. Should the primary roof drains become plugged or be unable to keep up with demand, rainwater will accumulate on the roof until it spills over the west parapet wall.
- The exterior steel stair providing access to the second floor relies on anchors installed into the exterior brick walls for support. Given the poor condition of the brick and the current level of deterioration, the connection of the stair to the walls may not be adequate to resist the live loads required under modern building codes.
- An exterior chimney on the north wall has visible bowing such that it is out-of-plumb. Metal strap anchors are installed to tie the chimney to the building, presumably to stabilize the chimney. However, given the deteriorated condition of the brick walls that these anchors are installed into, their effectiveness is doubtful.
- Basement foundation walls are rubble stone masonry. In most locations inside the basement where the rubble stone walls are visible, there is deteriorated stone and mortar accumulated at the base of the wall. (Reference Photos S7 and S8). The deterioration of the of the walls is likely accelerated by moisture. Moisture may be coming from contact with the ground on the exterior side of the wall, from water infiltration into the walls above, or a combination of both.
- The first floor is constructed of wood joists spaced 12 inches on center typically, spanning from the north and south exterior walls to a line of heavy timber posts and beams running east-west roughly down the middle of the building. The timber posts and beams are infilled with a brick masonry wall.

- FTCH conducted a structural analysis of the first-floor framing in 2003 to evaluate settlement issues of the first floor in the northwest corner of the building and to determine the structural capacity of the first floor.
    - In 2003 FTCH observed significant deterioration of the first-floor joists where they bear on the north foundation wall and significant deterioration of the wood sill plate supporting the joist ends on top of the foundation wall. It was suggested that the deterioration was caused by insect damage, moisture, or a combination of both. Sketches illustrating repair methods were provided by FTCH at that time. These repairs have been made in some locations along the north exterior wall. (Reference Photo S8).
    - The deteriorated joist and sill plate conditions described in FTCH's 2003 letter are present in other locations along the north wall where the recommended repairs have not been made. The most noticeable areas of deteriorated sill plate and joist ends is near the east end of the building, along the north wall. (Reference Photo S9). Note that there may be other areas suffering from similarly deteriorated sill plates and joist ends that are not visible due to wall and ceiling finishes covering them.

Recommendations

- Completely replace in kind the north, west, and south exterior walls above second floor to merely restore them to the integrity of the original construction, prevent further deterioration, and prevent the risk of injury or property damage due to falling brick. It is likely that the building would need to be unoccupied during this work.
- Perform localized repairs to the north and west exterior walls on the first floor, ranging from tuck pointing to full-thickness replacement, in areas where there is deterioration. Engage a mason experienced in the repair of old brick structures. Interior finishes may need to be removed to perform these repairs.
- Any change in the risk category of the building (such as relocating emergency services to the building) will require that the structure be upgraded to resist loading required by the current building code.
    - Merely replacing the exterior walls in kind will not likely satisfy this requirement. To satisfy this requirement, the replacement exterior walls would likely require greater thickness, the addition of steel reinforcing, or an entirely different structural system.
    - A replacement of the roof structure may be necessary for the roof to resist loading required by the current building code. Required replacement would likely include the steel trusses, wood roof and ceiling joists, and wood roof decking.
- Remove the exterior chimney on the north wall that is visibly out-of-plumb.
- Repair first floor joists that are deteriorated where they bear on the exterior foundation walls. Repairs would be similar to those recommended by FTCH following the 2003 assessment.
- Perform repairs to the mortar and stone on the interior face of the rubble stone foundation walls. Engage a mason experienced in the repair of stone masonry foundations.

Mechanical / Plumbing

General Comments

Recommendations below assume that the basement level remains unoccupied for storage only, and first and second floors are renovated for business use.

Recommendations

Fire Protection System

- If the intended renovated building use requires a sprinkled building to meet code, a new water service will be required.

Plumbing System

- Repair leaking drainage pipe at the building SW corner at the lower level. (Reference Photo M1).
- If the upper level is to be occupied, new bathrooms will be necessary. Main level plumbing revisions will also likely be necessary depending on the extent of renovation.

Heating Ventilating and Air Conditioning System (HVAC)

- Lower Level: Add a minimal amount of heat with a couple of hot water unit heaters tied into the heating boiler water supply. Add code required outdoor air ventilation to only operate when the lower level is occupied.
- Main Level: The three AH's will need to be replaced to free up the floor space of the upper level. The associated grade mounted condensing units will also need to be replaced because it is likely they will not be the right size for the revised main floor plan and they are using R22 refrigerant which is no longer code compliant for new projects. Some of the existing ductwork and diffusers and grilles may be reused, depending on the new floor plan layout.
- The perimeter baseboard finned tube and cabinet unit heaters can be reused. There may be a need to reconfigure some of the baseboard and cabinet unit heaters, depending on the new floor plan.
- Upper Level: Provide all new code compliant HVAC system including exhaust for bathrooms. The new HVAC system would not be tied into the existing boiler and would consist of new gas fired furnaces with remote, grade mounted condensing units. New sheet metal ductwork and diffusers would be provided to deliver the air to the spaces.

Electrical

General Comments

- The main electrical panels and IT equipment are located in the corner of the basement near a leaking roof drain creating a potential hazard safety hazard for anyone working on this equipment. (Reference Photo E1). The equipment is not rated for a wet environment.
- The main electrical equipment is aging and should be replaced in kind.
- The layout of the existing distribution system is not documented well, panelboard schedule are not fully filled out and there is not an existing one line available.
- There is one sub-panel to the main electrical panel which is located in a kitchen area over a counter. The panel does not have NEC code required working space in front of it. (Reference Photo E2).
- There are multiple wires/cables, both power and data, exposed throughout the building.
- The attic space has knob and tube wiring and multiple junction boxes without covers where wiring has been spliced. (Reference Photo E3).
- There security/camera system terminates to a makeshift “secure” enclosure on the second floor. All wiring associated with this equipment inside the building is exposed and easily accessible to anyone with access to the second floor. (Reference Photo E4).
- The security/camera installation on the roof uses exposed cables and long runs of flexible conduit secured directly to the roof. (Reference Photo E5).
- Most of the lighting in the building is fluorescent or incandescent and most spaces do not incorporate any level of dimming or occupancy sensing lighting control.
- Existing electrical devices on the second floor (light fixtures, switches, receptacles, etc.) are past their useful life and likely not compliant with current device standards.

Recommendations

- Provide a dry, dedicated space with a door for main electrical and IT equipment.
- Replace all the main electrical equipment and devices with new and verify grounding of all equipment is in compliance with NEC requirements. Document layout of the new system through the development of a one-line diagram and by labeling all panelboard schedules.
- Replace the subpanel in the kitchen with a new panel in a new location that meets NEC installation requirements. Demolish existing circuit conductors and provide all new conductors from panel to associated loads.
- In unfinished areas (attic, basement, etc.), all power wiring not installed in conduit that is exposed (i.e. romex, knob and tube, metal clad cable, etc.), should be demolished back to its associated panel and replaced with conduit and conductors.
- In finished areas, all exposed power wiring to be concealed or installed in a surface mounted raceway.
- In finished areas, all exposed data wiring to be concealed or installed in a surface mounted raceway.
- Replace all existing lighting, interior and exterior, with LED fixtures that are dimmable and install a lighting control system compliant with the Michigan Energy Code.
- Provide a fire alarm system for the building.
- Replace all emergency lighting (exit signs and egress lights) with new battery powered units.
- Replace conduit and cables on the roof with cables installed in rigid conduit supported on pipe stands. Any fittings or junction boxes shall be installed out of possible areas of flooding.
- Provide a dedicated space with a door on the second floor for a future electrical panel and the security equipment. All security cables to be concealed or routed in conduit.
- Provide new receptacles, switches, lighting, and emergency lighting on the second floor.
- Provide connections to new HVAC equipment.

Environmental

General Comments

FTCH identified 26 samples at the time of their April 24, 2019 visit. Eleven samples were collected and tested. Refer to Appendix A – Limited Asbestos Building Inspection and Bulk Sample Results.

Asbestos containing materials were found in four of the samples taken. Materials containing asbestos are plaster, asphalt roofing tar, vinyl floor tile, and drywall joint compound.

Recommendations

- Prior to any renovation, demolition, or construction, a full hazardous materials inspection is required to fully identify the presence and extent of asbestos-containing materials.

Reference Photos

Architectural Photos

A1 – Brick façade (East)

A2 – Brick façade (East and North)

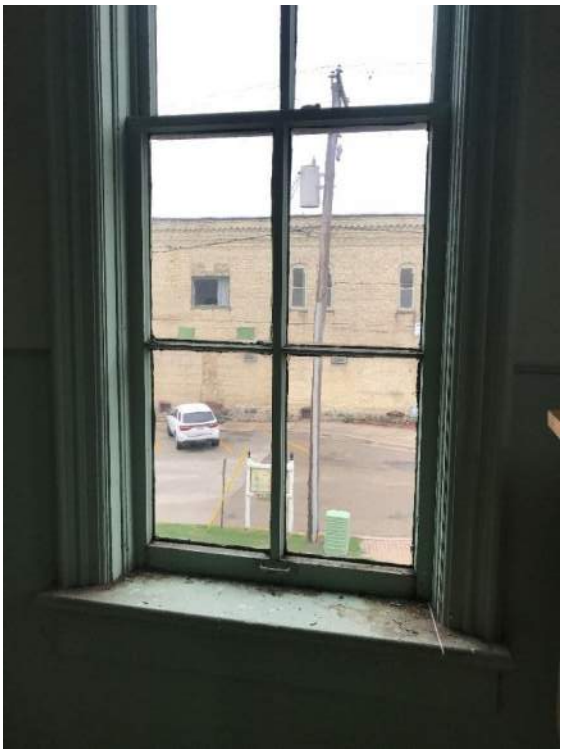
A3 – Brick façade (North)

A4 – Brick façade covered in metal panel (West)

A5 – Brick façade (South)

A6 – Brick façade (North)

A7 – Northeast corner – Second Floor



A8 – Second floor windows

A9 – First floor windows / sills

A10 – Roof condition & slope

A11 – Northeast roof drain & electrical box

A12 – Southeast roof drain

A13 – Roof coping

Structural Photos

S1 – North wall

S2 – North wall

S3 – North wall

S4 – North Wall

S5 – Bowstring trusses

S6 – Repaired joist ends

S7 – Rubble foundation wall

S8 – Rubble foundation wall

S9 – Rotten sill joist end

Mechanical Photos

M1 – Leaking roof drain – Southwest corner

M2 – Air Handler

M3 – Air Handler

Electrical Photos

E1 – Wall leaks at electrical panels

E2 – Sub-Panel

E3 – Knob and tube, open junction boxes

E4 – Exposed cables

E5 – Exposed cables on roof

Estimate of Probable Construction Cost

Repair

Architectural / Accessibility	**$920,000**
Brick repair & cleaning – East *(Note: Wall repair on north, south, east not priced – see structural rebuild)*	ALLOWANCE $25,000
New windows – Basement, Second floor, caulk First floor	$35,000
Basement perimeter excavation, drainage, waterproofing	$75,000
Second floor egress stairs (2)	$295,000
Elevator (2-story, no basement access)	$450,000
Add new / reconfigure restrooms, door hardware/clearance upgrades	$40,000
Structural	**$668,000**
North, east and south exterior second floor wall replacement	$335,000
First Floor wall repair	ALLOWANCE $45,000
Roof structure replacement	$147,000
Remove chimney	$16,000
First Floor joist repair	$65,000
Basement wall repair	ALLOWANCE $60,000
Fire Protection	**$65,000**
Add sprinklers, new water service	$65,000
Mechanical	**$220,000**
HVAC work – Basement	$15,000
HVAC work – First Floor	$90,000
HVAC work – Second Floor	$115,000
Plumbing	**$90,000**
Replace & add roof drains	$16,000
Repair leaking drainage pipe	$1,000
Second floor restrooms; First floor plumbing revisions	$73,000
Electrical	**$215,000**
Replace main panel, sub-panel; demolish / conceal exposed power & data wiring, replace all lighting & controls, add fire alarm, new second floor receptacles & switches, HVAC connections	$200,000
Electrical rooms: basement & second floor	$15,000
Total Repair Cost*	**$2,178,000***

** Not included: Hazardous materials abatement, site costs, interior fit-out, design/CM/other fees.*

New Construction

Cost estimating based on conceptual square-foot estimating techniques. Based on two-story construction plus a basement, replicating existing square footage. Construction assumed to be steel structure with masonry infill.

New Construction Cost* **$1,000,000 - $1,300,000***

**Cost is based on 4,500 SF footprint, basement + 2 story, brick/block construction, core & shell only.*

**In addition, demolition cost for existing building can be estimated at $125,000, not including hazardous materials abatement.*

May 7, 2019
Project No. 190609

Mr. Dave Spitler
Supervisor
Pentwater Township
327 S. Hancock Street
P.O. Box 512
Pentwater, MI 49449

Re: Limited Asbestos Building Inspection and Bulk Sample Results
Pentwater Township/Village Hall

Dear Mr. Spitler:

This report summarizes the limited asbestos building inspection conducted on April 24, 2019, and the laboratory results for the bulk samples collected at the referenced location. The samples were collected, by State of Michigan-accredited Asbestos Building Inspector, Mr. Alan C. Jennings of Fishbeck, Thompson, Carr & Huber, Inc. (FTCH), Accreditation No. A49740.

Twenty-six distinct homogeneous materials were identified. At your request and the discretion of the Inspector, 11 samples were collected, resulting in 17 sample analyses (including layers). The samples were submitted to EMLab P&K for analysis by Polarized Light Microscopy (PLM) in accordance with U.S. Environmental Protection Agency Method 600/R-93/116 for visual estimation. EMLab P&K is an independent laboratory accredited by the American Industrial Hygiene Association and participates in the National Voluntary Laboratory Accreditation Program.

As indicated in the summary table below, four of the materials were found to contain asbestos. A copy of the laboratory analytical report is attached for your reference.

Prior to any renovation or demolition activites, FTCH recommends conducting a full hazardous materials inspection in accordance with the National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR, Part 61, Subpart M, to identify the presence and extent of asbestos-containing materials (ACMs).

If you have any questions or require additional information, please contact me at 616.464.3962 or jsfusee@ftch.com.

Sincerely,

FISHBECK, THOMPSON, CARR & HUBER, INC.

Jeff S. Fusee, CIH, CSP

Alan C. Jennings

aes
Attachments
By email

Table 1 – Summary of Suspect Asbestos-Containing Materials and Bulk Sampling Results
Village of Pentwater Office
April 24, 2019

HM No.	Material Description	Sample Number	Asbestos %
01	Plaster	190424-01-01	None Detected
		190424-01-02	**2% Chrysotile**
02	Paper Under Hardwood Floor	190424-02-01	None Detected
03	Interior Window Glazing	190424-03-01	None Detected
		190424-03-02	None Detected
04	Exerior Window Glazing	190424-04-01	None Detected
		190424-04-02	None Detected
05	12"x24" Ceiling Tile, Geometric Holes		
06	Particle Board		
07	Asphalt Roof w. Tar	190424-07-01	**6% Chrysotile**
08	1'x1' Ceiling Tiles, Pinholes		
09	1'x1' Ceiling Tiles, Floral Pattern		
10	12"x12" Vinyl Tile, Green Feather Pattern	190424-10-01	**5% Chrysotile**
11	4" Cove Base, Brown/Grey		
12	Paper Under HM-09 in Vault	190424-12-01	None Detected
13	Carpet Adhesive, Yellow		
14	Drywall w. Joint Compound	190424-14-02	**2% Chrysotile**
15	12"x12" Vinyl Tile, Rough Texture Brown/Black		
16	2'x4' Ceiling Tile, Heavy Fissures		
17	Old Electrical Wiring		
18	Sheet Vinyl, Green Square/Diamond Pattern		
19	4" Cove Base, Mauve		
20	16"x16" Ceiling Tile, Above Drop Ceiling		
21	4" Cove Base, Brown		
22	12"x12" Vinyl Tile, Dark Faux Marble		
23	12"x12" Vinyl Tile, Brown Feather Pattern		
24	Stair Tread w. Nosing		
25	6" Cove Base, Brown		
26	3" Cove Base, Olive		

EMLab P&K
A TestAmerica Company

Report for:

Mr. Jeff Fusee, CIH, CSP, Ashley Spicer
Fishbeck, Thompson, Carr & Huber, Inc.
1515 Arboretum Dr. SE
Grand Rapids, MI 49546

Regarding: Project: 190609
EML ID: 2147530

Approved by:

Approved Signatory
Balu Krishnan

Dates of Analysis:
Asbestos PLM: 04-30-2019

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

EMLab P&K
3000 Lincoln Drive East, Suite A, Marlton, NJ 08053
(866) 871-1984 Fax (856) 334-1040 www.emlab.com

Client: Fishbeck, Thompson, Carr & Huber, Inc.
C/O: Mr. Jeff Fusee, CIH, CSP, Ashley Spicer
Re: 190609

Date of Sampling: 04-24-2019
Date of Receipt: 04-25-2019
Date of Report: 04-30-2019

ASBESTOS PLM REPORT

Total Samples Submitted:	11
Total Samples Analyzed:	11
Total Samples with Layer Asbestos Content > 1%:	4

Location: 190424-01-02 Lab ID-Version‡: 10183992-1

Sample Layers	Asbestos Content
Gray Plaster	2% Chrysotile
White Skim Coat	ND
Composite Non-Asbestos Content:	< 1% Hair/Wool
Sample Composite Homogeneity:	Good

Location: 190424-01-01 Lab ID-Version‡: 10183993-1

Sample Layers	Asbestos Content
Gray Plaster	ND
White Skim Coat /Green Paint	ND
Composite Non-Asbestos Content:	< 1% Hair/Wool
Sample Composite Homogeneity:	Good

Location: 190424-02-01 Lab ID-Version‡: 10183994-1

Sample Layers	Asbestos Content
Black Tar Felt	ND
Composite Non-Asbestos Content:	80% Cellulose
Sample Composite Homogeneity:	Good

Location: 190242-03-01 Lab ID-Version‡: 10183995-1

Sample Layers	Asbestos Content
Beige Window Glazing /Black Paint	ND
Sample Composite Homogeneity:	Good

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Client: Fishbeck, Thompson, Carr & Huber, Inc.
C/O: Mr. Jeff Fusee, CIH, CSP, Ashley Spicer
Re: 190609

Date of Sampling: 04-24-2019
Date of Receipt: 04-25-2019
Date of Report: 04-30-2019

ASBESTOS PLM REPORT

Location: 190242-03-02 Lab ID-Version‡: 10183996-1

Sample Layers	Asbestos Content
Yellow Mastic	ND
Beige Window Glazing /Green Paint	ND
Sample Composite Homogeneity:	Good

Location: 190424-04-01 Lab ID-Version‡: 10183997-1

Sample Layers	Asbestos Content
White Window Glazing	ND
Sample Composite Homogeneity:	Good

Location: 190424-04-02 Lab ID-Version‡: 10183998-1

Sample Layers	Asbestos Content
White Window Glazing /Blue Paint	ND
Sample Composite Homogeneity:	Good

Location: 190424-07-01 Lab ID-Version‡: 10183999-1

Sample Layers	Asbestos Content
Black Roofing Material /Gray Pebbles	ND
Gray/Black Roofing Tar	6% Chrysotile
Composite Non-Asbestos Content:	2% Cellulose
Sample Composite Homogeneity:	Good

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

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Client: Fishbeck, Thompson, Carr & Huber, Inc.
C/O: Mr. Jeff Fusee, CIH, CSP, Ashley Spicer
Re: 190609

Date of Sampling: 04-24-2019
Date of Receipt: 04-25-2019
Date of Report: 04-30-2019

ASBESTOS PLM REPORT

Location: 190424-10-01 Lab ID-Version‡: 10184000-1

Sample Layers	Asbestos Content
Black Mastic	ND
Light Green Floor Tile	5% Chrysotile
Sample Composite Homogeneity:	Good

Location: 190424-12-01 Lab ID-Version‡: 10184001-1

Sample Layers	Asbestos Content
Brown Paper /Black Mastic	ND
Composite Non-Asbestos Content:	80% Cellulose
Sample Composite Homogeneity:	Good

Location: 190424-14-02 Lab ID-Version‡: 10184002-1

Sample Layers	Asbestos Content
White Joint Compound /Light Green Paint	2% Chrysotile
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.
‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".