Western Reserve Home Inspection LLC

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date:

Client:
Address of house:

Client's telephone numbers: N/A
Others present at the inspection and relationship to client: N/A

Age of house: Built in 1925; the house is 84 years old.
Type of house: 2 story wood frame.
Weather at time of inspection: Sunny; 45°F
Orientation: The front of the house faces northeast.

Important positive conditions with this house that are not typical for its age: The roof is newer and in good condition. The electrical panel has been updated. The master bathroom has been remodeled. The north bathroom on the second floor has been remodeled. The floors have been refinished. A recreation room has been built in the basement.

Priorities (safety/water related): The window well at the northwest wall of the house needs to be cleaned and covered with a proper grating that can carry the weight of a person. The fireplace chimney needs to be tuck pointed. The vehicle door at the garage needs to be repaired to prevent collapse. The electric power cables need to be properly clamped to the house wall. The upper downspouts and open-ended gutters need to be reworked to discharge water directly to the lower gutters. Rodents need to be removed from the house. The kitchen sink drain piping needs to be reworked. The gap between the fireplace chimney and the upper wall of the house needs to be sealed to prevent rain, birds or bats from entering the attic. The wiring for the former attic fan needs to be properly terminated in a junction box. The northwest plumbing stack needs to be re-flashed at the roofline. The furnace exhaust flue at the top of the furnace casing needs to be replaced. GFCI type electric outlets are needed at the rear deck, the garage and laundry room.

General Exterior Conditions:

Walls: The exterior walls are covered with wood shingles and fired clay brick masonry. The wood shingles are in generally good condition and well painted. The shingles have been sandblasted in the past but still appear to be in good condition. Some new shingles have been applied to the northwest face outside the kitchen where the window opening has been reconfigured.

The picture below shows a hole in the shingles at the ground near the garage vehicle door opening. I recommend this shingle should be replaced.

The fired clay brick masonry wall around the front entryway is in generally good condition. However, the brick at the corner of the sill, shown in the picture below, is loose and needs to be reset on fresh mortar.

The original windows are well painted and glazed. They are well sealed and caulked in the wall openings.

The insulating glass window in the kitchen is in good condition. No evidence of condensation or cloudiness was seen between the panes, which is an indication of broken insulating seals.

Foundation: The exterior foundation is built of fired clay brick masonry. This house's foundation is built of hollow clay tile masonry with a fired clay brick wythe on the exterior part of the wall above ground and a hollow clay tile wythe on the interior part above ground. A wythe is the name for a single thickness of masonry. Somewhere close to the grade elevation the wall construction switches to three wythes of hollow clay tile

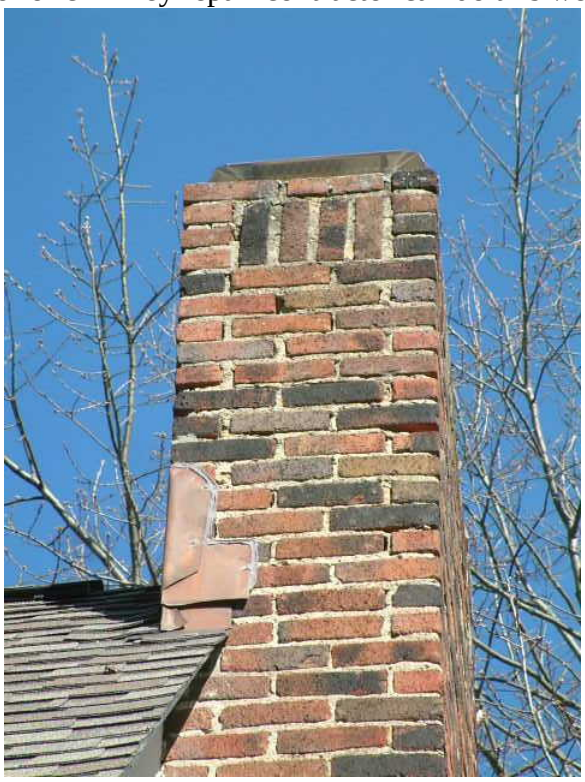
Foundation (continued): masonry. The exterior of the foundation appears to be in generally good condition. No unusual cracking, bulging or settlement were seen at the time of inspection.

The two pictures below show the window well on the northwest face of the house. The masonry walls are in fair condition. Cracking was seen in the masonry but it does not need to be repaired at the time of inspection. The right side picture below shows leaves and debris at the bottom of the well. I recommend that this should be cleaned and that the drain at the bottom of the well should be cleaned. Grating that can hold the weight of a person should be installed over this opening to prevent accidental falls. A competent and qualified masonry contractor or metal work contractor can do this work.

The window in the well has been painted and is opaque. I recommend it should be replaced with glass block masonry.

The picture above shows the old coal chute door on the southeast face of the house. I recommend it should be replaced with brick masonry or glass block masonry. Also, see the basement discussion.

Chimneys: The chimneys are built of fired clay brick masonry. They are in good condition except at the top of the fireplace chimney where minor tuck pointing is needed to fill gaps in the mortar as shown in the two pictures below. A competent and qualified masonry contractor or chimney repair contractor can do this work.



The chimneys are well flashed and counter flashed with aluminum sheet metal.

The picture above shows a gap between the siding and the masonry of the chimney on the northeast face of the house. I recommend that this should be sealed with caulking or a strip of wood to close the gap between the wood siding and masonry. This will help keep birds and bats out of the attic. A competent and qualified siding contractor can do this work.

Chimneys (continued): The chimneys should be checked annually for signs of cracked or crumbling mortar and tuck pointed as needed. Tuck pointing involves scraping loose and crumbling mortar from the cracks and joints between masonry units (bricks, stones, “cinder” blocks) and refilling them with fresh mortar.
Patios/Decks: The deck outside the southwest wall of the house is in good structural condition. However, the deck boards need to be scraped and recoated with paint or stain to retard weathering of the wood.

The picture above shows the canvas awning over the deck. The awning mechanism is in good condition and operates smoothly and easily. However, the awning needs to be replaced. It has been damaged by weather and birds nesting in the mechanism.

Driveways: The driveway is concrete. It is in generally good condition except at the two sections that are cracked shown in the two pictures below. The driveway is serviceable. The city of Shaker Heights will likely require breaking up the two cracked sections and replacing them.

I recommend filling the joints between slabs with good quality, exterior grade caulk or flexible concrete joint filler. The caulk or joint filler should have ultraviolet light resistance. Filling the joints will help prevent water from seeping underneath the slabs and freezing during the winter, which will cause heaving and cracking. I recommend that the use of de-icing salts should be limited to help prevent damage to the concrete surface.
Walkways: The walkway to the front entryway is built of sandstone. It is in good condition. No serious settlement or heaving of the stones was seen. The concrete stoop outside the front entryway is also in good condition. No cracking or settlement were seen.
Garage: The garage is a two-car structure attached to the house. No settlement was seen in the hollow clay tile masonry garage foundation at the time of inspection. However, settlement in garages is quite common because they are not usually built on full depth foundations extending below the frost line and are susceptible to freezing and thawing and changes in soil moisture content. This freezing and thawing of the water in the soil pushes on the foundation walls, which can cause cracking. Increased soil moisture can also cause a loss of bearing capacity in the soil, which results in settlement and cracking. The growth of tree roots is another cause of cracking of garage foundations.

Garage (continued): The garage floor is built of concrete. It is cracked and pitted but serviceable. I recommend that the floor should be rinsed each spring to remove salt residue. Coating the floor with a concrete sealer may help reduce damage from deicing salts.

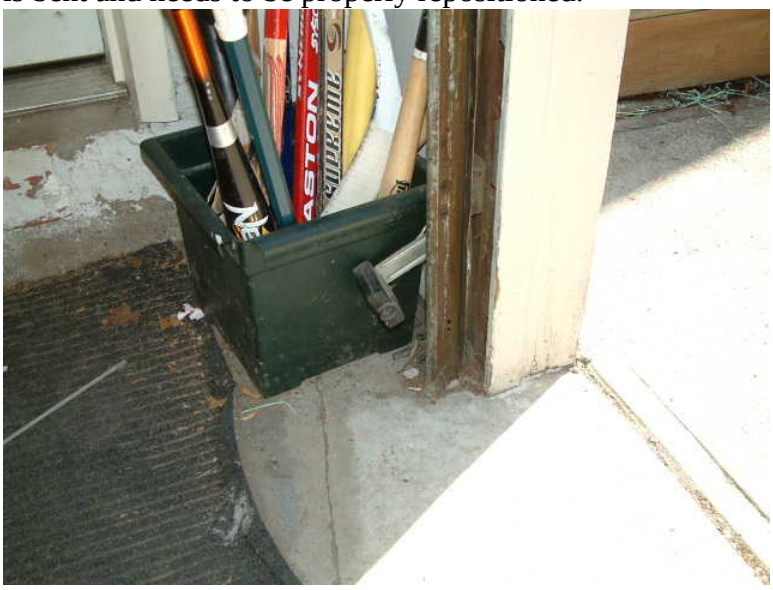
The walls and ceiling of the garage have been finished with plaster and drywall. They are in generally good condition. Cracking in the ceiling underneath the second floor laundry room has been caused by spills of water seeping through. The damage is not severe and can be scraped down and repainted. Other cracking in the ceiling has been caused by thermal expansion and contraction in the garage. It is cosmetic and can be patched if desired.

The vehicle door is a wood composite. It appears to be in poor to fair condition. A broken joint bracket was seen at the west end of the door as shown in the picture below. This needs to be repaired to prevent the door from collapsing.

The upper stiffener rail is loose at the west end of the door. This needs to be properly reattached with screws to prevent the door from cracking.

The door rolls smoothly and easily on the rails. The garage door opener is in good condition and operating properly. The two safety reverse mechanisms, electric eye and pressure sensitive, for the garage door opener

Garage (continued): are in good condition and operating properly. However, the East electric eye mechanism is bent and needs to be properly repositioned.



The man door in the Northeast wall is in good condition. It swings smoothly and easily, and latches securely.

I recommend that the electric outlets in the garage should be replaced with GFCI (ground fault circuit interrupter) type electric outlets for shock protection.

Grading/Landscaping: Any trees, shrubs or bushes that are growing closer than 12 to 18 inches from the walls of the house should be trimmed back to allow for proper air movement between the walls and plantings. This will allow the walls to dry after wind blown rainstorms. This will allow the exterior foundation masonry to dry after rains, slowing its deterioration. Large trees growing close to the house walls or garage should be removed entirely. Trees overhanging the roof should be trimmed away from the roof. Trees tangling wires running to the house should be trimmed or removed to allow the wires to pass unhindered. Soil or planting beds next to the foundation should be graded to slope away from the house so that water will drain away from the foundation. A gap of 6 to 8 inches should be maintained between the top of the soil and the bottom of the siding to help prevent easy access to the walls by wood destroying insects.

I recommend that ivy and soil against the siding along the northwest wall of a house should be removed and drawn down to prevent rotting of the siding.

Small trees growing near the northwest wall of the house should be cut down and removed.

Water/Gas/Electrical/Telephone/Television service: The water supply piping and gas supply piping enter the house underground. They appear to be in generally good condition.

The electric power cables run to the house from a poll at the West corner of the property. The left side picture below shows that the power cable bracket on the house has been torn off the wall; probably during a storm. I recommend this should be firmly reattached to the wall for safety. The electric power utility should be contacted about reattaching this cable.

The right side picture above shows the electric service entrance mounted on the northwest wall. It appears to be in good condition and is firmly anchored.

Picture above shows the electric power cables tangled in tree branches along the northwest property line. I recommend that the branches should be trimmed to allow the cable to pass to the house unhindered.

Water/Gas/Electrical/Telephone/Television service (continued): The left side picture below shows the TV cable and data services entrance mounted on the northwest wall. It appears to be in good condition and firmly anchored. The right side picture below shows the telephone service entrance mounted on the northwest wall. It is in good condition.

Consideration should be given to rationalizing the television and telephone wires mounted on the northwest wall.

The GFCI (ground fault circuit interrupter) type electric outlet mounted on the southwest wall at the deck is defective and needs to be replaced.

The GFCI type electric outlet on the Northeast wall near the front entryway is in good condition and operating properly.

Roofing:

Covering: The roof covering is asphalt shingles and rolled asphalt roofing. The shingles are in good condition. No loose or missing shingles were seen at the time of inspection. There is one layer of shingles on the roof.

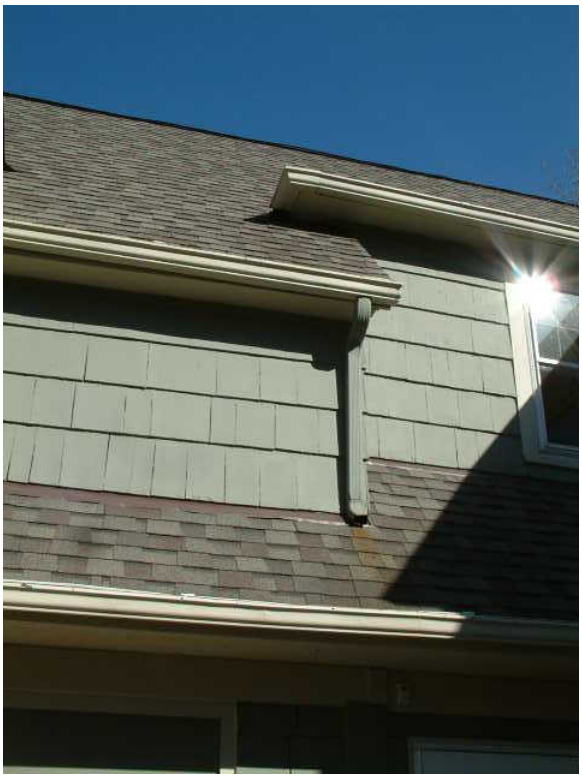
The rolled asphalt roofing appears to be in good condition. No obvious damage was seen to the rolled asphalt roofing at the time of inspection although it could not be viewed directly.

I estimate that with normal wear, the shingles should last approximately 20 years. The rolled asphalt roofing may last 10 years. Consideration should be given to replacing the rolled asphalt roofing with a rubber membrane in a few years.

Structure: The roof structure appears to be in good condition. No unusual waviness or sagging was seen in the roof decks or at the peaks of the roof. Consideration should be given to installing a hatch to the flat roof in the attic. Also, see the attic discussion.

Downspouts/gutters: The downspouts and gutters are steel. They appear to be in fair to good condition. They are beginning to rust. I recommend that they should be cleaned of leaves and debris at least once per year. Strainers should be installed in the tops of the downspouts to help prevent leaves and seeds from getting into the underground foundation drain system.

Shingles are a water resistant, not waterproof, covering. Excessive flow of water on the shingles, such as discharge from a downspout or open-ended gutter, can prematurely wear the shingles. I recommend that the open and gutters should be sealed and have downspouts attached to drain directly to the lower gutters. The right side picture below shows an upper downspout that needs an extension to deliver water directly to the lower gutter.



Downspouts/gutters (continued): The short piece of gutter shown in the picture below can be left to drain down the shingles lower gutter.

The discharge of gutters or downspouts onto a lower roof or the ground should be avoided whenever possible. Such conditions increase the rate of roof wear and the potential for backup or ice-dam problems. Roof-drain discharge should be kept away from flashed or roof junction areas. Consistently overflowing gutters can create dampness problems in basements and crawlspaces, and settlement and cracking in foundations. Each situation must be evaluated based on the conditions present. Any evidence of regular overflow, roof or structural damage, or leakage constitutes a significant deficiency that should be addressed before any additional damage occurs.
Flashing: Where the sloping roof rises parallel to a wall the shingles are properly step flashed and counter flashed with the siding.

Where the sloping roof intersects perpendicular to a wall the shingles are properly flashed with aluminum sheet metal under the siding and over the shingles.

The valleys in the sloping roof to sloping roof intersections are flashed with aluminum sheet metal. I recommend that these should be checked annually for signs of deterioration and cracking.

The drip edge flashing at the rake edges (gable ends) of the roof is in good condition.

Overhangs/Cornices/Eaves: The eave soffits (underside surfaces of the roof overhangs) are generally well painted and in good condition. However, the picture below shows possible water damage from a clogged gutter that is backing up spilling water behind on to the fascia and into the soffit. This could also be damage from an ice dam during the winter.

Penetrations: The 3 plumbing (drain, waste and vent, DWV) stacks are in good condition and are properly flashed.

Antennae: None seen.

Basement: A special concern regarding basements and flooding in general: Even if a basement is perfectly clean and dry at the time of inspection, basements should be regarded as likely sources of water entry around the foundation or through the floor. It should be regarded as fact that basements are not water-tight vessels and all exhibit some form or amount of water entry under wet conditions. Basement walls frequently have cracks and holes that run, weep or leak. The causes of water entry vary and remedies range from collection and extraction systems to ablative coatings. No leakage remedy is fail-safe in all conditions and basement finishing and use for storage should always be regarded as a risk. Among other features, water lines, gas lines and sewer pipes penetrate the walls and floors and can be water entry sources. Drain back-ups can be another. In nearly all cases, the homeowner's best recourse is to manage water exposure and entry by routing downspouts at least six feet away from the foundation if the downspouts are not connected into the foundation drainage piping. Also, having a soil grade that slopes away from the house at a rate of one inch per foot is advised. Installing a water extraction system (a sump) may be advisable in the wettest cases. Favorable findings and conditions at the time of inspection should not be interpreted as a guarantee that a basement would never leak

Interior foundation/retaining walls: (settlement/cracking?) The interior foundation is built of hollow clay tile masonry. The walls have been covered with plastic sheeting similar to the process used by Ohio State Waterproofing Company. The plastic sheeting appears to be in generally good condition. No evidence of unusual bulging or settlement were seen through the plastic sheeting. The House foundation appears to be in good condition.

Most of the basement walls are finished with drywall built on steel studs in front of the plastic sheeting. They appear to be in generally good condition. No evidence of unusual cracking, bulging or settlement of the finished walls were seen through the drywall.

The basement walls are approximately 12 inches thick. Soil is retained to approximately the 6 feet high.

Dampness/Rotting: No dampness was seen in the basement at the time of inspection. However, I suggest having the exterior foundation drains and sanitary sewer snaked or jet flushed clean to the street. This will help to minimize any water penetration into the basement. The downspouts may be temporarily disconnected so that a snake can be run into the foundation drain risers. The estimated cost for snaking could be as much as $500.00. The city or town service department may help with the sanitary sewer cleaning.

Interior storm drain piping has been installed underneath the basement floor at the parameter of the walls. This piping drains to the sump pump at the east corner of the basement. The piping appears to be in good condition.

No rotting of cellulose based materials such as wood, paneling, paper on drywall or natural fiber carpeting were seen at the time of inspection.

No laitance was seen. Laitance is a whitish or yellowish crystalline efflorescence that appears to "grow" out of the wall or floor. It is caused by moisture penetrating the masonry or concrete and leaching the lime out of the cement, mortar and masonry. When the moisture evaporates, the crystals are left behind on the wall or floor. It is not toxic and can be brushed off the wall or floor. It will recur as long as the moisture penetrates the wall or floor and it may be very difficult and expensive to stop it completely.

If the masonry walls are to be painted, I recommend that Dry-Lok type paints should not be used on the interior surface of the walls because they can trap any penetrating moisture against the walls, which may increase deterioration.

Flooring: The basement floor is concrete. It is cracked but appears to be in generally good condition. No evidence of seepage was seen at the time of inspection.

If carpeting is considered as a floor covering, it should have no natural fibers in it. The carpeting and padding should be completely synthetic. This will help avoid the growth of mold.

First floor beams and joists/columns: The steel columns and beams supporting the first floor framing are in good condition. The wooden joists supporting the first floor are also in good condition. No unusual sagging, cracking or twisting was seen at the time of inspection.
Windows: The picture below shows the Northwest side basement window opposite the window well. I recommend that this window should be replaced with glass block masonry. The duct in the upper left of the picture is the exhaust from the kitchen stove fan.

The other windows in the basement have been replaced with glass block masonry. They are in good condition.
Miscellaneous: The picture below shows a rat trap in the southwest storage room of the basement. This trap is energized and rat droppings were seen on the floor around the trap. I recommend that the House should be treated for rodents by a competent and qualified pest inspector.

Miscellaneous: The two pictures below show cleanout doors for the ash pit below the fireplace. They are in fair condition.

Notes on toxic mold contamination in houses: Mold uses cellulose, found in natural fibers, wood and paper, as a food source. All basements have some elevated levels of moisture that will be absorbed by natural fiber carpets and create the preconditions for mold growth. *No mold was seen or smelled in the basement.*

Stachybotrys Chartarum (atra) is a greenish-black fungus found worldwide that colonizes particularly well in high-cellulose material, such as straw, hay, wet leaves, **dry wall, carpets with wool, cotton, jute or silk fibers, wall paper, fiber-board, ceiling tiles, thermal insulation,** etc. The fungus (mold), before drying, is wet and slightly slimy to the touch.

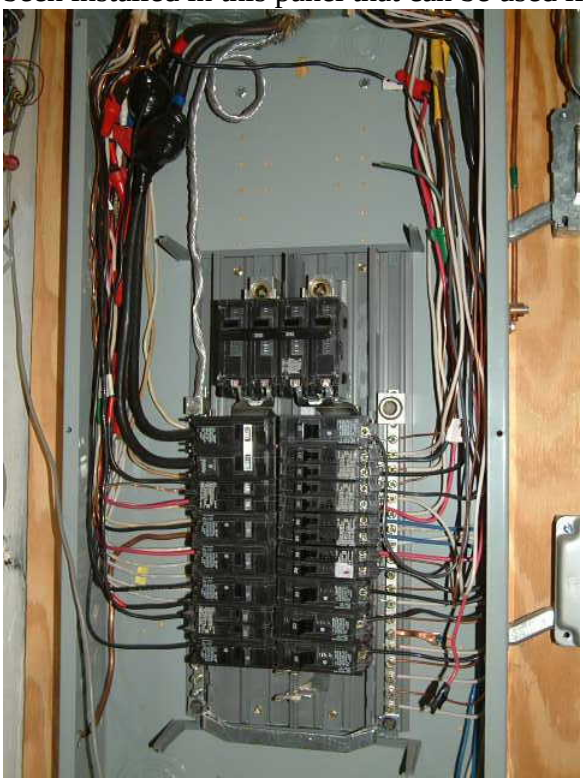
There are about 15 species of Stachybotrys, with a world-wide distribution. The toxic mold grows in areas where the relative humidity is above 55%. This type of fungus does not grow on plastic, vinyl, concrete products, or ceramic tiles. It is not found in the green mold on bread and cheese or the black mildew on shower tiles.

The toxic mold environmental risk may be one of the next major real estate "due diligence" concerns, especially in property development areas where major flooding has occurred. The problem is that this not only includes known residential and commercial flood areas incidents, but also numerous minor water releases due to plumbing failures, conductive condensation, house water leaks and accidents. The toxic mold concern could also be a problem where fires occurred at residential properties.

Electrical:

Service capacity: 220Volts; 100 amps.

Service panel: The main panel and circuit breakers are in good condition. A 200 amp main circuit breaker has been installed in this panel that can be used if the power service is upgraded.



No electric hazards were seen in the main panel at the time of inspection.

The electric system is properly bounded and grounded to the cold water piping.

Circuit distribution: No double tapped circuit breakers were seen. A double tap is more than one "hot" wire connected to the same fuse or circuit breaker terminal. This may cause the double tapped fuse to blow or circuit breaker to shut off when both circuits are being used. In some cases larger fuses or circuit breakers are installed to keep the circuits running and at that point there is no longer any overcurrent protection for the wiring and it becomes a fire hazard. Double taps are also an indication that more circuits are needed.

Condition of visible wiring: The wiring in the house is “knob and tube” style, sheathed non-metallic cable (Romex), and some is enclosed in metal conduit.

Basement: Any sheathed cable wiring that runs below the level of the bottom of the floor joists or outside the envelope of the wall studs should be in conduit for safety. In addition, any wiring that can be easily bumped, disturbed or accidentally cut should be in conduit for safety. The picture below shows wiring coiled behind the drywall in the southwest storage room. I recommend this should be properly secured by a competent and qualified electrician.

1st floor: All three pronged electrical outlets should be properly grounded. If they cannot be grounded they should be changed to two pronged outlets. No ungrounded three-pronged outlets were found. Also, see the kitchen and bathroom discussions.

2nd floor: All three pronged electrical outlets should be properly grounded. If they cannot be grounded they should be changed to two pronged outlets. No ungrounded three-pronged outlets were found.

I recommend that the receptacle at the laundry area should be replaced with a GFCI (ground fault circuit interrupter) type outlet for shock protection.

Also, see the bathroom discussion.

Condition of visible wiring (continued): *3rd floor/attic:* Electric wiring for the former exhaust fan in the attic has been left unprotected. I recommend it should be properly terminated in a sealed junction box. A competent and qualified electrician can do this work.

Notes on knob and tube style wiring: Knob and tube style wiring should be controlled in the circuit breaker panel or fuse panel (service panel) by circuit breakers or fuses rated at no more than 15 amps. This will help prevent excessive heat build-up in the knob and tube branch circuit wiring that could lead to a fire. If a knob and tube branch circuit frequently causes circuit breakers to trip or fuses to blow with a 15 amp circuit protection, the circuit needs to be reworked by a competent and qualified electrician to install additional circuits for the required electrical current needs. This work may also require the installation of additional service panels. Replacing 15 amp circuit breakers or fuses controlling knob and tube wiring branch circuits with circuit breakers or fuses rated higher than 15 amps risks excessive heat buildup and possible fire. A competent and qualified electrician should be consulted about any work done to knob and tube style branch circuit wiring.

Other reasons for fires caused by electrical wiring include but are not limited to: overloaded branch circuits (drawing too much current through too small wires), poor or improper splices, short circuits, flammable materials contacting damaged wiring.

Plumbing:

Water heater: The water heater was installed in 1998. Gas fired water heaters have an average life span of about ten years. No carbon monoxide or gas leaks were detected at the time of inspection. The flue draws combustion gasses up the chimney well. The burner is in good condition and well adjusted. The temperature and pressure relief valve is properly piped to within 6 to 12 inches of the floor.

The dip tube is not checked during the home inspection. A dip tube extends from the cold water inlet to near the bottom of the tank to prevent cold water from cooling the hot water near the top of the tank. Some water heaters manufactured between 1992 and 1999 may have defective dip tubes. I recommend contacting the manufacturer of the tank about the need for replacing the dip tube. I recommend that the water heater should be flushed to help remove sediment in the tank.

Capacity: 50 gallons.

Type: Gas fired.

Input BTU/Hr.: 40,000.

Interior Piping: The water supply piping is copper. The incoming water main is located behind a wall near the north corner of the basement. The gas supply piping is steel. The gas meters located behind the wall near the north corner of the basement. The drain, waste and vent (DWV) piping is cast iron, steel and PVC plastic.

Basement: The picture below shows the gas meter.

The picture below shows the water meter. The water and gas meters are accessible through panels in the northeast wall of the basement.

Interior Piping (continued): *Basement:* The sink faucet in the water heater room in the basement is leaking on the left side fitting.

1st floor: The picture below shows the sink drain piping underneath the kitchen sink. The compression nut on the left down to is cracked and leaking. The compression nut at the bottom of the tee fitting is missing. I recommend that this drain piping should be reworked. The sink drain piping underneath the kitchen sink, shown in the picture below, is located below the tailpipe section that penetrates the rear wall of the sink cabinet. This means that the sections of pipe below the tailpipe are always filled with water. There are many joints and fittings in this arrangement that could begin to leak and cause water damage. I recommend that the piping should be reworked by a competent and qualified plumbing contractor to raise these sections of pipe above the tailpipe and reduce the number of connections and fittings to a minimum.

Interior Piping (continued): *1st floor:* The kitchen sink faucet is loose on the sink.

Also, see the kitchen and bathroom discussions.

2nd floor: I recommend that the washing machine located on the second floor should be placed in the pan to control leaking. Also, see the bathroom discussion.

3rd floor/attic: The plumbing vent stacks are in good condition. No leaks were seen at the penetrations through the roof.

Water pressure: The water pressure was tested at 100 pounds per square inch at the time of inspection. I recommend that a pressure regulator should be installed on the cold water piping above the water meter to reduce the pressure to approximately 65 to 80 pounds per square inch. Reducing water pressure will help to save automatic valves, valve fittings and hoses that are plastic or rubber. Continuous high-pressure on valve components will permanently stretch or disfigure them over time leading to failure of the valves. High pressure on hoses will eventually burst the hoses. A competent and qualified plumbing contractor can do this work.

Floor drains/sewer cleanouts: There are floor drains in the water heater room and the recreation room of the basement. A bucket of water should be poured into these drains at a minimum of every month to keep the traps filled with water if they are not used regularly.

Floor drains/sewer cleanouts (continued): I recommend that this drain cover located in the middle of a recreation room floor should be replaced with a tight fitting grate to help prevent rodents from entering the house.

The picture below shows the sump pit located behind the wall at the east corner of the basement. The sump pump works properly and drains it quickly and quietly.

Consideration should be given to purchasing an emergency power supply for the sump pump and to purchasing a reserve sump pump.

Valves (All valves should be turned every 6 months or so, especially those on water lines. Those that cannot be turned should be replaced. Those that leak from the handle stem may simply need to have the stem nut tightened. If the valve still leaks after tightening the stem nut, the stem packing should be replaced): No leaking valves were seen at the time of inspection.

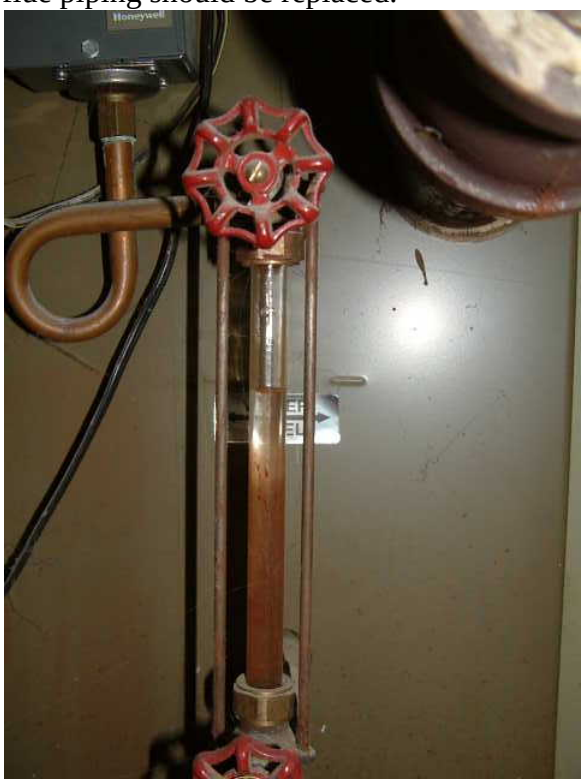
Notes about cross connections in plumbing systems: Care should be taken to prevent the occurrence of cross-connected water supply systems. A cross-connection means that wastewater or contaminated water can be potentially siphoned back into the potable water supply system. Serious health problems can occur from cross-connected plumbing. Some examples of potential cross connections are hand-held shower lines that can be immersed in tub water, spigots in sinks or tubs that are below the level of the overflow or spigots that have hoses extending to the bottom of the sink, broken piping running through fields and pastures, and pumps that are not fitted with backflow prevention devices or vacuum breakers.

Notes about underground and underfloor plumbing: Storm water piping is normally buried in the soil around the outside of the house foundation. It then normally runs underground to city storm sewers or yard area discharges. Sanitary waste piping is normally placed under the basement or crawlspace floors until it exits past the foundation walls where it runs underground to city sewers or septic systems. This piping is usually made of cast iron or clay tile for older houses. During the mid 1970s it changed to PVC plastic for newer houses.

Direct inspection of this piping is beyond the normal scope of a home inspection. The condition of underground piping can only be inferred by inspection of the foundation walls, basement floors and yard areas, and by running water into the sanitary system. Storm water piping and sanitary waste piping are usually, but not always, buried deep in the ground (6 feet or more) as they run away from the house foundation. The condition, location and connections of such piping cannot usually be determined in the course of a normal home inspection. As stated in the **Basement/dampness/rotting** discussion above, I recommend that the storm water piping system and sanitary waste piping system should be snaked or jet flushed clean to their terminations at the street, at the septic system or yard area discharges by a competent and qualified plumbing contractor. This will help to determine the condition and functionality of the piping systems.

Clay tile piping is highly durable and can last and operate properly for decades if maintained by occasional cleaning. Cast iron piping can also last many years. PVC plastic is a durable new product that should give decades of service. However, buried piping of any age is subject to many types of problems including crushing and breakage, filling with sediment or other obstructions, broken connections, illegal or improper connections between the two systems (especially in older houses where combined sewers may exist) and backflow from downstream waste piping systems. One or more of these problems may render the piping systems non-functional, cause backup into the basement and cost several thousand dollars to repair or rebuild. Detecting these types of problems during a normal home inspection is unlikely.

Heating, Ventilating, and Air conditioning:
Type: The heating system is gas fired steam.
Input BTU/Hr.: 225,000.
Gas Dryer BTU/Hr.: N/A.
Combustion air notes: The gas-fired furnace and water heater operate in the basement and use inside air for combustion. It does not appear that a provision has been made for an adequate combustion air source for this space. (The total required volume of air for the furnace and water heater would be approximately 13250 cubic feet. The volume of the basement is approximately 6000 cubic feet, which is approximately 45 percent of what is needed.) An adequate combustion air source serves 2 primary purposes: (1) It helps the appliances operate at full efficiency; and (2) It helps prevent hazardous conditions to the occupants that can occur if the appliances leak carbon monoxide or begin to backdraft into this semi-confined space. If the windows are replaced with glass block masonry this will make the basement significantly more airtight. I recommend that a consultation, with a licensed and competent heating contractor and the city building code department, should be arranged to determine the proper amount and location of the additional combustion air sources. Any additional sources should be installed as soon as possible. A solution may be as simple as keeping the door from the first floor to the basement open.
Approximate age: 1988. Boilers will last 40 to 60 years if maintained in good condition.
Condition: The boiler appears to be in good condition. No evidence of dry firing (heating the boiler without water in it) was seen. No carbon monoxide or gas leaks were detected at the time of inspection. The flue draws combustion gasses up the chimney well. However, the left side picture below shows the flue piping at the top of the furnace casing to be very rusty. I recommend that the flue piping should be replaced.



The right side picture above shows the water level in the sight glass. I recommend that the boiler should be serviced before the next winter so that the water levels can be properly set and the boiler and burners cleaned. The water level was too high in the boiler at the beginning of the inspection.

The burners are in good condition but need to be cleaned of rust.

I recommend that an emergency cut off switch should be installed near the boiler. A competent and qualified heating and ventilating contractor can do this work. I recommend that a competent and qualified heating and ventilating contractor should clean and check the boiler annually.

Piping/Ducting: The steam distribution and return piping is steel. The steel piping is covered with insulation that contains asbestos. The insulation has been removed from the steam piping in the basement. This results in a small inefficiency in the operation of the system but provides some heat for the basement.

The asbestos insulation at the garage ceiling appears to be in generally good condition. However, if removal of the asbestos is desired, I recommend that a competent and qualified asbestos abatement contractor should do the work.

Fiberglass insulation can be applied to the steam piping in the basement if desired.
Radiators/Vents: The radiators are in good condition. No evidence of leaking was seen at the time of inspection.
Valves: All valves on radiators should be turned every 6 months or so. Those that cannot be turned should be replaced. Those that leak from the handle stem may simply need to have the stem nut tightened. If the valve still leaks after tightening the stem nut, the stem packing should be replaced.
Thermostat: The thermostat is a programmable heat/cool type. It is in good condition and operating properly.
Air conditioning: None. However, there is room for an evaporator and air handler in the attic.

Kitchen:

Appliances: The garbage disposer is in good condition. It runs smoothly and powerfully.

The dishwasher is in fair condition. It runs smoothly but noisily. I recommend that it should be repaired by a competent and qualified appliance repair technician. No leaks were seen in the water supply or drain tubing connected to the dishwasher. I recommend that the drain hose for the dishwasher should be clamped to the underside of the sink cabinet to produce a downward slope into the garbage disposer. This will help prevent the possibility of wastewater being drawn back into the dishwasher.

The cooktop stove burners are in good condition and operating properly.

If your refrigerator has a water supply line, pull the refrigerator out from the wall of the cabinet periodically to check that the line is not leaking and creating the conditions for mold growth. Some of the worst cases of mold contamination in houses have been caused by leaking water lines soaking the drywall and creating the conditions for mold growth.

Cabinets: The cabinets appear to be in fair condition. The doors swing easily and smoothly. However many loose and sagging doors were found at the time of inspection. They need to be tightened with a screwdriver. The picture below shows the cabinets at the northeast wall of the kitchen to be sagging. I recommend that these should be properly reattached to the wall. A competent and qualified carpenter can do this work.

The drawers roll easily and smoothly. However, many loose handles and misaligned drawers were seen at the time of inspection.

The countertops are level and smooth except on the island where the weight of the ceramic tile has caused the cantilevered section of top to sag.

Exhaust fans: The exhaust fan in the cooktop blows air to the exterior. It appears to be in good condition. The fan runs powerfully and smoothly.

Electrical /Plumbing (GFCI?): The two GFCI (ground fault circuit interrupter) type electric outlets in the kitchen are in good condition and operating properly.

The picture below shows the sink drain piping underneath the kitchen sink. The compression nut on the left down to is cracked and leaking. The compression nut at the bottom of the tee fitting is missing. I recommend that this drain piping should be reworked. The sink drain piping underneath the kitchen sink, shown in the picture below, is located below the tailpipe section that penetrates the rear wall of the sink cabinet. This means that the sections of pipe below the tailpipe are always filled with water. There are many joints and fittings in this arrangement that could begin to leak and cause water damage. I recommend that the piping should be reworked by a competent and qualified plumbing contractor to raise these sections of pipe above the tailpipe and reduce the number of connections and fittings to a minimum.

Attic spaces:

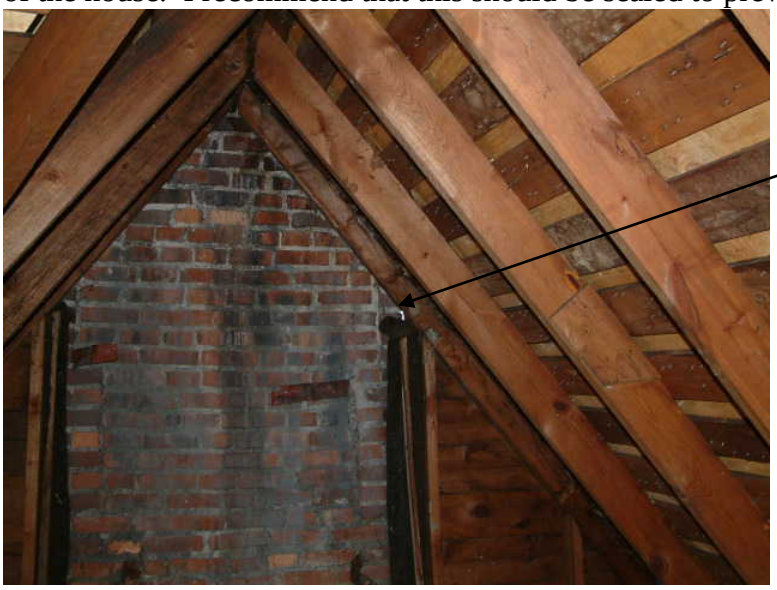
Ventilation: Ventilation in the attic is provided to the ridge vent at the peak of the roof. I recommend that ventilation should be increased with soffit venting at the eaves or additional roof venting.

In order to reduce the potential for moisture build-up in an attic, standard ventilation requirements call for a net-free ventilating area for enclosed attic spaces of not less than one square foot for each 150 square feet of attic floor area.

Insulation: Shredded fiberglass insulation has been placed on the "floor" of the attic. The insulation is approximately 5 inches deep. I recommend that additional insulation should be installed for energy efficiency. Total insulation depth should be approximately 12 to 13 inches.

Framing: No sags, twists, or cracks were seen. The rafters and roof deck appear to be in generally good condition. Evidence of past leaking was seen around the chimney and on the framing of the flat deck roof.

The picture below shows daylight coming into the attic at the joint between the chimney and siding on the front of the house. I recommend that this should be sealed to prevent birds or bats from entering the attic.



Framing (continued): Daylight was seen around the Northwest plumbing stack. No evidence of leaking was seen. I recommend that this should be properly re-flashed by a competent and qualified roofing contractor.

The picture below shows deteriorated roof decking underneath the flat deck roof. This should be checked annually for science of continuing deterioration.

Consideration should be given to installing a hatch through the flat deck.
Storage: None.

Electrical/plumbing: The 3 plumbing vent stacks in good condition. No leaks were seen at the penetrations through the roof.

Electric wiring for the former exhaust fan in the attic has been left unprotected. I recommend it should be properly terminated in a sealed junction box. A competent and qualified electrician can do this work.

The picture below shows the north bathroom exhaust fan discharging into the attic. I recommend that this fan should be directed to the exterior through a wall or roof to help prevent condensation in the attic.

Windows: None.

General Interior/Rooms:

Structural condition of walls, ceilings, floors, and stairways: The walls, ceilings and floors are in good condition. Normal and cosmetic cracking of plaster was seen in all rooms. Minor cracking of plaster was seen in the Southeast second floor bedroom closets; this is likely caused by past roof leaking.

Some sagging and misalignment of framing and floors were felt on the second floor. This is normal for an 84-year-old house. No structural distress was seen.

No unusual cracking, sagging, bulging or bounciness was seen or felt at the time of inspection.

The stairs are straight and plumb. The risers and treads are even and regular. I recommend that the railing at the top of the stairs should be attached to the wall with a bracket to stiffen the railing.

Doors/Windows: The interior doors are in good condition. They swing smoothly and latch securely.

The windows are in generally good condition. They are well painted and latch properly.

The French doors to the deck on the southwest side of the house are in fair condition. The storm door is not operable and will need to be replaced by operable screens.

Fireplaces: The fireplace in the living room is in generally good condition but sooty. It needs to be cleaned by a competent and qualified chimney sweep. The damper operates smoothly and easily.

<u>Bathrooms/laundry area:</u>
Plumbing/Electrical: *For the master bathroom on the second floor:* There is no safety handhold in the shower.

All plumbing fixtures are in good condition and operating properly.

The GFCI (ground fault circuit interrupter) type electric outlet is in good condition and operating properly.

The exhaust fan through the southwest wall is in good condition and operating properly.

For the main bathroom on the second floor: There is no safety handhold in the shower.

All plumbing fixtures are in good condition and operating properly.

The GFCI type electric outlet is in good condition and operating properly.

The exhaust fan discharges into the attic. I recommend it should be reworked to discharge to the exterior through a wall or roof.

For the half bathroom on the first floor: All plumbing fixtures are in good condition and operating properly.

The exhaust fan is in good condition and operating properly.

For the laundry room on the second floor: I recommend that the washing machine should be placed in a pan to help control spills.

I recommend that the electric outlets and laundry room should be replaced with GFCI type electric outlets for shock protection.