GENERAL BUILDING INSPECTION REPORT FOR
XXX South AAA Street, Seattle, WA.
FOR THE EXCLUSIVE USE OF Happy Clients

November 16, 2008
cover letter, 24 page report
OVERVIEW

The original envelope of this wood frame single-story home with concrete block basement foundation appears to be approximately 100 years old. The home originally has a post-and-beam foundation with a crawl space; the north end of the home and the basement are retrofit additions – although very old additions. Because the significant defects noted in the major components were much greater in number and significance, this house is deemed to be in very poor condition, relative to other properties of the same age and construction. Some of the construction methods and/or materials are used in a manner for which they were not designed or installed in a manner that is not in compliance with building regulations, indicating work that has been done by persons totally unqualified and unfamiliar with conventional building methods. These methods and materials also create concern over areas not visible and not inspected. It must be assumed that there is unconventional and improper construction that may only be discovered later. The degree of "caveat emptor" is always elevated when purchasing a home with this quality of refurbishing.

In order to acquire as much information as possible, the client should obtain copies of all relevant data, i.e., the Form 17, applicable permits, previous private inspection reports.

For orientation purposes, the front door faces south.

MECHANICAL SYSTEMS

PLUMBING

The visible plumbing system has a combination of copper and galvanized water supply lines, a combination of ABS plastic and cast iron drain-waste-vent lines, and a Richmond electric water heater of 50 gallon capacity. The water heater is approximately fourteen years old and is likely nearing the end of its useful life; the average lifespan of water heaters is eight to twelve years. Budgeting for a new unit in the foreseeable future would be prudent.

The water heater is equipped with a pressure relief valve and discharge pipe. The pressure relief valve is set to open at either 150 psi or 210 degrees F. Earthquake restraining straps have not been installed. Both elements are functional and set at 120°. The recommended setting for homes with children and the maximum allowable setting for rental houses under the state landlord-tenant act is 120 degrees F. This is to prevent the possibility of scalding from hot water coming directly from the water taps.
Water pressure measured 55 psi static with 40 to 80 being the normal range. Water volume (flow) is reduced at some fixtures when two fixtures are running simultaneously (see below). The main water shut off is located on the south basement wall.

Unless otherwise noted, the water meter at the street, the water line from the street to the house, and the plumbing fixture at the washing machine were not operated/evaluated; these items and the washer water supply lines are exempt from this inspection.

A note on galvanized water lines: low water volume will usually develop in time with galvanized water lines. These lines acquire a corrosion build-up on the inside of the pipe over time, reducing the water flow. When the water volume falls below "livable" levels, they will have to be replaced, and some of the water lines in this home appear to be at that stage. Additionally, the unions where sections are joined together (any threaded area) also corrode over time, having a tendency to leak. The typical life span of galvanized water lines is from thirty to fifty years.

Much of the plumbing and virtually all of the waste plumbing (DWV) is substandard and must be redone. The exceedingly poor quality plumbing work in this home indicates an absence of knowledge that is remarkable as well as hazardous to future occupants (the absence of P-traps at the bathing facilities will allow sewer gas – poisonous and explosive as well as fragrant – into the home).
Deficiencies in the plumbing system noted include, but are not necessarily limited to:

- convoluted waste piping from bathtub that prevents water from draining properly;
- and does not include a P-trap;
- no P-trap in master bath shower drain;
- “Y” fitting from main bath vanity installed backwards so water must flow uphill before draining;
- both the bathtub and shower drains leak;
- improperly fitted union;
- no venting for roughed in kitchen sink drain;
- vent for laundry incomplete and terminating in closet;
- flexible water hoses for laundry disappear into wall and cannot be checked for tightness or leaks, or shut off.
HEATING, VENTILATION, AIR CONDITIONING (HVAC)

This home is heated by an older first generation Payne/Carrier naturally-aspirated gas-fired, four burner, 125,000 BTU counterflow furnace with continuous pilot and a belt-driven forced air distribution system that is controlled by a Robertshaw thermostat. **The furnace appears to be in the range of forty years old. The age and deficiencies noted indicate that this unit is likely due for replacement as parts are most likely no longer available.**

**The furnace location is illegal; gas furnaces are not allowed in bedroom closets unless significant safety measures are taken (e.g. self-closing air-tight door, proper combustion air source, etc.).** *The gas line to the furnace has a small gas leak; this must be repaired as soon as possible to prevent “unplanned detonation” the gas company euphemism for explosion.*

**Removal of the furnace panel cover revealed a weak diffused or non-existent flame cone and fluctuating flame characteristics, indications of improper burning and the need for servicing and possibly new burners.** Due to the design, none of the heat exchanger is accessible to inspection without dismantling the furnace. **Radial play in the blower shaft and bearings is excessive and some wobble could be felt in the squirrel cage fan, and a noticeable growl could be heard from the cold air return.** There is no filter in place and the drive belt is cracked over half way through.
Payne naturally-aspirated furnace in bedroom closet

Temperature increase measured 81 degrees F., which is within the 70 to 100 degrees specified for this unit. Tests with the Bacharach Monoxor II detector revealed that the unit is releasing no carbon monoxide into the house; carbon monoxide in the house could indicate a defective heat exchanger. Using the TIF 8800 combustible gas detector, the gas supply lines were checked for natural gas leaks and none were detected.

Due to the defects noted, a qualified HVAC contractor should further evaluate this furnace and furnace installation and repair or service as necessary, with special attention to establishing the condition of the heat exchanger and bringing the heating system into compliance with local regulations.

It must be noted that this home has two full-height masonry chimneys, neither of which are visible in the home or basement. Most such chimneys require foundation support and are usually seen extending to the basement floor. The method of chimney support is therefore unknown; a written dialogue with the seller on this point is recommended.

Evidence of an underground fuel oil tank (a filler pipe protruding from the garage floor) was noted on the premises. Centennial Home Inspection Services, Inc. does not inspect, warrant, or otherwise address buried fuel tanks, but does advise its clients of their existence if noted, that some local agencies do have regulations regarding unused underground tanks, and that Washington State may address them in the Model Toxics Control Act. The client should request written confirmation that the tank has been properly decommissioned or removed and that the surrounding soil was tested for contamination.
ELECTRICAL

The 120-240 volt overhead electrical service is connected to a General Electric split bus 200 amp circuit breaker panel on the east wall of the basement. Removal of the service panel cover reveals aluminum 4/0 service entrance cable (from meter to panel), copper branch wiring (from panel to house), and a 100 amp sub-main disconnect for the household circuits. The system was grounded to the plumbing system but the system ground is no longer operational due to the insertion of plastic pipe between the grounding wire and the earth.

There are four generations of wiring in this home, the old knob and tube conductors, ungrounded fabric-insulated conductors, grounded fabric-insulated conductors and the updated NM or Romex plastic sheathed conductors.

The knob and tube wiring in the attic has been buried under the fiberglass batt insulation, a common but forbidden practice. It should also be noted that many insurance companies today will not insure homes with knob and tube wiring. A discussion with the client’s insurance vendor on this point is highly recommended.

There are no Ground Fault Circuit Interrupters (GFCIs) in this home. A GFCI is a safety feature that shuts off the power very quickly in an emergency (i.e., a toaster falling in a sink full of water). Current codes require GFCI protection at most exterior receptacles (1973), bathrooms (1975), garages (1978), kitchen receptacles, and crawl space and unfinished basements (1990). These requirements typically kick-in when remodeling is undertaken. GFCIs should be manually checked monthly to assure proper operation.
Inspection of the wiring and circuit breaker panel reveal amateur wiring and/or other deficiencies that include, but may not be limited to:

- a double tap in the panel that has;
- #12 branch conductors being fed by a 40 amp circuit breaker;
- live conductor not properly terminated;
- improper branch wiring components at exterior;
- exposed lamp fixture splice;
- energized knob and tube wiring buried under insulation in the attic;
- sump pump conductors at risk.

Due to the defects noted, a licensed electrician should be retained to survey this entire electrical system and make the necessary corrections.
EXTERIOR

WALKS/PATIOS AND DRIVEWAYS

The concrete driveway is in serviceable condition, although cracked in multiple places. Sealing the driveway cracks with epoxy is recommended to reduce moisture intrusion under the slab and prevent weed growth in the cracks. The block retaining walls at the driveway are not properly built (they should be level) but do not appear to be failing at this time. The settlement at the front walkway is significant and creates a trip hazard. The steps down to the sidewalk as well as the steps from the back door should have the requisite handrails installed.

![driveway retaining wall](image1) ![trip hazard near front porch](image2)

DRAINAGE/DOWNSPOUTS

The roof drainage could use attention. The reducers at some of the downspouts drop the size significantly, creating narrow passages that are easily obstructed. Some of the downspouts are not connected to either splashblocks or drain lines. This allows water to run directly into the soil at the foundation, possibly adding moisture to the basement or bearing soil under the footings. Splashblocks should be added to direct roof run-off away from the foundation, and the soil sloped for positive drainage away from the structure. Some of the downspouts do flow into below grade drain lines (BGDLs) that probably empty into a community storm drain. The BGDLs should be flushed annually with a garden hose to ensure that they are not plugged or collapsed. The operation and discharge of the underground drain lines is not included in the scope of this inspection. Plugged drains are a common cause of water leakage into basements and crawl spaces.
The run-off from the driveway is flowing into the basement, and neither the floor drain in the basement nor the sump-pump in the driveway is operational. The sump pump is not a professional installation as both the discharge hose and the wiring are at some risk from vehicle traffic. The pump should be properly replaced by a qualified drainage contractor and/or other steps taken to assure a dry basement.

reducers of questionable value

ponded water in basement (pump under grate)  non-functional sump pump
LANDSCAPING

The earth or groundcover is in contact with or in close proximity to the siding at random sections of the perimeter. A four to six inch clearance should be maintained between any earth, groundcover or foliage and any siding or wood members of the house. This aids in eliminating an attraction for wood-destroying insects or organisms. The earth or groundcover should be excavated away from the siding and the siding checked for deterioration. Any deteriorated material should be replaced.

Any foliage in contact with the siding should be pruned to permit the siding to "breathe". Any cellulose debris or untreated wood, such as firewood, should be stored at least ten feet from the house. This also aids in eliminating an attraction for wood-destroying insects or organisms.

BUILDING

Much of the cladding on this home is in disarray. Two sizes of clapboard siding were noted as well as some T-1-11 paneling mounted sideways on the rear wall. Much of the retrofit clapboard siding on the front of the home is badly deteriorated and due to be replaced. Much of the exterior shell is not weathertight. There are multiple areas where windows and/or doors have been moved or removed, and these remain obvious as the siding in these areas was patched in place. The eave areas are in serviceable condition but with no venting to the attic.
The framing of the front porch roof is substandard (a 4x4 is used as the main supporting beam) and could fail under a heavy snowload; it should be removed, replaced, or properly reinforced by a qualified and licensed contractor.

The rear deck and attached roof are in poor condition from both sub-standard construction and fungal decay and should be removed and/or replaced.
ATTIC/ROOF FRAMING/ROOF

The access to the attic is via a pass-through in the ceiling of the hallway. The addition attic is separated from the main attic by the original exterior wall; the area is inaccessible and was not entered and only viewed from the main attic and is therefore exempted from this report. There may be deficiencies in this area that would have a negative effect on the value of this home.

Entry to the main attic reveals original rafter and joist construction with 2x4 rafters 24 inches on center and 2x4 joists 16 inches on center. The plywood sheathing over the original 1x4 skip sheathing appears to be in serviceable condition.

There has been some unusual movement of the framing and resultant repairs or corrections of somewhat dubious validity. Where the top of the rafters come together at the ridge (or peak), the east rafters over the main area have dropped almost an inch in relation to the rafters on the west side. Some of the original joists have been removed, again from the east side. Retrofit support has been added in the form of plywood gussets at the peak, a 4x4 used as an offset ridge beam, 2x4 kickers in various areas and new 2x4 joists. The cause or reason for the original rafter movement was not apparent but could have been due to removal of the original joists. Whether or not the retrofit framing augmentation is adequate to arrest the framing movement can only be determined by a licensed structural engineer. If these modifications were not designed by a licensed structural engineer, then an engineer should be retained to further inspect/evaluate the framing changes to determine if the corrections are adequate and to issue a report that can be used at resale.

different views of retrofit roof framing & augmentation
The attic has four inch fiberglass batt insulation providing an insulating factor of approximately R-11. New homes require R-30 or more, so there is room here for improvement if the heating bills warrant. It should be noted that the existence of attic insulation hampers and in many cases prevents a visual inspection of the framing members.

Ventilation, consisting of six roof vents at the ridge and no eave vents, is marginal. Although it appears to be adequate to prevent condensation, it will not prevent significant heat build-up. The lack of airflow in the warm season can cause temperatures exceeding 120 degrees, which can lead to premature deterioration of the roofing. Attic ventilation should work similar to air flow through a chimney with cooler air coming through the lower (intake) vents normally situated in the eaves and the warmer air discharging through the higher vents (exhaust), normally roof, gable, or continuous ridge vents. The current rule of thumb is one square foot of unobstructed ventilation for every 150 square feet of attic floor area, divided roughly half and half between exhaust (upper) and intake (lower) vents. Increasing the air flow (adding roof vents or a fan at a gable vent and eave vents) is not very expensive and will increase roof life, increase energy efficiency, and lead to a dryer attic.

The roof consists of one tier of three-tab asphalt/fiberglass composition shingles. No significant defects were noted in the roofing or shingle installation but the counter-flashing at the chimney was omitted and the resultant voids sealed with mastic. Both chimneys are in deteriorated condition with soft and missing mortar and will need significant repair; the counterflashing should be replaced when the repairs are commenced.
The front porch roof covering is composed of layers of single-ply modified bituminous asphalt over a layer of fiberglass sheeting. Commonly called a "torchdown" roof, the material is usually guaranteed by the manufacturer for 12 to 15 years. Because ultraviolet rays can damage the asphalt, the roof should have been coated with a reflective material after a 60 day "curing" period; this is required by many manufacturers to keep the warranty in force. Some products, such as Reflective Emulsion #1845 by American Tar Co. are designed for this purpose.

No significant defects were noted in the aluminum gutters but most of the gutters are partially or completely clogged with moss and should be cleaned. Gutters are an integral part of the roof system and in order to properly maintain a roof, the gutters must be kept free flowing.
Although this home has a full sized concrete block basement, there is no access other than the automobile door. The door binds in the frame and does not latch, so security is a significant issue. The absence of any windows or secure coverings at all of the window bucks (rough openings) is also an open invitation to thieves.

The north concrete block stem wall has a horizontal fracture line in the mortar and evidences a slight rotation at the top. It appears that the concrete stoop is attached to the wall, either through friction or mechanical means and the wall is rotating with the stoop. Although movement is incremental, it will continue unless the stoop movement is arrested.

Because the home was originally built with a perimeter post and pier foundation, the original perimeter beams now rest on the concrete block stem walls. The interior foundation framing consists of 2x8 floor joists 16 inches on center mounted on 6x6 beams supported in turn by 6x6 posts. The beams are significantly overspanned and therefore will evidence excessive deflection. One of the beams is also excessively cantilevered, where one end is unsupported. Some intermediate posts appears to have been removed. No restraining cleats were noted securing the beams to the posts; adding cleats or gussets at the attachment points would increase lateral stability in case of earth movement. A qualified and licensed foundation contractor should be retained to survey the foundation framing and make corrections. Some anchor bolts securing the perimeter beams to the foundation walls were noted. The subfloor was spot checked in random areas; no significant defects were noted.
Due to the amount of water flowing into the basement from the driveway, it could not be determined how much moisture is entering from other sources. The sump pump in the driveway is not functional. The efflorescence on the walls does indicate some dampness periodically has wicked through the masonry. A licensed foundation drainage contractor should be retained for consultation regarding creating a dry basement. The client should be aware that basement structures were not necessarily designed to be watertight at the time this building was constructed and that periodic moisture infiltration should be anticipated in its present condition.

INTERIOR

There are no smoke detectors in this home. Current regulations require smoke detectors on each floor and in each bedroom and are recommended in these areas in older homes.

All of the dual pane windows in this home are new, so requesting copies of the material and installation warranties is highly recommended.

LIVING/DINING/ENTRY

The entry door is equipped with a deadbolt lock but the bolt is missing and cannot be used. There is no coat closet. No significant defects were noted in the glass or seals of the dual pane windows. The electrical receptacles tested have correct polarity and grounding. Heat for this area is provided by two forced air heat registers.

KITCHEN/EATING SPACE/BUTLERS PANTRY

The right rear range element did not get hot; all of the other elements of the Roper range and oven are functional, as is the two-speed recirculating ventilation fan and cook light. Because the cooking fumes and steam are not discharged to the exterior, homes with recirculating fans are somewhat more prone to mildew problems, especially at the windows. Augmenting air circulation by keeping windows open, frequent and lengthy use of bathroom fans, and/or “airing out” the house will help mitigate the moisture problem. The Kenmore refrigerator is in operating condition but the water has not been connected for the ice maker.

The stainless steel sink has not been installed or plumbed, and no provision for the atmosphere venting of the waste line was noted. There is no dishwasher or garbage disposal in place. The one-piece laminate countertops have been roughly placed in position but none of them are yet secured to the cabinets.
The electrical receptacles tested have correct polarity and grounding but are not GFCI protected (see ELECTRICAL section). No significant defects were noted in the glass or seals of the dual pane windows. The sheet vinyl floor feels firm and there is no visible evidence of moisture damage. **The ceiling is in very poor condition with uneven ceiling tiles and what appears to be exposed nail heads securing loose tiles, and warrants attention/repairs.** Heat for this room is provided by a forced air heat register.

**The laundry facilities are defective and should be replaced.** Although the mismatched Kenmore washer and General Electric dryer are functional, the **washer hoses are routed to the inside of the wall and the control valves are not accessible.** The flexible plastic dryer duct (now illegal) is routed through the wall into the bedroom and then down through the bedroom floor into the basement, where the duct terminates, discharging warm moist air and lint into the basement.

The exterior door to the deck is not deadbolt equipped.

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**MASTER BATH**

**The fit and finish of the components – including the walls and ceilings, is of poor, unfinished and/or amateur quality; this room will require a total do-over.**

No significant defects were noted in the one-piece fiberglass shower stall or fixtures.

The one-piece cultured marble sink/vanity top and faucet are in serviceable condition but **the sink is not secured to the cabinet.** There are no noticeable leaks in the faucet, the P-trap drain assembly, or the water supply lines.
The commode functions properly and is solidly mounted **but the tank is spaced from the wall** – and possibly reinforced by a wood block spacer. Water volume (flow) is adequate when two fixtures are used simultaneously.

The door lock is functional. There is no ventilation fan. The electrical receptacle has correct polarity and grounding **but is not GFCI protected.** No significant defects were noted in the glass or seals of the dual pane windows. There is no heat source for this room.

**MASTER BEDROOM**

No significant defects were noted in the glass or seals of the dual pane windows. **The entry door does not latch; there is no striker or receiver relief cut into the jamb.** There is no closet; there is a vaguely and improperly framed closet area. The electrical receptacles tested have correct polarity and grounding. Heat for this room is provided by a forced air heat register.
HALL BATHROOM

No significant defects were noted in the enameled steel bathtub but the five-piece shower surround is not well adhered to the wall. The hot water control valve has a significant leak and the bathtub drains extremely slowly (see PLUMBING section).

The one-piece cultured marble sink/vanity top and faucet are in serviceable condition but the sink is not secured to the cabinet. There are no noticeable leaks in the faucet, the P-trap drain assembly, or the water supply lines.

The commode functions properly and is solidly mounted. Water volume (flow) is adequate when two fixtures are used simultaneously. Moisture readings in the underlayment at the bathtub and commode were normal.

There is no door lock (a surface-mounted latchbolt provides privacy). There is no ventilation fan. The electrical receptacles have correct polarity and grounding but is not GFCI protected. The light over the bathtub is not functional. No significant defects were noted in the glass or seals of the dual pane windows. There is no heat source for this room.
SECOND BEDROOM (west)

No significant defects were noted in the glass or seals of the dual pane windows. The entry door does not latch properly. The unfinished closet framing has been placed over the carpet so it should be removed and replaced when the carpet has been removed. This closet is only 20½ inches deep and 70½ inches high. The electrical receptacles tested have correct polarity and grounding. Heat for this room is provided by a forced air heat register. This room should not be used as a bedroom as long as the furnace is in the unprotected closet.

unfinished closet with substandard framing built on top of carpet with 5’ 10” high opening

THIRD BEDROOM (south)

No significant defects were noted in the glass or seals of the dual pane windows. The entry door binds and does not close and there is no closet door. The electrical receptacles tested have correct polarity and grounding. Heat for this room is provided by a forced air heat register.
WOOD-DESTROYING ORGANISM REPORT

No evidence of wood-destroying insects was noted. It should be noted that many wood-destroying insects are dormant in the cold months and may appear, especially if there are conditions conducive to wood-destroying pest infestation. Centennial Home Inspection Services, Inc. is not responsible for detecting wood-destroying insects during the dormant season. Conditions conducive to pest infestation noted on this property include but may not be limited to:

- decayed wood in deck;
- moisture intrusion into basement.

Eliminating the conducive conditions is recommended to prevent and/or eliminate an attraction for wood-destroying insects/organisms.
SUMMARY

1. Items deemed most in need of attention* or close monitoring:
2. Correct plumbing deficiencies, as noted.
3. Correct heating deficiencies, as noted.
4. Correct electrical deficiencies, as noted.
5. Correct drainage deficiencies, as noted.
6. Correct exterior cladding deficiencies as noted.
7. Correct roof and roof framing deficiencies, as noted.
8. Correct foundation, foundation drainage, and foundation framing deficiencies, as noted.

* Summary items are life-safety items, items believed to exceed $2500.00 cost-to-correct, or, that if not corrected, will lead to further deterioration of this or some other component. The summary is intended as a guide to the client in determining the urgency and/or magnitude of possible repairs. Licensed and qualified contractors should be used for all repairs.
DISCLAIMER
Please read

Centennial Home Inspection Services Inc. is a member of and adheres to the professional Standards of Practice and Code of Ethics set forth by the American Society of Home Inspectors (ASHI). All opinions, observations, and conclusions in this inspection are based on the expertise of Centennial Home Inspection Services Inc. This inspection report is believed to be reliable but may not reflect the exact conditions of every inspected item (i.e., defective window seals in dual pane windows are not visible in some circumstances). We do not imply that an item not mentioned is satisfactory or in working order.

This inspection is limited in scope to those areas inside the perimeters of the living structure that may be visually inspected. Covered, hidden, or inaccessible areas of the structure are excluded from this report; the condition of inaccessible items and areas could have a substantial impact on the condition and value of this structure. Centennial Home Inspection Services Inc. does not do soils analysis or engineering or hazardous material testing, and does not inspect hot tubs, swimming pools, sports courts, underground sprinklers, pipes, or wiring, smoke detectors, heat pumps, septic tanks, docks, or built in food processors, vacuum cleaners, alarm systems, intercoms, phone systems, etc. WAC 16-228-2045 requires that a diagram be prepared for WDO inspection reports. A copy is available upon request for an additional fee.

Centennial Home Inspection Services Inc. assumes no liability and shall not be liable for any mistakes, omissions or errors in judgment by any employee or officer beyond the cost of this report. If any statements in this disclaimer, the cover letter, or any areas not covered by this inspection are of concern to the client, these concerns need to be addressed prior to closing. Centennial Home Inspection Services Inc. does have outside consultants in many of these areas. Should you receive any opinions or information that contradicts the opinions in this report, notify us immediately, before any repair work is started or costs incurred.

Thank you very much for using our services. If you have any questions, call anytime.

Respectfully submitted,

Centennial Home Inspection Services Inc.
A Washington Corporation

WSDA CPCC 57638