

Summary



Structure Tech Home Inspections

4205 Raleigh Avenue South
Saint Louis Park, MN 55416
www.StructureTech1.com
612-205-5600

Customer
New Buyer

Address
12345 Super Happy Street
Minneapolis MN

This Summary Report includes the items that were, in my opinion, the most important items to bring to your attention. This is not by any means a substitute for the full report. **Please read the entire report.**

5. Electrical

General Summary

5.2 Exterior Electrical

The clamps at the service entrance conductors weren't properly insulated, which is a shock hazard. If someone touched them, they would get shocked or electrocuted. Have the [utility company](#) correct this.

5.5 Interior Electrical

- (1) There were several [ungrounded three prong outlets](#) present, indicated in the photos below. These are potential shock hazards, and can allow equipment that is plugged into these outlets to be damaged. Have the wiring corrected.
- (2) There was [reversed polarity](#) to the north wall outlet in the northwest bedroom. This means that the hot and neutral wires have been wired backwards at some point in between or at the main service panel and the outlet. This is a shock hazard. Have the wiring repaired.

9. Interior

General Summary

9.1 Fireplaces

- (1) There was exhaust gas leaking back into the home at the gas fireplace, and there were high levels of [carbon monoxide](#) in the flue gas - over 400 parts per million. This is a safety hazard. Have the gas fireplace repaired before using it.
- (2) The wood burning fireplace had a gap between the smoke shelf and the first section of clay liner. This area must be tightly sealed to help prevent the passage of heat and smoke into the wood framed wall, which could start a fire.

There were also cracks in the flue liner that should be repaired before the fireplace is used. The smallest cracks can expand under thermal pressure to create a fire hazard.

Have the wood burning fireplace repaired by a [CSIA Certified Chimney Sweep](#) before using it.

10. Attic

General Summary

10.0 Exhaust Fans & Ducts

(1) The kitchen exhaust fan was vented into the attic, which causes all of the warm, moist air to discharge into the attic space, rather than to the exterior. This can cause a long list of problems with the attic, including rotted roof sheathing, frost in the attic, grease in the attic, and ice dams. The kitchen exhaust fan needs to have ductwork installed that is airtight, insulated, and continuous to the exterior. Have this corrected.

11. Garage

General Summary

11.2 Fire Separation

There were voids in the garage / house wall, extending the entire width of the house, that should be repaired, in order to maintain the necessary fire separation between the garage and the living quarters.

The wooden hatch cover to the attic area should be sheathed with metal or drywall in order to maintain the proper fire separation between the garage and the living quarters. This is to slow the potential spread of a fire. Have this fixed.

Licensed To Reuben Saltzman



Inspection Report

New Buyer

Property Address:
12345 Super Happy Street
Minneapolis MN



Structure Tech Home Inspections

Reuben Saltzman and Bill Oelrich
4205 Raleigh Avenue South
Saint Louis Park, MN 55416
www.StructureTech1.com
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Table of Contents

[Summary 1](#)

[Cover Page..... 3](#)

[Table of Contents..... 4](#)

[Intro Page 5](#)

[1 Roof Covering..... 6](#)

[2 Chimney 6](#)

[3 Exterior 6](#)

[4 Basement / Foundation / Structure8](#)

[5 Electrical 8](#)

[6 Plumbing..... 17](#)

[7 Heating 23](#)

[8 Cooling 25](#)

[9 Interior 25](#)

[10 Attic..... 28](#)

[11 Garage..... 32](#)

[12 Environmental..... 33](#)

Date: 9/21/2015	Time: 09:00 AM	Report ID:
Property: 12345 Super Happy Street Minneapolis MN	Customer: New Buyer	Real Estate Professional:

The service recommendations that we make in this report should be completed by licensed, qualified, competent specialists, who may well identify additional defects or recommend some upgrades that could affect your valuation of the property. This inspection was conducted in accordance with the ASHI Standards of Practice, which can be viewed online at <http://www.structuretech1.com/ASHI-SOP.pdf>

This report is the exclusive property of Structure Tech Home Inspections and the Client whose name appears within, and its use by any unauthorized persons is prohibited.

Style Of Building:

Single Family

Number of Stories:

One

Type Of Construction:

Wood Frame

Home Faces:

South

Furnished:

Yes

Occupied:

Yes

Year Built:

1960

Square Feet:

2188

Weather:

Clear and Dry

Temperature:

65 - 70 Degrees

Present At Time Of Inspection:

Buyers

1. Roof Covering

The inspection of the roof includes the roofing materials, the roof drainage systems, the flashings, skylights, chimneys, and roof penetrations.

Items

1.0 Sloped Roof

Acceptable

Roofing Material:	Inspection Method:
Architectural Shingles	Walked surface

2. Chimney

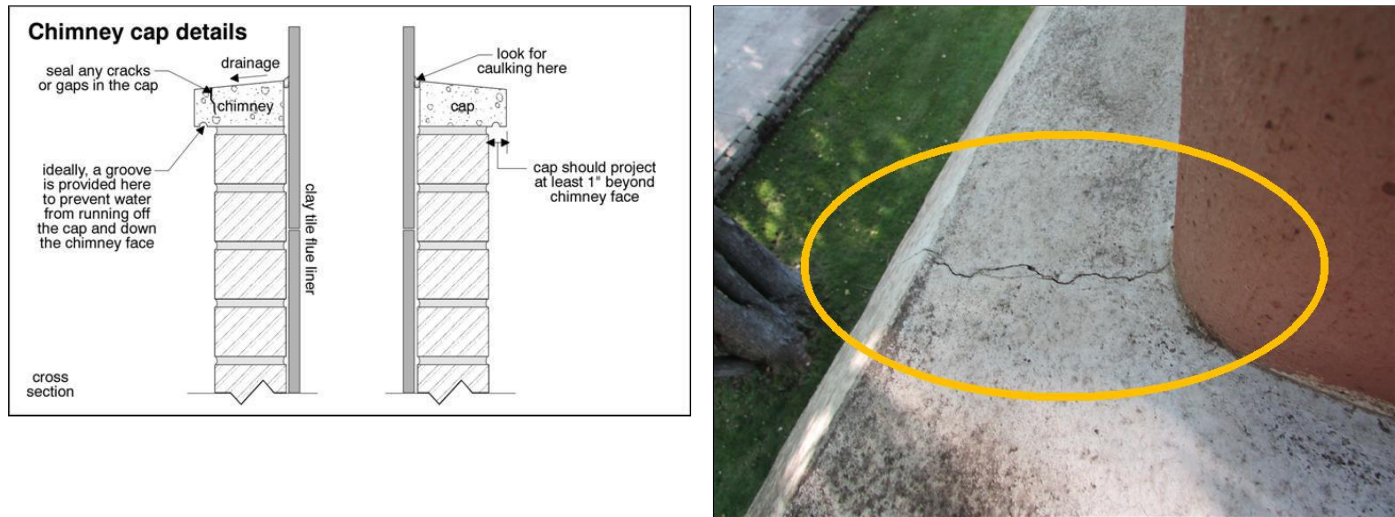
The inspection of the chimney includes the vent and system components.

Items

2.0 Chimney Crown

Attention Recommended

The chimney crown was cracked. These cracks will allow water into the chimney and should be sealed to help prevent damage to the chimney.



3. Exterior

The inspection of the exterior includes the siding, flashing, trim, all exterior doors, decks, balconies, stoops, steps, porches, and guardrails. It includes eaves, soffits, and fascias that are accessible from the ground level. This also includes vegetation, grading, surface drainage, and retaining walls that are likely to adversely affect the building. This also includes adjacent entryway walkways, patios, and driveways.

Items

3.0 Drainage & Grading

Acceptable

3.1 Windows

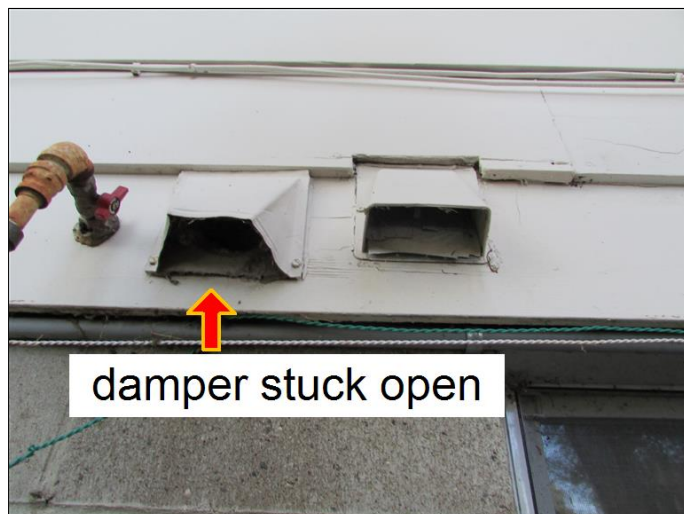
Comment

There were screens missing from several windows, but there was a large group of screens stored in furnace room. Ask to have the screens installed for the pre-closing walk-through. This allows the opportunity to verify screens were present at all of the windows, that they fit properly, and were all in acceptable condition.

3.2 Vent Terminals / Intakes

Attention Recommended

There were two abandoned bath or dryer vent terminals at the north side of the house. The damper was open on one which will allow for cold air to come in house. Have both vent terminals properly sealed at the exterior.



3.3 Exterior Faucet(s)

Attention Recommended

The frost-free faucet at the front side of the house was improperly installed; if the faucet doesn't slope downwards towards the spout, the water won't drain out when the faucet is turned off. If the water doesn't drain out, it has the potential to freeze and destroy the faucet, or possibly cause a leak from a burst pipe inside the house. Have this installation repaired. For more info about this specific defect here: <http://www.structuretech1.com/2012/01/how-to-prevent-outside-faucets-from-freezing/>



3.4 Exterior Faucet(s)

Attention Recommended

There was no backflow prevention device at the front exterior faucet pictured below. These are required to protect the potable (drinking) water supply from contamination. Add a vacuum breaker at the exterior faucet. For more information on this topic, click here: [Why do I need a backflow preventer?](#)



Siding:

Wood Lap / Clapboards

4. Basement / Foundation / Structure

The inspection of the structural components includes the foundation and framing.

Items

- 4.0 Signs of Moisture

Comment

There were no visible signs of moisture in the basement.
- 4.1 Sump System

Comment

There was no sump system present.
- 4.2 Limitations

Comment

The basement was mostly finished. The concealed components in the finished areas could not be inspected, such as the basement floor, foundation walls, floor structure, etc.

<p>Wall Structure:</p> <p>Wood Studs</p>	<p>Floor Structure:</p> <p>Conventional wood framing</p>	<p>Ceiling and roof structure:</p> <p>Conventional framing</p>
<p>Crawl space inspection method:</p> <p>No crawl space present</p>	<p>Foundation:</p> <p>Concrete block</p>	<p>Unfinished basement insulation:</p> <p>Foundation walls: not insulated</p> <p>Rim space: fiberglass batts</p>

5. Electrical

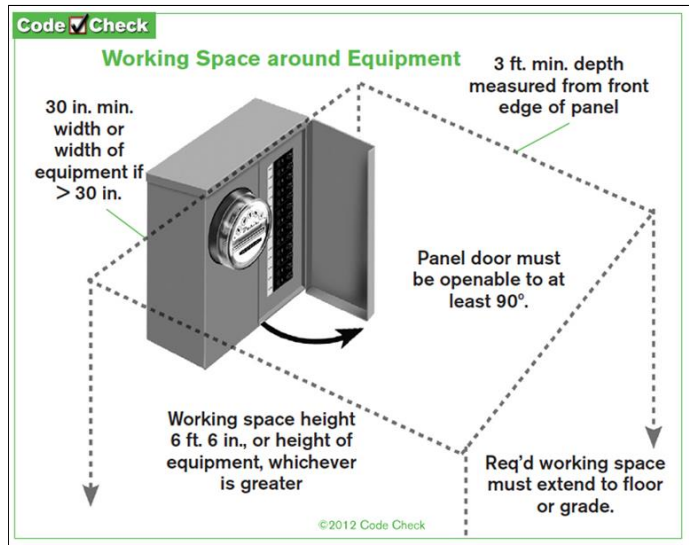
The inspection of the electrical system includes the following: the service drop; the service entrance conductors, cables, and raceways; service equipment and main disconnects; service grounding; interior components of service panels and subpanels; conductors; overcurrent protection devices; a representative number of installed lighting fixtures, switches, and receptacles; ground fault circuit interrupters and arc fault circuit interrupters.

Items

5.0 Main Panel

Comment

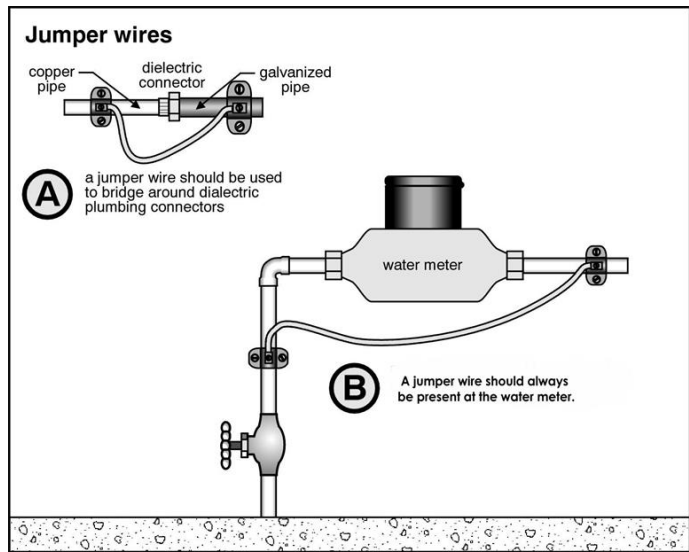
The main panel did not have thirty-six inches of clear space in front of it, which is the minimum required working space.



5.1 Service Grounding & Bonding

Attention Recommended

The main electric service was only grounded to the water distribution piping in the same room as the panel. For added safety, I recommend having this main panel grounded to the water piping coming into the home before the meter, including a [ground jumper](#).



5.2 Exterior Electrical

Unacceptable

The clamps at the service entrance conductors weren't properly insulated, which is a shock hazard. If someone touched them, they would get shocked or electrocuted. Have the [utility company](#) correct this.



5.3 Exterior Electrical

Comment

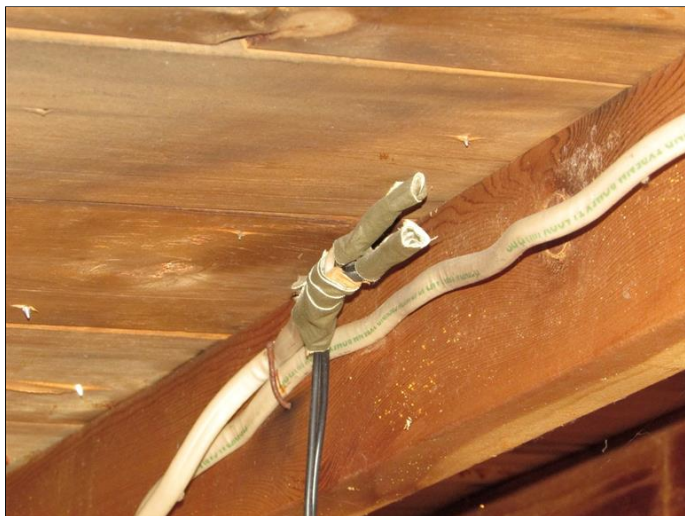
The front yard light did not function. This may be the result of a burned out bulb, the light could be controlled by a photoelectric sensor, or there may be a problem with the wiring. Try replacing the bulb first.



5.4 Unfinished Areas

Attention Recommended

(1) There was an open electrical splice in the attic, which is a potential fire hazard. Splices need to be made inside of junction boxes to contain any arcing or sparking which could occur. Have this repaired by an electrician.



(2) There was one improperly terminated cable in the attic, which is a potential shock and fire hazard. Remove this cable or have it properly terminated inside a box.



(3) There was a bare bulb light in the basement closet, creating a potential fire hazard. Install a light with a protective globe.



(4) There was some NM cable (or Romex) that was improperly stapled to the bottom of the floor joists; this size wire should be fed through bore holes in the floor joists, not mounted underneath.



5.5 Interior Electrical

Attention Recommended

(1) There were several [ungrounded three prong outlets](#) present, indicated in the photos below. These are potential shock hazards, and can allow equipment that is plugged into these outlets to be damaged. Have the wiring corrected.



North living room wall



North living room wall



east wall, NE bedroom



South wall, NE bedroom



1st floor bathroom



NE bedroom



Basement office room

(2) There was [reversed polarity](#) to the north wall outlet in the northwest bedroom. This means that the hot and neutral wires have been wired backwards at some point in between or at the main service panel and the outlet. This is a shock hazard. Have the wiring repaired.



(3) The surface mounted non-metallic cable under the kitchen sink should be protected in a metal raceway or something similar to help prevent physical damage. This was not done.



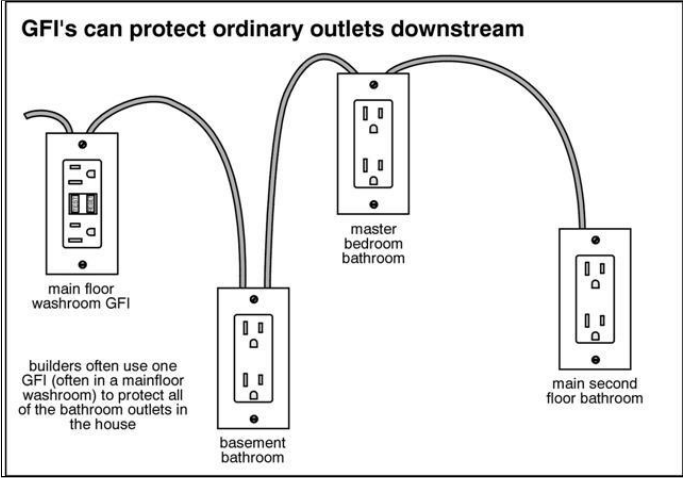
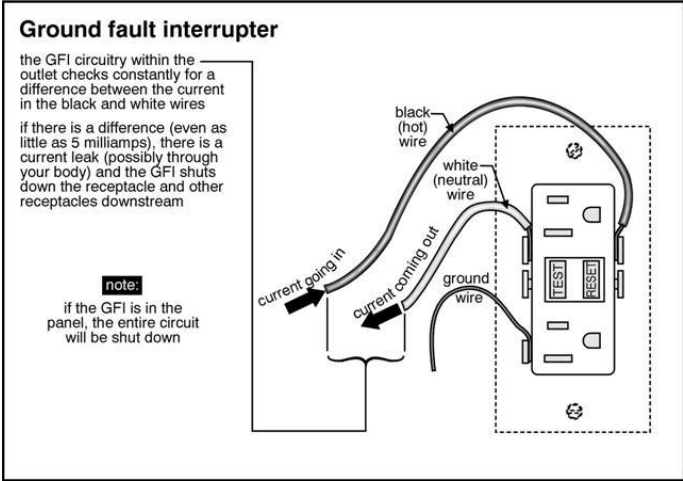
(4) The non-metallic cable for the garbage disposer at the kitchen sink should be protected in a flexible metal conduit and secured at the disposer, to help prevent damage to the wire from items being moved under the kitchen sink. Have the wiring to the disposer re-done for safety.



5.6 GFCI Devices

Attention Recommended

(1) The kitchen countertop, basement bathroom, unfinished basement and garage outlets were not GFCI protected. Add [GFCI](#) protection for these outlets to lower the risk of a lethal shock.



north wall kitchen



basement bathroom



furnace room



laundry room



original garage, north wall

(2) The GFCI outlet in the basement office room tripped, but did not lose current. This is not a location that requires GFCI protection, however, the outlet was not grounded, and our recommendation is to correct the wiring.



5.7 Smoke Alarms
Attention Recommended

The only smoke alarms present were the ionization type, which may not give occupants enough warning in the event of a smoldering fire. For increased safety, replace all the existing smoke alarms with photoelectric smoke alarms. For more information on this topic, click here: [Photoelectric smoke alarms are all you need](#).

5.8 CO Alarms

Acceptable

Service Amperage: 100 amps	Location of main disconnect(s): Basement Utility room north wall	Location of subpanel(s): None
Predominant Branch Circuit Wiring: Non-metallic sheathed cable (Romex)	Main panel type: Circuit Breaker	

Note: we do not test the operation of smoke and carbon monoxide alarms. These devices should be tested *monthly* by the occupants of the home by pressing the built-in test buttons on the devices.

AFCI devices are tested by using the internal test buttons on AFCI devices at vacant buildings only. Click the following link for more information on this topic: [AFCI devices](#)

6. Plumbing

The inspection of the plumbing system includes the following: the water supply and distribution system, including all fixtures and faucets; the drain, waste and vent systems including all fixtures; the water heating equipment and hot water supply system; vent systems, flues , and chimneys; fuel storage and fuel distribution systems; drainage sumps, sump pumps, and related piping. We DO NOT operate water supply / shut-off valves.

For the washing machine and dryer, we perform only a cursory test for the basic operation of the appliances. For instance, we'll check to make sure the dryer turns on with normal controls and listen to make sure it sounds like the tumbler is turning, but we do not check the accuracy of the dryer thermostat, moisture sensor, timers, or do any type of testing on similar features.

Items

6.0 Water Distribution Piping

Attention Recommended

There was a [saddle valve](#) present to supply water to a whole house humidifier, but the humidifier has since been removed. Saddle valves are not approved for use in Minnesota and are prone to leakage. This saddle valve was heavily corroded and should be removed, and the pipe repaired. There was also a saddle valve present for the ice maker; try to avoid operating that valve.



6.1 Water Heater

Attention Recommended

(1) The temperature and pressure relief valve at the water heater leaked, and should be replaced. If the valve leaks again after replacing it, this would need further evaluation by a plumber to help determine the cause for the leaking. For more information on this topic, click here: [Why The Relief Valve at the Water Heater is Leaking](#)



(2) The hot water coming out of the faucets was measured at approximately 135 degrees, which can cause scalding very quickly. The temperature of the water shouldn't be higher than 120 degrees at any of the faucets. To reduce the risk of scalding, turn the temperature down at the water heater. Be aware, however, that this will increase the potential for Legionellae Bacteria growth. To minimize the risk of scalding and bacteria growth, have a tempering valve installed. For more info on this topic, click here: [Water Heater Temperature](#).



6.2 Clothes Washer/Dryer

Attention Recommended

The dryer was functional at the time of inspection.

The front loading washing machine has a rubber gasket that can build up with mold growth. Keep the door open a crack when not using it to keep the gasket dry. Clean it now.

The washing machine leaked at the front door, and should be serviced.



6.3 Dryer Duct

Attention Recommended

The dryer duct consists of a semi-rigid aluminum material that was improperly spliced using duct tape and clamps at the joint pictured. This material also does not return to its original shape when dented. Dents impede air flow and could potentially lead to a fire from lint accumulation. Flexible material should only be used to connect the dryer to the rigid metal duct; never as a substitute for metal ductwork. Have the flexible material replaced with smooth metal to lower the potential for a fire.



6.4 Floor Drains

Attention Recommended

There was a loose cleanout plug at the floor drain, which will allow hazardous, smelly sewer gases to enter the home. Secure the cleanout plug or have it replaced with a tight-fitting plug. For more detailed information on this topic, click here: [Floor Drain Basics](#)

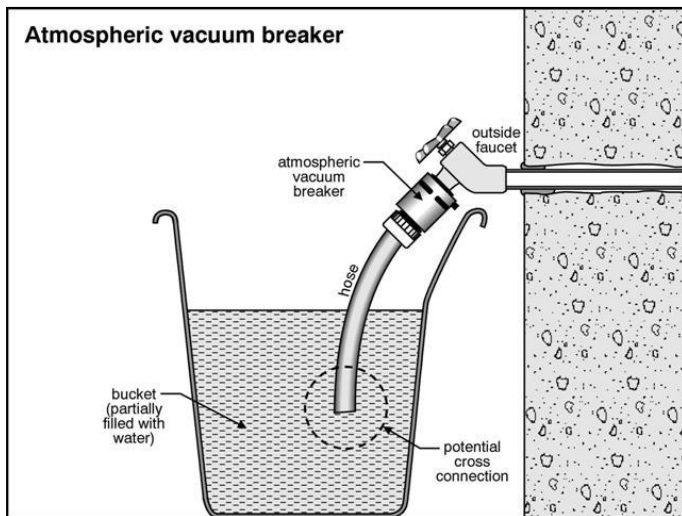


6.5 Laundry Sink

Attention Recommended

(1) There was no backflow prevention device on the threaded laundry faucet, which is required to protect the city's potable (drinking) water supply from potential contamination. Add a [vacuum breaker](#) (aka - backflow preventer). For more info on this topic, click here: [Cross-Connections at Utility Sinks](#)

The sink was dented from below causing a high spot in the middle of the sink. This "ridge" prevents water from completely draining. Repair the dent to allow the sink to drain properly.



ponds in circle, line represents ridge

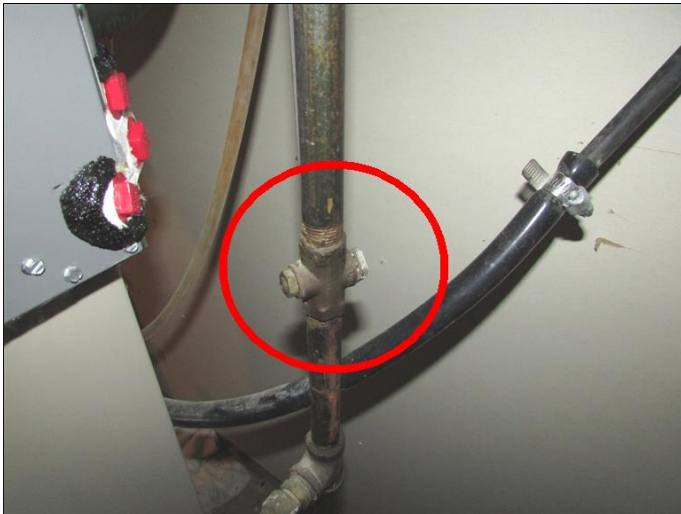
(2) There was a leak at the laundry sink drain that should be repaired.



6.6 Fuel Lines

Comment

There was an old gas valve installed at the furnace, which tends to stick or leak with age. When this appliance is replaced, the gas valve should also be replaced.



6.7 Bathroom Sinks

Attention Recommended

The mechanical sink stopper in the first floor bathroom did not function and will need to be serviced to work properly.



6.8 Bath Tub(s) / Shower(s)

Comment

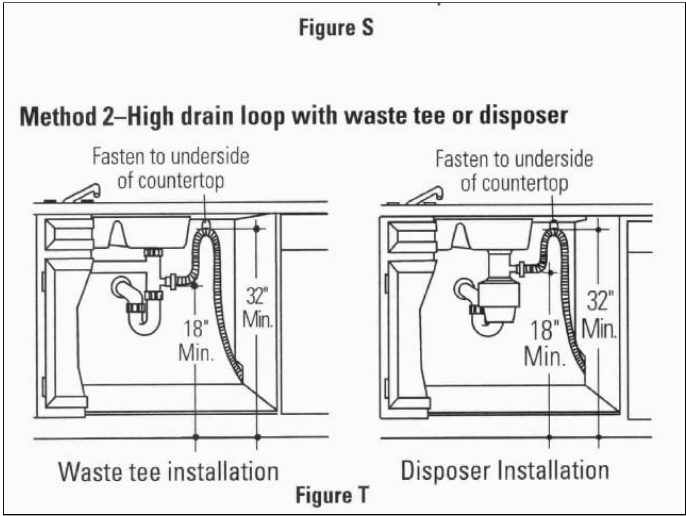
The bath tub in the basement bathroom was a deck mount type of bath tub, but it was installed right up against the wall. This is an improper installation that will be prone to leakage at the wall. There is no practical repair for this, short of tearing out the tub and starting over. There were signs of historical leakage behind the tub, but the wood was dry at the time of the inspection. To help prevent future leakage at the tub / wall intersections, keep them well sealed with caulk.



6.9 Kitchen Sink

Attention Recommended

The dishwasher drain did not have a proper high loop to prevent water from siphoning back into the dishwasher. This could lead to a cross-connection with the city water supply or a clogged dishwasher drain hose. Raise the dishwasher drain hose to match the diagram below. To read more about this specific issue, click here: [high loop at dishwasher drain](#).



6.10 Water Softener

Comment

The photo below shows a hardness test strip, taken from cold water at the laundry sink.



Water distribution pipes: Copper	Drain Waste and Vent Pipes: Copper	Water heater type: Electric - storage tank
Water heater age: Approximately 4 - 5 years old	Main water shut-off valve location: Basement south wall	Main gas shut-off valve location: Meter at exterior east wall

7. Heating

The inspection of the heating system includes any installed heating equipment and their vent systems, flues, and chimneys. Any readily openable access panels are also opened.

Items

7.0 Operation / Condition

Comment

The furnace responded properly to the thermostat controls and had a low level of carbon monoxide in the flue gas. Have the furnace serviced and inspected annually. For information about why we recommend annual furnace inspections, click here: [Are Annual Furnace Inspections Really Necessary?](#)

The furnace was at or near the end of its service life expectancy.

7.1 Furnace Filter

Comment

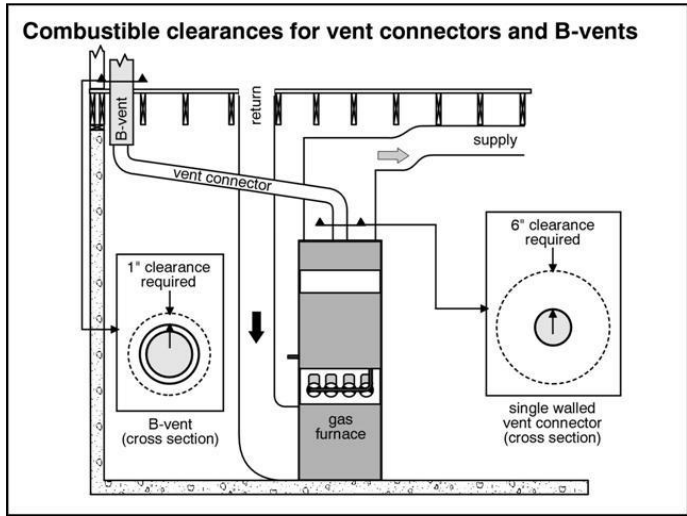
The cover was missing to the air filter. Install a tight cover to help prevent air in the basement from being pulled into the return air duct. This can cause excessive air pressure at the upper levels, which can lead to excessive air leakage from the house to the attic, which leads to frost in the attic and can contribute to ice dams.



7.2 Vent Connector & Vent

Comment

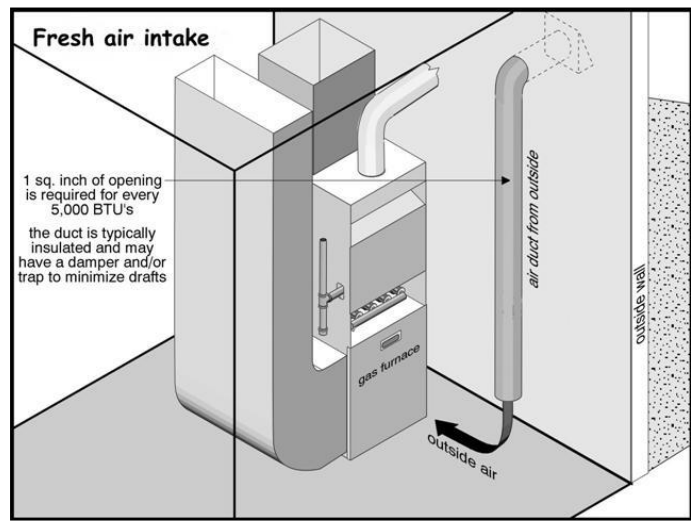
The furnace vent connector lacks the required clearance to combustibles. The double-walled vent connector should be one inch away from the drywall and wood framing.



7.3 Combustion Air

Attention Recommended

There was no combustion-air duct in the furnace room. These are essential to support complete combustion, and without them carbon monoxide could be produced and pose a threat to the occupants. Have a combustion air duct installed. For more information on combustion air ducts, click here <http://www.structuretech1.com/blog/?p=67>



Heating System:

Age of heating system:

Forced Air

Approximately 18 - 19 years old

8. Cooling

The inspection of the air conditioning consists of the central and through-wall equipment (but not window units), as well as the distribution systems. Any readily openable access panels are also opened.

Items

8.0 Operation / Condition

Acceptable

Cooling method:

Cooling age:

Forced air split system, electric

Less than one year old

9. Interior

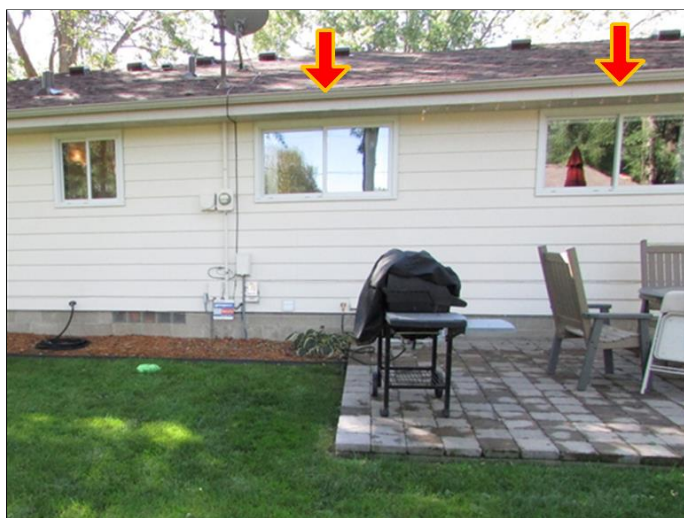
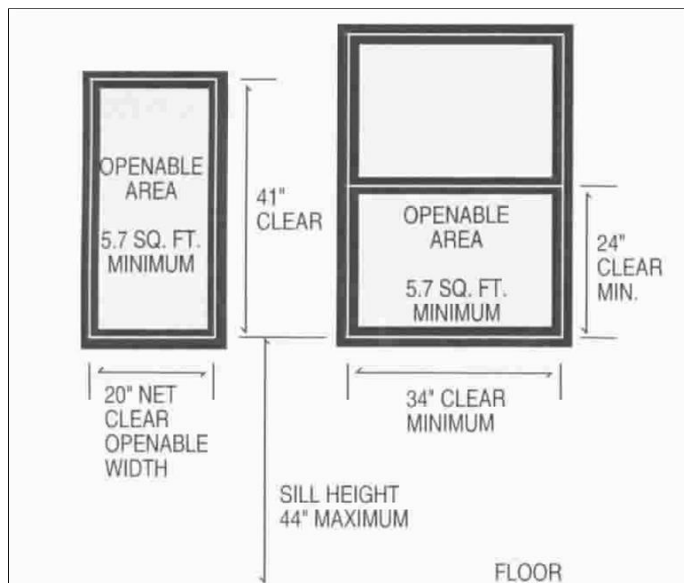
The inspection of the interior includes the following: walls, ceilings, and floors; steps, stairways, and railings; countertops and a representative number of installed cabinets; a representative number of doors and windows. Installed ovens, ranges, surface cooking appliances, microwave ovens, dishwashing machines, and food waste grinders are inspected by using normal operating controls to activate the primary function.

Items

9.0 Windows

Comment

The center and west bedroom windows do not meet today's egress requirements for *new* windows. The current size requirement for an egress window is that it opens at least 24" high, 20" wide, and has a net clear opening of at least 5.7 square feet. Additionally, the bottom of the window can not be more that 44" from the ground and can not require special tools or knowledge to open. This is not a major concern, as the windows had large enough openings for most people to climb through in the event of an emergency.



9.1 Fireplaces

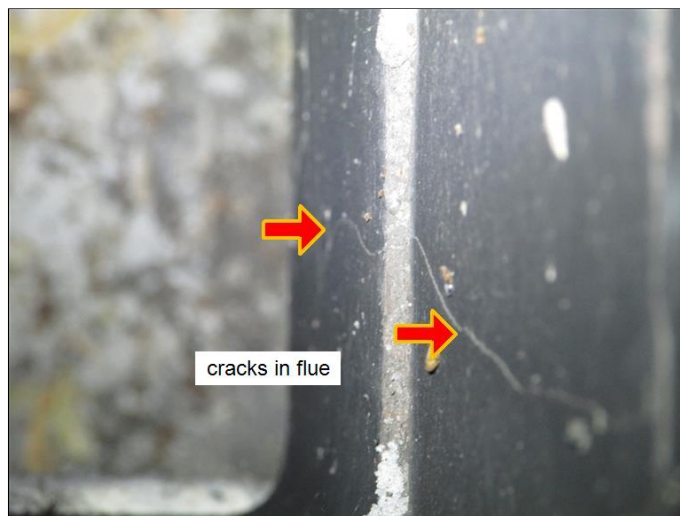
Attention Recommended

(1) There was exhaust gas leaking back into the home at the gas fireplace, and there were high levels of [carbon monoxide](#) in the flue gas - over 400 parts per million. This is a safety hazard. Have the gas fireplace repaired before using it.

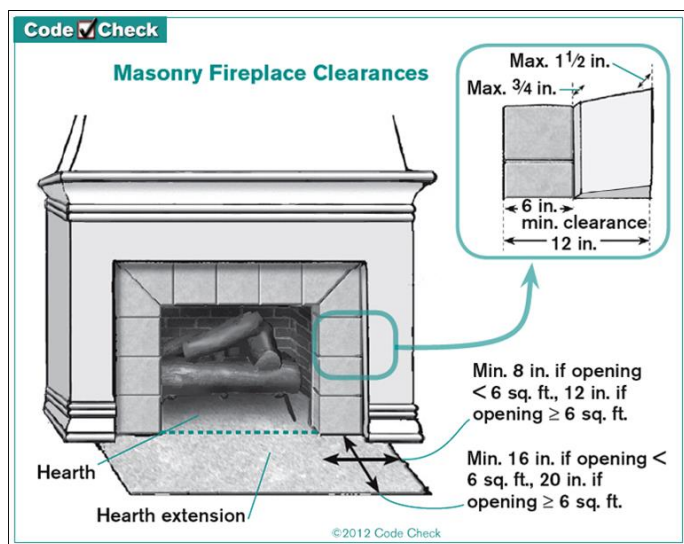
(2) The wood burning fireplace had a gap between the smoke shelf and the first section of clay liner. This area must be tightly sealed to help prevent the passage of heat and smoke into the wood framed wall, which could start a fire.

There were also cracks in the flue liner that should be repaired before the fireplace is used. The smallest cracks can expand under thermal pressure to create a fire hazard.

Have the wood burning fireplace repaired by a [CSIA Certified Chimney Sweep](#) before using it.



(3) The wood burning fireplace hearth extension did not have standard dimensions, which would require it to extend at least twenty inches from the front of the opening, and eight inches on either side, as the fireplace opening was over 6 sf. This is needed to help prevent a spark from landing on the floor and starting a fire. Have this corrected before using the fireplace.



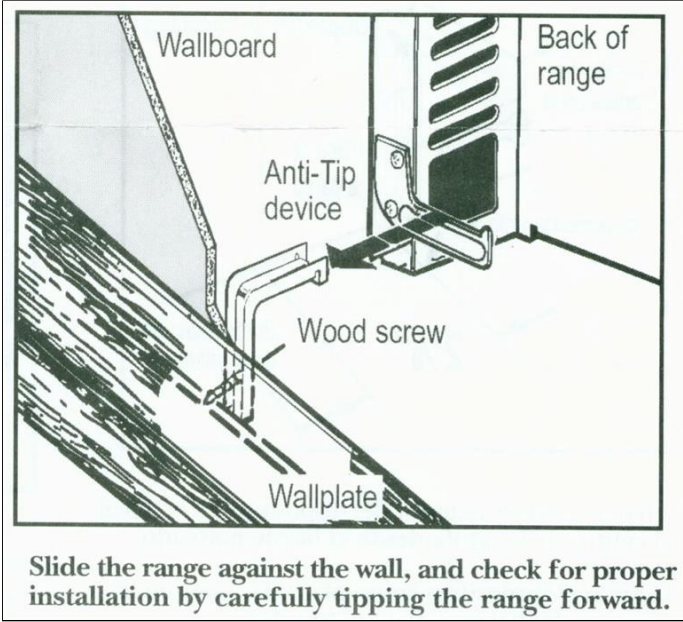
(4) There was a white haze on the glass at the gas fireplace. For information on how to clean the glass, click [here](#).

9.2 Kitchen Appliances

Attention Recommended

The range was functional.

The range was missing an [anti-tip device](#), which is needed to help prevent the range from accidentally tipping over. This is an important safety device that should be installed.



9.3 Kitchen Appliances

Comment

The dishwasher was functional. I ran the dishwasher through a rinse cycle only. The water drained out of the dishwasher and there were no leaks.

The garbage disposal was functional.

The microwave was functional.

The refrigerator was functional.

Interior limitations:	Fireplace Description:
Occupied	Wood burning masonry fireplace
	Masonry fireplace with gas insert

10. Attic

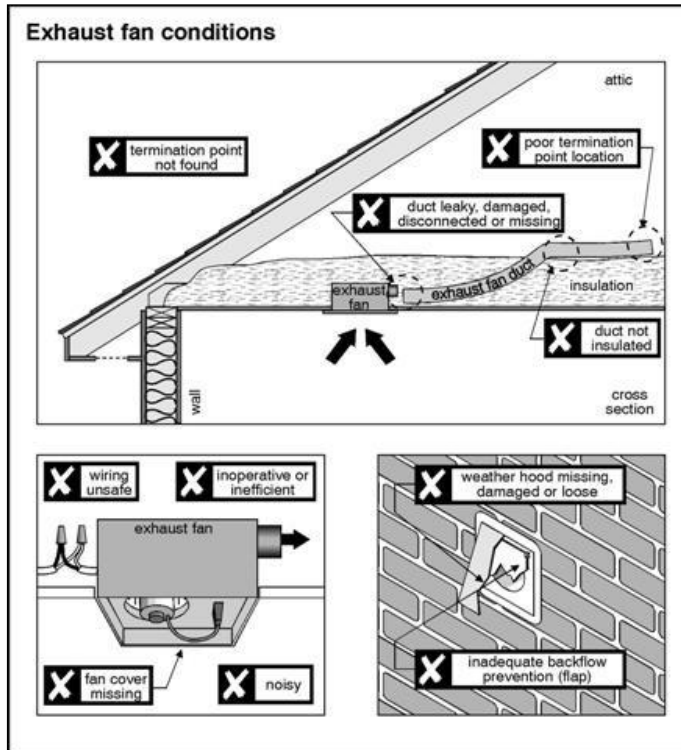
The inspection of the attic(s) includes the insulation, ventilation, and vapor retarders where visible. This includes kitchen, bathroom, laundry and similar exhaust systems, and clothes dryer exhaust systems.

Items

10.0 Exhaust Fans & Ducts

Unacceptable

(1) The kitchen exhaust fan was vented into the attic, which causes all of the warm, moist air to discharge into the attic space, rather than to the exterior. This can cause a long list of problems with the attic, including rotted roof sheathing, frost in the attic, grease in the attic, and ice dams. The kitchen exhaust fan needs to have ductwork installed that is airtight, insulated, and continuous to the exterior. Have this corrected.



(2) There was no insulation on the bath fan exhaust duct. Replace the duct with an insulated duct to reduce heat loss and potential ceiling damage from condensation.

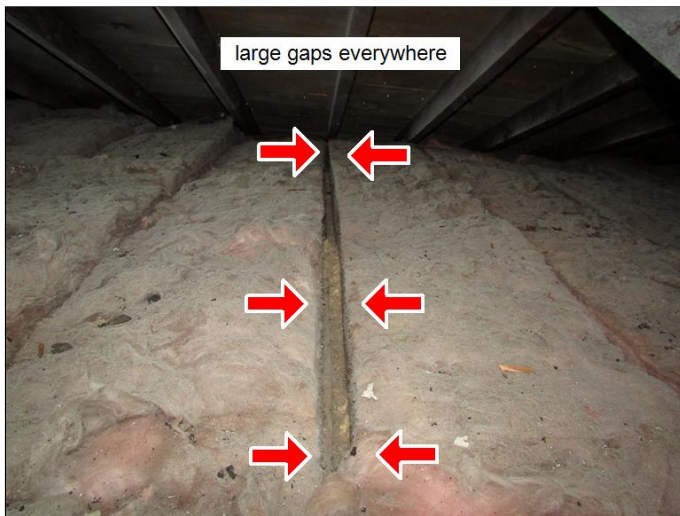
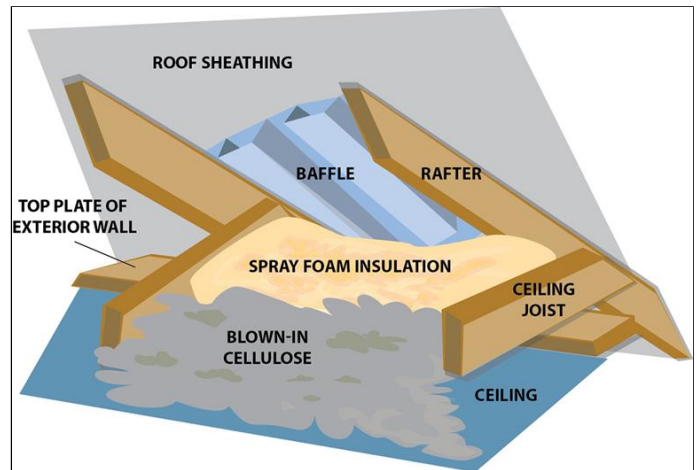


10.1 Attic Insulation

Attention Recommended

(1) Attic insulation consists of fiberglass batts installed on top of a few inches of loose fiberglass. The batts have been somewhat haphazardly installed, leaving large gaps in the insulation all over the attic. These gaps equate to an exponential level of heat loss through the attic space. Because of how difficult it is to properly install fiberglass batts, I recommend removing the batts and having the attic re-insulated with loose-fill insulation. This will help to reduce energy loss and lower the potential for ice dams. For information about the importance of evenly distributed insulation in the attic with no gaps, click [here](#).

Insulation at the eaves was minimal, which will allow for significant heat loss at the top wall plates. To reduce the heat loss here, you would need to have a different type of insulation installed at this location, such as closed cell foam. You can read more about this by clicking here: [Insufficient Insulation at Eaves](#).



(2) There were [inadequately insulated recessed lights](#) in the attic. Install insulated boxes over the recessed lights to prevent heat from entering the attic and increasing the potential for ice dams.



10.2 Air Leaks / Bypasses

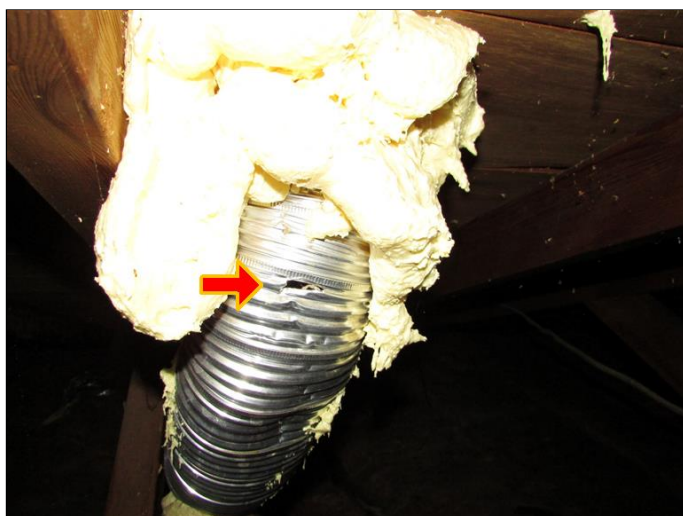
Attention Recommended

There were attic air leaks that should be sealed to help prevent conditioned household air from entering the attic space. Attic air leaks allow moisture into the attic which shows up as [frost](#), can reduce the effectiveness of insulation by as much as 70%, and are a major contributor to ice dams. Have the attic bypasses sealed by a qualified insulation contractor. For information about where to find these attic air leaks and how to correct them, download this [Guide to Attic Air Sealing](#).

While there are specific issues addressed in this inspection related to home energy and building performance, correcting one issue has the potential to create a new problem if not done properly. Before having any insulation or air sealing repairs / upgrades performed at the home, I recommend you read this [Building Envelope Guide](#) from the Minnesota Office of Energy Security, and recommend you have a whole house energy audit performed. This audit should include a blower door test and infrared scan at a minimum, and may also include a radon test. Doing so will help you to prioritize your energy improvement needs, and will help minimize the potential for creating new problems.



kitchen hood terminates in attic



hole in bath fan duct

Attic inspection method:	Attic insulation:	Vapor barrier:
Entered attic	Loose fill fiberglass Fiberglass batts	None present

11. Garage

The inspection of the garage includes the garage doors and garage door operators.

Items

11.0 Overhead door(s)

Acceptable

11.1 Garage door opener(s)

Attention Recommended

The wall button for the garage door opener was less than five feet high, which is the minimum required height to help prevent small children from operating the opener. Raise the opener button for safety.

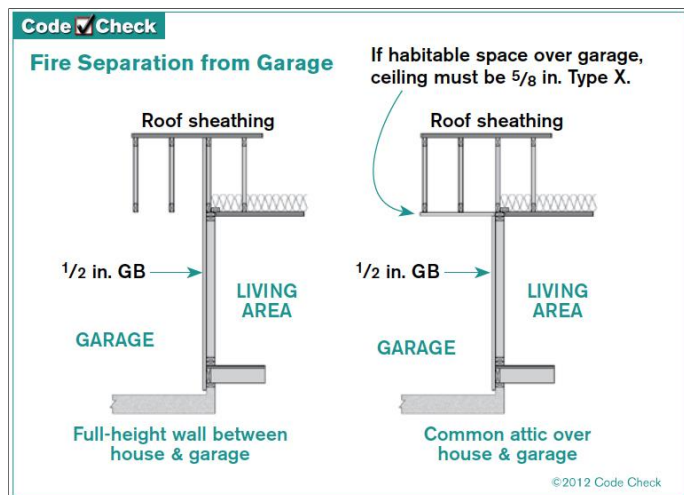


11.2 Fire Separation

Attention Recommended

There were voids in the garage / house wall, extending the entire width of the house, that should be repaired, in order to maintain the necessary fire separation between the garage and the living quarters.

The wooden hatch cover to the attic area should be sheathed with metal or drywall in order to maintain the proper fire separation between the garage and the living quarters. This is to slow the potential spread of a fire. Have this fixed.



drywall stops short of roof sheathing

12. Environmental

Environmental items included in this section are specifically excluded by our standards of practice as well as our inspection agreement, but may be noted here as a courtesy, or as a convenience if additional testing was conducted at the same time as the home inspection.

Items

12.0 Radon

Comment

The EPA protocol average for the radon test was <2.0 pCi/L (1.2), which is considered a low test. For more info on the test results, click here: [Radon Testing: What the Results Mean](#).

12.1 Vermin

Comment

There were mouse traps present under the kitchen sink. These usually indicate rodent problems.

