Your Inspection Report

427 Queenston Street
St.Catharines, ON L2P2Y3

PREPARED FOR:
JOHN DOE

INSPECTION DATE:
Tuesday, July 5, 2016

PREPARED BY:
Antonio Coelho NCI

Ancoe Property Inspections

Ancoe Property Inspections
2959 Arvida Circle
Mississauga, ON L5N1R6

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Canadian Association of Home & Property Inspectors CAHPI ONTARIO

Ontario Association of Home Inspectors OAHI

The best Inspection experience available.

August 4, 2016

Dear John Doe,

RE: Report No. 1239, v.2
427 Queenston Street
St.Catharines, ON
L2P2Y3

Thanks very much for choosing us to perform your Inspection. The inspection itself and the attached report comply with the requirements of the Standards of Practice of our Provincial Association. This document defines the scope of a home inspection.

Clients sometimes assume that a home inspection will include many things that are beyond the scope. We encourage you to read the Standards of Practice so that you clearly understand what things are included in the home inspection and report.
The report has been prepared for the exclusive use of our client. No use by third parties is intended. We will not be responsible to any parties for the contents of the report, other than the party named herein .
The report is effectively a snapshot of the house, recording the conditions on a given date and time. Home inspectors cannot predict future behavior, and as such, we cannot be responsible for things that occur after the inspection. If conditions change, we are available to revisit the property and update our report.
The report itself is copyrighted, and may not be used in whole or in part without our express written permission.
Our consulting service via telephone is available at no cost to you for as long as you own the home.
Please visit our website and/or feel free to leave a review at ancoeinspections.homestars.com.

Thanks again for allowing us to work with you.

Sincerely,

Antonio Coelho NCI
on behalf of
Ancoe Property Inspections

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This Summary outlines potentially significant issues from a cost or safety standpoint. This section is provided as a courtesy and cannot be considered a substitute for reading the entire report. PLEASE READ THE COMPLETE DOCUMENT. In addition, it is good practice to seek two professional opinions and acquire additional estimates of repair as to any defects, comments, improvements or recommendations mentioned in this report. We recommend that the professional making any repairs inspect the property further, in order to discover and repair related problems that were not identified in the report. We recommend that all repairs, corrections, and cost estimates be completed and documented prior to closing or purchasing the property. Feel free to hire other professionals to inspect the property prior to closing, including HVAC professionals, electricians, engineers, or roofers.

Priority Maintenance Items

Exterior

PORCHES, DECKS, STEPS, PATIOS AND BALCONIES \ Patios

Condition: • Trip hazards

Rosie almost had a fall here.

Implication(s): Physical injury

Location: Rear Yard

Task: Improve

Time: As soon as possible

Electrical

DISTRIBUTION SYSTEM \ Outlets (receptacles)

Condition: • Inoperative

This receptacle was not working and the wire is not protected from mechanical damage and the weather. Have your electrician correct this.

Implication(s): Equipment inoperative

Location: Front Exterior Wall

Task: Repair or replace Protect

Time: As soon as possible

Condition: • Reversed polarity

Implication(s): Electric shock

Location: Second Floor Bedroom Unit 2

Task: Correct

Time: Immediate

Condition: • Ungrounded

There were ungrounded circuits noted through out the house. Have your electrician provide GFCI receptacles in their place to improve safety.

Implication(s): Electric shock

Location: Throughout Basement First Floor

Task: Upgrade

Time: As soon as your Budget permits

DISTRIBUTION SYSTEM \ Outlets (receptacles) - number or location

Condition: • Too few outlets

This is an older home and there were many extension cords noted throughout the home. Extension cords are not designed for permanent wiring and this is a potential fire hazard. Modern life styles require more receptacles. Discuss with your electrician for a possible future upgrade and strategy.

Implication(s): Nuisance

Location: Throughout Basement First Floor Second Floor

Task: Upgrade

Time: As soon as your Budget permits

DISTRIBUTION SYSTEM \ Cover plates

Condition: • Missing

Implication(s): Electric shock

Location: Rear Exterior

Task: Correct

Time: Immediate

DISTRIBUTION SYSTEM \ Smoke detectors

Condition: • Missing

Unit 2

Implication(s): Fire hazard

Location: Second Floor

Task: Provide

Time: Immediate

DISTRIBUTION SYSTEM \ Carbon monoxide (CO) detectors

Condition: • Be sure to have Carbon Monoxide detectors installed on every level of your home.

Implication(s): Carbon Monoxide poisoning from faulty gas appliances.

Location: Throughout Basement First Floor Second Floor

Task: Provide

Time: As soon as possible

Cost: $100 - $150

Heating

GAS HOT WATER BOILER \ Pressure relief valve

Condition: • No pipe extension

Scalding and damage to near by people and drywall is possible if this valve opens due to high pressures. A discharge tube should be installed 6"-12" from the floor.

Location: Basement Utility Room

Task: Provide

Time: As soon as possible

GAS HOT WATER BOILER \ Radiators, convectors and baseboards

Condition: • Cold

Some Rads were not responding to heat in unit 3. Further evaluation by a boiler technician is recommended.
Implication(s): Increased heating costs | Reduced comfort
Location: Throughout Basement
Task: Further evaluation
Time: As soon as possible

CHIMNEY AND VENT \ Masonry chimney
Condition: • Loose, missing or deteriorated masonry
David Fritz (905) 508-0500
Marty Vandenberg
tel:905-515-6108
Mimmo (416) 571-6018
Brian Beaudin(705)-826-9638
Elite Designed Concrete Inc.. 905-764-3000
Steve Rockwell 647-567-1252* (Excellent work good price) http://www.rockwellmasonry.ca/en/
Magic touch : 905-948-0407
Metro Chimney: 416-839-0585
Howard Sheppard W.E.T.T Inspection:
wettech.sheppard@gmail.com
Implication(s): Material deterioration
Location: Roof
Task: Repair
Time: Less than 1 year

Plumbing

WATER HEATER \ Life expectancy
Condition: • Although this water heater is entering the typical projected end of life phase, it appears to be in good condition and performing well. Calling various rental companies to have it replaced with a new unit usually free of charge is a suggestion. Ex. (Reliance Home Comfort Toll free at 1-888-837-1451)
Implication(s): Reduced performance and greater operating costs. Rust in tank
Location: Basement Utility Room
Task: Replace
Time: Less than 2 years
Cost: $600-$1200 ave for purchase option

This concludes the Summary section.

The remainder of the report describes each of the home's systems and also details any recommendations we have for improvements. Limitations that restricted our inspection are included as well.

The suggested time frames for completing recommendations are based on the limited information available during an inspection. These may have to be adjusted based on the findings of specialists.

Home Improvement - ballpark costs

Description & Observations

Sloped roofing material: • Asphalt shingles

Sloped roof flashing material: • Metal

Limitations

Inspection performed: • By walking on roof

Recommendations & Implications

General

1. • Roofs can leak at any time. Leaks usually appear at roof penetrations, flashings, changes in materials and changes in direction. A roof leak should be taken care of immediately to avoid damage to structure, interior finishes and furnishings. A roof leak doesn't mean the roof has to be replaced. We recommend an annual inspection and tune-up to reduce the risk of leakage and increase the life of the roof.
Impact Roof works 416-931-0973
Luso Roofing 416-877-2020
Viana Roofing (416) 763-2664
Location: Throughout Roof
Task: Tune up
Time: Less than 2 years
Cost: $300 - $500

Description & Observations

Gutter & downspout material: • Metal

Gutter & downspout type: • Eave mounted

Gutter & downspout discharge: • Above grade

Lot slope:

• Away from building

Rear

• Flat

Front

Wall surfaces and trim: • Metal siding

Soffit and fascia: • Metal

Retaining wall: • Concrete

Driveway: • Asphalt • Gravel

Patio: • Concrete

Fence: • Wood

Limitations

Inspection limited/prevented by: • Car/storage in garage

Upper floors inspected from: • Ground level

Exterior inspected from: • Ground level

Recommendations & Implications

General

2. • Damaged or Dirty Vent Cap

Implication(s): Air, moisture or pest entry

Location: Left Side Exterior Wall

Task: Replace

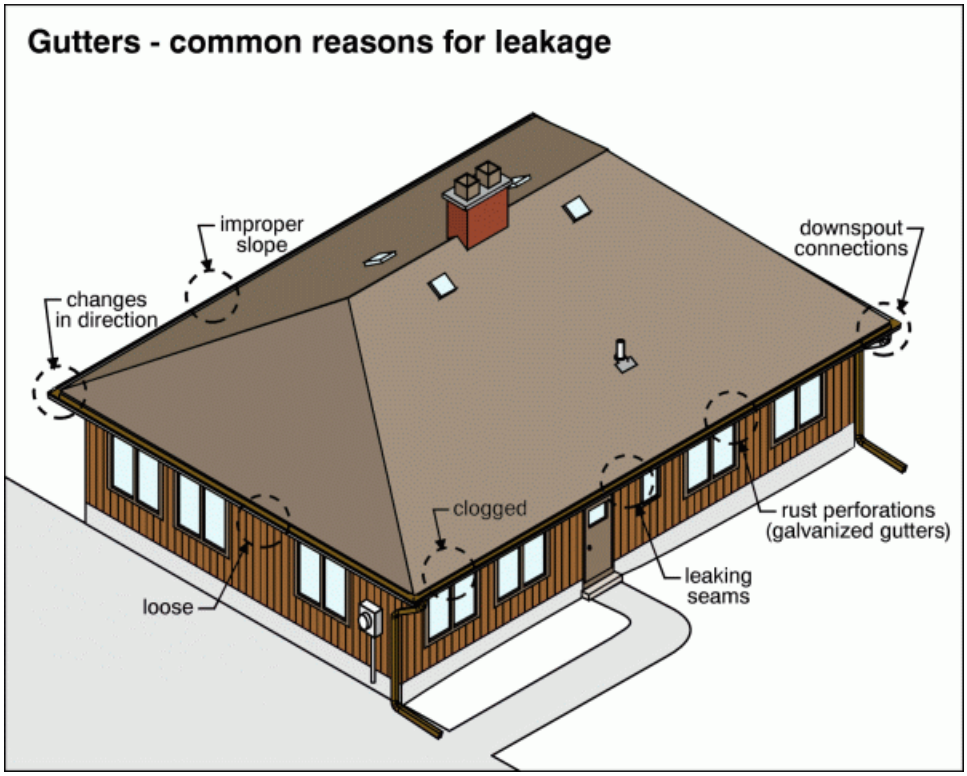
Time: Less than 1 year

1. *Damaged or Dirty Vent Cap*

ROOF DRAINAGE \ Gutters

3. Condition: • Cleaning gutters is an annual maintenance item that ensures that surface water moves freely without obstruction.
Location: Throughout Exterior
Task: Clean Inspect annually

4. Condition: • Loose or damaged
Implication(s): Chance of water damage to contents, finishes and/or structure
Location: Rear Exterior
Task: Repair or replace
Time: Less than 6 months



2. *Loose or damaged*

ROOF DRAINAGE \ Downspouts

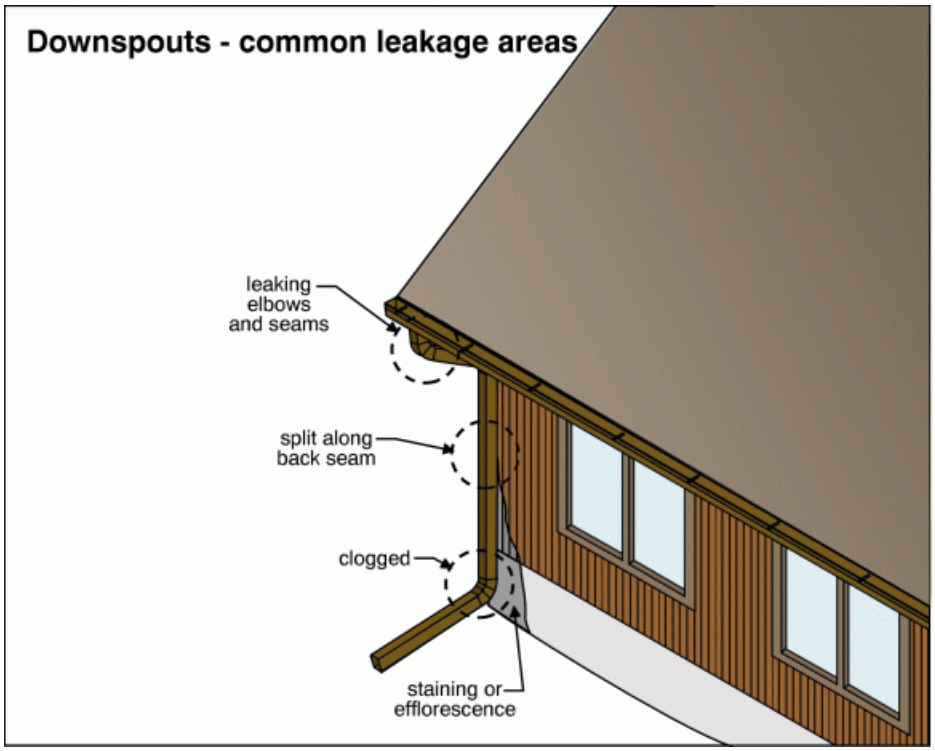
5. Condition: • Damage

Implication(s): Chance of water damage to contents, finishes and/or structure

Location: Throughout Exterior

Task: Repair or replace

Time: As soon as possible



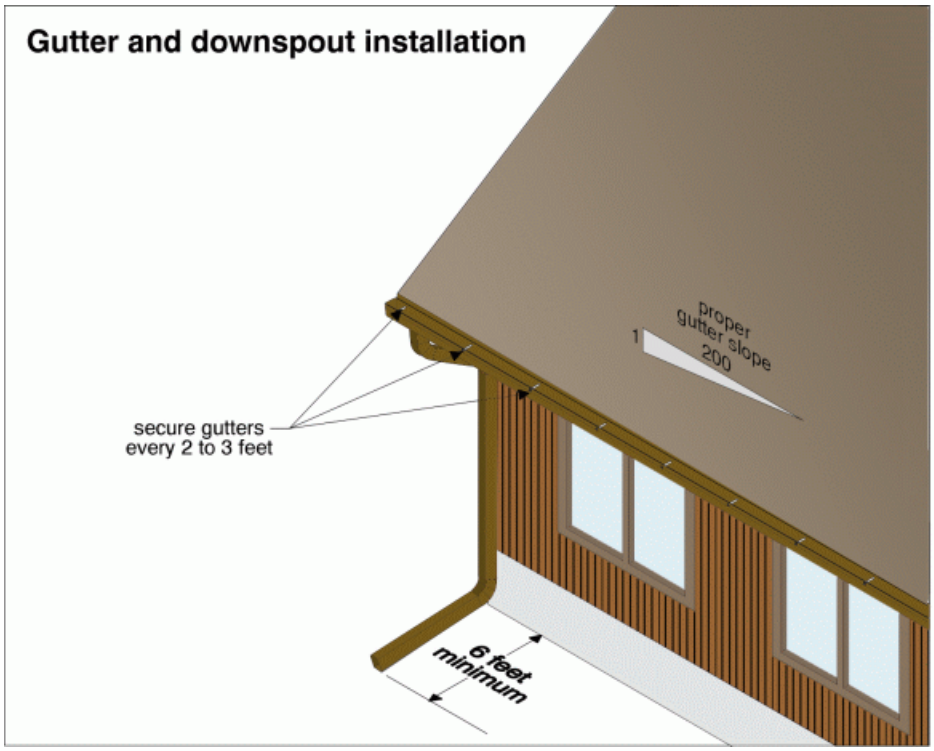
6. Condition: • Downspouts end too close to building

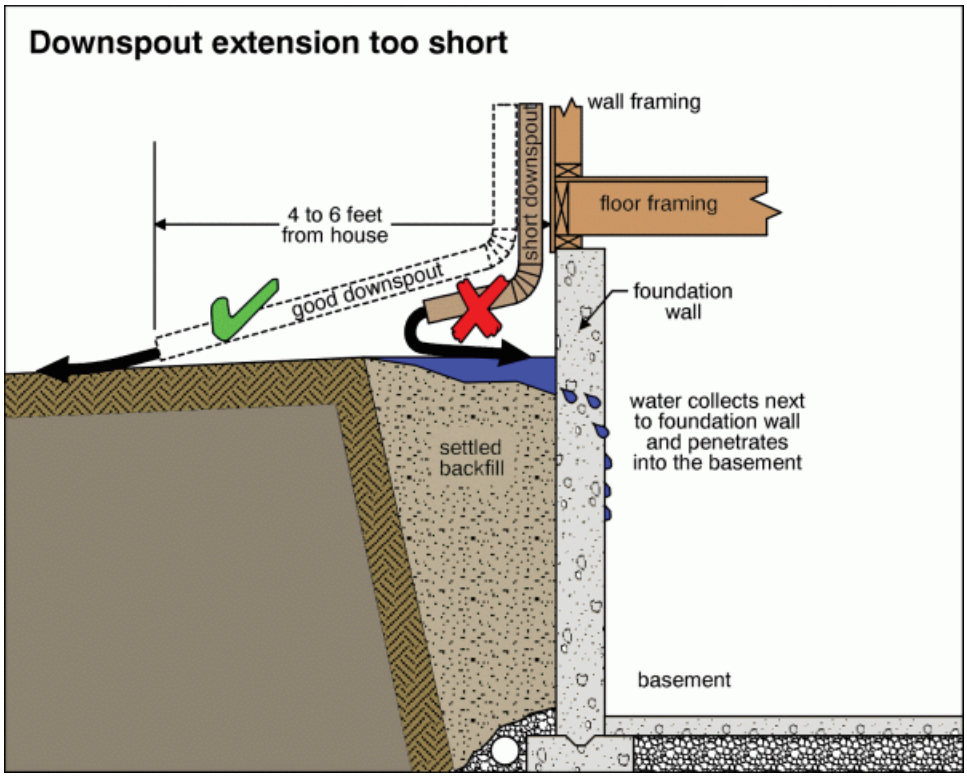
Implication(s): Chance of water damage to contents, finishes and/or structure

Location: Front Left Side Exterior Wall

Task: Improve

Time: As soon as possible


Gutter and downspout installation
proper gutter slope
1
200
secure gutters every 2 to 3 feet
6 feet minimum


Downspout extension too short
wall framing
short downspout
floor framing
4 to 6 feet from house
good downspout
foundation wall
water collects next to foundation wall and penetrates into the basement
settled backfill
basement

3. *Downspouts end too close to building*

4. *Downspouts end too close to building*

WALLS \ Metal siding

7. Condition: • Circular hole in siding and plugged with a plastic bag. Two copper pipes where observed in this hole and are vulnerable to freezing in the winter. Insulate and repair this area. A vent was once terminated to the exterior here once.

Implication(s): Frozen pipes, flooding, water damage, pest entry, energy loss.

Location: Right Side Exterior Wall

Task: Repair

Time: Less than 6 months

5.

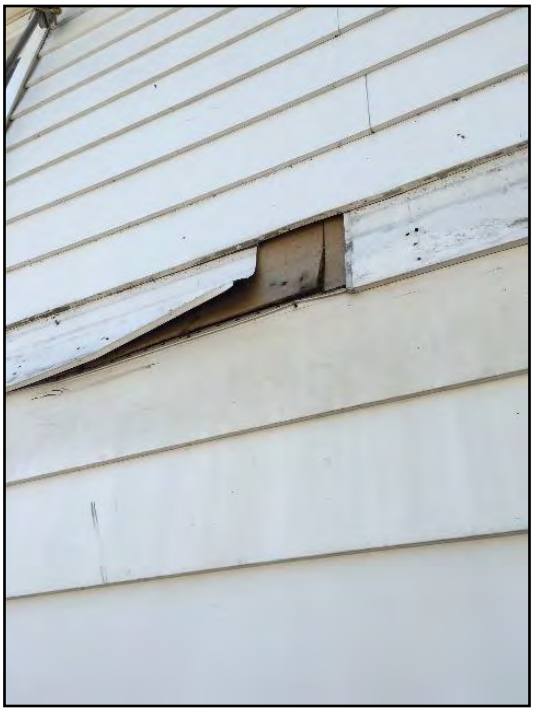
8. Condition: • Loose or missing pieces

Implication(s): Cosmetic defects | Chance of water damage to contents, finishes and/or structure

Location: Rear Exterior Wall

Task: Repair or replace

Time: As soon as possible



6. *Loose or missing pieces*

7. *Loose or missing pieces*

EXTERIOR GLASS \ Glass (glazing)

9. Condition: • Cracked

Implication(s): Cosmetic defects

Location: Left Side Exterior

Task: Replace

Time: Less than 1 year

EXTERIOR GLASS \ Frames

10. Condition: • Paint or stain needed

Implication(s): Material deterioration

Location: Throughout First Floor Second Floor

Task: Provide

Time: Less than 6 months

8. *Paint or stain needed*

9. *Paint or stain needed*

EXTERIOR GLASS \ Storms and screens

11. Condition: • Torn or holes

Implication(s): Chance of pests entering building

Location: Right Side First Floor

Task: Repair or replace

Time: Less than 1 year

10. *Torn or holes*

DOORS \ Exterior trim

12. Condition: • Paint or stain needed
Implication(s): Chance of damage to finishes and structure | Material deterioration
Location: Front Exterior
Task: Improve
Time: Less than 1 year

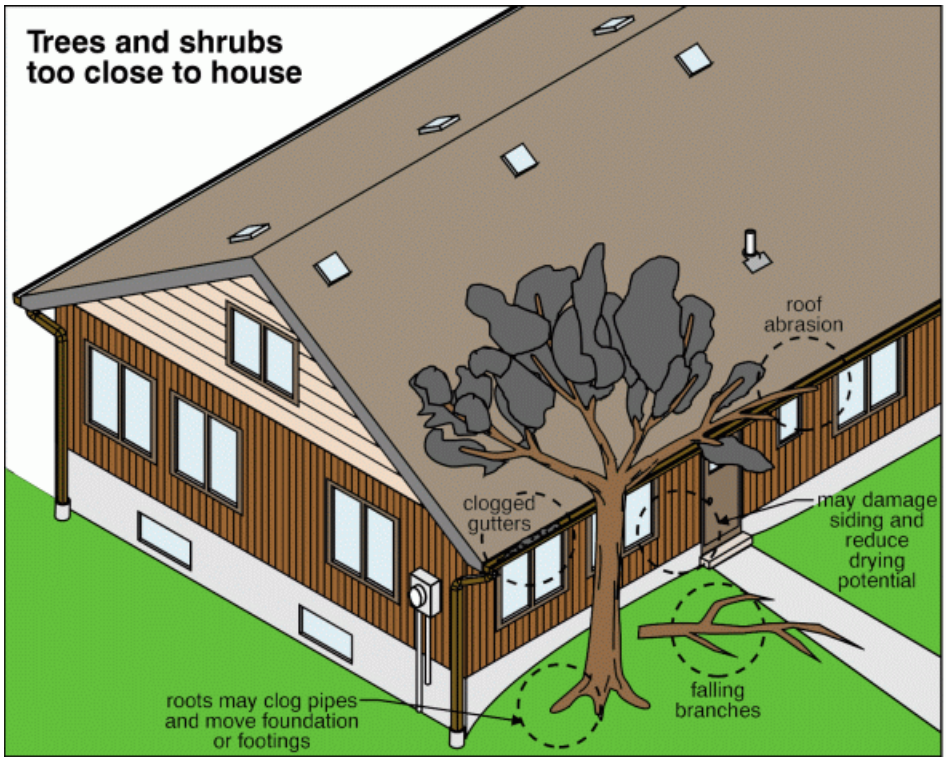
PORCHES, DECKS, STEPS, PATIOS AND BALCONIES \ Patios

13. Condition: • Trip hazards
Rosie almost had a fall here.
Implication(s): Physical injury
Location: Rear Yard
Task: Improve
Time: As soon as possible

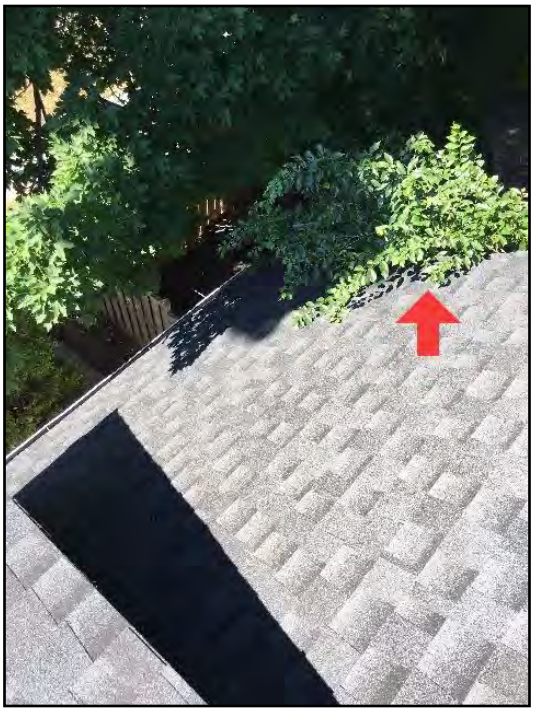
11. *Trip hazards*

LANDSCAPING \ General

14. Condition: • Trees or shrubs too close to building
Implication(s): Chance of water damage to contents, finishes and/or structure | Chance of pests entering building | Material deterioration
Location: Right Side Exterior Wall
Task: Correct
Time: As soon as possible



12. *Trees or shrubs too close to building*



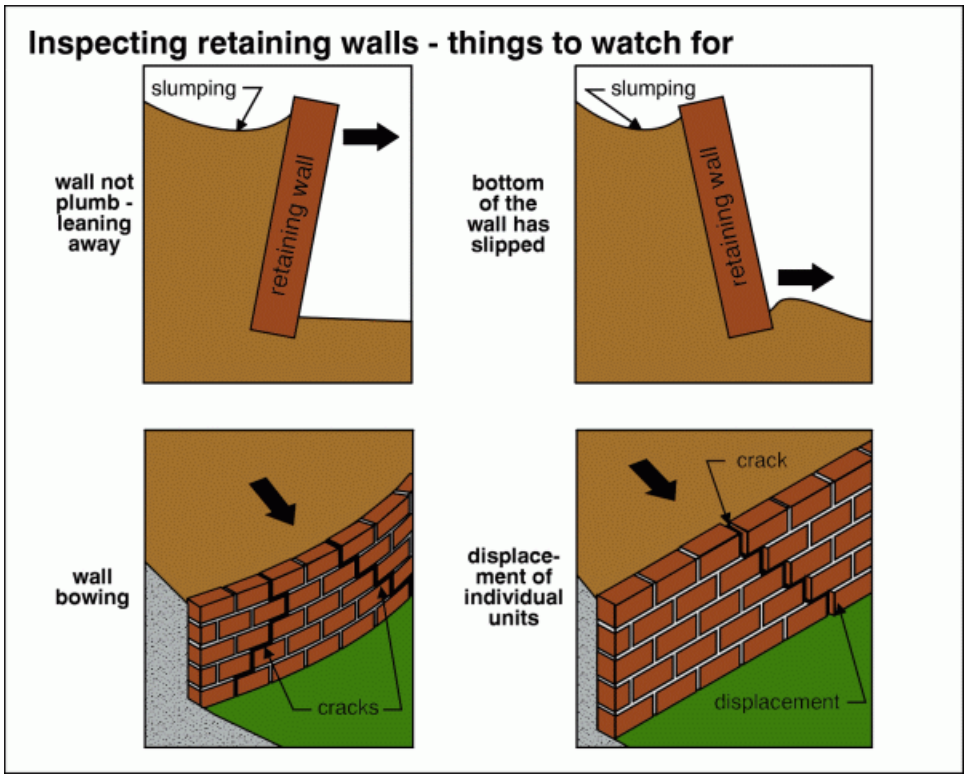
13. *Trees or shrubs too close to building*

LANDSCAPING \ Retaining wall

15. Condition: • Leaning

This wall will need to be replaced in the future. Monitor and replace when necessary.

Implication(s): Weakened structure | Chance of movement
Location: Front Right Side Exterior
Task: Monitor
Time: Ongoing



14. *Leaning*

Description & Observations

Configuration: • Basement

Foundation material: • Masonry block

Floor construction: • Columns and beams not visible.

Floor construction: • Joists • Subfloor - plank

Exterior wall construction: • Wood frame

Roof and ceiling framing: • Not visible

Limitations

Inspection limited/prevented by: • Wall, floor and ceiling coverings • Storage • New finishes/paint

Attic/roof space: • No access

Percent of foundation not visible: • 99 %

Not included as part of a building inspection: • Visible mold evaluation is not included in the building inspection report

Recommendations & Implications

FOUNDATIONS \ Foundation

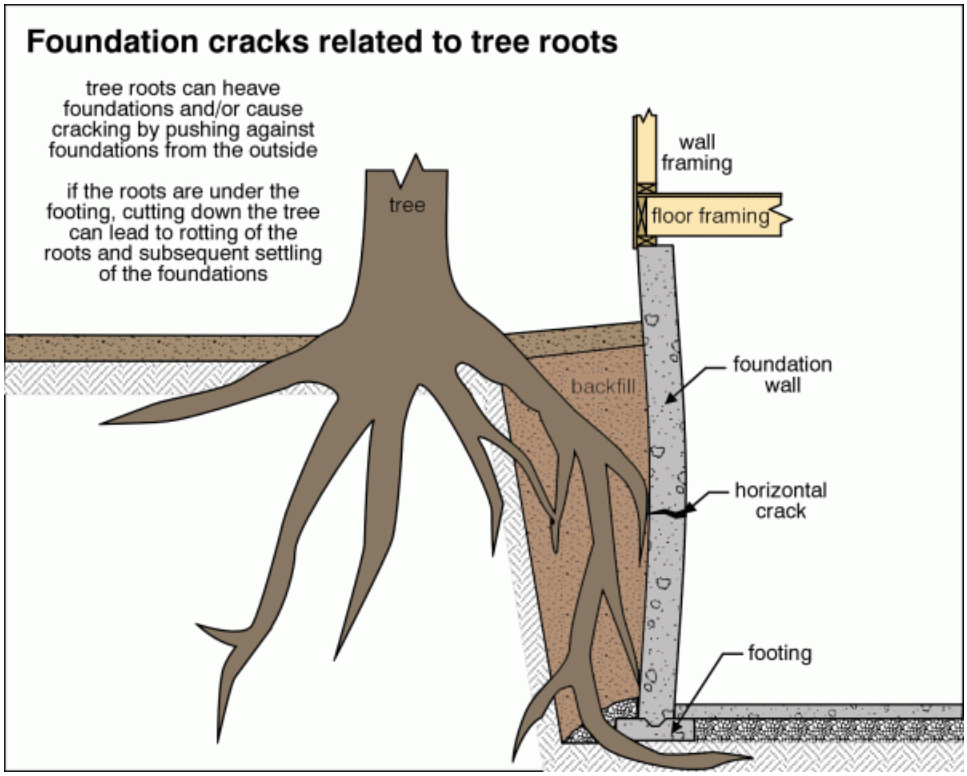
16. Condition: • Large trees close to building

Implication(s): Weakened structure | Chance of structural movement

Location: Right Side Exterior Wall

Task: Remove?

Time: Discretionary



15. *Trees or shrubs too close to building*

17. Condition: • Parging damaged or missing

Hairline cracks are normal in parged surfaces; parging that is separating from the concrete block base should be repaired. Parging is a cosmetic and sacrificial material applied to concrete surfaces.

Implication(s): Chance of damage to structure | Shortened life expectancy of material
Location: Right Side Exterior
Task: Repair
Time: Less than 2 years

16. *Parging damaged or missing*

FOUNDATIONS \ Performance opinion

18. Condition: • Considering the limitations of limited visibility, the Foundation appears to be performing as intended at the time of the home inspection. No signs of leakage were noted during this time. Please note that the possibility of leakage in the future is always probable. Keeping water away from the foundation is your greatest defense.
Location: Throughout Basement
Task: Monitor
Time: Ongoing

FLOORS \ Concrete slabs

19. Condition: • Hole in floor slab. A hole was created for the installation a a floor drain in the vicinity of the laundry area in Unit 3 under the stairs for Unit 2. Back fill and cement this area to prevent dampness from the soil entering the living space.
Implication(s): Possible Increased humidity levels in the area.
Location: Rear Basement
Task: Repair
Time: Less than 1 year

Description & Observations

Service entrance cable and location: • Overhead

Service size: • 100 Amps (240 Volts)

Main disconnect/service box rating: • 125 Amps

Main disconnect/service box type and location:

• Breakers - basement

Unit 3

System grounding material and type: • Copper - water pipe

Distribution panel rating: • 125 Amps

Distribution panel type and location:

• Breakers - basement

Unit 3

Auxiliary panel (subpanel) type and location: • Breakers-Kitchen Unit 1

Distribution wire material and type:

• Copper - non-metallic sheathed

• Aluminum - non-metallic sheathed

One circuit noticed in unit 1 panel. Have your electrician confirm when doing your electrical upgrades.

Type and number of outlets (receptacles):

• Grounded - upgraded

• Ungrounded - typical

More prevalent in Unit 1.

Circuit interrupters: Ground Fault (GFCI) & Arc Fault (AFCI):

• No AFCI

• GFCI - kitchen

Unit 1

Smoke detectors: • Present

Carbon monoxide (CO) detectors: • None noted

Limitations

General: • Concealed Electrical wiring is not inspected.

Panel covers: • Equipment Service Side Cover of the Panel is not removed.

System ground: • Continuity not verified

Circuit labels: • The circuits are not labeled at the panel

Recommendations & Implications

SERVICE BOX, GROUNDING AND PANEL \ Distribution fuses/breakers

20. Condition: • AFCI Recommended. AFCI's sense when there is arcing from loose connections and/or faulty wiring in a circuit and shuts the circuit down. This is a great life saving safety feature and an improvement to your home.
Location: Panel
Task: Upgrade
Time: As soon as your Budget permits

DISTRIBUTION SYSTEM \ Wiring - installation

21. Condition: • Open splices
Implication(s): Electric shock | Fire hazard
Location: Rear Yard
Task: Correct
Time: Immediate

17. *Open splices*

DISTRIBUTION SYSTEM \ Lights

22. Condition: • Missing light cover.
Location: Rear Yard
Task: Repair or replace
Time: As soon as possible

DISTRIBUTION SYSTEM \ Outlets (receptacles)

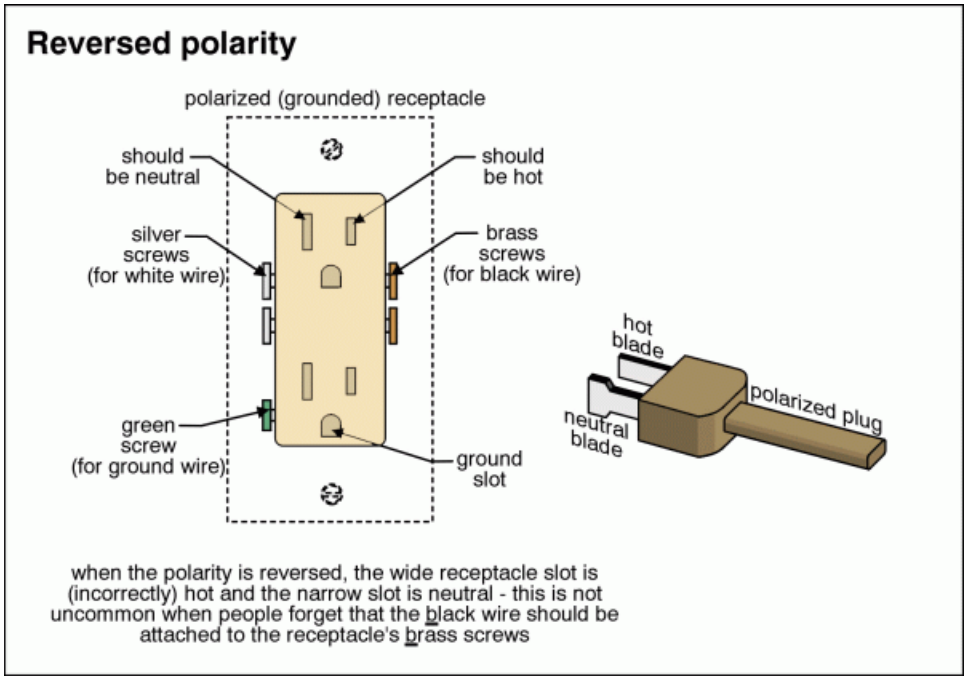
23. Condition: • GFCI recommended. Although GFCI's weren't required in the kitchen when this home was built, it is a good safety upgrade to have installed. Keep in mind if the Kitchen Receptacle is a Multi wired one, a GFCI Dual Pole Breaker will need to be used in the Panel. Multi wired kitchen receptacles have the top and bottom wired to different circuits. This reduces nuisance tripping from using kitchen appliances.

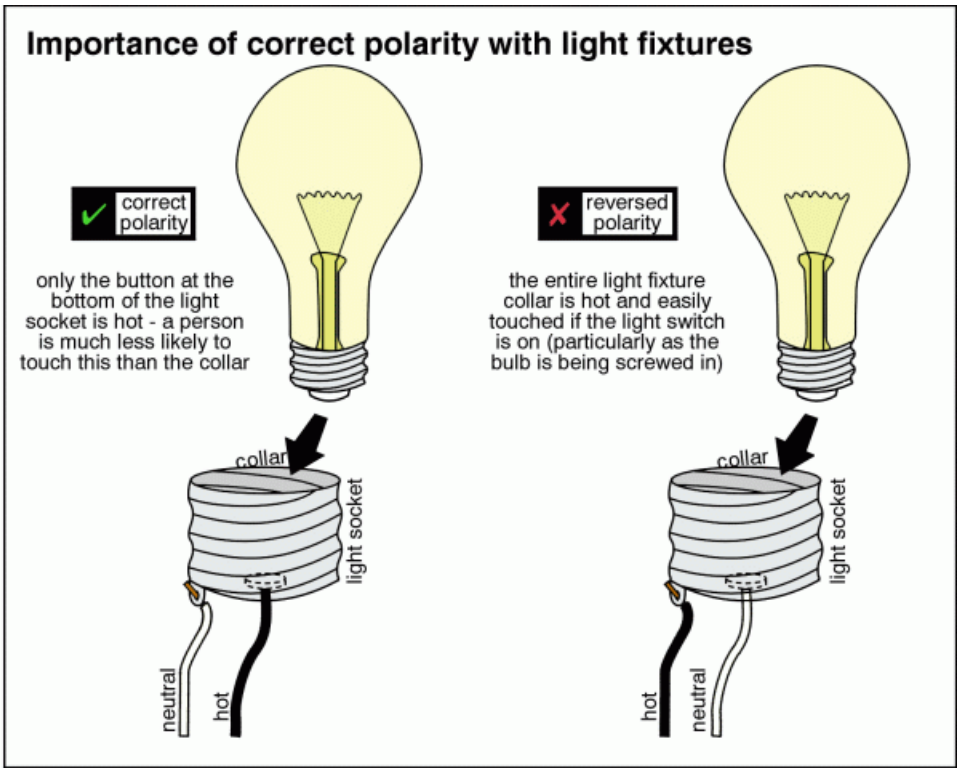
Notes: GFCI receptacle isn't a requirement for Garages but always recommended since outdoor appliances are often plugged in here.
Location: Kitchen Unit 2 and 3.
Task: Upgrade
Time: As soon as your Budget permits

24. Condition: • Inoperative
This receptacle was not working and the wire is not protected from mechanical damage and the weather. Have your electrician correct this.
Implication(s): Equipment inoperative
Location: Front Exterior Wall
Task: Repair or replace Protect
Time: As soon as possible

18. *Inoperative*

25. Condition: • Reversed polarity
Implication(s): Electric shock
Location: Second Floor Bedroom Unit 2
Task: Correct
Time: Immediate





26. Condition: • Ungrounded

There were ungrounded circuits noted through out the house. Have your electrician provide GFCI receptacles in their place to improve safety.

Implication(s): Electric shock

Location: Throughout Basement First Floor
Task: Upgrade
Time: As soon as your Budget permits

DISTRIBUTION SYSTEM \ Outlets (receptacles) - number or location

27. Condition: • Too few outlets
This is an older home and there were many extension cords noted throughout the home. Extension cords are not designed for permanent wiring and this is a potential fire hazard. Modern life styles require more receptacles. Discuss with your electrician for a possible future upgrade and strategy.
Implication(s): Nuisance
Location: Throughout Basement First Floor Second Floor
Task: Upgrade
Time: As soon as your Budget permits

DISTRIBUTION SYSTEM \ Cover plates

28. Condition: • Missing
Implication(s): Electric shock
Location: Rear Exterior
Task: Correct
Time: Immediate

DISTRIBUTION SYSTEM \ Smoke detectors

29. Condition: • Missing
Unit 2
Implication(s): Fire hazard
Location: Second Floor
Task: Provide
Time: Immediate

DISTRIBUTION SYSTEM \ Carbon monoxide (CO) detectors

30. Condition: • Be sure to have Carbon Monoxide detectors installed on every level of your home.
Implication(s): Carbon Monoxide poisoning from faulty gas appliances.
Location: Throughout Basement First Floor Second Floor
Task: Provide
Time: As soon as possible
Cost: $100 - $150

Description & Observations

Fuel/energy source: • Gas

System type: • Boiler

Furnace manufacturer: • Weil-Mclain

Heat distribution: • Radiators • Baseboards

Approximate capacity: • 100,000 BTU/hr

Efficiency: • Mid-efficiency

Exhaust venting method: • Induced draft

Approximate age: • 6 years

Typical life expectancy: • Boiler (cast iron) 25 to 50 years

Limitations

Warm weather: • Prevents testing heating effectiveness

Heat loss calculations: • Not done as part of a building inspection

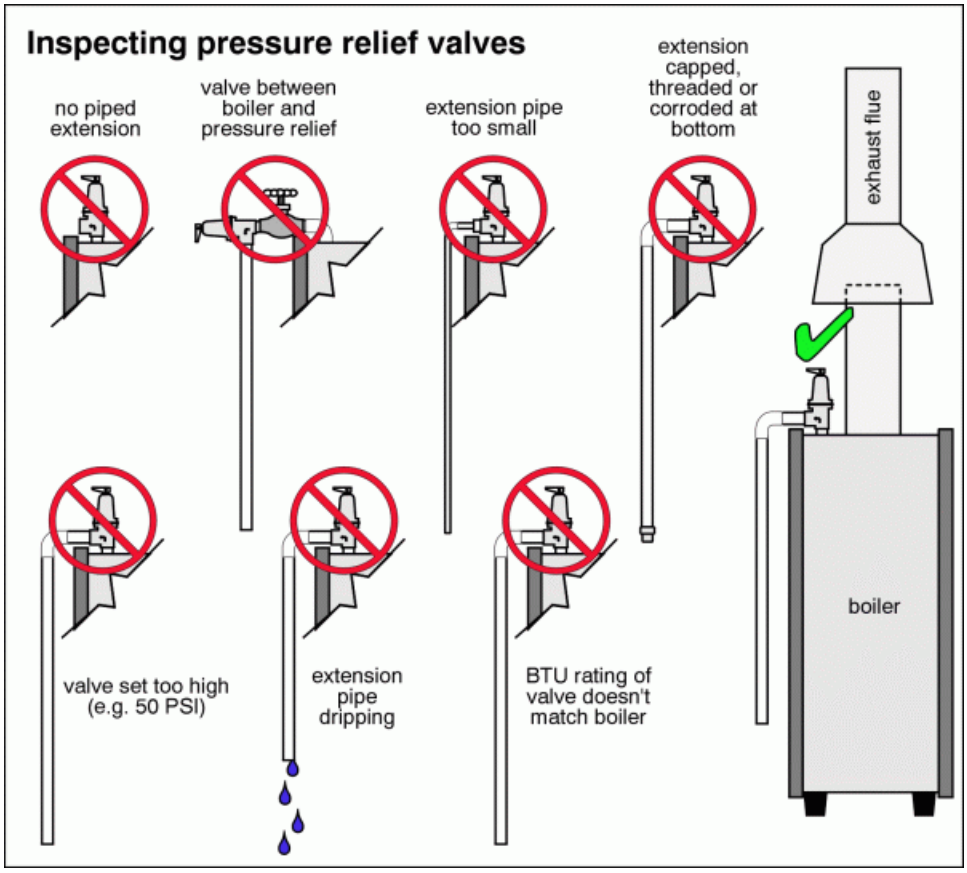
Recommendations & Implications

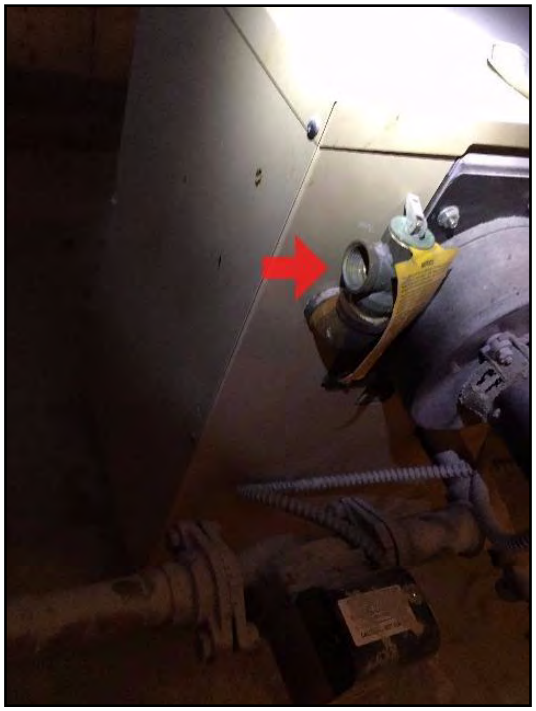
General

31. • Have a check up done in the early fall to ensure good efficient performance.
Location: Basement Utility Room
Task: Tune up
Time: Less than 1 year

GAS HOT WATER BOILER \ Pressure relief valve

32. Condition: • No pipe extension
Scalding and damage to near by people and drywall is possible if this valve opens due to high pressures. A discharge tube should be installed 6"-12" from the floor.
Location: Basement Utility Room
Task: Provide
Time: As soon as possible





19. *No pipe extension*

GAS HOT WATER BOILER \ Radiators, convectors and baseboards

33. Condition: • Cold

Some Rads were not responding to heat in unit 3. Further evaluation by a boiler technician is recommended.

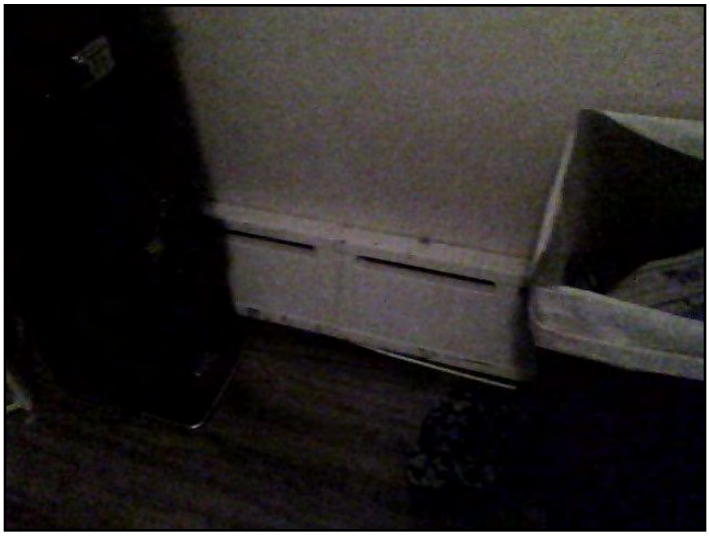
Implication(s): Increased heating costs | Reduced comfort

Location: Throughout Basement

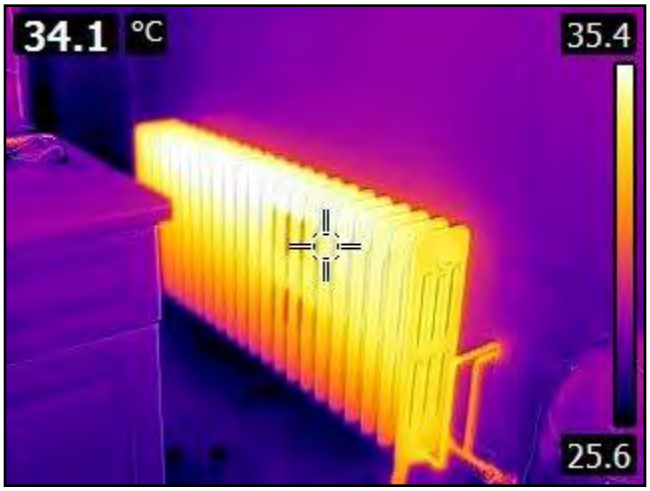
Task: Further evaluation

Time: As soon as possible

20. *Cold Unit 3 bedroom Pic B*

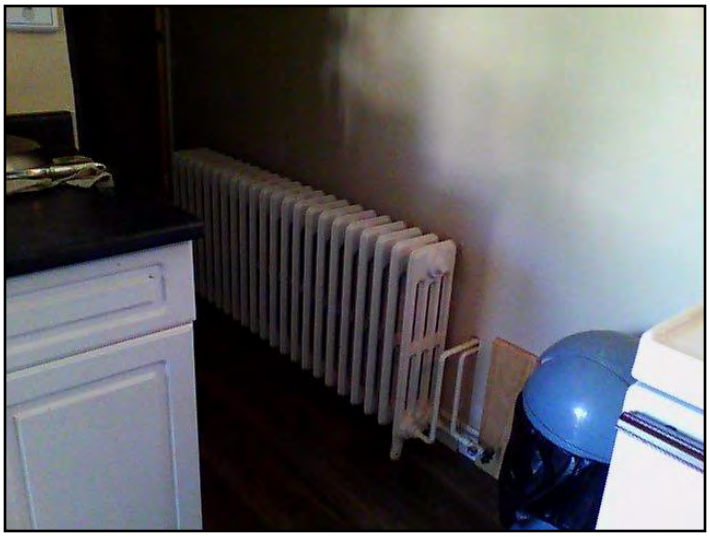


21. *Cold Unit 3 bedroom Pic A*



22. *Hot Rad in Unit 3 Kitchen Pic C*

23. *Cold Unit 3 bedroom Pic A*



24. *Hot Rad in Unit 3 Kitchen Pic C*

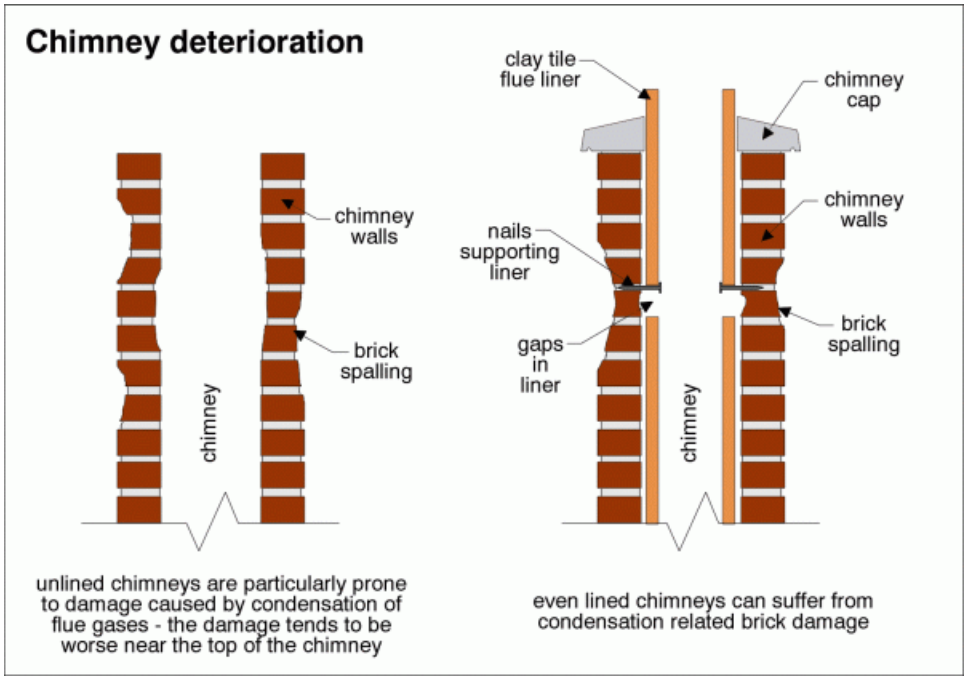
25. *Cold Unit 3 bedroom Pic B*

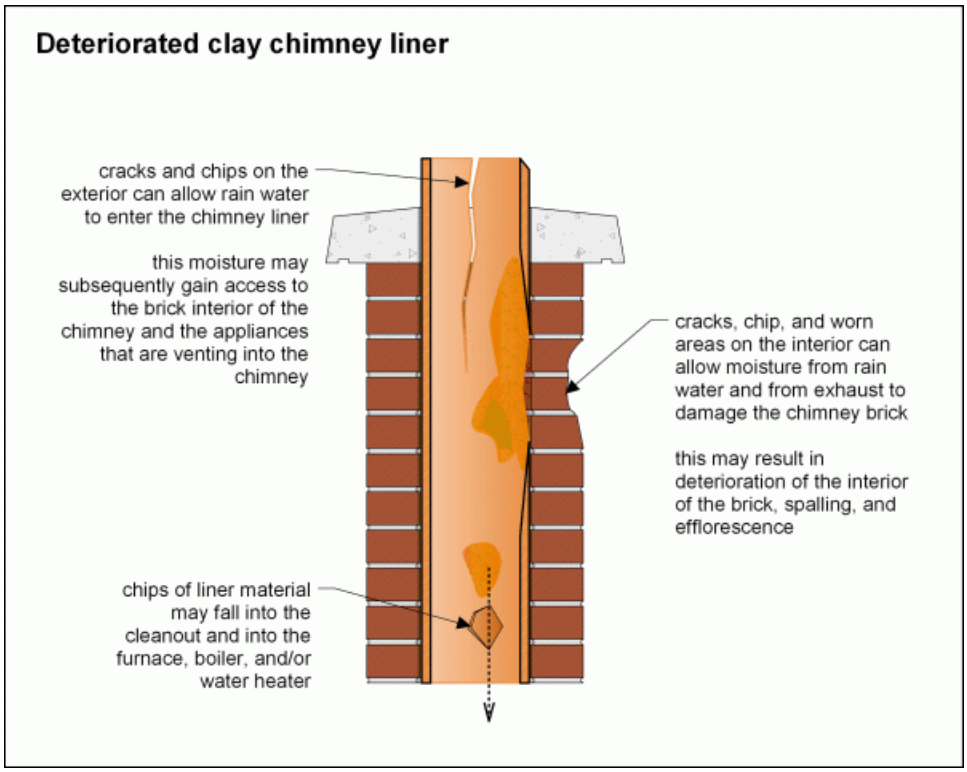
CHIMNEY AND VENT \ Masonry chimney

34. Condition: • Loose, missing or deteriorated masonry

David Fritz (905) 508-0500
Marty Vandenberg
tel:905-515-6108
Mimmo (416) 571-6018
Brian Beaudin(705)-826-9638
Elite Designed Concrete Inc.. 905-764-3000
Steve Rockwell 647-567-1252* (Excellent work good price) http://www.rockwellmasonry.ca/en/
Magic touch : 905-948-0407
Metro Chimney: 416-839-0585
Howard Sheppard W.E.T.T Inspection:
wettech.sheppard@gmail.com

Implication(s): Material deterioration
Location: Roof
Task: Repair
Time: Less than 1 year


Chimney deterioration
chimney walls
brick spalling
chimney
clay tile flue liner
chimney cap
chimney walls
nails supporting liner
gaps in liner
brick spalling
chimney
unlined chimneys are particularly prone to damage caused by condensation of flue gases - the damage tends to be worse near the top of the chimney
even lined chimneys can suffer from condensation related brick damage

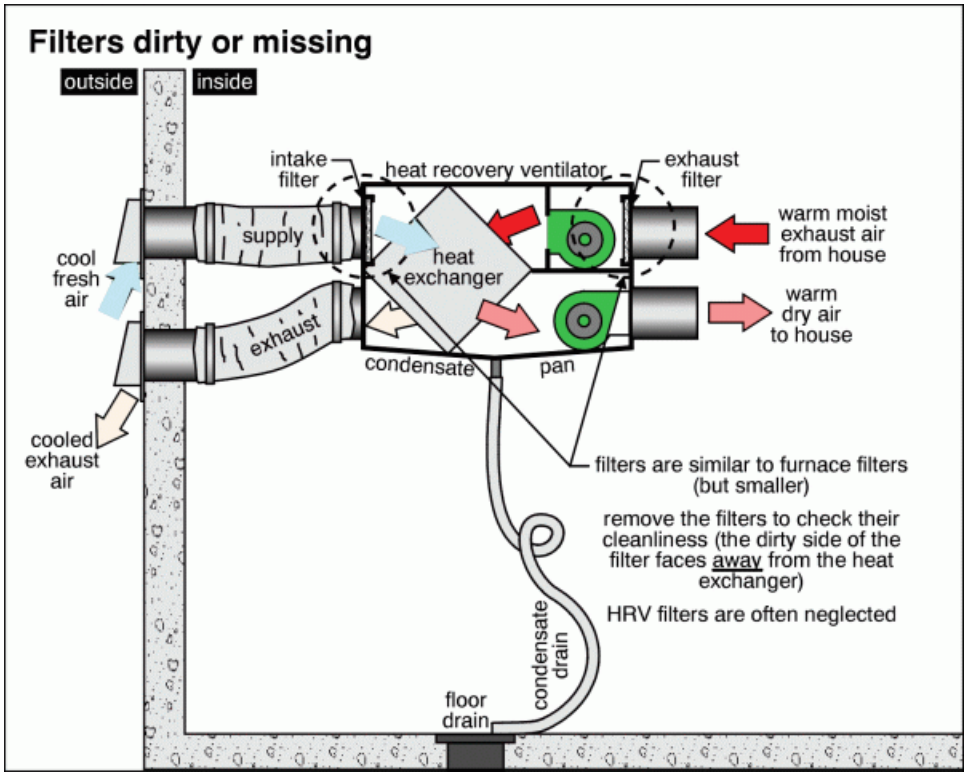

Deteriorated clay chimney liner
cracks and chips on the exterior can allow rain water to enter the chimney liner
this moisture may subsequently gain access to the brick interior of the chimney and the appliances that are venting into the chimney
cracks, chip, and worn areas on the interior can allow moisture from rain water and from exhaust to damage the chimney brick
this may result in deterioration of the interior of the brick, spalling, and efflorescence
chips of liner material may fall into the cleanout and into the furnace, boiler, and/or water heater

26. *Loose, missing or deteriorated masonry*

27. *Loose, missing or deteriorated masonry*

HEAT RECOVERY VENTILATOR \ Filters

35. Condition: • Dirty
Implication(s): Equipment ineffective
Location: Basement Utility Room
Task: Clean
Time: As soon as possible


Filters dirty or missing
outside
inside
intake filter
heat recovery ventilator
exhaust filter
supply
heat exchanger
warm moist exhaust air from house
cool fresh air
exhaust
warm dry air to house
condensate
pan
cooled exhaust air
filters are similar to furnace filters (but smaller)
remove the filters to check their cleanliness (the dirty side of the filter faces away from the heat exchanger)
HRV filters are often neglected
condensate drain
floor drain

28. *Dirty*

Description & Observations

General: • There is no central Air Conditioning in this home. Window A/C were noted. You may wish to install a mini split system in the future. Click on this blue link for more info.

Description & Observations

Attic/roof insulation material: • Not determined

Attic/roof ventilation: • Roof and soffit vents

Attic/roof air/vapor barrier:

• Kraft paper

A ceiling tile was missing and I was able to see the type of insulation and vapour barrier used. Keep in mind that this doesn't confirm the whole roof is like this but highly probable.

29. *Kraft paper*

Wall insulation material:

• Not determined

Not accessible

Wall insulation amount/value: • Not determined

Foundation wall insulation material:

• Not determined

Not accessible.

Mechanical ventilation system for home:

• Heat recovery ventilator (HRV)

Unit 3

• Bathroom exhaust fan

Unit 1

Limitations

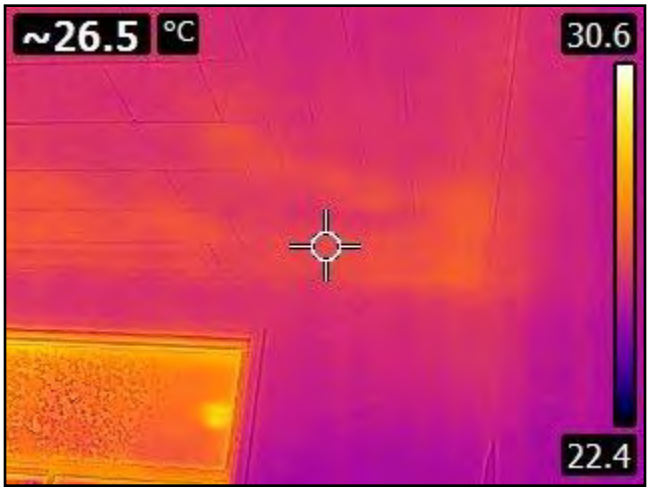
Inspection prevented by no access to: • Roof space • Wall space • Floor space

Air/vapor barrier system: • Continuity not verified

Recommendations & Implications

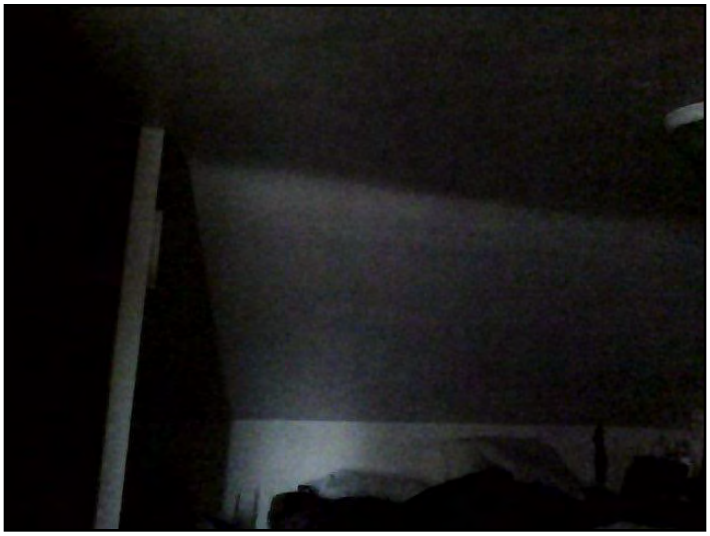
RECOMMENDATIONS \ Overview

36. Condition: • Although there was no Access to any type of roof and wall space, one can assume that this home is below modern standards as far as energy savings go. It is important to be aware that only by invasive means can one truly and accurately determine the amount of insulation behind finished areas.
Some Thermal scans were taken. Some areas show lower insulation performance and or voids. Improving these areas in future renovations will improve energy savings.
Implication(s): Reduced energy savings and increased losses over time.
Location: Throughout Attic

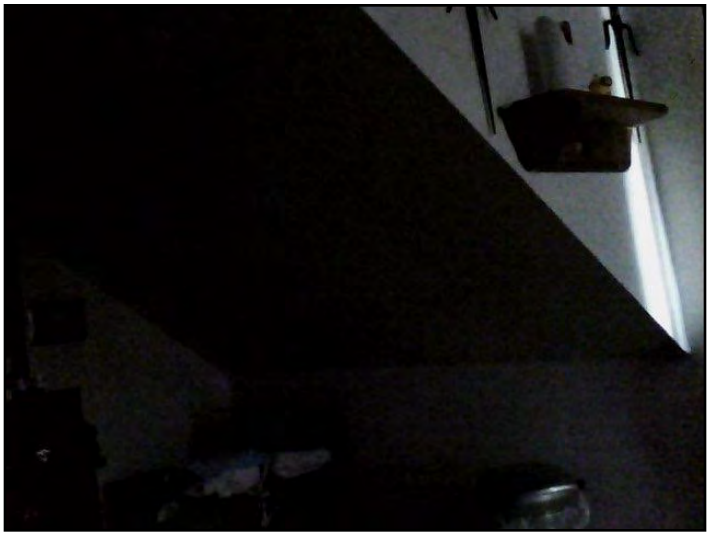


30. *Possible insulation voids Pic A*

31. *Possible insulation Voids Pic B*

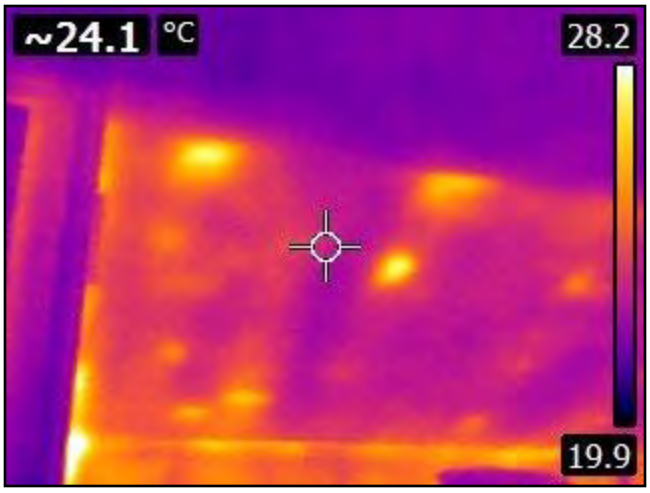


32. *Insulation Voids Pic C*

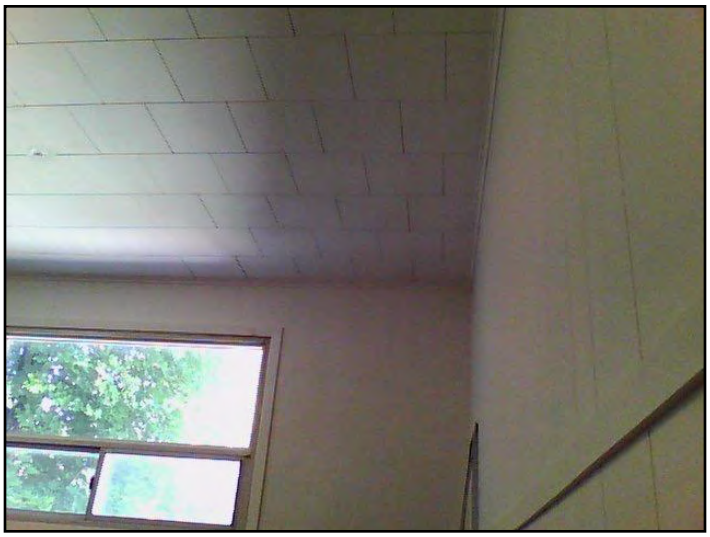


33. *Insulation Voids Pic D*

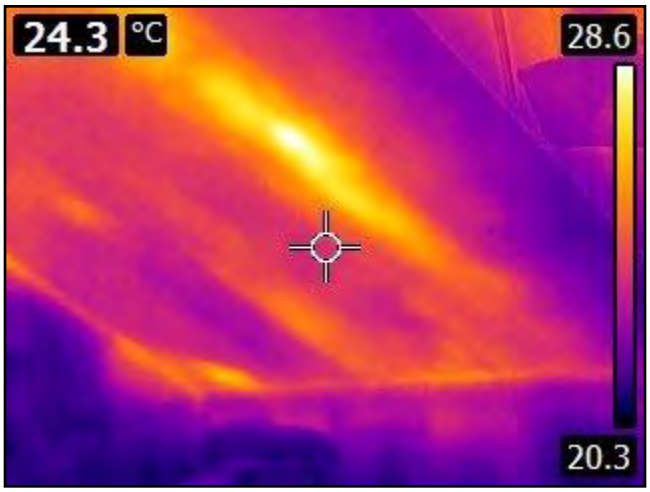
34. *Possible insulation Voids Pic B*



35. *Insulation Voids Pic C*



36. *Possible insulation voids Pic A*



37. *Insulation Voids Pic D*

Description & Observations

Service piping into building: • Copper

Supply piping in building: • Copper • Galvanized steel • CPVC (Chlorinated PolyVinylChloride)

Water flow and pressure: • Functional

Water heater fuel/energy source: • Gas

Water heater type: • Conventional • Owned

Water heater exhaust venting method: • Natural draft

Water heater manufacturer: • Bradford White

Tank capacity: • 40 gallons

Water heater approximate age: • 8 years

Typical life expectancy: • 8 to 12 years

Waste disposal system: • Public

Waste and vent piping in building: • Plastic • Copper • Galvanized steel

Floor drain location: • Near laundry area

Gas piping: • Steel • Copper

Main fuel shut off valve at the: • Gas meter

Backwater valve: • Not present

Limitations

Items excluded from a building inspection: • Water quality • Isolating/relief valves & main shut-off valve • Concealed plumbing • Tub/sink overflows • Water treatment equipment • Water heater relief valves are not tested • The performance of floor drains or clothes washing machine drains

Recommendations & Implications

WATER HEATER \ Life expectancy

37. Condition: • Although this water heater is entering the typical projected end of life phase, it appears to be in good condition and performing well. Calling various rental companies to have it replaced with a new unit usually free of charge is a suggestion. Ex. (Reliance Home Comfort Toll free at 1-888-837-1451)
Implication(s): Reduced performance and greater operating costs. Rust in tank
Location: Basement Utility Room
Task: Replace
Time: Less than 2 years
Cost: $600-$1200 ave for purchase option

WASTE PLUMBING \ Traps - performance

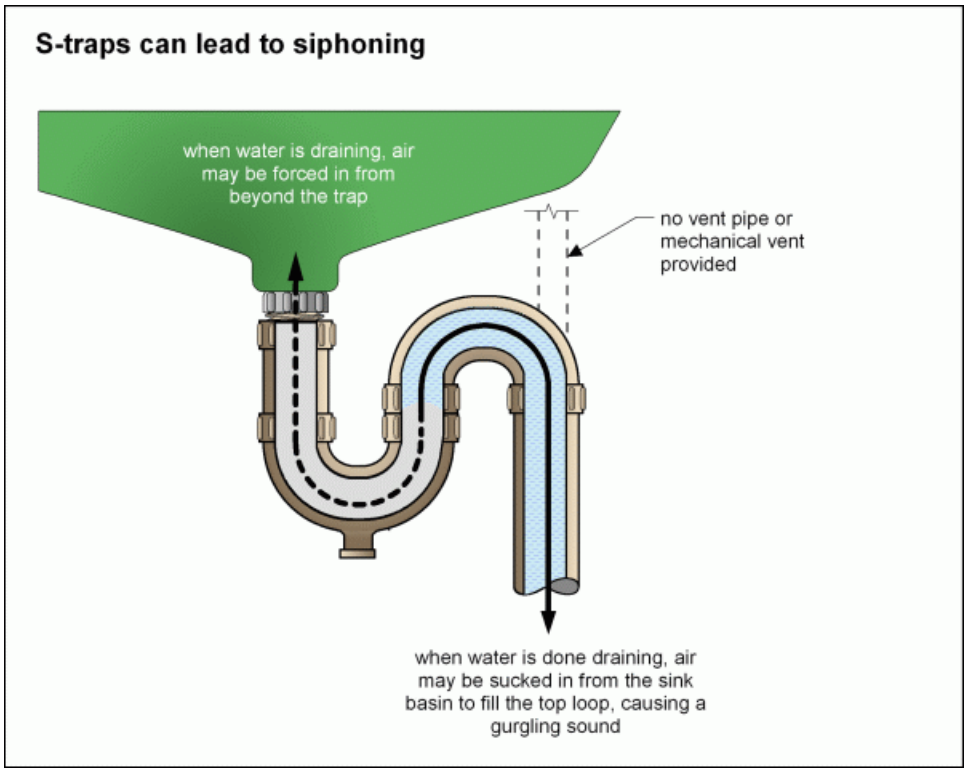
38. Condition: • Slow draining!
Note this trap arm connects to galvanized steel drain pipe. There is a possibility that it is corroded and affecting drain performance. If after cleaning out the trap no performance improvement is noted, have a plumber further evaluate.

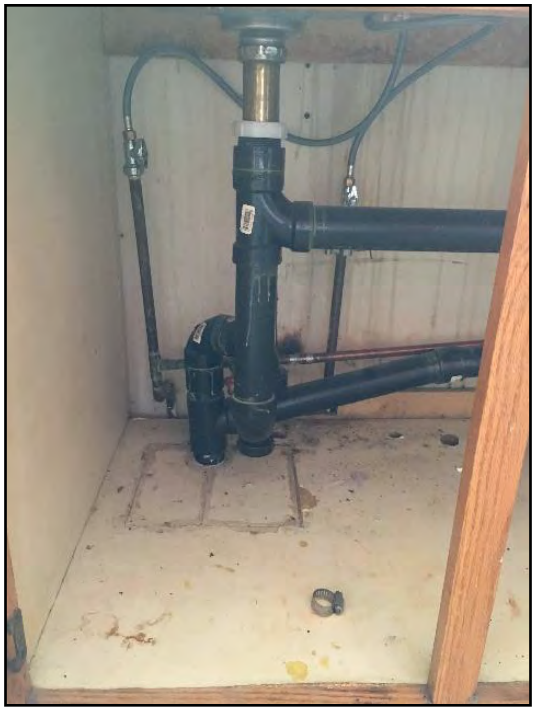
Location: First Floor Bathroom
Task: Clean
Time: Less than 6 months

38. *Slow draining!*

WASTE PLUMBING \ Traps - installation

39. Condition: • Nonstandard shape or material
This arrangement seemed to still perform its function. Monitor and have it replaced and improved in next remodel if necessary. Traps shaped in an S can often self siphon and allow sewer gases into the home.
Implication(s): Reduced operability | Fixtures slow to drain
Location: First Floor Kitchen
Task: Further evaluation
Time: Less than 6 months





39. *Nonstandard shape or material*

FIXTURES AND FAUCETS \ Toilet

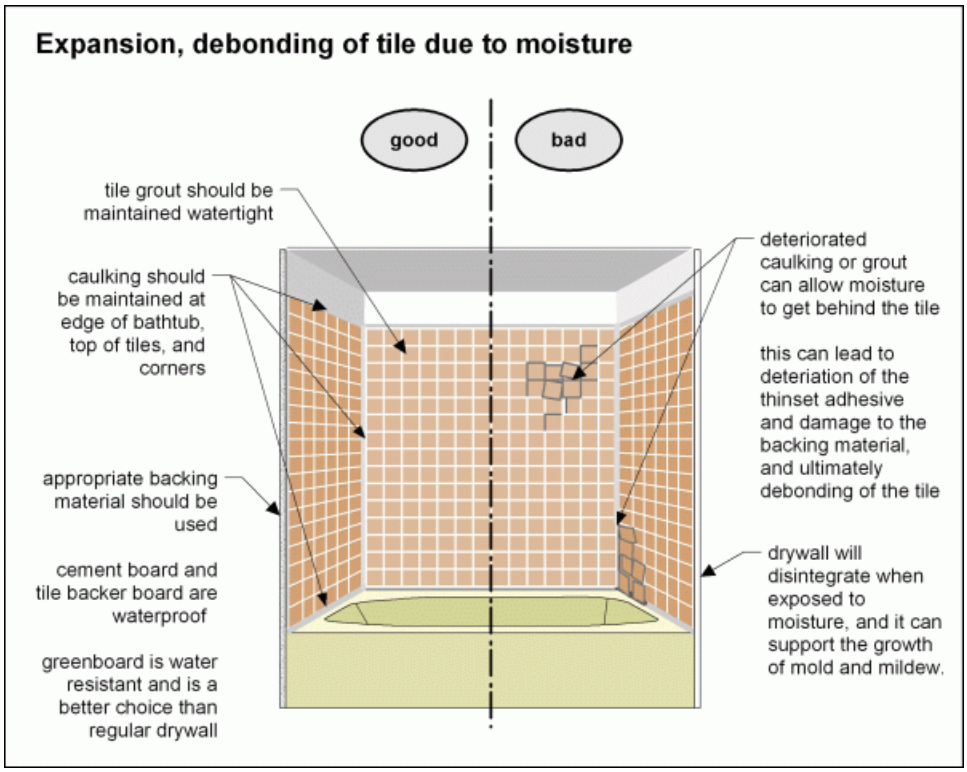
40. Condition: • Replace valve in toilet as it is not performing as intended.
Implication(s): Leakage and poor performance

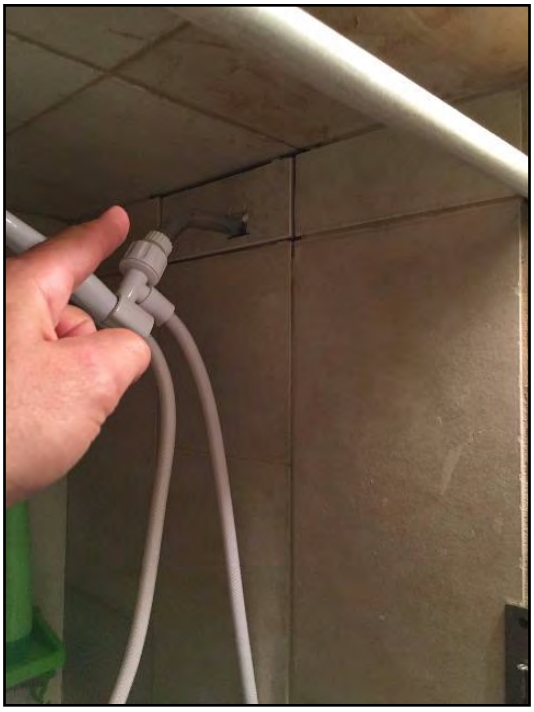
Location: Second Floor
Task: Replace
Time: As soon as possible
Cost: minor

40. *Replace valve in toilet as it is not...*

FIXTURES AND FAUCETS \ Bathtub enclosure

41. Condition: • Caulking loose, missing or deteriorated
Unit 1
Implication(s): Chance of water damage to contents, finishes and/or structure
Location: First Floor Bathroom
Task: Provide
Time: As soon as possible





41. *Grout missing*

42. *Caulking loose, missing or deteriorated*

Description & Observations

Major floor finishes: • Hardwood • Laminate

Major wall finishes: • Plaster/drywall

Major ceiling finishes: • Plaster/drywall

Windows: • Single/double hung • Sliders • Casement

Glazing: • Single • Double

Exterior doors - type/material: • Metal-clad

Oven type: • Conventional

Oven fuel: • Electricity

Range fuel: • Electricity

Appliances: • Oven

Appliances: • Refrigerator • Dishwasher • Microwave oven

Laundry facilities:
• Washer
• Hot/cold water supply
• Vented to outside
Unit 3 Unit is currently venting into the interior. The disconnected vent in the utility room may be the unit 1 dryer vent.
• 120-Volt outlet
• 240-Volt outlet
• Waste standpipe

Kitchen ventilation:
• Range hood
• Recirculating type
Unit 1

Bathroom ventilation: • Window
Note: Unit 2

Bathroom ventilation:
• Exhaust fan
unit 1 and 3

Stairs and railings:
• Inspected
Note: Although this isn't a code inspection, Unit 2 stairs are just a hair under code minimum. People with large shoe sizes should take care.

43. *Inspected*

Limitations

Inspection limited/prevented by: • Storage, Equipment and Materials

Inspection limited/prevented by: • Storage in closets/cupboards

Not tested/not in service:
• Central vacuum
Some rough in piping was noted in unit one.

Not included as part of a building inspection: • Carbon monoxide detectors, security systems, central vacuum • Security systems and intercoms • Cosmetic issues • Appliances • Perimeter drainage tile around foundation, if any

Appliances: • Effectiveness of dishwasher drying cycle not tested

Percent of foundation not visible: • 99 %

Basement leakage: • It is said that 90% of basements will leak at least once in their life time. Keeping this in mind, it is of utmost importance to maintain surface water away from the foundation as much as possible. This is your best defense in reducing the probability of Basement leakage from occurring.

Recommendations & Implications

WINDOWS \ Hardware

42. Condition: • Inoperable
Unit 1
Implication(s): System inoperative or difficult to operate
Location: First Floor Living Room
Task: Repair or replace
Time: Less than 6 months

44. *Inoperable*

43. Condition: • Missing
unit 1 and 2
Implication(s): System inoperative or difficult to operate
Location: Second Floor
Task: Repair or replace
Time: Less than 6 months

WINDOWS \ Storms and screens

44. Condition: • Missing
Implication(s): Chance of pests entering building | Increased heating costs | Reduced comfort
Location: Throughout
Task: Provide
Time: Less than 1 year

EXHAUST FANS \ Exhaust duct

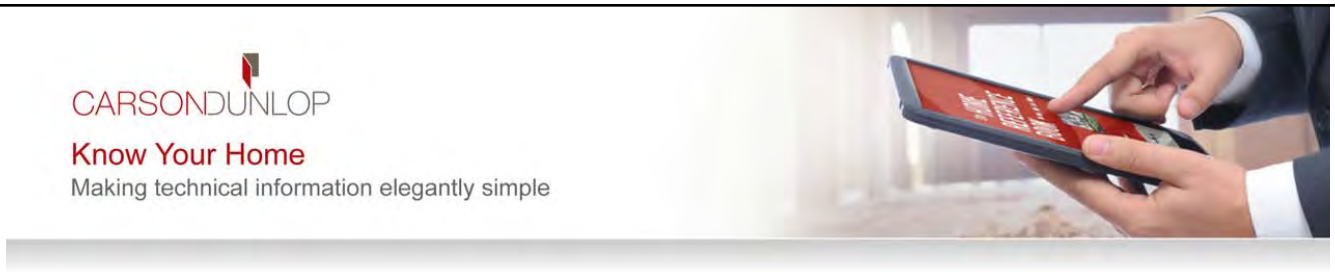
45. Condition: • Leak

This may be unit 1's dryer vent duct. Evaluate further and repair.
Implication(s): Chance of condensation damage to finishes and/or structure
Location: Basement Utility Room
Task: Repair
Time: As soon as possible

45. *Leak*

APPLIANCES \ Doorbell
46. Condition: • Inoperative
Unit 1
Implication(s): Equipment inoperative
Location: First Floor
Task: Repair
Time: Discretionary

END OF REPORT



Basement Apartments: Untangling the Web

Basement apartment, granny flat, accessory unit; no matter what it is called, there are many different reasons for having a second suite. Whether it's for extra income, providing a place for a family member, increasing the value of the house or having a tenant for company, a second suite can be beneficial.

But is it a 'legal' apartment? If not, how can it be made 'legal'? In the process of getting the apartment approved, will I be inviting 'trouble'? What if the City prescribes improvements that are prohibitively expensive? What if the City decides that I can't have a second suite?

This report will look at some of the key concepts of second suites including:

- The legislation history
- The evaluation process and required inspections
- Where to get more information

WHERE THERE ARE RULES, THERE IS GOVERNMENT

There are two levels of government with interests in the regulation of second units.

Provincial Legislation

Prior to 1993, there was little to worry about.

In 1994, the NDP government in Ontario created *Bill 120*, which allowed for second suites anywhere in the province, regardless of local bylaws. Standards were set out for building, fire and parking requirements. At this point, a permit was required to change a home from single family to multi-family.

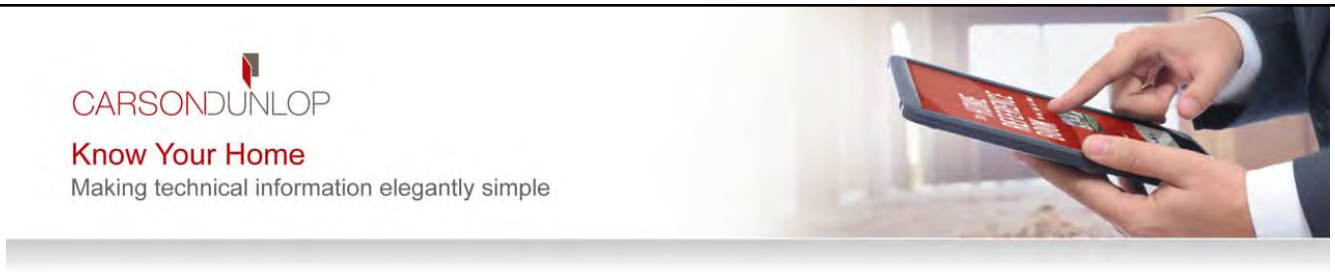
This legislation was nullified by the Conservatives in 1996, although any units created prior to November 1995 were to be recognized and permitted to stay in use.

The Liberals have since introduced ***Strong Communities through Affordable Housing Act, 2011*** (effective January 1, 2012). This Act requires municipalities to allow second units within primary residences as well as in other structures (e.g. garages). Generally only one extra unit would be permitted. Planning for the possible inclusion of these units is actually encouraged in any new developments.

At the same time, the Act allows each municipality to dictate areas that may not be suitable (e.g. inadequate services available) as well as standards for size, requirements for parking, etc. The Minister of Municipal Affairs and Housing warns that the standards should encourage the creation of these second units. These units must also adhere to the Building Code, the Fire Code and any applicable property standards bylaws.

What about old units?
There is no provision for 'grandfathering'. Current standards will apply to all units.

In effect, the provincial government has told the municipalities, *'If you don't have a policy that governs second units, get one; and if you* do *have one, make sure it agrees with ours.'* (Once all



the legislation is declared in force). To confuse matters, there is no specific date that municipalities have to be in conformance.

Municipal Legislation

Many larger municipalities have established policies on second units with different biases for and against them. With the recent Provincial legislation, this is now a bit of a gray area, specifically in municipalities that do not allow for 'accessory dwelling units' (e.g. Mississauga). As mentioned previously, while the Province has said that municipalities must 'get in line', no exact date has been set.

For the City of Toronto, legislation was passed in the summer of 2000 which permitted a second dwelling unit in almost the entire amalgamated city. This Second Suites Bylaw used the repealed *Bill 120* as a template to specify the requirements for planning standards, building and fire codes.

THE EVALUATION PROCESS (Toronto)

The first thing to establish is whether the suite is **existing** or **new**.

Existing Units

If there is an existing suite and the City has records that identify the house has been adjusted for a two unit residence, the Fire Department has issued a Certificate of Compliance and the Electrical Safety Authority has given approval, all is good.

If there are no records, you may have to prove the pre-existence with supporting records for rents collected, improvement expenses, taxes, etc. Inspections would then be required to determine if any upgrading is required.

In Toronto, a Municipal Licensing and Standards inspector will use Chapter 629 to confirm the requirements for occupancy and property standards are being met. If there are problems, they can be addressed by:

- fixing them, or
- applying to the Committee of Adjustment for a variance

After these conditions are approved, you must get a Fire Services Inspection and then an Electrical Safety Inspection.

New Units

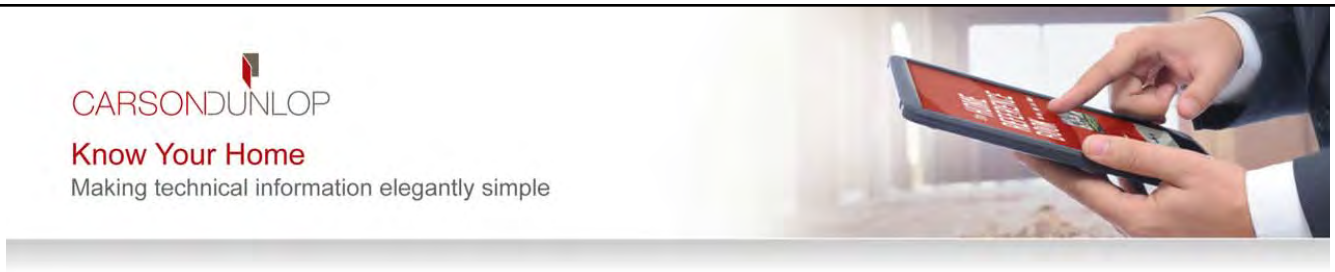
If a new suite is being planned, there are a number of questions that have to be answered before your apartment can be considered 'legal'.

1. *Do the local bylaws permit you to have a basement apartment?*

In most cases they will be permitted. Assuming that a second suite *is* allowed, you must ask,

2. *Does the apartment comply with the building code requirements?*

When creating a second suite, plans must be submitted, permits taken out and work approved. The Ontario Building Code and Ontario Fire Code are used for reference. There is lots of room for



the inspectors to be more or less 'strict'. In municipalities that encourage basement apartments, the inspection may be less strict. In municipalities that discourage basement apartments, the inspection may be more strict.

3. *Have the requirements of the Ontario Fire Code been met?*

After the building requirements are passed, the local municipal fire department will have to be contacted so they can ensure current fire safety codes are being met. A 'Letter of Inspection' will be issued when all is good.

4. *Have the requirements of the Electrical Safety Authority been met?*

A *General Inspection for Compliance of Two-Unit Residential Dwelling* must be arranged with the ESA and once any electrical defects are corrected a 'Certificate of Inspection' is issued.

What are the consequences of having an 'illegal' apartment?
A disgruntled tenant or neighbour may call the City and complain.
If you are found to be not in compliance there are a number of possibilities:

- You could be asked to dismantle the apartment and remove the tenant
- You could fix the problem
- You could be fined or go to jail

HOW ABOUT SOME SPECIFIC REQUIREMENTS?

In Toronto, Municipal Licensing and Standards (ML&S) has developed guidelines for developing second suites. To start:

- The building must be at least five years old
- The building must be detached or semi-detached (and in some cases it may be a row house)
- The front of the house must stay essentially the same
- The second suite cannot be larger than the primary residence
- Parking must be provided (with exceptions in some parts of the former City of Toronto

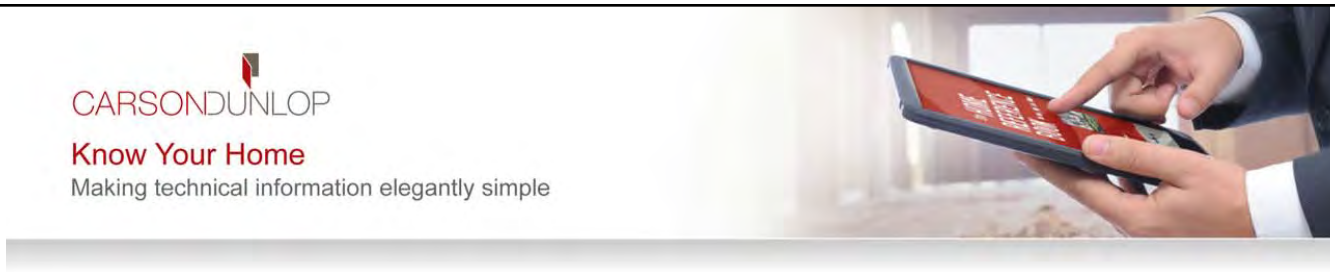
Ontario Building Code and Municipal Bylaws
While the Provincial standards are ordinarily followed, ML&S bylaws may provide exceptions or refinements. In Toronto, Chapter 629 provides the rules for Property Standards.
These include specifics for everything from the sizes of rooms, required heating and lighting to the necessities for storage of garbage and debris.

Some examples:

- *Size of Living Space* - 629.25C requires a minimum habitable space of 9 square meters (97 ft²) per person.
- *Ceiling Height* – 629.25D requires a height of 1.95 meters (6 ft. 5 in.) for at least ½ of the floor area in a room.
- *Bedrooms* – 629.25E/F requires 6 square meters (65 ft²) for one person or 4 square meters (43 ft²) per person when more than one person is sleeping in the room.
- *Bathroom Ventilation* – 629.39B requires any bathroom to have an exhaust fan or an operable window.

Ontario Fire Code Retrofit Section 9.8
Any rental unit, old or new, must comply with the standards set out in the Ontario Fire Code. There are four key areas regarding fire code compliance, all having to do with the safety of the occupants:

- Fire containment
- Mean of egress



- Fire detection and alarms
- Fire suppression

1. Fire Containment
The goal is to contain the fire in the unit that the fire started, long enough to get all of the occupants out of the house. This means that any walls, floors, ceilings and doors between units should control the fire for a minimum prescribed time. These components are given '*Fire Resistance Rating*' of how long they will survive a direct fire before burning through. A 30-minute rating means that the component will withstand the fire for at least 30 minutes.
The typical requirement is a 30-minute separation between the units.

- Drywall and plaster are acceptable but suspended (T-bar type) ceilings are not.
- The ceiling must be continuous. For example, this means that you can't have exposed joists in the furnace room – this area has to be covered with drywall or plaster as well. (See note below in Suppression.)
- Doors should be solid wood or metal – at least 45 millimeters (1¾ inch) thick.

Flame Spread Ratings which determine how quickly the fire on a burning material will spread are also considered, meaning materials like wood paneling are not ordinarily acceptable.

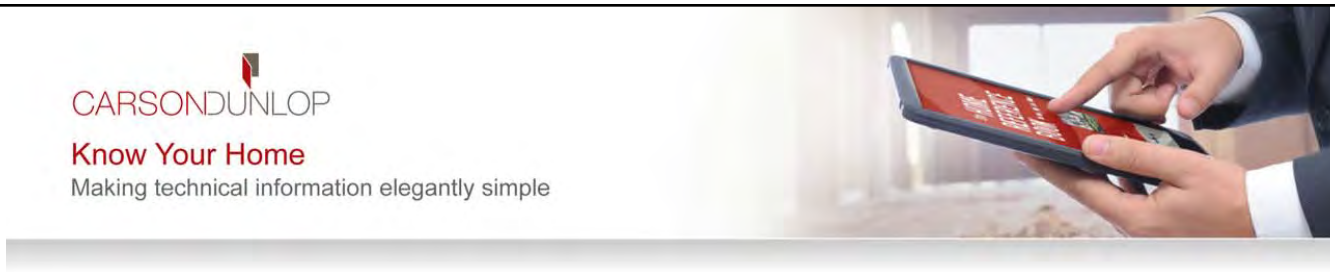
2. Means of Egress - Escaping the home
The goal is to allow the occupants to get out of the house if there is a fire. There are two common situations; either each unit has its own exit, or there is a common exit. If each unit has its own exit, you are all set. If the units share an exit, it is more complicated.

A common exit is allowed if it is fire separated from both of the units with a 30 minute rating. If the common exit is not appropriately fire separated, you can still use this common exit as long as there is a second exit from each dwelling unit and the fire alarms are interconnected (if one alarm sounds, the others will sound as well). The second exit is typically a window.
What is an acceptable window?

- The windowsill must be within 1 meter (3 feet) of grade. We don't want people jumping and breaking a leg.
- The smallest dimension is 0.5 meters (~18 inches).
- The opening is at least 0.38 square meters (~4 ft²)
- If a basement window has a window well, it must extend 1 meter (3 feet) out from the house wall, to allow room to crawl out.

3. Fire detection
All units must have smoke alarms on every floor and audible from the bedrooms (when doors are closed). The *owner of the property is responsible* for the installation and maintenance. The smoke alarms do not have to be interconnected unless the fire separation to the common exit area does not have a 30-minute rating (Note: It must have at least a 15-minute rating). Interconnection may also be required if a unit is located on a third floor. Carbon monoxide detectors are also required.

4. Suppression
While sprinkler systems are not mandatory, their installation may lower the requirements for fire containment and/or egress. As an example, an open ceiling in a furnace area may be acceptable. Portable fire extinguishers should be provided.



Electrical Inspection
The Fire Code includes a provision that any suite must have a general inspection by the *Electrical Safety Authority* and any hazards must be fixed. If requested, a letter of compliance must be made available to the Chief Fire Official.

Closing Thoughts
Although there are many more 'illegal' apartments than 'legal' ones, the benefits of 'flying under the radar' should be weighed carefully. The consequences of being reported by a perturbed tenant or neighbour are one thing; being sued for negligence or being denied an insurance claim can be more onerous. If you are going to represent the property as Multi Unit, verify that it is registered with Municipal Property Standards.

WHERE TO GET MORE INFORMATION

Province of Ontario – Ministry of Municipal Affairs and Housing
-Information on the *Strong Communities through Affordable Housing Act, 2011*
http://www.mah.gov.on.ca/Page9575.aspx

General inquiries: Phone 311

- Landlord's Self Help Centre *www.landlordselfhelp.com* and http://www.secondsuites.info/hub_page.htm
- Excellent sources of information on creating a rental unit

City of Toronto Buildings Division *www.toronto.ca/building*
- For building information, permits and inspections

Municipal Licensing and Standards *www.toronto.ca/licensing*
- For information, inspection and investigation of zoning and bylaw infractions

Toronto Fire Services *www.toronto.ca/fire/prevention*

Electrical Safety Authority *www.esainspection.net*

Our Web Site
The Carson Dunlop website (www.carsondunlop.com) has this report and other reports of interest to Real Estate Professionals available for download.

This article was submitted by Carson Dunlop, a Toronto based consulting engineering firm that has specialized in Home Inspection since 1978. For more information, call 416-964-9415 or 1-800-268-7070, or visit www.carsondunlop.com.

ABOUT YOUR HOUSE

CE 50

Avoiding Basement Flooding

Basement flooding is unfortunately a common occurrence in many parts of Canada. But the good news is that many types of basement flooding may be avoided. This publication explains some of the practical steps you can take to avoid basement flooding.

HOW SERIOUS IS BASEMENT FLOODING?

Basement flooding is now being recognized as a potentially serious problem. There are many negative consequences associated with basement flooding, above and beyond the inconvenient mess and disruption of household routine. Research cites the following impacts:

- Chronically wet houses are linked to an increase in respiratory problems.
- Frequent occurrences of basement flooding can result in long-term damage to the building and equipment that may not be covered by insurance.
- Insurance rates may rise to compensate for repeated basement flooding claims, and/or the minimum deductible may be increased significantly.
- Property value may depreciate because the basement is prone to frequent flooding.

Before appropriate measures can be taken, it is important to identify the causes of basement flooding. These range from problems originating in the individual dwelling to problems associated with the municipal sewer systems that serve entire communities.

WHY DO BASEMENTS FLOOD?

Water can enter your basement for a number of reasons. Water in your basement is most likely to occur during periods of heavy rainfall, or when snow is melting rapidly during a spring thaw. In these cases, your basement can be wet because of:

- a leak or crack in your home's basement walls;
- poor lot drainage;
- failure of the weeping tiles (foundation drains); and
- overflowing eavestroughs or leaking/plugged downspouts.

Basement flooding may also occur because of:

- a blocked connection between your home and the main sewer in the street;
- a back-up of wastewater in the sewer system (or a combination of wastewater and rainwater from the sanitary or combined sewer system); and
- failure of a sump pump (in some areas) used to pump weeping tile water.

Basements are also vulnerable to natural river flooding disasters, but these cannot be addressed by individual homeowners.

FLOODING BASICS

Municipalities attempt to prevent flooding by maintaining the public sewer system. Homeowners with private sewage systems (septic tank and field bed) can appreciate the need for regular maintenance, but unforeseen or accidental problems can occur in any type of system.

Canada

CMHC SCHL
HOME TO CANADIANS

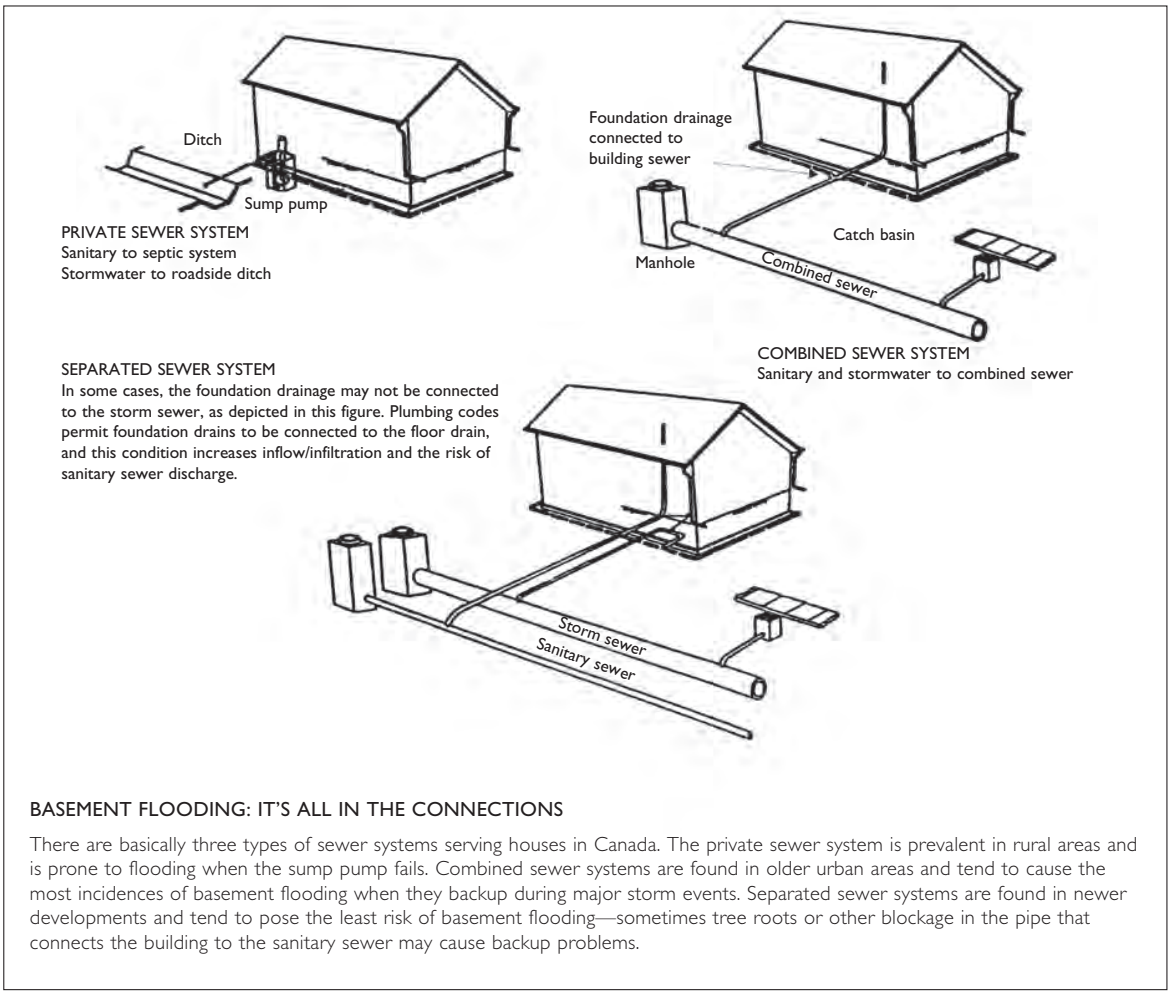


Figure 1 Types of sewer systems serving houses in Canada

Here is some municipal infrastructure terminology you should know:

Sanitary sewer

A sanitary sewer is a pipe buried beneath the street that is designed to transport wastewater from your home. This consists of water from sanitary fixtures (toilets, sinks, etc.) and floor drains inside your house, and in some areas includes groundwater from weeping tiles around the foundation of your home.

Storm sewer

A storm sewer is a pipe buried beneath the street that is designed to carry storm-related water runoff. Storm sewers are normally much larger than sanitary sewers because they are designed to carry much larger amounts of flow.

Sewer backup

Extra storm-related water (from sources other than wastewater and groundwater) should flow into the storm sewer or soak slowly into the ground without entering the sanitary sewer. If excess storm water does enter the sanitary sewer system, it can overload this kind of system.

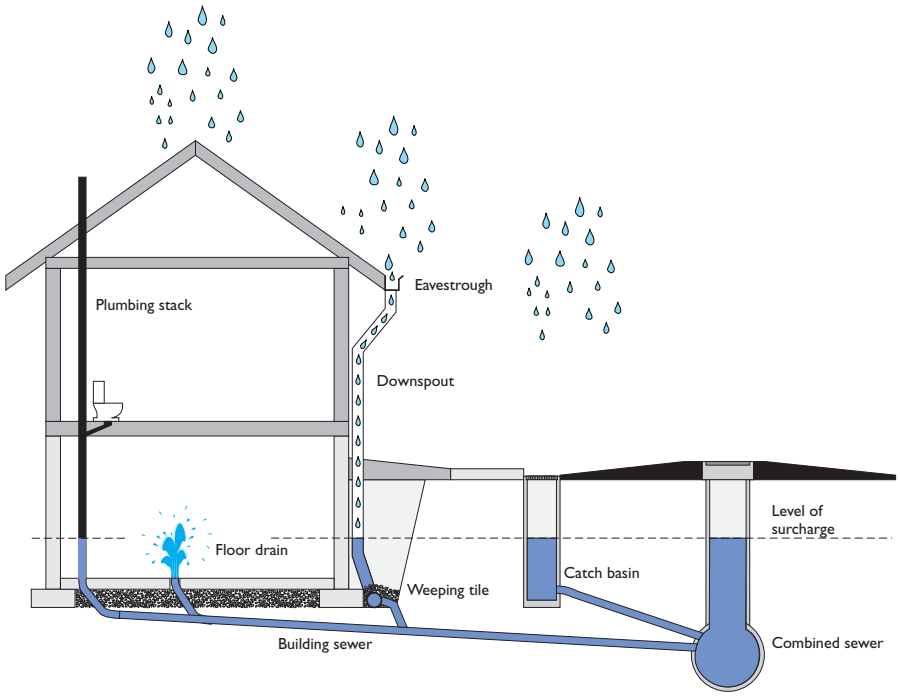
When the sewers are overloaded, the water level in the system rises above normal design levels, and this condition is referred to as "surcharge." Basement flooding can occur if the home has sanitary fixtures or floor drains below the surcharge level (Figure 2).

PRACTICAL MEASURES TO AVOID BASEMENT FLOODING

Basement flooding problems are best diagnosed by working your way down from the eavestroughs and downspouts, to the lot and foundation drainage, and then to the plumbing system—both inside your home and beyond its connection to the municipal sewer system.

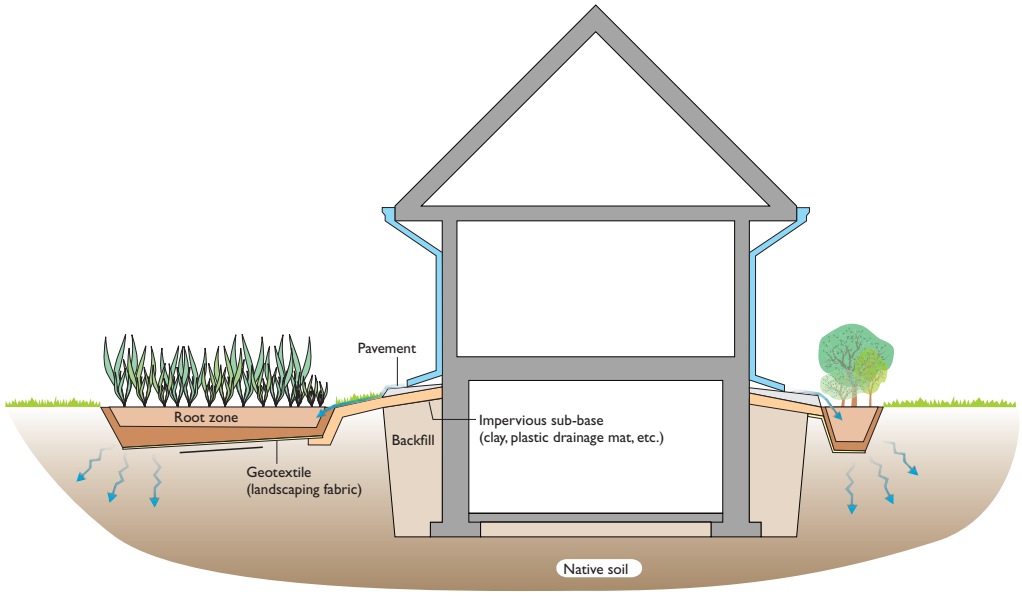
Eavestroughs and downspouts

Water pours out of your eavestroughs into downspouts. If the downspouts are dumping the water right beside your foundation, it drains directly to the weeping tile and can easily overload your home's drainage.



During periods of heavy rainfall, or snowmelt, the municipal sewer system becomes overloaded and the surcharge backs up and floods basements through low plumbing connections. It is essential to properly clean up the flooded area after the flooding subsides because the sewage may contain numerous harmful bacteria and contaminants.

Figure 2 Basement flooding due to combined sewer backup



Gardens and plants may be accommodated within properly graded sites by ensuring that a continuous flow of surface water away from the building is maintained. The backfilled area immediately surrounding foundations (1.8 m or 6 ft.) should not be planted. Instead, this perimeter should be made impervious to water penetration and sloped away. Plantings adjacent to this perimeter zone should have a sloped base below the root zone lined with a geotextile that will convey excess water away from the building and the plants. This approach reduces: 1) the need for plant watering; 2) the amount of water conveyed to the foundation drains; and 3) the cost of any future foundation maintenance or repair, as the plants do not have to be moved to access the below-grade foundation.

Figure 3 Grading and planting

Make sure downspouts extend at least 1.8 m (6 ft.) from your basement wall. Also, be sure the water does not drain toward your neighbour's basement walls. It should drain away from your house toward the street, rear yard, or back lane. If your downspouts are connected to your home's sewer system, or weeping tile, disconnect them.

Clean debris from eavestroughs regularly. If they overflow even when clean, replace them with larger size eavestroughs and downspouts.

Lot grading

If the land around your home slopes in toward the foundation, rainwater heads right for the weeping tile around the basement and can overload your foundation drainage system. The land around many homes settles over time, and then slopes in toward the foundation. If your lot slopes inward, you'll want to fill in and grade the lot so that, for at least 1.8 m (6 ft.) out from around the foundation, the land slopes away from your house.

Build up the ground around your house so that water drains away from your basement walls. Also,

examine sidewalks, patios, decks and driveways. These can settle over time and cause water to drain back towards your basement walls (Figure 3).

Extend downspouts so that water flows away from your house and does not collect next to the basement walls and windows.

Proper drainage helps to:

- reduce the amount of water flowing to your home's sewer system and to the main sewer system, and lessen the risk of sewer backup;
- reduce water seepage into your home through basement windows and cracks in your basement walls;
- keep the moisture content of the soil around and under your house stable to reduce the chances of cracking and shifting. If water collects next to your basement, it can make its way to the footings that support the basement walls. The increased moisture may cause the footings to heave or settle; and
- extend the life of your sump pump by reducing the amount of work it has to do.

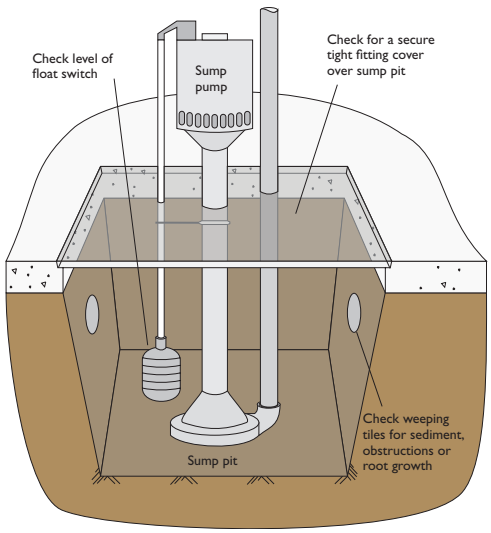
Be sure that any drainage improvements you make do not cause water to flow onto your neighbour's property.

FLOODPROOFING DEVICES

If your home drainage system or the neighbourhood's drainage system overloads, you may still be able to prevent rain water and sewage from backing up into your basement by installing one or more floodproofing devices, such as sump pumps or back flow valves. Each installation is unique and some devices (back flow valves) may require a plumbing permit. Check with your municipal office or a qualified plumber before you proceed with any installation.

Sump pit drainage system

A sump pit drainage system includes a sump pit, a sump pump and a discharge pipe. The sump pit, set into the basement floor, collects water from the weeping tiles around your basement. The pump pushes the water outside your house through the discharge pipe (Figure 4).



In some cases, basement flooding is caused by an inadequate foundation drainage system. If the weeping tile is clogged, it should be properly replaced, but often the problem is a sump pump with insufficient capacity, or a sump pit that is not deep enough to lower the water table below the foundation. Consult with your local municipal office or a qualified plumbing contractor to ensure that your sump pit and sump pump are correctly sized.

Figure 4 Typical sump pump installation

Place your sump pump discharge pipe so that it:

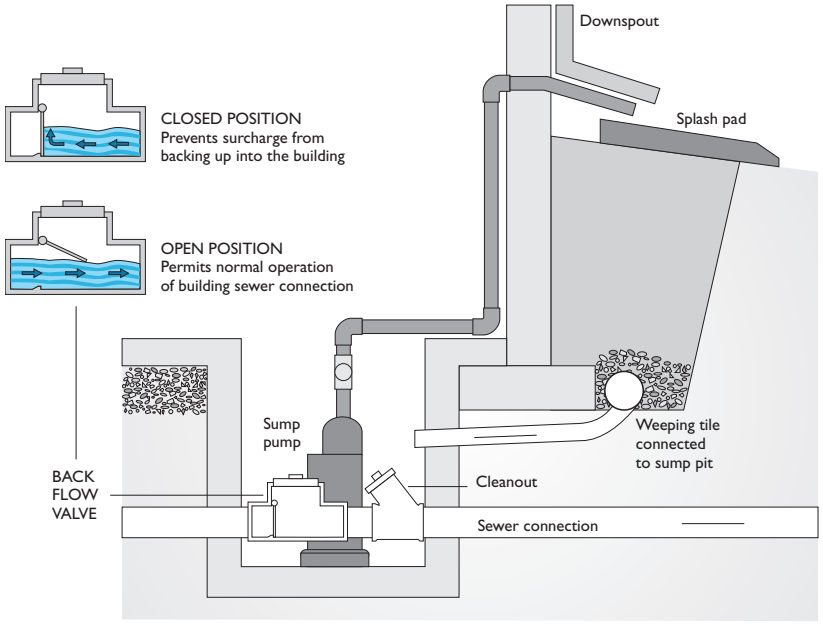
- drains somewhere onto your property where water can be absorbed, such as your lawn or flower bed; and
- does not direct water onto neighbouring properties, lanes, sidewalks, or streets.

Sump pit

- Clean the pit each year after freeze-up. Weeping tile drainage may carry small amounts of soil, sand and debris into the pit from around your basement foundation.
- Some water may remain in the pit and cause a musty smell if it sits for a long time. If so, you can flush the pit by adding fresh water until the pump removes the stale water.

Sump pump

- Check and test your pump each spring before the rainy season begins, and before you leave your house for a long time. Pour water into the pit to trigger the pump to operate.
- Remove and thoroughly clean the pump at least once a year. Disconnect the pump from the power source before you handle or clean it.
- Check the pit every so often to ensure it is free of debris. Most pumps have a screen that covers the water intake. You must keep this screen clean.



In existing homes experiencing basement flooding due to sewer backup, an effective prevention strategy is to install a sump pump and a back flow valve. This type of installation must normally be approved by the municipality and it is recommended to have the work performed by a qualified plumbing contractor.

Figure 5 Back flow valves and sump pumps are effective means of avoiding basement flooding

Sump pump discharge pipe

- Check the place where the discharge pipe leaves the house. If the pipe is discharging right against the basement wall, the water will drain down into the weeping tiles and continue to recycle through the system.
- Check the discharge point regularly to make sure that nothing is blocking the flow.
- If your pump runs frequently in the winter, and the resulting ice is causing hazardous conditions on the lawn and sidewalks, call your municipal office.

Backwater valve

A backwater valve is a device that prevents sewage in an overloaded main sewer line from backing up into your basement. The valve automatically closes if sewage backs up from the main sewer (Figure 5). A properly installed backwater valve must be placed so that sewage backup will be stopped and not come out through other outlets in your basement, such as sinks, toilets, showers and laundry tubs.

- Make sure that you can get at the valve at all times.
- Check the valve regularly and remove any material that may prevent the valve from operating properly.

You will normally require a permit and inspection to install a back flow valve and sump pit. Since part of the basement floor will be dug up and since proper placement of these items is important, we recommend that you use a qualified plumbing contractor.

ADDITIONAL PROTECTION MEASURES

There are also several additional flood protection measures that may be considered.

Plumbing fixture maintenance

Have a qualified plumber inspect all floodproofing devices and plumbing fixtures (i.e. sump pumps, backwater valves, floor drains, etc.) regularly to ensure proper operation. Check the operating instructions for more detailed information and safety guidelines, or ask your plumber to explain the details of your system to you.

Backup sump pump

Severe storms are often accompanied by power blackouts. A battery powered backup sump pump may be a prudent investment. Most pumps are made to fit in beside the main sump pump and also have an audible alarm that warns the main pump has failed so that you can attend to its repair or replacement. There are also water powered backup sump pumps available that run by water flowing through the pump impeller.

Basement finishes and furnishings

In the event a risk of basement flooding is still possible, it is advisable to install impermeable floor and wall finishes, such as ceramic tile, to lessen damage and make cleanup easier. Make sure basement furniture has legs that keep the furniture fabrics above any accumulated flood water. Area rugs are a good alternative to full broadloom as these can be removed and properly cleaned in the event of flood damage.

Insurance—just in case

Insurance that fully covers basement flooding damage is an important means of financial protection to homeowners.

Most policies include or can include coverage for damage caused by sewer back-up. Make sure your policy includes sewer back-up insurance.

Check regularly with your insurance agent or broker to ensure you have appropriate and adequate insurance coverage, including any extensions in coverage that may be available, which were not previously attached.

Keep a detailed inventory of your residence. It will be invaluable in the event of loss.

Make sure your insurance policies and related records are in a safe location and easily available after an emergency or disaster event.

SOURCES OF INFORMATION

Additional sources of information related to basement flooding are listed below. Always check with your local municipality or plumbing inspection department for the latest information on basement flood protection.

Websites

Canada Mortgage and Housing Corporation
www.cmhc.ca
Enter "flood" or "stormwater" in the search box.

Sump and Sewage Pump Manufacturers Association
www.sspma.org

ACKNOWLEDGEMENTS

CMHC wishes to acknowledge the contributions of numerous Canadian municipalities to this publication. All of their public information bulletins were consulted during the development of this publication. Their assistance and cooperation are greatly appreciated.

To find more *About Your House* fact sheets plus a wide variety of information products, visit our website at www.cmhc.ca. You can also reach us by telephone at 1-800-668-2642 or by fax at 1-800-245-9274.

Priced Publications

A Guide to Fixing Your Damp Basement	*Order No. 65886*

Free Publications

About Your House *fact sheets*

After the Flood—A Homeowner's Checklist	*Order No. 60515*
Hiring a Contractor	*Order No. 62277*
Home Maintenance Schedule	*Order No. 63218*
Rain Gardens: Improve Stormwater Management in Your Yard	*Order No. 63490*
Renovating Your Basement for Livability	*Order No. 64092*

Research Highlight *fact sheets*

Practical Measures for the Prevention of Basement Flooding Due to Municipal Sewer Surcharge	*Order No. 63413*

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HOUSE HOLD TIPS

Add a big, dry towel to the clothes dryer when drying jeans and it will cut the drying time significantly.

When you take down Christmas lights, wrap them around a square of cardboard for storage and place them in a large bin labeled Christmas.

When making fruit salad, mix in orange juice or grapefruit juice to keep the fruit from browning.

Before you buy those home appliances, read this FIRST! Awesome tips http://t.co/vaH62AIJ

Fabric softener sheets work great for cleaning base boards and marks on the wall. Bonus: smells great!

Chalk isn't just fun for drawing, place it in the damp areas of your home (like your basement) to absorb excess moisture and repel mildew.

12 of the best natural laundry tips ever. Love the black pepper trick http://t.co/PURgfz3k

It's not the dryer that shrinks clothes, it's leaving the clothes in there for too long causing them to over-heat.

Place a slice of bread in a bag with brown sugar to keep it from hardening. It will soften the sugar in about three hours!

Clear away lime scale from the bottom of your tub by rubbing it or soaking the bottom with a little lemon juice.

Citrus fruits like lemons, oranges and limes make good all-purpose cleaners when mixed with baking soda and water.

To get rid of mildew in awkward corners, dip cotton balls in bleach and leave them to stand in the corners for a few minutes.

Dirt and neglect can affect the efficiency of heating, ventilation and ac systems, and are among the top causes of heating-system failure.

Grind 1/2 cup of uncooked rice through your coffee grinder for a quick clean.

To get rid of a musty odour from stainless steel water bottles, fill the bottle with 1 part white vinegar, 10 parts warm water, and shake.

Rub a little salt over a lipstick on a glass to remove the imprint and then wash as usual.

Remove rust from household tools by adding salt to 1 Tbsp lemon juice. Apply the paste to rusted area with a dry cloth and rub it away.

One side of a thick slice of bread can be used to pick up small pieces of broken glass.

Stuff all cracks around gas and water pipes with steel wool to keep mice out.

Rubbing alcohol will clean the caulking around bathtubs. It also shines chrome and glass.

Use tea tree oil not only as a natural disinfectant, but a mould killer as well. Safe to breathe and safe for the environment.

To silence your squeaky hardwood floors sprinkle some baby powder on the squeaky area and sweep it into the cracks.

Hot sauce and water in a spray bottle will keep pests from munching on your garden without harming the plants!

When re-potting a plant, place a coffee filter at the bottom, over the drainage hole, then add the soil to prevent from draining out.

If a vase won't hold water, melt a candle and pour into the bottom. Often this will seal a crack and prevent future seepage of water.

Had to put a band-aid on a booboo? Before you take the band-aid off saturate it in alcohol to dissolve the adhesive making it painless.

To get rid of an unsightly oil spot, just spray it with a generous amount of WD-40 and then hose it down with water.

Fill a washing machine with ice and soda/beer cans so you don't have to empty the fridge. The melted ice will drain in the machine.

Fire extinguishers shouldn't be left under the kitchen sink. Other nearby chemicals can let off vapours that mix creating an opportunity for an explosion that could seriously injure you or your family.

When things go wrong.

There may come a time that you discover something wrong with the house, and you may be upset or disappointed with your home inspection.

Intermittent Or Concealed Problems
Some problems can only be discovered by living in a house. They cannot be discovered during the few hours of a home inspection. For example, some shower stalls leak when people are in the shower, but do not leak when you simply turn on the tap. Some roofs and basements only leak when specific conditions exist. Some problems will only be discovered when carpets were lifted, furniture is moved or finishes are removed.

No Clues
These problems may have existed at the time of the inspection but there were no clues as to their existence. Our inspections are based on the past performance of the house. If there are no clues of a past problem, it is unfair to assume we should foresee a future problem.

We Always Miss Some Minor Things
Some say we are inconsistent because our reports identify some minor problems but not others. The minor problems that are identified were discovered while looking for more significant problems. We note them simply as a courtesy. The intent of the inspection is not to find the $200 problems; it is to find the $2,000 problems. These are the things that affect people's decisions to purchase.

Contractors' Advice
The main source of dissatisfaction with home inspectors comes from comments made by contractors. Contractors' opinions often differ from ours. Don't be surprised when three roofers all say the roof needs replacement when we said that, with some minor repairs, the roof will last a few more years.

Last Man In Theory
While our advice represents the most prudent thing to do, many contractors are reluctant to undertake these repairs. This is because of the "Last Man In Theory". The contractor fears that if he is the last person to work on the roof, he will get blamed if the roof leaks, regardless of whether the roof leak is his fault or not. Consequently, he won't want to do a minor repair with high liability when he could re-roof the entire house for more money and reduce the likelihood of a callback. This is understandable.

Most Recent Advice Is Best
There is more to the "Last Man In Theory". It suggests that it is human nature for homeowners to believe the last bit of "expert" advice they receive, even if it is contrary to previous advice. As home inspectors, we unfortunately find ourselves in the position of "First Man In" and consequently it is our advice that is often disbelieved.

760 words

Why Didn't We See It
Contractors may say "I can't believe you had this house inspected, and they didn't find this problem". There are several reasons for these apparent oversights:

1. Conditions During Inspection
It is difficult for homeowners to remember the circumstances in the house, at the time of the inspection. Homeowners seldom remember that it was snowing, there was storage everywhere in the basement or that the furnace could not be turned on because the air conditioning was operating, et cetera. It's impossible for contractors to know what the circumstances were when the inspection was performed.

2. The Wisdom Of Hindsight
When the problem manifests itself, it is very easy to have 20/20 hindsight. Anybody can say that the basement is wet when there is 2 inches of water on the floor. Predicting the problem is a different story.

3. A Long Look
If we spent 1/2 an hour under the kitchen sink or 45 minutes disassembling the furnace, we'd find more problems too. Unfortunately, the inspection would take several days and would cost considerably more.

4. We're Generalists
We are generalists; we are not specialists. The heating contractor may indeed have more heating expertise than we do.

5. An Invasive Look
Problems often become apparent when carpets or plaster are removed, when fixtures or cabinets are pulled out, and so on. A home inspection is a visual examination. We don't perform any invasive or destructive tests.

Not Insurance
In conclusion, a home inspection is designed to better your odds. It is not designed to eliminate all risk. For that reason, a home inspection should not be considered an insurance policy. The premium that an insurance company would have to charge for a policy with no deductible, no limit and an indefinite policy period would be considerably more than the fee we charge. It would also not include the value added by the inspection.

760 words

Electrical Safety

Flipping a light switch. Plugging in a coffeemaker. Charging a laptop computer. These are second nature for most of us. Electricity makes our lives easier. However, we need to be cautious and keep safety in mind.

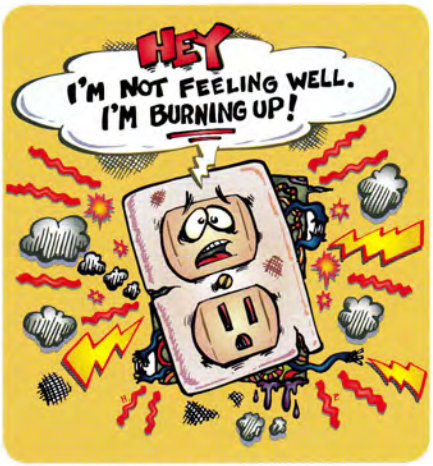
SAFETY TIPS

- Have all electrical work done by a qualified electrician.
- When you are buying or remodeling a home, have it inspected by a qualified electrician.
- Only plug one heat-producing appliance (such as a coffee maker, toaster, space heater, etc.) into a receptacle outlet at a time.
- Major appliances (refrigerators, dryers, washers, stoves, air conditioners, etc.) should be plugged directly into a wall receptacle outlet. Extension cords and plug strips should not be used.
- Arc fault circuit interrupters (AFCIs) are a kind of circuit breaker that shuts off electricity when a dangerous condition occurs. Consider having them installed in your home. Use a qualified electrician.
- Use ground fault circuit interrupters (GFCIs) to reduce the risk of shock. GFCIs shut off an electrical circuit when it becomes a shock hazard. They should be installed inside the home in bathrooms, kitchens, garages and basements. All outdoor receptacles should be GFCI protected.
- Test AFCIs and GFCIs once a month to make sure they are working properly.
- Check electrical cords to make sure they are not running across doorways or under carpets. Extension cords are intended for temporary use. Have a qualified electrician add more receptacle outlets so you don't have to use extension cords.
- Use light bulbs that match the recommended wattage on the lamp or fixture. There should be a sticker that indicates the maximum wattage light bulb to use.

IMPORTANT REMINDER

Call a qualified electrician or your landlord if you have:

- Frequent problems with blowing fuses or tripping circuit breakers
- A tingling feeling when you touch an electrical appliance
- Discolored or warm wall outlets
- A burning or rubbery smell coming from an appliance
- Flickering or dimming lights
- Sparks from an outlet



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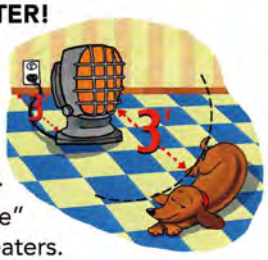
Heating Safety

There is something about the winter months and curling up with a good book by the fireplace. But did you know that heating equipment is one of the leading causes of home fire deaths? With a few simple safety tips and precautions you can prevent most heating fires from happening.

BE WARM AND SAFE THIS WINTER!



- Keep anything that can burn at least three-feet away from heating equipment, like the furnace, fireplace, wood stove, or portable space heater.
- Have a three-foot "kid-free zone" around open fires and space heaters.
- Never use your oven to heat your home.
- Have a qualified professional install stationary space heating equipment, water heaters or central heating equipment according to the local codes and manufacturer's instructions.
- Have heating equipment and chimneys cleaned and inspected every year by a qualified professional.
- Remember to turn portable heaters off when leaving the room or going to bed.
- Always use the right kind of fuel, specified by the manufacturer, for fuel burning space heaters.
- Make sure the fireplace has a sturdy screen to stop sparks from flying into the room. Ashes should be cool before putting them in a metal container. Keep the container a safe distance away from your home.
- Test smoke alarms monthly.

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Heating Equipment Smarts

Install wood burning stoves following manufacturer's instructions or have a professional do the installation. All fuel-burning equipment should be vented to the outside to avoid carbon monoxide (CO) poisoning.

Install and maintain CO alarms to avoid the risk of CO poisoning. If you **smell** gas in your gas heater, do do not light the appliance. Leave the home immediately and call your local fire department or gas company.

FACT

Half of home heating fires are reported during the months of **December**, **January**, and **February**.

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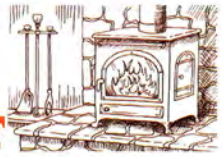
Carbon Monoxide Safety

Often called the silent killer, carbon monoxide is an invisible, odorless, colorless gas created when fuels (such as gasoline, wood, coal, natural gas, propane, oil, and methane) burn incompletely. In the home, heating and cooking equipment that burn fuel can be sources of carbon monoxide.

- CO alarms should be installed in a central location outside each sleeping area and on every level of the home and in other locations where required by applicable laws, codes or standards. For the best protection, interconnect all CO alarms throughout the home. When one sounds, they all sound.
- Follow the manufacturer's instructions for placement and mounting height.
- Choose a CO alarm that has the label of a recognized testing laboratory.
- Call your local fire department's non-emergency number to find out what number to call if the CO alarm sounds.
- Test CO alarms at least once a month; replace them according to the manufacturer's instructions.
- If the audible trouble signal sounds, check for low batteries. If the battery is low, replace it. If it still sounds, call the fire department.
- If the CO alarm sounds, immediately move to a fresh air location outdoors or by an open window or door. Make sure everyone inside the home is accounted for. Call for help from a fresh air location and stay there until emergency personnel.
- If you need to warm a vehicle, remove it from the garage immediately after starting it. Do not run a vehicle or other fueled engine or motor indoors, even if garage doors are open. Make sure the exhaust pipe of a running vehicle is not covered with snow.
- During and after a snowstorm, make sure vents for the dryer, furnace, stove, and fireplace are clear of snow build-up.
- A generator should be used in a well-ventilated location outdoors away from windows, doors and vent openings.
- Gas or charcoal grills can produce CO — only use outside.

HOME HEATING EQUIPMENT



Have fuel-burning heating equipment and chimneys inspected by a professional every year before cold weather sets in. When using a fireplace, open the flue for adequate ventilation. Never use your oven to heat your home.

FACTS

- A person can be poisoned by a small amount of CO over a longer period of time or by a large amount of CO over a shorter amount of time.
- In 2005, U.S. fire departments responded to an estimated 61,100 non-fire CO incidents in which carbon monoxide was found, or an average of seven calls per hour.

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GOOD ADVICE FOR ALL HOMEOWNERS

The following items explain how to prevent and correct some common problems.

Electrical System - Label the Panel:The electrical panel should be labelled to indicate what is controlled by each fuse or breaker. Where the panel is already labelled, please verify the labelling is correct. Do not rely on the labelling being accurate.

Bathtub and Shower Maintenance :Caulking and grout in bathtubs and showers should be checked every six months and improved as necessary to prevent leakage and damage behind wall surfaces.

Smoke and Carbon Monoxide (CO) Detectors: Smoke and carbon monoxide (CO) detectors should be provided at every floor level of every home, including basements and crawl spaces. (Even if they are present during the inspection, we recommend replacing detectors.) Smoke detectors should be close to sleeping areas, and carbon monoxide detectors should be in any room with a wood-burning stove or fireplace. These devices are not tested as part of a home inspection. Once you take possession of the home, detectors should be tested regularly, and replaced every 10 years. If unsure of the age of a smoke detector, it should be replaced. Smoke detector batteries should be replaced annually.

Washing Machine Hoses: We suggest braided steel hoses rather than rubber hoses for connecting washing machines to supply piping in the home. A ruptured hose can result in serious water damage in a short time, especially if the laundry area is in or above a finished area of the home.

Clothes Dryer Vents: We recommend vents for clothes dryers discharge outside the home to reduce the vent material drying time, energy consumption and cost; and minimizes the risk of a lint fire inside the vent.

Cooking Safety

Cooking brings family and friends together, provides an outlet for creativity and can be relaxing. But did you know that cooking fires are the number one cause of home fires and home injuries? By following a few safety tips you can prevent these fires.

"COOK WITH CAUTION"

- Be on alert! If you are sleepy or have consumed alcohol don't use the stove or stovetop.
- Stay in the kitchen while you are frying, grilling, or broiling food. If you leave the kitchen for even a short period of time, turn off the stove.
- If you are simmering, baking, roasting, or boiling food, check it regularly, remain in the home while food is cooking, and use a timer to remind you that you are cooking.
- Keep anything that can catch fire — oven mitts, wooden utensils, food packaging, towels or curtains — away from your stovetop.

IF YOU HAVE A COOKING FIRE...

- Just get out! When you leave, close the door behind you to help contain the fire.
- Call **9-1-1** or the local emergency number after you leave.
- If you try to fight the fire, be sure others are getting out and you have a clear way out.
- Keep a lid nearby when you're cooking to smother small grease fires. Smother the fire by sliding the lid over the pan and turn off the stovetop. Leave the pan covered until it is completely cooled.
- For an oven fire turn off the heat and keep the door closed.

Cooking and Kids

Have a "kid-free zone" of at least 3 feet around the stove and areas where hot food or drink is prepared or carried.

FACTS

- The leading cause of fires in the kitchen is unattended cooking.
- Most cooking fires in the home involve the stovetop.

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Home Improvement Costs

The following costs are intended as ballpark estimates for repairs and/or improvements to a typical three bedroom home. Our experience has shown that actual contractor quotations can vary by as much as 300%. Naturally, the quality of workmanship and materials will influence costs. The complexity of the job, accessibility and even economic conditions can also alter actual costs.

printable version

Roofing / Flashings / Chimneys	
Install conventional asphalt shingles over existing shingles	$2.00 - $4.00 per sq.ft.
Strip and reshingle with conventional asphalt shingles	$2.75- $5.50 per sq.ft.
Strip and reshingle with premium quality asphalt shingles	$5.00 - $10.00 per sq .ft.
Strip and re-roof with cedar shingles	$9.00 - $18.00 per sq .ft.
Strip and replace built-up tar and gravel roof	$10.00 - $20.00 per sq.ft. (min.
Strip and replace single-ply membrane	$10.00 - $20.00 per sq.ft. (min.
Reflash typical skylight or chimney	$500.00 - $1000.00
Rebuild typical chimney above roof line	$25.00 - $50.00 per row of bricl $400)
Rebuild typical single flue chimney above roof line	$200.00 - $400.00 per lin.ft. (m
Exterior	
Install galvanized or aluminum gutters and downspouts	$5.00 - $10.00 per lin.ft. (min. $
Install aluminum soffits and fascia	$8.00 - $16.00 per lin.ft.
Install aluminum or vinyl siding	$6.00 - $12.00 per sq.ft.
Repoint exterior wall (soft mortar)	$3.00 - 6.00 per sq.ft. (min. $5(
Repoint exterior wall (hard mortar)	$5.00 - $10.00 per sq.ft. (min. $
Parge foundation walls	$3.00 - $6.00 per sq.ft.
Dampproof foundation walls and install weeping tile	$150.00 - $300.00 per lin.ft. (m
Install a deck	$25.00 - $50.00 per sq.ft. (min.
Resurface existing asphalt driveway	$2.00 - $4.00 per sq.ft.
Install interlocking brick driveway	$8.00 - $16.00 per sq.ft.
Rebuild exterior basement stairwell	$5000.00 and up
Build detached garage	$70.00 - $140.00 per sq.ft.
Build retaining wall (wood)	$20.00 - $40.00 per sq.ft. (min.
Build retaining wall (concrete)	$30.00 - $60.00 per sq.ft. (min
Painting (trim only)	$2000.00 - $4000.00 and up
Painting (trim and wall surfaces)	$5000.00 and up
Structure	
Underpin one corner of house	$5000.00 and up
Underpin or add foundations	$300.00 and up per lin.ft. (min
Lower basement floor by underpinning and/or bench footings	$150.00 - $300.00 per lin.ft. (m
Replace deteriorating sill beam with concrete	$60.00 and up per lin.ft. (min.
Install basement support post with proper foundation	$800.00 - $1600.00

Perform chemical treatment for termites	$2000.00 and up
Repair minor crack in poured concrete foundation	$400.00 - $800.00
Electrical	
Upgrade electrical service to 100 amps (including new panel)	$1200.00 - $3000.00
Upgrade electrical service to 100 amps (if suitably sized panel already exists)	$800.00 - $1600.00
Upgrade electrical service to 200 amps	$1700.00 - $3500.00
Install new circuit breaker panel	$700.00 - $1400.00
Replace circuit breaker (20 amp or less)	$100.00 - $200.00
Add 120 volt circuit (microwave, freezer, etc.)	$150.00 - $300.00
Add 240 volt circuit (dryer, stove, etc.)	$300.00 - $600.00
Add conventional receptacle	$200.00 - $400.00
Replace conventional receptacle with ground fault circuit receptacle	$70.00 -$140.00
Replace conventional receptacle with aluminum compatible type (CO/ALR)(assuming several are required)	$60.00 - $120.00 ea.
Upgrade entire house with aluminum compatible receptacles, connectors, etc.	$1000.00 - $2000.00
Rewire electrical outlet with reversed polarity (assuming electrician already there)	$5.00 - $10.00 ea.
Replace knob & tube wiring with conventional wiring (per room)	$1000.00 - $2000.00
Heating	
Install mid-efficiency forced-air furnace	$2500.00 - $5000.00
Install high-efficiency forced-air furnace	$3500.00 - $7000.00
Install humidifier	$300.00 - $600.00
Install electronic air filter	$800.00 - $1600.00
Install mid-efficiency boiler	$3500.00 - $7000.00
Install high-efficiency boiler	$6000.00 - $12000.00
Install circulating pump	$400.00 - $600.00
Install chimney liner for gas appliance	$500.00 - $1000.00
Install chimney liner for oil appliance	$700.00 - $1800.00
Install programmable thermostat	$200.00 - $400.00
Replace indoor oil tank	$1200.00 - $2500.00
Remove oil tank from basement	$600.00 and up
Remove abandoned underground oil tank	$10000.00 and up
Replace radiator valve	$300.00 - $600.00
Add electric baseboard heater	$250.00 - $500.00
Convert from hot water heating to forced-air (bungalow)	$10000.00 - $20000.00
Convert from hot water heating to forced-air (two storey)	$15000.00 - $30000.00
Clean ductwork	$300.00 - $600.00
Cooling / Heat Pumps	
Add central air conditioning on existing forced-air system	$3000.00 and up
Add heat pump to forced-air system	$4000.00 - $8000.00
Replace heat pump or air conditioning condenser	$1200.00 - $2500.00

Install independent air conditioning system	$10000.00 - $20000.00
Install ductless air conditioning system	$3000.00 - $7000.00
Insulation	
Insulate open attic to modern standards	$0.80 - $1.60 per sq.ft.
Blow insulation into flat roof, cathedral ceiling or wall cavity	$2.00 - $4.00 per sq.ft.
Improve attic ventilation	$30.00 - $60.00 per vent
Plumbing	
Replace galvanized piping with copper (2 storey with one bathroom)	$2500.00 - $5000.00
Replace water line to house	$2000.00 and up
Replace toilet	$500.00 and up
Replace basin, including faucets	$750.00 and up
Replace bathtub, including ceramic tile and faucets	$2500.00 and up
Install whirlpool bath, including faucets	$3500.00 and up
Retile bathtub enclosure	$1000.00 - $2000.00
Replace leaking shower stall pan	$1000.00 - $2000.00
Rebuild tile shower stall	$2500.00 - $5000.00
Replace laundry tubs	$400.00 - $800.00
Remodel four-piece bathroom completely	$6000.00 - $50000.00
Connect waste plumbing system to municipal sewers	$5000.00 and up
Install submersible pump	$1000.00 and up
Install suction or jet pump	$700.00 and up
Install modest basement bathroom	$6000.00 and up
Interior	
Add drywall over plaster	$4.00 - $8.00 per sq.ft.
Sand and refinish hardwood floors	$2.00 - $4.00 per sq.ft.
Install replacement windows	$40.00 - $120.00 per sq.ft.
Install storm window	$200.00 - $400.00
Install masonry fireplace (if flue already roughed-in)	$3000.00 and up
Install zero-clearance firelace (including chimney)	$3500.00 and up
Install glass doors on fireplace	$300.00 and up
Install skylight	$3000.00
Remodel kitchen completely	$10,000.00 - $110000.00
Install gas fireplace	$3500.00 and up

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The links below connect you to a series of documents that will help you understand your home and how it works. These are in addition to links attached to specific items in the report.

Click on any link to read about that system.