Your Inspection Report

Commercial Building
Twin Cities Area, MN

PREPARED FOR:
SAMPLE REPORT

INSPECTION DATE:
Monday, October 14, 2013

PREPARED BY:
John Mika

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The best property inspection experience available.

Minnesota Inspections, LLC.

January 14, 2014

Dear Sample Report,

RE: Report No. 1124
Commercial Building
Twin Cities Area, MN

Thank you 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 national Association. This document defines the scope of a inspection.

Clients sometimes assume that a 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 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 structure, recording the conditions on a given date and time. 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.

Again, thank you for choosing us to perform your inspection.

Sincerely,

John Mika
on behalf of
Minnesota Inspections, LLC.

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INTRODUCTION

This report is an unbiased opinion of the conditions found at the property and is intended to help the client make informed decisions regarding the purchase and repair of the property.

The subject building consists of a three story commercial office structure covering approximately 28,000 square feet total (very rough estimate). The visible evidence suggests that the building was constructed in 2007. The building is presently used as an office building.

This report has been prepared by Minnesota Inspections LLC. on behalf of our client. Our client is a prospective purchaser of the property and this report has been prepared to provide general information on the condition of the property.

The site inspection was carried out on October 14th 2013, in the company of the client the property managers representative and the lenders representative. Our inspection was limited to components that were readily visible and not obstructed by storage, finishes, vegetation, etc.

SCOPE

A request for documents and pre-survey questionnaire were provide to the client but were not returned to Minnesota Inspections before the report was authored.

Items not included in the scope of the inspection include:

- Environmental testing
- Detailed analysis of heating, air conditioning, plumbing, electrical and structural elements.
- ADA compliance items
- Fire protection equipment
- Elevators and vertical lift equipment
- Restaurant or industrial equipment
- Communications, computer or networking equipment

BUILDING CODE and FIRE CODE VIOLATION INQUIRY

The seller did not respond to these items and the limited amount of time for field work and report generation places this outside the scope of this inspection.

While a property inspection does not address issues such as code compliance and building permits, we encourage you to have someone search the history of the property with the local building department to determine whether all appropriate permits have been applied for and signed off. Your legal advisers may be able to help with this.

A property inspection analyzes hundreds of features from all systems of a structure. Our focus is on functional items, and we pay particular attention to those components that are expensive to correct, or may create a significant safety problem in the home. As we look for these major items, we will come across some lesser items as well. As a courtesy, those are documented for you. However, please do not misinterpret this as an exhaustive list of all minor defects in the home. That

is not the intent of the inspection.

OVERALL CONDITION and LEVEL OF MAINTENANCE

This is a typical commercial office building, which for the most part, has been well maintained. Most systems were found to be in serviceable to satisfactory condition.

The priority improvements include the garage heater, garage exhaust fan, roof seam repair and front sidewalk. Fire protection system and HVAC systems did not appear to receive scheduled maintenance and should be serviced.

OUR PHILOSOPHY

Our inspection philosophy separates components that are functional from those that are not. Where components are found to be functional, no recommendations will be offered. Where defects are noted, we will recommend improvements with a time frame. In some cases, components may be functional but clearly near the end of their life cycle. Those circumstances are included in the report as well.

Priority Maintenance Items

3.0 Electrical

General

• Estimated cost to repair electrical defects.
Cost: Less than - $500

DISTRIBUTION EQUIPMENT \ General condition
Condition: • Minor deficiencies noted

DISTRIBUTION EQUIPMENT \ Main distribution conditions
Condition: • Storage within one meter of electrical equipment
Clear access should be provided to all distributions panels in tenant spaces.
Task: Improve
Time: Immediate

DISTRIBUTION EQUIPMENT \ Panel conditions
Condition: • A small number of circuits were not labeled.
Task: Improve
Time: Less than 1 year

BRANCH CIRCUIT \ General condition
Condition: • Minor deficiencies noted

BRANCH CIRCUIT \ Fixture cover plates
Condition: • Missing on switches, outlets and junction boxes
Location: Basement Garage - Unit 320
Task: Repair or replace
Time: Immediate

BRANCH CIRCUIT \ Light conditions
Condition: • Inoperative
Both fire escape staircases.
Location: Second Floor - Third Floor
Task: Repair
Time: Immediate

SERVICE GROUNDING \ Grounded service
Condition: • Corrosion on ground wire may reduce effectiveness of ground.
Location: Basement Garage
Task: Evaluation by licensed electrician Improve
Time: Immediate

STANDBY GENERATOR \ Periodic testing
Condition: • Does not appear to have been tested monthly
Task: Evauation by licensed electrician
Time: Action recommended but not require

4.0 Heating

General
• Cost to repair is unpredictable. Estimated cost to assess the units is $100-$200.
Cost: $100 - $200

GENERAL \ Overall condition
Condition: • Serviceable

GENERAL \ Maintenance level
Condition: • Less than ideal

CEILING-MOUNTED HEATERS \ Unit #1
Condition: • Unit in garage did not fire. Fan operated but burners/heating portion was inoperative.
Location: Garage
Task: Evaluation by licensed HVAC contractor
Time: Immediate

ELECTRIC HEATERS \ Location
Condition: • Properly located on exterior walls below windows, where practical

ELECTRIC HEATERS \ Repair Summary
Condition: • Unit in fire command center did not function.
Task: Repair
Time: Immediate

5.0 Air Conditioning

General
• Estimated cost for general maintenance and service.
Cost: $800 - $1,000

GENERAL \ Overall condition
Condition: • Serviceable

GENERAL \ Maintenance level
Condition: • Less than ideal
Debris in cooling fins. Loose filter screens on economizer. Minor mechanical damage noted on cooling fins.
Task: Service
Time: Less than 1 year

6.0 Ventilation

General
• Estimated cost to assess fan.
Cost: $100 - $200

GARAGE \ General
Condition: • The garage exhaust fan was not in operation - It may be idle or inoperative
Task: Evaluation by licensed electrician

7.0 Plumbing

General
• Estimated cost to assess and repair plumbing items.
Cost: $500 - $800

GENERAL CONDITION \ Overall condition

Condition: • Serviceable

GENERAL CONDITION \ Maintenance

Condition: • Less than ideal

PIPING \ Supply

Condition: • Corrosion observed on service line and main service line valve.
Task: Monitor

Condition: • Loose pipe.
Location: Garage service line entrance
Task: Repair or replace
Time: Immediate

Condition: • Evidence of past leakage noted
Leak or soap spill.
Location: First Floor Men's Bathroom
Task: Monitor

PIPING \ Venting

Condition: • Several apparent vents on the roof were capped. Confirm vent arrangement with building plans and consult plumber if slow or noisy drains become a problem. Two vents had coaxial cable from satellite units penetration boot seal. Void in boot has the potential for water infiltration.
Location: Roof
Task: Further evaluation - Repair
Time: Immediate

FIXTURES \ General

Condition: • Most plumbing fixtures that were sampled operated satisfactorily

FIXTURES \ Toilets

Condition: • Inoperative automatic flush valve.
Location: Second Floor Women's Bathroom
Task: Repair or replace
Time: Immediate

FIXTURES \ Basins / sinks

Condition: • Inoperative automatic sink valves.
Location: Second Floor Men's and Women's Bathroom
Task: Repair or replace
Time: Immediate

Condition: • Rust stains indicate a potential leak.
Location: Unit 110
Task: Monitor

8.0 Roofing

General
• Estimated cost to repair visible priority roof defects.
Cost: $500 - $750

EPDM / TPO \ Age
Condition: • Between 5 and 10 years old

EPDM / TPO \ Average life expectancy
Condition: • 15 to 25 years - high dependent on original installation quality, material properties and maintenance level

EPDM / TPO \ Remaining life
Condition: • Replacement is not expected within the timeframe considered by this report

EPDM / TPO \ Deficiencies
Condition: • Blistering, which occurs when air or moisture gets trapped within or below the roof assembly, and may be a function of age, building conditions, or installation quality, was noted - This increases the risk of damage and leakage
Task: Inspect annually

Condition: • Tenting noted - A symptom of age and influenced by the installation quality
Minor tenting observed at perimeter.
Task: Inspect annually

Condition: • Open seams at lap joints
Located directly above unit 320 and area where water stains were observed.
Task: Repair or replace
Time: Immediate

TYPICAL ROOF DEFECTS \ Flashings
Condition: • Damage (dented) and loose seam flashing and sealant.
Task: Further evaluation
Time: Less than 1 year

DRAINAGE \ Roof Drains
Condition: • Large trees adjacent to building have the potential to clog roof drains. Inspect in the spring and fall of the year, at a minimum.
Location: Roof
Task: Service semi - annually

DRAINAGE \ Gutters and Downspouts
Condition: • Discharging too close to building structure - Downspouts should discharge water at least six feet from the building, where practical
Location: Rear
Task: Improve
Time: Less than 1 year

9.0 Interior

General
• Containers labeled as flammable located in fire command center. Remove.
Task: Remove
Time: Immediate

• Estimated cost to repair interior defects. Does not include tenant space improvements. Certification of fire system recommended.
Cost: $2,000 - $3,000

• Current elevator inspection certificate in elevator room.
Task: Comment

• Carbon monoxide detector located in garage. Not tested.
Task: Comment

• Fire extinguisher inspection tags are expired for extinguishers located in tenant spaces.
Task: Service - Improve
Time: Immediate

• Fire alarm system certificate on display is expired. Have system evaluated or request disclosure from seller.
Location: Basement
Task: Service
Time: Immediate

GENERAL CONDITION \ Overall condition
Condition: • Satisfactory

GENERAL CONDITION \ Maintenance
Condition: • Adequate

GENERAL CONDITION \ Interior Surfaces
Condition: • Unit 320 had the following conditions: Stained and buckled carpet, missing drywall, water stains on walls, missing trim above door, loose electrical conduit, missing ducts and missing electrical cover plates.
Task: Repair
Time: Discretionary

Condition: • Typical minor flaws.

Condition: • Minor cracks observed in tile on main staircase.
Task: Monitor - Repair
Time: Discretionary

Condition: • Cosmetic repairs are discretionary

WATER DAMAGE \ Above Grade
Condition: • Water stains observed on wall and windows sill in fire escape outside of unit 330.
Task: Monitor

Condition: • Water stains located on third level near the elevator.
Task: Monitor Repair
Time: Immediate

Condition: • A water stain was noted
Location: Third Floor
Task: Further evaluation
Time: Immediate

Condition: • CAUSE???
Small void in roof seam above space. May or may not be source of problem.
Location: Roof

Condition: • All areas of staining were found to be dry at the time of the inspection

Condition: • The water damaged finishes should be repaired or replaced

BASEMENT LEAKAGE \ Evidence
Condition: • Staining
Monitor or improve roof drain discharge areas.
Location: Electrical room
Task: Monitor

STAIRWELLS \ General
Condition: • No major deficiencies were noted with the stairwell

STAIRWELLS \ Handrails / Railings
Condition: • Hand rail does not return to glass.
Location: First floor
Task: Improve
Time: Less than one year

11.0 Structure

GENERAL CONDITION \ Overall condition
Condition: • Satisfactory

GENERAL CONDITION \ Maintenance
Condition: • Adequate

GENERAL CONDITION \ General
Condition: • No major structureal defects were noted

FOUNDATIONS \ Settlement and Shrinkage Cracks
Condition: • Typical minor cracks noted.

WALLS \ Lintels and Shelf Angles
Condition: • Corrosion observed in lintel above overhead garage door.
Location: Basement Garage
Task: Repair
Time: Less than 1 year

Condition: • Replacement of the steel is not considered warranted at this time; however, the steel should be scraped clean and repainted to minimize future corrosion

Condition: • Lintels have not been provided above the windows
Steel lintels not in place in fire escape towers. Confirm engineering and structural details with original construction documents. Copies may possibly be obtained from the local building official if sellers do not have the documents.
Task: Further evaluation
Time: Recommended but not required

FLOORS \ Concrete
Condition: • Typical minor cracks.

BEAMS AND COLUMNS \ Beams
Condition: • A supporting beam has been notched
Several pre-cast holes observed in beams. Confirm engineering specifications for location and hole diameter with original building documents. No cracks or other defects observed.
Location: Basement garage
Task: Further evaluation
Time: Action recommended but not require

ROOF \ Deck
Condition: • Small holes observed in bottom of decking in north fire escape stairs.
Task: Monitor

12.0 Exterior

General

• Estimated cost to repair exterior items.
Cost: $5,000 - $7,000

• Dead and missing trees, shrubs, mulch and plant materials.
Task: Repair or replace
Time: Discretionary

GENERAL CONDITION \ Overall condition
Condition: • Satisfactory

GENERAL CONDITION \ Maintenance
Condition: • Adequate

WALLS \ Masonry
Condition: • Efflorescence observed on finish block.
Location: Exterior
Task: Monitor

Condition: • Unknown drain pipe?
Location: Southwest
Task: Further evaluation

Condition: • Water penetration has caused spalling of the brickwork
Minor spalling near the front entrance. Damage to first course of block adjacent to sidewalk likely due to chlorides in ice melt products. Included language in snow removal contracts to remove accumulated ice melt from masonry surfaces and use care when spreading to avoid contact with masonry wall surfaces.
Location: Front
Task: Repair or replace
Time: Less than 1 year

DOORS \ General
Condition: • All doors that were sampled operated properly

DOORS \ Overhead doors
Condition: • Impact damaged
Task: Repair or replace
Time: Discretionary

SITE WORK \ Grading
Condition: • Flat grade in south corner in the rear of the building near the fire escape. Improve grade and slope away from building.
Task: Improve
Time: Less than 1 year

SITE WORK \ Sidewalks and Walkways
Condition: • Unsealed gap at building. Caulk needs replacement.
Location: Front
Task: Repair
Time: Less than 1 year

Condition: • Metal hand rails beginning to rust.
Task: Repair
Time: Less than 1 year

Condition: • South fire escape stairs beginning to crack.
Task: Monitor

Condition: • The sidewalk has settled relative to the curb, creating a trip hazard
Location: Front entry
Task: Repair or replace
Time: Immediate

Condition: • Cracked
Typical cracks.
Task: Monitor

SITE WORK \ Asphalt pavement
Condition: • Curbing damaged.
Location: North
Task: Repair or replace
Time: Less than 1 year

Condition: • Satisfactory overall condition

SITE WORK \ Retaining walls
Condition: • No major deficiencies were noted
Some minor impact damage was observed.
Task: Repair
Time: Discretionary

SITE WORK \ Fence
Condition: • Affected areas should be repaired
Task: Repair or replace
Time: Discretionary

FIRE ESCAPE \ -
Condition: • No major concerns were noted
Task: Repair
Time: Discretionary

This concludes the Summary section.

The remainder of the report describes each of the buildings 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 a pre-purchase inspection. These may have to be adjusted based on the findings of specialists.

Repairs and Improvements - Approximate Costs

Description

Weather: • Overcast • Ground was damp • There was rain on the day of the inspection. • It was not raining at the time of the inspection. • Moderate winds

Approximate temperature: • 56°

Attendees: • Buyer • Buyer left before the inspection was complete. • Lender’s representative • Lender’s rep left before the inspection was complete.

Access to building provided by: • Buyer's representative

Occupancy: • The building was occupied at the time of the inspection.

Utilities: • All utilities were on during the inspection.

Approximate inspection Start time: • The inspection started at 10:30 a.m.

Approximate inspection End time: • The inspection ended at 4:30 p.m.

Approximate age of building: • 6 year

Approximate size of building: • 28,000 Square Feet

Building type: • Office

Number of stories: • Three

Below grade area: • Garage

Street surface: • Paved

Limitations

General: • The following items were not assessed.

- Fire safety systems were not reviewed.
- A Building Code and Fire Code violation inquiry was not undertaken.
- Elevators were not assessed.
- ADA compliance items were not assessed.

3.0 ELECTRICAL

Commercial Building, Twin Cities Area, MN October 14, 2013

Description

Electrical service to the building: • Underground

Main electrical service transformer: • south of property

Main building transformer size: • Unknown

Electrical service size: • 2000 - amps

Capacity of electrical service size determined by : • Size of the main fuses

Service distribution and metering (single meter for building): • Distribution panels in tenant spaces

Distribution panels: • Circuit breakers

Predominant wire types: • Copper

Lighting fixture types: • Flourescent

Standby generator : • Cummins - Size not determined • 80 kW Katolight

Standby generator : • Natural gas-fired

Grounding - electrical system: • at the domestic water service entrance

Electrical supplier: • Not disclosed

Limitations

Main building transformer size or location: • There is no information to indicate its size

Electrical service size: • The capacity should be verified by opening the main disconnect switch or contacting the electric utility provider

Service adequacy: • It is impossible on an inspection such as this to determine adequacy for commercial demands

Grounding: • Quality of ground not determined

Supplier of electricity: • Not verified

Recommendations

General

1. • Estimated cost to repair electrical defects.
Cost: Less than - $500

DISTRIBUTION EQUIPMENT \ General condition

2. Condition: • Minor deficiencies noted

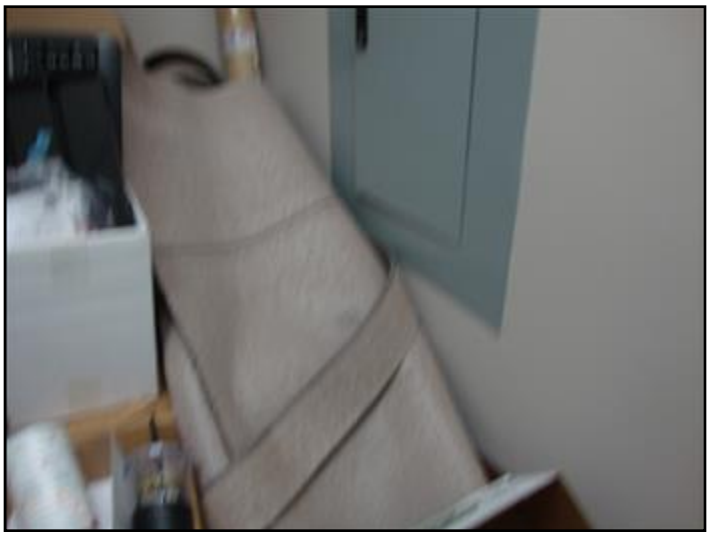
DISTRIBUTION EQUIPMENT \ Main distribution conditions

3. Condition: • Storage within one meter of electrical equipment

Clear access should be provided to all distributions panels in tenant spaces.

Task: Improve

Time: Immediate



Storage within one meter of electrical...

DISTRIBUTION EQUIPMENT \ Panel conditions

4. Condition: • A small number of circuits were not labeled.

Task: Improve

Time: Less than 1 year

BRANCH CIRCUIT \ General condition

5. Condition: • Minor deficiencies noted

BRANCH CIRCUIT \ Fixture cover plates

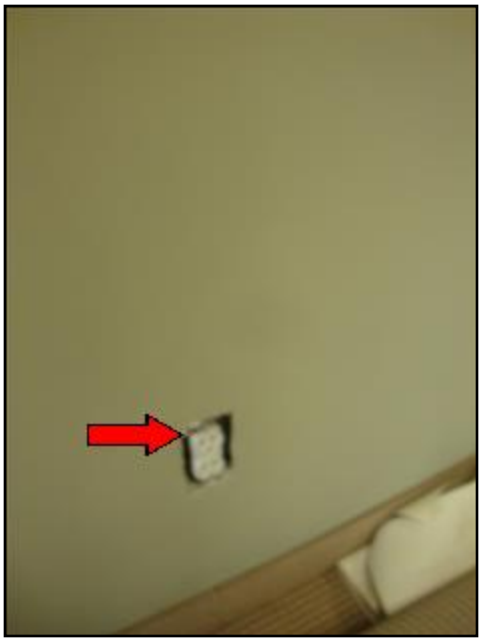
6. Condition: • Missing on switches, outlets and junction boxes

Location: Basement Garage - Unit 320

Task: Repair or replace

Time: Immediate

Missing on switches, outlets and junction...



Missing on switches, outlets and junction...

BRANCH CIRCUIT \ Light conditions

7. Condition: • Inoperative

Both fire escape staircases.

Location: Second Floor - Third Floor

Task: Repair

Time: Immediate

Inoperative

Inoperative

SERVICE GROUNDING \ Grounded service

8. Condition: • Corrosion on ground wire may reduce effectiveness of ground.

Location: Basement Garage

Task: Evaluation by licensed electrician Improve

Time: Immediate

Corrosion

STANDBY GENERATOR \ Periodic testing

9. Condition: • Does not appear to have been tested monthly

Task: Evauation by licensed electrician

Time: Action recommended but not require

4.0 HEATING

Commercial Building, Twin Cities Area, MN October 14, 2013

Description

Rooftop Unit #1 - Age and Type: • Between 5 and 10 years old • Gas-fired, heating (electric cooling) unit

Rooftop Unit #2 - Age and Type: • Between 5 to 10 years old • Gas-fired, heating (electric cooling) unit

Rooftop Unit #3 - Age and Type: • Between 5 to 10 years old • Gas-fired, heating (electric cooling) unit

Rooftop Unit #4 - Age and Type : • Between 5 to 10 years old • Gas-fired, heating (electric cooling) unit

Rooftop Unit #5 - Age and Type: • Between 5 to 10 years old • Gas-fired, heating (electric cooling) unit

Rooftop Unit #6 - Age and Type: • Between 5 to 10 years old • Gas-fired, heating (electric cooling) unit

Rooftop Unit #7 - Age and Type: • Between 5 to 10 years old • Gas-fired, heating (electric cooling) unit

Typical Rooftop Unit Life Expectancy: • 20 years

Ceiling-mounted Heater #1 - Age and Type: • Between 5 to 10 years old • Gas-fired, unit heater

Typical Ceiling-mounted Heater Life Expectancy: • 15 to 25 years - Dependent on location to overhead doors, exposing the heaters to greater thermal stresses and reducing life expectancy

Electric - Radiant System: • Located in fire escape staircases and fire command center.

Maintenance contract: • Not Determined

Limitations

Maintenance contract: • It could not be verified if one is in effect

Natural gas supplier: • Not verified

Dataplates:
• Illegible - heating capacity and age could not be determined
Middle rooftop unit near front of building.

Illegible - heating capacity and age could...

Recommendations

General

10. • Cost to repair is unpredictable. Estimated cost to assess the units is $100-$200.
Cost: $100 - $200

GENERAL \ Overall condition

11. Condition: • Serviceable

GENERAL \ Maintenance level

12. Condition: • Less than ideal

CEILING-MOUNTED HEATERS \ Unit #1

13. Condition: • Unit in garage did not fire. Fan operated but burners/heating portion was inoperative.
Location: Garage
Task: Evaluation by licensed HVAC contractor
Time: Immediate

ELECTRIC HEATERS \ Location

14. Condition: • Properly located on exterior walls below windows, where practical

ELECTRIC HEATERS \ Repair Summary

15. Condition: • Unit in fire command center did not function.
Task: Repair
Time: Immediate

5.0 AIR CONDITIONING

Commercial Building, Twin Cities Area, MN October 14, 2013

Description

Rooftop Unit #1 - Age and compressor type: • Between 5 to 10 years old

Rooftop Unit #1 - Cooling capacity and fresh air intake: • 15-tons • Economizer unit

Rooftop Unit #2 - Age and compressor type :
• Between 5 to 10 years old
Estimated. Data plate illegible.

Rooftop Unit #3 - Age and compressor type : • Between 5 to 10 years old • Sealed

Rooftop Unit #3 - Cooling capacity and fresh air intake : • 15-tons • Economizer unit

Rooftop Unit #4 - Age and compressor type : • Between 5 to 10 years old • Sealed

Rooftop Unit #4 - Cooling capacity and fresh air intake : • 12.5-tons • Economizer unit

Rooftop Unit #5 - Age and compressor type : • Between 5 to 10 years old • Sealed

Rooftop Unit #5 - Cooling capacity and fresh air intake : • 12.5-tons • Economizer unit

Rooftop Unit #6 - Age and compressor type : • Between 5 to 10 years old • Sealed

Rooftop Unit #6 - Cooling capacity and fresh air intake : • 12.5-tons • Economizer unit

Rooftop Unit #7 - Age and compressor type : • Between 5 to 10 years old • Sealed

Rooftop Unit #7 - Cooling capacity and fresh air intake : • 12.5-tons

Typical Rooftop Unit Life Expectancy: • 20 years, as noted in the Heating section

Limitations

Operating status: • Not functionally tested • Severe damage to compressors can result from operating air-conditioning equipment when outside temperature is below 15ºC (60ºF)

Recommendations

General

16. • Estimated cost for general maintenance and service.
Cost: $800 - $1,000

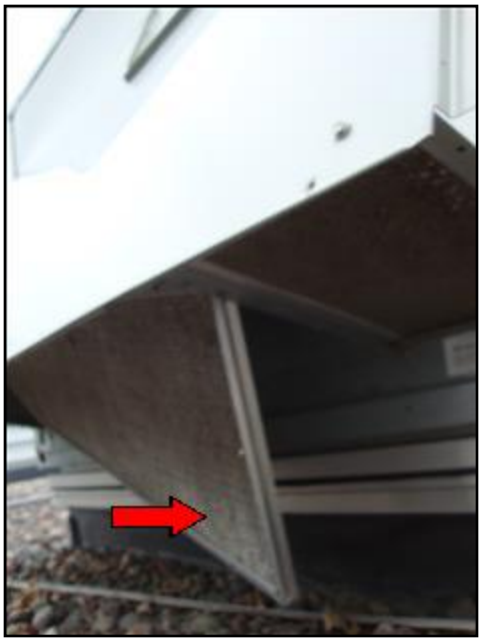
GENERAL \ Overall condition

17. Condition: • Serviceable

GENERAL \ Maintenance level

18. Condition: • Less than ideal
Debris in cooling fins. Loose filter screens on economizer. Minor mechanical damage noted on cooling fins.
Task: Service
Time: Less than 1 year

AC Less than ideal



AC Less than ideal

AC Less than ideal

Description

Rooftop units: • Equipped with a fresh-air makeup duct / economizer unit, which allows fresh air from the exterior to mix with the return air stream

Limitations

Process related equipment: • Process related equipment is beyond the scope of our assessment and is not closely examined

Recommendations

General

19. • Estimated cost to assess fan.
Cost: $100 - $200

GARAGE \ General

20. Condition: • The garage exhaust fan was not in operation - It may be idle or inoperative
Task: Evauation by licensed electrician

Description

Domestic water supply - size: • 1-inch diameter

Domestic water supply - pipe material: • Copper

Domestic water supply - shutoff: • Located in the basement

Water meters: • One

Supply plumbing pipe material examined: • Copper

Drain, Waste and vent piping material examined: • PVC plastic • Cast iron

Storm drain piping material examined: • PVC

Washroom locations: • Men's and women's on each office floor

Pumps and locations: • Sump pumps • Basement

Limitations

General: • Water heater(s) not located or inspected.

Domestic water supplier: • Could not be verified

Appropriate vent piping for waste plumbing: • Could not be verified

Pumps: • The sump pump was not observed in operation

Recommendations

General

21. • Estimated cost to assess and repair plumbing items.
Cost: $500 - $800

GENERAL CONDITION \ Overall condition

22. Condition: • Serviceable

GENERAL CONDITION \ Maintenance

23. Condition: • Less than ideal

PIPING \ Supply

24. Condition: • Corrosion observed on service line and main service line valve.
Task: Monitor

Corrosion

25. Condition: • Loose pipe.
Location: Garage service line entrance
Task: Repair or replace
Time: Immediate

Loose pipe

Loose pipe

26. Condition: • Evidence of past leakage noted
Leak or soap spill.
Location: First Floor Men's Bathroom
Task: Monitor

Evidence of past leakage noted

PIPING \ Venting

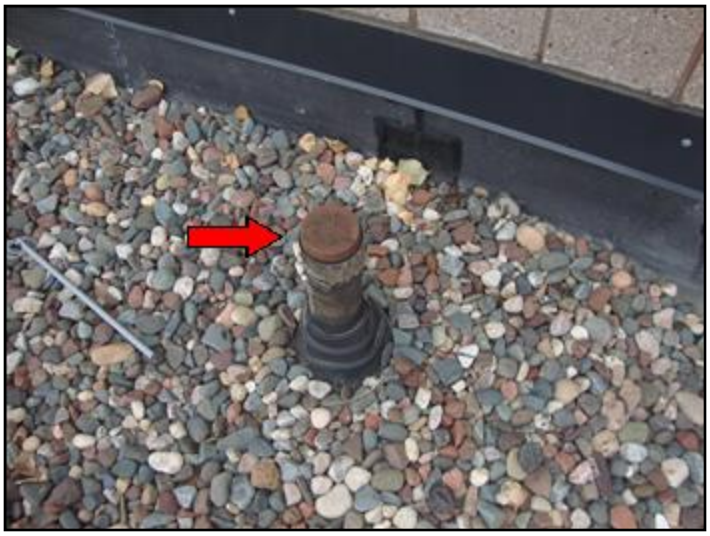
27. Condition: • Several apparent vents on the roof were capped. Confirm vent arrangement with building plans and consult plumber if slow or noisy drains become a problem. Two vents had coaxial cable from satellite units penetration boot seal. Void in boot has the potential for water infiltration.

Location: Roof

Task: Further evaluation - Repair

Time: Immediate

Wire in boot flashing



Capped Vent?

Capped Vent?

FIXTURES \ General

28. Condition: • Most plumbing fixtures that were sampled operated satisfactorily

FIXTURES \ Toilets

29. Condition: • Inoperative automatic flush valve.
Location: Second Floor Women's Bathroom
Task: Repair or replace
Time: Immediate

FIXTURES \ Basins / sinks

30. Condition: • Inoperative automatic sink valves.
Location: Second Floor Men's and Women's Bathroom
Task: Repair or replace
Time: Immediate

31. Condition: • Rust stains indicate a potential leak.
Location: Unit 110
Task: Monitor

Rust stains

Description

Flat roof covering(s) - EPDM:

• Loose laid and covered with stone ballast

Ballasted EPDM. Appears to be adhered, ballast limited inspection.

Flat roof covering(s) - Metal: • Steel, with folded seams

Roof Warranty or Bond: • Not verified

Flat roof drainage:

• Scupper drains at the roof perimeter

Fire escape stairs.

• Interior collection system, via roof drains

Limitations

Flat roof covering(s) - General: • Ballast limited view of roof membrane.

Recommendations

General

32. • Estimated cost to repair visible priority roof defects.

Cost: $500 - $750

EPDM / TPO \ Age

33. Condition: • Between 5 and 10 years old

EPDM / TPO \ Average life expectancy

34. Condition: • 15 to 25 years - high dependent on original installation quality, material properties and maintenance level

EPDM / TPO \ Remaining life

35. Condition: • Replacement is not expected within the timeframe considered by this report

EPDM / TPO \ Deficiencies

36. Condition: • Blistering, which occurs when air or moisture gets trapped within or below the roof assembly, and may be a function of age, building conditions, or installation quality, was noted - This increases the risk of damage and leakage

Task: Inspect annually

Blistering,

Blistering,

37. Condition: • Tenting noted - A symptom of age and influenced by the installation quality
Minor tenting observed at perimeter.
Task: Inspect annually

Tenting noted

38. Condition: • Open seams at lap joints
Located directly above unit 320 and area where water stains were observed.
Task: Repair or replace
Time: Immediate

Open seam

TYPICAL ROOF DEFECTS \ Flashings

39. Condition: • Damage (dented) and loose seam flashing and sealant.

Task: Further evaluation

Time: Less than 1 year

Damage

Loose

DRAINAGE \ Roof Drains

40. Condition: • Large trees adjacent to building have the potential to clog roof drains. Inspect in the spring and fall of the year, at a minimum.

Location: Roof

Task: Service semi - annually

Trees

DRAINAGE \ Gutters and Downspouts

41. Condition: • Discharging too close to building structure - Downspouts should discharge water at least six feet from the building, where practical

Location: Rear

Task: Improve

Time: Less than 1 year

Discharging too close to building structure...

Discharging too close to building structure...

Description

Finished area floor coverings: • Carpet • Ceramic tile • Quarried tile

Wall finishes: • Drywall • Paneling

Ceiling finishes: • Suspended tile

Staircases: • Masonry and steel

Limitations

General: • ADA compliance inspection not included in scope.

General: • Elevators and vertical lift equipment not tested.

General: • Fire alarm and suppression systems not tested.

Basement leakage: • Since wet basement problems are usually intermittent, they cannot always be identified or quantified on a one-time visit. It is suggested that the basement be inspected during and after heavy rain and snowmelt periods to establish the true extent of the basement moisture condition

Recommendations

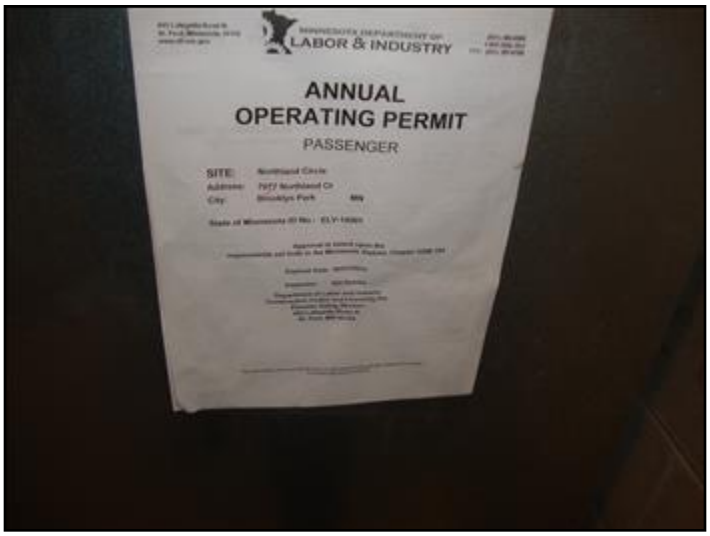
General

42. • Containers labeled as flammable located in fire command center. Remove.
Task: Remove
Time: Immediate

Flammable

43. • Estimated cost to repair interior defects. Does not include tenant space improvements. Certification of fire system recommended.
Cost: $2,000 - $3,000

44. • Current elevator inspection certificate in elevator room.
Task: Comment



Certificate

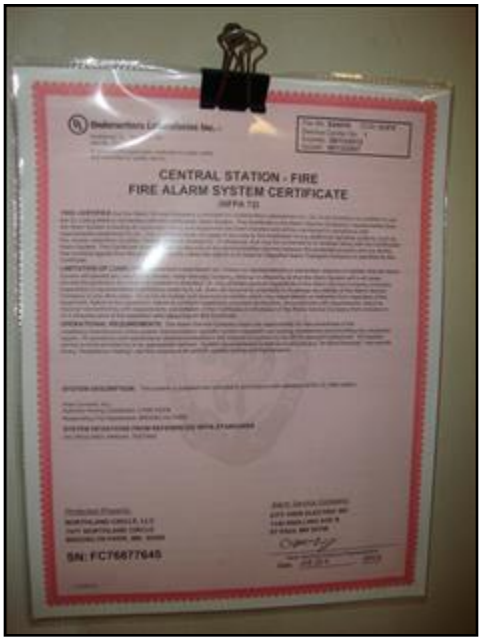
45. • Carbon monoxide detector located in garage. Not tested.
Task: Comment

46. • Fire extinguisher inspection tags are expired for extinguishers located in tenant spaces.
Task: Service - Improve
Time: Immediate

Expired

Expired

47. • Fire alarm system certificate on display is expired. Have system evaluated or request disclosure from seller.
Location: Basement
Task: Service
Time: Immediate



Expired

GENERAL CONDITION \ Overall condition

48. Condition: • Satisfactory

GENERAL CONDITION \ Maintenance

49. Condition: • Adequate

GENERAL CONDITION \ Interior Surfaces

50. Condition: • Unit 320 had the following conditions: Stained and buckled carpet, missing drywall, water stains on walls, missing trim above door, loose electrical conduit, missing ducts and missing electrical cover plates.
Task: Repair
Time: Discretionary

320

320

320

320

320

320

51. Condition: • Typical minor flaws.

52. Condition: • Minor cracks observed in tile on main staircase.
Task: Monitor - Repair
Time: Discretionary

Minor cracks

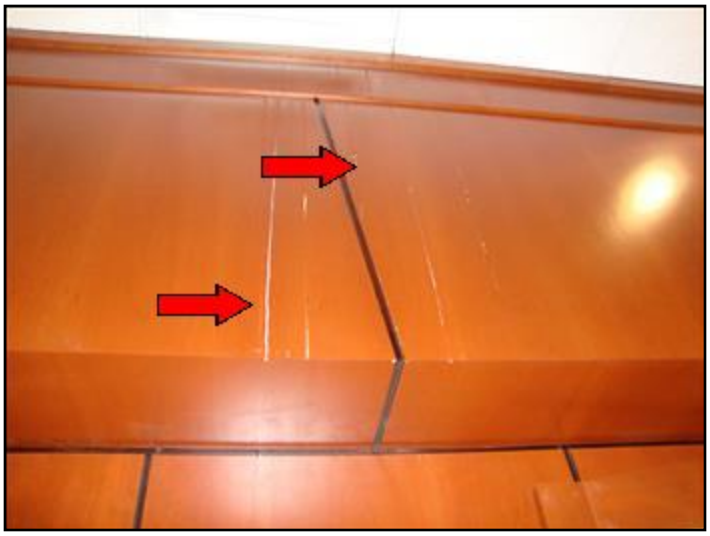
53. Condition: • Cosmetic repairs are discretionary

WATER DAMAGE \ Above Grade

54. Condition: • Water stains observed on wall and windows sill in fire escape outside of unit 330.
Task: Monitor

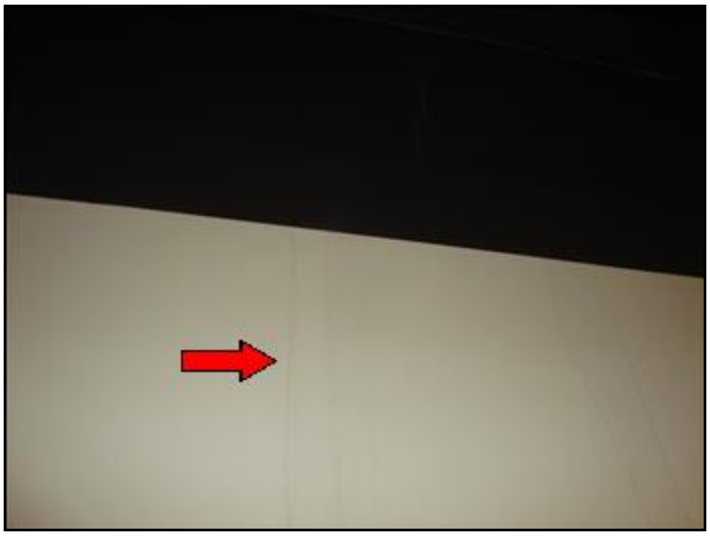
Water stains

55. Condition: • Water stains located on third level near the elevator.
Task: Monitor Repair
Time: Immediate



Water stains

56. Condition: • A water stain was noted
Location: Third Floor
Task: Further evaluation
Time: Immediate



A water stain was noted

57. Condition: • CAUSE???
Small void in roof seam above space. May or may not be source of problem.
Location: Roof

58. Condition: • All areas of staining were found to be dry at the time of the inspection

59. Condition: • The water damaged finishes should be repaired or replaced

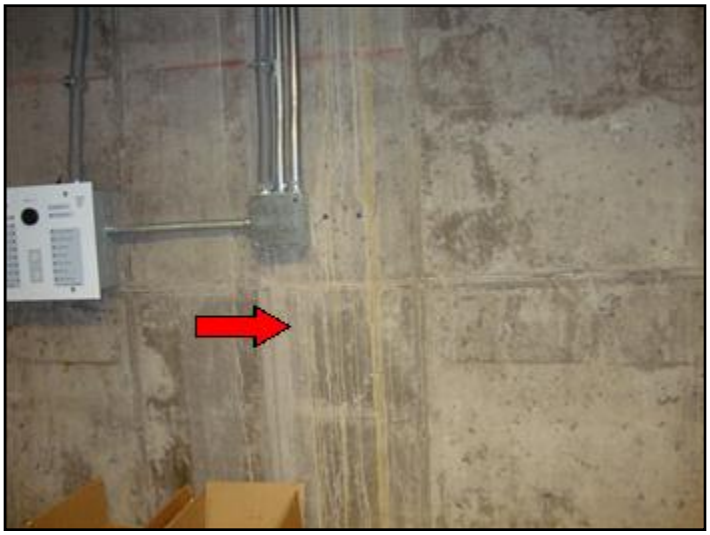
BASEMENT LEAKAGE \ Evidence

60. Condition: • Staining

Monitor or improve roof drain discharge areas.

Location: Electrical room

Task: Monitor



Staining

STAIRWELLS \ General

61. Condition: • No major deficiencies were noted with the stairwell

STAIRWELLS \ Handrails / Railings

62. Condition: • Hand rail does not return to glass.

Location: First floor

Task: Improve

Time: Less than one year

Hand rail

Description

General: • There is no visible insulation in the building, where spot-checked

Limitations

Above grade walls: • This could not be verified

Flat roof: • The amount of insulation in the flat roof could not be ascertained

Limitations

General: • The examination of the structural components was visual only; a design review was not undertaken • Interior and exterior finishes restricted the evaluation of the structure

Recommendations

GENERAL CONDITION \ Overall condition

63. Condition: • Satisfactory

GENERAL CONDITION \ Maintenance

64. Condition: • Adequate

GENERAL CONDITION \ General

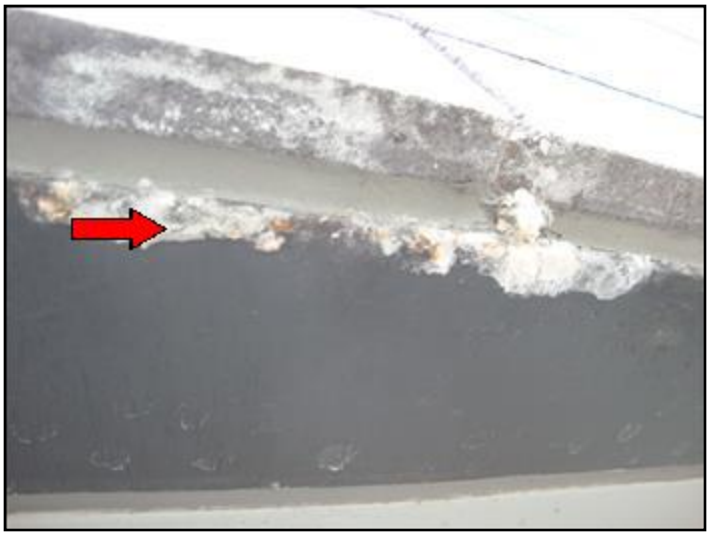
65. Condition: • No major structureal defects were noted

FOUNDATIONS \ Settlement and Shrinkage Cracks

66. Condition: • Typical minor cracks noted.

WALLS \ Lintels and Shelf Angles

67. Condition: • Corrosion observed in lintel above overhead garage door.
Location: Basement Garage
Task: Repair
Time: Less than 1 year



corrosion

68. Condition: • Replacement of the steel is not considered warranted at this time; however, the steel should be scraped clean and repainted to minimize future corrosion

69. Condition: • Lintels have not been provided above the windows

Steel lintels not in place in fire escape towers. Confirm engineering and structural details with original construction documents. Copies may possibly be obtained from the local building official if sellers do not have the documents.

Task: Further evaluation

Time: Recommended but not required

FLOORS \ Concrete

70. Condition: • Typical minor cracks.

BEAMS AND COLUMNS \ Beams

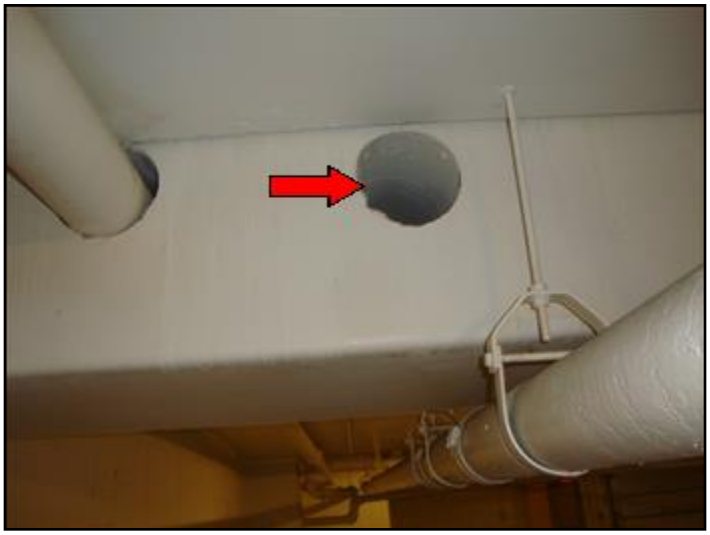
71. Condition: • A supporting beam has been notched

Several pre-cast holes observed in beams. Confirm engineering specifications for location and hole diameter with original building documents. No cracks or other defects observed.

Location: Basement garage

Task: Further evaluation

Time: Action recommended but not require



Holes in beam

ROOF \ Deck

72. Condition: • Small holes observed in bottom of decking in north fire escape stairs.

Task: Monitor

Small holes

Description

Exterior Walls: • Concrete block • Double-glazed curtain wall

Main entrance doors: • Aluminum-framed

Personnel doors: • Steel-framed

Overhead doors: • Steel sectional

Building windows: • Aluminum-framed • Double-glazed • Fixed glazing

Retaining walls: • Dry-fitting block

Pavement: • Asphalt

Sidewalks and Walkways: • Poured-concrete sidewalk

Signs: • Lighted sign boxes on front façade

Fire escapes: • At the north side of the building • At the south side of the building

Recommendations

General

73. • Estimated cost to repair exterior items.
Cost: $5,000 - $7,000

74. • Dead and missing trees, shrubs, mulch and plant materials.
Task: Repair or replace
Time: Discretionary

Dead and missing

Dead and missing

Dead and missing

Dead and missing

GENERAL CONDITION \ Overall condition

75. Condition: • Satisfactory

GENERAL CONDITION \ Maintenance

76. Condition: • Adequate

WALLS \ Masonry

77. Condition: • Efflorescence observed on finish block.

Location: Exterior

Task: Monitor

Efflorescence

Efflorescence

78. Condition: • Unknown drain pipe?
Location: Southwest
Task: Further evaluation

Unknown drain pipe?

79. Condition: • Water penetration has caused spalling of the brickwork
Minor spalling near the front entrance. Damage to first course of block adjacent to sidewalk likely due to chlorides in ice melt products. Included language in snow removal contracts to remove accumulated ice melt from masonry surfaces and use care when spreading to avoid contact with masonry wall surfaces.
Location: Front
Task: Repair or replace
Time: Less than 1 year

Spalling

DOORS \ General

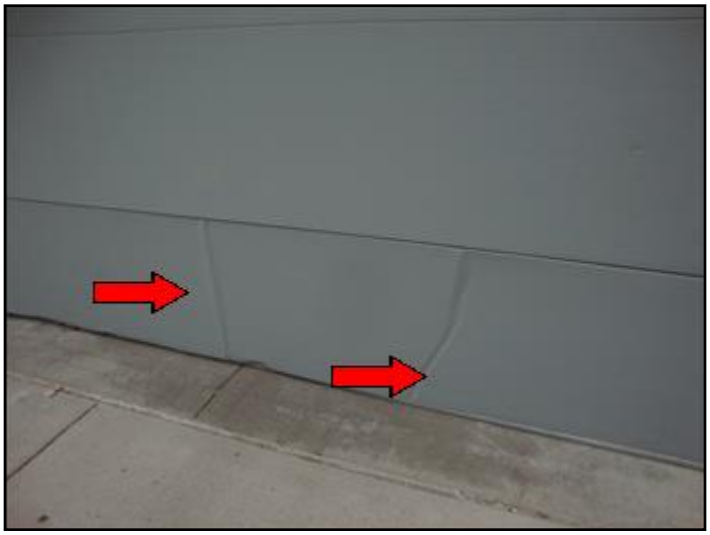
80. Condition: • All doors that were sampled operated properly

DOORS \ Overhead doors

81. Condition: • Impact damaged

Task: Repair or replace

Time: Discretionary



Impact damaged

SITE WORK \ Grading

82. Condition: • Flat grade in south corner in the rear of the building near the fire escape. Improve grade and slope away from building.

Task: Improve

Time: Less than 1 year

Flat grade

SITE WORK \ Sidewalks and Walkways

83. Condition: • Unsealed gap at building. Caulk needs replacement.

Location: Front

Task: Repair

Time: Less than 1 year

Unsealed gap

84. Condition: • Metal hand rails beginning to rust.

Task: Repair

Time: Less than 1 year

85. Condition: • South fire escape stairs beginning to crack.
Task: Monitor

86. Condition: • The sidewalk has settled relative to the curb, creating a trip hazard
Location: Front entry
Task: Repair or replace
Time: Immediate

The sidewalk has settled

87. Condition: • Cracked
Typical cracks.
Task: Monitor

Cracked

SITE WORK \ Asphalt pavement

88. Condition: • Curbing damaged.

Location: North

Task: Repair or replace

Time: Less than 1 year

Curbing damaged

89. Condition: • Satisfactory overall condition

SITE WORK \ Retaining walls

90. Condition: • No major deficiencies were noted

Some minor impact damage was observed.

Task: Repair

Time: Discretionary

Minor impact damage

Minor impact damage

SITE WORK \ Fence

91. Condition: • Affected areas should be repaired

Task: Repair or replace

Time: Discretionary

Missing board

FIRE ESCAPE \ -

92. Condition: • No major concerns were noted

Task: Repair

Time: Discretionary

END OF REPORT

MAINTENANCE RECOMMENDATIONS

This Appendix provides maintenance recommendations related to items mentioned in our report. These recommendations are intended to be general and should not be construed as all-inclusive. Maintenance should be undertaken by qualified personnel only.

ELECTRICAL

1. The area in front of electrical panels and disconnects should always be accessible (i.e., no storage or debris).

2. Each circuit should be labeled to identify the area or appliance it controls.

3. Circuit breakers should be manually tripped and reset semi-annually.

4. Dirt deposits on transformers and relays should be cleaned monthly to minimize operating temperature and maintain optimum efficiency.

5. Hardware on all electrical equipment should be checked for looseness semi-annually. Cable connections, fuse clips and circuit breakers are common areas where loose connections can be found.

6. Electrical switches, etc., should not be lubricated unless specified by the manufacturer. The type and grade of lubricant specified should be strictly adhered to. Oil and grease should be kept away from electrical insulation as it may attack this material.

7. Extension cords should not be used as permanent wiring.

8. Electrical modifications should be performed by qualified personnel only.

9. Test buttons on ground fault circuit interrupters should be operated monthly.

10. The main ground fault interrupter should be tested annually.

11. The switchgear internal connections should be checked and retightened annually.

HEATING

1. The heating systems should be serviced annually by a qualified technician.

2. The fans and motors should be lubricated as directed by a serviceperson or the manufacturer.

3. The filters should be inspected monthly and cleaned or replaced as necessary during heating system operation.

4. Electric baseboard heaters should be tested periodically and replaced as necessary. Heating fins should be vacuumed annually.

5. Electric baseboard heaters should be tested periodically and replaced as necessary. Heating fins should be vacuumed annually. Internal wire connectors should be checked for tightness annually. Special service connectors should be used.

AIR-CONDITIONING

1. The air-conditioning system should be inspected and recharged as necessary by a serviceperson, before annual start-up.

2. The fans and motors should be lubricated as directed by a qualified serviceperson or the manufacturer.

3. The outdoor unit should be level. If the supports settle or heave, adjustment should be made by a service person.

4. Debris and vegetation should be kept away from the outdoor (condensing unit) components.

5. An annual oil and refrigerant analysis would be desirable so that operating condition trends can be monitored. Annual oil replacement is advisable.

6. The condenser and evaporator tubes should be mechanically examined every 3 to 5 years.

VENTILATION

1. Exhaust fans should be inspected semiannually.

2. The motors should be cleaned annually, and lubricated as recommended by the manufacturer.

PLUMBING

1. The main shutoff valve for the plumbing system (located in the northwest) should be operated semiannually to ensure that it can be closed in an emergency.

2. Every fall, the inside control valves for outdoor faucets should be closed. The outside pipes should be drained and the exterior faucets left open.

3. The domestic water heater and associated equipment should be serviced annually by a qualified technician.

4. The plumbing fixtures should be inspected monthly for leakage and repairs made promptly.

ROOFING

1. The roof should be inspected semiannually. Particular attention should be paid to the flashings, edges and intersections.

2. The roof should be periodically examined for gravel scouring and improved as necessary.

3. The roof drains should be periodically inspected to ensure that they are free of debris.

4. Metal chimneys and vents should be examined annually for corrosion, leaning and loose or missing rain caps.

INTERIOR COMPONENTS

1. Windows should be inspected at least annually for damage resulting from leakage and condensation.

2. Wall and ceiling surfaces should be periodically examined for evidence of roof or plumbing leakage.

EXTERIOR COMPONENTS

1. Exterior masonry should be inspected annually for deteriorated or missing mortar.

2. The caulking and weather stripping should be inspected every fall.

3. The asphalt paving and sidewalks should be visually examined annually for cracks or depressions. Repairs should be made promptly.

GLOSSARY

ABS — A type of black plastic pipe commonly used for waste water lines.
Aggregate — Crushed rock or stone.
Air chamber — A vertical, air filled pipe that prevents water hammer by absorbing pressure when water is shut off at a faucet or valve.
Air-conditioner condenser — The outside fan unit of the air conditioning system. The condenser discharges heat to the building exterior.
Alligatoring — Coarse checking pattern on the surface of a material. Typically caused by ageing, exposure to sun and/or loss of volatiles.
Ampacity — Refers to the how much current a wire can safely carry. For example, a 12-gauge electrical copper wire can safely carry up to 20 amps.
Asphalt — A bituminous material employed in roofing and road paving materials because of its waterproofing ability.
Backfill — The replacement of excavated earth into a trench or pit.
Backflow — A reverse flow of water or other liquids into the water supply pipes, caused by negative pressure in the pipes
Ballast — A transformer that steps up the voltage in a florescent lamp.
Balusters — Vertical members in a railing used between a top rail and bottom rail or the stair treads. Sometimes referred to as pickets or spindles.
Base sheet — Bottom layer of built-up roofing.
Batt — A section of fiberglass or rock-wool insulation.
Bay window — Any window space projecting outward from the walls of a building, either square or polygonal in plan.
Beam — A structural member transversely supporting a load. A structural member carrying building loads (weight) from one support to another. Sometimes called a girder.
Bearing wall — A wall that supports any vertical load in addition to its own weight.
Bird's-mouth cut — A cutout in a rafter where it crosses the top plate of the wall providing a bearing surface for nailing. Also called a heel cut.
Bitumen — Term commonly applied to various mixtures of naturally occurring solid or liquid hydrocarbons, excluding coal. These substances are described as bituminous. Asphalt is a bitumen. *See Asphalt.*
Blocking — Small wood pieces to brace framing members or to provide a nailing base for gypsum board or paneling.
Board and batten — A method of siding in which the joints between vertically placed boards or plywood are covered by narrow strips of wood.
Bottom chord — The lower or bottom horizontal member of a truss.
Brick tie — Metal strips or wires that are inserted into the mortar joints of the brick veneer. Ties hold the veneer wall to the backer wall behind it.
Brick veneer — A vertical facing of brick used to clad a building. Brick veneer is not a load-bearing component.
Building paper — A general term for papers, felts and similar sheet materials used in buildings without reference to their properties or uses. Generally comes in long rolls.
Built-up roof — A roofing composed of three to five layers of asphalt felt laminated with coal tar, pitch or asphalt. The top is finished with crushed slag or gravel. Generally used on flat or low-pitched roofs.
Butt joint — The junction where the ends of building materials meet. To place materials end-to-end or end-to-edge without overlapping.
Cant strip — A triangular shaped piece of lumber used at the junction of a flat deck and a wall to prevent cracking of the roofing which is applied over it.
Cantilever — Any part of a structure that projects beyond its main support and is balanced on it.
Cap flashing — The flashing covering over a horizontal surface to prevent water from migrating behind the base flashing.
Cap sheet — The top layer in modified bitumen roofing.
Casement window — A window with hinges on one of the vertical sides and swings open like a door.
Ceiling joist — One of a series of parallel framing members used to support ceiling loads and supported in turn by larger beams, girders or bearing walls. Can also be roof joists.
Cement — The grey powder that is the "glue" in concrete. Portland cement. Also, any adhesive.
Certificate of Occupancy — Certificate is issued by the local municipality and is required before anyone can occupy and live within the building. It is issued only after the local municipality has made all inspections and all monies and fees have been paid.
CFM (cubic feet per minute) — A rating that expresses the amount of air a blower or fan can move. The volume of air (measured in cubic feet) that can pass through an opening in one minute.
Chase — A framed enclosed space around a flue pipe or a channel in a wall, or through a ceiling for something to lie in or pass through.
Checking — Cracks that appear with age in many large timber members. The cracks run parallel to the grain of the wood. At first superficial, but in time may penetrate entirely through the member and compromise its integrity.
Cleanout — An opening providing access to a drain line. Closed with a threaded plug.
Closed-cut valley — A method of valley treatment in which shingles
from one side of the valley extend across the valley, while shingles from the other side are trimmed 2 inches from the valley centerline. The valley flashing is not exposed.
Collar tie — Nominal one- or two-inch-thick members connecting opposite roof rafters. They serve to stiffen the roof structure.
Column — A vertical structural compression member that supports loads acting in the direction of its longitudinal axis.
Combustion air and ventilation air — The ductwork installed to bring fresh, outside air to the furnace or boiler room. Normally two separate supplies of air are brought in: one high for ventilation and one low for combustion.
Compressor — A mechanical device that pressurizes a gas in order to turn it into a liquid, thereby allowing heat to be removed or added. A compressor is the main component of conventional heat pumps and air conditioners. In an air conditioning system, the compressor normally sits outside and has a large fan (to remove heat).
Concrete board or **cement board** — A panel made out of concrete and fiberglass, usually used as a tile backing material.
Condensate drain line — The pipe that runs from the air conditioning cooling coil to the exterior or internal building drain, ton drain away condensation.
Condensation — The change of water from vapor to liquid when warm, moisture-laden air comes in contact with a cold surface.
Condensing unit — The outdoor component of a cooling system. It includes a compressor and condensing coil designed to give off heat.
Conduit, electrical — A pipe, usually metal, in which wire is installed. The pipe serves to protect the wire.
Control joint — Tooled, straight grooves made on concrete floors or structures to "control" where the concrete should crack (as a result of shrinkage).
Cooling load — The amount of cooling required to keep a building at a specified temperature during the summer, usually 25° C, based on a design outside temperature.

Corbel— To build out one or more courses of brick or stone from the face of a wall. This may be decorative, or serve to support a structural component.
Counterflashing — A metal flashing usually used to cover another flashing and prevent moisture entry.
Course — A row of shingles or roll roofing running the length of the roof. Parallel layers of building materials such as bricks, or siding laid up horizontally.
CPVC — *See PVC.*
Crawlspace — A shallow space below a building, normally enclosed by the foundation walls.
Cricket — A saddle-shaped, peaked construction connecting a sloping roof plane with a wall or chimney. Designed to encourage water drainage away from the chimney or wall joint.
Culvert — Round, corrugated drain pipe (normally 15 or 18 inches in diameter) installed beneath a driveway and parallel to and near the
street.
Cupping — A type of warping that causes boards or shingles to curl up at their edges. Typically caused by uneven drying or loss of volatiles.
Curb — The short elevation of a supporting element above the deck of a roof. Normally a box (on the roof) on which a skylight or piece of mechanical equipment is attached.
Curtain wall — An exterior building wall that is supported entirely by the building structure, rather than being self-supporting or load bearing.
Damper — A metal "door" placed within the ductwork, typically. Used to control flow of air, etc., in the ductwork.
Damp-proofing — The black, tar-like material applied to the exterior of a foundation wall. Used to minimize moisture penetration into the wall.
Deck — The surface, installed over the supporting framing members, to which the roofing is applied.
Dedicated circuit — An electrical circuit that serves only one appliance or a series of electric heaters or smoke detectors.
Dew point — Temperature at which a vapor begins to deposit as a liquid. Applies especially to water in the atmosphere.
Disconnect — A large electrical ON-OFF switch.
Diverter valve — A device that changes the direction of water flow from one faucet to another.
Dormer — A box-like projection from the sloping plane of a roof that frames a window.
Double-hung window — A window with two vertically sliding sashes, both of which can move up and down.
Downspout — A pipe for draining water from roof gutters. Also called a leader.
Drain tile — A perforated, corrugated plastic pipe laid at the bottom of the foundation wall and used to drain excess water away from the foundation. It prevents ground water from seeping through the foundation wall. Sometimes called perimeter drain.
Drip —A groove in the underside of a sill or drip cap to cause water to drop off on the outer edge instead of drawing back and running down the face of the building.
Ducts — Usually round or rectangular metal pipes installed for distributing warm or cold air from the heating and air-conditioning equipment.
Eaves protection — Additional layer of roofing material applied at the eaves to help prevent damage from water backup (typically caused by ice damming).
EIFS —Exterior Insulation Finish System. An exterior cladding system that employs a relatively thin acrylic stucco coating over insulation panels. (Pronounced "ee-fus")
Elbow — A plumbing or electrical fitting that lets you change directions in runs of pipe or conduit.
Evaporator coil — The part of a cooling system that absorbs heat from air passing through it. The evaporator coil is found within the ductwork.
Expansion joint — A joint that allows for building material expansion and contraction caused by temperature changes.
Exposed aggregate finish — A method of finishing concrete which
washes the cement/sand mixture off the top layer of the aggregate — usually gravel. Often used with precast concrete exterior wall finishes.
Exposure — The portion of the roofing or wall cladding material exposed to the weather after installation.
Fascia — a vertical member attached to the ends of the roof structure
and often the backing of the gutter.
Felt — Fibrous material saturated with asphalt and used as an underlayment or part of a built-up roofing system.
Finger joint — A manufacturing process of interlocking two shorter pieces of wood end to end to create a longer piece of dimensional lumber or molding. Often used in jambs and casings and are normally painted (instead of stained).
Fire stop — A solid, tight closure of a concealed space, placed to prevent the spread of fire and smoke through such a space. Includes stuffing wire and pipe holes in the fire separations.
Flashing — (1) Sheet metal or flexible membrane pieces fitted to the joint of any roof intersection, penetration or projection (chimneys, copings, dormers, valleys, vent pipes, etc.) to prevent water leakage. (2) The building component used to connect portions of a roof, deck, or siding material to another surface such as a chimney, wall, or vent pipe. Often made out of various metals, rubber or tar and is mostly intended to prevent water entry.
Flatwork — Common word for concrete floors, driveways, patios and sidewalks.
Flue — The space or passage in a chimney through which smoke, gas, or fumes ascend.
Fluorescent lighting — A fluorescent lamp is a gas-filled glass tube with a phosphor coating on the inside. Gas inside the tube is ionized by electricity which causes the phosphor coating to glow. Normally with two pins that extend from each end.
Footing — A widened, below-ground base of a foundation wall or a poured concrete, below-ground, base used to support foundations or piers.
Forced air heating — a common form of heating with natural gas, propane, oil or electricity as a fuel. Air is heated through a heat exchanger and distributed through a set of metal ducts.
Form — Temporary structure erected to contain concrete during placing and initial hardening.
Foundation — The supporting portion of a structure below the first floor construction, or below grade, including the footings.
Framing — The structural wood, steel or concrete elements of the building.
Framing, balloon — A system of framing a building in which all vertical structural elements of the bearing walls consist of single pieces extending from the top of the foundation sill plate to the roof plate and to which all floor joists are fastened.
Frost line — The depth of frost penetration in soil and/or the depth at which the earth will freeze and swell. This depth varies in different parts of the country.
Furring — Strips of wood or metal applied to a wall or other surface to even it and normally to serve as a fastening base for finish material.
Gable — A sidewall, typically triangular, that is formed by two sloping roof planes.
Gable roof — A type of roof with sloping planes of the same pitch on each side of the ridge. Has a gable at each end.
Gasket — A device used to seal joints against leaks.
GFI or **GFCI** or **Ground Fault Current Interrupter** — A electrical device used to prevent injury in locations where one might be in contact with a grounded surface and an electrical appliance. Most GFIs are located in a receptacle or circuit breaker and can be identified by the presence of a "test" and a "reset" button.

Glued laminated beam (glulam) — A structural beam composed of wood laminations. The laminations are pressure-bonded with adhesives.
Granules — Crushed rock coated with ceramic material, applied to the exposed surface of asphalt roofing products to add color and reduce ultraviolet degradation. Copper compounds added to these help make them algae resistant.
Groundwater — Water from a subsurface water source.
Grout — Mortar made of such consistency (by adding water) that it will flow into the joints and cavities of the masonry work and fill them solid.
Gusset — A flat metal, wood, plywood or similar type member used to provide a connection at the intersection of wood members. Most commonly used at joints of wood trusses. They are fastened by nails, screws, bolts, or adhesives.
Gutter — The trough that channels water from the eaves to the downspouts.
H-beam — A steel beam with a cross section resembling the letter H.
H-clip — Small metal clips formed like an H that fits at the joints of two plywood (or wafer board) sheets to stiffen the joint. Normally used on the roof sheeting.
Header — A beam placed perpendicular to joists and to which joists are attached in framing for around an opening.
Hearth — The fireproof area directly in front of a fireplace. The inner or outer floor of a fireplace, usually made of brick, tile, or stone.
Heat pump — A device that uses compression and decompression of gas to heat and/or cool a building.
Heating load — The amount of heating required to keep a building at a specified temperature during the winter, based on an outside design temperature.
Hip — The external angle formed by the meeting of two sloping sides of a roof.
Honeycombs — The appearance concrete makes when aggregate in the concrete is visible and where there are void areas in the concrete.
Hose bib — An exterior water faucet.
Hot wire — The wire that carries electrical energy to a receptacle or
other device-in contrast to a neutral, which carries electricity away again. Normally the black wire.
HVAC — An abbreviation for Heat, Ventilation, and Air Conditioning.
I-beam — A steel beam with a cross section resembling the letter I.
Ice damming — The buildup of ice and water at the eaves of a sloped roof. Melting snow on the roof refreezes at the roof overhang, causing the damming. Buildings with inadequate attic insulation or ventilation or with large roof projections beyond the exterior walls are more pronto to ice damming.
Irrigation — Lawn sprinkler system.
Jack post — A type of structural support made of metal, which can be raised or lowered through a series of pins and a screw to meet the height required. Typically used as a replacement for an old supporting member in a building.
Joist — One of a series of parallel beams, usually two inches in thickness, used to support floor and ceiling loads, and supported in turn by larger beams, girders, or bearing walls.
Joist hanger — A metal U-shaped item used to support the end of a floor joist and attached with hardened nails to another bearing joist or beam.
Knob-and-tube wiring — A common form of electrical wiring used before the Second World War. When in good condition it may still be functional for low amperage use such as smaller light fixtures.
Lath — A building material of narrow wood, metal, gypsum, or insulating board that is fastened to the frame of a building to act as a base for plaster, shingles, or tiles.
Lattice — An open framework of crisscrossed wood or metal strips that form regular, patterned spaces.
Leader — *See Downspout.*
Ledger — The wood or metal members attached to a beam, studding, or wall used to support joist or rafter ends.
Lintel — A horizontal structural member that supports the load over an opening such as a door or window.
Load-bearing wall — A wall supporting its own weight and some other structural elements of the building such as the roof and floor structures.
Louvre — A vented opening into a room that has a series of horizontal slats and arranged to permit ventilation but to exclude rain, snow, light, insects, or other living creatures.
Mansard roof — A roof with two sloping planes of different pitch on each of its four sides. The lower plane is steeper than the upper, and may be almost vertical.
Masonry — Stone, brick, concrete, hollow-tile, concrete block, or other similar building units or materials. Normally bonded together with mortar to form a wall.
Modified bitumen roof — A roof covering that is typically composed
of a factory-fabricated composite sheet consisting of a copolymer modified bitumen, often reinforced with polyester and/or fiberglass, and installed in one or more plies. The membrane is commonly surfaced with field-applied coatings, factory-applied granules or metal foil. The roofing system may incorporate rigid insulation.
Mortise — A slot cut into a board, plank, or timber, usually edgewise, to receive the tenon (or tongue) of another board, plank, or timber to form a joint.
Mullion — A vertical divider in the frame between windows, doors, or other openings.
Neutral wire — Usually color-coded white, this wire carries electricity from a load back to the service panel.
Newel post — The large starting post to which the end of a stair guard railing or balustrade is fastened.
Nosing — The projecting edge of a molding or drip or the front edge of a stair tread.
On center — The measurement of spacing for studs, rafters, and joists in a building from the center of one member to the center of the next.
Open valley — Method of valley construction in which shingles on both sides of the valley are trimmed along a chalk line snapped on each side of the valley. Shingles do not extend across the valley. Valley flashing is exposed.
Open web steel joist — One of a series of parallel beams, used to support floor and roof loads, and supported in turn by larger beams, girders or bearing walls. Consists of horizontal top and bottom chords, with diagonal and/or vertical web members connecting the chords together.
Oriented Strand Board or OSB — A manufactured 4-foot-by-8-foot wood panel made out of one- to two-inch wood chips and glue. Often used as a substitute for plywood.
P-trap — Curved, U-section of drain pipe that holds a water seal to prevent sewer gasses from entering a building through a fixtures' drain pipe.
Parapet — The portion of an exterior wall that extends above the edge of a roof.
Parging — A thin layer of cement placed over masonry units.
Partition — A wall that subdivides spaces within any story of a building or room.
Paver — Materials (commonly masonry) laid down to make a firm, even surface on the exterior.
Performance bond — An amount of money (usually 10 percent of the total price of a job) that a contractor must put on deposit with a governmental agency as an insurance policy that guarantees the contractors' proper and timely completion of a project or job.

Perimeter drain — Typically 4-inch perforated plastic pipe around the perimeter (either inside or outside) of a foundation wall (before backfill) that collects and diverts ground water away from the foundation.
Pilot light — A small, continuous flame (in a boiler, or furnace) that ignites gas or oil burners when needed.
Pitch — (1) The degree of roof incline expressed as the ratio of the rise, in feet, to the span, in feet. (2) A thick, oily substance commonly obtained from tar, used to seal out water at joints and seams. Pitch is produced from distilling coal tar, wood tar, or petroleum.
Pitch pocket — A container, usually formed of sheet metal, around supporting connections with roof-mounted equipment. Filling the container with pitch, or better yet, plastic roof cement, helps seal out water even when vibration is present. A pitch pocket is *not* the preferred method of flashing a roof penetration.
Plan view — Drawing of a structure with the view from overhead, looking down.
Plate — Normally a horizontal member within a framed structure, such as: (1) sill plate — a horizontal member anchored to a concrete or masonry wall; (2) Sole plate — bottom horizontal member of a frame wall; or (3) top plate — top horizontal member of a frame wall supporting ceiling joists, rafters, or other members.
Plenum — The main supply air or return air duct leading from a heating or cooling unit.
Plumbing stack — A plumbing vent pipe that penetrates the roof.
Ply — A term to denote the number of layers of roofing felt, veneer in plywood, or layers in built-up materials, in any finished piece of such material.
Point load — A point where a bearing/structural weight is concentrated and transferred to another structural member or component.
Portland cement — Cement made by heating clay and crushed limestone into a brick and then grinding to a pulverized powder state.
Post — a vertical framing member usually designed to carry a beam.
Post-and-beam — A basic building method that uses just a few hefty posts and beams to support an entire structure. Contrasts with stud framing.
Power vent — A vent that includes a fan to speed up air flow.
Pressure relief valve — A safety device mounted on a water heater or boiler. The relief valve is designed to release any high pressure in the vessel and thus prevent tank explosions.
Pressure-treated wood — Lumber that has been saturated with a preservative to resist rot.
PVC or **CPVC** — (Polyvinyl choride) A type of white or light gray plastic pipe sometimes used for water supply lines and waste pipe.
Quarry tile — A man-made or machine-made clay tile used to finish a floor or wall. Generally 6 inches by 6 inches by ¼-inch thick .
R value — A measure of insulation's resistance to heat flow. The higher the R value the more effective the insulation.
Rafter — (1) The framing member that directly supports the roof sheathing. A rafter usually follows the angle of the roof, and may be apart of a roof truss. (2) The supporting framing member immediately beneath the deck, sloping from the ridge to the wall plate.
Rafter, hip — A rafter that forms the intersection of an external roof angle.
Rafter, valley — A rafter that forms the intersection of an internal roof angle.
Rake edge — The overhang of an inclined roof plane beyond the vertical wall below it.
Rebar — Reinforcing bar. Ribbed steel bars installed in concrete structures designed to strengthen concrete. Comes in various thicknesses and strength grades. May be epoxy coated to enhance rust resistance.
Refrigerant — A substance that remains a gas at low temperatures and pressure and can be used to transfer heat. Freon is an example.
Register — A grille placed over a supply air or return air duct.
Reglaze — To replace a broken window.
Reinforcing — Steel rods or metal fabric placed in concrete slabs, beams, or columns to increase their strength.
Relief valve — A device designed to open if it detects excess temperature or pressure. Commonly found on water heating or steam producing systems.
Resilient flooring — A durable floor cover that has the ability to resume its original shape.
Retaining wall — A structure that holds back a slope or elevation of land and prevents erosion.
Ridge — The horizontal line at the junction of the top edges of two sloping roof surfaces.
Riser — A vertical member between two stair treads.
Roll roofing — Asphalt roofing products manufactured in roll form.
Romex — A name brand of nonmetallic sheathed electrical cable that is used for indoor wiring.
Roof deck — The surface, installed over the supporting framing members, to which the roofing is applied.
Roof sheathing — The wood panels or sheet material fastened to the roof rafters or trusses on which the shingle or other roof covering is laid.
Roof valley — The "V" created where two sloping roofs meet.
Roofing membrane — The layer or layers of waterproofing products that cover the roof deck.
Run, stair — The horizontal distance of a stair tread from the nosing to the riser.
Saddle — Two sloping surfaces meeting in a horizontal ridge, used between the back side of a chimney, or other vertical surface, and a sloping roof. Used to divert water around the chimney or vertical surface.
Sanitary sewer — A sewer system designed for the collection of waste water from the bathroom, kitchen and laundry drains, and is usually not designed to handle storm water.
Sash — The frame that holds the glass in a window, often the movable part of the window.
Saturated felt — A felt that is impregnated with tar or asphalt.
Scratch coat — The first coat of plaster, which is scratched to form a bond for a second coat.
Scupper — (1) An opening for drainage in a wall, curb or parapet. (2) The drain above a downspout or in a flat roof, usually connected to the downspout.
Sealer — A finishing material, either clear or pigmented, that is usually applied directly over raw wood or concrete for the purpose of sealing the wood or concrete surface.
Seasoning — Drying and removing moisture from green wood in order to improve its usability.
Service equipment — Main control gear at the electrical service entrance, such as circuit breakers, switches, and fuses.
Service lateral — Underground power supply line.
Shake — A wood roofing material, normally cedar or redwood. Produced by splitting a block of the wood along the grain line. Modern shakes are sometimes machine sawn on one side.
Sheathing — (1) Sheets or panels used as roof deck material. (2) Panels that lie between the studs and the siding of a structure.
Short circuit — A situation that occurs when hot and neutral wires come in contact with each other. Fuses and circuit breakers protect against fire that could result from a short.
Sill — (1) The two-by-four or two-by-six wood plate framing member that lays flat against and bolted to the foundation wall (with anchor bolts) and upon which the floor joists are installed. (2) forming the lower side of an opening, as a door sill or window sill.
Skylight — A more or less horizontal window located on the roof of a building.

Slab-on-grade — A type of foundation with a concrete floor which isplaced directly on the soil. In warm climates, the edge of the slab isusually thicker and acts as the footing for the walls. In cold climates,the slab is independent of the perimeter foundation walls.
Sleeper — Usually, a wood member that serves to support equipment.
Soffit — (1)The finished underside of the eaves. (2) A small ceilinglike space, often out of doors, such as the underside of a roof overhang.
Solid waste pump — A pump used to 'lift' waste water to a gravity sanitary sewer line. Usually used in basements and other locations which are situated below the level of the city sewer.
Spalling — The cracking and breaking away of the surface of a material.
Span — The clear distance that a framing member carries a load without support (between structural supports).
Splash block — A pad placed under the lower end of a downspout to divert the water from the downspout away from the building. Usually made out of concrete or fiberglass.
Stair stringer — Supporting member for stair treads. Can be a notched plank or a steel member.
Starter strip — Asphalt roofing applied at the eaves that provides protection by filling in the spaces under the cutouts and joints of the first course of shingles.
Step flashing — Flashing application method used where a vertical surface meets a sloping roof plane.
Storey — That part of a building between any floor or between the floor and roof.
Storm collar — A metal flashing used to seal around a penetration in a roof.
Storm sewer — A sewer system designed to collect storm water, separate from the waste water system.
Storm window — An extra window usually placed outside of an existing one, as additional protection against cold weather, or damage.
Stucco — An outside plaster finish made with Portland cement as its base.
Stud — One of a series of slender wood or metal vertical structural members placed as supporting elements in walls and partitions.
Stud framing — A building method that distributes structural loads to each of a series of relatively lightweight studs. Contrasts with post and-beam.
Sump — Pit or large plastic bucket/barrel inside a basement, designed to collect ground water (storm water) from a perimeter drain system.
Sump pump — A submersible pump in a sump pit that pumps any excess ground water to the storm sewer.
Suspended ceiling — A ceiling system supported by hanging it from the overhead structural framing.
Tempered — Strengthened. Tempered glass will not shatter nor create shards, but will "pelletize" like an automobile window. Required in tub and shower enclosures, for example.
Termites — Insects that superficially resemble ants in size, general appearance, and habit of living in colonies; hence, they are frequently called "white ants." Subterranean termites establish themselves in buildings not by being carried in with lumber, but by entering from ground nests after the building has been constructed. If unmolested, they eat out the woodwork, leaving a shell of sound wood to conceal their activities, and damage may proceed so far as to cause collapse of parts of a structure before discovery.
Terra cotta — A ceramic material molded into masonry units.
Threshold — The bottom metal, concrete, or wood plate of an exterior door frame. They may be adjustable to keep a tight fit with the door slab.
Toenailing — To drive a nail in at a slant. Method used to secure floor joists to the plate. Not acceptable for securing joists flush to a header or beam.
Tongue-and-groove — A joint made by a tongue (a rib on one edge of a board) that fits into a corresponding groove in the edge of another board to make a tight flush joint. Typically, the subfloor plywood is tongue-and-groove.
Top chord — The upper or top member of a truss.
Trap — A plumbing fitting that holds water to prevent air, gas, and vermin from entering into a building.
Tread — The walking surface board in a stairway on which the foot is placed.
Treated lumber — A wood product which has been impregnated with chemicals to reduce damage from wood rot or insects. Often used for the portions of a structure which is likely to be in ongoing contact with soil and water. Wood may also be treated with a fire retardant.
Truss — An engineered and manufactured roof support member with "zig-zag" framing members. Does the same job as a rafter but is designed to have a longer span than a rafter.
Tube-and-knob wiring — *See knob-and-tube wiring.*
UFFI — Urea Formaldehyde Foam Insulation, a foam insulation blown into existing walls. (Pronounced "you-fee")
Ultraviolet degradation — A reduction in certain performance limits caused by exposure to ultraviolet light.
Underlayment — (1) A one-quarter-inch material placed over the subfloor plywood sheathing and under finish coverings, such as vinyl flooring, to provide a smooth, even surface. (2) A secondary roofing layer that is waterproof or water-resistant, installed on the roof deck and beneath shingles or other roof-finishing layer.
UV rays — Ultraviolet rays from the sun.
Valley — The inward angle formed by two intersecting, sloping roof planes. Since it naturally becomes a water channel, additional attention to waterproofing it is desirable.
Vapour barrier — A building product installed on exterior walls and ceilings under the drywall and on the warm side of the insulation. It is used to retard the movement of water vapour into walls and prevent condensation within them. Normally, polyethylene plastic sheeting is used.
Vent — A pipe or duct allowing the flow of air and gases to the outside. In a plumbing system, the vent is necessary to allow sewer gases to escape to the exterior
Vermiculite — A mineral closely related to mica, with the faculty of expanding on heating to form lightweight material with insulation quality. Used as bulk insulation and also as aggregate in insulating and acoustical plaster and in insulating concrete floors.
Water closet — A toilet.
Weather stripping — Narrow sections of thin metal or other material installed to prevent the infiltration of air and moisture around windows and doors.
Weep holes — Small holes in exterior wall cladding systems that allow moisture to escape and air pressure equalization in the cavity space drained by the weep hole.
Wythe — (rhymes with "tithe" or "scythe") A vertical layer of masonry that is one masonry unit thick.
Zone — The section of a building that is served by one heating or cooling loop because it has noticeably distinct heating or cooling needs. Also, the section of property that will be watered from a lawn sprinkler system.
Zone valve — A device, usually placed near the heater or cooler, which controls the flow of water or steam to parts of the building; it is controlled by a zone thermostat.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