

WJD Decker
Home Services, LLC

Complete Home Inspection Services

9356 N. Keeler Ave.

Skokie, IL 60076

Office: (847) 676-8393

Cell: (847) 609-2345

Inspection Report

Mary Nonefficient

**Property Address:
222 Lost Energy Lane
Big House Town, IL**



Front View



William Decker, IL Lic. # 450.0002240

Date: 1/13/2010	Time: 10:30 AM	Report ID: Sample Energy Audit
Property: 222 Lost Energy Lane Big House Town, IL	Customer: Mary Nonefficient	Real Estate Professional:

The subject property is a Victorian type style house originally built in 2007. The client requested an inspection with regards to energy loss, air infiltration and energy efficiency.

In summary, there are a number of issues with regards to heat loss and energy efficiency:

- The fiberglass insulation of the house was not installed properly.
- There was no sealing of the exterior sheathing of the house against cold air intrusion.
- There was a large amount of heat loss from the roof areas which is causing extensive ice damming and icicle formation.
- The basement furnace and the three tankless water heaters were not installed so as to provide their rated energy efficiencies or in accordance with the manufacturer's installation instructions.
- There were a couple of other, non-energy related issues that should also be taken care of.

This is an energy audit maintenance inspection and is not part of a real estate transaction. This inspection was requested by the owners to examine general maintenance and issues with regards to energy efficiency, to document these problems and obtain advice on how to best prioritize and fix these problems.

[Comment Key Definitions](#)

The following definitions of comment descriptions represent this inspection report. All comments by the inspector should be read and considered when evaluating this property.

Note: Any recommendations by the inspector to repair or replace or deal with a significantly deficient item suggests an evaluation by a licensed and insured contractor specifically qualified to determine the condition and safety of the described item, component or system. Please note that Home Inspectors in the State of Illinois are required to note any safety hazards, whether they comply with older, obsolete local building codes or not. Licensed and insured contractors are not. Repairs done by persons other than licensed and insured contractors carry with them added liability for the customer. All work done on the subject property should be accompanied by a copy of all invoices and warranties, such warranties should be transferable to the new owner and should include the contractor's license number and a copy of their insurance certification.

Category Definitions:

Inspected (IN) = The system, component or item was visually observed at a certain time and under certain conditions.

Not Inspected (NI) = The system, component or item was not inspected and no representations of whether or not it was functioning are intended. The reason could be that the item was not connected (gas, water, electrical disconnected), obstructed, or not accessible. In any case, the reason that the item, system or component was not inspected is

stated in the comments.

Not Present (NP) = This system, component or item is not present in the subject property.

Watch List or Maintenance (WL) = Either the system, component or item needs regular maintenance to remain functioning in a proper manner and those maintenance processes are noted or the item should be watched in anticipation of future problems.

Repair or Replace (RR) = The item, component or unit is not functioning as intended or needs further inspection by a licensed and insured contractor. Most of these type of comments describe items that will lead to more serious problems if not addressed. Items, components or systems that can be repaired to satisfactory condition may not need replacement.

Significantly Deficient (SD) = Defined by Illinois State Law as either a) not functioning or b) posing a safety hazard. It should be noted that a large number of significantly deficient items can be addressed at little cost. **It is important to remember that the safety of a significantly deficient item is not based upon mere local building codes, which contain 'grandfathering' clauses, or the common 'accepted' practices of tradesmen, but on current national and international safety requirements and with the well being of the property and the client in mind.**

Please Note: If you have any questions or any thing is unclear, please do not hesitate to contact Decker Home Services and/or your specific inspector. We are happy to answer any of your questions and have a large knowledge base of information and experienced, qualified expert NACHI instructors and inspectors from around the entire country at our disposal. We consider it very important for you to fully and completely understand the condition of the subject property and will do all we can to help you in the process.

NOTE: The report is copyrighted by Decker Home Services, LLC and is prepared exclusively for the Client(s) named in this report. Ownership of this report is retained by Decker Home Services, LLC. Agents are specifically advised that transfer to any other potential buyer or another agent is prohibited and to do so is a violation of U.S. Copyright laws without our written permission.

Age Of Home:
Under 5 Years (2007)

Client Is Present:
Yes

Weather:
Clear

Temperature:
Below 32 (28 F, 36 RH)

Rain in last 3 days:
No

1. Roofing

The home inspector shall observe: Roof covering; Roof drainage systems; Flashings; Skylights, chimneys, and roof penetrations; and Signs of leaks or abnormal condensation on building components. The home inspector shall: Describe the type of roof covering materials; and Report the methods used to observe the roofing. The home inspector is not required to: Walk on the roofing; or Observe attached accessories including but not limited to solar systems, antennae, and lightning arrestors.

Styles & Materials

ROOF COVERING:
3-TAB FIBERGLASS
DIMENSIONAL

VIEWED ROOF COVERING FROM:
GROUND
BINOCULARS
WINDOW

Inspection Items

1.0 ROOF COVERINGS - Inspect and Describe

Comments: Inspected

The roof is covered with asphalt impregnated fiberglass shingles in dimensional style. The roof displayed no signs of missing shingles, cupping, fishmouth or displacement.

There were multiple areas that exhibited excessive icicle formation, at the front (Picture 1, 2) and rear above the master bedroom balcony area (Picture 3). These areas coincide with the attic knee wall areas and the balcony area coincides with the placement of one of the attic furnaces. The heat loss in these areas, through the roof, is causing these icicles and ice damming (Picture 4), which will, over the long term, greatly shorten the life of the roof.



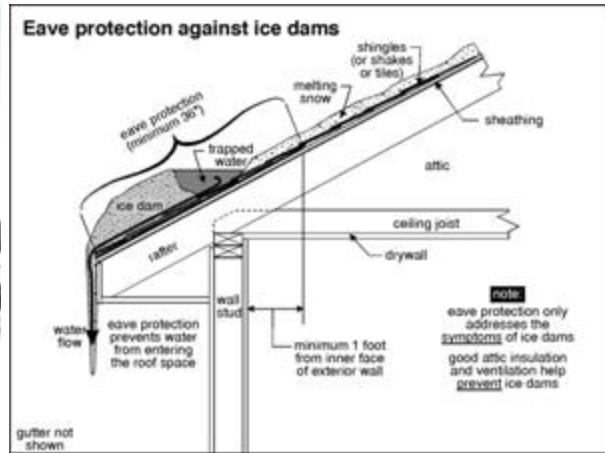
1.0 Picture 1



1.0 Picture 2



1.0 Picture 3



1.0 Picture 4

1.1 ROOF COVERINGS - Findings

Comments: Inspected, Repair or Replace

1) RR - Recommend that the knee wall areas, under the roof, be insulated with a spray foam type insulation installed on the underside of the roof and that the soffit vents be sealed in these areas.

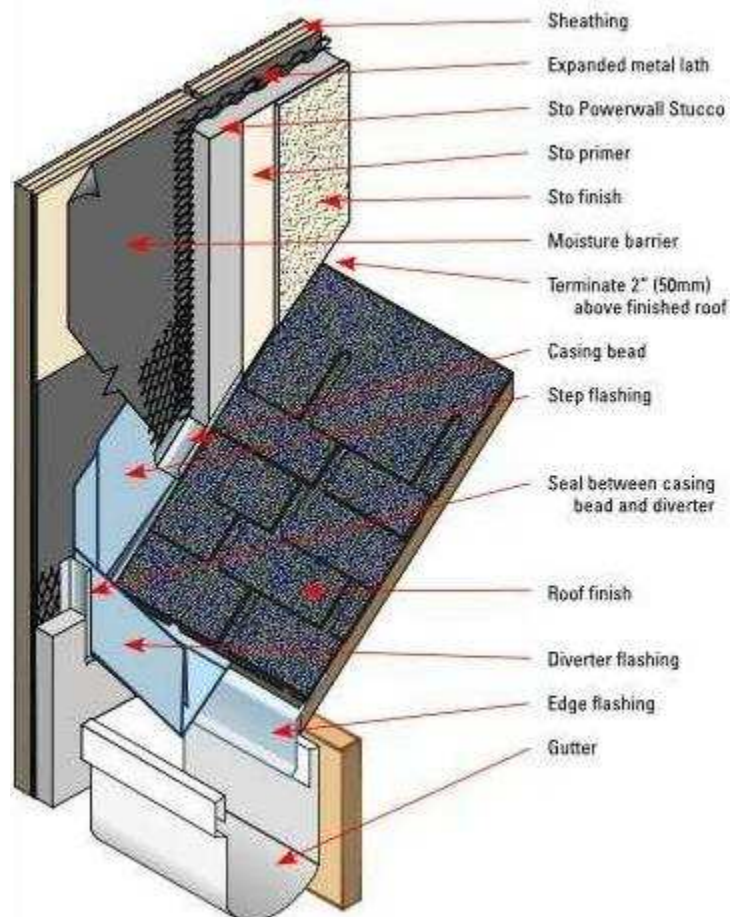
1.2 FLASHINGS, SKYLIGHTS, CHIMNEYS AND ROOF PENETRATIONS - Inspect and Describe

Comments: Inspected

The rear roof area, over the master bedroom balcony and adjacent to the rear chimney, is not equipped with the required kick-out flashings (Picture 1, 2). This is, at least, one of the causes of the water leakage seen around the chimney area.



1.2 Picture 1



1.2 Picture 2

1.3 FLASHINGS, SKYLIGHTS, CHIMNEYS AND ROOF PENETRATIONS - Findings

Comments: Inspected, Repair or Replace

1) RR - Recommend that the required kick-out flashings be installed where the roof planes end against side walls as a guard against water intrusion into the walls at these areas.

2. Plumbing System

The home inspector shall observe: Interior water supply and distribution system, including: piping materials, supports, and insulation; fixtures and faucets; functional flow; leaks; and cross connections; Interior drain, waste, and vent system, including: traps; drain, waste, and vent piping; piping supports and pipe insulation; leaks; and functional drainage; Hot water systems including: water heating equipment; normal operating controls; automatic safety controls; and chimneys, flues, and vents; Fuel storage and distribution systems including: interior fuel storage equipment, supply piping, venting, and supports; leaks; and Sump pumps. The home inspector shall describe: Water supply and distribution piping materials; Drain, waste, and vent piping materials; Water heating equipment; and Location of main water supply shutoff device. The home inspector shall operate all plumbing fixtures, including their faucets and all exterior faucets attached to the house, except where the flow end of the faucet is connected to an appliance. The home inspector is not required to: State the effectiveness of anti-siphon devices; Determine whether water supply and waste disposal systems are public or private; Operate automatic safety controls; Operate any valve except water closet flush valves, fixture faucets, and hose faucets; Observe: Water conditioning systems; Fire and lawn sprinkler systems; On-site water supply quantity and quality; On-site waste disposal systems; Foundation irrigation systems; Spas, except as to functional flow and functional drainage; Swimming pools; Solar water heating equipment; or Observe the system for proper sizing, design, or use of proper materials.

Styles & Materials

WATER SOURCE:

WELL

WASHER DRAIN SIZE:

WALL MOUNTED SUPPLY AND DRAIN

MANUFACTURER:

RHEEM

RUDD

PLUMBING SUPPLY:

COPPER

PLUMBING WASTE:

PVC

PLUMBING DISTRIBUTION:

COPPER

WATER HEATER POWER SOURCE:

GAS

TANKLESS

Inspection Items

2.0 HOT WATER SYSTEMS, CONTROLS, CHIMNEYS, FLUES AND VENTS - Inspect and Describe

Comments: Inspected

The house was equipped with 3 tankless, high efficiency direct vent water heaters, manufactured in 2008 and located in the utility room in the basement. The units operated properly. However they were not installed per the manufacturer's installation instructions. Direct vent water heaters require a combustion air vent flue so that combustion air is taken from the outside of the house. This condition has greatly lowered the energy efficiency of these water heaters and will also shorten their life. It also contributes to the house's negative indoor pressure condition.



2.0 Picture 1

2.1 HOT WATER SYSTEMS, CONTROLS, CHIMNEYS, FLUES AND VENTS - Findings

Comments: Inspected, Repair or Replace

1) RR - Recommend that the water heaters be evaluated and their installation repaired by a state licensed and insured plumber with HVAC experience and factory trained and certified by the water heater's manufacturer.

3. Heating

The home inspector shall observe permanently installed heating systems including: Heating equipment; Normal operating controls; Automatic safety controls; Chimneys, flues, and vents, where readily visible; Solid fuel heating devices; Heat distribution systems including fans, pumps, ducts and piping, with supports, insulation, air filters, registers, radiators, fan coil units, convectors; and the presence of an installed heat source in each room. The home inspector shall describe: Energy source; and Heating equipment and distribution type. The home inspector shall operate the systems using normal operating controls. The home inspector shall open readily openable access panels provided by the manufacturer or installer for routine homeowner maintenance. The home inspector is not required to: Operate heating systems when weather conditions or other circumstances may cause equipment damage; Operate automatic safety controls; Ignite or extinguish solid fuel fires; or Observe: The interior of flues; Fireplace insert flue connections; Humidifiers; Electronic air filters; or The uniformity or adequacy of heat supply to the various rooms.

Styles & Materials

HEAT TYPE:

FORCED AIR
INDUCED DRAFT

NUMBER OF HEAT SYSTEMS (excluding fireplaces):

THREE

FURNACE EFFICENCY:

HIGH EFFICENCY (Cat 4)

ENERGY SOURCE:

NATURAL GAS

DUCTWORK:

INSULATED
And
NON-INSULATED
RECTANGULAR
ROUND
GALVANIZED STEEL
IN ATTIC
FLEXIBLE DUCTS

FILTER TYPE:

DISPOSABLE

Inspection Items

3.0 HEATING EQUIPMENT - Inspect and Describe

Comments: Inspected

The house was heated by three category 4 high efficiency induced draft furnaces, two in the upper area of the house and one in the basement. The basement furnace did not have the manufacturer required combustion air intake vents (Picture 1). This causes the furnace to draw combustion air from the house;'s interior air. This condition has lowered the efficiency of the furnace (by about 10%) and will reduce the furnaces life. It also causes the house to be under negative interior air pressure, which further enhances the cold air infiltration problem.



3.0 Picture 1

3.1 HEATING EQUIPMENT - Findings

Comments: Inspected, Watch List - Maintenance, Repair or Replace

1) WL - Recommend that the furnace be evaluated and maintained annually (in the fall) by a licensed and insured HVAC technician as a regular maintenance item. This will add, significantly, to the life and efficiency of the furnace. It is further recommended that the furnace's filter be replaced every 30 days. The use of HEPPA, cartridge or so-called '90 day' furnace filters is not recommended.

2) RR - Recommend that the category 4 high efficiency furnace be provided with a combustion air vent, as required by the manufacturer. Recommend that the installation of this vent be done by a licensed and insured HVAC contractor.

4. Insulation and Ventilation

The home inspector shall observe: Insulation and vapor retarders in unfinished spaces; Ventilation of attics and foundation areas; Kitchen, bathroom, and laundry venting systems; and the operation of any readily accessible attic ventilation fan, and, when temperature permits, the operation of any readily accessible thermostatic control. The home inspector shall describe: Insulation in unfinished spaces; and Absence of insulation in unfinished space at conditioned surfaces. The home inspector shall: Move insulation where readily visible evidence indicates the need to do so; and Move insulation where chimneys penetrate roofs, where plumbing drain/waste pipes penetrate floors, adjacent to earth filled stoops or porches, and at exterior doors. The home inspector is not required to report on: Concealed insulation and vapor retarders; or Venting equipment that is integral with household appliances.

Styles & Materials

ATTIC INSULATION:

BATT
FIBERGLASS

R- VALUE:

BELOW R-19

VAPOR BARRIER:

KRAFT PAPER

VENTILATION:

RIDGE VENTS
SOFFIT VENTS

EXHAUST FAN TYPES:

FAN ONLY
IMPROPERLY VENTED TO SOFFIT VENTS

Inspection Items

4.0 INSULATION AND VAPOR RETARDERS (in unfinished spaces) - Inspect and Describe

Comments: Inspected

The attic areas was insulated with approximately 6" of fiberglass batt insulation in the cathedral ceiling and at the knee walls. The R value was measured at approximately R 17. A Kraft paper vapor barrier was seen but the insulation was not installed properly so the vapor barrier is pretty much worthless. The insulation of the walls was measured to be R 12. on average, but there were several areas that were colder and displayed signs of cold air intrusion through the rim joists.

The built-in seat area, at the front of the house, displayed signs of cold air infiltration and lacking insulation behind the built-in seat (Picture 1, 2) with an eight degree difference.

The corner closet, at the rear of the house and adjacent to the garage, displayed an almost complete lack of insulation (Picture 3, 4) . This condition also exists in the area of the 2nd floor, above.

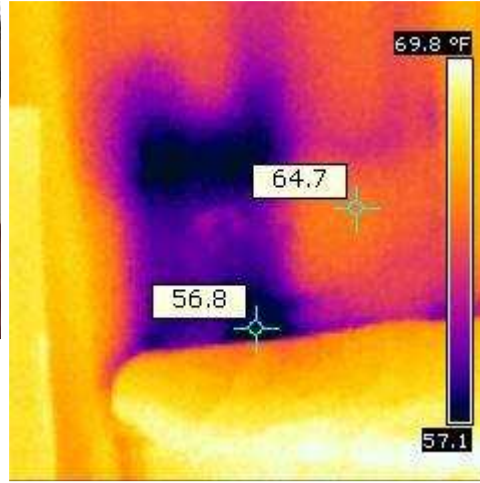
The small area adjacent to the balcony window in the master bedroom displayed an area of cold air infiltration from the rim joist area (Picture 5, 6).

This cold air infiltration problem is clearly seen from the main room of the house, looking up at the ceiling (Picture 7, 8) and in small areas where the cold air is traveling between the ceiling / floor joists (Picture 9, 10) and in the rear room (Picture 11, 12) as well as from the exterior floor areas.

Exterior imaging displayed areas around window built-outs and at the roof's soffit area, where there is lower insulation and heat loss (Picture 14).



4.0 Picture 1



4.0 Picture 2



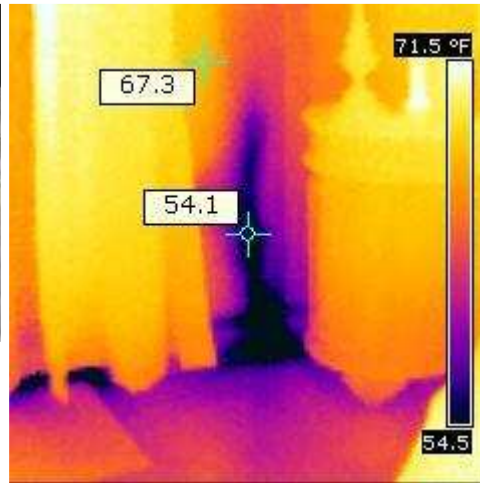
4.0 Picture 3



4.0 Picture 4



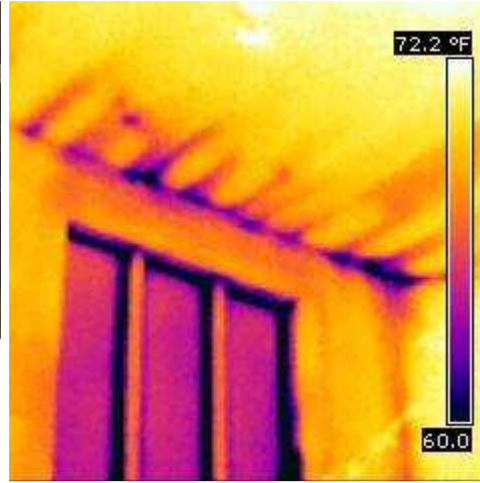
4.0 Picture 5



4.0 Picture 6



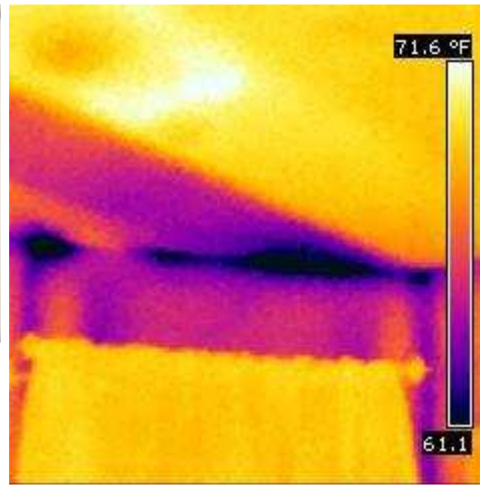
4.0 Picture 7



4.0 Picture 8



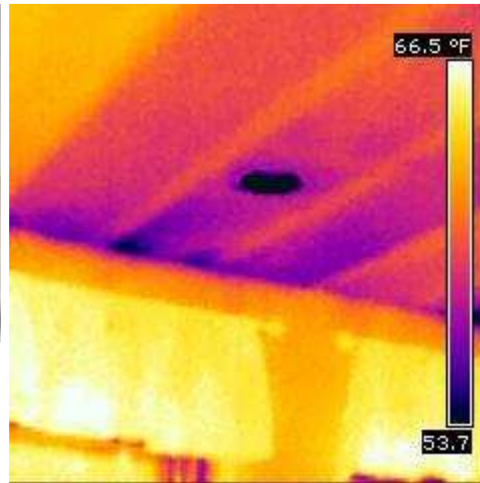
4.0 Picture 9



4.0 Picture 10



4.0 Picture 11



4.0 Picture 12



4.0 Picture 13



4.0 Picture 14

4.1 INSULATION AND VAPOR RETARDERS (in unfinished spaces) - Findings

Comments: Inspected, Watch List - Maintenance

1) WL - Recommended R values for attic insulation is R 38 or better. Recommended floor insulation, over crawlspaces, is R 19 or better. Recommended exterior wall insulation is R 21 or better.

These are the current recommended national standards. Please remember that mere listed R values of an insulation product are NOT indicative of what the actual R values will be once the product is installed and that factors such as air infiltration and moisture movement can lower the effective R values in home insulation.

If an upgrade is done, recommend that a non-organic foam type insulation be used so as to properly seal the insulation and reduce the effects of air and moisture changes on the R value of the insulation.

Current best practices call for the underside of the roof to be insulated and ridge and soffit vents to be sealed.

4.2 VENTING SYSTEMS (Kitchens, baths and laundry) - Inspect and Describe

Comments: Inspected

There were various areas where the bathroom exhaust vents are being vented to the roof's soffit area (Picture 1). This will allow for moist air to be drawn up into the attic area and cause rot and organic growth.



4.2 Picture 1

4.3 VENTING SYSTEMS (Kitchens, baths and laundry) - Findings

Comments: Inspected, Repair or Replace

1) RR - Recommend that bathroom exhaust fans be vented through roof jack vents and not through soffit vents as required by current national standards.

4.4 VENTILATION, FANS AND THERMOSTATIC CONTROLS (ATTIC) - Inspect and Describe

Comments: Inspected

The attic is ventilated by a combination of soffit vents and ridge vents. The recommended baffles were not in place over the soffit vents to guard against insulation blocking the vents.

Prepared Using HomeGauge <http://www.homegauge.com> SHGI (c) 2000-2004 : Licensed To Decker Home Services, LLC

General Summary

WJD Decker Home Services, LLC

Complete Home Inspection Services

9356 N. Keeler Ave.

Skokie, IL 60076

Office: (847) 676-8393

Cell: (847) 609-2345

Customer

Mary Nonefficient

Property Address

222 Lost Energy Lane

Big House Town, IL

The following items or discoveries indicate that these systems or components do not function as intended or adversely affects the habitability of the dwelling; or appear to warrant further investigation by a specialist, or requires subsequent observation. This summary shall not contain recommendations for routine upkeep of a system or component to keep it in proper functioning condition or recommendations to upgrade or enhance the function, efficiency, or safety of the home. This Summary is not the entire report. The complete report may include additional information of concern to the customer. It is recommended that the customer read the complete report.

1. Roofing

1.1 ROOF COVERINGS - Findings

Inspected, Repair or Replace

1) RR - Recommend that the knee wall areas, under the roof, be insulated with a spray foam type insulation installed on the underside of the roof and that the soffit vents be sealed in these areas.

1.3 FLASHINGS, SKYLIGHTS, CHIMNEYS AND ROOF PENETRATIONS - Findings

Inspected, Repair or Replace

1) RR - Recommend that the required kick-out flashings be installed where the roof planes end against side walls as a guard against water intrusion into the walls at these areas.

2. Plumbing System

2.1 HOT WATER SYSTEMS, CONTROLS, CHIMNEYS, FLUES AND VENTS - Findings

Inspected, Repair or Replace

1) RR - Recommend that the water heaters be evaluated and their installation repaired by a state licensed and insured plumber with HVAC experience and factory trained and certified by the water heater's manufacturer.

3. Heating

3.1 HEATING EQUIPMENT - Findings

Inspected, Watch List - Maintenance, Repair or Replace

1) WL - Recommend that the furnace be evaluated and maintained annually (in the fall) by a licensed and insured HVAC technician as a regular maintenance item. This will add, significantly, to the life and efficiency of the furnace. It is further recommended that the furnace's filter be replaced every 30 days. The use of HEPPA, cartridge or so-called '90 day' furnace filters is not recommended.

2) RR - Recommend that the category 4 high efficiency furnace be provided with a combustion air vent, as required by the manufacturer. Recommend that the installation of this vent be done by a licensed and insured HVAC contractor.

4. Insulation and Ventilation

4.1 INSULATION AND VAPOR RETARDERS (in unfinished spaces) - Findings

Inspected, Watch List - Maintenance

1) WL - Recommended R values for attic insulation is R 38 or better. Recommended floor insulation, over crawlspaces, is R 19 or better. Recommended exterior wall insulation is R 21 or better.

These are the current recommended national standards. Please remember that mere listed R values of an insulation product are NOT indicative of what the actual R values will be once the product is installed and that factors such as air infiltration and moisture movement can lower the effective R values in home insulation.

If an upgrade is done, recommend that a non-organic foam type insulation be used so as to properly seal the insulation and reduce the effects of air and moisture changes on the R value of the insulation.

Current best practices call for the underside of the roof to be insulated and ridge and soffit vents to be sealed.

4.3 VENTING SYSTEMS (Kitchens, baths and laundry) - Findings

Inspected, Repair or Replace

1) RR - Recommend that bathroom exhaust fans be vented through roof jack vents and not through soffit vents as required by current national standards.

Home inspectors are not required to report on the following: Life expectancy of any component or system; The causes of the need for a repair; The methods, materials, and costs of corrections; The suitability of the property for any specialized use; Compliance or non-compliance with codes, ordinances, statutes, regulatory requirements or restrictions; The market value of the property or its marketability; The advisability or inadvisability of purchase of the property; Any component or system that was not observed; The presence or absence of pests such as wood damaging organisms, rodents, or insects; or Cosmetic items, underground items, or items not permanently installed. Home inspectors are not required to: Offer warranties or guarantees of any kind; Calculate the strength, adequacy, or efficiency of any system or component; Enter any area or

perform any procedure that may damage the property or its components or be dangerous to the home inspector or other persons; Operate any system or component that is shut down or otherwise inoperable; Operate any system or component that does not respond to normal operating controls; Disturb insulation, move personal items, panels, furniture, equipment, plant life, soil, snow, ice, or debris that obstructs access or visibility; Determine the presence or absence of any suspected adverse environmental condition or hazardous substance, including but not limited to mold, toxins, carcinogens, noise, contaminants in the building or in soil, water, and air; Determine the effectiveness of any system installed to control or remove suspected hazardous substances; Predict future condition, including but not limited to failure of components; Since this report is provided for the specific benefit of the customer(s), secondary readers of this information should hire a licensed inspector to perform an inspection to meet their specific needs and to obtain current information concerning this property.

Prepared Using HomeGauge <http://www.homegauge.com> SHGI (c) 2000-2004 : Licensed To Decker Home Services, LLC