



elliott & associates

Experts in radon, asbestos and mold
In business since 1986

Radon Mitigation Proposal

Date: 5/23/2007

Address: 123 Main St., Hinsdale, IL 60521

Information Received from: Sally Jones

Elliott & Associates proposes to furnish the labor, material, and equipment necessary to complete the work at the building located at the above address. Elliott & Associates' Illinois Emergency Management Agency (IEMA) mitigation license number is RNM98113. We will follow all guidelines set forth by the IEMA as part of the Radon Industry Licensing Act [420 ILCS 44]. This proposal is based upon the information that has been provided to us. Please read this proposal (9 pages) in its entirety.

ACTIVE RADON MITIGATION: We propose to install a sub-slab ventilation system. The cost for all of the steps marked with an "X" below will be TBD.

-	
X	Install new ground water 21" round sump cover(s) with visual port-hole and seal with caulk.
-	Seal floor of gravel crawl space with 6 ml plastic, wood furring strips and caulk. Install roof flashing around suction point in crawl space. Crawl size:
X	Seal exposed and accessible radon entry routes larger than 1/8" with caulk as needed. This includes unfinished basement floor cracks and wall/floor joints.
X	Locate ONE suction point(s) as needed in the following location(s): basement floor . Gravel will be removed out of the primary suction point to increase system efficiency.
X	Install radon fan on the outside of the house per IEMA rules.
X	If radon fan is located outside, caulk exterior pipe and electrical penetrations to prevent water leakage and install vibration collar to help prevent vibration transfer to house.
X	Exhaust PVC pipe will run from suction point, to the outside of the house and vent out at the roofline above the highest eave and at least 10' from the ground. Our goal is to install the system so that it is not seen and not heard.
X	Support interior horizontal exhaust pipe with plastic/metal strapping every 6', at each suction point and maintain 1/4" slope of pipe. Support exterior vertical pipe exhaust every 8'.
X	Hard wire fan using conduit to existing electrical box and install disconnect (on/off switch) located within 2 feet of radon fan. Install rigid conduit and electrical junction box when flexible conduit is greater than 6'. Check breaker used for radon system so that the fan does not exceed 50% of circuit capacity. Label breaker panel that supplies the electricity to the radon fan. Install GFI, as needed.
X	Patch hole with concrete or sealant around suction point(s).
X	Install labels and visual vacuum monitor ("U"-tube) per IEMA guidelines.
X	Provide a LIMITED LIFETIME WARRANTY that the radon levels will be 3.9 pCi/l or less as long as none of the Exceptions (page 3) are true. Warranty is transferable and stays with the property.
SPECIAL NOTES: Homeowner to remove ALL items stored in gravel crawl space and relocate items away from the perimeter of the unfinished areas of the basement.	

Below are the methods of radon reduction that Elliott & Associates performs. Any one or a combination of these methods may be conducted.

Seal Radon Entry Routes

- **Exposed wall/floor joints and floor cracks** that are larger than 1/8" may be caulked using a latex-based caulk. Latex-based caulk does not produce harmful odors during the drying process like polyurethane caulks can. The caulk stops radon gas but does not stop water. Diagnostic testing may be used to determine which possible radon entry routes should be caulked.
- **Plumbing penetrations and structural columns** in the crawl space may be sealed, if necessary.
- **The gravel floor of the crawl space** should be sealed with a plastic soil gas retarder membrane. The membrane should be attached to the inside of the exterior wall with furring strips and sealant. The wood furring strips should be attached using concrete nails. All seams should be overlapped at least 12 inches and sealed in a permanent airtight manner. Note: If the membrane gets torn or damaged, the homeowner is responsible for fixing it. The warranty would be void if these repairs are not made. The homeowner must relocate items stored in the crawl space prior to the start of the work.
- **Sump pits** that permit entry of radon gas or that would allow conditioned air to be drawn into a sub-slab depressurization system should be covered. The sump cover should support up to 155 pounds. The cover should be sealed with a latex-based caulk that should allow easy removal of the cover if necessary. A viewport should be installed which should permit observation of the conditions in the sump pit.

Sub-Slab Ventilation/ Depressurization System

The installation of the sub-slab ventilation system should be in accordance with IEMA guidelines. The system's function is to vacuum up the radon gas and vent it to the outside at the roof level. Listed below are the major components of the system:

Suction Point: we try to locate the suction point(s) near walls, plumbing stacks, furnace, closets, etc., to ensure unobtrusive installation. The suction point should be located either in the basement floor, crawl space or sump pump hole. A 3 to 5-inch diameter hole is cut into the floor and a cavity is excavated to reduce the air resistance near the pipe.

Suction Pipe is inserted into the suction point(s) so that the radon and soil gases are drawn into the cavity from airflow channels in the porous soil or aggregate under the slab. The holes around the suction point should be sealed with caulk or concrete as necessary. The pipe is then neatly routed to the in-line vacuum fan through the unfinished areas of the basement minimizing encroachment into finished areas. The diameter of the pipe will be 2 to 4 inches. The slope of the pipe should be approximately 1/4 inch per foot to maintain proper drainage of condensate water. The radon pipes should be fastened to the structure of the building with hangers or strapping at least every 6 feet on horizontal runs and every 8 feet on vertical runs.

Exhaust Pipe on the exterior of the home should be above the highest eave of the roof, 10 feet or more above ground level, 2 feet above any window or door, and 10 feet from any adjacent building.

A visual alarm will be installed and signage posted inside and out where the active mitigation system is located. The signage indicates the system function and proper operation. An operations manual is provided with this proposal.

A thermally protected in-line vacuum fan should be mounted vertically with rubber couplings in the attic of the garage or outside to assure quiet reliable operation. Electrical disconnects (on/off switch) shall be installed within 4' of the fan following the NEC.

A typical sub-slab ventilation system will take 2 to 5 hours to install. Work is usually completed in a single day. However, schedules may require us to complete the job on a second day. Work will normally be completed within 5 days of the start date.

Elliott & Associates will leave the work area clean and dispose of installation debris (excavated aggregate) to client trash container or window well.

What You Need To Do Before We Arrive

- ALL items stored in a gravel crawl space MUST be removed (debris, cardboard, carpet, paint cans, etc).
- All items along the perimeter foundation walls in the UNFINISHED portions of the basement must be relocated two feet away from the walls and off any floor cracks that are 1/8" wide or wider. These areas must be broom cleaned and/or vacuumed to provide a clean surface for sealant adherence. This step must also be performed in the garage if we are installing a suction point under the garage slab.
- We can perform these steps for an additional charge of \$85.00 per man hour.
- If an appointment must be cancelled, please provide us with a minimum of 48 hours notice or there will be a \$100.00 charge.

Exceptions (These Rarely Occur)

If any of the following conditions exist and prevent the sub-slab ventilation system from lowering the radon levels below the EPA's Action Level of 4.0 pCi/l, additional work and material **may be** required for additional charges.

- **IF THERE IS NOT A MINIMUM OF 4" OF ½" TO ¾" GRAVEL WITHOUT FINES OR DOT #2 GRAVEL UNDERNEATH THE CONCRETE SLAB.**
- **IF THE HOME HAS A HIGH WATER TABLE.** IT IS THE HOMEOWNER'S RESPONSIBILITY AND EXPENSE TO LOWER THE WATER TABLE OR MOVE/ADD A SUCTION POINT.
- **IF THERE IS A CRAWL SPACE OR SLAB-ON-GRADE AREA (GARAGE OR LIVING SPACE) THAT IS AT A DIFFERENT ELEVATION THAN THE RADON MITIGATION SUCTION POINT.**
- **FOR HOMES THAT ARE BUILT ON SLABS:** IF THE HVAC DUCTS ARE IN OR UNDERNEATH THE SLAB. THE HOMEOWNER MAY EITHER HAVE TO REPLACE THE HVAC DUCTS OR ABANDON THEM AND INSTALL NEW HVAC DUCTS ABOVE THE SLAB.
- IF THERE ARE ANY **UNEXPOSED AND/OR UNACCESABLE RADON ENTRY ROUTES** (CRACKS, WALL/FLOOR JOINTS, HOLES, DRAIN TILE SYSTEM, ETC.)
- **IF THERE IS A FOOTING THAT SEPARATES THE SLAB** INTO TWO DIFFERENT NON-CONTINUOUS UNITS.
- WE ARE NOT RESPONSIBLE FOR **ELECTRICAL, PLUMBING AND/OR HEATING SYSTEMS THAT MAY BE BURIED IN OR UNDERNEATH THE CONCRETE FLOOR** WHEN DRILLING. HOMEOWNER SHOULD NOTIFY US OF SUCH SYSTEMS PRIOR TO START OF WORK. WE WILL MAKE EVERY ATTEMPT TO AVOID HITTING THESE SYSTEMS.
- **IF WE ARE INSTALLING THE FAN IN THE ATTIC** AND THERE IS NO CONSTANT HOT ELECTRICAL SUPPLY IN THE ATTIC.
- **IF THE HOME HAS A SYSTEM INSTALLED BY ANOTHER COMPANY.**
- **IF A HIGHER SUCTION FAN IS NEEDED.** OUR PROPOSAL INCLUDES THE XP-201 FAN.
- **IF THERE IS A CINDER BLOCK WALL OR FOUNDATION** (OTHER THAN A POURED CONCRETE WALL).
- **IF THE WELL WATER IS A CONTRIBUTOR TO THE RADON LEVELS.**

OWNER TAKES ALL RESPONSIBILITY FOR THE PROPER MAINTENANCE AND OPERATION OF THE SUMP PUMP. WE ARE NOT RESPONSIBLE FOR ANY DAMAGE ASSOCIATED WITH THE FAILURE OF THE SUMP PUMP.

In accordance with the IEMA guidelines, we recommend that the customer obtain an independent, follow-up radon measurement and that the structure be re-tested every two years or after the building under goes significant alteration. We request that a copy of any post-mitigation report be sent to Elliott & Associates for our records.

All single family BOCA building codes should be followed regarding penetrating any firewall and re-supporting any structural bearing box joist. All electrical work should meet or exceed local village codes. The glues, solvents and materials that are used may be hazardous. You should not be in the work area during the installation. Material Safety Data Sheets (MSDS) will be supplied upon written request.

Elliott & Associates or homeowner is to obtain all required licenses and permits from the Village where the work is to be performed. The homeowner is responsible to pay all fees associated with obtaining these documents.

Back-draft tests of combustion devices should be conducted. Owner is responsible for correcting any back drafting of any combustion devices. Radon mitigation systems do not create back-drafting problems. If a pre-existing problem is identified, the radon mitigation system should be shut off until it is corrected.

While work is in progress the windows will be opened and portable ventilation systems may be used. Workers should wear proper clothing suitable for this type of work, and wear eye, ear, and respiratory protection when necessary. Workers should be monitored for radon exposure during the work.

For general information about radon you can call the Illinois Emergency Management Agency at (800) 325-1245 or write to them at 1035 Outer Park Drive, Springfield, IL 62704 or visit them at their web site at www.state.il.us/iema.

Payment is due upon completion of work. If payment is not received within one week of completion, a late fee of \$20.00 per month will be added to the total. Undersigned agrees to pay court costs and attorney's fees in the event Elliott & Associates has to sue for payment.

The parties acknowledge that this contract shall be construed as having been entered into in DuPage County, the courts of which shall have jurisdiction in case of any disputes.

ELLIOTT & ASSOCIATES MAKES NO WARRANTIES, EXPRESS OR IMPLIED OR BY OPERATION OF LAW, OTHER THAN THE LIMITED PERFORMANCE WARRANTY ATTACHED.

Sincerely,



Elliott Wall
President

I hereby accept and agree to be bound by the terms and conditions as set forth in Pages 1 to 9:

Signature: _____

Date: _____

Address: _____

Home Repair: Know Your Consumer Rights

We provide you with this pamphlet as required by the State of Illinois Public Acts 91st General Assembly.

As you plan for your home repair/improvement project, it is important to ask the right questions in order to protect your investment. The tips in this fact sheet should allow you to protect yourself and minimize the possibility that a misunderstanding may occur.

Avoiding Home Repair Fraud

Please use extreme caution when confronted with the following warning signs of a potential scam:

1. Door-to-door salespersons with no local connections who offer to do home repair work for substantially less than the market price.
2. Solicitations for repair work from a company that lists only a telephone number or a post-office box number to contact, particularly if it is an out-of-state company.
3. Contractors who fail to provide customers references when requested.
4. Persons offering to inspect your home for free. Do not admit anyone into your home unless he or she can present authentic identification establishing his or her business status. When in doubt, do not hesitate to call the worker's employer to verify his or her identity.
5. Contractors demanding cash payment for a job or who ask you to make a check payable to a person other than the owner or company name.
6. Offers from a contractor to drive you to the bank to withdraw funds to pay for the work.

Contracts

1. Get all estimates in writing.
2. Do not be induced into signing a contract by high-pressure sales tactics.
3. Never sign a contract with blank spaces or one you do not fully understand. If you are taking out a loan to finance the work, do not sign the contract before your lender approves the loan.
4. Remember, you have 3 business days from the time you sign your contract to cancel any contract if the sale is made at your home. The contractor cannot deprive you of this right by initiating work, selling your contract to a lender, or any other tactic.
5. If the contractor does business under a name other than the contractor's real name, the business must either be incorporated or registered under the Assumed Business Name Act. Check with the Secretary of State to see if the business is incorporated or with the county clerk to see if the business has registered under the Assumed Business Name Act.
6. Homeowners should check with local and county units of government to determine if permits or inspections are required.
7. Determine whether the contractor will guarantee his or her work and products.
8. Determine whether the contractor has the proper insurance.
9. Do not sign a certificate of completion or make final payment until the work is done to your satisfaction.
10. Remember, homeowners should know who provides supplies and labor for any work performed on your home. Suppliers and subcontractors have a right to file a lien against your property if the general contractor fails to pay them. To protect your property, request lien waivers from the general contractor.

Basic Terms To Be Included In A Contract

1. Contractor's full name, address, and telephone number. Illinois law requires that persons selling home repair and improvement services provide their customers with notice of any change to their business name or address that comes about prior to the agreed dates for beginning or completing the work.
2. A description of the work to be performed.
3. Starting and estimated completion dates.
4. Total cost of work to be performed.
5. Schedule and method of payment, including down payment, subsequent payments, and final payment.
6. A provision stating the grounds for termination of the contract by either party. However, the homeowner must pay the contractor for work completed. If the contractor fails to commence or complete work within the contracted time period, the homeowner may cancel and may be entitled to a refund of any down payment or other payments made towards the work, upon written demand by certified mail.

Homeowners should obtain a copy of the signed contract and keep it in a safe place for reference as needed.

If You Think You Have Been Defrauded Or You Have Questions

If you think you have been defrauded by a contractor or have any questions, please bring it to the attention of your State's Attorney or the Illinois Attorney General's Office.

Attorney General Toll-Free Numbers:

Carbondale (800) 243-0607
 Springfield (800) 243-0618
 Chicago (800) 386-5438

Consumer Rights Acknowledgment Form

I, the homeowner or representative, have received from the contractor a copy of these sheets entitled "Home Repair: Know Your Consumer Rights"

Signature: _____

Date: _____

Address of Property: _____

Contractor: Elliott & Associates

Elliott Wall
 Elliott Wall
 President



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Limited Performance Warranty

PERFORMANCE: Fan assisted installations are warranted for the lifetime of the fan (not less than 5 years) from the date of the installation to test at 3.9 pCi/l or less for a 2 day or longer radon test, subject to the following limitations and conditions: As long as the fan is operating, the warranty is in effect.

1. Every two years a radon test shall be performed by the homeowner or a qualified professional using EPA approved follow-up protocol. These tests are performed at the owner's expense and records shall be kept to maintain this limited performance warranty.
2. Warranty does not cover any system that has been damaged or whose performance has been compromised by natural hazards or any modification, alteration, addition or mistreatment.
3. Homeowner is responsible for the cost of diagnosing and repairing cracks or other faults that did not exist or were not exposed at time of installation.
4. This limited warranty covers performance only. Maintenance or replacement of the system is the responsibility of the owner. The component warranty is limited to five (5) years.
5. If performance has been affected by lack of owner maintenance including fan replacement, labor and part charges will be paid by the owner to bring the system performance back into compliance based on annual testing using EPA approved methods.
6. This warranty will not apply if the system fails to achieve the desired level of radon concentrations due to well water contamination, building material contamination, a high water table, groundwater presence underneath or surrounding the work area that prevents adequate sub-slab or sub-membrane airflow, or from any cause beyond Elliott & Associates' reasonable control, including but not limited to, an act of God or the public enemy, an act of any government, a fire, a flood, epidemic, quarantine restriction, inaccurate disclosure of airborne radon levels, strike, freight embargo, unusually severe weather or Elliott & Associates' inability to obtain necessary materials, labor or transportation.

If, at any time during the warranty period, it is determined that the radon levels exceed 3.9 pCi/l, Elliott & Associates shall perform such additional radon mitigation as is reasonably necessary to satisfy the warranty; provided however that the liability of Elliott & Associates hereunder shall in no event exceed the cost of the work under the contract. IF, AFTER ELLIOTT & ASSOCIATES, USING ALL REASONABLE EFFORTS TO SATISFY THIS WARRANTY HAVE FAILED, THE OWNER'S SOLE AND EXCLUSIVE REMEDY HEREUNDER SHALL BE LIMITED TO A TOTAL REFUND OF THE CONTRACT PRICE. IN NO EVENT SHALL ELLIOTT & ASSOCIATES BE LIABLE FOR ANY DAMAGES, CONSEQUENTIAL OR INCONSEQUENTIAL, ATTRIBUTABLE TO ANY BREACH OF THIS WARRANTY, WHICH DAMAGES INCLUDE, WITHOUT LIMITATION, PERSONAL INJURY, DAMAGE TO PROPERTY, DIMINISHED VALUE OF PROPERTY, AND STRUCTURAL OR NON-STRUCTURAL REPAIRS.

ELLIOTT & ASSOCIATES MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, OTHER THAN THOSE LISTED ABOVE.



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Limited Component Warranty

MATERIALS: All materials are guaranteed to be as specified, and all work is completed in a workman like manner.

SYSTEM COMPONENTS: Sub-slab assisted ventilation components are warranted for five (5) years from the date of installation to function as intended by the manufacturer and are covered by the following limitations and conditions.

1. Warranty does not cover any system component that has been damaged or whose performance has been compromised by natural hazards or any modifications, alterations, additions or mistreatment.
2. Repair and/or replacement of defective components will be performed to maintain system operation and integrity in order to maintain limited performance warranty specification during the five-year component warranty period. Homeowner will be responsible for cost of labor only.

LIABILITY: EPA's current acceptable risk exposure to radon is 4.0 pCi/l. Any radon exposure has some risk of causing lung cancer. The lower the radon level in your home, the lower the risk of lung cancer. Every home has radon gas, but with the fan-assisted system the levels of radon should be the lowest. Therefore a house with this system is safer than a home that does not have this system. Outdoor radon levels are 0.4 pCi/l. So there is risk in or outside your home. ELLIOTT & ASSOCIATES' RESPONSIBILITY AND LIABILITY UNDER THE WARRANTY IS LIMITED TO MODIFICATION AND /OR REPLACEMENT OF MITIGATION SYSTEM TO ACHIEVE THE WARRANTED SPECIFICATIONS. ELLIOTT & ASSOCIATES AND ITS EMPLOYEES SHALL NOT BE HELD LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGE RESULTING FROM OR IN ANY WAY CONNECTED WITH ANY FAILURE OF SAID SYSTEM TO MEET THE WARRANTED SPECIFICATIONS.

ELLIOTT & ASSOCIATES MAKES NO WARRANTIES, EXPRESSED OR IMPLIED OTHER THAN THOSE LISTED ABOVE.



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Operations Manual

Sub-Slab Ventilation System

This Manual And Warranty Must Remain With The Property For Use By Future Owners.

- The function of this system is to reduce the levels of radon in the home.
- To test the system: Once a year shut the system off at the breaker box or on/off switch for 2 minutes and then turn it back on. If the system does not turn back on, CALL FOR SERVICE.
- A visual "U Tube", located in the basement, indicates system performance. When the system is functioning properly, one side of the red liquid in the "U Tube" is higher than the other. When levels become equal, CALL FOR SERVICE.
- This system works continuously and should not be shut off.
- If the sump pit cover(s) needs to be removed, the cover must be re-sealed.
- If any new cracks develop, they need to be sealed.
- The fan is located either in the attic of the house or outside in a weatherproof fan housing.
- If the fan needs to be replaced, the electricity should be shut off at the breaker box or on/off switch.
- The operating costs of the system will be \$25.00 to \$40.00 per year. See Warranty for any additional information.
- This house should be re-tested for radon gas every two years or if the building undergoes significant alteration. Call us for more details or questions.

SAVE THIS INFORMATION