

Residential Energy Retrofitting Estimate

February 23, 2011



Trading-as Name of Burton, Pfund Inc. (MHIC 89297)

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To: Mr. and Mrs. Comfort	For Energy Retrofitting Work on: 123 Street Baltimore, MD 21210
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We are pleased to provide you with the following estimates on the measures identified as energy-saving opportunities in your personalized "Building Envelope Energy Efficiency Analysis." These prices are informed estimates only and will of course vary depending on the contractor and materials used.

Our first section, "Health and Safety Maintenance" includes certain items which should or must be completed before addressing any energy-efficiency concerns. This includes most of the most pressing measures to alleviate areas of potential moisture ingress into the home.

Thereafter, unless you have requested that we include other specific measures, we have limited the list of energy retrofitting upgrades to those measures which can be expected to have a payback of 7 years or sooner (in some cases much sooner), or an annual return on investment of at least 14% - *before* taking into account any discounts from your local utility and state and federal tax rebates. In addition, we have indicated some of the comfort and health benefits that you can expect to enjoy as a result of the retrofitting work.

The list below is designed to give you the maximum amount of control over your air sealing/insulation budget by allowing you to decide which comfort and energy measures you choose to enact, now or later. Simply stated, you're in charge of how much you spend and when you spend it. We have tried to list the items in order of approximate importance, taking into account both comfort issues and expected payback on investment. Of course, the actual return on investment will depend upon a variety of measures, including utility rates, seasonal weather patterns, and homeowner usage. The expected payback is based on past results in similar homes using current utility rates. Your return on investment will of course be higher if utility rates continue to increase.

Item (Prioritized within Category)	Description of Work	Anticipated Benefits	Cost (Materials, Work Crew, and Assistance with Pertinent Rebates)	Expected Payback on Investment ¹ (Pre-Rebates and Tax Deductions)	Rebates and Tax Credits	
					Eligible for BGE Utility Rebate and/or Maryland state rebate ²	Eligible for 2011 Federal Tax Credit
	General Health, Safety, and Maintenance Measures					
1. <input type="checkbox"/>	Clean clogged gutter around perimeter of house to prevent snow/ice damage or moisture buildup Attach 3"-wide downspout extenders to all downspouts (min. 3' length) to better drain moisture onto concrete blocks and away from house	Reduced drainage/moisture concerns	\$24/ extender x 6 = \$144	N/A	no	no
2. <input type="checkbox"/>	Monitor drainage concerns around house and take proactive steps to reduce moisture ingress into home: a.) Seal heating/cooling and penetrations into rear of home with putty b.) Clean, and then thoroughly caulk all gaps at exterior windows and flashing/trim (some of which documented in report)	Reduced air leakage/ danger of water infiltration	\$215	~4 years (25% ROI)	✓	✓

¹ Expected payback on investment does not take into account tax credits on insulation (please see item 2. below).

² Certain conditions do apply to both rebate programs.

For the BGE Smart Energy Savers rebate (15% on installed insulation and airsealing measures), you must be a BGE gas or electric customer with a gas or electric powered central heating or cooling. To achieve the 15% airsealing credit, your home must be 20% leakier than the ideal *and* your airsealing contractor achieves an airsealing reduction. To achieve the 15% insulation requirement, your existing insulation must be below a certain minimum level (R-22 for attics, no insulation for basement band joists) and your insulation contractor must achieve a certain minimum level (R-38 for attics, R-13 for basement band joists). You will be eligible for the free measures if you choose to either airseal or insulate your home as per BGE requirements.

For the Maryland Energy Administration (MEA) Home Performance Rebate (35% on installed insulation and airsealing measures), the requirements are somewhat less stringent, but you must apply in advance to receive the funds: further details are available at the end of this estimate and on the MEA website.

3. <input type="checkbox"/>	Route metal bathroom fan vent through vent at attic eave and flash/seal around penetration (fan vent is currently depositing moisture onto wood stud and fostering mold growth)	Reduced danger of wood damage caused by moisture and mold problems	\$105	N/A	no	no
4. <input type="checkbox"/>	<p>Consider calling in a mold professional to diagnose type and full extent of mold noted in report</p> <p>At the minimum, applying anti-mold solution to noted areas should be completed as part of any attic re-insulation job</p>	Reduced health risk and risk of wood rot in attic	\$265 for thorough application of Shockwave™ anti-mold solution	N/A	no	no
5. <input type="checkbox"/>	<p>Protect indoor air quality by:</p> <p>a.) Replacing filter at air handler with correctly sized filter</p> <p>b.) thoroughly cleaning 2 bathroom exhaust vents</p> <p>c.) Regularly cleaning ductwork every 1-2 years</p>	Improved indoor air quality and reduced danger of moisture buildup	DIY measure or ask for quote	N/A	no	no
6. <input type="checkbox"/>	"Test in" / "Test out" per BPI standards: Conduct backdraft and combustion tests in basement Combustion Appliance Zone (CAZ) and measure air leakage before and after any airsealing measures	Ensure that tightening the home does not pose health risks due to backdrafting of flue gases; conform with BPI regulations	Free with other measures - part of scope of work of any Zerodraft airsealing work	N/A		
	Whole-House Air-Sealing Measures					
7. <input type="checkbox"/>	Thorough foam sealing of gaps in attic top plates/band joist and other protrusions such as electrical boxes and bathroom vent as part of overall attic work	This is a very important measure to prevent air transfer from conditioned space to the attic	\$235 as part of attic work package		✓	✓

8. <input type="checkbox"/>	Insulate attic hatch in upstairs bedroom closet, using custom-fit rigid foam and fiberglass, to min. R-20	Less air leakage into attic and more comfortable bedroom	\$55	~3 years (33% ROI)	✓	✓
9. <input type="checkbox"/>	Install custom-fit sweep at side storm door to prevent air loss	Less wasted heating/cooling and more comfortable side entry	\$45	~5 years (20% ROI)	✓	✓
Duct Sealing or Insulation						
10. <input type="checkbox"/>	Thoroughly seal all floor duct-grille connections to ensure that you are not losing conditioned air back into the basement	More efficient and responsive heating/cooling system	\$20 x 8 grilles = \$160	~4 years (25% ROI)	✓	no
Basement/Rim Joist Insulation Measures						
11. <input type="checkbox"/>	Insulate entire perimeter of basement rim joist in unfinished basement area (approx. 80') using a "flash and batt" system, foam-sealing perimeter and installing rigid/fiberglass insulation to achieve insulation value of min R-13	Less leakage of outside air into basement and perimeter of house; more efficient heating/cooling	\$435	~4 years (25% ROI)	✓	✓
Attic Insulation Measures						

12. <input type="checkbox"/>	<p>Improve thermal efficiency of attic by bringing R-value up to Dept. of Energy recommended R-49 (note: for best results, attic insulation job should also include thorough air-sealing work, #7. We also strongly recommend applying antimold and rerouting bathroom vent, #3 and #4)</p> <p>Blow in R-39 Cellulose (approx. 12" inches).</p> <p>Job includes addressing all 3 issues documented in report by: i.) filling and airsealing 2 cavities, and ii.) repairing and installing fiberglass batts to missing areas over dining room ceiling</p>	More comfortable home in winter and summer; longer-lasting insulation with improved moisture resistance and air quality	\$1065 for insulation and insulation repair work	~6 years (16% ROI)	✓	✓
HVAC						
13.	Reinsulate HVAC line at areas noted where insulation has worn off		\$25	< 1 year (100% ROI)	no	yes
14. <input type="checkbox"/>	<p>Have qualified master HVAC technician inspect, clean, and tune both heat pump. Job will include:</p> <ul style="list-style-type: none"> - Checking and adjusting charge - Cleaning of critical components - Thorough safety and efficiency testing 	Improved heat./cooling efficiency and longer expected serviceable life of units	\$265	depends on existing efficiency	no	no
Water Heating and Conservation						

15. <input type="checkbox"/>	Improve efficiency of oil hot water system by installing ¾" pipe wrap over all accessible hot water piping	More efficient hot water distribution	free with other measures	~1.5 years (66% ROI)	yes (free with insul. measures)	N/A
	Baseload (Lighting/Appliances)					
16. <input type="checkbox"/>	Replace ~20 incandescents with CFL spiral bulbs (specialty and LED bulbs also available upon request)	Reduced baseload electricity costs; less frequent bulb changes	first 10 CFLs free; thereafter \$4 each – LEDs average \$20 each	~1/2 year (200% ROI)	yes (free with insul. measures)	N/A
17. <input type="checkbox"/>	Install "Smart Power" strips in office and entertainment areas	Reduce effect of "phantom" electrical load	\$44 per strip	4 years (25% ROI)	no	no

Additional Information Relevant to this Estimate

1. Insulation/Air Sealing and the Resale Value of Your Home

In an era of relatively high energy prices and greater environmental awareness, home buyers are increasingly taking the energy efficiency of a home into consideration in their buying decisions. Real estate agents are more eager than ever to tout a home's "green" environmental upgrades, including both insulation and air sealing measures. Your retrofitting contract will be an asset which you can then present to an agent or prospective buyer should you decide to sell your home.

2. State, Utility, and Federal Rebates for Energy Efficiency

While selling your house may take some time in the current market, there are four tiers of rebates that you may be eligible for right now. The first two rebate opportunities require an audit by an ENERGY STAR™ participating contractor such as Zerodraft Maryland. If you choose to let us help you making your home more energy efficient, we will be assist you with the necessary paperwork at no extra charge, ensuring you get all the rebate money for which you are eligible.

a.) Utility Program - BGE "Smart Energy Savers" Program – Discounts and Rebates

The BGE "Smart Energy Savers" Program offers rebates of **15%** off the installed cost of certain insulation and airsealing measures. For more information on residential discounts and rebates for which you might be eligible, up to **\$2,450**, please consult the information which was given to you at the time of your audit; or, to view a complete and current listing on the BGE website, please see:

<http://www.bgesmartenergy.com/residential>

b.) Maryland Energy Administration (MEA) – State Rebates (while funds are available)

The Maryland Energy Administration (MEA) recently announced generous additional rebates for Home Performance measures in a program which just launched in mid-January. Similar to the "Silver Star" option in the federal Home Star legislation, the Maryland Home Performance Rebate program offers rebates of **35%** of the cost for selected measures, up to a **\$3000** total rebate. Eligible measures include air sealing, insulation (attic, wall, crawlspace/basement, and rim joist), and duct sealing or replacement. When combined with rebates from utility companies, customers will be able to save up to 50% of the cost of the job. All customers, statewide, will be eligible for the Maryland rebate. Customers will reserve their rebate funds in advance of performing the work, but after having an energy audit done and a contract signed with a Maryland Home Performance contractor. More information is available on the MEA website: www.energy.maryland.gov (text taken and modified from MEA press release).

c.) Federal Tax Credits for Insulation and Airsealing (through 2011)

Since 2009, homeowners and the energy retrofitting industry alike have benefitted from provisions in the economic stimulus bill ("American Recovery and Reinvestment Act") which grant tax credits for the cost of insulation costs.

The federal tax credit for insulation in 2011 is **10%** of the insulating materials purchase price, up to **\$500**, assuming you meet the following criteria:

- the home must be your principal residence
- you must provide receipts and a Manufacturer Certification Statement with your taxes (we will provide you with these upon completion of the job)

(You can access the IRS Form 5695 ("Residential Energy Efficient Property Credit") here:

<http://www.irs.gov/pub/irs-pdf/f5695.pdf>)

d.) Additional County Tax Credits for High-Performance Home (through 2011)

Depending on the measures enacted and the location of your home, you may also apply **for local (county) tax credits** on these retrofitting measures.

As of 2010, Baltimore County has offered a generous property tax credit for high-performance homes (Bill 43-10, "An Act Concerning High Performance Homes"). The measure offers a 3-year property tax credit (i.e. – tax break) equivalent to the percentage of reduction in your energy consumption directly related to your energy efficiency or renewable energy upgrades.

As an example, if you pay \$5,000/year in property taxes, and cut your home's consumption by 50%, you would save \$2,500/year x 3 years = \$7,500.

However, the minimum energy reduction is 40%, which means that any energy-efficiency project must be ambitious in scale and scope (the typical energy upgrade achieves a reduction in the neighborhood of 20%). Furthermore, your home must undergo pre- and post-reduction energy modeling by a certified HERS or Passive House rater.

These kind of projects are demanding but certainly technically feasible for most homes, especially when combined with a renewable energy installation. Please contact us if you would like additional information on pursuing this credit. You can also access and read the bill itself at:

<http://www.baltimorecountymd.gov/countycouncil/legislation/10bills.html>

3. Low-Interest Financing – the Maryland Home Energy Loan Program (MHELP)

The MEA and the Maryland Clean Energy Center (MCEC) have recently launched the Maryland Home Energy Loan Program (MHELP), enabling Marylanders to access unsecured, low-cost, funds for efficiency upgrades such as better insulation and higher-rated heating and cooling equipment. The money can be used for the purchase of, or upgrade to, a more efficient heating-ventilation-air conditioning (HVAC) system; significantly better home insulation in attics and exterior walls; and certain other purchases recommended by a Home Energy Auditor certified by the Maryland Home Performance program. The loan amounts are capped at \$20,000; the interest rate is **6.99%**. The loan can work out very well financially because many retrofitting measures have an expected ROI significantly higher than this interest rate. More information is available at www.mcecloans.org.
(text taken and modified from MEA press release).

4. Responding to this Quotation

Please feel free to check off all retrofitting measures you would like us to enact and either phone in your response or return this document by fax or email. We will be happy to supply any further information you may need regarding this quotation – please do not hesitate to contact us!



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Thursday, February 03, 2011

FIXED PRICE CONTRACT TEMPLATE (WITH CONTINGENCIES)

Owner's Name: **MR First Last**
 Owner's Address: **123 Street**
Baltimore, MD 21210

For the Project: Proposed Envelope/Energy Efficiency Improvements to Fuller Residence

Summary of Retrofitting Measures:

Category	Item # (from Addendum)	Brief Description	Cost	Category Total
Energy Audit				
General Health and Safety				
Whole House Air-Sealing				
Insulation Measures				
Duct Sealing or Replacement				
Baseload (Lighting/Appliances)				
Insulation (Rim Joist)				
TOTAL				

PAYMENT: The owner agrees to compensate Zerodraft Maryland the total sum upon completion of work.

Terms:

1. These contract documents represent the entire agreement of both parties and supersede any prior oral or written agreement.
2. The Contractor agrees to improve the above mentioned structure as shown and described in the 'Residential Energy Retrofit Estimate' (attached as Addendum 1), dated February 23, 2011, by enacting all checked measures on the estimate sheet (item # is also specified in the second column in the table above, on page 1). For purposes of convenience for Owner rebates, these measures are summarized in the table above, but the description of measures in the Estimate itself shall be preeminent.
3. The Contractor recognizes that the Owner is applying for the "Maryland Home Performance Rebate." Should the Owner not receive approval for these rebates, the Contractor agrees to let Owner renegotiate or break off this contract without fault.
4. Likewise, the Contractor is held in no way liable if the Owner fails to get rebates from any expected source. Procuring rebates is the sole responsibility of Owner, though the Contractor will endeavor to assist.
5. The Contractor will supervise all construction activities through to completion.
6. All aspects of the project shall be completed in a workmanlike manner, and shall comply with all applicable national, state and local building codes and laws.
7. The Contractor shall remove all construction debris and leave the project in a broom-clean condition upon completion.
8. Upon completion, the project shall be inspected by the Owner and the Contractor, and any repairs necessary to comply with the contract documents shall be made by the Contractor.
9. The Owner will not assume any liability or responsibility, nor have control over or charge of construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the project, since these are solely the Contractor's responsibility.
10. If the Owner desires to modify any individual item, Owner shall communicate all desired changes with the Contractor in a timely manner sufficient to create a Change Order. A Change Order is any change to the original plans and/or specifications. For some of these measures, Owner and Contractor may need to discuss exact specifications and the price may change accordingly. If the Owner and Contractor cannot agree on the terms of a Change Order, either party shall be allowed to void the Contract. All change orders need to be agreed upon in writing, including cost, additional time considerations and signed by both parties. All rebate-issuing agencies will receive an itemized list at the completion of the project with actual price paid.
11. The Owner will purchase and maintain property insurance to the full and insurable value of the project, in case of a fire, vandalism, malicious mischief or other instances that may occur.
12. The Contractor shall purchase and maintain needed Workman's Compensation and Liability insurance coverage as required by law and deemed necessary for his own protection.
13. Any dispute that arises which cannot be settled otherwise between the parties, will be resolved with binding arbitration. Notice shall be served in writing to the other party stating the grievance and naming a person to act as an arbitrator. The other party shall then name an arbitrator, and these two arbitrators shall select a third. The decisions of any two of said arbitrators shall be binding and conclusive to all parties.

WITNESS our hand and seal on this _____ day of February, 2011.

Signed:

Chris Pfund

Contractor Signature

Owner Signature