

ReVision Heat

Sustainable Heating Solutions



**Innovative design, instal
and service**



**Practical solutions for every home
and every budget**



Renewable, sustainable, smarter alternatives



Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 07/11/16

Heating System Proposal

CLIENT INFORMATION

Name: Carol Lease
Address: 727 Congress Street
City, State ZIP: Portland, ME 04102
Phone: 860-977-2199
Email: carol@impsolhq.com
Date of Proposal: 10/13/2015
Project Name: Air Source Heat Pump Installation

CONTRACTOR INFORMATION

Company Name: ReVision Heat
Contact: Lee Landry
Address: 145 Presumpscot St
City, State ZIP: Portland, ME 04103
Office Phone: 207-221-5677
Cell Phone: 207-570-4222
Email: lee@revisionheat.com

Components and Similar Projects



Lower Your Heating Costs and Decrease Your Carbon Footprint Today

COMPONENTS LIST



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Quantity	Make/Model	Performance:	Features:
1	Mitsu MSZFH09NA indoor	HSPF 12.0 SEER 21.5 ENERGY STAR Qualified	ESP Energy Saver Ion and Apple Catechin Filters 3 Mode Timer (Weekly/Program/Sleep) Dry Mode: up to 4.4 pints/hr.
1	Mitsu MSZFH12NA indoor		
1	Mitsu Branch Box PAC-MKA30BC 3 port		
1	Mitsubishi MXZ3B30NA		
1	QSWB2000 Wall Mount Bracket w/ vibration damp.		

COST

Proposed Solution:	Air Source Heat Pump System
Total Cost:	\$9,204.50
Rebates Available:*	\$500.00
Final Cost:	\$8,704.50
Estimated Date of Install:	12/15/2015

* This Air Source Heat Pump qualifies for a rebate through Efficiency Maine's Home Energy Savings Program. The program is subject to change without notice. The rebate will be made available after project completion. Please see Efficiency Maine's Home Energy Savings Program Manual for details (<http://www.efficiencymaine.com/docs/HESP-Program-Manual.pdf>).

SAVINGS

Annual Cost to Heat with Oil:	\$2,900.00	
Annual Cost to Heat with Oil and ASHP:	\$2,281.11	
Estimated Annual Savings:	\$618.89	Return on Investment (ROI)
Estimated 5 Year Savings:	\$3,881.60	-55%
Estimated 10 Year Savings:	\$9,731.11	12%
Estimated 20 Year Savings:	\$27,333.87	214%
Your New Heating System Will Pay for Itself in:	14.06 Years	Expected Lifespan 15-20 years

IMPACT

Annual Oil Use (gal):	1,000
Annual Lbs CO2 Emitted:	22,300
New Oil Use after offset by ASHP:	650
New Lbs CO2 Emitted:	14,495
Lbs CO2 Emissions Saved:	7,805
Oil-generated CO2 Emissions Reduced By:	35%

SYSTEM DESCRIPTION

Based on an evaluation of the heating and cooling requirements of your home, ReVision Heat proposes to install one Mitsubishi Multi-Zone air source heat pump system. The indoor units for the lower level will be mounted on the wall to the left of the closet in the master bedroom and the floor just outside of the closet in the office. The upper level unit will be installed near the archway that separates the kitchen from the living room. The indoor units will be connected to the outdoor unit via branch box located above the ceiling in the master bedroom closet. This outdoor unit will be installed with a cover to protect it from precipitation off of the roof. An external disconnect will be installed beside the outdoor unit which will be wired back to the load center with a two pole 30 amp breaker.

WARRANTY

Mitsubishi offers a limited twelve year warranty on the compressor and parts. ReVision Heat warranties our work of one (1) year. After one year ReVision Heat offers the option of a bi-annual heat pump maintenance agreement



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PAYMENT TERMS

- 30% due upon acceptance of this proposal
- 30% due upon delivery of heat pump system
- 30% due upon substantial completion of installation
- Remainder due upon fulfillment of the contract



PERFORMANCE

This heat pump is among the best in class, achieving the highest efficiency with the quietest operation. Assuming current average electricity costs of \$0.145/kWh:

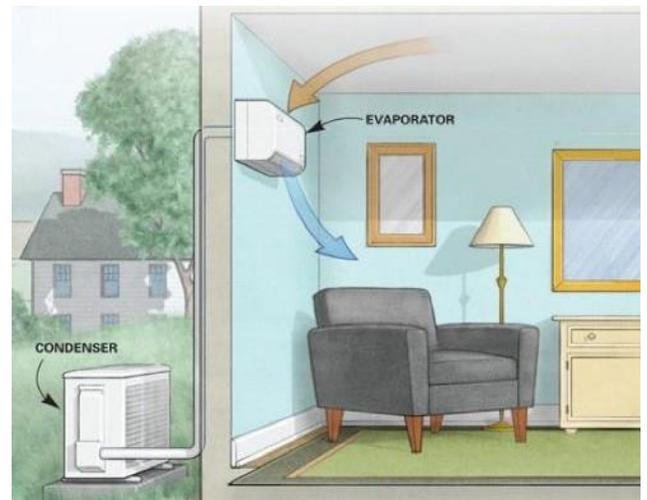
At 47 degrees, the system will run at 310% efficiency, which equates to oil at \$1.39 a gallon

At 5 degrees, the system will run at 242% efficiency, which equates to oil at \$1.79 a gallon

Maine's average low temperature is 37 degrees, so the average operating efficiency is 285% or oil at \$1.60/gallon!

SYSTEM OPERATION

The indoor unit is thermostatically controlled to provide both heating and cooling. When there is a call for heat, the outdoor unit will turn on the fan, blowing air throughout the outdoor unit. Latent heat in the ambient air is absorbed by the refrigerant, which is then compressed and pumped to the indoor unit, which in turn transfers heat to the room air via a fan located in the indoor unit. In cooling mode the process is reversed, making the indoor unit the evaporator and the outdoor unit the condenser (pictured). This moves hot air from inside to out, allowing cool refrigerant to return inside to produce a stream of cool air as the fan blows across the coils.



The compressor is driven by a state of the art microprocessor, which varies the speed of the pump to match the heating or cooling load exactly. The unit is rated to work down to -5 degrees. In the heating mode, the colder it gets outside, the less efficient the heat pump is. It has a Heating Seasonal Performance Factor (HSPF) of 12.0, which makes it eligible for rebates from Efficiency Maine. This number indicates the ratio of BTU output to watt-hours of electricity used for heating. The Seasonal Energy Efficiency Ratio (SEER) is 21.5, which indicates the efficiency of the system during cooling.

SCOPE OF WORK

Price to include the following:

- Provide and install indoor and outdoor units
- Provide and install all refrigerant and condensate piping.
- All necessary wiring from load center to external disconnect and from outdoor unit to indoor unit
- Thorough pressure testing and commissioning by factory trained and EPA certified refrigeration technicians
- All necessary licenses for code-compliant installation exceeding manufacturer's recommendations



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Price does not include the following:

- Any work not listed in the scope of work above

Homeowner Responsibilities:

- Ensuring work areas and access routes are clear

 **NEXT STEP**

If you wish to move forward with this project, we will send you an installation agreement and invoice for deposit. Once we receive the signed agreement and deposit, your project will be placed in the queue for installation. This fixed price quote is valid for 30 days.

IMPORTANT NOTES



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If the client specifies design changes which result in the need for materials or labor beyond the scope of this project should be discussed as early as possible. A change order will be negotiated and drawn up in writing after the details agreed upon by the client and ReVision Heat. Non-contract labor is billed at \$85 per hour; this rate applies to additional time and additional office time (design changes, preparation of a change order, etc.).

Estimates of equipment or system efficiency, performance or expected energy savings are for informational purposes only. Due to the large number of variables affecting efficiency and performance that are beyond ReVision Heat's control, ReVision Heat makes no warranty or guaranty that the equipment or system installed in accordance with this proposal shall perform in accordance with such estimates.

ReVision Heat requires that all necessary areas be accessible to perform the scope of work. This includes but is not limited to removal of belongings or debris from the basement, crawlspaces, closets, storage areas or other areas in the living space, cleaning of snow from pathways and access doors. Areas of access will be clarified before work begins. Any required removal of belongings, debris, or snow will be billed at the non-contract labor rate of \$85 per hour.