Agency: Commerce, Community and Economic Development

Grants to Named Recipients (AS 37.05.316)

Grant Recipient: Juneau Cooperative Christian Ministries **Federal Tax ID:** 92-0085663

Project Title: **Project Type:** Remodel, Reconstruction and Upgrades

Juneau Cooperative Christian Ministries - Glory Hole Shelter Energy Efficiency and Heating Improvements

State Funding Requested: $50,000 **House District:** Juneau Areawide (3-4)
One-Time Need

Brief Project Description:

Replace windows and siding, insulate, improve air exchange systems, and improve energy efficiency of the Glory Hole shelter building.

Funding Plan:

Total Project Cost:	$75,000
Funding Already Secured:	($25,000)
FY2012 State Funding Request:	($50,000)
Project Deficit:	$0

Funding Details:

The Glory Hole is prepared to commit 15,000 to this important project. Furthermore, a partnership with SAGA is being secured in order to involve other organizations in the project, reducing cost through saving on labor, as well as through a currently available federal rebate. The University of Alaska's Cold Climate Building Program already provided in-kind support in the forms of expertise, planning assistance, some material assistance, and assessment, valued at $10,000.

Detailed Project Description and Justification:

The Glory Hole is the only emergency shelter and soup kitchen in Juneau, serving those most in need. Its mission is to provide food, shelter, and compassion. In the past three years, The Glory Hole provided over 160,000 meals and 25,000 bed nights. In addition, the shelter provided over 15,000 "other" services, including laundry, showers, and bus tokens for transportation to jobs, job interviews, housing searches, and medical facilities for health care.

The Glory Hole relies primarily on fundraisers and community support for operation & maintenance. Too much of its budget every month is dedicated to heating a poorly constructed building. Utility bills exceed $30,000, while the patrons and staff often have to wear coats, hats, and gloves inside the building, in the winter. In other areas of the building, patrons can barely stand the heat because the existing heating system cannot be regulated. Annually, thousands of dollars are wasted because outdated thermostats and lack of an appropriate circulation system force us to keep the windows open in the dorms at night, allowing heat to escape. The dormitory air has been dubbed unhealthy.

By reinsulating walls, replacing several windows, putting on energy efficient siding, changing the thermostats, replacing the boiler, and creating smaller heating spaces within the building, the Glory Hole can save money on energy for years to come, maintain the integrity of the building, and create healthy living conditions in its dorms. The detailed plans for weatherization created by experts from the University of Alaska are attached.

Contact Name: Jesse Kiehl
Contact Number: 465-6827

For use by Co-chair Staff Only:

$50,000 Approved

10:24 AM 5/27/2011

The project includes installation of an electric boiler alongside the shelter's existing, aged, oil-fired boiler. The existing boiler is both inefficient and approaching the end of its design life. It will remain in place as a backup in case of electrical outage or extreme cold weather. The dramatically reduced wear on the elderly boiler will extend its useful life. The shelter will also have the electric boiler to rely on when the oil-fired boiler eventually fails.

The Glory Hole is a sustainable nonprofit, having served Alaskans for decades. In order to maximize every dollar on this project, the shelter sought innovative solutions and entered a partnership with another nonprofit, SAGA, in order to save on labor. One of SAGA's key programs focuses on building affordable housing for Alaskans, and it brings considerable building expertise to the project. The University of Alaska Cold Climate building program is also on board, providing free assessments, expertise, labor, and consultation. The Glory Hole has also raised money dedicated to this project, which will save money in the future.

This project is very important to the shelter's future. It will dramatically reduce energy costs. It will bring building and living standards for shelter patrons up to code, and allow for collaboration of several agencies in order to achieve a common good. It will ensure that the Glory Hole is a responsible member of the human community and not a wasteful user of carbon resources or charitable contributions. After the project is complete, the utility savings will enable the shelter to use the funds currently spent on heating oil to go towards providing necessary services, including expanded case management and social work, to our patrons in order to help them get out of poverty and homelessness.

Project Timeline:

The project can begin as soon as funding is secured. The Glory Hole will seek plan approval from the city as soon as a grant agreement is signed. Work should be completed within Fiscal Year 2012.

Entity Responsible for the Ongoing Operation and Maintenance of this Project:

Juneau Cooperative Christian Ministries d.b.a the Glory Hole

Grant Recipient Contact Information:

Name:	Mariya Lovischuk
Title:	Executive Director
Address:	247 S Franklin St
	Juneau, Alaska 99801
Phone Number:	586-4159
Email:	thegloryhole@gci.net

Has this project been through a public review process at the local level and is it a community priority? ☐ Yes ☒ No

For use by Co-chair Staff Only:

10:24 AM 5/27/2011

Contact Name: Jesse Kiehl
Contact Number: 465-6827

BUILDING LEAKAGE TEST

Date of Test: 2 May 09
Test File: glory hole

Technician:

Customer: Glory Hole

Building Address:

Phone

Test Results

1.	Airflow at 50 Pascals: (50 Pa = 0.2 w.c.)	6000 CFM 5.79 ACH 0.96 CFM per ft2 floor area
2.	Leakage Areas:	619.5 in2 Canadian EqLA @ 10 Pa 329.4 in2 LBL ELA @ 4 Pa
3.	Minneapolis Leakage Ratio:	0.68 CFM50 per ft2 surface area
4.	Building Leakage Curve:	Flow Coefficient (C) = 471.9 Exponent (n) = 0.650 (Assumed)
5.	Test Settings:	Test Standard: = CGSB Test Mode: = Depressurization Equipment = Model 3 Minneapolis Blower Door

Infiltration Estimates

1.	Estimated Average Annual Infiltration Rate:		501.3 CFM 0.48 ACH 12.5 CFM per person
2.	Estimated Design Infiltration Rate:	Winter:	664.4 CFM 0.64 ACH
		Summer:	231.7 CFM 0.22 ACH
3.	Recommended Whole Building Mechanical Ventilation Rate: (based on ASHRAE 62.2-2003)		174.3 CFM

Cost Estimates

1. Estimated Cost of Air Leakage for Heating: $ 1710 per year heating

2. Estimated Cost of Air Leakage for Cooling:

Date of Test: 2 May 09 Test File: glory hole

Building Conditions

Inside Temperature:	70 deg F	Heating Fuel:	Oil
Outside Temperature:	50 deg F	Heating Fuel Cost:	$3.25/gallon
# of Stories	3.0	Heating Efficiency:	82.00
		Heating Degree Days:	8897
Wind Shield:	M	Cooling Fuel Cost:	
# of Occupants	40.0	Cooling SEER:	
		Cooling Degree Days:	0
# of Bedrooms:	10.0		
Volume:	62163 ft3	Ventilation Weather Factor:	0.95
Surface Area:	8818 ft2	Energy Climate Factor:	20.0
Floor Area:	6245 ft2		
Design Winter Wind Speed:	9.0 mph	Design Winter Temp Diff:	69 deg F
Design Summer Wind Speed:	7.0 mph	Design Summer Temp Diff:	0 deg F

Comments

Date of Test: 2 May 09 Test File: glory hole

Data Points: Data Entered Manually

Nominal Building Pressure (Pa)	Fan Pressure (Pa)	Nominal Flow	Temperature Adjusted Flow	% Error	Fan Configuration	Baseline Std Dev (Pa)
-1.6	n/a					+/- 0.00
-50.0	157.8	5989	5875	0.0	Open	
-1.6	n/a					+/- 0.00

Energy Efficiency Improvement Options

Property: Mariya Lovishchuk
The Glory Hole Shelter
247 S. Franklin St
Juneau, AK 99801

House: Multi-Family, Whole Building
Living Floor Area: 6,245 sq.ft

Rater: Marquam George

Initial Rating: Three Star, 72.1 points
Additional Rating Points needed to reach higher Rating Levels:
0.9 more points needed to reach **3+ Stars** (a minimum 3 point increase is required to receive an AHFC rebate)
5.9 more points needed to reach **4 Stars**
10.9 more points needed to reach **4+ Stars**
15.9 more points needed to reach **5 Stars**
19.9 more points needed to reach **5+ Stars**

ID:

The following are possible energy-saving improvements for your home.
Note: The "*Ballpark Cost*" column gives a very approximate cost of the improvement assuming a typical situation. You should only rely on an actual contractor quote or a more refined cost estimate. The "*Break-Even Cost*" column provides a useful figure to compare with a more accurate cost estimate. The Break-Even cost is the *most* you could pay for the improvement and still have it be cost-effective based on energy savings over the life of the measure.

Improvement Description / Location	Cost Effective	Annual Savings	Ballpark Cost	Break-Even Cost	Rating Points Gained	Rating, after all Improvements thru this one
Install a Programmable Thermostat; zone controls extra	Yes	$625	$250	$7,850	1.1	73.2 points 3+ Stars Increase: 1.1 pts, 1 step
Install R-21batt insulation on basement wall Location - Below- (part or all) Grade Wall: House/First Floor	Yes	$3,428	$10,490	$76,350	12.0	85.2 points 4+ Stars Increase: 13.1 pts, 3 steps
Remove existing door and install standard pre-hung U-0.16 insulated door, including hardware. Location - Exterior Door: House/Rear	Yes	$68	$390	$1,523	0.3	85.5 points 4+ Stars Increase: 13.4 pts, 3 steps
Remove existing door and install standard pre-hung U-0.16 insulated door, including hardware. Location - Exterior Door: House/Front	Yes	$139	$796	$3,095	0.5	86.0 points 4+ Stars Increase: 13.9 pts, 3 steps
Install 2' of R-30 rigid board insulation around perimeter of Slab (vertical or horizontal). Location - On- or Below-Grade Floor, Perimeter: House/First Floor	Yes	$246	$1,804	$5,489	0.8	86.8 points 4+ Stars Increase: 14.7 pts, 3 steps
Install Lexan magnetic storm window on interior Location - Window/Skylight: House/South	No	$145	$2,555	$2,339	0.5	87.3 points 4+ Stars Increase: 15.2 pts, 3 steps
Add R-19 dense-pack to existing insulation. Location - Cathedral Ceiling: House	No	$74	$2,028	$1,646	0.3	87.6 points 4+ Stars Increase: 15.5 pts, 3 steps

Improvement Description / Location	Cost-Effective?	Annual Savings	Ballpark Cost	Break-Even Cost	Rating Points Gained	Rating, after all Improvements thru this one
Install R-5 rigid board insulation Location - Exposed Floor: House/Rear Cantilever	No	$2	$72	$38	0.0	87.6 points 4+ Stars Increase: 15.5 pts, 3 steps
Replace existing window with U-0.22 vinyl window Location - Window/Skylight: House/Other	No	$210	$7,586	$3,370	0.8	88.4 points 5 Stars Increase: 16.3 pts, 4 steps
Install R-10 rigid foam board to exterior and cover with T1-11 siding or equivalent. Location - Above-Grade Wall: House/Wood Frame	No	$458	$26,528	$10,195	1.6	90.0 points 5 Stars Increase: 17.9 pts, 4 steps
Total: All Measures	$670	$34,198	$11,885	17.9		

Annual CO2 Reduction after all improvements: 41,647 pounds per year

Notes:

1. *Cost-Effective* means that the energy savings that occur over the life of the improvement are sufficient to pay back the cost of the improvement including reasonable interest. This analysis does not consider additional benefits from the improvement unrelated to energy savings, such as increased comfort or additional longevity of the improved part of your home.

2. *Annual Savings* is the potential savings in your home's energy cost per year.

3. The *Ballpark Cost* is a very approximate estimate of the cost of the improvement measure. It does not substitute for an actual contractor quote or a more refined cost estimate.

4. *Break-Even Cost* is the most you could pay for this improvement and still have it be cost-effective based on energy savings over the life of the measure.

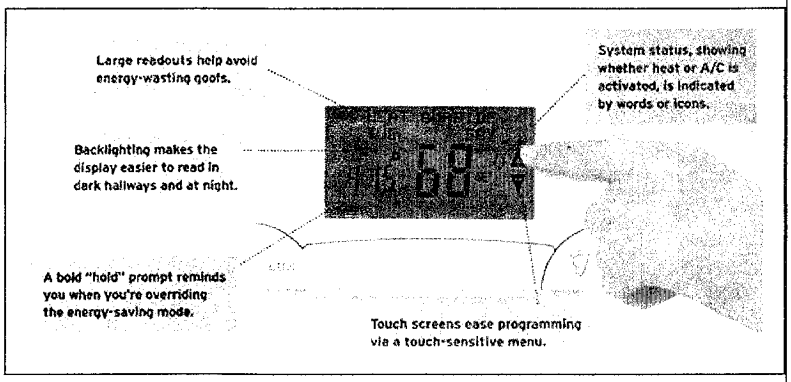
5. *Rating Points Gained* are the additional rating points that would be added to your As-Is Rating score if the measure were installed.

6. *Rating, after all Improvements thru this one:* This column shows the energy rating that would result if all improvements prior to and including this one were done. As well as showing the final rating, the column shows how much the rating will improve in terms of rating points and in terms of rating steps. For example, an increase from a 2 star rating to a 2 star plus rating is one step.

Detailed Improvement Information

Improvement Description	Location in Home	Cost Effective?	Annual Savings	Rating Points Gained	Rating after all Improvements thru this one
Install a Programmable Thermostat; zone controls extra		**Yes**	**$625**	**1.1**	**73.2 points 3+ Stars Increase: 1.1 pts, 1 step**

A thermostat that adjusts the temperature at different times during the day saves energy, compared with a simple room thermostat. *Setback* or *programmable thermostats* can automatically reduce the house temperature for certain periods such as when the home is unoccupied or during sleeping hours. Thermostats generally have only two low-voltage wires and are easy to install. You will need one thermostat for each zone.



Confusing controls on some programmable thermostats may make it difficult to save energy. When choosing a programmable thermostat look for one that is easily programmed with a display that is easy to read at arm's length. All programmable thermostats let you override their energy-saving modes. Some use bold letters or lights to tell you the override is on. Others have override prompts that are relatively easy to miss, and you may not realize you are not saving energy.

Install R-21batt insulation on basement wall	**Below- (part or all) Grade Wall: House/First Floor**	**Yes**	**$3,428**	**12.0**	**85.2 points 4+ Stars Increase: 13.1 pts, 3 steps**

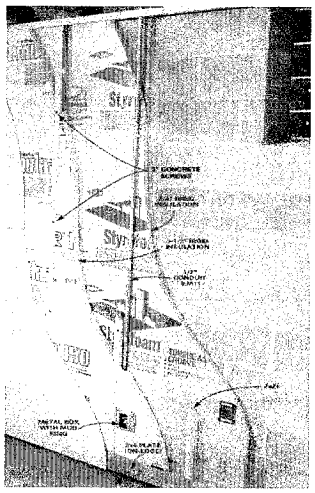
Control moisture. Before insulating foundation walls, make sure they are in good repair and check site drainage. Be sure that the walls are properly sealed and that no moisture is getting in. If the basement is damp or the walls have wet spots after a rain, the foundation should be checked by a professional before beginning your project.

Use approved, rigid-board insulation thick enough to give R-13 and finish it with a fire-resistant material, for example, gypsum board;

Headers should have at least R-13 rigid foam, friction-fit into each cavity and sealed with caulking or foam-in insulation to reduce air leakage. Blown-in polyurethane foam can also be used.

The most convenient option may be installing several inches of rigid foam insulation using a foam-compatible adhesive and mechanical fasteners. Vertical wood strips spaced 24 inches apart allow drywall to be fastened to the walls.

Improvement Description	Location in Home	Cost Effective?	Annual Savings	Rating Points Gained	Rating, after all Improvements thru this one



Insulating the basement walls could also be accomplished by installing rigid insulation on the exterior side.

In most areas, basement walls should be insulated to at least R-10 if they are more than fifty percent below the grade. If they are more than fifty percent above the grade, they should be insulated the same as above grade walls.

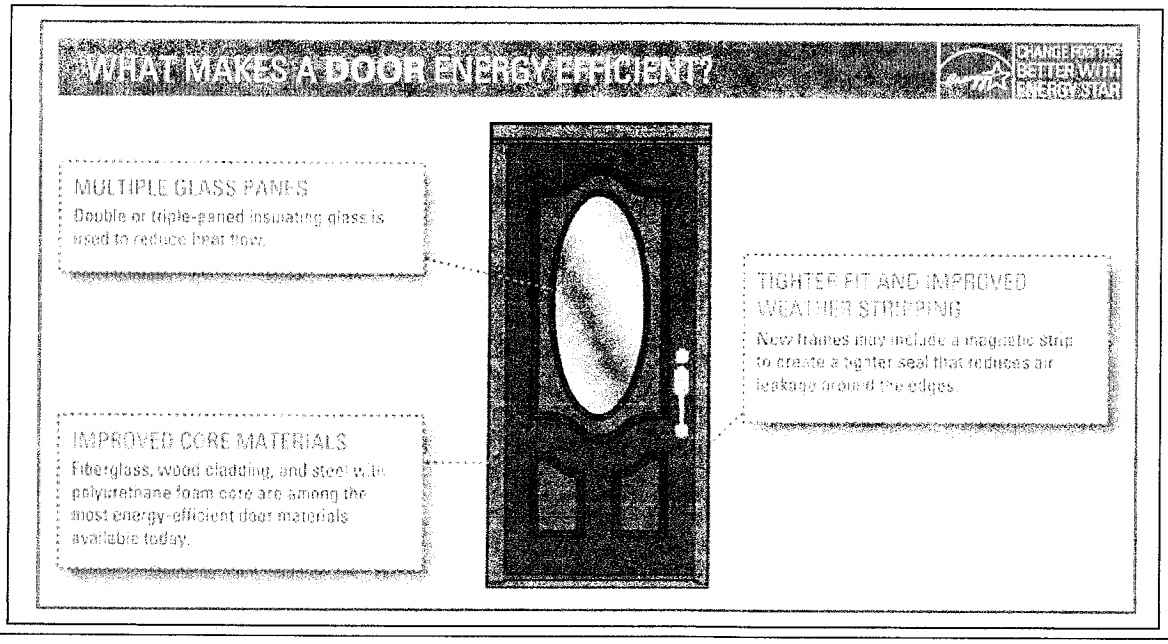
After the insulation is in place, a wall finish should be applied directly to the studs.

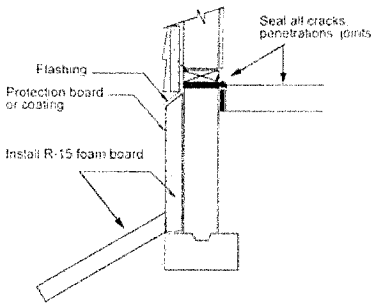
Remove existing door and install standard pre-hung U-0.16 insulated door, including hardware.	**Exterior Door: House/Rear**	**Yes**	**$68**	**0.3**	**85.5 points 4+ Stars Increase: 13.4 pts, 3 steps**

Quality exterior doors are filled with foam insulation and have insulating values of about R-7 to R-14, compared to R-2.2 for conventional solid wood doors. They come in a variety of styles. Metal doors last longer than wood doors, do not warp easily, and provide greater security. Often, they cost no more than solid wood exterior doors. You may also consider a fiberglass replacement door. These provide energy efficiency and durability comparable to a metal door and have a wood grain appearance.

The major drawback of metal and fiberglass doors is their inflexibility. They cannot be easily trimmed, so if the door frame is not square, it may have to be rebuilt.

Make sure the installer reads the directions that come with the door before beginning. Some adjustments can be made after the door is installed, but they will require extra time. A properly install



Improvement Description	Location in Home	Cost-Effective?	Annual Savings	Rating Points Gained	Rating, after all Improvements thru this one
ed insulated door will seal tightly for years.					
Remove existing door and install standard pre-hung U-0.16 insulated door, including hardware.	**Exterior Door: House/Front**	**Yes**	**$139**	**0.5**	**86.0 points 4+ Stars Increase: 13.9 pts, 3 steps**
See the Description above for the Improvement: *Remove existing door and install standard pre-hung U-0.16 insulated door, including hardware.*					
Install 2' of R-30 rigid board insulation around perimeter of Slab (vertical or horizontal).	**On- or Below-Grade Floor, Perimeter: House/First Floor**	**Yes**	**$246**	**0.8**	**86.8 points 4+ Stars Increase: 14.7 pts, 3 steps**
With a slab foundation, the energy loss is greatest at the edge. Excavate to a depth of 2' around the slab and attach rigid insulation to the foundation wall. Make sure the insulation comes all up to the bottom of the siding. Cover the above grade portion of the insulation with flashing. Then backfill. You can stop more energy loss by adding 2' of insulation, extending out from the foundation wall. 					
Install Lexan magnetic storm window on interior	**Window/Skylight: House/South**	**No**	**$145**	**0.5**	**87.3 points 4+ Stars Increase: 15.2 pts, 3 steps**
Storm windows are a lower cost option to new windows although usually not as efficient. **Exterior storm windows.** Exterior storm windows offer the best way to avoid condensation between the panes. They work best over double-hung windows that slide up and down, horizontal sliding windows, or fixed windows. In order to reduce costs, use standard-sized storm windows instead of custom-ordered windows. You can often trim the metal flanges of standard storm windows to adjust for a nonstandard window. Quality products will be rated by the American Architectural Manufacturers Association (AAMA). **Interior storm windows.** If attached inside, make sure the perimeter of the storm seals well against the sash to prevent condensation between the panes. These single-sheet storm windows are usually made of acrylic plastic and attach to the existing window trim with magnetic strips or Velcro® . They are ideal for hinged windows which open out, such as casement or awning units, where exterior storm windows would not allow the window to open. Some interior storm windows have a sliding sash system to allow ventilation like regular operable windows. They should be sized to fit on the inside surface of the window casing. In some cases, you will have to remove the handle for an operable window in order to install the storm window. It is possible to make your own interior storm windows. Several kits are available for do-it-yourselfers. On operating windows, the storm should attach to the operating sash – not the frame. The gap between the					

Improvement Description	Location in Home	Cost Effective?	Annual Savings	Rating Points Gained	Rating, after all improvements thru this one

being disturbed if someone walks on it. Do not cover the plastic with anything that could make holes in it, such as crushed gravel. Be sure the headroom of the crawl space meets local code regulations if you are considering pouring a concrete slab.

Any pipes or ducts that pass through an unheated crawlspace should be insulated, to prevent heat loss and freezing of water pipes.

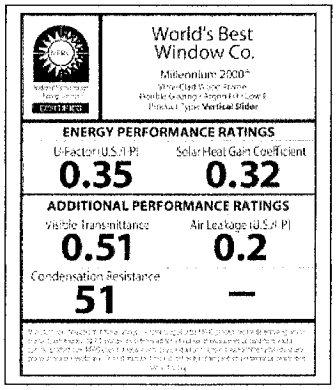
Other considerations

When properly insulating a crawl space, you also have to consider moisture control measures and air sealing. You also need to consider radon resistance or control when installing/insulating any type of foundation.

If the crawlspace is unvented and contains a heating system, water heater or significant heat source, you should insulate the crawlspace walls instead to contain the heat and warm the floor above. You can use fiberglass batts or blankets or one of the various foam board insulation materials. If using the foam boards, check local fire codes, as they may require covering the insulation with a fire retardant material.

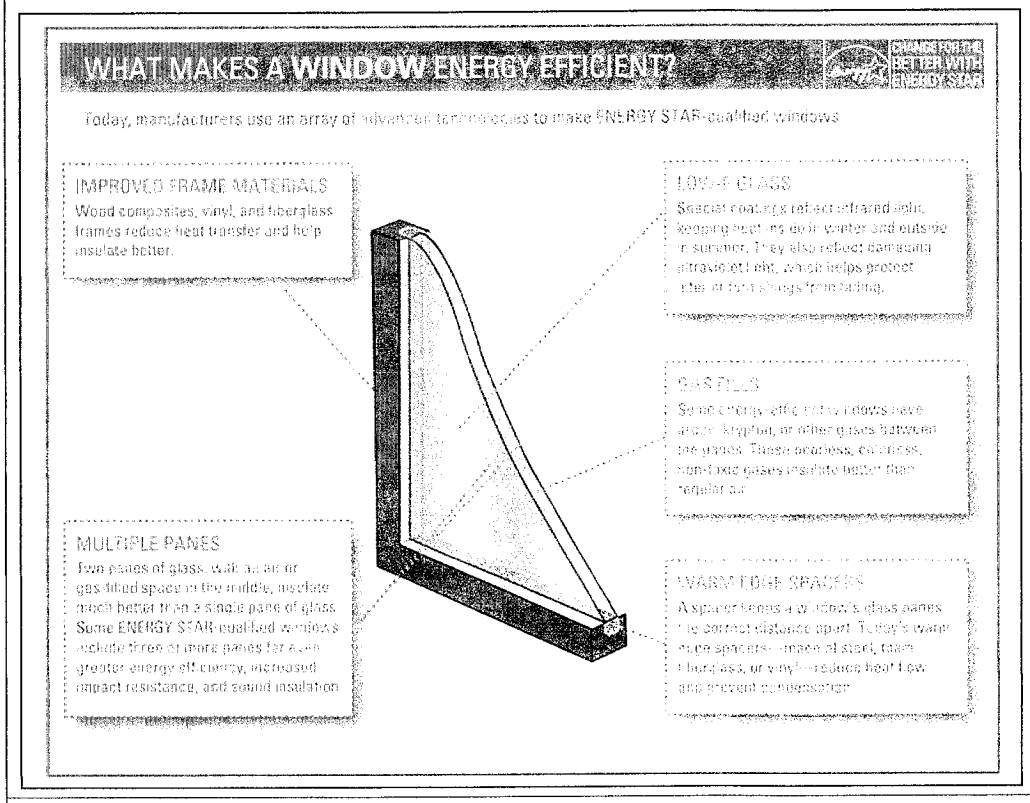
Replace existing window with U-0.22 vinyl window	**Window/Skylight: House/Other**	**No**	**$210**	**0.8**	**88.4 points 5 Stars Increase: 16.3 pts, 4 steps**

Look for the NFRC label to compare energy performance of different windows. In Alaska U-factor (less than 0.3), Air Leakage (the lower the better) and Condensation Resistance (the higher the better) are the most important.



Wood, vinyl, wood-clad, and hybrid/composite windows have very similar R-values for the same type of glass and spacers. Insulated vinyl and fiberglass have similar thermal values that are higher than the others, and better condensation prevention. They will cost more initially, but should require very little maintenance.

Improvement Description	Location in Home	Cost-Effective?	Annual Savings	Rating Points Gained	Rating, after all improvements thru this one



Install R-10 rigid foam board to exterior and cover with T1-11 siding or equivalent.	**Above-Grade Wall: House/Wood Frame**	**No**	**$458**	**1.6**	**90.0 points 5 Stars Increase: 17.9 pts, 4 steps**

You may have several options for increasing the R-value of the walls. Proper air sealing will significantly improve the performance of the new insulation.

Added Insulation Inside Walls. Consider having an insulation contractor inject dense-pack cellulose or one of the expanding foams into the wall cavities of the original structure. Dense-pack cellulose has a density of 3.5 pounds per cubic foot, or more. This upgrade will also reduce air leakage.

Exterior Retrofit. For added heat loss protection, consider adding rigid insulation to the exterior walls before installing the new siding. This provides more insulation as well as reducing outside air penetration and preventing wet siding from transmitting moisture into the wall cavity. Because rigid insulation is an excellent moisture retarder, and because it keeps the wood in the wall cavity warmer, walls with exterior insulating sheathing are significantly drier than walls without it. If you are planning to add new *exterior* siding, insulation should be blown into wall cavities first. Once the new siding is in place, it will be difficult and expensive to add blown-in insulation.

Interior Retrofit. If you are planning extensive *interior* renovation, such as gutting the walls of your home during a major rehabilitation project, you should spend the extra time and money to fill the cavities with insulation as long as they're open anyway. (If you plan to repaint or wallpaper rather than rebuild the walls, you can blow insulation into the walls from the inside.) In some cases it may be possible to add rigid insulation on the interior. Any type of rigid foam can be used although the highest R-value per inch will be found with polyisocyanurate (such as Thermax or R-max). Cover with new sheetrock.

BUILDING LEAKAGE TEST

Date of Test: 2 May 09
Test File: glory hole

Technician:

Customer: Glory Hole

Building Address:

Phone

Test Results

1.	Airflow at 50 Pascals: (50 Pa = 0.2 w.c.)	6000 CFM 5.79 ACH 0.96 CFM per ft2 floor area
2.	Leakage Areas:	619.5 in2 Canadian EqLA @ 10 Pa 329.4 in2 LBL ELA @ 4 Pa
3.	Minneapolis Leakage Ratio:	0.68 CFM50 per ft2 surface area
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5.	Test Settings:	Test Standard: = CGSB Test Mode: = Depressurization Equipment = Model 3 Minneapolis Blower Door

Infiltration Estimates

1.	Estimated Average Annual Infiltration Rate:		501.3 CFM 0.48 ACH 12.5 CFM per person
2.	Estimated Design Infiltration Rate:	Winter:	664.4 CFM 0.64 ACH
		Summer:	231.7 CFM 0.22 ACH
3.	Recommended Whole Building Mechanical Ventilation Rate: (based on ASHRAE 62.2-2003)		174.3 CFM

Cost Estimates

1. Estimated Cost of Air Leakage for Heating: $ 1710 per year heating
2. Estimated Cost of Air Leakage for Cooling:

BUILDING LEAKAGE TEST Page 2

Date of Test: 2 May 09 Test File: glory hole

Building Conditions

Inside Temperature:	70 deg F	Heating Fuel:	Oil
Outside Temperature:	50 deg F	Heating Fuel Cost:	$3.25/gallon
# of Stories	3.0	Heating Efficiency:	82.00
		Heating Degree Days:	8897
Wind Shield:	M	Cooling Fuel Cost:	
# of Occupants	40.0	Cooling SEER:	
		Cooling Degree Days:	0
# of Bedrooms:	10.0		
Volume:	62163 ft3	Ventilation Weather Factor:	0.95
Surface Area:	8818 ft2	Energy Climate Factor:	20.0
Floor Area:	6245 ft2		
Design Winter Wind Speed:	9.0 mph	Design Winter Temp Diff:	69 deg F
Design Summer Wind Speed:	7.0 mph	Design Summer Temp Diff:	0 deg F

Comments

BUILDING LEAKAGE TEST Page 3

Date of Test: 2 May 09 Test File: glory hole

Data Points: Data Entered Manually

Nominal Building Pressure (Pa)	Fan Pressure (Pa)	Nominal Flow	Temperature Adjusted Flow	% Error	Fan Configuration	Baseline Std Dev (Pa)
-1.6	n/a					+/- 0.00
-50.0	157.8	5989	5875	0.0	Open	
-1.6	n/a					+/- 0.00

247 S. Franklin Street
Open 24 Hours a day
365 days a year
Food
Shelter
Hospitality

The Glory Hole 2011 Legislative Request

Summary of Work and Costs

Thermostat/Sensor System: $250

Insulate basement wall: $10,490

Replace existing doors: $1186

Insulate Slab: $1,804

Replace windows: $7,568

Electric 38 KW boiler and installation: $30,000

(Contingency: $12,500)

Total Cost: 51,298 +(Contingency: $12,500)

Savings Projections Estimate Without the Thermos

One Year: $4716

Four Year: $18,864

Eight Years: $37,728

Ten Years: $47,160

Other Reasons Summary

-Right now people can not breathe in the dorm at night unless the windows are open

-The air is not healthy

-People have to wear coats in the winter

-Wasting is horrible

-Undeniable environmental benefits

-Consistent with City, State, and National goals of energy efficiency

-Last major capital improvement to the building needed