

Solar Thermal System Summary

Live Green Apartments

622 Grand Ave, Saint Paul, MN

System

- 8 – 4 foot by 10 foot AET thermal collectors
 - On sunny summer days the system heats the water to 150-180 degrees.
 - On sunny winter days the system heats the water to 80-120 degrees.
- 2 – 120 gallon water storage tanks
- 2 – pumps
- 1 – double walled Flat Plate heat exchanger
- 2 – temperature sensors connected
- Installed October 2006



2006 Initial Payback Estimate

Initial Cost	(\$27,000)
Tax Credit (30%)	\$8,100
2006-2011 Depreciation Credit	\$5,300
Total after Tax Credits	(\$13,600)
Estimated Gas Savings (1,000 therms/year at \$1/therm)	\$30,000
Estimated Net Income in Year 30	\$16,400
Estimated Payback Period	14 years

Actual Gas Usage Numbers for June through September 2004-2013

Year	Days	Therms	Therms/Day
2013	121	182	1.5
2012	123	184	1.5
2011	121	142	1.2
2010	121	197	1.6
2009	119	155	1.3
2008	121	161	1.3
2007	123	187	1.5
2006	122	546	4.5
2005	122	630	5.2
2004	122	801	6.6



Estimated Therms Saved per Year

	therms saved per day	days	total
Summer Savings	4	122	488
Winter Savings	0.5	90	45
Fall/spring Savings	2	153	306
839 therms per year			

2014 Revised Estimate on Payback

Repair Costs: broken controller (\$225), panel leaks (\$1,500), undersized expansion tank (\$890)	(\$2,615)
Projected Savings if regular water heater lasts 30 years instead of 15 due to less use.	\$7,000
Estimated income from reduced vacancies over 30 years.	\$18,000
Gas Savings – 840 therms at \$0.85/therm (Cost has gone from \$1.08 down to \$0.73/therm)	\$21,420
Estimated Future Repair Costs	(\$10,000)
140 tons less carbon dioxide pollution over 30 years.	Unknown
Estimated Net Income in Year 30	\$20,205
Estimated Payback Period	12 years