

# Houston Cool Metal Roofs

THERMALLY-ENGINEERED ROOF SYSTEMS FOR THE TEXAS CLIMATE

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## Evaluating A Cool Roof As An Investment

### A Risk-Free, Tax-Free, Inflation-Proof Investment That You Can't Find On Wall Street



What would you say if your stock broker called you one day and said that he had a risk-free, tax-free, inflation-proof investment that payed you at least 8% per year for next 30+ years?

If you have followed the financial markets over the last decade you would probably laugh at him and say that an investment like that doesn't exist.

Well I'm here to tell you that it does exist, and it's not some form of credit default swap or opaque financial instrument that is doomed to blow up the next time the stock market hiccups.

What is this miraculous investment? It's the roof over your head.

### A New Perspective in Investing

With the stock market virtually where it was a decade ago, and government treasury bonds paying next to nothing, many people are looking for alternative places to invest their money. One

alternative that is growing in popularity, and for good reason, is what's called a "cost-of-living investment."

With consumer and energy prices rising steadily, a cost-of-living investment puts money to work with the goal of saving money, rather than making money. The return on this type of investment (ROI) is defined by how much money the investment can save you on living expenses.

Unlike normal capital gains, the savings generated from these type of investments cannot be taxed, and in some situations the right investment may even earn you a tax credit.

### **Investing in Energy Savings**

The best type of cost-of-living investment is one that saves energy. Making your home more energy efficient is a great investment in protecting your purchasing power from the effects of inflation.

Historically, the cost of electricity has risen at 4% a year, which means that the return on an investment that reduces your electric bill also grows at 4% a year. This can really add up, as you can see in the example below.

“ Suppose that you could save 5000 kilowatt hours (kWh) per year by making your home more energy efficient. Today, priced at 12 cents per kWh, saving 5000 kWh of electricity saves you about \$600 this year.

But, with the price of electricity compounding at a 4% annual rate, reducing your energy usage by 5000 kWh ten years from now, saves you \$850 that year. In twenty years, you will be saving \$1,264 per year, and in thirty years, over \$1,800 per year. In total, over 30 years, reducing your energy usage by 5000 kWh per year, saves you over \$32,000.

That's an attractive return on a risk-free, tax-free investment.

### **A Cool Roof Investment For The Hot Texas Climate**

One way to save money on your electric bill in the hot, humid climate of Houston is to reduce your need for air conditioning. During the scorching summer months here, air conditioning can account for up to 80% of your electric bill.

An easy and cost-effective way to reduce the need for air conditioning and lower your electric bill is to replace the roof on your home with a thermally-engineered cool roof. Properly designed and constructed, a cool roof can dramatically reduce the amount of the sun's heat that is absorbed by your home and take a huge load off your air conditioner. (To learn more about how the cool roof works to lower solar heat gain in your attic and home, please see: [A Cool Roof Design for the Hot Texas Climate](#))

### Example Cool Roof Investment

To give you an idea what a good investment a cool roof can be, let's take an average 2400 square foot home with a 3000 square foot asphalt shingle roof as working example. Below is a table showing the typical monthly utility costs for this home.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Utility Bill \$	\$100	\$100	\$165	\$190	\$220	\$270	\$280	\$300	\$290	\$220	\$165	\$100	\$2,400

From the table above, we can see that annual utility bill for this Houston home is \$2,400.

Next we need to determine how much of that \$2,400 a year goes towards air conditioning the home. In the table below, the cooling load is expressed as a percentage of the monthly bill and will range from 0% for the winter months, up to 80% in high summer.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Utility Bill \$	\$100	\$100	\$165	\$190	\$220	\$270	\$280	\$300	\$290	\$220	\$165	\$100	\$2,400
% for Cooling	0%	0%	30%	50%	65%	70%	75%	80%	75%	60%	30%	0%	
\$ for Cooling	\$0	\$0	\$50	\$95	\$143	\$189	\$210	\$240	\$218	\$132	\$33	\$0	\$1,310

So out of that \$2,400 annual electricity bill, \$1,310 (~55%) is spent just to cool the home.

Because a roof comprises the majority of a home's surface area that is exposed to the sun's heat, and also because air conditioning duct work typically runs through the hot attic space, it is reasonable to estimate that 65-70% of the total cooling load of the house comes via the roof. It follows, then, that solar heat gain originating from the roof is responsible for \$850-900 of the \$1,310 annual cooling bill.

Replacing the asphalt shingle roof on this example home with a properly designed cool roof can cut the solar heat gain from the roof by over 70%. This translates into a yearly savings on the electricity bills of \$600 for this home. This may not sound like much at first, but with the price of electricity rising by 4% a year, the savings can really add up fast, as we saw in the example above.

## Calculating Return on Investment

To calculate the ROI on a cool roof investment for this house, we first need figure the total savings generated by the cool roof over a period time. Even though a cool roof can last for over 50 years, most people wouldn't stay in a home for over 30 years, so we will use that for the time period in our calculations.

The tables below show the expected savings in electricity bills that a cool roof can provide for the 15 and 30 year time periods, incorporating a 4% annual utility inflation rate.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
<b>Savings \$</b>	\$596	\$620	\$644	\$670	\$697	\$725	\$754	\$784	\$815	\$848	\$882	\$917	\$954	\$992	\$1,032	<b>\$11,930</b>

Over 15 years, the cool roof can save almost \$12,000 in utility bills, and in 30 years the savings can exceed \$33,000.

	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30	Total
<b>Savings \$</b>	\$1,073	\$1,116	\$1,161	\$1,207	\$1,255	\$1,306	\$1,358	\$1,412	\$1,469	\$1,527	\$1,589	\$1,652	\$1,718	\$1,787	\$1,858	<b>\$33,418</b>

We also need to consider the cost of at least one replacement asphalt shingle roof over the 30 year time period. At a minimum cost of \$7,500 (this may be more like \$10,000 a decade from now), we can conservatively estimate the total savings (return) for a cool roof investment for this house at \$40,000.

The installation of a thermally engineered cool roof will typically cost about twice as much as an ordinary asphalt shingle roof, or about \$15,000 for this example home. To calculate the ROI for this investment we use the following formula:

“  $(\text{gain from investment} - \text{cost of investment}) / \text{cost of investment} = \text{ROI}$

So let's plug in the values:  **$(\$40,000 - \$15,000) / \$15,000 = 166\%$  Return on Investment**

That's a significant return, but to make it easier to appreciate, let's calculate the annual rate of return for this investment as that is how most traditional investments are evaluated. To calculate the Annual Rate of Return (ARoR) we'll use the following formula:

“  $\text{gain from investment} / (\text{cost of investment} \times \text{total years}) = \text{ARoR}$

Doing the math gives us:  **$\$40,000 / (\$15,000 \times 30 \text{ years}) = 8.8\%$  Annual Rate of Return**

An 8% return on a risk-free, tax-free investment? That's literally outstanding, as it's not something you are going to get from your bank or stock broker. The safest investment that Wall Street can provide is the 30-Year U.S. Treasury Bond that is currently yielding about 3%, and you have to pay federal income taxes on its interest income.

The choice is clear-cut, especially if you are going to have to replace your roof anyway. In that scenario, you are just spending about \$7,500 more for a cool roof that is going to save you \$40,000 over the next 30 years. That's a whopping 17.7% Annual Rate of Return on the extra \$7,500 that you spent on a metal roof which will last far longer than you will probably own your home!

### **But What If I Don't Live In My Home For 30 Years?**

Just because you might not live in your home for 30 years doesn't mean that you can't profit from a cool roof investment.

First, it is quite common to recoup most of the money invested in a metal roof by an increase in resale value for your home. In the southern states, the average increase in resale value is 87% of the metal roof's cost. So, even if you sold your home in next few years, you're still likely to break even on a cool roof investment. In the meantime, you can sleep well knowing that your air conditioner won't be running all night trying to remove the heat that a typical asphalt shingle roof is pumping into your home.

Second, if you expect to live in your home for another 15 years, a cool roof could save you nearly \$12,000 on your energy bills and on the cost of a replacement asphalt shingle roof during that period. Add those savings to the increase in your home's resale value, and you have a roof that pays for itself twice over.

## Conclusions

Well, I hope this article has helped you to see the financial advantages of investing in a cool roof for your home. Not only do you get a roof that protects you from extreme weather conditions like drought, wildfires, and hurricanes, but you also get a risk-free, tax-free, inflation-proof investment that outperforms anything like it on Wall Street.

So don't call your stock broker the next time you want to invest your money, call a cool roofing contractor.

## Get A Free Quote

If you live in the Greater Houston Area and would like a free quote for a new roof from us, please call Patrick Bulot of South Shore Roofing at **(832) 640-7986** or use the email below:



## The Man Behind the Texas Smart Roof™



## A Cool Investment



My dream of the Texas Smart Roof™ would have never been realized without the hard work and know-how of one man, Patrick Bulot. Pat is truly a mechanical genius. He is also very down-to-earth and easy going. A man with this combination of character and ability is pretty rare these days, so I'm happy to be able to call him a friend. I ...

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### Cool Roofs and Climate Change Article

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Ted Hesson, a reporter with the National Journal, recently did an article featuring the cool roof system of Patrick Bulot. The article discusses adaptations to climate change and you can read it on The Atlantic website here. It should be mentioned that there was some important information left out the of ...

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