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## Can installation of solar hot water system be a DIY project?

**Question:** Based on our water bills, my family uses lots of water and much of it is probably hot water. Is there a simple solar hot water system design that I could build myself?



**James Duiley**  
Sensible Home

**Answer:** Heating water can account for a significant portion of your monthly utility bills. It can be 20% for the typical family of four. Gas water heaters are less expensive to operate than an electric one, but they also cost more initially to install.

Before you consider using solar or any other efficient water heating methods, install low-flow showerheads with shut-off tickle (lathering) valves. Also talk with your family about taking shorter showers. This not only reduces water heating costs, but it also conserves our fresh water supply.

Unless you are an accomplished craftsman who also understands plumbing, I suggest you make a simple batch solar water heater. This is called a passive system because the water moves through it due to the incoming line pressure or just temperature differences, yet it can be quite efficient and effective.

Trying to build an active system, with collectors on the roof, plumbing and control systems, and storage tanks is beyond the skill level of most homeowners. I am a design engineer and I don't think I could build a system from scratch for my own home.

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The simplest batch solar system is called a breadbox design. It utilizes a horizontal metal water tank inside of a box with a clear top. The sun shines in through the clear top to heat the water. Another slightly more efficient option uses a tall box tilted at an angle to face the sun. This allows the warmer water to be drawn first from the top of the tank.

You can buy a stainless-steel water tank especially designed for this application with the inlet and outlet water fittings. If you can find an old water heater which is not leaky, strip off the metal skin and insulation to use the inner tank. Paint it flat black to absorb more of the sun's heat.

It does help to insulate the solid sides and bottom of the box especially if you plan to use it most of the year. Very heavy insulation is not needed because the tank will not get extremely warm, especially if you are using hot water throughout the day. One-inch-thick foil-faced rigid foam sheets should be fine. Attach them inside the box so they reflect the sun's heat to the tank.

Install water valves and plumbing so the solar tank can be drained and bypassed during cold weather. Install heavy insulation around any exposed pipes and bury as much as possible underground.

JTHS-MIAMI, a Division of the MIAMI Association of REALTORS®

## MIAMI REALTORS® updated Southeast Florida 2024 Housing Outlook

With potential interest rate cuts in the second half of 2024 and given Southeast Florida's strong economic fundamentals, MIAMI REALTORS® Chief Economist Gay Cororaton still projects a sales recovery and sustained price growth in 2024, although at a more modest pace than projected in December 2023. The single-family market will outperform the condominium market in terms of sales and price growth.

South Florida – the coverage area being analyzed includes Miami-Dade, Broward, Palm Beach and Martin counties – home sales prices are expected to increase at a modest single-digit pace of 4%, revised downwards from the 5% projection in December 2023. The median single-family sales price is expected to increase 7% while the softer demand for condominiums/townhomes will hold down the price appreciation to a modest 1%.

### South Florida single-family market to remain a seller's market, condos a balanced market

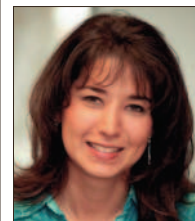
The decline in mortgage rates to below 7% in March 2024 from nearly 8% in October 2023 appears to have coaxed some homeowners to put their properties on the market. More supply could be unlocked as interest

### In Palm Beach County, new listings have increased for five consecutive months and are at pre-pandemic levels.

rates fall in the second half of the year. MIAMI REALTORS® expects the 30-year fixed mortgage rate to decline to 6% by December. More new home listings give buyers more choices in this high-demand market.

In Palm Beach County, new listings have increased for five consecutive months and are at pre-pandemic levels. Palm Beach total new listings increased 27.26% year over year in February, from 3,092 to 3,935. New listings in February 2020 were 3,917.

Months' supply is projected to average at four months in the single-family market and eight months in the condominium market based on market developments in January to February, with tighter conditions for single-family homes below \$400,000.



**Smitheman**

**Courtney Smitheman**  
2024 JTHS-MIAMI President  
MIAMI Association of REALTORS®

Crane Reed Properties, LLC  
561-301-0932  
csmitheman@crane-reed.com

**JTHS-Miami**  
2151 S Alt A1A, Suite 1100, Jupiter, FL 33477  
561-746-2707  
jthsmiami.com  
Office hours: 9 a.m.-5 p.m.

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