

1926 Burlington Ave N.

Historic Kenwood · St. Petersburg
2020 National Neighborhood of the Year

PEARL PLATINUM CERTIFIED · NEAR NET-ZERO ENERGY

High-Performance Home Feature Guide

A 1955 mid-century block bungalow, rebuilt from the inside out for comfort, healthy air, storm resilience, and ultra-low utility bills.

3	2	2,040	1955	Pool
BEDROOMS	BATHS	SQ FT	CONCRETE BLOCK	PRIVATE, SCREENED

FROM THE SELLER

Hi, I'm Adam. Thanks for checking out our home for sale.

This is a walkthrough of many of the important additions my wife and I made to this home since we purchased it in 2021. I'm a building scientist and energy modeling professional at Pearl. I started working in the green building space in 2004 and have been advocating for net-zero energy construction, sustainable materials, and indoor air quality ever since.

When we found this 1955 block bungalow in Historic Kenwood, we knew it had good bones and a central location, but it also had a long list of energy problems: leaky, single-pane windows, a 5-ton clunker of an AC, a gas water heater, and a scorching hot attic. Here's how we transformed this home over the past five years and why. Most of it you'll never see from the curb, but you'll feel it every single day if you live here.

PEARL SCORE

889 / 1,000

Platinum Certified

Typical U.S. home: 321 — This home: 889

Top 1% of homes in the 33713 ZIP code, with top ratings for Safety, Operations, Resilience, and Energy.

Pearl

Scan for this home on the Pearl Registry



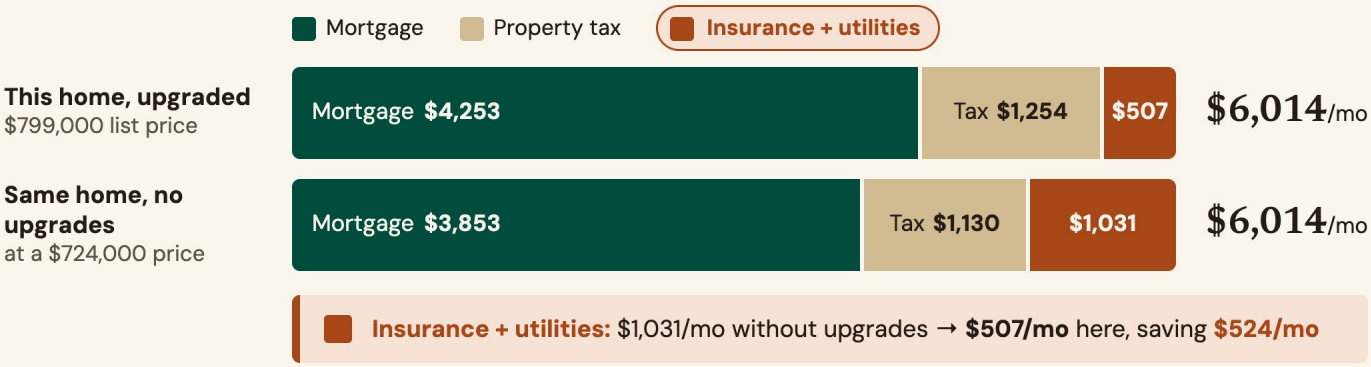
BEYOND THE LISTING

A Closer Look

LOWER TOTAL COST OF OWNERSHIP

These upgrades cut insurance and utilities by over $500/month on average

The savings covers roughly **$75,000** more purchase price, including the higher mortgage and property tax, at the same monthly cost.



Insurance + utilities: $1,031/mo without upgrades → **$507/mo** here, saving **$524/mo**

Insurance and utilities are seller estimates based on actual costs; yours may vary. Assumes 20% down, 7.00% fixed, 30 years; property tax at 2025 St. Petersburg millage with homestead exemption. Pool heating and EV charging not included.

Pearl's five performance pillars

Safety

EXCEPTIONAL

No combustion in the home, MERV 15 + UV filtration, fresh-air ventilation

Comfort

EXCELLENT

Variable-speed heat pump, dedicated dehumidifier, sealed and insulated shell

Operations

EXCEPTIONAL

Heat pumps for air, water, and pool; spray foam insulation; airtight shell

Resilience

EXCEPTIONAL

Impact windows and doors, metal hip roof, hurricane clips, 40 ft elevation

Energy

EXCEPTIONAL

9.76 kW owned solar, EV charger, whole-home energy monitoring

At a glance

Airtight: blower-door tested at 2.1 ACH50. That's in the top 1% in Florida.

All-electric: we capped the gas line. No gas bill, no connection fee, no combustion gases.

Solar-powered: an owned 9.76 kW system that produces nearly 12,000 kWh/year of electricity with a 25-year warranty, and no lease to take over.

Quiet: impact-rated Low-E windows and insulated doors take the highway from a roar down to a whisper.

Storm-ready: a metal hip roof, hurricane clips at every rafter, and high and dry at 40 ft above sea level. Best of all, no shutters to hang,

Healthy air: hospital-grade MERV 15 filtration, UV light, and air quality monitored around the clock for CO2, humidity, and other pollutants.

Low-maintenance yard: no lawn to mow. Just fruit trees and native plants, with a smart irrigation system.

"Labor of Love": we invested over $165,000 in these improvements plus hundreds of hours owner labor

For appraisers: the Pearl report includes the Appraisal Institute's Green and Energy Efficient Addendum (Form 820.05). Receipts for every improvement are available on request.

HOME INSULATION

Sealing the Envelope

2.1 ACH50
TOP 1% AIRTIGHTNESS IN FLORIDA

R-24+
SPRAY FOAM ON THE ROOF DECK

R-14
SEALED CRAWLSPACE CEILING

We ran a blower door test to check the airtightness of the house after the retrofit. It measured in at 2.1 air changes per hour (556 CFM50) – tighter than 99% of homes in Florida. In building science you always start with the envelope, because every system you put in later gets smaller, cheaper, and quieter when the house isn't leaking like a sieve.

Attic: from oven to conditioned space

What we found: whole sections of the 1955 soffits were open to the outside with nothing but bug screen over them, and nothing up high to let the heat out. On a still, humid August afternoon that attic was easily 130–150°F. Oof.

What we did: we removed all of the old soffits, repaired the structure, added hurricane clips (see Resilience), and installed new fiber cement (Hardie) soffits, then applied 6+ inches of Icynene open cell spray foam (R-24) right on the underside of the roof deck all the way to the soffits.

Why it matters: the ductwork now lives in an attic that's within a few degrees of the rest of the house, so the cold air you pay for actually makes it to the living space.

Crawlspace: sealing the floor from below

What we did: added closed cell spray foam (R-14) on the underside of the crawlspace ceiling. The crawlspace stays vented, the way this foundation was designed to work.

Why: honestly, the energy savings here were modest. But closed cell foam is an air AND moisture barrier, so it stops damp crawlspace air (and the occasional spider) from drifting up into the house. Big win on comfort and humidity.

Flex room: from porch to office or studio

What we found: the "bonus room" (called this because it couldn't count as conditioned space when we bought it) was an old proch that had been closed in, and the two wood-framed walls were the leakiest part of the house.

What we did: stripped the walls down to the studs from the outside, leaving the drywall intact (pic 1). We then filled the stud cavity with open cell spray foam (R-13), wrapped it in ZIP System sheathing (pic 2), and finished it with fiber cement (Hardie) siding (pic 3). As part of the duct upgrade (see HVAC), we also added supply ducts and a return, so the Flex room finally counts as conditioned space.

Why it matters: it's now a conditioned 360 sq ft room connected to the dining room and pool, with fire-rated siding that won't rot. This room has endless opportunities.

So why not insulate the block walls?

Believe me, I modeled it. Insulating the concrete block walls would have run around $18,000 and saved about $129 a year (roughly 800 kWh). That's a 100+ year payback. I could make up the same 800 kWh with 2 extra solar panels for about $800. And those block walls are pretty great just as they are: they're Class A fire rated, and they hold strong through hurricanes.



1. Flex room, stripped to the studs



2. Spray foam, then ZIP sheathing



3. Finished in fiber cement siding



WINDOWS AND DOORS

Keeping the Highway Noise Outside

Top 6%
FLORIDA HOMES, PER PEARL

100% impact
EVERY WINDOW AND ENTRY DOOR

~$29,500
INVESTED IN OPENINGS

The first time we walked into the house, you could clearly hear the roar of I-275 from the living room, and shutting the front door didn't change a thing. The original single-pane metal windows barely closed, so I knew they needed to go. We have replaced every window and every entry door (about $29,500 all in), and now when you close the door, the highway fades away.

Windows

What we did: ENERGY STAR certified, double-pane, gas-filled, Low-E impact windows with vinyl frames, installed 2022 (U-factor 0.30, SHGC 0.21).

The Low-E coating blocks about 80% of the sun's heat while still letting the daylight in. Hello, cooler rooms.

Impact rated, which means no more dragging plywood or storm shutters out of storage every time a hurricane shows up on the radar.



Original metal windows

Entry doors

What we did: Therma-Tru Pulse fiberglass insulated impact front entry door, ENERGY STAR certified (U-factor 0.19). Therma-Tru Smooth-Star impact-rated rear entry doors with full-lite impact glass and built-in blinds (U-factor 0.32).

Why fiberglass: it won't rot, warp, or rust in Florida humidity, and it insulates WAY better than wood or steel.



New impact doors with built-in blinds out back

What you'll notice living here

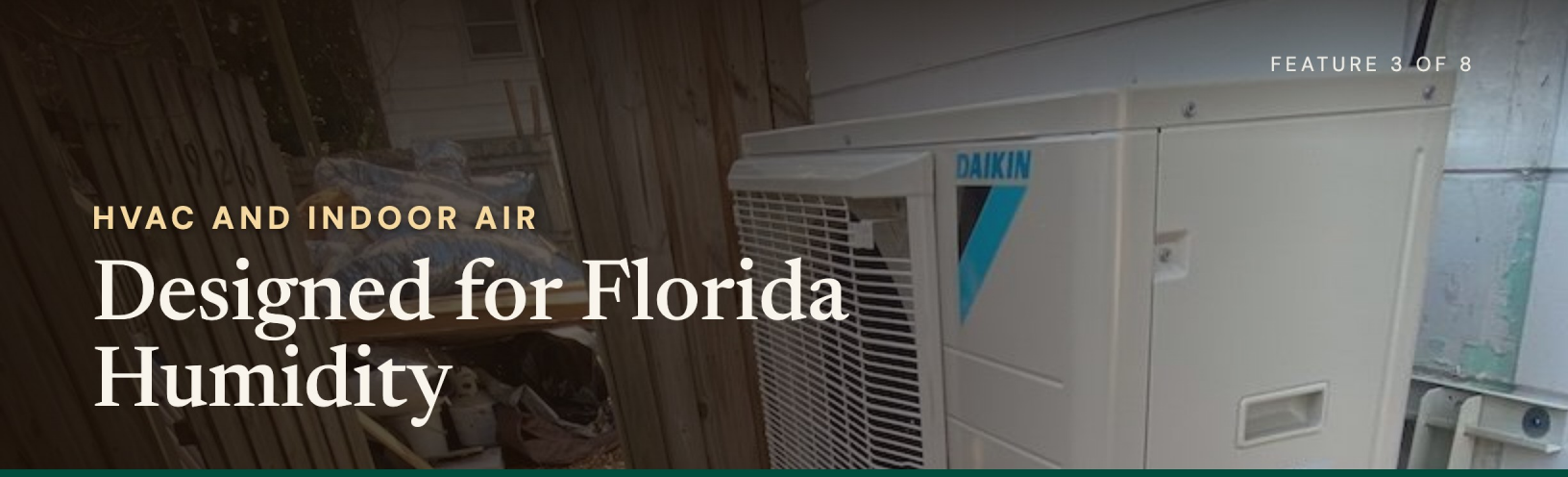
Much quieter inside
Laminated impact glass and sealed frames cut the highway noise dramatically.

Storm protection
Impact-rated openings hold up against wind-borne debris, with no shutters to install.

Fewer drafts, less humidity
New sealed frames are a big part of how the house hit 2.1 ACH50.

Cooler rooms
Low-E glass keeps solar heat out, so the heat pump runs less.

Insurance credit
Full opening protection on the wind mitigation inspection for hurricane insurance.



HVAC AND INDOOR AIR

Designed for Florida Humidity

5 tons → 3 tons
60% LOWER COOLING LOAD

MERV 15 + UV
HOSPITAL-GRADE FILTRATION

100%
DUCTS INSIDE CONDITIONED SPACE

The old system was a 5-ton monster cooling a house that, once we fixed the envelope, only needed about 23,000 Btu/hr instead of 53,000. That's a 60% drop. So out went the clunker (I don't think I've ever seen an air handler that dirty), and in went a right-sized 3-ton variable-speed Daikin heat pump with an automated indoor air-quality system built around it, for about $24,000 installed.

COMPONENT	WHAT IT IS	BENEFITS
Daikin Fit heat pump	Variable-speed inverter heat pump, 16.6 SEER2 / 8.2 HSPF2 (DZ17VSA361AA + DV36FECC14AA)	Runs low and slow for long stretches, so it's nearly silent and pulls a lot more moisture out of the air. Top 5% of Florida electric-heated homes.
Daikin ventilating dehumidifier	Whole-home dehumidifier (DV090) with MERV 13 intake filter and automated fresh-air damper	Brings in filtered fresh air and keeps humidity in check, even on mild days when the AC isn't running
MERV 15 filter	Daikin media filter, a hospital-grade rating	Catches the fine stuff: pollen, smoke, mold spores, most bacteria, and even COVID-19 pathogens
UV light	UV-C lamp in the air handler	Keeps the coil free of mold and biological gunk
Haven air quality monitoring	Haven air quality controller plus a separate bedroom CO2 monitor	Tracks particles, humidity, and CO2, and kicks on the fan or fresh air automatically only when it's needed. Prevents over-ventilating like most modern code ventilation.
New ductwork	All-new insulated ducts in the conditioned attic	100% of the ducts are inside conditioned space. The old flex ducts were crushed and even disconnected in spots. Not anymore.

Why this matters to you

In Florida, comfort is as much about humidity as it is about temperature. When we toured the house before buying, one of the first things I noticed was moisture damage around the entryway register. That's what an oversized, leaky system does. This one keeps the house cool and dry, with no musty smell, no sweating registers, and far less risk of mold.

HVAC AND INDOOR AIR

Engineered, Not Guessed

The old-school HVAC shortcut is 1 ton per 400 square feet which is almost always wrong. You have to account for insulation, air leakage, windows, and shading. We did it right and followed the ACCA design standards:

Manual J

Room-by-room heating and cooling loads, calculated AFTER the insulation and window upgrades.

Manual S

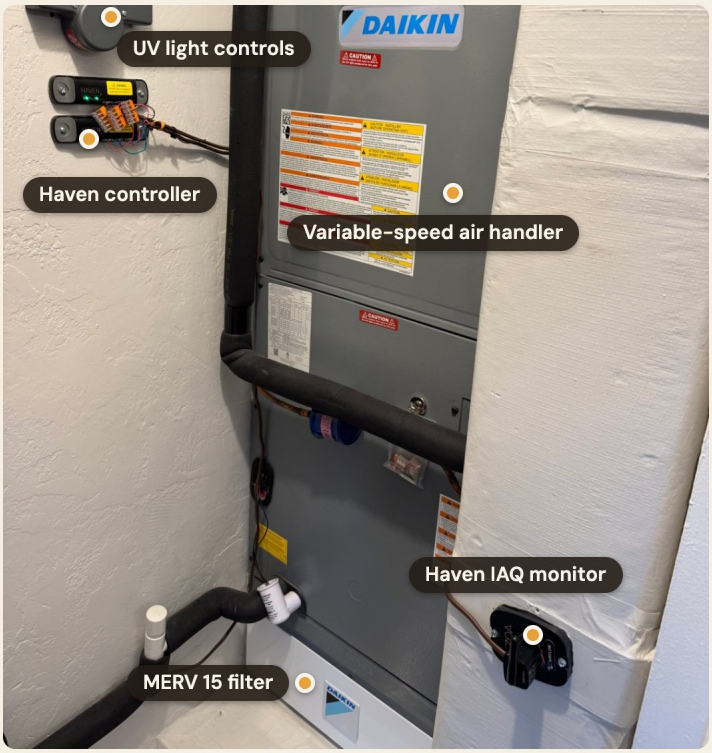
Equipment picked to match that load. An oversized unit short-cycles and leaves the house cold and clammy.

Manual D

Duct sizes and register locations designed so every room gets the air it needs.



Ventilating dehumidifier with the automated fresh-air damper, bringing in filtered outdoor air only when it's needed



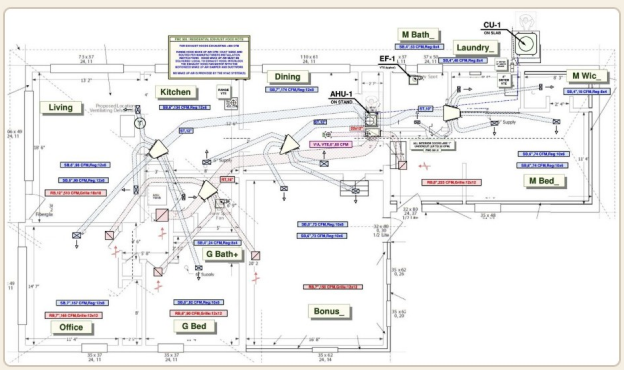
The mechanical closet: the air handler, filtration, and indoor air quality controls work together as one system



Before: the old air handler



Before: broken ducts in the old attic



The Manual J and D design: room loads and duct layout



LAUNDRY AREA

Hot Water from Sunshine

4.05 UEF	65 gallons	$0 gas bill
4× A STANDARD ELECTRIC TANK	HEATED MIDDAY USING SOLAR PV	GAS LINE CAPPED FOR GOOD

Tucked behind the barn door in the laundry closet, I found the dreaded tankless gas water heater. Long ago I actually used to recommend those as the most efficient option (we all make mistakes). But heat pump water heaters changed the game, and I didn't want anything burning fossil fuels inside our house, so out it went. Its replacement is 4 times more efficient than a standard electric tank (5 times more efficient than the tankless water heater that was there before), and we were able to cap the gas line.

Rheem ProTerra heat pump water heater

What it is: a 65-gallon, ENERGY STAR certified Rheem heat pump water heater (XE65T10H45U0).

How it works: it pulls warm air from the conditioned attic, moves that heat into the water, and sends back cooler, drier air. In Florida that means your water heater can double as a little dehumidifier. Pretty cool, right?

Solar timing: it's scheduled to heat water midday, when the panels are cranking out the most power. The big tank stores that heat, so it barely needs to run at night.

Thermostatic mixing valve: blends hot and cold so the water at the tap is the same temperature no matter how hot the tank gets. No scalding surprises, and the hot water goes further.

Smart controls: Wi-Fi controls plus leak and maintenance alerts.

ENERGY STAR washer and dryer

LG front-load washer (WM3500M): about 20% less energy and 30% less water than standard models.

LG electric dryer (DLE3500W): about 20% less energy than conventional models.

Why it matters

Water heating is usually the second-biggest energy user in a home, and here it runs mostly on sunshine. Capping the gas line also got rid of about $300 a year in gas connection fees for gas that we barely used, plus we got rid of the only combustion appliance in the house. Winning!



SOLAR, EV CHARGING, AND MONITORING

Owned Solar That Comes With the House

9.76 kW	~12,000 kWh	25 years
OWNED, NO LEASE OR LOAN	PRODUCED PER YEAR	PANEL AND INVERTER WARRANTIES

Being the energy geek I am, the very first thing I did when we found this house was look it up on Google Sunroof. There were a lot of trees shading the roof, but just enough sun for me to dive in deeper. I knew I could get the total energy usage of the home down a lot, but the question was if I could put enough solar on the roof to cover that load after all improvements. Today a fully owned 9.76 kW solar system produces enough energy to cover most of the home's energy use for the year, except pool heating and EV charging. And there's no lease or loan to take over.

Solar PV system

	MAIN ARRAY (2022)	EXPANSION (JAN. 2023)
Size	8.28 kW	1.48 kW
Panels	Silfab Solar SIL-360	Silfab SIL-370NX
Inverters	Enphase IQ7PLUS microinverters, one per panel	

Total output needed: once the efficiency upgrades were planned, the model showed the house would need about 12,000 kWh a year, so we were able to get just enough out of it. Now a few more trees have come down and it's possible to add more panels to the south if so desired.

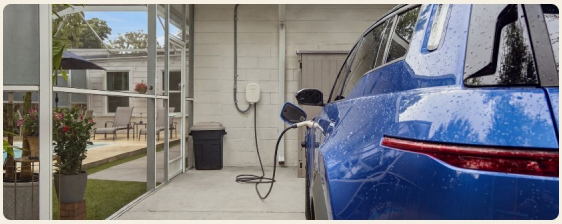
Owned and net metered: the utility is Duke Energy Florida, at about $0.21/kWh. Whenever the panels make more than the house is using, the extra flows back to the grid and earns bill credits at the full retail rate. Credits roll forward month to month, with an annual true-up.

Warranties: 25-year Enphase inverter warranty, plus a 25-year panel power warranty (82.6% output guaranteed at year 25).

Why microinverters: if one panel gets shaded by the oaks, or one ever fails, the rest keep producing at full output.

Panel upgrade: the electrical service panel was upgraded as part of the solar install.

Why no batteries: at the time, batteries were still on the expensive side, and really only helped if the power went out, which wasn't that often. Today, batteries are much cheaper and you can enroll in time-of-use programs with Duke where the financial savings from batteries are substantial. It's easy to add batteries to this system, as Enphase is offering special deals for integration with their systems.



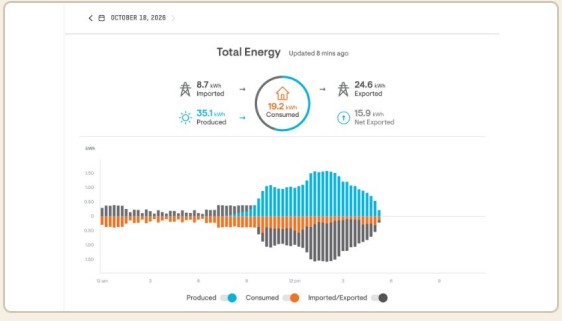
Emporia Level 2 EV charger

Emporia EV charger

ENERGY STAR certified Level 2 charger, installed December 2022. Faster than a standard outlet, and it can be scheduled to charge from solar or overnight.

Emporia Vue energy monitor

Circuit-level monitoring of more than 75% of the home's electricity use. It shows live solar production and what each major appliance is using, right in a phone app. If an appliance starts acting up or something gets left running, you'll see it here long before it shows up on the bill. (Every house should have one of these.)



Enphase solar monitoring app



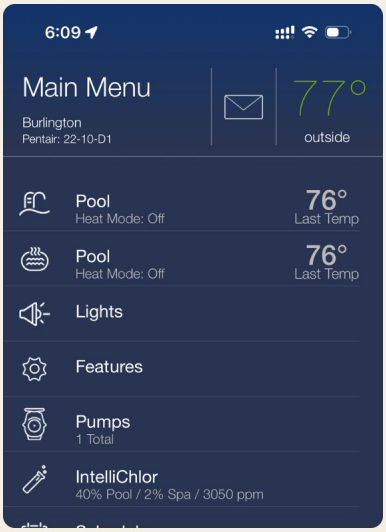
POOL

Private, Efficient, and Easy to Maintain

Screened	Saltwater	Heated	~$29,000
NO BUGS OR LEAVES	LOW MAINTENANCE	EFFICIENT HEAT PUMP	INVESTED IN UPGRADES

When we first saw the fiberglass pool in November, it was full of leaves and, honestly, kind of gross. Then I found the original 22-year-old single-speed pump and immediately remembered our contractors in Arizona joking about "drive-by energy audits": Does the house have a pool? Great, we can knock 30% off your electric bill. So we converted it into a private, screened, saltwater pool with automated, efficient equipment, about $29,000 in upgrades. It costs a lot less to run now, and it's a lot less work to keep clean… plus we now enjoy bug-free entertaining.

Screened enclosure	New hurricane-ready, vaulted screen cage over the pool and patio (2022). Privacy, no bugs, and no more leaves to fish out of the pool.
Saltwater system	Pentair IntelliChlor salt chlorine generator. Softer water, no buying or storing jugs of chlorine, no harsh chlorine smell.
Variable-speed pump	Replaced the 22-year-old single-speed pump with a new pump and filter. That old pump was one of the biggest energy hogs in the house. A variable-speed pump runs slower and longer and uses a fraction of the power.
Automation	Pentair IntelliTouch control panel with ScreenLogic. Schedule the pump, heater, and salt cell chlorination right from your phone.
Heat pump pool heater	AquaCal HeatWave electric heat pump pool heater, one of the most efficient pool heaters available. Swim comfortably from fall into spring. It moves heat from the air into the water using electricity, not gas.



Pool controls in the ScreenLogic app



The 22-year-old system we replaced



The new pool heater, filter, pump, controls, and salt cell.

Why it matters

In a lot of Florida homes, the pool equipment uses more electricity than anything except the AC. Here the pool runs on efficient, automated equipment. And the enclosure turns the pool and deck into an outdoor room you'll actually use year-round.



YARD AND LANDSCAPING

An Urban Food Forest

No lawn
NOTHING TO MOW

5 smart zones
WEATHER-AWARE IRRIGATION

~$19,000
PLUS MANY WEEKENDS OF SWEAT

We said goodbye to the lawn, and we don't miss it one bit. In its place: a re-graded lot that drains the right way, fruit trees, vegetable beds, and native Florida plants, all watered by an irrigation system that actually checks the weather. That's about $19,000 in landscaping, hardscaping, fencing, and irrigation, plus more weekends of our own sweat than we'd like to count.



Before: lawn



Drainage to the street



Hardscape going in



After: edible and native plants

Drainage first

We moved a lot of soil to regrade the lot so rainwater flows away from the house and all the way out to the street.

Why: keeping water away from the foundation and crawlspace means a drier house, fewer bugs, and a lot less worry during those afternoon summer downpours.

Healthier trees

We removed the invasive trees and had the mature oak canopy professionally trimmed.

Why: better spacing, more sun on the solar panels, and fewer big limbs hanging over the roof come hurricane season.

Hardscaping

Raised planting beds and paver pathways tie the whole yard together and make every bed easy to reach. Extended fencing created more private space in the yard.

Smart irrigation

Rachio 3 smart controller (WaterSense certified) running 5 zones with Rain Bird WaterSense sprinkler bodies and high-efficiency heads.

Tempest weather station right on site, feeding real rainfall, wind, and temperature data to the Rachio.

Why: it skips watering when it's rained (or is about to), and adjusts with the seasons, so the plants get what they need and not a drop more. Drip and micro-irrigation feed the beds.

An edible, native yard

No grass to mow, fertilize, or water. Mulched beds and a small patch of artificial turf out back instead. Fruit trees and vegetable gardens throughout the property, plus native Florida plantings for privacy and pollinators.

Fruits and veggies include: avocados, bananas, lemon, lime, mango, olive, passion fruit, pomegranate, mulberry, pineapple, papaya, blackberries, raspberries, ginger, turmeric, oregano, thyme, basil, parsley, lemongrass, lettuces, tomatoes, beans, zucchinis, and more.

RESILIENCE

Built for Hurricanes

Exceptional	Impact	40 ft	Hurricane Clips
PEARL RESILIENCE RATING	WINDOWS AND DOORS	ABOVE SEA LEVEL, FLOOD X	ON EVERY RAFTER

During the inspection we climbed into the attic and learned the roof rafters were only toe-nailed to the block walls. No "third nail," no hurricane clips. This wasn't common practice in 1955, and apparently nobody thought to add them when the roof was replaced the year before we bought the house. Sigh. So we fixed it. Between the block walls, the metal hip roof, the new clips, and impact protection on every opening, Pearl now rates this home's Resilience as Exceptional. The result: WAY cheaper property insurance and peace of mind when the big one finally makes its way to St. Pete.


Old vented soffit


Old soffits off


New hurricane clips at the rafters


Reinforced soffit bracing

FEATURE	WHAT WE DID	BENEFITS
Metal hip roof	Installed 2020, about 5 years old	Hip roofs have no gable ends for the wind to grab, so they're the strongest common roof shape in a hurricane. Metal sheds wind-driven rain and lasts for decades.
Roof-to-wall connections	Hurricane clips added between every rafter and the top of the block walls	Helps keep the roof right where it belongs when the wind picks up
Soffits	Open, screened 1955 soffit vents replaced with solid fiber cement soffit, with the soffit bracing reinforced	Closes the openings where hurricane wind and rain love to get into an attic, and completes the sealed attic
Opening protection	Impact-rated windows and doors on every opening	Full opening protection credit on the wind mitigation inspection. No shutters to put up.
Concrete block walls	Original 1955 block, Class A fire rated	Stands up to wind, fire, and termites far better than wood framing
Elevation and flood	High-and-dry flood zone, about 40 ft above sea level; electrical panel elevated above base flood elevation	Lower flood risk, and flood insurance is typically optional rather than required

Staying comfortable when the power goes out

A tight, well-insulated house holds its temperature a lot longer than a leaky one. With the foamed attic, impact windows, and 2.1 ACH50 airtightness, the inside stays cooler and drier long after a storm knocks the power out.

Insurance

The roof shape, roof covering, roof-to-wall clips, and opening protection each get scored on Florida's wind mitigation form (OIR-B1-1802), and every one of them adds up. Buyers should ask their insurer to quote using the current wind mitigation report, which we're happy to share.