

# Hot, Humid Climate Region 40+% Energy Savings



## The Lisa Gail "Too"

### Port St. Lucie FL

Developer/Owner:	J. Cherry & Sons
Location:	Port St. Lucie, Florida
Building Type:	Single Family Detached
Building Size:	2,210 sq ft
	4 bedrooms, 2.5 baths
Price:	\$198,500
Status:	2 completed
SWA Contact:	Srikanth Puttagunta

What do you do when a builder is already producing efficient homes? Raise the bar, and look for ways to fool-proof the process. That's what CARB did with J. Cherry & Sons Home Builders of Port Saint Lucie, Florida. Cherry was already building high performance housing, but was interested in working with the Building America program to boost performance and gain a more competitive edge in their market.

In the fast-paced new construction market during this period, Cherry was successful at including many high-performance details in their standard specification package and educating their customers on the importance of those details. This strategy meant that attic insulation and HVAC efficiency were marketed in the same breath as double-coffered ceilings and a granite wet bar. The end result of that approach was that every new Cherry home included a propane-fired Takagi tankless hot water heater for heat and DHW and a SEER-14 air-conditioning system. CARB worked on optimizing the systems integration and quantifying the true performance of the system. CARB also worked with Cherry homes to ensure that the "basics" of building science (tight envelope and ductwork) weren't taking a back seat to "eye-catching" technologies.

### Integrated Heating & Hot Water

CARB did extensive monitoring on the Takagi-Aquecoil hydro-coil system. Testing showed these systems to be effective at providing simultaneous heating and hot water. The design of this system is important to ensure that the supply temperature rise is sufficient for a given climate.

Poor performance can occur if there is excessive air in the Aquecoil loop. To prevent this from happening, ensure that the air separator is always installed just before the inlet to the Aquecoil. The other recommendation is to design a plumbing manifold for all the valves and water connections. This will assure that the system is consistently installed in each home of a development and minimize installation time in the field.



### ENERGY EFFICIENT FEATURES

- Aluminum frame IG windows with Cardinal low-e<sup>2</sup> 140 (U-0.30, SHGC-0.25)
- 5.5" Icynene (R-20) with vapor barrier on roof deck
- 1" XPS (R-5) on interior of CMU block exterior wall
- Uninsulated slab-on-grade foundation
- Hydro-air heating system w/ tankless propane water heater (EF 85)
- Split-system air conditioner (SEER 17)
- Ducts in unvented attic
- Supply-only ventilation
- 100% compact fluorescent lighting
- Energy Star® Appliances



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