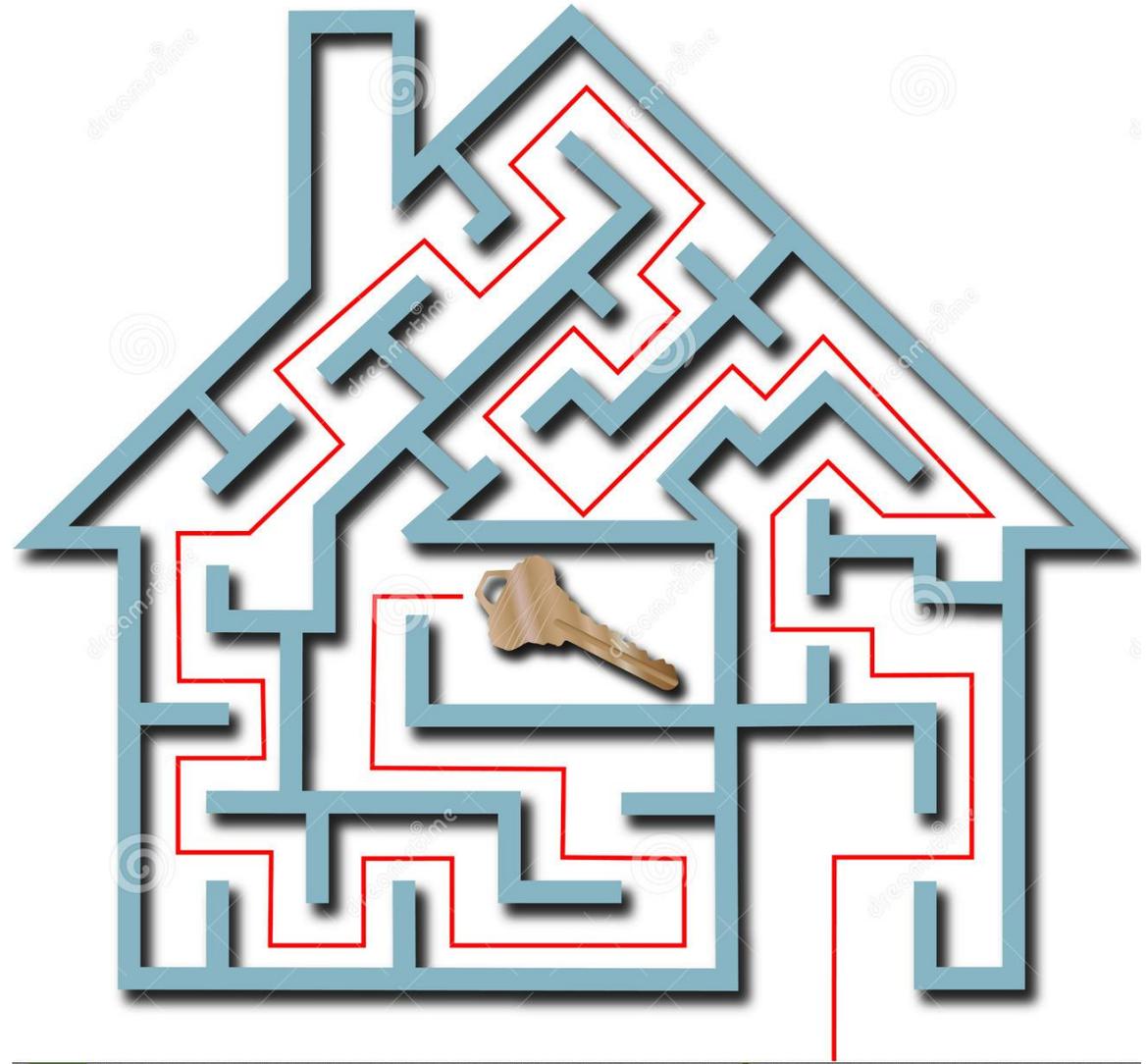


Navigating the Labyrinth to Build an Efficient All-Electric Condo in Camas, WA A Homeowner's Saga!

Graham Parker, Homeowner
and Efficiency Geezer



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Editorial Comments from an "Old Sage"

Alabama allows largest utility to increase 'solar tax' - guts state solar industry

Drought-stricken communities push back against data centers

As cash-strapped cities welcome Big Tech to build hundreds of million-dollar data centers in their backyards, critics question the environmental cost.



New Coal Plants Are Popping Up All Over Asia

By [Elicity Bradstock](#) - Jul 08, 2021, 4:00 PM CDT



Just five Asian countries are now producing the vast majority of the region's coal, with little intention of reining in production as several companies invest in new coal plants. According to a study released in June, China, India, Indonesia, Japan, and Vietnam are producing around [80 percent of all Asian coal](#), with plans to develop over 600 coal power units. Together, the projects are expected to produce around 300 gigawatts of energy.



Federal government proposes new energy consumption standards for home appliances

By [Kyle Benning](#) - Global News
Posted July 15, 2021 8:33 pm



Biden administration moves to reverse Trump-era showerhead rule

By [Kristen Holmes](#) and [Kate Sullivan](#), CNN
Updated 12:21 PM ET, Fri July 16, 2021



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Clean Energy

A Colorado Home Wins the Solar Decathlon, But Still Helps Cook the Planet

Air-source heat pumps perform well in cold climates. Why do they rely on a potent greenhouse gas?

"It's dire and it's only getting worse": California tourist town running out of water amid drought



Energy department targets Trump rollbacks on appliance efficiency

By [Rachel Fradin](#) - 06/03/21 12:00 PM EDT

12 COMMENTS

Air conditioner installations soar along with temperatures in Clark County

Local businesses see 'insane' number of calls during heat wave but cooling trend has been growing for years

By [Anthony Macuk](#), Columbian business reporter
Published: July 4, 2021, 6:05am

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Biden Administration to Impose Wave of Costly Regulations on Home Appliances

By [Ben Lieberman](#) - 06/17/2021

ENERGY AND ENVIRONMENT



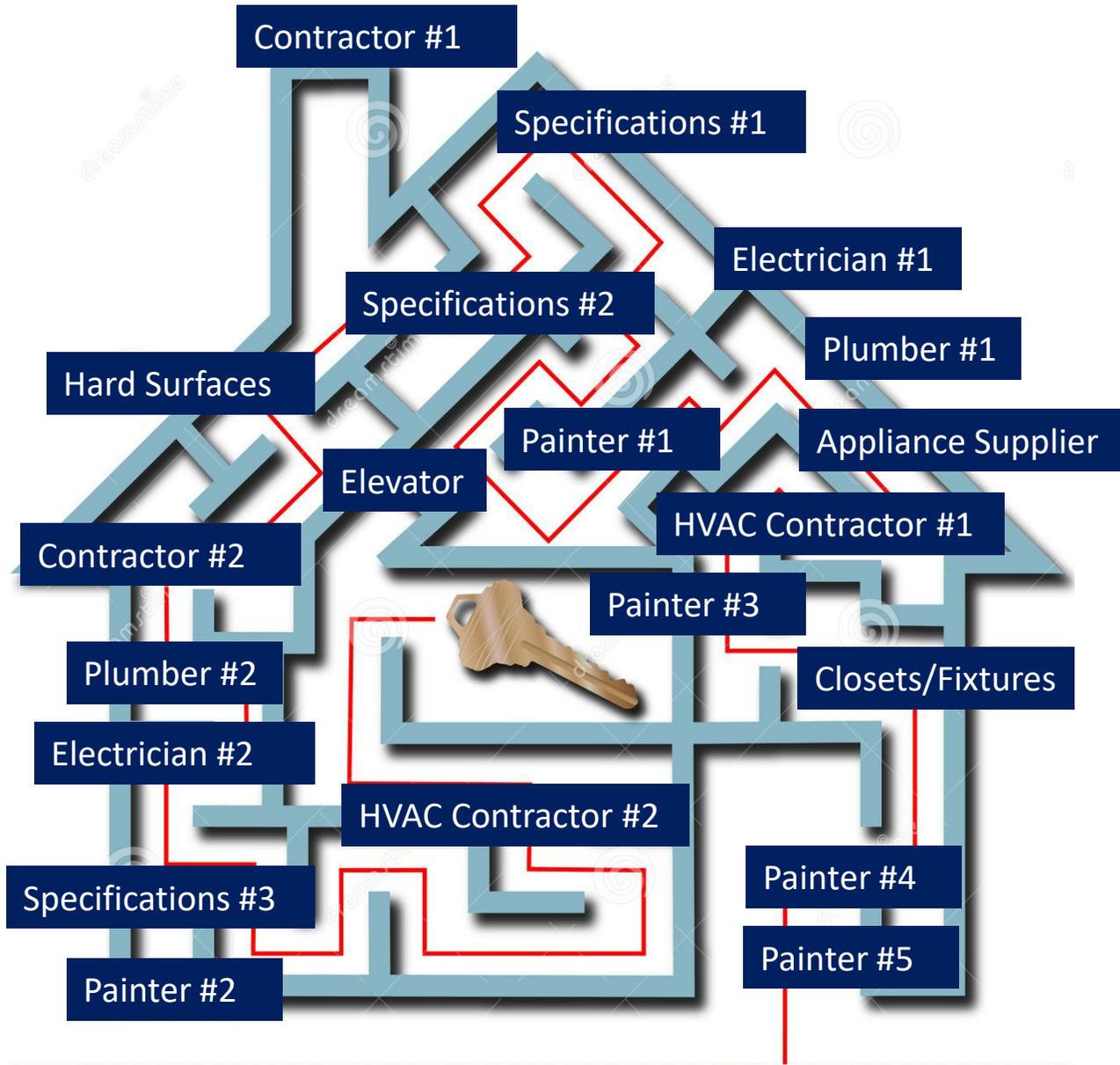
Part of dishwasher filter in male hand, cleaning service of home appliance dish washing machine inside.



Biden Re-Regulation of Household Showerheads Portrayed by Green Groups as Solution to Existential Threat

07/16/2021

The Biden administration today announced it's reversing the Trump administration's efforts to deregulate consumer showerheads. The Department of Energy formally started the process...



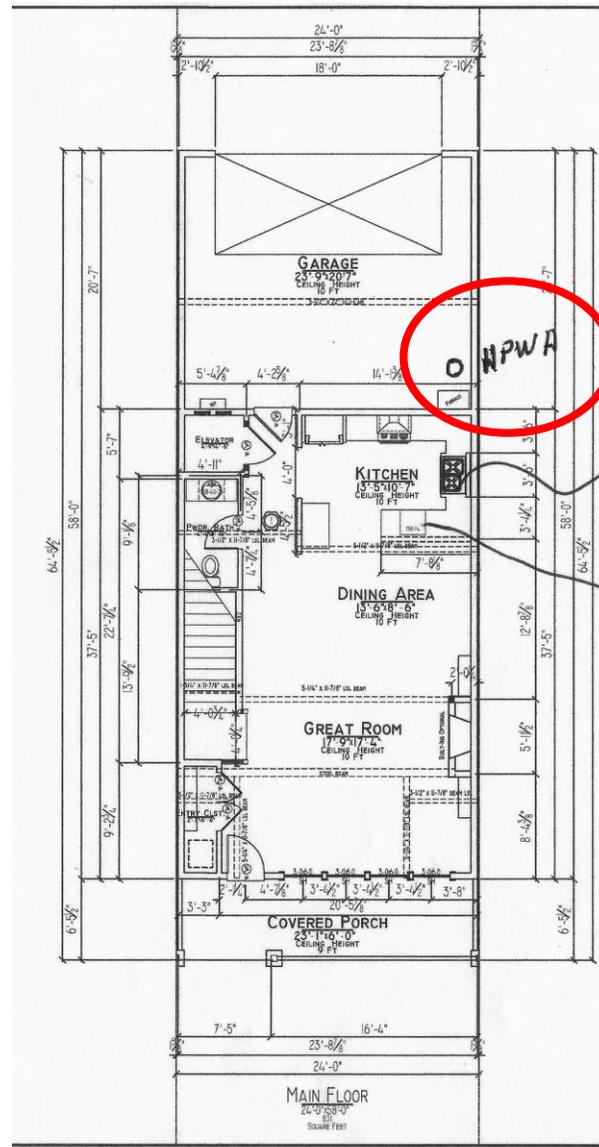
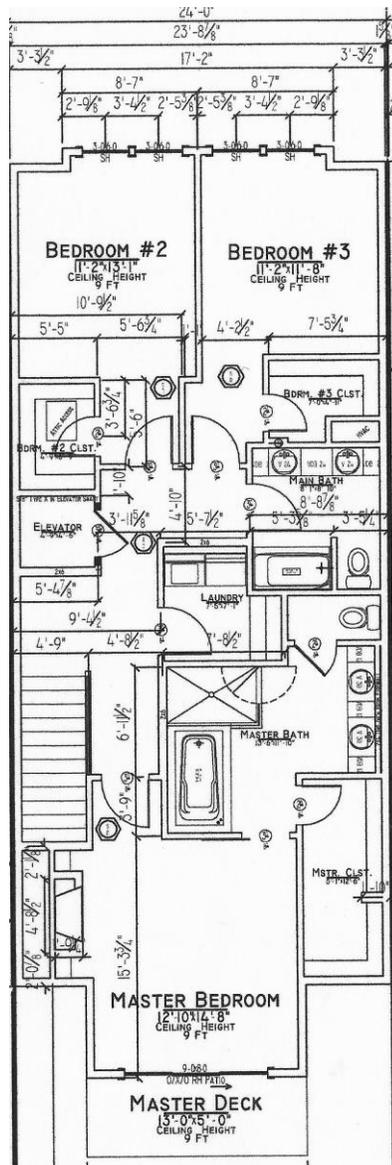
The 9 Month Walkabout at 2 Creeks



The Condominium

- 2- story 2100 square feet
- 3 BR/2.5 Bath
- 9 & 10 foot ceilings
- Double insulated sound walls; R38 ceiling/R24 walls
- Insulated ducting/PTCS®*
- Inside elevator (we ARE seniors!)
- Middle unit of a 3-unit complex
- Minimal glazing (S and N only)
- Black composition roof (ugh!)
- Insulated double garage door
- LED exterior and street lighting
- Clark PUD (8.7 ¢/kWh)

*Performance Tested Comfort Systems



Goals:

- As energy and water efficient as practical
- Pay attention to indoor air quality
- All electric
- Take advantage of utility and manufacturer incentives
- Work with realtor, contractor and subcontractors to minimize schedule disruptions to accommodate my requests
- Be an example and resource for other future buyers at 2 Creeks interested in efficiency



Reality:



Contractor resisted almost all suggested modifications from standard construction specifications...even if I was *more than* willing to pay for them (and I DID).

Subcontractors generally had same resistance mentality (see last slide).

I was considered 'odd' to shun natural gas HVAC and appliances.

Clark PUD incentives are not new construction **homeowner-**friendly.

Constantly changing base and optional specifications confounded ability to implement upgrades and modifications.

Constantly changing subcontractors was a communications nightmare.

Builder Specifications vs. Parker Specifications

Builder Specifications

- Code gas furnace + A/C with single speed furnace and standard stat. PTCS??
- Ply gem non-ES windows (met CA ES)
- Instant gas water heater
- Gas range
- Cans w/Satco LED bulbs throughout*
- Garage LED tubes
- Bedroom sliding patio door/side windows
- Non-sensor faucets/new WA code fixtures (1.2 gpm faucets/1.28 gpm toilets)
- 50 Amp breaker for EV charger!!!!
- Gas fireplace

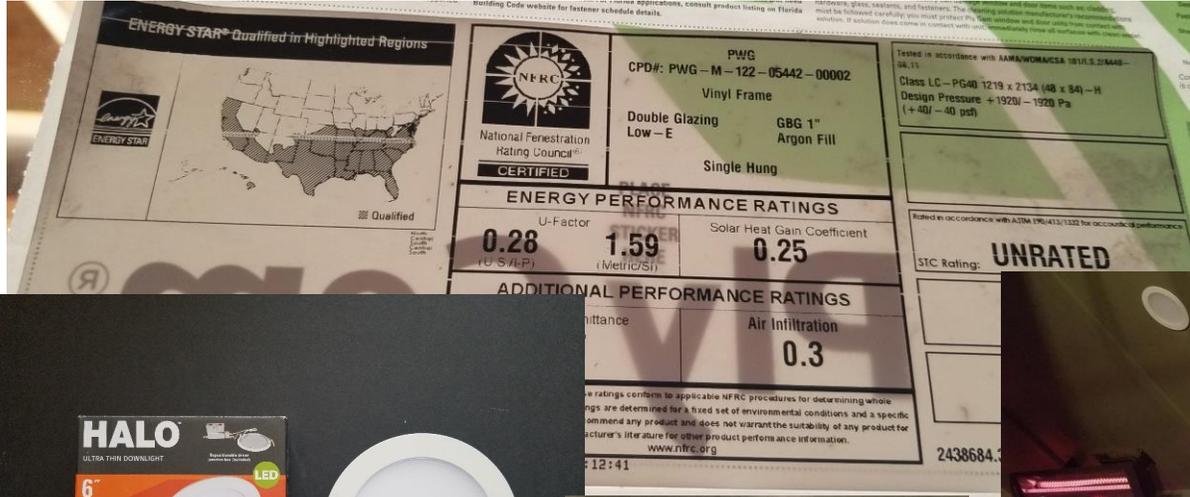
**Specification changed to Halo LED 'puck' lights*

Parker Specifications

- 17 SEER/13 EER/9.5 HSPF Heat Pump with V/S furnace and WiFi stat. PTCS
- NO CHANCE TO UPGRADE to ES as they **bulk** purchase
- A.O. Smith HPTU-50 N HPWH in garage
- LG Induction range
- Philips LED bulbs, panel LED laundry/master closet; 98% LED
- 2x4 panel LEDs
- French doors/no side windows (U= \sim 0.28)*
- Sensor faucets (bathrooms) + ACT I D'Mand hot water circulation pump + 'some' pipe insulation
- In the future...
- Capitulation!

**Design changed for future development construction to French doors for all units.*

Final Construction



The HVAC Saga

- Builder at initial meeting “unsure” if a heat pump could be installed, even though an A/C unit was standard!!. He did not comprehend my described background in building technology.
- HVAC contractor change meant re-specifying the unit (and different brand). Woeful communications...
- Heat pump installed was a ‘standard’ 14.7 SEER unit with variable speed fan that was incorrectly set up, an incorrect stat and unplugged condensate pump. An HVAC contractor golden sombrero.
- Correct unit was installed, manager set up furnace correctly and replaced the stat. *Somewhat* apologetic. This company will NOT do my maintenance work.
- And, still the standard whole house ventilation system was not explained to me and set to ‘auto’ without an outdoor thermostat to regulate when to de-activate. It was running when 85 degrees outside! It is currently turned off.
- Upcharge was ~\$4,600. ROI was not considered.

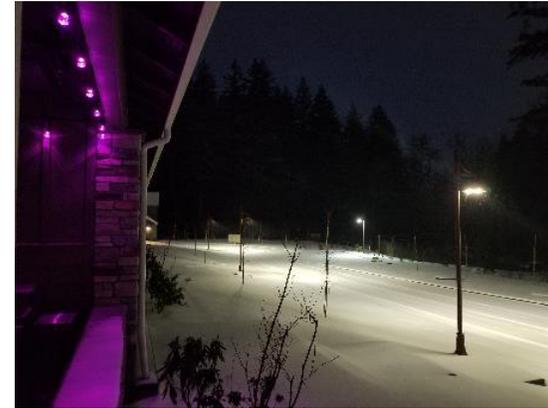


3820E00772		
PRODUCT NUMBER		
226CNA03600BAAA		
MODEL NUMBER		
226CNA036-A		
METERING DEVICE	TXU INDOOR	55 PISTON OUTDOOR
FACTORY CHARGED	11.20 LBS	R410A 5.08 KG
INDOOR TXU SUB COOLING	10 °F	
POWER SUPPLY	208-230 PH	60 VOLTS AC HZ
PERMISSIBLE VOLTAGE AT UNIT	1 MAX	197 MIN
SUITABLE FOR OUTDOOR USE		
COMPRESSOR	1	208/230 PH 60 HZ 16.8 RLA 75.0 LRA
FAN MOTOR	1	208/230 PH 60 HZ 1/12 HP 0.60 FLA
DESIGN/TEST PRESSURE	450 PSI	3103 KPA
HI	250 PSI	1724 KPA
LO	700 PSIG	4826 KPA
MAX DESIGN/WORKING PRESSURE		21.6
CIRCUIT AMPS		35 A
MAX CKT-BKR		230V



Heating Performance Metrics

- No supplemental heat.
- Thermostat set point at 70°F with overnight offset 2100-0500.
- COVID=Home a bunch, no company and no vacation!
- Water usage not as interesting, and besides, we save a 'boatload' of water by showing at the gym.



Month	kWh	HDD	kWh/HDD
November 2020	1088	346	3.1
December 2020	1191	397	3.0
January 2021	1431	395	3.6
February 2021	1318	409	3.2
March 2021	1008	363	2.7
April 2021	965	261	3.7
May 2021	720	171	4.2

Issues that Confound...and Continue to Challenge Home Buyers and our Industry...for nearly Half a Century

Builder did not care about efficiency beyond the standard package no matter how much I was willing to pay. Common with multifamily/condo construction.

Clark PUD provided \$300 rebate to *builder* for HPWH (but he did not care nor apply for it), but nothing to either plumber or buyer for high performance heat pump in NEW construction. Why?

Hot water supply from HPWH was not insulated in garage! Plumber also wanted to warn me that the HPWH may not keep up with demand and will be dumping cold air into the garage. I 'thanked' him.

Plumber questioned the location of the hot water circulation pump which is under laundry sink adjacent to my master bath. He had never installed one before...

I am the ONLY homeowner in 2 Creeks who has a heat pump or HPWH. The 'average' condo buyer here is not aware of the technology nor generally knowledgeable enough to specify.

Some (nothing
is new)
conclusions
from:

*Home Builders
Market
Research Report*

Prepared For NEEA
June 3, 2021

Expand ***education and training*** for key market actors about above-code practices and product plan measures by tailoring outreach materials to various points along the market actor journey. Equip market actors with resources to educate home buyers about the benefits of above-code homes and practices.

Work with ***utilities*** to incorporate rebates for product plan measures into their programs: 1) To mitigate affordability concerns, provide higher incentives for affordable housing projects or for homes where the area's median income falls below a certain level. 2) Consider ways for utilities to offer incentives to architects and builders to design homes that can accommodate super-efficient ducts and HRVs, such as through energy design assistance programs.

Consider conducting ***additional research*** with key market actors to address the following research objectives: 1) identify successful strategies for building above-code affordably; 2) investigate role of subcontractor influence on home building process and *how to influence subcontractors* to promote above-code measures; 3) explore ways to influence architects to design homes that can accommodate product plan measures.

