

Dry Cabins

By Art Nash

There are many terms for small, fully equipped residences. Several styles are all the rage in Alaska, and for good reason. This publication is about the “dry cabins” found throughout Alaska. A dry cabin is in many cases a typical home by function, which can be lived in year-round or seasonally. It is helpful to know how dry cabins compare to the other small homes.

For example, “tiny homes” are frequently small enough to be on wheels and pulled by a vehicle, though they are often built to stay in place. “Motor homes” have an engine and are designed to be road-legal vehicles. They can be purchased off the lot with every appliance and utility that a conventional home has, but with a footprint that is under 1,000 square feet. “Mobile homes” are much the same as motor homes except they are outfitted with residential 110-volt wiring and appliances rather than 12-volt vehicle wiring. Like tiny homes, mobile homes may have wheels or axles but lack an engine and require a separate vehicle to relocate them.

Dry cabins might seem the same as any of these types of small homes, but they are typically built outside of city limits. They often lack a well or septic system and are therefore “dry” because they don’t have a built-in water system. The following are common features to be aware of when contemplating building or living in a dry cabin.

Foundations

Most dry cabins do not have several floors, but they often have a second story loft. Popular sizes available through prepackaged kits from building supply stores throughout Alaska are 20x24 feet or 16x20 feet. The foundation may be cement slab, concrete masonry units (or CMUs), or pressure-treated wood.

A permanent dry cabin should be built on a foundation designed to accommodate the local soil conditions. For example, a pad and post foundation can hold the cabin floor three or more feet off the ground to keep permafrost soils of northern regions from

thawing, but it may also be fine for certain locations with flood-prone soils in coastal zones or river shores. Cabins built on the drier, nonfrozen soils of South-central Alaska or the Kenai might be better served by an underground foundation wall, resting below the winter frost line, with a concrete slab-on-grade floor. Speak with local building experts to determine the best foundation strategies for the potential cabin construction area.

Walls, Roofs, Floors and Sinks

A lack of well and city water means that dry cabins potentially have several unique aspects. Wall studs do not have to be cut into to accommodate PVC piping. P-traps, which are devices used to block the passage of sewer gas without hindering a sink or toilet’s outgoing discharge, are not necessary, and holes cut into the roof for the vertical venting of gasses are not needed. In any dwelling, the fewer cuts into studs and roofing the better, and the less connections of ABS and PVC piping that is hidden in walls, the less chance that an undetected leak will develop over time with potential moisture problems following.

Even without a pressurized water system in the cabin, water can be made available. A gravity system set up at a dry sink basin can feed spent water into an open bucket or closed jug. Be aware that if such a system is set up, it is likely that overruns and spills of water will occur. Thus, it is a good idea to consider putting a waterproof membrane such as Bituthene barrier under a basin/sink, or possibly even a roll-in shower pan if it fits. You do not, however, want to cover the entire floor underlayment with vapor barrier. When initially installing underlayment on new construction, use plywood rather than a chipboard or fiberboard so that in case spillage does occur, it is less likely to absorb the moisture.

Many dry cabins get water delivered into several hundred-gallon sealed poly tanks inside the cabin. They often utilize a 120-volt pump to deliver the water through piping secured on the exterior of the drywall. In certain

cities of Alaska, residents can get their own water in jugs to pack in many gallons of water. Extra interior floor space will need to be dedicated to storage of the tank or jugs so that it is warm enough to not freeze.

It may be beneficial to place water tank and exterior supply lines adjacent to the same interior walls of a particular room (bathroom, kitchen, utility room, etc.) so that if there is an outage you can heat a single room with auxiliary heaters and keep the walls warm enough not to freeze.

Ventilation

Another feature concerning moisture control is that since dry cabins are relatively small, many do not have mechanical ventilation. Standard homes often have an HRV unit and possibly ducting into parts of the home from the basement or crawl space. Residents of dry cabins often use passive tubes such as Fresh 80/Fresh 100 air inlets or new ceramic-cored heating tubes for ventilation. No fans are involved and incoming fresh air warms as it passes through a horizontal tube in the wall. Stale interior air flows in the opposite direction of the tube to exit the home.

One unintended ventilation avenue is often leakage through the top part of the roof when there is no second floor but rather a loft or cathedral ceiling. You will also want to make sure to have baffles for roof air flow and to separate the upward face of fiberglass insulation bats from the underbelly of the roof sheeting.

Lofts

If you do have a loft, there are several places in the cabin to create access from the ground floor to the loft while saving usable floor space. One method is to build a vertical ladder that ascends and is attached to the back end wall. This will require a cut square through the bottom of the loft to climb through. Depending if the wall above the first floor ceiling is perpendicular to the loft floor, rather than angled, you might be able to pop

up through the floor in the corner where the back end gable wall and the side wall meet. If this route is chosen, you can also slant a ladder from one corner to the other, diagonally, up the back gable wall. It is always possible to place a ladder at the front of the loft, but it may take up perfectly good floor space in the middle of the room.

On the outward-facing edge of the loft, you might consider making bookshelves as a safety boundary. And obviously, depending on space, dry cabins can have walls and room separation.

Utilities

Though dry cabins may have a nearby utility pole and meter on the property, the cabins often lack electrical access from utility services. If that is the case, you can certainly have a generator leading to 110-volt plug-ins outside or, in various parts of the home, for operating LED light bars or lighting ropes.

Toilets

One final issue residents of dry cabins grapple with is toilets. Outhouses are possibly an option if people are willing to clear a path and go out into the cold. If not, dry toilet options exist. Compost toilets may require a 110-volt electrical outlet and vent pipe to run a circulation fan in the toilet itself for driving off the moisture. Another option is putting in an indoor commercial toilet that has a separation bowl so that the moisture of urine can siphon off to a container, which can be emptied out individually. The dung can be composted outside of the cabin.

Conclusion

These are considerations, which may indicate whether dry cabins are an option for you. And while there is not a tight definition to differentiate what consists of a “home” in Alaska, it is clear that adequate ventilation and moisture control are very important. Be sure to seal well, circulate air and keep your place dry in any structure you plan to live in!

To simplify information, trade names of products have been used. No endorsement of named products by the University of Alaska Fairbanks Cooperative Extension Service is intended, nor is criticism implied of similar products that are not mentioned.

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