

Idaho Hilltop Residence

Musings By: T.M. Ciesla, 2007

Many factors impact the the design of a house, so considering a design/build project, I recommend folks spend time addressing the following issues before talking to a builder: budget(1), square footage, 1-story/2-story (or basement), style of home, and function (permanent, weekend, seasonal vacation). Here are some design issues to consider:

Site orientation

In colder climates, glass exposure should face south, while the north side of the structure has minimal glazing, and if possible, takes advantage of berms and tree lines to deflect and insulate from winter winds. For hilltop sites in this environment, the owner can take a variety of approaches as shown in Figure 1, Low slung on the hilltop, terraced down the slope of the hillside to minimize exposure to the wind, or the use of cantilver to extend the outdoor enviroment in a protected fashiion. Hilltop designs often favor arched or circular floor plan designs to maximize the view of the surrounding environment.



Figure 1

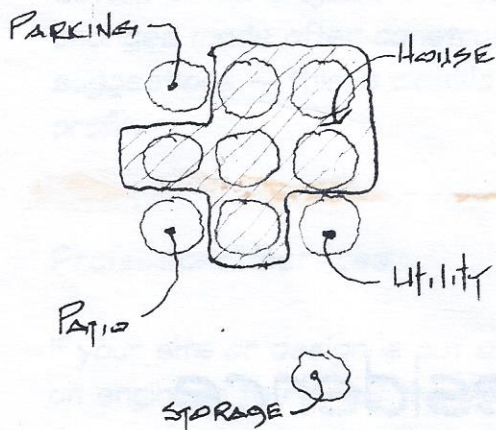


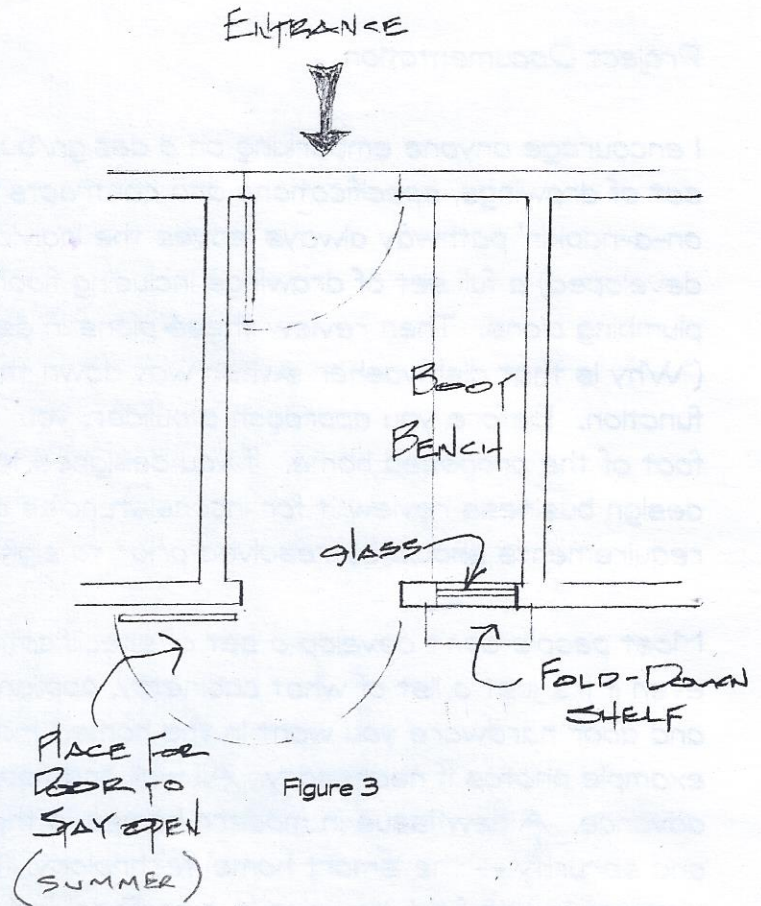
Figure 2

Site planning also includes consideration for ancillary functions such as parking, patio, utility, and secondary structures (pavillions, gazebos, firepits). With each of these, access in mild and extreme weather should be kept in mind. How easy is it to get to the well house in mid-winter? Is there room to pile up snow from plowing? Is the backup generator protected from the weather? Do I need fuel storage? Where should it be located? Should I build a greenhouse?

1. 'Budget' includes site improvements, utilities (septic, water well, power (on-the-grid/off-the-grid), site drainage, hardscaping, landscaping, access roads, trash containment/removal, and seasonal restrictions.

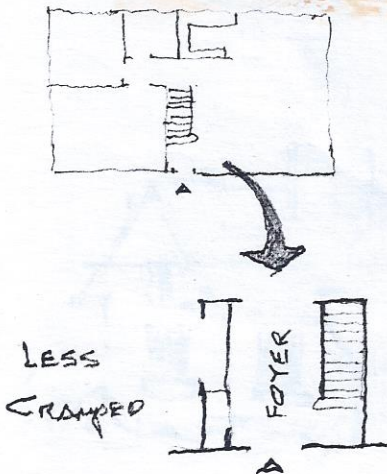
Airlocks & Overhangs

Wintry environments demand special attention when designing a home. To mitigate the amount of cold air entering a home, include an airlock as shown in Figure 3, to isolate cold air into the entry 'pocket', and provide a place for boots and coats to be stored. Overhangs should be large enough to keep snow away from the walls, windows and egresses, while allowing for sufficient winter sunlight to enter the home. This also applies to storage/recreation buildings that are used year-round. In addition, consider how rainfall and snowmelt will be drained away from the home.



Interior Design Issues

There's been increased emphasis lately on 'universal design' criteria --that is, small allowances that make a home suitable for the handicapped or children, while also making it more pleasant for the general population. This included ramps instead of steps, larger doors throughout the house, lower light switches, and showers that blend into the floor.



Try to avoid the temptation to use one room to access another, and don't scrimp on the entry - - incorporate a foyer if at all possible. It creates a welcoming environment and helps to direct the flow of traffic through the home. If at all possible, avoid hallways, but if you must have one, it should be no less than 3'-6" wide.

In severe climates, design the kitchen/pantry to be able to store enough supplies should access to town become difficult.

Project Documentation

I encourage anyone embarking on a design/build project to develop a comprehensive set of drawings, specifications and contracts before starting a project. The 'design-on-a-napkin' pathway always leaves the individual disappointed. Develop (or have developed) a full set of drawings including floor plans, elevations, electrical, HVAC, and plumbing plans. Then review these plans in detail to be sure there are no conflicts ("Why is that dishwasher switch way down there?"), or surprises in structure versus function. Before you approach a builder, you should be familiar with every square foot of the proposed home. If you designed the house yourself, have someone in the design business review it for inconsistencies or code violations. Grey areas and code requirements should be resolved prior to signing a contract with a builder.

Most people don't develop a set of specifications for a home project, but they should, even if it's just a list of what cabinetry, appliances, plumbing fixtures, lighting fixtures and door hardware you want in the home. Have everything in writing, and provide example photos if necessary. All wall and floor finishes should also be specified in advance. A new issue in modern homes is the integration of audio, video, computer and security -- the 'smart home' technology. Cost over runs and confusion are common in this field, so bring in a professional contractor to handle this area, and be able to explain your expectations.

When all parties are working from a common set of documents that spell out the details of the project, it minimizes confusion and cost over-runs. Never agree to changes made after construction begins. Never upgrade 'on-the-fly' based on builder suggestions -- this is classic "cost creep" -- costing you and increasing the builder's profit.

Professional Services

If your site or design is out of the ordinary, hire an engineer to review the plans to verify that the design is structurally sound.

If you intend to finish portions of the construction yourself to save money, be sure that this is clearly outlined in your builders contract.

