

# Design an Expandable House

## For Present Needs and Future Dreams

by Stanley Mazor

**Unlimited Publishing**  
Bloomington Indiana



Figure 1-1a: Normandy chateau, front view



Figure 1-1b: Normandy chateau, front view closeup

# Chapter 1 — Inspiration and Overview

After studying French in high school and taking several business trips and vacations in France, I became attracted to the remarkable architecture of the old chateaux. Some are true fortified castles, but many are just large villas. Since over 20,000 chateaux were built in France, they are relatively easy to locate; many have been converted to hotels or museums and are open to the public to visit.

Over the years I've collected books with photos and details of these big houses. One such book features the chateau shown in Figure 1-1a built in Normandy in the 17th century. It has a central foyer and two wings; there's a large tower on the left and a narrow, shorter tower on the right. It was constructed in at least two phases over a period of 100 years; the original architect planned a four-tower quadrangle structure, but only one tower was built because the owner ran short of funds. The article explains: "years later ... a second tower and wing were added".

These two towers provide visual balance, but the structure is not symmetrical, which sets it apart from typical neoclassical architecture of the period. However, the windows are placed symmetrically around the front door, as shown in the close-up photo of the entrance in Figure 1-1b. The article mentions that the house is a mere 16' wide; you can see directly through to the rear portion of the estate from the front windows and doors as shown in the photo. Although very narrow, the building appears to be about 150' long. This is an unusual footprint by modern standards. Today's houses are usually built more square to reduce the size and cost of the roof and foundation and to allow more circulation between rooms.

The floor plan of this chateau is not published, but the photos in the book show the interior of three rooms. Old castles often had few hallways; the rooms would simply abut one another. Given the slight 16' width of this building, it seems likely that it too was built without corridors.

The building's unusual shape caused me to wonder how the rooms were arranged. If you were to design a similar chateau with the rooms in a line, what would the floor plan be like? As a game, I tried to find a way of placing the rooms and started drawing some room arrangements on engineering grid paper. Starting with the garage on one end, I tried to put pieces of this puzzle together and wondered about building it in multiple stages. Is there a way to *grow this chateau* while minimizing the growing pains?

**Note to the Reader:** Figure numbers correspond to the opposing text page number.



Figure 1-2a: Taking measurements in Normandy



Figure 1-2b: Normandy chateau far perspective view

## **Normandy Search**

I soon wanted more information about this particular French chateau. The book mentions that it's near the city of Deauville, but does not identify its exact location. My sister Debi was going on a vacation to France. As a legal researcher, she's quite expert in getting information, and she volunteered to try to locate this chateau. Her friend Philippe, who owns an antique shop in Paris, was able to get the phone number for the Marquis mentioned in the book as the chateau's owner.

In August 1997 my wife Maurine and I booked a one-week walking tour of the Dordogne region of France. We extended this trip and spent a weekend on the North coast of France in Honfleur, Normandy, about 30 minutes from the Deauville chateau. Although it is a private residence, we phoned the Marquis, who speaks perfect English, and arranged a visit "just to take some photos of the exterior" — and to measure some of the chateau's exterior dimensions. Maurine acted as my measuring stick in a few of the photos, as seen in Figure 1-2a.

The building is about 15% larger than it appeared in the book. The left tower is about 30'; the wing between the tower and the central section is 33'; the center foyer section is 30' long. As shown in the photo in Figure 1-2b, the building is surrounded by a lovely moat, well manicured lawns, and sculpted hedges.

Our visit to France helped me complete my plans for a house that looks similar to the original chateau externally, but has a unique room arrangement and will be built in multiple phases. What began as curiosity about an article, became the starting point of my new dream house, which may someday become an inn.

My building's name, derived from the Normandy chateau and shortened a bit is "Herbe II." This book refers to the house simply as "Herbe" (pronounced "Herbie"). This book details the incremental design and construction of the first two phases of Chateau Herbe with Insulated Concrete Form (ICF) Styrofoam blocks in Ashland, Oregon.

I'll try to explain some of the options I considered and the final choices I made in the design and construction of Chateau Herbe. If you are considering a multi-staged house development, or using Styrofoam building blocks, you might gain some insights from my experiences.

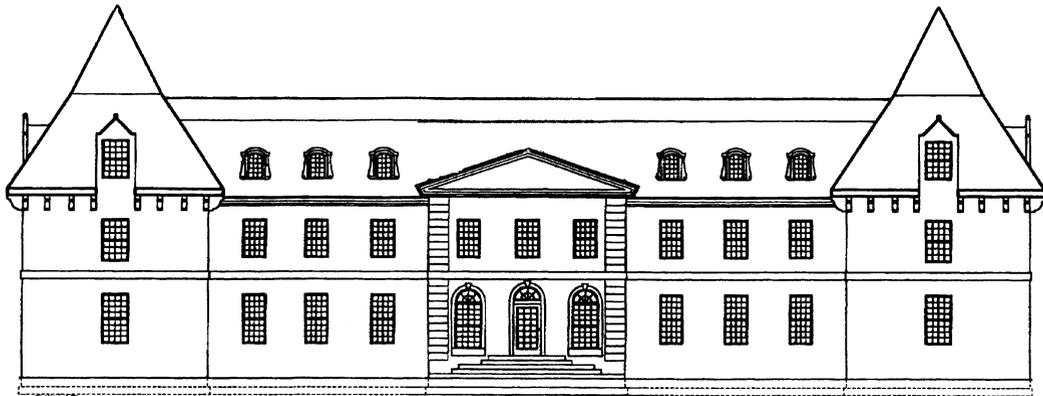
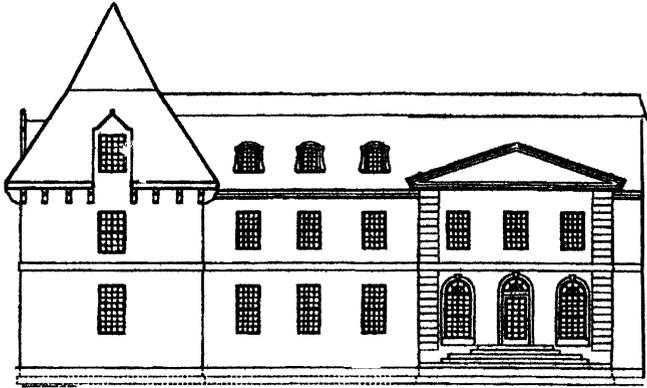
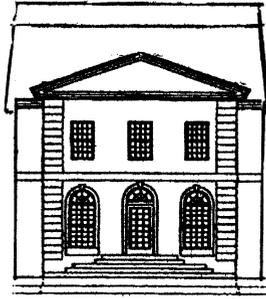
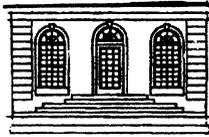


Figure 1-4: Chateau Herbe sequential front elevations

Figure 1-4 illustrates the front elevation view of Herbe as it expands in several construction stages. Several questions are inherent in multi-stage construction:

- How practical is the house at each stage of development?
- What has to be “thrown away” at each construction stage?
- How can plumbing, electrical, HVAC, entry, and stairs be placed ?
- Are the additions built horizontally or vertically?
- What are the extra costs of phased construction?
- How do the local building codes affect the project?

While your requirements may be very different from mine, this book’s explanation of the problems encountered, and how they were solved, may save some time and trouble on your own project.

The strategy of designing the entire building, then constructing it in stages, is similar to the way I’ve been designing computer hardware and software for over 40 years, using a method called “top-down design”. In the context of construction, the term doesn’t mean design the roof first, but to set overall project goals and include requirements in the original plan to enable the “grand” final result.

The opposite approach, “bottom-up design,” also came into play: designing in such a way that the component parts determine the final result. For example, specifying individual room sizes to establish the building’s footprint is a bottom-up approach. While an expandable design is best achieved in a top-down manner, that design should take full account of bottom-up issues — for example, my choice of building materials affected the stages in which Herbe would be constructed.

### **Multi-Phase Design — Possible Approaches**

I designed Herbe so it could be constructed in six (or fewer) phases, as shown in Table 1. What begins as a 500-square-foot, one-room cottage grows to a 7,800-square-foot, seven-bedroom house; the design is discussed in greater detail in Chapter 2. (For practical reasons, the construction of Herbe began with option 4.)

<u>Option</u>	<u>Size-sq. ft.</u>	<u>Stories</u>	<u>Configuration</u>
1.	500	1	cottage
2.	900	1	1-bedroom, 1-bath home
3.	1,350	2	2-bedroom, 2-bath home
4.	1,800	3	2-bedroom, 2.5 bath home
5.	4,800	3	5-bedroom, 6-bath home with garage
6.	7,800	3	7-bedroom Chateau Herbe

**Table 1: Six Construction Options**