Small Homes Council—Building Research Council, University of Illinois at Urbana-Champaign

PLANNING FOR MORE SPACE

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Twenty-five Cents
Planning for More Space

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Anyone that has ever done any work in the remodeling field will recognize most of these statements—"We want another bedroom," "We don't have enough storage space," "We need a family room or some place for the children to play". The best procedure to be followed in the search for additional space is for the owner to consult an architect. Such a procedure takes the builder out of the planning process and permits him to concentrate on his particular skill—building.

However, in actual practice, the architect is seldom consulted in small remodeling jobs; therefore, the builder is often required to provide a planning and design service. Perhaps some of these planning suggestions will be useful in meeting your needs.

The solution for any given "more space" problem will depend upon a number of factors, but the key factor question is "What kind of space is needed?"

Let us assume your family needs another bedroom. There are three routes to go on this type of problem. First, you may look for space that you can upgrade or convert into the desired bedroom space, or you may attempt to expand into an unused space such as an attic. Then, if these approaches are not possible, you may have to plan an addition to the house.

Sometimes conversion of space should be considered. In the average family, the greatest demand for bedrooms comes when the children are in their teens. It is desirable for children in this age bracket to have rooms of their own whenever it is possible, and, therefore, it may be necessary to find some extra space during this period. The fact that this time may be relatively short, in my opinion, justifies taking some measures that might not be considered expedient otherwise.

The garage is an area that is, in some instances, suitable for conversion. Technical Note 4 describes some methods of attaching wood floors to existing slabs—a technique very suitable for the garage conversion operation. A number of planning possibilities exist, and Figures 1 and 2 offer two ideas that might be useful. One of them incorporates a new rear entrance to the house as well as some outside storage, which would partially compensate for that loss when the garage is converted.

What happens to the car? In all likelihood it will be stored in the driveway on the outside, or it may be possible that there is space for a carport or garage along one side of the house or in front. Another possibility is that space between the side of the house and the lot line could be used for a driveway and a separate garage could be installed near the rear of the lot.

If a good, dry basement is available, suitable bedrooms can be constructed in this area. The biggest problem is light and safety. More adequate light and ventilation could be accomplished by introducing additional standard basement windows, but this does not solve the safety problem. Some means of exit other than the usual basement stairs should be devised. The basement can be upgraded and a safety exit can be achieved by introducing a more extended window areaway and larger windows as shown in Figures 3, 4, and 5. In essence, this upgrades the space a considerable amount because it begins to approach the quality of the lower level of a split-level house as far as light and access is concerned.

If the house was originally designed as a story-and-a-half house with expansion attic, you may consider finishing off the attic space for the extra bedroom that you want. You will have to check the suitability of the space. Some of the critical dimensions are shown in Figure 6. It can be seen that to get adequate room space, a fairly steep roof is necessary.

Another problem is the means of access to the upstairs. As the section in Figure 7 shows, a normal stairway takes up a considerable amount of space. If the house was planned for expansion there will be a space available for a stairway. The normal type of arrangement is shown in Figure 8. If there is a good
attic, but no space for adding a stairway within the existing house, an appended stair tower such as in Figures 9 and 10 may be the answer. The scheme in Figure 10 has the added advantage of providing a new separate rear entry which could be modified to incorporate a mud room. Also, the stair tower accommodates the upstairs bath, thereby eliminating the necessity for installing plumbing through the existing house. The tower, being narrow and tall, creates an unusual architectural effect, but, if properly handled, it can add pleasing individuality to the house.

Considering the scarcity of story-and-a-half houses built in recent years, it is not likely that you will have attic expansion area to provide the additional bedroom space. In that case, we must look elsewhere.

If it is impossible to meet your needs by conversion or expansion, then the possibility of adding to the
house must be examined. You may be able to add to either side, to the rear, to the front, or up and down, as indicated in Figure 11. The practical considerations will reduce these possibilities to a considerable degree. One of the problems is the lack of sufficient lot space; that is, the house may have already been built to the building lines at the side and at the front, and, therefore, the new space can not be added in those directions.

Another problem is the connection of any new elements to the rest of the house. In almost every instance, some existing space in the house will be lost in establishing a passage to the new elements. Extending services to the new addition may also be a problem.

Very often when we add new elements to the house, we will be covering up some windows or doors of the existing house, thereby creating a problem of obtaining sufficient natural light and ventilation in certain rooms of the existing house.

Finally, but not necessarily the least of the problems, is the method of roofing the addition. Sometimes this can be done with a simple extension...
of an existing roofing system, as in Figures 12 and 13; other times more complicated structures are required.

Now, let us look at some possible schemes for adding the new bedroom that you want. The easiest method of expansion is to go to the side, particularly where the main axis of the roof structure runs in that direction. Some space out of an existing room will have to be sacrificed in order to get a hall to the new room. In Figure 15, the hall was jogged so that the space came out of the larger of the two bedrooms. When adding to the side, it is almost as convenient to put in two new rooms as one because the roof framing is simpler. A design such as in Figure 16 might be used.

However, the number of times that additions can be made to the side is limited. One other possible means of extending the bedroom area is to add to the front, if space has been left between the house and the building line or if the zoning and building regulations can be amended for the addition. As a matter of fact, some breakup of the uniformity of the building fronts might add to the appearance of the neighborhood in some instances, particularly if the addition is well done. Figure 17 indicates how such an addition might be accomplished. Once again it is necessary to cut the hallway to the new addition from the existing bedroom. The roofing problem here can be most easily solved by a gable-end extension toward the street, as in Figure 14.

In the usual situation, the house has been built to the limits of the side yard and the front building line, and therefore the expansion must take place to the rear of the house. There are many possible methods of doing this. The simplest, of course, is somewhat similar to the expansion of the front shown previously. Once again, a hallway is cut out of an existing bedroom leading to the extension to the rear of the house, as in Figure 18. All of these arrangements make it possible to use the existing bathroom with the new bedroom. Sometimes when the new connecting hall is partitioned off, the remaining space is too small to serve as a bedroom. If this is the case, two bedrooms will have to be added in order to get the one additional bedroom that is required. The original bedroom, which has now become a hall with an alcove, might be used as a sewing alcove, space for a desk, or for some similar purpose.

There are means of connection other than through an existing bedroom. Some circumstances might dictate the removal of the existing bathroom and using this space as the access space to the added wing, as in Figure 19. Of course, this means that a new bathroom is required, and the expense of providing the new bathroom plus the removal of the old will usually argue against this system of connection. Nevertheless, there may be times when planning considerations dictate such an approach.

Another alternative is to use the present basement stairway as the access hall. In Figure 20, a new basement stairs is required, and to obtain this in the new structure it is necessary to do more excavation than might be otherwise desired. Once again, certain planning considerations might justify this approach to the addition.

One very intriguing method of adding to the house is the system that I have chosen to call a "satellite"
system. The basic idea, shown in Figures 21-26, is to build the new structure to the rear of the house and then attach it with a very simple passageway. This method has the advantage of completely separating the new structure from the old, thereby reducing the construction problems substantially. For example, the roofing of the new section can be planned independently of the existing house. Being very small, the connecting link can very often be roofed quite satisfactorily with a low slope or nearly flat roof as in Figure 22.

The satellite system also has a living or social advantage in some instances. It can serve to physically separate the generations. In the examples shown in Figures 21, 23, and 25, the satellite bedroom could become the parents suite, or grandmother and grandfather could be assigned to this unit. Obviously, the space use could be reversed; the teen-agers might find it very desirable to have their own wing of the house.

If building restrictions and lot use requirements prohibit the latter extension, there remains the possibility of expanding upward. (Excavating a basement under a house for a new bedroom does not seem to be a logical procedure, so I have eliminated such a plan.) The question is: “Should we raise the roof and add a second story to all or a portion of the house?” In addition to the same types of planning problems that occur with the attic expansion, there is the additional problem of how to build the second-story structure, such as illustrated in Figure 27, and particularly how to build it without exposing the house to rain damage. It is possible, of course, with truss roof construction, to lift off the roof as a total structure, store it temporarily on another part of the site, and then re-erect it after the new walls are built, as in Figure 28. The speed of this method may eliminate weather problems. In other cases, the new roof and wall structure is built above the existing structure; then the old roof structure is removed as in Figure 29.

There is an additional complication with the truss roof structure. Some type of central support for the second floor may have to be added, as is indicated in Figure 28.

Planning problems, construction problems, and weather problems all combine to make this method of expansion a difficult one. In addition, it is sometimes extremely difficult to arrive at a satisfactory architectural solution for this kind of an addition.

The second-story addition over a two-car garage offer some possibilities if the “satellite” type addition is acceptable. The problem of avoiding water damage in rebuilding a garage is not so critical, and the kind of structure that must be rebuilt is not as costly as the house structure; therefore, this solution may be very worthwhile.

So far we have been talking about bedrooms—now let’s speak about other spaces that might be desired by a family. Very often families express the desire for a “family room”, a “playroom,” a “recreation room,” or something of this nature.

If a house has a breezeway or porch, it may be very suitable for the type of expansion shown in Figures 30 and 31, or it is also possible to convert a garage into a family room.

Family rooms are frequently added to the rear of the house adjacent to the kitchen, as is indicated in Figure 32. Natural light for the kitchen has to be borrowed from the family room. Family rooms can also be added as “satellites.”
The playroom may also serve as the transitional element between a "satellite" bedroom complex and the original house. Another way of getting the family room or playroom is to make use of the existing living room of the house while erecting an addition to the house to provide a new living room. The first of the suggested schemes makes use of the breezeway as a new and enclosed entrance hall, and the new living room and the dining room extends to the rear. There is a second possibility where the side lot is limited and no garage or breezeway exists. The main entrance to the house can be transferred to the side—some architectural treatment should be developed to indicate clearly to the visitor the location of the new entrance. The original living room can now become the playroom, while the more formal portions of the house are to the rear.