

Bathroom Design

Balancing function, economy, and luxury

by Gordon F. Tully

No element in a house is harder to deal with than the bathroom. How private should a bathroom be? How many are needed in a house? What types of fixtures should one choose, and how should they be arranged? How small can a bathroom be and still work well?

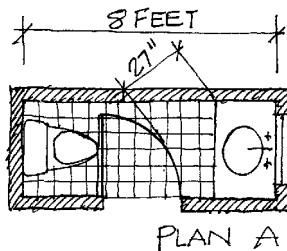
These issues are clearly and wittily discussed in a remarkable book called *The Bathroom*, written by Alexander Kira in 1966 and revised in 1976, and published in paperback by Viking. The book also deals with more general issues: how we feel about elimination, sex, and grooming (and where these ideas come from), how our bodies actually work, and what toilet fixtures would be like if they were functionally designed.

If you are embarrassed by frank talk and photographs about matters of elimination and sex, this book will make you very uncomfortable. But do read it if you are confused about what a bathroom is for, how it should be used and designed, and want to think the problem through. The book stands as a monument to thorough, if a bit obsessive, architectural research.

One conclusion Kira draws is that the typical 5x7-foot bathroom is too small. He argues that we once designed primitive, austere kitchens with separated and unrelated fixtures, and that today's bathrooms resemble such vintage kitchens. We will ultimately devote as much care to bathroom design as we now do to

built-in water jets. These tubs have introduced terrible new problems in bathroom design, and I am against them.

These new plastic tubs are "drop-ins," meaning that they do not have lips that run up under the finish and provide a secure water seal, but instead have lips made to sit on a horizontal plane. Unless you are willing to work out a reliable sealant detail between the wall finish and the



tub, you must add extra room around the already large tub, so that the shelf between the tub and wall can be kept clean and dry. This means that a 3x6-foot tub takes up to 4x7 feet of space—28 square feet versus 13-1/3 square feet for a standard 32x60-inch built-in tub.

Like the fancy new one-piece toilets, these big tubs are expensive. If equipped with water jets, they also require electrical connections and removable access panels to get at the

buyers will choose the gizmos. I reject this attitude, because the cost of replacing these shoddy buildings will fall on my children. But so much for philosophical matters.

To complete this quick review of bathrooms, let's dwell on the little things that make any bathroom better.

1. Often, the "powder room" works out well as a long, narrow space with the lav at one end, the water closet (or WC) at the other, and the door in the middle (plan A). Make sure the user has room to close the door after entering!

Either swing the door out (which can violate our sense of privacy: what if someone opens the door accidentally?), or leave at least 27 inches between the door-swing arc and the corner of the lav, assuming the door swings against the WC. If your client is appalled at the thought of looking in on the WC when the door is open, swing the door against the lav counter. There is extra room alongside the WC for standing as you close the door.

2. Many designers will not place the WC directly opposite the door, even though it is tempting (see plan B). This reflects our attitude that anything to do with elimination is revolting and should be hidden away. If you don't feel that way, this plan is very efficient.

Make the room at least 5 1/2 feet wide, and at least 8 1/2 feet long.

3. Don't place the end of a counter right against a tub since this creates a nasty, uncleanable condition; leave ample space (18 inches minimum) between the fixtures (plan B1). A better way is to put the WC next to the tub, especially since it can be used as a seat when washing a child, as in plan B.

4. Don't assume a bathroom has to be rectangular. An angled lav across

not very satisfactory, although they save lots of space. If you have room, put in a shower and a tub—perhaps one in one bath, one in another. Don't omit the tub unless you are sure the house will never have children in it. Small kids are scared of showers, and playing in the tub is a first-rate experience.

6. Splitting fixtures between different compartments was a popular idea among the modernists. There are at least two basic approaches to compartmentalization. One is to separate the lavatory, so one person can shave, wash, or brush teeth without disturbing another using the tub or WC (see plan C). The other approach is to isolate the toilet, as is common in Europe.

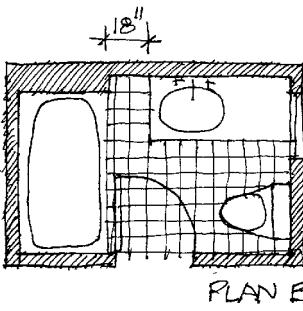
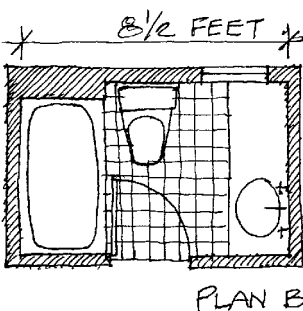
I personally favor a full-fixture bath, on the grounds that many things go on in a bathroom, some of which require different combinations of fixtures: one may need to use the toilet during bathing; one is ill; one wishes to floss while using the WC.

7. Acoustics are a major problem because of plastic piping, which amplifies the sound of running water. We now insist that all waste piping be insulated with a resilient material (such as rubber-type pipe insulation) between the pipe and any structural member.

A double-stud wall filled with acoustical batts and sealed with acoustical sealant is a good idea behind the fixtures where a bath is adjacent to a bedroom and is not used exclusively by the occupants of that bedroom. Don't let the plumber short-circuit the acoustical separation with the piping.

8. Moisture and ventilation problems are serious in bathrooms, particularly those under a north-facing cathedral ceiling. As general rules: see that the air/vapor retarder is not interrupted at light fixtures; avoid bathroom skylights facing north; continue roof ventilation around all sides of skylights; and seal around all ceiling penetrations, especially those for the plumbing vent, exhaust fan, and electrical lines.

Warm, moist air rising into the attic or cathedral ceiling can freeze all winter, then flood the place when it thaws. Or it can generate enough continuous moisture to cause rot. Include a bathroom-ventilation fan and make sure it is used, either by



kitchen design, says Kira. It is careful design, and not lavish size, that will make the difference: more complex bathrooms with lots of special features that cater to myriad uses.

Every new home is built under budget and space pressures, and bathrooms are very costly. Where do we strike a balance between progress and economy? Designers must in the end follow the preferences of their clients, who seem to know exactly what they want in bathrooms these days.

Most of our clients want modest bathrooms (but often several of them), preferring to spend money on the kitchen. The one extravagance that is becoming universal is the large, acrylic bathtub, often with

machinery, which inevitably will need maintenance. From an energy point of view, these tubs are disastrous. They require huge amounts of hot water as well as electricity to run the pump.

But it is nice to be burlbed when bathing, and tubs big enough for two are definitely a step forward. The dilemma is a general one: each family wants its own panoply of luxuries right in the home, in contrast to the old concept of sharing luxuries in public facilities or clubs. With limited resources, where do we stop adding luxuries?

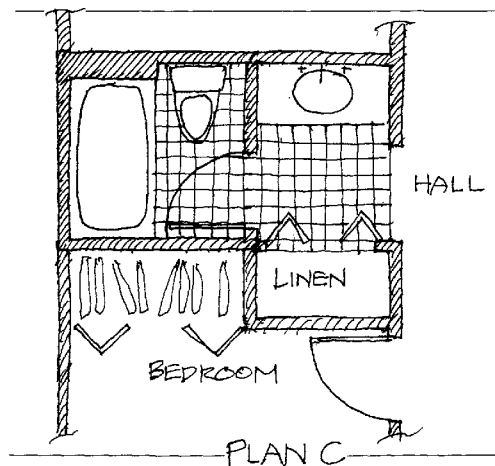
Given a choice of building a simple home well, so it lasts, or building a piece of junk filled with wonderful gizmos, today's live-for-the-present

the corner—or another angled arrangement—often helps in the planning and makes the room more interesting.

5. Tub/shower combinations are

educating the owners or by interlocking fan and lights.

9. Although it is often difficult, avoid placing bathrooms over formal living spaces. Think about the poten-



tial leaks and noise, and the possible need for a dropped ceiling to conceal piping.

10. It is a cliché among builders to stack baths in multistory houses, or place them back-to-back in one-story houses. While the idea is sound, it is better to separate bathrooms if that improves the plan. Insisting on clustered plumbing dramatically cuts down on possible floor plans, or may even make a plan impossible if the

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situation is highly constrained.

11. Don't forget wall space for electric wall heaters, baseboard heaters, and towel bars—another reason to make bathrooms bigger. Also, remember to block between the studs for grab bars, even if they are not installed at first.

12. Try every conceivable bathroom layout before settling on one, and play with inches in the plan. I never find the best layout on the first try.

13. Doors into bathrooms often are built 24 inches wide. This is okay if the plan is tight, but 26 or 28 inches is better.

14. As Kira points out, 30-inch square showers cause the user to bump into the walls all the time, and make it impossible to step out of the shower stream. In tight situations they work fine, but 36x48 inches is the ideal minimum.

15. As you can see in the adjacent plans, windows are a problem in all bathrooms. You can't put them over the sink because that's where the mirror goes. If you place a window on the same wall as a fixture, you risk plumbing outside the insulation, or plumbing lines running through the air/vapor retarder.

Often the best place for the window is over the tub. If the tub is not used as a shower, that's fine. If it is, be sure the windowsill is above the shower head. Even then, take special precautions to avoid water damage to the window.

There is no end to this! It's a subject to revisit. ■

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Gordon F. Tully is president of Tully & Ingersoll/Massdesign Architects in Cambridge, Mass.