

## Fish Rooms

### Setting up a fish room.

*By Miller Morgan*

#### Adapting an Existing Space

Now that you know what the ideal fish room offers, let's take a realistic look at what you are facing. To begin with, unless you have a well-constructed shed of some sort (wood-frame construction, not metal) already available that can be insulated and has water and electricity, you are probably going to end up with a fish room within the house or garage. Given the cost of building a shed (unless you are in the construction trade and have a lot of materials at your disposal), you will find that adapting an existing space will be much more cost effective.

If you use a garage or basement with a concrete floor, you will not have to worry about the total weight of aquariums and water, which will be very high. You can assume a weight of 10 pounds per gallon, including tanks, decor and racks. If you add up the total volume of water your fish room will contain, you may be shocked at the weight involved. This weight means that having a fish room within your home may not be possible.

If your house is built on a concrete slab, a fish room on the ground floor will not be a problem. This is also probably true for apartments with concrete floors. If you live in an apartment, however, err on the side of caution and consult the city engineering department for their assessment of your apartment building before doing anything. You'll need to know the weight involved, how long the tank racks will be, how close or far from the walls they will be and how the weight will be distributed (with legs directly on the floor or onto lengths of wood that distribute the weight over a much greater area). Figuring in this information is the only way an engineer can give you a useful answer.

If your home has wood floors, you face a challenge. The weight that wood floors can safely hold depends on the direction both the racks of tanks and the floor joists run. If the racks run across the joists, more weight can be safely held than if the racks and joists are parallel. The distance from the walls will also affect the amount of weight that is safe. Older houses will pose greater problems in this regard if the joists are sagging or not up to current code.

You may want to consult a contractor, because you do not want the racks of tanks to be a safety hazard, nor will you want to spend thousands of dollars to repair floors and joists damaged by the weight of the tanks.

Finally, you should concern yourself with earthquakes. There are many areas of the country that are subject to earthquakes - not living in California should not make you complacent. Many regions have faults running through them that generate very infrequent quakes of very large magnitude. You want to secure the racks themselves to the walls, and the walls must be sturdy and firmly attached to the flooring. It takes little rolling activity during a quake to send tanks and racks crashing to the floor, releasing hundreds or thousands of gallons of water - not to mention the shards of glass everywhere. Obviously, all your fish will be lost, as well.

#### Complexity

I want to emphasize how the simple idea of a fish room with a lot of aquariums can become far more complex than you may have considered. You need to think through each aspect so that you don't have to go back and fix problems you didn't anticipate, or revise the room in order to take advantage of a more efficient or less expensive way of doing something that wasn't planned for the original project. You only have to look at the pipes, tubes and electrical connections in a pet or aquarium store to realize what you should be thinking about.

For example, if you are going to run air stones in your tanks to provide aeration and water circulation, or to power corner or sponge filters, do you want to have one small air pump per tank, a number of larger pumps or a large central pump that supplies air via PVC piping with air valves to all tanks at once? The cost of the central system is initially higher, but as you add tanks and air pumps, the total cost for the multi-pump system (both hardware and electricity) may be even more. If your fish room will be modest in scale, a central air system may be too much and not worth the expense. Run the numbers for each setup, and see what the differences are.

Central filtration may seem like a good idea, and it does have some advantages for a large fish room with many tanks, but there are concerns you need to consider. Whereas separate tanks with individual filtration systems are isolated from each other, a central system will quickly transmit disease-causing organisms from one tank to all, unless you have an ultraviolet sterilizer and a diatom filter inline before filtered water is returned to the aquariums. And if you want to use particular filters

on certain tanks or maintain fish with differing water chemistry needs, you either have to be able to bypass these tanks or run them outside the central system. Finally, tanks need to be drilled and fitted so that water can be pumped into and out of each aquarium.

We've already discussed the option of heating the fish room rather than individual tanks, but there is the same drawback as with filtration: species needing higher or lower temperatures cannot be easily accommodated. You will find that breeding success with some species depends on being able to raise and/or lower the water temperature to induce spawning.

There are myriad details to contend with even after the basics of the room are worked out. Racks need to be built from either wood or metal. Metal racks mean drilling and bolting, and possibly even welding. Wood may be easier to work with, but you must make sure the weight of the tanks is properly supported. To this end, it may be best to use cinder blocks to build staggered rows of tanks that have wood running across the blocks to support the aquariums.

Unless you are familiar with installing electrical conduits and wiring, you should have this work done by a professional. Make sure the incoming power to the circuit breaker will easily supply the considerable voltage and amperage requirements of even a modest fish room. And you absolutely want ground fault protection circuits for all outlets to prevent accidental exposure to electrical current in the presence of water.

As with electricity, plumbing to bring water to the fish room is not something to tackle, unless you can reliably tap into existing piping to supply cold and hot water, along with a sink. By mixing hot and cold water, you can have replacement water for water changes that is the same temperature as the tank water. Water siphoned from aquariums can be disposed of in a sink, which is also where filters can be cleaned and foods can be prepared. A floor drain is always desirable but not likely, unless the existing floor can accept one.

The list could go on, and part of the fun of this project is working out the details to your satisfaction. Visiting other hobbyist fish rooms is always educational and will give you ideas for yours. If you really, really want a fish room and are willing to spend the time, effort and money to do it right, it can be home to your hobby and a place in which you can take on new fishkeeping challenges.

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