



“How To” Series: Building Koi Caves and Tunnels

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So, what do raccoons and birds of prey have to do with koi tunnels and caves? Everything! Blue herons are one of the most known predators, and if you have a koi pond, you know the anxiety that comes once they target your pond for their daily breakfast. (Our EasyPro® Pond Tents can help with that too.)

Koi tunnels and caves protect from predators. Even if a pond is void of predators, I don't know anyone who is that lucky, fish are always much calmer when they have a place to retreat to for safety. Less stressed fish are healthier fish and prone to less disease.

In this “How To” Series, we will explore:

- ✓ Two Types of Fish Protection Features
- ✓ Construction Techniques
- ✓ The Pros and Cons of Each Feature

Koi Caves

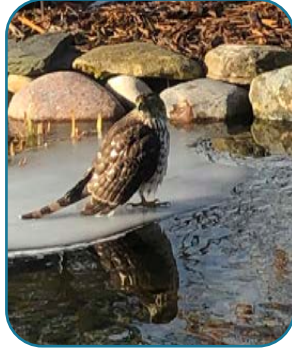
Koi caves have been built into koi ponds for many years. It is easier to build one with a new construction project, but it can also be added to an existing pond by stacking rock for all the walls and then placing a cap rock.

In a new construction, you simply notch out an area in the grade, place a cap rock over the top and conceal the area with rocks. At the same time, the opening can be established with just enough room for only the fish to go in and out.

Koi Caves: SPECIAL NOTES

There are a couple of house keeping items that you will want to take care of on a regular basis with your koi cave.

- **Sediment and muck build up** can happen in koi caves due to lower water movement. Be sure there is access to the cave to clean it out from time to time.
- **Koi Caves run the risk of creating an oxygen depleted conditions** or what is called a dead spot. Having the ability to flush the area and/or maintain a good exchange of oxygen rich water would be very beneficial.
- **Do not make the koi cave too small.** Fish need room to turn around, and if one fish likes it, they will all want to crowd into the available space.



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Koi Tunnels

Several effective building techniques can be utilized to create a koi tunnel. With a little creative planning an additional point of interest can be created at the same time as is the case with this impressive land bridge design provided by Jim Daulerio out of Philadelphia. *(Top two photos on the left.)*

Creating a land bridge is an effective technique when creating the appearance of two bodies of water separated by a walkway. Corrugated culvert pipe is used for the Koi Tunnel and to support the bridge. The 15" or even the 24" diameter pipe can be adapted to the project and is strong enough to support the walkway.



TUNNEL TIP:

Your tunnel should be large enough for the amount and size of the fish, giving them enough room to turn around once inside. Fish will also gather in the tunnel during the winter months if it is installed deep enough. Allow enough space so the fish will not be touching each other or creating dead spots by depleting oxygen levels during those long winter months.

My Preferred Koi Tunnel Design



This design technique starts with a valley, right above the bottom drainpipe that runs from the bottom drain to the skimmer. There is a natural slope from the 18" depth to the 4.5 foot depth, and the opening is wider at the deep end.

The cap rock is 1.25" inches thick and measures 4 feet by 3 feet and rests on two supporting slabs on either end to help protect the liner and spread the weight load

See the Koi Tunnels: SPECIAL NOTES section for a number of reasons as to why I love this design.

New Build or Renovation Technique



This technique is limited to a new build or renovation where the old liner has been removed due to requiring an extensive change in grade below the liner.

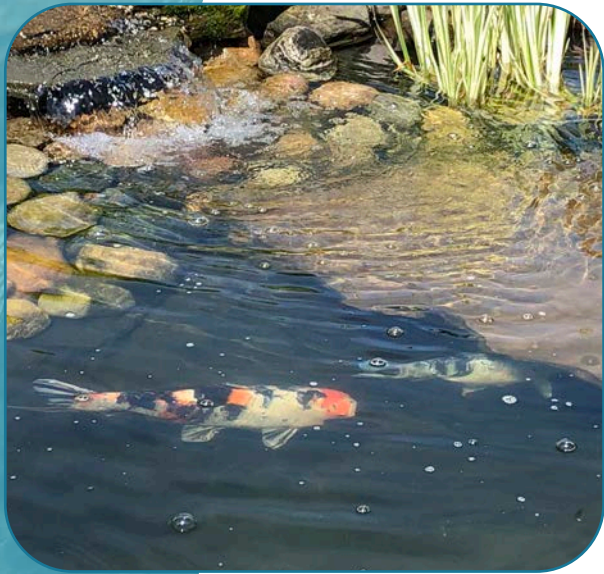
WEIGHT TIP:

This technique also requires a solid substrate to support the weight. It is not recommended for sandy soil or loose gravel without additional weight bearing support. Once completed - **DO NOT** walk on the cap rock, it is only 1.25-inches thick.

WINTER TIP:

If winter ice is normal for your location, be sure the cap rock is at a depth below the normal expected ice thickness. Expanding ice can crack the strongest rock and cause damage to the tunnel.

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Koi Tunnels: SPECIAL NOTES

I personally prefer koi tunnels for a number of reasons.

- **They can be built to house more fish safely.**
- **Water flows through the tunnel** reducing the risk of a dead spot that could kill your fish due to oxygen depleted water.
- **A natural slope to the floor** can be created from shallow to deeper water.
- **Being open on both ends** allows for easy clean out of sediment and muck.
- **Fish are not crowded** and can easily swim in and out freely.

Shared Pros of Caves and Tunnels



All the techniques shared here provide the advantages of adding additional protection for the fish from predators. In addition, they both:

- **Create a consistent, safe environment for the fish**
- **Help the fish feel more secure, with a safe zone to retreat to**
- **Fish are calmer and healthier with less stress, reducing the chance of stress related diseases**
- **Being open on both ends** allows for easy clean out of sediment and muck.
- **Fish are not crowded** and can easily swim in and out freely.

