a new era in koi keeping

mike snaden reveals new ideas for pond design based on Japanese research

Koi keeping is a wonderful hobby that serves different people in different ways. Some people just enjoy koi as pets, some like to compete in shows, some get great pleasure from trying to breed them, and some people buy a koi in the hope of making dreams come true in the future.

Many Japanese koi professionals find our pond designs both amusing, and disappointing. Many systems have complicated pipe-work and filtration methods that produce dead water, or water that is abundant with undesirable bacteria. Mr Maeda's theory is that his new pond design creates water that is abundant in good bacteria.

The latest and best performing ponds that Mr Maeda has been designing for many of his customers, are ones that no longer have submerged filtration, but rely solely on the 'Bakki Showers'. Such ponds require almost zero maintenance

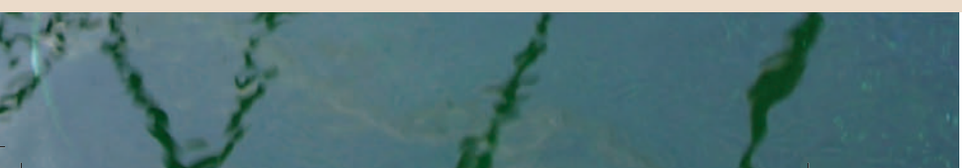
unnecessary expense

Technology moves forever forward, with many inventions being put on the market, some good, some not so good. So many products are now available that you can easily tie yourself in knots by trying to decide which ones will be of use in your pond. Some of these products make koi keeping easier, but some inevitably make the hobby extremely expensive with very few real benefits.

the pleasure principle

Over the past few years, Momotaro Koi Farm has been trying to build the perfect pond. A pond that will produce better jumbo koi whilst keeping building costs and maintenance to a bare minimum, with gallonage and pleasure being pushed to the maximum. Why? Put simply, Mr Maeda feels that in order that his koi gain popularity throughout the world, people must be able to obtain much better results with his koi, feeling there is no point in sending a koi to a pond that isn't capable of improving and growing it.

After carrying out tests on 10 identical ponds, using every type of available media, in both submerged and showered filtration methods, they found that one system out-performed all of the others. This method of pond design cuts completely against the grain, and even many Japanese professionals don't understand why it produces such good results!



The vast majority of koi in this pond are over 80cm. People live under the misconception that it isn't possible to grow koi to jumbo sizes in a filtered pond. By looking carefully at many aspects of Japanese koi keeping techniques, it is possible to grow koi big even in relatively small ponds. Why buy big koi when you can grow your own?

The following is an overview of a pond that I have designed for a customer here in the UK using Mr Maeda's design principles. The pond will contain around 10,000-gallons, of which almost the entire footprint consists of pond space, not filter space. By doing this, it has been possible to design a pond that with conventional filtration, would have perhaps only contained 6,000-gallons (excluding filters).

Also, as well as gaining a vast increase in gallonage, this pond will be extremely cheap and simple to construct. It will be constructed from concrete blocks, with two bottom drains feeding two small standpiped settlement/pump chambers, which take up the two rear corners of the pond. One pump will be situated in each of these chambers, and will pump the water up to two separate four tier Bakki Shower filter systems, with the water returning directly back into the pond. Airdomes will be fitted to the bottom drains to aid water circulation, otherwise there won't be a great deal of flow within the pond.

Some of these products make koi keeping easier, but some inevitably make the hobby extremely expensive with very few real benefits

key features and principles

Two bottom drains with four inch pipe-work. One pump (per drain) of 2,000-gallons an hour will draw water from each drain, (which should keep sedimentation within the pipe runs to a minimum) and into the sediment chamber where the pump is situated. A standpipe will be fitted to each of the sediment chambers to facilitate the flushing of waste from these chambers, and the drains, if and when necessary. Standpipes will be used so that no water will be able to settle and make bad water in the way that waste pipes usually do when valved at the end of a pipe run.

A UV lamp will be fitted above each chamber rather than the usual 'inline' type. Note that the Japanese nearly always use this type of UV for several reasons as follows. Japan's koi professionals feel that assuming that you are creating good bacteria in your filters, it is beneficial to allow this to return to the pond, as it will create better water within the pond, and benefit the koi.

Fish waste that gathers in settlement chambers will already be riddled in bad bacteria, and hence, the bacteria levels should be reduced at this stage of the filtration process. It therefore stands to reason that it is far better to kill undesirable bacteria before the biological filtration chambers. Contact time of the UV rays with the water is also greatly increased in a UV at this stage. Conventional UV lamps need increased pipe-work resulting in reduced flow, and possible areas for water to become bad. This also results in greater expense!

Also, as well as gaining a vast increase in gallonage, this pond will be extremely cheap and simple to construct

superb oxygenation
Why the four tier showers? Well, the advantages are numerous. The media used in these systems is a man made ceramic material that is baked at 130ºC, which causes it to be extremely porous, and hence great for creating anaerobic bacteria, which in turn breaks down nitrates.

This is a strange pond system that even I don't completely understand, but having seen them in action, I can only say that they work extremely well!

I must confess to finding it hard to understand or explain the technical principles of this media, but basically, it creates infra red rays that cause the water cluster to become smaller, resulting in superb oxygenation, and also has an effect of literally pulling in fine particles, and promptly breaking them down.

Mr Maeda says that the speed with which waste gets broken down with this media is beyond most people's comprehension.

These filter units are stacked in such a way that a channel of air runs between them, which means that ammonia and nitrogen is gassed off, and also the oxygen level is maximised before the water hits the next layer of media.

the downside
The downside is that these filter systems

will chill water greatly, so it is only feasible to use them on a pond which is situated within a 'fish house', or to site the showers within some form of ventilated enclosure. Mr Maeda says that these systems work so well that you can pull water directly from a bottom drain with absolutely no settlement chamber, and put all of the water and fish waste through the shower filters. Apparently, they consume every bit of waste that passes over them. Water changes are then carried out in a slow and controlled manner in order to keep the Total Dissolved Solids (TDS) level to a minimum.

grow your own!
This is a strange pond system that even I don't completely understand, but having seen them in action, I can only say that they work extremely well! So, why not set about growing your own jumbo koi! 鯉

The shower system on the right is an 'add-on' which is fed by water that has already been through the existing filtration. But, the system on the left is fed with dirty water directly from the bottom drain, with absolutely no settlement! Despite being extremely heavily stocked, the water clarity is wonderful, with a surprising improvement despite the second unit being fed with all of the koi's solid waste. This unit also serves to pull the water much faster through the bottom drain- pipe runs, so that they don't act as a 'settlement chamber'