PLANNING YOUR POND
Helpful tips, tools and calculations

### What kind of pond are you planning?

Planning and building your pond is much easier if you clearly define for yourself what it is you are looking for. By articulating these choices early in the process, the resulting requirements can be incorporated into the plan and the construction of the pond. The most important choice you will probably face is whether or not you want to have fish in the pond. Fish increase the biological load on the pond ecosystem significantly and necessitate planning for a pond that is deeper and incorporates a more effective filter system.

Where will your pond be built?

A koi or fish pond should be located near a patio or close to the house so that one can observe and interact with the fish. A splashing water feature is best placed in the middle of the garden, while a natural pond is perfect for the garden perimeter. 4-6 hours of direct sunlight is ideal. Placing a pond under trees is not recommended without a water surface skimmer to remove accumulating leaves. Most importantly the location of the pond should work well with the landscaping of the rest of the backyard.

What about streams and waterfalls?

In addition to being interesting to look at, waterfalls and streams are of biological benefit to the pond. The moving water aerates the pond and reduces stagnant areas. However, not every pond will look good or benefit from Niagara Falls splashing into it. If your garden is more or less flat, a waterfall will look out of place or unnatural and a stream might be much better suited for the landscape. For normal-size ponds a 0.6m waterfall is close to ideal and provides all the benefits and aesthetics of something larger.
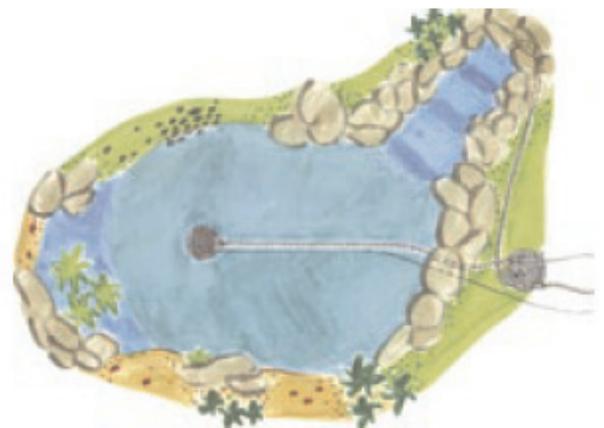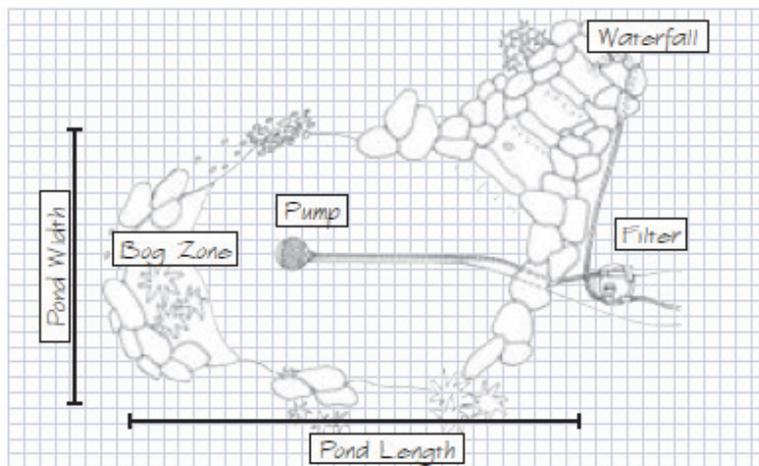
This pond incorporates a waterfall and a generous bog zone, which will provide additional natural filtration and a very natural look. The excavated material is used to construct the waterfall and some of the landscaping around it. The Aquamax solids-handling pump is installed at the deepest point of the pond. This will ensure that all debris is eventually pumped into the filter where it can then be removed. The pump can be hidden by strategically placing larger rocks around it; tubing and cable can be hidden in a fild of the liner. The Filtoclear is installed out of sight (it can be buried up to the upper lid of the filter - even below water level). The output line is fed to the water feature returning water to the pond. The flush line is directed to a drain or flower bed (a valve or cap to prevent accidental flushing os recommended).

Sketch your pond

Adding some of the landscaping features of your backyard will help you in designing the perfect pond for your garden.
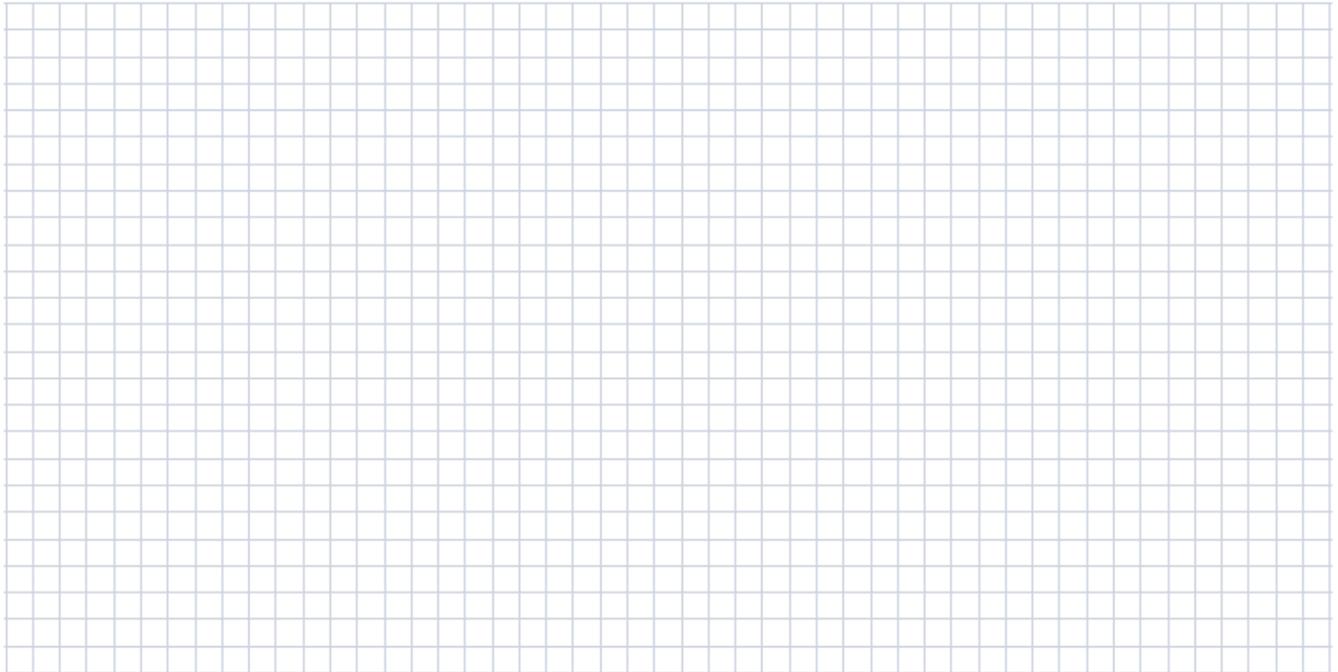
How big in litres is your pond?

This will allow you to choose the proper filtration system needed to maintain clear water of great quality from the chart below.

Length in m		width in m		avg depth in m		Litres
	X		X		x 1000 =	

POND VOLUME WITH KOI	OASE PRESSURE				OASE GRAVITY			
	FILTER	PUMP	UV	R's/m	FILTER	PUMP	UV	R's/m
300l	Filtoclear 3000	Aquamax ECO 4000	9W	20.09				
500L	Filtoclear 6000	Aquamax ECO 4000	11W	22.14				
1000L	Filtoclear 6000	Aquamax ECO 6000	11W	25.43				
1500L	Filtoclear 6000	Aquamax ECO 8000	11W	32.81	Biotec 5.1	Aquamax ECO 4000	18W	24.04
1500L	PondoPress 10000	PondoVario 2500	7W	15.94	FiltoMatic 3000	Aquamax ECO 4000	11W	22.14
2000L	Filtoclear 11000	Aquamax ECO 8000	11W	32.81	Biotec 5.1	Aquamax ECO 6000	18W	27.33
2500L					PondoMatic 5000	PondoVario 1500	7W	11.12
2500L	Filtoclear 11000	Aquamax ECO 12000	11W	50.85	Biotec 5.1	Aquamax ECO 6000	18W	27.33
3000L	Filtoclear 15000	Aquamax ECO 12000	11W	50.85	Biotec 5.1	Aquamax ECO 8000	18W	34.71
3000L					FiltoMatic 6000	Aquamax ECO 6000	18W	27.33
3500L	Filtoclear 15000	Aquamax ECO 16000	11W	64.81	Biotec 10.1	Aquamax ECO 6000	24W	29.53
4000L					PondoMatic 8000	PondoVario 2500	11W	17.94
5000L					Biotec 10.1	Aquamax ECO 8000	24W	36.91
8000L					FiltoMatic 12000	Aquamax ECO 8000	24W	36.91
10000L					Biotec 10.1	Aquamax ECO 12000	24W	54.95
12000L					Biotec 12	Aquamax ECO 16000	36W	73.05
14000L					Biotec 12	Profimax 20000	36W	173.11
16000L					Biotec 18	Profimax 20000	55W	180.45
20000L					Biotec 18	Profimax 20000	72W	185.56
25000L					Biotec 36	Aquamax 16000	72W	124.87
30000L					Biotec 36	Profimax 20000	110W	200.13
35000L					Biotec 36	Profimax 30000	110W	271.49
40000L					Biotec 12 X 2	Profimax 30000	72w X 2	281.72
50000L					Biotec 18 X 2	Profimax 40000	72w X 2	441.66
60000L					Biotec 36 X 2	Profimax 40000	72w X 2	441.66
75000L					Biotec 36 X 2	USP 662W 230V	72w X 2	435.10
100000L					Biotec 36 X 2	USP 813D 400V	72w X 2	763.18
120000L					Biotec 36 X 2	USP 813D 400V	110W X 2	792.32

What length and width of liner do you need for your pond?
Liner in your size might not be available directly, but can easily be glued from smaller pieces

Pond Length in m		Max Depth in m			

$$\boxed{\text{Pond Length in m}} + (2 \times \boxed{\text{Max Depth in m}}) + 1 = \boxed{}$$

$$\boxed{\text{Pond Width in m}} + (2 \times \boxed{\text{Max Depth in m}}) + 1 = \boxed{\text{Liner Width in m}}$$

How much rock and pebbles do you need for your natural pond?
This calculation assumes you will cover most of the liner of a 0.6m deep pond with rocks and pebbles.

$$\boxed{\text{Pond Length in m}} \times \boxed{\text{Pond Width in m}} / 65 = \boxed{\text{Tons of Rocks}}$$

$$\boxed{\text{Tons of Rocks}} / 2 = \boxed{\text{Tons of Pebbles}}$$

What pump is needed for your stream or waterfall?
In flat yards waterfalls should have a maximum drop of 0.6m. A stream should drop 60mm for every 1m.
For larger waterfalls - due to the volume required for a particular effect - it is often far more economical to use one pump - usually the most suitable and most energy-efficient pump possible - to run the pond filtration system, and a second pump to run a waterfall at maximum flow periodically. This will not just reduce energy costs but will prolong the life of the second pump dramatically.

b) What flow rate is required for my waterfall or water course?

$$\boxed{\text{Width of flow in cm}} \times 1.5 = \boxed{\text{Flow rate in L/min}}$$

a) What total dynamic head (TDH) is required for my waterfall or watercourse?

$$\boxed{\text{Rise above water in m}} +10\% = \boxed{\text{Total Dynamic Head in m}}$$

c) Select the pump out of the chart below by finding the calculated flow rate in the respective TDH column.