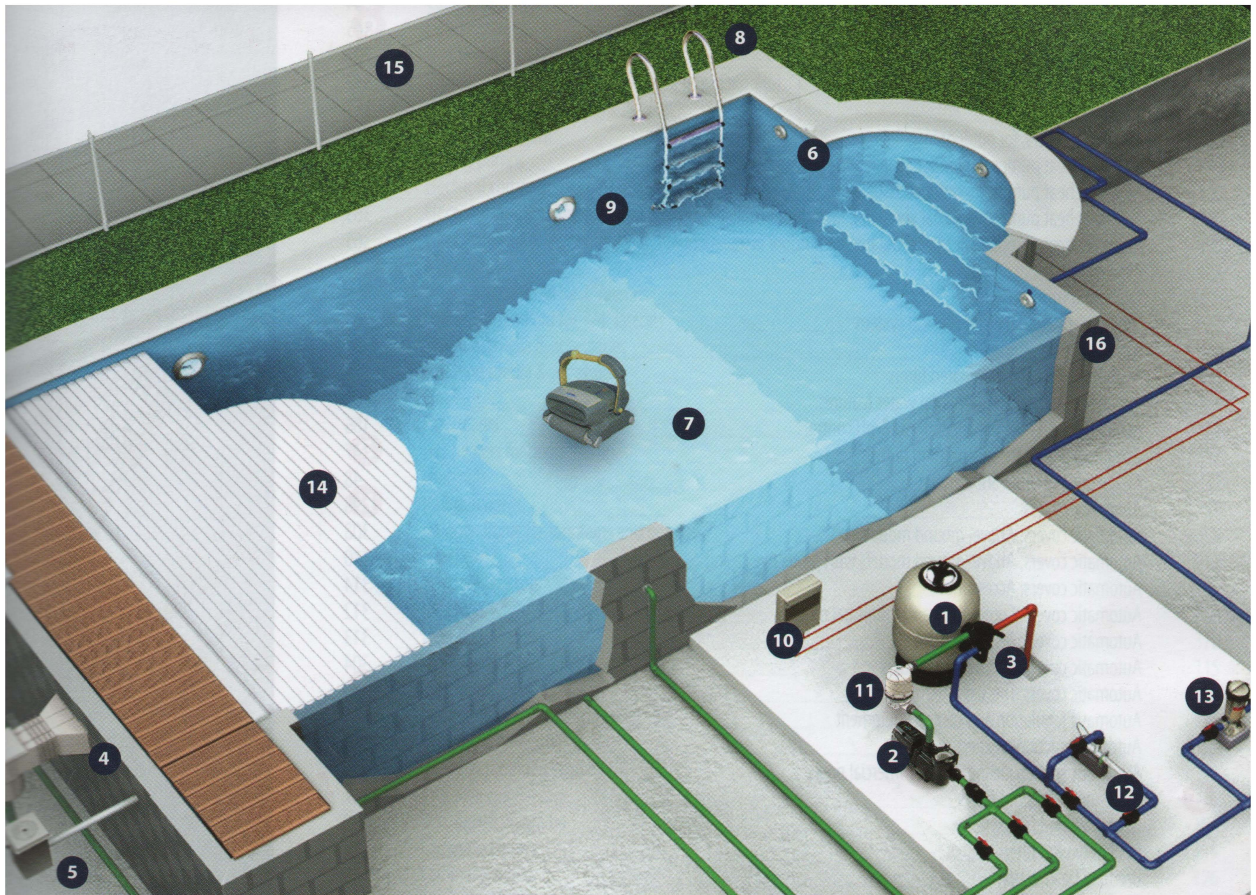


POOLWISE

Chandresh Raithatha



- | | | | | |
|--------------------|--------------------------|---------------------------|-----------------------|--------------------------|
| 1. Filter | 4. Skimmer | 7. Automatic pool cleaner | 10. Control panel box | 13. Chlorine dispenser |
| 2. Pump | 5. Water level regulator | 8. Ladder | 11. Hydrosprin | 14. Automatic pool cover |
| 3. Multiport valve | 6. Inlet nozzle | 9. Under water lights | 12. Heat exchanger | 15. Safety fences |

We have covered various local and construction issues. To complete the swimming pool, the best possible shell equipment should be considered with an appropriate swimming pool layout. The most important equipment parameters are the proper quantity and placement of both mechanical and electrical fittings within a pool. An adequate amount of fixtures are required and which also have to be installed properly marrying with the final pool finishes and levels plus waterproofed well.

Why are these, the most important parameters?

Simply because once placed within the pool shell, these are very very difficult to remove, shift or add more. The best quality possible fixtures should be utilized as you simply cannot exchange/replace them without major cost and structural implications. The actual equipment specification should be rechecked by both the consulting engineers and with the specialists. The circulation equipment configuration is dependent on both the pool size, the plumbing

arrangement and the plant turnover.

Let us look at two specific examples of pools. The most common domestic pool size today is 12.5m x 4.0m, or 10m x 5m, or a 50 square meter swimming pool with a capacity of 60,000 to 70,000 litres. Given that this pool is in domestic usage, an eight hour turnover is sufficient. This translates in having the complete 70,000 litres of water to be turned over within an eight hour or an approximately 9000 litres per hour turnover period. The equipment configuration for a skimmer type of pool would be as follows: two inlets providing a 10,000 litre return capacity, two skimmers providing 10,000 litre suction and a bottom drain pool allowing for an 10,000 litre suction. The plumbing configuration should be a two inch delivery distributed into the two inlets, one number two inch suction combined for the two skimmers and two inch main drain suction. The filtration plant would be composed of a 0.75 HP pump and 600mm filter, producing a 12000 to 14000 liter hourly turnover period.

In contrast, school use community pools have a tremendous amount of contamination. The international recommended turnover would be between two and three hours

for the complete pool water. For example with a 25m by 12.5m pool and a capacity of 480,000 liters, a turnover of 160,000 litres should be the minimum and the equipment configuration ideally be 24 return two inch inlets fittings. Sixteen top skimmers and three large antivortex main drainage fixtures to allow for the full suction. A filtration plant combination recommended would be a tandem system with four sets of 3HP pumps each coupled to a 1200mm filter, producing a 160,000 litre per hour turnover.

In Kenya, we compromise on international norms and generally the commercial pool equipment is sized at six hour turnover periods and which is not acceptable or according to international standards. When this occurs, the water quality is compromised and not suitable for the users.

For the popular deck level pools, skimmers are eliminated and the top channel drains are introduced with a balance tank. In addition a vacuum suction point is mandatory to allow for vacuuming the swimming pool. Unlike the skimmer type pools, inlets are generally placed between 300-600mm below pool top/ water levels and the vacuum point at 450mm below the top. The top channel may be covered by ABS/ plastic grating or granite or cut stone grating. Grating sizing varies from 150mm to 300mm depending on pool size. This channel collects the outflow and which then accumulates in the balance tank. Within the balance tank, suction outlets also have to be introduced. Generally the balance tank is sized at 8% to 12% of the pool capacity to allow for enough surge capacity.

All the inlets and outlets need to be installed together

with puddle flanges and water bars. The appropriate wall conducts are toughened ABS non corrosive fixtures and cost saving Jua kali pvc pipes pieces should not be used. This small detail often overlooked is a common cause of pool shell leakage.

Regarding the pool fittings, there was a major change in the design and installation of pool main drains. In June 2002, Virginia Graeme Baker, the granddaughter of the former US Secretary of state, John Baker III tragically became stuck to a hot tub/ Jacuzzi maindrain and drowned. Two men who eventually freed Virginia, pulled so hard that the cover broke from the force, but Virginia had drowned from suction entrapment. After that, her parents lobbied for Pool and Spa safety and on December 19th, 2007, President Bush signed the *Virginia Graeme Baker pool and Spa safety Act into law*. This resulted into changes in maindrain designs as well as introduction of antivortex covers. Unfortunately in Kenya, very few pools are installed with antivortex drains. Legislation in the US and Europe today requires existing swimming pools to be retrospectively installed with antivortex maindrains.

We will continue with pool lighting and additional fixtures in the next issue.

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WATERWAYS AFRICA

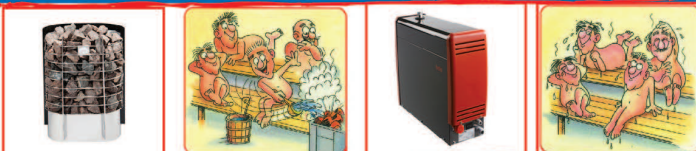
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