

Different Types of Water Element

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Abstract—This paper studies different type of water element. The focus of the report thus become designing a building that would facilitate all the modern water elements needed in resort to fulfill the requirement of visitor and studying and knowing various new technologies of water elements and implementing them in the design of building. It will include the study of their types and use of proper materials and making it functional without wasting water

Index Terms— water element, wasting water

I. INTRODUCTION

Water is not just a vital element in our life, it can be experienced in a whole variety of ways. It creates different kinds of atmosphere and moods that appeal to our feeling. Water is a universal landscape element. It is the vital element which can bring life to any landscape; immediate life, constant life. Water wonderful contribution to this world has been to shape the hard landscape through its immense forces of erosion and to create the soft landscape through its gentle nurture of vegetation.

In nature many factors contribute to the character of water:

- Movement
- Lighting
- Sound
- Color

A. Effect on Microclimate

A microclimate is a local atmospheric zone where the climate differs from the surrounding area. The water body in a city contributes greatly to microclimate effects. Single water body less than 0.25km~ (2) almost has no influence on the environment, while multiple, dense water body can obviously affect the microclimate.

II. CASE STUDY

A. Banyan Tree, Kerala

1) Location

Location in the western lowlands area of Kerala, India. Banyan tree Kerala sits on 16 area of the Nediyathuruthu Island, assuring guests the utmost in privacy, seclusion and luxury. Situated an hour south of Cochin international airport and accessible by rail, road and boat, the exclusive resort is a 15-minute boat ride away from banyan tree Kerala private jetty in vaduthala.

B. Facilities

1) Gymnasium and yoga pavilion

Start your day with a vigorous cardio and strength training session at the well- equipped gymnasium. Attempt to achieve nirvana with asana performed at the yoga pavilion India is after all, the birthplace of yoga.

2) Resort pool

Mingle with fellow guests by the resort pool. Relax on your lounge all day and perfect your tan. Pampering poolside service include cold towels, natural freshen sprays and complimentary fruit.

3) Kids club

Children between the ages 4 to 12 can join the kids club to take part in fun and enriching activities such as painting, baking, storytelling and traditional Indian folkdance.

4) Library and games room:-

Find intellectual stimulation with an afternoon spent reading bestselling novels, the latest magazines or perfecting your chess strategies and tactics.

C. Meeting Facilities

Banyan tree Kerala boardroom and two meeting can host up to 18 people, suitable for intimate group discussions, meeting and conferences. If grand celebrations are in order, the elegant banquet hall seats 150 guests a choice venue for wedding festivities or revelry of any type.

1) Banyan tree Kerala dining

From traditional Kerala spices of chill, cardamom and cloves, to piquant Thai herbs and international tastes, a kaleidoscope of flavors and sublime dining experiences await you at banyan tree Kerala.

2) Spa café

Embark on a gastronomic journey to wellness with innovative cuisine at the spa café.

3) The water court

The resort main dining venue serves a sumptuous international and south Indian cuisine from banyan tree global culinary team.

4) Bar lounge

Stop by the bar lounge for an afternoon of sweet and milky south Indian coffee or spicy local estate tea.

5) Destination dining

Ambrosial meals presented to you in the comfort and privacy of your villa.

6) *Banyan tree spa Kerala*

Experience a sanctuary for the sense at banyan tree spa Kerala, home to the group's first dedicated Ayurveda center, with its holistic approach and spiritual well-being. Massage treatments are based on centuries-old evolving techniques, our health and beauty remedies make use of aromatic oils, herbs and spices with ancient healing powers. When banyan tree spa opened in Asia first luxury spa resort- banyan tree Phuket, Thailand in 1994, it pioneered the tropical garden spa concept with its eastern therapies and holistic focus on spiritual, mental and physics harmony.

D. *Villas Overview*

Reflecting the legacy of a long history, rich culture, as well as the abundant foliage and life-giving water ways of the region, all 54 pool villas and houseboat are modern interpretation of traditional Kerala residences, featuring vibrant colors, elements of kathakali art and finest finishes and furnishings.

1) *Deluxe pool villa*

An intimate hide way for two, the deluxe pool villa offers panoramic views of the pictures quekerala backwaters.

2) *Presidential villa*

Developed by tropical palms with idyllic views of the eternal backwaters, the presidential villa is perfect for hosting friends and family. The interior of this palatial residence comprise expansive living areas and two well-appointed bedrooms. Extensive outdoor areas include a private pool, terrace, timber sundeck, porch, pond and outdoor shower. Spend an unforgettable Kerala sojourn at this exquisite villa.

3) *Double pool villa*

Enjoy the ethnic charm of your backwater setting at the expansive double pool villa. Replete with a living room, master bedroom, a second bedroom that can also serve as a spa treatment room, two private pools, terrace, timber sundeck, porch and outdoor shower, this premium accommodation type is suited for honeymoon couples or travelers who seek seclusion and relaxation.

4) *Grand pool villa*

Large interiors lead to liberal outdoor areas at the grand pool villa. Spend a restful and relaxing holiday in this exquisite retreat featuring separate living room and bedroom, private pool, terrace, timber sundeck, porch and outdoor shower, complemented by enchanting backwater surrounds.

E. *On Resort*

At Banyan Tree Kerala, one can look forward to banyan tree award winning spa experience, a variety of leisure and recreation activities and a host of other facilities, including yoga sessions, hands –on Indian cooking classes and traditional Indian arts and crafts lessons.

A variety of enjoyable activities:

- General /nature activities
- Culture activities
- Recreational lounge activities
- Kids clud

F. *Around Resort*

Surrounded by pristine backwaters, and lush greenery, the areas around banyan around banyan tree Kerala present unrivalled opportunities for exploration and cultural appreciation. There is a variety of backwater tours to choose from:

1. Backwater facts
2. Fishing practice and local fishes
3. Clam diving / farming
4. Local village and transportation
5. Local flora and faund tour

G. *Wedding*

The exclusive tranquil surrounding of Banyan Tree Kerala create an ambience perfect for grand wedding celebrations.

III. WATER ELEMENT REQUIRED IN COMMERCIAL

A. *Swimming Pools*

Swimming pools are the best way to beat the scorching summer heat. Everybody loves to plunge into the cool water and relax away. Moreover, places where the temperatures are really high in summer, pools are a necessity.

B. *Classification of Swimming's Pools*

1) *Public pools*

A public pool is usually a larger pool (more than 1800 square feet) that is owned or operated by some legal.

2) *Semi-public pools*

This pool is similar to the public pool but has specific entry restriction like that of a fitness center, country club, or hotel/motel pool.

3) *Residential pools*

For the purposes this text, residential pools are private pools that are not regulated by the health department or some other regulatory agency.

C. *Types of Swimming Pools*

1) *Above Ground Swimming Pools*

This type comprises swimming pools that are installed above ground level. It is the cheapest option among the swimming pool types. These pools come in variety of sizes, with models ranging from 10 ft. to over 30 ft. in diameter.

2) *In - ground swimming pools*

In - ground swimming pools are not only the most popular, the most expensive type of swimming pools available. People who are not tight on budget and space, opt for these pool. These pools are built into the ground (below ground level).

3) *Infinity edge swimming pools*

The latest trend is swimming pools is the infinity pool is the infinity edge swimming pool. Also referred to as the disappearing edge pool, negative edge pool etc. it is an pool that gives an illusion that the pool water extends till infinity. One cannot see the edge of the pool. The pool edge in such pools is built lower than the actual pool water falling off the edge and then pumps it back into the pool with the help of pump.

4) *Diving pools*

Diving boards are long time investment and are expensive additions to the pool as well. The diving boards are of two types: the commercial type and the residential type.

5) *Lap pools*

Swimming is an excellent low impact aerobic exercise, as mentally relaxing as it is physically invigorating. Any lap pool that is 45 to 75 feet long and 8 to 10 feet wide, and at least 3.5 feet deep should satisfy most swimmers.

D. *Recreational Pools*

Recreational pools can be built in any shape, size or style and often includes coves for wading or for children's play. Although most recreational pools are 3.5 ft. to 5 ft. deep, the depth of pool can vary from one end to the other. For diving one end of the pool should be at least 11 ft. deep. For games and water aerobics a 4 ft. deep area is ideal for keeping everyone head above water.

1) *Fountains*

A fountain is a piece of architecture which pours water into a basin or jets it into the air to supply drinking water and /or for a decorative or dramatic effect. It is a universally acknowledged fact that fountains, when properly executed, can make a garden when it comes to water features, fountains are some of the most versatile. Because they come in a range of styles and are made from different materials, there's an option to match virtually any landscape design.

E. *Spouting*

A spouting fountain is generally the most dramatic because it features a pipe that sprays water up into the air for a striking, plume-like effect. This type of fountain is easy to add to an existing water feature, like a pond or swimming pool, because it only requires a submersible pump.

F. *Pond less*

A pond less fountain is a twist on traditional water features. Unlike a spouting or cascading fountain that draws from a visible water reservoir, such as a pond or lower basin, a pond less fountain's reservoir is hidden underground. Because of its design, it does not require as much maintenance as other made from a non-traditional structure, like a boulder, column or urn, which is placed on a bed of river rocks or gravel that the water can drain through to the reservoir below.

G. *Bird Fountains*

These outdoor water fountains come in several types, either wall mount or bowl, but both fit great in smaller garden with a lot of flower and plant life. By attracting birds to your garden.

H. *Tiered Fountains*

For large, elegant gardens that already have a lot of furniture and still significant space to spare a multiple tiered fountain can be a great way to fill it.

I. *Wall Fountains*

A wall fountain is a smart choice if you have a small backyard because it does not require as much space as a spouting or cascading fountain.

J. *Animal Fountains*

For the lovers of nature, animal fountains may be a smart choice. They typically "spit" water out of their mouths, such as the frog displayed here. These fountain are typically made on a smaller scale, but can be customized to any size.

K. *Contemporary Fountains*

Contemporary fountains are a mix of other types. It depends upon what your landscape to feel modern or not

L. *Floating Fountains*

Floating fountains often become focal points of gardens, lawns, and other areas of landscape extremely heavy natural stones float on nothing other than water. The water pressure rotates the ring or sphere, creating a very unique outdoor fountain

M. *Pedestal Fountains*

Pedestal outdoor fountains only mean that the design incorporates a pedestal, a stone support structure. Anything, such as floating spheres, bubblers or rocks can be put on top of the pedestal

N. *Rock Fountains*

These are very-explanatory. Fountains made of large rocks or boulders. Water is pumped through the rock and released at one or multiple locations.

O. *Statuary Fountains*

Artistically more advanced than other designs, statuary outdoor fountains make wonderful additions to landscapes. They can also be a more accurate display of your personality than other fountains. There are happy statues, angry statues, and everything in between.

P. *Urn Fountains*

Urns have very large water basins. They also might have an additional, small tier. The more decorative the better with these outdoor fountains.

1) *Artificial ponds*

Ponds are a beautiful addition to any landscape. Manmade/artificial ponds generally refer to bodies of water that are built and /or are maintained by humans rather than Mother Nature. Within this broad category are a number of pond sub categories such as water garden where the main purpose is ornamental display, fish ponds or koi ponds where the main purpose is housing or breeding fish, backyard ponds or garden ponds where the pond is used more as a landscaping feature, or industrial ponds where the purpose is to store water as part of some industrial process

IV. TYPES AND SHAPES OF POND

Pond may be set in any shape you desire – amoeba, square,

oval, rectangle, circle etc. pond shapes are asymmetrical and curved, with soft or sloping edges. It may be still water or flowing one.

A. Construction

- Man-made ponds are built into ground with human labor and lots of digging.
- During construction stage itself one should provide inlet and outlet for the flow of water. If one want a fountain and need to do light arrangements, then he should include enough, plumbing and filtering settings also.
- Nowadays depending on vastu for every construction is the latest trend. According to vastu presence of water is best in north or north-east.

B. Water Source

- The water in man- made ponds usually comes from a residential source, like a well or hose.
- Water is then moved by concealed pumps and pipes, by using a simple splash box or via prevailing breezes rippling the surface in the ponds.

C. Design Considerations

1) Planning the pond

- Decide on pond depth – an ideal range is from 12` to 20`
- For winter operation the pond needs to be a minimum of 1` below the frost line
- In cold climates provide at least 10 sq. ft. of deep-water space (2` to 3` deep or 1` below the frost line) for fish to hide during freezing temperatures

2) Site selection

- Avoid low – lying, boggy areas that are constantly moist and hard to dig in
- Locate the pond near a water source for easier filling and consistent levels
- Place ponds away from trees as leaves can clog pumps and filters.

3) Aquatic life

- To keep fish alive in cold climates, keep a hole in the pond ice to allow oxygen to enter
- The most popular fish for water garden ponds are gold fish and koi
- Include aquatic plants, such as water lilies, lotuses, irises, water hyacinth and water lettuce
- Regularly check water pH to monitor the toxicity level of ammonia and nitrates

D. Water Gardens

Water garden typically incorporate aquatic plants, ornamental fish, statuary, waterfalls and other decorations. They can be found in residential backyards, courtyard and parks to compliment the landscaping and as an enhancement in existing garden

Some of the commonly used plants in water gardens:

- Submerged plants
- Marginal plants
- Floating plants

V. TYPES OF WATER GARDENS

There are several different types of water gardens including container garden raised and sunken ponds and bog gardens. A container water garden is typically small and easy to care for and can be placed on a patio or balcony with ease. Raised and sunken ponds are built directly into the ground and require more maintenance than other types. Bog gardens are the most natural of the three and designed to attract wildlife. They are generally dug into the ground, lined with plastic and filled with native plants and fish.

A. Steps for Building a Water Garden

1. The first step to consider is to decide what type of pond you want to build whether a koi pond or a water garden.
2. The second step in establishing a new pond is to select the proper location:
3. Determine the size of pond or water garden
4. Dig the pond or water garden to the desired shape:
5. Position any external pond filters and / or pond skimmers and level these in their proper location:
6. Line the pond or water garden excavation with pond underlayment.
7. Place the rubber pond liner into the excavation and unfold. Pond waterfalls and streams can be excavated now.
8. Connect the pond liner to the skimmer, if one is being used, following the manufacturer's directions.
9. Place the stone or other coping around the edge of the pond or water garden.
10. Add de chlorinator to the pond to remove any chloramines
11. Add aquatic plants as soon as possible after constructing the pond or water garden.

VI. CONCLUSION

Water has become a scarce resource in many fast growing countries and regions with limited rainfall. So to cooperate with water conservation practices build the pools and water bodies as large and as deep needed for anticipated activities and don't automatically empty them at the end of season. Try to adopt many water recycle technologies to save water. While designing a building the availability of water at that place and its proper use is very essential. So choose the location where there is easy availability of water. Climate conditions of a particular place is also very important in every building. Design the pools and various other water features its location, shape, size, depth, features in accordance with the use and its need i.e. Whether it is used for recreation, exercise, landscape or

entertainment and refer the various standards for their construction and incorporate them in the design.

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