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INTERACTIVE (Participatory) Fountains

The what, where and how questions.

Georgia Fountain Company is the leader in designing and building interactive (or participatory) fountains and provides the following information to support and guide any design ideas that designers may have.

When considering an interactive fountain one must ask and answer the following questions.

a) What is the purpose of the interactive fountain?
b) What environment must the fountain have?
c) What are the fountain surroundings going to be?
d) What type of system will be used?
e) What health codes apply to an interactive fountain?
f) What additional code issues require equipment other than fountain materials?
g) What utilities are required?
h) What system requirements are there?
i) What safety issues require attention?
j) What mandatory maintenance requirements are there?
k) Does the owner understand the operating requirements & costs?

What is the purpose of the interactive fountain?

This question requires careful scrutiny. Is this fountain being designed to be a focal point to entice the viewer to stop, enjoy, relax and if so inclined, to spontaneously participate in this ornamental fountain or is this fountain being designed to be a focal point and to invite the general public to actively participate? Is this fountain being designed to be a children's play area? Will there be an exposed pool (not a reservoir)? Will it be a plaza type environment? The answers to these questions, in a way, dictate the direction of answers to all the other questions. One will understand that more clearly that the most influential decision will be the application of local health codes.

What environment must the fountain have?

Regardless of the above answers the environment this fountain must have is the expectation, the planning and execution of an area that is designed to be wet at all operating times. It is best to have a defined perimeter. The perimeter shall be dished toward the center of the fountain. The area beginning at the perimeter away from the fountain shall be down and away.

What are the fountain surroundings going to be?

First the fountain area has to be defined. The defined area shall be that area around the fountain that is expected to be wet at all times and the fountain water of which must remain in the fountain area.

For the express purpose of helping the system in its health environment issues it is prudent to consider eliminating ALL planter designs and plant materials in a well-defined area well away from the

fountain. It would not do to have a planter right next to the fountain where people will be in and out of the fountain and trampling the plants, carrying with them plant material back in to the fountain.

If the fountain is outdoors it is also extremely important to design the fountain surface area elevation to have rain water flow AWAY from the fountain along with a trench drain system around the fountain area.

What type of system will be used?

The type of system that should be chosen is one of two: 1) Potable water system. 2) Re-circulating system.

Potable water system.

An interactive system that wants to be designed using potable water only is simple. But it is also limited to small nozzles and short spray heights and fine sprays due to the quantity of water needed. It requires no body, reservoir of pool of water. It requires no pumps, filters or chemicals. It requires little maintenance. It will however waste good water coming from a potable water system typically city water. The amount of water is determined by the flow rate for the nozzle designed and the duration time of the presentation of those nozzles during normal operating times.

For instance:

One nozzle operating for 10 seconds one time per minute for 8 hours of operating time per day.

If that nozzle requires a flow rate of 3 GPM (gallons per minute) for the given height and the nozzle is turned on for 10 seconds at a time and only one time per minute then the water going to waste (or carried off by people) will be (3GPM :6 = 0.5 gallon per minute (x 60 minutes x 8 hours) will be 240 gallons per day.

If the system has a total of 10 nozzles and each nozzle presented only once every 2 minutes for 10 seconds the waste would be (10x6 /6 x30 x 8 hours) 1200 gallons per day. Many folks might consider this a waste. Way the costs of wasted water versus the costs of re-circulation, chemicals and maintenance to make that choice.

Systems configurations normally consist of a control manifold, hydro static tank, nozzles and an electric control panel to operate the low voltage control valves.

Re-circulating systems.

Typical designs include a reservoir of some type, either directly under the fountain plaza or in a separate tank/ reservoir. The re-circa system gets its water from there and returns the water trough the controls to the spray nozzles. The systems will also feature complete NSF approved materials including filters, chemical monitors and chemical control systems along with electrical controls and lighting controls.

What health codes apply to an interactive fountain?

This is at present a complicated question to answer and requires the input of City/ Local Health Authorities. *Many states STILL DO NOT HAVE CODES FOR INTERACTIVE FOUNTAINS yet*. As of 2008 there are several states that now classify Interactive Fountains ***by name*** in their respective swimming pool codes. Among them are the States of Florida, North Carolina, Wisconsin and others.

Debates are ongoing daily about what classification to put participatory fountains in. Some officials, absent a specific code for fountains will just classify them under swimming pool codes, specifically wading pools, not for the pool depth but for its activity or maybe both. It requires upfront understanding by Health Officials that this is not a swimming pool or wading pool but an interactive

fountain and application for and approved variances should be made in advance of a project to help the officials in the closeout of the project.

We believe that many portions of all local swimming pool codes do not apply to “interactive fountains”. Portions of that code for instance are the requirement for a fence. A fence (in the swimming pool code) is in the code to prevent accidental drowning in pools that are unattended. In an interactive fountain WHICH HAS NO “POOL” there is NO WATER for anyone TO DROWN IN. Diving boards, access ladders etc. all fall by the way side too.

What additional code issues require equipment other than fountain materials?

What is a requirement however are ALL items that relate to water quality control and automatic chemical control systems, filters, a possible shower and foot wash station (debatable) and a public rest room close by is a good idea.

Careful attention to other hidden non-common sense items (in the SWIMMING POOL CODE) such as 7 ft. head room requirement inside equipment rooms and 3 foot clearance around every piece of equipment in that room have to paid due respect. We believe that equipment rooms for swimming pool systems are different then for fountains. Swimming pool equipment rooms are often used as chemical storage areas and have a great number of chemicals not required for fountains. Fountains require less chemicals and generally have pressurized chemical tanks and pressurized ventilation for the rooms and safety issues should not be governed by how high a rooms ceiling is.

Lighting Decision

A decision has to be made if the project shall operate after sunset and into the evening. If so the type of lighting should be considered. Today’s new standard is using LED lighting technology, either in fixed colors or variable colors using RGB LED lighting systems such as GEFCO #EE175 which can be controlled from a DMX control network.

The latest in fountain lighting technology makes conventional incandescent or halogen lighting less desirable for the major purpose of power savings, maintenance cost and color options.

Most LED lighting designs are operated at low voltage and have the capability of being operated out of the water without any issues regarding overheating of light fixtures.

The power consumption savings of LED lighting vs conventional fountain underwater lighting cannot be overstated enough. Today even household lighting is taking on a more visible role on our overall reduction of lighting costs using LED light bulbs now available at any electrical house or do-it-your-self centers like Home Depot and Lowes.

The most impressive advantage is the capability of colored LED lights being controlled using RGB LED DMX control technology allowing the creation of serious color variations and individual light color control because each of the RGB lights having its own telephone address when connected to a DMX controlled network. This allows, for example, light #1 to be red, light #2 to be pink, light #4 green and so on and in the next moment chase their colors around the circle or doing a color wash through the million+ color spectrum.

What utilities are required?

Utilities required are water supply, drain to storm or sanitary (depending on local codes), power sufficient to drive the systems. Typical design guidelines are: being able to drain, clean and refill a system in an 8 hour workday. Typical designs are: 1 ea. min. 1” or 1-1/2” potable water supply, 1 ea. 4” sanitary or storm drain system for the pumping system and area storm drains designed based on the fountain trench drain system. Power shall be 120/240 single phase or 120/208V 3-phase per NEC SEC.680.

What system requirements are there?

System requirements are determined on the design of the fountain and can be quite extensive. First establish a performance specification. I want this many nozzles to go this many feet high. I want this type of spray. I want this many nozzles to be individually controlled and this group of jet controlled as one.

I want lights at each jet I want the lights on all time during night hours or I want each light at each jet to come on with the jet only.

Remember to allow the fountain area design to match the systems requirements, i.e. if I want the jet that is located 5 feet from the perimeter of the fountain area to spray 20 feet high is not a good idea.

What safety issues require attention?

Some major safety issues to remember are:

1) **Public safety.**

   Allow small sprays on the outside of your fountain area to allow toddlers to participate, they might be afraid of the taller sprays in center. This will also allow moms to get to their toddlers quickly.

2) **Emergency shut-off.**

   Make sure you locate an emergency cut-off switch near the fountain to allow to unimpeded help to a person requiring medical attention in the fountain area.

3) **ADA compliance.**

   Careful attention to surface design, accessibility and area definition for compliance to ADA requirements shall not be forgotten.

What mandatory maintenance requirements are there?

Daily water quality control, area cleanup, systems review, clean basket strainers, clean filter elements as required.

Does the owner understand the operating requirements & costs?
It is one thing to make an allowance in the construction costs of a fountain project as a capital expenditure item. It is an entirely different item to make sure the owner allows a fountain maintenance budget line item in his/her operating costs budget. ***It is imperative for the designer to make the owner aware of this one single solitary item.***

If you need help with the design, budgeting, systems supply or construction with your participatory or interactive fountain please contact us at (800) 522-3297 or e-mail us at: info@georgiafountain.com. Please visit our website http://www.georgiafountain.com for additional catalog information and photos for ideas.