Designing a Splash Pad

Dustin Graham
Great Southern Recreation
Designer & Territory Manager
Learning Objectives

• Present history of splash pads
• Present creative design ideas and solutions for splash pads
• Educate on current trends in the industry
• Educate on current health codes in Georgia covering splash pads
First Splash Pads in United States?
Frog Pond Spray Pool - Boston, c. 1970
Frog Pond Spray Pool - Boston, 2018
Keller Fountain – Portland, 1970
Keller Fountain – Portland, 2018
What Makes a Splash Pad?

- Aquatic Recreation Area
- Little to No Standing Water
- No Lifeguard
- Ground Nozzle Sprays
- Above Grade Sprays
- Interactive Features
- Broom Finished Concrete Deck
- Clean Water
Splash Pads
Multi-Deck Splash Pad
Interactive Fountains
A Growing Trend

• World Waterpark Association – aquatic centers and municipal waterparks are one of the fastest growing segments in the water leisure industry.

• 900+ waterparks in the U.S.

• Majority Municipality Owned

• Decommissioning Outdated Pool Facilities

• Increase of Splash Pad Renovations
Benefits of Splash Pads

• Access for All Ages & Abilities
• Cool Destination in Summer
• Easier Maintenance
• No Lifeguards
• Outdoor Exercise
• Sensory Development
Why Consider a Splash Pad

- **Energy** - Liven up public spaces and attract visitors with aquatic features.
- **Efficiency** - Easy to add to existing parks and increase park visits. Use less water than pool facilities.
Why Consider a Splash Pad

- **Revenue** - Pavilions can encourage party use and revenue from rentals help fund operations, maintenance, and future expansion.

- **Low Risk** – Less drowning risk than pools
Cost Benefits

- **Construction** - Initial construction costs for splash pads are significantly less than swimming pools.
  - Pool renovation costs can exceed total cost to design and build a new splash pad.
- **Maintenance** – Maintaining splash pads are easier and cheaper than pools.
  - Uses Less Water
  - Water monitoring and automatic chemical feeders
- **Operations** - There are two main types of splash pad systems: recirculating and pass-through.
  - **Recirculating** systems collect the water within a holding tank where it is treated and filtered and pumps it back out again to the spray nozzles. This system requires scheduled water monitoring and adjusting of chemicals. While it uses much less water, it is more expensive to monitor.
  - **Pass-through** system uses city potable water and drains directly to the sanitary system and therefore no monitoring is required. The main cost is the potable water. Some systems collect the water and utilize it as a gray water application such as drip irrigation. If there is no charge to the residents to use the splash pad, access control personnel are not always required.
- **Safety** – Self regulated and self supervised. Less drowning risk than pools and does not require the hiring of lifeguards.
Considerations – GA Health Code Requirements
Chapter 511-3-5, 2017

**Interactive Water Play Pool** - A pad which contains various fountains, interactive water sprays, or waterfall features. The pad slopes to one or more drains which empties into a reservoir which is recirculated and disinfected before its return to the water features. These pools are also known as splash pads, spray pads, wet decks. For the purposes of the Chapter, only those designed to recirculate water and intended for public use and recreation shall be regulated.
Considerations – Health Code Requirements Chapter 511-3-5, 2017

- Recirculated Water System Turnover Rate - 30 Minutes
- Secondary UV Filtration – Required
- Bathroom Facility – Required within 300 ft of splash pad
  - Include Diaper Changing Station
- Construction Permits - Two complete sets of scaled construction plans must be submitted to the local health authority for approval – and must bear the seal of a licensed architect or professional engineer, unless the health authority deems it to be unnecessary.
Considerations – Flow Thru System
Flow Thru System

- Easier to build – but high water consumption
- Potable Water In – Used Water Out to Sewer or Stormwater
- Increases design budget for interactive play features above grade
- Ideal for small areas with low use
- Low Maintenance for owner
Considerations – Recirculating System
Recirculating System

- High Water Conservation
- GPM and 30 minute turn over
- Automatic Chemical Feeders and PH detectors
- Secondary UV filtration
- Electronic Rain Diversion
- Maintenance requires CPO to refill chemicals and perform filter discharge
Designing the Splash Pad – Info Gathering

• **Electrical Services** - Single Phase vs Three Phase
• **Water In** - City Pressure? Less than 50 PSI?
• **Water Out**
  • Sewer or Stormwater?
  • EPA considerations?
• **Site** – Potential Vegetation Issues
• **Age of Users**
Designing the Splash Pad – Design Options
Designing the Splash Pad – Design Options
Designing the Splash Pad – Design Options
Designing the Splash Pad – Design Options
Designing the Splash Pad - Features

- Above Grade Features
  - Interactive
    - Users Manipulate
  - Anticipatory
    - Overhead Dumping Elements
  - Thematic
Designing the Splash Pad – Features & Music

Google “Hydraulophone”
Designing the Splash Pad - Features

• Flush Mount Features
  • Various Spray Patterns
  • Interactive Sequencing
  • Dancing Water & Show
  • Good for all ages
Designing the Splash Pad – Age Zones
Designing the Splash Pad – Surfacing

To date – there are no surfacing standards for splash pads

- Broom Finished Concrete
- Appx 2-3% grade to drains
Designing the Splash Pad – Surfacing

- Broom Finished Concrete
- Colored Concrete
- Concrete Paint
- Permeable Pavers
- Poured-in-Place Rubber
- Aquatic Tiles
Designing the Splash Pad – Surfacing
Designing the Splash Pad – Surfacing

Diagram showing the layers of a splash pad:
- Concrete Base
- Thin Primer Layer
- 3/8” Pellets with Resin

Image of a completed splash pad with various water features and surrounding structures.
Designing the Splash Pad – Surfacing

- **Poured-in-Place**
  - Polyolefin Pellets – Chemically Resistant
  - Increase Traction
  - Add Design/Theming
  - Difficult to patch/repair
  - Requires Urethane Touch-Ups
  - Risk of Granulation
A more tactile surface that looks and feels as slip-resistant as it is.
Designing the Splash Pad – Surfacing

• **Aquatic Tiles**
  • Increase Traction
  • Add Design/Theming
  • Easier to patch/repair compared to PIP
  • Needs site prep for proper installation and performance
  • Various thicknesses available
  • Custom Graphics and Inlays
Designing the Splash Pad – Trends
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