

POOL DESIGN

Why Fall is the Perfect Time to Start Planning for a Pool

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Installing a pool within your community creates a common meeting point, as well as promotes a healthy, active lifestyle for residents.



Informed municipalities understand the value of public recreation facilities as a tool for keeping their quality of life high. Pools are also used to attracting new residents that wish to reside in communities that have a lot to offer.

But why are we talking about pools when summer has come and gone?

It's because proper public recreational pool design does not happen by accident, and it does not happen quickly.

That's why the planning and design process starts as soon as summer ends.

Remember: Poorly planned pool projects present problems.

Planning

Proper planning will ensure your pool will be open in time for the busy summer season.

You should take into consideration:

- Population statistics
- Location
- Parking & Traffic
- Maintenance & Energy
- Programs

By identifying these fundamental factors, you will be able to create a solid plan, maintain compliance with local and federal regulations, and keep your community informed about how decisions are being made.



Consider enlisting the help of an expert consultant; this can reduce this time and costs dramatically.

Scheduling

Developing a schedule will help dictate the speed of progress. Make sure you build in time for unforeseen circumstances, for example the weather. This way, even if you lose a few days of work, the project will still be on track to finish on time.

Remember: Never underestimate the potential of the blindingly simple to become extraordinarily complex.

Make sure you educate yourself and your community about the myriad of potential roadblocks, as well as have procedures in place to effectively handle them.



We've included a schedule showing how fast a small project can go if there is proper planning:

Task Name	Duration
Planning	5 days
Budgeting	5 days
Town Approval	30 days
RFP Engineer	30 days
Design – Plans & Specs	30 days
Bidding to Contractors	30 days
Award Contract	1 day
Build Pool	45 days
Ribbon Cutting	1 day
Enjoyment of Community	Forever

In general, designing and constructing a community pool is a 2 year process that's best started between the months of October and January.



Technical Considerations

A public pool is defined as an artificial basin constructed of concrete, steel, fiberglass, and other materials with the intended use of recreational bathing, swimming, diving, or for therapeutic purposes.

Public pools are typically found either outside in an open area or inside a recreational facility.

When you're planning for your public pool, make sure you consider:

- A controlled water supply
- Structures, areas, and enclosures for the pool patrons' or staff's use, such as club houses or concession stands
- Restrooms that include toilets, showers, dressing rooms, and lockers
- Separate equipment rooms that can only be accessed by authorized personnel



Personnel

Hiring the right technical team will ensure you cover all the critical elements.

Plumbing engineers need to view the pool's piping design as that of a water treatment facility, since the majority of the work occurs in the filter room.

The architect and structural engineer are responsible for the actual layout of a pool, its size, shape, and depth.

Numerous operations that occur in the filter room need attention, including the water's filtration and chemical treatment, sanitization, pumping, and personnel safety. The designer must consider how maintenance will be performed and lay out spaces accordingly.

A careful design includes:

- Easy access for valve operation,
- Easy visibility of gauges,
- Emergency shower and eye wash accessibility,
- Corrosion-resistant materials, and
- Equipment replacement due to their high rate of deterioration caused by the harsh environment.

HELPFUL TIP

The mechanical room is a highly corrosive area, often the storage place of concentrated chlorine, oxidizers, conditioners, shock, cleaners, acids, and other chemical treatments. Corrosion and scaling also accelerate at higher water temperatures, such as those found in a hot tub or spa. Piping materials are usually schedule 80 PVC, CPVC, and stainless steel. A mild steel pipe or hanger will not last long in this environment, so piping materials must be chosen carefully. Corrosive valves, piping, and equipment subject to chemical attacks will require immediate replacement.

We included the following checklist to equip you with some basic tools you need to properly complete this project:

Checklist for Pool Piping and Equipment	
<p>Project Requirements—Before You Begin</p> <ul style="list-style-type: none"> <input type="checkbox"/> What are the applicable codes? <input type="checkbox"/> Perform initial pool calculations. <input type="checkbox"/> Space proof and locate the equipment. <input type="checkbox"/> Locate the incoming water, outgoing sewer, sizes, locations, and pressures. <p>Calculations</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pool volume <input type="checkbox"/> Pool water turnover rates (pool: six hours; diving: eight hours; wading: two hours) <input type="checkbox"/> Surge requirements <input type="checkbox"/> Pump sizing <input type="checkbox"/> Filter sizing <p>Circulating Pump</p> <ul style="list-style-type: none"> <input type="checkbox"/> Centrifugal type <input type="checkbox"/> Self-priming <input type="checkbox"/> Flooded suction <input type="checkbox"/> Head, pressure, and flow <input type="checkbox"/> RPM <input type="checkbox"/> Electrical characteristics <input type="checkbox"/> Efficiencies <input type="checkbox"/> Recovery time <p>Pump Types</p> <ul style="list-style-type: none"> <input type="checkbox"/> End suction <input type="checkbox"/> Vertical inline 	<ul style="list-style-type: none"> <input type="checkbox"/> Vertical multistage <input type="checkbox"/> Vertical turbine <input type="checkbox"/> Constant speed <input type="checkbox"/> Variable speed <p>Filter Selection</p> <ul style="list-style-type: none"> <input type="checkbox"/> Filter media <input type="checkbox"/> Particle size <input type="checkbox"/> Uniform coefficient <input type="checkbox"/> Mineral content <input type="checkbox"/> Water hardness <p>Makeup Water</p> <ul style="list-style-type: none"> <input type="checkbox"/> Quality and source <input type="checkbox"/> Pressure and volume <input type="checkbox"/> Hardness <input type="checkbox"/> Alkalinity <input type="checkbox"/> pH <p>Indicators</p> <ul style="list-style-type: none"> <input type="checkbox"/> Flow meter <input type="checkbox"/> Gauges <input type="checkbox"/> Water level glass <input type="checkbox"/> Water level controller <p>Valves</p> <ul style="list-style-type: none"> <input type="checkbox"/> Diversion <input type="checkbox"/> Butterfly <input type="checkbox"/> Ball <input type="checkbox"/> Air relief <p>Chemical Feed</p> <ul style="list-style-type: none"> <input type="checkbox"/> Passive <input type="checkbox"/> Active
	<p>Heater</p> <ul style="list-style-type: none"> <input type="checkbox"/> Heat exchanger type <input type="checkbox"/> Gas fired <input type="checkbox"/> Electric <input type="checkbox"/> Pool surface area <input type="checkbox"/> Pool activity type <p>Filters</p> <ul style="list-style-type: none"> <input type="checkbox"/> Sand media <input type="checkbox"/> Diatomaceous earth <input type="checkbox"/> Cartridge <p>Surge Tank</p> <ul style="list-style-type: none"> <input type="checkbox"/> Capacity (1 gallon per square foot of pool surface area) <input type="checkbox"/> Valves designed for submerged rating <input type="checkbox"/> Piping designed for 100 percent of circulation rate <input type="checkbox"/> All water penetrations stopped <p>Level Controls</p> <ul style="list-style-type: none"> <input type="checkbox"/> Manual <input type="checkbox"/> Automatic <input type="checkbox"/> Electronic <input type="checkbox"/> Pneumatic <input type="checkbox"/> Mechanical float <p>Appurtenances</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pipe and fittings <input type="checkbox"/> Strainers <input type="checkbox"/> Gauges <input type="checkbox"/> Shutoff valves (ball and butterfly types)

Conclusion

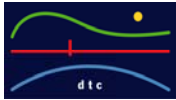
Designing and constructing a public swimming pool complex is highly technical and requires knowledgeable practitioners in its execution.

DTC has been called in too many times to correct mistakes that were the result of poor planning or design. Invest in the help of a professional to avoid costly delays and unnecessary spending.

For more information on planning your community recreational pool project, please call Jim Stenqvist or Dominick Celtruda at 203-239-4200



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For nearly 40 years, DTC has provided government and industry with solid technical management and engineering on building and infrastructure needs.