

International Council on Active Aging®

DEVELOPER'S **guide** 2009

Designing, building and equipping an age-friendly wellness center



BEYOND THE BASICS

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Creating unique aquatic facilities for

Memorable aquatic facilities do the basics well, plus are 'seasoned' with unusual elements from the worlds of spa, exercise and medical research

by Chris White



the older adult



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Water activities of all kinds are among the most attractive to people of all ages.¹ From beach vacations to “taking the waters” in European spas, forms of water recreation and health through activity in and around water are many and varied.

Older-adult settings feature numerous kinds of aquatic amenities, many of which enjoy extraordinary success. Yet others languish and don’t get the use they might. Why? This article will examine some of the underlying assumptions and principles that contribute to a well-designed and well-used aquatic facilities complex with a mission to serve the older-adult population.

Form and function

It was famed 19th-century architect Louis Sullivan who coined the phrase, “Form follows function.” By this Sullivan meant that a thorough understanding of a space’s intended function would result in the appropriate form (i.e., design) for it. We can easily argue that the opposite is also true: An incorrect understanding of the intended use can result in the wrong design for it, and that design will control what uses can and cannot be accommodated there.

Proactive activity programming in aquatics is no less important in meeting needs, attracting users and making for a pleasant user experience than it is anywhere else in the world of recreation and therapeutic activity. The key to designing high-impact water facilities is to correctly and creatively assess the projected needs of the various user groups and provide physical facilities that will meet those needs. This approach need not result in higher costs and more lavish facilities. It will likely result, however, in a more user-friendly and popular facility, which should be the overall goal of the design effort.

Safe, comfortable aquatic environments

Water attracts a variety of users who are seeking exercise, recreation or just relaxation. Some see the water environment as the most forgiving medium for a serious exercise regimen—either in a group format or on their own. Others enjoy water environments for relaxation and socializing. Still others look to water as a therapeutic medium, and use it to recover from injuries and do movement that would be impossible for them on dry land. A well-planned facility can meet most, if not all, of these needs.

Let’s begin with the water, itself. Differing activity levels require different water temperatures. With advancing age also comes a higher likelihood of users having chronic conditions that must be accounted for and adjusted to; in fact, research suggests that 88% of Americans over age 65 have one or more chronic health conditions.² Further, I have observed in my professional career that older users seem to have a sensitivity to cooler water temperatures not exhibited by younger users. All of these things call for more than one water body within the ideal aquatic complex. In the final analysis, there will be a need for water temperatures that range between 82F° and over 100F°. We will discuss these various types below.

Water purification and filtration is another critical factor in providing a safe and comfortable aquatic environment, and this is true of all water bodies in the complex. Over the years, chlorine has proven to be the most consistently effective disinfectant for bathing water, regardless of temperature. Chlorine gas, bromine, chlorine tablets and other

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forms of chlorine delivery into the water unfortunately bring with them a host of negative effects. These include, but are not limited to, unpleasant smell; skin and eye irritation; and hair damage or discoloration. Chlorine generator purification systems (also called salt purification systems) produce pure chlorine from noniodized salt using an electrolysis process that takes the place of chlorine injection and eliminates these negative effects.³ Proponents of this alternative to traditional chlorine treatments say that one of its greatest benefits is the water quality, according to the book *Pools and Spas*.⁴ (By the way, this type of pool should not be confused with a salt water pool. The water in these pools is fresh, not “salty” like sea water.)

From an owner’s point of view, these purification systems have significant advantages as well. They include:

- freedom from dealing with powdered or gaseous chlorine
- low maintenance time
- low salt consumption

Although the systems themselves may as much as double the initial cost of system construction, the labor savings and reduced chemical costs can repay that cost premium in 2–4 years of operation, according to one vendor.

Users’ needs

Let’s now consider some different user groups and the types of water bodies their interests require. As with any activity program area, there are “staple” activities and services that organizations must accommodate to meet the most common needs of older aquatic users. We will identify these user groups as:

- exercisers
- socializers
- therapeutic users

Exercisers use the facilities for fitness purposes. Whether their favorite forms of activity are solitary (such as lap swimming or personal training) or run more towards the group exercise format, these users will adhere to a more-or-less regular schedule of exercise for personal fitness reasons. *Socializers* gravitate towards the social interaction that takes place both in and around pools. These individuals see the water environment as an attractive one to meet and enjoy the company of others. Finally, *therapeutic users* are those who are recovering from an injury, exercising under controlled conditions due to a chronic health problem, or receiving therapy to achieve some specific remedial outcome.

The above distinctions are helpful when thinking about the various needs of aquatic users, but they are not meant to

“pigeonhole” or stereotype them as exclusively one type or another. In fact, those who use pools for exercise purposes may well be avid socializers when their water exercise classes aren’t in session or they’re not swimming laps. In any case, the requirements of these various pursuits are different and require different pool types. I suggest that a facility with at least 3 separate water bodies will serve all these user groups better.

The main ingredients

The first swimming pool—a basic pool for exercisers—should be suitable for both lap swimmers and group exercise classes. This feature should be rectangular in shape and 50 or more ft. in length to accommodate lap swimmers (although swim treadmills may play a role, as described below). The depth of this pool should be no more than 4.5 ft., although it can be a foot shallower in the center. Such depth variation provides for water exercisers of different heights, as short people need shallower depth to do the same exercises as taller people in the same class.

Twenty feet of width in this pool will easily accommodate 4 swim lanes, which can be labeled for swimmer speed (“fast,” “medium,” “slow,” etc.) during heavy lap-swimming hours of the day. Appropriate water temperature is often the subject of debate. In my experience, the water temperature for such a pool should be no less than 82°, and may go as high as 85° without seriously impacting user comfort. Strenuous exertion in water warmer than 85° can be quite uncomfortable for the bather.

In addition to the entry and exit assistance equipment required by the Americans with Disabilities Act (such as sling lifts or electric/hydraulic mechanical lifts), the pool should also have a gently sloped ramp with full-length handrail.

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This ramp will accommodate wheelchair users and others who cannot use steps or ladders.

The best addition to a basic pool is a whirlpool bath (or hot tub). The dimensions and surroundings of this pool are important as, properly sized and situated, it can serve both the socializer and to some extent the therapeutic user.

The depth slope of the whirlpool/hot tub should run from 3.5 ft. at one end upward to 4.5 ft. at the other. To serve the widest variety of users, this pool should be 12–15 ft. in diameter, thus easily accommodating a dozen adults or watsu treatment (see “The leading edge” section below for more about watsu). Water temperature will likely be around 100F°, but could go as low as 95F° and as high as 104F°. With this pool’s relatively small size (about 800 cubic ft.), temperature increases of several degrees could be accomplished in 2 or 3 hours, while decreases could be done much more quickly by simply adding cold water.

The whirlpool/hot tub should have steps with a handrail at the entry and benches at about 2 ft. below the water’s surface. Seating is often placed to take advantage of air and water jets that can provide massage to various parts of the body, and

a unique adaptation involves constructing contoured chaise lounges underwater that provide massage over the entire body. It is also important to set up the area around the pool with deck furniture, so socializing bathers can move easily between the water and the seating and still keep contact with the group. The whirlpool/hot tub can also be supplemented with a deluge or waterfall. With this feature, the heated water returning to the pool falls from a height of 4 or 5 ft. above the surface, affording those who sit under it a soothing neck and shoulder massage.

The final piece to the aquatic puzzle is the therapy pool. This tank can vary greatly in size and shape, but generally should have a water surface area of at least 400 sq. ft. and be no deeper than 4.5 ft. Besides including all the access equipment mentioned for the basic pool, the therapy pool has another salient characteristic for older adults, and that is the water temperature: This type of pool is generally run at 88F° or 89F°. A higher water temperature is crucial for comfortable movement for individuals dealing with rheumatoid arthritis, fibromyalgia, and other debilitating conditions. The therapy pool is typically the site of most of an aquatic facility’s water therapy (both group classes and individual services).

With the three water bodies described above, we now have a complete indoor aquatic center. So why add an outdoor pool as well?

Outdoor facilities

Outdoor aquatic facilities are popular attractions in many older-adult settings—senior living communities, in particular—and they deserve thoughtful planning to make the most of their potential. The outdoor pool offers a golden opportunity to create a resort-style amenity with an ambience that indoor facilities cannot do as easily.

When supplementing an indoor complex, the outdoor pool is predominantly a social facility. Lap swimmers and those seeking the therapeutic environment will have what they need indoors. Socializers will flock to an attractive outdoor facility with ample seating, strategically placed shade structures, barbecue facilities, lawn games such as horseshoes or croquet, and other such diversions.

Outdoor pools need not be large, as they are used for dipping more than actual swimming. The most attractive of these pools have:

- zero entries—pool entries that allow users to walk from the deck into the gradually deepening pool
- lounge ledges—6-in.-deep shelves where lounge chairs are set to keep the user cool
- underwater bench seating—similar to the seating mentioned for the indoor hot tub

Diving boards, slides, splash pads and kiddie pools are optional here for organizations that want to accommodate visiting grandchildren.

A coed outdoor whirlpool or hot tub, such as the one described above, would

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also be popular in certain climates. Usually, attractive landscaping, ample deck space and deck furniture are provided to contribute to the comfort and conviviality of the setting.

The leading edge

Once organizations have covered the basics, they can turn to a host of additional features to help them differentiate their aquatic facilities from others and attract new residents or members. Here are some ideas:

Watsu treatment. Watsu is a water-borne form of shiatsu massage. The recipient floats in 95F° water, while a watsu therapist stretches, massages and rocks the person's body with the support of the water to help the individual achieve a state of release and tranquility. As with conventional spa treatments, watsu commands a fee from the recipient and can bring direct revenue to the aquatic operation.

Salt inhalation room. Salt therapy, known as speleotherapy (using natural salt caves) or halotherapy (using the simulated microclimate of salt caves), is said to have a positive impact on many conditions, including asthma and chronic bronchitis. Users sit comfortably in these salt breathing chambers or caves for 30–45 minutes at a time. These rooms can be constructed in spaces as small as 120 sq. ft.—the size of an average steam room or sauna.

Swim treadmill. Considerably smaller than conventional pools, these pools use pumping equipment to create a steady (and adjustable) current of water so a swimmer can have the sensation and benefits of swimming “endlessly” in a mere 100–125 sq.-ft. tank. This technology has also been adapted as an after-market addition to conventional pools that are too short for satisfactory lap swimming.

Infrared sauna. Many older people cannot tolerate the high air temperature found in the conventional sauna (typically 190F° to over 200F°), and the infrared sauna is an alternative for them. Instead of heating the air in the room the way a conventional sauna does, infrared saunas use electromagnetic radiation to heat the human body more directly. Users can stay in the sauna longer and experience more of its detoxifying benefits.

Deluge or waterfall shower. A freestanding version of the feature described for whirlpools/hot tubs can be made available somewhere in the pool area. This shower consists of an approximately 3-sq.-ft. wading pool filled to a depth of about 2.5 ft. with 100–102F° water. A pump draws the heated water from the wading pool upward through a heater to a height of 7 or 8 ft., where it is dumped in a continuous stream onto the neck and shoulders of the bather below.

Ice fountain. Much like a Slurpee machine at the local convenience store, an ice fountain generates a steady flow of shaved ice into a bowl, which is located next to the steam bath, sauna or whirlpool. Overheated bathers can cool off with a handful of ice from the bowl.

These features are but a few of the many possibilities that organizations can apply creatively in the aquatic environment to make it exceptional. Much like the creation of a master chef, unique aquatic facilities must do the basics well, yet also be “seasoned” with unusual elements from the worlds of spa, exercise and medical research. ☞

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2. King, A. C., Rejeski, W. J., & Buchner, D. M. (1998). Physical Activity Interventions Targeting Older Adults: A Critical Review and Recommendations. *American Journal of Preventive Medicine*, 15(4), 316–333.
3. Salt Chlorination Device. Chemical product design projects, West Virginia University Department of Chemical Engineering. Retrieved from http://www.che.cemr.wvu.edu/publications/projects/prod_design/salt_chlorination.pdf.
4. Donegan, F. J., & Short, D. (2008). *Pools and Spas: Planning, Designing, Maintaining and Landscaping*, 2nd edition. Upper Saddle River NJ: Creative Homeowner.

Resources

Internet

National Swimming Pool Foundation
www.nspf.org

Worldwide Aquatic Bodywork Association
Watsu therapy
www.waba.edu

Print

“Cultivating a water program using an evaluation approach, part 1”
Author: Mary Sanders
Journal on Active Aging®, January/February 2008

This “Splash!” column by Mary Sanders outlines water temperatures for specific exercise intensity levels. Members of the International Council on Active Aging® can access the article by logging in to the members only section at www.icaa.cc and searching the “Articles archives.”