

# RECREATION MANAGEMENT

THE MAGAZINE WITH IDEAS & SOLUTIONS FOR RECREATION, SPORTS & FITNESS FACILITIES MANAGERS

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## From The Ground Up

### What You Need to Know to Get Climbing Done Right

By **Matthew M.F. Miller**

**L**arge-scale projects always pose planning, fundraising and building challenges for facility owners, but when the project itself is designed for scaling, the challenges can be even trickier to navigate.

Rock climbing and the use of climbing walls has become a major draw in the United States, with more than 9 million people participating in the activity each year. Popularity alone, however, isn't enough for all facility owners to jump on the bandwagon. Walls can be expensive to build and maintain, and due to the risk of injury, they require a trained staff and informed consumers.

#### Partner With a Pro

Investing money and time to build a well-made wall will bring a whole new adventure-seeking clientele to an existing recreation facility, as well as offer routine users a new, exciting challenge. It's an endeavor that will pay off in spades as long as the golden rule of climbing-wall construction is followed: Work with a pro.

"It is absolutely necessary to hire a professional when designing and engineering a climbing wall," said Candie Fisher, marketing director for a Boulder, Colo.-based designer and manufacturer of climbing walls and equipment. "Their specialist knowledge and expertise are well worth the cost. A climbing wall can be a very complex project. A professional designer has the experience to help you balance aesthetics, performance and budget. Hiring a professional avoids potentially costly mistakes, both in the construction, climbing experience and the long-term use of the wall."

Most importantly it will help alleviate the risks of injury. According to a recent study at the Center for Injury Research and Policy of the Research Institute at the Nationwide Children's Hospital, Columbus, Ohio, as climbing has gained in popularity, the number of injuries has increased as well. A recently published study revealed a 63 percent increase in the number of patients treated in U.S. emergency departments for rock-climbing-related injuries between 1990 and 2007.

"We found that the climbers who fell from heights higher than 20 feet accounted for 70 percent of the patients that were hospitalized for a rock climbing-related injury," said Lara McKenzie, Ph.D., principal investigator at the Center for Injury Research and Policy at Nationwide Children's Hospital. "This trend, combined with the fact that rock climbers have a higher hospitalization rate than other sports and recreational injuries, demonstrates the need to increase injury prevention efforts for climbers."

While many climbers are likely injured while scaling outdoor cliffs and rocky features, if your facility contains a climbing wall, you need to be aware of the increased risk and the importance of protecting your members and patrons. And that protection begins in the planning stages.

#### Make a Plan

According to Fisher, the most important step when beginning to plan the addition of a climbing wall is to get a clear understanding of a facility's needs. The climbing wall itself is only one part of the equation. In addition to designing a climbing wall that meets the needs of the community, facility owners should consider how that wall is being made available to the community, as well as programming, hours of operation and additional staffing needs and training.

"In the planning and purchasing stage, owners need to make sure that they have a really strong

understanding of their programming and potential audience, then need to select a product and configuration that is best suited for those needs," she said.

The facility should make using the wall as inviting as possible, with education, clearly displayed signs with rules and regulations, and events that highlight the wall and encourage use. Owners should eliminate as many barriers as possible (physical and psychological) to ensure that the facility members are comfortable trying out the climbing wall and coming back to develop their skills.

Space also is a major consideration when planning a wall. It needs to be large enough to attract users without eating up the entire square footage of a facility—and the size all depends on for whom it's designed.

"Ceiling height, wall size and floor space are all key concerns," said Garnet Moore, spokesperson for a Boston-based climbing wall company. "An operator should first decide what they want to get out of a climbing wall: impressive architecture, great rock climbing, innovative fitness training for their clients, etc. The size of the wall should really be based on these intentions."

Mertyce Mrvos, a spokesperson for a Mendota Heights, Minn.-based climbing wall company, said that owners should consider more than just the available space when looking to add a climbing wall. Building a big wall just because room allows doesn't necessarily equate to higher traffic.

"Consider the age group to be served. This will help determine the height of the wall, as well as the surface of the wall," she said. If you are serving a K-5 population, something as small as an 8-foot high wall is appropriate. If, however, you are serving a middle school-age population, a 10-foot-high wall would better accommodate the longer legs and arms of the climbers.

For a fitness facility, Fisher said a good height is 21 to 35 feet.

"This height range allows you to control the time climbers spend on a route, increasing route turnover and the wall's capacity," she said. In addition, this allows everyone at different skill levels and ages to reach the top, giving them motivation to keep coming back. And, of course, height will also be dictated by your facility.

"If you have less than 21 feet, consider traverse panels or bouldering, which has a lower barrier to entry and can be accommodated at heights of 12 to 14 feet," Fisher said.

Moore said that the best climbing walls make the most of the space available and should be as tall as possible. "A fitness-oriented wall can be a little shorter, but should be wider to accommodate more climbers and longer traverses," he added. "In really tight spaces, either a freestanding rotating wall or a short, 8-foot traverse wall can be a really nice way to bring in climbing at a low cost with a minimum of space."

It's not just vertical space that must be considered. The minimum distance a climbing wall extends from the structural wall is two feet and the average distance is three feet. According to Fisher, the minimum recommended fall zone adds an additional 6 feet from the pronounced area of the wall. A standard climbing lane is 4 to 5 feet.

"A great starting width is 16 feet, which can accommodate up to four climbers at a time," Fisher said.

"Facility owners need to consider potential usage in both peak and off peak times and determine the height/width combination that gives them the optimal mix of climber participation and return on investment."

## What's Your Style?

The two most popular styles of climbing walls are modular and custom. Modular walls are a bit like pre-fab homes. They are panelized systems that are sold in pieces and include everything needed to install and assemble the wall. You can pay to have the manufacturer install it or do so yourself—at your own risk.

With custom walls, the manufacturer is normally involved in the entire process, Fisher said. "Design, manufacture and installation. Every custom wall is a highly involved project and should be coordinated through the manufacturer."

There also are three main types of climbing walls: traverse walls, top-rope climbing walls and combination walls. According to Mrvos, a traverse wall is 8 or 10 feet high, and participants climb horizontally across the wall. Since participants are never more than a few feet from the floor, no special equipment or training is required. Mats are at the base of the wall to provide a safer landing surface.

A top-rope climbing wall, also called a vertical climbing wall, is higher and more challenging than a traverse wall. Mrvos said this type of wall requires special equipment: ropes, harnesses, helmets and belay devices. Participants must go through a training process to learn how to tie into the harness and how to belay to increase the climbers' safety. Top-rope walls help to develop trust, teamwork and positive risk-taking, in

addition to developing climbing skills. They are more expensive to build than traverse walls since they are more elaborate and structural engineers need to be involved with the design of the wall. There is also more material and labor involved in the installation process. Additionally, the staffing and maintenance requirement of these walls are greater.

The material of the existing wall over which owners plan to build a climbing wall also plays an important role in choosing the space that will work best.

Mrvos said to consider the surface where the wall will be installed. Is it cinderblock, concrete, drywall with wood or metal studs, built into a corner, or a continuous straight wall? This information will help inform what type of installation is needed and whether the panels are directly mounted to the wall, or whether a sub-wall is needed to mount the panels.

"Ideally we are looking for a wall that is void of such obstacles as clocks, thermostats, fire alarm pulls/strobes, pillars, dividers, basketball hoops, water fountains or windows," Mrvos said. "We can work around obstacles, but the fewer the better. Traffic flow through the space is also a consideration."

A good designer will speak with a facility owner to get a better understanding of the needs of the community and design flexible terrain to meet those needs. The key to recouping your investment is to invest in a climbing wall that will keep people engaged and coming back.

Fisher noted that it is important to invest in large diameter belay bars (top-rope bars), which are safer than double point anchors. In addition to reducing ropewear, the larger contact area allows belayers to better control falling climbers, especially when there is a large weight disparity.

## Tips for Getting Your Team Ready for Wall Climbing

The Association for Challenge Course Technology, a nonprofit organization that offers facility owners information about safe construction and operation of challenge courses, and the certification of challenge course staff, offers the following standards to get a staff prepared to manage a climbing wall:

1. All staff should be trained in first aid/CPR so they can respond immediately.
2. The climbing wall should only be used when supervised by trained staff. No unauthorized use should be allowed. A sign to that effect should be posted in the immediate area. The wall should be designed to prevent unauthorized use, or the area should be secured by other means.
3. If the participants are young, all staff should be at least 5 years older than the oldest participant (and preferably at least 18 years of age).
4. Attention should be paid to each staff person's weight or anchoring; it needs to be enough to control participants on belay.

### Getting It Right

So what exactly makes a climbing wall good?

Moore said that there is no single answer to this question, as climbing walls are installed for a wide variety of reasons. But, he added, "The best climbing wall is the one that is doing the most for its owner. It may be the most fun, the most beautiful or the one that attracts the most people."

Mrvos said that a good climbing wall is one that is functional for people of varying ages and ability levels. This functionality can be achieved through varying angles on the climbing wall (slabs, overhangs, roofs) and through varied handholds (small, medium, large/easy, advanced). There should be enough t-nuts to allow for the climbing handholds to be regularly rearranged. That way, the facility will continually be able to create new and interesting climbing routes without spending more money. This maintains interest in the wall and keeps climbers of varying ability levels challenged.

"A good climbing wall also has safety features and an appropriate safety and risk management protocol in place," Mrvos said.

She also recommends visiting a facility with a climbing wall before you buy. There are many different styles, from authentic-looking rock to candy-colored units, and seeing walls in person will give facility operators a better idea of what they will be purchasing.

"This will give you a visual picture of what a wall looks like, as well as the features that it hosts," she said.

"In addition, it will give you the opportunity to ask questions of people who have experience with climbing, and how it was received by their program participants."

For flooring, mats are the most commonly used safety feature to improve impact attenuation, as head injuries caused by falls are a common injury.

"The mats fold up and attach to the climbing wall to close the wall," Mrvos said. "This not only reduces access to the wall when it is closed, it also provides padding and protrusion protection for anyone who might run into the wall during another activity."

Fisher said that while there is no flooring standard in the climbing industry, her company recommends a 5 1/2-inch-thick dual density foam system with a flame-laminated carpet surface.

"This flooring is sturdy enough to support a ladder for route setting, but able to absorb the shock of a fall," she said. Also, make sure the wall you purchase meets the Climbing Wall Association safety standards. Ask the manufacturer from which you purchase to outline their safety standards prior to purchase.

Aside from not accounting for proper safety precautions, Mrvos believes that the biggest mistake some facilities make is focusing on advanced climbers and not offering a wall that welcomes beginners, too.

"The long-term picture should also be kept in mind," she said. "We have had customers build 'small' and find the need to quickly add to their wall. Another big mistake is not having ongoing training of staff and not having a risk management plan in place."

## Maintain or Upgrade

Upgrades and maintenance are fairly easy for climbing walls. After installation, trained staff members should conduct quarterly inspections of all ropes, equipment and wall structures for possible problems. An annual inspection by a contractor is essential and often required by some states. Every piece of equipment related to the climbing wall should have its own usage log that records service dates, hours of usage, inspections and equipment failures, if any.

"Climbing wall maintenance," Moore said, "is actually very easy. The handholds need to be cleaned regularly for both hygiene and appearance. On smaller walls, this is often the only real maintenance point. On roped walls, anchor points and ropes need to be inspected regularly to ensure their condition. Also on roped walls, it is important to actively encourage and train staff so that they can offer the most help to climbers."

Fisher added that the facility's staff should always be on the lookout for worn or damaged equipment and/or ropes. Top items to check on her list are:

- Top ropes and lead ropes for signs of excessive wear and abrasion.
- Bolts and bolt hangers. Make sure bolts are straight, tight and that the hangers are not bent. Make sure all bolts on the wall have quick draws and that they are in good condition
- Security of the rope anchors and anchors at the top of the lead wall.
- Check for abrasion on the webbing and grooves in the carabiners.

Of course, as with all equipment in a recreation facility, there will come a time when it's necessary to replace or upgrade. For those looking to remodel, it is a lot easier to spruce up your equipment these days. The most common complaint is old-looking walls as surface wear diminishes the overall appearance and aesthetics of a facility, and leads to decreased satisfaction and participation by climbers.

"Historically, the ability to resurface a climbing wall has been limited and costly," Fisher said. "As a solution, [we] recently introduced...a revolutionary pliable climbing wall resurfacing system that can be applied over existing climbing wall surfaces. (With this) thin-coat system, a 1/16-inch layer of resurfacing is applied to the existing climbing wall, improving appearance and durability without sacrificing performance."

Mrvos said that one hot trend is adding obstacle courses to climbing walls. Her company offers three different sizes of foam "noodles" that fit into specially designed handholds to form loops, lines and starburst obstacles for users to climb over, under, around and through.

Moore said there are other options for increasing climbing in a facility. "Pairing a larger wall with a rotating climbing wall or short traverse wall really works well," he said. "This allows for more intimate on-the-ground coaching and can really help climbers improve and get more out of the climbing wall."

Often, Moore added, the best improvements can be quite simple. "Changing the handholds in a thoughtful manner can really encourage people to think about their bodies and learn new movements," he said. "The

mental aspect of climbing is equal to if not greater than the physical."

Once the wall is built, don't expect users to be forever thrilled by the mere idea of scaling. Constant, innovative programming, including competitions, games and obstacle courses, will drive-up usage and provide a deeper, more rewarding experience for all.

## Where Else?

In addition to climbing walls that act as the grand, eye-catching centerpiece of the facilities that host them, there are other choices. In other words, if your facility is already built, you still have options.

Consider these other places where you can add a bit of climbing:

- **The Playground:** Many playground manufacturers and climbing wall companies also make boulders that are appropriate for use on the playground. Kids can't resist climbing, so why not give them a chance?
- **Poolside:** One company builds climbing walls meant to be installed by the pool. Once climbers reach the top, they can fall back into the water.
- **Racquetball Courts:** Are your courts sitting unused? You may be able to convert them to climbing space. Talk with climbing wall companies to find out if this is a possibility for your space.
- **The Gymnasium:** Some climbing wall companies manufacture modular systems that can be installed along a gymnasium wall. This is a great option for schools looking to diversify their physical education program.
- **Anywhere:** If you don't have the space for a full wall, consider one of the treadmill-like rotating walls. They offer climbing without taking up much additional space in your facility.

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