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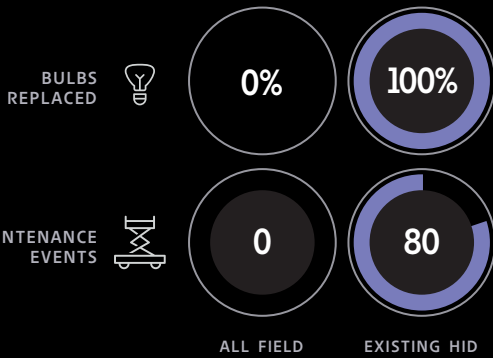
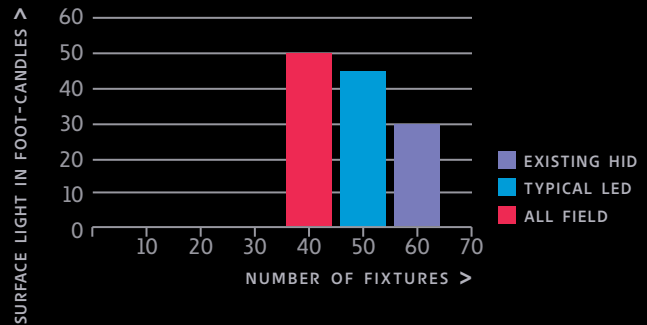


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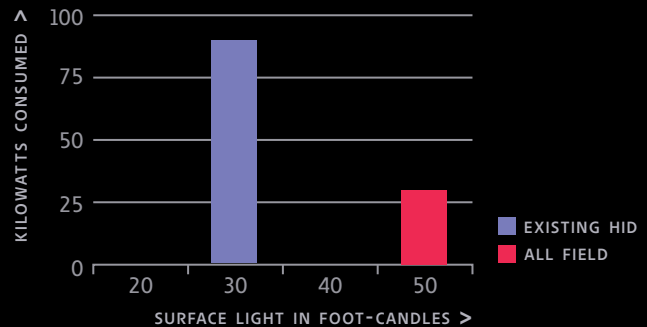


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Correction: The article "Noise pollution solutions for today's fitness centers" (October 2017) mischaracterized the thickness of duraTRAIN flooring by SofSURFACES. The flooring measures 1.25 inches thick.

COVER IMAGE OF
ORLANDO SKYLINE,
ILLUSTRATION BY
NICOLE BELL.



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Submit to the 2018 Aquatic Design Portfolio

If you have an outstanding aquatic facility that you think should be featured in *Athletic Business*, submit it to the 2018 Aquatic Design Portfolio!

Featured in our January/February issue, the portfolio reviews the latest aquatic renovations and new construction projects. It's a must-have resource for industry professionals seeking inspiration for their own aquatics projects. Don't miss out!

To find out more about submitting, contact executive editor Andy Berg at andy@athleticbusiness.com

On Our Blog

www.athleticbusiness.com

How to Speak 'Archibabble'



Stephen Springs,
senior principal,
Brinkley Sargent
Wiginton
Architects

You may not have noticed, but architects speak a whole other language.

Some call it "archibabble," and few know when or why we started using terms such as "fenestration" and "charette." Some clients, I'll admit, find it pretentious, while others appreciate the opportunity to learn new words and speak design language. No matter how much we try to avoid jargon, we just can't help ourselves sometimes. It becomes part of our daily lives.

A few years ago, one of my clients decided to keep a list of every new term she learned from my team and me, and it became an ongoing joke throughout the course of the project. I'm glad she took the time to care. One of the worst feelings in the world is leaving a meeting and having little idea of what's happening next, because you don't speak archibabble – and are too timid to ask. Don't be! Architects need to be whacked back into the real world from time to time. Failure to be on the same page now could result in lost time or money later.

Check out Stephen's "archibabble" glossary at www.athleticbusiness.com/archibabble

According to You

A high school in Iowa kicked five players off its football team after a photo emerged of the boys wearing white hoods and standing next to a burning cross. The players considered a lawsuit, citing their First Amendment right to free speech.

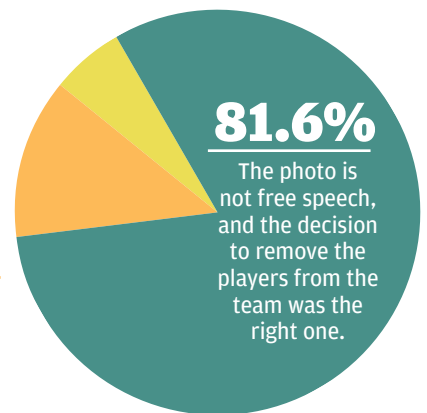
We asked readers, "Is an offensive photo free speech, or was the school justified in removing the players from the team?" Here's what you said:

5.7%

The photo is free speech, and the players should be able to play football.

12.7%

The photo was wrong, but the players should still be allowed to play football.



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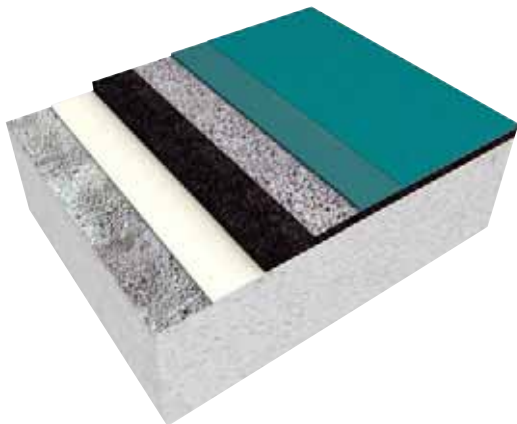


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LETTER FROM THE EDITOR



Common ground

It's an interesting time to be part of this industry. In recent months, sport has again realized its platform as an effective channel for social and cultural debate. Whether or not you feel strongly about protests taking place on the sidelines of NFL games – and those at the college and high school levels – it's hard to ignore that this industry finds itself at the epicenter of a politically charged conversation.

From an editorial perspective, we've found it almost impossible to avoid coverage of the national anthem protests. As student-athletes search for their voices amid the cacophony, administrators and athletic directors grapple with how they can use these volatile times as an opportunity to educate. As we've covered these issues in our daily newsletter over the past few months, it's been encouraging to see how even in times of adversity and disagreement people are nevertheless brought closer to understanding through the activities that this industry supports.

As we prepared this issue, we were also finalizing logistics for our annual conference in Orlando. In fact, many of you may be reading this at AB Show 2017, an event that plays host to a dynamic cross-section of industry professionals who invariably lend vital perspective and deep insight on myriad issues related to athletics, fitness and recreation.

Our hope is that attendees at AB Show take away a broader understanding of not only the issues of the day, but how their businesses or institutions can help enrich the conversation taking place in their communities. Whether you're an operator planning a community outreach push, a designer hoping to innovate around accessibility for individuals with disabilities, a rec director seeking to foster diversity among program participants, or a publication editor striving to inform an industry, we all play an important part in finding common ground.

It's nice to meet everyone in sunny Orlando, but inevitably we'll all disperse back to our daily work. We hope you'll keep reading and responding. Through our print publication and daily newsletter, *Athletic Business* is proud to offer our readers a space where they feel a constant connection to their community of peers.

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Starting Lines

Ideas and events shaping our industry



Survey says: Listening to student-athletes provides valuable insight

By Jason Scott

Athletics administrators know that listening is an important skill. Hearing honest feedback from coaches, fans and boosters is one key to running a successful department.

In addition to hearing from and responding to the feedback that these constituencies provide, it's also important to hear from student-athletes to gain valuable insight into their programs and the student-athlete experience. One way that athletic directors can provide student-athletes with a platform to voice their opinions is through well-designed surveys.

"We're in an era where a student-athlete's voice has never been stronger," says Michael Cross, co-owner and co-founder of Athlete Viewpoint, a tool that helps athletic directors glean better data from

student-athlete surveys. "We're in an environment where student-athletes have come up through youth leagues and youth coaching situations and are accustomed to giving feedback and providing insight on what their experience is like."

A good survey – one that asks the right questions and prompts sincere responses – can help administrators drill down beyond "vanity" metrics, which Cross defines as feel-good information that fails to provide administrators with actionable data.

"It's nice to get a question that says everything's all sunshine and roses," he says, "but if the questions that are being asked don't give you insight as to how to act upon [that data], then you're really at a loss as to what to do."

Athletic directors can use surveys to gather opinions from student-athletes on virtually any topic. Want to know how your facilities measure up against competitor institutions? Or how about gaining a better understanding of how a coach communicates in practice? Surveys can even be helpful in understanding team attitudes on things such as drug and alcohol use, hazing, and other broad social issues.

This kind of survey data can help athletic directors and departments stay aware of situations facing particular student-athlete groups. A freshman's experience will invariably differ from that of a senior. Similarly, minority student-athletes may face a different set of challenges than those from majority populations.

"If you have an understanding that, say, your African-American student-athletes are not having an experience that is similar to your majority-white student-athletes, that's something that you should be paying attention to and trying to figure out why that is the case," says Cross. "Is that something that's particular to your campus? Is that a lack of mentorship or of seeing people in leadership roles who are similar to your student-athletes? Is that something that's particular to your town and your community?"

Surveys, of course, are not a panacea for any problems that may arise in an athletic department, but the data they generate can provide a valuable starting point. With limited budgets and resources, survey data can help athletics administrators steer their dollars in the right direction.

Despite the versatility of a good survey, Cross recommends keeping questions focused on issues within the purview of the athletic department.

"It might be helpful to know, for example, that student-athletes don't really care for 8 o'clock classes," he says, "but if that's the only time a particular course is offered that's required for a major, that's not really in the purview of the athletic department to deal with."

Moreover, surveys aren't the only way that athletic directors can hear from their student-athletes. University of Maryland athletic director Kevin Anderson holds regular open forums for student-athletes to discuss whatever

comes to mind – including such touchy subjects as race and politics.

"I wanted to have a forum with our student-athletes where we could talk about all of these worldly issues," Anderson told *The Washington Post*. "Not about athletics, not about academics, but what's on your mind? What are you feeling? How do you see this? I just wanted to sit down and hear what they were thinking."

That kind of environment helps give Terrapin student-athletes a feeling that they're being heard, which is of unique importance in an era of boycotts, protests and demonstrations that have, in recent years, impacted several college athletic departments.

"At the end of the day, we're told he runs this multimillion-dollar business and he has all these expectations and stress that goes with selling the product of University of Maryland athletics," Alex Leto, a senior track athlete, told the *Post*. "So he's head honcho, he's doing his job, but then he brings himself down to a personal level and just wants to talk with us."

Focusing on the student-athlete voice is one way that athletic departments can show that they value that voice. By making a concerted effort to gather student-athlete feedback, administrators can show they take seriously the responsibility of playing a positive role in the lives of young men and women.

Cross knows that administrators are interested in providing a great experience for their student-athletes, and that a great experience goes far beyond the results on the field.

"Right now, within college athletics, the biggest metrics that we have to measure whether or not student-athletes are getting it done are winning and losing on the field, team GPA, grad-rate, and maybe your APR score," he says. "Those are some pretty high-level things that really don't give you any insight into the day-to-day experience of your athletes in ways that allow you to make the experience better."

Cross adds that college athletic directors also have a role to play in the mentorship, health and wellbeing of their student-athletes.

"It's important to understand whether you're delivering on those things." @

The Score

1.5

Estimated open-market value, in billions of dollars, of the Ohio State University football program in 2016 – a 59.6 percent jump over its nation-leading valuation a year earlier, according to an Indiana University-Purdue University Columbus analysis



5

Positions among the nation's 10 most-valuable college football programs held by members of the Southeastern Conference, which boasts a nation-leading average value of \$523 million per team

Source: The Wall Street Journal

90

Percentage of 1,000 Americans surveyed who said they view parks and recreation as important government services

Source: National Recreation and Park Association



14

NBA teams, among the league's 30, that lost money during the 2016-17 season, including nine that were in the red even after the league's revenue sharing was factored

Source: ESPN.com

3:05

Average time needed to complete a Major League Baseball regular-season game in 2017 – an all-time high

Source: SI.com



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HIGH SCHOOL PARTICIPATION SURVEY | BY NFHS

Statistics from the annual High School Athletics Participation Survey conducted by the National Federation of State High School Associations (NFHS).



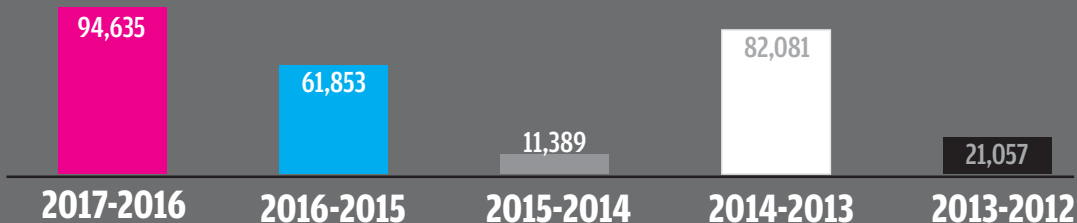
THE LARGEST ONE-YEAR INCREASE IN GIRLS PARTICIPATION IN 16 YEARS

“As we celebrate the 45th anniversary of Title IX this year, this report on girls participation numbers underscores the significance of that important decision in 1972,” said Bob Gardner, NFHS executive director.



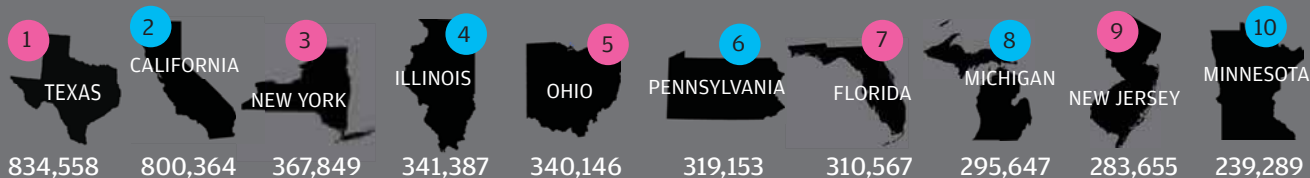
PARTICIPATION GROWTH IN THE LAST 5 YEARS

The latest increase of 33,052 athletes represents the largest one-year jump in overall participation since the 2008-09 school year.



TOTAL HS ATHLETES PARTICIPATING IN 2016-2017
7,963,535

TOP 10 PARTICIPATION STATES



[Illustration by Nicole Bell]

Noteworthy

Power management company **Eaton** announced the installation of its advanced Ephesus LED sports lighting at the United Center in Chicago, home to the NBA's Bulls and the NHL's Blackhawks. The new system reduces energy use by as much as 75 percent. In addition, the system features advanced controls, allowing venue operators dimming and color-changing opportunities to elevate the in-venue experience for fans while providing high-quality lighting for athletes and broadcasters.



[Photo courtesy of Eaton's Ephesus Lighting]

Fitness equipment manufacturer **Nautilus** announced that one of its brands, **Octane Fitness®**, had been recognized with several Best Buy awards from *Fitness Professor Review*. Octane earned awards in the cross trainer and elliptical categories. With the new awards, Octane has received a total of 128 awards from various organizations since 2003.

The University of Montana announced that it had selected **ANC** to install a new center-hung visual display at Dahlberg Arena, home of its men's and women's basketball teams. The display will feature four 6-millimeter LED video displays measuring 9.45 feet high by 16.38 feet wide, and will be the only such display in the Big Sky Conference.

Architecture firm **Perkins+Will** announced that it would acquire Denver-based firm **Sink Combs Dethlefs**. The merger brings one of the nation's leading sports, recreation and

entertainment architecture firms to Perkins+Will, and creates the firm's 24th design studio in the strategically significant Rocky Mountain West region. Together, the firms plan to provide clients with the blend of expertise necessary to meet the needs of overlapping markets.

At least 163 children younger than age 15 fatally drowned this summer in pools and spas, according to new statistics released by the **USA Swimming Foundation**. Those statistics, compiled by media reports, show that nearly 70 percent of the victims were younger than age five. **Pool Safely**, a national public education campaign in partnership with the USA Swimming Foundation, recommends installing fencing around pools and spas, designating an adult supervisor, teaching children to swim and learning CPR as ways to keep kids safe around water and prevent drowning deaths. 📞

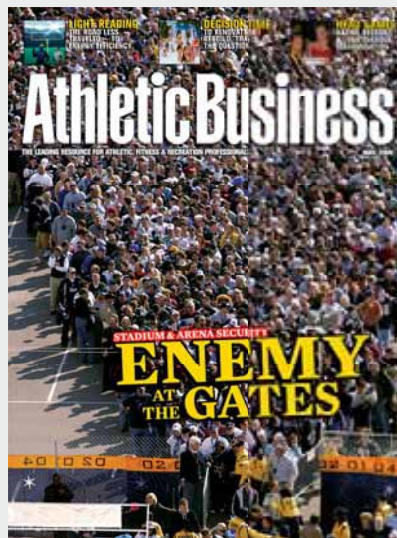
Looking Back: May 2006

Revisiting past issues of *Athletic Business*

The massacre that unfolded Oct. 1 at a Las Vegas outdoor concert served notice that large gatherings remain attractive targets for individuals who wish to cause widespread panic and mass casualties. Our look nearly a dozen years ago at the measures taken to secure spectator sporting events points to the life-and-death importance of hardening such targets.

Enemy at the Gates

Still widely regarded as prime terrorism targets, stadiums and arenas must adhere to post-9/11 security vigilance at the turnstiles and beyond.



Read more at www.athleticbusiness.com/no-terror

Fastbreaks

High School Smoke Signals

Natural disasters ravaged the United States in an unprecedented way this summer. Amid all the media attention garnered by Hurricanes Harvey and Irma, another natural disaster was sweeping the northwestern U.S., disrupting high school sporting events and generally causing havoc.

Wildfires burned in several states, including historic fires in northern California that destroyed homes and lives. But it was a side effect of the fires — smoky haze — that kept people indoors as many school sports seasons were set to begin.

In Boise, Ida., the Air Quality Index, a measure that represents the expected level of pollution in a given area, reached 151 — a level considered “unhealthy” by the Idaho Department of Health and Welfare, which recommends rescheduling or relocating events during periods of poor air quality. That triggered high school district-level policies calling for the cancellation of outdoor events. Youth sports events were also cancelled.

“You look outside and it’s like a thick fog,” Kim Johnson, community relations manager at St. Mary’s Hospital in Cotton Wood, Ida., told *U.S. News and World Report*. “It’s definitely impacting our sports, football and everything. Practices have been in the gym.” 📞

Scoring LGBT policies in the Power Five



AB first spoke to Hudson Taylor in 2012, a year after the former collegiate wrestler had launched a nonprofit advocacy group for LGBT student-athletes called Athlete Ally. In the five years since, the group has gone from no staff members to eight (five full-time). There are now 32 Athlete Ally chapters on campuses across the country, and more than 150 professional athletes have signed on as organization ambassadors. The group has helped influence LGBT policies and practices within the NCAA and the IOC, and branched out to advocate for more women in FIFA governance and for the wearing of hijabs to be allowed in FIBA women's basketball competition. On Sept. 12, Athlete Ally released its first Athletic Equality Index, a scoring of LGBT policies within the 65 NCAA Division I athletic departments comprising the Power Five conferences. *AB* senior editor Paul Steinbach caught up with Taylor to talk progress.

How does the Athletic Equality Index fit into your organization's overall goals?

One goal is that everybody who's involved in sports is educated on LGBT respect and inclusion, but another really important outcome for us is for there to be policy uniformity. By that I mean every athletic community should have the same LGBT policies and protections. An LGBT athlete who is at one school should not have fewer rights or protections if they transfer schools. The Athletic Equality Index is our effort to move the athletic community in that direction.

Scores ranged from a negative-45 (Baylor) to perfect 100s (Stanford, USC). How did you come by those figures?

We had an independent researcher go through handbooks and newspaper clippings and social media accounts of all 65 schools in the Power Five. It took a bit of time with each school to make sure that we really weren't missing anything. After that, we went out to all 65 schools with our findings and gave them four weeks to respond and clarify and correct us if we had missed anything, or to update their policies, if they wanted, prior to the launch.

Did any of them update?

Prior to us reaching out to the schools, only three of the 65 institutions had explicitly adopted the NCAA guidelines for their transgender student-athletes. By the time we went public with the report, that number had reached nine.

What did you personally take away from the results?

These NCAA best practices have been in existence going back

to 2011. That's when they adopted at least the transgender guidelines, so to have had so many institutions not update their policies since then is a bit frustrating. But then to have had this opportunity to reach out to these schools and see such a quick response and turnaround from so many was particularly inspiring. The other thing that definitely jumped out at me was that different conferences score better on different things. For instance, one of our criteria that we looked at was having an LGBT-inclusive fan code of conduct. Many colleges did not have one. However, the SEC, as a conference, did best on the fan code of conduct side. You think of conferences in which member institutions occupy the South, more conservative areas of the country, they may not be better on some issues, but in fact — when it came to fan culture and fan conduct — the SEC is doing a better job of addressing that than the coastal conferences.

Are you pleased with the overall trajectory of tolerance since we last spoke?

I would say in the past five years we've seen more athletes come out, more athletes speak out, more teams and leagues take a stand than at any time in history. So we are certainly in a period of athlete activism, in a period of athletic communities really embracing their responsibility for the acceptance and respect of the entirety of their constituents. But I think of this work as not being the beginning of the end but sort of the end of the beginning. We still have a tremendous amount of work to be done, but in every corner of this country there's at least a conversation now taking place that wasn't taking place even five years ago. 🗨️

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A collage of four images showcasing Matéflex flooring. Top left: A close-up of wooden planks with metal fasteners. Top right: An indoor basketball court with a colorful modular floor in blue, red, and yellow. Bottom left: An indoor basketball court with a light-colored wooden floor. Bottom right: An outdoor basketball court with a colorful modular floor in blue, green, and red, set in a park-like environment with trees and a green canopy structure.

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Which apps or software do you find most helpful in running your facilities and programs?



Sarah Klaassen, staff assistant, Utah State University Campus Recreation, Logan, Utah

“Connect2Concepts has helped us improve our communication and reporting over the past few years. They have gone above and beyond in helping us implement the Connect2 software and continually provide training and support so we can maximize use of their product in our recreation facilities.”



Kaila Lavin, assistant director for facility operations, California State University, Northridge, Northridge, Calif.

“Fusion. This software is one of the most important software systems we utilize in our facility because we use it for so many functions. This not only controls access, it is also our equipment checkout and sales software. We utilize this software in pretty much every department within the student recreation center, as well as the student union, including: membership services, fitness & wellness, aquatics, outdoor adventures, sport clubs, games room, computer lab and wellness center. We literally could not operate without this program.”



Andrew Mitchell, activities director, Fort Madison School District, Fort Madison, Iowa

“Essentially every high school in Iowa uses rSchool, Arbiter Sports and Quikstats for various purposes. I also use Google Calendar, Twitter, Facebook and Remind to communicate with athletes and the community.”



Hannah Roberts, coordinator of club sports and reservations, East Carolina University, Greenville, N.C.

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Legal Action

How the ADA protects those assisting individuals with disabilities

By Kristi Schoepfer-Bochicchio



Kristi Schoepfer-Bochicchio
(schoepferk@winthrop.edu)
is chair of the Physical Education, Sport and Human Performance Department at Winthrop University.

The Americans with Disabilities Act became law in 1990. It prohibits discrimination against individuals with disabilities in all areas of public life, including all places open to the general public. Levi's Stadium opened as the home of the NFL's San Francisco 49ers in 2014, and today ranks as the fourth most expensive venue in the league at a cost of \$1.3 billion.

Considered state of the art in many ways at the time of its debut, Levi's Stadium has since been accused of significant accessibility shortcomings by one individual with disabilities and his wife in *Abdul Nevarez v. Forty Niners Football Company LLC*, case number 5:16-cv-07013, filed last December in the U.S. District Court for the Northern District of California.

Abdul Nevarez and his wife Priscilla visited Levi's Stadium for football and other events on four separate occasions from 2014 to 2016. Mr. Nevarez's right leg is amputated above the knee, and he also suffers from significant nerve damage in his left leg and arm. He requires a wheelchair for mobility, and has a parking placard that allows him access to parking

[Image courtesy of Brettapproved.com]

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reserved for individuals with disabilities. Mrs. Nevarez has no disabilities, but she attends events at the stadium with her husband to assist him.

In December 2016, Nevarez and his wife sued the San Francisco Forty Niners Football Company LLC, the Forty Niners SC Stadium Company LLC, the National Football League, the City of Santa Clara, the Santa Clara Stadium Authority and Ticketmaster LLC. Subsequent to the initial complaint, the plaintiffs dismissed the National Football League (with prejudice) and amended their complaint to include a third plaintiff. The amended complaint also included the Forty Niners Stadium Management Company LLC and Live Nation Entertainment Inc. as defendants.

Barriers to access

The Nevarezes allege that on each visit to the stadium they faced multiple barriers that prevented equal access and enjoyment of stadium events. First, they asserted that it was difficult for them to access the stadium from the parking lots. They allege to have encountered extreme difficulty with the stadium shuttle system during each of their four visits, specifically noting that the shuttle system from certain parking lots made it very difficult to access the stadium box office to get tickets.

Regarding tickets, the plaintiffs allege that they encountered significant difficulty purchasing accessible seating in advance of events. According to the complaint, they were told that the stadium box office would not sell tickets over the phone, that tickets needed to be purchased in person or online, and that accessible tickets need to be acquired at the box office on a first-come, first-served basis.

Further, the plaintiffs argue that the security checkpoints at the stadium entry were not wide enough to accommodate Mr. Nevarez's wheelchair, that gate entries marked with the wheelchair symbol were not actually accessible, and that metal detectors were too narrow for a wheelchair. The plaintiffs contend it was difficult to determine how Mr. Nevarez could gain access to the stadium, and that once they found the correct location, he was only admitted after being patted down.

The Nevarezes argue that once inside the stadium, poor signage made locating elevators challenging. Moreover, staff did not know where elevators are located, according to the Nevarezes, who said they found the process of finding an elevator exhausting.

Additionally, the plaintiffs claim to have experienced embarrassment when they were invited by friends to the suite level for an event and the suite itself lacked accessible seating. Mr. Nevarez "was in everyone's way," they claim, and there was no access from the suite for him to actually see the event.

Lastly, the plaintiffs argue that obtaining companion seating for Mrs. Nevarez and other family members was extremely difficult on multiple occasions.

Associational discrimination

Plaintiffs allege discrimination under Title II and Title III of the ADA, as well as under the Unruh Act. Title II prohibits public entities from discriminating

The allowance of Mrs. Nevarez as a plaintiff should serve as a reminder to facility owners and operators that the ADA associational discrimination claim is as valid as a claim of discrimination by a patron with disabilities.

against any individual with a disability by denying them the benefit of services, programs or activities of a public entity. Title III states that "no individual shall be discriminated against on the basis of disability in the full and equal enjoyment of the goods, services, facilities, privileges, advantages or accommodations of any place of public accommodation." Additionally, Title III prohibits participation in an unequal benefit; requires reasonable modifications in policies, practices and procedures; and requires removal of architectural barriers if such is readily achievable.

The Unruh Act (California Civil Code §§51) provides that all persons within California (including those with a disability) are entitled to the "full and equal accommodations, advantages, facilities, privileges or services in all business establishments of every kind whatsoever."

In response to the plaintiffs' claims, the stadium-related defendants filed a partial motion to dismiss. Specifically, the stadium defendants asserted that Mrs. Nevarez could not allege discrimination under either the ADA or the Unruh Act because she does not have standing to do so.

All parties agree that Mrs. Nevarez is not an individual with a disability within the definition of disability provided by the ADA or the Unruh Act. Rather, Mrs. Nevarez's claims for disability discrimination under the ADA are "associational discrimination" claims; she claims to derive her individual right to sue solely through her association with her husband.

Courts have held that for a plaintiff to have standing to bring an associational discrimination claim under the ADA, a plaintiff must allege a "specific, direct and separate" injury as a result of association with the individual with the actual disability. If the plaintiff's allegation of discrimination is entirely "derivative" of the individual with the disability, the able-bodied individual will not have standing to file a lawsuit.

In this case, Mrs. Nevarez alleges that she suffered frustration, emotional distress, physical exhaustion and discrimination resulting from having to help Mr. Nevarez overcome many physical access barriers at the stadium. In contrast, the stadium defendants cite ADA guidance to assert that the associational discrimination claim should be applied narrowly, and that Mrs. Nevarez needs to prove she was directly discriminated against. For example, the stadium defendants argue that if Mrs. Nevarez were denied entry because of Mr. Nevarez's

disability, she would have a separate claim. The stadium defendants assert that the associational discrimination claim is limited to access, and that struggling to assist a disabled individual is not the valid basis of an associational discrimination claim.

The court disagreed with the stadium defendants, citing three recent case decisions in which plaintiffs in similar circumstances to those of Mrs. Nevarez were found to have satisfied the requirements of standing for an associational discrimination claim. Specifically, in *Daubert v. City of Lindsay* (2014), *Cortez v. City of Porterville* (2014) and *Moore v. Equity Residential Management* (2017), plaintiffs who filed associational discrimination claims for experiencing circumstances such as physical difficulty, frustration, emotional anguish, anxiety and embarrassment were all found to have standing in their lawsuits. The court could not draw a distinction between Mrs. Nevarez and these plaintiffs.

Emerging precedent

It is important to note that the decision on the stadium defendant's motion to dismiss does not address whether any of the alleged violations of the ADA actually violate federal law. This decision cannot be used as guidance regarding the stadium defendants' compliance with the requirements of Title II and Title III of the ADA or the Unruh Act.

However, the continuance of the case and the grant of standing to Mrs. Nevarez using the associational discrimination provision of the ADA is significant in its potential impact to facility owners and operators. The emerging legal precedent regarding associational discrimination is to interpret such discrimination broadly. As the case moves forward, it may be that the stadium defendants are absolved of liability, but the allowance of Mrs. Nevarez as a plaintiff creates more difficulty in that defense and should serve as a reminder to facility owners and operators that the ADA associational discrimination claim is as valid as a claim of discrimination by a patron with disabilities.

While facility owners and operators may believe themselves to be compliant with the mandates of the ADA, they should consider what is required of able-bodied patrons who assist those with disabilities. In addition to considering whether patrons with disabilities have full and equal access and enjoyment of goods and services, must they now consider the potential level of frustration experienced by an able-bodied patron providing assistance?

That may appear to place an unreasonable burden on the facility owner/operator, but considering the experience of able-bodied assistants in cases decided and undecided, it seems a prudent consideration for those who may face liability under the ADA. ☹

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Technology-dependent and loving it



[Illustration courtesy of YouTube]



Rob Bishop
(rob@elevationshealthclub.com)
is managing partner at Elevations Health Club in Scotrun, Pa.

By Rob Bishop

When we first purchased Elevations Health Club, 22 years ago, members would sign in when they arrived at the club on a piece of lined notebook paper. Membership dues were collected at the front desk each month. Not exactly technology-dependent.

As we started to grow, we implemented auto-payments. No more tracking down payments from every member every month. It was an essential change since we simply couldn't keep track of everyone's monthly dues on paper. Soon after that, we started a computerized front-desk check-in system.

About 10 years ago, we decided we needed "member-management software." We wanted to be able to track payments in real-time — and follow up more quickly on bounced payments. We wanted to know what days of the week or times of day were the busiest so we could adjust staffing. We wanted to know when members went "missing" so we could reach out to them and get them back in the club. There are a large number of software vendors in the fitness industry and each has its advantages. We felt ABC Financial fit our needs.

We now needed two computers at the front desk, one for members to check in (barcode keytags) and one for us to use as our cash register and to run reports, etc. ABC also had an app that allowed us to use our personal computers to log into the system so we could work from a back office or remotely.

Dark ages to digital age

As tech-dependent as I thought we had become, I recently discovered that we were practically in the dark ages compared to what we could be doing. ABC wanted us to switch to Electronic Agreement Entry — allowing prospective members to join on the computer, with no paper membership application. I wasn't so sure about this, but ABC offered to send a rep to our club for an entire week to teach us everything we needed to know.

Our rep, Kevin, came on-site and immediately said, "You know, there is soooooo much you guys could be doing online to make things faster, more efficient and more customer-driven."

Like what?

Electronic Agreement Entry — EAE, for you tech people. When we sign up a new member, we now do all of it on the computer. The software will walk the staff person and customer through the sign-up process. Pricing and payment terms are preset. We installed an electronic signature pad so the new member can sign in all the right places. No paper. It

takes less time than having someone fill out a paper contract and then have us enter it into the computer and send the originals off to our billing company so it can sync everything up in our database.

Guest registration — We ask everyone who walks in the door to fill out a guest register (name, address, email, interests, etc.) and a waiver if they will be “trying out the club.” We used to do this on paper and then type everything into the computer later. The paperwork has to be kept on file for years for liability purposes.

Now, we use a \$70 tablet that has internet access and a portal ABC supplies to us. When a guest walks in, we simply have them fill everything out (even sign our waiver) on the tablet. That person is instantly in our system.

If they decide, after their tour or workout that they would like to join, half the signup process is already done and in the computer. It also eliminates the possibility that the staff won't be able to read someone's handwriting or that we will miss getting their email address. It also ensures that every guest actually gets into the database so we can follow up and market our services to them.

In the past, when we did things on paper, I'd estimate that only 60 to 70 percent of the guest registers made it into our computer with accurate information.

Email — All of our new members receive “welcome to the club” emails and a monthly newsletter. We can also email blast all of our members when swim lesson registration is starting. We can email all of our prospects at once if we are running a fall special. With EAE, our new members now receive a copy of their contract via email and a copy of their receipt — and a staff person doesn't have to do anything.

Scheduling — We want every new member to meet with a trainer their first week in the club. We do this to help the new member feel comfortable and to design a workout for them that will help them meet their goals.

In the past, we had used a schedule book (think hair salon) to schedule these sessions, but we've put this online, too. When a staff person is signing up a new member on the computer and they get to the point where we are ready to accept payment, the computer automatically jumps to the appointment scheduler.

There's also an app for our smartphones, so the trainers can check the schedule from anywhere. They can even block out time or open up more availability from their phone.

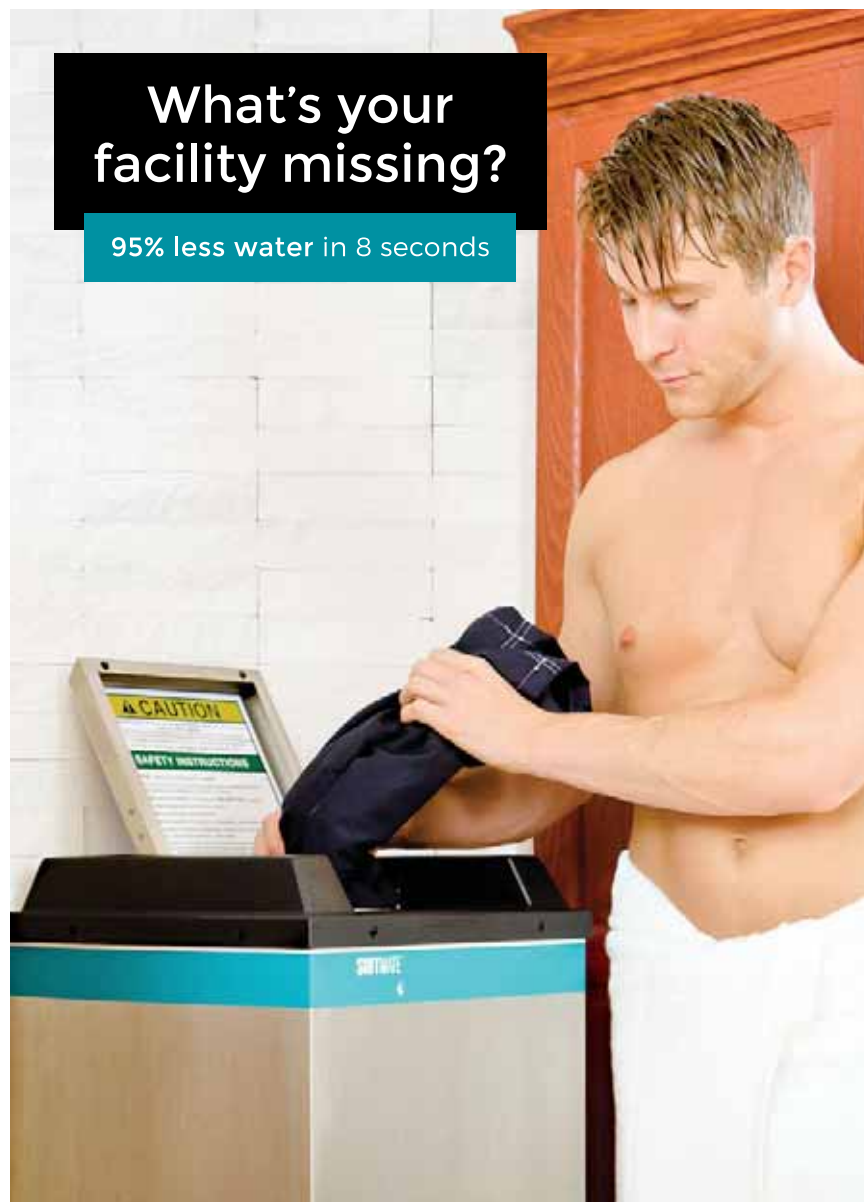
Decade's worth of progress

In just one week, we pushed more of our business online than we had in the previous 10 years. And we aren't done yet. There is still so much more we can do to streamline our business and to make things easier for our customers.

Every six weeks, at the start of a new swim lessons session, the front desk has typically been covered in a sea of registrations, waivers and payments. We are soon going to allow customers to log into our website and register and

pay for swim lessons online. We are also going to let our members schedule their children's daycare on our website.

For years, I have been aware that we could do Electronic Agreement Entry and not have to do things on paper. But I resisted, thinking that it would take too long to learn. That was a huge mistake. There is a learning curve for everything, but the bottom line is that technology allows us to improve our business and better serve our customers. @



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Education is imperative to prevent sexual violence on campus



[Photo by Shutterstock]



By **Nathan Pine**

As athletics administrators, we have the ability to help shape society by influencing the values of those we mentor. In the high-pressure environment of college athletics, this is a fact that can sometimes be underappreciated. But remembering just how essential a role we play in the education of our student-athletes is more important now than ever.

Nathan Pine is the director of athletics at the College of the Holy Cross in Worcester, Mass.

Education is at the heart of everything we do in collegiate athletics. Intellectual exploration and discovery, and promoting a sense of curiosity and active engagement in the world, is the call of our educational mission at Holy Cross. We believe that creating these connections between our learning in and around the classroom and our own personal experiences develops thoughtful and engaged human beings who understand the role we all play as global citizens.

We encourage all of our constituents to engage with the complicated topics that our society must face. We ask our members to turn their knowledge into action to contribute to the common good, and that starts right here at home.

Athletics can be a powerful platform to drive change, not just on each of our respective campuses, but in society and culture as a whole. The NCAA Board of Governors' policy on campus sexual violence represents one of those opportunities.

Changing a culture

Sexual violence exacts a huge cost on its victims, as well as their loved ones and communities, yet it continues to occur at an alarming rate. It is imperative that we act now. But changing a culture is an ambitious task, one that requires us to commit our resources and hold all of our members responsible for our unified campus safety.

At Holy Cross, we recognized the growing issue of sexual violence and our role in both education and prevention. Last year, we identified this area as a gap in the educational offerings we were providing for our student-athletes. With this knowledge, and in support of initiatives already being enacted on campus, we joined with CFM Partners to implement, among other things, a program to train our student-athletes, coaches and staff on this important topic.

Providing a comprehensive educational experience is at the forefront of our daily work,

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and we are happy to see NCAA policies fall within that mission. Through this proactive partnership based in expanding our own educational goals, Holy Cross was compliant with the NCAA's sexual violence prevention and education policy before it was even announced.

We believe that this program is integral to running a responsible athletics department. Through this initiative and others, we believe we are fostering an inclusive, positive and empathetic culture built on respect for oneself and others.

An obligation to protect

As leaders in athletics administration, we must work with our colleagues on campus to address the ongoing issue of sexual violence. We have an obligation to protect our student-athletes and staff and ensure that our campuses will always be a haven, both physically and emotionally, for everyone. By taking a collaborative approach and working with other leaders in our communities, we can reduce occurrences of sexual violence and

The NCAA's sexual violence policy requires that the chancellor/president, director of athletics and Title IX coordinator must annually attest that:

- The athletics department is fully knowledgeable about, integrated in, and compliant with institutional policies and processes regarding sexual violence prevention and proper adjudication and resolution of acts of sexual violence.
- The institutional policies and processes regarding sexual violence prevention and adjudication, and the name and contact information for the campus Title IX coordinator, are readily available within the department of athletics, and are provided to student-athletes.
- All student-athletes, coaches and staff have been educated on sexual violence prevention, intervention and response, to the extent allowable by state law and collective bargaining agreements.

We believe we are fostering an inclusive, positive and empathetic culture built on respect for oneself and others.

continue to address its devastating effects.

At Holy Cross, we will continue to be clear and consistent in prioritizing the need for all student-athletes and staff members to commit to sexual violence

prevention. This is an issue that we – and many others in the athletics community – take seriously, and we will continue to reinforce our commitment until not a single person lives in fear. @

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NCS4's lab offers students real-world experience

By Daniel Ward



Daniel Ward (L.Ward@usm.edu) is the director of the National Sport Security Laboratory, home to the new Sport Security Research, Training and Operations Center within NCS4 at the University of Southern Mississippi.

On Sept. 1, the University of Southern Mississippi's National Center for Spectator Sports Safety and Security (NCS4) held a ribbon-cutting ceremony for the Sport Security Research, Training and Operations Center at the National Sport Security Laboratory (NSSL). The new center helps bring to life NCS4's vision of being the world's leading academic research institution in addressing sports safety and security risks and threats.

The NSSL derives its unique position through its connectivity to each of the university's three main sports facilities. M.M. Roberts Stadium (football), Reed Green Coliseum (basketball) and Pete Taylor Baseball Park serve as technology, training and exercising extensions of the lab. This connectivity provides researchers and solution-providers the opportunity to immerse themselves in a real-life sports environment. The university applies sport safety and security best practices in an environment designed to integrate people, processes and technology.

The addition of the Sport Security Research, Training and Operations Center gives NCS4 the ability to achieve its mission to conduct innovative research, provide training, enhance professional development and assess security solutions.

"We have an opportunity to groom our sport security thought-leaders of tomorrow," said Dr. Lou Marciani, director of NCS4. "Connecting our

athletics facilities as part of our laboratory provides amazing opportunities for our students. They will be able to work with professional, intercollegiate, interscholastic and marathon sports organizations and facilities to test theories, translate lessons learned and best practices into real-world solutions, and build the sports safety and security profession for the future." Here's a look at some of the functions of the NSSL:

Training center

The NSSL is outfitted to support professional development and training opportunities. Students, practitioners and organizations are welcome to attend customized training and exercises in an environment designed to emulate a sporting and special event operations center. Through the NSSL-connected venues, training can be extended to sports facilities and surrounding areas.

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M.M. Roberts Stadium (football), Reed Green Coliseum (basketball), and Pete Taylor Baseball Park serve as technology, training and exercising extensions of the lab.

Participants can receive technology-specific training or participate in a customized scenario designed to build or enhance multi-agency collaboration, event management and incident-management capabilities.

Operations

The lab houses an operational coordination center, fully equipped to manage event and incident operations. NCS4 provides operational support to the University of Southern Mississippi and real-world training and education opportunities for students and practitioners.

Research

The NSSL connects safety and security experts with manufacturers and solution-providers in an effort to develop capabilities, validate effectiveness, and identify the value technology brings to sports and special event safety and security programs.

Research and development

Technologies, services and solutions can be researched, developed and then evaluated by the NSSL. Alternatively, the NSSL can work with manufacturers and solution-providers to identify gaps, best practices, product recommendations, and integration requirements. Through research, the NSSL works with the sports safety and security community and manufacturers to develop processes, policies and technologies


designed to reduce vulnerabilities at sporting and special events.

Product reviews

Beta, emerging and established technologies are regularly reviewed by industry and technical experts to examine the applicability of solutions, as well as provide feedback to solution-providers to assist them in determining or enhancing product value to sporting and special event safety and security.

Product evaluations

NSSL personnel and industry experts can assist manufacturers and solution-providers in defining evaluation criteria for solutions designed for sporting and special event safety and security. Solutions are then field-tested in a real-world environment by end-users and technical experts. Products and services are evaluated based on stated capabilities and their effectiveness in addressing industry needs. An evaluation report is distributed to sports safety and security practitioners and leagues. The NSSL maintains an updated evaluated product list.

There's no greater educator than experience. With its location on a campus featuring diverse but familiar types of spectator venues, the Sport Security Research, Training and Operations Center is uniquely positioned to provide future safety and security professionals a place to learn their craft and advance the industry. 



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Be sure to catch this year's Nov. 10 keynote, which should give you plenty of food for thought, as well as practical tips to improve your businesses and institutions. Former *New York Times* investigative reporter Charles Duhigg will be presenting on his insights from two years of full-time

research into the neurology of habit formation. He'll discuss highlights from his best-selling 2012 book *The Power of Habit: Why We Do What We Do in Life and Business*.

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Expo Grand Opening
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12:00pm-5:00pm

Innovation Station Seminars
12:30pm-2:30pm

Free-Throw Contest
2:00pm-4:00pm

FRIDAY, NOV. 10

Early-Morning Workout
6:30am-8:00am

Expo Open
Demo Stage Open
12:30pm-4:00pm

Innovation Station Seminars
12:30pm-1:45pm

AB Social on the
Expo Floor
2:00pm-3:00pm

Free-Throw Contest
2:00pm-3:30pm

INNOVATION STATION

Booth 1347

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2017 Exhibitors

Exhibitors with ads in this issue appear in **boldface type**. To find a specific ad, refer to the ad index on page 77. Exhibitors as of October 9, 2017.

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The case for embedded ROTC athletic trainers



By Courtney Cameron

A UCM athletic trainer checks for lower-extremity injuries common to cadets completing endurance training in heavy boots. [Photo by Bryan Tebbenkamp, UCM photographer]

The U.S. Army has high standards for fitness – and no one knows that better than the individuals tasked with treating soldiers' injuries. Rachel Brown is an instructor/ROTC athletic trainer at the University of Central Missouri, where a flourishing ROTC program prepares a battalion of roughly 125 cadets annually. Her ultimate goal: to ensure that every cadet passes a monthly regimented Army Physical Fitness Test (APFT) without incurring a debilitating or chronic injury.

UCM's ROTC cadets undergo a rigorous daily Physical Readiness Training (PRT) comprised of an Army-standard warm-up, followed by a series of workouts designed to help maximize their scores on the APFT – including push-ups, sit-ups, burpees and endurance running – and a cool-down. These daily 6 a.m. workouts and monthly timed tests provide the framework for a continuous athletic season – one that leaves many cadets open to injury from overuse.

"Most sports go through periodization training," says Brown. "They have a regular season, an off-season and a preseason; they circulate through different levels of exertion. For example, volleyball regular-season work is going to be comprised of

short-duration, high-intensity workouts, whereas in your off-season you might be doing a lot of weights and conditioning. That's not the case with the Army. They never have a true off-season. They're always going."

These strenuous routine tests are compounded by field work, where the cadets train in full uniform, covering long distances in heavy boots and often with a full pack weighing a minimum of 35 pounds. Field challenges include functional training that simulates a battle situation, such as carrying logs overhead, completing "litter carries" with a 200-pound dummy on a stretcher, or running while carrying large bladders of water in each hand.

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“They don’t want to appear weak. Even when it’s something that could easily prevent other things from happening, they don’t want to lose training. They don’t want to leave the field.”

According to Brown, these activities teach the body how to adjust to uneven terrain and lopsided weight. “They train the way that they need to be able to perform when they go on deployment,” she says. “They need to be able to maintain fitness over a long period of time. That’s why the Army conducts PRT.”



Army Strong mentality

Because of the unpredictability of this method of training, ROTC athletic trainers see a wide variety of injuries – everything from burns and smashed fingers to poison ivy and snakebites. But, the most concerning trends come in the form of overuse injuries: IT band issues, hip inflexibility and weakness, plantar fasciitis, shin splints, stress fractures, lower back pain, and overall tightness and inflexibility. Left untreated, many of these injuries can become chronic.

Unfortunately, there is an ingrained (reluctance) among Army cadets to seek help. Says Brown, “If you think about sports psychology – each sport has its own sport culture. When you talk about the Army – their theme is Army Strong, and part of the problem is that they don’t go when they need help because of the stigma. They don’t want to appear weak. Even when it’s something that could easily prevent other things from happening, they don’t want to lose training. They don’t want to leave the field.”

According to Brown, orthopedic problems and musculoskeletal pain is the number one cause of duty loss in the Army – and much of that could be prevented if treated correctly. “And that’s where I come in,” she says. “I’ve spent a lot of time and effort integrating myself into the program to try to change that culture – to convince people to use the free care that’s available to them.”



“It took me at least a full semester to get to know them and for them to trust me and see me as a resource,” says Brown. “Now, they trust me and they will tell me when they’re hurt. I’m catching things and am able to treat them. If the AT isn’t out there ‘doing life’ with the cadets and exemplifying the principles of Army Strong, you aren’t going to get the prevention you’re after.”

From a monetary standpoint, it only makes sense to have a dedicated ROTC AT. ROTC training is precisely formatted to fit a four-year degree program, and contracted cadets are required to complete additional training camps during the summer months, leaving little room for setbacks due to an injury. Says Brown, “We want them to graduate in four years and get through their training quickly so the Army doesn’t lose money. If they get injured their junior year and can’t pass a fitness test, that puts them way behind.”

“Having athletic training for the cadets on campus is a huge benefit for a lot of reasons,” she continues. “One, they stay safer, so we can prevent injuries from happening and they can still participate. Two, if an

Athletic trainers at UCM work with cadets to maintain flexibility and mobility.

[Photo by Bryan Tebbenkamp, UCM photographer]

Trust among cadets

Here’s where the program at UCM differs from the norm. Brown has been an inspiration in the creation of an embedded athletic trainer position with ROTC. “I restructured my schedule and how I work to be integrated into all of their activities,” says Brown. “If you’re going to be here, I’m going to be here.” While many ROTC programs have access to AT services on campus, that availability alone doesn’t build the level of trust that ensures cadets will report injuries in the early stages.

Since Brown began attending the daily PRT – in addition to participating in labs, sitting in on cadre meetings, tagging along on field trips and keeping open clinic hours – injury reporting has doubled.



UCM athletic trainers work with cadets from the 2015-16 battalion, professors and military leadership. [Photos by Bryan Tebbenkamp, UCM photographer]

injury happens, it can be taken care of right away. Three, the cadre don't have the burden of trying to make medical decisions that they aren't qualified to make. And four, if more people complete the course and don't drop out because of injury, the program gets more money. They have to graduate and commission a certain number of cadets each year in order not to go on probation."

Recruiting tool

Along with helping to decrease the drop-out rate, Brown has been instrumental in recruitment. "Since I started our battalion has doubled," she says. "They use me. I am a huge marketing tool." Having an AT present on campus during ROTC training reassures

parents that their students will be taken care of. "Why should you come to UCM over a larger school?" asks Brown. "This is why."

However, as much as the university might hold a competitive advantage by having one of the few ROTC programs with an embedded AT, Brown is eager for more schools to follow suit. "One of my major goals for the next 10 to 15 years is to start getting athletic trainers into the ROTC programs at major colleges," she says. "In many cases, the ATs are already there. In others, a new position would have to be created and funded through the university."

Why should schools put up money for a new position? To answer that question, Brown is involved in a national research project to collect data that shows the amount of money saved by having an AT dedicated to the program. Early injury reporting means cadets don't miss training and they get the treatment they need – often preventing a debilitating injury and saving the overall program the costs of a higher dropout rate.

"These cadets are preparing to do a job, and how their training works basically sets them up for injury," says Brown. "It's important to have someone there to take care of those injuries." 📍

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Shared indoor stadium benefits Cowboys, school district

[Photos courtesy of TexasHSFootball.com]

By Paul Steinbach

NFL-regulation hash marks embedded in the synthetic turf inside The Star in Frisco's indoor football stadium are colored a dark gray, bordering on black – the product of atypical negotiations during the year-old facility's design phase.

As one component of the Cowboys' \$1.5 billion, 91-acre headquarters campus located 30 miles due north of Dallas, the 12,000-seat stadium represents a partnership between Jerry Jones' empire and four local entities – most notably the Frisco Independent School District, whose eight high schools take turns hosting games there on Thursday and Friday nights. For all other intents and purposes during the fall, Ford Center – as the venue is officially known – serves as the Cowboys' indoor practice facility. The unmistakable blue midfield star and end zones emphasize that fact.

But the hash marks tell a different story.

With Cowboys executives on one side of the table and Frisco ISD athletics administrators on the other ("Now that's a cool meeting," says Frisco assistant city manager Ron Patterson), one of the NFL's most storied franchises acquiesced to the field being marked primarily for the facility's game-day commitments, with white turf inlays specified for the wider high school hash mark dimensions.

"I know that seems like a minor detail, but it's very important," Patterson says. "It just goes

to show, in my opinion, how well the Cowboys organization and the school organization and the city can all work together."

Community connections

The sharing of professional practice facilities with their host communities is a concept that seems to be coming of age. Last year, *Sports Business Journal* reported that new practice facilities are helping NBA franchises redefine destination districts in Sacramento, Milwaukee, Toronto and Camden, N.J. (for the Philadelphia 76ers), and that public use of the venues is part of the bargain of having municipalities fund their construction. According to their 20-year lease at BioSteel Centre, the Toronto Raptors must open the facility's doors to city-run recreation programming a minimum of 1,200 hours per year.

Still, one wonders why the Cowboys, the most valuable franchise in all of professional sports at \$4.2 billion, would feel the need to share facilities with anyone. Turns out, it wasn't strictly a charitable

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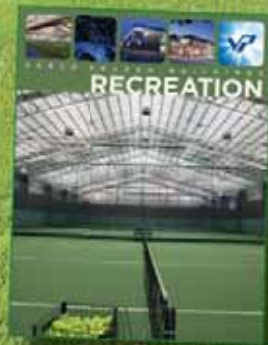
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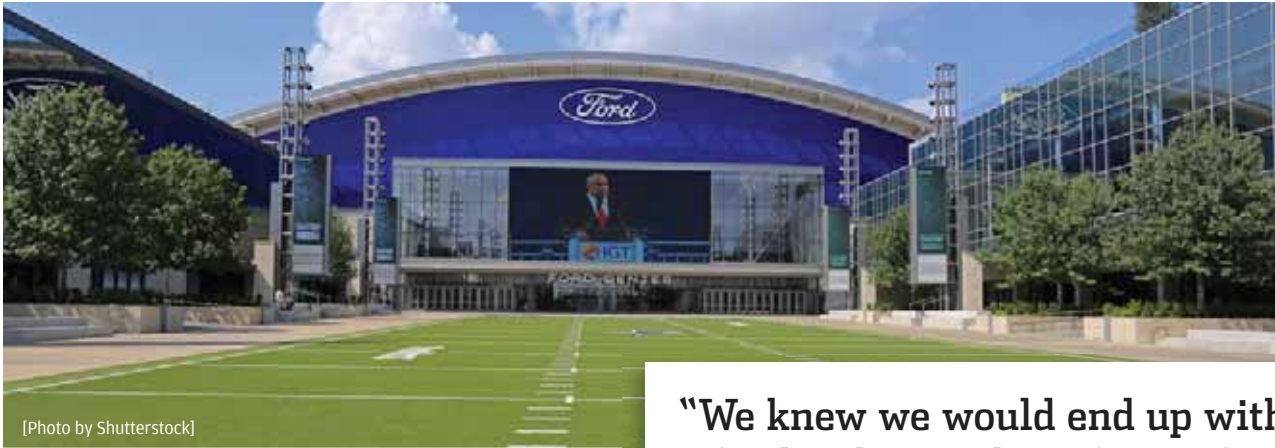
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“We knew we would end up with a facility better than if any of us were alone. Not only did we get a football facility, but we got an indoor, 12,000-seat facility, whereas our \$30 million was not going to be able to touch that.”

decision. A Frisco-based real estate firm helped connect the dots between Cowboys owner Jones and would-be stakeholders within the community. In the end, the Frisco ISD put up \$30 million, which it had already earmarked for construction of a third football stadium in the district; the City of Frisco added another \$30 million; the Frisco Community Development Corporation pitched in \$25 million; and the Frisco Economic Development Corporation was good for \$5 million.

“We started thinking, okay, we already know we need a stadium. We also know that we need more space for graduations. We need more space for conventions. We need more space for concerts. I mean, demand is huge,” says Patterson, who adds that pooling resources to meet a variety of community needs was “pretty much a no-brainer.”

“We knew we would end up with a facility better than if any of us were alone. So not only did we get a football facility, but we got an indoor, 12,000-seat facility, whereas our \$30 million was not going to be able to touch that.”

Ford Center is owned by the City of Frisco, which then leases it to the Cowboys. Moreover, the Cowboys provide the type of facility management expertise that’s outside the city’s comfort zone, and neither the city nor the district assume any financial responsibility for ongoing maintenance and operations, which Patterson estimates at six figures annually. It’s a formula that has served Frisco well with similar projects, including Toyota Stadium, the 22,000-seat home of Major League Soccer’s FC Dallas that doubles as another Frisco ISD football venue. Says Patterson, “We feel very comfortable developing and building structures like this, but it’s always good to know what you don’t do well, too. And we don’t run them very well. That’s why we don’t do it.”

School officials are at least present at Ford Center to handle the type of supervisory duties that any high school administrators would on game nights, but Cowboys personnel are there to turn off the lights and lock the doors when it’s time to go home.

Physical space within the building itself is likewise clearly defined. The stadium is divided lengthwise, with the City of Frisco and Frisco ISD occupying locker rooms and offices along one side and the Cowboys operations housed along the other. “If a high school is on the field for whatever

purpose – band, whatever – the Cowboys can still do their thing. They’re in their offices. The coaches are working,” Patterson says. “Vice versa, when the Cowboys are on the field, then the high school folks and the city can be on their side of the venue. We can both be in the venue at the same time and not step on each other.”

Yet, there’s a sense of ownership. City and ISD logos grace the eastside entrance used on game nights, student artwork adorns interior walls, and raised-letter logos of all eight schools along a hallway visually reinforce residency. “Students feel very much like ‘This is our home. This is where we play,’” Patterson says.

It’s also where Frisco ISD students learn. “We don’t call it a sports venue; we call it an educational venue,” says Patterson, who points to the state-of-the-art broadcast and video equipment on which students from the district’s Career and Technology Education Center gain experience during every game. Hands-on lessons in sports management, development and hospitality are also a plus. “All of those kinds of things are going on in that venue besides football, soccer and band,” Patterson says.

Star-gazers

The playing field represents the only area truly shared by the various athletes utilizing Ford Center, with the Cowboys running morning and afternoon practices and Frisco ISD staging games at night. “We deliberately designed it so there would be that separation but still have connection on the field,” says Scott Armstrong, a senior associate at Gensler, the stadium’s architect.

And it’s not as though the Cowboys are overly protective of their turf. According to Armstrong, Jones personally delighted in the idea of paths



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Inside the Bruins' Hub of Practice Activity

Professional sports teams that share practice facilities with the public represent a growing trend, but hockey teams have been doing it for years – and for good reason. Unlike a basketball gym, which can go dark at little cost when not in use, an ice arena only makes economic sense when open for all but a few hours of the day.

Warrior Ice Arena – which opened in September 2016 as part of Boston Landing, a 16-acre health and wellness campus that houses New Balance Athletics' world headquarters in Boston's Brighton neighborhood – serves as the new practice facility of the NHL's Bruins. The arena's schedule accommodates Bruins practice from roughly 10 a.m. to noon. Beyond that, the single ice sheet, open from the early morning hours to midnight or later, hosts youth, adult, high school and college hockey, as well as public open-skate sessions. Even in rink-rich Massachusetts, ice time is in high demand, according to facility manager Marissa Marwell, who handles Warrior Ice Arena's day-to-day operations on behalf of Rink Management Services.

The arena represents a big improvement over the Bruins' former practice facility in Wilmington, approximately 20 miles north of Boston, according to the new rink's general manager Jay Rourke. Warrior's ice-making technology is every bit as good as, if not better than, TD Garden's, Rourke contends, and similarities to the Bruins' game-day home don't end there.

"Everything is designed to replicate the Garden," says Rourke, a senior project manager for NB Development Group. "The ice is painted just like the Garden. The penalty boxes and players' benches are the same size and in the same location. The height of the glass is the same. The lighting here is 100 foot-candles, so it's designed to replicate the ceiling inside the arena. The players love it. It makes them feel that they're playing in a game situation. And then your average youth



hockey player gets to come out here and skate. Men's league players find it very cool to just sit there and take a photo on the same 'B' that's at the Garden."

Witnessing the public attraction to the team and its new practice digs has been a highlight for Marwell, herself a lifelong Bruins fan. "The most rewarding part for me is seeing the kids who get to come watch the practices who may never get to a game. They may not be able to afford tickets or for a variety of reasons will never get to the Garden and sit at the glass and watch their idols play," Marwell says. "But at this arena, they're able to come in at no cost, park at little to no cost and get right up close to them, right up to the glass. And then after that they can attend one of our public skating sessions. That gives them the opportunity to skate on the same exact ice."

Warrior Ice Arena was designed to replicate the playing environment of TD Garden.
[Photo courtesy of Warrior Ice Arena]

crossing – a chance sighting of Dak Prescott or Jason Witten as they surrender the field to high school student-athletes and their pregame warm-up. "They really wanted to have that connection to high school sports and to youth sports, in general," Armstrong says of the Cowboys, "as if saying, 'Hey, we're trying to be a little bit more personable, a little bit more engaged with the community.' For the ISD, you're attached to a world-class organization, and your kids get to be part of that environment and that kind of excitement and energy."

A sampling of the Ford Center's diverse schedule reveals an October concert by Bob Seger & The Silver Bullet Band (22,000 fans can be accommodated for such shows), a Geico Patriot Cup lacrosse event for collegiate men and women and high school boys and girls next February, and the Conference USA men's and women's basketball championships in March.

Designed wide enough to accommodate a regulation soccer pitch, Ford Center is the only domed high school stadium in Texas, where climate-control is a welcome luxury in August and throughout the fall. "It's a credit to the city, the ISD and the Cowboys organization for having the kind of vision to see past what has been done to what can be done," Armstrong says. "Traditionally, people don't think they can partner with an NFL team to do something like this. It really worked out great."

Other professional franchises are taking notice. "I think there are a lot of teams that are looking at this as a catalyst for what can be done," says Armstrong, who can see The Star from his Frisco residence. "I know for sure there are a lot of teams that have come through the facility, seen it and said, 'This is something we'd like to replicate in our own backyard.'" 📍

Putting a freeze on energy waste in ice arenas

By Randy Lieberg

[Photo courtesy of Accent Refrigeration Systems]

By their very nature, ice arenas are energy consumers, often due to the competing interests of intense refrigeration and heating for occupant comfort. Owners want an efficient building envelope, rink managers want lower operational costs, participants want ice at the proper temperature for their respective sports, and spectators want to be able to watch without shivering in their seats.



Randy Lieberg is a project architect within the athletics and ice design studio at JLG Architects in Grand Forks, N.D.

The good news is, sustainability and ice arenas do not have to be mutually exclusive. In fact, there are now a variety of tools and options to meet everyone's needs. Because of their nature and use, ice facilities' sustainability efforts tend to focus heavily on energy reduction as the primary facet of control. While it is true that ice arenas are energy hogs, that does not mean that sustainable practices cannot be utilized in their design and operation.

When planning a new facility, several relatively simple strategies can be employed to maximize sustainability. These include solar orientation of the building, ultra-efficient building envelope construction, partial earth sheltering, and a reduction in overall building footprint. However, operational energy savings undoubtedly has the greatest impact on sustainability for arenas.

A 2009 survey of Quebec ice arenas showed the least efficient community rinks used upwards of 2.4 million kWh per year, while the most efficient rinks used vastly less energy at around 800,000 kWh per year. By using just some of the energy-saving methods with relatively low payback periods, operators can expect energy savings in the range of 40 percent.

Resurfacing and refrigeration

Beginning with the ice surface itself, designers have many ways to ensure the stage is set for maximizing operational savings.

Let's assume that the rink floor in question is a poured-concrete slab, though operators of sand floor facilities can generally apply the same principles with a few exceptions and achieve similar results. The flatter the floor, the easier it is for operators to maintain an optimally thin ice surface. An ultra-flat floor can result in as much as a 6 to 8 percent reduction in compressor energy use. Similarly, if the density of a concrete slab is increased, it can transfer temperature much more efficiently, adding to the percentage of energy savings in compressor operations. If rink operators carefully monitor ice thickness and perform necessary ice maintenance, they will keep the ice surface as thin as possible and keep costs down.

Today's ice systems designers have many options to choose from, and the design of an ice plant involves several combinations of compressor types and controls systems intended to streamline operations. These systems can minimize run times, quickly achieve needed changes in ice temperatures, and even be self-diagnostic.

Optimizing compressors is a science in and of itself, with factors such as compressor sequencing (phasing), floating head pressure, variable-flow or dual-drive brine pumps, variable-frequency drives on evaporators, high-efficiency motors, and soft-start controllers. It would not be unusual to see as much as a 3 percent bump in operational savings through the optimization of compressors. Some

While it is true that ice arenas are energy hogs, that does not mean that sustainable practices cannot be utilized in their design and operation.

manufacturers have even developed proprietary systems that are continually seeking to exceed these savings.

Waste heat capture in refrigeration is not a new concept. It is used in all facets of commercial refrigeration and is even used in situations where waste heat is captured from non-refrigeration equipment to run separate refrigeration equipment. Most mechanical engineers and virtually all ice systems designers should be able to adequately design waste heat capture in an arena, especially for new construction. Long gone are the days when waste heat was simply let go as part of an arena's refrigeration operation. Rink designers should strive for 100 percent capture and use within the facility.

In addition to using energy that might otherwise be wasted, savings from compressor design and sizing are becoming more common. If careful consideration is taken during system design, and facility operators can maintain predicted loads, compressor sizing may be reduced. For instance, if a single ice sheet requires 40 tons of cooling, that same ice slab might be combined with one or more other ice sheets and reduce the individual cooling load to a more efficient 25 tons. This is a 60 percent reduction in needed compressor capacity. However, if unintended loads are applied by either excessive rink use or by underutilizing the facility, the compressors will not operate at full efficiency, which can result in higher operating costs, overworked equipment, shorter compressor lifespans, and even failure.

Building envelope and materials

Due to the immense amount of humidity that can be produced within an ice arena, any opportunity to use airtight insulation in the walls and roof of the main arena volume should be taken. Batt fiberglass insulation will eventually collect water vapor and sag, lose its effectiveness, or worse – grow mold. A great solution are insulated sandwich panels, which feature a closed-cell middle insulation layer held between the inner and outer finish surface of a metal panel – usually galvanized steel or aluminum.

While these panels do use expanded closed-cell insulation, they provide such a thermally secure building shell that they more than make up for it over the lifespan of the building. By designing an ultra-airtight building envelope, rink designers can significantly reduce the total tonnage of refrigeration needed to cool the ice.



Low-emissivity ceilings are a very effective tool for reducing the heating load on the ice surface – and consequently, the refrigeration systems. The “emissivity” refers to any material's natural tendency to reflect (or “emit”) radiant energy, which travels through the air without affecting the air temperature itself, but strikes and warms surfaces. Since radiant heat flows from warmer objects to cooler objects, this means small amounts of energy are constantly transferred from ceiling to ice.

Therefore, if the ceiling structure and decking of a metal ice arena have standard paint coatings, their emissivity means that they give off radiant energy and direct it toward the ice, heating the ice surface and making the refrigeration system work a little harder. Low-e materials simply have a far lower emissivity than standard materials (like metal arena ceilings), which means less energy transferred from ceiling to ice – reducing the heat load on the ice by as much as 30 percent.

Low-e ceilings are typically white or shiny/reflective, and a common misconception is that a shiny surface “reflects” heat. In fact, it doesn't collect and therefore doesn't emit as much energy. The shiny part is simply a bonus, because the high degree of visual reflectivity makes light sources appear much brighter, usually allowing a reduction in the number of light fixtures over the ice surface, which in turn reduces heat load on the ice and electrical load on the facility.

Lighting

Older rinks utilized individual high-pressure sodium or metal halide lights spaced evenly across the rink surface to provide intense spots of light. These are heavy energy users and bulb replacement is quite expensive, and in order to avoid empty spots on the ice surface, more fixtures are used than are necessary for light levels.

LED fixtures are getting more affordable, and provide even greater operational cost savings than fluorescent. If they can fit within initial or retrofit

Ice replacement projects, such as this one at Bowling Green State University, should always keep sustainability in mind. [Photo courtesy of JLG]

budgets for new construction, LEDs are a great option, and they are often eligible for considerable rebates from utility providers and/or government agencies.

Elsewhere in the facility, lighting changes can greatly help with energy savings. Occupancy sensors in common areas, restrooms, offices and locker rooms can help conserve a significant amount of electricity usage. Reducing lighting levels and/or fixtures in spectator areas can cut costs, as can setting lighting in these areas on separate zones and schedules. There is no need for lighting over seating when nobody is sitting there.

Dehumidification and ventilation

Dehumidification for ice rinks is necessary for a variety of reasons that go beyond removing humidity from the air itself. Besides controlling indoor fog in warmer seasons and improving indoor air quality, a dehumidification system will provide a level of building efficiency.

High humidity within the arena volume can lead to humid air condensing on the ice surface, which increases the ice thickness over time. Thicker ice means a harder-working ice plant. Additionally, humid air can cause newly resurfaced ice to freeze more slowly. Ultimately, dehumidification of indoor air will result in lower energy usage.

If the only reason for dehumidification were ice-related issues, the equipment and its operating cost might not be worth it. Fortunately, dehumidification has other primary benefits in an ice arena. It also helps prevent moisture vapor from damaging steel building structure, equipment and non-moisture-resistant building materials, and from permeating fiberglass batt insulation. The lower the odds for mold growth within the rink, the better it is for air quality and occupant health.

It is important to note that this article separates arena HVAC as being for spectator comfort, with the understanding that where combustion ice resurfacers are used, some ventilation is required to meet clean air standards. Modern building code and energy requirements have changed design thinking. Not only are air exchanges within the box necessary, spectators demand some form of comfort control or heating at least over the seating areas. The advent of waste heat capture usually provides the necessary heating for locker rooms and the other rink-related support spaces, as well as for heated water.

A centralized HVAC system is typical for other occupied spaces such as lobbies, restrooms, pro shops, concessions areas and viewing rooms. Cooling capacities for these spaces are not uncommon for summer usage, and certainly for arenas in southern areas of the country.

Ways to incorporate sustainable practices as they apply to occupant comfort include:

- Radiant heating for spectator areas is much more effective at keeping spectators comfortable because it doesn't heat the air but rather the

If rink owners and operators understand the options available, they may be able to apply them no matter what stage of arena operation they're in.



spectators below it. That said, radiant heat only heats objects in its direct radiant zone, which means other areas of the arena are going to feel much colder. Therefore, spectators moving between heated seating areas and other spaces within the arena bowl are not going to experience a consistent comfort level, and it is not as effective in larger-spectator-capacity situations.

- Forced air in the arena bowl may not be the best choice in smaller arenas, as it is highly inefficient for spectator areas within the large-volume arena space. The cool, humid air within the box draws a large amount of heat from the forced air as it leaves the duct system and travels to the spectators.

Introducing forced heated air into the rink volume increases how hard other building systems must work. For instance, the warmer air can mix with cooler air and cause moisture vapor, which the building's dehumidification must then work harder to remove. Ambient air temperatures increasing within the arena will also naturally create more work by the refrigeration system to keep ice at the correct temperatures.

Green thinking equals great ice

These are only a handful of sustainable options that can be applied to ice rinks, and not every rink can harness all sustainable design strategies. However, if rink owners and operators understand the options available, they may be able to apply them no matter what stage of arena operation they're in. Whether planning a new facility, expanding an existing one, retrofitting lighting, changing refrigeration, or simply implementing scheduled deferred maintenance, every step is an opportunity to implement sustainable practices. 🌱

Munn Ice Arena at Michigan State University was one of the first ice rinks in the United States to be equipped with LED lights.

[Photo by MSU Today]



Humble beginnings in the Ivy Leagues

The advent of the country's first manual scoreboard that went beyond chalk and slate is placed somewhere around the late 1800s. Harvard University claims it unveiled the country's first football scoreboard on Thanksgiving Day in 1893. The board tallied the Crimson's win over Ivy League rival the University of Pennsylvania. Penn, meanwhile, claims its own Franklin Field — the oldest football stadium still in operation, according to the NCAA — as the site of the nation's first scoreboard reveal in 1895.

[Photo courtesy of the Library of Congress]

Monster nostalgia

"There are some ballparks that still like that nostalgic look of the manual board," says Randy Uehran, engineering manager at Daktronics. "They'll run them in addition to their digital displays. They actually have a guy inside who's monitoring the game and then they go up and change the number. It's totally manual." The lower portion of the Boston Red Sox' famed "Green Monster" is one such throwback still in operation.

[Photo courtesy of Wikipedia Public Domain]



Scoreboard watching

It wasn't until the early 1900s that the electric scoreboard emerged. Sports teams, however, didn't immediately adopt the technology, which would have been primitive by today's standards. Nevertheless, fans took to watching the novel electric scoreboards outside newspaper offices and in movie theaters, where scores were telegraphed by observers at the game to the board operators.

[Photo courtesy of Popville.com]

"One of our goals as a company was to take that professional stadium experience and make it feasible for the high schools and small colleges,"

— David Sutter,
chief creative officer,
ScoreVision

Yankees boast efficiency

In 1950, the New York Yankees unveiled what was then one of the largest electric scoreboards to date. The team called it the world's most efficient scoreboard because it could be run by just one person. That said, the Yanks' state-of-the-art board likely wasn't easy to operate. According to *The New York Times*, the board featured 11,210 lamps that ran at 115,000 watts. It weighed 25 tons and included a master console with 4,860 buttons.

[Photo courtesy of Baseballfever.com]





Incandescents hot

The basic scoreboard that used standard incandescent lightbulbs had a long run. They were simple boards like this Fair-Play unit at the Rose Bowl in Pasadena, Calif. This was one of Fair-Play's first units to feature digital timing, which was introduced in 1949.

[Photo courtesy of Fair-Play]

At long last LED

LED scoreboards like this one from Daktronics at St. Claire High School are now the standard. They are more energy efficient, with longer-lasting bulbs and a greater selection of colors.

[Photo courtesy of Daktronics]



Going digital

High schools and smaller colleges were long priced out of the video display market, but that's changed significantly in recent years. The price difference between a conventional scoreboard and an LED video display is now negligible. More schools are opting for video displays, which offer a variety of revenue-generating advertising options, social media integration and multimedia effects, all of which increase fan and community engagement. The change allows for big-league tech at smaller venues. "We're actually putting a better product in high schools today than what was in the big stadiums just 10 years ago," says David Sutter, chief creative officer for ScoreVision.

[Photo courtesy of Colorado Time Systems]

Dallas goes Texas big

In 2009, the Dallas Cowboys made the *Guinness World Records* with a four-sided, center-hung, high-definition video display at AT&T Stadium. Mitsubishi's Diamond Vision® LED technology was used for the two main sideline displays, which measure 72 feet high by 160 feet wide, and two Diamond Vision end-zone displays measuring 29 feet high by 51 feet wide. Weighing 600 tons, the screens are suspended 90 feet directly over the center of the playing surface and stretch from nearly one 20-yard line to the other.

[Photo courtesy of Pinterest]



Over the top, state of the art

It's the length of three football fields and wrapped into an inner "halo" high above Mercedes-Benz Stadium in Atlanta. Engineered by Daktronics, the massive video display was installed in 600 pieces and measures 58 feet high by 1,075 feet in circumference, amounting to 61,900 square feet of display space. It is more than five stories high and nearly three times larger than the next-largest display in professional football.

[Photo courtesy of Mercedes-Benz Stadium]



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Before and after

Colorado Time Systems took the University of Minnesota's natatorium from a 9-by-12-foot, 35-millimeter pixel board to a 10-by-18-foot, 12-millimeter video display and a 10-by-19-foot, 23-millimeter board for scoring.

[Photos courtesy of Colorado Time Systems]

BEFORE

AFTER

UNIVERSITY OF MINNESOTA



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"With our first incandescent video boards, we used red, blue, green and white lenses to generate about 64,000 colors. Now, with today's boards, we're in the trillions of colors."

— Randy Uehran, engineering manager, Daktronics

Scoring goes HD

Parent company Trans-Lux supplied this high-definition TL Vision display mounted above a Fair-Play fixed-digit LED board at Greenwood High School in Greenwood, S.C. It's a perfect example of high-tech scoring and multimedia at the prep level.

[Photo courtesy of Trans-Lux]



Big tech, small school

Strake Jesuit High School in Houston recently upgraded to a 34-foot-tall high-resolution video display that utilizes modern applications and a cloud-based infrastructure to serve up a variety of digital content.

[Photos courtesy of ScoreVision]



Fixed-digit still in play

While video displays are growing in popularity, there's still a robust market for fixed-digit LED boards like this one from Varsity Scoreboards at Tank Memorial Stadium in Ironton, Ohio.

[Photo courtesy of Varsity Scoreboards]



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Everybody into the pool: Inclusivity, accessibility in aquatics on the rise

Commonwealth Community Recreation Centre | Edmonton, Alb.
[Photos by Tom Arban, courtesy of MJMA]

By Andy Berg

In 2010, Congress added a provision to the Americans with Disabilities Act that mandated all public pools and spas – hotel, rec center, country club or otherwise – be accessible to individuals with disabilities by the end of 2012. In most cases, compliance could be accomplished by installing a lift chair or ramp – facility enhancements that likely cost somewhere in the neighborhood of \$8,000 to \$10,000, which was better than being slapped with a \$55,000 fine.

While the new accessibility rules were a step in the right direction, they were a blunt solution to a complex problem with myriad implications for everyone from facility designers and operators to program directors and end users.

Progress

Justin Caron, principal architect at Aquatic Design Group, says there has been a greater awareness around accessibility in recent years. “I attribute this to the industry focusing on it more earnestly beginning 10 to 12 years ago,” Caron says. “Every

time a new project opens that provides access for all in seamless and creative ways, that calls attention to the fact that things don’t have to be like they are just because that’s how they’ve always been.”

Designing facilities that are truly inclusive means designers and operators have to think differently, as success in this area is dependent on expanding our idea of what it means to provide facilities and programming for everyone.

Mark Weiss, manager of aquatics at the University of Utah’s George S. Eccles Student Life Center, says he’s always open to accommodating the needs of his guests but admits that this has to be



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George S. Eccles Student Life Center, University of Utah [Photos courtesy of University of Utah]

accomplished on a case-by-case basis. “When people ask for accommodations, we’re always accepting,” Weiss says. “We had one lady who had a condition where she couldn’t really be touched, and we tried to accommodate that request in any way we could.”

“Inclusivity starts from the moment you think about going to the facility, coming through the entrance sequence, coming through the locker rooms, and then actually entering the swimming pool.”

Weiss says it’s important not to marginalize those who request special accommodations, noting that most of us will eventually be the benefactor of accessibility solutions. “Everyone really does have a disability at some point in their life,” he says, “because things will inevitably get harder as you get older.”

Douglass Whiteaker, principal architect at Water Technology Inc., says too many people see accessibility as a problem to be solved rather than just another consideration in the design of a facility. “Accessibility is an important aspect of having universal inclusivity,” Whiteaker says. “That’s really what everybody wants to do, and it starts from the moment you think about going to the facility, coming through the entrance sequence, coming through the locker rooms, and then actually entering the swimming pool. All of that has to be as seamless as possible.”

Caron sees access through the holistic lens of inclusivity and doesn’t discriminate between those with disabilities and those who simply have other needs or considerations. “I’m particularly interested in gender-inclusive restrooms and locker rooms,” he says. “We’re seeing more interest both from architecture and planning firms and from clients, as well as users, for eliminating the single-use locker rooms, or at least minimizing them, and providing more gender-neutral units. This helps as well with providing easily accessible facilities for all users.”

According to Weiss, parents with young and/or opposing gender children, as well as companion care and transgender individuals, are the obvious

A challenge, an inspiration

The challenge is significant, but there are examples of facilities that have managed true inclusivity.

The way a few kids playing in a hotel pool shunned Gordan Hartman’s daughter Morgan, who has physical and cognitive disabilities, was the impetus behind a new “ultra-accessible” theme park. It was the look of disappointment in Morgan’s eyes that set Hartman on a mission to create the kind of place where Morgan and others underserved by mainstream theme parks could go and have a good time. In 2010 Hartman and his wife Maggie opened “Morgan’s Wonderland” in San Antonio.

In June of this year, the Hartman’s added a new attraction called Morgan’s Inspiration Island that is a perfect example of an aquatics facility that understood its purpose and was designed to include as broad a swath of its population as possible. Inspiration Island opened this spring and features six major elements that comprise the \$17 million, tropically themed park.

“We decided to call it Morgan’s Inspiration Island because Morgan truly has been the catalyst for every project we’ve pursued to help the special-needs community,” Hartman says in a statement on the park’s website.

Every element of the Island is wheelchair-accessible, and waterproof wristbands with RFID technology are available so parents can easily locate their kids. Morgan’s Island also caters to those with sensory disorders, allowing guests to quickly change water temperatures if they have sensitivity issues.

The park also teamed up with the University of Pittsburgh to develop wheelchairs propelled by compressed air. Expensive battery-powered wheelchairs can’t get wet, so the park has special Morgan’s Inspiration Island PneuChairs™ available on a first-come, first-served basis, along with two other waterproof wheelchair models – a push-stroller type for guests needing assistance from a caregiver for mobility, and a rigid-frame, manual wheelchair for guests who can push themselves.

Bob McCullough, the park’s director of communications, says the feedback on the park has been tremendous. “The key word really is ‘inclusion,’” McCullough says. “The whole idea is to bring people together in a barrier-free environment.”



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The REC of Grapevine | Grapevine, Texas
(Photo by James Ray Spahn)

“Each project should be viewed as a unique opportunity to provide services appropriate for the intended uses of that facility.”

beneficiaries of gender-neutral units, but adds that those with modest concerns due to religion or other factors also benefit from these accommodations. “Not much has changed over the past five years with regard to aquatics infrastructure,” Caron says “However, much greater emphasis on accessibility and inclusivity has been adopted by operators. Simple things like having and providing sufficient wet-use wheelchairs for patrons and adding accessible lifts to facilities in excess of code are much more common in today’s facilities than even those from 10 years ago.”

Universal access

Perhaps what is most vexing about providing inclusive aquatics facilities and programming is the spectrum of needs exhibited by any given community, from individuals with physical disabilities to cognitive issues like autism, not to mention aging adults and young children.

“The key question is probably, ‘What is most appropriate for any given person at any given stage in their life?’” posits Susan Grosse, founder of Aquatic Consulting & Education Resource Services. “That applies to people who aren’t ordinarily categorized as disabled. Let’s say an adult who in their 40s is morbidly obese at 450 pounds. What’s going to be appropriate for them in terms of getting in and out of a swimming pool is entirely different from someone who’s a paraplegic.”

Grosse is realistic about the challenges inherent in providing truly universal aquatics access. She says accessibility issues have been a concern since the 1960s, when Congress passed the first legislation that mandated accommodations for kids with disabilities attending public schools. Facility operators, she says, are motivated to provide access by three things: compliance with current law; their own personal bias (whether they actually care); and whether they have a personal stake in the matter – a relative or a friend with disabilities.

“I cannot think of a facility or program that is perfect,” Grosse says, ceding that smaller communities have a better chance at providing an inclusive facility. “Small communities can survey their current resident population and figure out what they need, and they may have one or two kids in wheelchairs in their whole school system, if any. They may have one or two returning servicemen in Wounded Warrior; they’re not

going to have 50. But the big-city areas have a real a problem meeting everyone’s needs. They just can’t.”

Once a designer or operator understands who they’re serving, they can design to that population or add equipment with that population in mind. Caron notes that a high school with only a few students with disabilities might provide an ADA-compliant accessibility lift and stairs as means of access, whereas a hospital or therapy pool would be more likely to provide the lift, an ADA-compliant ramp, stairs or more. “Each project should be viewed as a unique opportunity to provide services appropriate for the intended uses of that facility,” Caron says. “When those uses are unknown or undetermined, it’s our philosophy to provide accessible means of access for the full potential of the facility – not just its primary use.”

The same reasoning should apply to programming. The word Grosse returns to when thinking about programming is “appropriate,” which she calls a “soft term” and one that depends in many ways on how a facility balances the needs of its clientele with fiscal realities.

“You can’t define ‘appropriate programming’ the way you can the inches of a doorway,” she says. “A parent might think that an inclusive program is appropriate for their very severely disabled child. On the other hand, the people running the program might very well know that this person needs special assistance and highly qualified people to work with that person. And the parent and a programmer may disagree on ‘appropriate,’ and then you get into who is going to fund what’s ‘appropriate.’”

Awareness around accessibility is growing. Inclusivity concerns are increasingly pushed through the design process by owners and operators, as opposed to being pulled through by the design team, according to Caron, who stresses that even a little more empathy and understanding can make a big difference. “I think a great mental reset that can help frame this topic is to consider that for able-bodied, fully functioning people, in many cases, nothing in your entire day is as physically, mentally and emotionally draining as the act of getting out of bed can be for someone with a disability.”

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(800) 425-5438

See ad on page 3

AB ATHLETIC BUSINESS SHOW 2017 Booth 328

AllChem Performance Products LP

The Vantage ACF Series, AllChem's line of calcium hypochlorite tablet feeders, has been developed based on the input of commercial aquatics facility operators to perform under the demanding conditions of modern aquatics facilities. AllChem can help pool operators update existing equipment or replace old liquid-chlorine systems.

www.vantagewatercare.com
(352) 378-9696



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AB ATHLETIC BUSINESS SHOW 2017 Booth 1050

Aqua Products

The Duramax RC features powerful vacuum suction with dual scrubbing brushes and ultra-fine filtration. The RC is factory-programmed to automatically vacuum and scrub commercial pools, saving valuable labor hours. The Duramax RC features a dual-direction remote control for spot-cleaning and wall- and waterline-scrubbing options. The RC includes a one-hour cleaning cycle delay and a full digital display with timed selections ranging from one to seven hours up to a continuous run cycle.

www.aquaproducts.com
(800) 221-1750

AB ATHLETIC BUSINESS SHOW 2017 Booth 839

Alta Enterprises Inc.

The Alta Power Winder is designed to power existing thermal-pool-cover reel systems. Made of stainless steel and featuring automated functionality, the Power Winder makes the normally painstaking, manual process of deploying and retracting pool covers fast and effortless. Electronics and motors are in a water-resistant enclosure that maximizes corrosion protection, while the reel system retracts a large pool cover in minutes.

www.altaenterprises.com
(800) 624-1235



See ad on page 67

Aqua Creek Products LLC

The Ranger lift features a 350-pound weight capacity while maintaining a sleek, low-profile design. This lift is ideal for use on smaller pool decks where space may be limited. The Ranger is third-party-verified to comply with ADA standards. An economical choice, this lift comes standard with five-year structural and five-year prorated electronics warranties. A solar charging station adds minimal maintenance and long-lasting use.

www.aquacreek.com
(888) 687-3552



Clarion Safety Systems

Clarion Safety Systems' innovative pool safety signs are expertly designed to comply with current best practices to convey critical safety messages in an aquatic facility, helping to better protect patrons and reduce the facility's liability risk. Clarion Safety Systems draw attention to core safety concerns with graphic-based designs and systematic repetition. Fully customizable Clarion Safety Systems are field-tested and proven effective.

www.clarionsafety.com/ab
(877) 748-0244

See ad on page 25

AB ATHLETIC BUSINESS SHOW 2017 Booth 333

BECS Technology Inc.

EZConnect™ is a simple and secure system for providing local and remote access to BECSys controllers. EZConnect employs a multilayered security approach, including TLS encryption and locally generated authentication codes, eliminating the need for IT departments to make special router/firewall allowances.

EZConnect is currently available on BECSys7, BECSys5 and BECSysBW controllers.

www.becs.com
(314) 567-0088



Competitor Swim

Competitor's new high-capacity Elite Stor Lane Reel™ is ideal for easy, mobile storage and installation of racing lanes. Solid end-wheels keep lines safely on the core to avoid tangles and line damage. A powder-coated aluminum frame and end-wheels offers durability for both indoor and outdoor use. A unique, end-mounted tow handle and six-inch stainless steel casters with individual brakes provide easy and safe maneuverability. The Elite Stor Lane Reel is available in dark Competitor blue.

www.competitorswim.com
(800) 888-7946



Diamond Spas

Diamond Spas' stainless-steel, copper or glass-walled pools and spas, swim spas, cold-plunge pools, water features and custom bath fixtures are built to client specifications at a production facility in Colorado. Diamond Spas has one of the best engineering teams in the industry, and has been catering to commercial, academic, hospitality and residential markets worldwide since 1996. A full portfolio of products is available online.

www.diamondspas.com
(800) 957-7727

See ad on page 65

AB ATHLETIC BUSINESS SHOW 2017 Booth 229

ChlorKing

ChlorKing's NEXGEN on-site chlorine generators and CHLOR SM salt chlorinators use salt to sanitize swimming pools without the safety and cost issues associated with bulk chlorine. ChlorKing systems prevent chlorine gas discharges by eliminating the need for chlorine, while adding a second layer of protection and chloramine control with Sentry UV lights. ChlorKing systems can last more than 10 years with proper maintenance and are backed by 36- and 60-month equipment supply and maintenance programs for new facilities and retrofits.

www.chlorking.com
(800) 536-8180



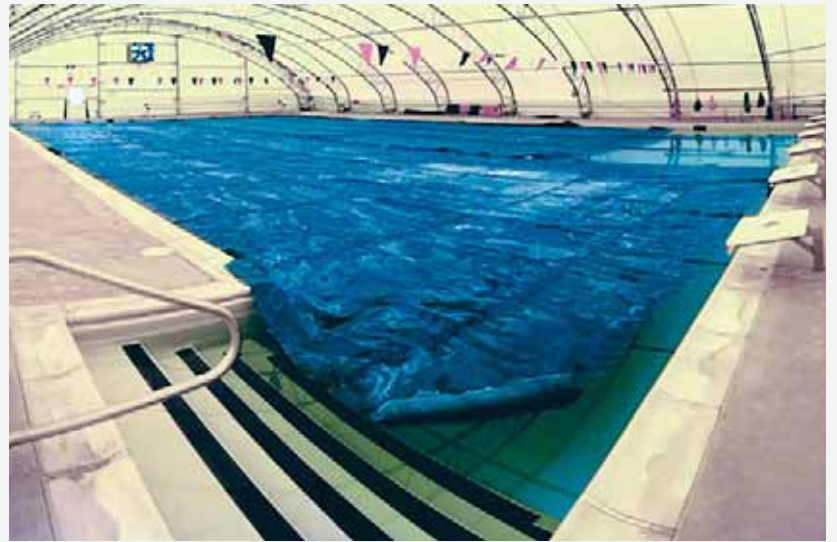


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ClearSpan Fabric Structures

ClearSpan Fabric Structures provides design-build solutions for any aquatic center need. Abundant natural daylighting makes the atmosphere inside a ClearSpan structure enjoyable for employees and patrons. The climate-responsive quality of these buildings keeps them cooler in the summer and warmer in the winter, reducing energy consumption. Sound-absorbing fabric covers and walls reduce outside noise and echoing.

www.clearspan.com
(866) 643-1010



AB ATHLETIC BUSINESS SHOW 2017 Booth 640

Eckel Industries Inc., Acoustic Division

Eckel's high-performance Eckoustic Functional Panels (EFPs) increase spectator enjoyment and improve instructional communications in aquatic facilities by effectively controlling noise and reverberation. These patented, fire-resistant panels can be spot-located on walls and ceilings and customized in color and finish to complement any architectural layout and design. Available in moisture-resistant coated aluminum, Eckel EFPs are ideally suited to a damp, chlorinated environment. Their superior sound absorption and durability make them a practical and economic acoustic solution.

www.eckelusa.com
(617) 491-3221

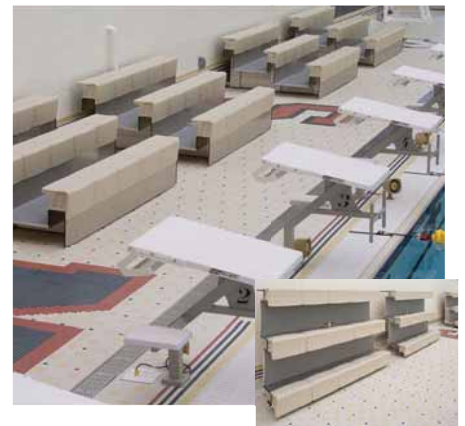
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AB ATHLETIC BUSINESS SHOW 2017 Booth 936

Colorado Time Systems

Colorado Time Systems is pleased to introduce Gen7 – an all-new swim timing and scoring system. The Gen7 platform provides long-lasting technology that will save both time and money. Its software interface puts intuitive control of all levels of competition at the operator's fingertips. Combined with the distributed intelligence of the company's proprietary bus communication system, this software gives facilities the flexibility to run meets in a customized way.

www.coloradotime.com
(800) 279-0111



Hussey Seating

MAXAM1™ portable bleachers deliver flexibility, mobility and spectator safety in any environment, including natatoriums and pool decks. Designed for single-person transport and operation, MAXAM1 is the first and only closed-deck portable bleacher with ergonomically contoured polymer seats. Its thoughtful design and multidirectional casters fit easily through standard doorframes and in common large-capacity passenger and freight elevators. Additional features include Xtreme Graphic logos and a five-year factory-backed warranty.

www.husseyseating.com
(207) 676-2271





Inter-Fab Commercial Aquatics

Inter-Fab Commercial Aquatics now offers a new line of Salt Pool Safe™ thermoplastic-coated safety rails that provide an additional layer of protection against corrosion on salt-chlorine generator pools, as well as a safety measure for swimming pool entry and exit points. These stainless steel rails are treated with an advanced-polymer coating that protects rails in harsh environments and also provides an attractive and safe grip-assist texturized finish. Safety rails are available in white, tan or gray.

www.inter-fab.com
(800) 737-5386

See ad on page 61

AB ATHLETIC BUSINESS SHOW 2017 Booth 1041

Daktronics Inc.

Daktronics has developed products to cover a sports facility's every need, including scoring solutions, video displays and training aids. Daktronics has combined its superior products with the most comprehensive network of local support in the industry, resulting in an invaluable investment. Daktronics aquatics equipment is unmatched for reliability, accuracy, functionality, compatibility and support.

www.daktronics.com/aquatics
(888) 325-8766

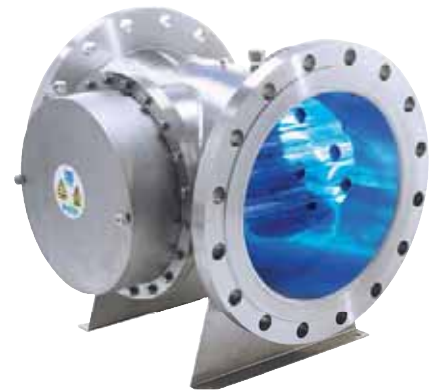
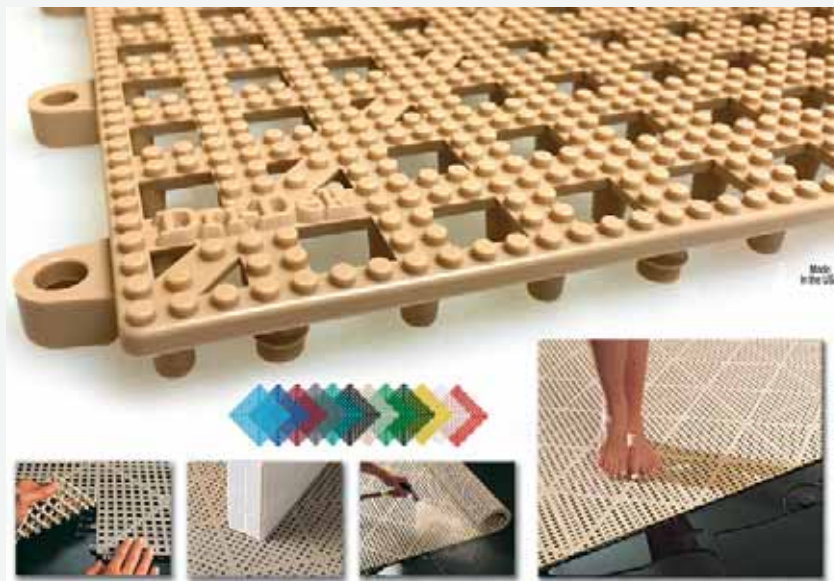


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Dri-Dek

Dri-Dek's anti-skid, self-draining surface keeps floors dry. Made from antimicrobial oxy-B1™ vinyl to help control infectious bacteria, mold and mildew, Dri-Dek is perfect for pool areas, showers, locker rooms and barefoot walkways. Interlocking tiles easily snap together to form a custom surface of any length, width or shape.

www.dri-dek.com
(800) 847-9341



Neptune-Benson Inc.

UV disinfection is an environmentally friendly alternative to chemical disinfection. Neptune Benson's ETS-UV disinfects water (deactivating chlorine-tolerant pathogens such as *Cryptosporidium*), reduces chloramines and improves air quality. The system is easy to install and creates no harmful byproducts.

www.neptunebenson.com
(800) 832-8002

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Extractor Corp./SUITMATE

The SUITMATE® water extractor is an innovative system that removes 95 percent of the water from a wet swimsuit in eight seconds, without using heat. The SUITMATE® unit is a highly valued amenity not only for guests, but also for property owners, as it helps prevent water damage from dripping-wet swimsuits, resulting in a cleaner, dryer environment for all.

www.suitemate.com
(800) 553-3353



Pentair Commercial Aquatics

The AquaTRAM® 90 is a pool access lift that rotates 90 degrees in either direction for easy access. The lift anchors directly into the deck using the Quickset Dual Wedge™ anchor socket, enabling equipment-free removal and easy retrofitting for existing anchors. The lift includes a comfortable seat with an adjustable lap belt, a footrest and dual flip-up armrests, plus a user-friendly control panel. The lift's improved reach clears spa benches and most gutter types. This ADA-compliant system comes complete with a rechargeable, battery-powered operating system and features a 300-pound lifting capacity.

www.pentaircommercial.com
(800) 831-7133



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AB ATHLETIC BUSINESS SHOW 2017 Booth 929

Lincoln Aquatics

The automatic self-propelled and self-contained vacuum from Lincoln Aquatics operates without the use of the labor traditionally required to physically clean a pool. Operators simply place the vacuum in the pool, let it work and then rinse the filter assembly when finished. This allows the staff to tend to other duties while the pool is being cleaned. The automatic vacuum is not only easy to use but ensures better cleaning compared to manual-operation vacuums.

www.lincolnaquatics.com
(800) 223-5450



AB ATHLETIC BUSINESS SHOW 2017 Booth 536

RenoSys Corp.

RenoSys® manufactures aquatic facility renovation products and has now expanded its line of DuraTech™ Pool Grating to accommodate any pool gutter width or style. The new line includes T-Bar, I-Bar, Interlocking and PolyGrate™ styles – all certified slip-resistant and made in the United States from colorfast, UV-resistant outdoor-grade polymers. Fiberglass, PVC, polymer, granite and stainless-steel options are available and ideal for repairing and renovating aquatic facilities. A variety of styles and colors are in stock for immediate shipment.

www.renosys.com
(800) 783-7005

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Recreation Supply Company

Recreation Supply Company makes shopping for pool supplies easy with access to knowledgeable staff via phone, email or an online chat platform. RecSupply sales and customer service staff are CPO-certified and ready to help. The company now has two warehouse locations stocked with thousands of items, enabling fast delivery. Customers don't need to wait for shipping quotes, as most orders of more than \$100 ship free inside the 48 contiguous United States. A free commercial pool supply catalog is available upon request.
www.recsupply.com
(866) 831-0048



S.R.Smith

S.R.Smith's Velocity and Legacy **Starting Block** series now feature a dual post and a sleek fiberglass footboard with a five-setting, adjustable track start wedge. The new dual post models are made from commercial-grade stainless steel that's powder-coated to provide extra protection. In addition to four standard colors, the frames can be custom-ordered to match team branding. The Velocity series is available with customizable, traditional sand tread or our unique TrueTread™ non-slip platform surface. The Legacy series features a reinforced acrylic footboard, finished with customizable slip-resist sand tread. Blocks can be ordered with a patented RockSolid® anchor that virtually eliminates frame movement.
www.srsmith.com
(800) 824-4387



Seresco USA Inc.

Seresco introduces the multifaceted R3 Expansion Module, plus a compact furnace add-on option for the NE Series of indoor pool dehumidifiers. The R3 is a plug-and-play module configured to match the newly reduced cabinet footprint of the NE Series. The R3 features three key goals of natatorium sustainability: reduce the equipment size and footprint, reuse exhaust and energy to increase efficiency, and recycle energy by recovering it. The R3 components offer additional cost-cutting efficacies for space and water heating and heat rejection beyond the already industry-leading performance of the NE Series. The R3 can be factory-installed or shipped separately.
www.serescodehumidifiers.com
(770) 457-3392

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AB ATHLETIC BUSINESS SHOW 2017 Booth 826

Recreonics Inc.

Wibit's interlocking modules transform any swimming pool into a water adventure for all ages. All combinations are designed to fit standard pool sizes, with special combinations for small facilities and budgets. Operators can choose from more than 40 individual interlocking modules and standalone inflatables to customize their own aquatic adventure. German-designed and engineered, Wibit products meet the highest safety standards worldwide.
www.recreonics.com
(800) 428-3254



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AB ATHLETIC BUSINESS SHOW 2017 Booth 837

Spectrum Aquatics

Spectrum offers a complete selection of custom grab rails, therapy rails, ramp rails, stair rails and more. Custom rails are available in a variety of stainless-steel material types – 304, 304L and 316L – as well as a variety of outside diameters and wall thicknesses. Spectrum's in-house engineering and CAD teams are available to help facilities create exactly the rails they need. Spectrum also offers powder-coating options for a truly unique look.

www.spectrumaquatics.com
(800) 791-8056



Stark Bulkhead Co.

Stark Bulkhead has built custom pool bulkheads for 48 years. The company's one-piece monolithic fiberglass bulkheads often replace failing steel bulkheads, many after only a few years of use. Stark offers a 25-year structural warranty without yearly maintenance fees.

www.starkbulkheads.com
(360) 403-7707



See ad on page 65

Structures Unlimited

For more than four decades, Structures Unlimited has been a single-source provider of custom pool enclosures and natatoriums. By combining Kalwall® translucent panels with a signature structural aluminum system, these stunning spaces enhance occupant comfort, harvest daylight and eliminate glare. Structures Unlimited systems are highly resistant to corrosion and condensation, offer maximum energy efficiency, and require minimal maintenance. Options include fixed and operable-vision glazing for walls, motorized operable roofs, and opaque metal roof panels for thermal performance up to R-46.

www.structuresunlimitedinc.com
(800) 225-3895



SwimEx Inc.

SwimEx plunge pools are the ultimate tool for rehabilitation and recovery. Easy to maintain, they are built out of solid fiberglass with bottom drains, and have superior temperature retention. Available in four standard sizes or customized to meet specific protocols, SwimEx plunge pools are a top choice for professionals around the world.

www.swimex.com
(800) 877-7946



Vortex Aquatic

Vortex Aquatic introduces Explora, a Splashpad® collection that invites children and their parents to explore how water delivers its magic. Explora features moving, pushing, pulling and spinning play activities, helping kids engage more deeply in the process of discovery. With more than 6,500 installations in 45 countries, Vortex Aquatic Structures Int'l is the world leader in aquatic play solutions.

www.vortex-intl.com
(877) 586-7839

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Synthetic Surfaces Inc.

With their recently developed hydrophobic 4-Series of adhesives – and a reputation for unsurpassed fresh- and salt-water-resistance – NORDOT® one-part adhesives have become installers' first choice for a variety of aqua-bonding applications. They are used worldwide to install waterslides, swimming pools, flow-boarding and wave machines, and more. Their durable bond holds surfaces together, even when regularly exposed to or submerged in fresh or salt water. Installation is expedited by their ease of handling and spreadability.

www.nordot.com
(908) 233-6803



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Breaking Ground



[Renderings courtesy of HKS]

The Texas Rangers broke ground Sept. 28 on a \$1.1 billion ballpark at **Globe Life Field**. Designed by **HKS** of Dallas, the 1.7-million-square-foot ballpark features a transparent, retractable roof and approximately 41,000 spectator seats on a 13-acre site. Excavation on Globe Life Field began in early October. The new ballpark is projected to open in time for the 2020 baseball season.

The City of Aurora, Colo., recently broke ground on a 55,000-square-foot community recreation center. Funded through marijuana tax revenue, the **Aurora Rec Center** by **Populous** of Kansas City, Mo., will provide recreation amenities such as a gymnasium with elevated track and fitness area, a natatorium, group exercise studios, multipurpose and event rooms, offices, locker rooms and a teaching kitchen.

Southern Utah University broke ground Oct. 6 on the **George S. Eccles Sports Performance Center**. The new strength and conditioning center will feature a strength training room, a turf runway, a nutrition station and coaches' offices. The project has been in the planning stage for nearly two years and is projected to open for use in early 2018.

The City of Newark, Calif., will begin work in early December on \$1.4 million in improvements to the swimming pools and play area at **Silliman Family Aquatic Center**. Overseen by **Aquatic Design Group** of Carlsbad, Calif., the project will include a renovation of the center's activity pool, lap pool and lazy river; maintenance to existing pumps, filters, chemical control systems and drain grates; and a new \$370,000 play structure with spray features and a dump bucket. The center is projected to reopen in March 2018.

First Pitch

The University of Texas recently announced \$4.5 million in upgrades to the **Frank Erwin Center**, including a basketball court with a new floor design and a nine-display, center-hung scoreboard measuring 12½ feet high by 23 feet wide on all four sides with a 360-degree ribbon display installed underneath. The school already has new practice courts, wall graphics and locker rooms inside **Denton A. Cooley Pavilion**. Officials expect to replace both facilities with a new multipurpose arena within a few years.

Montana State University has announced a 20-year Athletics Facilities Master Plan, including the new **Bobcat Athletic Complex** to house the football program, expanded student-athlete academic support and training facilities inside **Brick Breeden Fieldhouse**, upgrades to the north end zone and eastside grandstand of **Bobcat Stadium**, and renovations to the existing **Bobcat-Anderson Tennis Center**. The school also plans to construct a new **Bobcat Indoor Performance Facility**, featuring a 100-yard turf field, a 300-meter eight-lane track, media facilities and seating for 1,000 spectators.

The University of Kansas recently secured funding for \$170 million in improvements to **Memorial Stadium**, including upgrades to seating and lounge areas, renovations to the suite tower and viewing decks, an expansion of the concourse and concessions areas, two new video boards, and renovations to the south end zone and west side of the stadium. University officials also approved a \$12 million renovation of **Hoglund Ballpark**, as well as construction of a \$15 million **indoor football practice facility** and a \$10 million **volleyball arena**.

Grand Openings



The City of Shakopee, Minn., celebrated the grand re-opening this fall of the 95,000-square-foot **Shakopee Community Center**. The center has been renovated to include expanded fitness and cardio space, new teen and senior centers, an indoor children's play area, and multipurpose meeting and event space.

The center's former ice arena space has also been repurposed to include an aquatics center with a zero-depth entry pool, a lap pool and a spa, as well as a new two-sheet ice arena constructed in the adjacent space. Design for the renovated community center and new ice arena was provided by **292 Design Group** of Minneapolis.



[Photos courtesy of 292 Design Group]




[Photo courtesy of Advent]

Stanford University recently opened the doors on the **Stanford University Home of Champions**, housed in what was once the Arrillaga Family Sports Center. The 18,000-square-foot former basketball facility has been transformed by experiential design firm **Advent** of Nashville, Tenn., into a celebration of 126 years of student-athlete history. The Home of Champions features interactive elements such as the Letter-Winner Books, the Hall of Fame interactive table, and vertical, high-definition screens displaying life-sized interactive video interviews of student-athletes and alumni. The facility also features corner displays for the university's notable awards and memorabilia.

Total Sports Park of Washington Township, Mich., will hold a grand opening Nov. 4 for a 119,000-square-foot **indoor community recreation and sports facility**. The indoor facility is an addition to a larger sports complex on the 220-acre site that includes 24 existing outdoor soccer fields. The \$8.5 million project features a full-size practice field to accommodate football, soccer and lacrosse, as well as six volleyball courts, six batting cages, fitness facilities, a dance studio and a sports bar. @

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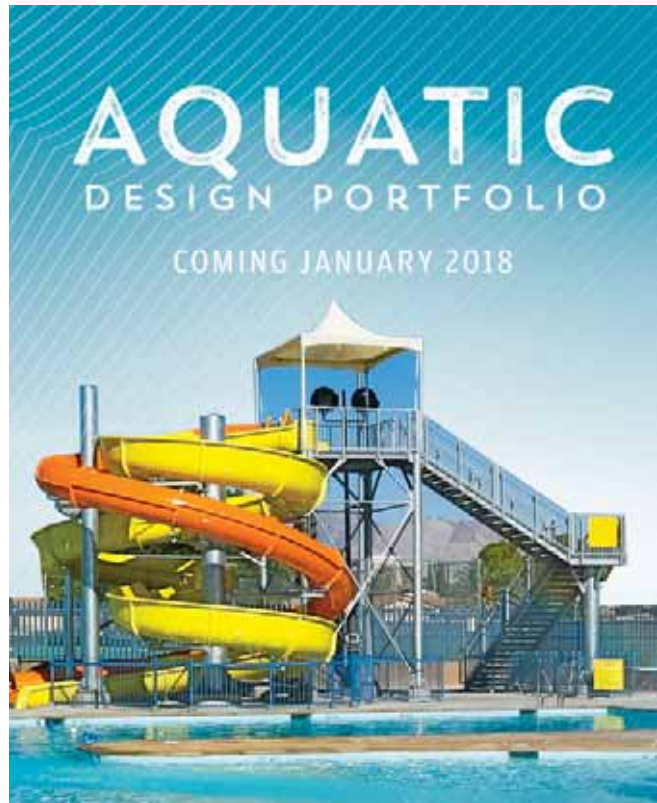
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Send ideas for this feature to editors@athleticbusiness.com



[Photos by Tom Crane Photography Inc.]

Exterior stair complements Novogratz center aesthetic

By Paul Steinbach

Because the Novogratz Center for Athletics at Poly Prep Country Day School in Brooklyn, N.Y., has a second-floor multipurpose gymnasium that holds up to 624 people, code dictated three separate points of egress. To complement the building's main staircase and an interior utilitarian stair, designers at **Jack L. Gordon Architects** moved the third **staircase outside the building footprint**, thus creating a sculptural solution that satisfies the code requirement. Shielded from the elements by a roof and sidewall that mimic the faceted exterior of the building itself, the switchback stair remains visually open to an outdoor terrace and field. "We opted to take the third stair and turn it into an architectural statement rather than just box it within the building," says Jack Gordon, who estimates the approach saved 30 to 40 percent when compared to the cost-per-square-foot equation of another interior stair. "It reinforces the overall aesthetic of the building and provides an economical solution to another means of egress off of that floor." 

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