

Field Guides

From brand-new or converted complexes to parent-proof fields, a look at the latest in sports field design

By Mitch Martin

If sports architecture is geometry, then outdoor sports field design is plane geometry. At least at first blush.

On the surface, literally, sports field design seems to develop in a decidedly incremental fashion.

However, with the increasing popularity of soccer and the need to find fresh revenue streams, new sports complexes continue to pop up around the country.

Over the last year, several new projects have illustrated the creative possibilities in sports field design. Budgetary concerns, high demand for field space and environmental concerns appear to be the biggest problems driving this creativity.



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Several views of the newly opened, 212-acre
Aurora Sports Park in Aurora, Colo.

Big, beautiful and smart



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On Aug. 24, the City of Aurora, Colo., opened what its consultants believe is the largest sports complex of its kind in the Rockies region of the United States.

The Aurora Sports Park is a 212-acre sports field facility designed primarily for soccer, softball and baseball, though also with multipurpose capabilities. It is, in many ways, a great deal more than just a large conglomeration of fields.

"We didn't want this to be your standard sports park," says Tom Barrett, manager of parks for the City of Aurora. "It's a regional facility that at this point is in the middle of nowhere, so if you want to make it a destination you really have to make it special."

City residents passed a bond referendum in 1998 that financed most of the \$20 million project. Much of the land, located in the

grassy plains south of the new Denver Airport, was a junkyard.

Luckily for the city, it was a rather promising junkyard, aesthetically. The site was in the shadows of the Rocky Mountains, making for a picture postcard setting. And the junkyard owners left 15 grand cottonwood trees on site. Running through the edge of the property was a waterway, Sand Creek.

Early on, project manager Graham Smith says the cottonwoods and the creek became design guideposts for making a unique complex amenable both to large sports tournaments and passive-use recreation.

In an age when most park district officials are grappling for every square inch of useable soccer field they can get their hands on, looks are not often a big part of the equation.

But Aurora officials and a design team with 25-plus members believed a standout facility would bring tangible returns.

"We never generated hard numbers to sell investing on special design elements, but we did say tournaments are a competitive enterprise, and you should do something unique to stand out," says Smith, of the Denver-based Wenk Associates.

The Aurora project is on a high plateau in an area of great open space. Designers were concerned that the 23 fields, about 140



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acres, would turn openness into emptiness.

The overall design themes were meant to celebrate sports and play, and—at the same time—provide context to the site so it would feel like a real place, a destination.

By leaving the cottonwoods in place and putting a 5.5-acre pond in the center of the site, the complex is almost as much park as field. Around the pond, the facility has large areas for passive use, which is rather unusual for a sports complex.

Each cluster of fields has a unique concessions-and-support building at its center. Designed by the Denver-based firm of Brendle APV, the buildings are hallmarked by large trellis overhangs to provide shading and signage framework. The unique design helps unify the sprawling fields, Smith says.



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The great size of the Aurora sports park enables it to rotate its soccer fields almost like a farmer rotates his or her crops. The soccer fields, which are also multipurpose, can be rotated 90 degrees to change wear patterns and move heavy-wear spots. The plan is to rotate the fields at the beginning of each season, Smith says.

"Most of our old fields sprouted up on a case-by-case basis," Barrett says. "It will be nice to have fields that can really last through the season."

The park is designed to have excellent parking and access. A looping road system winds through the complex with parking near each set of fields, instead of one large expanse of concrete.

"It also makes things easier for disabled patrons," Barrett says. "They should almost be able to watch a game from the comfort of their own car."

Much of the near-site parking was accomplished by putting the spaces at a 15-degree angle along the roadway. In addition to making parking close, the increased parking activity along the roadway should help slow down drivers.

The 5.5-acre irrigation pond is central to the environmental friendliness of the project, Smith says. During operations, the pond will be filled with treated but not potable City of Denver sewer water. The water will be used to irrigate all the playing fields in the complex.

The irrigation set-up is made possible by the extremely sandy soils on site. Sandy subsoil are one of the best natural water filters, cleansing the irrigation water before it returns to the water table.

"We are suffering drought conditions this summer, and the fact that we are using water in this way is critical to the community acceptance of the project," Smith says. "It's definitely a touchy issue here."

Aurora Parks & Open Space Department believes it will have a one-of-a-kind sports complex after a three-year development process. A fairly short development time, but public parks departments are always under pressure to show tangible results of a bond referendum in short order. Barrett believes the main lesson he has learned from the project is plan, plan, and plan.

"I would tell others that it is always to your benefit to resist the temptation to eliminate a step in your review process in order to keep a project moving," Barrett says.



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The Big Mistakes

As the co-author of two books on sports field design, Jim Puhalla thinks there are two major mistakes he sees repeatedly in existing sports complexes. The first involves parking and access.

"Early in the life of a project, designers should make sure each field has good access, for players, spectators, ambulances, and vehicles that will be used in renovation and maintenance," he says.

Too often, designers pressured to add a little extra playing surface, design complexes in such a way that people are forced to walk over other fields or long distances. This increases wear on all the fields,

and vehicles may be forced to drive over playing surfaces to renovate or maintain other facilities.

"It's probably the biggest mistake I see again and again in existing complexes," Puhalla says.

The second biggest mistake relates to grading and drainage, which are obvious factors in designing good sports fields, but they remain a common mistake, Puhalla says. He says one major design key is that each field should be isolated as its own drainage unit.

"Each field should only have to take its own water," Puhalla says. "It should never have water from other fields or from areas outside the playing surfaces."

A field should be constructed so it has its own drainage, so it's not overwhelmed by its own and another field's water.

Fixer-uppers

One thing Jim Puhalla, president of the Ohio-based Sportscape International, specializes in is the conversion and updating of existing baseball and softball fields. Recent projects at high-school fields in Ohio and other states were undertaken to save failing baseball fields. The centerpiece of these conversions is often turning "skin," or all-dirt, infields into grass infields.

Many older parks were built without grass infields for budgetary reasons. By adding grass infields, facility managers will have fewer runoff problems and rutting. Grass infields and grass foul areas, also limit muddy conditions after a rain.

Skin conversions are often done in cooperation with overall renovations of ballparks, with added features such as new fences, new irrigation and concessions.

Puhalla is the co-author of *Sports Fields: A Manual for Design, Construction and Maintenance*. He and his co-authors, Dr. Jeff Krans and Dr. Mike Goatley, will be publishing a new book this fall: *Baseball and Softball Fields: Design, Construction, Renovation and Maintenance*.

Puhalla believes that irrigation should be the budget priority for every new or rehabilitation field project.

"Your irrigation is going to be the best thing for the maintenance of your field—I don't care where you live,"

Puhalla says.

However, Puhalla believes that subsurface drainage often can be a waste of money, particularly infield subsurface drainage.

"People think it's going to work on the skin area, and it's never going to," he says.

Instead, infield projects should concentrate on having adequate sloping. Foul territories should slope into the dugouts.

In a major upgrade of an existing ballpark, Puhalla noted two things that are particularly potent ways to spiff up a park.

One is adding a warning track along the outfield fence, which also serves an obvious safety function. Puhalla advises facility managers to use the best local dirt and other material available because trucking costs can greatly increase the expense.



PHOTOS COURTESY OF SPORTSCAPE INTERNATIONAL, INC.

Series above, top to bottom: At Lincoln High School in Warren,

Mich., a newly reconstructed regulation baseball field with 90-foot bases, skinned from dugout to dugout. The school wanted to replace the slag with new skinned soil and grass for the infield and foul territory around the infield. The original field (2nd from top). The entire skinned area was excavated and used as the material for a new outfield warning track.

Puhalla also advised the purchase of a reel mower, which will allow the grounds crew to create patterns in the outfield grass, just like Major League crews create.

After the right preparations, the field was ready for sod (bottom).

"It can put a finishing touch on a field, and you have to buy a mower anyway," Puhalla says. "Plus, you can use it on your other fields."

Conversion Pointers

James Mueller, superintendent Golf/Athletic Division for Hall-Irwin Company and past president of the Colorado Sports Turf Managers Association, often lectures and consults on the safe way to convert passive-use fields to sports fields.

Mueller says such conversions are becoming increasingly common as park districts and other organizations search for practice and game space for soccer and other sports. He offers several tips for a safe conversion.

1. **Make a conscious decision on whether a passive field is appropriate for active use. Many are not. An appropriate grade is one of the major considerations. Also make sure there is adequate buffer space around the actual playing surface. Mueller usually recommends 25 feet of buffer space away from streets, holes, uneven surface or hard metal objects.**

"You'd be surprised where people try to put a soccer field these days," he says.

2. **Perform a safety audit before play and make sure personnel revisit the fields with a safety checklist after play begins.**

3. **Be sure grass is mowed to an appropriate height. This is more important for ball-on-grass games such as soccer.**

4. **Don't underestimate the increase in maintenance a conversion will engender.**

"It's very easy to underestimate how much activity is generated just by putting up a pair of soccer goals," Mueller says.

5. **Field layout should take into account the sun, so players aren't fighting the rays.**

Parent-proof field

City of New Brunswick, N.J., Superintendent of Parks Mike Blackwell has been fielding a lot of calls lately. His park department's idea for a new park has garnered calls from CNN, NPR, ABC and several major newspapers. Karen Heller of the Philadelphia Inquirer says some people have been given MacArthur Fellowships for less.

When the New Brunswick Youth Sports Complex opens Oct. 29, two of the softball/Little League fields will come with a built-in barrier between the game participants and the crowd. The idea is to keep parents out of haranguing-distance from kids, umpires and coaches during games.

For years, Blackwell has taught a state certification course for coaches at Rutgers where one of the biggest topics is how to handle out-of-control parents. At his own district, Blackwell says a few parents are so unaware of their poor behavior, he sometimes videotapes them in action and then shows them the tape.

When the city foreclosed on 15 acres of land in the center of the town, Blackwell and other city recreation workers saw an opportunity to improve the atmosphere of games.

"My motto is let the ump ump, let the coach coach, let the kids be kids, and let the parents cheer," Blackwell says.

The fields are being built with a six-foot high wall around the backstop; the prime hectoring area for upset parents. This gives parents a "mouse eye's" view of the game, which should help reduce overly aggressive parental coaching or umpiring, Blackwell says.

The fence is also backed with tennis-style windscreens, further obscuring the view from behind the plate and the



PHOTO COURTESY OF CHRISTOPHER BERRY
A new "parent-proof" field in New Brunswick, N.J., has been receiving a lot of attention.

dugouts. Parents can still see from bleachers placed behind third and first base.

"It's still a great view, but one where parents can cheer without actually coaching the kid as he bats," Blackwell says.

The \$2.5 million facility was paid for with open space grants from the state of New Jersey and Middlesex County. City officials hope concession and other revenues will help support youth programming.

Blackwell says that even some parents who have been problems at games are supporting the idea. And in perhaps the biggest sign of success, applications for umpire jobs are way up.