

**K**ipp Schulties hates them. He would ban them from golf courses altogether if he could.

Schulties, of Kipp Schulties Golf Design in Singer Island, Fla., doesn't feel this way about titanium drivers, tightly wound golf balls or even slow players. Instead, Schulties saves his wrath for cart paths.

"When you design a golf course, you're always trying to keep it as close to nature as possible," Schulties says. "Concrete isn't natural. As far as I'm concerned, cart paths are a necessary evil."

Necessary, in Schulties' opinion, because the increasing popularity of golf places turf under enormous strain. Adding

the strain of golf cars to normal turf on top of that could destroy the work of an architect in a matter of weeks. So, like it or not, Schulties combines his talents with those of an engineer to build the best cart paths possible.

Schulties says a typical cart path is 30,000 feet long. For a concrete path, Schulties estimates a cost of more than \$400,000, while an asphalt path will cost nearly \$300,000. He also says screened rock, a finely crushed stone composite, will cost between \$50,000 and \$60,000 per path.

Gary Grigg, superintendent at the Royal Poinciana GC in Naples, Fla., says he has tried most cart path construction techniques in his 32 years in the business. His overarching advice sounds as if it comes from a salesman's handbook: You get what you pay for.

# Cart path *smarts*

Experts offer tips on how to make the best ones possible

By Frank H. Andorka Jr., Associate Editor

“Think long-term when it comes to cart path construction,” Grigg says. “The only people who think short-term are the developers who are going to come in, create a golf course and then turn around and sell it. They don’t have to worry about maintenance issues, so they’re going to do whatever is cheapest.”

Grigg says even though it will cost less to do an asphalt cart path, it will be harder to maintain and won’t look as good to the members.

### Tips for construction

Here are some tips Grigg and Schulties offer to superintendents who are building cart paths:

- Use concrete instead of asphalt whenever possible.

“Concrete will cost a little more up front, but it’s going to last longer than asphalt,” Grigg says.

Grigg suggests using 4,000 pounds of pressure per square inch concrete rather than the standard 3,000 psi because it will stand up better to the pressure of constant car traffic.

- Make sure the concrete contains fiber mesh, which holds concrete together under normal expansion and contraction of the ground.

“Fiber mesh adds little to the cost of the path itself, but it makes it far easier to maintain later,” Schulties says. “Small cracks don’t become big cracks as quickly.”

- Remember that concrete is designed to crack.

“If you’re going to use concrete, make sure you lay it in sections,” Schulties says. “It’s easier to replace one section of concrete — and it’s a lot more aesthetically pleasing than patching asphalt.”

Grigg says he avoids steel-mixed concrete because it rusts easily.

“You’re going to have a lot of cracks expand a lot more quickly if you use steel because of the rust,” Grigg says. “Once rust sets it, it breaks down the concrete.”

Expansion joints should also be cut at the end of each concrete section, Grigg says. An expansion joint should generally be one-quarter the total height of the path. These man-made cracks give the concrete somewhere to go as the ground stretches and contracts.

“This will prevent larger cracks from forming in the center of sections,” Grigg says.

Expansion joints must be cut the same day the concrete is poured, he says.

- Hire an engineer to oversee the layout and construction of the path.

Most golf course architects steer clear of actually building the paths because of the liability issues involved, Schulties says. An engineer will have the knowledge necessary to build a safer cart path.

- Evaluate the soil to determine the path’s substructure. It’s important to understand what the soil composition is

### Cart Path Caveats

Michael Hurdzan, Ph.D., of Hurdzan Fry, a Columbus, Ohio golf course architecture firm, steers his firm away from designing cart paths because of liability issues (“We’d make lousy witnesses if there were lawsuits involved,” he says), but that doesn’t mean he doesn’t have opinions about what NOT to do with cart paths. Here’s his five-step primer:

1. Don’t make the cart paths too steep. The grade should not exceed normal engineering standards for roadways.
2. Don’t create turns that are too sharp. Combine sharp turns with any sort of grade, and you’re asking for trouble.
3. Don’t make the cart path too narrow.
4. Don’t ignore the importance of warning signs, guard rails and speed bumps. In case of litigation, these precautions could reduce your liability.
5. Don’t share cart paths on two different holes. If you do, you’re putting people in harm’s way.

Hurdzan also cautions superintendents to keep the cart paths well maintained, particularly in the fall if the path lies under trees that lose leaves. Leaves, combined with water, turn a cart path into an accident waiting to happen.

“There have been some tragic accidents — even deaths — from golf car accidents,” Hurdzan says. “Treat them like roads, rather than paths, and you should be all right”

where the planned cart path will rest, Schulties says.

“Different soils will require different strategies,” Schulties says. “Take the extra time to do the project right.”

- If asphalt is the choice, mix it with at least 5 percent cement.

Mixing cement with asphalt increases its stability, Grigg says. Typically, an asphalt cart path will be 2 inches in height, Grigg says.

- Develop a good base.

Grigg suggests 4 inches of compacted limestone provides a solid foundation for most cart paths.

- Promote dual uses for cart paths.

Since cart paths need to exist on most golf courses, Schulties says courses should be creative in their use to serve more than one purpose. For example, design a cart path on the side of a hill and pitch it away from the fairway. Then hide drainage basins in the path to draw excess water.

“It’s proven that this technique will help make the fairways more maintainable for the superintendent,” Schulties says. “Don’t be afraid to be creative.”

Grigg says cart path construction always depends on the budget and what a superintendent is trying to accomplish.

“Everything having to do with cart path construction is predicated on cost,” Grigg says. “You can get all the advice in the world, but in the end you have to do what’s possible with the amount of money you’ve been given to spend.” ■