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Cart path design

At one time, you've probably contemplated adding cart paths to your golf course. If you don't have them, you should because every new course I've built without them adds them within a year. But you shouldn't add them without a master plan, or if you're 99-percent sure no major greens, tees or bunkers will be moved or added, because your cart paths must be completely integrated with your design to work as intended.

The trick to laying out cart paths is to defeat the straight-line mentality by providing many equally attractive entrance and exit points. Golfers hit their shots in different directions, so unless you inadvertently limit their access from primary play locations to the cart paths, this isn't difficult. Nonetheless, all golfers eventually go to areas such as greens, landing areas and tees. That traffic increases your maintenance challenge.

While you can't eliminate problems, intelligent design minimizes them. Here are a few tips.

Strive for easy circulation first and concealment second. There's little sense in designing a path where no one drives. Of course, this doesn't mean running cart paths down the middle of the fairway.

Direct routes. Paths veering sideways more than forward invite shortcuts without blockage. Paths should be as direct as possible. If the next tee is right of the green, the path should be on that side.

Gentle curves fit the landscape, look better and drive easier. You should be able to drive your truck comfortably at 15 mph and at a minimum radius of 120 feet. Broad curves spread wear better. Sharp curves encourage narrow exit/entry points and often draw attention. Strive to create unencumbered, relatively level access equal to two feet per thousand rounds. Generally, one broad inside curve midway between the tee and fairway landing area or the landing area and green encourages a variety of entrance/exit points distributing traffic better.

Limit obstructions such as trees, mounds or bunkers between paths, tees, fairways or greens because they funnel traffic. If you want to hide a fairway path with an earth form, use a long, gentle ridge rather than a series of humps because carts will inevitably funnel through the valleys.

Remove trees if necessary to maintain minimum radii and keep tree trunks five

feet from the pavement to avoid cart dents and roots from damaging pavement.

Limit slopes to about 15 percent where practical and avoid steep drop-offs near the paths for safety.

Cross fairways if necessary, avoiding prime landing areas. This increases fairway accessibility and can usually be hidden.

Green-area paths should:

- Be located 40 feet to 60 feet from the green's edge. Any closer affects play and invites short-cutting inside the path.

- Have curbs at tees and greens to control traffic and avoid small pull-out areas that concentrate traffic. Pave the paths to 10 feet to 12 feet of the full length of the natural entry points.

- Enter near the back to move players ahead, minimizing delays.

- Avoid entry through main drainage ways, narrow mounds or to a small portion of the green.

Tee-area paths should:

- Be 25 feet to 40 feet from and parallel to the tee edge, making all areas equidistant and similarly sloped from the tee.

- Avoid narrow access routes and steps.

- Minimize visual distractions and avoid the line of play.

- Minimize vertical climb. If the tee is raised, raise the cart path.

- Extend a gentle curve well past normal exit points in partial cart paths areas because abrupt ends concentrate exiting traffic.

Fairway-area paths should be:

- 40 feet to 60 feet from the fairway at main entry points and further in other areas, blending convenience and concealment.

- On the right side of the fairway where possible.

- On the side with the fewest obstructions (bunkers, mounds, etc.).

- On the outside of doglegs out of play, unless they can be hidden on the inside.

- Shaded by trees between exit areas for concealment.

- Near fairway level to assure convenient access. Being slightly above the fairway allows golfers to see their balls from the cart, quickening play.

- Routed away from dangerous areas such as high-play zones of adjacent holes and

hazards such as steep drop-offs.

Conceal paths by:

- Shading them with trees.

- Tilting them away from view lines and/or using low ridges to hide them in open areas. It's often easier to conceal a path crossing the fairway than one paralleling the line of play.

Where cart paths must be visible, avoid sharp vertical and horizontal alignments for best appearance. Because many golfers will travel the route, it should feature views of natural highlights such as trees, waterfalls, rock outcroppings or landscaped areas.

You also should use high quality construction materials, adequate pavement thickness with reinforcement and proper expansion/contraction joints. Concrete might be more expensive than asphalt, but it lasts longer and requires less maintenance.

And don't forget drainage. Many courses retrofitting with paths inadvertently block drainage patterns, but building paths with swales and drainage inlets on either side avoids this. Don't use paths as drainage ways because wet pavement isn't as safe and drainage accelerates, causing erosion at exit points. If necessary, use catch basins in the pavement with curbing to trap water. Remember to handle drainage well away from heavy traffic areas such as greens and tees.

You can further aid agronomic impacts of carts by:

- Routing cart paths on the south and/or east sides of fairways, tees and greens in wooded areas,

allowing morning sunlight to reach these areas.

- Using green-to-tee cart paths through wooded areas as wind slots by aligning them with breezes to provide air circulation.

Make sure your irrigation system favors the cart path side of the fairway. Insufficient irrigation combined with the stress of additional cart traffic will kill turf quickly.

If you're contemplating additions to your course, these basic guidelines will give you a good start. The most convenient route might also pose some safety problems, especially at older courses where cart paths were never contemplated during routing design and hole spacing. Use these general guidelines and common sense to determine your best cart path routing. GCN

STRIVE TO CREATE UNENCUMBERED, RELATIVELY LEVEL ACCESS EQUAL TO TWO FEET PER THOUSAND ROUNDS.