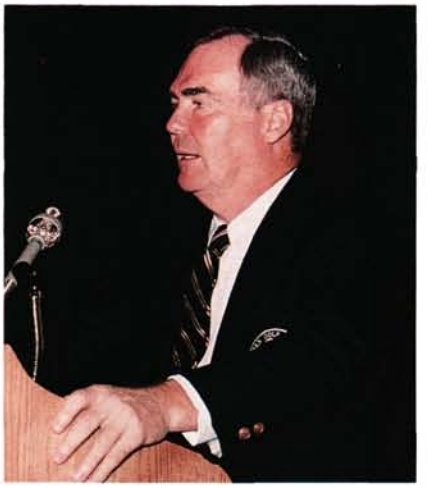
1988 GREEN SECTION EDUCATION CONFERENCE

Understanding Some Things We Think We Know All About

February 8, 1988, Houston, Texas



F. Morgan Taylor, Jr.

THE AUDIENCE for the Annual Green Section Educational Conference, held February 8, at the George R. Brown Convention Center, in Houston, Texas, was the largest we have ever enjoyed. Over 1,300 people attended the program. F. Morgan Taylor, Jr., of Hobe Sound, Florida, Chairman of the USGA Green Section Committee, introduced the speakers of the day. It was a huge success, and the seventh consecutive year for the Annual Green Section Conference to be held in conjunction with the Golf Course Superintendents Association of America International Turfgrass Conference and Show. Herein are the full proceedings of the 1988 Educational Program.

BEST TURF TIPS OF 1987 — PART I

The Best Turf Tips have become one of the highlights of the Green Section's Annual Program. From north, south, east, and west, here are the remarkable innovations developed by golf course superintendents around the country. They were reported by eight members of the Green Section Staff, who observed these innovative tips while they were making Turf Advisory Service visits last year. We start with Part I. Parts II and III appear later in this issue.

Banking On Beauty

by JAMES T. SNOW
Director, Northeast Region, USGA Green Section

PONDS AND streams are integral features of many golf courses, contributing to their challenge, as well as improving their appearance. Beauty can slowly give way to unsightliness, though, as pond and stream banks deteriorate through erosion or from muskrat activity. As the decline continues, maintenance of the banks becomes more difficult and time consuming, playability problems develop, and bank undermining due to water movement or muskrat tunneling can threaten the safety of golfers as well as the conditions of nearby greens, tees, or other features.

When this occurs, golf courses are forced to rebuild the banks with the hope of establishing long-term stability. In certain instances it can be quite effective to regrade the bank to a more gentle slope, and reinforce it with either vegetation or rip-rapping. This procedure can be very expensive, however, demanding adequate space, and often requiring permission from various regulatory agencies. A good alternative, especially where space is limited, is the installation of a vertical wall to stabilize the bank.

Though dozens of materials can be used to construct a vertical wall, many have deficiencies that limit their effect. Characteristics of the ideal construction material would include good stability, minimum long-term degradation, provisions for lateral seepage of water through the wall, reasonable cost, and attractive appearance. Among the commonly used materials, for example, are pressure-treated railroad ties. Pylons are attractive but quite expensive, while gabions (wire baskets holding rocks) are not as elegant looking or as long-lasting as some clubs want.

At the Upper Montclair Country Club, in Clifton, New Jersey, Bob Dickison, the golf course superintendent, has developed an attractive, low-cost

method of dealing with pond and stream banks. Having tried gabions and finding their longevity and appearance were not what he had hoped, Bob built plywood forms that allowed him to produce reinforced concrete sections eight feet long, 16 inches wide at the bottom, four inches wide at the top, and 20 inches high. These sections are then tied together and stacked on top of each other to create a vertical wall as long and high as desired in a given situation. Ornamental stone is placed on the open side of the form just after the cement is poured, giving the finished product the appearance of a stone wall. (Note: The top side of the form is ultimately the vertical side, which will be seen when the wall is constructed.)

The only drawback to this method was that the plywood forms had to be rebuilt after only a couple of sections were made. This problem was resolved when a club member who owns a sheet metal fabricating shop offered to make the forms out of one-eighth-inch plate steel. Since then the forms have been used hundreds of times without showing any signs of wear. Bob has two of these forms, and can produce one section per form per day. Each section weighs about 2,000 pounds. Shorter sections can easily be made by placing a custom-cut piece of plywood at any point along the length of the form and securing it in place with 2-by-4s. Pieces of plywood can also be placed at angles to create sections used for turns in the wall. To ensure that the sections are easily detached from the form after the cement is dry, the inside is covered with a coat of old crankcase oil before the concrete is poured. To give the section greater strength, reinforcing rods or pieces of scrap metal are welded together and placed in the form before the concrete is poured.

To permit drainage through the sections, three-inch PVC pipe is set vertically in two locations in the form before the concrete is added. If existing course drainage is to be tied into the section, then six-inch pipe is used. These holes created by the pipe also serve as a means of lifting the section out of the form and maneuvering it in place when the wall is being laid. This is done by running a cable through the pipe before the concrete is poured and attaching it to a loose plate placed on the bottom of the form. After the section is removed, the plate is chipped away from the back of the section and the cable is detached from the plate.

Another feature of this method is that adjacent sections can be tied together after installation by way of pouring cement in a vertical 4-by-4 gap created by placing 2-by-4s horizontally along the ends of the form when the sections are being made. The 2-by-4s are set back a consistent five inches from the top of the form so they leave the 4-by-4 gap when the sections are butted against each other.

When installing the sections along a stream or pond bank, it is important that a firm, level base be established. Gravel should be placed on the base before the sections are laid, and should be used to backfill behind the sections after they are in place. There should be a slight angle of repose to the wall, especially if the sections are stacked several layers high.

As with any good idea, it doesn't take long for the word to get around. Ed Nickelsen, superintendent at nearby Montclair Golf Club, saw the results of Upper Montclair's bank stabilization program and ordered two of the forms for his club at a cost of about $900 per form. Using on-site rock to face the concrete sections, he estimates that the cost of materials and labor for making the sections and installing them at about $11 per linear foot, a bargain compared to most methods of building vertical walls for stream and pond bank stabilization.

(Above left) Ready to pour concrete in the form, with reinforcing frame and drainage pipe in place.

(Left) A stockpile of completed sections ready for use.

(Above) Final stages of installing a new wall.