

I think I would prefer pumping up into the tank and then get the pressure from gravity rather than depending on keeping the pump working all the time I was watering. So far as watering equipment is concerned, each club must figure on its own particular system of producing volume of pressure of water and locate its own source of supply.

Describes Systems

Having decided on the source, I have found just two systems for watering fairways which I shall describe. One is to lay cast iron pipe below frost level or approximately $5\frac{1}{2}$ feet in the ground. Illinois started with 6-inch cast iron mains, dropped to 4-inch where that size was adequate and then to 3-inch and some of the short laterals are 2-inch. The labor cost of placing this pipe below frost line will run from 45 to 55 cents per lineal foot. The cost of the pipe will vary from year to year and the prices are obtainable from pipe manufacturers. The quantities required will vary on each course, depending upon the layout of the course and the possibility of using one main line for more than one fairway. In some cases it is possible to use a single line for as many as three fairways, and with a small length of laterals it is possible to use one line for as many as four fairways, so it would hardly be possible to make an average estimate on the average golf course as to the number of feet of each size necessary.

I found the most satisfactory system was to run the line down through the rough and have a standpipe or water plug every 125 feet. These plugs would be so placed that they would not interfere with the play and also not interfere with the mowing. Each of these fire plugs is equipped with "stop and drain," which means that when the hydrant is shut off it automatically drains itself below frost line. All of these hydrants have 2-inch connections and I find it most satisfactory to attach a 2-inch by $1\frac{1}{2}$ -inch reducer, so that the sprinklers are throwing a full $1\frac{1}{2}$ -inch supply of water.

After trying many sprinklers from the larger putting green sprinklers up to the size which could not be handled by hand power, we employed a special sprinkler which cost \$45 each. We used $1\frac{1}{2}$ -inch heavy duty electric hose made up in 50-foot lengths, so that it is easier to handle.

I find that Bob-O-Link and Flossmoor are using sprinklers on carriages where they must lug around exceptionally long

lengths of hose. I tried to avoid this by eliminating these carriages and cutting the hose into 50-foot lengths so as to eliminate labor. The sprinkler I designed can throw much more extensive and a greater quantity of water as compared with these carriage sprinklers, which must be kept in one spot for several hours before any real growth-producing supply of water is distributed.

I also tried the underground system of having sprinkler heads placed under the ground, but this did not work out very satisfactorily. Summing it up, I might give an average cost which would apply to any course similar to Illinois. The Illinois system covered the fairway sprinkling and usual tee and green sprinkling system combined in one. The cost ran approximately \$14,000 for material and \$11,000 for labor, making a total of \$25,000. Fairway sprinkling *only* would naturally cost less, inasmuch as all of the Chicago district clubs have the putting green and tee sprinkling system well in the ground. Some of this present system might be used for fairway sprinkling, that is in such places where you find pipe large enough to carry the water necessary for the fairway.

17,000 feet of 6-inch pipe below frost line—

Pipe costs 74 cents per foot. Installation cost averages 55 cents per foot.

7,000 feet of 4-inch pipe—Pipe costs 60 cents per foot. Installation cost averages 52 cents per foot.

— feet of 3-inch pipe—Pipe costs 40 cents per foot. Installation cost averages 50 cents per foot.

— feet of 2-inch pipe—Pipe costs 38 cents per foot. Installation cost averages 40 cents per foot.

9 Sprinklers at \$45 each.

600 feet of $1\frac{1}{2}$ -inch hose with couplings, 48 cents per foot.

Another system of pipe line could be installed which would be a great deal cheaper and require the same number of feet, but instead of placing the pipe below frost line it would be placed 18 inches to two feet deep, so the installation cost would be reduced about 30 cents per lineal foot. The pipe could be lessened because you would use galvanized wrought steel instead of cast iron pipe. Then instead of having fire hydrants which cost \$25 each, you could use what we call "stand" pipe, which is nothing more or less than a piece of two-inch pipe with a valve on the top of it. If this shallow system were installed

an air compressor must be purchased with which to blow out this shallow system some time in November before freezing weather comes. This galvanized steel pipe will last about twenty years and the beauty of the shallow pipe is if it does spring a leak you will notice it and it is not hard to repair, since it is only 18 inches to two feet deep.

Summarizing the whole system, a fair estimate on the cost of an irrigation system would be:

Well	\$10,000
Pump	5,000
Tank	6,000
Lake—	
2,000,000-gallon lake.....	15,000
100,000-gallon lake.....	6,000
Pump—	
Centrifugal working from lake...	1,000
Watering System—Underground system for 6,500-yard course below frost line approximately (<i>Fairways only</i>)	
Material	9,000
Labor	9,000

Sprinklers	450
Hose—600 feet of fairway hose.....	300
Shallow installation pipe line complete—	
Material	5,400
Labor	4,800
Fairway sprinklers	500
Fairway hose	300

These figures would be materially lessened by using part of the present pipe line system now installed.

I have listed all these various things that the club might select the particular items they would require and the cost figures are not exceptionally low nor exceptionally high.

Again I say it is impossible for anyone to make a real estimate or lay out a definite plan without thoroughly analyzing the particular course for which the irrigation system is desired. No one can say where to place these fire hydrants until they see the course and to secure the best layout without knowing the course would be like trying to play golf after reading golf articles or stories.

Be First with the Latest

Keep your eye open for the new golf specialties. Order small amounts as starters but make the most of them in your displays so you'll get your shop recognized as headquarters for the first and best in golf and its accessories.

These cane seats are good specimens of this type of merchandise. It was thought at first that they wouldn't go at all in this country, although they were fine for Eng-

land with its damp ground. However, the great favor enjoyed by white golf clothes has put these combination canes and seats in good selling repute. Alert pros are making money out of them. Robert Taylor at Minikahda sold the two dozen of his first order quickly and plans to push them to the gallery at the National Amateur. It's picking up business like this that accounts for the fat incomes enjoyed by professionals who are keen business men.



A few days ago this was the site of a fine equipment shed, stocked with \$15,000 worth of maintenance machinery and supplies. Just a spark and a night wind, and the result is shown here. Now the club is learning a lot about insurance.

MEMBERS LEDGER

YOUR NAME BY A. W. HONECKER		DEBIT					DEBIT		CREDIT		DEBIT
BALANCE AT START		GUESTS	CAPE	CASH	FEES	MISC.	BALANCE AT CLOSE	DATE	PAYMENTS	AMOUNT	BALANCE
AMOUNT BROUGHT FORWARD											

HOUSE EXPENSE

DEBIT

ENTERTAINMENT

LABOR	ELECTRICITY	FUEL	LAUNDRY	TELEPHONE	REPAIRS	MISC.	MISC.	EDUCATION	ST. & FUEL	MISC.	

DEBIT

ADMINISTRATIVE

DEBIT

GENERAL LEDGER

LABOR	ELECTRICITY	FUEL	LAUNDRY	TELEPHONE	REPAIRS	MISC.	MISC.	EDUCATION	ST. & FUEL	MISC.	

C. D.

ROOM OR BANK

DEBIT

GROUPS EXPENSE

WATER	LABOR	WOOD & YARD	WELL TRUCKS	OIL & GAS	FEES	BLANK	MISC.

EXPENDITURES

YOUR NAME BY A. W. HONECKER		DEBIT					DEBIT		CREDIT	
LABOR	TO MEMBERS PAID	WATER	WELL TRUCKS	WATER	WELL TRUCKS	WATER	WELL TRUCKS	WATER	WELL TRUCKS	

These are some of the forms that keep the Cascade Hills club officials constantly informed of the club's true condition.

How Cascade Hills Makes Its Budget

By A. W. HONECKER

Treasurer, Cascade Hills Country Club

WE LAY our cards flat on the table and let our members decide how they want their money spent. If they wish an

assessment of \$15, we tell them what it will give them in addition to running the club in the regular manner. If they wish to have a larger assessment we tell them what additional they can have over the smaller assessment. After making their choice we follow the budget figures, checking them up month by month to see that the figures do not overrun. Generally speaking these anticipations can be fol-

What to Plant for Course Landscaping

By M. A. POTTENGER

IT has been the common practice of most golf clubs to develop beautiful landscape in and around the club house proper and to beautify a few of the outlying borders with shrubs and trees.

Plantings around tees and the sides of greens, may be bordered or enveloped with trees, shrubs, evergreens, hardy perennials such as Peonies, Iris, Phlox. Spring flowering bulbs also may be used to their

Mr. Pottenger, who is the head of one of the country's big nurseries, has had some highly successful experience in working with greenkeepers who are landscaping their courses. Particularly in the cases of courses where there are not many trees is landscaping being given some deep thought.

His suggestions relative to landscaping around greens show what possibilities there are in this respect, although many will believe that the proximity of the tee landscaping to the greens, and the chances of having wild approach shots land in the green landscaping, make this work something to be done with great care.

greatest advantage.

We will take for an example, an imaginary border surrounding any of your tees. In most cases these borders may be laid out with a combined planting of trees, shrubs and flowers from twenty to thirty feet deep, surrounding three-fourths of the tee, giving a planting area equal to a strip of ground twenty to thirty feet wide and one hundred to two hundred feet long.

This planting may consist of those flowers which are most beautiful at close observation, such as Pansies, Violas, Primroses, Hardy Pinks, Linum, Gaillardia, Aquilegias (Columbine), Shasta Daisies, Foxglove, Canterbury Bells, Bleeding Hearts, Sweet Williams, Lupins, Forget-me-nots, Platycodon, Scabiosa, Sedum, etc.

Evergreens of the dwarf grafted types, which are very beautiful as single specimens, may be planted in clumps in and about the tees. A bird-house erected near the end of the clump, a few rock plants and very small rock garden effects may also be added about the tees. Nothing is more soothing and interesting than a small pool with goldfish close to the benches where you sit while your opponents are driving off from the tee. All these little points of interest add to the pleasure of golfing. They help the loser to enjoy the

rounds as well as the winner.

Honey Locust is without question the most valuable tree to be used in and about landscape, as this is the only family of trees that the writer knows of which gathers its nitrogen from the air, the same as clovers and other leguminous plants.

The shrubs to be used in these borders about the tees, may consist of all the standard varieties that do well in the community where the golf

grounds are developed, as little attention needs to be paid to their height of growth or the season of bloom.

Green Borders

Where the course from the tee to the green is a distance of three hundred yards or more, it is quite reasonable to assume that there would be very little slicing of balls that would interfere with a planting setback 30 yards on either side of the green, and about even with the front edge and extending back even or a little past the back of the green. Where these borders are subject to having a ball dropped in occasionally, large plants such as Peonies, clump planting of Hollyhocks, Anchusas, Delphinium, Aconitum (Monkshood), Rudbeckia Purpurea, Phlox should be used, with liberal ground space in and around the plants.

This selection of plants is beautiful at long distances, and is readily admired while traveling the course in routine of playing. Shrubs such as Tamarix Altheas, Standard Lilacs, Auralia, Hardy Hydrangeas planted at liberal distances apart will be found most effective and desirable for these plantings. Umbrella trees, Weeping Mulberry, Cutleaf Weeping Birch, Bechtel's Double, Flowering Crab, Moun-

tain Ash are the best trees to use in and about these borders.

Tulips for Perennial Borders

There is nothing so effective as a spring flower, as Tulips. They are in a class by themselves. The cottage Tulips are much more effective and last better in the perennial border. Owing to the fact that tulip bulbs should stand until the foliage dies away naturally in order that the bulbs develop properly for the next year's bloom, they should be placed in small plantings of about two and one-half feet square, twenty-five bulbs in a place, fairly deep in the border, where the foliage will be hidden by other perennials growing up in and around them for a second blooming season. Late blooming Perennials, such as Phlox, Platycodon, Monkshood, Hollyhocks, Lilies, Chinese Delphinium, Belladonna and Bellamosumare, some of the best perennials to fill in these spaces with. However, any of the annuals may be used.

Preparing for Fall Planting

In order that your landscape may have the best chance for development, the ground should be spaded up and allowed to have two or three rains, and be thoroughly pulverized before planting. As to the best time to plant, we have noted very little difference provided the late planting is planted deep enough that it does not heave out during the winter from continuous freezing and thawing.

A light covering of mulch to prevent thawing will greatly aid the plants from heaving. Such plants as Phlox, Delphinium, Peonies, Aquilegia, Platycodon, Anchusa,

Hibiscus, Salvia Azurea, Monkshood, all the bulbs, including Lilies and Tulips, may be completely covered, and one should not lose a single plant. Stakes by each of these plants will aid in early cultivation as such plants as Platycodon are slow to come up in the spring and are apt to be hoed off from the first cultivation.

As a review of this article the writer wishes to emphasize the importance of deep and broad borders, any place the ball is apt to be dropped in among the plants, so that you will retain a good landscape effect from a distance, even though the plants are planted far enough apart that hunting a ball among the plants will neither be annoying to the player or destructive to the plants themselves. Also, in developing your borders, one must constantly keep in mind, the arrangement of plants so as to have the entire grounds a mass of bloom at all times. It is quite too frequently the case where one has a beautiful border in June and practically nothing of interest in August. Phlox, Hollyhocks, Liliun Auratum and Rubrum, Rudbeckia, Purpurea, Monkshood, Tiger Lilies, Hardy Hydrangeas, will greatly help in filling up this gap.

Evergreens, small, inexpensive pools, with little rock garden effects, shade and benches will be found the most interesting and useful near the tees.

Study the club tournament score sheets. Nothing can be turned into sales much quicker than a comment to a member, "Saw you broke your record yesterday. Getting into the class of the stars now."



The Peoria Country Club's home is set in a commanding position and seems to have grown up as a natural part of the scenery. Its location is a splendid example of calculating art.

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DON'T BE MISLED—

BY SEED DEALERS OR THEIR SALESMEN INTO PURCHASING SO-CALLED COLONIAL BENT, OR GERMAN MIXED BENT SEED. COLONIAL BENT COMES WAY FROM NEW ZEALAND. IT IS NOT ACCLIMATED TO OUR NORTHERN AND EASTERN STATES AND ALMOST INVARIABLY GERMINATES POORLY. GERMAN BENT, OFTEN SOLD IMPROPERLY AS CREEPING BENT, IS A MIXTURE OF BENT SEEDS. IT PRODUCES A TURF OF WIDE VARIATION IN COLOR AND TEXTURE. THIS CERTAINLY IS NOT DESIRABLE. IT OFTEN GIVES A PATCHY, MOTTLED, UNATTRACTIVE APPEARANCE TO THE TURF AND LACKS UNIFORMITY OF TEXTURE WHICH IS THE PRIME REQUISITE OF A FIRST CLASS PUTTING GREEN. These large seed dealers who do a country-wide business have to maintain warehouses, city offices and a force of salesmen. Of necessity, there has to be a big difference between the price that these dealers pay for their seed and what they sell it for. All their "superior quality" talk or "tested seed" arguments do not amount to a "tinker's darn." The facts are that they purchase seed where they can buy it the cheapest, and that is from Germany and New Zealand. Don't let them tell you that the quantity of seed that they handle allows them to make you a very favorable price. No one, no two, and probably no five of them put together sell the quantity of Bent seed that I grow on my farms which I sell direct to the golf clubs of America. Seed dealers are fully awake to the fact that I have taken a tremendous amount of business away from them. They know that I have a negligible overhead expense. I simply have two stenographers and a bookkeeper—no expensive city offices and no traveling salesmen to maintain. A small percentage of profit over the cost of production satisfies me. Some of these seed dealers have instructed their salesmen to use a 16-pound hammer on A. N. Peckham, of Kingston, Rhode Island, and his seed. They certainly are decidedly not enthusiastic over the fact that I have furnished many clubs with seed of native grown Rhode Island Bent to replant areas on which unacclimated seed of foreign origin has proven unsatisfactory.

REMEMBER—WHEN YOU PURCHASE SEED DIRECT FROM THE FARMS WHERE IT GROWS YOU ARE ASSURED OF AN ABSOLUTELY FRESH, VIABLE, ACCLIMATED, WINTER-HARDY PRODUCT.

SAVE THE MIDDLEMAN'S PROFIT AND DON'T RUN THE RISK OF GETTING OLD, UNACCLIMATED SEED OF FOREIGN ORIGIN. BUY YOUR SEED DIRECT FROM THE FARMER WHO GROWS IT.

RIGHT NOW WE ARE GOING FULL SPEED. WE DON'T KNOW ANYTHING ABOUT UNION HOURS, SATURDAY AFTERNOONS, SUNDAYS AND HOLIDAYS OFF. NOW AT THE HARVEST TIME IT IS TEN HOURS A DAY, SEVEN DAYS A WEEK OR NO JOB. MY THRESHING AND CLEANING APPARATUS ARE NOW RUNNING NIGHT AND DAY TO KEEP UP WITH THE BOYS IN THE FIELDS WHO ARE MOWING AND CURING THE BENT HAY. WE ARE NOW FILLING ORDERS THAT I HAVE ON HAND FROM MORE THAN 70 GOLF CLUBS FOR RHODE ISLAND BENT AND TRUE CREEPING BENT SEED. WEATHER PERMITTING, IN 10 DAYS I WILL BE CAUGHT UP. PLACE YOUR ORDER NOW FOR FRESH, VIABLE SEED THAT IS COMING RIGHT FROM FIELDS WHICH ARE RUNNING 98% OR BETTER AS TO PURITY OF VARIETY.

A. N. PECKHAM

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THE ONLY GROWER OF CULTIVATED, PEDIGREED, TRUE CREEPING BENT SEED (AGROSTIS STOLONIFERA) IN AMERICA

Planning for Model \$30,000 Clubhouse

WHAT would be the features of a clubhouse that you would build for \$30,000? This question was put up to GOLFDOM by the building committee of a golf club in a southern town of approximately 5,500 population.

The site for the clubhouse is one overlooking a broad and beautiful valley. The town has a good sized state educational institution in it so the club, if it so desires, can get a fair amount of additional revenue from the clubhouse by allowing sorority and fraternity dances and bridge parties to be held in the establishment. Although there are some drawbacks to this policy it brings in some revenue to help the club pay for its building investment.

The number of inquiries for data on golf club buildings GOLFDOM has received was responsible for us volunteering to help this southern club get a model clubhouse for its money. Already an architect has

worked out some preliminary sketches and already they have been sent back to him as having the customary defects of clubhouse plans. This enterprise is one in which both the interested golf club and GOLFDOM will appreciate all the co-operation it can get, so club officials are cordially invited to write us their ideas of a model \$30,000 clubhouse. A description of the virtues and defects of your own clubhouse, or those you have observed, will be most welcome.

More crimes have been committed in small town clubhouse architecture than are committed in the name of liberty so our sight-seeing tours have led us to believe. We have seen shacks that would be a discredit to a dog boarding kennel attempting to do duty as small town golf clubhouses. Money has been spent for some establishments with a pitiful lack of value showing. The layout has been inconvenient, the showers dark and always

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clammy and cold, the men's locker-rooms like jails, and the invariably inadequate women's quarters having all the comfort and charm, if not the security, of a shell-hole. Then there is wonder that the club members lose interest in their proposition.

Get Your Money's Worth

What aroused GOLFDOM's acute interest in this matter of a model small town clubhouse is our abiding belief that many of the clubs in small towns and fairly large cities have been painfully stung with the results obtained from their building appropriations. It may be a case of too many bosses over the architect. That always is a possibility with golf clubs. Or, it may be that the architect, having done no other clubhouses prior to this particular one, wanders around more or less in the dark, adapts according to his own lights, and comes but with a weird production.

Rarely have we seen in golf clubhouses proper provisions made for growth. That is one thing that we want to handle in this model proposition; starting construction on a unit basis so that additional units and extensions may be added and the demand for increased facilities and the available money permit.

Another feature we seldom have seen right in golf clubhouses, large or small, is the original layout of the kitchen. So even though this \$30,000 proposition will involve no elaborate cooking and service facilities, they are going to be right. The experts of one of the leading kitchen equipment houses will check all plans in this respect and after their experience in revamping kitchen and service facilities after the clubhouse is constructed and they are called in—too late for greatest economy and efficiency—these fellows ought to be able to present something of value.

It is our pet idea that ingenuity and talent.

(Continued on page 33)

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Here is one of the Pinehurst greens. Many are of the opinion these are the world's finest sand greens.

Nature Is Supplier of Pinehurst Greens

SEVERAL inquiries relative to the sand used in the famous sand greens at Pinehurst have been received by GOLFDOM. It is evident that those green chairmen and greenkeepers having sand greens regard the Pinehurst green as the best of this character and are anxious to get similar sand.

Getting this sand is going to be a tough job, according to Leonard Tufts of Pinehurst, for he states it is a local product. Mr. Tufts advises GOLFDOM:

"I think the success of our sand greens is due almost exclusively to the native material. I have never seen its equal anywhere and I doubt if it could be duplicated by any artificial method. In the process of making our sand hills there were evidently large streams of considerable size

USE YOUR EYES

That's all you need to do. Go to the nursery and see for yourself what you are getting before your greens are planted, without your knowledge, to a mixture of dandelions and weeds.

Maybe you think Bent is some kind of magic plant that just naturally grows itself, all clean and fresh and fine. Well, it is not. It takes every care and attention to produce the right kind of Bent for your golf course or any other golf course.

So see what you are getting. Ask whose Bent is going on your course, where it is grown, and then go and look at it. Then take a look at our nursery and we will abide by what your eyes tell you.

Don't blame anyone if you get stung in the Bent that goes on your greens. It's your own fault if you buy the worthless planting stock. Claims and hot-air mean nothing—SEE THE NURSERY STOCK YOURSELF.

BENT GRASS COMPANY

HOOPESTON

ILLINOIS

When there is a better strain of Bent we will grow it