Building the Green

It is within very recent years that the building up of putting greens has become popular. The old plan was to build the green on the site selected, no matter if it should be situated on low-lying ground or on a hilltop, the same procedure in building was rarely changed. It was immaterial whether the ground sloped the one way or the other, so long as the surface was in any way flat on which it was proposed to build the green. The courses were for the most part laid out on meadow or park land. The tees and putting greens were staked off with four pegs, the putting greens being as square as it was possible to have them. The old idea seemed to be to get everything done on as straight lines as possible. With the advent of the modern architect this has been all changed, in my opinion, for the betterment of golf and the benefit of the followers of the game. In my former article I described my own ideas of drainage. I shall, in this article, begin with the building of the greens first. It may be that the site selected for the new course is on ground of an undulating character and the position of the greens may make it essential to build them up in a variety of ways. One may have to be built on a flat piece of ground, another on a hilltop and another on the sloping side of a hill. The construction of each one may call for entirely different methods. The one

on flat ground may have to be raised slightly. The one on the hilltop may have to be let down, and the one situated on the side of the hill built up in some way to provide a suitable putting surface. As I said in my first article, the construction work should be carried out, as far as possible, so that it should fit in with the existing natural conformation of the ground.

I shall first deal with the building of the green on the hilltop. It is very essential, I think, that the green should, if possible, be sunk, or in other words, constructed on the punch bowl pattern. My reasons for advocating this is, firstly, that a green situated on the top of a hill is more liable to burn up in the hot summer months than one placed on a flat, and also that if it is so constructed it will have so little shelter from the keen winter winds that would otherwise sweep across it if exposed on the extreme top.

In the summer months, when it is essential to apply water to the turf, if the green is cupped less water will be required for this purpose. In other words, if the green is let down a little so as to form a saucer, moisture will be more easily retained, whereas if it is built on the extreme hilltop it would be like pouring water on a duck's back, it would all run off and little or no benefit would be derived from the application of the water. Another and very important point to be considered has to be borne in mind also, namely, the top dressing of the green. As every one knows, grass, like a human being, must be fed, and this remark ap-

plies more especially to putting greens where there is continual mowing and tramping over, with the inevitable result that the grass plants weaken in course of time. When this state of affairs takes place it behooves those in charge to apply nourishment of some kind and if the green is built on the lines I have suggested there will be less chance of whatever top dressing is applied being washed away than there would be with one placed on the extreme top of a hill. As is well known, the soil on the top of a hill is of much poorer quality than that met with on the lower levels. The reason for this is that the continual wash from the rains has the tendency to deposit all the richer soil from the higher levels on the flat surface below, enriching the one at the expense of the other. Therefore I say, if a putting green has to be constructed on the summit of a hill it should be lowered somewhat for the reasons I have stated.

When I say lowered, I do not mean that the putting green should be constructed in a deep hollow hewn out of the crest of the hill. My idea is that the green should be built in a slight depression only on the lines I have stated in the foregoing. Drainage on a green situated on a hilltop is of very little account, in fact it should take care of itself, as the most important point in the circumstances is to retain all the moisture possible. The depth of soil on a green so situated is a most important matter and calls for the closest attention. On low-lying ground a much lesser depth can

be done with but a depth of at least ten inches should be applied to a green on a higher level. The soil will help to retain the moisture for a longer period if put on at this thickness and there will be less chance of burning up taking place. Less artificial watering will also be required during the hot summer season. If seeding down has to be resorted to this depth of soil applies more so, and in my opinion no less quantity of good soil should be spread over the surface. If turf is to be used, a lesser quantity might possibly be done with, but even in the case of turfing care should be taken to apply enough before placing the sod in position. When seeding has to be resorted to, some good old rotted stable manure should be forked into a depth of six inches or so, and an inch of humus spread over the whole area of the green afterwards. The humus should be kept as near the surface as possible to give a start to the young grass plants. The humus should be raked in and mixed with the topsoil by means of an iron rake. I have found from experience that if the roots of the grass plants come in touch with the stable manure too soon and before the plants get strong enough there is a tendency for them to die out as the manure is perhaps too strong for them in their tender condition. Another thing I have seen is that if they have been strong enough to stand when they have got their roots down to the manure the plants have a chance to become coarse, and resemble more like what is required to make hay than the nice, fine carpet that

is desired to form a true and even putting surface. Now humus does not do this, but on the contrary it gives to the young plants just the proper stimulant to strengthen them in the right way. It does not rush the young plants as the stable manure would do, but carries them on during their baby state so that when their roots do get down to the manure they are strong enough to withstand its strong influence.

The same, to certain extent, applies to the treatment for turfing, but the grass being turf and therefore older plants, the manure may be kept nearer the surface and a less application of humus is required. I strongly advocate this form of treatment for greens in exposed positions, such as those situated on hilltops.

So much for the greens placed in such positions as I have just mentioned, and I now come to the ones to be built on the side of a hill. There are two ways to set to work to build a green which is placed thus. First, there is the plan of cutting into the hillside and building up the lower part from the earth excavated therefrom. This I think is the most common one and is seen to-day on many courses. I do not advocate this style at all and in my opinion it should be avoided as far as possible. A green built in this way must of necessity look artificial, and as I have said in my former article the great idea should be to get away from this as far as possible and try and make everything fit in to look as natural as it is possible to get it. Where the location of the proposed green is on a slope

that is perhaps very steep it may seem impossible to do otherwise than excavate into the hillside. I admit it is by far the cheapest and easiest way to build the green, but would it not be better in the end to build it another way and one that would not look so unsightly?

We will suppose the green is being built by excavating the hillside. The first thing to look to is drainage On a green built up in this way drainage is a very serious question, as I have in my time seen greens constructed thus with what would seem to anyone a perfect system of drains, turn out to be perfect failures on account of being always wet. A green built thus must form a pocket in the hillside. The wash from the higher levels must find its way down towards it. The slope is aggravated to a great extent by the one that has been made to make the fill for the lower part of the green. This means that a greater drawing power has been made and the water must of necessity run with greater force towards the green. At the bottom of the slope a drain may have been put in to catch this flow of water, but in nine cases this style is a dismal failure, as the water passes over the top of the drain and gets on the putting green where it collects. This wash may do no harm to the part of the green that has been made up as it may find its way in time to the drains that have been put in. However, the higher part, the part next the bank is wet and a hole may not be placed there except in very dry weather, therefore this portion of the green is of very little use.

Another way of dealing with this wash is to put in a grass hollow all around the base of the bank with a drain running in the bottom. This is a much easier way but far from being satisfactory. Another plan I have seen tried was to run a series of hollows across the hillside on the side of the green so as to divert the water around either end of the green. This I have seen done in addition to the one lower down. This scheme may to a great measure help to keep the green dry. With all this, however, a green built in this way has the tendency to become damp, especially on the side next the slope. In my next article I will explain the method I myself have found to work best in keeping the surface of a putting green built on the side of a hill perfectly dry and in first-class playing condition.