

Arne van Amerongen describes his work on a course where nose bleeds are an occupational hazard...

Once in a lifetime

The opportunity to build a golf course at an altitude of 1900 metres (well over 6000 feet) comes but once in most people's lifetime so naturally I was very pleased to be asked to supervise the extension of the golf course at Arosa, a small skiing resort not far from Davos, high up in the eastern Alps in Switzerland.

The original nine holes were designed as long ago as 1941 by Donald Harradine, an English golf professional who, pre-war, became Golf Course architect in Switzerland. However, the golf course was not built then but opened in 1946. Fifty three years later Donald Harradine's son, Golf Course Architect Peter Harradine, re-designed a complete new layout to extend the Golf Course to 18 holes.

Co-incidentally, Jim Arthur, advised on maintenance at Arosa during his regular visits to many of Donald Harradine's courses in the late 1940's.

It goes without saying that this site produced many unusual problems – not least being the rarified atmosphere at this altitude. This was a particular problem to me, as it was not possible to use vehicles on this mountainous terrain if damage was to be avoided, and it took me some three weeks to become acclimatised.

Walking as opposed to riding has, of course, one major advantage familiar to all greenkeepers, namely that you see far more on your feet than on wheels, and so can avert problems by timely detection.

A major problem in these mountains is, naturally, the weather. Even in summer (June until September) you can expect at least one day of snow in every month. However, during this construction, rain, rather than snow, was our major problem. We had suffered 237 mm in August and 270 mm in September! We had only four to five months for construction so such heavy rain was a considerable hindrance and, over and above this, snow started in earnest in the first week of October.

Fortunately, we were blessed by having more than 40 cm depth of good top-soil over most of the site and there were no big boulders to move. We "used the land we were given," retain-



Snow stopped construction in October, last year

ing the natural contours as much as possible, with virtually the only earth-moving on green and tee sites.

Ponds were also constructed, both for ecological reasons and attractiveness and, indeed, throughout the whole construction we had to be extremely conscious of conservation restraints.

For earth movement we used smaller machines, such as the Cat 215 and the Akkermann II 14, but one machine which we found to be especially useful on such steep slopes was the Mezi Muck. This was nicknamed the spider because it works on four independently operated legs, rather than tracks, giving it great stability.

In addition to conservation, restraints we had to cope with cows which graze the Golf Course in Summer. Greens and tees have to be protected by electric fencing when the Golf Course is in play, but luckily during construction the cows were moved elsewhere!

Greens, tees, fairways and surrounds were seeded with a higher percentage of highland bent (*agrostis castellana*), which is much tougher than the so-called creeping bents which were judged not to be satisfac-

tory under these testing conditions. Construction was to full perched water table standards, with particular attention to intercept drains on the perimeter of greens to intercept both surface flow from surrounding steep slopes and also sub-surface lateral drainage, as well as a conventional herringbone system.

This attractive course, set in spectacular Alpine scenery, with a

wonderful flora and wild life, may have a very short season, as well as high rainfall and snow, but it dries remarkably quickly and one can play (and work!) only three days after the snow thaws.

My view is that the future trend of architectural work will be in renovation, re-modelling and extending existing golf courses rather than in building new ones.



The new 18th green showing herring-bone and perimeter drain lines