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Practical Turf Wicket Construction

This talk today is about the way we build wickets and my hope is that this discussion may help to form a basic accepted method of construction.

Our ideas on how wickets should be built have evolved through the years from advice and the thoughts of others and our own input. I am not suggesting our way is the only way to build a turf wicket. I think it's the best we have been able to come up with so far but we are always willing to listen. It seems to me that it's about time some basic standards should be documented in an attempt to create a minimum acceptable method.

The methods described below may seem over cautious and extravagant though if we consider the years and years the wicket will serve and the costs of the materials used then the caution can be justified. (The soil alone on a six wicket table costs approximately $43,600.00 +GST at today's price.)

To begin:

Building good turf wickets takes some discipline, so don't try to cut corners. Try to be as close to perfect as possible.

Turf wickets should be constructed so that the curator has a base that is perfectly even in compaction (No variation in bounce). The surface should be smooth and true with a very small amount of grade to the sides. There is not much point building a turf wicket in an oval and destroying the field while you are doing it. You must have the correct equipment on hand. Large amounts of soil, sand and wicket soil are to be transported on and off the field without detrimental effect to the existing grass outfield. I would find it difficult to build a wicket economically and efficiently without a laser-grader on hand. We have a heavy roller on the 1.8 metre laser scoop we use to construct so the soil is rolled as it is graded to the correct grade prior to heavy rolling. Usually we finish with the 1.5 metre laser scoop to achieve the best finish particularly close to the edges.

Wickets are generally constructed 25 metres long by a nominated width (3 metres modules) and 200mm deep. If the existing out-field grades are to remain, the new wicket surface shall need to blend into the existing contours of the surrounds. An extra metre or perhaps more if needed of the existing grass is to be removed from around the wicket square to allow for re-contouring and grassing with couch. The wicket is to be constructed as close as possible to play north south. As far as possible the design of the finished surface is to conform to: North/South - level, East/West - .5% gradient each way from a centre line.

Scope of work:

1. Survey the area and install recoverable survey pegs then excavate wicket area to a depth of 250m from the existing surface. The base of this excavation is to be laser-graded accurately to match the grade of the proposed finished surface.
2. The unwanted spoil is to be carefully removed and stockpiled off the field and then removed from the site. Never install drainage or irrigation pipes beneath the square. Remove any existing pipes.

3. The existing sub-base is to be carefully compacted to create a firm foundation. It is compacted at a finished depth of 250mm to establish a foundation on which the wicket can be built. If it is found that extra suitable material such as "road base" or crushed rock is required to achieve a good result then this would be an extra cost. The base is to be laser graded to the same grades as the proposed finished surface grades. You can never do too much compacting of the sub base.

4. A 200mm wide plinth-board of compressed ac panel is placed around the perimeter of the wicket to prevent the heavy clay from moving laterally when compacted. Joining strips are used between the sections of plinth-board and the top of the board is to finish 30 to 50mm below the grassed surface. We got the plinth idea from Garry Hoy from Knox Grammar a long time ago when he had a problem with a wicket moving laterally into a sand profile outfield that we had installed. He and I figured out a way to cut a very narrow slit around the square and install the plinth-board. It worked well so we have used the method ever since.

5. Geo Textile cloth is placed neatly over the surface of the sub-base and a thin layer of very coarse sand to a depth of 50mm is spread and laser-graded to a close tolerance in the wicket square. The grade of the sand is to be exactly the same as the grade on the wicket finished surface. The geo-tech fabric is used to ensure that the sand is not contaminated and to add to the general stability. While it may seem very little if any water will find a way down through the wicket soil to the sand, it does. Simple proof of this is that the roots of the couch grass grow through the soil and down into the sand layer. We found this to occur on a wicket only one year after construction.

6. An agricultural/surface drainage line is installed along the lower sides of the wicket to remove the unwanted water from the drainage layer and run off from the wicket covers. A drainage line from the wicket to the perimeter is installed to carry this water to the existing stormwater system. Extra drainage outside the wicket is very useful in removing the water run off from the covers.

7. The wicket soil in Sydney is "Oberon" type purchased from M. Collins and Sons P/Ltd. 200mm of this "Oberon" soil is carefully spread, compacted and laser graded in layers until the final level is achieved. This wicket soil is contained within the plinth which has been accurately placed and stabilised to ensure that the quantity used is correct and that compaction will not cause spreading laterally. Compaction should only be carried out on each layer of wicket soil after it is carefully graded to the design shape. If the wicket soil is compacted before it is graded smooth and true the compaction will vary at the surface. We have found that the weight of "Oberon" soil compacts to about

1.7 times the cubic area. Never let the soil get wet until you have finished. (We have not had much success with wet rolling.) Do not use a vibrating roller until the wicket is firmed by light rolling. (We have rollers on our laser blades to firm the soil as it is graded.) Vibrating compaction plates are good around the perimeter. Be sure of the weather before calling for a delivery of soil and prepare a place for it to be dumped. Remember each load costs close to $9,000.00. Don't waste it.

8. The wicket is then blended into the surrounding area often by adding loam around the perimeter and is fertilised and prepared for grassing. Be careful not to contaminate the wicket soil with sand or loam. If we are rebuilding a wicket we leave the surrounding grass in place until the wicket is complete then turf-cut it and remove it by hand to avoid contamination.

9. Selected washed couch grass is then laid on the wicket and the surrounds. Usually we lay the washed turf across the surrounds as well as the wicket.

It is difficult to keep the surface the same as it was when originally built over a long period. Probably because of the rough way the surfaces are treated during play and in the winter. Even using wide level lawns or boxes the shape seems to vary. We have built a small laser scoop to top-dress and laser the grass surface without scalping the turf to maintain the grades and the surface levels accurately for long periods of time. We need a record of the constructed grades and some recovery pegs to be kept so each year the exact same surface shape and levels can be maintained. The result is a wicket as close to perfect as we can possibly get. This is the technique we have used at the SCG for quite a while.

I think that associations like ours are a great way to share ideas and openly try to improve the standard of the work we do.

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