

MASTER CLASS

So far we have spent a considerable amount of time looking at foundations and how to deal with stones which haven't quite read the rule book. Over the next few articles we will be looking at different types of stone and the approaches needed when using them and the subtle differences required to build a good wall out of them. Before I attempt this however it seems sensible to look at the basic principles involved in building the main body of the wall itself and how some of the basic lessons from the articles on foundations can be applied here.

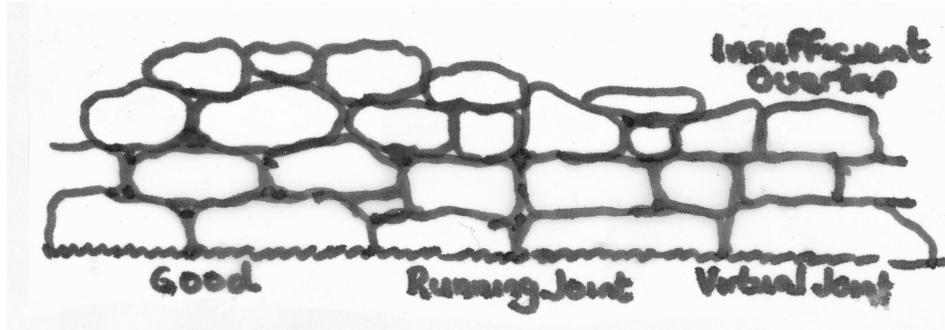
7 simple principles can be identified.

- 1) One stone or two, and two stones on one.
- 2) Run the length of a stone into the wall.
- 3) Make sure tie stone sits solidly,
- 4) Make sure each stone is touching its neighbour.
- 5) Use larger stones in the bottom of the wall.
- 6) Keep the wall an even height along its length and across its width.
- 7) Keep your hearing up.

(1) 1 on 2, 2 on 1

Anyone who has been on a training course or has read a basic instruction booklet will know that the first rule is to cover all joints - "one on two and two on one". It still amazes me at how often this simple factor is forgotten when people actually get to building the wall. Occasionally it is at-cop table - or so we are told to have a 'two stone' joint as long as the stones are still 1 on 2. This may depend on what you see as occasional to me occasional means once in a blue moon.

When you are first starting out trying to remember and apply all the factors to each stone especially when they are a ridiculous shape and refusing to co-operate - is not easy. As such these double joints are perhaps not surprising, but even at this stage they should not be allowed to develop into tunning joints. One of the keys - frequently neglected by one and all is to stand back and have a good look at the wall so that you can notice these joints before they develop too far.



Just to complicate matters further we have virtual joints, caused by stones which only just sit on their neighbours. To all intents and purposes these are running joints as the stones do not really overlap sufficiently to hold each other in the wall, they might as well not overlap at all.

(2) Run stones into the wall.

If a stone is run with its length into the wall it will be far harder to displace than a stone which is

run with its length along the wall ("traced"). Almost any wall will settle in time, most will attempt to bulge. The fewer traced stones there are the longer it will be before it collapses - if at all.

In Foundations part 1 we saw that sometimes we might need to trace a stone. This might be because it is so long that it would otherwise project from the wall (only true in areas where throughs do not project) or it's too short to make a throughstone but would be too problematic to build around on the opposite side of the wall. The basic techniques for dealing with this were dealt with in Foundations part 1, and will be re-iterated in greater detail when we discuss building with slate where traced stones are normally un-avoidable. Here it will suffice to identify a few sub-principles to cover the eventuality that a stone will be traced.

- (a) Do not trace two stones next to each other
- (b) Utilise the space opposite the traced stone to the full
- (c) Do not trace one stone on top of another.

(3) Make sure the stone sits solidly.

The major difference between constructing foundations and building the rest of the wall is that foundations (normally) sit on earth which can be sculpted to fit the stone rocks. Beyond this problem the remaining principles involved are essentially the same. The key to enabling stones to sit solidly is to build the wall in such a way that it will readily accommodate the next building stone, that comes with doing, experience and not the written word - although I will attempt to give some pointers when we deal with different rock types.

There are still however some points which can be made now. When you place a stone you will almost inevitably be able to tip it off the wall - if you apply enough force, the key - if it doesn't sit without any wobbles from the word go is to tip it until you reach a point of balance, that is where it wants to sit. You then apply your wedge and hey presto it's solid.

Principle 3(a) Only one wedge will do.

This conveniently brings us to wedges. Some of the problems of over wedging were dealt with in Foundations 1 and 2. Time for another sub-principle - only one wedge will do. Imagine a chair with a wobbly leg, you cut a bit off, it still wobbles so you have to cut a bit off another leg, it still wobbles so... I'm sure we all know some such comedy sketch; however the same is essentially true of wedging. If after the careful application of one wedge the stone is not solid it is either the wrong shaped/sized wedge or the wrong building stone in the first place. Only when the stone is solid held by one wedge do you wedge/ pin all the other nooks and crannies behind it.

(4) Make sure each stone is touching its neighbour

This has been dealt with sufficiently in Foundations 1 and also in Foundations 2 where we looked at triangular shapes. Just remember it doesn't only mean at the face of the wall it's along as much of the side of the stone inside the wall as possible

A wall without a 'tight' face (i.e. absence of gaps) will have more scope for movement - and hence collapse, during settlement.

(5) Use larger stones in the bottom of the wall.

There are a number of good reasons for placing the larger stone in the base of the wall. The first is that the larger stones are heavier and hence less effort is expended!

Secondly theoretically larger stones are less stable near the top of the wall, a technical argument I don't want to dwell on!

Thirdly you are unlikely to have suitable stones to use only two stones alongside them to gain enough height for the next 'course' (see Foundations 1).

Finally, and most important, walls are wider at their base than near the top it follows that the larger stones should be placed where there is the most space to build solidly on the opposite of the wall. Place large stones high up and you can only build a skin opposite them.

(6) Keep the wall an even height along its length and across its width.

Experience would suggest that those used to building random walls take to coursed walling far less readily than coursed wallers take to building random. This I would suggest is due primarily to technique, in that coursed walling forces you to build the wall evenly progressing along the wall before you gain any height

This is just as important for random walling; it ensures a well structured wall with the larger stones lower down and helps you to ensure a tight face with all the stones crossing joints.

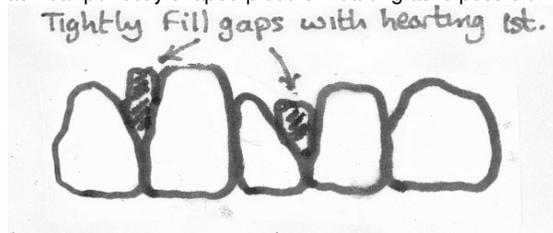
If you do not progress essentially in a sequence, placing one stone next to another you are forever filling in gaps between stones and they do not always fit as tightly as they might.

With random walling you do not have to proceed in such a structured way; you can build up as well as along, but it does lead to problems and a less well built wall.

(7) Keep your hearting up.

Hearting is a frequently neglected aspect of wall building - "out of sight out of mind".

Hearting should always be placed in the wall rather than thrown, using as large a stone as is possible to fill any voids, with smaller stones then placed around these. With hearting you always work from the outside to the middle, that is tightly filling any gaps immediately around the building stones before filling the larger voids at the centre of the wall. This is particularly important, we have seen that the stones should butt together tightly (principle 4) and of course we all know that inattentive elected Branch representatives to deal with DSWA business etc. They are interesting in so far as one can see what the DSWA are doing at the National level and also what is going on amongst the oilier Branches. I can assure you that this Branch has to be in the top 6 as far as activities/events go, as well as the various projects we are involved in. Many Branches do not produce any form of newsletter, preferring to use 'Wailer and Dyker' to pass on information practice this doesn't happen every time. When it doesn't the next best thing is to fill the gap with a as near perfectly shaped piece of hearting as is possible.



Ideally you build the hearting keeping it as level and as tight as possible, just as for the rest of the wall. It should not be treated as an afterthought, loose hearting with lots of voids seriously weakens a wall, it settles very quickly compared to the rest of the wall, large voids appear, there is nothing to stop wedges coming out of place, and the wall will

collapse.

Well that's it for this issue, nothing to it really Perhaps the key to becoming a good waller is a good memory! Next time we'll have a look at what to do with some specific rock types, and hopefully I'll remember to incorporate something about coping and throughstones.

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