

Figure 11.62 ● Control of column verticality using two theodolites.

Controlling column verticality using theodolites only

Although short columns can be checked by means of a long spirit level held up against them, as shown earlier in Figure 11.56, long columns are best checked with two theodolites, as shown in Figure 11.62. Either the edges or, preferably, the centre lines of each column are plumbed with the vertical hairs of two theodolites by elevating and depressing the telescopes. The theodolites are set up directly over the necessary control lines and because of the potentially high angles of elevation, they must be very carefully levelled. The use of diagonal eyepieces is recommended. In addition, because they may not be in perfect adjustment, the verticality of the column must be checked using both faces of the theodolites.

It is not always necessary to use two theodolites, and Figure 11.63 shows the formwork for a tall column being plumbed by a single instrument set up in two positions. The theodolite is first set up on a plane parallel to but offset from one face of the formwork and sighted on suitable offset marks at the top and bottom. Ideally the theodolite should be some distance away to

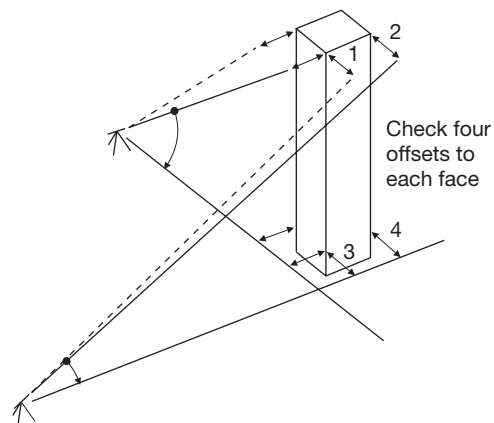


Figure 11.63 ● Control of column verticality using one theodolite (reproduced from the CIRIA book *Setting Out Procedures*, 1997).