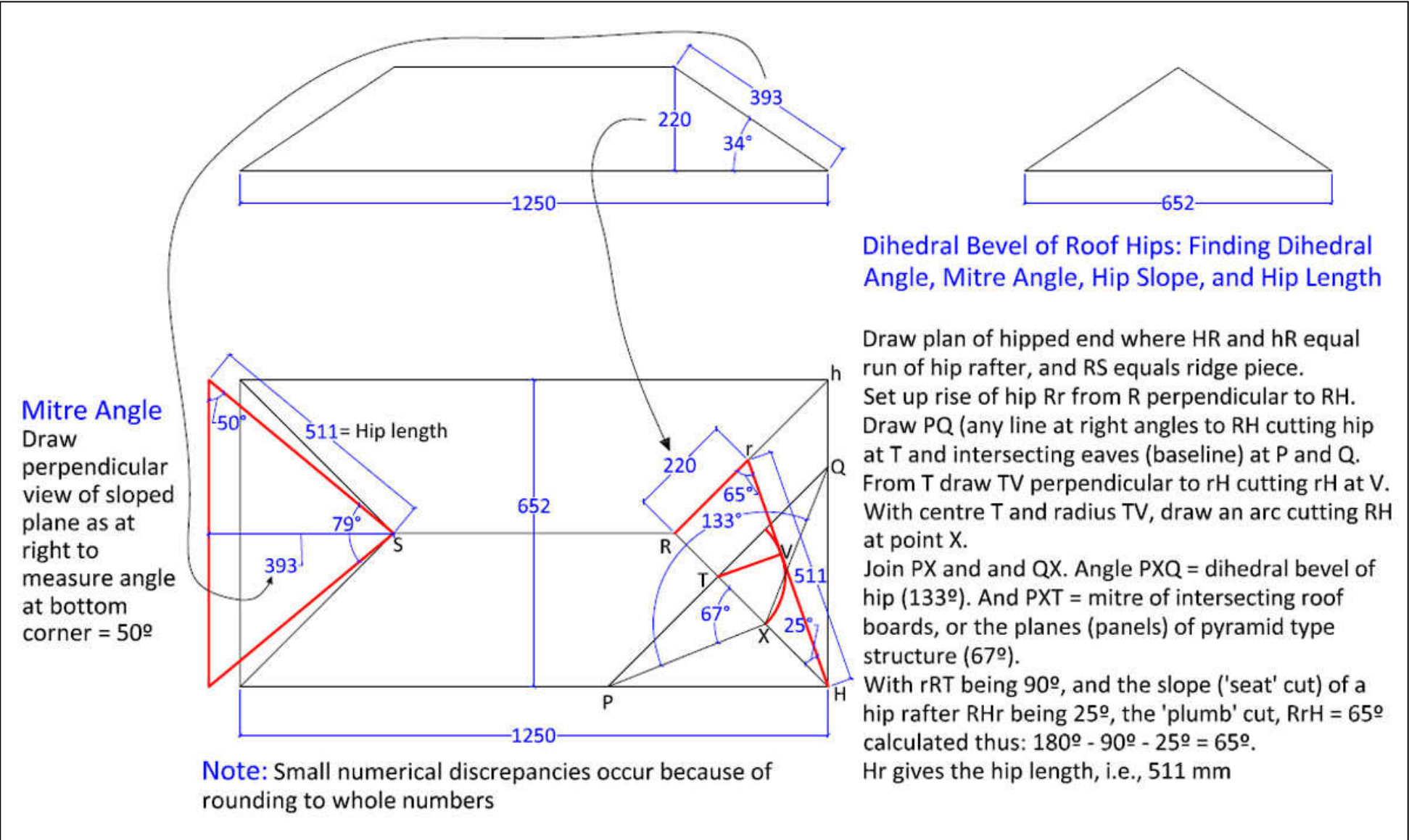


Drawing method to establish numerical information about hipped roofs. Pyramids are, essentially, a hipped roof without a ridge where the top end of each hip meet at the peak, therefore numbers derived from this drafting technique apply.

For roof building applications adjustments are required to the derived numbers. For example, the hip length given here requires a subtraction to account for the ridge piece's thickness, and an addition for the overhang (if incorporated) beyond the roof plate and wall to allow for under eaves, soffits and fascias.



Mitre Angle
 Draw perpendicular view of sloped plane as at right to measure angle at bottom corner = 50°

Dihedral Bevel of Roof Hips: Finding Dihedral Angle, Mitre Angle, Hip Slope, and Hip Length

Draw plan of hipped end where HR and hR equal run of hip rafter, and RS equals ridge piece. Set up rise of hip Rr from R perpendicular to RH. Draw PQ (any line at right angles to RH cutting hip at T and intersecting eaves (baseline) at P and Q. From T draw TV perpendicular to rH cutting rH at V. With centre T and radius TV, draw an arc cutting RH at point X. Join PX and QX. Angle PXQ = dihedral bevel of hip (133°). And PXT = mitre of intersecting roof boards, or the planes (panels) of pyramid type structure (67°). With rRT being 90°, and the slope ('seat' cut) of a hip rafter RHr being 25°, the 'plumb' cut, RrH = 65° calculated thus: 180° - 90° - 25° = 65°. Hr gives the hip length, i.e., 511 mm

Note: Small numerical discrepancies occur because of rounding to whole numbers