

As a professional land surveyor, I am highly sceptical of dimensions found in conveyance deeds and in transfer deeds and on their associated plans.

This is because no conveyance deed or transfer deed:

- identifies by name or profession the person who provided those dimensions;
- identifies the measuring technology used in deriving those dimensions;
- identifies the expected accuracy of the dimensions.

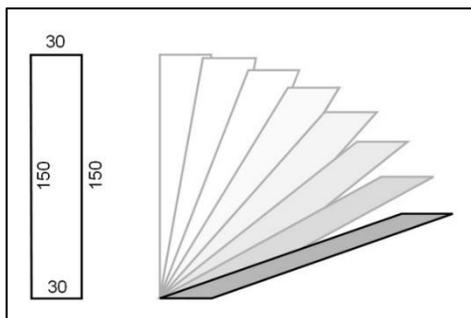
In short, there is never an explicit nor an implied standard of quality or accuracy for those dimensions.

All dimensions found on conveyance plans and transfer plans are limited to the side lengths of the polygon that bounds a parcel of land. The sizes of the corner angles are never given. Land surveyors are equipped to measure the angles at the corners of such polygons, but dimensions given in conveyances always lack corner angles. For lack of such corner angles, a boundaries expert must expect, and work with, side lengths only.

**The science:** In those rare cases where the parcel of land is a triangle, i.e. bounded by three straight sides, then trigonometrical formulae can be used to calculate from the three side lengths the exact sizes of the three corner angles. Thus, it is possible to determine from the three side lengths the exact size and the exact shape of the triangle.

For parcels of land having four or more sides, those trigonometrical formulae are of no assistance. The exact shape of the parcel of land cannot be calculated mathematically.

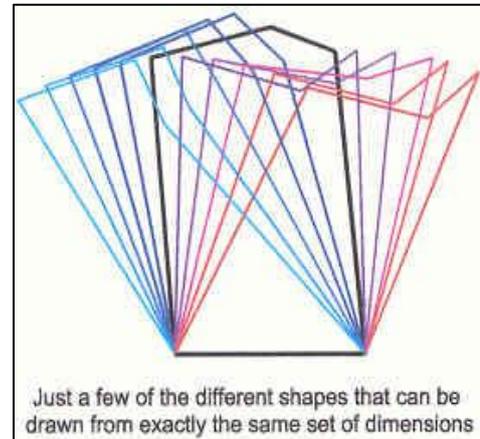
Below is a monochrome drawing that demonstrates that a set of four dimensions - that might be thought to describe a rectangle - might instead represent any one of a considerable number of parallelograms.



This ambiguity would not exist if the person who had provided the dimensions had also provided the length of one of the diagonals, breaking the quadrilateral (i.e. the rectangle or parallelogram) into two triangles whose exact shape and size were capable of being determined by trigonometry. Within the British Isles, such "bracing diagonals" are never encountered.

For parcels of land having five or more sides, the question of determining its exact shape (given only its side lengths) becomes

much more difficult. The coloured drawing that follows is intended to give some idea of the problem.



**Practicalities:** Fortunately, if one has made an accurate survey of those features present on the ground that are potentially boundary-marking features, then it is possible (using a combination of artifice and artistry) to construct from the dimensions a polygon (whose shape may be iteratively refined by trial and error) either to conform to the existing ground features or to prove that the existing ground features do not match the dimensions.

Dimensions do not describe boundaries (they do not identify the features by which the boundaries are marked and nor do they describe whether those boundary-marking features run in straight, curved or meandering lines); they merely tell us how far each corner or turning point is from the next corner or turning point.

The lack of provenance for the dimensions, and the age of those dimensions (relative to the historic development of ever more accurate land surveying instruments and techniques), renders questionable the stated distances of those dimensions.

**Science** plays no part in the interpretation of a set of dimensions. It is necessary to employ **artifice** in selecting existing (and possibly anachronistic) ground features for use as datum points, and **artistry** in using the dimensions to reiteratively draw lines that attempt both to replicate the polygon of boundaries shown on the conveyance plan and/or to correlate the dimensions to existing ground features.

At best, dimensions can only provide guidance that tells us where to look for a boundary-marking feature, which may assist in ruling out some features that may otherwise have been thought of as candidates for boundary-marking. At worst, dimensions are unreliable due to:

- a lack of provenance that denies us any knowledge of their accuracy,
- the age of the deed assuring us that modern land surveying accuracy was unavailable at the date of the deed.