

## Historical Highlight

### Early Technical Drawings

Early technical drawings were often quite crude and very hard to understand due to the lack of drawing standards and projection systems. The drawing shown in the figure is an under-shot water mill and was in a book of drawings compiled by the Abbess Herrad of Landsperg about 1160. Some refer to this type of drawing as a one-plane projection, but it really uses no formal projection system. The artist tried to represent the geometrical shapes that made up the mill but in doing so really made it difficult if not impossible to understand.

The top portion of the drawing represents four columns fixed to a base made of horizontal timbers to support the grindstones. There is a long horizontal shaft running through the structure with a toothed wheel under the grindstone and a water wheel located to the left. There are inconsistencies be-

tween the drawing and real object. For example, the main water wheel is shown as two concentric circles when in fact they are circles of the same size with paddles attached. However, if they were drawn the same size, they would coincide and the artist would not have been able to represent the paddles.

The rather crude depiction of devices is quite usual in drawings of this period. Although it may be possible to reconstruct the machines from these drawings, we have to guess the real size of parts. It would have to take the development of a formal projection system during the Renaissance period before more accurate drawings could be produced to represent technical objects.

Excerpted from *The History of Engineering Drawing*, by Jeffrey Booker, Chatto & Windus, London, England, 1963.