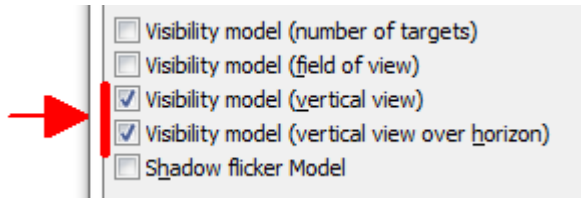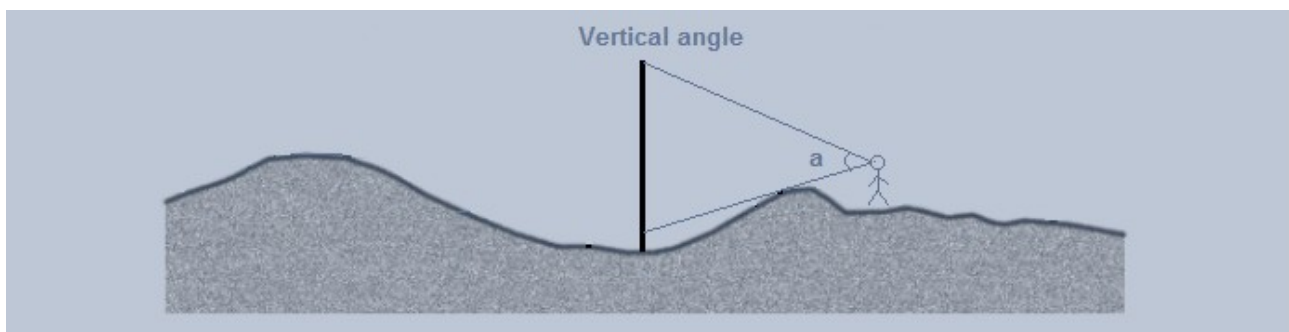# ZTV Vertical View Analysis

What does it do?

Determines how tall targets seem to appear for an observer. This analysis is usually done for vertically grand structures like wind turbines, cranes and such. The result is a model showing the vertical angle, in degrees, that the target fills the observer's view. Fancy way to say this: "In a vertical view ZTV model the values assigned to each cell relate to the subtended vertical angle from visible target extents in degrees."

There are two slightly different models created: 1) Vertical view and 2) Vertical view over horizon. Note that in both models where the ZVI point is not visible at all the model is not active I.E. color analysis etc. functions ignore those areas completely.

Vertical view

This is more simple result of the two. The closer the observer is to the target and the more of the target is visible the bigger the vertical angle is. In the model all positive Z areas mean that the target is visible, the bigger the Z value is the bigger the vertical angle is. On a flat ground model this will resut a circular color map where the max. value is nearly 180 (if the observer's nose is touching the target) to a gradually smaller value the further away the observer goes from the target.
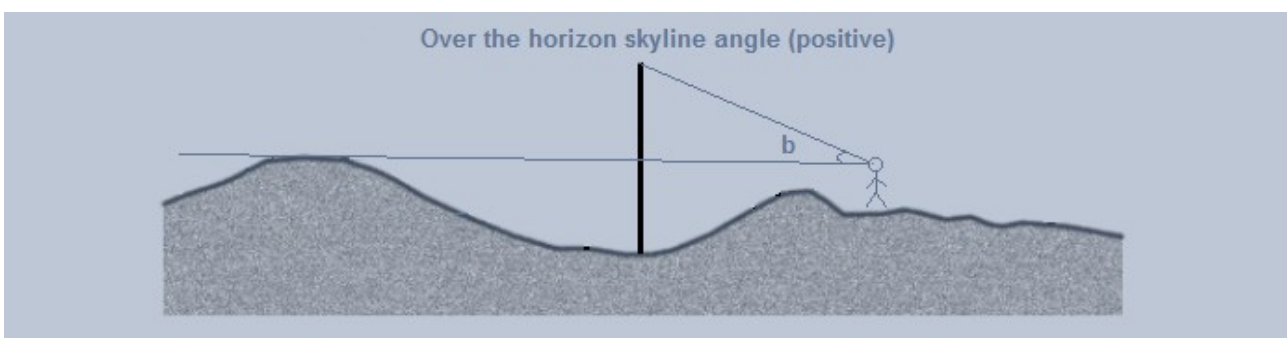

*Angle, in degrees (a), of the visible targets extents*

Vertical view over horizon

Analysing the vertical visibility in more detailed manner the over horizon analysis shows the locations where the observer can see the target sticking up above the horizon and also the locations where the target is still visible but wholly below the horizon. This may be interesting to know as the target's visual impact may be deemed different depending whether it "breaks" over the horizon or not.

1. **Positive** Z values tell that the target is above horizon. The value of Z is the angle of the over the horizon part of the target. (See below)

2. **Negative** Z values tell that the target is wholly below horizon. This can happen when the observer is on top of a highish hill and looking down onto the target. Or it can happen when the target is located in front of mountains for example. (See below)

Positive angle, in degrees (b), of the visible targets part that seem, for observer, to be higher than horizon.
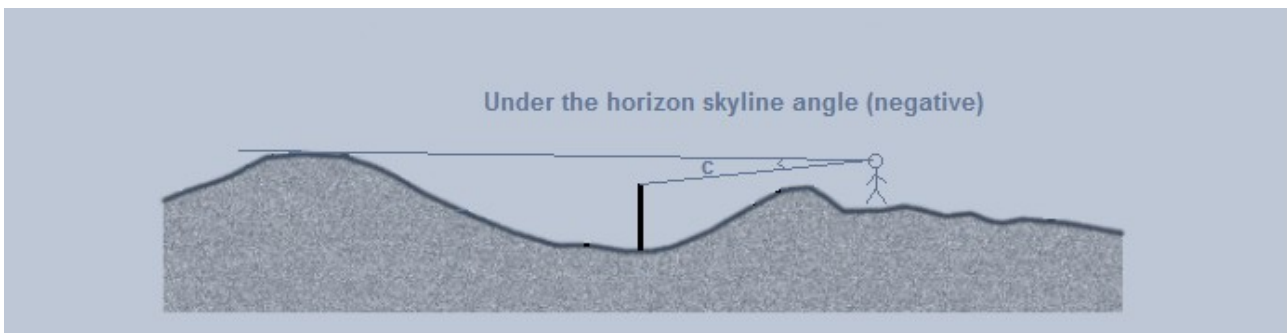
Negative angle, in degrees (c), tells that the target is wholly below the horizon. The value shows how "deep" the highest point of the target is below the horizon.