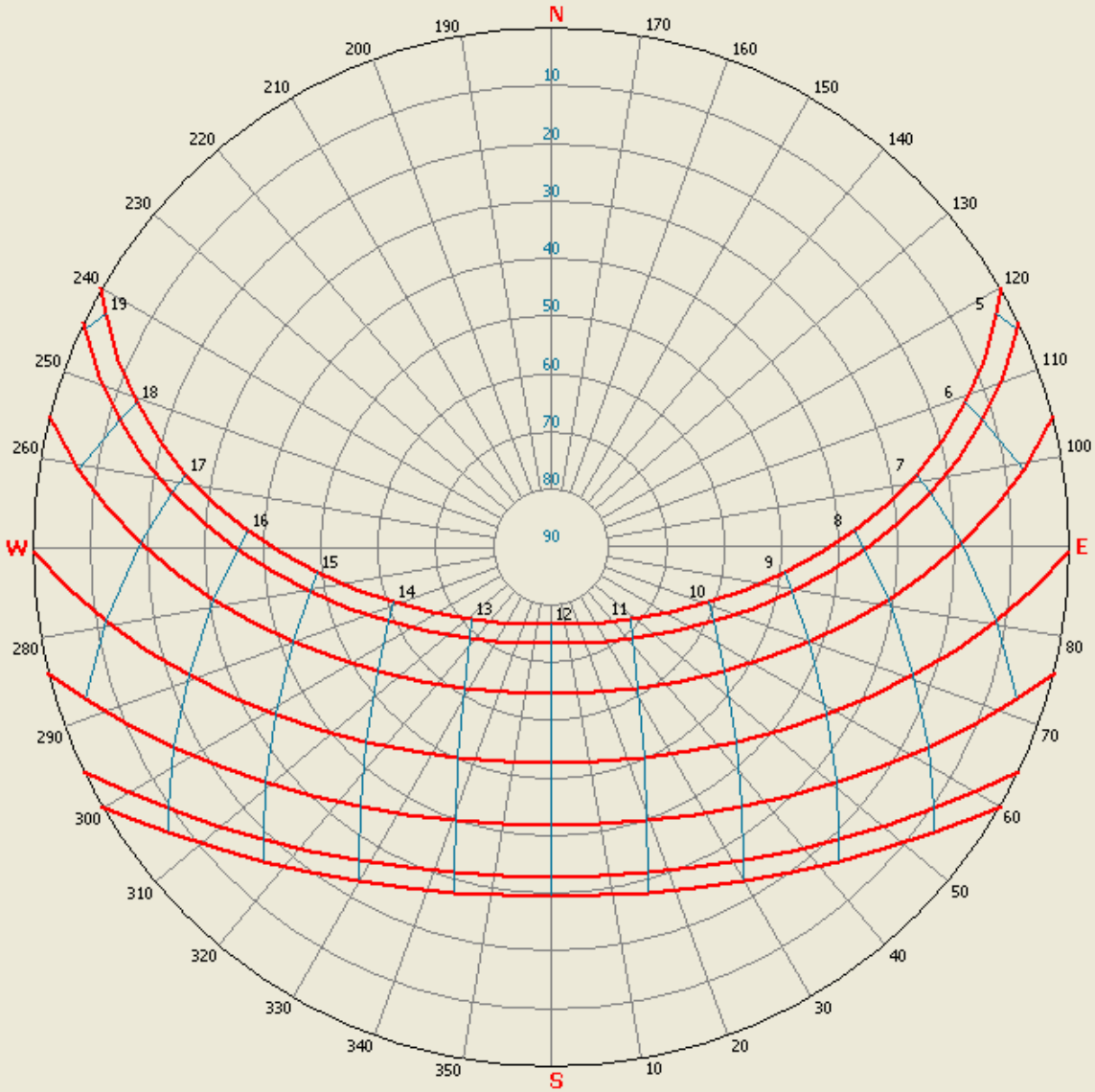

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Thursday, F

HOW TO READ THE SUNPATH DIAGRAM:

1. WHAT INFORMATION YOU GET FROM THE SUNPATH DIAGRAM
The sunpath diagram gives you the angle of the sun in the different times of the day, in different months.

2. ANGLE → The concentric circles
3. HOUR OF THE DAY → The red lines and the numbers along the upper curve give you the hours.
4. MONTHS → Start counting from the bottom red curve as December, January, February, till you reach the top curve is June. Then you start counting back going down from June to July, August, September, till you reach again the bottom red curve which is December.

5. HOW DO YOU DETERMINE THE ANGLE OF THE SUN?
To determine the sun angle on December 21 at 12:00 noon, which is the date and time of the lowest sun position in the sky, you follow the lower red curve, to the 12:00 location, where it meets the concentric circles. It is the 30 degree circle. In the same way, you find the June 21 at 12:00 which is the date and time of the highest sun position in the sky, you follow the upper red curve to the 12:00 location, where it meets the concentric circles. It is half way between the 70 and 80 degree circles, which means it is about 85 degrees. In a similar way you determine that in September the sun rises almost perfectly from the East just after 6am, reaches the highest point in the sky at 12:00 at an angle of approx. 53 degrees and then sets in the West just before 6pm.

6. WHY DO WE NEED THE ANGLE OF THE SUN?
This is how we can determine which hours, which months, at what width and depth we need to shade our openings in our buildings, or allow the winter sun to penetrate the building for passive solar heating.

7. IS THERE AN EASIER WAY TO FIND THE SUN PATH?
Yes, if you use the ‘SHADOW” feature of Google Sketchup, once you sent your location and the north orientation of your building, you can get fairly good sunshine shading patterns on the outside of your building and thus determine the shape, size, depth and length of the shading needed to shade in the summer and allow the sun to penetrate the building in the winter.

ECOWEEK 2010 TEAM