FAQs

1. **How is movement of the earth in relevance to sun?**
   As the Earth rotates around the sun on its annual cycle, it is tilted at an angle on its vertical axis. This impacts how the sun's rays strike various locations on Earth. The Earth is its most extreme tilt at the winter and summer solstices.
   The sun appears to rise in the east and it sets in the west. In actuality, the Earth is rotating on its axis and around the sun.

2. **What is winter, summer solstice and equinox?**
   - In the winter, the sun is relatively low in the sky with its lowest arc through the sky on the winter solstice, on December 21st.
   - In the summer, the sun travels a high path through the sky and is at its highest angle on the summer solstice, on June 21st.
   - The equinox falls on the point between the solstices and indicates the arrival of spring or fall.

3. **How does solar position important in architectural design?**
   The sun's movement through the day and through the year is one of the most crucial environmental factors to understand when designing high performance buildings.

   If you design your building with careful consideration of the sun's path, you can take advantage of strategies such as natural day lighting, passive heating, PV energy generation and even natural ventilation.

4. **Define altitude and azimuth.**

   - Altitude is the vertical angle the sun makes with the ground plane ($0° < alt < 90°$).
   - Azimuth is the horizontal angle between the sun and true north ($–180° < azi < 180°$, positive in a clockwise direction from north)

5. **What are the various solar radiation aspects to be considered for changing hour of the day?**
   Morning: You may want to capture sun's energy to warm up spaces when the sun is low in sky. But you'll also need to protect against glare.

Noon: Sun is the strongest and highest in the sky. You may want to avoid the hot midday sun to reduce cooling loads in some areas. But you may want to capture the sun in other cases for passive solar heating or energy generation.

Afternoon: You may want to prevent overheating and glare

Occupancy hours: You may be particularly concerned about the times when the building is most heavily occupied