3.12 SUPPLEMENTARY ARTIFICIAL LIGHTING

An artificial sky allows us to test the daylighting performance of a scale model under overcast sky conditions. There are newer multiple-lamp artificial skies which are computer controlled and capable of creating any desired sky distribution. However, those skies are very expensive in both, purchase and maintenance, and are not widely used. (fig. 3.12.1)

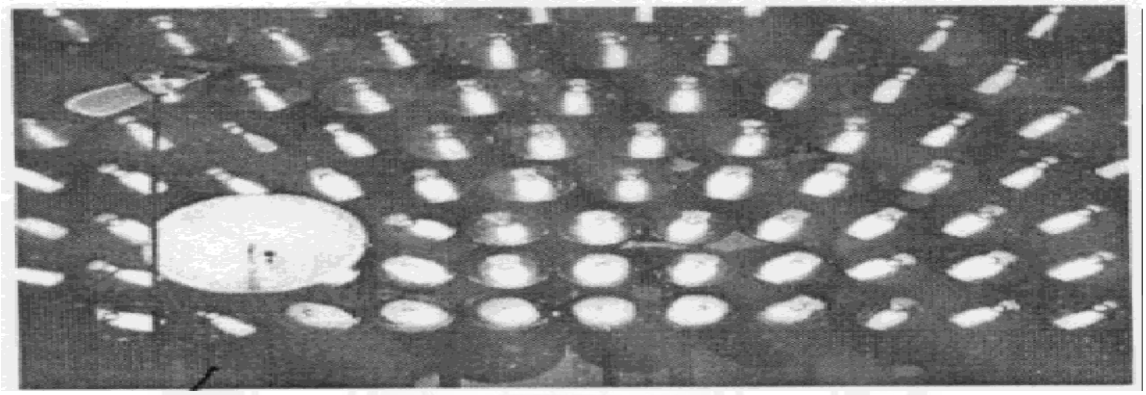

Fig. 3.12.1- Multi-lamp artificial sky with sun simulator

The most economic artificial skies are simple boxes with mirrors inside and diffuse lighting in the top. Traditionally, mirrored artificial skies are used for daylight factor analysis of scale models.

There are newer, more sophisticated (and more expensive), designs that have several hundred lamps which are individually controlled by a computer. Those skies can be programmed to model any sky distribution. Pre-programmed settings allow for a dynamic simulation of an entire day or for several seasons. Sometimes sun simulators are incorporated into the sky allowing for sun penetration studies which are otherwise done in a **heliodon**.

For the measurement of daylight factors, dual or multi-cell illuminance meters are very useful

to model the reflectance values inside the model as accurately as possible. It is often best to get samples of the actual materials that are going to be used such as paint or pieces of carpet.