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PERCEPTION

Since 1912, when illumination 'standard practices' were introduced, lighting has sometimes been evaluated in a way that has been wasteful and/or inaccurate.

The first error is when determining the type of light source to be used.

Initial cost is often the only criteria considered. One usually gets what one pays for.

Error two is attention to 'recommended practices' set into place either before or shortly after the introduction of warm-cathode discharge (fluorescent) sources in the middle of the previous century. ***These widely accepted recommendations ensure that a space will be over-illuminated (and thus waste energy) just to meet a 'maintained average' horizontal foot-candle level.***

Error three, and the most easily addressed, is the belief 'the more lumens, the better'. This is comparable to believing that the application of thirty coats of black paint to a wall will make it 'blacker' than only twelve coats. And, depending on the quality of the medium (in this metaphor, black paint) you may need only one coat. So what's a person to do?

- 1) **Determine the space function.** Is it a warehouse with intermittently- occupied aisles, or an airport ticket counter with paper tasks and computer use? Are the occupants' high school students or senior citizens? Is the task a critical function such as parts inspection or is it merely a transitional space?
- 2) **Understand hours of operation.** If the space is staffed for production around the clock, then the source won't need to be switchable. However, tremendous energy savings can be realized when lighting is switched off when it's not needed. Or maybe there is adequate daylight from windows or skylights that can augment the artificial lighting system – can linear or stepped dimming work here?
- 3) **Light the task**, not the corners of the room. If the task area of a space is illuminated correctly, who cares what the lighting level is behind the entry door? For example, a conference room is designed for 40 fc average maintained. To get to this level, enough lighting is installed to light the conference table to 75 fc so that the 75 fc and the 12 fc in the corners of the room will average out to 40 fc. In reality, all that was needed was 40 fc at the task. Using a better method, the table is illuminated to 40 fc, and the corners of the room only see about 8 fc. This is fulfilling the design intent, and saving a lot of energy, and the uniformity ratio is improved from 6:1 to 5:1.

Error 4 is to ask for and try to get general consensus from everyone working in the space. One of several things will happen. The first will be that someone will look directly at the new proposed light source and say "it's too bright" even though that same person would not walk outside at noon and stare at the sun. The second thing to happen will be someone will look at the new source and say "it is too dim, there is not enough light" ... go figure. Third, no matter how much better the source someone will not like it, for no other reason than they simply do not like it. All of these scenarios are exacerbated if the consensus group is uneducated in lighting discipline.

Unless all of the parameters of a proposed system are firmly understood, subjective opinions will generally trump the objective reasons for the design in the first place. Too many cooks spoil the pot.