

WHAT'S WATTS PER SQUARE FOOT? PART ONE

This is the first of two bulletins addressing the issue of office building electrical loads in terms of watts per square foot. This issue addresses the electrical system and its capabilities; the second will address HVAC issues.

Watts per square foot is simply the total wattage divided by the total area. The issue then becomes what wattage? And what total area?

If You Are A Tenant Looking for Space:

Your programming should include all equipment planned for your space: lighting, computers, printers, copy machines, coffee machines and miscellaneous equipment that will be plugged into receptacles within your area.

If you simply total all lighting and equipment loads and allocate wattage for receptacles you will develop a "connected" electrical load. This connected load may be diversified since not all outlets will be used simultaneously and not all computers will peak at the same moment. This diversified load is called the demand load.

If You Are A Landlord Renting Space:

The power available to your floors is based upon the capacity of the distribution system (feeders) that brings power to the floor. An analysis of the feeder capability will indicate the demand load that may be served by the feeder.

At the service room, fuses and circuit breakers control the power flow and may effect the feeder capacity. The switchboards enclosing the fuses and circuit breakers also must be considered particularly if there are a large number of feeders or building mechanical systems served from the switchboard.

If You Are A Tenant or Landlord Trying To Figure Area:

The two terms most commonly used in describing area are "rentable" and "usable". The usable area is generally measurable consisting of the area the tenant actually put to use. The rentable area is the usable area plus some factor including an allocation of common building areas. The rentable area can generally be anywhere from 15 to 30% greater than the usable area.

So..What's Watts Per Square Foot?

The use of demand watts is preferable since the demand usage can be actually measured. Connected watts may be developed from a survey of the space. The area used in any calculation of watts per square foot may be rentable or usable, as long as everyone involved understands the terms.

Why Are Tenants Asking For Higher Watts Per Square Foot In Your Building?

As computers have become more decentralized the normal office space is becoming a giant computer room. A central computer room with 40 watts per square foot demand is now spread out over an entire floor establishing a uniform 6-8 watts per square foot requirement along with a need for significant supplemental air conditioning.

How Can You Increase The Available Watts Per Square Foot In Your Building?

If the utility service capacity in the building is adequate, the next step is to determine how much capacity is available at each floor in your building. If more is required there are a number of options. These range from replacing cables in existing conduits with larger cables, to adding feeders and providing new bus duct risers. Planning for increased capacity will allow a building to keep up with the needs of its tenants.