



*From the desk of* **David Montané**

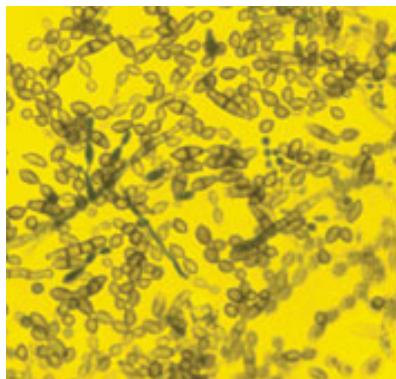
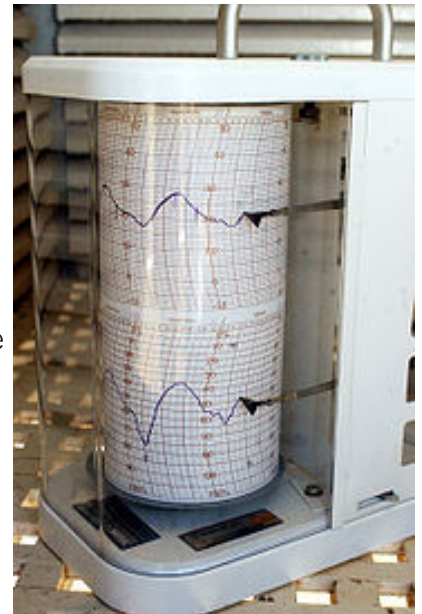
## Storage Design Trends: Dry Air Storage

"Climate Controlled" self storage is one of the most misunderstood subjects in the industry. The term is a misnomer -- "Temperature Moderation" often more accurately describes actual storage operations. When the term "Climate Control" is used, both temperature and humidity should be controlled within a narrow range, but often only the extremes of temperature are moderated, and worst of all, humidity levels are usually totally ignored.

We can trace the confusion to what most people are accustomed to, which is actually Temperature Control. Most people set the thermostat in their homes and offices to 72 degrees year-round. Or, if they want to be more economical, they might set it at 68 in the winter and 77 in the summer. This is known as "room temperature", which is a good temperature range for human comfort.

Very few items stored in self storage facilities need temperature control; mainly medicine and wax. Wax must be stored at temperatures below the melting point, and medicine must be stored at room temperature. Go to your medicine cabinet and read the labels. Most will say to store at "20-25 degrees Celsius (68-77 degrees Fahrenheit)." A few allow a more moderate range of "15-30 degrees Celsius (59-86 degrees Fahrenheit)."

So, except for the very small percentage of tenants who are pharmaceutical reps, or tenants storing candles in hot climates, temperature control or moderation is only for human comfort. And since people are usually expending more energy than usual when moving goods in and out of storage facilities, the temperature moderation range is usually kept on the low end of the room temperature scale; 55 to 80 degrees Fahrenheit is a typical range.



### **The Real Culprit**

However, the vast majority of storage items are not affected by temperature. They are probably not even affected by low humidity, but here in Georgia we wouldn't know about that because the humidity never gets low enough to find out! The problem here is high humidity. Relative humidity over 60% allows mites, molds, mildew, rust, paper rot and wood degradation to occur.

If they think about humidity at all, most facility owners and managers rely on the air conditioning system to dry the air. One problem with this method is that high temperatures do not always coincide with high humidity. Records show that high humidity is more likely to occur at night, while high temperatures naturally occur in the afternoon. Likewise, in spring and autumn temperatures are milder at the same time as humidity levels are high. Another problem with relying on an HVAC system is that, in winter and summer self storage HVAC systems are working their hardest on temperature control, but with their wide temperature range they are running much less than an office or home system set on 72 degrees.

### **What You Can Do**

If you already own or manage a storage facility having climate controlled units, how can you help relieve these handicaps of conventional HVAC systems? The most important is to install a humidistat that will turn on the AC or furnace, both of which have a drying effect as a side benefit, when the humidity gets above 50%. Secondly, look to see if the unit has a variable speed fan. If so, set the humidistat to run the fan at the lowest speed. Finally, if you have two HVAC



units for one interior area, set one at a lower temperature than the other. This is equivalent to undersizing the unit, a common technique for climate-controlled storage developers using conventional HVAC systems without dehumidifiers.

### **An Energy-efficient Alternative**

"Climate Controlled" storage works best in higher income areas because most people are not willing to pay a high monthly premium for what often amounts to only slightly more comfortable temperatures during move-in and move-out. This is one reason why demand for climate-controlled storage has declined during the current depression. If you are considering expanding, building a new facility, or converting a space to self storage, what is your best solution? For many facilities, the answer may be "Dry Air Storage" -- a solution offering a lower price point than "Climate Controlled" storage, while addressing the humidity hazards of traditional storage.

The good news for those contemplating a new facility or an expansion is that **Dry Air Storage**, which only moderates high humidity, is easier and less expensive in all respects - capital, operating, maintenance and replacement costs - than temperature control. For instance, commercial dehumidifiers are less expensive than heat pumps. Also, no insulation is required, no ductwork is required, and there is only one unit (as opposed to the typical "split-system" with a unit inside and another outside).



Another bonus is that exterior units can efficiently be built as Dry Air Storage simply by installing rubber draft stops in the gap at the top of the roll-up doors, and brushes in the tracks at the sides. This is much less expensive, and less maintenance-prone, than insulation in and around the exterior roll-up doors and on the ceiling of climate-controlled exterior units. And basements, where humidity is often a problem, are perfect for Dry Air Storage. The temperature is already stabilized by the soil surrounding the basement and the four inches of concrete overhead, so all you need is dehumidification.

Another good thing about moderation of high humidity levels is that people are comfortable in a broader range of temperatures when the humidity is low! "Cold and clammy" feels worse than mere cold, and "hot and sweaty" is more intolerable than just hot.

### **Building for the Future**

As energy costs in America start sky-rocketing again, as they are sure to do, the self storage industry will be driven toward Dry Air Storage and away from so-called Climate Controlled Storage. And the future is already here! One of the largest publicly traded storage REIT's, Sovran, has been quietly designing and building Dry Air Storage into many of their new Uncle Bob's facilities since the year 2000, and has even been retrofitting older traditional buildings with this more economical technology. (To confirm that I am not just a lonely madman bucking industry traditions, refer to <http://unclebobselfstorage21.reachlocal.net/driguard/tech/>.)

If you are intrigued by this subject and want to discuss retrofitting an existing building, expanding an existing facility or building a new facility using Dry Air Storage technology, feel free to call me.

All the best!

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