Desiccant Dehumidification for Disaster Recovery

Disasters happen — roofs leak, condensate drains get plugged, toilets explode — and often the most serious threat is the aftermath — the large amount of moisture in the building envelope than can lead to mold.

Wet-vacs and mops are generally not going to provide an adequate response, especially if the disaster is large. Likewise, the existing building HVAC system is probably not going to be able to remove the large amount of moisture inside the building — and often already being absorbed by collections. A better approach may be the use of desiccant dehumidification.

These units are delivered to the institution on trailers and are designed to withstand disaster-related conditions. Portable, inflatable plastic ducts are used to distribute the dry air throughout the building — eliminating reliance on the existing (and potentially damaged) building HVAC system. Also, the plastic ducts can be easily moved, allowing frequently modification to ensure that collections are adequately dried.

To be effective, however, the dry air must be contained. This may mean weatherproofing a damaged building — repairing a roof or boarding over windows — before dehumidification can begin.

Desiccants attract moisture molecules directly from the air and release them into an exhaust air-stream. Desiccants are very effective in removing moisture from the air at low relative humidity levels. The result is an extremely dried air source capable of drying (and potentially damaged) building materials.

Depending on the amount of moisture to be removed and the nature of the disaster, the following steps may be considered:

1. Any abandoned package or item should be immediately reported.
2. Relocate recycling or garbage containers away from the building and emergency evacuation staging areas.
3. Don’t allow vehicles to get too close to the building.
4. Lighting around the building should be kept to a minimum to reduce the risk of fire.
5. If the building is not secure, steps should be taken to sandy or seal any openings.
6. If possible, use a desiccant dehumidification system to remove as much moisture as possible.
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and the conditions present, the number of hourly air changes to be effective can vary greatly. Air-change rates can fluctuate based on ceiling height, tightness of the building envelope, type of vapor barrier present, outside weather conditions, and other variables. Keep in mind, however, that desiccant dehumidification will result in very hot air — probably around 100°F. So it is usually critical in museum, library, or archival situations to combine temporary cooling systems with desiccant dehumidification. Otherwise the resulting temperatures will cause damage to the collections. They will also make working conditions unbearable, especially if the disaster occurs in the summer.

One reason that desiccant dehumidification works so well is that it reduces both humidity levels and the vapor pressure. Moisture travels from areas of high vapor pressure to areas of lower pressure. Thus, by lowering the vapor pressure between the material and the ambient conditions around it, the materials begin to dry more quickly. In fact, materials dry in a matter of days, rather than weeks.

This quick drying is especially critical in cases where temperatures are high and there is a potential for mold growth. A simple overview of desiccant systems is provided by http://www.linric.com/desicc.htm. Information from the US Department of Energy is available at http://www.eere.energy.gov/buildings/info/components/hvac/cooling/desiccant.html.

Top 10 Security Measures, continued from pg. 1

If You MUST Have Carpet—Develop a Care Program

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Carpet isn’t a great preservation choice — it holds water and breeds mold, it requires a lot of maintenance (that most institutions don’t have) to keep it looking good, and it adds a lot of particulates to the airstream. But . . . if you MUST have carpet, here are some guidelines for appropriate care in a preservation setting. Proper carpet cleaning and care must include three basic regimens:

1. A rigid vacuuming routine
2. Regular spot removal
3. Interim (low moisture) cleaning.

If you follow these steps you’ll reduce the need for the intensive demands of restorative cleaning. It’s also critical that you prevent as much soil as possible from entering your building. Critical steps include:

• Maintenance of outside surfaces.
• Properly sized and placed

The EPA reports that “up to ten wand strokes may be needed at outside doorways and other high traffic areas” to adequately vacuum a carpet.

Don’t touch!

Is this the extent of your institution’s security preparedness?

Use of plastic ducts such as this allow the very dry air to be uniformly distributed throughout a building. It also allows duct configurations to be easily changed as necessary.

If your institution is just beginning to think about security issues, a great source is the publication Suggested Guidelines for Museum Security. It is easily adapted to archives and libraries.

Another great source for security-related information in Steve Keller’s website. Perhaps the foremost museum security expert, Steve Keller offers a variety of excellent papers at http://www.stevekeller.com/Steve%20Keller%20%26%2348%3B%20%26%2326%3B%20

Page 2 Preservation Tips
Inside Story Headline

This story can fit 150-200 words.

One benefit of using your newsletter as a promotional tool is that you can reuse content from other marketing materials, such as press releases, market studies, and reports.

While your main goal of distributing a newsletter might be to sell your product or service, the key to a successful newsletter is making it useful to your readers. A great way to add useful content to your newsletter is to develop and write your own articles, or include a calendar of upcoming events or a special offer that promotes a new product.

You can also research articles or find “filler” articles by accessing the World Wide Web. You can write about a variety of topics but try to keep your articles short.

Much of the content you put in your newsletter can also be used for your Web site. Microsoft Publisher offers a simple way to convert your newsletter to a Web publication. So, when you’re finished writing your newsletter, convert it to a Web site and post it.

Inside Story Headline

This story can fit 100-150 words.

The subject matter that appears in newsletters is virtually endless. You can include stories that focus on current technologies or innovations in your field.

You may also want to note business or economic trends, or make predictions for your customers or clients.

If the newsletter is distributed internally, you might comment upon new procedures or improvements to the business. Sales figures or earnings will show how your business is growing.

Some newsletters include a column that is updated every issue, for instance, an advice column, a book review, a letter from the president, or an editorial. You can also profile new employees or top customers or vendors.

Inside Story Headline

This story can fit 75-125 words.

Selecting pictures or graphics is an important part of adding content to your newsletter.

Think about your article and ask yourself if the picture supports or enhances the message you’re trying to convey. Avoid selecting images that appear to be out of context.

Microsoft Publisher includes thousands of clip art images from which you can choose and import into your newsletter. There are also several tools you can use to draw shapes and symbols.

Once you have chosen an image, place it close to the article. Be sure to place the caption of the image near the image.
Preserving the past for the future

This would be a good place to insert a short paragraph about your organization. It might include the purpose of the organization, its mission, founding date, and a brief history. You could also include a brief list of the types of products, services, or programs your organization offers, the geographic area covered (for example, western U.S. or European markets), and a profile of the types of customers or members served.

It would also be useful to include a contact name for readers who want more information about the organization.

Back Page Story Headline

This story can fit 175-225 words.

If your newsletter is folded and mailed, this story will appear on the back. So, it's a good idea to make it easy to read at a glance.

A question and answer session is a good way to quickly capture the attention of readers. You can either compile questions that you've received since the last edition or you can summarize some generic questions that are frequently asked about your organization.

A listing of names and titles of managers in your organization is a good way to give your newsletter a personal touch. If your organization is small, you may want to list the names of all employees. If you have any prices of standard products or services, you can include a listing of those here. You may want to refer your readers to any other forms of communication that you've created for your organization.

You can also use this space to remind readers to mark their calendars for a regular event, such as a breakfast meeting for vendors every third Tuesday of the month, or a biannual charity auction.

If space is available, this is a good place to insert a clip art image or some other graphic.