

## Mid-South Engineering Company

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### Take the EPIL *By Chris Brown*

Take an EPIL for Improved Project Communication.

Electronic Project Information Library, or EPIL, is a new service offered by Mid-South to enhance communication for the duration of capital projects. Based on Microsoft's SharePoint technologies, EPIL offers project team members secure access to project related files such as specifications and drawings through a web-based interface.

Through the use of EPIL, project team members get instant, anytime access to the latest project documents and designs. Design review and approval can be expedited facilitating faster approvals, so team leaders and clients can make decisions more quickly and identify potential issues sooner rather than later. Automatic notifications are available to keep project team members informed of important changes and updates to project documents.

Security is a prime objective in dealing with project information. Each user that is given access to the EPIL site will be assigned a user name, password, and a permission level which restricts access to only the areas where the user needs access. In addition, activity logs provide a complete listing of all site and project activity, including who accessed what and when.

Microsoft Internet Explorer 5.5 or higher and an active internet connection are required to use the Electronic Project Information Library. Ask for more details when it is time for your next project.



### The cause of Rust while Painting Steel

*Adapted from: Coating Solutions, Fall 2005*

During construction of steel structures it is not uncommon to see instances where a contractor has cleaned the surface and has begun the painting process using a corrosion-resistant paint, yet when they leave for the evening and return the next day rust has appeared through the paint. What happened?

The most common causes for rust bloom are:

- Exposure to low temperature or high humidity during application or curing
- Allowing condensation to form on the coating before it has dried
- Insufficient film build of the primer not covering the profile of the substrate; or
- Over-reduction of the primer

To fix the rust bloom, recoat the affected area following the manufacturer's recommended application procedure with attention to temperature, humidity, and film-build requirements.

Everyone has experienced these problems whenever the paint is applied to steel in the field and if it is at all possible, shop application of a rust inhibitive primer, or even better the primer and finish coat, is preferable. However, there will always be a need for some field painting even with shop coats because of field welding, and assembly processes that damage the paint.



"The Barn" built in the 1930's to house Welsh ponies, serves as Mid-South's offices.

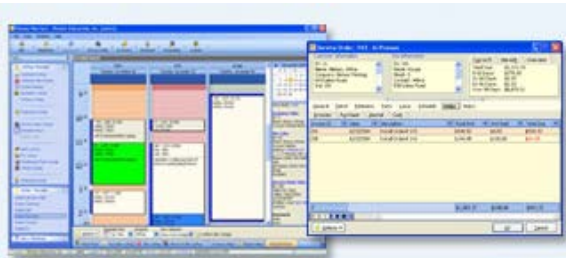
# How to size HVAC Systems

By: Rob Bullen

When sizing an HVAC system, several issues must be addressed. The more accurate and complete your information is in reference to these items, the better job you will do at sizing your system.

The first and most important issue is: what are you trying to do with the system in question? Although the answer to this question may seem obvious, some items can be easily disregarded in the decision making process. In occupied areas, the common goal is to maintain a comfortable work environment within a given temperature and humidity range. This also involves proper ventilation for the building occupancy which has the capacity to greatly affect the requirements for adequate heat and/or cooling capacity. For non-occupied areas, the goal may be to maintain a temperature and/or humidity level, or to ventilate an area. Sometimes however, you may be adding other items such as pressurization to the list of tasks to be accomplished.

The next consideration is the loads present considered in the space. Many of these loads will be readily apparent, but sometimes the less obvious items can be quite substantial. Loads to be considered must include the obvious (lighting loads, people, weather conditions, heat generating equipment, etc...), but must also include some less obvious items (computers and office equipment, infiltration, make-up air for ventilation, etc...). In addition to the magnitude of the loads being considered, you must also consider the timing and duration of these loads.



Another question to ask is, what load diversity must be considered? The term diversity here is actually quite simple to understand, but a bit more difficult to quantify. Diversity refers to the variance of the actual loads from the calculated/design peak loads with respect to time. Not all loads are going to peak at the same time, and the system design can benefit greatly from this variance. All too often, systems can be oversized by calculating the maximum load as the sum of the peak loads, or undersized by utilizing the sum of the average loads. Either of these situations leads to a system that is improperly sized, and which will operate at less than optimal performance levels.

Once you have gathered all of this information, you can either model the building/space yourself, or have an applications specialist model it for you. Most major equipment manufacturers will provide either the software for this, or the assistance of actually modeling the space for you. The modeling of the space will also take into account such factors as: Construction method and quality, local climate conditions, glass quality and quantity, floor/foundation construction, and required air changes. From the model, you should get the following information: Maximum heating load, maximum cooling load, required airflow, and charting of load versus time.

For estimating purposes, there are tables available that will give you estimates of heating and cooling loads for various applications. These tables are generally a conservative "go-by", and can be very helpful for getting budgetary numbers, but must be regarded with the consideration of the assumptions made. Utilizing these estimates to actually size your HVAC units may cause excessive sizing errors, and cause operational equipment problems.



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