



The two-story office and lab addition for EPS in Marengo, Ill., matches the existing building. Designed by Direct Design Ltd. Architects, Crystal Lake, Ill., Direct Steel and Construction, Crystal Lake, was the builder. (Photos courtesy of Varco Pruden Buildings)

frame or post and beam. "These frames are designed to allow additional bays to be added without reinforcing the end frame," he explains. "Frames can also be designed for future loads, such as cranes, lean-tos and more."

Hance recommends that when designing the original building, the design team should make sure that bracing, doors, ground-mounted equipment, etc., will not interfere with future expansion plans. "A metal building can also be configured with an expandable endwall or sidewall columns that can be designed to support a width extension," he says.

Ferland says the building geometry should consider any future expansion plans. "While initial construction costs may be more, if future expansion is a priority, this may be money well spent," he says. "For example, if 14-foot clear height is a requirement and the owner plans on a future width extension, do not build a building with a 14-foot clear height unless there are plans for a multiple-width gutter. Listen to an owner's needs and make

recommendations accordingly."

If an owner has no designs for future expansion, then typically a bearing endwall is used. "If future expansion is needed, we can use an expandable endwall frame, so when it comes time for expansion the contractor can tie in to the expandable endwall with no need for an additional frame," Pesch adds. "The existing sheathing and girts can remain or be relocated to the end of the new addition depending on the owner's needs."

Expandable endwalls make it easier to make an existing building longer. If you want to make the existing building wider, Pesch says if the existing structure is a single-slope building, another duplicate building can be added on to the high side of the building, creating a gable building.

"Even if the existing structure is a non-metal entity, it doesn't mean that metal couldn't be the right solution," Peckham explains. "Even if you want to match a block wall, or a non-metal wall condition, you can still do it with a pre-engineered solution. And most manufacturers understand how to handle flash-

ing issues, making sure that particular attention is paid where the elements join together to ensure the building is watertight for a long, long time."

"The most common challenge," Peckham continues, "is when someone thinks [a building] has to be the conventional metal building with metal wall panels. There are many options for the walls of a metal building, from block, brick, precast, horizontal or vertical metal, and more. Materials in metal buildings are not limited to roll-formed sheet metal. Beautiful wineries, churches, architect offices, and more can all be designed around metal building systems."

"We have expanded many buildings, from pre-engineered metal buildings to conventional structures of steel, CMU bearing, wood and even pre-engineered wood structures on occasion," Ferland says. "Every building and addition is a prototype and has its own challenges. The preferred building to expand is one which the possibility of future expansion was incorporated at time of construction and all as-built information is available." 