

FEATURES

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Metal Panels: Considerations for Selecting a Metal Panel Façade

Project location, design and cost all play a factor in selecting metal panels

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Northwest University, Kirkland, Wash.
(Photo courtesy of NAC Architecture)

When designing a project, architects have plenty of options for the exterior façade. Whether brick, wood, metal, stone, concrete or something in between, what seems like an easy decision very

seldom is. There are a variety of reasons why an architect chooses a specific type of façade for a project, with everything from the owner's vision to local design ordinances playing a role. However, the bottom line on the final decision often comes down to cost.

While choosing a metal wall or roof panel may seem like a simple decision, that's only part of the decision. There's plenty of options to consider such as the panel type, width, length, thickness and color. With so many options possible, we spoke to some architects to learn what plays a role in their decision to choose a metal panel façade, and what circumstances can cause them to change the type of panel they decided on.

Design Concepts

Project type, location and cost all play a role in the type of metal panel chosen for a project, says Timothy Mansfield, AIA, principal at [CambridgeSeven](https://www.cambridgeseven.com/) (<https://www.cambridgeseven.com/>) in Cambridge, Mass. But, he goes on to say that these type of decisions are all part of the design process, which often starts with the story of the project: where is the program, who is the audience and how do they best capture the concept in built form? "From there we explore the materiality of the concept, consider the site and environs, and explore design options," he explains. "Metal panels offer us a variety of design expressions and the type of panel (shape, color and profile) is typically derived from this careful design process. In the end, cost does weigh in as typically our clients are expecting us to be as efficient as possible."

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When determining the best metal panel for a building façade, Will McCrory, AIA, LEED AP, design principal, architect at [SmithGroup](https://www.smithgroup.com/) (<https://www.smithgroup.com/>), Phoenix, says cost and fenestration are often the main drivers. “While an overall square footage cost may be the simplest way to analyze the best metal panel type for a particular application, an efficient length of panels within a wall is also a determining factor. This is often dictated by the wall geometry and the quantity and spacing of windows within the metal panel wall.”

Panel Qualities

Rohit Sood, AIA, LEED AP, associate principal and director of sustainability at [Holly & Smith Architects](https://www.hollyandsmith.com/) (<https://www.hollyandsmith.com/>), New Orleans, says that since most of their projects tend to have modest budgets, the cost of the metal panel system will often dictate selection on any particular project. “Beyond cost, we often select metal panels based on the different qualities such as texture, depth of ribs, shadow lines it will create on the building façade, and standard colors available.”

Similarly, Ron van der Veen, FAIA, IIDA, principal at [NAC Architecture](https://www.nacarchitecture.com/) (<https://www.nacarchitecture.com/>), Seattle, says that because much of the work his firm does is focused on education and is publicly funded, the type of panel chosen usually starts with cost. “With panel selection often beginning in the bottom 25% of pricing, there is not a lot a designer can do, but I give our teams the challenge: innovate! One of the wonderful aspects of metal panels is the interesting shadow patterning that can be created just by the nature of their corrugation. The three-dimensionality of metal not only creates intriguing shadows, but also provides a building an inherent sense of depth.”

“We pay particular attention to the type of corrugation selected in relationship to the orientation of the building,” van der Veen adds. “In the Pacific Northwest, for instance, horizontal patterns are effective in creating depth on south façades, while vertical patterning can create vivid shadowing on the east and west façades.”

Panel Types

The different types of panels available provide architects different options for their projects. For instance, as McCrory explains, insulated metal panels (IMPs) are ideal for longer lengths of coverage, where windows can be sized to fit within the metal panel widths.

“While having the benefit of an all-in-one insulation and weather barrier, for a more industrial look and to further save cost the interior metal finish can be exposed,” he adds.



Bellevue College, Bellevue, Wash.
(Photo courtesy of NAC Architecture)

On the other hand, McCrory notes metal composite material (MCM) panels are appropriate for most building facades and are available for a wide range of applications including rainscreen, sealed, gasketed and spline. “To

minimize the cost, the panel design should maximize the panel width and length," he explains.

And when cost is main driver, McCrory says formed metal panels are most often used. "However," he adds, "due to the wall geometry of the spacing of the windows, costs can increase if the panel lengths are not maximized, causing an inefficient use of material."

van der Veen says one of his favorite types of metal panel is a vertical stand-n-seam because it offers variations that can really influence the dynamics of a building's façade. "We are always tweaking the spacing and depth of the seams to give us the right density and visual feel," he says.

Panel Availability and Other Considerations

While budget isn't the only reason a design can change, it is a main one. According to Sood, other considerations include availability of the panels and long lead times, as well as the standard color options available. Adds van der Veen, "As everyone knows, two issues that are having a much greater impact on panel selection these days is availability and cost certainty. We are trying to source local metal panels as much as possible."

While the typical circumstance to cause a change is primarily around budget, Mansfield says, "If we believe aesthetically metal panels achieve our design objective, we tend to follow through with that specification. A change from metal panels would only happen if the budget is a challenge and we are directed to explore value engineering options."

"Value engineering often targets the building components that are easiest to quantify, and unfortunately, this can include the metal panel wall finishes," adds McCrory. "However, the savings that is initially identified in the analysis can easily evaporate if changes in the complexity of the details are not accounted for. The availability of qualified installers of a particular metal panel system can also cause the design to change, as well as the client's and jurisdiction's familiarity with the metal panel system."