

## Guidance for **Manufacturers**



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For the purposes of this Guide, the stakeholder category of manufacturers includes those who might participate in an integrated project in the capacity of a product development specialist or product representative.

## Role to Play in an Integrated Approach

In an integrated project, manufacturers may provide on-hand product knowledge to a design team to ensure complementary systems and cost-effective solutions for healthy and sustainable materials use. That expertise could save hours of research for the design and specification team. In some cases, the manufacturer's expertise could enable a product or product system to be enhanced, based on the needs of the project. Since integrated teams are also better positioned to utilize prefabrication services, the manufacturer may have the competitive edge in this market that promises to shift a larger percentage of the construction budget to manufacturers. More widely, the practice of involving manufacturers in a design process would provide market feedback that might be useful for product innovations.

**For integrated projects, manufacturer participation offers:**

- **on-hand building science and product knowledge,**
- **input on how systems will integrate together, and**
- **the ability for products to be designed and enhanced to meet project needs.**

## Opportunities

The integrated design and delivery process offers an opportunity to establish a closer relationship with owners and to understand their product needs. As part of the team, the manufacturer will be called upon to share his product knowledge, as well as to sell complementary products as integrated systems. For example, the company Tremco has led the way in this area with its Proglaze Engineered Transition Assembly System, which markets sealants, membranes, primers, and flashings (all its own products) compatible with insulation and sheathings of other manufacturers as one, integrated, whole product (Yost and Atlee 2012). The details are backed with extensive research to ensure compatibility for optimal energy savings and moisture management, which is likely to appeal to integrated teams who understand the importance of each part working together as a complete system. The effort also saves architects, specifiers, general contractors, and trade subcontractors the time and research they would usually put into figuring out how the assembly would best perform—a service that owners are currently likely willing to pay a premium for and eventually might grow to expect.

**Integrated projects provide manufacturers with:**

- **a closer relationship with owners—the ability to understand their needs and build relationships,**
- **opportunity to share building science knowledge and contribute to a higher-performing building, and**
- **a chance to sell products as they are intended—as a part of integrated systems.**

**“ Owners are getting smarter about Lean and IPD and requiring that expertise more and more to participate in the project. If we weren't going down this path, we would be excluded from the market. ”**

– Robert Tibbling, Assa Abloy

## Selling One's Expertise

As of yet, very few projects have been proactive in bringing product representatives on board early in design, so the role one might play in integrated design and delivery will depend on his ability to make the case for his involvement. Some of the arguments that might be appealing to the project team revolve around having added product knowledge at the table. Manufacturers can help engineers choose complementary systems, help specifiers weigh performance statistics, and help owners get more value for their money. Once a project is completed successfully, partnerships develop and it is easier to rely on demonstrated value.

### **Having deep product knowledge at the table helps the design team:**

- **choose complementary systems,**
- **weigh performance stats, and**
- **achieve more value for the cost.**

## Supporting BIM

Providing high-quality, data-rich 3-D objects for use in BIM can increase a product's chance of being specified and reduce the risk of being substituted out. These objects should be visually appealing, for rendering purposes, technically precise, and include data in open-formats for use in quantity take-offs (i.e., a detailed estimate of the materials and labor to complete a construction project) and simulations—for example, finish materials must have accurate light reflectance characteristics for use in daylight modeling, and envelope materials must include thermal characteristics, such as heat transfer and storage (*AEC Magazine* 2013). Products must also be complementary to the use of BIM by operations and maintenance staff, allowing the ability to capture in-operation data that can be entered into the model.

### **Key Points:**

- **Provide data-rich 3-D objects for designers to place in their model.**
- **Support high-performance green goals by including performance data for simulations and data aggregation.**

## Building on Lean Practices

With the mantra of “maximizing value while minimizing waste,” Lean design and construction practices encourage collaboration as a means to increase efficiency and provide an entry point into integrated design and delivery because of some of their overlapping principles. They also support the efficient use of materials, which is an important sustainability objective. In construction, typically the entity purchasing products, the entity installing the products, and the entity responsible for waste disposal are often entirely different companies, so waste occurs in the hand-offs. An integrated approach can optimize these activities by applying certain Lean practices related to products, like Just-in-time Delivery, or taking more responsibility in other stages of construction, like committing suppliers to take back construction waste.

### **Examples of key Lean practices to implement:**

- **Lean practices, as applied to construction, can play an important role in delivery of supplies, e.g., Just-in-time Delivery.**
- **The aim of “maximizing value while minimizing waste” encourages collaboration throughout the delivery process.**



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