THE BUILDING MAKER

By David Leslie, RWC

Let's face it: our industry is broken. Design/bid/build (DBB), the predominant method of constructing new buildings, is inefficient and delivers a flawed product. By design, the DBB process promotes compartmentalization, disjointed communication, and conflict. We all know it and complain about it every day. And what is done about it? We add more processes to the method, which simply address the symptoms. I am no different. My *RCI Interface* article, "Is It Just Me, Or Does Every Building Leak?" published four years ago, spends an inordinate amount of time doing nothing but explaining this mess. My Power vs. Knowledge graphic (*Figure 1*), also used in the original article, basically illustrates why DBB does not work.

What about design/build (DB)? Sorry, but it doesn't go far enough. There is no long-term relationship between the customers (people owning the building) and the producers (people making the building). Regardless of whether it is DBB or DB, the primary object of the constructors (all the groups involved in the assembling) is to get the building done as fast as possible, collect their money, and move on to the next job, only to do it all again. The faster the building is built, the more money everyone makes. Instead of building a good building out of pride, it seems like the only real incentive for performance is to stay out of court.

What other options are there? To gain more insight into the various possibilities, a good place to look is public/private partnership (P3). The basic concept behind P3 is to combine the strengths of governmental bodies with the strengths of private entities in a way that minimizes their weaknesses. The most visible delivery method is design/build/operate/maintain (DBOM). Many of the tollways across America use this method. The public partner provides the resources to design and build the project. The private partner then provides the labor to design, build, operate, and maintain the project (the operators make their money on the "O" part, such as with tolls). There are other

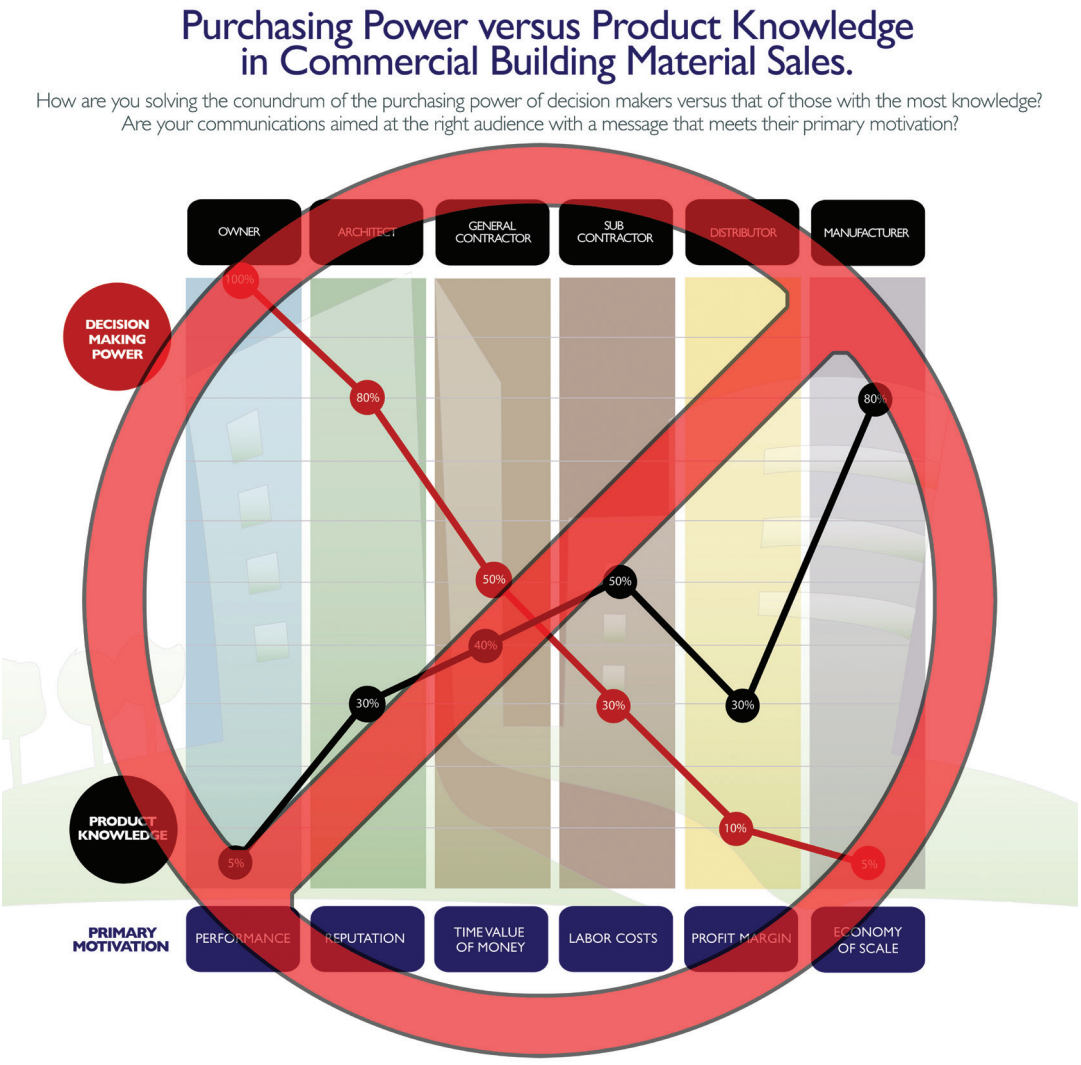


Figure 1

variations of DBOM, like design/build/operate (DBO) and design/build/maintain (DBM); the important thing is not the method, but the symbiotic relationships established by the method.

So, is the best method a variation of DBOM? It is a starting point, but a different method is not enough to bring about real change. There must be a paradigm shift from the DBB conglomeration of clearly identifiable individual groups (e.g., architect, general contractor, subcontractor) throwing a building together, to a single recognizable organization (i.e., a new company, a new division, a restructure) making a building. Much like other consumer products, that single recognizable organization would be viewed as a "maker" (e.g., Ford, a car maker; Hewlett-Packard, a printer maker; Apple, a computer maker); and, in our industry, a building maker.

Casting the image of a building maker causes the identity of the suppliers to become irrelevant and drives brand loyalty for the building maker. Loyalty is important for two reasons: it creates the opportunity to have a long-term relationship with the building owner, and it provides another revenue source for the building maker, through maintenance. This method would look like design/build/maintain–plus (DBM+), but the key to its success is driven by the mindset that the building maker will retain the relationship with the customer well beyond the Certificate of Occupancy.

A BUILDING CONSTRUCTED WITH DBB IS A PROTOTYPE

What is so important about the image of a building maker? Seeing Jennifer Keegan's frustration with owners during her "Order of Failure in Building Skin Design and Construction" seminar at the 2017 RCI Building Envelope Technology Symposium produced a moment of clarity. Few people realize that a building constructed with DBB is a prototype. After the presentation, I shared my revelation with Keegan, explaining that most owners don't understand how or why their building is a prototype. The owners also don't understand their decisions have grave consequences, because they can't imagine a new building leaking. I likened constructing a new building that leaks to buying a new car that doesn't run. By functioning as a building maker, the car analogy becomes more relevant.

Is understanding that a DBB building is a prototype the key to communication? No, it is a key to understanding why the delivery system is broken. A consultant friend recently explained to me that "We construct opulent buildings for people who don't understand how they are built and how to maintain them." Does that statement hold true with cars? Absolutely. Approximately 6.3 million passenger cars were sold in the United States during 2017. It is hard to fathom that all of those people know how to make a car. Understanding the manufacturing process is unnecessary in selecting a vehicle and should be the same for a building.

Am I saying we don't need better communication? No, I am saying that we need a better relationship. Poor communication is a symptom. DBB creates a convoluted relationship among the participants and makes it hard to understand who is responsible for the success of the project. DB is not much better. There may be a more direct consumer/provider relationship with DB compared to DBB, but both diversify liability after the building is finished. Just consider the war-

ranties. The "manufacturers" of the various building components provide decade-long warranties for systems they did not design or assemble. Crazy. In the car analogy, the "manufacturers" would be considered suppliers. You don't get a separate warranty for the Dana drivetrain components, or from Bosch for the window switches.

Am I insinuating that the building maker would provide the only warranty? Yes, that is the reason for the "+" in DBM+. The person making the building must take responsibility for the building in order to cement a long-term relationship with the owner. What better way to validate the commitment than by putting it in writing with a warranty? I am not talking about the typical manufacturer's one-sided fine-print type, but a real agreement that is fair to both parties. The duration of the warranty would be for at least ten years and cover all the major components, from mechanical, electrical, and plumbing (MEP), to the building envelope.

HOW IS A BUILDING LIKE A PRINTER?

What would possess anyone to accept that level of liability? Simple: sustainable revenue. It is all about extending the consumer/provider relationship. Here is where the car analogy parts ways. A car has a much shorter life cycle than a building. Car makers can use the DB method because their product is disposable, but buildings aren't. We need a mechanism that positions the building to be more like a printer. Printer companies make machines that are relatively inexpensive and solidly dependable, but they really don't make their big money on the printer. They make the real money on the ink.

How does a building act like a printer? By extending the relationship with owners by providing ongoing maintenance. The pivot point to making DBM+ desirable for the building maker is the previously unrealized revenue generated from the maintenance portion of DBM+. As the maker, the long-term relationship is already established with the warranty. Is there any better opportunity to establish the relationship for a preventative maintenance (PM) program than in support of the warranty? In doing so, we have moved the short-lived and often toxic relationship of DBB, to the long-term symbiotic relationship between the owner and the building maker.

What would possess an owner to use the maintenance program? Who better to understand the inner workings of the building than the maker? My consultant friend is right: Most owners do not know how to maintain the building envelope. How often have we investigated buildings where unchecked water intrusion does major structural damage because simple maintenance was not performed? Imagine rolling the PM for the foundational systems of the entire building into one facility asset management program. How powerful would that be in reducing the operation cost and extending the building's functional service life?

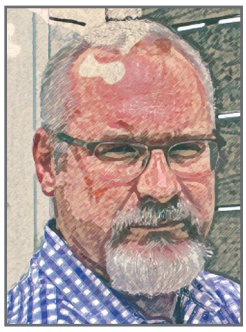
Why would providing maintenance produce better buildings? Beyond the obvious advantage of the building maker having continuity in the processes, and thus producing continuity into the building, there is a deeper reason. Think about it: When a building is constructed with the system functioning at peak performance, the cost of providing PM services is significantly reduced. The motivation to produce a quality product then shifts from fear of litigation to the desire for increased sustainable profits. Every effort would be made at the highest levels of the organization to ensure that

the buildings produced were constructed for performance and longevity.

What makes me think it will work? The concept is not without examples. In my research, I have found multiple MEP contractors using DBM. MEP may be one aspect, but there is no reason the model could not be applied to the entire building. All the processes needed to execute DBM+ as a building maker are being done in construction today but are forced into dysfunction through DBB. A prime example of this dysfunction is building envelope commissioning (BECx). Utilizing BECx is a natural fit for the building maker, but with the DBB method, BECx is often left out because of the perceived redundancy of activities and the desire to reduce cost. So, beyond continuous revenue, there are so many aspects of the concept that just make sense. Like the car analogy, building makers would have base model buildings to streamline the process, reduce delivery time, and reduce initial cost; and luxury packages/accessories will replace value engineering. The building makers' integrated PM program would reduce maintenance cost, reduce costly down time, and extend the longevity of the building. I can go on and on.

Why is it not being done now? I believe it reflects our society. To maximize productivity and minimize risk, we have all become specialists. DBB is the perfect example of that mindset. The essence of a building maker is contrary to the current societal direction, but the concept is more than a pipe dream. Every aspect needed to bring the building maker to fruition exists today. Don't get me wrong; what I am proposing is not for the faint of heart. It will take an organization with some serious horsepower and guts to use it. But, if someone steps up to the challenge, they could drag the industry out of mediocrity, make sweet buildings, and people would throw money at them to do it.

So, is the purpose of this article to say that the building maker should be the only method used moving forward, and that it would answer every question? Heavens no. The purpose is to show how our industry is currently falling short and provide a plausible alternative to start the conversation on how to do it better.



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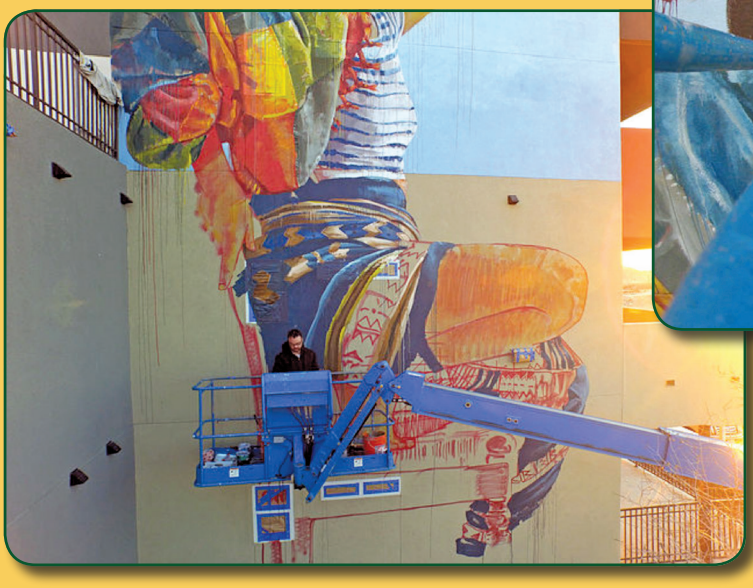
David Leslie is Director of Technical Services & Product Management of the Architectural Division of Polyguard Products, Inc. His experience includes product development, contracting, and consulting. His 30 years of experience have provided him with a unique insight into numerous aspects of the building envelope. He is a published author, public speaker, expert witness, and holder of multiple patent applications. It is his core belief that there is no good reason for a building to leak, and he has devoted much of his career to keeping people dry.

Wall Art Close Up

Australian artist Fintan Magee painted the mural shown on the cover of this month's *RCI Interface* as part of an ongoing mural project known as Murals at Montecillo in El Paso, Texas in 2016.

Magee is well known for his murals throughout the world, including the U.S., Africa, Asia, Europe, Scandinavia, and Australia. He has won numerous awards for his work. See some of them at his website: fintanmagee.com.



The El Paso mural is at Santi Dwellings at Montecillo, a mixture of residential living environments blended with entertainment, commercial, and retail business opportunities.

Photos by Exist 1981.