

Innovation Building Group Best Practices for Modern Methods of Construction



3. Why Value Engineering Often Happens Too Late

A common pattern in conventional housing delivery is that projects are designed to a conceptual or performance target first and then forced back into budget through multiple rounds of value engineering later in the process.

By the time value engineering begins, many critical project decisions have already been embedded into the design, including:

- structural systems,
- building massing,

- mechanical strategies,
- enclosure assemblies,
- consultant coordination pathways, and
- procurement assumptions.

At this stage, opportunities for meaningful optimization are significantly reduced. As a result, late-stage value engineering often becomes reactive rather than strategic. Teams are forced to remove scope, simplify assemblies, reduce performance targets, or redesign systems after substantial design effort has already occurred.

This process creates:

- duplicated consultant work,
- schedule delays,
- procurement uncertainty,
- coordination inefficiencies, and
- increased project risk.

In many cases, the issue is not insufficient innovation or technical capability. The issue is that critical delivery decisions are occurring too late in the project lifecycle.

At IBG, one of the largest process changes over the last decade has been shifting system integration and costing analysis into the earliest stages of project development.

Rather than treating costing as a separate exercise following design completion, costing becomes embedded within the system selection process itself.

Our system library evolved from completed projects that have already undergone:

- construction sequencing,
- field coordination,
- occupancy,
- operational monitoring,
- maintenance review,
- and long-term performance evaluation.

As a result, assemblies and delivery strategies are selected based not only on theoretical performance targets, but also on demonstrated constructability and operational outcomes.

During early-stage project development, we evaluate integrated combinations of:

- structural systems,

- enclosure assemblies,
- HVAC strategies,
- manufacturing approaches,
- and procurement pathways

using both performance criteria and real-world delivery data.

Once validated systems are identified, the project is optimized around them from the outset.

This fundamentally changes the delivery process.

Instead of designing projects first and removing value later, projects begin with systems already calibrated to balance:

- constructability,
- durability,
- operational efficiency,
- manufacturability,
- and cost certainty.

This approach significantly reduces redesign cycles and improves budget predictability throughout the project lifecycle.

Perhaps more importantly, it allows organizations to continuously refine proven delivery systems over multiple projects rather than repeatedly re-solving the same coordination and costing problems from the beginning.