



TOP 4 HIDDEN COSTS OF PARKING STRUCTURE DESIGN

By Jason Rupp, Partner at AO

At first glance, designing a parking structure might seem simple — tally the number of stalls, check the City stall dimensions, and start your layout. However, the real risks and hidden costs lie in the details. Without careful planning and technical expertise, small oversights can escalate into major budget and constructability issues.

Here are four components to consider when planning your next parking structure. Take heed to make sure your build doesn't cost you more than you planned.

1. **STRUCTURAL COMPLEXITY:** *IT'S MORE THAN CONCRETE & COLUMNS*

Long span, short span, precast, or a hybrid — which is right for your project? Long-span systems reduce columns and improve circulation. Short-span systems offer shallower floor-to-floor heights and material savings. Precast options accelerate schedules with off-site fabrication. Each comes with distinct advantages — and limitations. Here's the trap: assuming one system is the “best” without context and wasting money on a solution.

The solution? At AO, we don't take a one-size-fits-all approach. By blending the efficiency of design-build with a focus on your project's success, we tailor the structural solution to meet your specific goals — functionally, economically, and strategically. That's how we deliver more.

2. MECHANICAL VENTILATION: *THE INVISIBLE DEALBREAKER*

In enclosed or underground garages, ventilation isn't optional — it's critical. Carbon monoxide, exhaust fumes, and heat must be managed, and the code requirements are non-negotiable.

The catch? Ventilation systems aren't plug-and-play. They need to be coordinated early with the structural design. Miss that window, and you're looking at retrofitting ductwork and fans later — at a steep premium. Another costly oversight? Ignoring opportunities for natural ventilation. Even partial openness, when site conditions allow, can significantly reduce mechanical needs. That simple move can save six figures. Think ahead — or pay twice.

3. WATERPROOFING & DRAINAGE: *DEATH BY A THOUSAND LEAKS*

Water doesn't negotiate. Without smart slope design, well-placed drains, high-quality expansion joints, and durable protective coatings, your structure will leak, crack, corrode — and fail faster than you think.

We've seen parking decks barely five years old already facing major structural repairs due to poor waterproofing decisions. The cost? Slab replacements, joint failures, and a cascade of change orders.

The better way? Get it right the first time. It'll save you years of headaches — and a mountain of money.

4. SPACE EFFICIENCY: *THE HIDDEN COST OF LEAVING STALLS ON THE TABLE*

Not all layouts are created equal. At AO, we consistently deliver up to 10% more stalls — sometimes as much as 30% — on the same footprint others are working with. That's not just a design win. That's real, bankable value.

Each missed stall can cost \$25,000 to \$35,000 — and underground, it's even more. On a 500-stall garage, improving efficiency by just 10% could mean \$1.25 million in added value.

We're not more expensive than other architects. But the difference in outcome? It's massive. That extra million? You can reinvest it into your project — or use it to make the numbers pencil. Our design pays for itself — and then some.

The Bottom Line

We help you avoid rework, minimize risk, and build smarter — the first time. Because the best parking garage isn't just the one that gets built. It's the one that's built right.

Give us a call—we'll help you make every stall (and every dollar) count.

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