



DESIGNING THE NEXT GENERATION BOX:

Speculative Industrial meets
Advanced Manufacturing

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Executive Summary

Advanced manufacturing is a significant driver of industrial development in select markets. We are seeing systemic shifts in how and where production happens. The term advanced manufacturing serves as an umbrella for many uses, including R&D environments, production, robotics, AI-driven technologies, and advanced materials, among others.

Federal incentives, supply chain realignment, electrification, automation, and digitalization continue to drive domestic investment in production. While much of the market attention focuses on large-scale build-to-suit facilities, significant opportunity lies in speculative industrial development designed to be advanced manufacturing ready.

Economic indicators reinforce that manufacturing momentum is not speculative. The ISM Manufacturing Index recently returned to expansion territory after nearly a year of contraction, with gains in new orders, production, and backlogs. This signals firming demand and tightening production capacity.

For industrial real estate, this signals renewed activity and sustained investment. The question becomes whether speculative shells are prepared to support it.

Today's advanced manufacturers introduce different variables than traditional logistics users: higher workforce densities, elevated electrical requirements, and equipment-intensive layouts. In certain markets, the competitive advantage in speculative development is no longer maximizing the box to yesterday's standard specs. It is calibrating the next generation of shell to responsibly serve both warehouse/distribution and advanced manufacturing users.

This paper outlines a design-led framework for evaluating workforce density, structural flexibility, scalable power planning, and yard convertibility.



Figure 1: OMP – Fremont, California - Pacific Commons South

The Manufacturing Resurgence is Reshaping Industrial Real Estate

Advanced manufacturing is no longer a niche segment of the industrial market. Manufacturers continue to invest in domestic capacity, driven by supply chain resiliency, electrification, and automation. Industry outlooks highlight sustained capital deployment in advanced production technologies and digital manufacturing environments, even amid broader economic uncertainty. Manufacturing construction spending remains near historic highs, particularly across technology, transportation, clean energy, and defense sectors.

While headlines often focus on semiconductor or battery megaprojects, the more immediate impact on industrial real estate is occurring within mid-scale facilities, typically 50,000 to 200,000 square feet, where manufacturers prioritize speed to market and proximity to talent clusters. In Western U.S. innovation-oriented markets, these users increasingly compete for Class A industrial space that can accommodate elevated electrical demand, higher employee density, and flexible production layouts.

Traditional speculative industrial buildings have been optimized primarily for distribution efficiency. Today's advanced manufacturing users introduce additional variables. With advanced manufacturing demand increasing across mid-scale facilities, the next question becomes architectural: what does this mean for speculative shells?

Advanced Manufacturing Demands: People, Space, & Power

First, we need to understand the needs of an advanced manufacturing user. A robotics integrator, defense electronics assembler, battery component manufacturer, and logistics operator may all occupy similar building envelopes, but their infrastructure requirements differ significantly. In practice, advanced manufacturing is an operational condition defined by workforce density, equipment intensity, and utility demand.

People: At nearly double the workforce density of traditional distribution, advanced manufacturing users have engineering teams, technicians, and quality control staff working throughout the building. This means increased parking demand, restroom counts, HVAC loads, and office requirements.

Space: Advanced manufacturing introduces fixed production lines, robotics, equipment pads, and concentrated floor loads. Reduced interior columns, structural bracing and maximal clear area are key differentiators.

Power: The processes and automation within advanced manufacturing require increased power availability, which is often a gating factor, particularly in markets where grid capacity varies. Initial access to day one power with a clear path to expansion is key.



Figure 2: Hines – Hayward, California - Exchange @ 92

Calibrating the Next Generation Box

Speculative industrial development has long been optimized for distribution efficiency. Clear height, dock door ratios, and trailer counts remain critical metrics. However, in certain markets, expanding beyond traditional specs is increasingly necessary. The speculative challenge is in designing shells that can responsibly accommodate multiple uses without overbuilding for any single outcome.

| Speculative Industrial meets Advanced Manufacturing Ready | | | | | | |
|-----------------------------------------------------------|-------------------|---------------|-------------------|----------------|--------------|--------------------------|
| Category | Tech | Defense | Energy | Transportation | Logistics | Calibrated Spec |
| Workforce Density | High | High | Moderate | High | Low | Moderate - High |
| Parking Ratio | 1.5-2:1000 | 1.5-2:1000 | 0.5-1:1000 | 1.5:1000 | 0.6-1.2:1000 | 1.2-1.5/1000 convertible |
| Dock Door Ratio | 1/15K | 1/15K | 1/15K | 1/10K | 1/5K | 1/10K |
| Power Requirement | 8-12kA | 8-12kA | 10-20MW | 8-12kA | 4-8kA | 8kA min. / scalable |
| Yard Configuration | Equipment/Staging | Security/Test | Equipment/Staging | Trailer | Trailer | Convertible Zones |
| Structural Requirement | Moderate | Large | Large | Moderate | Moderate | Moderate-Flexible |

Figure 3: A Look at the Numbers

Flexible Yard: Both traditional industrial and advanced manufacturing development start with site planning and the exterior of the building. Logistics users prioritize trailer counts and dock door density. Advanced manufacturing may prioritize equipment staging, security setbacks, or higher employee counts. A calibrated approach balances required parking, provided parking, and areas that can convert over time. Flexible yard zones create opportunities to pivot between trailer and auto parking, equipment staging, or utility yard expansion depending on the use.

Power Ready: Power is central to the discussion at the beginning of many industrial projects regardless of use, however for advanced manufacturing the ability to expand power is the key. Power-ready shells include properly sized electrical rooms, expansion pathways, yard space for additional transformers or power generation, and coordinated planning for future systems.

Open Structures: Distribution buildings prioritize vertical storage and clear spans. Advanced manufacturing introduces fixed production lines, robotics, equipment pads, and concentrated floor loads. Despite the very different interior configurations, wide column spacing and strategically placed bracing benefit both advanced manufacturing and traditional industrial. A calibrated shell anticipates heavier loads, preserves flexibility, and avoids structural decisions that constrain interior layouts.

Expandable Office: The inclusion of mezzanine in industrial has long been market specific and continues to be. However, the flexibility to provide mezzanine is a prime way to calibrate for both advanced manufacturing and traditional industrial. This may look like providing two story glazing and knockouts to allow for future tenant improvement without returning to planning, or providing a higher finish level strategically with the option of expanding office areas to accommodate a larger workforce.



Figure 4: OMP – Tempe, Arizona - Nextwave

Developer Checklist

Before locking schematic design:

- Can the yard or trailer stalls convert to employee parking?
- Is electrical infrastructure sized for expansion?
- Does the site have expansion area for additional power or on-site independent systems?
- Can mezzanine office space be added without major structural modification or additional planning approvals?
- Does the structural grid restrict production layouts?

Not every future scenario must be covered, but where possible, calibrate for adaptability.

Conclusion

The next generation of speculative industrial development is about designing shells that can successfully serve both. Markets evolve. Tenant profiles shift. Technologies advance. Buildings optimized for a single outcome may struggle to adapt.

Planning for flexibility at schematic design has long been part of our industrial ethos. If advanced manufacturing is a potential tenant profile for your next development, thoughtful calibration early in the process can position your project for long-term performance.



Get in Touch

We'd love to hear from you. Whether you have questions, need support, or simply want to learn more about us, our team is here to help.

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