

Strengthen distribution networks with the right heavy manufacturing location

Discover how smart site selection can improve operations, cut costs and reduce environmental impact

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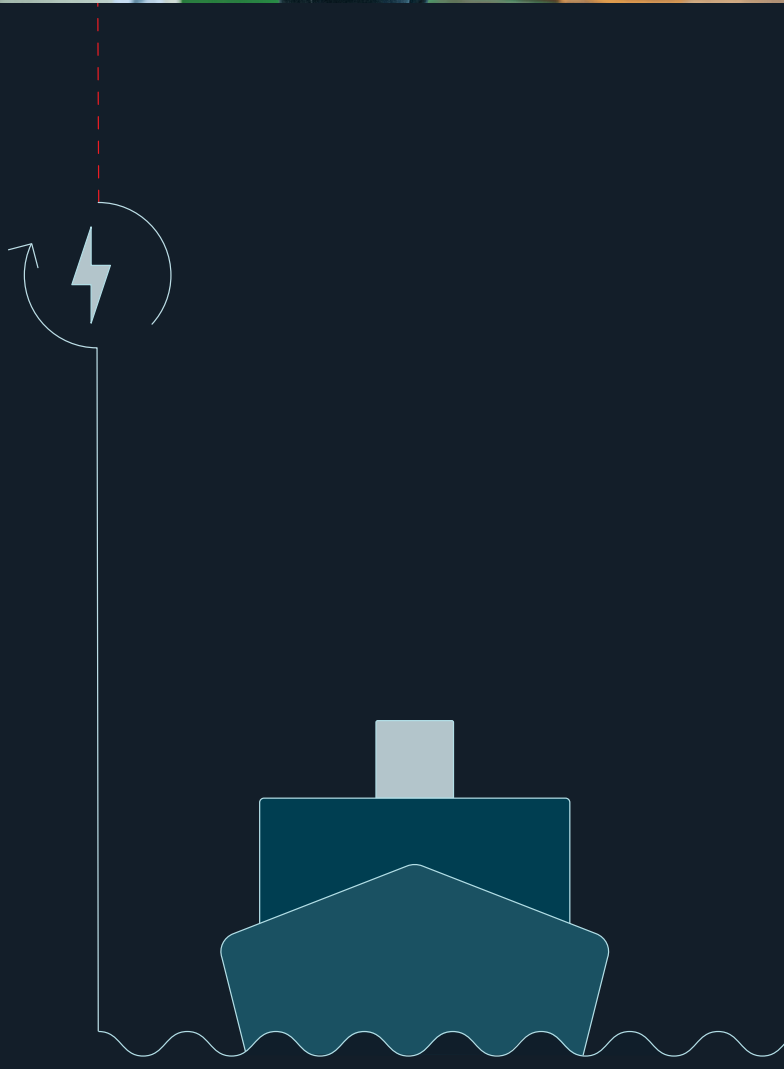
The perfect location can give any advanced manufacturer a competitive advantage, and that's certainly true in heavy industry. Selecting the right site can solve supply chain challenges, reduce transportation costs and environmental impact, and boost speed to market.

However, finding the ideal site for your specialized, capital-intensive facility can be challenging. The site needs to accommodate large-scale machinery and complicated, energy-intensive production processes. You often must choose sites near deep water ports, rail lines or specialized transport because highways cannot accommodate heavy or hazardous products and supplies. Additionally, the facilities often need special zoning due to emissions, noise and other factors.

This guide offers tips and strategies for selecting the right site to produce large, heavy and complex goods in sectors such as aerospace and defense, chemicals, energy infrastructure, heavy machinery, shipbuilding and steel production. A thoughtful, data-driven approach helps you pinpoint the ideal location to improve your distribution network.



Why manufacturing real estate is heating up

If you're looking for a new manufacturing site, you're not alone. In the United States, demand for manufacturing real estate has increased by an average of 50% each year since 2020. JLL researchers also forecast heightened demand for UK manufacturing facilities and significant growth in Southeast Asia and India.

What's driving demand? Consider these factors:

Aging assets: JLL research shows that more than half of industrial properties in the U.S. are between 30 and 60 years old, leading some companies to consider relocating to modern facilities.

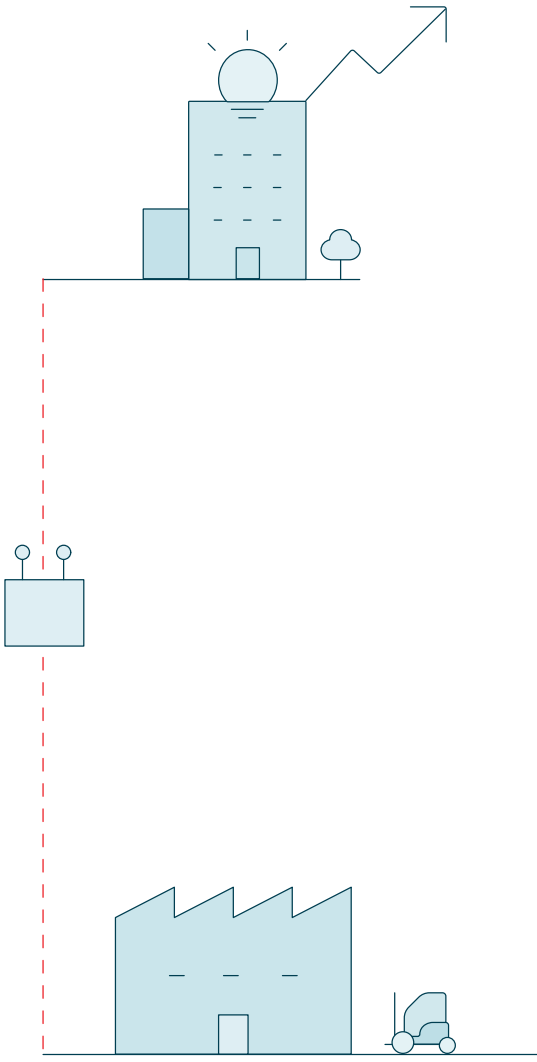
Consolidation: Mergers and acquisitions often lead companies to combine operations in new facilities.

Geopolitical instability: Tariffs, military conflicts and other concerns are changing the desirability of some locations.

Supply chain disruptions: The recent global chip shortage, natural disasters, Suez and Panama Canal disruptions and other major events are upending supply chains.

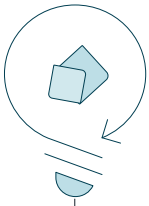
Reshoring: Many companies are bringing manufacturing locations closer to customers to increase speed to market while addressing geopolitical issues and supply chain disruptions.

Decarbonization: Transforming energy infrastructure for a more sustainable future requires new facilities to build electric cars, large-scale batteries, wind turbines and other heavy equipment.



Top considerations when selecting a country/region

The right location can help you run more efficiently, save money, reduce your environmental impact and increase your speed to market. Start by narrowing your options to a country or region. Then, focus your search on the three Ps: power, people and place.

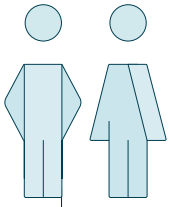


Power

Modern factories need a lot of electricity to run their high-tech equipment. But in many places, power is getting harder to come by. Data centers and Electric Vehicle (EV) battery manufacturers are using more electricity than ever, while aging power grids are struggling to keep up. When you're looking for a new location, you need to think about whether there's enough power available, if the electrical grid is reliable and how much of that power comes from clean energy sources.

JLL recently assisted an Asian EV battery manufacturer in its site selection search. When fully operational, their energy requirement would equal 200 megawatts (MW) each year, which limited the number of available options. Similarly, an aluminum smelter needed 900 MW of power on day one, combined with barge access for material transport – requirements that severely constrained their location options.

Electricity isn't the only utility you need to worry about, though. Depending on the production process, you might also need plenty of liquified natural gas or water – and these resources can be hard to source in some areas too. When using water in the process, there may be a need to treat it before it's allowed to discharge.



People

Finding skilled workers is a critical factor when choosing where to locate your business. To ensure you'll have access to the talent you need both now and in the future, you should examine the region's working population growth trends, quality of life factors that attract and retain workers, and the availability of international schools or specialized training programs that can develop the skills your industry requires.

You'll also want to carefully evaluate the local labor market economics. Look at current total labor costs for the roles you need to fill, as well as how quickly wages have been increasing in recent years. These labor costs can significantly impact your overall business case.



Place

Proximity to customers and suppliers substantially impacts transportation costs and limits the CO2 emission footprint. Proximity also means less exposure to supply chain disruptions and a llows you to reduce inventory levels and working capital. Heavy manufacturers should also avoid non-attainment areas with stricter air quality regulations.

Community acceptance is equally important. Selecting locations where communities welcome industrial development helps avoid costly permitting delays and operational challenges later.

Top site selection factors

Once you've settled on a country or region, it's time to drill down into more specific locations and sites. As you evaluate sites, these questions can help determine whether a location meets your needs:

Quality of life: Does the community offer good schools, family amenities, and quality of life factors that will help attract and retain workers? Are local grade schools well-rated, and is it a desirable place to raise a family?

Shovel ready sites: Time to market is key in selecting the final site. Does the site owner have permits in place to allow for a speedy groundbreaking ceremony?

Site planning works: Is the site flat or does the site need to be flattened? Are there still trees to be removed? What about access roads and utilities?

Site due diligence: It's important to inspect the soil quality, topography, easements, and any cultural sites. Would it require expensive piling to establish the facility?

Transportation: Does it have access to deep water ports, barge transportation, heavy rail lines or other specialized transport?

Accessibility: Is there an international airport within a one-hour radius? Is the site conveniently located near major roadways or public transportation for employees?

Risk assessment: What is the overall risk profile of the location, including climate resilience such as natural disasters or flooding, geopolitical stability, economic volatility and potential regulatory changes? Is the building structure able to withstand common environmental threats?

Sustainability features: Does the facility have energy-efficient systems, on-site energy generation capabilities, and redundant infrastructure? Can it accommodate future renewable energy expansion and feed excess power back to the grid?

Costs: What capital investment is required to get the site ready for construction? What are the construction costs to construct the factory?

Incentives: Does the government offer any grants or tax incentives for manufacturers? What is the ratio between cash and tax incentives? What is the theoretical maximum of state aid?

These questions provide a starting point, and your unique requirements will shape other considerations such as size, amenities, layout and more.

Sector snapshot

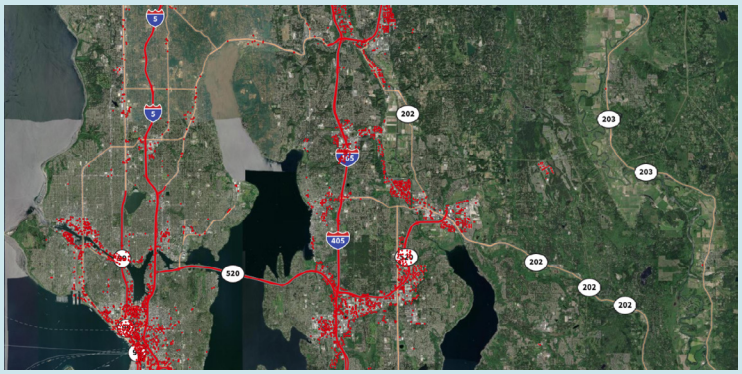
Category	Semiconductor manufacturing	Pharmaceutical production	Automotive assembly manufacturing	Energy storage systems manufacturing	Battery cell manufacturing	Heavy manufacturing (e.g. aluminum smelting, copper foil production, etc.)	Solar manufacturing (ingot/wafer/ cell)
Building sizes (SF)	200K - 4M	100K - 500K	2-9M SF	350K - 1M SF	2-7M SF	1M - 1.5M SF	400K-1MSF
Building height (ft)	40	40	40-60	40	40-60	60-100	40-80
Dock door ratio	1 per 20K SF	1 per 20K SF	Varies	Varies	1 per 175K SF	N/A	Varies
Access to rail	Moderate need	Low need	High need	Medium need	Low need	High need	Medium need
Auto parking per SF of building	1:1000	1:1000	0.5-1:1000	0.5-1:1000	0.5-1:1000	Highly variable	0.5-1:1000
Yard needs	Trailer storage for larger buildings	Trailer storage for larger buildings	Secure perimeter	Secure perimeter	Secure perimeter	Secure perimeter	Secure perimeter staging and equipment
Utility needs	Heavy power, water	Water	Heavy power	Heavy power	Heavy power, natural gas, steam	Heavy power, natural gas, steam	Heavy power, water
Power requirements	75-200 MW	8,000-12,000 amps	50 MW	7-20 MW	220-270 MW	90-9,000 MW	115 MW
Clear span requirements	Moderate	Moderate	Moderate	Moderate	Moderate	Large	Moderate

A tech-driven approach to smarter site selection

Today's technology allows you to analyze more data points and search for locations more efficiently. With today's tools, you can analyze data from multiple sources in easy-to-read dashboards and maps, allowing you to compare locations from multiple perspectives. You can also tour sites virtually, saving time and travel costs.

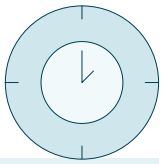
Here's how technology tools improve site selection:

- **Evaluate supply chain impacts:** A comprehensive network optimization tool allows you to see how location decisions, such as opening a new plant or consolidating regional hubs, will impact inbound and outbound costs.
- **Get data-driven rankings:** Effective site selection examines everything from labor pools to transportation access. A weighted multi-criteria model can prioritize factors based on your business goals, rank your options, and create defensible presentations that clearly show your analytical methodology for board approval.
- **Travel less:** Property tours require less time when you visit them virtually. For example, companies in Singapore and Europe can tour several offices in one day at JLL NXT Office locations. During the immersive experience, companies select properties and then explore detailed maps and Matterport digital twins, featuring photorealistic 3D tours, detailed layouts, precise measurements and comprehensive analytics.
- **Increase efficiency:** AI is reshaping the way information is collected and analyzed in site selection, making it possible to validate data more quickly and identify new sources.
- **Visualize your options:** Comparing locations across multiple data sets requires clear visualization. We use tools like MapIT, an interactive mapping tool, and Blackbird, our patented 3D technology platform, to analyze locations and facilitate stakeholder alignment through collaborative working sessions that optimize for operational success.



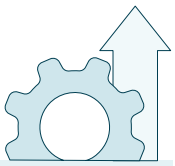
Top tips for selecting a new location

Investing in a new heavy manufacturing location is a complex, capital-intensive decision that requires a thorough, thoughtful approach. These tips can help you get off to a successful start.



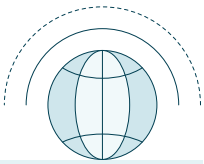
Start early

Power constraints, aging infrastructure and talent shortages are making it more critical to get a jump start on searching for new manufacturing sites. Once you find a site, you may need two years or more to upgrade the power infrastructure, establish rail connections or launch upskilling programs.



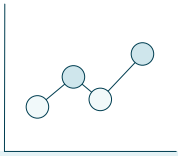
Think long term

Manufacturing facilities are long-term investments, but too often, companies take the short view when calculating the cost of doing business at a new location. The analysis must look beyond today's prices to consider how consumer price and wage inflation will impact costs over the next three to five years.



Consider community impact

Gaining zoning approval for a new plant sometimes requires efforts to build community support. Luckily, the economic stimulus of a manufacturing facility offers compelling benefits: United Nations research reveals every manufacturing job creates 2.2 jobs – closer to three or more in the U.S., according to JLL – in other sectors.



Leverage available incentives

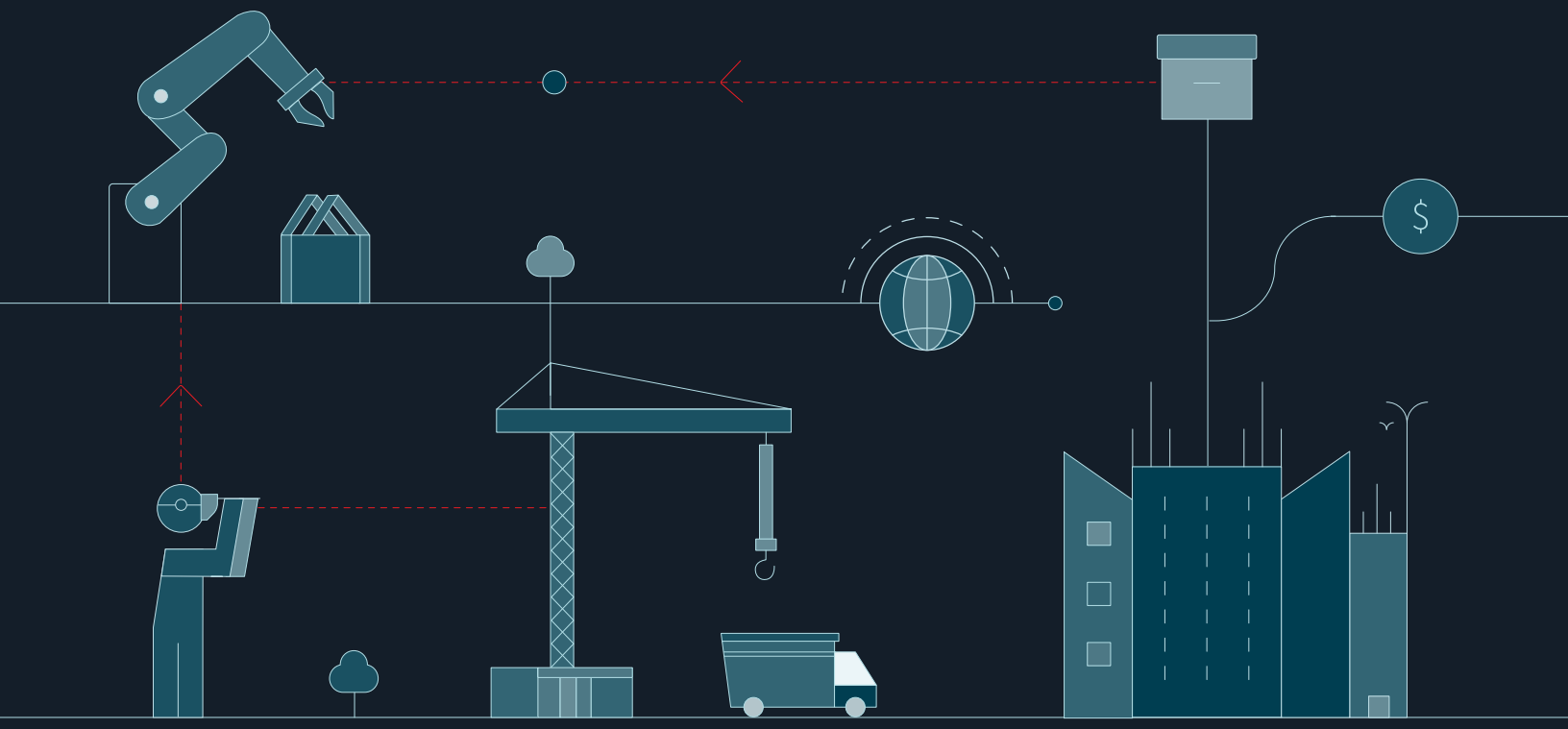
Government grants, tax incentives and special economic zones can significantly impact your project economics. Research federal, state, and local programs available for manufacturing investments. Consider both cash incentives and tax benefits, and evaluate the total potential value against program requirements and timelines.

Improve your distribution network with the right locations

The location you choose for your heavy manufacturing facility creates ripples throughout your supply chain, so it's critical to get it right. A smart choice reduces transportation time, costs and emissions—while providing access to the talent and power you need to run your facility.

An experienced partner can help you navigate your options and find the best site to boost your competitive edge. We've led site selection for some of the world's leading manufacturers, using a holistic, data-driven approach to improve distribution networks. We combine global capabilities with an extensive brokerage network deeply ingrained in local markets.

Discover the best location for your next heavy manufacturing facility. Contact us to discuss your site selection needs today.



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