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A FIELD GUIDE FOR FACTORY BUILDERS

Don't Build Your Next Factory Until You Read This.

Six checklists that protect you from the costly design mistakes most manufacturers only discover after the concrete has been poured.

38%	80%	90 → 15
More Output Per Person	Improvement in Key Parameters	days inventory reduction

By the Lean Facility Design© team at Faber Infinite Consulting

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The most expensive factory mistakes are free to avoid.

Let us tell you what we have seen, again and again, across more than a decade of shop-floor work from cryogenic tanks to pharma, from solar to consumer goods, from drip irrigation to auto components.

A founder pours years of capital and ambition into a new plant. The structure rises. The machines arrive. The ribbon is cut. Production begins. And within ninety days, the cracks appear: material crosses the shop floor three times when once would do. Inventory bloats. Throughput crawls. Forklifts queue. The dream plant becomes a daily firefight.

Here is what almost nobody tells you: none of that was an operations problem. It was a design problem. The bottlenecks were poured in concrete months before the first shift clocked in.

Lean Facility Design© was built by Team Faber Infinite for exactly this moment, the moment before the concrete. It is a 15-step framework that fuses industrial engineering, lean management, and project management into one disciplined act of design. Greenfield or brownfield. New plant or expansion. Pharma or FMCG.

This guide is the first taste. Six checklists drawn from that framework the same questions our consultants ask in the first week of every engagement. Work through them honestly and you will already be ahead of 90% of the manufacturers in your category.

And when you are ready to do this properly with the full framework, our team, and the methodology that has delivered 38% productivity gains and inventory reductions from 90 days to 15 you know where to find us.

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Your six-checklist blueprint.

Every factory you've ever walked through was built twice once on paper and once in concrete. The cheap mistakes happen on paper.

01
The Pre-Design Reality Check
Align strategy, demand, and operational planning early.

02
Flow & Layout Checklist
Improve movement, flow, and space utilization efficiency.

03
Capacity, Manpower & Ramp-Up
Plan scalable production, workforce, and future growth.

04
Warehouse & Inventory Design
Optimize storage, inventory flow, and dispatch operations.

05
Safety, Visual Management & Ergonomics
Build safer, visible, and operator-friendly work environments.

06
Execution Readiness & Day-Zero Launch
Ensure smooth startup with complete operational preparedness.

BONUS — INSIDE THE GUIDE

The 60-Second Factory Readiness Self-Score

A10-point diagnostic. If your score under 7,you are about to over spend on your next plant and we can prove it to you in a single 30-minute call.

What our clients gained before opening day.

Lean Facility Design© engagements typically deliver these outcomes measured, not promised. The work happens on paper. The savings happen for the next 20 years.

38%
Higher output
Per person,
Per month

~80%
Improvement
Across Key Operating Parameters

90 → 15
Inventory days
From Raw Material
To Finished Goods

30%
Lower cost
Via Factory
Layout Design

36%
Faster throughput
And Reduced
Cycle Time

Day 0
Full efficiency
The Day
Production Starts

> ***You will spend the next twenty years living with the layout decisions you make in the next twenty weeks. Choose carefully.***
>
> — A LEAN FACILITY DESIGN© PRINCIPLE

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The Pre-Design Reality Check.

The success of a factory is decided long before construction begins. Poor planning at the pre-design stage often leads to higher project costs, inefficient layouts, operational bottlenecks, excess material movement, and expensive future modifications. Once the factory is built, correcting these inefficiencies becomes difficult, disruptive, and significantly more expensive. This makes the planning stage one of the most critical phases of any manufacturing project.

A strong pre-design reality check ensures that every important operational, business, and scalability factor is evaluated before layout finalization. Instead of designing a facility around assumptions or immediate production needs, the focus shifts toward building a factory that supports long-term efficiency, smoother material flow, higher productivity, and future expansion readiness.

At, our Lean Facility Design© (LFD) framework evaluates 27+ critical parameters covering flow, capacity, manpower, inventory, safety, automation readiness, utility planning, expansion capability, and operational efficiency. These parameters help align the factory layout with future demand, production goals, material movement, and long-term business strategy.

The framework helps identify hidden inefficiencies before implementation begins, reducing the risk of bottlenecks, poor space utilization, workflow imbalance, and operational instability after go-live. By addressing these factors during the planning stage itself, manufacturers can reduce costly redesigns, improve throughput, optimize investment, and build facilities that remain efficient, scalable, and future-ready from day one.

Flow & Layout Checklist.

A great layout is not a great-looking layout. It is a layout where material moves in one direction, people move the least, and machines see no idle waiting.

- **Material Flow Efficiency** – Ensures smooth and uninterrupted movement of material across operations with minimal delays and handling losses.
- **Layout Optimization** – Designs the factory around operational flow, productivity, and long-term efficiency instead of just fitting equipment into available space.
- **Space Utilization** – Maximizes the productive use of every square foot while maintaining flexibility, movement access, and scalability.
- **Machine-to-Machine Connectivity** – Improves synchronization between processes to reduce waiting time, interruptions, and manual dependency.
- **Bottleneck Identification** – Detects operational constraints early to improve throughput and prevent future production slowdowns.
- **Material Handling Distance Reduction** – Minimizes unnecessary movement to reduce manpower effort, handling cost, and operational fatigue.
- **WIP Movement Optimization** – Controls work-in-progress flow to reduce congestion, lead time, and excess inventory accumulation.
- **Throughput Optimization** – Enhances output stability by balancing machines, manpower, and process flow effectively.
- **Dispatch & Receiving Flow** – Streamlines inbound and outbound logistics movement for faster material handling and reduced congestion.
- **Future Expansion Readiness** – Ensures the layout can support future growth without major redesign or operational disruption.
- **AI & Automation Readiness** – Prepares the facility for digital manufacturing, automation integration, and intelligent operational monitoring from day one.

The Layout Efficiency Test

If a stranger walked onto your shop floor and could not trace the path of a single unit from raw material to dispatch in under sixty seconds, your layout is not finished. Lean Facility Design© engagements

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Capacity, Manpower & Ramp-Up.

Efficient growth is not achieved by adding more resources alone. It requires the right balance of capacity, manpower, workflows, and scalable systems to ensure operations can handle increasing demand without compromising productivity, quality, or operational stability. These focus areas are selected to help businesses build sustainable, agile, and future-ready operations.

- **Capacity Planning** – Aligns production capabilities with demand forecasts to avoid shortages, excess capacity, and operational inefficiencies while ensuring smoother production flow and better resource utilization.
- **Manpower Optimization** – Ensures the right workforce allocation across operations to improve productivity, reduce idle time, balance workloads, and enhance overall operational efficiency.
- **Cycle Time Analysis** – Identifies delays, process gaps, and non-value-added activities to improve production speed, reduce turnaround time, and achieve faster operational performance.
- **Standard Work Integration** – Establishes consistent operational methods and process standards to improve quality, reduce variation, increase efficiency, and simplify workforce training.
- **Ramp-Up Planning** – Supports smooth scaling during increased production demand by minimizing disruptions, improving coordination, and ensuring operational readiness during expansion phases.
- **Scalability Planning** – Builds flexible operational structures capable of supporting future business growth, market expansion, and changing production requirements without major operational disruptions.
- **Digital System Integration** – Connects operational processes through digital tools and data visibility to improve decision-making, tracking accuracy, operational control, and overall process efficiency.

Warehouse & Inventory Design.

Efficient warehouse and inventory design helps businesses reduce storage losses, improve material availability, optimize movement, and maintain faster operations. These focus areas are selected to create a streamlined, scalable, and cost-effective inventory management system that supports smooth production and supply chain performance.

- **Inventory Flow Design** – Create smooth and systematic inventory movement to reduce delays, avoid congestion, and improve material accessibility across warehouse and production operations.
- **Warehouse Planning** – Design organized warehouse structures that improve space usage, simplify operations, and support faster receiving, storage, and dispatch activities.
- **Storage Optimization** – Optimize storage methods and allocation to maximize available space, improve accessibility, and reduce unnecessary inventory handling efforts.
- **Inventory Turn Optimization** – Improve inventory rotation and stock movement to reduce excess holding costs, minimize dead stock, and maintain better inventory availability.
- **Utility & Infrastructure Planning** – Plan utilities and warehouse infrastructure effectively to support operational efficiency, safety standards, future expansion, and uninterrupted warehouse performance.

The 90-to-15 Story

Across multiple Lean Facility Design© engagements, clients have reduced inventory at various stages from 90 days down to 15 releasing significant working capital that funded growth instead of sitting on shelves. That capital was never lost. It was just trapped by a layout decision.

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Safety, Visual Management & Ergonomics

A safe, well-managed, and ergonomically designed workplace improves operational stability, reduces risk, enhances employee comfort, and supports smoother production flow. These focus areas are selected to create safer operations, improve visibility, simplify maintenance, and optimize long-term efficiency across the facility.

- **Safety & Compliance Planning** – Establishing workplace safety standards, risk control measures, and compliance systems to create a secure, regulation-ready, and accident-free operational environment.
- **Ergonomic Workstation Design** – Designing operator-friendly workstations that reduce physical strain, improve comfort, increase productivity, and support better working efficiency during daily operations.
- **Visual Management Integration** – Implementing clear visual indicators, displays, markings, and communication systems to improve process visibility, reduce confusion, and enable faster decision-making on the shop floor.
- **Maintenance Accessibility** – Planning equipment placement and layouts for easier maintenance access, reducing downtime, improving service efficiency, and supporting smoother operational continuity.
- **Energy Optimization** – Optimizing energy usage through efficient planning, utility management, and resource control to reduce operational costs and support sustainable manufacturing practices.

What you cannot see, you cannot improve

The single greatest predictor of how a plant will perform in Year 2 is whether its visual management was designed in from Day 1 or bolted on after problems emerged. Build the nervous system before you build the body.

Execution Readiness & Day-Zero Launch.

A factory's real performance begins on the day production starts. Even a well-designed facility can struggle if execution planning, operational readiness, and launch preparation are not aligned before go-live. Delays, workflow confusion, unstable output, manpower inefficiencies, and frequent operational disruptions during the initial phase often become long-term performance challenges.

Execution readiness ensures that the facility, systems, manpower, utilities, processes, and operational controls are fully prepared before production begins. The objective is not just to start operations, but to achieve stable, efficient, and controlled performance from day one.

At Faber Infinite Consulting, our Lean Facility Design© (LFD) framework focuses on preparing factories for a smooth and structured Day-Zero launch through detailed operational planning and readiness evaluation.

This includes validating layout execution, equipment readiness, manpower preparedness, workflow sequencing, material movement logic, maintenance planning, inventory readiness, utility stability, safety preparedness, and operational control systems before go-live. The framework also ensures that production ramp-up plans, performance milestones, escalation systems, and continuous improvement mechanisms are established early to avoid operational instability during the initial launch phase.

A structured Day-Zero launch reduces startup inefficiencies, minimizes operational disruptions, improves throughput stability, and helps teams achieve faster production maturity. Instead of spending months firefighting operational issues after launch, businesses can begin operations with stronger control, visibility, and process discipline from the very first shift.

The objective is simple ensure the factory performs efficiently from the day production begins, not months later.

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The 60-second factory readiness self-score.

Tick every box you can answer YES to honestly. Add up your score below.

1. We have value-stream-mapped our future-state operation, not just our current one. ☐ YES
2. Our layout is designed around material flow first not around the building shape. ☐ YES
3. We have planned capacity for Year 3 demand, not just opening-day demand. ☐ YES
4. Manpower planning is based on actual cycle times, not on intuition or industry averages. ☐ YES
5. Inventory zones are sized to a specific days-of-stock target. Warehouse space, receiving, and dispatch flows have been simulated. ☐ YES
6. Material handling distances between stations have been measured and minimised on paper. ☐ YES
7. Visual management standards are designed into the layout — not bolted on after go-live. ☐ YES
8. Safety and ergonomics were primary design constraints, not retrofit considerations. ☐ YES
9. We have a documented ramp-up plan with measurable performance milestones for the first 90 days. ☐ YES
10. We have defined digital data capture points to enable future AI-based monitoring, forecasting, and operational decision-making. ☐ YES

Your score, decoded:

8–10 You're in rare company. Talk to us about benchmarking your plant could be a case study.
5–7 You're on the right path, but blind spots remain. A diagnostic call will surface them quickly.
0–4 Stop. Talk to us before another rupee is committed to construction.

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READY FOR THE FULL FRAMEWORK?

Let's design your next factory before you build it.

Book a complimentary 30-minute Lean Facility Design© diagnostic with our consulting team. We'll review your project, identify the three highest-risk design decisions on your table right now, and tell you honestly whether you need us, or whether this guide is enough. No deck. No pitch. Just a conversation between people who design factories for a living and a leader who is about to build one.

Claim your free diagnostic

30 minutes • No obligation • With our consulting team

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Results referenced reflect representative client engagements across pharma, FMCG, auto components, solar, irrigation and engineering sectors.