TOP 5
MANUFACTURING DESIGN
TRENDS OF 2024

Sustainability, expansion to unused buildings, ergonomic safety, and technology will define the future of the manufacturing industry in 2024 and beyond.

Manufacturing facility designs are changing to tackle new challenges and seize opportunities.

From lofty ESG goals to automotive strikes and legislation changes, we expect manufacturing will see several new trends emerge. The industry is adapting quickly, focusing on creating spaces that improve efficiency, health, and productivity. However, planning for these changes is crucial—it's not just about keeping up, but about preparing to innovate and grow. Good design impacts profits, leading to a push for greener, people-friendly, and tech-smart buildings. A readiness to change and take on new design ideas will set top manufacturing players apart in years ahead.

1. THE RISE OF BIOPHILIC DESIGN IN MANUFACTURING

Biophilic design, a term gaining traction in manufacturing, is rooted in 'biophilia,' which means 'the love of living things.' This design philosophy integrates natural elements into the built environment, aiming to satisfy our innate need to connect with nature.

Biophilic design is becoming increasingly relevant in manufacturing facilities where workers often spend long hours indoors. It's not just about aesthetics but creating environments that actively support employee well-being.

The integration of biophilic elements, such as natural lighting, indoor plants, and nature-inspired motifs, is on the rise. These elements are not decorations; they are strategic investments in the health and efficiency of the workforce. A study by the University of Illinois and SUNY Upstate Medical University shows natural lighting can lead to employees sleeping an average of 37 minutes longer, and workers exposed to natural light scored 42% higher on cognitive tests than those under artificial lighting.

Moreover, biophilic design can improve healing, reduce aggression, and enhance mood, which are significant benefits in any work setting. The presence of natural materials, the cleansing quality of indoor plants, and access to outdoor spaces are predicted to become more prevalent in manufacturing design. These features create a healthier workforce and contribute to a more productive and focused one. As we look towards 2024, expect the manufacturing industry to increasingly adopt biophilic principles, recognizing that a connection to nature can translate into tangible business benefits.

2. MAKING SUSTAINABLE PRACTICES STANDARD

Sustainability is no longer a fringe concept in manufacturing design; it is becoming a fundamental standard. Manufacturing facilities will increasingly integrate sustainable practices into their core operations. The dual benefits of operational efficiency and enhanced employee health drive this shift.

Renewable materials and energy-efficient designs are set to become commonplace as the industry recognizes their long-term cost benefits and impact on reducing the carbon footprint. Using sustainable resources not only conserves the environment but also signals a company's commitment to responsible practices, which is increasingly valued by consumers and employees alike.

Sustainable design contributes to a healthier workplace by improving air quality and reducing exposure to harmful materials. This focus on health is not just about compliance with safety standards; it's about creating a work environment that actively promotes the well-being of those who occupy it.

As we look to the future, sustainability in manufacturing design is not just a trend—it's a transformation that aligns economic success with environmental and social responsibility. It may take longer than 2024 to accomplish, but we'll see a stronger push to start being more sustainable in 2024 and beyond.

3. EXPANSION TO UNUSED SPACES

Between the Inflation Reduction Act and recent automobile strikes, a rise in nearshoring is imminent. To accommodate for the increase in onshore facilities, a surplus of older and unused buildings may be transitioned into manufacturing facilities. We've already seen this happen in a few industries, such as retail buildings being turned into clinical spaces. Now, the trend is ready to break into the manufacturing industry.

However, these older buildings may require a few upgrades and updates to be up to code with manufacturing space requirements. Additionally, they'll likely need the updates mentioned in this article to accommodate today's manufacturing facility amenities and expectations of employees.

4. INNOVATIONS IN ERGONOMICS AND SAFETY

The manufacturing industry is on the cusp of a new era where ergonomic design and safety are paramount. Advancements in workspace design are both aesthetic and aim to ensure every aspect of the work environment meets the workforce's needs. The strategic layout of facilities, equipment, and workstations is being reimagined to reduce strain and prevent injuries, enhancing overall worker well-being.

Safety is also taking center stage, focusing on reducing noise levels and other environmental stressors that can lead to distraction and accidents. Innovations in materials and construction techniques are expected to contribute to quieter, more secure work environments. These improvements are not incremental; they represent a fundamental shift in how manufacturers approach the health and safety of their employees.

The integration of ergonomic and safety considerations in the design of manufacturing spaces will become standard practice. This proactive approach promotes compliance and creates environments where employees can perform at their best, free from the risk of harm and the burden of injury.

5: TECHNOLOGY-DRIVEN DESIGN SOLUTIONS

Technology integration into manufacturing design will increase in 2024, enhancing functionality and operational agility. Interactive technologies and intelligent systems will not just be add-ons, but foundational elements of manufacturing environments. These integrations will streamline processes from inventory management to quality control, ensuring precision and efficiency.

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Smart systems, equipped with sensors and interconnected networks, will enable real-time monitoring and adjustments, reducing downtime and predicting maintenance needs before they become critical. The role of technology in design goes beyond machinery; it extends to creating an environment that is responsive to both the human and production needs of the manufacturing sector. As a result, technology-driven design solutions will become standard, transforming manufacturing facilities into intelligent, adaptive spaces that keep pace with the ever-evolving industry demands.

START SMALL, WITH ADAPTABILITY AND FORESIGHT

Biophilic elements, sustainability, expansion to unused buildings, ergonomic safety, and technology will define the future of the manufacturing industry in 2024 and beyond. Embracing these trends with adaptability and foresight is crucial for manufacturers aiming to thrive. Companies can feel overwhelmed with where to begin, but partnering with an experienced A/E firm can help them start small and build toward their goals.

We're here to help.

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