

CASE STUDY: A BIOPHILIC VISION BROUGHT TO LIFE

MODERNA HEADQUARTERS

2025





Moderna's new global headquarters at 325 Binney Street in Cambridge, Massachusetts, is a cutting-edge facility designed to foster innovation, collaboration, and employee well-being. Central to the design is a grand atrium that spans six floors, filled with natural light and featuring a striking crystalline prism wall and cascading "veggie stair." This expansive space serves as a hub for collaboration, offering various research labs, wellness rooms, and diverse collaboration areas that support both team innovation and individual productivity.

As part of this visionary project, Mark Richey Woodworking was tasked with creating custom wood planters to integrate biophilic design elements throughout the headquarters. To ensure the planters' long-term durability and waterproofing, Planters Unlimited was brought in to supply over 400 custom fiberglass planter liners. This case study delves into how these custom liners contributed to the success of the project, supporting Moderna's biophilic design vision while also showcasing our manufacturing capabilities in delivering tailored solutions for complex architectural needs.

The Challenge: Integrating Biophilic Design with Structural Practicality

Moderna sought to create an environment that embodied biophilic design principles—connecting employees with nature to promote well-being and productivity. This required extensive use of greenery throughout the headquarters, particularly within the atrium’s striking “veggie stair,” a cascading display of live plants ascending the 6th floor tall structure. However, the challenge lay in finding a solution that allowed for long-term maintenance and waterproofing of the wood planters.

- Mark Richey Woodworking required a manufacturer capable of producing custom fiberglass liners tailored to a wide range of planter dimensions, ensuring seamless integration with the overall design. The liners needed to accommodate planters of all different shapes, sizes, and depths, supporting live plants, incorporating irrigation and drainage systems, and being durable enough for direct wall mounting. This complex requirement called for precise customization to ensure the liners maintained long-lasting performance in a high-traffic, long-term installation.



The Solution: Custom Fiberglass Planter Liners by Planters Unlimited

Planters Unlimited collaborated closely with Mark Richey Woodworking to design, fabricate, and deliver a total of 446 fiberglass planter liners. These liners were essential in achieving Moderna's biophilic vision while ensuring the longevity of the planters. Our approach included:

- **Precision Engineering:** Custom fabrication of liners in triangular and trapezoidal shapes with unique angles ranging in depths from 10" to 18". Each liner was tailored to fit the exact specifications of the wooden planters, ensuring a snug and seamless installation.
- **Reinforced Fiberglass:** A reinforced fiberglass sheet was used to enhance durability, allowing direct mounting to the walls without additional structural reinforcements. The reinforced edges provided added strength, ensuring the liners could withstand the weight of soil, plants, and water without warping or compromising structural integrity.

Liners Floating in the Wood Structure: The liners were not supported on the bottom but were bolted to the back wall. The intent was to have them secured to the back rather than resting all the way down. These were hanging planter liners.

Building Sequence for the Liners: The liners were built first. Precision was crucial because we had to drop them into existing wood planters. These were pre-fabricated with very specific dimensions.

- **Integrated Irrigation & Drainage:** The design featured an automated drip irrigation system to sustain the living plant vision, ensuring water flowed seamlessly through the entire 200-foot installation. To protect the custom wood planters, our liners were engineered to be watertight, preventing leaks that could cause damage. Strategically placed drainage holes allowed excess water to cascade downward through the interlocked planters, efficiently channeling runoff to a central drainage point.
- **Waterproofing & Aesthetic Considerations:** To ensure both durability and aesthetics, each liner was finished with a smooth fiberglass sheet that required no priming or painting, providing a sleek, seamless look that complemented the natural beauty of the wooden planters. Designed for a precise fit, the liners seamlessly integrated into the wood planters, preventing water damage and protecting the structural integrity of the wood. This meticulous design not only enhanced longevity but also eliminated gaps that could lead to moisture damage over time, ensuring a flawless and enduring installation.

Implementation Strategies: Overcoming Challenges in Durability, Functionality, and Customization

The implementation of this project focused on overcoming the challenges of durability, functionality, and ease of installation while meeting the client's specific needs. The key strategies involved were:

- **Enhanced Structural Design:** To ensure durability and simplify installation, we opted for reinforced fiberglass sheets typically used for liners or planters. This approach allowed the liners to be directly mounted to the walls. By drilling through the back and bolting them securely, we eliminated the need for additional brackets, making the installation process both streamlined and robust. This custom solution ensured the planters' integrity remained intact and provided a seamless, hassle-free installation.
- **Live Plant Integration:** Moderna specifically requested live greenery to maintain their design approach. To support this preference, we took additional steps to integrate waterproofing measures. These safeguards were designed to protect the surrounding structures from potential moisture exposure, ensuring the long-term viability of the live plants while preserving the structural integrity of the walls.
- **Customization of Liners:** With a scope exceeding 400 planters, each required a custom size and depth to meet the specific spatial constraints of the project. This led to the creation of over 400 customized liners, each meticulously tailored to the unique requirements of the design. By ensuring every liner was customized to precise specifications, we were able to guarantee a seamless installation and optimal functionality, playing a key role in the overall aesthetic and practical success of the project.

Results: A Customized, High-Precision Solution

The successful execution of this project demonstrated our commitment to delivering a highly customized, precision-engineered product. Key outcomes include:

- **Enhanced Aesthetic & Functionality:** The seamless integration of our fiberglass liners with custom wood planters provided the necessary durability while supporting the lush, natural ambiance envisioned by the client. Our ability to meet these design needs with precision was central to the project's success.
- **Long-Term Durability:** Through meticulous waterproofing measures, we not only extended the lifespan of the wood planters but also ensured that the installation would require minimal maintenance, providing long-term value for the client.



Overall Success of the Atrium

The atrium at Moderna's global headquarters stands as a testament to exceptional design, sustainability, and innovation. Recognized with multiple prestigious awards, including IIDA's "Best in Show" and Interior Design Magazine's "Best of Year" honor, the project showcases a visionary approach to collaborative and biophilic spaces.

Planters Unlimited played a pivotal role in bringing this vision to life, providing custom fiberglass liners that seamlessly integrated lush greenery into the cutting-edge workspace. Through innovative engineering, meticulous craftsmanship, and seamless collaboration, we ensured that our solutions met the project's exacting standards while enhancing both form and function. As companies continue to embrace biophilic design principles, our expertise in custom planter solutions remains at the forefront of creating sustainable, nature-infused environments



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