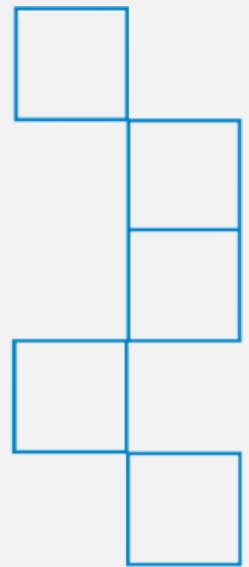




DESIGNING INSPIRING HUMAN-CENTRIC LABS

Using Wood Elements to Create
Inviting Laboratory Spaces

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INTRODUCTION:

THE GROWING ROLE OF AESTHETICS IN HIGH-PERFORMANCE LABS

When you think of a laboratory, you might picture a sterile, impersonal space full of metal surfaces and glaring fluorescent lighting. However, that is changing. While safety and cleanliness will always be foundational, today's lab environments can also be visually engaging and designed to support the people who work within them.

Current design trends and research show that a person's physical environment has a real impact on how they feel and perform at work. Studies demonstrate that factors such as natural materials, windows, and overall spatial quality can significantly influence stress levels, mood, creativity, and cognitive performance (Douglas et al., 2022). These findings align with broader workplace research indicating that well designed, comfortable settings enhance employee well being, satisfaction, and productivity (Abdul Hamed et al., 2023).

In laboratory settings specifically, aesthetic qualities such as color, lighting, and visual appeal have been shown to reduce stress and improve motivation, contributing to a more pleasant and productive work experience for researchers (Macbick, n.d.). Together, this evidence supports the idea that aesthetics are not merely decorative but a meaningful component of high-performing laboratory design, positively impacting the scientists, technicians, and students who spend long hours in these spaces.

To create a welcoming environment, select materials for more than just their functionality. Wood is an impactful addition; it adds warmth and texture and brings nature into the space without sacrificing durability, sanitation, or compliance with lab standards. Used alongside steel and other lab-grade materials, wood helps soften the clinical feel of traditional labs.

A popular approach is to use blended materials to enhance visual interest and overall aesthetic quality. Steel benches paired with wood accents, wood shelving integrated into metal systems, or mobile casework finished with wood veneers all contribute to environments that feel more inviting.



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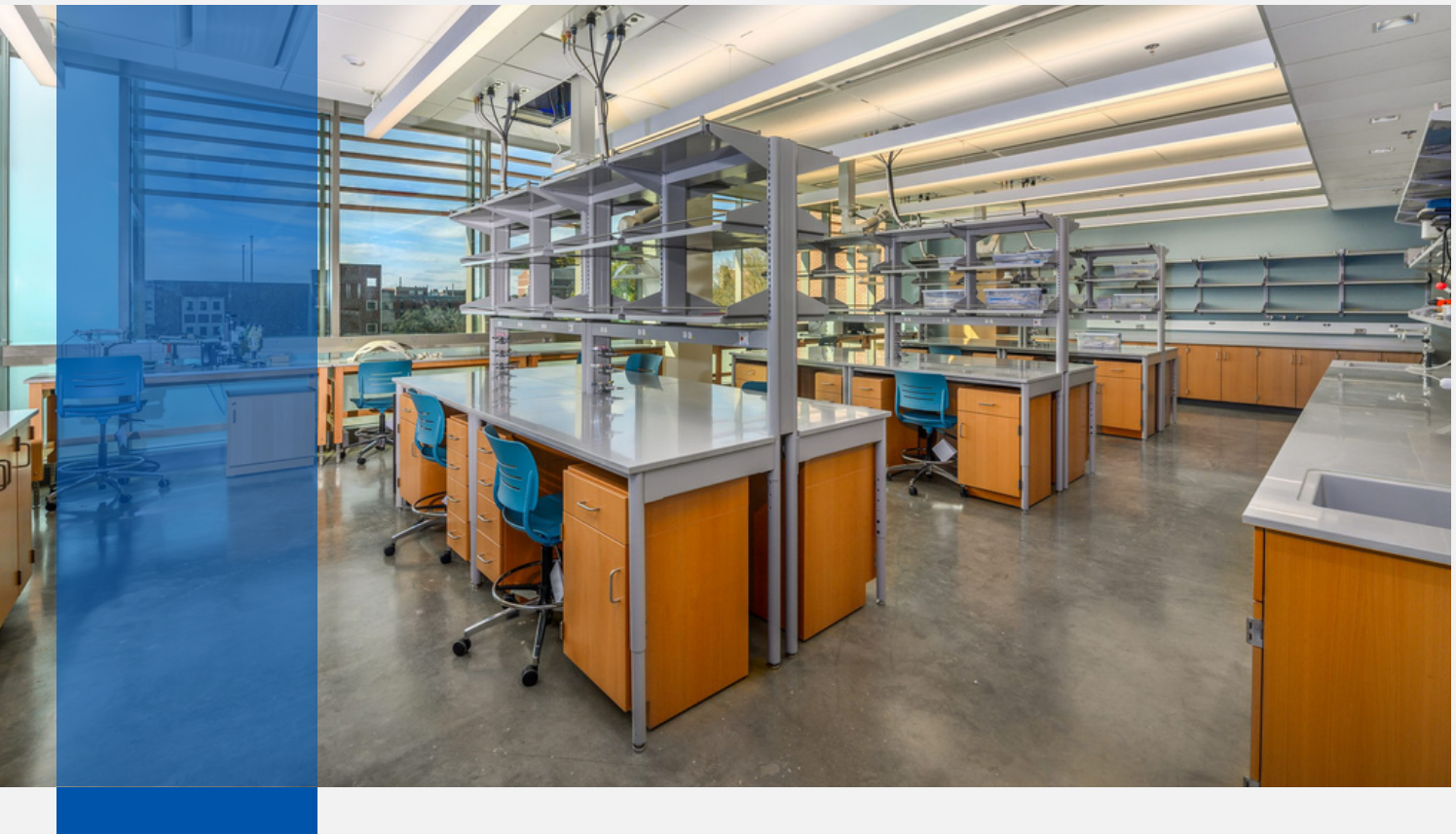
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WHY DESIGNING AN INVITING SPACE MATTERS

Recent findings in environmental psychology and biophilic design show that natural wood finishes trigger measurable physiological benefits, including reduced cortisol levels, improved cognitive focus, and higher perceived well-being among employees (Parklex Prodema, 2025). These benefits are especially valuable in environments like labs that demand precision, focus, and mental endurance. This research further supports the idea that material choices do more than satisfy technical requirements; they influence how people feel, work, and interact within a space.

Additionally, natural textures help counter the visual fatigue that often comes with technical spaces. Variations in wood grain and tone provide relief and contrast against metal and glass surfaces. They can help labs feel calmer, more approachable, and create an inspiring space.

When laboratories are inviting, they become environments that spark engagement, support innovation, foster connection, and make daily work more enjoyable. They also play an important role in attracting and retaining top talent. Today's professionals expect workplaces that reflect the value of their work, and well-designed labs send a clear message of investment, pride, and purpose.



SELECTING APPROPRIATE WOOD TYPES FOR LABORATORY USE

Technical requirements are foundational in laboratory design, but they can be met without sacrificing an inviting workspace. Used intentionally, wood can help transform labs into an environment not just designed for equipment, but for the people in them. Whether introduced through veneers, casework, tabletops, shelves, or fronts on steel systems, wood adds personality and visual appeal without compromising performance.

SPECIES:

Lab planners and architects can use materials as their creative palette. Within wood alone, there is a wide range of options available. Some popular species include:

- **Oak:** Strong, traditional, and visually distinctive with pronounced grain
- **Maple:** Timeless warmth, durable, smooth-grained, and easy to clean
- **Beech:** Uniform, smooth, and warm-toned with excellent durability
- **Bamboo:** Offers a clean, modern look with sustainability associations
- **Birch:** Light, minimal, and understated with a fine grain
- **Ash:** Light, airy, and subtly patterned with a contemporary feel

Using different species and contrasting hard and soft woods creates a distinct look often found in higher-end research and academic facilities.

DURABILITY & USE ZONES:

One of the most common concerns is whether wood can meet the durability and chemical resistance requirements of a laboratory. While certain high-risk wet or chemical areas still require steel or epoxy resin solutions, the belief that wood “won’t hold up” is often incorrect.

SEFA standards establish performance criteria for laboratory casework, including wood casework under SEFA 8W, which evaluates durability, structural integrity, and suitability for lab environments (BQSCertification, n.d.). SEFA recognized testing, including 49 chemical resistance evaluations and performance-based structural tests, confirms that properly finished hardwood products can meet the durability and chemical resistance requirements expected in modern laboratories (Micom Laboratories, n.d.). Independent SEFA 8 testing further shows that many hardwoods, such as maple, oak, and beech, perform well in appropriate lab applications when designed and finished according to SEFA’s recommended practices. Maple, in particular, has a long history in laboratory furniture due to its strength, smooth grain, and ease of cleaning, making it a reliable material in properly designed lab environments.



ENGINEERED OPTIONS & VENEERS:

Engineered wood products and wood-faced steel casework further expand design possibilities. These options provide the visual warmth of wood with increased stability, moisture resistance, and long-term performance. These hybrid solutions balance aesthetic goals with operational requirements.

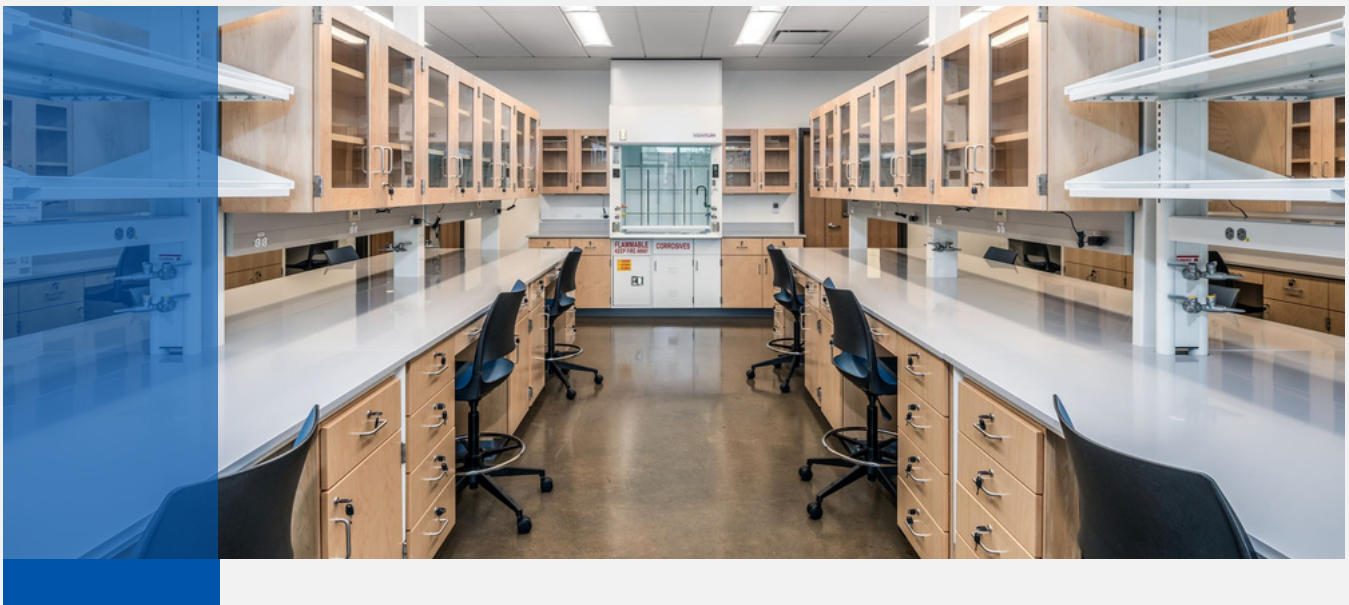
Beyond casework, engineered structural wood systems, such as mass timber, are increasingly used in lab-adjacent spaces and exposed architectural elements. Mass timber is manufactured by bonding layers of wood into large, strong structural components designed to perform comparably to steel or concrete while weighing significantly less. When properly engineered, these systems meet structural integrity and fire-resistance requirements, support faster construction, and contribute to sustainability goals through renewable, carbon-storing materials.

Together, engineered wood products and mass timber make it possible to create environments that are efficient, compliant, and visually connected to nature.

FINISHES:

Finishes are critical to the successful use of wood in laboratories. Protective coatings, including polyurethane, epoxy, and UV-cured finishes, create sealed, non-porous surfaces that resist moisture, staining, and microbial growth. Matte or satin finishes reduce glare from lighting, and light to medium wood tones help brighten spaces without feeling sterile.

With the right species, construction, and finish, wood can meet the cleanliness, durability, and performance standards required in laboratories.



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DESIGN PRINCIPLES: BALANCING DESIGN, SAFETY, & PERFORMANCE GOALS

Inspiring laboratory environments strike a balance between technical performance and user experience. Pay attention to these key principles when designing your next lab.

Mix materials by function: Use steel for structural elements and high-exposure areas. Integrate wood into casework, shelving, furniture, collaboration areas, and wall accents. Strategic material combinations show that durability and warmth can coexist. Steel provides the strength and sterility that laboratories require, while wood adds texture, tone, and visual comfort, helping people feel more engaged and at ease.

Durability details: Select impact-resistant edges, sealed joints, protected corners, and finishes compatible with cleaning protocols.

Zone intentionally: Ensure that chemical handling areas meet safety requirements and use epoxy resin or stainless steel as needed. Use wood in adjacent or low-risk zones to deliver warmth without compromise.

Other considerations: Prioritize natural daylight and views to elevate moods and reduce the closed-in feeling common in labs. You can also consider layered lighting that blends task, ambient, and warm tone fixtures to complement natural light. Incorporating sound-absorbing materials can minimize noise and distraction. Keep ergonomics and natural movement in mind when choosing bench heights and spacing workstations. Finally, further strengthen the connection to nature by integrating biophilic elements, such as plants, organic textures, and accent walls in colors found in nature, to soften the environment and foster a calm, engaging workspace.

Layering materials with intention and combining engineered strength with natural warmth allows labs to meet safety and performance standards while creating spaces that feel expressive, purposeful, and designed to support the people who drive discovery.



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SUSTAINABILITY

Sustainability has become a core consideration in laboratory design, and responsibly sourced wood plays an important role in meeting both environmental and occupant-health goals. As a renewable material with a lower carbon footprint than many synthetic alternatives, wood supports green building standards while helping create healthier indoor environments. Some sustainability considerations include:

Materials & Certifications

Consider FSC-certified wood, low-VOC finishes, and formaldehyde-compliant cores to support better indoor air quality, an important factor in spaces where people spend long hours each day.

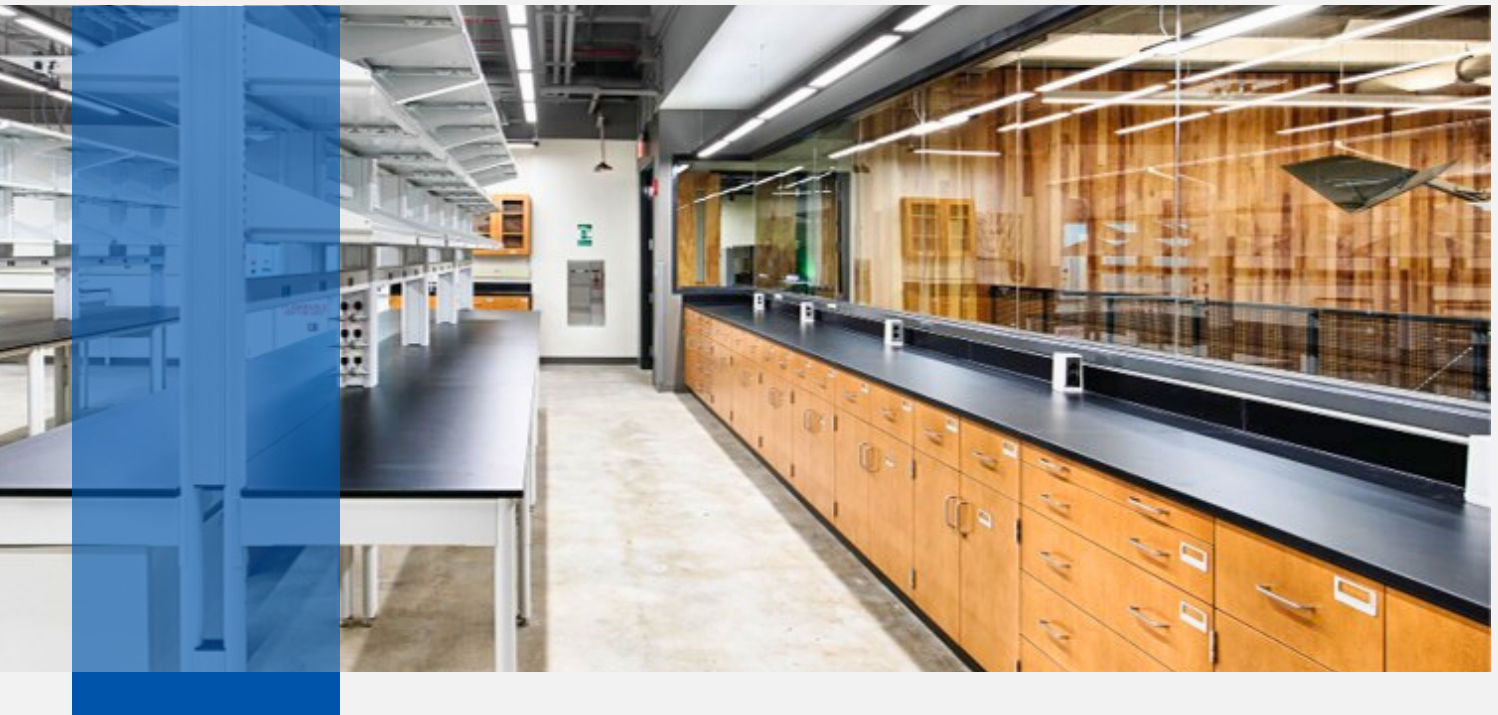
Longevity & Adaptability

Durable wood products, modular casework, and wood fronts extend service life, reduce maintenance, and minimize waste. All key factors for research, education, and healthcare facilities focused on long-term performance and cost control.

Safety & Compliance

Sustainable strategies must align with strict safety and compliance requirements. In high-exposure areas, use chemical-resistant finishes and epoxy worktops for direct contact surfaces. Ensure everything meets all codes, guidelines, and directives for your location.

When sourced responsibly, wood contributes to sustainable lab design without compromising safety, performance, or regulatory compliance.



PROCUREMENT & PARTNERING

Selecting the right supplier is key to creating laboratory environments that perform as intended. Ideal partners have in-house manufacturing, ensuring consistent quality, tight process control, and quick issue resolution. They also ensure clear communication throughout the design, fabrication, and inspection process, supported by on-site engineering and product management. A great supplier respects both the original design and the project schedule.

Experienced suppliers with dedicated quality control teams understand the unique demands of laboratories. Their expertise ensures that materials and finishes are appropriate for the application, durable enough for daily use, and built to perform reliably over time. Strong supplier partnerships contribute to long-term operational success.



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CONCLUSION

Laboratory design is no longer just about performance; it's about experience. The look and feel of a lab has become a strategic advantage, positively influencing how people feel, collaborate, and perform. The use of wood and natural materials brings warmth and character into labs, while still meeting lab requirements for durability and safety.

By carefully selecting wood species, applying appropriate finishes, and pairing natural materials with glass, steel, and solid surfaces, architects and planners can create laboratories that feel cutting edge, enable scientific excellence, and elevate the experience of the people who work in them.

Ultimately, a lab can be both high-performing and welcoming. These are not competing priorities, in fact, they are mutually reinforcing.

If you're considering integrating wood elements into your next laboratory project, partnering with an experienced manufacturer ensures your design vision aligns seamlessly with performance, safety, and compliance standards.



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SCHEDULE A VISIT

Ready to explore how wood elements can transform your lab? Schedule a tour of Kewaunee's manufacturing facility or connect with your local dealer to explore how our team can help you create the lab you envision while meeting every specification.

Schedule a visit: Marketing@Kewaunee.com



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APPENDIX

Core Wood Species

Widely used, durable, and familiar in design and furniture.

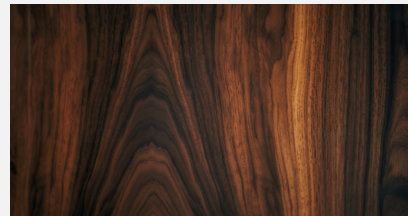
Maple



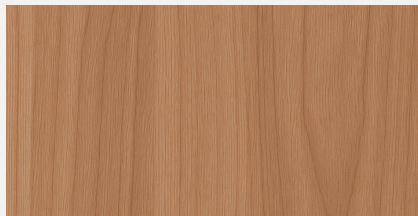
Beech



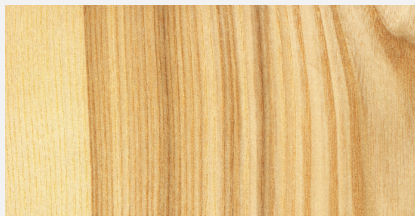
Walnut



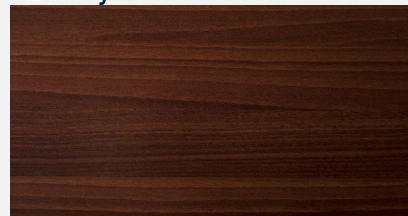
Oak



Ash



Cherry



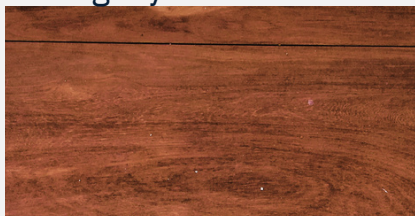
Exotic Wood Species

Offer distinctive looks, richer tones, or unique grain characteristics.

Teak



Mahogany



Zebrawood



Pairing Wood & Steel

Add wood veneers to casework for a mixed material look.



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