INDUSTRY SPOTLIGHT

Focus on Modular Construction

Exploring Customization, Versatility and Innovation in Modular Construction

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Modular buildings can be tailored to meet a customer's unique needs for building expansion. Here, OECM's supplier partners share examples of flexible, versatile and customizable modular building designs and innovative applications in a variety of settings:

Customization in Modular Buildings

Flexibility in Design and Application

Modular construction offers remarkable flexibility, catering to various needs, from classrooms and hospitals to housing and administrative spaces. Early design engagement is crucial to assess compatibility with project requirements, site conditions, and logistical challenges, ensuring smoother execution and maximizing benefits.

NRB Modular: 4-Storey Multifamily Housing

AMB Modular: Modular Classroom Building

NRB Modular: SCFS Agency Office Building

Customization Options

Modular buildings can be tailored with specialized equipment, wheelchair accessibility, and multi-unit configurations. Customizable prefab structures facilitate the seamless integration of architectural features, ensuring functional and comfortable spaces across various industries.

AMB Modular: Access Ramp

AMB Modular: Connecting Corridor

AMB Modular: Custom Staircase

Quick Installation and Adaptability

Modular construction allows rapid installation, minimal disruption, and easy relocation if needed. Standardized module sizes enable swift assembly, making them ideal for urgent expansions. Pre-assembled structures reduce setup time and suit diverse applications like data centers and equipment housing.

Durability and Weather Resistance

Engineered for durability, modular buildings withstand harsh weather and serve as temporary or permanent housing, even in remote or vulnerable communities.

Compliance with Regulations

Precise planning and prefabrication ensure that modular buildings meet regulatory standards and are suitable for their intended use.

Versatile Applications

Within the **Education Sector**, modular buildings offer tailored spaces and accessibility features for classrooms, labs, and offices. They support collaborative learning environments and incorporate health and wellness facilities and can be easily modified or expanded over time to accommodate changing needs.

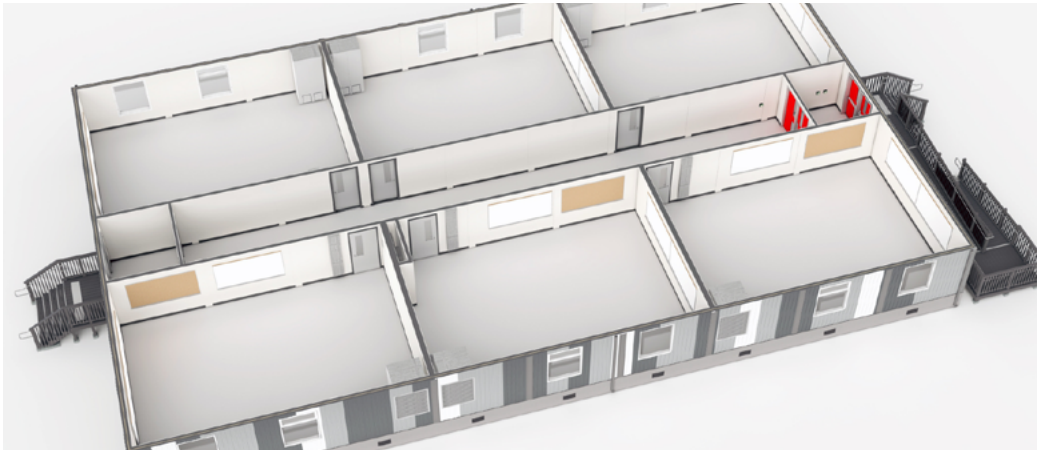
NRB Modular: Cafeteria Additions

AMB Modular: Student Dorms - Drawings

AMB Modular: Multi-Purpose Room

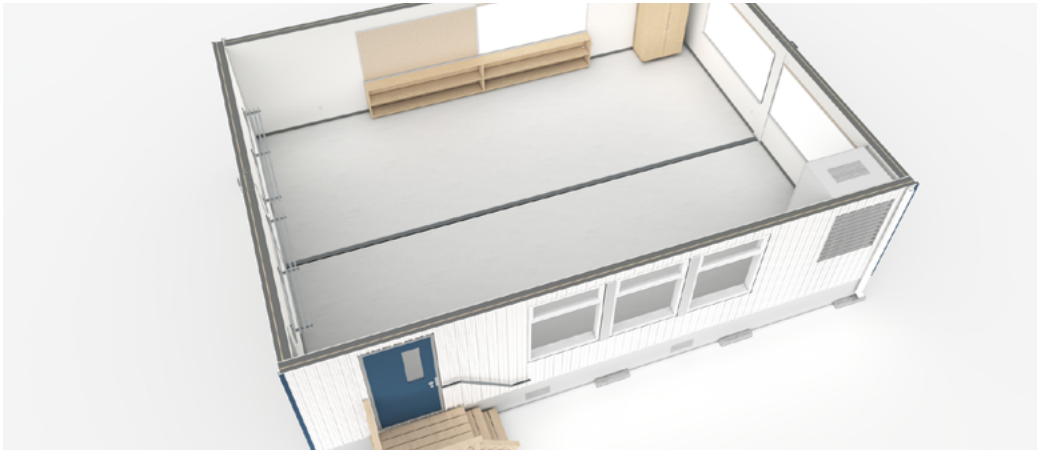
Portable classrooms provide specialized spaces such as art and music rooms with features like natural lighting, soundproofing, and instrument storage. They offer turnkey construction options, including bedding and kitchen equipment, and their multi-purpose design allows for easy reconfiguration for different uses. These classrooms are adaptable and convenient, catering to diverse educational requirements while maintaining a focus on functionality and comfort.

Fero International: 15-Classroom Portapak - Outside



Fero International: 6-Classroom Portapak - Design Drawing

Fero International: Single Classroom - Outside



Fero International: Single Classroom - Inside Design Drawing

Across the **Broader Public Sector**, modular solutions provide crucial amenities for affordable multifamily housing and temporary housing, addressing homelessness with relocatable buildings designed for future repurposing.

NRB Modular: City of Toronto Supportive Housing

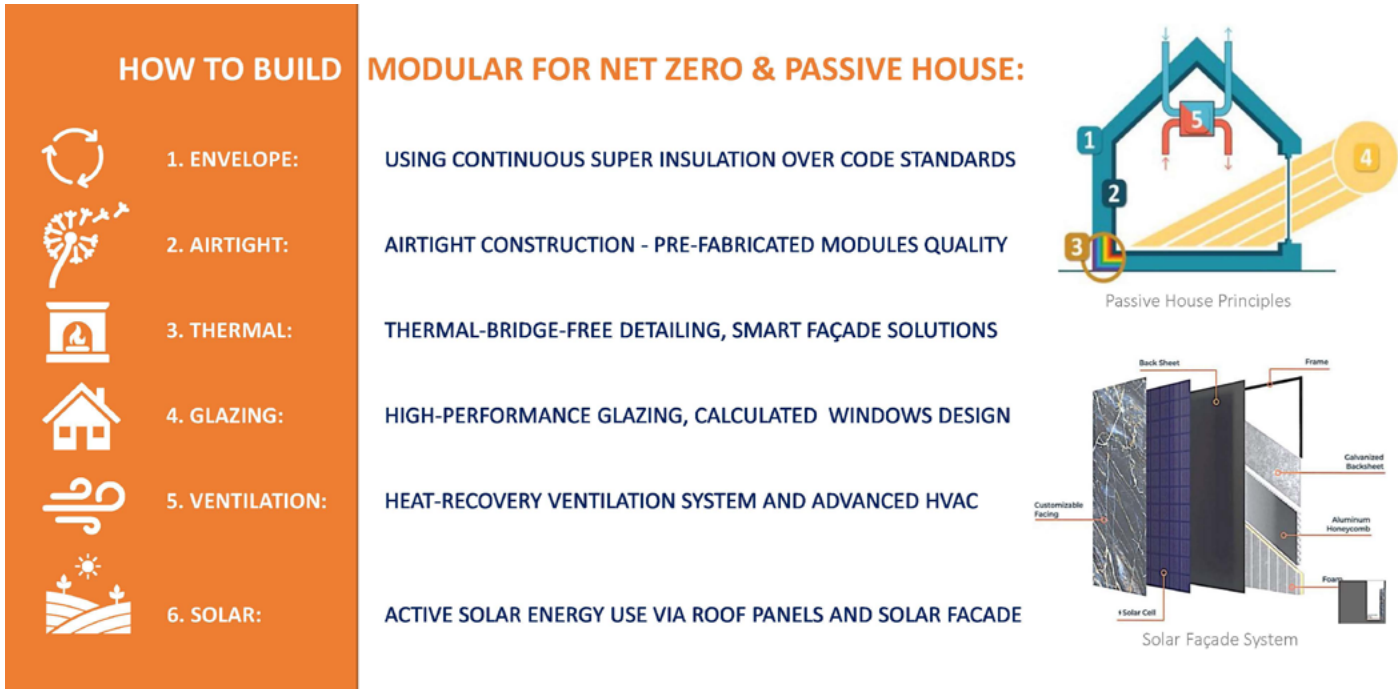
BECC Modular: Modular Housing - Inside

Innovative Design Elements and Trends

Green Building and Sustainability

Across all sectors, the demand for green building materials and practices, such as the use of Passive House designs and Net Zero buildings, and sustainability measures to achieve high energy ratings and reduce waste, is rapidly growing.

OECM's supplier partner, *BECC Modular*, illustrates how they incorporate standards for sustainability into their modular buildings.



BECC Modular: Net Zero and Passive House

Other Innovations

- Virtual and augmented reality integration and interactive digital displays enhance experiential learning.
- Flexible furniture solutions support diverse learning styles and group work.
- Biophilic design integrates nature elements, enhancing well-being.
- Matching cladding and interior finishes ensure seamless integration with existing buildings.

Healthcare Infrastructure Applications

Modular buildings in the healthcare sector include features for infection control, serviceability, scalability, environmental control, and advanced technology integration.

- **Infection Control and Air Quality:** Infection control via pressurization, decentralized HVAC with HEPA, and lab HVAC
- **Serviceability and Maintenance:** Easy disinfection with medical-grade control
- **Scalability and Flexibility:** Bed-by-bed customization, modular lab sizes, adaptable for various purposes
- **Environmental Control:** With temperature control, and sound-and-thermal-insulated wall panels
- **Technology and Healing Environment:** Cloud-based remote monitoring; healing-focused lighting

OECM's supplier partner, *Fero International Inc.*, demonstrates their innovative approach to modular infrastructure in a healthcare setting in this exciting 3D Tour: *https://ferointl.com/healthcare/hospitals#3D-tour*

Seamless Integration with Existing Structures

Modular buildings integrate with existing infrastructure using precision cutting techniques, ensuring continuity in aesthetics and functionality. Challenges include matching external finishes, aligning floor levels, and integrating MEP systems. Structural support considerations are critical, especially for upper-level modules.

Smart Building Features

Smart building features contribute to enhanced comfort, significant and sustained energy savings, and improved operational efficiency, making them highly beneficial for customers seeking advanced building solutions.

Additional smart building features include:

- Energy management systems that optimize heating, cooling, and lighting, reducing costs and environmental impact.
- Building Automation Systems (BAS) that enable remote control and flexibility.
- Power over Ethernet (PoE) that expands building functionality with cost savings and energy efficiency.
- Access control, security systems, and emergency communications to ensure safety and customization.
- Automated maintenance alerts for HVAC, plumbing, and electrical systems that contribute to preventative maintenance, streamlining facility management and reducing downtime.
- High-speed internet and wireless connectivity to support educational and professional activities, enhancing productivity.

If you have any questions about Modular Construction support and resources available through OECM agreements, please contact OECM's Customer Support team at:
OECM Customer Support | 1-844-OECM-900 (1-844-632-6900)