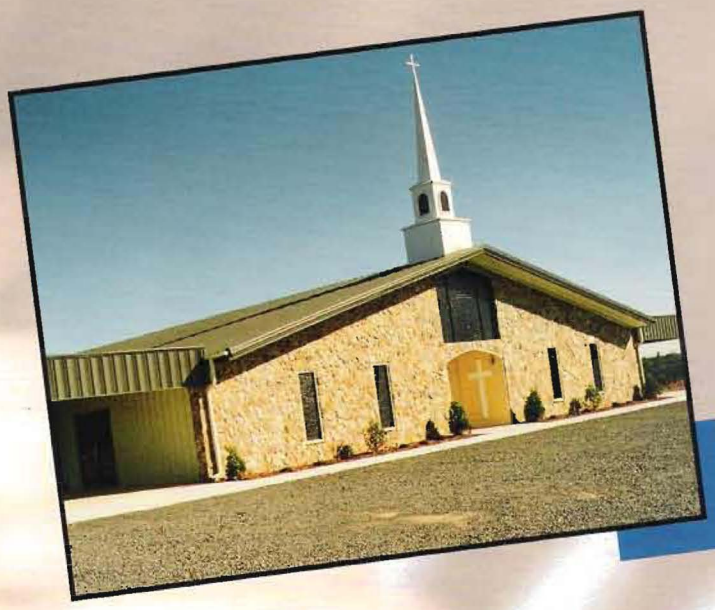
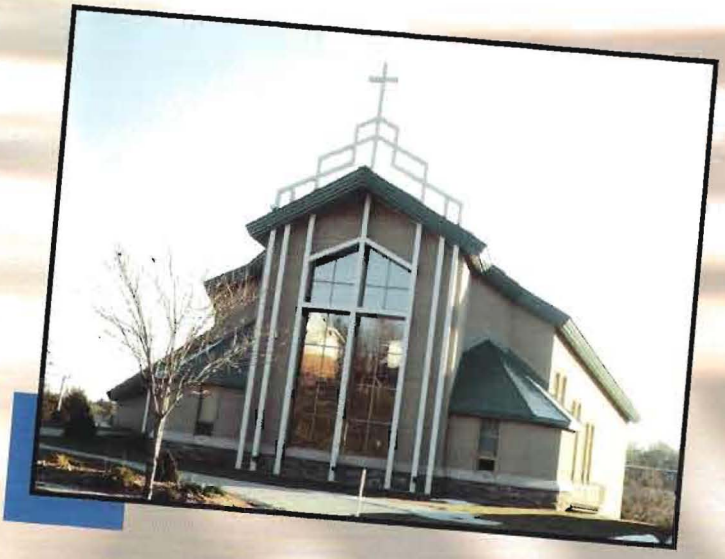
Solutions

Institutional Buildings





Metal Building Manufacturers Association

Applications

- Educational Institutions
- Health Care Facilities
- Churches
- Recreational Facilities
- Prisons
- Government Facilities

Meeting Tomorrow's Needs

Anyone responsible for planning or building a school, church, health care facility or other institutional building is interested primarily in economy and efficiency. Cost and speed of construction are almost always paramount.. So how do you produce a building that meets tight budget restrictions and often an equally tight completion deadline? The answer is metal building systems . . . a construction method that has brought to the industry a new dimension in advanced technology.

The metal building systems approach permits the design professional to concentrate on improving the form and function of the building while state-of-the-art computer technology creates the structural design. Metal building systems are more adaptable to computer-aided design than other types of construction because

they utilize standard engineered sections for customized applications.

Little wonder then that metal building systems have shown significant growth in institutional-type applications. Use of metal building systems in education-related facilities has increased significantly in recent years. This trend promises to continue as the industry expands its technological capabilities.

Integrated Process

A metal building system is a series of integrated, computer-designed, factory-fabricated structural, roof and exterior wall systems used primarily in low rise, non-residential construction. These systems are fully integrated and customized to meet the specific requirements of the building owner, and shipped to the jobsite ready for assembly and erection by a local builder/contractor. This provides single-source responsibility and facilitates on-time delivery of the finished product.

Owing to significant improvements in materials, engineering and fabrication technology, metal building systems represent the fastest-growing method of construction in the industry.

The design latitude and wide range of possible architectural treatments have also contributed to their popularity. Metal buildings can be simple and basic or can be detailed with sweeping vistas of glass or dramatic overhangs. They can also accommodate a multitude of wall and fascia treatments.

Functionally, metal building systems adapt well to all types of educational environments or wherever a wide, clear span structure is required. This includes auditoriums, recreational buildings, churches and other institutional buildings.

Advantages and Benefits

Metal building systems offer a number of competitive advantages over traditional forms of construction. They generally cost less to build . . . are completed in about two-thirds the time . . . offer maximum design flexibility . . . can significantly reduce heating and cooling costs and . . . are uniquely suited to future expansion.

Expansion capability is particularly important in school construction or health care facilities where expansion is often necessary. A metal building system can be enlarged simply by removing one or more walls, erecting new framework, and adding matching wall and roof covers. In addition, the original wall panels can

often be reused. This flexibility greatly reduces the time and inconvenience typically associated with expansions or additions to traditional construction.

Outstanding Performance

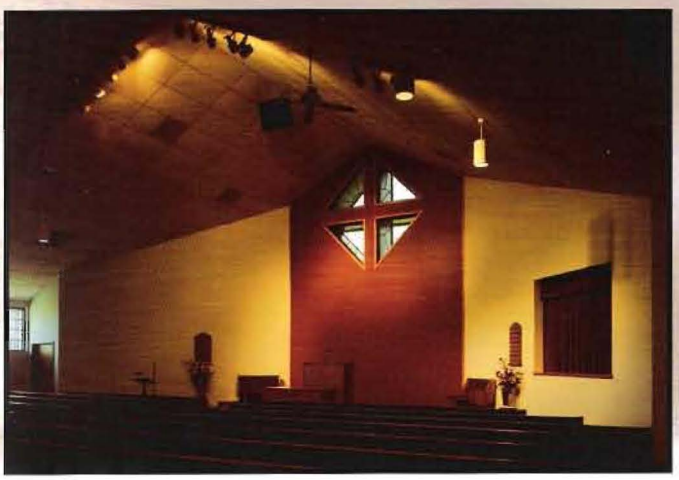
Education and health care require high-performance building facilities. Documented studies on the performance of metal building systems under severe weather conditions (hurricanes and earthquakes) have proved that properly designed metal building systems fare significantly better than their conventional counterparts. This is an important consideration in the design and construction of buildings that house schoolchildren or the sick and elderly.

Computer Design

The computer is the primary design tool in metal building systems design. With metal building systems construction, a structural design can be completed in a matter of hours rather than weeks, as is often the case with conventional buildings.

Metal building systems are designed using standard engineered sections, permitting fast design, fabrication and delivery of the building project to the jobsite, as well as immediate erection of the structure.

The building sub-systems are fully engineered, systemized and integrated into the complete building. They include the structure itself, ceiling systems, roof panels, exterior



walls, fascia and soffit systems, window and wall systems, doors and frames, insulation and various trim systems.

Computer programs also are used to analyze stresses on primary frames and secondary support members. These programs select the optimum materials to provide the most economical system for each building project.

The Standing Seam Roof

Schools, churches and other facilities with flat roofs are notorious for leaking. Because it has few structural fasteners, the standing seam metal roof generally used on metal buildings provides a weathertight seal.

Standing seam metal roofs can be designed with a low slope . . . or be highly visible with a steep slope to add distinctive aesthetic appeal to the building. The standing seam roof panel can also be used for mansards, fasciae and similar applications.

Structural standing seam roofs rely on a unique fastening system that permits the roof plane to expand and contract during extreme temperature changes, maintaining its

weathertightness. The roof's light weight and durability also make it an excellent retrofit option.

A standing seam metal roof that's installed over an existing roof can often be applied with minimal structural modifications to the existing building. Life-cycle cost studies confirm that standing seam metal roofs are among the most cost-effective systems available.

Building System Materials

Metal building systems are often enhanced with wall panels featuring attractive profiles, curves, textures and colors. These alternative wall systems also allow a smooth visual transition between different areas or rooms. The steel is protected by other metals or metallic alloys, or treated with silicon polyesters, fluoropolymers or other coatings that resist peeling, chipping, chalking and fading.

Metal building systems are designed to incorporate non-load-bearing wall systems. This permits the structure to be integrated with exterior cladding materials that provide a pleasing exterior compatible with the surrounding environment. These materials include precast concrete, brick, stone, wood and glass.

The Right Choice

The combination of cost factors, speed of construction, flexibility, versatility, safety and operational savings makes metal building systems the construction method of choice for educational and recreational buildings, churches, health care facilities and other institutional structures.

Today, approximately two-thirds of all low rise, non-residential buildings constructed in the U.S. are metal building systems. They're the obvious choice — and the right choice — for all types of institutional applications.

Certification Program

Metal building systems manufacturers displaying the AISC Category MB logo are now covered by a comprehensive Quality Certification program developed by the prestigious American Institute of Steel Construction (AISC).

These are just some of the benefits that owners, architects, specifiers and building code officials achieve through this extensive program:

- Certified manufacturers have undergone rigorous third-party examination of their professional engineering and manufacturing policies, procedures and practices.
- Quality assurance standards and controls have been found to meet the requirements established in the certification program.
- Annual on-site audits ensure continued compliance with the program requirements.
- Certified manufacturers have proved under the program that they can meet the public safety requirements imposed by the applicable building codes because their basic design and quality assurance procedures and practices used to produce metal building systems meet the needs of predictable structural integrity and quality.

This program also enables local, national and international code groups to utilize an already established and nationally recognized certification agency to verify compliance with their standards.

The AISC Category MB logo verifies that the metal building systems manufacturer has met rigorous quality certification standards.

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