

Code Official Corner

Safely Converting Barns for Other Uses

By Paul May, Architect, and John Swanson, Deputy Fire Marshal

The AELSLAGID Board and the Minnesota State Fire Marshal Division (SFMD) have received notices and complaints about an alarming trend occurring in Minnesota. Increasingly, barns traditionally used for agricultural purposes are being converted to residential property or used by the public for assemblies like weddings and dances. This article will address the implications of that trend, change-of-use issues related to agricultural buildings, and regulations set by state building and fire codes.

Most buildings are designed and built for specific uses and purposes. These uses require certain life safety requirements. When the use within a building is changed, the owners, builders and design professionals must revisit the life safety issues in light of those new uses.

Building and fire codes list ten occupancy classifications. Each structure must be assigned one of these classifications by the design professional and code official. According to the National Fire Protection Association (NFPA), ten of the twenty deadliest fires in U.S. history occurred in occupancies in the “assembly” or “residential” category. In these ten most-deadly fires, 2,555 people lost their lives. Those are troubling statistics, and they require building and fire code officials to focus fire prevention efforts on these types of occupancies.

Some common issues in those fires:

- Lack of required number of exits
- Exit door or gate designs that limited quick egress
- Overcrowding
- Combustible materials that caused fire to spread rapidly

Many, if not all, of these conditions are found in typical barns and other agricultural buildings. Agricultural buildings typically do not include necessities such as smoke alarms when the building is used for sleeping, or the minimum number of required exits when used for assembly. When a large quantity of highly combustible material such as hay and wood are combined with ignition sources like heaters and candles, the consequences can be devastating.

Minnesota Rule 1300.0030 exempts agricultural buildings from the state building code. However, this regulation does not exempt agricultural buildings from the state fire code. Utilizing an agricultural “building” for a non-agricultural “use” is considered a change of use, which must comply with the requirements of the new use. Temporary or infrequent change of use is still considered a change of use. The general public, as well as design professionals, should be aware of all code requirements associated with these

buildings. The Minnesota State Fire Code (MSFC) section 102.3, quoted below, requires any change in use of a building or structure to comply with state building code and state fire code. Similar language is found in The International Building Code (IBC), section 3406, and the Minnesota Rules Chapter 1311 Rehabilitation of Existing Buildings. In many cases, compliance will require certified design drawings to be submitted to a city or county building official by a licensed design professional.

102.3 Change of use or occupancy. No change shall be made in the use or occupancy of any structure that would place the structure in a different division of the same group or occupancy or in a different group of occupancies, unless such structure is made to comply with the requirements of this code and the International Building Code. Subject to the approval of the fire code official, the use or occupancy of an existing structure shall be allowed to be changed and the structure is allowed to be occupied for purposes in other groups without conforming to all the requirements of this code and the International Building Code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.

In addition to fire-and-life safety concerns, conversion to a different occupancy classification may result in changes to the building's structural system. Those could include the possibility of increased loads from people, snow or storage. Additional considerations for the owner and the design professional would include alterations to plumbing or ventilation systems, and electrical code upgrades.

The fact that the structure is used infrequently does not eliminate the obligation to follow state building and fire codes. Nor does lack of code enforcement at the local or county level exempt the design professional from ensuring compliance with state codes.

The modern tendency to repurpose agricultural buildings to new uses and ignore state law has code officials worried about the consequences. All structure owners, whether they understand state codes or not, have an obligation to ensure the structure meets minimum fire-and-life safety requirements. A major part of that obligation is to work with an architect or engineer to ensure all building and fire code requirements have been met.

When a design professional works hand-in-hand with the structure's owner and appropriate code officials, Minnesota can hope to ensure the life safety of our residents and visitors, protect our structures, and prevent one of the deadliest fires in U.S. history from happening in our state, under our watch.