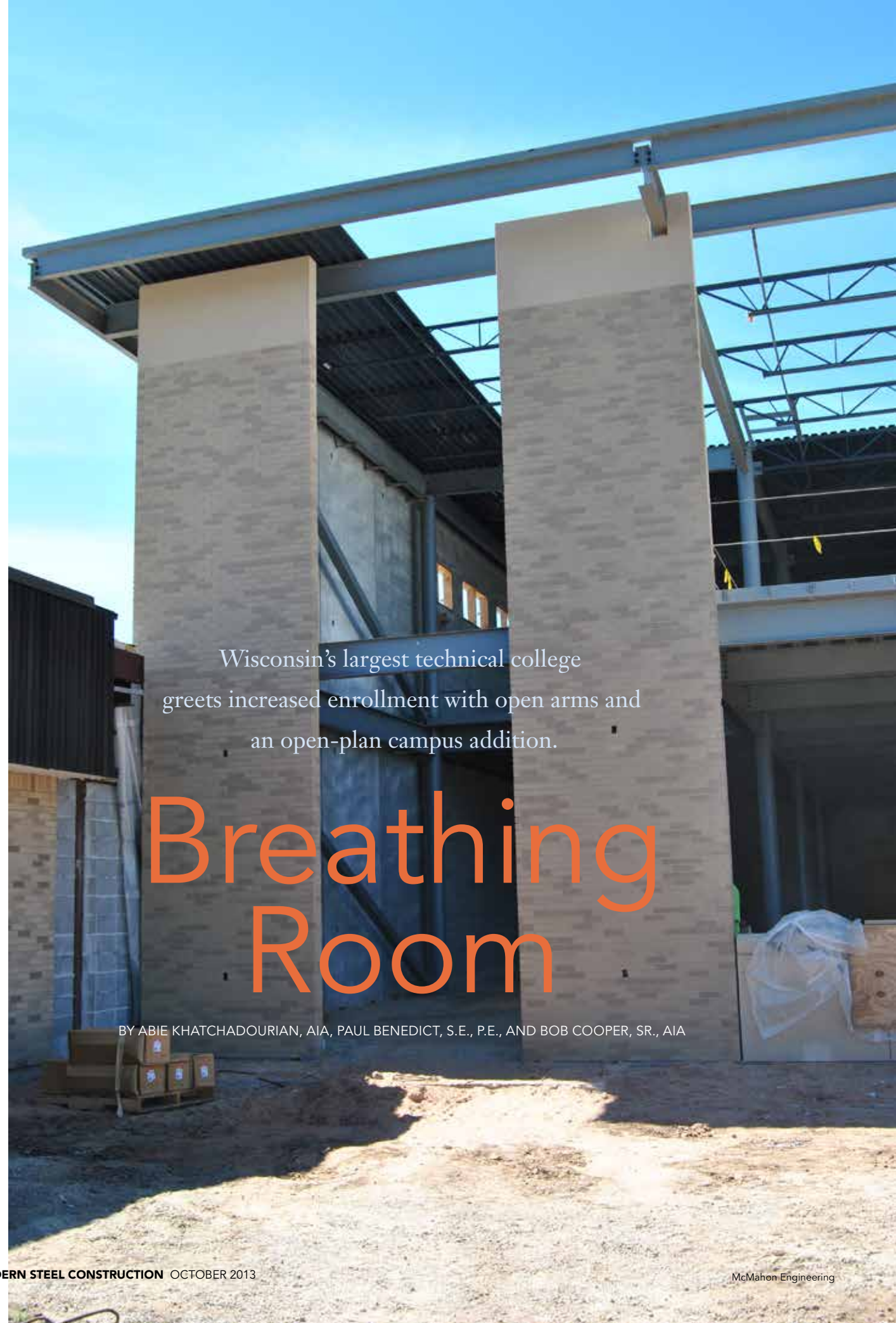

Wisconsin's largest technical college greets increased enrollment with open arms and an open-plan campus addition.

Breathing Room

BY ABIE KHATCHADOURIAN, AIA, PAUL BENEDICT, S.E., P.E., AND BOB COOPER, SR., AIA

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FOX VALLEY TECHNICAL COLLEGE is growing by leaps and bounds.

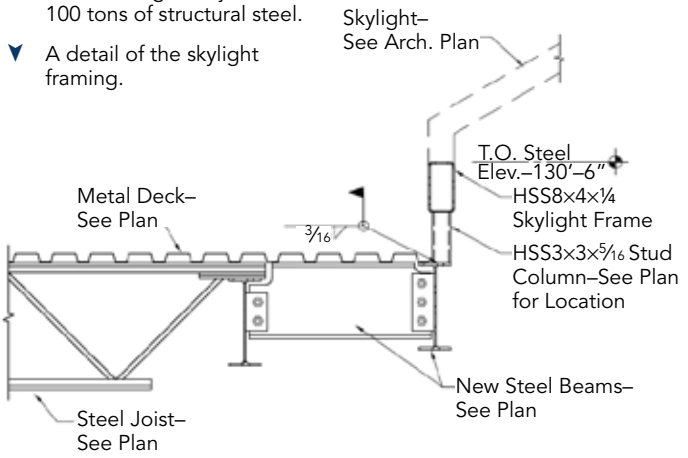
The Appleton, Wisc.-based college had experienced a 30% increase in enrollment in the three years leading up to 2012. In 2011, it served more than 53,000 people, more than any other technical college in the state, with 90% of its graduates finding employment within six months of graduation.

To accommodate this growth and success, the college is in the midst of seven different expansion projects at its various locations (to be completed by 2015), two of which are taking place as additions to the main campus building in Appleton. One of these, the Student Success Center, will add 23,700 sq. ft. In addition, 95,700 sq. ft of the existing building will be renovated.

The Student Success Center concept is relatively new to two- and four-year higher education institutions and is designed to help facilitate recruitment, enrollment, advising, retention and graduation of students. "Visioning" sessions with selected Fox Valley faculty members led to the development of a goal to create a degree of openness within this addition as a counterpoint to the relatively windowless main building. To support this concept, steel and glass were chosen as a means of setting the stage, bringing natural light into the facility. The building is designed to support active and open student-faculty collaboration spaces with a minimum of visual obstruction, offer exterior views while admitting daylight and serve as a focal point for its connection to the existing building, which is being remodeled as an Information Commons. The design also had to create an open and visually significant building entrance, which doubles as a major entrance to the college.

▲ The building uses just over 100 tons of structural steel.

▼ A detail of the skylight framing.



In addition, the north half of the building is designed as a curve to act as a counterpoint to the rectilinear shape of the original buildings. A roof overhang at the second floor provides sunscreening while a large skylight opening at the juncture between the new and existing buildings brings additional natural light to the interior spaces. Metallic champagne-colored aluminum panels form the exterior façade, which is designed to appear lightweight and open.

This open design concept was best accommodated by a steel structural system, as it allowed for smaller columns (10-in.-diameter HSS). The framing plan consists of 27-ft column bay

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◀ The Student Success Center is scheduled to open next summer.

▲ The building is one of several recent expansions to Fox Valley Technical College.

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▲ The steel roof framing system consists of a metal deck supported by steel joists and steel beams. This system allowed for a large curved façade and accompanying 5-ft overhang to be relatively simple and repeating.

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spacing in the north-south axis to match the column spacing of the existing building, with roughly 24-ft column spacing in the east-west direction. Since the addition is being built directly adjacent to the existing building, steel also allowed for the new construction to match the existing facility as closely as possible. In addition, it facilitated a faster enclosure of the building and minimized the need for cold-weather construction.

The steel roof framing system consists of a metal deck supported by steel joists and steel beams. This system allowed for a large curved façade and accompanying 5-ft overhang to be relatively simple and repeating; steel roof beams, W16 or W18, cantilever beyond the plane of the building to support the roof overhang. Custom steel joist seats helped facilitate small steel framing members at the overhangs, which lends a thin and light appearance to the cantilever.

The floor framing system consists of 6 in. of concrete on 3-in. steel deck, supported by steel beams (W16×26 composite purlins and W21×50 composite girder beams). Three major openings are featured in the floor framing, with a central opening over the east reception area and two open stairs. A cantilevered second floor overhang at the central opening was accomplished through moment connections within the framing system.

The lateral support system consists of braced frames, either single diagonal or chevron braced frames with tube bracing members, allowing the lateral framing columns to be the same size as the gravity framing columns while also limiting the floor space interferences by locating the frames along the building's exterior. The foundation consists of conventional spread footings to match the existing construction system. Steel framing allowed for relatively light loads to the foundation, which was important at the columns adjacent to the existing construction.

The addition, which uses 106 tons of structural steel, is scheduled to open next summer and will provide some relief to existing campus facilities as well as room to grow. MSC

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