It’s not uncommon for MSU alumni, faculty, and students to give back to their institution of higher learning. But some individuals have given in a way you might not expect. You could say their contributions have made the MSU campus what it is today.

Even prior to the establishment of the engineering college during the 1907–1908 academic year, those affiliated with the College of Engineering were busy building not only a fine engineering program, but the MSU campus itself. While the first dean of engineering — George Bissell — was appointed on June 18, 1907, Michigan State engineers began contributing to building the MSU campus and the surrounding community much earlier.

They helped plan and build the network of roads and bridges across the MSU campus, played a part in designing and constructing the buildings where students attend classes and perform lab experiments, and have been instrumental in providing the power that supplies electricity and heat to the offices and dorms.

It all began in 1875 with Rolla Carpenter, who was both an MSU engineering alumnus and a faculty member . . .

“Engineering the MSU Campus” represents just a sampling of how a few of our alumni, students, and faculty have helped engineer the MSU campus. If you would like to share your story of how you helped engineer the MSU campus, please e-mail the editor at editor@egr.msu.edu or mail your story to: Editor, Currents Magazine, MSU College of Engineering, 3412 Engineering Building, East Lansing, MI 48824. We will consider your story for inclusion in a future issue of Currents Magazine or on our Web site.
Rolla Clinton Carpenter, born near Orion, Mich., in 1852, graduated from the State Agricultural College (Michigan State) in 1873 with a bachelor of science degree. He received a civil engineering degree from the University of Michigan in 1875, and was appointed as a math and civil engineering instructor at the State Agricultural College that same year. He earned a master’s degree in 1876 (it’s unclear whether this degree was in civil engineering, and if he earned it from the State Agricultural College or the University of Michigan), and was later elevated to the level of professor.* He would later receive a master’s degree in mechanical engineering from Cornell University (1888).

Carpenter was a Renaissance man of sorts. He designed bridges, built icehouses, taught students astronomy, and even coached the school’s first football team in 1886.

In his report to the State Board of Agriculture dated December 1, 1875, he says about his first year as an instructor: “During the greater portion of the year I have spent from three to five afternoons of each week in doing work not included in my regular College duties. . . . I have done a considerable amount of surveying of farm lines, boundaries of fields, and under-drains; in fact, I have done all that profitably can be done with our present instruments.”

In addition, he served on the committee for rebuilding the [Red] Cedar River bridge and prepared the design and working drawings from which the bridge was built. (The location of the bridge referred to here is the site of today’s Farm Lane bridge near the Auditorium.)

Carpenter wrote in his September 30, 1876, report to the State Board of Agriculture: “Connected as I am with the Engineering Department of the College, a large amount of outside work is of necessity required of me. In some instances afternoons and Saturdays for from one to three weeks consecutively have been required. . . . Under my direction the maps of the College farm and grounds, for the library and farm office, were finished. . . .”

He further wrote: “The appropriation of the last Legislature of $800.00 for the building of [the Cedar River] bridge was barely sufficient for its construction. One contractor only would bid for the work, most of them regarded the amount as altogether too small for the building of 125 feet of bridge, and the structure erected was the best possible under the circumstances.”

In 1878, at the request of the president of the State Board of Agriculture, he took charge of constructing the brick oven in the college boarding hall. Construction of the campus icehouse fell to Carpenter in 1878–1879. During

*Editor’s note: Elaine C. Davis, historical research consultant, assisted with the research on Rolla Carpenter. The above information about Carpenter’s degrees earned, the dates, and the institutions where he earned them, was taken from his obituary in The M.A.C. Record, Vol. 24, No. 15, 1919. Information across numerous historical documents is inconsistent on some of these details.
1879–1880, he was assigned to oversee "repairs in brick and iron, including repairs to the steam works." When the board approved construction of an astronomical observatory, the carpentry work was done almost entirely by students under his supervision. A windmill reconstruction and a new vegetable boiler in the college kitchen were other projects for which Carpenter was responsible.

During 1881, assisted by students, Carpenter made extensive changes in the steam-heating system in the original Wells Hall, a dormitory. In 1882–83, he prepared plans and specifications for a new boiler house and chimney and served as construction superintendent. Because of the high price and the "bad color" of bricks available near Lansing, the building committee decided that the bricks should be handmade for the construction of the boiler house and a "Professor's residence"; naturally, Carpenter was put in charge. Nearly 400,000 bricks were made at the MAC brickyard and, according to Carpenter, the bricks were "...of uniform red color" and "in every way first-class."

In his annual report to the board for the 1883–1884 period, Carpenter said that his work outside the classroom "has been unusually arduous and confining the past year, requiring from me, each day, five to eight hours' work. The work has been of that peculiar kind which could only be satisfactorily done when under my immediate oversight. The work ... has been principally devoted to finishing the construction of the water-works, to supervision of the construction of the boiler-house and chimney, to construction of dam and ditch for a water supply for fish ponds to be used by the State Fish Commission in the breeding of Mirror carp, the location and surveying of drains on the farm and garden departments, and ... the purchase of fuel and general oversight of the steam heating works ..."

Carpenter designed the Mechanical Building (constructed in 1885) — sometimes referred to as the mechanical lab or mechanical shops, and later referred to as the engineering shops. (He prepared the specifications and drawings with...continued on page 9
In his report submitted on September 30, 1884, to the State Board of Agriculture, Samuel Johnson, professor of agriculture and superintendent of the farm, recommended that the wooden Cedar River bridge be replaced, and two stone abutments be added. “This bridge, which has to be crossed by our stock and teams daily, is not in a condition to trust very much longer. It should be replaced by an iron bridge . . .”. In his report to the board dated October 20, 1886, he states that a stone abutment was added to the south end of the bridge, but the old bridge was still dilapidated and unsafe and should be replaced by an iron bridge as soon as possible.

Original mechanical laboratory and shops, designed by Carpenter and constructed in 1885. In 1887, he prepared plans for the addition to the Mechanical Building and was construction superintendent.
An early bridge over the Red Cedar River at Farm Lane. Photo circa 1912.
The Mechanical Building, built in 1885, was sometimes called the mechanical lab or mechanical shops and later referred to as the engineering shops. It was expanded in 1887.

The Engineering Building was built in 1907, beside the Mechanical Building, and formally dedicated on June 22, 1908. Both the Engineering Building and the Mechanical Building were destroyed in a fire in the early morning hours of Sunday, March 5, 1916. (Pictured to the right of the Engineering Building is Wells Hall, a dormitory.)

The fire purportedly started about 5:00 a.m. Sunday, March 5, 1916, in the cement labs in the southeast corner of the Engineering Building basement. Fire quickly spread through the building and to the engineering shops. The fire then leapt to the roof of Wells Hall (left), a dormitory near the Engineering Building, but it suffered only minor damage. According to the 1916 Wolverine (the yearbook), “. . . the ruins had scarcely ceased smoking before a new schedule of classes . . . was formulated” for the 400 engineering students. “When sessions began on Monday morning . . . not a class was missed.”

R. E. Olds, in a letter to MSU President Frank S. Kedzie dated April 29, 1916, confirmed his intent to contribute $100,000 toward reconstruction of the Engineering Building. The April 25, 1916, issue of The M.A.C. Record had reported: “The story goes that in the early days of M.A.C., Dr. Kedzie’s father, Dr. R. C. Kedzie, was in a position to do a great favor to the father of Mr. Olds. These men were warm friends and their sons have continued this friendship. Hence Mr. Olds finds this a very opportune time to help Dr. Kedzie out of the first real worry of his college administration.” On June 5, 1917, The M.A.C. Record reported: “R. E. Olds was present in person [at the dedication of R. E. Olds Hall on June 1, 1917] and, in turning over the keys of the building to Dean Bissell, he said, “It is my observation that the students turned out of this college are better fitted on the average than those from any other college in the country.”

The R. E. Olds Hall of Engineering (center of photo) was built on the old foundation of the former Engineering Building. Inside and out, it was a near replica of the original structure. Olds Hall was formally dedicated on June 1, 1917, along with the new engineering shops (“a two-story, fire-proof shop building,” located to the left of Olds Hall). Wells Hall dormitory is to the right of Olds Hall in the far distance.

The College of Engineering occupied Olds Hall until 1962, when it moved into the new building on Shaw Lane, its present location. Olds Hall currently houses a variety of academic and administrative units.
the aid of students.) He described the building as "plain and devoid of architectural ornament . . . convenient, well constructed and satisfactory to all those who occupy it." In summer 1887, Carpenter prepared plans for an addition to the Mechanical Building and was construction superintendent.

In 1886, at Carpenter’s request, he was relieved of his fire department duties, including the weekly fire drills he used to run. Responsibility for the weekly drills was turned over to the military department. He remained engineer of the campus water works, recommending that the water works be extended to the professors’ residences and to the barns for fire protection. During 1889–1890, Carpenter was superintendent of construction for a new Agricultural Laboratory.

In August 1890, at the end of the school year, he went to Cornell University to take a professorship in the department of mechanical engineering.

His last report to the State Board of Agriculture, dated June 30, 1890, states: "So far as I know I leave everything connected with my department in excellent condition, and I leave not unfinished work for my successor to take up. All the work requiring such means of identification will be found mapped in a large book or file in my office. In that book will be found descriptions and maps of all heating lines, water lines, sewers and drains, also the various surveys that have been made from time to time of the college property.”

He ends the report by saying: "I shall ever retain the warmest feelings of regard to all those who have been connected with my work in this institution, and shall look back to the years spent in work here as the happiest in my life."

Carpenter died in Ithaca, N.Y., on January 19, 1919.

EDITOR’S NOTE: Carpenter was also a patent expert and a prominent writer of engineering textbooks. Some publications authored by Carpenter are still in print and available through Amazon.com.

William Minard (BS Elec Egr ’49) of Bloomfield Hills, Mich., says that his father, Ray Floyd Minard (BS engineering no pref, ’07) used to talk about how he had carried bricks to build the original Engineering Building as part of a summer job while he was a student.
Claud R. Erickson received four engineering degrees from MSU, beginning with a BS in 1922. He later earned degrees in mechanical (1927), electrical (1933), and civil engineering (1934). Always maintaining close ties with his alma mater, Erickson served on the MSU Foundation’s first board of directors. He was asked by President John A. Hannah to oversee the construction of MSU’s Alumni Memorial Chapel. He also supervised the completion of 7,000 married-student housing units in just five months to accommodate U.S. servicemen returning to campus after World War II.

Born in Manistee, Mich., Erickson helped support his family during high school and took a full-time job immediately after graduating. Associates at work recognized his talents and persuaded him to begin college, but it was a constant financial struggle for him. At times, faculty members chipped in to keep him in school. As director and general manager of the Lansing Board of Water and Light for 50 years, he made the utility a strong, progressive force in the Lansing area.

Since 1983, The Claud R. Erickson Distinguished Alumnus Award, established in his name, has been presented annually to a College of Engineering graduate who has attained the highest level of professional accomplishment and provided meritorious service to the college and the engineering profession. (For a complete list of Claud Erickson Award winners, go to www.egr.msu.edu/egr/development/alumni/awards/erickson_past.php.)

When asked by President Hannah at one point, “Why do MSU alumni come back to campus year after year?” Erickson responded, “Because they love the University that offered them the hand of friendship and the open door of opportunity.”

Erickson died in 1993 at the age of 93.
George R. (Dick) Grantham (BS ’38, MS ’40 Civ Egr) recalls that, when he was 11 years old, “there was no money to build a new Union Building” so he says about 500 neighbors showed up with shovels and wheelbarrows to help dig the basement for the new building.
“Michigan State students and faculty members wield shovels to dig the foundation of the new Union Building during “Excavation Week” on the campus in November of 1923. Digging was the major sport on the campus for the entire week with every member of the school’s family taking part in the job. The basement excavation measured 200 \times 186 \times 5 \text{ feet} when it was completed.”
— News Bureau, Department of Information Services, Michigan State College, East Lansing

“Everyone got involved in digging — professors, parents, students, townies, children, and dogs!” Thirty teams were involved in the week-long dig, working alongside a horse-drawn wagon, filling it with dirt. When one wagon was full, another wagon was brought in to replace it, and the work continued.

The completed Union Building, with additions, circa 1949. The Union Building opened on June 12, 1925, though only a small portion of the building had been completed. Additional construction and remodeling took place in 1936, when the east wing annex was added. Major remodeling took place between 1947 and 1949, and the south wing addition was constructed in 1948.

Bobby McCarthy helps out at the Union Building “Excavation Week,” November 1923.
John Patriarche (BS Civ Egr ’38) was best known as “Mr. East Lansing.” He served as city manager for 28 years, helping to expand the city’s boundaries and draw businesses to the area. During this time, he also worked with MSU President John Hannah to extend the campus westward and build new dormitories. Patriarche retired from East Lansing government in 1976. A city park is named in his honor. Patriarche died in March 2007 at the age of 89.

The Brody Residence Hall complex, which includes a central service building and six surrounding residence halls, was constructed between 1954 and 1962 on the west end of campus. Originally known as the Harrison Road Halls, the complex consists of Armstrong Hall, Bailey Hall, Bryan Hall, Butterfield Hall, Emmons Hall, and Rather Hall. The central building, Brody Hall, contains the largest nonmilitary kitchen in the world; it is equipped to serve 3,000 students three meals a day.
Howard Hunter, PE (BS Civ Egr ’28) of Lansing, Mich., was a partner in the Warren Holmes Company, which designed the MSU University Club. The University Club officially opened October 10, 1970, and was the setting for Hunter’s retirement party in 1972. Hunter was honored by MSU at the June 2006 Kedzie Reunion, at the age of 101, as the oldest male alum present.

Up until December 2007, when he had to quit driving, Hunter could be seen around town in his light green Mustang convertible that he bought new in 1968. He was also a volunteer at St. Lawrence Hospital from 1999 until December 2007, but had to give that up due to health issues that were slowing him down somewhat. But Hunter remains active. On May 14, 2008, he attended a luncheon for Warren Holmes Company retirees. Hunter celebrated his 103rd birthday on May 6, 2008.
The M.S.C. Campus in 1923
*The Union Building was included on this map, drawn in 1923, even though its foundation had not yet been dug.*
Robert Neil Rosso Jr. (BS Civ Egr ’44) of Traverse City, Mich., says his first job after college was with the American Bridge Co. in Gary, Indiana, where he worked as a draftsman. He says this was “not his idea of civil engineering,” so in July of 1945 he returned to Michigan to work for the Christman Company of Lansing. While he was employed there, projects at Michigan State included additions to the Union Building and the Administration Building. New construction projects included the Electrical Engineering Building (now the Computer Center), Shaw Hall dormitory, and the apartments located on the corner of Shaw Lane and Harrison Road for married students and faculty.

In January 1952, he went to work for The James E. Payne Co. as a sales engineer of metal building products. Rosso and The James E. Payne Co. worked with several contractors on MSU projects including parking ramps, dorms, classroom labs, the new library, the International Center, and Spartan Stadium pedestrian ramps.

In 1954, Rosso was named a partner in the business and it became the Payne-Rosso Company. Other alumni who worked with Rosso at Payne-Rosso were Hal Neumann (BS Civ Egr ’47), who eventually became Rosso’s partner; and Terry Holzhausen (BS Civ Egr ’68), who worked there part-time as a student and joined the firm in 1970 after his discharge from the U.S. Army.

Rosso retired in 1975, but the company today still supplies MSU with products for campus projects.
While he was a student, Leonard L. Klein, PE (BS Civ Egr '49) of Elk Rapids, Mich., worked on the first addition to the stadium. (Spartan Stadium was originally called M.A.C. Field. In 1935, it became Macklin Field, in honor of John Farrell Macklin, who was the first full-time athletics director from 1911–1916. Macklin Field became Spartan Stadium in 1957.) Klein also worked with the Christman Company on the addition to the MSU Union Building during 1947–1949; he helped rebuild the ballroom. Klein started out as a laborer and advanced to doing all the layout, shop drawings, and general engineering. He also worked on the Shaw Hall dormitory and drew up plans for the architect for the 1949–1950 addition to the president’s house (today’s Cowles House, then called Hannah House). Klein worked an average of 20 hours per week on these projects while carrying a full load of classes. He was paid $1.00 an hour.

He later served on the College of Engineering Alumni Board under Lawrence W. Von Tersch, who was dean of the college from 1968 to 1989. Klein also planned one of the earliest College of Engineering reunions.

After receiving his degree, Klein worked for Armco Steel for seven years, and for Superior Products Co. from 1957 until his retirement in 1987. In 1973, he was instrumental in the design and installation of the world’s largest precast concrete gravity storm sewer pipe. The American Society of Civil Engineers named him Michigan’s Engineer of the Year in 1975.
Union Building, President’s House
K. D. Kelly Puts Shaw Hall and Kellogg Center On the Map
Kenneth D. Kelly, PE (BS Civ Egr ’50) of Spring Lake, Mich., is a WWII veteran. He spent 23 months in the Pacific Theatre with the U.S. Navy Construction Battalions (Seabees) building advance military bases on the Pacific Islands.

After enrolling at MSU and moving into a barracks apartment on campus, he started working for the university’s (then Michigan State College) Facilities Engineering Department. The work consisted of surveying, mapping, and drafting to provide records and topographic maps for new buildings being constructed. He and other student engineers, including Lyle Bornor (BS Civ Egr ’50), surveyed and mapped for Shaw Hall and the Kellogg Center, under the supervision of Theodore “Ted” B. Simon (BS Civ Egr ’42) — the father-in-law of MSU’s current president, Lou Anna K. Simon. Ted Simon served as the university’s assistant construction engineer (1946–1951), construction engineer (1951–1956), superintendent of buildings and utilities (1956–1964), director of the Physical Plant (1964–1973), and assistant vice president for the Physical Plant (1973–1984). He was instrumental in much of the post–World War II campus development. (The T. B. Simon Power Plant was named after him; see related story on page 26.)

“The Shaw Hall site was a fairly level clover field and was rather simple to survey,” says Kelly. “The Kellogg Center site was a little more rugged, with trees and bushes located on it, making it a little more difficult. I’ve often wondered if I could still locate the nail we put in the base of one of the trees to use as our benchmark during surveying and construction,” Kelly muses.

“We surveyed for other buildings and facilities as well, but these two stand out in my mind as they were major projects at the time, in the late 1940s.”

Kelly also served on the College of Engineering Alumni Board. He later established Kelly Sales and sold a bridge crane to MSU that was used during construction of the Biomedical and Physical Sciences Building, which opened in 2002.
While in Lansing from 1986 to 1993 with Soil and Materials Engineers (SME), Paul C. Larsen, PE (BS Civ Egr ’79) of Carmel, Indiana, worked on many notable campus projects including an addition to the Engineering Building, the Kellogg Center expansion, the Eli Broad College of Business, the T. B. Simon Power Plant expansion, and several others.

“But the project I am most proud of is the Jack Breslin Student Events Center,” Larsen says. “I had the privilege of working on it during both the design and construction phases.” Shortly after the design phase was completed in 1985, Larsen transferred from Livonia in suburban Detroit to Lansing and was able to serve as SME’s project manager during the construction phase of the Jack Breslin Arena.

“Breslin was the first major project that I followed from beginning to end,” Larsen says. “I have very fond memories of that project and the people I worked with and for. Many of the young people that worked on that project 20 years ago have gone on to very successful careers.” John Holmstrom, PE (BS Civ Egr ’83), vice president of the Christman Company, served as a project engineer for Christman/Gilbane on the Breslin project. Davie Hurlburt, PE, who served as SME’s field engineer during construction, is now a vice president with SME.

When Larsen relocated to Indianapolis in 1993, he was given a photo of the Breslin Center that was hanging on the wall in his Lansing office. “That picture came with me to Indianapolis, spent a few years with me in Cleveland, and is now once again proudly displayed in my new Indy office,” Larsen says. “While I have been fortunate to work on many incredible projects throughout the Midwest during my career, the Breslin Center will always be a special one for me.”

Today, Larsen is senior vice president and division executive with NTH Consultants, Ltd., an ENR Top 500 design firm that specializes in underground/geotechnical, environmental redevelopment, facilities infrastructure, resource technology, and construction services engineering. At NTH, Larsen works with several MSU alumni including Keith Swaffar, PE (BS ’77, MS ’79 Civ Egr), president and CEO; Fritz Klingler, PE (BS ’87, MS ’88 Civ Egr), senior vice president of the public infrastructure; and Michael Miller, PE (BS ’96, MS ’98 Civ Egr), Indianapolis office lead, to name a few. After opening an NTH office in Cleveland, Ohio, in early 2004, Larsen returned to Indianapolis in late 2006 to open NTH’s next new office. In his current position, he is helping implement NTH’s Midwest geographic expansion plans.
In 1990, the T. B. Simon Power Plant, located on Service Road, consisted of three power generation units. MSU contracted with Black & Veatch to design, engineer, and monitor construction of Unit 4, and to perform numerous upgrades to the existing units—which continue to this date.

John Kaman (BS Chem Egr ’76) of Livonia, Mich., a Black & Veatch engineer, served as instrument and controls engineer for the project. The Black & Veatch team also included the following MSU alumni: Ron Hicks (BS ’67, MS ’73 Mech Egr), lead instrument and controls engineer; Steve Syrjamaki (BS Elec Egr ’72), electrical engineer; Kristi Vilminot (BS Mech Egr ’91), mechanical engineer; and Kurt Westermann (BS Elec Egr ’80, MBA ’98), lead electrical engineer.

The work was done in close collaboration with MSU Power Plant employees: Robert Ellerhorst (BS ’74, MS ’76 Civ Egr), Ron Flinn (BS Civ Egr ’60), Rick Johnson (BS Elec Egr ’91), Joe Kavanagh (BS Elec Egr ’91), Doug MacDonald (BA Math ’76, BS Mech Egr ’79, MBA ’88), and Gary Mell (BS Math ’93, MS Mech Egr ’00). The team installed a 350,000 lb/hr coal-fired fluidized bed boiler and a 24 MW controlled extraction condensing turbine generator facility and developed the final design and bid documents for the general architectural/mechanical and electrical construction contracts. Groundbreaking for the site work and foundations work began June 1991. Site erection of the steam generator began March 1992, and commercial operation of the unit was achieved in September 1993.

Engineering design of Unit 4 incorporated several unique, leading-edge concepts, which resulted in a state-of-the-art facility that was recognized with several awards. In 1993, this project received the Michigan Society of Professional Engineers (MSPE) award for Outstanding Engineering Achievement in Private Practice–Building Division Systems. That year the engineering team also received an internal Black & Veatch award — the Riley Woodson Outstanding Team Award. When the Unit 4 concepts were presented to the Big 10 Powerhouse conventions, MSU was placed in the spotlight for innovative design.

The Unit 4 boiler is capable of burning processed biofuels; the ultimate goal is to find a cost-effective way to reduce MSU’s carbon dioxide emissions. MSU officials are working with Toledo-based N-Viro International Corporation to do that.

Some of the leading-edge features of the Unit 4 project include:

- **Circulating Fluidized Bed Boiler Fuels.** While the CFB itself was not unique, the use of it to burn multiple sources of coal along with natural gas gives MSU a distinct advantage in fuels planning and reliability.

- **Steam Turbine Control.** All General Electric steam turbine generator control functions were implemented in the plant’s distributed control system. For a new steam turbine, this approach had not been performed before.

- **Control Room/Electrical Upgrade.** The main control room of the four-unit plant was transfigured from a ’50s-style benchboard room with hundreds of pushbuttons and switches to a completely CRT-based control center with custom-designed operating consoles.
Dan Remondino (BS Civ Egr ’03) of Holland, Mich., designed the traffic signal that was put in place after the roundabout at Wilson Road and Bogue Street was eliminated in the summer of 2006. He is employed by OMM Engineering, Inc. of Grand Rapids, Michigan, as a design engineer and previously worked for the East Lansing Department of Public Works as a traffic engineer.

After working with MSU officials to determine what the university wanted to accomplish by changing the intersection, Remondino prepared a set of construction plans and specifications used by the contractor to build the signal. His responsibilities included coordinating with suppliers to ensure the contractor had the proper materials and equipment on site to construct the signal. He also worked with an electrical engineer and university staff to determine how to supply the signal with electricity, which was run from the adjacent Plant and Soil Sciences Building. Once the signal was constructed, Remondino joined the supplier as well as the group responsible for maintaining the signal and programmed it to operate as needed for the expected traffic patterns.

“I can’t tell you what it felt like to know I was helping to make positive changes to the campus that I grew to care so much about during my time there,” notes Remondino. “It gives a person a sense of accomplishment like none other to know you learned your trade and now you’re improving your own campus.”

In addition to the traffic signal, the project also included roadway and streetscape reconstruction of the intersection and adjoining road segments. M.C. Smith Associates and Architectural Group Inc., also of Grand Rapids, designed the renovations to Wilson Road between Bogue Street and Farm Lane. A number of Spartans from M. C. Smith contributed to the project: Michael Smith (BS Landscape Architecture ’72), owner and president; James DeWilde (BLA Landscape Architecture ’79), vice president; and Tiffany Smith (BLA Landscape Architecture ’01), senior staff landscape architect.
Ben Maibach III Extends Spartan Spirit
Ben Maibach III (BS Civ Egr ’69) — often referred to as “Ben Three” — of Farmington, Mich., is president, chairman, and chief executive officer of Barton Malow Company. He was a major player in the addition to MSU’s Spartan Stadium, a project that was completed in September 2005.

Features of the eight-story, 268,947-square-foot expansion include 24 luxury suites; 800+ club seats; a new press box; an increase of 3,000 seats, bringing the total stadium capacity to 75,005; and office space for the MSU Alumni Association, University Development, and the Spartan Athletics Office.

The renovation was a joint venture between Clark Construction and Barton Malow Construction Company.

During the summer of 2004, Brian Davies (BS Civ Egr ’04), then a defensive tackle for the MSU football team and a civil engineering senior, worked on the project as a student intern for Barton Malow and Clark Construction. Davies has since joined Barton Malow as a full-time employee.

Barton Malow is currently constructing the new Skandalaris Football Operations Center, an addition to the Hugh “Duffy” Daugherty Football Building, across from Spartan Stadium on the corner of Shaw Lane and Chestnut Street, is currently under construction. Barton Malow was recently awarded the contract to build MSU’s Eli and Edyth Broad Art Museum at the site of the old Paolucci Building, next to Berkey Hall, on East Circle Drive near the Collingwood entrance to campus. Groundbreaking is planned for late fall 2008, with completion expected in 2010.

Ben and his wife, Barbara (BS Nat Sci ’68), also provided a generous gift to the College of Engineering to initiate the establishment of The Center for Spartan Engineering, a new career services center that officially opened its doors in September 2007.
Alton Granger (BS Civ Egr ’54) is chairperson of Granger Construction Company in Lansing, Michigan, which he founded with his father and two brothers in 1959. They have constructed more than 35 facilities at MSU and many other well-known structures throughout Michigan, which have been admired for their endurance, safety, beauty, and innovation. They have won numerous state and national awards.

On-campus structures include several dormitories (Holmes, Hubbard, and Holden Halls), the Eppley Center, the Eli Broad College of Business addition to the Eppley Center, the Food Safety and Toxicology Building, the Communication Arts and Sciences Building and nearby parking ramp, and the MSU Diagnostic Center for Population & Animal Health (main photo below), which was featured in the June/July 2006 issue of the Engineering Society of Detroit’s Technology Century magazine as a Worthy Nominee in the 2006 ESD Construction & Design Awards competition. Most recently, Granger Construction Company served as project manager for the Grand River Avenue Parking...
Ramp located near Morrill Hall and the Human Ecology Building. The 700-space structure (which has six levels and a basement) was designed to fit in with the surrounding historical buildings on the north campus. That project was completed in December 2006, more than six months ahead of schedule. Others on the project team included Carl Walker, Inc. (structural engineer/parking consultant) and Fishbeck, Thompson, Carr & Huber (architects). The project received a 2008 Aon Build America Award in the “Building New” category from the Associated General Contractors of America. The Build America Awards are the highest and most sought-after awards in the construction industry.

Tucked between such North Campus fixtures as Morrill Hall and the Human Ecology Building, the Grand River Avenue Parking Ramp No. 6 has received much attention for how well it fits in with its surroundings. That is no accident. The structure was designed to ensure that it wouldn’t look like a parking ramp.

Thomas Maleck Makes Campus a Safer Place

Thomas Maleck (BS ’66, MS ’72, PhD ’80 Civ Egr), associate professor in the Department of Civil and Environmental Engineering and MSU’s traffic engineer, was an adviser on the Grand River Avenue Parking Ramp (among many other projects) and was one of the presenters to the MSU Board of Trustees on the project’s merits. Maleck attended Central Michigan University, served in the U.S. Army, and then transferred to Michigan State University where he earned a BS in civil engineering in 1966. While employed by the Michigan Department of Transportation, he was a part-time graduate student in the MSU Department of Civil and Environmental Engineering, earning both an MS and PhD. He joined the faculty at MSU in 1982 and was named traffic engineer in 1995.

MSU received the Richard H. Austin Traffic Safety Award at the 12th Annual Michigan Traffic Safety Summit in 2007. The award recognized MSU’s commitment to the safety and well-being of the campus community, as demonstrated by traffic safety improvement efforts that significantly reduced the number of on-campus traffic accidents. Crash data showed a 62 percent reduction in the number of accidents and an 83 percent reduction in the number of injuries since 1995.
It’s been 50 years in the making. Now, thanks to federal grant funding totaling nearly $15 million — and the work of graduate students in the Department of Civil and Environmental Engineering (CEE) in the late 1990s — “The New Farm Lane: Bridge to the Future” is a reality.

More than 60 trains per day travel along two sets of railroad tracks that run through the MSU campus. Delays due to trains stopped on the tracks often last 30 minutes or longer. These delays are dangerous, time-consuming, and costly. Pedestrians and bicyclists frustrated by the wait often climb through the train cars stopped on the tracks. Emergency response vehicles experience life-threatening delays. Bus service is interrupted and everyday vehicular traffic is inconvenienced by long delays at the tracks, which result in late arrival to campus jobs and events. And in a recent three-year period, there were four railroad-related deaths on campus.

In an endeavor to make the crossings safer and more accessible, many studies were carried out over the years to determine the feasibility of rerouting Farm Lane — a main north/south route through the campus — either under or over the railroad tracks. In the late 1990s, graduate students in the Department of Civil and Environmental Engineering — Hilary Owen (MS Civ Egr ’99), John Aldighieri (MS Civ Egr ’96), Sarah Nolf (MS Civ Egr ’98), and Mousa Abbasi (PhD Civ Egr ’98) under-
took directed studies to determine the feasibility of taking Farm Lane under the two railroad crossings. The students’ independent studies were directed by Thomas Maleck, associate professor of CEE, and Frank Hatfield, professor (now emeritus) of CEE. The resulting report concluded that underpasses were plausible. Their work led to a joint publication by MSU’s Department of Police and Public Safety and the Division of Campus Park and Planning (recently renamed Campus Planning and Administration) in July 1997.

In October 2007, the project was officially launched. On March 26, 2008, Farm Lane was closed to vehicular and pedestrian traffic from Mt. Hope Road north to Trowbridge Road (and will later be closed further north to Wilson Road) in order to lower Farm Lane to allow for clearance under the two railroad crossings — the Canadian National Railroad just north of Service Road and the CSX line north of Mt. Hope — and begin bridge construction. The project includes widening the roadway and adding bike paths and sidewalks. (For a project timeline and more details, see sidebar on page 34.)

Completion of the project, a joint partnership between MSU and the Michigan Department of Transportation, is expected in the summer of 2009.

For more information about the project and to view a “flyover” digital animation that illustrates the finished project, visit www.michigan.gov/farmlane.
Project Details and Timeline

More than 60 trains per day affect the vehicular and pedestrian traffic using this main north/south route through campus, accounting for 4½ lost hours per day. The new Farm Lane will increase safety for motorists, pedestrians, and bicyclists; keep buses on schedule; and decrease response times for emergency vehicles.

PROJECT MANAGERS

- Mark Harrison, PE, Michigan Department of Transportation, Project Manager
- Steve Hadersbeck, MSU Physical Plant, MSU Project Manager
- Andy Linebaugh (BLA Landscape Architecture ’95), MSU Physical Plant, Construction Project Representative

PROJECT DESCRIPTION

- Two railroad bridges will be built; road traffic will go under the railroad bridges.
- Farm Lane will expand from two lanes to five lanes between Mt. Hope Road and Wilson Road and will include bike lanes and sidewalks. (The road alignment will shift to the west to avoid any impacts to Baker Woodlot.)
- Other aspects of the Farm Lane project include: drainage improvements that include building new pump houses, landscaping, reconfiguration of the commuter lot (Lot 89), and construction of two new service drives to be located just west of Farm Lane.

PROJECT TIMELINE

Phase 1: October 2007–early spring 2008

- Construction of two shooflies (temporary tracks built parallel to the existing tracks that will allow train traffic to continue uninterrupted during the project) — one for the Canadian National line (north set of tracks) and one for the CSX line (south set of tracks). The shooflies are about 50 feet offset from the center of the existing tracks.
- Creation of two new storm water detention basins near the site of the new underpasses.
- Relocation of water main and utilities.
- Pre-ordering of the structural steel for the railroad bridges (girders are 15 feet long and 12 feet tall)

Phase 2: March 2008–summer 2009

- Construction of the two railroad structures (will be 14’ 6” clearance, typical Department of Transportation requirement)

Contributing Alumni*

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<tr>
<th>NAME</th>
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<tbody>
<tr>
<td><strong>Access Engineering, Inc.</strong></td>
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<tr>
<td>Elizabeth Harding</td>
<td>BS ’89</td>
<td>Civil Engineering</td>
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<tr>
<td>Molly Motz (Halik)</td>
<td>BS ’05</td>
<td>Civil Engineering</td>
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<td><strong>Bergmann Associates, Inc.</strong></td>
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<tr>
<td>Jami Barker</td>
<td>BS ’06</td>
<td>Civil Engineering</td>
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<tr>
<td>Richard Chelotti</td>
<td>BS ’00</td>
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<tr>
<td>Jeremy Hedden</td>
<td>BS ’98</td>
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<tr>
<td>Michael Isola</td>
<td>BS ’89, MS ’93</td>
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<tr>
<td>Chad McCollum</td>
<td>BS ’05</td>
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<tr>
<td>Mario Quagliata</td>
<td>BS ’01, MS ’03</td>
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<td>Nicholas Schroeder</td>
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<td>Keith Simons</td>
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<td>Stephen Tatangelo</td>
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<tr>
<td>Michael Zavadil</td>
<td>BS ’74</td>
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**Michigan Department of Transportation**

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<tr>
<td>Kari Arend (Debnar)</td>
<td>BA ’93</td>
<td>Journalism</td>
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<td>Ron Boomer</td>
<td>BS ’76</td>
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<td>Rudy Cadena</td>
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<td>Mark Kloha</td>
<td>MURP ’98</td>
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<td>Amy Lindstrom</td>
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<td>Geography</td>
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<td>Jeremy McDonald</td>
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<tr>
<td>Kay McNeal</td>
<td>BA ’73</td>
<td>Accounting</td>
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<tr>
<td>John Polasek</td>
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<td>Debbie Potvin (Horbeck)</td>
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<td>Mark Shulick</td>
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<td>Larry Tibbits</td>
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<td>Jenny Transue</td>
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<td>Tom VandenBerg</td>
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<td>Mark Van Port Fleet</td>
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<td>Melissa Wegener</td>
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<td>Rob Whaley</td>
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<tr>
<td>Dave Wresinski</td>
<td>BA ’83</td>
<td>Public Administration</td>
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**Soil and Materials Engineers, Inc.**

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<td>Larry Heining</td>
<td>BS ’62, MS ’73</td>
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<td>Michael Thelen</td>
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**Woolpert, Inc.**

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<tr>
<td>Gary Bilow</td>
<td>BS ’77</td>
<td>Wildlife Biology</td>
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*While every effort has been made to ensure the accuracy of this information, this list may not be entirely complete.
The Farm Lane project also lends itself as a learning tool for civil engineering seniors. Each spring semester, students in CE 495 (Senior Design in Civil Engineering) form teams and develop their own preliminary designs for the new Farm Lane entrance to campus. Their design projects must protect Baker Woodlot, minimize the impact on the wetlands in the immediate vicinity, and provide an aesthetically pleasing entrance to campus — all while meeting government requirements. The students must consider many things, including the foundations for the bridge, storm water drainage, a new paved parking lot, and total cost of the project. Student teams complete a technical report and give a formal presentation.
The physical appearance of the campus has changed dramatically over the last 100 years. But what hasn’t changed is the MSU College of Engineering’s mission to train future Spartan Engineers. Whether it be one of the earliest Spartan Engineers — Rolla C. Carpenter — or the graduates of 2008, Michigan State’s College of Engineering has always been dedicated to providing students with a thorough foundation for a successful career in engineering. In addition to traditional classroom education, the college offers opportunities for undergraduate students to get real-world experience in research labs, and strongly encourages students to get involved in experiential learning options like co-op and internship positions and study abroad programs.

You have read in these pages how Spartan Engineers have made the MSU campus a more efficient, safer, and more beautiful place to study, live, and work. Looking back, we appreciate how Spartan Engineers have transformed this campus, and we are dedicated to transforming today’s students into tomorrow’s Spartan Engineers.