Establishing a new home for the Department of Agricultural and Biosystems Engineering (ABE) is the top capital priority for Iowa State. The buildings are a key component of the ABE complex—in September 2010, the first phase opened with the dedication of the Biorenewables Research Laboratory.

**Positioning students to succeed**

ABE combines the two disciplines for which Iowa State is most famous: agriculture and engineering. Undergraduate enrollment exceeds 500, making it the largest program of its kind in the nation. The program is also highly ranked: No. 3 in the latest US News rankings.

New buildings with modern classrooms and laboratories will provide a better teaching and learning environment.

These facilities will help Iowa State’s professors ensure success with their lessons, as well as encourage collaboration and use of technology to prepare 21st century engineers.

Seventy percent of graduates stay in Iowa to launch careers supporting manufacturing; grain and food processing; agricultural machinery; crop production; meat processing; and animal production.

Students from 90 Iowa counties are enrolled in ABE.

More than $12M in gifts and commitments has been secured, with a final goal of raising $14.1M. This symbolizes strong public and industry support for this project. State appropriations of $60.4M are needed to complete the project. Total project cost: $74.5M allocated over 3 years.
ABE’s Service to Iowa

Partnerships with Iowa-based industries. Each year faculty and staff work directly with many companies. They take an interdisciplinary, systems approach and enjoy strong connections with the most highly visible and forward-looking companies in the agricultural and technology industries. Often, faculty engage multiple industries, which leads to quicker process development and research outcomes that translate to business plan development. In 2009–2010, ABE faculty served in collaboration with companies that included POET, Vermeer, DuPont-Danisco, John Deere, Pella, Grain Processing Corp., SoyWorks, Tone’s Spices, and Kinze Manufacturing.

Bioeconomy. ABE is a linchpin in how science and technology link to future prosperity in the bioeconomy. ABE is providing leadership and innovation that Iowa will depend on to keep the state in the forefront in the fast-moving, competitive bioeconomy. Recent ABE advances include: a technology licensed by John Deere to collect corn cobs for cellulosic ethanol production; and engaging multiple industries to develop solutions for economic biomass supply chains to support bioenergy and biorefining.

Energy from biomass. ABE researchers are key to fulfilling goals of Iowa State University’s BioCentury Research Farm, the nation’s first integrated research and demonstration farm devoted to biomass production and processing. They are conducting studies at the facility that support production-scale cellulosic biomass feedstock collection, and advance the discovery, development, and deployment of technologies for sustainable production of biomass.

Water quality. ABE faculty and staff are studying the fate and transport of contaminants in soil and water, particularly pesticides. The department is a leader in exploring new agricultural drainage systems on farmland statewide. Faculty serve to inform state and federal decision-makers on water quality policy options.

Air quality. ABE has one of the best faculty teams in the nation working on emissions, odors, and mitigation strategies for the state’s multibillion dollar animal agriculture industries. Faculty scientists also serve as national leaders on air quality and environmental issues in the egg production and processing industries, where Iowa ranks #1.

Precision. ABE faculty are showing how a suite of precision agriculture technologies can put money in producers’ pockets. They are developing advanced sensing and control systems to optimize machinery management. Improvements will further promote the agronomic and environmental gains from use of precision technology in crop fields.