

Agricultural Engineering Facilities: From Fire-trap to State of the Art

The Great Depression slowed the mechanization of agriculture, and created a markedly different work environment for agriculture and agricultural engineers. The demand for agricultural produce declined and prices fell. A “cotton crises” was particularly prolonged. In 1930, H. P. Smith transferred from the Department of Agricultural Engineering to the Texas Agricultural Experiment Station to head up its newly organized Agricultural Engineering research division—and his particular thrust was to work on the cotton problem. The price collapse was triggered by low consumption and by the fact that the Liverpool global cotton market had some 2 million bales of unsold cotton on hand in 1933. Cotton remained at “bottom” prices from 1931 through 1938. Smith developed a strong research program in cotton mechanization, and one of his products, the cotton-stripper harvester lowered “picking” costs and enabled Texas farmers to remain economically competitive with producers in other states. But, to be sure, increasing production through mechanization no longer seemed to be a solution to the farm problem. Texas A&M’s department of Agricultural Engineering began to work with more intensity on improving cultivation practices, on conservation, improved use of water resources, and on the electrification of the farm and home...relatively less costly enterprises than mechanization but critical to successful farming. At the same, time implement dealers, also closely associated with agricultural engineering, needed to sustain and ideally increase their marketing. Scoates and Texas A&M’s agricultural engineers effectively continued to cultivate the connection between the farm, the merchant, and the manufacturer, and thus somewhat ameliorated the “farm problem”.

During the depression, Scoates became increasingly focused on farm homes and farm buildings as essential elements of a successful life in agriculture. In 1931, President Herbert Hoover asked Scoates to head a committee to make recommendations to the “President’s Conference on Home Building and Home Ownership” co-sponsored by the Department of Commerce and the Department of Interior. Scoates’ contributions, described as “thoughtful and painstaking work” had a unique value and provided more accurate information for programs sponsored by residential housing districts and the respective Departments of Commerce, and

Interior. The President, and Secretaries asked John M. Grier, Executive Secretary of the Conference to convey their appreciation to Prof. Daniels Scoates.

Paradoxically, Texas A&M and the Department of Agricultural Engineering weathered the Depression rather well. Enrollment more than doubled from 2,379 students enrolled in 1926-27 to 4,915 for the 1936-1937 academic year. In the 1920s, The University of Texas and Texas A&M began to receive royalties from oil production on University lands, lands originally dedicated to higher education and “The University of Texas” by the Republic of Texas. The impact of the depression on the campus was substantially limited by the receipt of oil income and increased appropriations for capital improvements from the State of Texas. Between 1929 and 1937, the years of most severe depression, Texas A&M received appropriations from the State and funds from New Deal programs enabling A&M administrators to spend some \$3,165,850 on new construction during the Depression. This amount equaled the combined capital spending by Texas A&M since it was founded. Scoates and the Department, long been in need of a new building had accumulated convincing reports and documentation justifying construction expenditures.

In January 1923, Scoates had invited the Texas Hardware and Implement Association to appoint a special committee to report on the condition of the buildings which housed the Agricultural Engineering Department and Laboratories. Simply put, the Committee found the facilities totally inadequate!

The committee finds that the Department of Agricultural Engineering at the present time is housed in two frame buildings and part of one of these buildings, in which the office and most of the class rooms are located, is the remains of an old implement barn that has been worked over and made to serve this purpose. The large wooden shed attached to this structure houses gasoline engines, automobile machinery and other equipment. This shed is used for laboratory purposes and has gravel for a floor.



Fig. 3.4, Demonstrating feed grinding and silo filling as part of the 1931 Agricultural Engineering Fair. The site is outside the wooden Agricultural Engineering Laboratory building that was described as a fire hazard.

Moreover, existing buildings were judged to be “unsanitary, unlivable, and unsuitable”...and a fire hazard as well. The Committee made sure that the Texas legislature (then in session) received the report accompanied by photos of the accommodations at the University of Minnesota and the University of Nebraska. The message was clear and succinct, a new building for the Agricultural Engineering program seemed imperative. Despite the obvious need for facilities in the past there had been no action and now, finally, in the throes of the Great Depression, funding became available.

Construction began on the Agricultural Engineering Building, using a design strongly affected by the report of the Texas Hardware and Implement Association, by the physical growth and success of the Agricultural Engineering program, and by Daniels Scoates’ perception of the unique needs of the building. It was to be, in his mind, not only for offices, classrooms, and laboratories, but something of a monument and a memorial to “Agricultural Engineering.” He wanted a design and motif that immediately captured and displayed the mission of agricultural engineers and the memorable moments and individuals in the history of agricultural engineering. As he explained in an editorial he wrote for Deere & Company’s quarterly *Furrow*, the design included an “Agricultural Engineers Hall of Fame, “where busts and plaques of famous

agricultural engineers will be a constant reminder to the throngs that pass that ours is a worthy heritage and our debt is great.” It was no coincidence that the first bust of a famous “agricultural engineer” turned out to be John Deere. The new agricultural engineering building was not only to house classrooms, laboratories, and offices, but demonstrate that Texas A&M’s agricultural engineering program was closely aligned to the interests of the farmer, manufacturer, and distributor.

The new Agricultural Engineering building comprised almost one and a half acres of floor space (62,000-square feet) and included offices for faculty and graduate students, a library, store rooms, a rural electrification laboratory, farm machinery laboratory, gas engine laboratory, an irrigation and drainage laboratory, a farm shop equipped for wood, concrete, forge, metal, and rope projects, an electric wiring display, and tool sharpening and repair facilities. And there was an exhibit foyer where the department could display models of new farm machinery and electrical appliances useful to the farm home. The building boasted a “120-seat lecture room with controlled lighting, a revolving demonstration platform, and a colorful five-panel mural on the front wall depicting the evolution of cotton production machinery and farm equipment.” Daniel Scoates had a strong role in the design of the building, and in the final detail, and he literally had a hand in its final completion. The color mural was designed by Professor Scoates and painted Gertrude Babcock, financed by a grant from International Harvester, some years after the Department’s move.

The building is a unique depression-era design, one of ten on campus that feature the architectural creativity of Samuel Vosper, architectural designer and Frederick Giesecke, College Architect, with input on functional requirements from Daniels Scoates. It has an artistic front entrance, over which decorative Owls observe the campus. Upon entering, marble walls grace the main lobby. Adjacent to the lobby is a unique 120-seat lecture room with an elegant chandelier, and a revolving platform which facilitate demonstrations by lecturers. The building houses offices, classrooms, laboratories, and the Agricultural Engineers Hall of Fame.



Fig. 3.5, Agricultural Engineering building, c. 1937