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**ANIMAL PROJECTS**

## VIRGINIA TECH, Blacksburg, Virginia

## Livestock and Poultry Research Facilities, Phase 1, 2017- Present

Project consisted of 126,000 gross square feet of various agricultural structures for poultry, swine, equine, beef cattle, and various other agricultural support structures. Provided initial program review, consultation services regarding further program development, conceptual building layouts meeting AAALAC requirements as well as optimized facilities for livestock production efficiency.

## UNIVERSITY OF CALIFORNIA, Davis, California

## Dairy Relocation, 2014-2015

Programing and schematic design for a new dairy facility and new Animal Science Teaching Facility (ASTF). Dairy facility included preliminary plans for the relocation of 110 milking cows, barn layouts and size estimates, and manure handling. The ASTF contained classrooms, offices, conference room, animal housing and birthing facilities for bovine, sheep, goats, and swine. The ASTF building provided short term animal housing for use with student teaching and educational outreach activities.

## UNIVERSITY OF IOWA, Oakdale, Iowa

## Liquid Waste Treatment System from ABSL2 Vivarium, 2013

Consultation and conceptual planning for an ABSL2 liquid waste treatment system for a multi-species vivarium. Met with design team and university personnel on ABSL2 requirements and discussed the need for effluent decontamination. Assisted in determining the methodology of the decontamination system as well as determined system effluent loading and sizing.

## IOWA STATE UNIVERSITY, Ames, Iowa

## Zumwalt Station Remodel, 2012

Initial consultation and design for a BSL2 swine research facility. Advised owner on complications with remodeling existing facility verses constructing a brand new facility. Provided electrical, mechanical, and plumbing designs for existing facility remodel. Performed engineering design for concrete manure storage structure and plumbing to and from facility.

## TUSKEGEE UNIVERSITY, Tuskegee, Alabama

## Meat Processing (Abattoir), 2011

## VIRGINIA TECH, Blacksburg, Virginia

## Dairy Relocation, 2009-2010

New dairy facility for 232 lactating cows including feed, manure handling, replacement animals, and administration facilities. The facility consists of multiple buildings with a budget of \$10,000,000. Curry-Wille & Associates provided design services for the animal housing buildings, manure system and support facilities. Design-build format was utilized for final construction of the lactating and parlor housing.

## MICHIGAN STATE UNIVERSITY, Kellogg Biological Station, Michigan

## Dairy Facility, 2008

LEED Certified rotational pasture-based robotic dairy facility for 120 milking cows. The facilities include 18,924 sf. freestall barn and 1,908 sf. Of support area. Total facility costs. With site development was \$1,800,000.

VIRGINIA TECH, Blacksburg, Virginia

Master Planning, 2008

Master planning of all animal and agricultural facilities, relocation and updating with the University. Departments involved included: Swine, Dairy, Beef, Poultry, Equine, Veterinary Medicine and Plant Sciences. Estimated cost \$33,400,000.

CORNELL UNIVERISTY, Ithaca, New York

Feasibility Study, 2006

Feasibility study and schematic design to relocate or remodel dairy teaching and research farm for 415 milking cows plus replacement animals and support facilities and manure utilization. Curry-Wille & Associates is the design team leader.

UNIVERSITY OF TENNESSEE, Knoxville, Tennessee

Dairy Farm, 2006-2007

New dairy farm in a new location for 232 milking cows plus replacement animals and all support facilities and manure utilization. Multiple buildings with a total of 123,500 sf and an estimated construction cost of \$14,000,000. Curry-Wille & Associates provided initial program and will provide animal building design and manure handling and utilization design.

SOUTH DAKOTA STATE UNIVERSITY, Brookings, South Dakota

Equestrian Center, 2006

AUBURN UNIVERSITY, Auburn, Alabama

Poultry Facility, 2005

New poultry facility consisting of poultry housing, research space, feed mill, administration space, egg processing and meat processing. The facility is approximately 121,876 SF at an estimated cost of \$14,000,000. Curry-Wille & Associates is designing all animal facilities, feed mill and consulting on processing spaces.

UNIVERSITY OF WISCONSIN, Marshfield, Wisconsin

USDA Animal Holding Facility, 2005

Design of dairy and freestalls for heifers and lactating cows, nutrient management system, holding facilities and special needs facilities.

IOWA STATE UNIVERSITY, Ames, Iowa

Dairy and Animal Science Education & Discovery Facility, 2005

New dairy facility for 450 lactating cows including full feed, manure, heifer raising and administration facilities. The facility consists of multiple buildings with a total of 280,000 SF with an estimated cost of construction of \$9,000,000. Curry-Wille & Associates is providing design and construction services for the animal housing buildings, manure system and support facilities.

IOWA STATE UNIVERSITY, Ames, Iowa

Bilsland Swine Breeding Building, 2005

Design of swine breeding and gestation facility

UNIVERSITY OF WISCONSIN, Platteville, Wisconsin

Dairy Research Building, 2005

Program Planning and Design of 200 cow freestall housing, conventional milking parlor and robotic milking

UNIVERSITY OF GEORGIA, Athens, Georgia

Swine, Beef and Sheep Teaching and Research Farm, 2005

Master Planning and cost estimating

USDA/UNIVERSITY OF WISCONSIN/U.S. DAIRY FORAGE RESEARCH CENTER, Prairie du Sac, Wisconsin

F & G Barn Renovation, 2004

Design of a remodel of freestall housing for dairy replacement heifers and dairy milking stock.

UNIVERSITY OF TENNESSEE, Knoxville, Tennessee

Undeveloped Farm, 2003

Master Planning and cost estimating for 200 cows plus replacements on an undeveloped farm.

UNIVERSITY OF GEORGIA, Athens, Georgia

Animal Health Research Center, 2003

Consultation and design of animal spaces for high containment (BSL-3AG) research. Species include bovine, swine, equine, sheep, goats, dogs and rodents.

LOUISIANA STATE UNIVERSITY AGRICULTURAL CENTER, Baton Rouge, Louisiana

Animal and Food Sciences Facilities Renovations & Modernizations, 2003

Consultation and design of abattoir, animal isolation spaces and waste handling systems. Activities include diagrammatic flows of animals, waste and air, equipment plans, identification of sanitary and utility requirements and site studies.

UNIVERSITY OF ILLINOIS, Champaign, Illinois

South Farms Relocation, Beef and Sheep Facilities, 2003

UNIVERSITY OF GEORGIA, Athens, Georgia

Animal Health Facility, 2003

Design of animal spaces, feed storage and handling, and waste handling systems in and out of containment.

AUBURN UNIVERSITY, Auburn, Alabama

Master Plan for Swine Research and Education Center, 2002

UNIVERSITY OF WISCONSIN, Marshfield, Wisconsin

Heifer/cow facility, 2001

Design of housing, animal flow and manure/waste handling facilities

UNIVERSITY OF WISCONSIN, Platteville, Wisconsin

Swine Research Building, 2001

Design of farrow to finish swine research facility, including schedules and support areas, with complete manure management design.

UNIVERSITY OF WISCONSIN, Platteville, Wisconsin

Dairy Research Building, 2001

Renovation of existing freestall facilities for better animal management flow and increased usage of freestalls.

THE MILTON HERSHEY SCHOOL, Hershey, Pennsylvania

Animal and Dairy and Food Processing Center, 2001 and continuing

Agricultural Engineering design for dairy, large animal, small animal, milk processing (goat and cow), veterinary clinic and horse stables. Includes animal flow and waste/manure treatment.

THE OHIO STATE UNIVERSITY, Columbus, Ohio

25-year long range planning for facilities in the College of Agriculture, 1999/2000 and continuing

UNIVERSITY OF KENTUCKY, Princeton, Kentucky

Consultation and specifications for farrow to finish swine facilities and feed mill, 2000

UNIVERSITY OF MARYLAND-EASTERN SHORE, Princess Anne, Maryland

Center for Food Science and Technology, 1998/99

Provide consultation and design for live animal handling and holding; swine, sheep, goat and bovine slaughter facilities; poultry slaughter facilities; seafood processing facilities; meat processing and cold storage facilities.

UNIVERSITY OF NEBRASKA, Curtis, Nebraska

Livestock Pavilion, 1998

Preliminary design and specifications for design/build bidding. Show arena and animal handling areas for teaching and demonstration.

THE OHIO STATE UNIVERSITY, OARDC, Wooster, Ohio

Equine Education Complex 1977/99

Assisted the University in preparing drawings and specifications for housing, teaching, offices and pavilion for equine education.

UNIVERSITY OF KENTUCKY, Lexington, Kentucky

Swine, Beef and Sheep Teaching and Research Farms, 1996/99

Drawings and specifications for farrow to finish swine facilities, beef cow/calf market and handling facilities and sheep lambing and market facilities.

IOWA STATE UNIVERSITY, Ames, Iowa

Animal Science Teaching Building and Livestock Infectious Disease Facility, 1995/99

Drawings and specifications for animal manure system.

IOWA STATE UNIVERSITY, Ames, Iowa

Beef Nutrition Research 1995

Consultant to University Design Services in the preparation of construction documents for a confinement beef feeding research facility.

IOWA STATE UNIVERSITY, Madrid, Iowa.

Bilsland Swine Breeding Farm, 1995/96.

Drawings and specifications for a 48 sow farrowing - Nursery with a sow wash area and observation room. Approximately 8,440 square feet. Two (2) 600-head grow/finishing buildings were also designed as naturally ventilated buildings with mechanical winter ventilation. Approximately 11,700 square feet.

MICHIGAN STATE UNIVERSITY, East Lansing, Michigan.

Swine Facility, 1993/96.

A 200-sow, farrow-to-finish Swine Facility with an individual intensive lab for farrowing and nursery. 41,800 square feet of production facilities including a solid-liquid manure separation system, compost building and load-out area.

Poultry Facility, 1993/96.

A 48-pen, 1150 Turkey Research Facility complete with work room. (8,120 square feet).

Beef Handling Facility 1993/96.

A 1,600 square foot Beef Handling Facility with a handling chute, scale, squeeze chute, outside holding pens and dual height loading chute and working corral.

Intensive Dairy Metabolism Facility 1993/96.

A 3,650 square foot Metabolism Facility complete with feed room, milk center and sample prep lab.

THE OHIO STATE UNIVERSITY, Wooster, Ohio.

Poultry Teaching/Research Facility, 1993/95.

Consultant to Prime Architect on a 20,600 square foot Poultry Facility.

SOUTH DAKOTA STATE UNIVERSITY, Brookings, South Dakota.

Swine Grower/Finishing Biostress Research Facility, 1993/94.

Drawings and specifications for a 400 head grower/finishing facility with feed storage/handling support rooms. Approximately 7,000 square feet.

UNIVERSITY OF MINNESOTA, Grand Rapids, Minnesota.

Open Front Beef Facility, 1993/94.

Drawings and specifications for a 180 head open front wood post-frame beef facility, including quarters and feed bunk layout. 10,800 square feet.

SOUTH DAKOTA STATE UNIVERSITY, Brookings, South Dakota.

Sheep Lambing Barn, 1992.

Building program refinement, drawings and specifications for 600 head sheep unit with lambing facilities, office, laboratory and feed supplies storage. 17,300 square feet.

UNIVERSITY OF MINNESOTA, Crookston Campus, Minnesota.

Agricultural Operations Management Center, 1991/1992.

Drawings and specifications of animal facilities including 24 sow swine unit, beef and sheep building, hay-shavings storage building, and manure storage bunkers and liquid slurry tank. Consultant to prime Architect. 15,680 GSF.

UNIVERSITY OF MINNESOTA, St. Paul Campus, Minnesota.

Animal Physiology Research Facility, 1991.

Building program refinement, schematic design and design development of animal housing areas and equipment for prime architect on campus research laboratory. Facility to meet AALAC requirements. 14,470 GSF.

OHIO STATE UNIVERSITY, Wooster, Ohio.

Dairy Maternity and Calf Barn Facility, 1991.

Drawings and specifications for replacement maternity facility including 14 maternity pens, 32 head calf nursery, 54 head growing heifers, hay storage building and manure storage bunker. Performed in association with local Engineering firm. 17,650 square feet.

SOUTH DAKOTA STATE UNIVERSITY, Brookings, South Dakota.

Swine Research Facility, 1991.

Drawings and specifications for swine research facility including 60-head gestation housing, 24 farrowing stalls, and 28 single litter size research nursery pens. Equipment bid separately. Performed in association with local Engineering firm. 7,300 square feet.

PENNSYLVANIA STATE UNIVERSITY, University Park, Pennsylvania.

Dairy Research Unit, 1991.

Independent review of design development documents prepared by Architect. 550-head dairy facility complete with individual feeding barn, intensive research barn, milking parlor, heifer and milking cow housing.

HAWKEYE INSTITUTE OF TECHNOLOGY, Waterloo, Iowa.

Cattle Laboratory Building, 1991.

Consultant to architect and preparation of specifications for animal housing portion of cattle housing building. 8,160 square feet.

IOWA STATE UNIVERSITY, Ames, Iowa.

Ankeny Dairy Station-Individual Feeding Barn, 1989.

Preparation of contract drawings and specifications for 48-cow freestall barn with individual electronic feed gates.

IOWA STATE UNIVERSITY, Ames, Iowa.

Swine Nutrition and Management Research Center, 1989.

Consultation to prime engineering firm on 200-sow farrow-to-finish swine operation of 25,750 square feet.

UNIVERSITY OF KENTUCKY, Lexington, Kentucky.

Animal Science Experiment Stations, 1988/89.

Evaluation of program and facility needs for next 20 years, in the areas of beef, dairy, horses, poultry, sheep, and swine, with a total of approximately 1500 mature animal units.

of air conditioning for bulls.

MISSISSIPPI AGRICULTURAL & FORESTRY EXPERIMENT STATION, Mississippi State, Mississippi.

Dairy Science Farm, 1984.

Drawings, Specifications, Contract Documents, and cost estimates for a 200-cow research and teaching dairy farm. Included in the project are all facets of the dairy, including utilities, waste treatment, site development, housing requirements, and parlor needs.

UTAH STATE UNIVERSITY, Logan, Utah.

Dairy Science Farm, 1983.

Consultation for a 200-cow research and teaching dairy farm. Project included development of all facets of the dairy to be located on an undeveloped site.

### **GRAIN/SEED STORAGE FACILITIES**

UNIVERSITY OF MINNESOTA, Becker, Minnesota.

Sand Plains Research Farm, 1992.

Drawings and specifications for a 2,400 square foot post frame seed sample preparation facility.

UNIVERSITY OF MINNESOTA, Grand Rapids, Minnesota.

North Central Experiment Station, 1992

Drawings and specifications for a 3,600 square foot field crop laboratory with lab rooms, offices, meeting room, and a machinery storage area.

UNIVERSITY OF MINNESOTA, Morris, Minnesota.

West Central Experiment Station.

Drawings and specifications for a 6,500 square foot agronomy research facility complete with labs, computer room, offices, and machinery storage area.

IOWA STATE UNIVERSITY, Ames, Iowa.

Grain Center Specifications, 1991.

Preparation of Contract Document Specifications for receipt of bids on grain drying and storage system including bins, drying and stirring equipment, bucket elevator and tower, conveyors, temperature monitoring equipment and controls. System design by ISU.

### **FEED HANDLING FACILITIES**

THE OHIO STATE UNIVERSITY, Wooster, Ohio

Feed mill evaluation, 1995

Evaluation and cost estimate of remodeling vs. replacement of University feed milling system.

IOWA STATE UNIVERSITY, Ames, Iowa.

Structural Evaluation of Feed Mill Structure, 1990.

Site observation, analysis and report on wall cracks on masonry-clad feed mill structure at the Ruminant Nutrition Research Station.

IOWA STATE UNIVERSITY, Ames, Iowa.

Feed Preparation Facility, Swine Nutrition and Management Research Center. 1989.

Preliminary and Final Drawings and Specifications for a feed preparation facility to serve a 200-sow farrow-to-finish swine research station. Features include a nominal 30x60 pre-engineered steel building, exterior bulk storage bins, custom steel support system for nine overhead bins, bulk ingredient receiving area, premix and mixing areas, secure ingredient storage area, and bagging area. Feed handling equipment includes horizontal mixers, electronic scale hopper, bucket elevator, drag conveyor, hammer-mill, feed distribution augers, and dust collection system.

MICHIGAN STATE UNIVERSITY, Kellogg Biological Station, East Lansing, Michigan.

Feed Center. 1985.

Design of electrical system including motor control center and controls for automation of feed processing system for dairy research center.

### **FERTILIZER AND AG CHEMICAL FACILITIES**

UNIVERSITY OF MINNESOTA, Becker, Minnesota.

Sand Plains Research Farm, 1992.

Drawings and Specifications for a 1,200 square foot post-frame fertilizer storage facility.

### **MISCELLANEOUS/OFFICE/COMMERCIAL BUILDINGS**

IOWA STATE UNIVERSITY, Madrid Iowa

Bisland Swine Breeding Farm, 1995/1996

A 1,600 square feet office complex including a men's and women's shower in/out facility with a break room and conference room.

UNIVERSITY OF MINNESOTA, Morris, Minnesota

West Central Experiment Station, 1993

Drawings and Specifications for a 6,500 square foot agronomy research facility, complete with labs, computer rooms, offices and machinery storage area.