THE UNIVERSITY of WISCONSIN MADISON

REQUEST FOR ARCHITECTURAL & ENGINEERING PRE-DESIGN AND DESIGN SERVICES

Integrated Dairy, Phase III

December 2010

Project No. 10D1S

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Project Background and Purpose

Dairy research at UW-Madison predates the 20th century. Until the 1950s, dairy research was primarily conducted on campus, but expanded research needs led to construction of the original Arlington dairy about 1960. The Marshfield dairy was built a few years later to focus on the unique needs of the state's north central and northern tier dairies. Today, the dairy science program provides research, teaching and outreach support to the dairy industry, which contributes $20 billion annually to the state's economy.

Dairying in the upper Midwest is in the midst of major restructuring, caused by changes in national and global competition, new federal marketing and pricing programs, and challenges with mature production and processing infrastructures. The region has been slow to adopt new and developing practices, but the pace of change is increasing. These changes have raised concerns about labor availability, food safety and animal well-being. Dairy farmers, dairy processors, support industries, the academic community, and other state agencies must work together to recreate the state's traditionally prosperous dairy industry. UW-Madison's research and graduate school training opportunities can help to advance the State's dairy industry in the areas of cost of production, environmental impact of dairying, food safety and quality, animal health and well being, and bio-security and diagnostic techniques.

Prior to the initiation of the Integrated Dairy Program in 1999, the dairy science program facilities were far below the quality and quantity that one would expect to find in America's Dairyland. They lacked compliance with contemporary animal care guidelines, and were an impediment to the dairy science program's research and academic mission. The existing herd sizes were insufficient to meet standards of statistical accuracy for animal health studies, reproductive performance, and the long-term impacts of nutritional strategies to reduce environmental waste. The Integrated Dairy Program's Phases I and II have resulted in improved facilities at Marshfield and Arlington Agricultural Research Stations. The final component is meeting the needs for the teaching/research cows on campus.

Campus veterinary staff has expressed concerns to the Dean of the College of Agricultural and Life Sciences, the Associate Dean for Research Policy in the Graduate School, and the Director of the Research Animal Resource Center. In their view, injuries to the dairy cattle housed in the center have increased in number and are a direct result of the outdated facility. Reaccreditation of the College of Agriculture and Life Science (CALS) animal facilities is scheduled for 2012 so it is imperative that this project be underway or nearing completion by the time.

Project Description

This project renovates approximately 25,900 GSF of space in the Dairy Cattle Center on the UW-Madison campus for the Dairy Science Department. The projected animal count at the completion of this project is 80. The scope of the renovation includes:

- Renovation of the East/West Stanchion Barns: The work will include removal of the raised concrete feed alleys and feed bunks; removal of the existing tie stalls; widening and lengthening the existing stalls; constructing new feed alleys; modifying the scrape alley and providing new tie stalls in each of the stalls. Rooms at the west end of the west barn may be modified or removed depending on the final design for the barn and

the recommendation from the A/E on the milking system. If the existing milking parlor is removed, these rooms may be relocated to that area. Minimal work to the exterior walls or roof may be required to install new ventilation equipment or to remove and patch holes from outdated equipment. Patching of the exterior may be required where the existing silos are removed (depending on the location of the new silos). Exterior walls on the north, east and west elevations will be pressure washed. Existing watering, lighting, electric and ventilation systems will be removed and new ones will be constructed. New barn cleaners will be provided. The A/E shall consider the use of evaporative pads and a continuous bank of fans to cross ventilate the barns.

- Milking Parlor and Veterinary Area: The existing milking parlor is inefficient and labor intensive to operate. The campus has identified three possible options for milking, and would like the A/E team to propose others. The first option would be to enlarge and improve cow flow to the existing parlor; the second would be to construct a new parlor in the existing arena; and the third would be an in-barn milking system. If the existing parlor is removed, the functions located at the west end of the west barn could be constructed in its place. If option one would work with an adjustment to the existing veterinary room, the A/E should identify it during the pre-design. The veterinary area will receive a new HVAC system.

- Central Core of the Building: The central core is the three story space (basement, first and second floors) between the two barns. The existing milking parlor, veterinary area, and locker rooms are located in this core. The second floor of the core contains three resident rooms, a bathroom and a kitchen for students employed by the college to care for the animals. The second floor also contains a lecture room. The A/E team shall identify during the pre-design process any code related issues that need to be corrected and incorporate them into this project. They will also identify any mechanical, electrical or plumbing issues that do not meet code and upgrade them as part of this project. A new ADA accessible elevator will be added on the north side of the central core. This elevator will provide access from grade and will serve all floors of the building.

- Locker Room Renovation: The male and female locker rooms on the basement level of the building will be renovated. New lavatories, toilets (and stalls), showers (min. of two for each sex/ must meet minimum plumbing code), and interior finishes (including lighting) will be provided. Twenty five new full size lockers will be provided for women and twenty five for men. The current female locker room is extremely small and will require expansion into the storage room to the south. This expansion will require the relocation of the laundry area. Re-design of the men's locker room is also anticipated. New electrical, mechanical and plumbing will be provided where it does not currently exist or comply with current codes.

- Silos and Grain Bins: Three existing silos at each end of the barn will be removed (six silos total); four new concrete stave silos (18' diameter and 60' tall) with unloaders will be constructed, connected to the western barn. It is anticipated that two of the silos will be located on the west end of the barn (one on each side of the large doors), and two along the south edge in parking lot 122. The A/E team shall work with the campus during pre-design to confirm that the location, height and diameter will work with the new design for the barns. There are utility lines in the area but they should not impact

the placement of the silos. The A/E and surveyor shall confirm their location during pre-design and work with the campus if a conflict between the lines and the silos will occur. The A/E shall identify possible issues with leachate from the silos and propose a solution if necessary. Areas where existing silos were removed shall be repaired with asphalt to match the surrounding area.

Six existing grain bins shall be removed from the feed storage buildings (which are attached to the south side of the barns). Eight new four ton exterior feed bins will be provided (the location will be determined during pre-design).

Scope of Services

This project will provide pre-design and design services for the Integrated Dairy, Phase III project.

Teams should have specific expertise and experience in the design and coordination of dairy facilities renovations and demolition. Well qualified teams will include an agricultural consultant. Work includes site surveys, acquiring field data, and verifying as-built conditions to assure accurate development of planning documents. Consultants should indicate specific projects from past experience (including size, cost, and completion date) in their letter of interest and include proposed consulting partners and specialty consultants. Consultants will provide the following services and deliverables:

A. Pre-Design Services

- Develop a space tabulation summary, program statement including a description of user functions, requirements and room data sheets.
- Working with information provided by the campus, verify the location of the existing utilities and their capacities. Provide a recommendation for utility rerouting if required, or identify a location for the silos that does not impact the utilities.
- Develop a budget for construction costs and overall project cost.
- Develop a project schedule that identifies major milestones, including time for approvals.

B. Design & Construction Services

- Develop a 35% Design Report that includes preliminary documents as prescribed by the Division of State Facilities/State of Wisconsin.
- Develop complete 100% Construction Documents as prescribed by the UW-Madison campus technical guidelines (https://fpm-www3.fpm.wisc.edu/cpd/Default.aspx) and Division of State Facilities Master Specifications/Design Guidelines
- The AE shall include DSF Level 2 commissioning as part of the scope of work
- At a minimum, use Building Information Modeling (BIM) as required by DSF
- The A/E will design and specify all building signage. Signage will be installed by the contractor. The only exception is the exterior building sign which will be ordered by FP&M using project funds.
- Provide interior design services, including all interior furnishings, as required. A/E will provide contract administration service for receiving and installation of all required furnishings.

- The A/E will provide bid related services.
- The A/E will provide construction period services for the project
- The A/E will work with the appropriate campus staff (UW FP&M, Physical Plant, Safety, CALS and UWPD) to review the 35% and 100% documents. The AE team will attend review meetings for the 35% and 100% documents. The groups will provide written comments based on the documents, discuss the comments with the A/E and their sub consultants and written responses are required to be provided by the A/E. The A/E will provide the campus with six complete review sets (in addition to the 15 review sets required for DSF) for the 35% and 100% reviews as well as six complete sets of bidding documents.
- At the end of construction, the A/E will provide the campus with three electronic copies each of O&M manuals and record drawings/specifications in AutoCAD/MS Word format, including the work of all sub-consultants, furnishings, signage, etc, as well as three hard copies of same. Any renderings or models generated by the AE will also be turned over to the campus. This is in addition to the record drawing requirements of the Division of State Facilities.

Project Schedule

AE Selection	December 2010
Pre-Design Complete	July 2011
Design Begins	TBD
35% Design Report	TBD
BOR/SBC Approval	TBD
100% Design Complete	TBD
Project Bidding	TBD
Construction Start	TBD
Construction Complete	December 2013

Preliminary Project Budget:

This total project budget breakdown is provided for reference only.

Construction Cost:	$2,272,000
Hazardous Materials:	50,000
Demolition:	80,000
Total Construction:	2,402,000
Contingency:	168,000
A/E Design Fees:	200,000
DSF Mgmt Fees:	103,000
Other Fees:	75,000
Movable Equipment	27,000
Percent for Arts	7, 000
	$2,982,000

General Requirements:

WEPA: In accordance with the Wisconsin Environmental Policy Act (WEPA), the project requires a Type III Environmental Impact Assessment (EIA)

Hazardous Materials: The Dairy Cattle Center has been surveyed as part of the Wisconsin Asbestos and Lead Management System (WALMS). The building has pipe insulation and floor tile that contains asbestos and will be abated. The Division of State Facilities will contract with an abatement design professional to design the documents for the removal of these materials.

Project Considerations:

Site: The Dairy Cattle Center is located in the center of the UW-Madison campus in the area known as the "Ag Campus". The Dairy Cattle Center is located at 1815 Linden Drive and is bordered on the east by a surface parking lot and on the west by the Dairy Barn. To its south is the Wisconsin and Southern rail line. The USDA Dairy Forage Research Building sits to the north of the Dairy Cattle Center.

The parking lot on the east side of the building (where the silos will be removed) must be repaired as required to match the existing paving. Provide striping as required for the parking stalls.

Architectural: The program must meet the needs for the teaching/research cows on campus. There are currently multiple physical deficiencies at the center which affect the health and welfare of the cattle in the building and stand to jeopardize CALS accreditation by AAALAC. All of the stalls in the east/west stanchion barns are seriously undersized and considered inhumane by current standards; two-thirds are obsolete and non-serviceable. Many of the confined stalls are also the outdated stanchion-type. Existing stalls are not sloped to permit installation of modern mattress pads, which forces the use of natural bedding materials that are more expensive, labor intensive to use, and promote disease. A new elevator will be constructed on the north side of the building west of the main entry. It will provide ADA access to all levels of the building.

Site Utilities: The Dairy Cattle Center is served by a high pressure steam vault (16" Supply, 8" Return) located to the east of building in Lot 39. The high pressure steam enters into the building (6" Supply, 3" Return, 0.5" Air) on the north side. Chilled water supply and return is available in Linden but currently does not service this building. A 4" domestic water pipe enters the Dairy Cattle Center from a manhole (15V069) north of building. Two sanitary lines also enters into the building—an 8" line enters south of building (15SMH043) and 6" line enter north of building (15SMH013). Electricity is fed from electrical vault 6V02 to the north and manhole 6P10 to the north. Telecom is fed from the north east of building.

There will be shutdowns to tie in the new electric and water systems to the existing utilities within the building. These shutdowns must be coordinated with building occupants

Fire Alarm System: Provide a fully addressable fire alarm system with one-way voice capability. The system should include area smoke and/or heat detection, and an annunciator panel installed at the fire fighters designated entry point.

Telecommunications: The A/E team will review the existing telecommunications infrastructure in the Dairy Cattle Center during pre-design to determine if it meets campus standards. If it does not, it shall be updated as part of this project. All spaces will be wired with Cat 6 data cabling or the current acceptable standard as determined by the campus. The core of the building will be fully serviced by the campus's wireless network (which will be designed by DoIt). Single mode fiber will serve any high demand areas determined during programming. Provision for reliable continuous cooling should be made to all telecom and server rooms.

Campus Automation System: The building automation system, fire alarm system reporting, and the access control system must be tied to the University's existing Metasys system.

Security Systems and Access Control: A system of electric locks, door contacts and card readers will be placed as needed to secure and access the building as deemed appropriate by the department and campus staff. The UW Police Department and Electric Shop will assist in planning and review of these systems. The campus standard Andover building security access system needs to be tied to the University's existing Metasys system.

Additional Resources:

Campus Master Plan - 2005 Campus Master Plan

Contact Information:

UW Madison: UW Madison Contact: Doug Sabatke, 608-265-3476, dsabatke@cals.wisc.edu


Observatory Drive
Linden Drive
Dairy Cattle Center
Dairy Barn
Campus Drive
FACILITIES PLANNING AND MANAGEMENT
Campus Planning & Landscape Architecture
Suite 930 WARF
610 Walnut Street
Madison, Wisconsin 53726
WISCONSIN
Integrated Dairy-Phase III
2007 Air Photo
10-28-2010
N/A
JLB
1" = 60'-0"
North
L-1
1

SITE MAP