University of Arizona as the Global Leader in Desert Ag Research and Innovation: Realizing that Vision

Infrastructure Needs at the Yuma Agricultural Center to support that Vision

Agriculture in Yuma has national and local impact\(^i\), and is sensitive to new challenges

- Provides 90% of the North American leafy greens and winter vegetables from November-March
- Provides a $3.2B annual economic impact to Yuma County, and accounts 25% of the County's jobs
- Is sensitive to emerging challenges of access to irrigation water and skilled labor, rising temperatures, and new pests and diseases

Recent Progress to Realize the Vision at Yuma Ag Center (YAC)\(^ii\)

- University of Arizona (UA) President’s Commission\(^iii\) identified YAC as one of four Innovation Hubs
- Success of the YCEDA\(^iv\) public-private partnership linking UA expertise with stakeholder needs
- Ongoing hires of UA Extension faculty: Integrated Pest Management and Organic Farming
- $360K from NSF for 10GB data access to support Precision Ag Research and Innovation

Potential New and Expanded Research Areas at YAC

Precision Agriculture supported by Big Data, Water Conservation, Soil Health, Emerging Pests and Pathogens, Plant-Soil interactions, and Farming System Design

More Lab and Meeting Space is Needed at YAC to realize the Vision

- 10-15 new labs needed in next 5 years
  - Existing 13 labs are occupied, and 3 labs have double occupancy
  - Immediate need for 5 more labs: 2 new Extension faculty in Pest Mgmt and Organic Farming, New YCEDA projects with collaborators, and 2-3 new industry occupants
  - Next 3-5 years, 5 more labs needed: UA President’s Commission: 4 new faculty supporting Innovation Hubs, and additional industry occupants
- More meeting space needed to support growth in conferences and workshops
  - Current space (1100 ft\(^2\)) is insufficient to support large, interacting groups

Exploring Options for New Infrastructure Investments

- Needs Assessment, Funding Options, Timeline, and Next Steps
- A Conceptual Design for discussion and reference\(^v\)
  - Lab Building (21,000 ft\(^2\)) includes 12 labs (BSL2 level); Conference Center (5,400 ft\(^2\)) capacity 120 people; and projected cost $40M according to UA Planning Design and Construction

For more information: Mitch McClaran, Director, Arizona Experiment Station, mcclaran@arizona.edu

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\(^ii\) https://experimentstation.arizona.edu/
\(^iv\) Yuma Center for Excellence in Desert Agriculture https://desertagsolutions.org/
\(^v\) See Conceptual design on https://experimentstation.arizona.edu/centers-and-locations/yuma-agricultural-center
Introduction

The University of Arizona’s Yuma Agricultural Center (YAC) needs more lab and meeting space to meet the expected increase in research and outreach focused on sustaining the 53B agricultural industry in the Yuma region in the face of climate uncertainty, water insecurity, and potentially for new diseases and pests. Currently, the existing space at the YAC is over-committed with many labs and offices in double-occupancy. Yet, the University is pursuing external funding to increase research and extension activities, increasing research collaborations with private and public partners, and developing a strategic plan to sustain desert agriculture. Therefore, to support these current and future needs, we present this conceptual design and preliminary budget estimate for new labs and meeting spaces at the YAC. We expect this plan to generate dialog and support for expanding the capacity of the YAC to deliver on the land grant mission of the University of Arizona.

To this end, the University of Arizona Office of Planning Design & Construction (PDC), on behalf of the University’s Arizona Experiment Station, engaged Sears Gerbo Architecture (SGA) to provide conceptual programming and design for a new laboratory and support facility, faculty offices, classroom and meeting spaces be located on the YAC in Yuma, Arizona. The proposed laboratory will provide space for as many as 12 new faculty hires. The new facility will provide additional research opportunities for new and existing outside partnerships. The proposed facility will also provide a new exchange center, meeting and gathering spaces that will relieve pressure on the existing structures on campus. This conceptual design will be used by the YAC as a mechanism for the University to focus on building new facilities to support the critical needs for additional space at the YAC, and also represents a sustainable and forward-thinking approach to architectural design. This conceptual design serves as a catalyst for positioning the University of Arizona as a leader in innovative research in desert agriculture, and for future fundraising efforts to support the new infrastructure.

In conclusion, the proposed laboratory and Exchange Center buildings at the YAC not only address the immediate needs for additional space at the YAC, but also represents a sustainable and forward-thinking approach to architectural design. This conceptual design serves as a catalyst for positioning the University of Arizona as a leader in innovative research in desert agriculture, and for future fundraising efforts to support the new infrastructure.

At the request of CALES, separate preliminary total project budget estimates were prepared for the following conceptual options:

A) Full build-out of Lab Building, includes Exchange Center, PV covered roofs, parking and outdoor courtyard $40,000,000
B) Full build-out of Lab Building, excludes Exchange Center, includes PV covered roof, parking and outdoor courtyard $35,000,000
C) 6 Lab build-out with 6 Lab shell space, includes Exchange Center, PV covered roof, parking and outdoor courtyard $36,000,000

These total project budgets were based on historical cost data for similar building types and site development allowances for utility infrastructure and solar covered parking/solar roof installations. Budgets include one year of escalation and will be refined as the project is further developed.

Acknowledgements

Sears Gerbo Architecture would like to thank the following people for their valuable time and participation in this effort.

UA Yuma Agriculture Center
Mitchel McClaran Director, Arizona Experiment Station
Humberto Hernandez Director, Yuma Agricultural Center
Sonnet Nelson Associate Director of Operations, Yuma Center for Excellence in Desert Agriculture
Stephanie Slinski Interim Director, Yuma Center for Excellence in Desert Agriculture

Planning Design & Construction
Ralph Banks P.E., P. Eng., CEM, LEEDAP
Sears Gerbo Architecture
Tom Gerbo AIA, LEEDAP
Fatemeh Sharaf Zadeh LEED Green Associate
**SPACE SUMMARY**

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<th>SPACE</th>
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**TOTAL NET AREA** 20,127 1.15 23,237

**TOTAL GROSS AREA** 26,723

**LEGEND**

- **DIRECT ACCESS**
- **INDIRECT ACCESS**
SITE PLAN

BUILDING GROSS AREA = 26,723 SF

EXISTING PARKING SPACES

NEW PARKING SPACES

COVERED PARKING LOT

PV PANEL

NEW LABORATORY BUILDING

EXISTING BUILDING

(EX. C. CURTIS LABORATORY)

PV PANEL

EXCHANGE CENTER

EXISTING GREENHOUSE

EXISTING GREENHOUSE

NEW LANDSCAPE AREA

COVERED COURTYARD

PV PANEL

PV PANEL

EXISTING UTILITY

NORTH
ZONING PLAN

BUILDING GROSS AREA = 26,723 SF

ZONING LEGEND
- EXCHANGE CENTER
- LABORATORY
- LABORATORY SUPPORT
- OFFICE/CONFERENCE
- KITCHENETTE
- BUILDING SERVICES/ CORRIDOR

EXISTING GREENHOUSE
EXISTING GREENHOUSE

EXCHANGE CENTER
LABORATORY
LABORATORY SUPPORT
OFFICE/CONFERENCE
KITCHENETTE
BUILDING SERVICES/ CORRIDOR

LABORATORY BUILDING SERVICES/CORRIDOR
OFFICE/CONFERENCE
KITCHENETTE

NORTH

SC: N.T.S
BUILDING SECTION

1

SC: N.T.S

NORTH NATURAL DAYLIGHT

PV PANELS ON ROOF FACING SOUTH

OPEN OFFICE

LAB SUPPORT

CLOSED OFFICES & CONFERENCE ROOMS

BUILDING SECTION

A3.0

Plot Date: 01.04.2024

Project No.: 1008-097

Plot Scale: AS NOTED

UNIVERSITY OF ARIZONA

YUMA AGRICULTURAL CENTER

STUDY

SEARS GERBO ARCHITECTURE

4547 E. FT. LOWELL RD., STE 421

TUCSON, ARIZONA, 85712

TEL: 520-733-5079
INTERIOR VIEW - LABORATORY

SC: N.T.S

1

A4.1

Plotted Scale
AS NOTED

Plot Date
01.04.2024

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