



Office of Physical Plant  
Physical Plant Building  
University Park, PA 16802-1118

DATE: **May 15, 2023**

SUBJECT: **Request for Proposals (RFP) - Architect/ Engineer (A/E) Team Selection  
PlantWorks Project Feasibility Study  
PSU Project #0008601  
University Park, PA**

TO: Christner Architects  
Erdy McHenry Architecture  
Flad Architects  
HDR, Inc.  
Mitchell Giurgola Architects, LLP  
Payette  
Perkins & Will  
SLAM  
ZGF Architects LLP

## **REQUEST FOR PROPOSALS - PART 1 PROJECT INFORMATION and OWNER REQUIREMENTS**

The Pennsylvania State University (PSU) wants to first thank the 16 submitting teams that expressed interest in this project. After careful review of the submitted Letters of Interest, we congratulate the 9 A/E teams who were selected to continue to the next step in the process: invitation to respond to this Request for Proposal (RFP). PSU uses a qualifications-based A/E Team Selection Process with three assessments: Long-list (based on Letter of Interest), Short-list (based on Proposal responses), and Interviews. This specific A/E Selection process is as follows.

Proposal responses are due by **Noon on June 12, 2023**. After review of Proposal responses, the Screening Committee will identify three firms for interviews. The **Short-List/ Interview Notice will be posted to the OPP website on June 27, 2023**. Interviews will occur on **July 28, 2023**. Non-Binding Fees will be requested of the three Short-Listed teams, which will be due just prior to the respective Interview.

The results of the AE Team selection process will be posted to the OPP website:  
<https://opp.psu.edu/planningdesignconstruction/project-bidsproposals>.

### **A. PROJECT OVERVIEW, PROJECT PROGRAM AND GOALS**

The Pennsylvania State University (PSU) recognizes the scientific challenge to plant production from increasing climate instability that requires technological innovations to ensure stable global food availability, effective management of agricultural and forest ecosystems, and design of cheaper, lower input plant cultivation systems. Ensuring meaningful strides toward these goals at Penn State requires significant improvements in the plant science research infrastructure on the Penn State campus, starting

with fully re-imagined greenhouse and headhouse facilities, and including new shared research facilities for plant phenotyping, plant transformation, biological containment, controlled-environment plant growth, and high-resolution sample analysis.

To elevate our plant research capacity to its full potential requires new ways of integrating and deciphering data together with more powerful and precise ways to engineer plants. The challenges presented by climate change to food security and forest sustainability make improvements to the Penn State plant research infrastructure imperative. Current plant growth facilities on the University Park campus include 80-year-old, individual-unit glasshouses with inadequate environmental controls and containment, ineffective pest exclusion/containment, and inadequate space for growth chambers that are scattered across the campus. The goals of the PlantWorks project are to develop:

- New and better designed, USDA APHIS-compliant greenhouse facilities that allow for control and remote-monitoring of daylength, light quality and temperature, and a subgroup of chambers equipped for additional controls including CO<sub>2</sub> levels, relative humidity, and automated plant monitoring.
- A multi-story facility with first-floor design for headhouse facilities to accommodate plant tissue and seed preparation, storage, sampling, and analysis.
- Consolidated controlled-environment, walk-in and reach-in plant growth chamber facilities with proper air handling and temperature, relative humidity, lighting, and CO<sub>2</sub> control features and remote monitoring capabilities.
- Multi-investigator laboratory facilities for research in plant transformation, regeneration and CRISPR technologies.
- Dry-lab facilities designed for computational and data science, small group instruction and proper ventilation for high performance computer equipment.
- Biological containment facilities, both laboratory and greenhouse, for the proper, APHIS-compliant research of plant pathogens and pests. (Level of containment to be determined through the study) These facilities could be developed off-site.
- This facility may be home to fifteen or more researchers and supporting staff.
- The building would support dozens of faculty offices support staff, conference rooms, AV support and appropriate collaborations spaces. The new lab spaces should be flexible spaces that can be retrofitted easily in the future. The project team will assist the University in determining the program for this space.
- In addition to the greenhouse and laboratory areas, the new building will also include a receiving area and loading dock.
- Combined and/or separate wet lab and instructional spaces with seating up to 30 students.
- This building may support museum space including the Frost Insect Museum and the PSU Herbarium.
- Portions of the facility should be visible and allow public access for student/community outreach, engagement, and tours.
- Stakeholders include a cross section of campus research groups including Departments such as Biology, Ag Engineering, Forestry, Plant Science, and Computer Science. (The Colleges of Science, Agriculture, and the Huck Institutes of the Life Sciences)
- The project may need to be developed in phases to accommodate funding availability.

- The new facility should represent an innovative fit within the context of campus and solve the architectural challenges related to this type of facility in an active part of campus.

The University desires to hire an architectural and engineering consultant team to develop a feasibility study for this proposed new facility. The preliminary scope of work will include:

- Meet with the University's Building Committee to confirm scope and program (virtual when possible)
- Meet with users to develop a basic program document (virtual when possible)
- Assist with developing and then summarize the mission and vision of the project.
- Assess current greenhouse holdings (condition / utilization) and identify current facilities that could be demolished or replaced.
- Site analysis of multiple locations (Identify and investigate potential siting options) – identify adjacencies. Provide an assessment of the proposed sites.
- Establish optional program scopes at three distinct scales.
- Establish a preliminary budget. Review the budget and provide a high-level breakdown of costs and fees with the committee.
- Develop and summarize an implementation plan to maintain operations while developing/designing/constructing the new facilities. The phasing plan may need to be funding based.
- Provide high level documents such as concepts and 3D sketches to support fundraising and philanthropic initiatives within 3 months of award.
- Utilize e-Builder processes for this study.
- Determine a high-level schedule that includes design and construction durations.
- Review the progress of the scope, program, and related data with specific OPP stakeholders prior to submitting the first draft.
- Prepare and submit a draft report and final report for review and comment by the University.
- Assist the project leader with preparation of graphics and metrics for PDRB Gate 1 Programming

The study may be used as the initial basis of design and for procurement of the design professional This study needs to define multiple potential options for advancement of the project. The study should not make a final design/program recommendation nor make final recommendation about advancing the project.

#### **B. PROJECT SCHEDULE, DELIVERY METHOD, and OWNER REQUIREMENTS**

PSU anticipates executing the Architect-Engineer contract shortly after team selection. The planning/study/programming efforts will start upon execution of the agreement. We anticipate the study to be completed by **March 2024**.

**It is critically important that the Architectural/Engineering team have experience with:**

1. Complex research environments and laboratories
2. USDA APHIS-compliant Greenhouse facilities Infrastructure for greenhouse (including advanced control environment technologies), research, teaching and institutional facilities
3. Integration of this multi-use (greenhouse, headhouse, research) facility into a campus setting
4. Creation of flexible research facilities that are cost effective, well thought-through design solutions.

### **Task 1: Building & Site Assessment and Existing Conditions Analysis:**

The Building Assessment task is to focus primarily on the existing building and surrounding site.

- Assess and evaluate the existing site, potential new facility sites and how the area surrounding the existing facility might best be planned and utilized.
- Assess and evaluate existing utilities to the existing building and determine capabilities and capacities for new construction and major renovations.
- Develop a space assessment and program analysis.
- Determine which programs are best suited in the new building construction versus programs/function left or moved into heavy- or light-renovated facilities. Consultant to study options based on programmatic drivers/needs, overall facility process and workflows, programmatic adjacencies, existing building conditions, and other factors to be defined.
- Determine of overall “building suitability”, respective to factors, such as: capital and life cycle cost, long term phasing scenarios, ability to address maintenance backlog in different planning scenarios, ability to achieve university accessibility, energy efficiency, and building shell and structure (vibration, floor to floor, ability to change, code/ seismic upgrades that could be triggered, etc.), MEP/FP systems, etc.
- Consider strategic facility improvements to existing facility to enhance ability to support current and future research functions.
- Provide an assessment of the existing and proposed sites.

#### Task 1 Meetings:

Anticipate monthly meetings through this phase. When possible, per University Guidelines, interview sessions should be conducted in-person and on campus and should be conducted with Academic Department representatives, on-site facilities department and University Park OPP representatives. Other meetings could be held virtually as warranted.

#### Task 1 Deliverables

Building & Site Analysis and Assessment Findings

### **Task 2: Space Needs Analysis & Program Development & Site Selection**

Evaluate and assess space usage, office requirements and related data in the existing buildings to determine if there is space to support the current activities and programs.

- The study will work closely with Planning, Design and Properties to evaluate and assess research space usage, space requirements and related data.
- Meet with users to develop a basic program document.
- Summarize the mission and vision of the project.
- Work with administration to finalize overall space projections and needs for new or renovated facilities including the identification of facility’s needs and programming gaps for present and future.
- Organize existing data analytics and utilize data as planning and design drivers.
- Provide the estimated space requirements for future activities and programs.
- Develop initial program space document for new space.

- Perform site selection analysis to determine the best placement and arrangement of the building on campus. Review of impact to University Planned District (UPD), zoning, and related permitting. Provide a summary of expected permits should this project advance to design.
- Site utility scope. Understand what site utilities and capacities the building needs.
- Provide a summary list of permits that will or may be required for this project to advance to the design stage.
- Provide assessment and evaluation of process flow including materials, systems, people, and waste.
- Provide an assessment and evaluation of maintenance and operational efficiencies and costs.

#### Task 2 Meetings:

Anticipate monthly meetings through this phase. When possible, per University Guidelines, interview sessions should be conducted in-person and on campus and should be conducted with Academic Department representatives, on-site facilities department and University Park OPP representatives. Other meetings could be held virtually as warranted.

#### Task 2 Deliverables

Space Needs Analysis and Program Summary

### **Task 3: Planning Scenarios and Concept Design:**

- Work with PSU OPP to develop planning drivers and priorities
- Apply the established space and facility projections and growth needs to create, develop, and analyze planning scenarios
- Develop a clear and feasible strategic, prioritized and phased framework for the planning and development of capital investments. Identify multiple scenarios for capital project investments, including:
  - Determine what programs could/be, and need to be located in the existing buildings.
  - Determine what programs could/be, and need to be located in the new building(s).
  - Determine what programs or buildings require: facility renovations; strategic interventions; adaptive re-use of a different building; can remain as is.
  - Consider project sequencing opportunities in considering these scenarios.
- Provide multiple planning scenarios that address the findings from Tasks 1 and 2. Provide an understanding of cost and logistical complications with each scenario along with other pros and cons. Utilize stacking diagrams to help illustrate the options. Additionally, address short and long term opportunities with each option.
  - a. Develop basic concept level floor plans and building massing to help convey design ideas presented in the planning scenarios which may include any additions and renovations that be required to meet future space needs,
  - b. Designing and sequence improvements whereby faculty, students, and staff may be relocated in whole or in part to other facilities required to accommodate this effort.
- Develop Conceptual Design for building and site. Include concept level building/engineering/site/civil/utility/landscape scope. Calculate the impervious surface and green space addition/loss.

### Task 3 Meetings:

Anticipate monthly meetings through this phase with the core working group consisting of the Administration, Academic Department representatives, on-site facilities department and University Park OPP representatives. Meetings may consist of both in-person and virtual platforms.

### Task 3 Deliverables

Planning Scenarios findings  
Draft report outline

### **Task 4: Cost Estimate and Schedule**

Develop a conceptual cost estimate and schedule for any proposed planning scenario.

- Review the budget and provide a high-level breakdown of costs and fees.
- Determine a high-level schedule that includes design and construction durations.

### Task 4 Meetings:

At least two meetings with the core working group that may be combined with other agenda tasks. If held separately, these meetings can be on a virtual platform.

### Task 4 Deliverables

Cost Estimate and Schedule

### **Task 5: Final Presentation**

Provide a final presentation to administration and physical plant representatives on scenarios and costs to implement the building program study. This study should not make any recommendations about advancing the project or make any recommendations about various programmatic options.

- Review progress of the scope, program, and other data with specific OPP stakeholders prior to submitting the first draft.
- Prepare and submit a draft report and final report for review and comment by the University.
- Assist the PSU project leader with preparation of graphics and metrics for PDRB Gate 1 Programming

### Task 5 Meetings:

At least one virtual meeting with the core working group and several virtual work sessions with the PSU Project Manager.

### Task 5 Deliverables

Final presentation and final report

## **C. RFP ATTACHMENTS AND REFERENCED STANDARDS**

The following supplemental documents are relevant to this RFP:

- Form of Agreement. Included is the link to our Form of Agreement 1-S:

<https://oppwiki.atlassian.net/wiki/spaces/OPPDCS/pages/5409499/Division+00+-+Procurement+and+Contracting+Requirements#Division00-ProcurementandContractingRequirements-005200PROFESSIONALAGREEMENTS>

Please review this agreement to ensure that your firm accepts all terms and conditions as written. In submitting a proposal for this project, you acknowledge that you concur, without exception, with all terms, conditions and provisions of Form of Agreement 1-S.

- Office of the Physical Plan (OPP) Standards. The web sites [www.opp.psu.edu](http://www.opp.psu.edu) and <https://oppwiki.atlassian.net/wiki/spaces/OPPDCS/overview> provide information regarding specific design submission requirements and standards, of the University.
- OPP High Performance Standards. The University has a commitment to environmental stewardship and requires the maximum possible use of sustainable and energy-efficient designs and specifications, for architectural, site, utility, structural, mechanical, electrical, and plumbing work. Refer to the following link for the University's high performance standards that exceed building code minimum requirements:  
<https://oppwiki.atlassian.net/wiki/spaces/OPPDCS/pages/5409436/01+80+00+PERFORMANC+E+REQUIREMENTS> Apart of this is PSU's High-Performance Building Design Standards: Building projects shall comply with ASHRAE Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings, 2010 version AND as superseded by more stringent requirements of ASHRAE Standard 189.1 Standard for the Design of High-Performance Green Buildings, 2011 version. The standard defines a minimum requirement of LEED Certified for this project.

## REQUEST FOR PROPOSALS - PART 2 PROPOSAL REQUIREMENTS

### A. PRE-PROPOSAL SUBMISSION CONTACT

Contact Greg Kufner [gak21@psu.edu](mailto:gak21@psu.edu) or Jeff Spackman [djs47@psu.edu](mailto:djs47@psu.edu) directly if you have any contract, programming or design related questions.

### B. PROPOSAL REQUIREMENTS

#### **Proposal**

Please answer all the questions in the ordered requested. Limit the entire document to twenty (20) 8-1/2 x 11, portrait formatted, single-sided pages. Submit the Technical Proposal in PDF form electronically to Jeff Spackman ([djs47@psu.edu](mailto:djs47@psu.edu)) with a copy to Greg Kufner ([gak21@psu.edu](mailto:gak21@psu.edu)). Late submissions will not be considered.

#### **Form of Agreement**

The successful team will be contracted through the University's Form of Agreement 1-S. Please review this agreement to ensure that your firm accepts all terms and conditions as written. In submitting a proposal for this project, you acknowledge that you concur, without exception, with all terms, conditions and provisions of the Form of Agreement 1-S.

### **Proposal Document Format**

Collate technical proposals according to the following Sections. Proposals shall follow the below format, in the order stated to ensure that all pertinent information necessary for evaluation is included and easily comparable by Selection Committee. OPP encourages you to be as brief as possible without sacrificing accuracy and completeness. As applicable throughout proposal, provide professional credit to architectural partners (including design architect, architect of record) for all projects discussed within the proposal for all project images shown.

#### ***Introductory Letter***

An introductory letter shall be provided from the proposed leader(s) of the Candidate Team submitting. The cover letter should be one page maximum and is included as part of the 20 page limit. The cover letter should include the following:

- A. This letter should establish the contact information (address, phone, and e-mail) for your team's main point of contact
- B. Primary office location of the submitting candidate team
- C. A concise summary as to why your team is best suited for this project
- D. Statement of certification that all information provided in your submittal is accurate

#### ***Section 1.0 –TEAM STRUCTURE***

- A. Identify prime firm and key consultant firms, size of prime firm, each firm's role on this project, and each firm's qualification and experience on similar projects. Identify past collaboration between prime firm and key consultants.
- B. Provide team organizational chart. Include prime and key consultant firms and provide the name and role of key team members. Clearly identify which team members are designated for leadership positions on the team. Please highlight Diverse Business Enterprise Program (DBE) representation on your team.
- C. Provide role descriptions and resumes of key team members identified in the organizational chart. Include registrations/ certifications, educational background, years of experience, and relevant project experience. Relevant project experience should include size, budget, program type, project overview, and define what each team member's role was on each project listed on their resume. Emphasize each team member's most relevant experience and ideally highlight that the team member has had comparable roles on similar projects. Include at least two client references for each key team member. **If possible, please avoid using Penn State employees as references.**

#### **Include resumes for, at least, the following key team members:**

1. Principal in Charge (Project Team Lead)
2. Project Manager (PSU's day-to-day point of contact)
3. Lead Programmer. Laboratory Programmer/Planner
4. Greenhouse expert
5. Campus Planner, Site Designer and/or Landscape Architect
6. Lead MEP Engineer(s)
7. Cost Estimator



Note: If any individual(s) is fulfilling multiple project roles, identify multiple roles on the organizational chart and within individual resumes.

### ***Section 2.0 – TEAM QUALIFICATIONS***

- A. Provide a summary of qualifications and expertise of the firms with specific emphasis on:
  - 1. Planning/Programming/ Design Excellence
  - 2. Distinguishing factors of team differentiation
  - 3. Experience delivering projects of a similar scope, scale, and complexity
  - 4. Leading edge integrated practices/processes for project delivery, stakeholder engagement and alignment. Experience applying LEAN principles to improve processes.
  - 5. Expertise in the programming, planning, design, and delivery of plant science facilities.
  
- B. Identify a maximum of five (5) example projects and/or studies within the last ten (10) years, which BEST exemplify qualifications and expertise listed above for the proposed team. Include brief description of each project, project gross square feet, project budget, final project cost, and completion date of project. If a project is under construction, list the scheduled date of completion.
  
- C. **Project Relevancy Matrix.** Develop a matrix that illustrates the similarities between the example projects and this project. Please be as specific to our project, as possible.
  
- D. **People-Projects Matrix.** Develop a matrix to show the participation of key individuals from your proposed team on the example projects. List individual's role on example projects.
  
- E. Acknowledgment of your review and acceptance of the attached Form of Agreement 1-S, ensuring that your firm accepts all terms and conditions as written.

### ***Section 3.0 – PROJECT APPROACH AND SCHEDULE***

- A. Describe the approach your team will take for planning, managing, and executing the study process.
- B. Discuss your approach to helping the client through the decision-making process(es), approach to meeting project goals and expectations, and the approach to programming/planning/design process.
- C. Provide a statement validating the proposed project schedule and your entire team's availability to appropriately staff the anticipated workload.
- D. Approach to developing project visioning and project mission/goal setting. And your approach to then establishing a design process that works to achieve the project vision and goals.
- E. Approach to leveraging/developing building planning options and/or overall campus planning or site selection options.

#### **Section 4.0 – PROJECT-SPECIFIC KEY DRIVERS AND IDEAS**

- A. Project Understanding. Briefly demonstrate your understanding of the project. Provide any observations of the project program or other provided information.
- B. To indicate your understanding of the project, describe key project drivers and/or critical design elements that your team has identified as a priority for this specific project. For instance: What issues or driver, beyond purely functional issues, constitutes the essence of this project? If not done previously in your Proposal, discuss how you addressed similar issues on similar projects.
- C. Describe your unique knowledge about Plant Science Facilities and Labs. What makes them unique, what are the programmatic or design drivers? Very briefly summarize your understanding if or how the mechanical and electrical systems may influence the design of this facility.
- D. Describe how you would assess and evaluate the process flow (materials, people, waste) within a plant science facility then how you would use this information to inform the programming/design/arrangement of a new facility.
- E. Describe how you would assess the maintenance and operational costs and develop criteria to use for providing a facility that will be easy to maintain and function on a low operating budget.
- F. Provide any final considerations regarding the project. Considerations may include your thoughts/opinions related to the project site, program elements, and/or any other design considerations.

#### **ARCHITECT/ENGINEER (A/E) TEAM SELECTION PROCESS SCHEDULE**

**The University will perform a three-step A/E team selection process, with three assessments: Letter of Interest, Proposals, and Interviews (if needed).**

##### **A/E Team Selection Schedule**

- Proposal responses from the Long-listed teams are due at **Noon EST on June 12, 2023**.
- Three short-listed firms will be chosen from the RFP respondents. The short-list results and interview notice will be posted to the OPP website by the end-of-day on **June 27, 2023**.
- Interviews (in person) will be **July 28, 2023**. Instructions will be issued to the short-listed teams.

Short listed teams will be offered an in-person tour on **Tuesday July 11, 2023**. We will arrange specific time slots for each of the three teams. The first tour will begin at 8:30am, second tour at 10:30am and third tour at 1:30pm. Additional instructions, including number of people, will be issued to the short-listed teams.

Participation in this A/E Team Selection process is voluntary and at no cost or obligation to The Pennsylvania State University. PSU reserves the right to waive any informality, in any or all submissions, and to reject any submission or portion thereof. PSU reserves the right to modify dates as/if it deems necessary. News releases pertaining to this project will not be made without prior approval from PSU, and then only in coordination with PSU. All information, documents, and correspondence shared within the

A/E selection process are to remain confidential, and as such, are not made public in any manner. Additionally, the University may hold all proposals for up to 45 days.

Please contact Facility Project Manager Jeff Spackman (814-863-2496, 814-826-8461 or [djs47@psu.edu](mailto:djs47@psu.edu)) with any questions regarding the project or the A/E Selection process.

Kindest Regards,

Greg Kufner, AIA, NCARB

A handwritten signature in black ink, appearing to read 'G. Kufner', with a stylized flourish at the end.

University Architect  
The Pennsylvania State University  
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Email: [gak21@psu.edu](mailto:gak21@psu.edu)

CC: Screening Committee