



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

Date: June 9, 2023

Subject: **Request for Proposals (RFP) – Architect/Engineering (A/E) Team Selection
UP-CHIMES Cleanroom Renovation, PSU Project No. 00-08958.00**
University Park, PA

To: AdvanceTec
Affiliated Engineers, Inc.
Jacobs
Payette
Perkins & Will
Precis Engineering, Inc.
Stantec

REQUEST FOR PROPOSALS - PART 1 PROJECT INFORMATION and OWNER REQUIREMENTS

Congratulations! The Pennsylvania State University (PSU) would like to invite you to submit your proposal for the CHIMES Semiconductor Cleanroom Renovation project at Penn State's University Park campus.

The A/E Selection process is as follows. **Proposal responses are due in my office by Noon on June 29, 2023. Please note this date change from the original schedule.** The Screening Committee will review the Proposal responses to determine the Short-list of approximately three to five (3 -5) Congrateams to continue to the next stage in the process. On, or before **July 7, 2023** the Short-List/ Interview Notice will be posted to this website.

Interviews will occur on July 27, 2023 in State College, PA. The exact format will be determined at a later time. Non-Binding Fees for your entire A/E Team will be requested of the Short-Listed teams, which will be due just prior to the in-person interviews. The results of the A/E Team selection process will be announced at the Board of Trustees meeting in September 2023.

Participation in this RFP and selection process is voluntary and at no cost or obligation to PSU. PSU reserves the right to waive any informality in any or all Proposals, and to reject or accept any Proposal or portion thereof. PSU reserves the right to modify dates as/if it deems necessary.

Confidentiality and Non-Disclosure. News releases pertaining to this project will not be made without prior approval from PSU, and then only in coordination with PSU. The contents of all A/E selection process correspondence are to remain confidential, and as such, not be made public.

A. PROJECT OVERVIEW

The Electrical Engineering Department recently hired a new department head who is a leader in the semiconductor research industry. The Semiconductor Research Corporation (SRC)'s Joint University

Microelectronics Program 2.0 (JUMP 2.0) has announced the creation of a new Penn State-led Center for Heterogeneous Integration of Micro Electronic Systems (CHIMES). The focus of this research is to collaborate to advance effective integration and packaging of semiconduction devices, chips, and other components.¹ A new advanced research facility is required to support the EE Department's new research goals.

B. PROJECT-SPECIFIC INFORMATION AND PROGRAM

The purpose of this project is to complete the design of the new micro electronic systems packaging research laboratory and determine the anticipated cost of construction. This research is to be completed by the Penn State Department of Electrical Engineering within the SRC JUMP Center, along with partnering external researchers, to develop an advanced semiconductor devices and packaging process.

The research has been divided into two distinct processes and will be located in two buildings on campus. The wet material processing process will be located in the Millennium Science Complex (MSC). This is a very sophisticated research facility that has all of the specialized utility systems required for the CHIMES research. The existing cleanrooms also have lab equipment that can be shared by multiple research groups allowing for optimizing of University assets. The scope of work within this facility consists of the fit out of new cleanroom space as well as modifications to existing space with minimal disruptions to existing research activities.

The remaining research functions consist of dry packaging processes which will be located within the Electrical Engineering West Building (EEW). This is an older building in the historic core of Penn State's campus that was built in 1940. The existing Room 113 cleanroom suite was established in 1991. Significant renovation of portions of this suite will be required to meet current design and research standards.

The purpose of this RFP is to identify a complete design team (hereafter referred to as "the professional") to work with representatives from the College of Engineering and the Office of the Physical Plant (PSU project team) to complete this project.

The total estimated construction cost for this project shall be developed at the schematic design phase. In the absence of a CM firm at the DD phase, the design team shall update the construction cost estimate.

The project goals are expected to include the following:

1. Review the 2023 113 EE West Cleanroom Study. This study was completed in early 2023 with the purpose of identifying the appropriate location of the new research facilities on Penn State's campus and to provide a preliminary construction cost estimate to aide in securing appropriate project funding.
2. Coordination with representatives from the College of Engineering and key external partners to confirm final research processes, equipment layouts, chemical usage, and all other programmatic requirements.

3. The Professional shall evaluate existing building conditions and establish the renovation scope of work necessary for meeting all programmatic requirements including, but not limited to:
 - a) Evaluating the capacity and performance of existing mechanical systems to meet the space temperature, humidity, and pressurization requirements of an ISO Class 6 cleanroom suite with localized ISO Class 5 containment systems (final design criteria shall be confirmed by the Professional).
 - b) Evaluating the capacity and design criteria of existing electrical, plumbing, fire protection, and process utility systems.
 - c) Confirmation of anticipated chemical usage and storage against NFPA and other code-related requirements.
4. To the greatest extent practical, the building infrastructure shall be serviceable outside of the cleanroom spaces and without unnecessary disruptions to research processes.
5. Both facilities will have ongoing research in the surrounding spaces. The Professional will identify the appropriate phasing to minimize occupant disruption during construction.

C. A/E TEAM SELECTION PROCESS and PROJECT SCHEDULE MILESTONES

• RFP Issued:	June 9, 2023
• Optional Site Tours:	Upon Request
• Submission of A/E Proposals Due:	Noon EST on June 29, 2023
• Post Short-List results + Interview notice:	July 7, 2023
• A/E Team Interviews:	July 25, 2023
• Notice of results:	July 2023, Date TBD
• Contract Award / Letter of Intent:	July 2023
• Construction Begins:	Spring 2024
• Construction Complete:	Summer 2025

D. PROJECT DELIVERY METHOD and PROJECT DELIVERY REQUIREMENTS

Penn State University and the Office of the Physical Plant (OPP) require a high level of collaboration and LEAN principles to ensure project success. **The final selected A/E design team must establish a process for the design, documentation, and execution of the project.**

PSU anticipates executing the Architect-Engineer contract shortly after completion of the interviews in **July 2023**. Construction is anticipated to begin **Spring 2024**, with planned occupancy of the new building by the **Summer 2025**.

The successful A/E Team will work in conjunction with PSU’s selected third-party Construction Manager (CMaR) throughout the design, and construction phases. The A/E team and CMaR will separately develop parallel cost estimates, which will be reconciled at the end of project phases. Confirmation of being within the project budget is required before PSU will allow the A/E Team to proceed to each subsequent project phase.

The selected A/E Team will begin this project with a validation creation of a program, including creation of a scope (project roadmap) to meet the defined budget. PSU will work with the selected

A/E to determine the level of programming. Depending on the approach of the specific design team, the program validation phase could be combined with a Concept Design or Schematic Design Phase.

After programming effort, PSU typically follows industry-standard design Phases (Schematic Design, Design Development, Construction Documents, Bidding Phase, and Construction Administration) in accordance with Penn State's standard 1-P agreement.

E. RFP ATTACHMENTS and PENN STATE STANDARDS

- **Form of Agreement.** Included is the link to our Form of Agreement 1-P:
[The Owner's "Form of Agreement 1-P"](#)
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-P.
- **Design Phase Deliverables.** Reference this document under the heading *00 51 00 MISCELLANEOUS FORMS* at the following link:
<https://oppwiki.atlassian.net/wiki/spaces/OPPDCS/pages/5409499/Division+00+-+Procurement+and+Contracting+Requirements?preview=/5409499/5407947/OPP%20Design%20Phase%20Deliverables.pdf>
- **Office of the Physical Plant (OPP) Standards.** This website provides information regarding specific design submission requirements and standards of the University. The University is willing to consider recommended exceptions to OPP standards due to the project type. Any such exceptions would need to be formally approved, in writing, by PSU OPP.
<https://oppwiki.atlassian.net/wiki/spaces/OPPDCS/overview>

F. SITE TOURS AND PRE-PROPOSAL SUBMISSION CONTACT

We encourage you to visit the campus and proposed project site. In order to further allow the A/E Teams to discuss the project with representatives of the user group(s), we will schedule site tours of the non-public existing spaces. We encourage you to also visit the new project site and other publicly accessible spaces on your own time.

The tours are not mandatory, and can be arranged upon request. Teams will be allowed to bring three (3) people maximum to the tour. Contact Facility Project Manager Julie Patrick (jat280@psu.edu), as soon as possible, to schedule a tour date.

Also, contact Julie Patrick with any additional questions regarding the project or the project program.

Please do not wait until the tours to ask any questions that may be time-sensitive to your Proposal submission.

REQUEST FOR PROPOSALS - PART 2 PROPOSAL REQUIREMENTS

Deliver one (1) digital copy of your submission to:

Greg Kufner, University Architect
gak21@psu.edu

&

Julie Patrick, Facility Project Manager
jat280@psu.edu

Proposals received after this date and time may be automatically rejected. Proposals shall be provided in an 8.5" x 11" format. Limit submission to **thirty-six (30) single-sided pages maximum (15 double-sided), plus two-page cover letter.** Double-sided printing is encouraged. 10-point type minimum font.

A cover letter shall be provided from the proposed leader of the Prime (contract holding) A/E Team. The cover letter should be two-page maximum. The cover letter should include, at least, the following:

- A. Legal name of the Prime A/E Team. If separate, legal name of Architect of Record (stamping)
- B. Primary office location of Prime A/E Team and Architect of Record, if applicable
- C. Contact information for A/E team's main point of contact (name, address, phone, and e-mail)
- D. A concise summary as to why your team is best suited for this project
- E. Statement of certification that all information provided in your submittal is accurate

Collate and bind proposals according to the following Proposal 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. The cover letter, table of contents, and divider pages will not count towards the RFP page limitation. **We encourage you to be as brief as possible without sacrificing accuracy and completeness.**

*** Note 1: As applicable throughout the proposal, provide professional credit to architectural partners (including design architect, architect of record, academic/lab planning partners) for all projects discussed within the proposal and for all project images shown.**

PROPOSAL SECTION 1 – TEAM STRUCTURE

- A. Identify your entire proposed design team including:** Prime (Contract Holding) firm, Lead Design firm (if different), architectural partners (as applicable), building system engineering firms, lab/academic planning consultants, and proposed specialty consultant firms. **If your team proposes an architectural partner – either as an Architect of Record (stamping architect) or Associate Architect (where the Prime firm remains lead designer and Architect of Record) – identify the roles and split/ sharing of project responsibilities for all firms involved.** As you finalize your proposed team, please note that it is required that a Pennsylvania registered architect stamp the final construction and bidding documents.

Provide insights into the firm's unique qualifications/ characteristics, firm personality, design ethos/ philosophy, client notations of previous project success, etc.

For each firm, identity the firm differentiators, size of firm, each firm's qualifications, and experience on similar projects, and clearly identify each firm's role on this project.

Identify past collaboration between prime firm and key engineers/consultants, including number/ value of projects, and the added benefit the key consultants provide to your team. It is encouraged to create A/E teams that demonstrate previous successful collaboration and execution of projects similar to this project. While we appreciate firms with experience at PSU we do not have a preferred vendor list and encourage the selection of high-quality engineers and specialty consultants. If proposed architectural/engineering/consultant firms do not have PSU experience, convey how your team has previously incorporated owner's design standards similar to the Penn State Design and Construction Standards.

- B. **Provide team organizational chart.** Include all firms and consultants 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. Refer to RFP Section 2.F., below.
- 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 project size/cost, 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. If individuals are serving multiple roles, identify multiple roles on Organization Chart and on resumes.**
1. Principal in Charge (Project Team Lead)
 2. Lead Design Architect (Lead Designer)
 3. Project Manager (PSU's day-to-day point of contact)
 4. Project Architect (Architectural Technical Lead)
 5. Construction Administration Leader (Construction oversight leader)
 6. Academic programmer/planner
 7. Lead Interior Designer
 8. Sustainability Leader and/or energy modeler
 9. Lead Mechanical, Electrical, Plumbing/FP, Structural, Civil, design engineers
 10. Cost Estimator

PROPOSAL SECTION 2 – TEAM QUALIFICATIONS

- A. Provide a summary of qualifications and expertise of the firms with specific emphasis on:
1. Design Excellence, including national recognitions.
 2. Distinguishing factors of team differentiation.
 3. Experience delivering programs, studies and projects of a similar scope, scale, and complexity. **(See Note 1)**
 4. Expertise in the planning, design, and delivery of state-of-the-art academic, research, and workplace facilities.

- B. **Identify a maximum of five (5) example projects within the last five (5) 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 and a client reference(s). Additionally, provide information on whether specialized turnkey firms were part of the project team or if design assist was utilized. Provide owner contract (name, title, phone and email) for each example project. **Show illustrative representation of the example projects, particularly those highlighting the work of your team's proposed Lead Design Architect, captions encouraged. (See Note 1)**

(Optional) If important to your team, discuss any of the example project(s) that are highly relevant to our project, in more detail. Include insights into what made these project(s) successful, including how those design intentions were translated into a meaningful and synthesized/successful solution.

- 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. **Diverse Business Enterprise.** The Pennsylvania State University is committed to and accountable for advancing diversity, equity, and inclusion in all of its forms. Therefore, we encourage the participation of Minority Business Enterprises, Women Business Enterprises, Veteran Business Enterprises, Service-Disabled Veteran Business Enterprises, and LGBT Business Enterprises (collectively referred to as Diverse Business Enterprise (DBE) for Design Professionals.

Submitting A/E team are encouraged to include at least one (1) certified DBE design professional firm as part of their team. If the proposing firm itself is a current Diverse Business Enterprise, the firm should state that fact in their proposal. Below is a partial list of acceptable certifying agencies:

1. Department of General Services Bureau of Small Business Opportunities (DGS BSBO)*
2. Federal Department of Transportation
3. National Minority Development Council (NMSDC) or its affiliates
4. Southern PA Transportation Authority (SEPTA)
5. Women Business Enterprise National Council (WBENC)
6. Pennsylvania Unified Certification Program (PA UCP)
7. National Women Business Owners Corporation (NWBOC)
8. Minority Business Enterprise Council (MBEC)
9. National Gay and Lesbian Chamber of Commerce (NGLCC)
10. U. S. Department of Veteran Affairs (VOB/SDVOB)

* Or comparable state agencies or regulating bodies in other states or local jurisdictions.

- F. List errors and omissions insurance coverage limits of the lead/ prime entity of the candidate team. Provide information on errors and omissions claims in the last (7) seven years.
- G. Provide historic breakdown of project performance for Prime Firm and Architect of Record (as applicable). Include list of projects, delivery method, history of project budgets compared

to completed construction cost, history of change orders, average response time to RFIs, and any other key project metrics you deem most relevant to this project.

- H. Acknowledgment of your review and acceptance of the attached Form of Agreement 1-P, ensuring that your firm accepts all terms and conditions as written. In submitting a proposal for this project, you concur, without exception, with all terms, conditions and provisions of this Form of Agreement.

PROPOSAL SECTION 3 – PROJECT APPROACH AND SCHEDULE

- A. **Describe your team’s proposed design approach for this project. Given the importance of this project, the awarded A/E team would be required to provide at least three (3) distinct design options be developed for PSU’s review and approval.** Options will be developed at least to a Concept Design level and could be developed to Schematic Design level. Be as specific to our project as possible. Discuss, at the least, your approach to the following:
1. 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.
 2. Validating the project program and gaining knowledge of the project brief. Additionally, describe any programming/building planning tools, benchmarking tools, and/or other firm-specific methodologies to assist in the design of our project.
 3. How the initial project phase leads into the Concept Design and/or Schematic Design Phase of the project.
 4. Developing building planning options and/or overall building design schemes. Approach to developing programmatic ‘blocking and stacking’ options that explore gallery and/or programmatic adjacencies.
 5. Working with PSU to analyze, compare/contrast different design options.
 6. Developing the interior/ exterior “look and feel” of the new building, particularly the level of advancement at the various project phases.
 7. Use of BIM, “predictive modeling”, analytical/ digital tools, and other technologies.
- B. **Approach to project delivery.** At least, describe your team’s overall approach to:
1. Achieving the project schedule.
 2. Identify key risks to project schedule and strategy for mitigating such risks.
 3. Planning, managing, and executing the project.
 4. Consensus building and guiding stakeholders through decision-making process(es).
 5. Creating a collaborative environment between architects, building/site planners, engineering consultants, and PSU/OPP stakeholders.
 6. Working with PSU’s third-party Construction Manager at Risk (CMaR) throughout design and construction phases. Describe previous success delivering projects with a CMaR. Identify potential innovative strategies that you consider using in the design, procurement, and construction of the project, while maintaining quality and uncompromised project goals (example: Design Assist).
- C. **Approach to Cost Control.** Delivering our project on budget is critical. So, provide your approach to manage costs through all design and construction phases, especially considering currently escalating construction costs. Additionally, provide the following:
1. Highlight your process of cost estimating, scope/budget alignment and cost/quality control through the design and construction phases.
 2. Define critical factors with respect to the project budget.

3. Provide your impression of the project budget.
 4. Identify key risk to project budget and strategy for mitigating
- D. **Approach to MEP and building system design.** Narrative approach to MEP planning/ design/ delivery of facility that will contain programs and space types as noted herein. Be specific with your experience and highlight your project type expertise.
- E. **Approach to Sustainability.** After reviewing PSU's High-Performance Standards, describe your team's approach to driving towards PSU's sustainability goals on the project, including exceeding our standards. Highlight your experience meeting similar high-performance standards and describe overall team commitment to sustainable design (including number of completed LEED projects). Among other applicable topics, discuss your team's approach and experience applying advanced sustainability measures, ability to apply best practice in sustainable design, applications of creative innovations to obtain the optimum performance for projects, and experience using energy models to drive design thinking.
- F. **Briefly describe your approach to Penn State reviews, PSU design reviews, and jurisdictional reviews.** Anticipated jurisdictional reviews will include State of PA Labor & Industry. Local municipal reviews/ permits may be required, and the professional shall be responsible for securing these permits with assistance of the University. Any fees associated with permits shall be paid for by the Professional and will be reimbursed by the University.
- G. **Approach to Prevention Through Design (PtD).** Safety is essential to the University during the construction and post occupancy maintenance / operation of the facility. Therefore, the University is stressing implementation of Prevention through Design on this project. Share your thoughts, experiences, and approach to PtD. The LEED v4 Pilot credit for PtD will be mandatory for this project.
- H. **Project Staffing/Workload.** Verify the entire A/E team's availability to successfully staff the project, immediately, given our project schedule and other A/E Team workload.
- I. **Graphic Schedule.** Create a graphic project schedule showing phase durations, owner engagement and review periods, and identify critical path items, milestones, and schedule drivers. This can be printed on an 11x17 fold-out and will only count as a single page.

PROPOSAL SECTION 4 – PROJECT-SPECIFIC KEY DRIVERS AND IDEAS

- A. **Project Understanding and Drivers.** Demonstrate your understanding of the project. Provide observations of the project program, project goals, or other provided information.
- Describe key project drivers, critical design elements, and potential constructability considerations your team has identified as a priority for this specific project. Discuss how you addressed similar issues on other projects.
- B. **Project Insights.** Provide your thoughts specific to design of facilities, like described in this RFP. Provide your team's vision of what, beyond purely functional issues, constitutes the essence of project, such as we envision. Discuss potential key issues in the design of LARTB.

- C. **Program and Programmatic Goals.** Delivering a facility that successfully accommodates the various Departments and programs, within state-of-the-art facilities, is of the upmost importance. Describe your programming, planning, benchmarking tools and methodologies that your team will use to test, and ultimately achieve, the stated project goals.

Provide firm-specific core values, design principles, etc. regarding key space types, including the following. Feel free to reference precedent project examples. **(See Note 1)**

1. Cleanroom Laboratories
2. Faculty Research Spaces
3. University workplace environments
4. Optional: Highlight experience with projects that support higher education **cleanroom** facilities or similar.

(OPTIONAL) PROPOSAL SECTION 5 – ADDITIONAL PROJECT IMAGERY

- A. **(Optional) Additional Project Imagery.** If pages remain within your proposal, please feel free to include additional project images. Photo captions are strongly encouraged.

In closing, thank you for your participation in the A/E Team Selection process for this exiting project. We understand the commitment that each team puts into their submissions. The Screening Committee reciprocates this effort in our detailed review and analysis of each Proposal. We look forward to learning more about the Long-Listed A/E Teams and their project-specific approaches to determine which three (3) Short-Listed teams continue to the In-Person Interviews.

Kindest Regards,

Greg Kufner, AIA, NCARB



University Architect

The Pennsylvania State University (Note: shipping address for Proposals listed above)

CC: Screening Committee

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1. Penn State leads semiconductor packaging, heterogeneous integration center.
<https://www.psu.edu/news/engineering/story/penn-state-leads-semiconductor-packaging-heterogeneous-integration-center/>