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PennState

COAA PROJECT LEADERSHIP AWARD SUBMISSION
PENN STATE EAST HALLS PHASE I

31 JULY 2019







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EAST
RESIDENCE HALLS

Single	Double	Quad
Double	Triple	Quad
Single	Double	Quad
Single	Double	Quad
Single	Double	Quad
Single	Double	Quad
Single	Double	Quad
Single	Double	Quad



SECTION 1

General Project Information

GENERAL PROJECT INFORMATION

Name of Project:

Penn State East Halls Phase I

Location of Project:

Pennsylvania State University
University Park, PA

Name and Address of Owner:

Penn State Housing and Food Services (*Customer*)

Owner/PM:

Penn State Office of Physical Plant (OPP)
Rich O'Donald, Project Manager
Pennsylvania State University
106 Physical Plant Building
University Park, PA 16802

Name and Address of Design Professional(s):

Mackey Mitchell Architects
900 Spruce St. #500
St. Louis, MO 63102

Lamar Johnson Collaborative
35 East Wacker Dr. Suite 1300
Chicago, IL 60601

Name and Address of Construction Professional(s):

Clayco
35 East Wacker Dr. Suite 1300
Chicago, IL 60601

Other Consultants or Professional(s):

DLA+ Architecture & Interior Design
750 Holiday Dr.
Foster Plaza 9 Suite 200
Pittsburgh, PA 15220

Type of Project:

Institutional

Delivery Method:

Design-Build

General Project Description:

The East Halls project is one of the largest residence hall construction projects undertaken by the university. During Phase One of the project, East Halls received significant upgrades to surrounding outdoor spaces, construction of two new residence halls, and renovation of six existing halls, which were built in the 1960s.

Penn State selected Clayco, Mackey Mitchell Architects (MMA) and DLA+ Architecture & Interior Design as the design-build team to ensure the success of this ambitious and complicated long-term project. *(Continued on next page)*

Phase One has taken place over three successive, 14-month construction periods that will be completed in the summer of 2019. At that time, there will be a total of 2,484 new and renovated beds at East Halls. The project is the first of a multi-phased scope that is envisioned as a comprehensive transformation of the student residential experience. Following the successful completion of Phase One, the design-build team will begin to renovate the remaining nine existing buildings as part of Phase Two of the project, which will result in a total of 4,570 new and renovated beds.

Penn State chose the design-build delivery method to ensure the multi-phased scope remained as efficient and innovative as possible. Penn State has worked closely and collaboratively with the design-build team to ensure East Halls will be rebuilt as a refreshed and cohesive community. Design-build created efficiencies that allowed the project to be completed three years ahead of schedule. It also helped fund an additional 425 bed residence hall, which in turn will boost the university's freshman experience and subsequent income stream.

The Penn State OPP ownership group and project management team inspired and maintained a highly collaborative process across design and construction. As integrated problem solvers, all teams were unified under the mission of transforming the East Halls, which allowed everyone to embrace the collaborative and transparent mindset bound by a charter that kept every team accountable for project success and subsequent income stream.

The Penn State OPP project management team inspired a highly collaborative process across design and construction. As integrated problem solvers, all teams were unified under the mission of transforming the East Halls, which allowed all teams to embrace the collaborative and transparent mindset bound by a charter that kept every team accountable for project success.

Project Duration:

1,269 Calendar days

Project Start Date:

March 2016

Project Completion Date:

Planned - Summer 2019

Actual - Summer 2019 (August 16, 2019)

Changes in Schedule:

Phase 1 included an additional renovation and a new building as part of the overall project acceleration. The impact to the overall project was a savings of three years to the entire project schedule.

Initial Construction Cost (\$):

\$227,400,000

Final Construction Cost (\$):

\$228,700,000*

**Project included an acceleration that incorporated an additional new building. The re-sequencing of the project resulted in additional beds available to take more active beds offline, and the initial investment was largely offset by savings in escalation and general conditions.*

Percentage of Change Orders:

5%



SECTION 2

Overall Project Management

OVERALL PROJECT MANAGEMENT

PROJECT MANAGEMENT

Provide two (2) examples which demonstrate project management excellence by the Owner's Project Manager.

1.) Penn State OPP was focused on delivering the best product as efficiently as possible. After an early board of trustees' walkthrough that showed high performance in phase 1A, the design-build team was tasked with conducting an acceleration study to explore ways to bring more beds online faster. The study showed 12 different options for new phasing on both East and Pollock Halls. The options accelerated the original 12-year construction duration to seven, nine and 10 years. Each of these options included studies for total replacement and developer led OPP options. Those studies led to a group of more focused studies that analyzed four additional options for a total of 16 options that the university presented to the board at a special session for final approval. As a result of these efforts, Penn State University decided to add an additional 425 bed residence hall and is reviewing options to accelerate the renovations in the coming phases.

2.) The owner worked closely to ensure there was a community-based team involved on the East Halls projects. The also assured this was rebuilt as a refreshed and cohesive community. All teams took the term community to heart and searched for the best local partners (MEP, Civil and Structural Engineers and Diversity Consultant) that knew the community, the university, and understood the design-build delivery model.

SCHEDULING

Provide two (2) examples which demonstrate the Owner's expertise in managing the schedule; that is, identify some steps taken by the Owner which contributed to the management of the schedule.

1.) Penn State OPP established a schedule recovery allowance: With the critical nature of the project a schedule recovery allowance was developed to allow for owner change orders or weather delays. This provided flexibility around critical path activity and allowed the project to move forward without unforeseen delays.

2.) Penn State OPP project management team implemented lean scheduling tools and practices: The East Halls projects utilize Primavera's newest lean scheduling tool, Oracle Prime. This powerful tool promoted and prompted the use of Pull Planning and Last Planner lean scheduling practices. The tool allowed the project teams to take the activity breakdown on the P6 master schedule and break them out into more detailed location / manpower-oriented tasks. These tasks promoted increased collaboration between the management team and subcontractors on site. The owner project managers and project team then tracked these tasks daily, which created an efficient method of tracking how subcontractors are impacted by weather, predecessor's uncompleted items, missing material, etc. Reports could run to see the most common reasons why the tasks were missed or how well a subcontractor was doing at completing the tasks they were assigned. The Oracle Prime tool enhanced the full team's ability to improve the coordination and efficiencies within the complex schedule.

COST MANAGEMENT

Describe what action the owner took with the project team to manage the project costs.

- Bi-weekly owner change order meetings.
- There were five gates or milestones for updates to the GMP. That insured there were no surprises. This method also allowed the design-build team to carry decisions forward with a better understanding of costs in real time.
- Value engineering was implemented across all projects.
- There was a target value design and delivery process.

QUALITY MANAGEMENT

Provide a brief narrative describing the methods of quality control/quality assurance and the Owner's participation in this area.

The owner supported development of a global quality control program that:

- Required all design and construction staff had QA/QC responsibilities. This created an additional level of accountability across the entire project team.
- Suggested a full-time site rep was brought on for the architect to reduce the amount of time needed for submittal reviews. This added a level of field monitoring quality control.
- Organized bi-weekly water tests, back checked submittals on all sites.
- Used BIM 360 and various software tools to track, scan and maintain document and model consistencies. This smart construction workflow helped coordination with subs as QA/QC problems were identified. This also limited warranty call backs.



SECTION 3

Overall Project Success

OVERALL PROJECT SUCCESS

Identify and briefly explain the factors that contributed to the success of the project such as the selection of the A/E, Prime Contractor and Subcontractors, approach to decision-making, handling end user requests, etc.

- Selecting the design-build delivery method was the top decision for overall success of the project. It helped save time and money on such a complex project.
- Every two weeks owner walkthroughs were hosted on site. Teams would review the drawings and discuss details of how the ownership team saw things moving. It allowed the team to identify and make changes earlier, which helped keep the relationship transparent and helped to keep surprise changes to a minimum once the project had begun.
- There was a high level of engagement from ownership in solving problems with the design-build team.
- Owners encouraged team integration and collaboration, fostering a fun and rewarding place to work.
- Owners challenged the team to maximize value through lean concepts.
- The ownership inspired strong advocacy for the end user and kept all teams focused on elevating the occupant experience.



SECTION 4

Project Complexity

PROJECT COMPLEXITY

Provide a brief narrative describing the complexity of the project including challenges, constraints and the solutions.

- A major challenge for the owner was managing, updating, and forecasting the overall project budget – it was a constant effort to adjust numbers as conditions changed to anticipate potential risks on future phases. As prior phases were closed out, Penn State needed to evaluate whether unused contingency funding could be transferred to current phases in either design or construction. Managing the funding happened at many levels and was seen through several different lenses.
- Penn State has a very strict hiring process for subcontractors on the projects. With 200-250 workers on site at any given time amongst 30-40 different subcontractors, low labor availability in the center of a state posed a significant challenge. The design-build team managed through this and kept the project on schedule without disruption.
- With multiple projects active at the same time, the site was under a constant state of design, pre-construction, construction and closeout. This made the work complex to manage, but the owner carried forward the learning from design changes to each new phase.
- The team worked efficiently and safely around an active campus. The sites were concentrated to a small area that is home to over 4,800 first-year students at the University Park campus of Penn State. Significant site / utilities improvements were included and required the owner to carefully plan around those disruptions.

- Design Programming was a major challenge for the owner to maintain the proper balance between maximizing bed counts while providing vibrant common areas for studying and socializing. Responsiveness to student feedback was important and to make the right decisions, the owner kept track of the areas the students need to be improved to elevate their experience.
- Due to student move-ins, the schedule was tight with final completion dates that could not change. The owner and design-build teams coordinated sequencing on site to minimize critical path activities was around these stringent deadlines.



SECTION 5

Sustainability Elements/Efforts

SUSTAINABILITY ELEMENTS/EFFORTS

Provide a brief narrative describing sustainability elements/efforts, if any.

Penn State has a campus-wide LEED policy that all projects must follow. From design through construction, the projects constantly improved. While the project team's base goal was LEED Certification, the entire phase had a requirement to be as energy efficient as possible, and currently the separate phases have achieved a silver and two gold certifications by:

- Improving thermal performance of the existing building enclosures. (Insulated glass units in windows and curtain wall and added insulation)
- Installing energy efficient lighting and HVAC equipment. (Evaluated through energy modeling)
- Specifying interior finish materials that are durable and easy to maintain. (Penn State Housing staff test materials before including them in their detailed design standards)

Project sustainability specifics are as follows:

Phase 1A

- LEEDv2009 BD+C NC Silver
- Energy Cost Savings – 18.8%
- 100% reduction in outdoor water use.
- 20% of materials included recycled content and were extracted and sourced locally.
- Low emitting paints & coatings, adhesives & sealants, flooring systems and wood were used.

Phase 1B

- LEEDv2009 BD+C NC Gold
- Energy Cost Savings – 24.5%
- 100% reduction in outdoor water use.
- 80% construction and demo waste diversion.
- Outdoor views from 90% of regularly occupied spaces.
- Allowed team to optimize the integrated process and learn where to efficiently incorporate sustainable elements.

Phase 1C

- Targeting LEEDv2009 BD+C Gold
- Energy Cost Savings – 40.4%
- 40% reduction in indoor water use.

SECTION 6

Conflict Resolution

CONFLICT RESOLUTION

Provide a brief narrative describing the owner's role in minimizing and resolving conflicts.

- A collaboration charter was established by the owner to hold teams accountable, increase communication and encourage innovation.
- The owner held a mission collaboration charter meeting every quarter. This meeting included the design-build team and all key subcontractors. This meeting allowed the teams to press pause and discuss how everyone was working as a team. This meeting brought everyone to the same level; problems were discussed and addressed in an open forum. This allowed everyone, as a team, to feel comfortable hearing and resolving concerns and before issues became a conflict.
- Penn State was insistent on establishing a collaborative work environment in which everyone was encouraged to know each other on a personal level. Penn State championed an inherent environment of mutual respect and trust in the spirit of cooperation. When new people joined the team, there was a concerted effort made to ensure they felt welcomed.
- The owner developed an on-boarding process that clearly conveyed expectations for behavior and work ethic.
- There were no major conflicts on this project, which is a testament to the prevailing positive work environment. However, all teams involved understood there was little tolerance for conflict.





CUSTOMER SATISFACTION

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900 Spruce Street, Suite 500
St. Louis, MO 63102

COAA Project Leadership Awards Committee
5000 Austell-Powder Springs Rd. Suite 217
Austell, GA 30106

July 25, 2019 RE: Design Professional Letter of Recommendation

Hello Awards Committee!

It is my honor and privilege to describe for you all how the Penn State Office of Physical Plant (OPP) representatives have contributed to the project success of the East Halls project – a complicated multi-year effort which we began designing around January 2015.

Collaboration. This Owner has truly been a collaborative partner from the beginning of the project. In fact, Penn State insisted on building an integrated and high-performing team even before work started. The first step was to clearly define all the stakeholders and document roles, lines of communication, protocols for decision-making, and establish an ethos of innovative problem-solving shared by all representatives from the Owner, Designer, and Builder entities. Early on, we established a Team Charter depicting our shared values and metrics of project success, which was signed by key leadership representatives. Regardless of experience level, all team members have been encouraged by Penn State to speak up, ask questions, and seek more efficient, value-based ways of executing the project. I appreciate how Penn State values the concept of continuous learning and improvement. Given this project is a multi-phase effort, we all are constantly learning from past design and construction issues, adapting to unforeseen conditions, and implementing improvements.

Communication. One unique suggestion Penn State OPP shared (and has used successfully on other projects) was to hold monthly team meetings where we evaluate how the team is performing, discuss needed changes and identify ways of improving performance. These gatherings are expressly not intended as a place to solve jobsite issues, but rather are meant to give everyone the interactive tools needed to work better as a team. The group that attends these brief sessions is known as the “Mission Collaboration Committee”. These meetings have been effective venues for O-D-B representatives to get to know each other on a personal level and we have benefitted greatly from learning more about Lean Construction Principles from John Bechtel who shares turns facilitating these conversations.

Respect. As a design professional, the thing I appreciate most about this Owner is the level of cooperation, trust, and respect they demonstrate with the D-B team and each other, particularly the Penn State user group – Housing and Food Services (HFS). There are no egos or grand-standing apparent during our sessions together. Everyone at Penn State is clearly unified by their shared mission of maximizing the greatest benefit to the student residents while balancing the constraints of the schedule and budget. This Owner has a solid compass. You just know they will always do the right thing.

Cheers,

Stephen Emer, AIA, LEED BD+C
President

July 30, 2019

COAA Project Leadership Awards Committee
5000 Austell-Powder Springs Rd. Suite 217
Austell, GA 30106
RE: COAA Project Leadership Award

On behalf of the Clayco team, I would like to recommend the Penn State Office of Physical Plant (OPP) for the COAA Project Leadership Award. As the Clayco team leader for the East Halls Development that included multiple phases of new construction and renovations, I have had the opportunity to observe and experience first-hand the leadership and culture of the Penn State team.

Team is an operative word for all things Penn State. Their internal group was a team and they treated us as part of the team – not as a hired commodity. They also embrace the one team concept which was noticeable at every level throughout the organization.

Open and Supportive - They are open to new ideas and are part of the process. They are supportive of all the people who work for them: us, the workers and the community.

Their role as owner - They understand the importance of their role, as owner. This is demonstrated in many ways including:

- Being prompt with payments - quickly processing invoices
- Being part of the team to promote and celebrate successes
- Understanding the implications of their requests and showing appreciation for our efforts while being respectful of our time.
- In our "Job Conference" meetings they are engaged - spending time providing input and acting promptly on items that require their response
- They understand if they miss dates it impacts the team's ability to perform
- They respect the mission at hand

Expectations – Penn State's expectations are firm, but fair. They expect accountability at all levels. We appreciate this as this approach helps to build a long lasting relationship where we feel valued as a partner.

Good People - They run an exemplary organization with character traits that we always seek out in a client. Owners in the industry can look to Penn State as the model example what it means to be a good owner.

In closing, they are great people and we love the relationship that has been forged and we hope to have the opportunity to partner with them for years to come.

Sincerely,



Rick Moeckel | DBIA, LEED AP BD+C
Executive Vice President & Shareholder, Clayco
p 314-592-2120
e moeckelr@claycorp.com



July 30, 2019

Lucie Castro
5000 Austell Powder Springs Rd. Suite 217
Austell, GA 30106

Dear Lucie:

It is with great pleasure that I write this letter of recommendation for the Penn State, Office of Physical Plant staff, associated with the East Residence Hall project. The project began in design in 2014, and to date, we have opened 2 new and 3 renovated halls. 3 more halls are scheduled to open next month, for a total of 2,484 new and renovated beds on campus. The students and staff have responded extremely well to the project. The feedback we have received from our students during building receptions has been great. The students specifically comment on the design, feel and quality of the project. They also really like the AC during the warmer months.

Though many individuals have contributed to the project, architects, contractors, students and owners, the staff at the Office of Physical Plant have provided the critical oversight and management needed for our success. The staff manages our design and job meetings efficiently and effectively, keeping the team on time, involved and accountable. Within a University setting there are several "owners" of a project, often with competing priorities, and the OPP staff has resolved these disputes professionally and with great patience. In addition, they have successfully facilitated several design meetings and helped direct the conversation to a consensus and a brilliant design.

I have worked at Penn State for 27 years with a variety of staff, and can confidently say that the Office of Physical Plant staff associated with the East Residence Hall project is one of the most talented group of individuals on campus. If I can be of any further assistance please feel free to contact me at cfc4@psu.edu or at 814-826-8420.

Sincerely,

Conal Carr

Conal F. Carr
Director, Housing Operations

AFFIRMATION AND RELEASE:

Nomination is submitted by:

Name:

Company:

Street Address:

City, State/Province, Zip/Postal Code:

Phone Number:

Email Address:

Director of Communications

Oliver Muenz-Winkler

Clayco

2199 Innerbelt Business Center Dr.

St. Louis, MO 63114

502.649.3410

muenzwinklero@claycorp.com

In submitting this application, I affirm to the best of my knowledge, that the information contained herein is accurate and correct. I also agree to grant permission for COAA® to use the nomination materials in their entirety (including photographs) for promotional purposes which may include, but not be limited to, the COAA® website and the *Owners Perspective* magazine.

SIGNATURE



DATE 07/30/2019

TITLE :

Director of Communications

Project Leadership Awards Nomination Form
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www.coaa.org



