UPPER MERION AREA HIGH SCHOOL

Upper Merion Area School District
King of Prussia, Pennsylvania
EXECUTIVE SUMMARY

After a full community-engaged master planning process and subsequent successful new elementary school projects, Upper Merion Area School District (UMASD) began the process of creating a flagship facility to house the upper secondary programs for the District. A thorough process was utilized including multiple user meetings and tours of state-of-the-art facilities throughout the United States.

The intent behind the facility is to provide career and higher education level spaces for the students of UMASD to engage in the 21st century learning activities of; research, develop and present. Multiple hi-tech industry work spaces as well as contemporary higher education spaces were studied in the process of the development of this unique facility.

The proposed 340,000 SF facility will be connected to the existing middle school facility through the athletic facilities to provide a full secondary campus. The resulting facility will provide enriching opportunities for students from the traditional sixth grade through twelfth grade ages.

A true “student commons” is the heart of the facility and will be an “all-day” area for multiple activities. The commons is a two-story open space with learning resources located on the second level to enhance the research and project-based components mixed with dining and food-based opportunities. After hours, the “commons” space will provide pre and post activity support for both the athletic as well as the performing arts complexes. A full competition gymnasium and competition swimming venue will be the connector to the middle school. The performing arts complex provides a complete 650 seat theater with balcony and all supporting performing arts spaces.

Student services and technology distribution and support spaces are located between the commons space and the academic area. A three-story academic wing supports the core academic programs with a STE(A)M based center, multiple project and team-based spaces and a three-story learning stair. The learning stair connects all core programs vertically to enhance the cross-pollination of learning activities. Transparency is a key aspect of the facility’s design and is utilized to promote the visual connection between each of the learning activities.
The new facility will be constructed while the existing high school on site is still occupied. Once complete the existing facility will be demolished and new playing fields will be constructed in the place of the existing facility. A unique site feature is an underground stream bisecting the site. The project chooses to highlight that challenge by exposing the stream at its outfall within a new outdoor amphitheater and teaching area. This outdoor space will enhance internal building program opportunities by connecting them to the exterior. The stream will provide for science-based learning activities directly on campus. The students of UMASD will have additional tremendous learning opportunities once this facility is complete.
SCOPE OF WORK AND BUDGET

The scope of work generally consists of approximately 340,000 SF of new construction on the existing Upper Merion Area High School (UMAHS) site. The existing high school will be maintained throughout construction and will be demolished upon completion of the new facility. There will also be a 600 SF, stand-alone greenhouse.

Additional renovation work will take place in the existing Middle School natatorium. The pool will be infilled and converted to a multi-purpose athletic room with exterior athletic storage. The pool conversion space is approximately 6,000 SF.

Site work consists of work required for the new construction, including site demolition as required, as well as the addition of new paved parking areas, paved parent drop off areas and bus traffic loop with bus parking. Additionally, the site will be redesigned to accommodate new athletic facilities including three multipurpose fields, two ball fields, discus and shotput. The new high school will require landscaping, lighting, pedestrian paths, and will connect to a new municipal trail that will run throughout the site.

The entire construction value is estimated at approximately $126,000,000.
THE UPPER MERION TOWNSHIP COMMUNITY
Upper Merion Area School District

The Upper Merion Area School District (UMASD) is located in Southeastern Pennsylvania, about sixteen miles from Philadelphia, located in King of Prussia, Pennsylvania. The district consists of seven schools and provides education to three townships in Montgomery County:

- Upper Merion Township
- Bridgeport Township
- West Conshohocken Borough
Upper Merion Township is roughly 17 square miles large and has developed into one of the most important activity centers in the region. It is home to over 28,000 residents, and recognizable attractions such as Valley Forge National Park and the King of Prussia Mall, the nation’s largest shopping mall.

Education has been rooted in UMASD’s history since 1683 as far back as Pennsylvania founder, William Penn’s existence. Over 170 years later, UMASD has evolved to provide education to six schools, providing educational needs to students in grades K-12 today. The district is currently configured with five elementary schools, one middle school and one high school.

UMASD is widely known for their highly rated public schools based on a variety of measures, including academic performance and its overall equity. The District strives to ignite a challenging, diverse, caring learning environment focused on serving children and the community.
STAKEHOLDERS IN THE PROJECT

Upper Merion Area School District founded a Design Committee comprised of District administrators, teachers, and building administrators. Students were involved as they are with every project. The stakeholders held planning and design workshops with the Design Committee to create a facility design that adequately met the District’s needs. Planning was driven by deciding how the District wished to educate and then by determining a facility design that best responds to the desired educational program and site. Multiple meetings were held on multiple occasions with the school board members and the public to work with the team to further concepts based on community goals.
PROJECT CHALLENGES

A unique site feature of the proposed facility includes an underground stream bisecting the site. The project chooses to highlight that challenge by exposing the stream at its outfall within a new outdoor amphitheater and teaching area. This outdoor space will enhance internal building program opportunities by connecting them to the exterior. The stream will provide for science-based learning activities directly on campus.

However, a series of consensus based planning workshops took place to develop the project, and allowed the team to overcome most challenges and hesitations in the planning phases. Through information gathering and sharing sessions, brainstorming workshops and design charrettes conducted with both the professional design team and the board members involved, we were able to reach creative and appropriate solutions without many obstructions. This is largely because the method allows for input and information sharing by ALL from the very beginning, and the buy-in to and ownership of the final design is beyond any that might develop otherwise.

This approach allowed the project to avoid problematic situations and has allowed the team to deliver a level of detail that enhances the day-to-day experience for both the student and faculty.
One of the most recognizable assets of the facility is the commons, the initial space following the main entrance. The commons is a two-story open space with learning resources located on the second level to enhance the research and project-based components mixed with dining and food-based opportunities. After hours, the “commons” space will provide pre and post activity support for both the athletic as well as the performing arts complexes. A full competition gymnasium and competition swimming venue will be the connector to the middle school. The performing arts complex provides a complete 650 seat theater with balcony and all supporting performing arts spaces.

Student services, technology distribution areas and support spaces are located between the commons space and the academic area. A three-story academic wing supports the core academic programs with a STEAM based center, multiple project and team-based spaces and a three-story learning stair. The learning stair connects all core programs vertically to enhance the cross-pollination of learning activities. Transparency is a key aspect of the facility’s design and is utilized to promote the visual connection between each of the learning activities.
VALUE OF PROCESS AND PROJECT TO THE COMMUNITY

The planning process allowed for the community to have tremendous input into the concept and the final design. By utilizing a consensus based planning approach, numerous ideas provided by the many constituents can be found in the overall plan for the facility. The educational vision is clearly supported by the many unique aspects of this facility. Public meetings were held where interested citizens met on multiple occasions to work with the team to further the project and to encourage the use of sustainable techniques. As a result of the design charrette workshop, the design committee and community established an overall layout and decided two stories for communal use should be incorporated.
The most important change was the motivation to move away from a lecture-based learning process towards project-based learning. The goal of project-based learning is to bring the multitude of students not served well by the lecture format into the realm of application of data rather than regurgitation of data. The District and building team embraced this theme because it brings a variety of other concepts into consideration. The intent behind the overall design of the facility is to provide career and higher education level spaces for the students of UMASD to engage in non-traditional learning environments and learning activities of; researching, developing and presenting.
HOW THE ENVIRONMENT SUPPORTS THE CURRICULUM

UMASD high school employs a one-to-one environment, providing laptops to students in all grades. There is a strong focus on 21st century skills development and integration of technology into teaching and learning. The proposed facility design includes a technology distribution and support spaces located between the commons space and the academic area to integrate the correlation for teaching and learning. Additionally, the high school offers virtual coursework and service learning for credit. A three-story academic wing supports the core academic programs with a STE(A)M based center, multiple project and team-based spaces and a three-story learning supports the school’s STE(A)M curriculum.
HOW THE ENVIRONMENT SUPPORTS MULTIPLE LEARNING + TEACHING STYLES

The building promotes multiple learning styles by providing an environment in which every space in the facility is essentially a learning space. Learning studios, small group instruction areas and large group instruction areas provide spaces for individual, small-, medium- and large-group learning. Spaces traditionally used as corridors or hallways are designed to function as additional learning spaces, and even stairs are intended to be used as presentation steps and/or to provide a dynamic team collaboration area. A STE(A)M area and support spaces are located between the commons space and the academic area to integrate the correlation for teaching and learning. Every two instructional spaces share a break-out space used for specialist push-in instruction, group work, and collaboration.
The proposed facility successfully delivers the District’s intent to incorporate the “Four C’s” (Critical Thinking, Creativity, Collaboration and Communication) in the overall design. The Four C’s provide the learner with spaces for instruction, research, development of projects (making), and presentation of ideas. Each space within the facility is designed to enhance students into ways of creating better communication and collaboration, creativity and critical thinking skills.

The skills of collaboration and teamwork are vital to best preparing our learners for a world that necessitates experience in working together to solve problems, bringing out the best in one another to achieve a solution that’s better than one could have achieved alone. Collaboration is key to furthering these attributes for a successful learning experience.

Creating memorable and meaningful learning experiences that encourage learners to communicate on numerous levels is paramount to success. Providing opportunities to connect their learning to real life scenarios builds engagement, energy and ultimately keen communication skills. Allowing learners to interact with others and contribute back to their communities instills a sense of respect and pride.

Creating spaces for students to think critically versus presenting sets of facts, allows them to engage, ask questions and become engaged in the world around them. When this happens, they help others think critically too.
ADAPTABILITY AND FLEXIBILITY

A variety of instructional delivery methods are utilized including blended and online learning to personalize the process to engage all learners, tapping into their unique learning styles. The District and the building team were influenced by the notion of technology being of tremendous use in that it can be used to assess each learner’s strengths, freeing up the teacher to do what he/she does best: guide the instruction. Learners are engaged, they take ownership of their learning and a life-long love of learning is instilled.
In order to accommodate the variety of instructional methods referenced above, our spaces must be agile allowing them to be shaped and reshaped to support the desired activities. We refer to this as “rapid reconfiguration.” Particularly, as technology continues its rapid pace of change and as our understanding of how each of us learns continues to evolve, this notion of flexibility and adaptability was key to ensuring that all physical spaces in this facility support learning.
SECOND FLOOR PLAN
THIRD FLOOR PLAN
5 PHYSICAL ENVIRONMENT

A true “student commons” is the heart of the facility and will be an “all-day” area for multiple activities. The commons is a two-story open space with learning resources located on the second level to enhance the research and project-based components mixed with dining and food-based opportunities. After hours, the “commons” space will provide pre and post activity support for both the athletic as well as the performing arts complexes. A full competition gymnasium and competition swimming venue will be the connector to the middle school. The performing arts complex provides a complete 650 seat theater with balcony and all supporting performing arts spaces.

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The learning stair connects all core programs vertically to enhance the cross-pollinization of learning activities. Transparency is a key aspect of the facility’s design and is utilized to promote the visual connection between each of the learning activities.
Upper Merion Area High School (UMAHS) is in close proximity to educational facilities and communal resources in the surrounding community. This new facility will be physically connected to Upper Merion Area School District (UMASD)’s Middle School in a secondary campus design. UMAHS is also within a one mile radius to UMASD’s Caley Elementary School, Upper Merion Township Library and Upper Merion Community Center.
HOW THE PROJECT INSPIRES AND MOTIVATES

Ultimately the building motivates by the variety of amenities it provides to the students who attend as well as the community members that use the extensive facilities. As previously mentioned, the student commons are the heart of the facility and will be an “all-day” area for multiple activities. Large group teaming spaces, small group work spaces, and the learning/presentation stairs allow for students to congregate and collaborate ideas hands-on in a non-traditional learning environment.
RESULTS OF THE PROCESS + PROJECT

HOW THE PROJECT ACHIEVES EDUCATIONAL GOALS AND OBJECTIVES

The facility is not yet built, as construction begins Spring 2020, therefore the direct outcome data is not yet available. Judging by the process and the enthusiasm for the proposed educational structure, the team expects great results.
HOW THE PROJECT ACHIEVES COMMUNITY AND SCHOOL DISTRICT GOALS

The project achieves school district educational specifications by incorporating cognitive, digital learning peer-to-peer/staff-to-staff social structures, providing an inviting and hands on learning environments. Additionally, as previously stated, the proposed facility successfully achieves the district’s vision to incorporate the concept of the four C’s (Communication, Collaboration, Creativity, and Critical Thinking) in the overall design.
UNINTENDED RESULTS AND ACHIEVEMENTS

The project is still in the design phases with construction beginning in Spring of 2020. With the project not yet built, the expectations from unintended consequences is yet to be learned. There have been several site related challenges though, that have driven this to be a very unique project solution. Two consequences are as follows:

- The underground stream was a challenge that grew into an opportunity. The stream required that the design team bifurcate the building to bridge that underground structure. Further, the Department of Environmental Protection believes strongly that previously captured waterways in the state be revealed where possible. The team took the opportunity to split the building into the community spaces and the academic spaces thus allowing two distinct campus structures with a small structure/bridge spanning the underground stream. Then, the team exposed the end of the stream and developed a full outdoor classroom/presentation space around the stream. Art and science rooms open up to that end of the facility to encourage those uses of the stream and outdoor classroom area.
The condensed and confined site with a high school building that had to remain operational provided the other unique challenge that became an opportunity. Knowing that the existing high school had to remain functioning while the new facility was constructed, and knowing the parking and playing field structures that had to be part of the resultant design, the team master planned the new high school to connect with the existing middle school. In the short term this will allow the two schools to share resources between performing arts and athletic structures, probably reducing the quantity of spaces required for each separately. Further though, the facilities will serve as a true secondary campus so as the educational program evolves from specifically a grade structure format to more a competencies based program, students can feel free to take classes wherever in the facility suits their academic needs.
EDUCATIONAL SPECIFICATIONS

The facility provides the following unique spaces as part of the educational specification:

- STE(A)M Center/Presentation Area
- STE(A)M team areas
- Dining + Social Commons
- Project breakout Spaces
- Multi-Media Center
- Fitness Center
- Performing Arts Center
- Public lobbies/gathering areas
- Career and college Counseling Centers
- Virtual reality augmented reality spaces
- Areas of open circulation
- Four C’s (Critical Thinking, Creativity, Collaboration, and Communication) concept spaces
- Hands-on learning areas
- “In person” and digital learning, peer-to-peer, staff-to-peer social structures
- Coffee Commons