Architectural Design Narrative

School of Concrete & Construction Management:
Located on the north side of the site, the new two-story, 54,000 square foot, School of Concrete and Construction Management (SCCM) building is being designed to serve the needs of the School of Concrete and Construction Management department as well as providing classrooms for the general student body. The building will terminate a future East Quad extension with the main entrance/lobby that interconnects the two levels facing the quadrangle. The general design of the building has a two-story bar running east to west with a one-story section extending to the south separating the two major outdoor elements – the working yard and courtyard. The two-story bar’s first floor will house the laboratory spaces to the west, and the department office, conference center, multi-media showcase classroom to the east. The second floor includes a distributed mix of classrooms, computer labs, individual faculty offices, graduate/tutor center, and collaborative/gathering areas. The one-story bar that extends south is a single loaded corridor that includes a portion of the laboratory spaces, a covered amphitheater space, and the 200-seat lecture hall. We envision this section of the building having the possibility to connect to a future building to the south of the site and/or a future second floor. The corridor would serve as a backdrop to the east courtyard. The two bars intersect at a shared lobby, service core, and communicating staircases.

There are outdoor areas designed around the building that are essential to the success of this project. A working yard on the west side, will provide an area where students can extend their work and projects outside of confines of the laboratories and classrooms. It will include material storage, trailer parking, a concrete batch plant, dumpsters, and space for constructing larger projects. The covered amphitheater has direct connection to the student projects lab and working yard. Here students will observe particular construction methods, or product demonstrations. In addition to the working yard, the building also includes a courtyard that will serve as a secondary entrance into the building and provides a space to support the department offices and program’s community and industry events. The courtyard will likely contain concrete walks highlighting a variety of decorative finishes and techniques. There will be a mechanical penthouse on top of the main bar to house equipment serving this building. The penthouse will be accessible by a stair and elevator. The building is envisioned to have a mix of structural steel framing, load bearing CMU, and cast-in-place concrete with concrete hollow core planks with a finished concrete topping for the second floor. This hybrid system will allow for special moments where concrete, masonry, steel and other building materials can be showcased. These moments will include multiple casting techniques, textures, colors, and mix designs. The intent is to showcase the possibilities with concrete. The building’s cladding will be a mix of brick veneer, precast concrete panels, and aluminum storefront/curtainwall with insulated glazing units. The roofing material is anticipated to be TPO. Interior flooring is expected to be a mix of concrete, LVT, ceramic tile, and carpeting. The interior partitions will be metal stud framing with painted drywall and ground faced CMU. The building is intended to be fully sprinklered.

Another critical piece of this project includes moments where the design process, construction, and building will serve as a teaching tool for students. Data collection related to concrete maturity, movement monitoring, and energy usage may also be incorporated into the design. The design will also incorporate more literal teaching movements with windows into walls, foundations, and structural and mechanical systems, as well as integral sample panels that showcase multiple construction types.

The project will be required to meet the State of Tennessee High Performance Building Requirements (HPR).

Applied Engineering Building:
The Applied Engineering Building will be located to the south of the SCCM building and will be approximately 90,000 square feet. The building will likely be three stories tall with a mechanical penthouse situated on top. During the design phase of the School of Concrete and Construction Management it was made clear that a physical connection between the SCCM and Applied Engineering Building should take place. We envision this connection happening along a corridor addition along the east side of the 200-seat lecture hall. The Applied Engineering Building would be expected to complement the SCCM building in materiality, rhythm, and scale. It is expected that along with the Applied Engineering Building project, there would be a series of site and utility improvements included in the design efforts. These could include removal of the existing parking lot, reinforcing utility redundancies, and addressing the storm water clutter at the southeast corner of the site. Continuing to preserves the healthy trees on this site should be a priority and be considered when studying the building footprint and associate pathways.

The Applied Engineering Building will be the next step in the campus master plan to rejuvenate this area of campus and its applied sciences programs. These buildings will serve as a new gateway into campus and set the tone for the future development and growth around the East Quad extension to the north of the site.
The Site and design of both the School of Concrete and Construction Management and the Applied Engineering Building shall respond to the current built conditions including neighboring buildings, traffic patterns and parking locations, as well as be ready to support the future vision of a formal quad as an extension of the North Quad, pedestrian-centric traffic to the North and west and vehicular traffic to the south and east.

The School of Concrete and Construction Management will open to the corner of Alumni Drive and Blue Raider Drive, providing the temporary entry to the campus at this intersection. The Applied Engineering Building will be expected to hold this corner and be the image of this entry point.

The working yard will be accessed by students and staff working on projects that do not fit inside any of the labs. This may include pouring concrete, dusty woodworking exercises and test driving of vehicles. The yard will also host demonstrations. Supplies such as gravel and sand and waste streams will move through this yard. In addition each program has vehicle storage needs such as trailers, bobcats and university trucks that shall be accommodated in the yard.

The formal courtyard will be landscaped and used as an entry sequence for both building, a place for outdoor study and outdoor gathering. There is an opportunity to incorporate a major entry point for Applied Engineering Building from this courtyard.

The main entry of the SCCM Building is located to be a backdrop to the future quad. The design intent was to have the building blend into the campus while expressing and highlighting the use of concrete as you approach. The axis of the main lobby pay homage to the historic building at this area of campus.

The integration of the existing bus stop into the pedestrian sidewalk design was critical to provide access to the SCCM building and the future AEB.

Tree preservation was very important to the development of this site. The goal is to save as many healthy old growth trees around this area of campus.

The secondary entrance from the courtyard serves as a meeting place both inside the building and out. It is intended to be a gathering space for the conference center and students attending lectures in the 200-seat hall. This area will serve as a future connector to the AEB project.

This area includes existing parking areas to remain at the completion of the SCCM building. The SCCM project will provide an additional 20 new parking spaces in the south lot and 25 new parking spaces in the north lot help offset the number of parking spaces absorbed from the west lot.

Temporary screening of the working yard shall be considered prior to the start of the AEB project. This area can be visually chaotic and would benefit from screening plants.

This vehicular entrance will be shared access to the parking lots, working yard, and trash recycling bins. This access shall remain at the completion of the AEB project in order to have access to the working yard area.
The School of Applied Engineering will be sited to begin a rhythm of buildings that front Alumni Drive and have street presence here. Alumni Drive is an edge of campus and will be more prominent over time as the campus master plan is built out.

The School of Applied Engineering will share the working yard and the formal yard. The building will provide a southern edge to both of these yards and screening for the working yard.

The courtyard between the buildings will serve as a formal and informal gathering space. The hope is that there will be a corridor that will linked the two buildings together. This connector will serve as a backdrop to the courtyard with the possibility of showcasing the etched graphic on the existing concrete wall.

The Applied Engineering Building is expected to be the anchor for this entrance into campus and will set the tone for students and visitors. The exact location of the Alumni Drive entrance is flexible, and should be welcoming to visitors.

The new Applied Engineering Building is approximately 90,000 square feet and will likely be a three-story building with a mechanical penthouse on the roof. While it is expected that the building fit within the existing campus context, there is an opportunity to incorporate some of the elements from the SCCM building.

The Applied Engineering Building will need to address the corner of Alumni Drive and Blue Raider Drive. This intersection will be re-imagined into a major gateway into campus. There is a vision where this intersection becomes a roundabout similar to other intersections on campus.

This area will likely become an additional service entrance/yard into the Applied Engineering Building. Consider screening this area with additional planting or fencing.

Connection to existing and future residential districts of campus. The Campus Master Plan indicates a numerous residence hall projects to the East of the site.

Significant storm water improvements are needed at this corner. There are multiple head walls from various storm lines. The hope would be that this could be visually improved and simplified for better maintainability.

The Campus Master proposes removing surface parking lots from the interior of campus, the lot south of the SCCM is included in that effort. This area should be considered for any on site water treatment requirements that the Applied Engineering Building will include as well as providing additional trees and plantings to reinforce this area’s vegetation.
Future Building - The campus master plan proposes multiple new buildings to reshape this area of campus. Part of that vision includes a new quad space similar to the one to the north. The massing of these buildings should be consistent with this area of campus, particularly in their height. These buildings will reinforce the north-south axis along Blue Raider Drive and serve a direct channel from the existing East Quad to the SCCM and Applied Engineering Buildings.

Quad Expansion - This quad expansion will replace a pair large surface parking lots. The quad expansion will reinvigorate this area of campus and become a space for students to gather and interact. It is clear that the campus master plan is shifting the priority from vehicles and parking to the pedestrian and open green space. This extension of East Quad to the south is a wonderful opportunity for the campus.

Roundabout - The campus master plan suggests a roundabout at the intersection of Blue Raider Drive and Alumni Drive. This is part of a continued effort to ease congestion and improve safety across campus. As this area of campus continues to grow, clear and safe vehicular and pedestrian traffic paths are critical and should be studied carefully.

East-West Connector - This connection between the James E. Walker Library and the Womack Lane Apartments can be strengthened and reinforced with direct paths and clear lines-of-sight. While this connection is important to students, it also serves as a utility corridor through this area of campus. Creating clear, direct paths for utilities will benefit the maintainability efforts exhibited across campus.