Etown Southern-Campus Mixed-Use Development for College and Community

Master Plan Site Plan, Playground & Pavilion, and Mixed-Use Building Shell

EGR496 – Architecture Studio 2

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1. Introduction

This document consolidates the final design deliverables produced through Autodesk Revit modeling for a community-centered development project. The purpose of this compilation is to present labeled visuals exported directly from the Revit model alongside written design narratives that explain the reasoning, intent, and technical considerations behind each design decision. Together, these materials form a comprehensive record of the project from concept through developed design.

The project addresses community-centered design through three interrelated components. First, a master plan site plan establishes the overall spatial organization of the development, defining the relationships between buildings, open spaces, circulation systems, and landscape zones. Second, a playground and pavilion provide inclusive recreational and gathering space designed to serve users of all ages and abilities. Third, a mixed-use building shell integrates residential, commercial, and civic uses into a single structure that serves as a community anchor. These three elements are designed to

function both independently and as a cohesive whole, reinforcing one another through shared circulation, complementary programming, and a unified material and formal language.

The design narratives accompanying each component address four key themes: design intent, which explains the goals and spatial strategies driving each element; accessibility, which documents compliance with ADA Standards for Accessible Design and the application of Universal Design principles; vernacular architecture, which describes how the project draws from regional building traditions to create structures that feel rooted in their context; and community integration, which discusses how the project was shaped by and designed to serve the needs of its surrounding community.

2. Master Plan Site Plan

2.1 Site Plan Overview

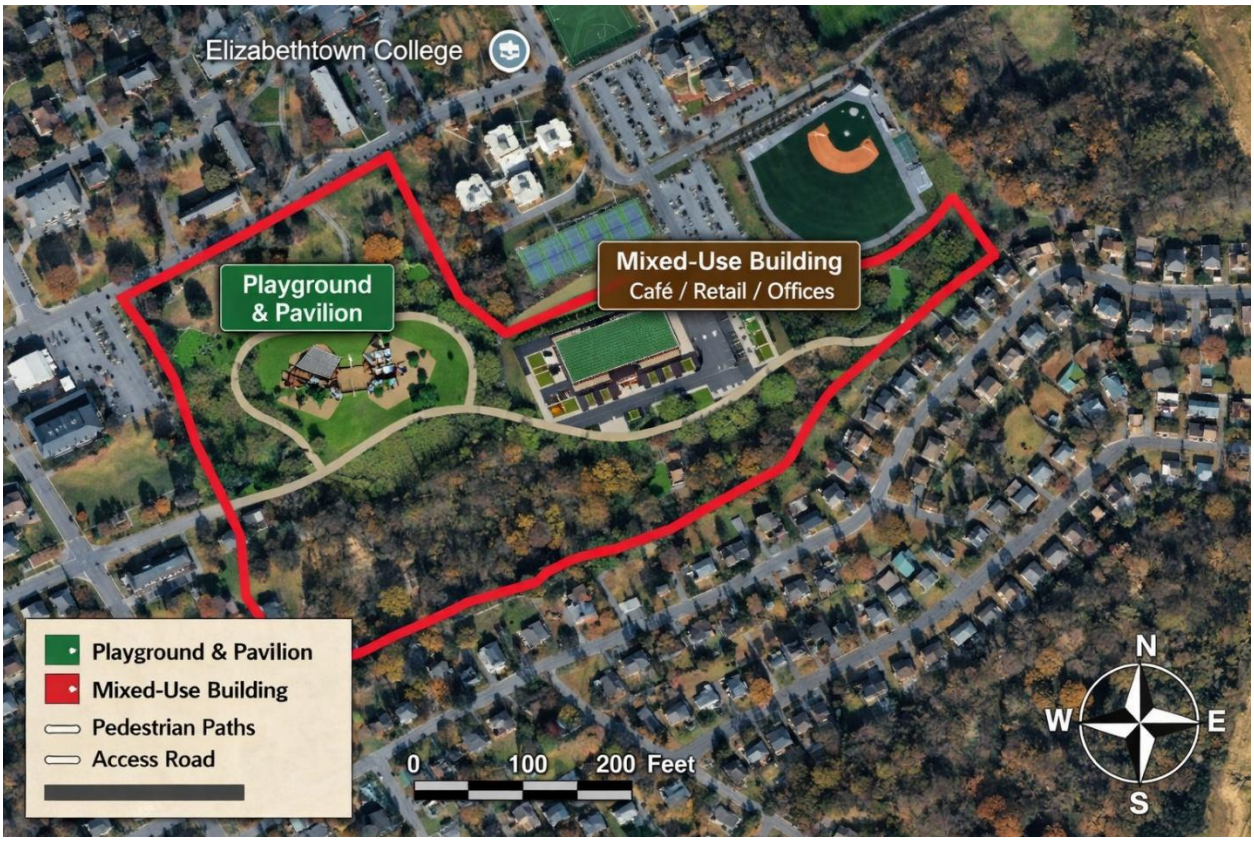

Figure 1. Master Plan Site Plan — Overall spatial organization showing building footprints, circulation paths, open spaces, and landscape zones.

The master plan site plan establishes a cohesive spatial framework that organizes the development's three primary program areas, the playground and pavilion, the mixed-use building, and community open space. All put into a legible and navigable whole. The plan is structured around a central pedestrian spine that connects all major destinations, with secondary paths branching to individual program areas. Land uses are arranged to create a gradient from the more active, publicly oriented zones (commercial frontage, playground) to quieter, more contemplative areas (residential entries, passive green space), ensuring that each use benefits from an appropriate level of activity and privacy.

Walkability is a foundational principle of the site plan. Connected pathways with consistent widths and surfaces provide clear wayfinding throughout the development. Gathering nodes, small plazas, widened path intersections with seating, and landscape alcoves are strategically placed at key decision points along the pedestrian network. These nodes serve both functional and social purposes: they orient visitors within the site while also creating opportunities for casual encounter and rest. Street trees and landscape buffers along primary paths provide shade, define spatial edges, and contribute to a comfortable microclimate for pedestrians.

The plan carefully balances built and open space to avoid an overly dense or paved environment. Approximately forty percent of the site area is devoted to landscape, including active recreation zones, passive green space, and functional stormwater management areas. Bioswales and rain gardens are integrated along parking areas and building edges, treating stormwater runoff on-site while contributing to the visual character of the landscape. A continuous green buffer along the site perimeter provides acoustic and visual separation from adjacent properties, creating a sense of enclosure and identity for the development.

The circulation system is designed around a clear hierarchy that separates pedestrian and vehicular traffic to maximize safety and comfort. Vehicular access is consolidated at a single primary entry point from the adjacent public road, leading to a shared parking area positioned at the site perimeter to minimize automobile presence within the pedestrian-oriented interior. Service and emergency vehicle routes are routed along the site's edge, with access to building service areas screened by landscape buffers. This arrangement ensures that the central portions of the site remain free from vehicular traffic, creating a safe and inviting pedestrian environment.

All pedestrian routes within the site are designed to meet or exceed ADA accessibility requirements, with continuous accessible paths of travel connecting every program area. Running slopes are maintained below five percent, cross-slopes are held under two percent, and surface materials scored concrete and stabilized aggregate provide firm, stable, and slip-resistant walking surfaces. Curb ramps with detectable warning surfaces are provided at every vehicular crossing point. The pedestrian network connects the three major program areas the playground and pavilion, the mixed-use building, and the

community green through direct, intuitive routes that minimize travel distances and eliminate dead-end paths, ensuring that all users can navigate the site independently and comfortably.

3. Playground and Pavilion

3.1 Playground Design

Figure 3. Playground Plan View — Layout of play zones, accessible surfacing, seating, and sensory elements.

The playground is designed as an inclusive, multi-sensory environment that supports physical, cognitive, social, and emotional development for children of all ages and abilities. Principles equitable use, flexibility in use, simple and intuitive use, perceptible information, tolerance for error, low physical effort, and appropriate size and space for approach and use serve as a comprehensive framework ensuring that the playground is not merely accessible in a compliance-driven sense, but genuinely welcoming and engaging for every child who uses it.

Specific inclusive features are integrated throughout the playground layout. Ground-level access play elements including sand tables, musical instruments, tactile panels, and sensory walls are positioned so that children using wheelchairs, walkers, or other mobility aids can participate alongside standing children without segregation or adaptation. Sensory-rich stations incorporate textured panels in varied materials, sound-producing features such as chimes and drums, and high-contrast color schemes that support

children with visual impairments. Play structures are organized into graduated challenge levels, with lower-complexity zones for younger children and toddlers transitioning to higher-complexity climbing and balancing elements for older children, allowing each child to engage at a level appropriate to their developmental stage. Shaded rest areas with companion seating are distributed throughout the playground, providing caregivers with comfortable vantage points for supervision and offering children quiet zones for sensory regulation.

The playground surfacing system uses poured-in-place rubber surfacing meeting ASTM F1292 impact attenuation standards and ADA requirements for accessibility. This unitary surface provides a continuous, trip-free plane that accommodates wheelchair and mobility device travel across the entire play area. The surfacing is installed with integrated color patterns and wayfinding cues that help children navigate the space intuitively. The overall layout is designed with clear sightlines from all caregiver seating areas to every play zone, ensuring that adults can monitor children's activity from any position within the playground environment.

3.2 Pavilion Design

Figure 4. Pavilion Elevation — Structural form, material palette, and relationship to surrounding landscape.

The pavilion serves as a flexible community gathering structure that provides shade, weather shelter, and a focal point for social interaction adjacent to the playground. Conceived as a multi-purpose covered space, the pavilion accommodates a range of

activities from informal family picnics and birthday celebrations to organized community events and seasonal farmers' markets. The structure is sized and proportioned to feel generous enough for group gatherings while maintaining an intimate, human-scaled character that invites everyday use. Its placement within the site creates a natural transition between the active energy of the playground and the calmer atmosphere of the adjacent green space.

The pavilion design draws deliberately from regional building traditions, employing vernacular architectural strategies that root the structure in its local context. The primary structure uses timber framing sourced from regional species, with connections detailed to express the clarity and warmth of traditional wood joinery. A native fieldstone base anchors the pavilion to the ground plane, referencing the stone foundations and retaining walls characteristic of the Pennsylvania landscape. The roof form a simple gabled profile with generous overhangs echoes the proportions of local agricultural and civic structures while providing effective solar shading and rain protection. Natural ventilation is achieved through the open-sided design, supplemented by a raised ridge vent that promotes convective airflow through the covered space. These vernacular strategies respond directly to the regional climate, available materials, and cultural building norms, creating a structure that feels authentically of its place.

Accessibility is fully integrated into the pavilion design. Level access is provided from all approach paths, with flush transitions between the surrounding walkways and the pavilion floor. Tactile ground surface indicators mark the pavilion entries for users with visual impairments. Accessible seating including tables with extended clear space for wheelchair users and benches with armrests and back support for users with limited mobility is integrated into the structure rather than added as an afterthought. Adequate clear floor space is maintained throughout the pavilion interior to allow comfortable circulation for wheelchair users and those with mobility devices. Lighting fixtures are selected and positioned to provide even, glare-free illumination, supporting users with visual sensitivities and ensuring safe use during evening hours.

4. Mixed-Use Building Shell

4.1 Building Shell Overview

Figure 5. Mixed-Use Building Shell — Exterior perspective showing massing, facade articulation, and ground-floor activation.

The mixed-use building shell is conceived as the community anchor of the development, integrating ground-floor commercial and civic space with upper-level residential or office use in a single, coherent structure. The shell design prioritizes long-term adaptability: floor plates are kept open with minimal interior partitioning, floor-to-floor heights are generous (fourteen feet at the ground floor, eleven feet at upper levels), and the structural grid is dimensioned to accommodate diverse tenant configurations without requiring modification to the primary structure. This approach ensures that the building can evolve over time in response to changing community needs, absorbing new uses and tenants without compromising its spatial quality or structural integrity.

The building massing responds carefully to its site context. The primary volume is positioned to define a street edge along the development's main pedestrian spine, with the longest facade oriented to maximize ground-floor visibility and frontage. Upper floors are set back from the street-facing facade to reduce the perceived bulk of the building and maintain a human-scale relationship with the pedestrian realm. Facade articulation expressed through changes in material, window rhythm, and plane breaks the building's length into distinct bays that read at a neighborhood scale rather than as a monolithic block. The material palette combines load-bearing masonry in warm tones referencing the regional brick and stone traditions, wood accent panels at entries and upper-level balconies, and generous glazing at the ground floor to create a transparent, active street frontage.

The ground-floor activation strategy is central to the building's role as a community asset. Transparent storefronts with full-height glazing provide visual connection between interior commercial spaces and the public sidewalk, encouraging foot traffic and creating

a sense of safety through natural surveillance. Entries are recessed slightly from the facade plane to create sheltered thresholds, while canopies extending along the full street frontage provide weather protection and define an intermediate public zone between the building interior and the sidewalk. Tenant bays are sized flexibly ranging from approximately 800 to 2,400 square feet to attract a mix of neighborhood-serving uses such as a café, community workspace, small retail, or civic service office.

4.2 Floor Plans and Sections

Figure 6. Floor Plan — Core location, Personalized areas and flexible tenant layout.

The building's internal organization is centered on an efficiently located core that consolidates vertical circulation, a hydraulic passenger elevator, an enclosed exit stair, and mechanical and plumbing risers into a compact zone positioned near the building's midpoint. This placement minimizes corridor lengths on upper floors, maximizes usable floor area along the perimeter where natural light is available, and provides equitable access from any tenant space to the building's primary means of egress. A secondary exit stair is located at the opposite end of the building to satisfy code-required separation distances and provide redundant amounts of capacity.

The structural system employs a steel frame with wide-flange columns and beams on a regular grid, providing clear spans of approximately thirty feet in each direction. This open structural bay allows tenants maximum flexibility in laying out their spaces without interference from intermediate columns. Composite metal deck with concrete fill forms the floor system, providing a level, durable substrate suitable for any finish material. The

structural grid, core placement, and generous clear heights together create a building shell that supports long-term adaptability a structure designed not for a single use, but for a succession of uses over the building's lifespan, responding to the evolving needs of the community it serves.