

# The Perry Street Edge: Developing A New Pedestrian Portal to Virginia Tech

By: Aaron W. West

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in partial fulfillment of the requirements for the degree of

## Master of Architecture

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## Abstract:

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At the crossing of a strong architectural edge and an axis line, it is necessary to articulate the intersection and acknowledge the moment. But what if, at the point of this intersection, other contextual factors work against the articulation? What if there is an opportunity to not only mark the intersection, but in doing so, strengthen the edge condition, elevate the importance of the axis line and provide a celebrated threshold experience?

This project looks at this very condition as it exists within the context of the Virginia Tech campus in Blacksburg, Virginia. At the intersection of the axis of symmetry for the campus and the building edge along Perry Street, there is no acknowledgment of this crossing. In fact, in its present condition, the intersection is beset by a breakdown in the edge condition and only a trace of the powerful axis line. In addressing the challenges that plague this existing condition, this project will seek to achieve four things with respect to the Virginia Tech campus, at large:

1. Articulate the termination point of the axis of symmetry for the campus by strengthening the pedestrian path that runs along the axis providing a clearly defined route to the Drill Field.
2. A redefinition of the edge along Perry Street, repairing the breach in the building wall and connecting the components that make up the edge.
3. Strengthen intersection of the edge and the axis/path line by developing a new pedestrian portal into the heart of campus thereby providing a formal entry point along an edge that currently does not articulate the entry points into campus.
4. Develop the architectural context within the site, bridging the divide between the architectural traditions of the campus core with the modernist vernacular of the Perry Street Edge.

The Perry Street Edge:  
Developing a New Pedestrian Portal To Virginia Tech

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For Meredith Anne

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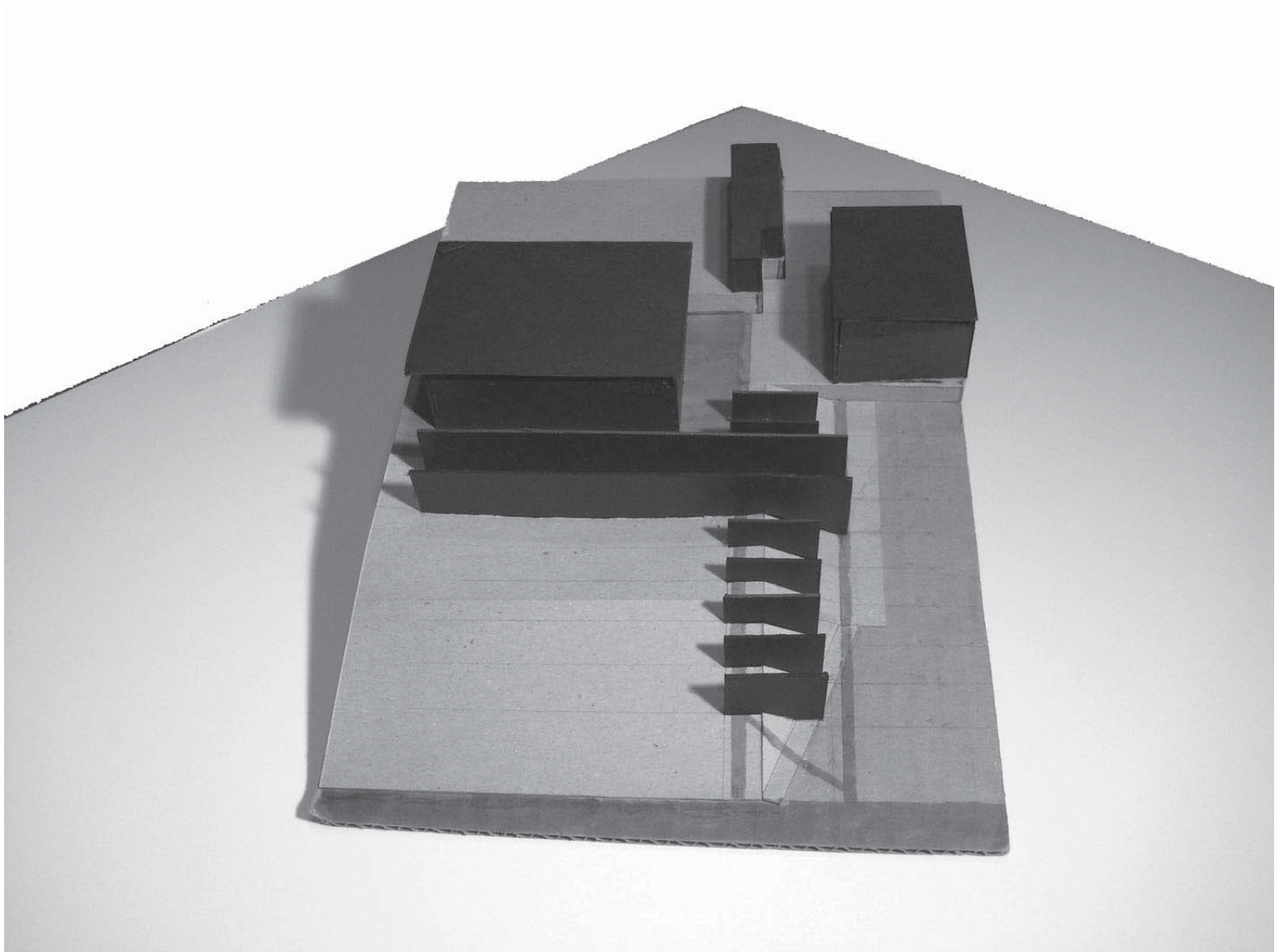
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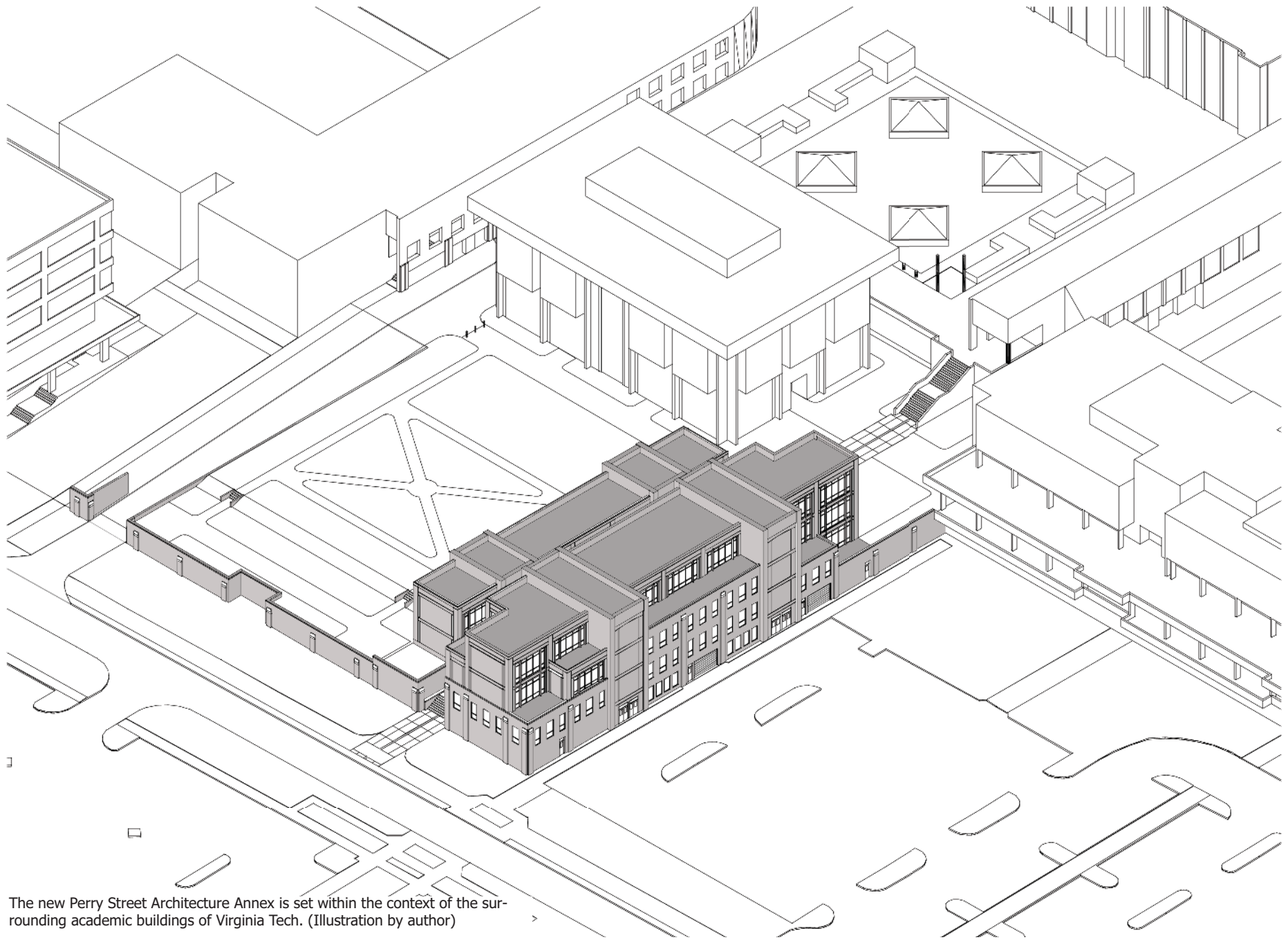
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..... Look Mom, I finally finished!!!!





## Chapter I: The Virginia Tech Campus



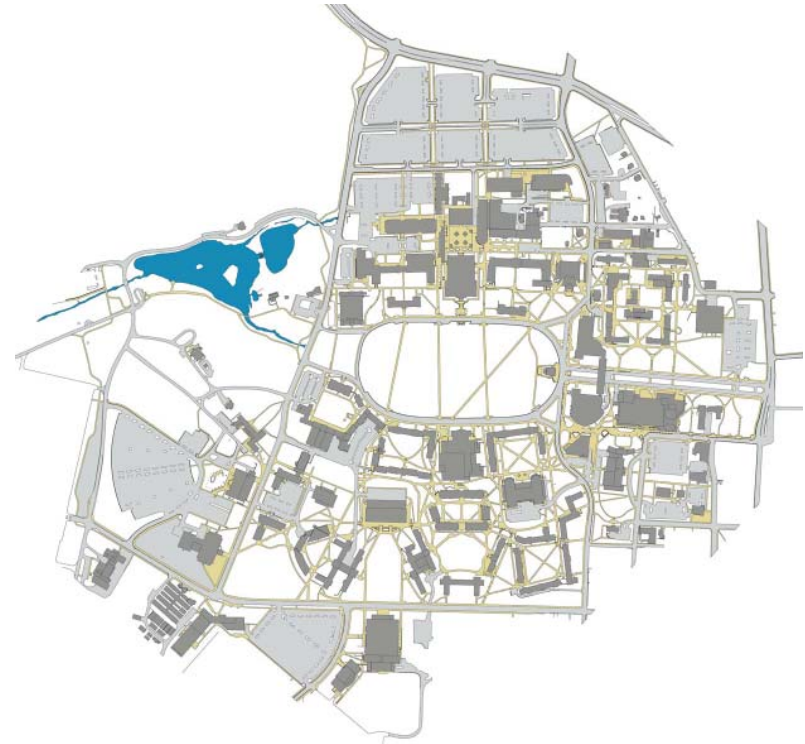
The new Perry Street Architecture Annex is set within the context of the surrounding academic buildings of Virginia Tech. (Illustration by author)

The college campus is an ever evolving entity. In order to meet the changing needs of its student body and its faculty the typical American university is in a constant state of expansion and construction. In fact within the course of a generation or two, the change can be so great as to alter the very nature of the "campus". Yet in most cases, the heritage, history, culture and soul of the college can still be found within the campus environment. It is no secret to the millions of Americans who have spent time in college; the campus is a special, sacred place. However, as new buildings are erected, old ones are replaced, and in some cases complete new campuses are developed the connection to the campus experience fades

To design within the context of the evolving college campus can be both exciting and extremely challenging. Adding a new building to the campus fabric comes with many implications. What is the impact of site selection? Should the style of the new building hold to the traditional roots of the campus or should it strike out along a new, more modern path? Should the new building, if it is on the edge of campus, help define that edge or remain uncommitted with the anticipation of future expansion and construction? Likewise, should the new design work to identify and accentuate special spatial conditions integral to the older parts of campus? Finally should the new building include a visual connection and acknowledgement to the history and tradition of the older buildings at the campus center? These questions

can, and should be asked at every university, taking into consideration the history, style, academic traditions and practical needs of the campus community. This is certainly the case at Virginia Tech, the site of this thesis investigation, and like most other schools the answers to these questions require context and thoughtful examination.

Occupying 2,700 acres of rolling farmland directly to the southwest of the town of Blacksburg, Virginia, the Virginia Polytechnic Institute & State University, commonly known as Virginia Tech, provides a top-level public education to over 30,000 undergraduate and graduate students. A large, sprawling complex of over 170 buildings the main campus of Virginia Tech is the single largest, non-commuter school in the Commonwealth of Virginia. Founded in 1872, Virginia Tech has evolved quite substantially from its humble beginnings 137 years ago. However, the traditions established in the most formative years of the university's founding continue to have a profound impact on the development and the evolution of Virginia Tech as an institution and as a campus.



The campus of the Virginia Polytechnic Institute & State University in Blacksburg, VA as it exists in 2003. Home to over 30,000 students the school is the largest in the Commonwealth of Virginia (Illustration by Author)



The Preston & Olin Institute Building, built in 1851, became VAMC's first academic building at the school's founding in 1872. (Photo from University Archives of Virginia Tech)



Barracks No. 1 (Lane Hall), present day. The central building of the Upper Quad, this structure served as the focal point of campus expansion during the first fifty years of Virginia Tech. (Photo by author)



The Upper Quad of VPI, circa 1900. Lane Hall, visible to the left served as the focal point for the barracks enclosing the quad. Rasche Hall (Barracks #3) is in the background. (Photo from University Archives of Virginia Tech)

Founded under the Morrill Land Grant Act of 1862, a federal program which provided land and funding to states for the establishment of schools of higher education in the mechanical and agricultural sciences, the Virginia Agriculture & Mechanical College (VAMC), as it was known at the time was established ten years after the Act's passing as a military academy that required all students to serve in the college's Cadet Regiment. Occupying the buildings of the defunct Preston & Olin Institute, a small Methodist run college founded in the 1850s, on a small hill to the west of town the school was slow to grow in its first ten years.

By 1881, the student population began to increase, requiring campus expansion. Moving up the hill to the north of the Preston & Olin buildings, the first planned campus element, known as the Upper Quad, was developed. Situated at the crest of the hill in a tight square looking out onto a central green, the buildings in this area served as the barracks for the Cadet regiment, while also providing academic, administrative and regimental space for the college. These first structures were of red brick, which is used elsewhere around town of Blacksburg, and stylistically similar to the architecture of most frontier U.S. Army posts. Situated in the center of the Upper Quad, Lane Hall (Barracks No. 1), built in 1888, served as the command post for the Cadet Regiment, the primary administrative building on campus. Likewise, due to its prominent location and its importance as the Regimental Headquarters, Lane Hall naturally be-

came the focal point of campus for its first sixty years of existence.

By the turn of the century the area around the Upper Quad was filling up and the college, now called the Virginia Polytechnic Institute (VPI), began its first tentative expansion west into Draper's Meadow. Used mostly for drill and athletic pursuits, the Meadow was a naturally occurring flat depression in the local terrain. The field had up to this point, remained relatively free from buildings and fences. Yet by 1910 an agricultural sciences cluster would be established on the southwest corner of the Meadow, laying the groundwork for further development and expansion of the campus in the coming years. However despite the growth of the agricultural science programs on the Meadow, VPI still maintained its standing as a military installation, and, as such, the focus of campus remained squarely on Lane Hall and the barracks on the Upper Quad. This focus would not change until 1937, with the completion of the new administrative building, Burruss Hall, and the formalization of the Drill Field, the vast central green space on campus, which is now the iconic center of campus.



From the precision and starkness of the Corp barracks on the Upper Quad, to the vast expanse of the Drill Field, which still retains its function as a drill and parade field it is readily apparent that the school's military heritage had a profound influence on the early development of Virginia Tech's campus. The buildings that ring the Drill Field are heavy and gothic, built of grey limestone and fortress-like in appearance. Even the most sacred place on campus, the War Memorial Pylons, drive home the message of service and honor those who have died fulfilling their military duty. Nevertheless even with this understanding of the school's military heritage, it is still important to understand how this tradition along with other mitigating factors and circumstances, helped to shape the new heart of campus in the Drill Field area.

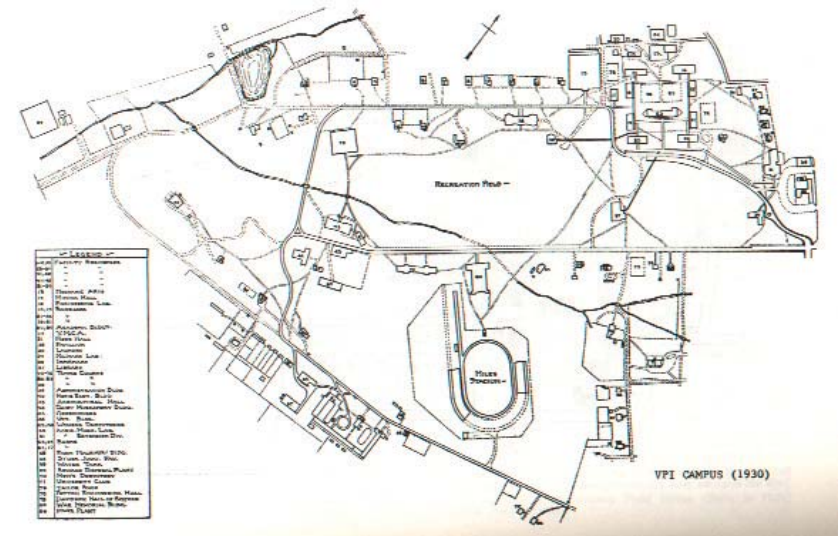
To many, the limestone and the collegiate gothic architectural style used around the Drill Field are what define the Virginia Tech campus. However, these architectural traditions are not part of the original composition of campus. The common red brick, used in the buildings on the Upper Quad, holds that distinction. The first building on campus to use the locally quarried limestone, now commonly referred to as "hokie-stone", was built in 1898 on the northwestern corner of the Upper Quad.

Known as the YMCA building (now the Performing Arts Building), this three story structure was built in the muted, and heavily rusticated Romanesque style made popular by H.H. Richard-

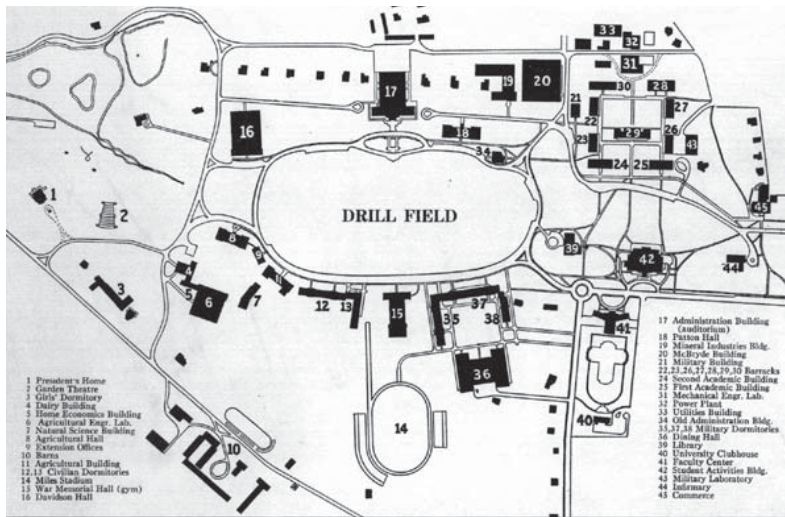
son, a popular architect from Chicago at the time. Using heavily rusticated stone work with arched windows and lighter sandstone banding as horizontal architectural accents this building exhibited some of the architectural attributes commonly used on campus later, but was otherwise unique in its design. In the modern context of the Virginia Tech campus the YMCA building remains a singular example of a short-lived, yet popular architecture style. However, the YMCA building's broader impact on the development of campus was the decision to use limestone rather than the red brick used in the original campus buildings. There is no record as to why limestone was used as the primary building material, but it can be guessed that it was used primarily because of its local availability, as well as for its stylistic properties in keeping with the Romanesque style. Regardless of the reasons for its use, limestone became the primary building material on campus within the next twenty years.



The YMCA Building of 1898. The first hokie-stone structure on campus, this building set the stage for the campus' expansion west into the Draper's Meadow. (Photo from University Archives of Virginia Tech)



As late as 1930, the VPI campus still remained centered around Lane Hall and the Upper Quad. War Memorial Hall and other buildings that now rim the Drill Field are present but the Drill Field has yet to be developed. (Image from University Archives of Virginia Tech)



By 1940, the Drill Field, as it is presently known, had emerged. Burruss Hall, to the north, with War Memorial Hall to the south, form the axis of symmetry for campus. The north rim of the Drill Field would fill in by 1960. (Image from University Archives of Virginia Tech)

The turning point in the architectural and spatial evolution of the Virginia Tech campus finally occurred in the latter half of the 1910s. During the presidency of Joseph Eggleston (1913-1919) the first campus master plan was developed by Carneal & Johnston a prominent East Coast architecture firm... In an effort to rid the campus of buildings that were "poverty-stricken and factory like", the master plan accounted for the future expansion of the campus and developed an 'academic' style more conducive to the higher education aims of VPI and also in keeping with the military traditions of the school. As part of that plan the first example of the new "Virginia Tech style" established under the new master plan was the new Mechanical Arts Building (McBryde Hall), erected between 1914 and 1917.

cally to the east and to the west along the longer visual axis of the Drill Field.

Due to the relative expanse of the 25-acre Drill Field area the master plan also utilized the limestone and collegiate gothic style of the recently completed Mechanical Arts Building (McBryde Hall) as the design template for all new buildings along the rim. The heaviness of the stone would provide ample weight and scale for the rim buildings, while also being locally quarried and readily available. Paired with a gothic-style utilizing towers, pilasters, crenulations, arched windows, stone tracery, sandstone accents and other elements, this architectural standard would provide a new, more "academic look" for the campus. Furthermore, it would maintain the important military heritage of Virginia Tech, as the gothic architecture recalled the heaviness and "fortress-like" feel of the United States Military Academy at West Point, NY. the oldest and most revered military installation in the country.

In developing the architectural language and spatial organizing principles that have come to define the modern Virginia Tech campus the designers relied heavily on the natural topography of Draper's Meadow and the recent limestone additions to campus. The 1917 Master Plan, called for future construction on campus to ring the Drill Field area along the low ridgeline that enveloped three of the four sides of this roughly elliptical shaped parcel of land. The plan also established a line of symmetry for the campus along the short axis of the Drill Field. With the line being marked by a new administrative building (Burruss Hall) and gymnasium (War Memorial Hall) located on opposite rims, with additional buildings filling in the rim symmetri-

By the outset of World War II, the modern Drill Field as it is experienced today was for the most part in place, with Burruss Hall, the new administration building and focal point of the Drill Field being completed in 1936.



Burruss Hall, built in 1936, dominates the center of campus. Using hokie-stone and the collegiate gothic elements, Burruss typifies the architectural style that is associated with Virginia Tech. (Photo by author)

In the post-war era, the campus evolved steadily for the next twenty years. The 1950s saw the completion of the new Alumni Mall, a well defined boulevard which physically established the major axis of campus and provided a formal entrance to Virginia Tech from Blacksburg. The Drill Field Rim was completed in 1960 with the opening of Robeson Hall. Likewise, 1960 saw the opening of the War Memorial Chapel at the east end of the Field, as the last new structure built on the Drill Field until the 1980s.

The mid 1960s marked a time where Virginia Tech began its most radical transition. By 1965, enrollment was increasing dramatically, as the campus had begun accepting women and the compulsory two-year service in the Corp of Cadets had been abolished. This era was also marked by the outward expansion of the campus away from the Drill Field, with the introduction of newer, more modern architectural styles and materials on campus.

Forced to meet the urgent spatial needs of a rapidly growing campus these newer structures were erected quickly and economically. Regrettably while the spatial needs of the university were met, the design implications of these newer, modern buildings had long-lasting effects on the architectural language of the campus. Abandoning the traditions of the Drill Field, these new structures introduced the campus to modernist, functional designs of concrete and glass, setting in motion a decades long argument over the architectural legacy of Virginia Tech.

While the university has continued its expansion, it has returned to the more traditional architectural language of the Drill Field. Nonetheless, the architectural decisions of the late 1960s and early 1970s still reverberate throughout Virginia Tech, having created clusters of buildings on campus that are stylistically dated and remain isolated from the architectural fabric of campus.

Of these clusters, the largest grouping of these concrete buildings is found along the edge of Perry Street, to the north of the Drill Field. In many ways, the academic buildings clustered in this area are the most prominent examples of the loss of architectural continuity and heritage on campus.

In many ways, this area is the frontline in the struggle between the need to re-introduce the architectural heritage of campus and the pragmatic requirements of an expanding university. It is within the context of this ideological argument over the architectural character of the campus edge that this thesis project finds root.

The campus edge along Perry Street is unique in many ways. It is not only the most defined "built" edge on campus; it is also the most heavily accessed and the most public campus edge. Architecturally, the buildings that comprise the edge are the most diverse stylistically and tectonically, and spatially speaking Perry Street is the most defined edge on campus.

Situated on the minor axis of the Drill Field, at its intersection with Perry Street and the terminus of the only path on the north side of campus providing direct, un-impeded access to the Drill Field, the proposed building is being designed as a new facility for the College of Architecture and Urban Studies (CAUS), currently housed in Cowgill and Burchard Halls.

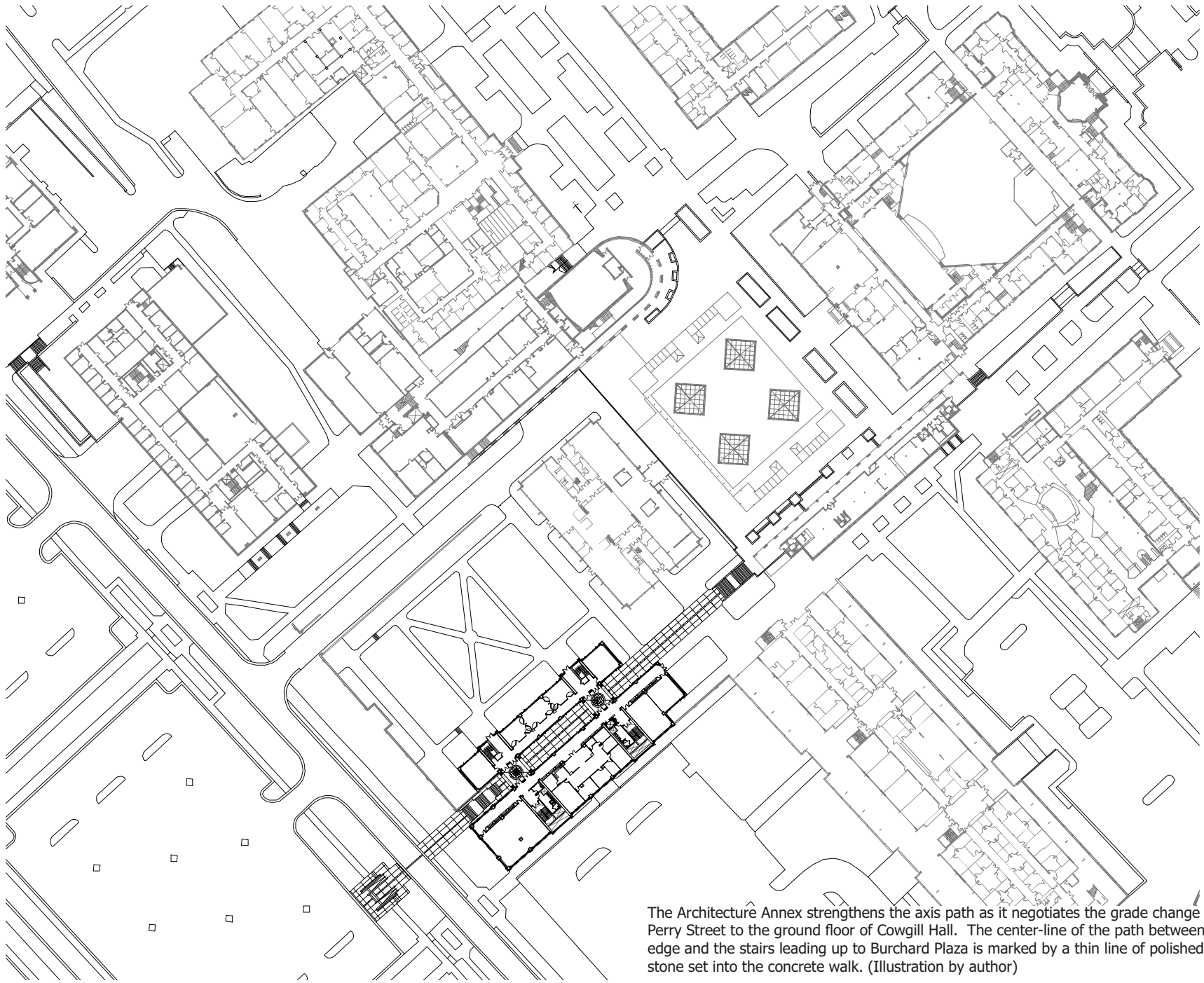
Based on the original fundraising documents from 1999 for proposed Building Construction Department Building, the proposed design is situated in line behind the GB Johnston Student Center providing over 60,000 square feet of additional classroom, studio and office space for CAUS. Known throughout this thesis as the "Architecture Annex", this design will also seek to answer four important questions.

First, how can the design strengthen the campus edge along Perry Street at a point where the edge condition breaks down? Second, how can the Architectural Annex reinforce the pedestrian path that leads from the Commuter Lot to the Drill Field, while providing a more defined route at a point where the path is undefined? Third, what steps must this design take to provide for a more formal entrance into campus from Perry Street? Taking into account the fact that the site is situated at the intersection of the minor axis of symmetry for campus and the campus edge, this "portal" to the Drill Field will provide direct access along the most heavily traveled edge of campus.

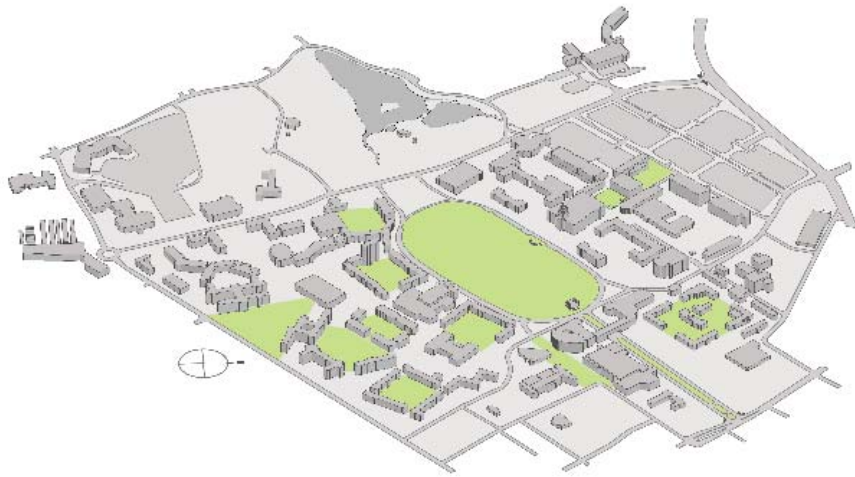
Finally, the Architecture Annex will reflect on the modernist architectural context of the surrounding buildings, as well as the traditional architectural heritage of the Drill Field, in attempt to find common ground between the two, resulting in a way for both architectural languages to compliment one another on the fringes of campus.

## Chapter II: The Minor Axis



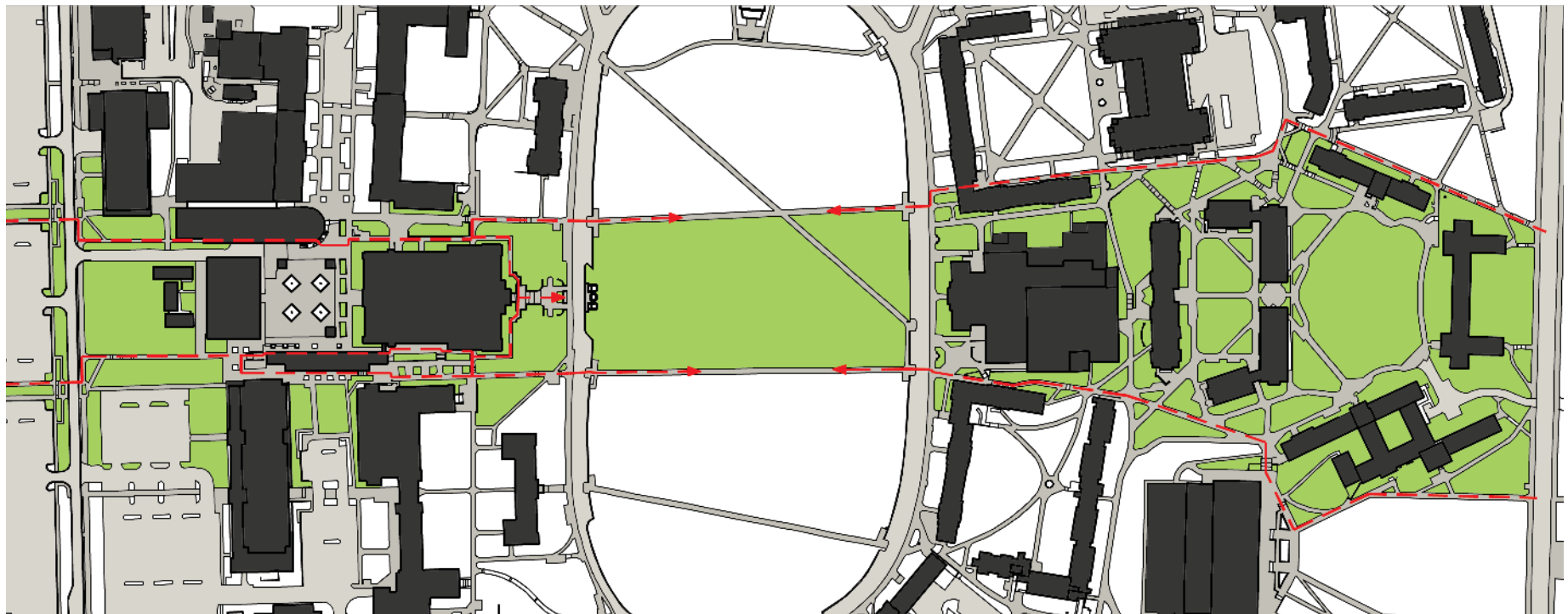


The Architecture Annex strengthens the axis path as it negotiates the grade change up from Perry Street to the ground floor of Cowgill Hall. The center-line of the path between the street edge and the stairs leading up to Burchard Plaza is marked by a thin line of polished Hokie-stone set into the concrete walk. (Illustration by author)



*Left: The green spaces of the Virginia Tech campus. Without any graphic articulation of the axis lines, the spatial conditions of the axes are quickly recognized. (Illustration by Author)*

*Right: On the minor axis at Burruss Hall, the axis of symmetry for campus is visible when looking south, across the Drill Field and towards War Memorial Hall (Photo by author)*



The minor axis of the Drill Field as it exists in 2003. The pattern of alternating green spaces and buildings oriented symmetrically about the axis strengthen the line as it cuts across the Virginia Tech campus. The red lines indicate the primary pedestrian paths that move along the edges of the axis line to the Drill Field. (Illustration by author)



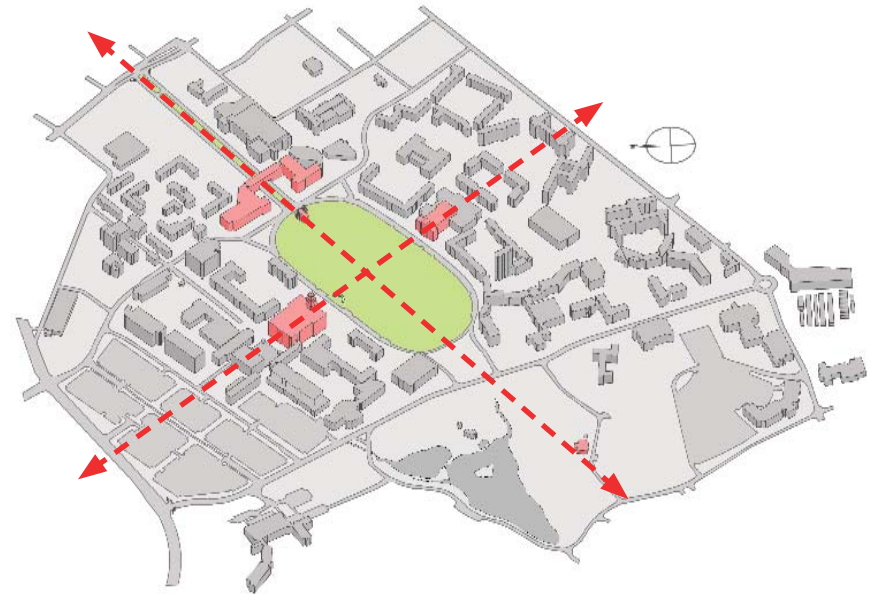
Running from north to south, the axis of symmetry establishes a pattern of paths and intermediate green spaces that lead to the center of campus. Defined primarily by the tall central tower of Burruss Hall on the north rim of the Drill Field, and by the shorter central tower of War Memorial Hall across the Drill Field to the south, this minor axis is also the most architecturally articulated. Spanning the width of the entire campus from Washington Street to Perry Street the axis line is marked by academic buildings and dormitories, set in an alternating pattern of building - green space - building, designed symmetrically about the axis and strengthened by framed views of the two towers at the center of campus.

To the south of the Drill Field in the residential area of campus, the line of symmetry is addressed by the layout of the dormitories that form the perimeter of Pritchard Prairie, with Lee Hall marking the termination of the axis line at Washington Street. Because of the rise in elevation on campus it is possible to view the axis line to the Drill Field towers through the gaps between the residential halls between Lee and War Memorial Hall. While the minor axis is very visibly articulated by the buildings in this area of campus, the actual line of symmetry is not marked by any pedestrian pathways. For the most part, the pedestrian pathways that leads from Washington Street to the Drill Field run along the edges of the buildings along the axis, moving between the naturally occurring gaps in the building landscape. Nevertheless these pathway do

very little to mark the axis in this area of campus, mostly as a result of the size and orientation of the buildings that bound the Pritchard Prairie.

Sitting in contrast to the visual articulation of the minor axis to the south, the portion of the axis that runs behind Burruss Hall relies more on the pathways along the building edges for articulation. Half the depth of the southern, residential area of campus the building density in the academic area of campus is defined by one central green space on the axis and the buildings and pathways that form the edges of this space.

Directly in line with Burruss Hall, Cowgill Hall marks the end of the minor axis at the intersection of Perry Street. Set back from the street by approximately 300 feet Cowgill Hall rests on the crest of a hill that leads into campus from the Price's Fork commuter lot. A modernist expression in concrete and glass, Cowgill Hall maintains the axis line through the articulation of transparent and opaque surfaces within the façade and its simple rectangular form that is symmetrical about the axis.



The Virginia Tech campus is divided into four quadrants by the major axis running east to west along the length of the Drill Field and the minor axis as marked by Burruss Hall and War Memorial Hall. The minor axis also serves as the line of symmetry for campus. (Illustration by author)



The central towers of Burruss Hall (left) and War Memorial Hall (right) indicate the minor axis as it cuts across the Drill Field. (Images by author)

*The minor axis of campus as viewed from the south entrance of Cowgill Hall. In the foreground are the four pyramid shaped glass skylights that define Burchard Plaza. In the background is the rear entrance to Burruss Hall. The arched door at the center marks the line of symmetry as also seen at the front side of Burruss Hall, as seen to the left. (Photo by Author)*



*At the northwest corner of the Plaza the GBJ Student Center loggia and the stairs leading down to the ground level of Cowgill Hall mark the path along the minor axis. The railing in the foreground marks the parapet condition of the Burchard Hall retaining wall. Derring Hall is seen in the background. (Photo by Author)*



*Burchard Plaza as seen from the southwest corner at the gap between Burruss Hall and GBJ Student Center. The squared off stair towers and pyramid shaped skylights on the plaza are actually part of the roof-scape of Burchard Hall below. (Photo by Author)*



Of all the open spaces on campus Burchard Plaza is unique in that it is the only plaza that is completely articulated architecturally. While other open spaces on campus are marked by green lawns and trees, the Plaza between Cowgill Hall and Burruss Hall is marked by four glass pyramid shaped skylights, and four stair tower blocks that are symmetrical about the minor axis and are part of the roof assembly of Burchard Hall below. Bound by the G. Burke Johnston (GBJ) Student Center to the west and Hancock Hall to the east, the plaza is completely enclosed with the exception of the southeast corner at the pedestrian alley formed by Old Turner Street.

The plaza has read less as a gather space then as a widening of the path to the Drill Field from Perry Street. This space utilization is due to the articulation of the paths that flank the axis and the two structures that define edges of the Plaza that run parallel to the minor axis. Of the numerous paths that lead into campus from Perry Street, the two that flank the minor axis are the most traveled and the best articulated. Providing the only means of direct access to the Drill Field from the commuter parking lot, these two lines jump from building edge to building edge a myriad of changes occur including elevation changes, material changes, and changes to the spatial composition of campus.

The path that flanks the eastern side of the minor axis begins at the intersection of Perry Street and the service road that leads up to Cowgill and Bur-

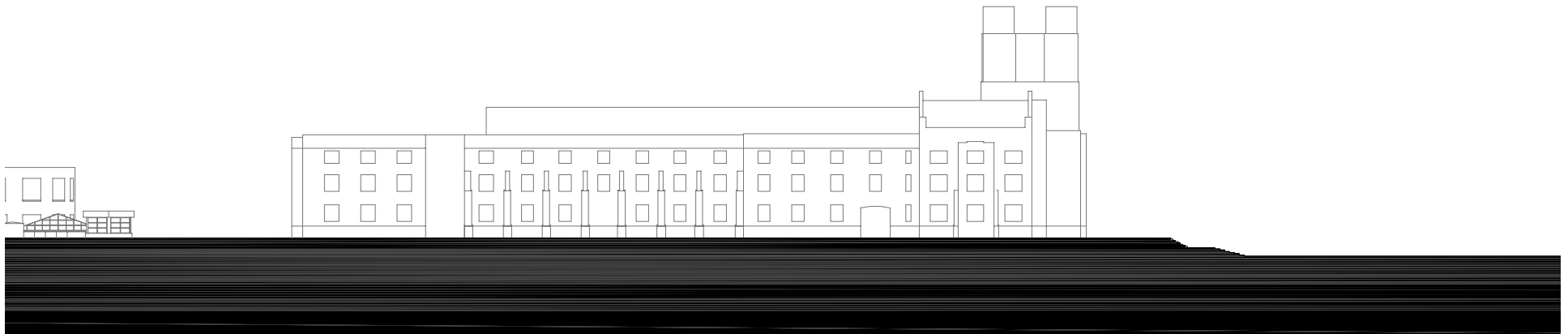
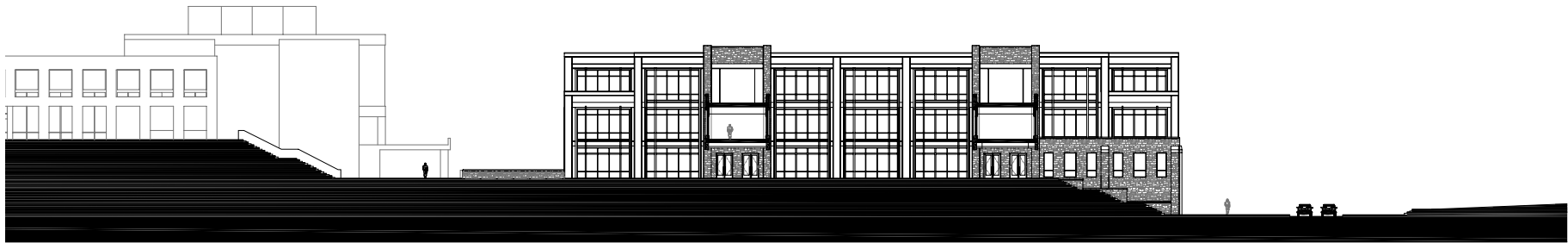
chard Halls. At Hancock Hall, the path becomes integrated into the loggia as it raises 15 feet in elevation to match the level of Burchard Plaza. Forming the eastern edge of the Plaza, Hancock Hall's loggia is formed by a series of punched openings in the Hokie-stone facade. Large and unadorned this covered area screens the inner facade of the Hancock, while providing direct access to the Plaza.

At the midpoint of the Plaza, Hancock Hall's curved façade begins to diverge from the straight line path, which then continues on to the edge of Burruss Hall. While there is nothing that physically marks the path line between the two buildings the strong sense of movement created by the building edges along the path, and the visual connection to the next waypoint at Burruss Hall, work together to keep the path intact. Once the path realigns with the eastern façade of Burruss Hall, the sidewalk continues directly ahead to Drill Field Drive. At this point changing to asphalt the path crosses the Drill Field to connect with the path that runs north through the residential area, defining the western "edge" of the axis line.



Section Elevation through the minor axis path and the Architecture Annex looking west towards GBJ Student Center and Derring Hall. (Illustration by author)





Section Elevation through the minor axis path and the Architecture Annex looking east through Burchard Plaza towards Hancock Hall and Burruss Hall. (Illustration by author)



The path along west edge of the axis line to the Drill Field also starts off at Perry Street as a utilitarian 10 foot wide concrete sidewalk. Digging tentatively into the slope of the hill leading to Cowgill Hall the path negotiates the slope through a series of cascading concrete stairs before leveling off at the crest of the hill. Moving on grade with Cowgill Hall the path opens up into a small plaza formed by Derring Hall to the west, Cowgill Hall to the east and the retaining wall of Burchard Hall to the south. Faced with an additional 15 foot change in elevation the path rises to the level of Burchard Plaza via an articulated run of wide stairs leading to a loggia condition above.

The loggia is part of the GBJ Student Center, the building that forms the western edge of the Plaza parallel to the axis. A narrow three story structure, two of which sit above the grade of the Plaza, the Student Center presents a highly geometric façade of Hokie-stone and squared off punched openings to the Plaza. Maintaining a regimented meter of pillars and punched openings the upper level of the building fills the openings with plate glass windows, while the openings on the plaza level are left open to form the loggia. Once on the level of the plaza, the path uses the loggia as a direct conduit to the western edge of Burruss Hall, in effect bypassing the need to enter the plaza proper. The building edges of GBJ and Burruss Hall overlap allowing the path to continue clearly marked along the edge of Burruss Hall once it discharges

from the open ended loggia on the south façade. The path, at this point, remains a simple sidewalk, but due to its movement along the edge of Burruss Hall the path remains singular in its mission to bring pedestrians to the Drill Field.

The path along the western edge of the axis from Perry Street to the Drill Field is, for the most part well marked and easy to recognize as an important conduit to the campus center. However, the path does have one serious flaw, in that the first 100 yards moving south from Perry Street are marked only by a simple sidewalk, a seemingly utilitarian method of marking such an important line. It is within the context of this first 100 yard stretch that the Architecture Annex design proposes to reinforce the path architecturally at this crucial point. Yet, in creating definition the proposed design must recognize the challenges of building along an axis line. An axis line, by its very definition, is the line upon which an object symmetrically revolves, which in this situation is the Drill Field. In addition, a secondary definition of axis also indicates that it may be a line of movement, direction, or extension, which are all traits of the path running through this area.



*Burchard Plaza as seen from the axis path to the east of the line of symmetry. Taken from within the loggia of Hancock Hall the retaining wall of Burchard Hall is barely visible in front of the pyramid shaped skylights. (Photo by Author)*



As the sidewalk marking the axis path moves into campus from Perry Street a simple set of stairs moves up the hill to the ground level of Cowgill Hall. (Photo by author)



Left: On level with the ground floor of Cowgill Hall the existing minor axis paths moves in a straight line to the GBJ stairs visible in the background. The row of evergreen trees to the right mark the beginning of the steep slope down to the Derring Hall staff parking lot.. (Photo by author)

Right: The third floor of GBJ extends, visually, into space over the minor axis path as it reaches the GBJ stairs. The articulation of the facade indicates movement and the prospect of something grand at the top of the stairs. (Photo by author)



Left: Once on the level of Burchard Plaza the minor axis moves down the loggia formed by the east facade of GBJ. Moving further into campus this covered walkway expedites the passage to the Drill Field. (Photo by author)



Whereas the minor axis indicates that the building design should be symmetrical, the utilization of the path requires the building to be directional and more linear in its movement, much like GBJ. The form of the Architecture Annex is able to circumvent the need for symmetry as it does not reside directly on the axis line. However the design of the building does need to reinforce the linear qualities of the pathway, while amplifying the sense of movement along the path from Perry Street.

As a result of detailed site analysis performed early on in the course of this project, it became clear that the ideal location for the Architecture Annex was on the first 300 feet of the path along the western edge of the axis at the point where the hill slopes not only down to Perry Street from the Cowgill Hall Level but also down to the Derring Hall staff parking lot to the west. The building will sit along the sidewalk marking the eastern edge of the parking lot and will then extend 60 feet back into the hill parallel to the existing sidewalk. The orientation of the building's long axis is parallel to the pathway, running nominally north to south. Coincidental to this site location, the existing stair at the corner of Derring Hall from the staff lot to the small plaza will also be removed forcing all pedestrian movement to be redirected to the existing path which will also be redeveloped and reconstructed.

The design of the Architecture Annex maintains the prominence of the path to the Drill Field along the minor

axis in a number of ways that allow the path to remain independent of the structure, but also integral to the design at the same time. The design also maintains the location of the old 10 foot sidewalk but doubles the width of the path through the articulation of critical design elements that from the beginning install a sense of direction and movement towards the Drill Field.

As a subtle indication that the minor axis of campus does not abruptly end at Perry Street, the design of the Architecture Annex proposes the installation of a small set of stairs and two accessibility ramps in line with the path on the commuter lot side of the street. Due to the topography of the campus in this area the parking lot area is, on average, three feet higher in elevation than the street, necessitating a means of vertical conveyance for pedestrian traffic moving out of the lot and onto campus. As the commuter lot exists presently, the two paths that flank the minor axis are articulated as sidewalks that lead to Price's Fork Road, dividing the area into three zones. Marked on the campus side of Perry Street by brick inlays in the sidewalk, these pathways do not align with the two paths that lead to the Drill Field on either side of Cowgill Hall.



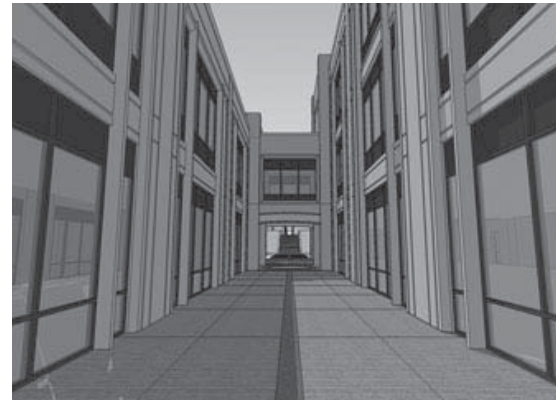
This small incursion into the parking lot by the Architecture Annex works to re-orient the western path prior to its crossing of Perry Street, in order to prepare pedestrians to progress into campus through the portal created by the building. Constructed of concrete and low Hokie-stone walls this stair and ramp assembly extends the path and marks its beginning with a simple line of polished lime-stone. Set into the concrete sidewalk, this 12 inch wide strip of hokie-stone marks the center-line of the path and becomes the visual indicator of the path over the first 50 feet. Using the polished center line to convey direction, the line also draws the eye inward towards campus and to the north façade of the Architecture Annex.

Upon passing through the north façade of the Architecture Annex, the path enters a new environment. Bound on both sides by Hokie-stone clad retaining walls, movement along the path is directed up a series of cascading stairs to the ground level of Cowgill Hall. Flanked by a series of stepped Hokie-stone elements, the stairs narrow as they reach the top of the hill and refocus the eye on the center of the path. Viewed from a distance, these block elements work to give direction and movement to the stairs while implying that the stairs are deeper, steeper and more monumental than they actually are. With this simple change in the forced perspective, the path's movement into campus is accelerated.

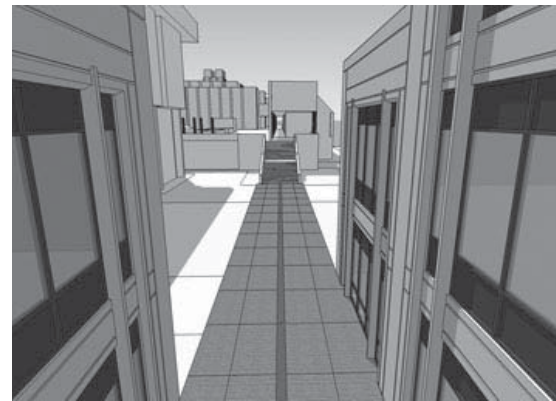
As the path progresses up the series of stairs, pedestrian traffic begins to

emerge from the Hokie-stone clad lower elements of the building into a lighter, more open and modern alleyway between the two building masses. At the top of the stairs, and now on level with the ground floor of Cowgill Hall, the path crosses under the first of two portals that denote the transition into campus from the outside world. At this first arched portal, the path continues to be marked by the 12 inch polished stone strip, but is crossed by a strip of like polished stone etched with the founding date of Virginia Tech. Marking the threshold between campus and town this band of stone also marks a change in the treatment of the Annex facades that line the path.

Prior to this first portal, while ascending the stairs, the building facades retain tradition to the architectural language of Virginia Tech with the exclusive use of Hokie-stone, capped pilasters and punched window openings with sandstone (or in this case concrete) surrounds. This condition extends up to the second floor (the Cowgill Hall Level is considered the first floor) of the main building mass of the Architecture Annex, while the vertical plane of hokie-stone on the smaller building mass only extends up to provide a parapet for the retaining wall. At the point of intersection with the first portal, the building façade compresses inward and downward to create a transition point, which relies exclusively on Hokie-stone to clad the walls around the entrance doors into the buildings.



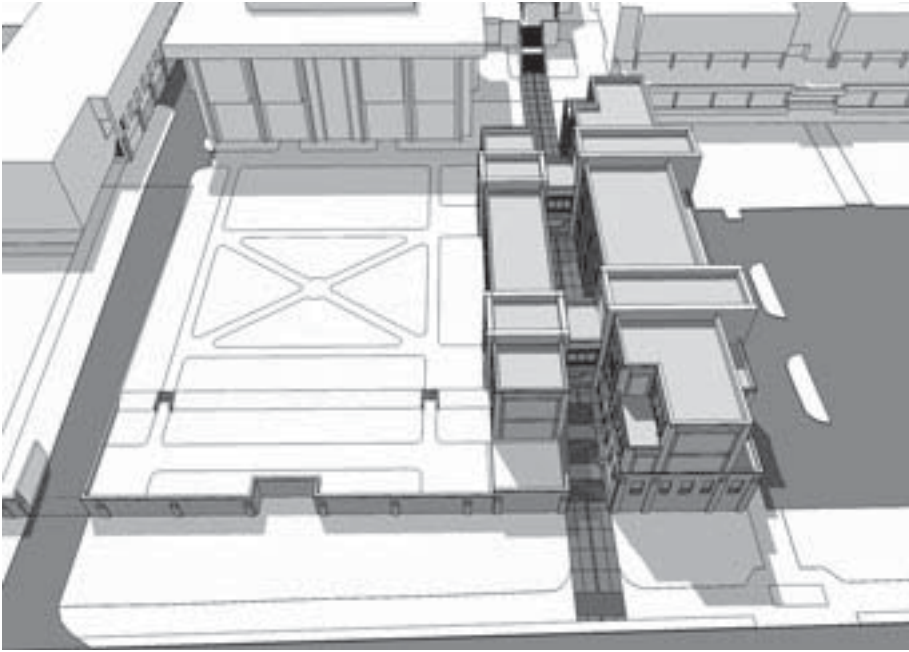
*The pathway along the western edge of the minor axis cuts through the middle of the Architecture Annex. Framed on both sides by the facades of the building, and with the view into campus and the GBJ stairs framed by a bridging element the path is clearly marked. Strengthening this is a 12" polished Hokie-stone line set into the sidewalk, which marks the significance of the path. (Illustration by Author)*



*Viewed from the windows in of the second floor of the Architecture Annex along the center-line of the path the connection to the stairs, GBJ and Burchard Plaza are well defined. At this point the central tower of Burruss Hall, one of the two primary markers of the minor axis is visible between Cowgill Hall and GBJ. (Illustration by Author)*

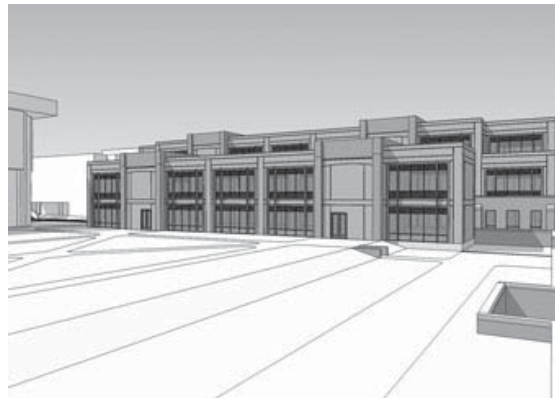


*Looking in the opposite direction from the top of the GBJ stairs the Architecture Annex clearly defines the path in and out of campus. Once through the first visible portal the transition back to the non-academic world begins, culminating in the decent down the stairs to the Commuter Lot across Perry Street. (Illustration by Author)*



A bird's eye view of the Architecture Annex the articulation of the minor axis path can be seen as it moves up from Perry Street, through the Annex and on to the GBJ stairs. At the stairs the path picks up existing edge conditions to continue the movement towards the Drill Field. This view also shows the newly formed Annex Plaza, which continues the local symmetry of campus about the minor axis (Illustration by author)

A view from the northeast corner of the Annex Plaza. the minor axis path is accessed from the plaza by pushing through the gap between the new building and Cowgill Hall. (Illustration by Author)



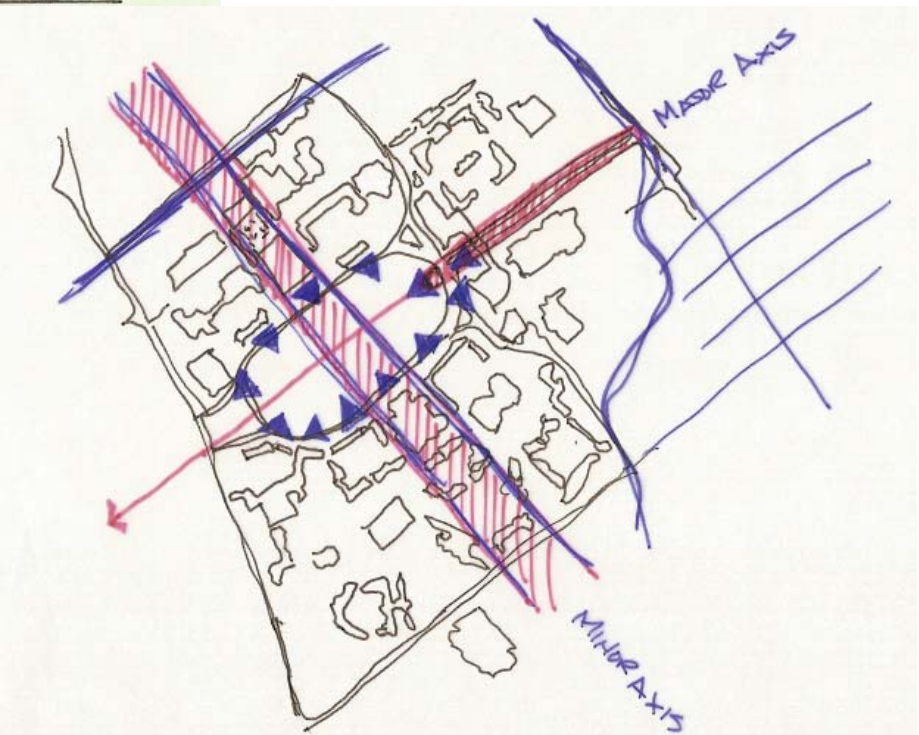
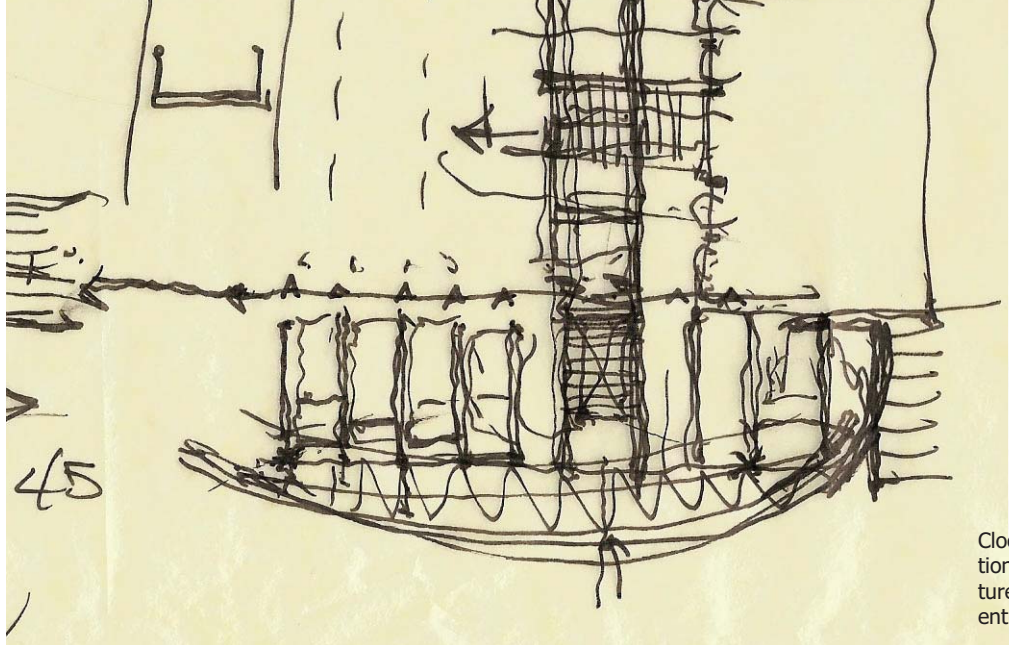
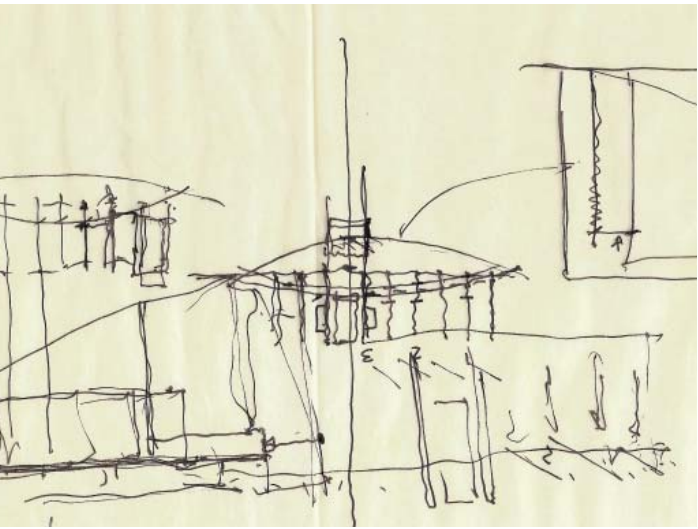
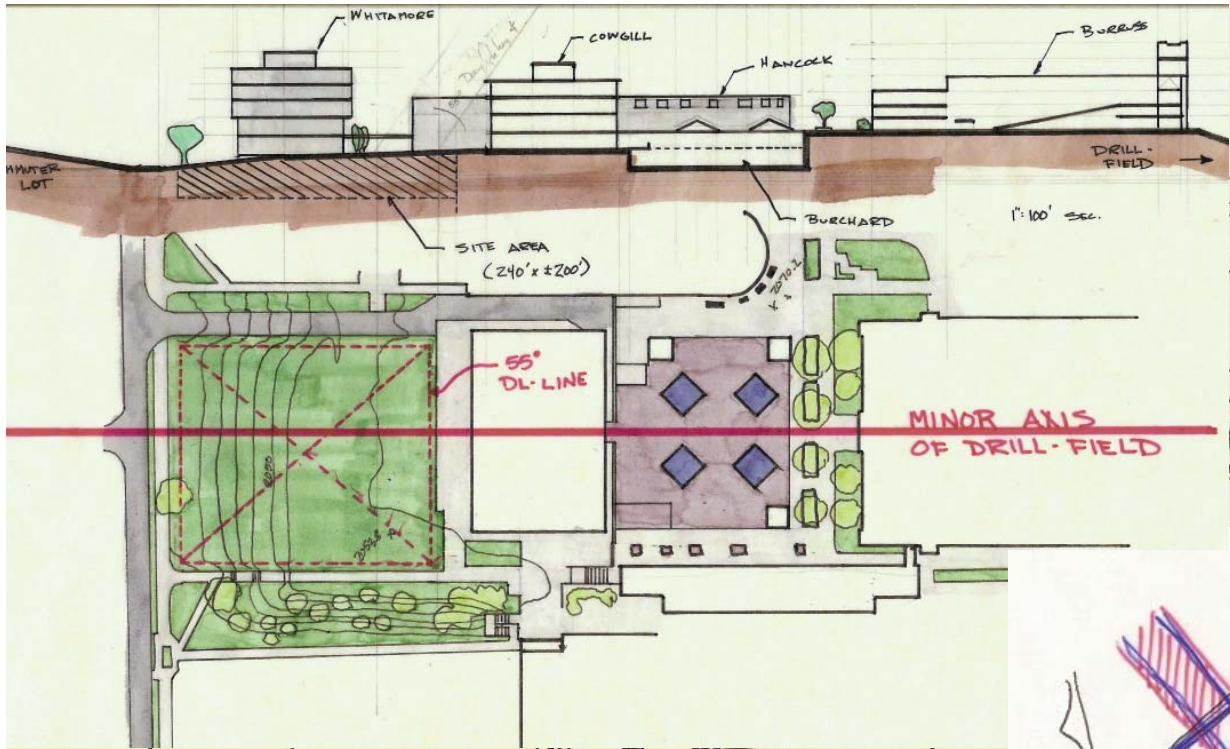
Once through the first portal, pedestrian movement progresses down the polished stone marked path to the second portal, identical to the first. Working as the beginning of the transition out of campus, the portal nevertheless provides a tightly framed view of the next waypoint in the path's march to the Drill Field. Past the second portal, the path line retains its heading as it negotiates the small plaza leading to the GBJ stairs. The intersection of the path with the plaza marks the axis line's first direct contact with the existing fabric of campus, and in doing so, provides pedestrians with options to turn off the main path into other sections of campus. This small plaza also becomes the primary means of accessing the new Annex Plaza developed on the hill behind Cowgill Hall.

In the development of the Annex, it seemed appropriate to keep the Annex Plaza removed from the axis line until this point, where the path has the ability to continue on to the Drill Field without coaxing. Accessed from the main path through a gap between the Annex and Cowgill Hall the Annex Plaza maintains the repeating rhythm of building - green space - building, along the minor axis. As the path through the Annex reaches the GBJ stairs, the newly designed site elements give way to the pre-existing conditions of campus. Sitting on axis with the center-line of the path these stairs lead up to Burchard Plaza and to the loggia of GBJ. Having the appearance of being 'glued' to the side of the Burchard Hall retaining wall, this monumental set of stairs extends out

into the small plaza between Cowgill Hall and Derring Hall encouraging foot traffic to move further into campus. This effect is amplified by the two story end condition of GBJ that hovers over the stair, forming the entrance to the loggia.

It is at this set of stairs that the articulation of the path, through the use of the strip of polished hokie-stone and changes in the texture of the concrete sidewalk, ends. For the most part, once the GBJ stairs are reached, the articulation of the path becomes more regimented and directed. As discussed earlier in this section, once the path enters the loggia it continues along the building edges until reaching the Drill Field. The design intent of the Architecture Annex was to introduce a higher level of order onto the existing path in an area where it was defined by nothing more than a sidewalk. Ultimately the Annex achieves this goal by developing a sequence of framed views of the GBJ stairs, by physically marking the path over its first 500 feet and by shifting the focus of the building facades so they look inward to the pathway.





Clockwise from top left: 1) An early analysis sketch of the minor axis of campus showing the elevation change between the commuter lot and the Drill Field. 2) Early concept sketch of the Architecture Annex on the minor axis path. 3) A diagram of the campus showing the two axis conditions and entry points onto the Drill Field. 4) A conceptual diagram of the Annex design. (Images by author)

## Chapter III: The Perry Street Edge



The new Architecture Annex extends the building edge along Perry Street, and in doing so creates a new plaza behind Cowgill Hall in the new-found space (Illustration by author)



Due to this insufficient definition, Cowgill Hall ultimately becomes the weak point in the edge, causing the power of the building wall to be diminished. Even with the minor axis moving across the site, there is nothing within the context of the site to lock the building in place or to conform the hill the edge. If the hill had a slope in only the direction towards Cowgill Hall this might be easy to fix. However the hill is more complex than it seems. While the hill defines the 300 foot gap between Perry Street and Cowgill Hall, the stretch of land between the street and Derring Hall to the west remains on grade. Occupied by staff parking leading up the edge of Derring Hall, the hill to Cowgill bounds the parking area to the east with a steep slope. Forming a naturally occurring corner in the landscape, the two slopes of the hill actually open up the breach in the edge even more by providing two points of access rather than one.

It is within the context of this naturally occurring corner that the design of the Architecture Annex proposes to re-assert the strength of the building edge along Perry Street, while connecting the plane of the edge as defined, by Whittemore Hall back to the edge at Derring Hall. In addition, the design of the Annex provides a virtual plinth block for Cowgill Hall, giving the building the weight and mass it needs to conform to the rest of the structures on the edge, as well as the ability to repair the breach.

In strengthening the edge along Perry Street, the Architecture Annex also

solves the additional problem related to the hill leading up to Cowgill Hall. A severely underutilized space the hill is currently home to three temporary structures, which are used by the College of Architecture & Urban Studies (CAUS). The Annex design proposes to redevelop the hill into a public green space, in keeping with the traditional use of open spaces along the axis.

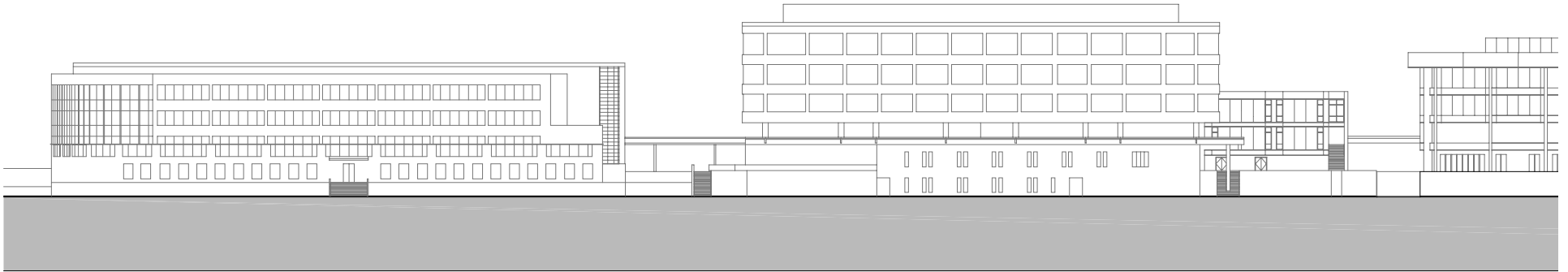
To make the hill useable it is necessary to place a long 14 foot tall retaining wall along the edge of Perry Street from the Cowgill Hall service road to the edge of the hill at the Derring Hall staff lot. This wall not only brings the elevation of the hill up to the ground floor of Cowgill Hall, but it also aligns with the street edge of Whittemore Hall to the east. Using this projected edge line, the retaining wall then closes off the breach caused by the hill, breaking only to allow the minor axis path to push through the edge and cross the street into the commuter parking lot. Even then, at this break point, the retaining wall turns inward back towards campus to hold back the hill as the path negotiates the grade change.



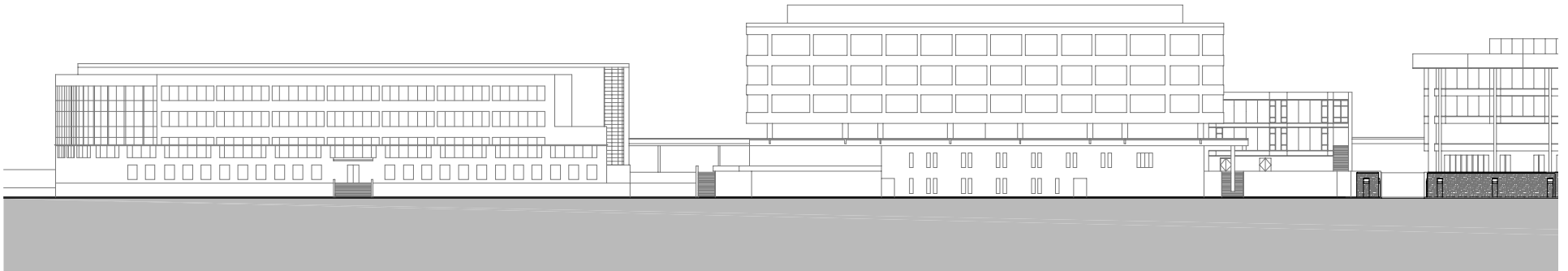
Taken from at the intersection of the eastern minor axis path and Perry Street this photo identifies the point where the building edge returns up the hill to Cowgill Hall. Also of note is the hill leading down to the street edge, which is presently the home to three temporary structures situated behind Cowgill (Photo by Author)

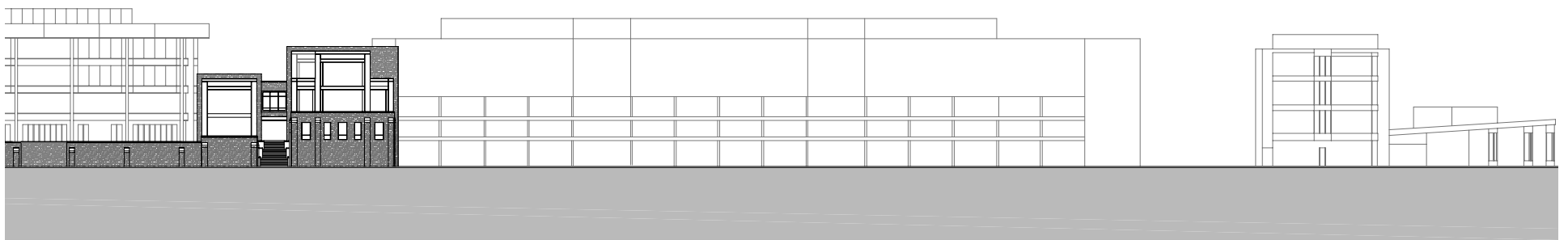
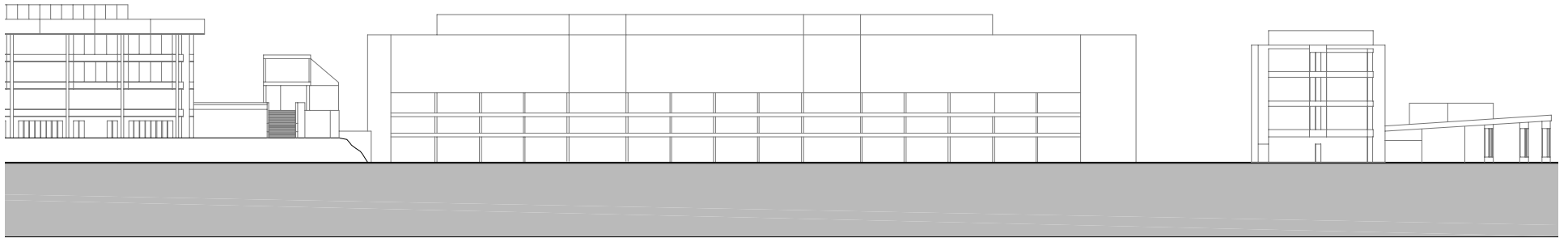


Cowgill Hall dominates the crest of the hill that leads up from Perry Street into campus. Lacking a heavy base like the neighboring buildings, Cowgill Hall sits tentatively on the hilltop creating a perceived break in the edge condition (Photo by Author)



The Perry Street Edge. Dominated by five of the largest academic building on campus, this edge is also the most articulated architecturally. Moving from east to west (left to right) Durham Hall establishes the corner at Stanger Street, while neighboring Whittemore Hall is the tallest structure on the edge. Stepping back 300' from the street, the corner of Hancock Hall and then Cowgill Hall sit atop the gradually sloping hill leading up into campus from Perry Street. Between the gap formed by Cowgill and Derring Halls the G.B. Johnston Student Center sits 15' above the crest of the hill on the western edge of Burchard Plaza. Continuing the edge established by Cowgill Hall, Derring Hall and Hahn Hall complete the wall to West Campus Drive. (Illustration by Author)





The design of the Architecture Annex proposes to continue the wall along Perry at the point where the hill leading up to Cowgill Hall breaches the built up edge. The retaining wall element of the Annex design provides Cowgill Hall with a heavy base to sit on virtually and in doing so creates a new plaza on the minor axis. the minor axis is addressed by recessed section of the retaining wall. At the corner of where the hill returns back towards Derring Hall, the Architecture Annex establishes a strong corner condition before completing the building edge back. (Illustration by Author)



Constructed of Hokie-stone, the plane of the retaining wall also makes a few subtle gestures in response to the contextual elements of campus. While the only physical break in the wall occurs at the intersection with the axis path, the true axis of symmetry crosses the edge 80 feet to the east of this line at the center-line of Cowgill Hall. At this intersection, the retaining wall sets back approximately 10 feet over the width of one of Cowgill Hall's structural bays. This recess in the wall is made even more apparent by the use of applied hokie-stone pilasters on the retaining wall that align with the column lines of Cowgill Hall. These pilasters also help the retaining wall to visually align with Cowgill Hall, setting up a virtual plinth block condition for the building. While not a physical extension of the building, the top edge of the retaining wall is set at the grade of the ground floor of Cowgill Hall allowing it to read as a heavy base when viewed head on from the commuter lot. Because the retaining wall's top edge is set on grade the newly created plaza steps down 42 inches for the last 50 feet to allow the retaining wall to also function as a parapet and a safety barrier.

As the retaining wall moves past the western edge of Cowgill Hall, the spacing of the applied pilasters changes and the wall increases in height by three feet, marking its inclusion into the design of the main structures of the Architecture Annex. The retaining wall remains a part of the building design, as it returns into the hill at the main entry stairs and again as it

returns to the edge of Perry Street. However over the course of the directional translation at the stairwell the wall elevation rises to 30 feet and transitions to form the exterior walls of the first two floors of the main building.

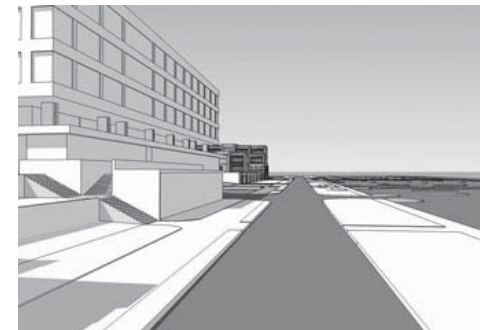
Punctured by window openings on the second floor, the wall then establishes the corner of the building as the building edge moves towards Derring Hall. For the first 50 feet of this edge condition the wall maintains the same character of punched windows as seen on the north façade and on the portion of the west façade that overlooks the axis stairs. The bottom floor of the wall in this area is intermittently punctured to provide access doors to the interior workshop spaces on this level. After traversing the first two structural bays, the wall intersects the first service tower. Past this element, the wall increases to three stories while maintaining the continuity of the retaining wall and the other elements of the wall. The three story section of Hokie-stone wall continues to second service tower before it steps back down to two stories for one bay and then down to only the first floor. At this point, the Hokie-stone wall returns to its function as a retaining wall and a parapet wall before connecting with the adjacent condition at Derring Hall.



The view looking west from the corner of Durham Hall at Stanger Street. Showing the strong building edge along Perry Street this image also indicates the relative barren quality of the commuter lot to the right (Photo by Author)



The strong edge condition along Perry Street continues past Durham Hall with the tall, flat facade of Whittemore Hall. (Photo by Author)



A sequence of views moving west down Perry Street the retaining wall of the Architecture Annex continues the edge where the hill intersects the street causing the building edge to shift back 300'. At the far corner of the hill the Architecture Annex then develops the edge condition back to Derring Hall. (Photo by Author)



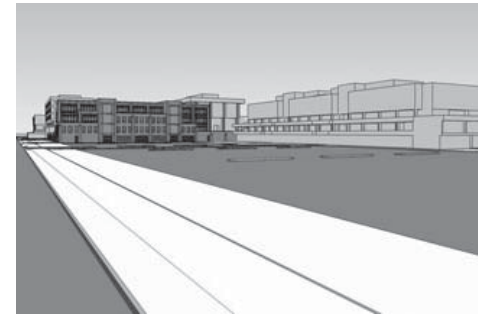
Taken at the height of summer this view shows the corner condition formed by the crest of the hill and Derring Hall to the right. The ridge of the hillside is marked by the row of evergreen trees in the background. (Graphics by Author)



Top & Bottom: Views of hillside that connect Perry Street and Derring Hall. Taken from the Derring staff lot the radical elevation change is noted in the elevated height of Cowgill Hall (Photos by Author)



Top & Bottom: Views of the Architecture Annex as it connects the edge along Perry Street to the building edge of Derring Hall. While there are a great number of trees in the area they are not show for clarity. (Graphics by Author)

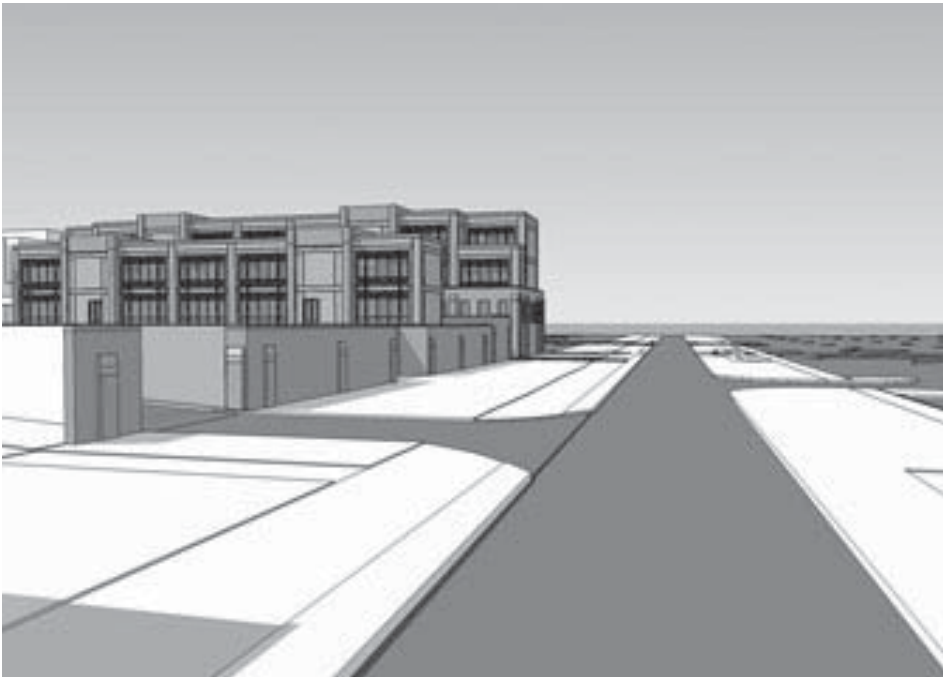


Architecture Annex Elevation, Facing West: Showing the context of the Annex in relation to Derring Hall and Cowgill Hall beyond, the design creates a visual gap for views into the campus, but physically creates a barrier at the level of the Derring staff parking lot. (Graphics by Author)





While the wall physically and visually repairs the breach in the edge along Perry Street, the development of the retaining wall also creates new found public space in the form of the Annex Plaza. In keeping with the pattern of building – green space – building on the minor axis this green space acts as a spatial extension for both Cowgill Hall and the Architecture Annex. Designed with paths moving along the perimeter and across the plaza, the overall layout avoids the introduction of any defined path directly on the campus axis of symmetry. Instead, the axis is marked only by the crossing of two diagonal paths and the notch in the retaining wall at the end of the plaza. Furthermore, the plaza also relies on the overall symmetry of Cowgill Hall about the axis to reinforce the line.

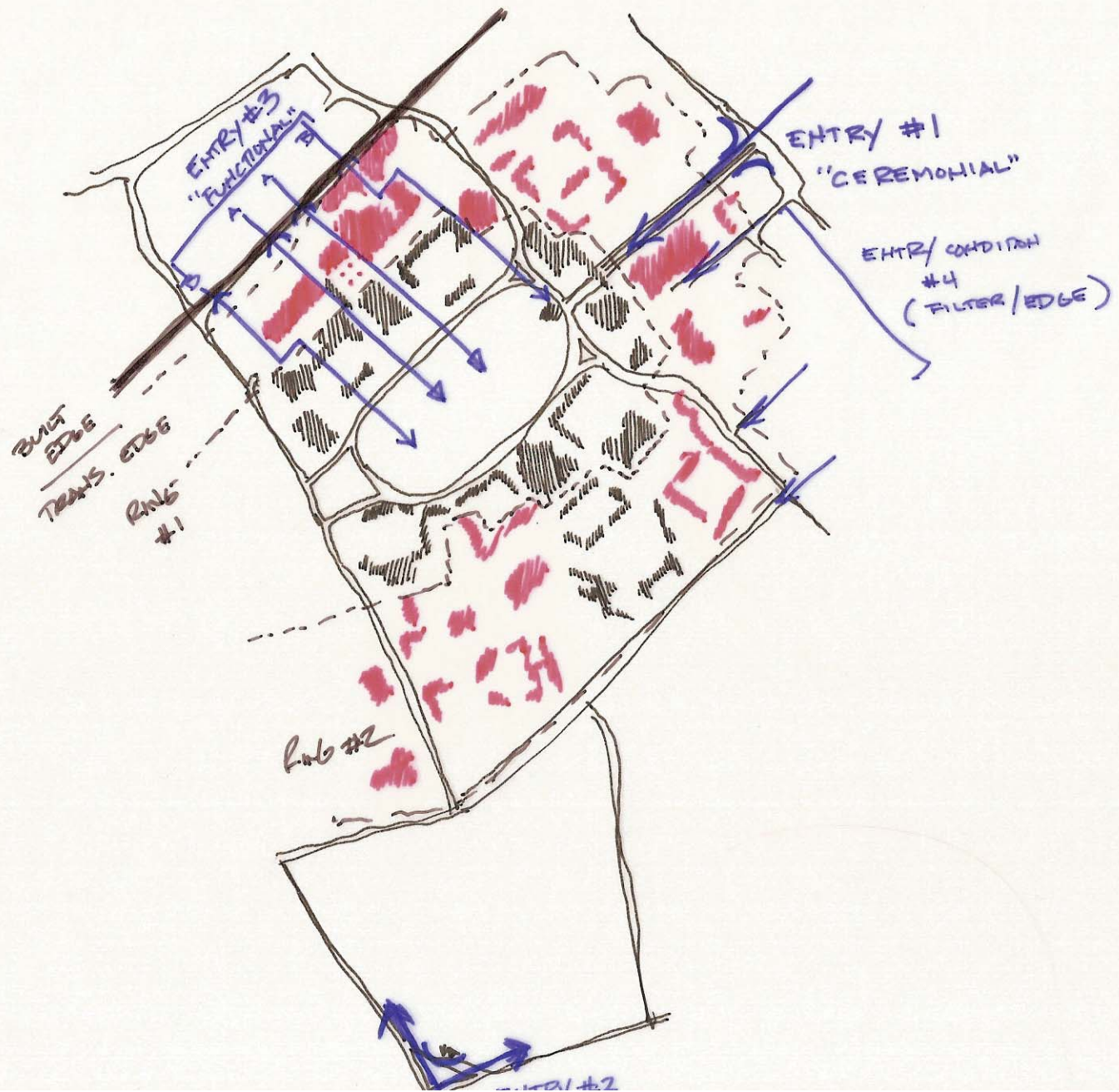


Above Left, Top: The hill between Cowgill Hall and Perry Street is noteworthy in that it is one of the last undeveloped green spaces on campus. Taken from the intersection of the street and the service road that leads up the hill the evergreen trees that run from left to right mark the crest of the hill relative to the Derring Hall staff parking lot, and also line the sidewalk that becomes the minor axis path further into campus. (Photo by Author)

Left: Taken from relatively the same position as the photo above this image shows the new retaining wall element of the Architecture Annex design as well as the new building in the background. (Photo by Author)

While bound to the west by the secondary building mass of the Architecture Annex, the eastern edge of the plaza is contained by a retaining wall along the edge of the service road. However, this retaining wall does not use Hokie-stone but rather returns to a cast-in-place concrete system adorned with reveal lines and edges, similar to those used on the Annex itself. Like the other monolithic wall element used in this design, the retaining wall also marks the spacing of the structural system in the Annex with vertical lines set into the concrete form. This design element thus ties the remnants of the hill and the new plaza into the fabric of the Architecture Annex, while patching the breach in the Perry Street edge condition while completing the wall.

## Chapter IV: Understanding Entry Conditions at Virginia Tech





The decision was made early on in this project to locate the Architecture Annex at this important intersection and therefore, it became critical to the success of the design to gain a better understanding of the use of articulated thresholds and portals on campus. The analysis of entry conditions in this chapter focuses primarily on the portals which provide access to the Drill Field.

Arriving at the buildings that rim the Drill Field, arched portals and passageways are used to mark the threshold leading into the sacred and spatial center of campus. Used sparingly around the Drill Field these arched portals provide small, celebrated moments and specific, framed views at the edge of the campus core. All told, there are three traditionally arched pedestrian portals that lead into the Drill Field. Additionally, there is a fourth oversized portal, in the large arch of the Torgersen Bridge, which provides a vehicular and pedestrian portal to the campus center.

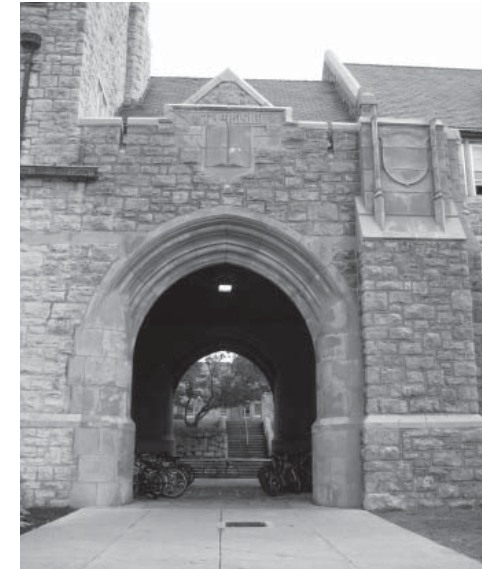
Of the three arched pedestrian portals the only one not leading directly out and onto the Drill Field is the arched passageway between Norris and Holden Halls. Marking the transition from the rear academic areas of campus into the campus core, the portal is an articulated gap between the two buildings along the ridgeline. Passing through the archway the terrain drops swiftly to the level of the Drill Field, providing for a broadside view of Patton Hall. Nevertheless, the panoramic sweep of the Drill Field can

be seen peripherally to Patton Hall, with Burruss Hall, Torgersen Hall and the Pylons all visible from this vantage point.

To the south, the Campbell Hall Arch to the west of War Memorial Hall provides framed views across the field to Burruss Hall. The archway is reached from the south through the Campbell Quad and by negotiating a steep grade change from the quad to the Drill Field. The portal is entered from the backside, down a set of narrow concrete stairs which lead to the Drill Field level. This dramatic grade change negates the portal's ability to frame views of Burruss Hall and the Drill Field from the back edge of Campbell Quad at Slusher Tower. Likewise, this condition prevents the framed views through the portal from actively drawing people to the opening and onto the Drill Field.



The Norris Hall portal as viewed from the Old Turner Street Side.(Photos by Author)



The Campbell Arch from the Drill Field showing the steep rise in grade beyond the portal. (Photos by Author)

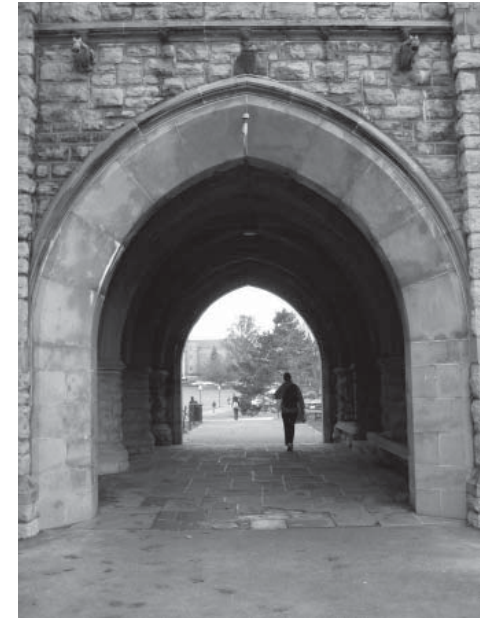
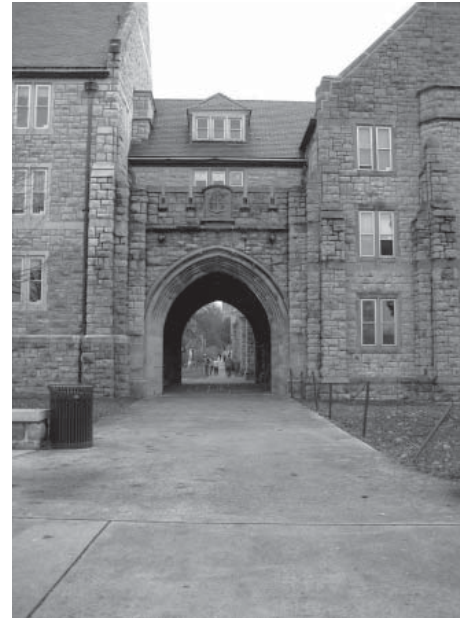


A modern portal, created by the sky bridge between Pamplin and Robeson Halls, creates an enlarged opening from the Derring Service Road and the Biology/Chemistry cluster to the Williams Quad on the Drill Field Rim. Framed by the view inward, Williams Hall blocks direct access to the campus center.(Photos by Author)

The third and final pedestrian archway leading to the Drill Field is the Eggleston Arch formed by the heel of the intersecting wings of the Eggleston Residence Hall. The oldest residence hall on the Drill Field the arched portal to the campus center at Eggleston is also the oldest and best articulated arch on campus. Situated on the eastern portion of the southern rim, the Eggleston Arch provides a formal connection and point of transition between the smaller, flat Eggleston Quad to the rear and the expanse of the Drill Field beyond.

Amplifying the difference between the two green spaces and the sacred qualities of the campus core, the passageway is roughly 16 feet wide, by 30 feet deep, by 15 feet tall at the highest point of the arch. Providing covered access to the two wings of the dorm inside the passageway, the portal is defined by a thick barrel vault with two large ribs springing from the half-column pilasters that flank the side doors. Lit only at night by lights near the side doors, the passageway is relatively dark even on the brightest days. Accentuating the heavy, compressive quality of this passageway, the low lighting level also assists in giving a more defined accent to the Drill Field when passing through from Eggleston Quad. In the natural course of proceeding through the portal, a pedestrian leaves the bright, open green space behind the dormitory and enters into the dark portal. Once one's eyes adjust to this change in light, the pedestrian is pushed out the other side and onto the bright expanse of the Drill Field.

Eggleston Arch provides the exception, rather than the rule, to most of the points of entry around the Drill Field. The majority of the thresholds that ring the field rely on visual tricks used further out from the campus center such as forced perspective and framed views. None of the entry points, however, provide the same visual and spatial experience as that witnessed at Eggleston Hall. To that end, the Eggleston Arch remains the most venerated pedestrian threshold into the sacred Drill Field and the best use of transitional space on campus. Ultimately, it is no surprise that the framed archways of Campbell and Eggleston Halls enter the Drill Field from the south. Set equidistant from Memorial Gym and the minor axis of campus, these two archways maintain the symmetrical appearance of the building edge along the rim. They also provide direct, framed views to Burruss Hall, the focal point of activity on the Drill Field, from the campus side of the portals.



The Eggleston Arch provides the most celebrated view into the Drill Field from the residence areas. Framing the view of Burruss Hall across the field, the Eggleston Arch is the most defined portal along the Drill Field Rim. Moving clockwise from the top right: A view from the Eggleston Quad into the archway. At the bottom, Burruss Hall comes into view midway through the arch. Top Left: The Eggleston Arch as viewed from the Drill Field. (Photos by Author)



Occupying the eastern edge of campus the Alumni Mall is utilized as the formal, vehicular entrance onto campus. Over a quarter-mile in length, this straight, tree lined boulevard darts into the center of campus. Resting on the long axis of the Drill Field and the primary visual axis of the campus, the mall provides the ceremonial link between the Drill field and downtown Blacksburg. This justification symbolizes the strong bonds between the town and the university. However, of greater importance in the context of this thesis project is the Alumni Mall's architectural and spatial articulation of the intersection between a strong axis and, not one, but two strong edge conditions. In fact the Alumni Mall can really be described as a series of threshold conditions leading to the transition onto the Drill Field.

The formal portal into campus begins unassumingly enough at a "T" intersection with Main Street. Contrary to what one might expect at the intersection of such an important campus regulating line and the main thoroughfare through town, this intersection is meek and poorly designed. While the Virginia Tech component of this entry condition does make several attempts to improve the situation, it is the Blacksburg side of the intersection that fails the test. Lined by a cluster of old, poorly maintained, one and two story buildings Main Street acts as a dominant edge condition preventing the strong axial movement for continuing past the edge and out into town. Because of this condition, all of the embodied energy in the Alumni Mall is

focused solely to the west and towards the Drill Field.

The physical boundary between the campus and town is marked by two curved monument signs of Hokie-stone, flanking the mall entrance and by a small grove of shade trees situated on the center island. Screening the view from across Main Street, or perhaps vice versa, these trees frame the view down the central strip of grass, which divides the traffic lanes and leads to the massive Torgersen Arch at the end of the Mall, at its intersection with the Drill Field.

Once past this first threshold of trees and signage, the Mall opens up into a divided boulevard as it moves west. Trees flank the outside edges of the Mall, but at widely spaced intervals to allow for views of the Squires Student Center and the oldest portion of campus, situated on the Upper Quad. Though widely spaced, once past the first one hundred feet of the Mall, these trees do establish a rhythm and meter for those moving towards the Drill Field, and help mark the distance to the endpoint. Likewise, the center strip of grass divides the mall into two, one-lane roads and passively directs visitors to the Drill Field with forced perspective views towards the Torgersen Arch, the War Memorial Chapel Pylons and the Drill Field beyond.

Marking the end of the Alumni Mall and the beginning of the Drill Field, the Torgersen Arch spans over 120 feet creating a threshold for all incoming vehicular and pedestrian traffic.



One of the two monument signs that flank the Alumni Mall entrance off of North Main Street. These signs, constructed of hokie-stone, are new additions to the campus (within the last five years), and mark the border between Virginia Tech and Blacksburg. (Photo by Author)



Top Left: A View down the Alumni Mall from Main Street. Flanked by two symmetrically planted rows of maple trees, the center green between the two lanes of traffic directs the eye towards the Torgersen Arch and the War Memorial Pylons beyond. (Photo by Author)





From the Alumni Mall, looking west towards the Pylons, the bridge of Torgersen Hall frames the view into the Drill Field. At the height of summer, the trees flanking the boulevard reinforce the path of movement from town into the center of campus. (Photo by Author)



The eight pylons of the War Memorial Chapel symbolize the qualities of the Corp of Cadets. Engraved with the names of all VPI alumni who have given their lives in service to the country, this elegant sculpture frames the view of the Drill Field and caps the end of the Alumni Mall. (Photo by Author)

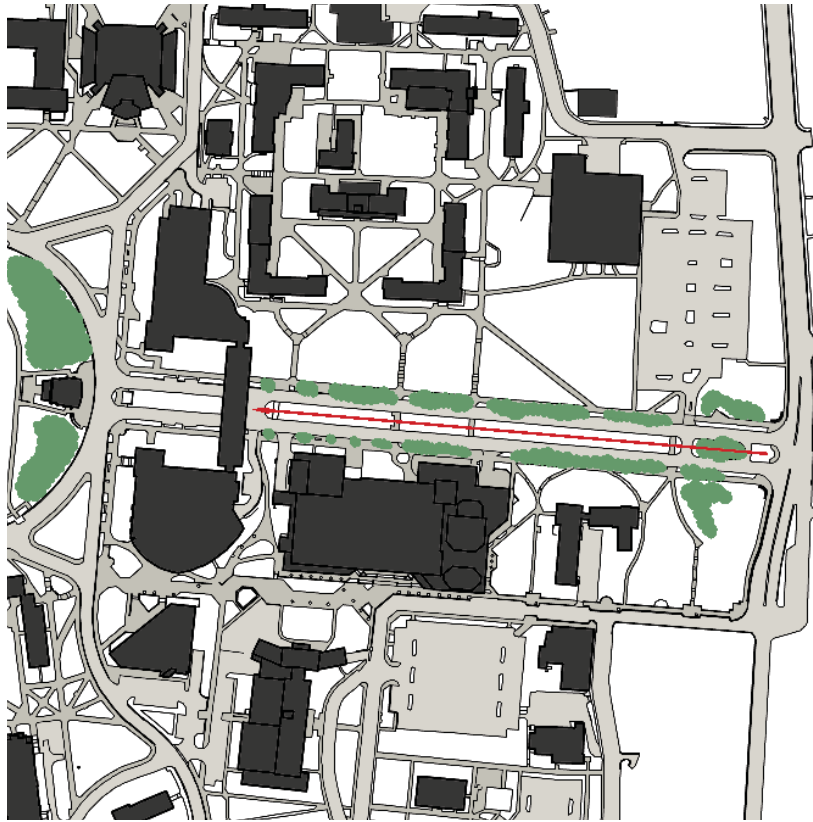
Reaching over two stories in height, with a third enclosed level above the arch, and is part of Torgersen Hall, the newest addition to the Drill Field, completed in 2000. Controversial when the design was first announced, Torgersen Hall is the last building to in-fill the Drill Field Rim. Prior to its construction, the main criticism levied at the design was that it would block the view to the Memorial Pylons at the end of the Alumni Mall, and that it would also destroy the bucolic atmosphere created by the tree-lined, bridgeless Mall.

Despite the loud protests of the alumni base, construction proceeded as planned and did severely impact the character of the Alumni Mall. However, in this author's opinion, the impact was a positive development. Prior to the completion of the arch, the visual line of the Mall terminated at a polished stone altar piece at the center of the Pylons. Flanked by the eight gradually set in Pylons, which narrowed the focus and strengthened the axis, the Chapel's roofscape provided the terminal framed view for the Alumni Mall. However, with the completion of the arch the view to the pylons is much more focused and targeted.

This accentuated condition at the edge of Virginia Tech is where the Torgersen Arch most differs from the conventional thinking on archways on campus. Whereas the Eggleston Arch exerts its relative importance by compressing space prior to entering the Drill Field, the Torgersen Bridge works differently. Coming in from the east and downtown, the arch provides a very

clear and defined, framed view of the War Memorial Pylons. Even from the monument signs at the campus edge, the Pylons are visible through the arch, and the Drill Field is technically visible through the Pylons, creating a very tangible axis line of phenomenal transparency. Passing through the span, the compressive forces of moving through a transitional edge into a sacred space are more implied than directly felt because of the size, though the use of shadow lines does help enhance the experience. Ultimately, by entering into a sacred, highly regulated and stylized space through the archway from the more loosely regulated area of campus the sense of threshold is enhanced.

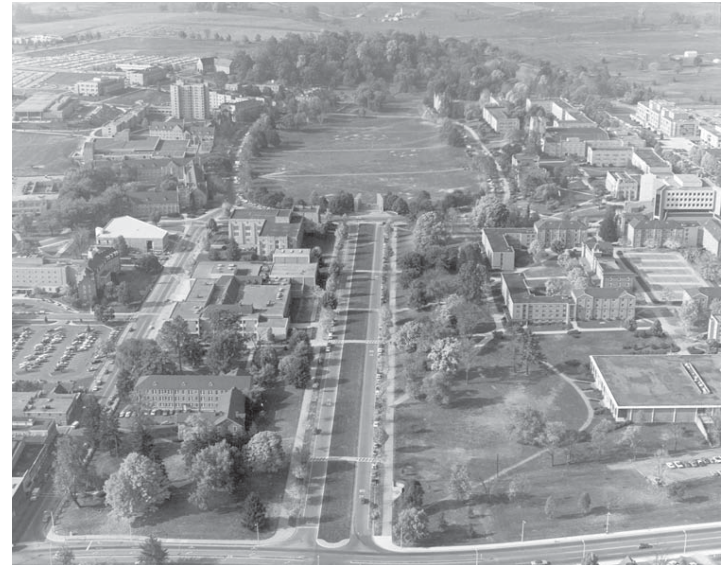
Using the articulation of the entry condition at Torgersen Hall as a template the Architecture Annex, through its design, provides for a much need formal entry into campus for pedestrian traffic moving from the Perry Street commuter parking lot. Despite being the most heavily traversed edge of campus, at no point is there any indication that one is entering the academic core area of campus. In fact, there are no entry indicators whatsoever, as the sidewalks leading into campus simply terminate at the street edge. Given the Annex's prominent location at the intersection of the campus minor axis and the campus edge, the design incorporates an entry component. However, the development of this entrance requires more than the application of the portal elements seen elsewhere on campus, due to the topography of the site and the geometry of the proposed design.



The Alumni Mall is the formal entry to Virginia Tech from Blacksburg. Developed in the 1950s this tree-lined boulevard shifted the campus entrance from the intersection of College & Main Street to reflect the changes in the campus design and layout. Culminating with a view of the Drill Field from between the Pylons of the Memorial Chapel the Alumni Mall is an arrow pointed directly at the sacred and spatial center of campus. Torgersen Hall's completion in 2000 changed the character of the Mall by creating a well defined edge for the Drill Field. The areas indicated in orange represent framed views along the Alumni Mall and the major axis of the Drill Field. Using trees, buildings and other devices the Mall ultimately invites visitors into the heart of campus. (Illustration by Author)



The first alumni gate at the intersection of College Avenue and Main Street. (Photo from University Archive of Virginia Tech)

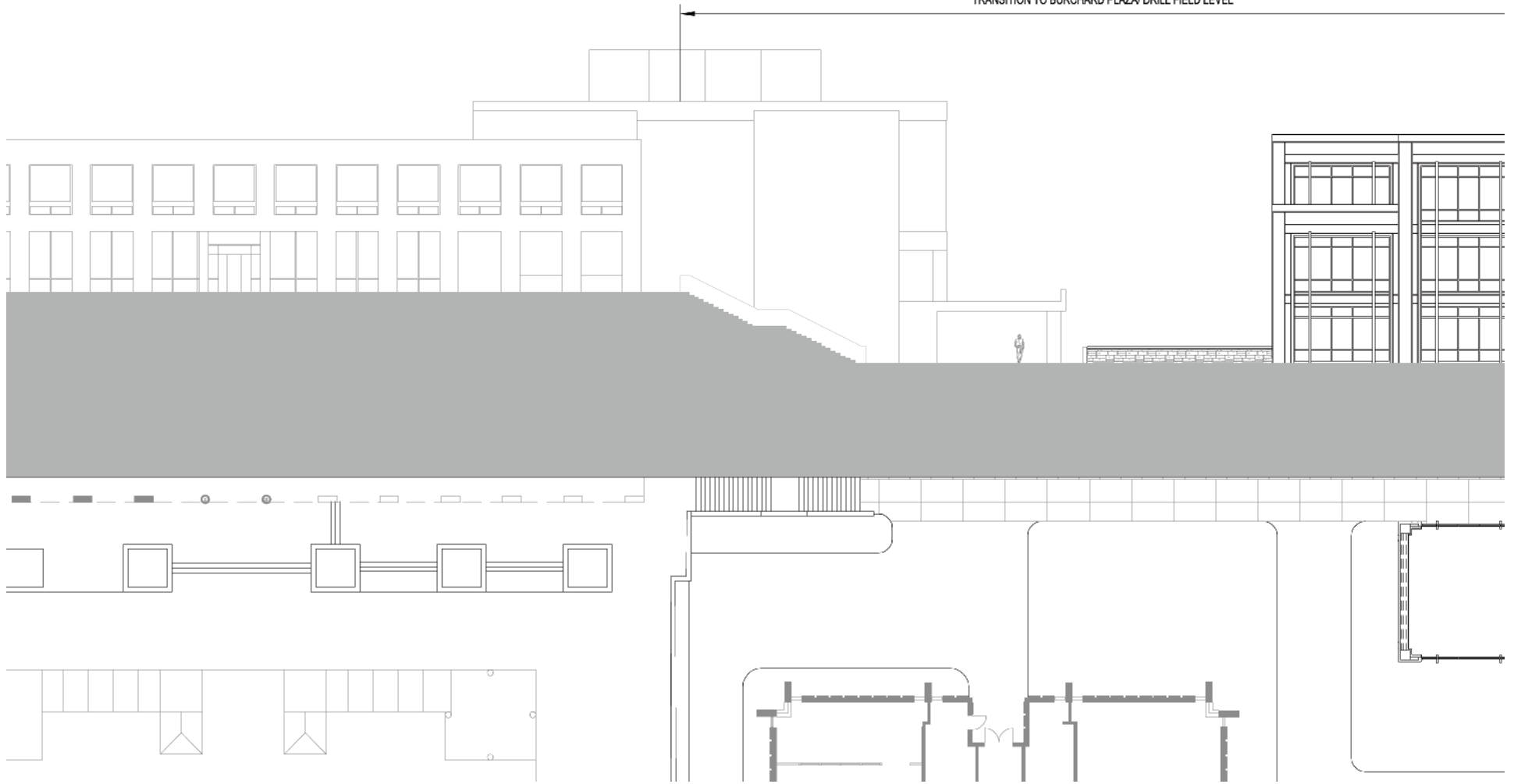


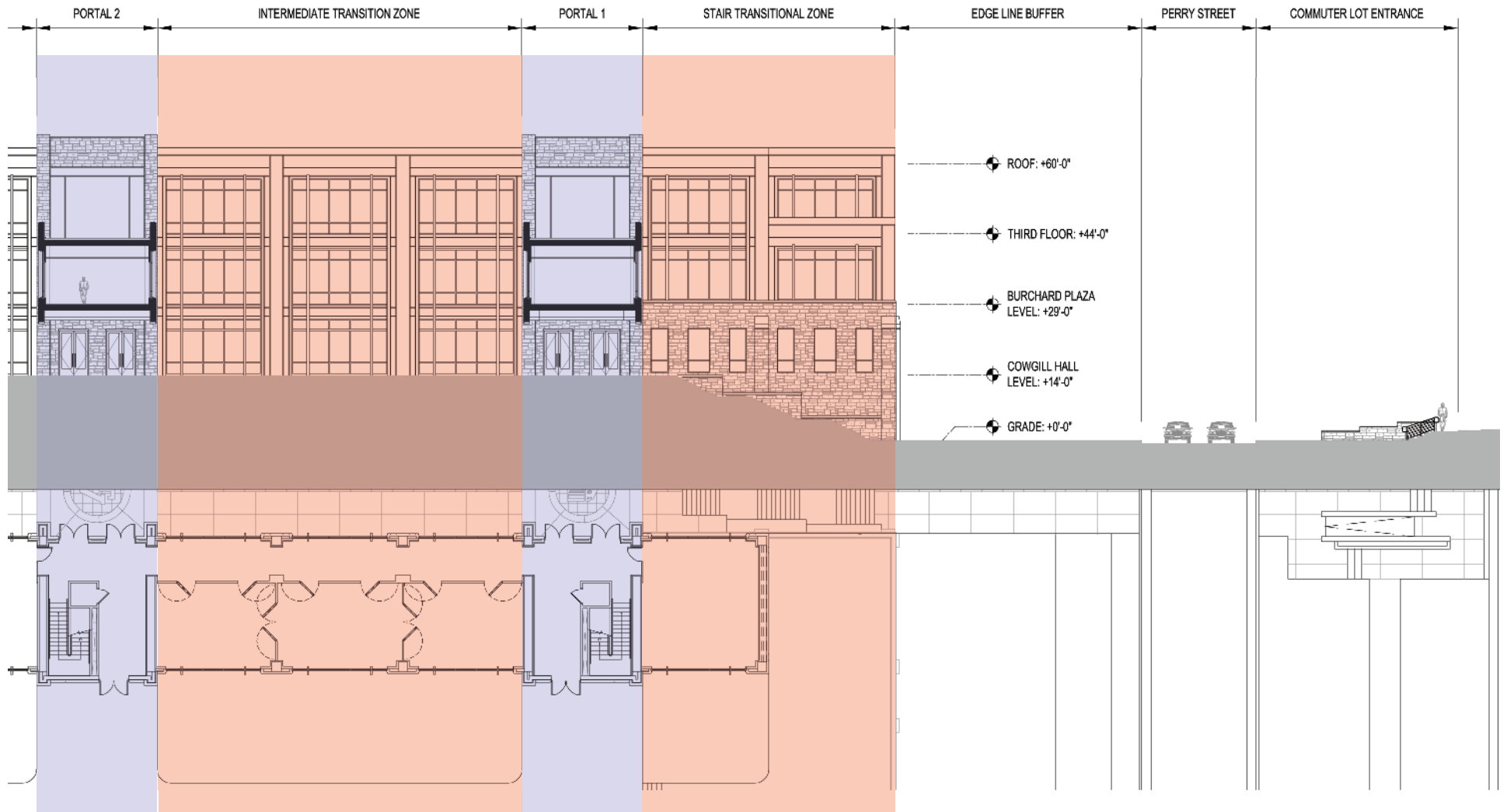
The Alumni Mall, circa 1975, establishes the formal axis of entry into campus from town. The mall also defines the long axis of the Drill Field with its termination at the edge of the field at the War Memorial Chapel. (Photo from University Archive of Virginia Tech)



The shadow line of the Torgersen Arch now marks the edge of the Drill Field. Framing the Pylons and the Drill Field proper beyond. Controversial at its inception the arched entry into the heart of campus provides the formal threshold the earlier mall lacked. (Photo by Author)

TRANSITION TO BURCHARD PLAZA/ DRILL FIELD LEVEL





Section/ Elevation through the Architecture Annex along the center-line of the minor axis path. The design of the building develops an elongated transition to mark the threshold between the surrounding areas and the Virginia Tech campus. Over the length of this transition, the elevation rises 14' as the building spans the gap between the street edge and the building edge. (Graphic by Author)



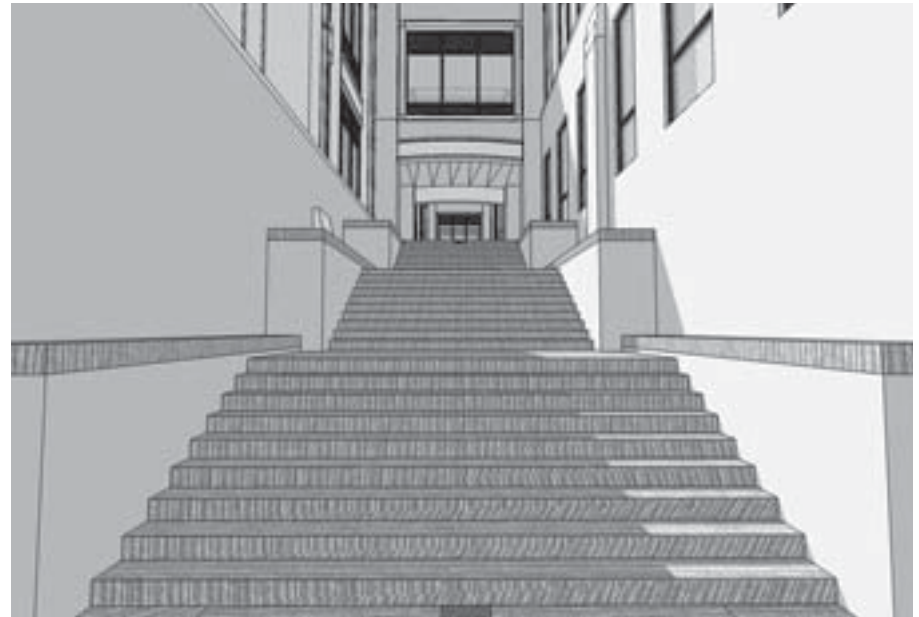
The first layer of this new pedestrian transition zone occurs at the retaining wall edge along Perry Street. At the gap in the wall created by the minor axis path pedestrian movement is encouraged to move through the wall towards a set of concrete stairs set back from the edge. Flanked by a cascading tier of Hokie-stone elements, which gradually compress the stairway as it rises in elevation, the perspective views up stairway is focused towards the first of two portals. The first portal is reached at the top of the stair run, but is again set back a number of feet to allow ample foot traffic up and down the stairs and in and out of the building.

Movement into the first portal marks the second layer of the new pedestrian transition zone. The portal takes its design cues from the Eggleston Arch and the Torgersen Arch, and provides an arched entryway set into a hokie-stone wall. Compressing the space through the use of a low ceiling, this threshold marks the beginning of the final transition into the older area of campus. Conversely, when exiting campus, this portal marks the final transition out of campus.

Typical of the architectural style of the Drill Field, this event is meant to convey a hint at the type of architecture that will be encountered at the campus center. This first portal also frames the view down the axis path towards the second portal and the GBJ stairs beyond. At this point, the view to the GBJ stairs is locked in as the canyon effect created by the vertical

building plane forces the eye to move in one direction. Secondary to this forced view, the main entrances into the two portions of the Annex Building are located under the concrete slab that forms the portal. Done mostly to protect the building entrances during inclement weather, the precedent of placing entry doors in the portals is well practiced on campus, as every portal discussed earlier shares this condition.

Upon moving through the first portal, the incoming pedestrian traffic continues towards the second portal 80 feet further down the path. In this transition area between the portals the inward facing facades of the Annex maintain the focus of the foot traffic forward towards the second portal and to the GBJ steps visible beyond. The third and final element of this elongated entrance into campus is reached at the archway that begins the second portal. Identical to the first portal in size, shape and composition this last compression of space marks the arrival at the building edge defined by Cowgill and Derring Halls, and thus marks the entrance into the campus proper. Beyond the second arched component of the portal pedestrians discharge into the small, open space created by the gaps in Cowgill, Derring, and Burchard Halls and the Architecture Annex. Having made the final transition onto campus the minor axis marked in the sidewalk by a line of polished Hokie-stone continues the directional movement of the path begun by the entry portals of the Annex



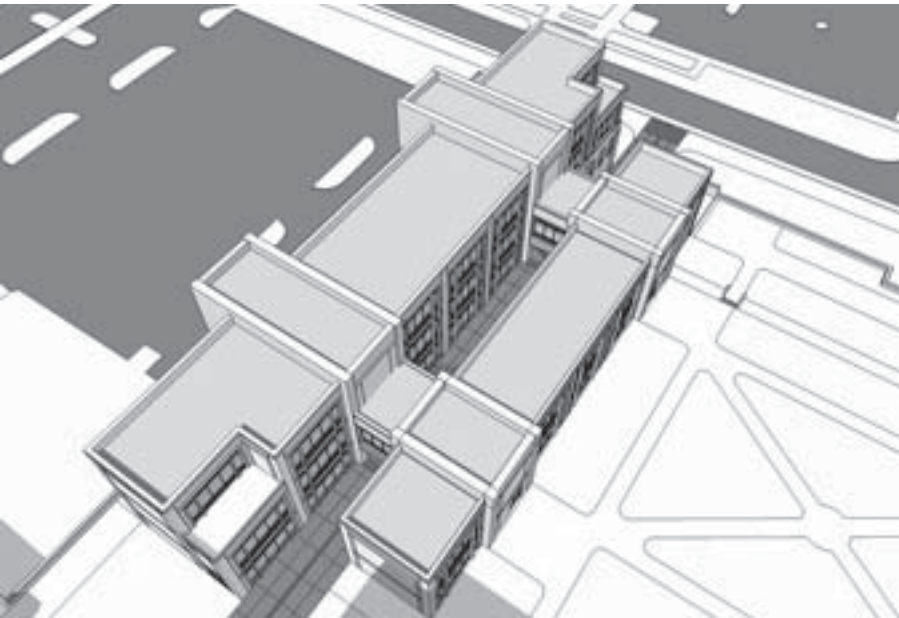
The monumental stairs at the front of the Architecture Annex mark the first moments of the transition into campus from Perry Street. The first portal marking the moment occurs at the top of the stairs. (Illustration by Author)



Portal #1 marks the formal entrance into campus. Framing a view down to the second portal and on towards the GBJ stairs, this compressed space recalls the arched portals used further in at the edges of the Drill Field (Illustration by Author)



Portal #2 marks the end of the transition into campus from Perry Street. Beyond this point the existing path picks up the existing building edges that direct the flow of traffic into the center of campus. (Illustration by Author)



A birds-eye view of the Architecture Annex from above the roof of Cowgill Hall. The layers of the elongated entrance into campus are visible. (Illustration by Author)

In the design development process of the Architecture Annex, one of the first and most complex issues to be addressed was the change in grade across the building site. In the 400 feet from the edge of Perry Street to the top of the GBJ stairs the campus elevation rises 30 feet, with the first half of that distance having to be negotiated to simply get to the ground floor of Cowgill Hall. The issue of grade change on site is currently circumvented by a series of concrete stairs which climb the hill in line with the sidewalk that leads from the GBJ stairs. Conforming to the steep slope as the hill nears the street, these stairs are strung together in rapid succession. With the design of the Annex retaining wall along Perry Street the topography of the site is much more easily controlled and manipulated, but nevertheless the 14 foot grade change still poses a challenge.

It is at this juncture that the second factor, that of the building geometry, begins to influence the design decisions related to the new portal. Electing to run the building parallel to the minor axis, while also turning the building edge off Perry Street to link up with Derring Hall, the geometry of design called for a long narrow building, or as is the case of the final design, a long, narrow main building along the outside edge and a smaller auxiliary building along the inside. Faced with the need stretch out the change in grade over the first third of the building it was clear that the stairs leading up to the first level should have deep tread lengths and be sepa-

rated by multiple, long landings. The decision to stretch the stairs was also confirmed due to the fact that the area inhabited by the building as it spans the distance from Perry Street back to the building edge at Derring Hall is an elongated transition zone. Rather than bringing pedestrians right up to the level of campus after crossing the edge this design gradually lifts pedestrians to the Cowgill Level and then continues to gradually transition them into the denser areas of the inner campus.

## Chapter V: Context & Materials



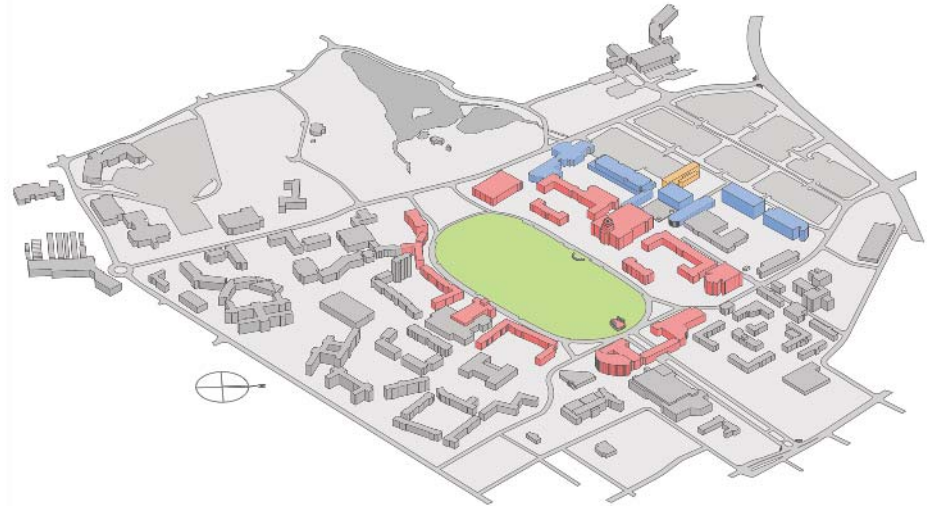
Unlike the rest of campus, the area along Perry Street is dominated by modern, functional buildings made of concrete, glass and modular masonry. Constructed in the late 1960s, the three buildings that create the core of the Perry Street edge now stand as relics of a bygone era when the architectural heritage of the main campus was abandoned to make way for cheaper, quicker methods of providing space. In the context of the dominant architectural language on campus, limestone and gothic architecture, these buildings have always stood out, even with the completion of new more modern buildings in the vicinity and in stark contrast between these buildings and those that rim the Drill Field. However, the irony is that these modern buildings are the first cluster of structures to be happened upon when entering campus from Price's Fork Road.

The story of Whittemore, Derring and Cowgill Halls is worth repeating as a cautionary tale of what not to do when building in the context of a very strong architectural language. The greatest period of expansion in the history of Virginia Tech began in the late 1910s with the formalization of the campus master plan, which created the Drill Field and introduced the gothic style and limestone to the campus. Over the next four decades, as the campus underwent an unprecedented expansion the architectural traditions we now consider to be synonymous with Virginia Tech developed. Leaving the older institutional red brick language of the Upper Quad behind in favor

of Hokie-stone, every new building erected on campus between 1920 and the completion of the Drill Field ring in 1960 conformed to this consistent language.

While the campus grew steadily in the 1930s, thanks to the federally funded Works Projects Administration program and the ready availability of skilled stone masons and labor, the university was again bursting at the seams by 1965. With a new wave of building construction required to meet the needs of the campus the university's board of visitors made a conscious decision to move away from Hokie-stone for two simple factors: budgetary and time constraints. While the locally quarried limestone used on campus was readily available, it was also a very labor intensive material to work with, as well as cost prohibitive. Requiring man power to not only extract the rock, but also to dress it and face it prior to its arrival on campus, the stone then had to be handled on site by skilled masons capable of turning the stone into blocks and slabs suitable for use in the building facades. Not only was this process expensive, requiring a large number of highly skilled artisans, but it was also very time consuming, as each stone that was placed needed to be modified prior to setting.

Adding to the gothic appearance of the buildings on campus, square punched window openings and arched window openings with stone surrounds are used to great affect as are horizontal bands of sandstone, large wooden-



*The limestone clad gothic buildings (red) that rim the Drill Field (green) constitute the historical core of campus and establish the architecture heritage of campus. In juxtaposition to this central core are the modern concrete structures (blue) that define the edge of Perry Street. Sitting along this austere edge, but connected to the Drill Field by the minor axis, the Architecture Annex (orange) merges the two languages. (Illustration by Author)*



*Spanning from Stanger Street to West Campus Drive, the building edge along Perry Street presents a hard concrete edge to the town of Blacksburg. Standing in contrast to the more traditional campus architecture on the Drill Field, this area stands alone, architecturally, from the rest of campus. (Photo by Author)*



-doors set in arched portals, gabled roofs of slate, crenulated battlements and tower elements. While only the buildings that enclose the Drill Field use all of these elements, and some more than others, the vast majority of the other buildings on campus are selective in their use of these elements. In fact, the further away from the Drill Field a campus building is situated, the less the structure has the gothic appearance.

Sitting directly behind Burruss Hall, which is the most heavily articulated of all the gothic buildings on campus, Cowgill Hall serves as the modernist concrete antithesis. Completed in 1969, the concrete and glass appearance of Cowgill Hall reflects its attention to the functional needs of the building instead of its form. Rectangular in shape with the short dimension of the building on axis with the campus line of symmetry, Cowgill Hall is best identified by the exterior columns spanning the entire four stories of the structure, and by the thick band of overhanging concrete that creates a cornice and flat roof for the structure. Capped with a smaller penthouse along the centerline of the building, the roof system is often referred to as the "top hat" on campus due to its appearance.

However what puts Cowgill Hall, and by default the similarly built Whittemore and Derring Halls, in such direct contrast with Burruss Hall and the Drill Field is the austerity of the building. While Burruss Hall and its Hokie-stone brethren have an underlying natural,

warm quality with soft edges, a wide color palette and multiple layers, Cowgill Hall is a cold, angular building with little depth in its façade and extremely monochromatic in appearance. The building façade is dominated by vertical reveal lines in the concrete in-fill panels that clad the majority of the façade. Marking the axis of symmetry for campus, the structural bay that straddles the line is articulated with floor to ceiling plate glass. The structural columns as the corners of the building are also off-set to create a floating edge also articulated only by floor to ceiling plate glass. The thickness of the floor slab is also articulated on the façade, as each slab extends past the glass lines to create a strong horizontal banding effect on the building.

Nevertheless despite its contrary appearance Cowgill Hall is an extremely successful building. A poster child for the modernist architectural axiom "Form follows Function", the building houses the primary studio and classroom spaces for the College of Architecture and Urban Studies. With a footprint of approximately 150 feet by 90 feet the building is ideally suited to the needs of an open studio space. With the structural columns of the building situated on the exterior of the building, and with the concrete waffle slab able to span over 40 feet there are no interior columns between the façade of the structure and the building core. This lack of interior columns has also allowed the interior space of the building to be altered and modified relatively easily.



*Burruss Hall (1936), sitting on the axis of the Drill Field, best represents the traditional use of hokie-stone and gothic architecture on campus. (Photo by Author)*



*With its sharp edges, pronounced cornice and exclusive use of concrete, Cowgill Hall (1969) represents a shift in the vernacular of campus. (Photo by Author)*



*Shown in context with GBJ Student Center to the left and the roofscape of Burchard Hall/Plaza in the foreground, Cowgill Hall and its modernist language stand in direct contrast to Burruss Hall. Not shown, Burruss Hall lies to the left in this picture. (Photo by Author)*

As the tallest structure on Perry Street, Whittemore Hall (1972) is noted for its planar facade, which reinforces the edge condition along the street. A hybrid building stylistically, Whittemore Hall's first two stories are of Hokie-stone and act as a plinth for the more modern upper stories of panelized concrete. (Photo by Author)



Taken from the proposed site of the Architecture Annex, the side view of Whittemore expresses the modernist, functional design aims of the time of its construction. Addressing the slope of the hill along Perry Street, the contrast between the older bottom portions of the building and the newer upper portion is readily apparent. (Photo by Author)

Directly to the west of Cowgill Hall is Derring Hall. Built around the same time, the structural system of the building, like Cowgill Hall, is expressed in the facade. In-filling the concrete bays are pre-fabricated panels of brick inset with commercial grade aluminum frame windows. Derring Hall is also the most massive building on the edge of Perry Street and the only one to showcase modular brick. (Photo by Author)



This architectural system was again repeated in 1970 with the construction and completion of the much larger Derring Hall to the west. Nearly 400 feet long and five stories tall Derring Hall is not as elegant as Cowgill Hall, as a purely sculptural piece of architecture. However the building continued the new attention to concrete and functional architecture on the back side of campus. While there are a great number of differences between Cowgill and Derring the most prevalent is the use of in-fill panels between the columns. While the panels at Cowgill Hall are uniform in appearance, with respect to the concrete structural system, the panels at Derring Hall show a greater flexibility in addressing the complex programmatic needs of the building. The panels also reintroduce brick masonry to this section of campus. Generally speaking, the panels used to infill the bays at Derring Hall are prefabricated assemblies of bricks in a stacked coursing pattern, framing narrow vertical slit windows of aluminum and plate glass. Addressing the need to bring more light into the building, while maintaining privacy these panels also include transom glazing systems. The use of prefabricated panels is also seen at Whittemore Hall, the last of the concrete giants on Perry Street.

The tallest of the three structures sitting at six stories tall excluding the penthouse, Whittemore is also the most architecturally eclectic building on campus. Its lowest two stories are actually constructed of hokie-stone and were part of an earlier period of

construction. Essentially a large limestone box with narrow slit windows this portion of the building burrows into the slope to the east of Cowgill Hall, which lead up to Turner Street from Perry Street. Around 1970 the new modernist concrete vernacular was applied to the expansion of the building, leading to the development of a four story block being set on top of the two story plinth block. Taking the more successful elements of Derring and Cowgill Halls, the end result of Whittemore Hall is a massive building of stone and concrete with little visible window area and little regard for either Perry Street or the rest of the architecture on campus.

It is within the context of the three concrete giants on Perry Street that the Architecture Annex is challenged to develop a new architectural language that is both complimentary of the pre-existing site conditions, and respectful of the architectural heritage of the Drill Field. While at first glance, the architecture of Hokie-stone and an architecture of panelized concrete seem at odds with one another, they are in fact complimentary elements.

The marriage of concrete and hokie-stone along Perry Street is not a new discovery, as we've seen with Whittemore Hall. However, this union of these two materials is widely unsuccessful as there is not architectural continuity between the two materials, as the concrete upper stories of the building were, in fact, dropped onto the lower limestone stories.



The ability to successfully merge these two building traditions is linked to the ability to extend common lines and elements within the building façade across the datum line between the two materials.

Despite its haphazard appearance, Whittemore Hall does establish the use of Hokie-stone as a plinth block upon which other elements can be built. As the heavier, blockier material, the use of limestone as a base or retaining wall is a time tested method, one that is not wholly unfamiliar to the Virginia Tech campus. With this acceptable use of Hokie-stone established on campus, the Architecture Annex uses the material to create the lower horizontal bands of the building and for all four exposed faces of the two service cores, which align with the portals. Similarly the Architecture Annex switches to concrete panels for its upper horizontal bands in keeping with the use of the material in the nearby buildings.

In developing its own architectural syntax, the Annex building looks to the more established buildings on campus for inspiration and reference. A hybrid of concrete and Hokie-stone, the design of the buildings takes the best elements of each style and attempts to merge them into a cohesive language within the context of the building. Using hokie-stone as the retaining wall element along Perry Street, the building also uses this material for the lowest level of the main building block and as the primary material that wraps the corners of the building where the axis path cuts through the building.

Extending the use of hokie-stone down the west façade, the building maintains its retaining wall like appearance as it then connects to the concrete and brick retaining wall elements of the lowest level of Derring Hall. At all instances, the retaining walls are marked by Hokie-stone pilasters. Along the portion of the wall fronting Perry Street, the pilasters match the column spacing of Cowgill Hall. When applied to the Annex the pilasters indicate the location of the structural columns of the building.

As the retaining wall begins to integrate with the Annex, the retaining wall rises slightly and the pilasters then match the column lines within the new building. The same pattern of pilasters is maintained along the west façade and continues at the same meter once past the edge of the building until terminating at Derring Hall. Hokie-stone pilasters are widespread throughout campus but are used to the best effect at Burruss Hall, Holden Hall and Torgersen Hall. The pilasters used at the Architecture Annex are approximately 36 inches wide by 10 inches deep. Extending vertically without tapering, as the pilasters on Burruss Hall do, each element ends 4 feet below the top edge of the hokie-stone wall and is capped with an 18 inch sloping pre-cast concrete element that doubles as both a protective element and a decorative element. The caps are similar in concept to the one used at Burruss, but are more on the scale of the cap elements at Holden Hall.

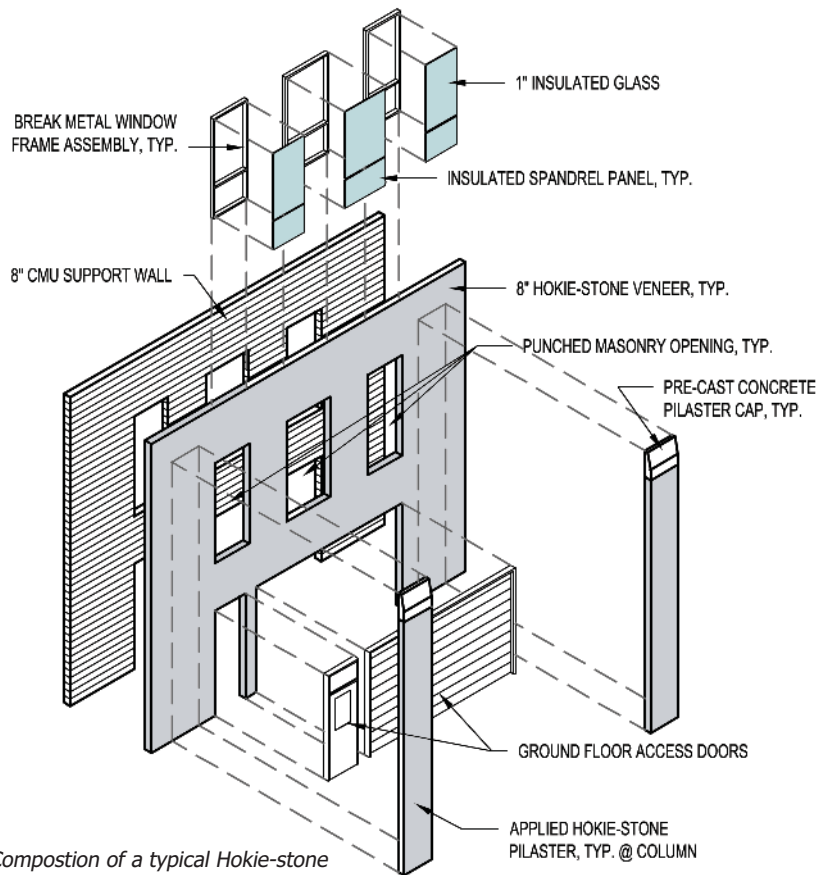


*Top left: Pilaster corner condition at Holden Hall. Top right: An articulated window condition at Burruss Hall, typical to the Drill Field Rim. Right: The west facing facade of Torgersen Hall overlooking the Drill Field. Completed in 2000 the building utilizes the traditional building block elements of campus. Bottom: The traditional building elements as used on Burruss Hall. (Photos by Author)*





The punched masonry openings of GBJ (left) and Hancock Hall (right) introduce a modern aesthetic to the campus. Using the traditional Hokie-stone as the primary cladding material, each building minimizes the use of ornamentation as seen on the Drill Field rim buildings. (Photo by Author)



Composition of a typical Hokie-stone wall as used at the Architecture Annex. (Illustration by Author)

At the instances on the Annex where corner conditions occur, the pilasters mimic the corner condition used at Holden Hall, where the vertical elements are set slightly off the corner to allow the primary façade wall to terminate in a clean edge.

Likewise, within the context of using Hokie-stone on the lower levels, the Architecture Annex also looks to the more modern stone clad buildings of GBJ Student Center and Hancock Hall when articulating the windows that puncture the façade. Fore-going the more traditional method of punched openings with articulated sandstone surrounds, as used on the Drill Field, the Annex uses unarticulated punched openings. The decision to go this direction was two-fold. First, this window assembly keeps more in line with the stripped down nature of the buildings in the area. Second the use of the punched openings in the Annex building is meant to recall the openings of GBJ providing a visual connection to the next area of campus that will be entered.

Once at the level of the Annex Plaza, the building begins to transition to a system of pre-cast concrete panels as the primary façade material. Taking advantage of the flexibility of concrete and its ability to accept patterns and reveal lines, the facades are articulated with a series of horizontal bands broken by vertical reveal lines. The vertical reveals in the concrete panels are set in line with the Hokie-stone pilasters below, with the reveal lines matching the width of the applied

elements. This gesture extends the verticality of the pilasters and allows them to reach their natural termination point at the roof-line of the building. The horizontal reveal lines, in turn, mark the depth of the concrete floor slabs on the exterior of the building and break up the vertically projecting lines of the glazing system used in these panels.

The window openings in these panels are set back into the panel and are articulated with a sloped surround that adds visual depth to the window, while providing some weather protection. Each window assembly is divided into five segments, with the three center panes acting as one combined unit. The outermost panes in each window assembly are split by a thin vertical concrete fin that connects the stacked window assemblies in each bay. More an aesthetic decision than a function decision, these thin fin elements help to accentuate the verticality of the pilaster elements and help to break up the extreme horizontality of the building due to its mass and proportions.

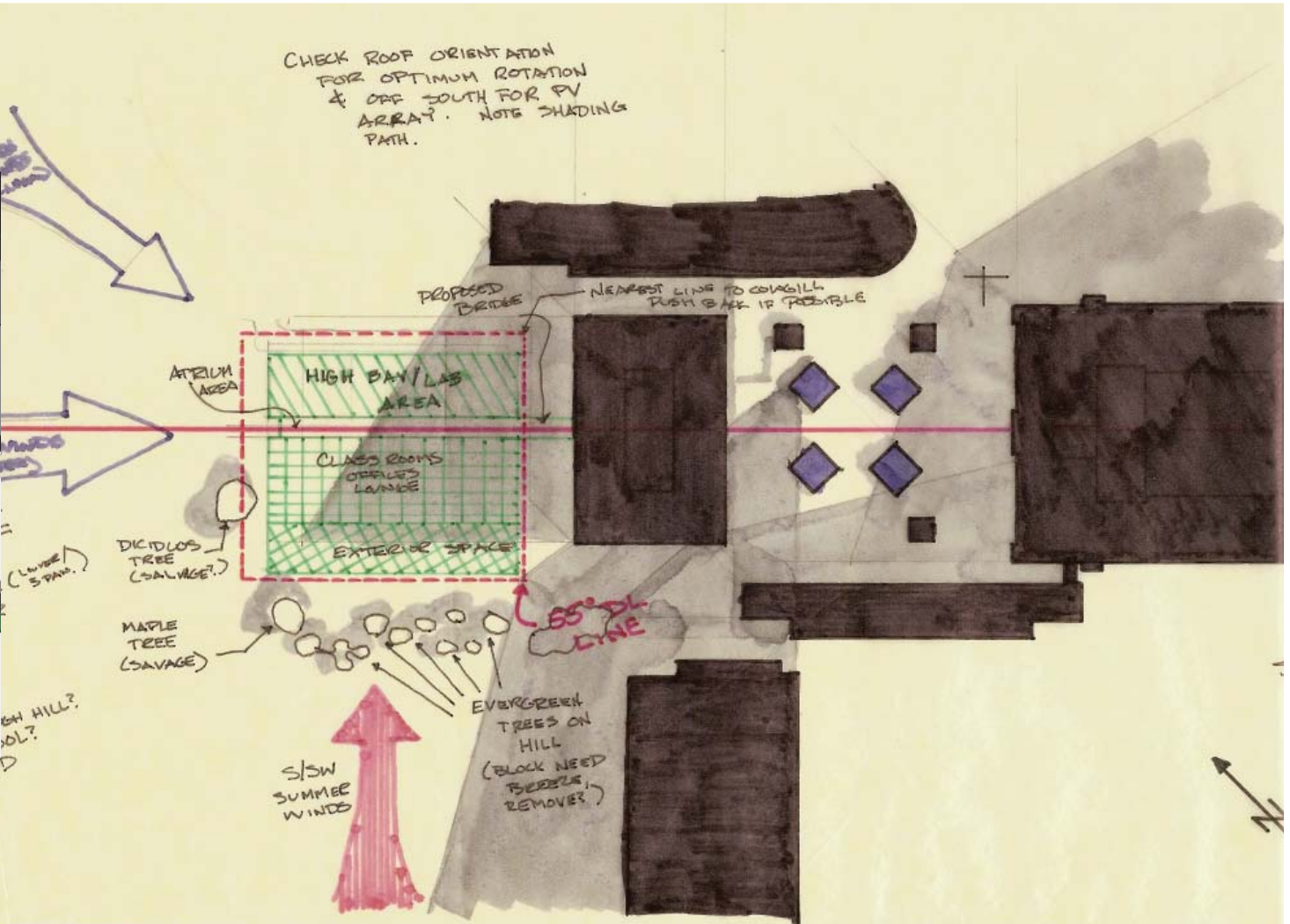
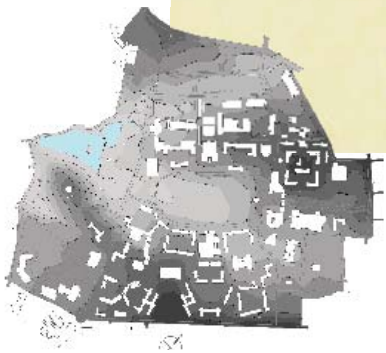
In the development of the pre-cast panels the Architecture Annex takes its visual cues from the traditional sandstone apertures used at Burruss Hall and the more modern pre-cast infill panels used for the windows at Torgersen Hall. In this regard, the design of the pre-cast panel system for the Annex building avoids making direct connections to Whittemore and Derring Halls, and allows the building to begin to highlight some of the architectural elements of the Drill Field.



## Chapter VI: Conclusions & Drawings



CHECK ROOF ORIENTATION FOR OPTIMUM ROTATION & ORF SOUTH FOR PV ARRAY. NOTE SHADING PATH.



Counter-clockwise from the upper right: 1) An early site analysis diagram. 2) Campus topography study. 3) Early concept model of the Architecture Annex. 4 & 5) first concept model of the Architecture Annex to use two building masses split by the minor axis path. (Illustration by author)



The new Perry Street Architecture Annex is set within the context of the surrounding academic buildings of Virginia Tech. (Illustration by author)

The success of designers and professionals is incumbent upon the awareness of the impact many important issues may have on the selected building site. Likewise, designers must also consider that the decisions which are made because of these issues may in turn, provide a whole new set of challenges for those who follow. With this in mind, it was necessary for the analysis of the Cowgill Hall hill site and the development of the Architecture Annex to not only understand prior design decisions, but also to provide an improved site environment for the future. At the beginning of this thesis project four questions were asked, and as we conclude this investigation, four answers have been provided.

We first asked how the proposed design could reinforce the pedestrian path that moves along the minor axis of campus as it leaves Perry Street, on its way to the Drill Field. In answering this question we looked to the existing conditions of the path and discovered that it relies on moving along the building edges to complete its journey. We also discovered that for the first 400 feet of the path from Perry Street, runs along an arbitrarily defined line, with no building edges to mark it. In resolving this issue, the Annex design proposed not one, but two, building edges one set on either side of the path in order to provide movement and directionality to the point where the path is clear.

We then asked if the design of a new building at this site could strengthen the campus edge along Perry Street at

a point where the edge fails. Through extensive site analysis, it was determined that the campus edge fails at the site of the Architecture Annex because of the sloping conditions of the hill and because Cowgill Hall lacks the mass to continue the edge at the top of the hill. In addition, it was discovered that because of the hill's slope in two directions, creating a corner, it was necessary to define not just the edge along Perry Street, but also connect the edge back to Derring Hall. To remediate these issues, the Architecture Annex incorporated the design of a retaining wall along Perry Street to reform the edge, while also providing Cowgill Hall with a virtual plinth block. The design also establishes the main volume of the building on the corner condition, marking the point where the edge turns back towards Derring Hall.

As the architecture character of the existing edge and axis conditions on this site were redefined through the course of the design, the third question asked how the design could provide a more formal entrance into campus at the intersection of these two lines. In answering this, we first considered the variety of methods available for marking an intersection. Then in analyzing the use of formal entry conditions around campus, with particular attention paid to the Eggleston Arch and the Alumni Mall, a set of rules for defining entry were developed. In using portals and in elongating the sense of transition into campus from the outside world, the Architecture Annex provides a subtle yet suitable pedestrian entrance into campus. In doing so,

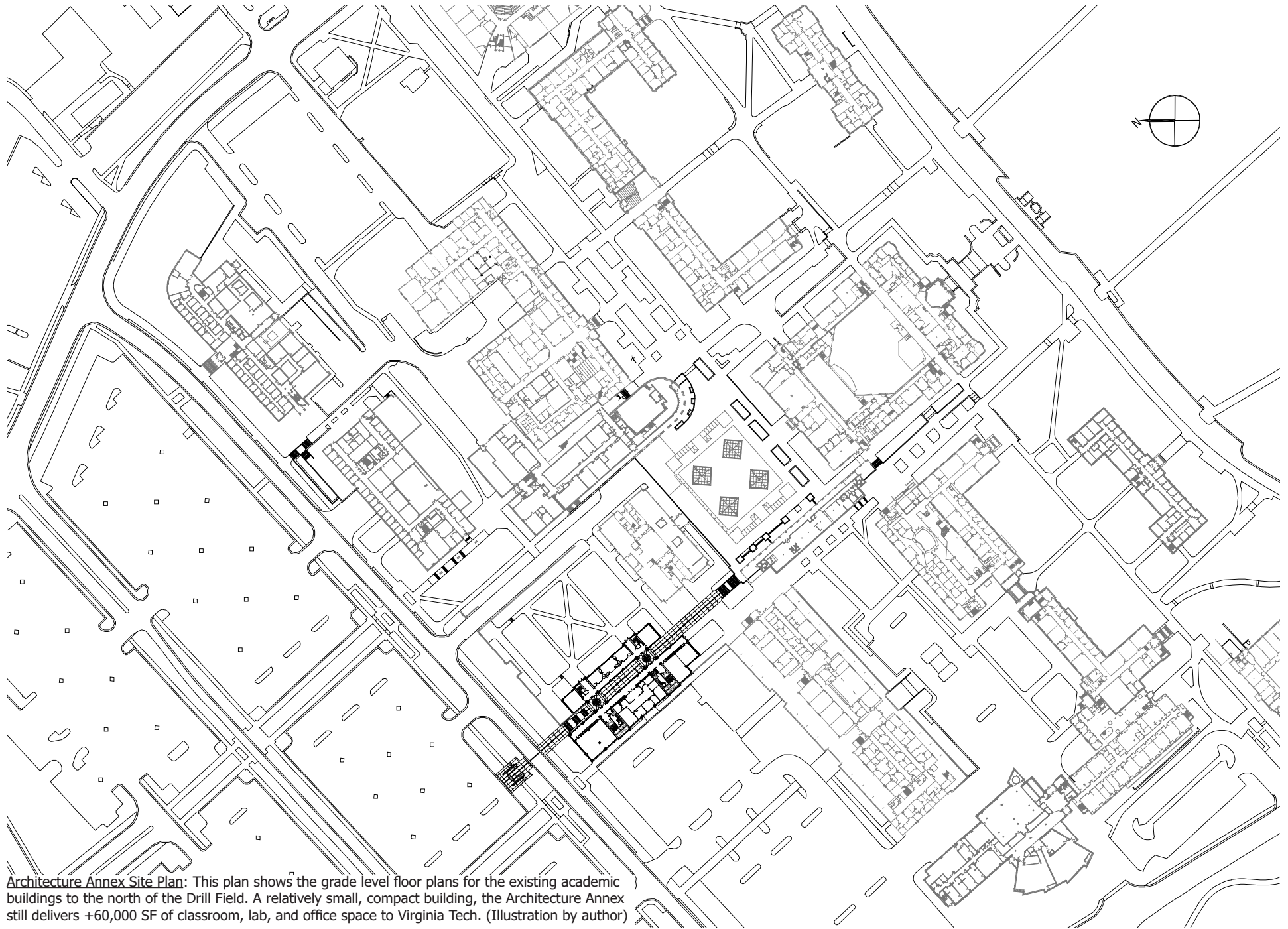
the Annex ultimately provides a formal portal to the thousands who cross over this edge every day on the in way to school and work.

Finally, this thesis investigation was charged to explore the architectural context of this area of campus with respect to the more traditional architecture used at the center of campus. In understanding both the vernacular of Hokie-stone and gothic design as it exists on the Drill Field, and the modernist concrete and glass language of Perry Street, the Architecture Annex proposed the use of a hybrid system of materials. Using Hokie-stone as a base, and concrete in the upper stories, the Annex sought to merge the two languages through the use of common elements seen elsewhere on campus, and the articulation of edges and lines that could be conveyed from one material palette to the next. Likewise, the Annex also took cues from the more prominent buildings along the Drill Field, and introduces abstractions of these elements along the Perry Street edge as a means of conveying what will be found at the center of campus, while also as a means of re-establishing the architectural heritage of campus on this modern edge.

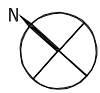
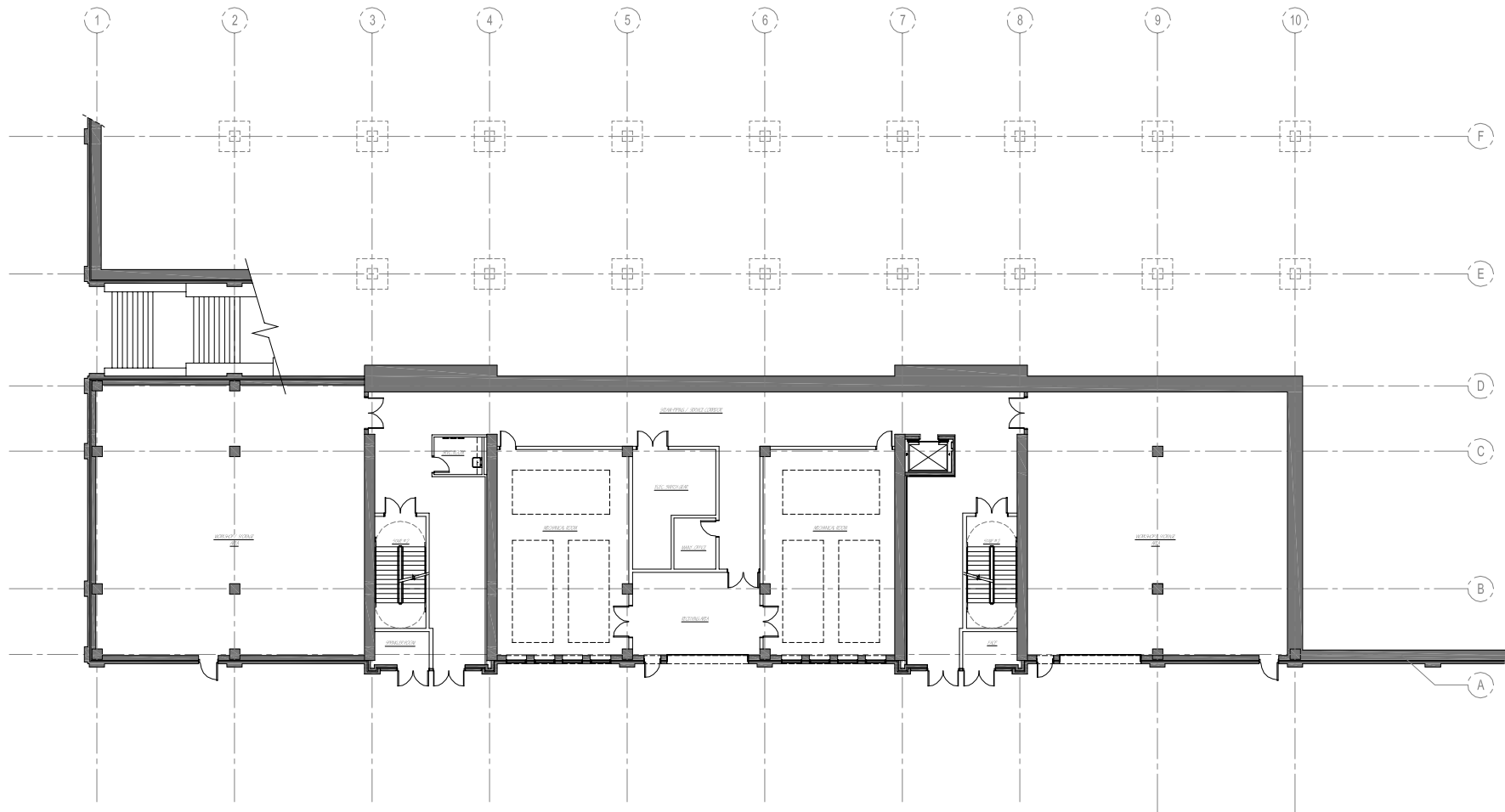
Ultimately the design of the Architecture Annex takes its cues from the program and site location of the proposed new building for the Department of Building Construction. However, this design focuses more on the needs of the growing College of Architecture & Urban Studies, and the desire to bring elements of the school,

such as Landscape Architecture, Urban Planning and Interior Design, back to a central complex of buildings. In developing the program, needs, such as additional faculty office space, studio space, classroom space, and lounge space, were taken into consideration. Likewise, the development of a new suite of offices for the Dean of the College and new workshop space were also added into the design. The resulting project, as described in the preceding pages both graphically and in written form, are the result of many hours of design, planning, and redesign as the issues of edge, axis, entry and context were addressed. However, in the following pages the issues of programmed space and the general layout of the building design will be displayed, not in the context of the thesis, but simply in the context of the building as an object.





**Architecture Annex Site Plan:** This plan shows the grade level floor plans for the existing academic buildings to the north of the Drill Field. A relatively small, compact building, the Architecture Annex still delivers +60,000 SF of classroom, lab, and office space to Virginia Tech. (Illustration by author)



Architecture Annex Basement Plan: Doubling as a retaining wall for the hill beyond to the north-east, the basement level houses mechanical rooms for the building and flex workshop space for use by CAUS. The exits on this floor discharge out into the Derring Hall Staff Parking Lot. (Illustration by author)



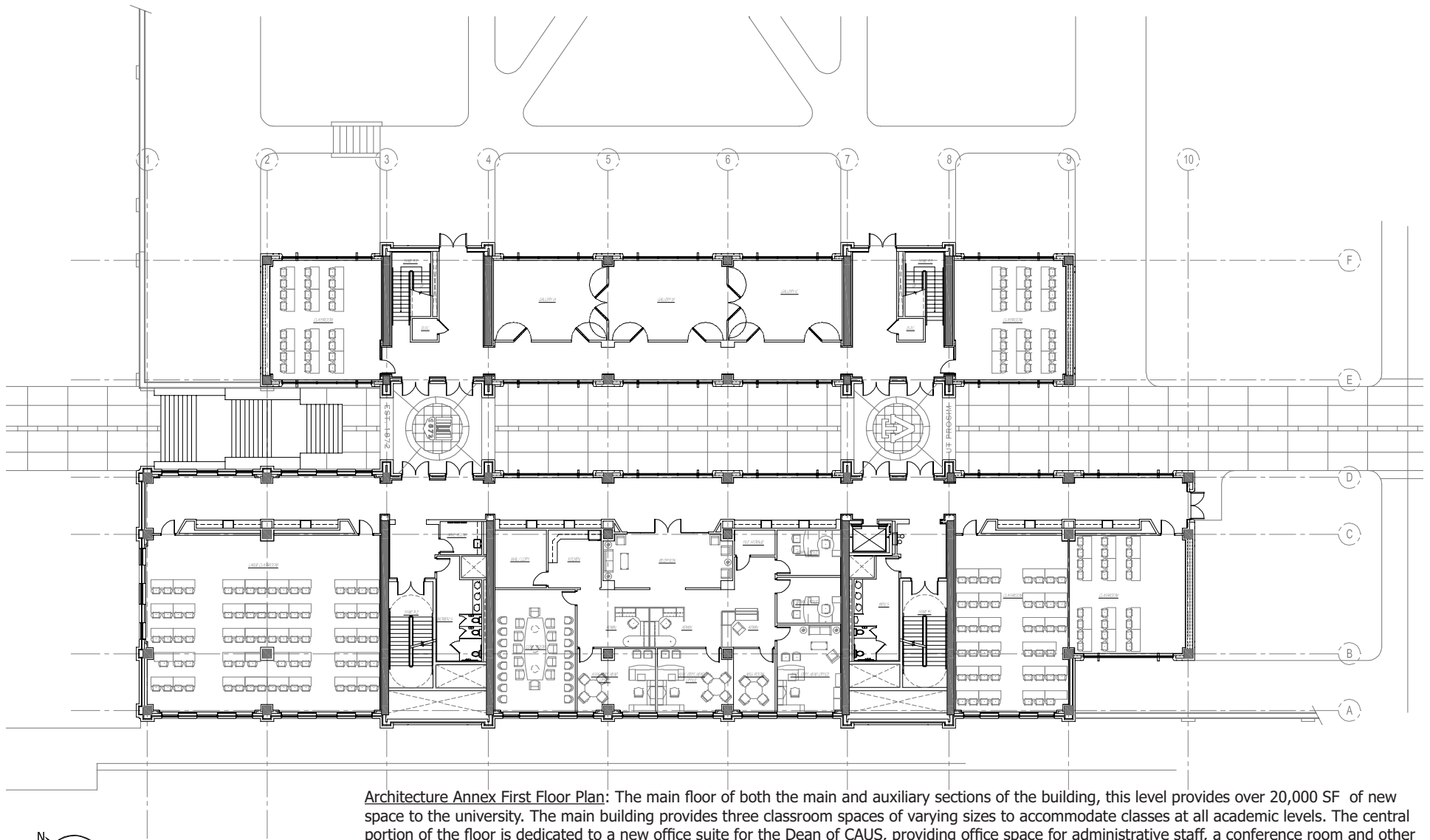
Building Elevation/ Section - Facing East: Cut along the centerline of the building and the minor axis path this graphic shows the system of stairs that negotiate the 30' elevation change from Perry Street to the level of Burchard Plaza. Also visible are the two bridge elements, which connect the two parts of the building, while spanning the axis path and serving as the entry portals into campus (Illustration by author)



Building Elevation/ Section - Facing East: Cut along through Derring Hall, this graphic shows the west facing elevation of the Architecture Annex. Prominent in this view are the two Hokie-stone frame service cores, which provide vertical access through the building and mechanical riser space. This graphic also shows the Annex retaining wall connection to Derring Hall, thus completing the building edge along Perry Street. (Illustration by author)

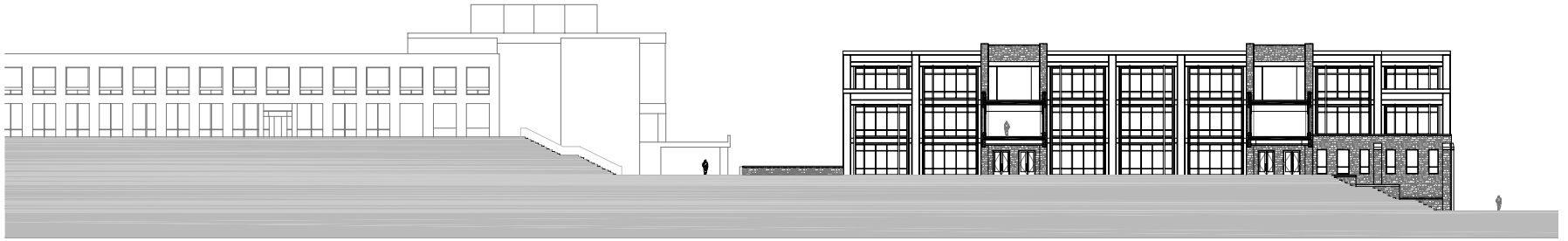


Building Elevation/ Section - Facing East: Cut just past Derring Hall, this graphic shows the relationship of the Annex and the small plaza prior to the GBJ stairs. (Illustration by author)



**Architecture Annex First Floor Plan:** The main floor of both the main and auxiliary sections of the building, this level provides over 20,000 SF of new space to the university. The main building provides three classroom spaces of varying sizes to accommodate classes at all academic levels. The central portion of the floor is dedicated to a new office suite for the Dean of CAUS, providing office space for administrative staff, a conference room and other office amenities. The auxiliary building provides two small classrooms and a gallery space with the capability of being re-configured to handle everything from design studio pin-ups to larger exhibitions. The main entrances into each section of the building are located in the building service bays, which become the portal elements as the bay spans the axis path. At each of the main entrances and within the portals, the walkways are articulated with symbols of Virginia Tech. These symbols help reinforce the pathway and mark the significance of each portal. (Illustration by author)





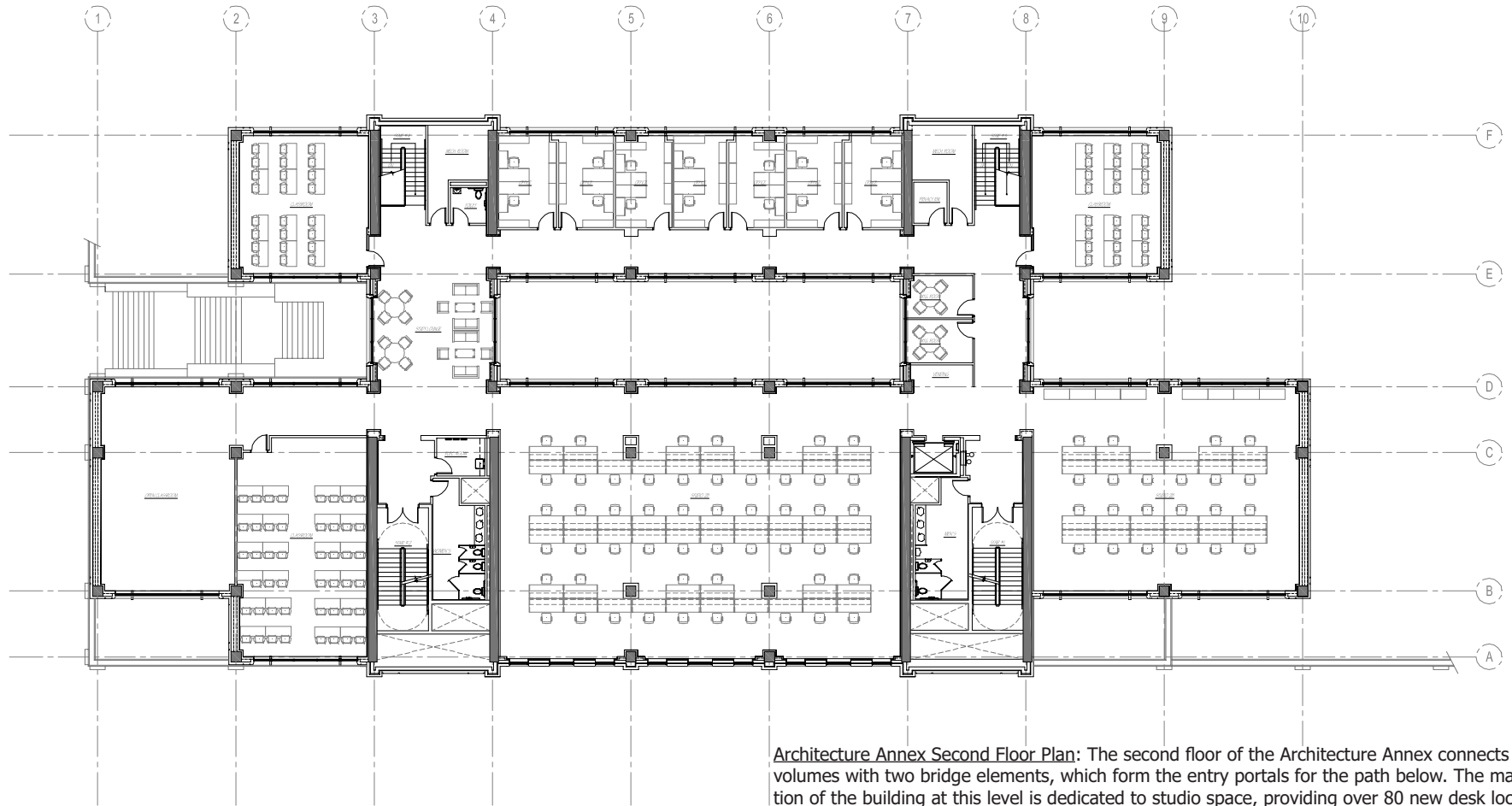
**Building Elevation/ Section - Facing West:** Cut along the centerline of the building and the minor axis path, this graphic shows the system of stairs that negotiate the 30' elevation change from Perry Street to the level of Burchard Plaza. Also visible are the two bridge elements, which connect the two parts of the building, while spanning the axis path and serving as the entry portals into campus (Illustration by author)



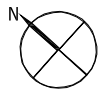
**Building Elevation/ Section - Facing West:** Cut just west of the Cowgill Hall service road retaining wall, this graphic shows the Plaza side elevation of the Annex building. Two stories tall, this element of the building forms the western edge of the plaza, against the backdrop of the similarly articulated main Annex Building. (Illustration by author)

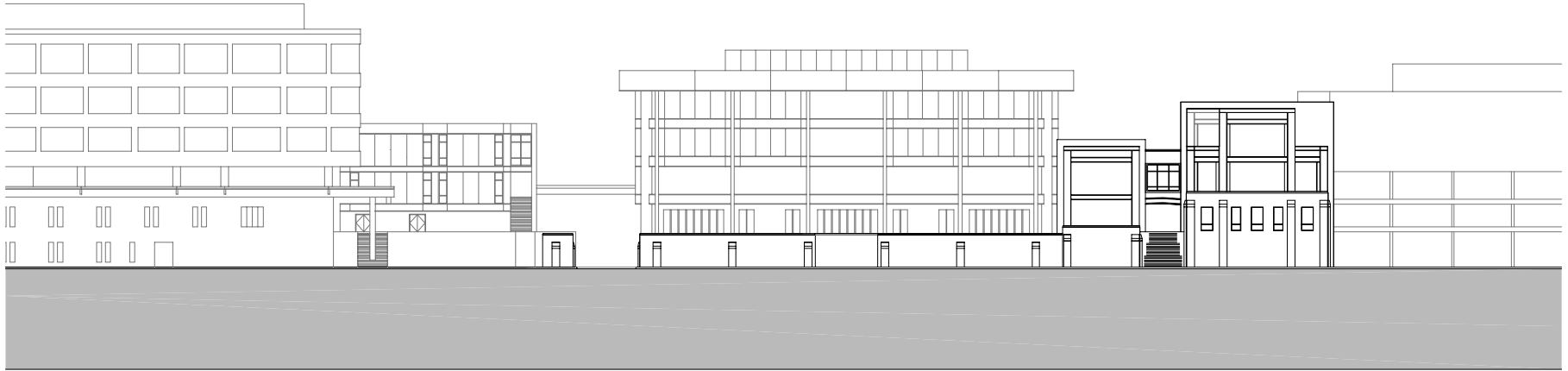


**Building Elevation/ Section - Facing West:** Cut along the center-line of the Cowgill Hall service road retaining wall, this graphic shows the articulation of the retaining wall, which marks the eastern edge of the newly formed plaza. (Illustration by author)



**Architecture Annex Second Floor Plan:** The second floor of the Architecture Annex connects the two volumes with two bridge elements, which form the entry portals for the path below. The main section of the building at this level is dedicated to studio space, providing over 80 new desk locations. The northern section of the building is home to a medium sized classroom and an unprogrammed “flex” space, suitable for a computer lab, media center, etc. The smaller segment of the Annex provides seven new double occupancy offices and two small classroom spaces capable of being reconfigured to meet any need. The two areas of the floor which form the bridge between the two buildings are used as student lounge space and as private study/meeting rooms for small student work sessions. As will all other floors, the main circulation path runs parallel to the axis path, recognizing the importance of this path as a conduit into campus. (Illustration by author)

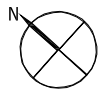
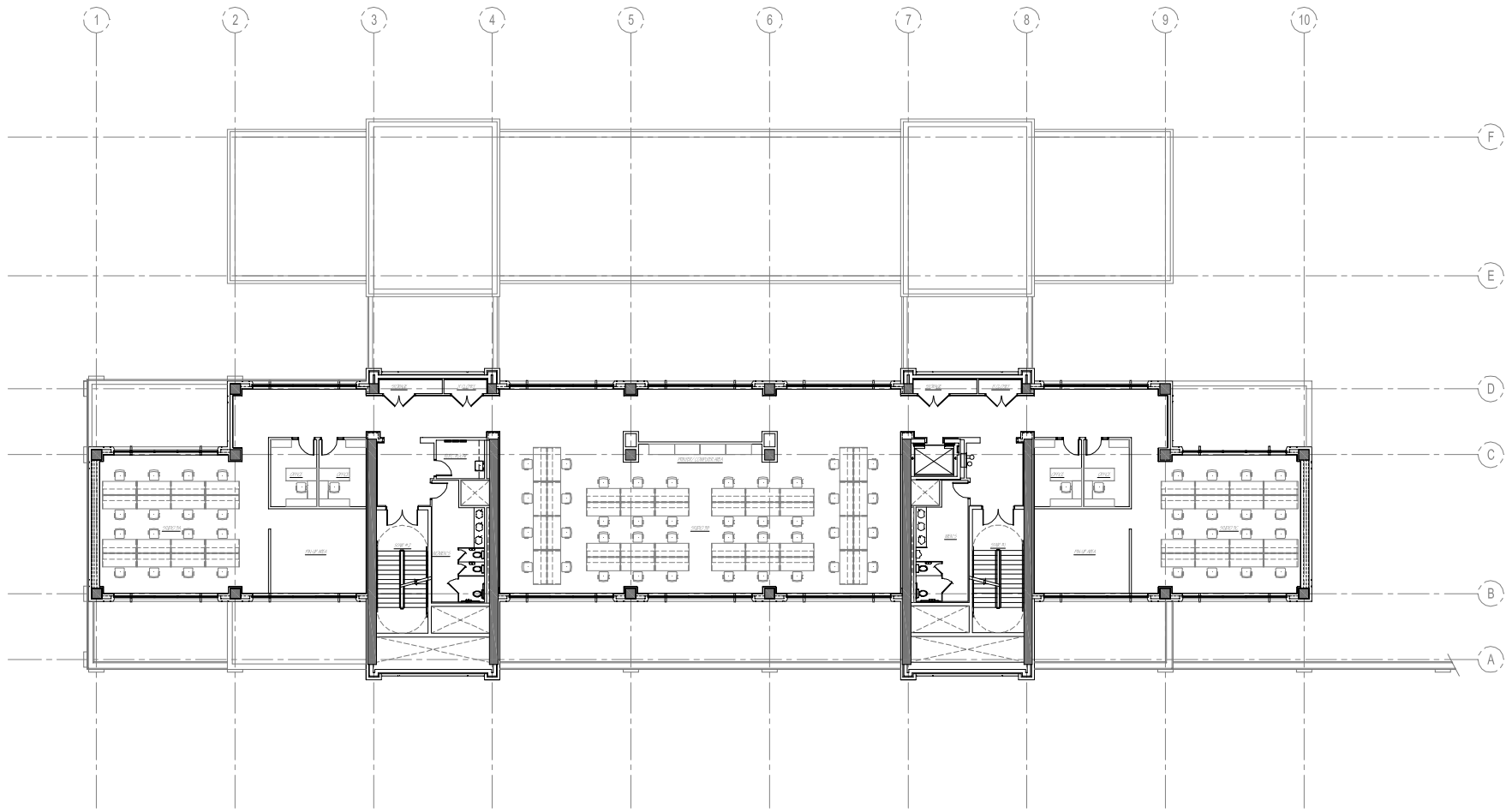




Site Elevation - Facing South: In context with the other buildings that form the edge along Perry Street, the retaining wall of the Architecture Annex provides Cowgill Hall with a plinth block, while converting the hill into functional space. The Annex fills the gap, visually between Cowgill and Derrign Halls, but in doing so heightens the entry condition at the relative center of the building. (Illustration by author)



Site Section Elevation - Facing South: Showing the relative position of each floor of the Architecture Annex with respect to the grade changes, this graphic also indicates that the structure of the building is a concrete column and slab configuration. With a floor to floor height of 15', each floor slab is 16" thick and provides a 42" plenum space above the ceilings, which are set at 10'-0" (Illustration by author)



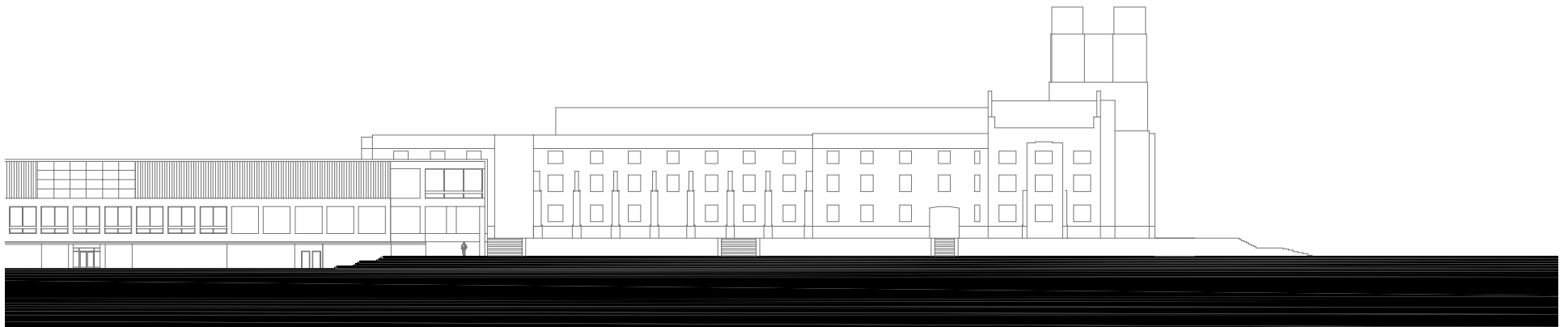
**Architecture Annex Third Floor Plan:** With the auxiliary section of the building limited to only two floors, the main building rises one more level above the axis path and the portal bridges. Providing over 14,000 SF, including an additional 72 desks over three studio areas, four single occupancy offices and two pin-up spaces, this floor brings the total number of studio desks to over 150. Likewise, exclusive of the Dean's office, the offices bring the number of faculty desks up to eighteen. Typical to the other floors, this level provides fully compliant ADA restrooms, and meets the current IPC and IBC building codes. (Illustration by author)



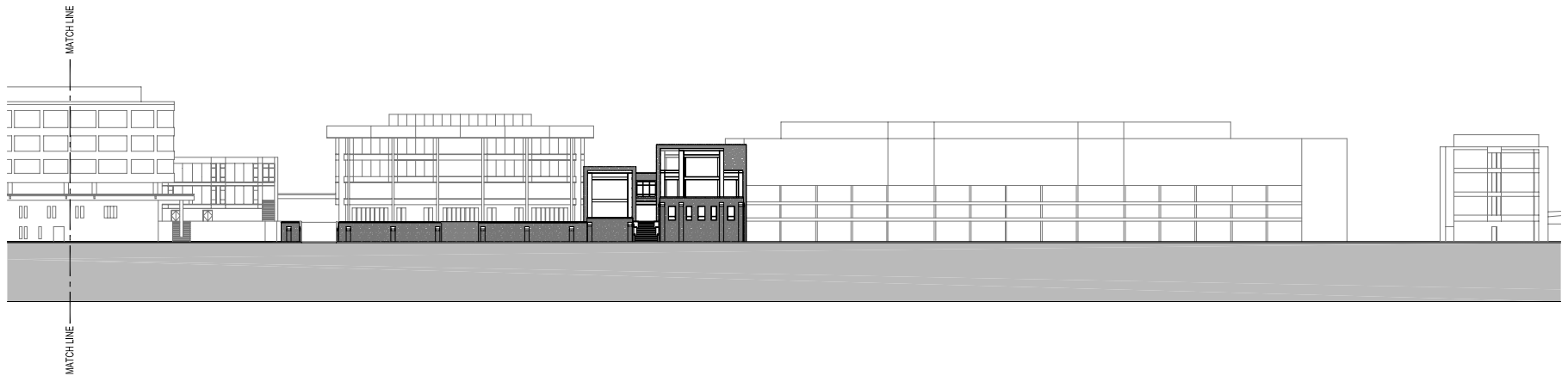
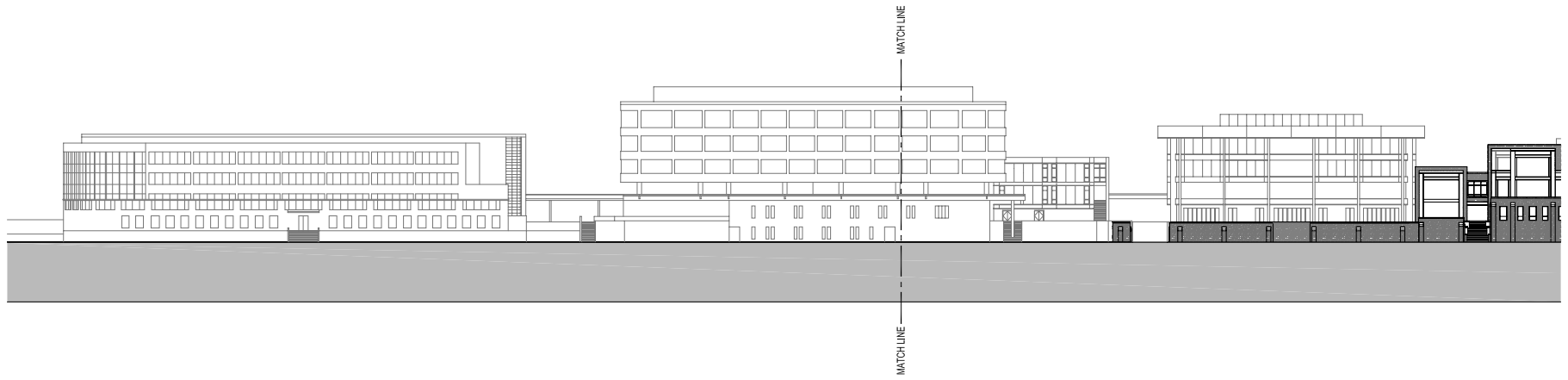


Site Elevation - Facing West: Cutting through Burchard Plaza, and the centerline of the axis path, this section clearly shows the elevation changes that are addressed on campus at this site. Looking towards the main building of the Architecture Annex this drawing also shows the location of the portal bridging and the articulation of the facade that overlooks the axis path. (Illustration by author)





Site Elevation - Facing East: Showing the grade changes between Perry Street, the ground floor of Burruss Hall and the Drill Field, this graphic also shows the development of the Annex as an edge condition along the axis and in context with Derring Hall. (Illustration by author)



**Site Elevation - Facing South:** In context with the other buildings that form the edge along Perry Street, the retaining wall of the Architecture Annex provides Cowgill Hall with a plinth block, while converting the hill into functional space. The Annex fills the gap, visually between Cowgill and Derring Halls, but in doing so heightens the entry condition at the relative center of the building. (Illustration by author)

## Addendum: Addressing Bishop-Favrao Hall

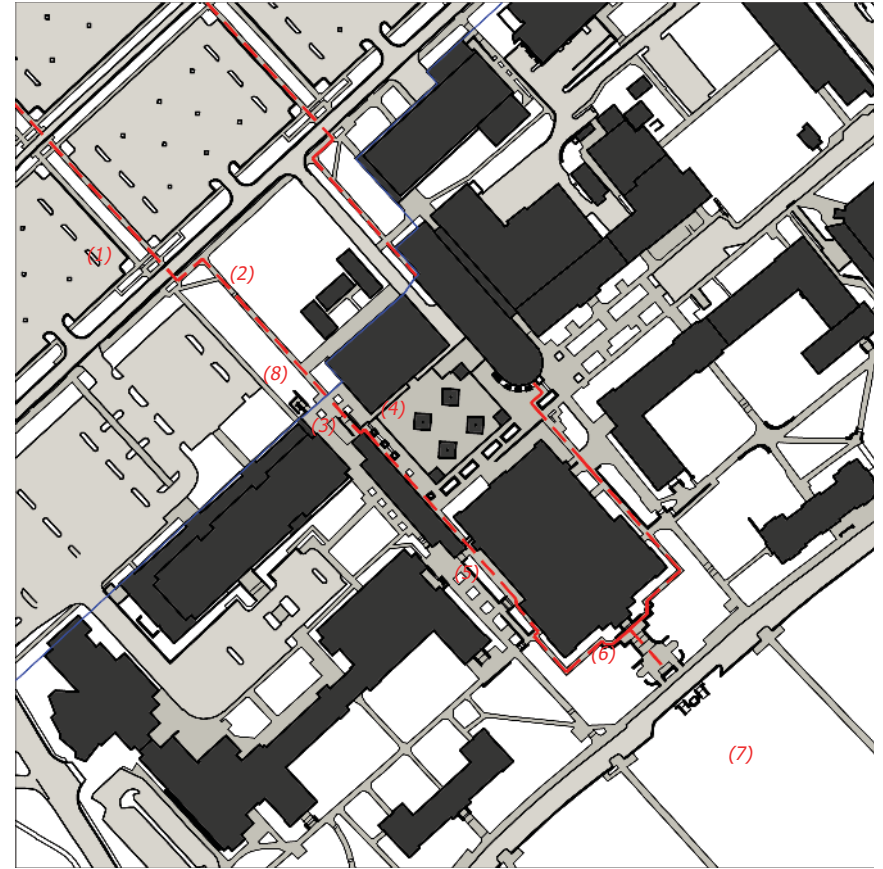


This thesis investigation began in the Spring Semester of 2000, upon learning of the Virginia Tech Building Construction Department's fund raising efforts to build a new home. The Department planned to develop a new structure to accommodate their growing office and classroom needs, which could not be met in their existing space in Burruss Hall. The new building would be a four-story design directly in line with the GBJ Student Center and would sit in the gap between Derring and Cowgill Halls. In the first, nascent concept sketches of this proposed building it became apparent to me that one of the most fundamental spatial elements on campus was at risk of being destroyed. Therefore, using the fund-raising and conceptual design packet as a basis I explored the continuing evolution and expansion of the Virginia Tech campus, and investigated the condition created by the intersection of the Drill Field's minor axis and the built-up campus edge along Perry Street. In addition to this investigation the thesis project would also explore the notion of celebrating this intersection with the development of a new, pedestrian portal into campus.

In the spring of 2001, the project was put on hold and remained the focus of intermittent attention over the next eight years. During this time period, the Building Construction Department continued fundraising and design development, and ultimately broke ground on their new structure in 2005. In the fall of 2007, the Department of Building Construction (BC) moved

into Bishop-Favrao Hall a 31,700 SF structure situated on the same site proposed for the Architecture Annex building developed in this thesis. Today in early 2009, with my thesis investigation and the proposed design complete it is necessary to address what was actually built by the university on this site. In many ways, there is an interesting juxtaposition between the questions asked and addressed in the course of this thesis and the actual finished product built on the site. However, what is perhaps most ironic is that Bishop-Favrao Hall's design is the anti-thesis to this investigation, failing to clearly address three of the major issues being asked here.

The first question addressed in this thesis was that of the campus edge condition along Perry Street. The strongest edge condition found at Virginia Tech, the buildings along Perry Street not only define the perimeter of the campus built environment, but also presents a prominent face for the university to the outside world. However, as discussed earlier, the building edge has a very serious flaw in the deficiency of Cowgill Hall, at the point where the minor axis intersects the street. Cowgill Hall, a building lacking the mass of its neighbors and the undeveloped hill behind it in effect breach the edge line. To rectify this issue, the Architecture Annex design sought to close this breach by completing the built edge along Perry Street and finishing the "wall" back to Derring Hall, while also providing Cowgill Hall with a virtual and much needed plinth block.



Prior to 2007, the GBJ path existed as the only direct connection between the Commuter Lot and the Drill Field. Stepping off at the crosswalk across Perry Street (1) the path moved up the hill behind Cowgill Hall via a sidewalk and a set of stairs (2). Reaching the ground level of Cowgill Hall the path led to another set of stairs (3) leading to the edge of GBJ, there the path moved along the edge of Burchard Plaza (4) before picking up the edge of Burruss Hall (5). Moving along the edge, the path then re-directed to the minor axis in front of Burruss (6) and then onto the Drill Field (7). Part of the Derring Hall retaining wall, a secondary stair (8) provided access to the plaza adjacent to the lower level of Cowgill. This diagram shows the campus circa 2005. (Illustration by author)



Completed in 2007, Bishop-Favrao Hall is the home of the Building Construction Department. Located on Perry Street adjacent to the Derring Staff Lot, the building suffers from site selection issues similar to those experienced with Cowgill Hall. (Photo by author)



Taken in 2003 from roughly the same vantage point, the hill behind Cowgill Hall sweeps down to Perry Street and the Derring Staff Lot. The path along the minor axis is marked by the visible tree line leading up to GBJ. (Photo by author)

Bishop-Favrao Hall, however, fails to sufficiently address this edge condition clearly. The new building and the Architecture Annex occupy roughly the same site, at the far northwest corner of the hill, along the edge of the Derring Hall staff lot and on axis with GBJ. Yet, while the Architecture Annex seeks to complete the wall along Perry Street and then back to Derring Hall, Bishop-Favrao Hall merely occupies the corner. Pushing back approximately 100 feet from Perry Street, the building abruptly terminates, leaving a gap of about 150 feet back to the retaining wall of Derring Hall. This design decision also leaves the remainder of the existing hill in-place, utilizing the existing stairs at the corner of Derring as the only public means of accessing the small plaza in front of the GBJ steps.

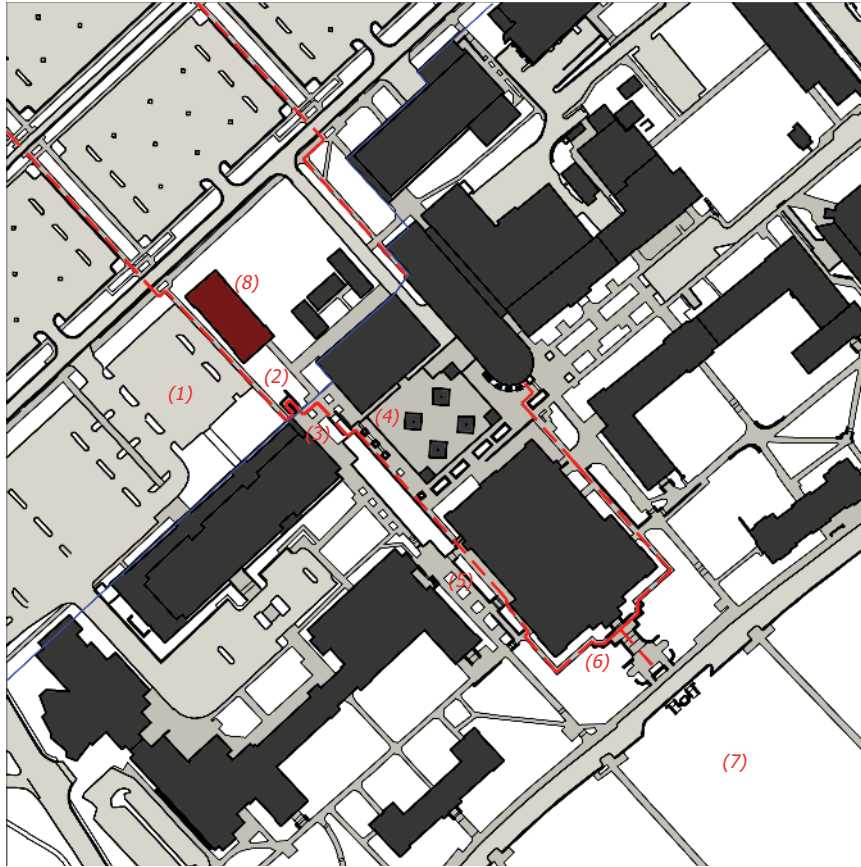
This decision is problematic because while the site selection does provide easy access off of Perry Street to the building loading dock, the new building, like Cowgill Hall is not locked into the site. Despite the fact that the building sits on a heavy limestone plinth block, there is nevertheless nothing in the surrounding site context that informs the decision to locate the building at that specific point. This is most evident when viewed from the Derring Hall staff lot. When viewed head on from the commuter parking lot across Perry Street, the site location is a bit more defined as it visually fills the gap between Cowgill and Derring Halls, and on axis with GBJ. However, the building fails to complete the building edge in this area, and does nothing more than turn the single large

fracture in the campus edge into two smaller gaps in the building edge.

While Bishop-Favrao Hall's failure to complete the campus wall in this area is disappointing, its treatment of the pedestrian path along the Drill Field's minor axis is a far greater disappointment. The second of four primary questions asked in this thesis, the design of the Architecture Annex paid particular attention to the only direct pedestrian path to the Drill Field. On the other hand, the new building fails to acknowledge the importance of this visual and spatial axis, and in fact, completely closes off the direct, visual path from Price's Fork Road to the Drill Field. This has the effect of diminishing the spatial experience and rendering the space irrelevant to the campus plan of Virginia Tech.

Placed directly on axis with GBJ and the pedestrian path, the new building had an opportunity to amplify the importance and relevance of this portal into the heart of campus from the commuter parking lot. Foregoing the opportunity to rethink the path there was also the potential to heighten the sense of arrival into campus and the beginning of a journey deeper into the heart of Virginia Tech. Instead, the design of Bishop-Favrao Hall chose to ignore these opportunities by closing off the line of sight along the path to GBJ. This is a direct contrast to the design of the Architecture Annex, which not only celebrates this important path along the minor axis, but also enhances the experience of entering into the academic space.





After the completion of Bishop-Favrao Hall (8) the only direct path to the Drill Field was closed off. The path now moves along the Derring Staff Lot (1) to the open stair in the Derring Hall retaining wall (2). Reaching the ground level of Cowgill Hall the path led to another set of stairs (3) leading to the edge of GBJ. There the path moved along the edge of Burchard Plaza (4) before picking up the edge of Burruss Hall (5). Moving along the edge, the path then re-directed to the minor axis in front of Burruss (6) and then onto the Drill Field (7). This diagram shows the campus in its present condition. (Illustration by author)



Taken in 2008, this view from the Commuter Lot shows how the visual connection to GBJ and Burruss Hall have been blocked by Bishop-Favrao Hall. (Photo by author)



Taken in 2003, prior to the construction of the BC Building, the path to the Drill Field is marked by a sidewalk leading up to the loggia of GBJ and on to Burruss Hall. The photo above is taken from the same spot as the 2008 photograph. The photo to the right shows the first set of steps leading up the hill where Bishop-Favrao Hall now sits. (Photo by author)



With Bishop-Favrao Hall completed, the only connection to the plaza between Derring and Cowgill, or to the steps leading up to GBJ, is a set of concrete stairs tucked into the corner of the retaining wall at Derring Hall. (Photo by author)



Using a hybrid of hokie-stone and precast concrete panels, the BC building negotiates the tricky contextual issues of the Perry Street edge. Addressing the concrete structures surrounding it, Bishop-Favrao Hall with the use of precast concrete panels the building also uses post-modern gothic elements and a hokie-stone plinth block to acknowledge the heritage of Virginia Tech (Photo by author)

The third question addressed in this thesis was that of the celebrated entrance at the intersection of a strong axial condition and a stronger edge condition. The Architecture Annex design acknowledges the minor axis' termination at Perry Street by providing a portal into campus along a visually enhanced pedestrian pathway. Rather than marking the intersection with a simple marker, the building itself becomes the portal along its entire length, while also maintaining a direct, utilitarian path from the commuter lot to the Drill Field.

Because of its inattention to both the edge and path conditions on site the Bishop-Favrao design completely closes off this point of entry. As such, access to the core elements of campus in the Cowgill Hall area can only be achieved by walking along the Derring Hall parking lot edge to a pre-existing concrete stair set into the retaining wall, which discharges one on the Cowgill Hall ground level facing, the building. At this point the remnants of the path to the Drill Field can only be picked up by turning 90 degrees to the right to the GBJ staircase. The Derring Hall stairs were never meant to serve as a primary portal into campus, and while the original concrete sidewalk and stair that ran on axis with GBJ were not ideal, they did have the benefit of a visual connection with the more defined elements of the latter sections of the path.

While budgetary and environmental concerns must be considered in any building project, the design of Bishop-

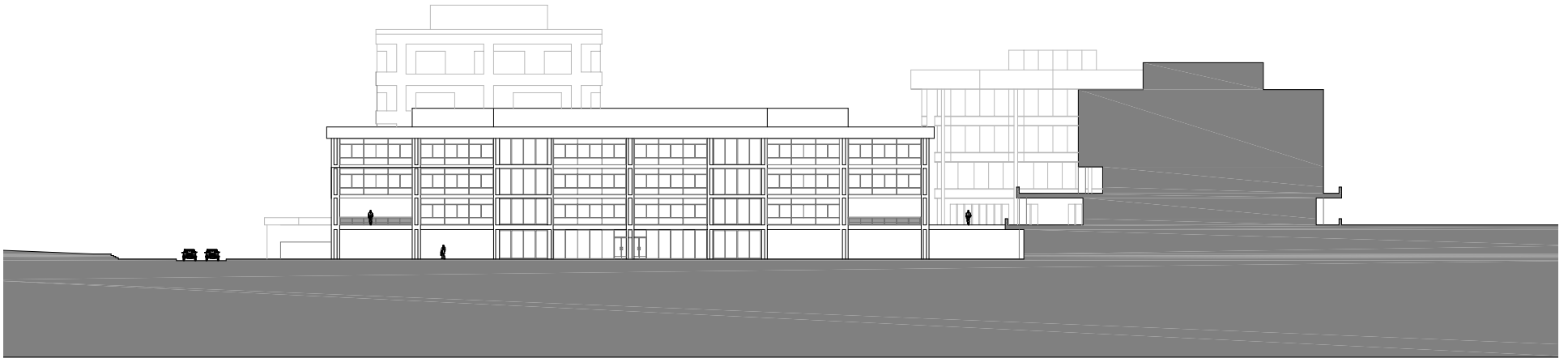
Favrao Hall should have taken advantage of the spatial opportunities of the building site. However, while the building fails miserably in addressing the edge, axial and entry conditions present on site, the building does address the fourth question posed by this thesis, in its use of the campus vernacular architecture.

Bishop-Favrao Hall, much like the Architecture Annex, finds itself at the forefront of the struggle between the modernist, minimalist concrete architecture of the Perry Street edge and the architectural heritage of Hokie-stone used elsewhere on campus. The new BC building negotiates this line successfully and does so by utilizing the current Virginia Tech campus building design guidelines. Because the building is on the very edge of campus the requirements to use the collegiate gothic style and Hokie-stone as the primary building material are diminished. Taking cues from Hahn, Whittemore and Durham Halls, the BC building's first two stories are of hokie-stone forming a solid, plinth block for the rest of the design. Above this line the building reverts back to the use of pre-cast paneling and plate glass, as seen in Cowgill, Derring and Whittemore Halls. However Bishop-Favrao Hall sticks to a color palette for its concrete elements that is more inline with the sandstone and non-limestone elements used found on the Drill Field.





A version of the Architecture Annex at a point where the design focused on the architectural language of the buildings which rim the Drill Field. Clad completely in hokie-stone with arched windows rimmed in sandstone/ concrete, this design failed to address the modernist context of the building site.(Illustration by author)



A version of the Architecture Annex at a point where the design focused on the modernist and minimalist architectural language of the surrounding buildings. Forgoing any of the traditional architectural elements of the Drill Field, this design fails to re-introduce the primary architectural language of campus along the Perry Street Edge.(Illustration by author)



A view through the gap between Cowgill Hall and Bishop-Favrao Hall to GBJ in the background. This photo shows the use of concrete in the new building to connect with the context of its neighbors.(Photo by author)



Looking southwest from the ground floor plaza of Cowgill, the new BC building suffers from a case of the "floating building syndrome" much like its neighbor, Cowgill Hall. (Photo by author)

In addition to the use of pre-cast panels, and in keeping with the architectural heritage of the Drill Field, the building utilizes a few post-modern collegiate gothic elements. Mostly seen in the use of vertical pilasters and fins to accentuate the building's height, and by the use of ideograms and icons represents the functions contained within the building. However, stylistically the "construction" icons are too large, and too busy for the scale of the building. The simple, repetitive iconography used at Torgersen Hall would have been an appropriate and more elegant way of representing the function of the building.

As much as the Bishop-Favrao Building serves as the direct anti-thesis to this thesis, the skillful use of architecture cues from the neighboring buildings, combined with the collegiate gothic motifs used elsewhere on campus, did compel the design of the Architecture Annex to change slightly. From the very beginning of this thesis investigation, the Architecture Annex struggled to find its architectural voice. Wanting very much to fit in with the surrounding context of Derring, Cowgill and Whittemore Halls, while still very much seeking to assert the legacy of the Virginia Tech building tradition, the design and materiality of the building went through many iterations. Prior to this last push to completion, and prior to 2007, the Architecture Annex remained locked in the modernist, minimalist language of the Perry Street Edge. Using hokie-stone sparingly and in some cases reluctantly, the design failed to recognize the importance of

bringing these elements to the forefront at this newly formed "portal" into campus. Thus, at some point the materiality of the building switched totally to the limestone heavy vernacular of the Drill Field Rim. However, in making this switch the same problems, yet in the opposite direction, held true.

Ultimately, after the decision was made to address the Bishop-Favrao building as an addendum to the thesis book the final design elements of the Architecture Annex, as presented here emerged. Only in analyzing and assessing the BC building design, and by becoming reacquainted with the architectural context of Cowgill, Durham, Whittemore and Derring Halls did the use of both the traditional Hokie-stone and the modern pre-cast concrete vernaculars develop. In conclusion, the design of Bishop-Favrao Hall provided the last critical evidence in answering the questions posed by this thesis. The design of the Architecture Annex sought to strengthen the existing building edge, while providing a celebrated, formalized portal into campus from Perry Street. The design decisions of the BC building, in the context of design decisions taken on the Architecture Annex, reinforce those arguments. However, it was not until the interplay between the gothic and modernist architectural vernacular, as used on Bishop-Favrao Hall, was explored, was the Architecture Annex truly successful in answering all four questions posed by this thesis.

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In Remembrance

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