



Design Guideline

ARCHITECTURAL VOCABULARY

1st Edition November 2019

Facilities Management makes UND Exceptional



Table of Contents

1. INTRODUCTION

- 1.1 Purpose
- 1.2 Historic Architectural Expression and Style
- 1.3 University Master Plan Environmental Principals
 - UND is a Flagship University
 - UND is a Historic and Dynamic Campus
 - UND is a Collection of Memorable Places
 - UND is a Leader in Environmental Stewardship
 - UND is a Pedestrian Campus
- 1.4 Sustainability
- 1.5 Existing Architectural Vocabulary Map
 - Overall UND's Campus

2. CAMPUS NEIGHBORHOODS

- 2.1 Traditional Neighborhood
 - Traditional
 - Transitional Contextual
 - New Paradigm
- 2.2 North Neighborhood
 - UND North Campus
 - Transitional Contextual
 - New Paradigm
- 2.3 West Neighborhood
 - New Paradigm
 - Transitional Contextual
- 2.4 UND Housing
- 2.5 School of Aerospace Sciences – Grand Forks International Airport

3. DESIGN COMPONENTS, COMPOSITION & SCALE

- 3.1 Height and Building Footprint
- 3.2 Open Space & Orientation of Buildings
- 3.3 Materiality & Color
 - Brick
 - Stone
 - Architectural Metals
 - Glass
 - Roof Materials
 - Other Materials
- 3.4 Composition, Scale & Variety
 - Vertical vs Horizontal Composition
 - Symmetry & Asymmetry
 - Unity without Uniformity

4. ARCHITECTURAL PATTERNS, DESIGN ELEMENTS & DETAILS

- 4.1 Architectural Patterns, Design Elements & Details
 - Towers
 - Bays
 - Windows & Fenestration
 - Archway / Passages & Entrances
 - Parapets, Finials & Medallions
- 4.2 Outdoor Lighting
 - Task Lighting
 - Ambient Lighting
 - Accent Lighting
 - Customized LED's

1.0 INTRODUCTION

1.1 PURPOSE

The Architectural Vocabulary Guidelines are intended to aid architects, campus designers and stewards of the environment at the University of North Dakota in creating a cohesive campus. Learning from the past architectural work allows progress and innovation to collaborate with the future needs of the University.

These guidelines, along with the UND campus master plan, establish a basis for advancing a successful campus environment. The guidelines are not intended to create uniformity, UND is not uniform, but are intended to develop a sense of visual unity and consistency in the environment. A setting that will continue to be memorable as the University of North Dakota.

1.2 OVERVIEW OF “HISTORIC ARCHITECTURAL EXPRESSION AND STYLE”

In discussion of new architecture within UND’s colleges and the University campus, the question of appropriate “architectural expression or style” often is an initial topic. At UND, we have many types of architectural expressions, a careful review of the subject is necessary by users of these guidelines, particularly, regarding location on campus. To aid in this basic background, illustrations of existing “architectural expression and style” are included in this document. However, consultants should develop this review further and in relevance to specific new buildings.

Generally, the University of North Dakota is known for its Collegiate Gothic core, the oldest academic part of campus, the origins of which follow:

The term Collegiate Gothic derives from Gothic Revival, an architectural style inspired by medieval Gothic architecture. Beginning in the mid-18th century, Gothic Revival became a leading building style during the 19th century and often employed because of its moral overtones for academic, political, and religious buildings.



“Gothic style is handsome, tasteful, and well-suited as the “lamp of learning.” – Quote from Theodore Wells partner of Wells & Denbrook.

There is an interesting, coincidental association between Princeton University’s extensive use of Collegiate Gothic architecture, and American President Woodrow Wilson, who personally regarded Gothic Revival architecture as well-suited to the expression of learning. In December 1902, six months after being elected as President of Princeton, Woodrow Wilson asserted in the *Princeton Alumni Weekly* that “Gothic architecture has added a thousand years

to the history of the university, and has pointed every man's imagination to the earliest traditions of learning”.

At UND, a succession of university administrators during the main campus growth periods and throughout history consistently supported the application of Collegiate Gothic stylistic motifs. Based on the precedent set at UND by Frederick Keith's 1918 design of the Gillette Hall (Chemistry building at that time) and Joseph Bell DeRemer's subsequent development of Merrifield Hall (1929), the Collegiate Gothic style eventually became the unifying architectural expression throughout the early UND campus. O'Kelly Hall (two phases, beginning in 1947), Harrington Hall (1951); Education Building (built in 1954); the Chester Fritz Library (1961) and Leonard Hall (built in 1963); are all solid examples of Collegiate Gothic architecture.

Street names around UND, (Princeton, Oxford, Harvard, Cambridge, Hamline, Cornell, Columbia) as well as the unified architecture of Collegiate Gothic in its campus buildings, affirm those same values in education.

1.3 UNIVERSITY MASTER PLAN ENVIRONMENT PRINCIPALS

The following includes a set of guiding principles that should be referred to by architects and other users of these guidelines on new capital projects.

UND is a Flagship University

Ensure the quality of all buildings, landscapes, and infrastructure as an expression of the University and as a reflection of the values of the institution

- By supporting strong master plan oversight with a process for continuous review and

- By following design and construction guidelines that support a high-quality built environment.



UND is a Historic and Dynamic Campus

Strengthen the identity of the UND campus as a continuously evolving environment with a unique historic beginning

- By identifying selected buildings and landscapes that should be preserved
- By ensuring that new development contributes to, rather than detracts from, the existing environment, and
- By respecting and responding to UND's historic architectural and landscape character while incorporating contemporary design architectural vocabulary elements where appropriate.



UND is a Collection of Memorable Places

Direct development toward the creation of human-scale open spaces with distinct character

- By ensuring that all buildings and landscapes be viewed as part of their context, not in isolation
- By ensuring that landscape contributes to the campus aesthetic experience
- By seizing opportunities to improve the quality of the campus
- By relating building entries to streets, open spaces, plazas, and other buildings, and
- By incorporating wayfinding signage related to historic locations /events



Future Historic Quad

UND is a Leader in Environmental Stewardship

Ensure that buildings, landscapes, and natural areas are created and sustained to create a campus community that conserves natural resources, restores environmental quality and protects biodiversity

- By being mindful of the interrelationship of human and natural systems
- By designing to meet or exceed accepted standards for sustainability
- By conserving energy, water and other natural resources

- By reducing greenhouse gas emissions and solid waste
- By developing and encouraging alternative transportation options
- By fostering a healthy ecosystem and diverse habitat through the use of native plants, and
- By recognizing the built and natural environment as a “living classroom” for the University and UND community.

UND is a Pedestrian Campus

Redefine the movement systems throughout the campus to be functional, safe and comprehensible, built on a visible logic that supports wayfinding and the cohesiveness of the overall campus

- By clarifying points of entry into the campus
- By reducing vehicular through-traffic on campus
- By creating universally accessible buildings and landscapes where possible
- By integrating pedestrian, bicycle, and transit circulation into the overall movement system, separating such systems where appropriate, and
- By exercising caution in the locations of parking areas to pedestrian conflict.



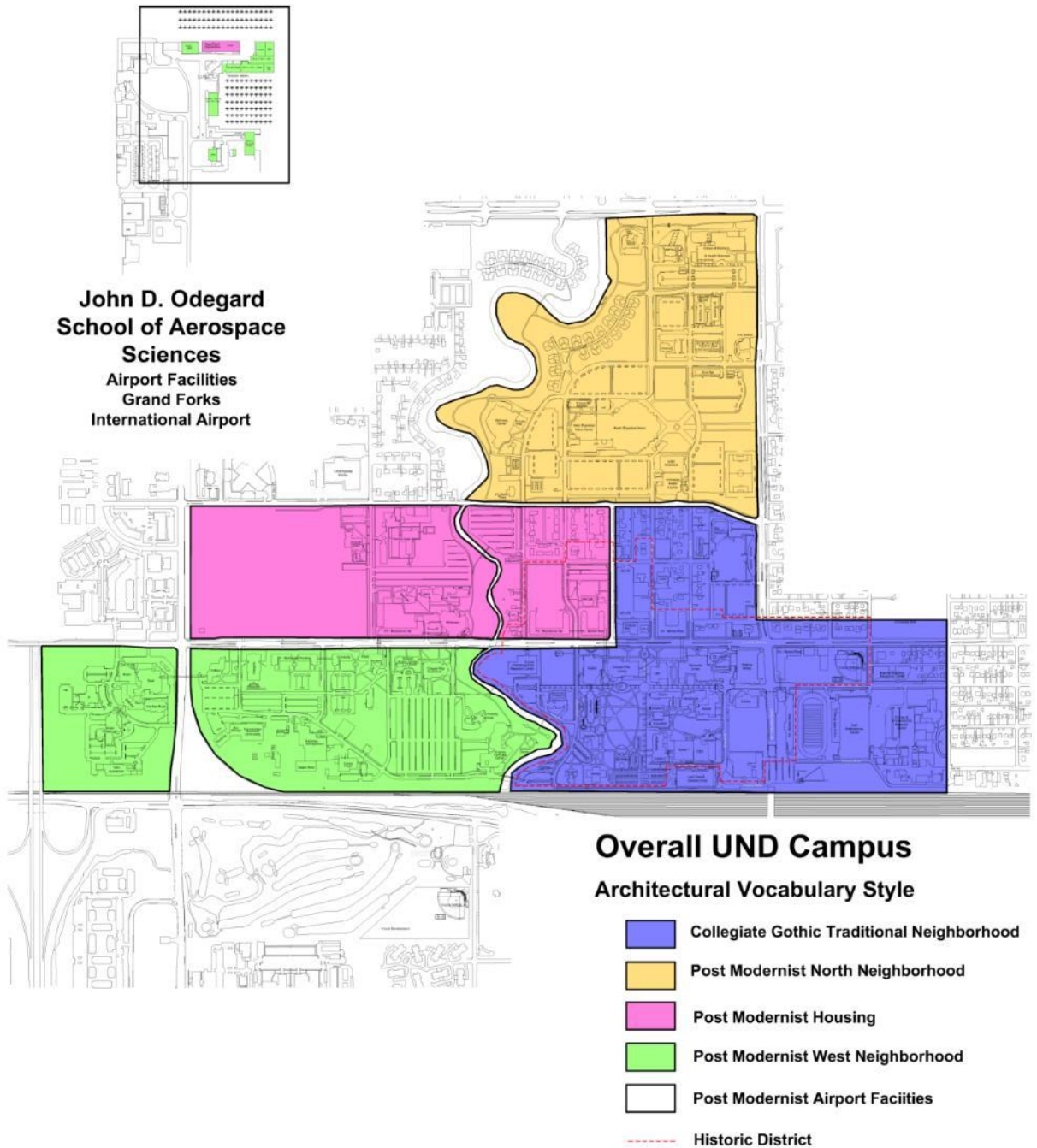
1.4 SUSTAINABILITY

The campus' recycling system reduces UND's overall waste stream by 20 percent. UND has conducted lighting retrofits and installed heat recovery systems and power management technology for peak and off-peak use adjustment. UND has eliminated the use of coal to produce campus steam completing a new

natural gas plant in 2021. Sustainability guidelines are not included here, however issues of sustainability should be fundamental to the construction work on campus. UND currently seeks the design level of Silver LEED Plus on all capital projects but that may change on a project to project basis. Please consult with the University once the project is initiated.



EXISTING ARCHITECTURAL VOCABULARY MAP



Overall UND's Campus

Founded in 1883, six years before the state itself was established, UND gave North Dakota its name when the former Dakota territories separated into two distinct states. Today, UND is a busy 550-acre campus, the state's largest. We have emerged as a leader in engineering, medicine, aviation, and unmanned aircraft systems.

UND has grown from a single building on the prairie to nearly 350. The core campus, east of the English Coulee, currently boasts 56 buildings and open spaces listed on the National Register of Historic Places, including the second largest concentration of Collegiate Gothic style architecture in the United States. UND's historic campus and its sorority and fraternity houses represent more than 100 years of architectural styles and educational development in the state of North Dakota. From the days of classical curricula to today's broad range of programs, including professional and graduate degrees; from one building of indeterminate style and problematic construction to 550 acres of educational property, including a National Register Historic District; from infancy to maturity; from classes in Greek to aviation; from raw prairie to structured landscape, the University of North Dakota has grown and prospered.

The Neighborhoods of architectural vocabulary styles shown on page 8 are created in response to the existing buildings and their respective styles. As the campus grew away from the core Collegiate Gothic Traditional Neighborhood, a suburban planning model was used that developed Yale, Strinden, Oxford, Harvard, Hamline streets where a more contemporary

and postmodernist architectural style has prevailed.

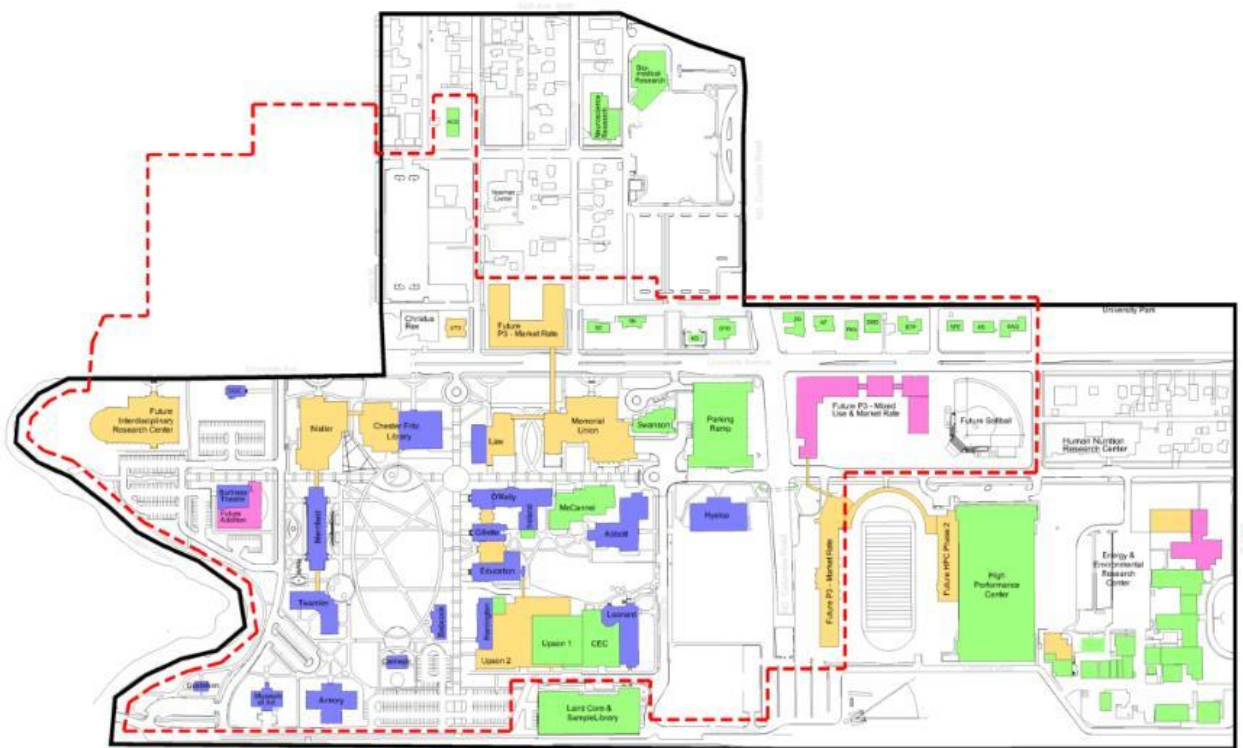
Therefore, the unification solution of the campus buildings amongst differing styles is to take an earnest look at the style that established roots, that being the architectural vocabulary components that make the Collegiate Gothic Style unique. Using those elements of design within the buildings of the other neighborhoods in a contemporary way that is also contextual will help to unify the currently varied and distinct styles. These design elements are discussed later within this section.



Finial @ Merrifield

2.0 CAMPUS NEIGHBORHOODS

2.1 UND Traditional Neighborhood



UND Traditional Neighborhood

Architectural Vocabulary Style



Traditional

The Collegiate Gothic Traditional Campus, the oldest part of UND, has many historic buildings. The prominent exterior landscaped space referred to as the Quad is lined with historic buildings including **Merrifield Hall**, **Twamley Hall**, **Babcock**, **Carnegie Library**, **O'Kelly Hall**, **School of Law**, **Gillette**, **Education** and **Harrington Hall**. A newly constructed Memorial Union (2021) and Nistler College of Business Public Administration (2022) are connected to the Quad by a newly constructed pedestrian promenade (2021-22).

The scale, proportion and general materiality of the historic Quad buildings remains the model for any future development.

Illustrations of the Traditional architecture follow:



O'Kelly Hall North Entry



Chester Fritz Library



Merrifield Hall Entry



Education Building

Transitional Contextual

Transitional architecture, responding to its context on campus, has been developed successfully by multiple architects. These building forms respond to their specific location and create a visual transition from the original traditional architecture. Gateways are created and larger building footprints are broken into smaller elements. These buildings may incorporate towers or bay windows in a contemporary way or they relate by the use of materials. The **Memorial Union, Nistler College of Business** and the **Education Building Renovation**, as well as the renovation of **O'Kelly Hall** are good examples of Transitional Contextual architecture on campus as the following examples illustrate:



School of Law Addition Transitional Contextual; Original Building Traditional



Memorial Union



Nistler College of Business Rendering



Stadium Village Rendering

New Paradigm

At particular locations, due to a special use or the architect selected, new types of architectural expressions have been introduced and could be introduced in the future at UND. These new expressions may be referred to as contemporary, modern, iconic or the result may be described as an object building. These buildings can suggest a new model or paradigm.

Examples of this at UND would be the recently designed (2021) expansion to the **Burtress Theatre**. The extensive use of glass relates by contrast as the historic architecture is highlighted by the transparency of the new expansion. Although not constructed and awaiting financing, the special use of Burtress employs that it represents the splendor of drama through its building form and choice of materials that will enhance its theatrical purpose.

Another example, important to include, is the designed renovation of **Merrifield Hall** (2022). Creating a new entry in the middle of Merrifield and on the historic quad side is bold, daring, and challenging. The extensive use of glass at the new entry allows Merrifield Hall to visually engage and collaborate with the historic quad. This new entry also provides accessibility to the building through a new plaza and entry walk.



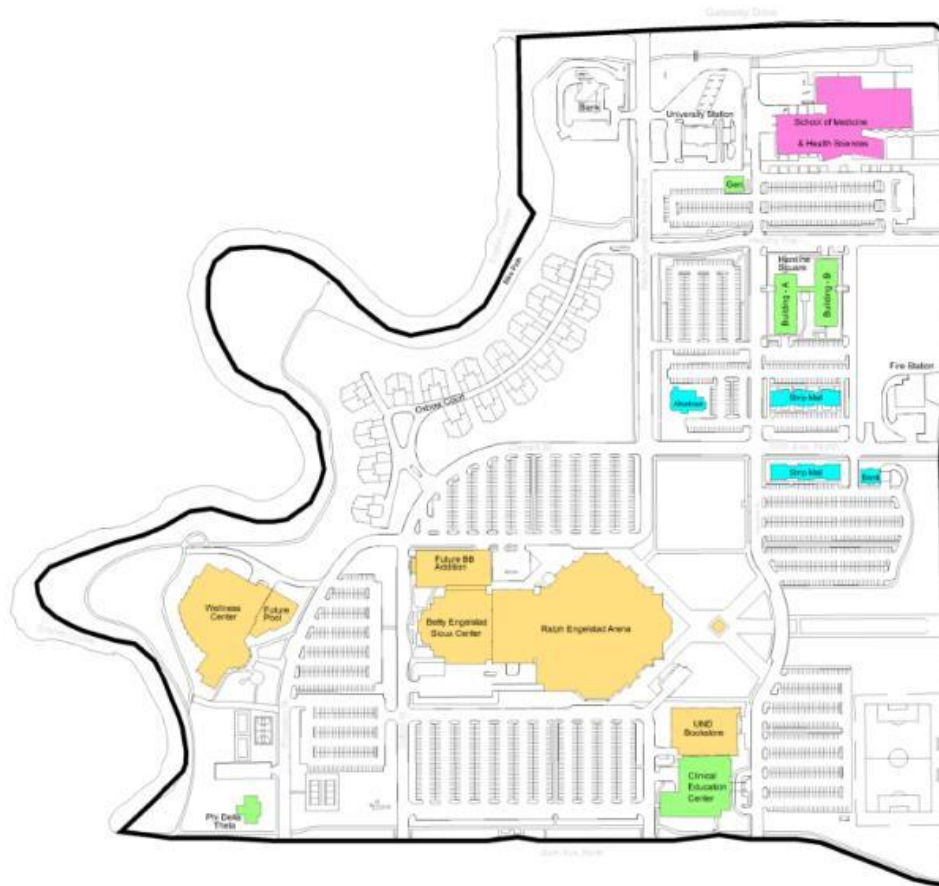
Merrifield Quad Entry Rendering



Burtress Exterior Rendering

Architectural ambition has been strong at UND and creativity is certainly encouraged. However, it is important to point out that a campus made of unique object buildings, each competing for visual attention or trying to create a new paradigm, would not create the campus unity and cohesiveness desirable for a memorable collegiate setting. Therefore, the new paradigm approach should be used sparingly as directed by the University.

2.2 UND North Neighborhood



UND North Neighborhood

Architectural Vocabulary Style

	Transitional Contextual
	New Paradigm
	Other Campus Buildings
	Commercial Land Lease

UND North Neighborhood

There have been substantially less new buildings on the North Campus compared to other campus locations. The **REA Arena** (2001), **Betty Engelstad Sioux Center** (2004), **Wellness Center** (2004) and the **School of Medicine and Health Services** (2015) compile the major buildings of this area of campus. All these buildings though need substantial parking in order for them to function properly. Wellness Center (450 parking stalls), REA/Betty (1,400 stalls) and the School of Medicine (300 stalls) creates a condition where a sizeable amount of acreage is used for vehicular circulation. Nevertheless, there is still the opportunity for prime building sites within this area of campus.

Transitional Contextual

Ralph Engelstad Arena is a massive building that contains 400,000 square feet. There are 48 full luxury suites, two mini-suites and two enormous club rooms featuring the longest freestanding bars in the state. Seating capacity for the Ralph is 11,634 for hockey, 12,119 seats for basketball and 13,154 seats for a concert.



East Main Entry to Ralph

The main east entry shown above incorporates the context of UND's traditional vocabulary style through the use of the brick material, a tower emphasizing the point of entry and through the use of precast concrete as "limestone" accents. The Ralph has a large footprint, over 25,000 sf

which by these guidelines triggers the effort to reduce the visual impact of the large floors by breaking the mass into parts with various architecture elements, such as towers, bays, setbacks and occasionally the use of entry canopies to help bring the scale of the building down where people interact with the building.



Betty Engelstad Sioux Center is an addition to the Ralph. Completed in 2004 its arena is used for UND's volleyball and basketball teams. It has a seating capacity of 3,300 seats.



Betty's west entry

The entry has masonry columns on each side with wall sconce lighting, a contemporary design element used as a means of being contextual with the more traditional campus.



Betty's pre-cast "limestone" accents

Wellness Center designed in 2004 and opened in 2006 has 106,000 square feet of multi-dimensional needs. The center offers personal training, rock climbing, cooking lessons and intramural sports, cardio equipment and free weights and many more venues of activity. The Ralph and Betty arenas are near to the Wellness Center and influenced the material selection in terms of masonry, fenestrations and pre-cast accents. Its circular entry culminating in a large skylight gives this building its own unique

appearance while still blending into adjacent buildings.



Wellness entry skylight



Masonry contextual compliance Wellness

New Paradigm

School of Medicine and Health Services is the only medical school in North Dakota. As of 2021 two out of every three family physicians in the state received their medical degree from UND. Of the 78 annual admissions, 60 are reserved for students who are residents of North Dakota. The building contains 4 levels and 375,000 square feet of undergraduate and graduate programs in Athletic Training Sports Medicine, Medical Laboratory Science, Occupational Therapy, Physical Therapy, Physician Assistant Studies and Public Health. The well-lit front entry, atrium, and illuminated exterior column were all

intended to attract visitors upon entering the building. By relocating all healthcare departments in one new building, the SMHS was able to define its own physical brand and determine how it wanted to promote its message and solutions. The new SMHS is decidedly post-modern and clean in comparison to the other Collegiate Gothic structures, giving it its own identity.



East side entry to School of Medicine

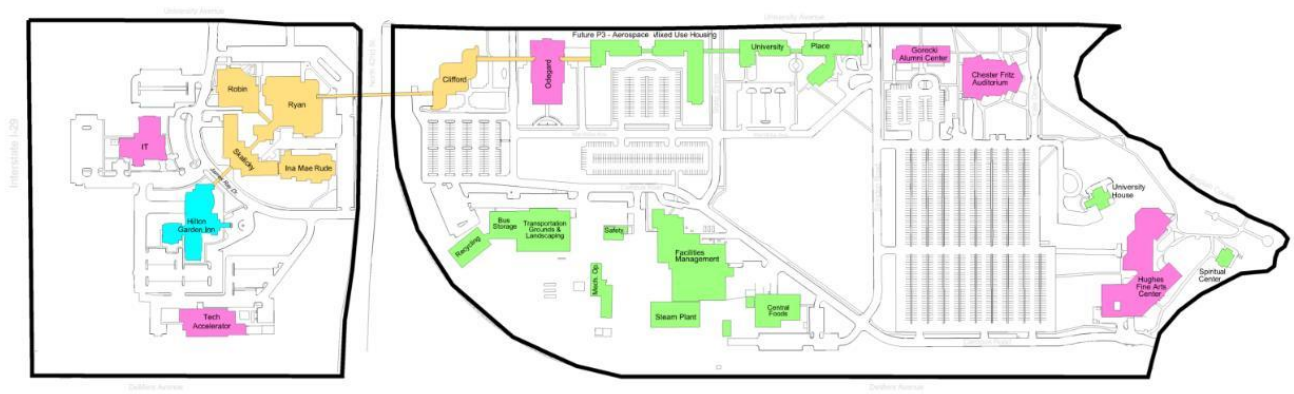


School of Medicine Auditorium



South Elevation & Main Entry School of Medicine

2.3 UND West Neighborhood



UND West Neighborhood

Architectural Vocabulary Style

	Transitional Contextual
	New Paradigm
	Other Campus Buildings
	Commercial Land Lease

New Paradigm

Chester Fritz Auditorium opened for its first event in 1972. The exterior of the building used a reddish masonry brick like other buildings across campus. CFA introduced an exterior precast wall assembly to the architectural vocabulary on campus. This product assisted in a faster construction time and also allowed the project to come within budget.



Pre-Cast Wall Panels @ The Fritz

The interior of The Fritz has a maximum capacity of 2,384 seats of which all have great sight lines to the stage. Attendees have an outstanding aural experience as the knowledge of the physics of sound was applied to the knowledge of building construction.



The Fritz interior

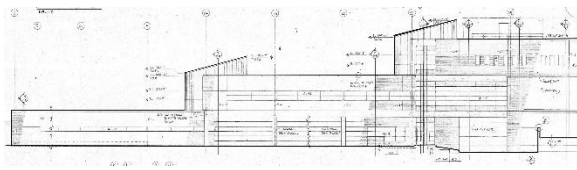
Shortly after The Fritz opened, **Hughes Fine Arts Center** was constructed in 1974. Using The Fritz as contextual imagery Hughes Fine Arts has a two toned/textured insulated pre-cast wall

panel that completely engulfs this building's exterior.



Hughes Exterior Panels

John D. Odegard was a pioneer of aviation and founder of UND's aerospace school. John lead the aerospace school into national prominence in aviation and unmanned aerial systems. When Odegard launched the aerospace department in 1968, there were a mere 12 students. Now the college enrolls nearly 2,800. Odegard logged over 10,000 hours of flight time in his life and was licensed for commercial flight and instrument operations. He was type-rated in Cessna Citations, Learjet, and Beechjet, as well as being a certificated flight instructor (CFI) and certified examiner for commercial, instrument, tailwheel, multiengine, and Citation type-ratings. Having broken the sound barrier in the Concorde (as a passenger) and having flown as a crop-duster to help pay for college, Odegard was no stranger to the varied envelopes of flight. He was quite familiar with the many aspects of aviation and his vision for a well-rounded school which trains pilots in all aspects of flight helped the aviation program at UND become what it is today. Odegard Hall named after John was designed to create a new vocabulary on campus reflecting aviation. Its interior contains an Altitude Chamber, Regional Weather Information Center and Atmospherium.



Elevation showing Building Mass



Plane Profile

The building mass above as illustrated through the construction document elevation shows how the mass of the building “abstractly” reflects that of an airplane profile. The second floor Dean’s Office “theoretically” is located in the cockpit. The design also incorporated curvilinear forms expressing aerodynamics.



Curved Building Mass

The Tech Accelerator opened in 2009 and is a two story, 50,000 square foot research facility with laboratories in Life Sciences and Advanced Technologies. It was not an original UND building when constructed but acquired by UND in 2013.



Tech Accelerator has a variety or mixture of exterior materials none of which are prevalent on other UND buildings.

Gorecki Alumni Center opened in 2012 and is the only LEED Platinum building in the State of North Dakota. Its new location is prominently viewed from University Avenue with beautiful views and access to the English Coulee. At approximately 38,000 square feet, the new building houses development, alumni services, and administration functions in addition to a 200-seat ballroom and conference facilities. The Center serves not only former students but is also a central point of communication for new and potential students visiting the campus. The exterior of building utilizes a reddish brick in context with other UND buildings. The creative and expansive use of glazing along with a contemporary designed framework of trellis and its support system allows every occupant daylight throughout the building.



South View of Gorecki



Gorecki glazing

The Information Technologies Building located on the far west side of UND's campus opened in 2013. The building is a partnership between NDUS and UND. It was originally designed to house work groups responsible for software development, system and database administration, integrated services, enterprise and user services, network and communications, ODIN library services, project management, security and access control, and Campus Solutions. Currently (2021) UND Facilities is exploring the concept of utilizing a portion of this building for the School of Aerospace's new Space Force Department. The building is approximately 40,000 gross square feet and can accommodate 125 employees as currently configured.



Main Entry IT Building

The contemporary post-modernist exterior design of the Information Technology Building has an exciting expression. The materials used however are not consistent with UND's campus

and relegates this building to the Paradigm category.



West Facade of Information Technology

Transitional Contextual

Using Odegard Hall as their contextual inspiration all of the School of Aerospace buildings on the west campus, and a few others Skalicky and Ina Mae Rude, are designed and constructed with exterior materials and curvilinear forms that are similar to Odegard.

Ryan Hall opened in 1988; total of 63,112 square feet that contains FAA Flight Simulators, Frasca Helicopter simulations both Bell 206 Jet Ranger and Schweitzer 300C, Level 6 Canadair Regional Jet Simulator, Air Traffic Control Radar Simulation Lab, Aerospace Test Center and AeroSpace Network Distant Learning Broadcast Center.



Ryan Hall Interior

Clifford Hall constructed in 1990 contains the 360 Air Traffic Control Tower Simulator, Earth System Science Program and Center for UAS Training and Education Lab.



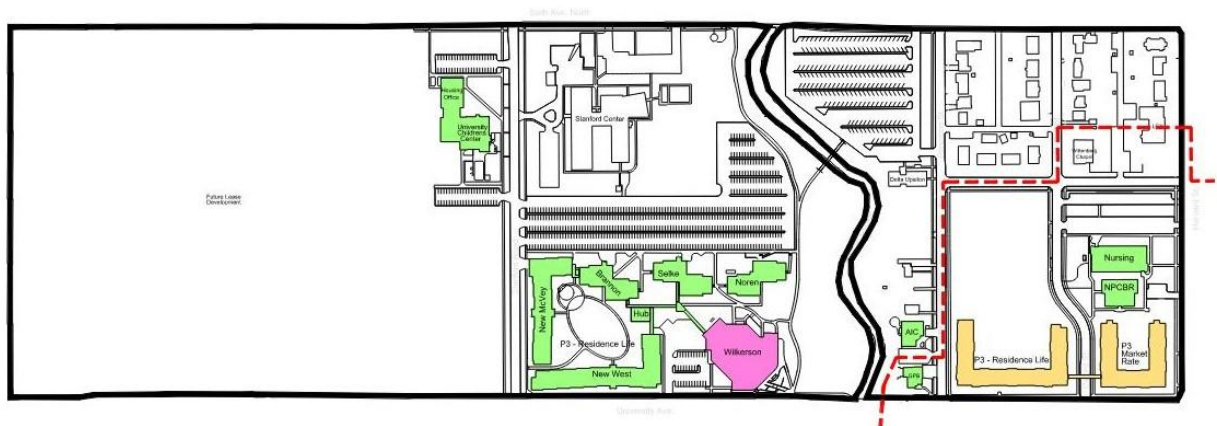
Clifford Hall

Robin Hall constructed in 2016 the 60,000 square foot facility contains the Unmanned Aircraft System Education and Research Department. Its 127-foot tower is a modern contemporary representation of other towers within the Traditional Campus. This tower signifies that “**The sky is the limit**” for aviation at UND.








UND Green highlights the tower at night

2.4 UND Housing



UND Housing Campus

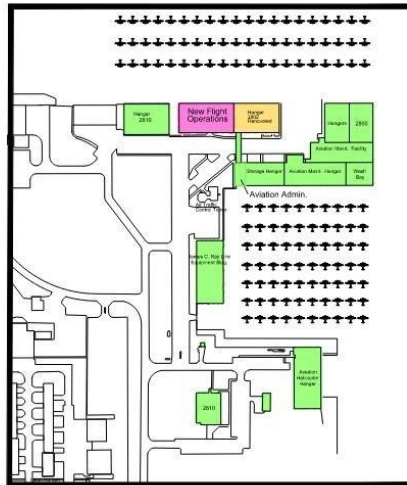
Architectural Vocabulary Style

-  Traditional
-  Transitional Contextual
-  New Paradigm
-  Other Campus Buildings
-  Historic District

The housing panorama on the University of North Dakota is currently going through a major change starting in the year 2021. Phase I, at the Wilkerson Commons Complex, includes the removal of McVey and West Halls in favor of a new resident halls with the same names and...renovating Brannon...and upgrading Selke and Noren to target students seeking more affordable housing options. This approach puts a greater focus on Wilkerson Hall, the main dining facility, remodeled in 2019 for this purpose. These two phased projects when complete will reduce the UND housing footprint by one-million square feet and eliminates \$211 million dollars in deferred maintenance. Ultimately the financial Housing Performa achieved through this strategy will make UND Housing sustainable into the future.

Please refer to UND Housing Design Guidelines linked within the Facilities Management website.

2.5 School of Aerospace Sciences – Grand Forks International Airport



Airport Facilities Campus

Architectural Vocabulary Style

	Transitional Contextual
	New Paradigm
	Other Campus Buildings

The new Flight Operations Building is designed to be a new paradigm for the Airport Aviation Facilities. One of the goals of this project is to change the environment to one that is more reflective of the stature that UND Aerospace has as the national leader in Aerospace Sciences. It is desired that this new Flight Ops Building will set the tone for future projects at the Airport. This project is currently in the Design Development Phase (2021), with a major fund-raising event to happen during Homecoming and construction to start in the spring of 2023.



North Elevation Rendering of Flight Ops



South Elevation Rendering Flight Ops

3.0 DESIGN COMPONENTS, COMPOSITION & SCALE

3.1 Height and Building Footprint

The University is fortunate to have an abundance of land; therefore, excessive height is not necessary. Typical buildings on Campus should not exceed three to five stories and in immediate adjacency and highly visible from the historic Quad, should be no more than three or four stories. Floors expressed as roofs, attics or setback may exceed these limits by one story. Also tower elements with relatively small footprints may be one to two stories taller.

Space programs for current facilities, often result in large floors and building footprints that are difficult to relate to a collegiate environment. For buildings with footprints over 25,000 SF, effort should be made to reduce the visual impact of the large floors by breaking the mass into parts with various architecture elements, such as towers, bays, and courtyard setbacks.



Story Pole Nistler College of Business



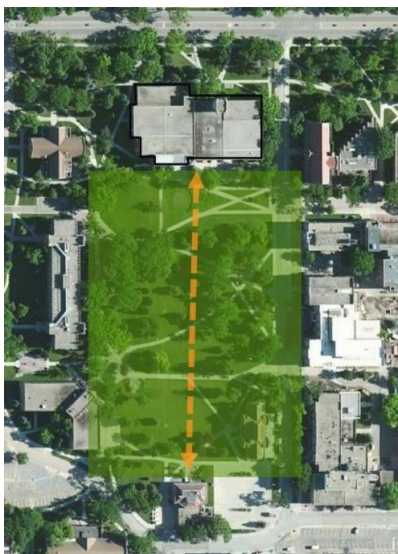
Large footprint broken into smaller parts - The Betty

3.2 Open Space & Orientation of Buildings

All building projects are to have landscape plans that are developed integrally with the building design. Ideas and guidelines for this component are as follows:

- A building's scale and mass **needs** to be considered in relation to both adjacent open space and other campus buildings
- Buildings should **"front"** on open spaces pedestrian ways, plaza, and / or other groups of buildings.
- Interior gathering spaces **should be orientated** to adjacent open space. Connections between interior and exterior should be made to maximize opportunities for indoor and outdoor activities.

In summary, new buildings on Campus should seek to reinforce the existing and contribute to the making of open space and extending them as a system of connected places on campus.



Historic Quad Axis Chester Fritz Library to Carnegie



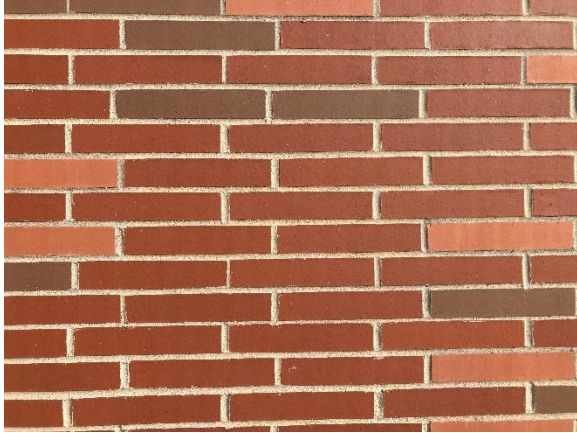
Primary Axial Relationships

Buildings and outdoor spaces are organized axially and often symmetrically about the campus' three main primary axis. The north to south axis of the Quad previously mentioned and shown above. The second and third axis are in the east /west direction and involve the 2nd Ave. pedestrian promenade that begins at Cornell Street and extends west through campus. The third axis is University Ave and its east /west axis through campus.

3.3 Materiality & Color

Brick

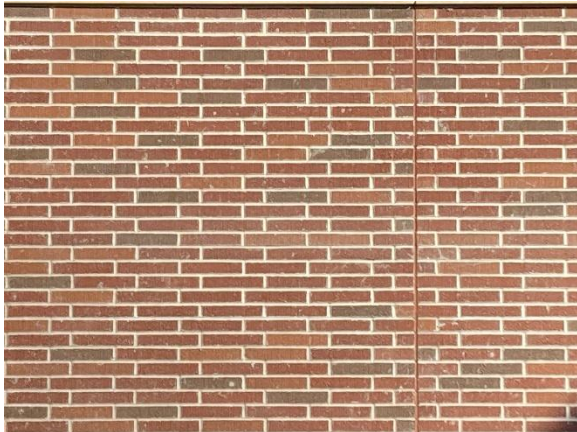
Most of the brick on campus is primarily a red brick blend. Over time there are darker and lighter variations of the red mix or blend. The Memorial Union, completed in 2021, used a three-color mix that was contextual to the School of Law, McCannel and O'Kelly Halls. That mix was 70% Garnet, 15% Chocolate and 15% Wild Rose from the Hebron Brick Company. This masonry also included a texture that closely matched those buildings. Brick blends are difficult to match as variations can occur from the kiln batches or production plants will close. The long-term goal for the University is to define the UND Brick Blend (UNDBB), so that future projects can put this blend into their design vocabulary.



Memorial Union Brick Blend

The Nistler College of Business and Public Administration also used a reddish brick blend but with a slightly different variation so that it was contextual with the Chester Fritz Library and Merrifield Hall. That Hebron Brick special blend was 70% Garnet, 15% Chocolate and 15% Mahogany with a Rugg Texture.

The mortar color can have an overall impression on the brick blend color therefore careful attention to this detail to either match adjoining buildings or be unique needs to be considered.



Nistler College of Business Brick Blend

It is imperative that buildings undertaking a brick and stone restoration and tuckpointing match not only the existing color of the grout but also maintain the existing grout width, to not deter from the original building's character.



Carnegie Brick Restoration with matching mortar color

Carnegie brick restoration and matching brick selection is a good example of getting the job done correctly.

There are a few masonry exceptions to the reddish brick mix on campus. The Gershman Graduate Center (original 1904, interior restoration and some exterior replacements 2021) has a lighter mortar color on a darker brick. The very thin mortar joint detail creates a unique appearance. Some say that masons were more skilled at the turn of the 20th Century as wider joints became more prevalent later. But the standardization of brick modules in later years established the need for joints to be maintained at 3/8" so that 3 brick plus their joints would equal 8" in height which then aligned with concert masonry units.



Gershman Graduate Center



Babcock Brick

Babcock’s dual brick color separated by the horizontal stone band is yet another unique brick expression. The matching of mortar to brick color on the upper part of the building creates a more monolithic appearance than the individual bricks expressed in the lower portion of the walls. It is virtually impossible to remove mortar from stone once dried as seen on the horizontal stone band. Quality restoration contractors are essential for UND standards to be met.

Stone

The Collegiate Gothic original buildings have a light-colored architectural trim and detail in limestone. New buildings or remodeling and additions requiring trim, stone copings (@ parapets are to be avoided), sills or string courses are to use limestone, or cast-stone or architectural pre-cast concrete with matching contextual color depending on the project budget.



Stone Quoining at Windows



Stonework at Carnegie

Architectural Metals

The uses of metal include the enclosure of rooftop equipment and penthouses, window wall and curtain wall mullions. Façade metal has been introduced through the Housing project at the Wilkerson Commons (2021) as architectural metal panels have been implemented into those buildings’ facades. The utility buildings contained within the Facilities Management area on campus also have metal facades.

The standard going forward for windows, storefront or curtain walls is to maintain a **dark anodized finish** on all glazing elements and on all projects. This standard has been implemented in 2021 with a large deferred maintenance project that will re-window most buildings contained with the traditional academic campus.



Typical re-window with the stone quoining

Glass

In the last 10 years, new buildings on campus have introduced architecture that is primarily glass or has large portions of glass. This was driven by the interior functions needed for transparency and light, as well as, a desire to highlight rather than compete or extend adjacent architecture. Gorecki Alumni Center, School of Medicine, Wilkerson Commons, Memorial Union, and the Nistler College of Business are highlights of those projects. Other examples feature relatively large sections of glass curtain wall to emphasize an entry or special function such as Robin Hall. Because of these precedents, a thoughtful and appropriate use of glass elements is in the future of UND projects. The glass like all materials should be contextual, and it should be Low E II and Argon clear glazing. The use of Sage Glass or similar product should be investigated along with the potential for sun shading that adds texture and scale to glass areas.



Multi tinted glass panels to have restricted use



Dark tinted glazing used at Aerospace only

Roof Materials

There is a variety of roofing materials used on campus based on the timeframe of construction. Earlier buildings such as Carnegie (1907), Museum of Art (1907), School of Law (1920) used a clay tile. Ludowici French Clay Red I.D. # 323466 is the preferred roofing tile for renovation or new construction work where a clay tile has been selected. Asphalt shingles are also represented across campus at Gustafson, Babcock, Hopper Danley Chapel. The most common is a flat EPDM roof as per the Campus Specifications section.



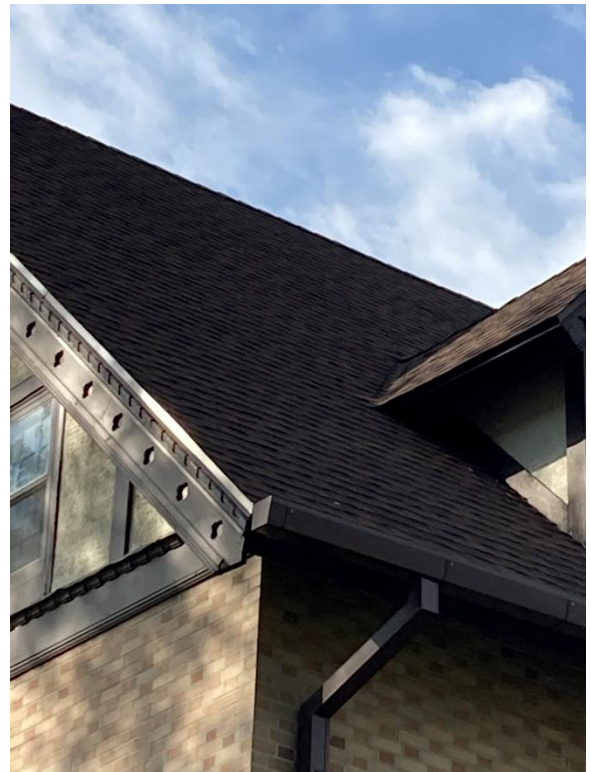
Asphalt Roof @ Hopper Danley Chapel



Standing Seam Metal Roofing should have limited but effective use



Temporary Asphalt Roof @ Babcock



Asphalt Roof @ Gustafson



Babcock Roof Lack of Insulation & Venting

Other Materials

There is a new material at this time, terra cotta, used successfully at the Wilkerson Commons. There are many forms and textures that this product can take on, with its reddish color and masonry character gives it promising consideration for future projects.

Another new material is a roofing material that is being used at the Nistler College of Business. Certainteed. Symphony Slate Series synthetic shingles is made from virgin plastic and molded approximating the appearance of traditional, natural slate. This project will also be considered for the Gustafson and Babcock renovations.

KEE-1 Solar Brite FB Membrane by Viking Products Group is an EIP Ethylene interpolymer membrane fully adhered roofing system that has been used on a few projects with success.



Synthetic Slate Shingles

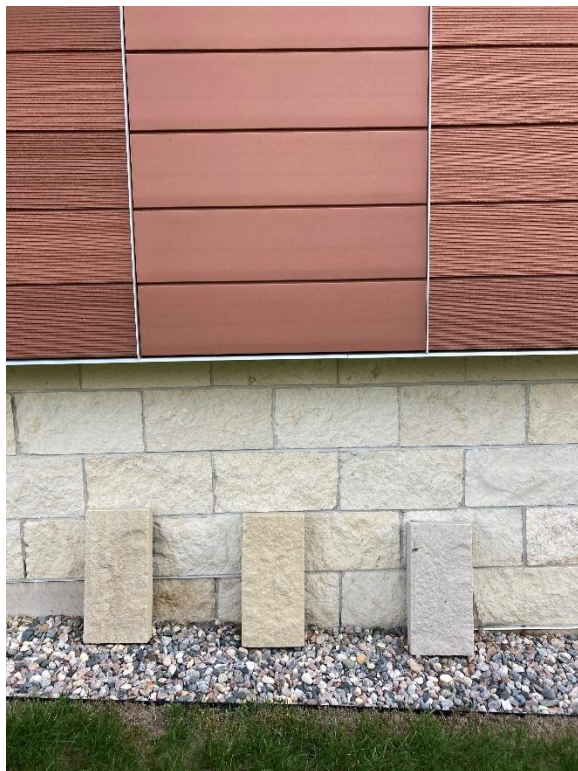
3.4 Composition, Scale & Variety

The Chester Fritz Library and Merrifield Hall are certainly the highlight of the Traditional Neighborhood architecture. Both of these buildings seen from either a distance or as a pedestrian approaching to enter, allow you to relate visually at multiple scales.

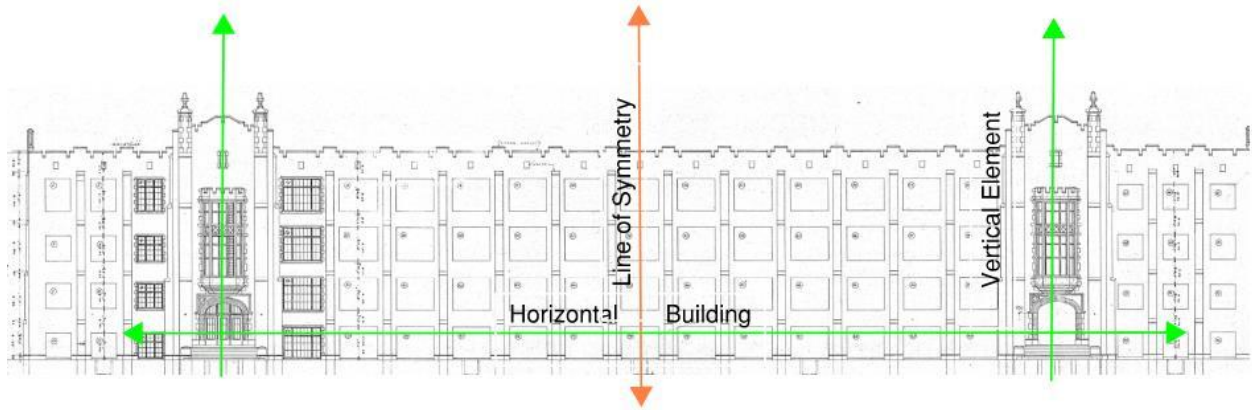
Vertical vs Horizontal Composition

The plan area and height of the original traditional buildings generally resulted in a horizontal form, more linear than tall but these forms were enhanced by vertical elements, towers, gables, bay windows and chimneys, which served to divide these compositions into vertical elements that can be related to better by a person or human scale.

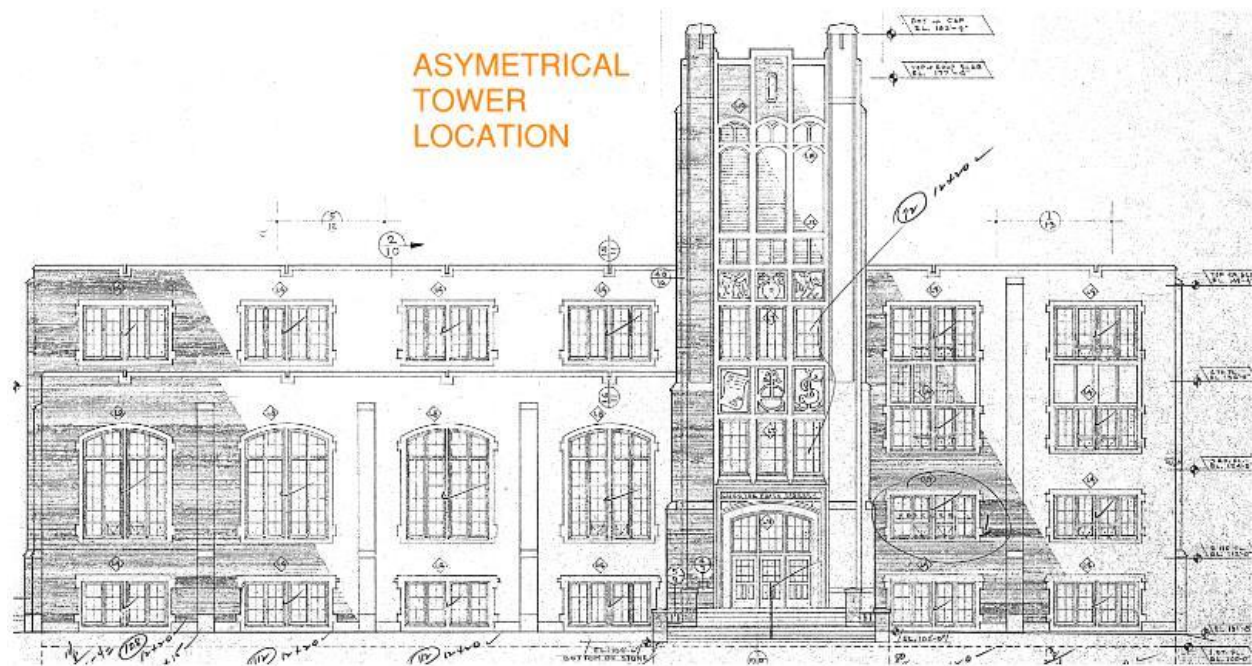
Similarly, new buildings, with footprints that are often larger today, should make use of their own version of vertical elements to divide the composition and mass of new buildings.



Terra Cotta used with two different finishes



Merrifield Hall 1927



Chester Fritz Library - North Elevation of original building

Symmetry & Asymmetry

The original traditional buildings combine both symmetrical and asymmetrical composition in their forms. The asymmetrical allowed response to site or interior function, while symmetry highlights entries and more formal, axial relationships to the campus. The Carnegie Building is a good example of this as it terminates the Quad axis with a symmetrical entrance. Sometimes subtle and sometimes obvious, the combination of symmetry and asymmetry in buildings, either existing or new, creates variety and visual interest.

Unity without Uniformity

The best qualities of the original traditional campus is its visual unity without being uniform.

Within the framework of the Quad's open space is consistent material and color, a remarkable variety of plan, height, roof-scape and fenestration can be found. Observers will also find a successful proportional relationship maintained between building height and open space width, and the buildings have a relatively consistent three-part, vertical composition (base, middle, and top/roof).



4.0 ARCHITECTURAL PATTERNS, DESIGN ELEMENTS & DETAILS

4.1 Architectural Patterns, Design Elements & Details

UND's Campus architectural details and their characteristics which may be useful in new building compositions are described and illustrated as follows:

Towers

It is important to note that the Chester Fritz Library Tower stood alone and unrivaled for decades along University Avenue as an iconic piece of architectural vocabulary. Its 82-foot height stood for inspiration to all who seek wisdom and knowledge.

Creating a vertical element that can be read as a tower, within a larger building form, has been successful at a number of buildings on campus over its history. This has served to create building mass interest or, create an identity and other purposes. Stairs, elevators, and stacked conference rooms have been used to make tower elements.

In appropriate locations and for appropriate uses, towers are encouraged to be part of future buildings.

Towers can also be used architecturally as a unifying design element between the various campus neighborhoods. Tower examples are shown on the following pages and adjacent:



Transitional Contextual Tower at the Union symbolism for student life the university's living room



New Paradigm Tower at Robin Hall symbolism for flight where the sky is the limit

Traditional Towers



Chester Fritz Library Tower



School of Law Tower



Merrifield Hall



O'Kelly Hall North Entry



O'Kelly Hall West Entry



Gillette Hall



Education



Twamley Hall



Leonard Hall



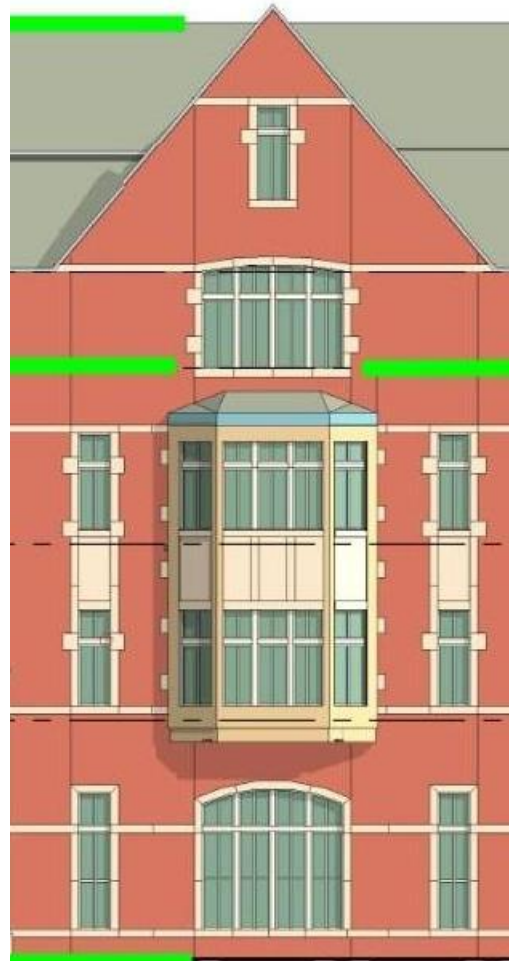
Hyslop North Entry

Bays

Windows may be grouped or special elements within a building may be projected to make a vertical bay expression. This can serve to reduce scale and mass of a building and add vertical emphasis.



Merrifield Bay



NCoBPA illustrated bay



Education Bay

Windows & Fenestration

Historic windows and fenestration examples are included for reference. The historic windows are vertically proportioned, have depth relative to the walls they are in and their glass is subdivided into smaller lights. These windows are typically trimmed with limestone or similar product. These characteristics are generally desired in individual windows in new buildings.



Typical window fenestration



Window groupings create a vertical element



Archways / Passages & Entrances

Portals into Quads or important routes from one campus area to another are to be marked by archways and passages.

Historically entrances into buildings on campus typically will have an arched entry with wall sconces flanking each side.



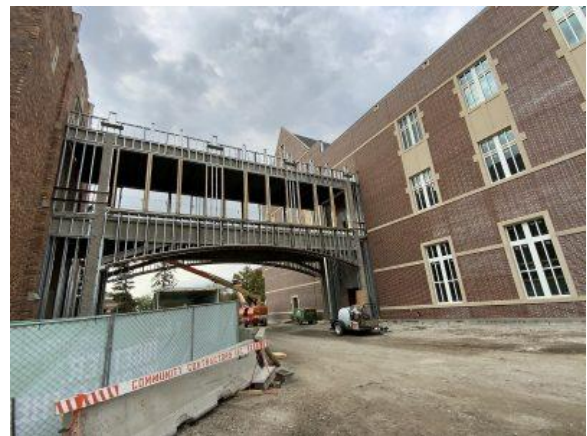
Flanking wall sconce at entry



Wall sconces vary in style



Memorial Union SE entry



Creating archway / skyway NCoBPA to Merrifield

Parapets, Finials & Medallions

For safety, parapets at a flat roof are mandatory and they can provide an opportunity to create visual interest at the top of the facades. Techniques have included: varying the parapet height, continuing vertical elements through the parapet cap height. Regardless of the form this may take in the future, attention to the parapet design and expression is suggested in future buildings.



O'Kelly Hall Finial



Merrifield Finial



School of Law Finials

Cast and carved medallions are found on campus in the historic buildings. New buildings have made some of both new and salvaged medallions in facades to create interest, emphasize entries and honor tradition. In appropriate locations, and with approved content, this is encouraged in the future.



4.1 Outdoor Lighting

Task Lighting

It is important to start with task lighting for illuminating pathways and entrances. Task lighting is paramount when performing specific tasks. This type of outdoor lighting can be achieved by using pathway lights, deck lighting and outdoor step lights. If the fixture is exposed to the elements, make sure it is a wet-rated fixture. And always make sure that the light fixture is specifically identified as outdoor lighting.

Ambient Lighting

A common mistake is using too bright a bulb outside. A bulb that uses a lower wattage or has a lower lumens output is generally adequate in the dark. Usually, these are outdoor wall lights or post lights. Ambient lighting is also known as general lighting, which radiates a comfortable level of brightness without glare and allows you to see and walk safely.

Accent Lighting

Accent lighting adds drama to an outdoor space by creating visual interest. Take time to plan and focus this lighting for particular features: walkways, the doorway, landscaping. You can highlight trees, planting areas and architectural details expressed on the building's façade or by lighting up the tower elements in projects that have those incorporated into the design. This type of lighting can be provided by spotlights and/or LED string lights and LED light fixtures as needed for the articulation.

Customized LED Lighting

Light Emitting Diodes, or LEDs, are revolutionizing the way we see architecture, and it is about time. In the 140 years since Edison patented the first light bulb, lighting technology has remained essentially the same. In addition

to the environmental benefits, the low voltage required to operate LEDs and their reliable construction makes them suitable for both indoor and outdoor use, even in the most extreme climates.



Monument Wayfinding Lighted Sign



Task Lighting beneath seating and within masonry column



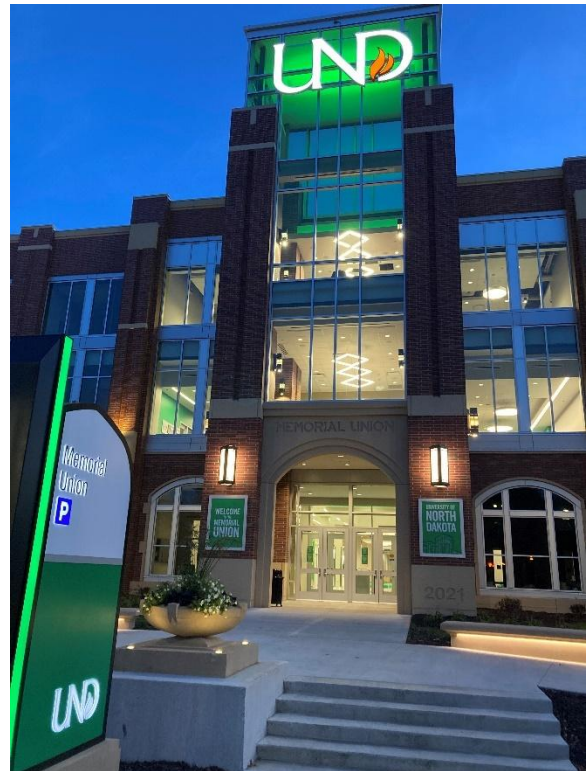
Ambient Lighting at post and wall sconce



Task Lighting at Flag poles



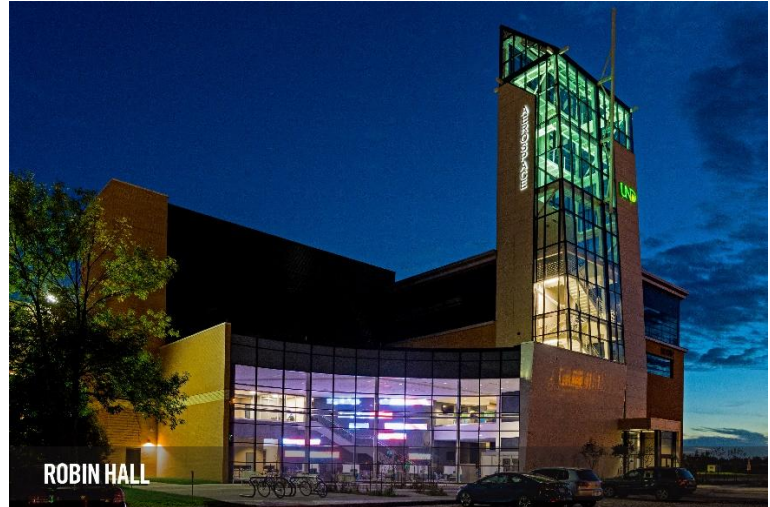
Task Lighting beneath seat at School of Law



*Task & Ambient & Accent Lighting at Memorial Union
accent UND logo*



Task Lighting & Ambient Lighting at Memorial Union



Robin Hall Accent Lighting



Rendering of Flight Operations Building Accent Lighting



For more information, guidelines and standards
Contact Les Bjore AIA LEED AP University Architect