Concept sketch from WCU 2014 Master Plan
In collaboration with a project steering committee, Hanbury Evans Wright Vlattas + Company conducted this study to assess the potential and outline the parameters for a mixed use development along Centennial Drive, in the heart of Western Carolina University’s main campus. This development is a chance to introduce a “main street” atmosphere for the campus as well to provide additional student housing and retail space. The program was established through a series of four workshops between Hanbury Evans and the WCU committee.
EXISTING SITE CONDITIONS

Existing View from East

Existing View from West

Key Plan

Route 107
EXISTING SITE CONDITIONS

Legend:
- 5 Foot Contour
- 1 Foot Contour
- Top of Bank
- Bottom of Bank
- Property Line
- Property Line NOT SURVEYED
- Existing Road
- New Road
- Existing Fence Line
- Existing Waterline
- Property Corner Found
- Utility Pole
- Water Well
- Sewer Manhole
- Electric Manhole
- Telephone Manhole
- Storm Manhole
- Water Valve
- T.P. - Telephone Pedestal
- Water Meter
- Power Transformer
- Sewer Clean Out

Existing Site Plan Provided by Western Carolina University
Scale 1:100

3 - WESTERN CAROLINA UNIVERSITY • MIXED-USE DEVELOPMENT PROGRAMMING & CONCEPT STUDY
SITE CONCEPT OBJECTIVES

conceptual site plan

The proposed scheme works with the existing site to create a pronounced street edge along Centennial Drive. Outdoor dining/plaza space is provided on either end of the development. Parallel and off-street parking are integrated throughout the site, providing convenient access for residents and visitors. The buildings are divided in to four basic units, with two units sharing a common space for an entrance lobby, elevator, and community spaces.

The conceptual section to the right illustrates a substantial retaining wall, service access road, sidewalk, retail and residential massing with an arcade.

A 36-40 semi-suite bed community per floor
B Entry and community living space above at building “knuckle” provide views in to and out of new development
C Commercial/retail at ground level throughout with arcade walkway
D Parking dispersed throughout the site in surface lots and on-street parking
E Service drive on south side of halls
F Retaining walls on south side terrace to provide usable outdoor space and enhance views
G Outdoor plaza and dining space
SITE CONCEPT OBJECTIVES

3d views

The images shown on this page do not reflect proposed architectural character. They are intended to reflect massing and orientation. The preferred concept steps the massing upward as the building units move east around the curve, providing views to the campus below. The red massing indicates retail space. The blue massing indicates residential and support spaces.
SITE CONCEPT OBJECTIVES

sketch vignette

Concept Sketch of Public Space at the Corner of Central and Centennial Drives
### Program Objectives

#### Western Carolina University

Program Concept - New Mixed Use Development  
Centennial Drive  
New Community

<table>
<thead>
<tr>
<th>Space #</th>
<th>Space / Description</th>
<th>Occupancy</th>
<th>Quantity</th>
<th>ASF</th>
<th>Total ASF</th>
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<tbody>
<tr>
<td>100</td>
<td><strong>Residential Spaces</strong></td>
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<tr>
<td>101</td>
<td>Resident Director - 2-Bedroom Apt</td>
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<td>102</td>
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<td>600</td>
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<tr>
<td>103</td>
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<tr>
<td>104</td>
<td>Faculty Apartment</td>
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<td>200</td>
<td><strong>Student Residences</strong></td>
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<td>201</td>
<td>SSS 2 Single Rms; Bath 2:1</td>
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<td>468</td>
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<td>203</td>
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<tr>
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<td>Suite Double - 2 Double Rooms, bath, small living</td>
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<td>800</td>
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<tr>
<td>205</td>
<td>Suite Single - 4 single rooms, bath, small living</td>
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<td>0</td>
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<tr>
<td>204</td>
<td>Apartment - 4 single rooms, baths, living room, kitchen</td>
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<td>1,000</td>
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<tr>
<td>205</td>
<td>Apartment - 1 bedroom</td>
<td>1</td>
<td>0</td>
<td>850</td>
<td>-</td>
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</table>

- Total Occupancy / Community Cluster
- % Capacity in Single Occupancy Rooms

<table>
<thead>
<tr>
<th>300</th>
<th><strong>Hall Community</strong></th>
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<tr>
<td>301</td>
<td>Lounge w/study</td>
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<td>700</td>
<td>4,200</td>
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<td>302</td>
<td>Study Room</td>
<td>10</td>
<td>180</td>
<td>1,800</td>
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<td>303</td>
<td>Hall Bath</td>
<td>0</td>
<td>250</td>
<td>0</td>
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</tbody>
</table>

#### Hall Common Spaces

| 304    | Housekeeping Closet                             | 6         | 50       | 300  |
| 305    | Telecommunications Closet                        | 6         | 80       | 480  |
| 306    | Electrical Closet                                | 6         | 80       | 480  |
| 307    | Trash / Recycle                                 | 0         | 80       | 0    |
### Program Objectives

**COMMON SPACES**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Spaces</th>
<th>Occupancy</th>
<th>Total ASF</th>
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<tbody>
<tr>
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<td>Public Spaces / Offices</td>
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<tr>
<td>401</td>
<td>Lobby/Desk/Waiting</td>
<td>1</td>
<td>200</td>
<td>200</td>
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<tr>
<td>402</td>
<td>Front Desk Storage</td>
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<td>80</td>
<td>80</td>
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<tr>
<td>403</td>
<td>Mail Boxes</td>
<td>0</td>
<td>200</td>
<td>0</td>
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<tr>
<td>404</td>
<td>Public Toilets</td>
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<td>240</td>
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<tr>
<td>405</td>
<td>Director's Office</td>
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<td>120</td>
<td>120</td>
</tr>
<tr>
<td>406</td>
<td>Desk Manager Office</td>
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<td>120</td>
<td>0</td>
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<tr>
<td>407</td>
<td>Resource Room</td>
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</tr>
<tr>
<td>408</td>
<td>Storage</td>
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<td>250</td>
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<td>Building Community / Civic</td>
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<td>501</td>
<td>Laundry Room</td>
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<tr>
<td>502</td>
<td>Gaming Lounge</td>
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<td>600</td>
</tr>
<tr>
<td>503</td>
<td>Community Living Room</td>
<td>55</td>
<td>2</td>
<td>1,100</td>
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<tr>
<td>504</td>
<td>Community Kitchen</td>
<td>6</td>
<td>2</td>
<td>220</td>
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<tr>
<td>505</td>
<td>Vending Center</td>
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<td>1</td>
<td>60</td>
</tr>
<tr>
<td>600</td>
<td>Building Support Spaces</td>
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<tr>
<td>601</td>
<td>Trash Recycle (Building)</td>
<td>0</td>
<td>200</td>
<td>0</td>
</tr>
<tr>
<td>602</td>
<td>Bike Storage</td>
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</tr>
<tr>
<td>603</td>
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<tr>
<td>604</td>
<td>Maintenance Shop Storage</td>
<td>0</td>
<td>500</td>
<td>0</td>
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</table>

**RETAIL AND PUBLIC SPACES**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Spaces</th>
<th>Occupancy</th>
<th>Total ASF</th>
</tr>
</thead>
<tbody>
<tr>
<td>700</td>
<td>Learning Community / Programs</td>
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<td>19,950</td>
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<tr>
<td>701</td>
<td>Retail Space on First Floor</td>
<td>20</td>
<td>15</td>
<td>1,330</td>
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<tr>
<td>702</td>
<td>Faculty Office</td>
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<td>0</td>
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<tr>
<td>703</td>
<td>Multipurpose Room</td>
<td>100</td>
<td>0</td>
<td>1,000</td>
</tr>
<tr>
<td>704</td>
<td>Group Study</td>
<td>4-6</td>
<td>0</td>
<td>140</td>
</tr>
<tr>
<td>705</td>
<td>Smart Classrooms</td>
<td>30</td>
<td>0</td>
<td>400</td>
</tr>
</tbody>
</table>

Subtotal ASF: 70,340  
Program Efficiency Ratio: 65% for retail, 75% for retail  
Target GSF: 134,815  
Target GSF/Bed: 385
residential unit types

Two Double Units: 640 GSF

Two Single Units: 530 GSF

The program requires that 80% of the beds provided are Double Units and 20% Single Units. Example floor plans of each configuration are shown above. ADA accessible units should be provided in accordance applicable state and local codes.
residence hall diagram

- Enclosed Stair
- Study Lounge
- 36-40 Students
- RA Suite
- Housekeeping, Mechanical, I.T. and Storage Closets
- 1st Floor: Entrance and Lobby
- 2nd - 4th Floors: Community Gathering Space, Kitchen/Lounge and Living Room

Two Person or Four Person Semi-Suite
WOOD STUD FRAMING CODE RESEARCH

North Carolina State Building Code 2006
(2003 IBC with NC Amendments)

Occupancy Classification (NCIBC 310.1)
- Residential Group R-2: Dormitories

Construction Type VA: (NCIBC 602.5)
- Wood Stud Bearing and Non-Bearing Walls

Allowable Heights / Area (NCIBC T503)
- Basic Allowable Heights = 50 feet (3 Story)
- Basic Allowable Area = 12,000SF

Note: +10 feet in height and + one story
for sprinkler NFPA 13R (903.3.1.2) (NCIBC 504.2)
= 60 feet (4 Story)

Note: 200% area increase
for sprinkler NFPA 13 (903.3.1.1) (NCIBC 506.3) = 36,000sf / floor

Fire Resistance / Protection (NCIBC T601)
- Structural Frame = 1 Hour
- Bearing Walls = 1 Hour
- Floor Construction = 1 Hour
- Roof Construction = 1 Hour
- Non-Bearing Walls = 0 Hour

Fire Separation Distance / Rating (NCIBC T602)
- < 5 feet = 1 Hour
- 5 to < 10 feet = 1 Hour
- 10 to < 30 feet = 1 Hour
- > 30 feet = 0 Hour

Occupancy Separation (NCIBC T302.3.2) (NFPA 13)
- Residential & Business = 2 Hour
- Residential & Assembly = 2 Hour
- Assembly & Business = 2 Hour
project description

Western Carolina University Endowment proposes to replace a commercial strip shopping area located directly adjacent to the campus which was recently damaged by fire. In addition to ground floor retail spaces, upper floor student housing will be provided. The proposed mixed-use project will be situated on 4.1 acres of University Endowment-owned land along Centennial Drive and extending to the intersection with Central Drive.

The project shall have a positive impact on the campus and surrounding community. The project will actively advance Western Carolina University’s larger sustainability commitment by incorporating sustainable building and site design and construction principles throughout the life of the project. This should include the consideration of total life cycle costs of building ownership and site maintenance into decision making and make building occupant health and comfort a priority and balance this with energy efficiency goals.

The following criteria are not intended to be fully comprehensive in scope for the project but it establishes the Owner’s general preferences for the project. Alternatives to the criteria given will be considered, particularly if they result is a reduction in the cost of the project, but the level of quality of the materials and systems noted, shall remain consistent.

design criteria

PROGRAMMING CONCEPTS

The following describes the programming aspects of the mixed-use development as foreseen by the Endowment. In general the project will entail:

• A ground floor of approximately 20,000 net square feet (NSF) providing soft lit shell retail spaces on the ground floor.

• Three floors of single and double semi-suite residential housing units totaling approximately 350 beds. Each residential floor will include a community space with a lounge area and support spaces. In addition, separate study spaces will be provided.

• Access to the upper residential floors will be via an elevator in first floor lobbies located adjacent to the retail spaces. Enclosed egress stairways shall also be provided.

• Approximately 50 surface parking spaces which equals to 2 ¾ spaces per 1,000 NSF of the retail space.

• Pedestrian oriented exterior spaces, as well as site amenities, including furniture and landscaping

• Site utilities, earthwork and extensive retaining wall construction. The retaining wall to be aesthetically pleasing with fence or railing along the top of the wall.

ARCHITECTURAL CONCEPTS

The following information defines the general project design parameters for the project.

• The development shall contribute to the architectural context of the campus and reinforce the Western Carolina University identity and sense of place

• The retail street frontage is imagined to create a college town atmosphere that is active day and night

• Sound deadening measures, such as sound attenuation blankets shall be used to reduce noise transmission between the retail and residential spaces. Such measures shall also be used between the residential units.

• Brick veneer shall be the predominate exterior material, along with a metal standing seam roof.

• Sidewalks and lighting shall be provided along Centennial Drive. The site lighting shall match existing landscape and area lighting incorporating LED technology.

• Service access for deliveries, waste removal (including trash, recyclables and food waste), the utility corridor, and move-in day activities shall be from an access drive along the rear of the buildings and adjacent to the retaining wall.

• The buildings street façade shall be designed to architecturally delineate the retail spaces.
project criteria

To establish the criteria for the design of the development, the following parameters are noted:

EXISTING SITE CONDITIONS AND TOPOGRAPHY
- The Developer shall investigate the existing geotechnical conditions to determine the basis of the design and construction of the buildings and installation of the retaining wall.
- Demolition of existing structures shall be by the Developer.
- Abatement, removal and disposal of Hazardous Materials shall be by the Developer.
- Landscaping shall be comparable and in context with the existing campus. The Developer shall submit a list of proposed plant material for review prior to installation.

ARCHITECTURAL FEATURES
- Brick exterior shall be comparable with brick type and color used on campus after the year 2000.
- A sloped green metal roof, comparable to other metal roofs on campus, shall be provided.
- Gearless traction type elevator.
- Enclosed egress stairways
- Metal storefronts and entrances at the retail spaces
- Casement type commercial pre-finished aluminum windows with insulated glazing on the residential floors
- Solid core wood doors on the residential floors
- Impact resistant gypsum wallboard over batt insulated walls with resilient base, with wood doors and wood window trim on the residential floors
- Ceilings shall be impact resistant gypsum wallboard in residential units. Ceilings shall be lay-in acoustical tile in corridors and common areas for accessibility to utilities above.
- Carpet on floors in residential hallways and lobbies. Flooring of bedrooms shall be vinyl composition tile, with ceramic tile in bathrooms.

UTILITIES
- Domestic Water
- Sanitary Sewer
- Storm Drainage
- Natural Gas
- Site Electrical

STRUCTURAL SYSTEM
- To be designed in accordance with the applicable codes for the jurisdiction
- Wood or metal stud framed construction
- Flooring system shall include a 2” cementitious topping slab HVAC Systems
  - To be designed in accordance with the applicable codes for the jurisdiction
  - Provide adequate ventilation as required by code
HVAC SYSTEMS

To be designed in accordance with the applicable codes for the jurisdiction:

- Retail HVAC system – these spaces are to be served by air cooled split system equipment provided under separate tenant improvement work and with separate controls. Provision shall be made for refrigerant and other piping pathways, outside air, and exhaust air via exterior louvers and shaft space to the roof (especially for grease exhaust) shall be incorporated into the design. Due to limited space on-grade, consideration should be given to incorporating rooftop equipment hidden behind the sloping metal roof.

- Residential HVAC system – air conditioned by means of dedicated, stand-alone, four-pipe fan coil units located within a drop soffit at the entry area of each unit, or vertical fan coil units. Ceiling fans are to be provided for all bedrooms to promote air circulation and to minimize usage of mechanical cooling. Each fan is to be controlled by a variable speed wall switch. Outside air to be provided via operable windows.

- Location of all wall louvers or caps for toilet exhaust, dryer vent, outside air intakes, etc. to be carefully coordinated and be located toward the rear of the building and out of clear sight.

- Kitchenette space in the building to be exhausted directly to outside to control migration of odors. Exterior dumpsters and waste recycling will need to be strategically placed to mitigate odors.

- Elevator hoist ways to be gravity vented to the building exterior and to the rear of building or roof.

PLUMBING AND FIRE PROTECTION SYSTEMS

- To be designed in accordance with the applicable codes for the jurisdiction

- Provide plumbing fixtures as indicated for each bathroom, but also for janitor closets, drinking fountains, domestic water heaters, frost-proof hose bibs, and clothes washers.

- Install domestic water system, sanitary water and vent system, and storm system to make adjacent connections.

- All fixtures will be low flow type and comply with current energy conservation requirements.

- ADA compliant spaces and fixtures as required will be provided.

- Provide separate metering for each retail space

- The fire protection system shall be designed according to NFPA 13, or NFPA 13R. A complete wet pipe automatic sprinkler coverage will be provided throughout all the buildings. The system shall include an automatic fire control assembly and a common drain to the outside of the building and will be supplied from one standpipe.

ELECTRICAL SYSTEMS

To be designed in accordance with the applicable codes for the jurisdiction.

- Install electrical distribution system throughout the buildings to include interior lighting system, power to installed equipment, and adjacent connection to power source.

- Each residential building shall include a main power distribution panel. Retail space shall be multi-metered to provide meters and bases for each space, plus a house meter for the common areas.

- Provide uniform light distribution in all spaces. Interior lighting systems shall provide illumination without discomfort caused by glare. Consider reflectance of room surfaces and coordinate with architectural finishes.

- Related systems to provide include communications, emergency egress lighting, fire alarms, data, security, residential card access, and TV cabling. Systems to be compatible with existing campus systems for ease of use, connectivity, and standardization of equipment.