FINAL

FORT CAMPBELL

INSTALLATION PLANNING STANDARDS

JANUARY 2019

FORT CAMPBELL

Real Property Vision Plan
Installation Planning Standards

Prepared By:

Michael Baker Jr., Inc. – AECOM Joint Venture

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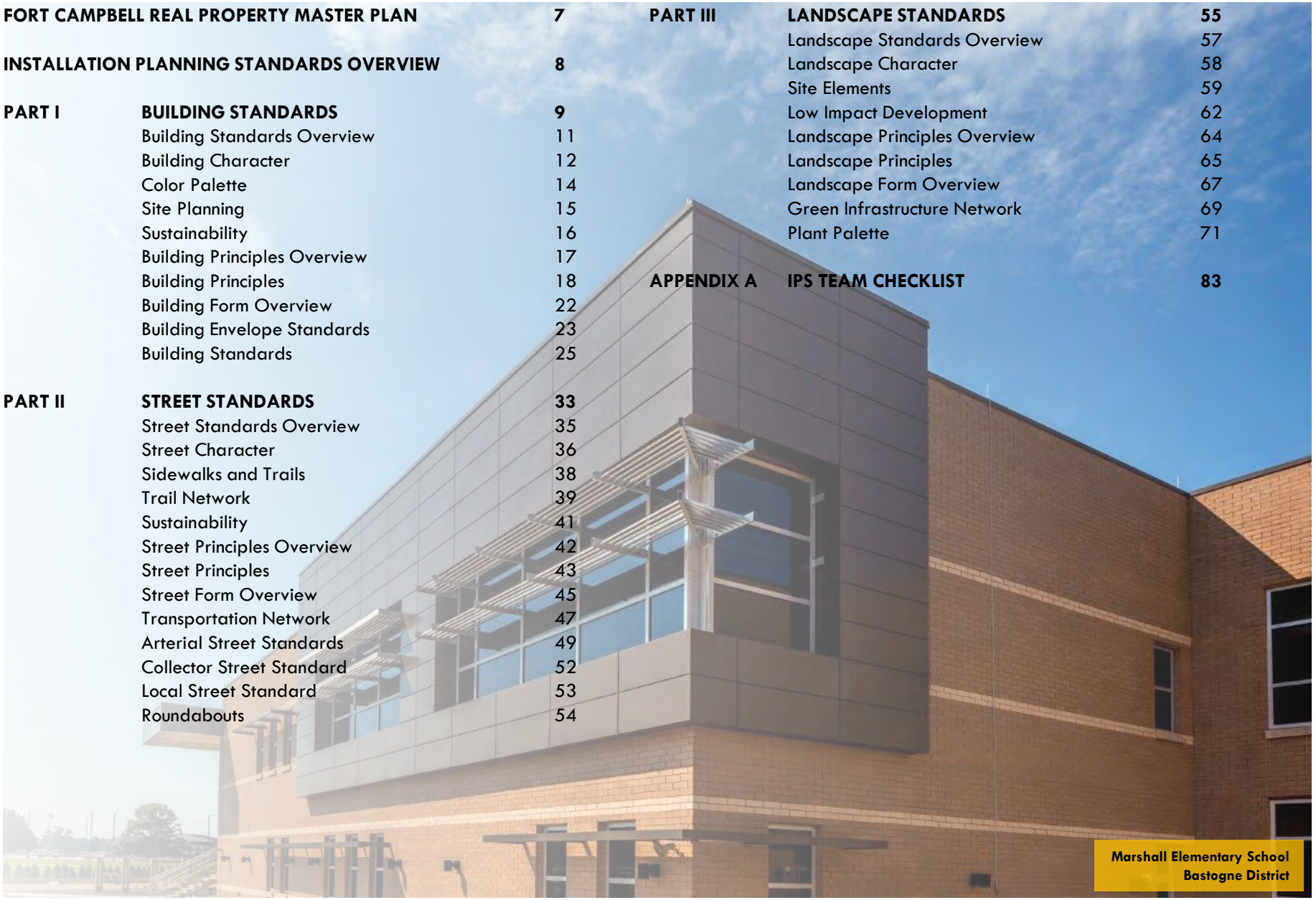

Marshall Elementary School
Bastogne District

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Fort Campbell Real Property Master Plan

Real Property Master Plan

The U.S. Army is responsible for managing millions of acres of land and billions of dollars in facilities and infrastructure worldwide. The effective long-term management of these resources requires thoughtful and thorough planning. This planning is accomplished primarily at the installation level through a ***comprehensive and collaborative planning process*** that results in a Real Property Master Plan (RPMP). The RPMP provides a means for sustainable installation development that supports mission and environmental requirements, and establishes and prescribes planning philosophies and strategies applicable across all Army installations.

Unified Facilities Criteria

The Unified Facilities Criteria (UFC) 2-100-01 on Installation Master Planning establishes a consistent approach for master planning across the Department of Defense (DoD), while Army Regulation (AR) 420-1, Chapter 10, provides the specific guidance for Army installations. The RPMP is sufficiently flexible to permit installation expansion, reduction and changes in mission, and ensure that installation assets can meet mission requirements. The RPMP is the ***road map*** to ensure installation real property supports ***long-term mission requirements***. A well-prepared RPMP expresses a long-term commitment to provide a high quality, sustainable, enduring installation. It covers a minimum 20-year planning horizon (3-5 years for contingencies) and provides the map to executing that commitment.

REAL PROPERTY MASTER PLAN PROCESS AND PRODUCTS

1. DEVELOP VISION PLAN		
Vision, Goals, Objectives	Framework Plan	Network & Green Infrastructure Plans

2. PREPARE INSTALLATION PLANNING STANDARDS		
Building Standards	Street Standards	Landscape Standards

3. UPDATE LONG-RANGE COMPONENT		
Area Development Plans *For Each District in the Framework Plan		
Constraints and Opportunities Maps		
Illustrative Plan	Regulating Plan	Street and Transit Plan
Green Infrastructure Plan	Sidewalk and Bikeway Plan	Primary Utility Plan

4. DOCUMENT CAPITAL INVESTMENT STRATEGY		
Project Lists	Analysis of Requirements	Future Development Plan

Installation Planning Standards Overview

Installation Planning Standards (IPS) capture the Installation's guidelines for development of sustainable and efficient facilities. The Standards provide a clear set of guidelines to ensure that the installation's Vision and planning Objectives for development are achieved. The Standards are applicable to all installation tenants.

- The IPS supports the Regulating and Illustrative Plans in each Area Development Plan (ADP) by specifying building, landscape, and street standards.
- The IPS is developed to promote visual order, enhance the natural and manmade environments through consistent architectural themes and standards, and improve the functional aspects of the installation.
- The IPS provides common facility and infrastructure standards for the installation, provides guidance on cost-effective resource investments, ensures sustainability and efficiency of facilities, and improves the function and appearance of the installation, to include guidance on exterior and interior planning parameters, and landscaping.

The IPS is implemented and enforced through the Siting Board, Building Standards, Street Standards, and Landscape Standards, described in the following paragraphs.

The Siting Board

The Siting Board is responsible for reviewing each siting request while considering factors described in the IPS and overall RPMP such as: Environmental Constraints; Land Use Compatibility; Utility Availability; Transportation Systems; Future Project Plans; Archaeological & Historic Features; Force Protection; Aviation Safety; and Occupant and Command Group Preferences. More details are available in Appendix A.

Building Standards

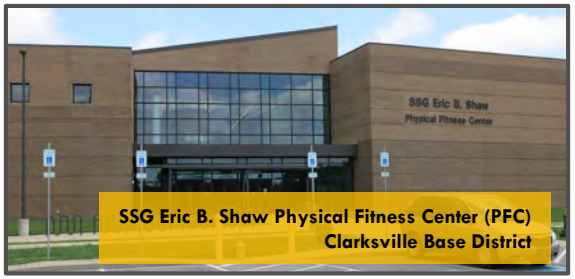
This IPS includes Building Standards that establish basic parameters governing building form. The intent of these Standards is to shape and detail public space that is safe, comfortable, and functional through placement and envelope controls on each building type. The Standards aim for the minimum level of land use control necessary to meet the planning Goals. These Standards include not only building standards, but also site planning standards, and building-related force protection standards. For each general type of building, there is a Building Envelope Standard (BES). Typical elements defined in each BES are massing, height, placement on the site (e.g., required build-to lines and percentage of building that must be built to the required build-to lines), allowed parking locations, materials, and use. Installations will develop a BES for each applicable building type on the installation.

Street Standards

The Street Standards illustrate typical configurations for all street types on an installation through Street Envelope Standards (SES). Each SES addresses vehicular traffic-lane widths, sidewalk and tree planting area dimensions, and on-street parking configurations. An SES is required for every type of street specified on the installation. After a street (or section of a street as an entire street need not follow the same standard throughout its length) is selected, the characteristics desired for that street section should be documented in plan and section.

Landscape Standards

Landscape Standards show, at a minimum, appropriate type and placement of landscape elements, which includes natural landscape features (trees, ground cover, etc.), manmade landscape features (street furniture, signage, lighting, etc.), and landscape-related force protection standards. Landscape standards identify the installation's landscape theme(s). They address both planning intent and allowable plant materials and site furnishing elements.



SSG Eric B. Shaw Physical Fitness Center (PFC)
Clarksville Base District


29th Street and Indiana Avenue
Town Center District


Playground at Marshall Elementary School
Bastogne District

PART I
BUILDING STANDARDS

Building 7073
Screaming Eagle District

Building Standards Overview

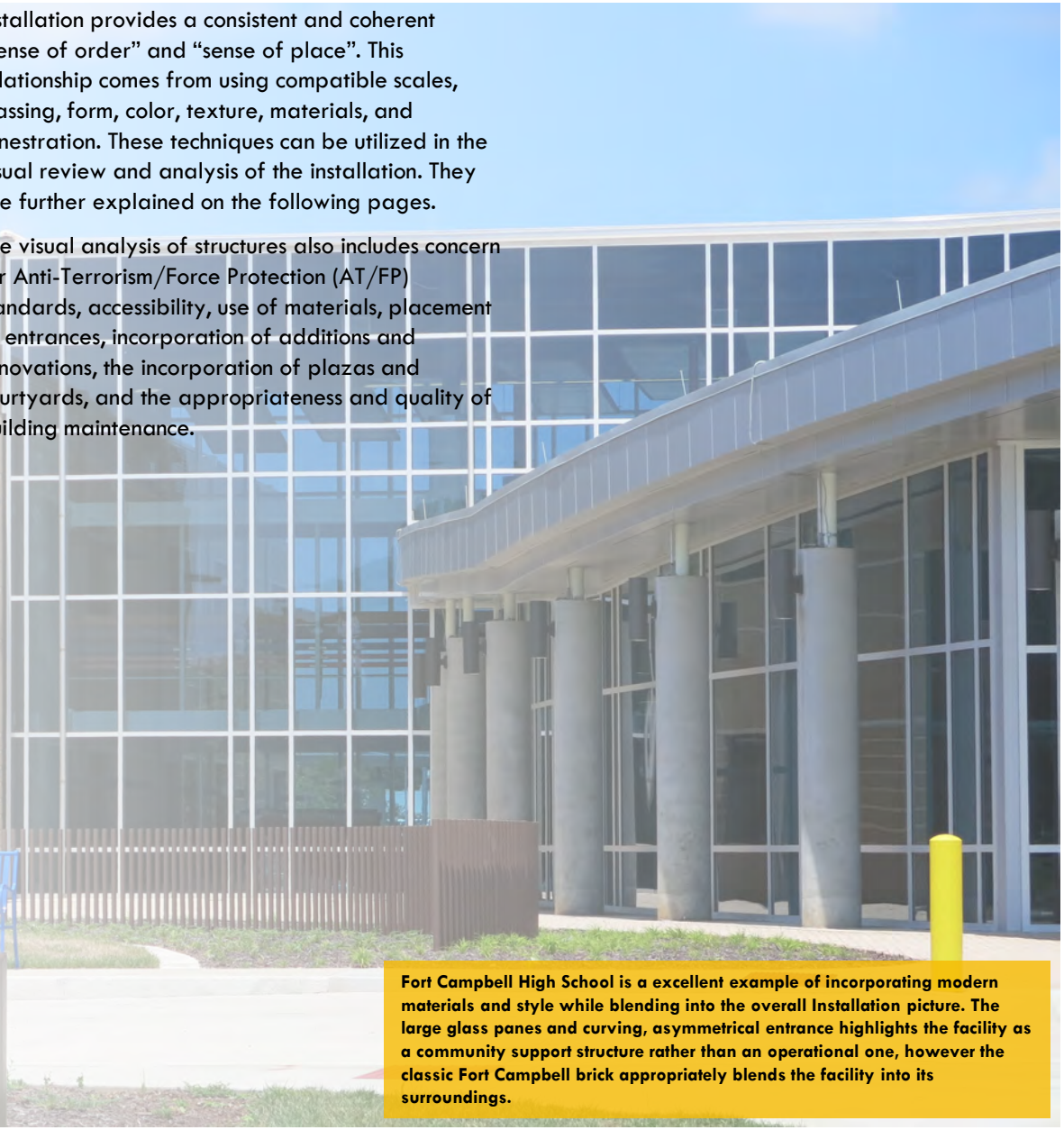
The character of an installation's buildings impacts the overall image of the installation. The visual analysis of buildings and related structures helps define visual zones and themes and is an important part of an installation's assets and liabilities assessment. The Building Standards component encompasses the character of the buildings as well as the arrangement of buildings in relationship to one another and to their environment.

The arrangement of the buildings, and the essential site planning to achieve a balanced arrangement, is often just as important as the architectural style of the buildings. These Building Standards also consider the placement of the buildings to create an installation that is ordered and fosters a sense of pride among all installation users – Soldiers, Civilians, Families, Retirees, and visitors.

In general, these Standards use architectural style, materials, and colors indigenous to the region. The preservation of historically and culturally significant structures adds to an installation's character and provides a sense of heritage. For Fort Campbell, that means removing incompatible buildings such as the World War II constructed facilities and temporary structures, and replacing them with sympathetic architecture that enhances surrounding buildings and the region.

The character of installation architecture varies according to the use of the structure and when it was built. This use and age variation can result in character incompatibilities. The difference in character may also result when the planner ignores the character and scale of adjacent buildings or uses an imitative technique unsuccessfully. The coordination of structural character on an installation provides a consistent and coherent "sense of order" and "sense of place". This relationship comes from using compatible scales, massing, form, color, texture, materials, and fenestration. These techniques can be utilized in the visual review and analysis of the installation. They are further explained on the following pages.

The visual analysis of structures also includes concern for Anti-Terrorism/Force Protection (AT/FP) standards, accessibility, use of materials, placement of entrances, incorporation of additions and renovations, the incorporation of plazas and courtyards, and the appropriateness and quality of building maintenance.



Fort Campbell High School is a excellent example of incorporating modern materials and style while blending into the overall Installation picture. The large glass panes and curving, asymmetrical entrance highlights the facility as a community support structure rather than an operational one, however the classic Fort Campbell brick appropriately blends the facility into its surroundings.

Building Character

Massing and Articulation

Mass is defined as a three-dimensional form such as a cube, box, cylinder, or pyramid. The way the forms are sized directly relates to the way building elements are emphasized or de-emphasized. Voids of open space in the forms can change their appearance and make the building more interesting and less imposing.

New buildings should be carefully developed to meet the desired size and proportion requirements. The size and proportions of a new building if located in a cluster of existing buildings should be planned to make it compatible with the architectural theme of adjacent structures. The height of a new building should be determined partially by the height of its neighbors. For example, a new high-rise building should not be located on a site directly adjacent to lower-rise buildings.

When the program requires a large building mass, the form should be "articulated" by modulating the facade plane. Entryways should be recessed or projecting to break up massing and emphasize entrance location. Upper floors should be setback to accommodate balconies and other architectural treatments. Materials should vary between the base, body, roof line, and entry, but surface detailing should not substitute distinctive massing.

Scale and Form

Scale is the proportion of one object to another. Human or intimate scale incorporates buildings and landscape elements that are moderate in size. Monumental scale incorporates large or grand building elements. In general, human scale involves more horizontal elements, while monumental scale accentuates the vertical elements.

The scale of most buildings on Fort Campbell should be more human than monumental with the exception of ceremonial buildings, such as worship centers, headquarters complexes, schools, hotels, and hospitals. These buildings make use of large, glazed areas at entrances and oversized fenestration elements to create an appropriate scale to the building's use. Where the scale of different buildings is consistent in a single area, it results in a strong unified image.

Buildings should remain consistent in scale and have similar proportions to surrounding buildings. All new construction should maintain compatibility of scale with adjacent buildings. Scale and relief can be provided through proper use of roof form, fenestration, building articulation, and landscape plantings.

The form of a building is determined by its size, mass, shape, and proportions. The use of similar building forms provides continuity to the installation architectural impact. The result is a more aesthetically pleasing environment.

Fenestration

Building fenestration includes features such as doors, windows, and building decoration details. These features should be similar in arrangement, style, size, and proportion for architectural compatibility and visual consistency and continuity. The rhythm, pattern, and proportions of window openings are major factors in a building's character.

Where a building is located at a prominent location the formality of its facades needs to be strengthened with careful placement of windows.

Facades of the sides where sun-shading is not required should continue the window pattern without the recessed masonry to extend the architectural expression on all four sides of the building.

Building 6958
Screaming Eagle District

101st Airborne Division (Air Assault) Headquarters
Town Center District

Building 5912
Town Center District

Building Character

Colors and Materials

The use of a color scheme that is consistent throughout the installation, where possible, results in a continuity of buildings and contributes to a sense of place. Fort Campbell standard colors should be used for exterior walls with accent colors applied sparingly. Accent colors can be applied in recesses or to accent certain portions of building facades

The use of the same materials in the exterior finish and trim of buildings provide visual continuity, reflect the function of a building, and showcase its hierarchy within Fort Campbell. Materials and finishes selected should be durable and weather resistant and minimize reflective surfaces or glare. Pre-finished materials should be used where possible – gutters, window frames, doorframes, etc.

Primary building materials and colors should be limited to no more than two different materials (excluding glass windows) on a single facade. For Fort Campbell, these materials include:

- **Brick –** Brick shall not be painted to ensure the natural color remains visible;
- **Masonry –** Pre-cast, split faced concrete masonry units are required, with a preferred minimum of eight feet tall in certain Districts.
- **Wood –** As approved, generally for cabins and cottages in a rustic setting.
- **Metal –** Concealed fastener metal panels should be used.
- **Windows –** Primarily metal and glass. Generally located on upper floors and at primary building entrances.
- **Exterior Insulating Finish System (EIFS) –** The use of EIFS shall be restricted to use as accents on buildings, and shall not be used full-height on walls, not be installed within four feet of grade to minimize risk of damage.

Buildings and structures should not include the following materials: Unfinished Lumber and exposed fastener metal siding.

Roof Forms

Appropriate roof forms include low and moderate pitched hip and gables or flat roofs with a continuous parapet. Curved roofs may be used to articulate specific building components such as an entry awning or tower. Mansard, gambrel, bonnet, and saltbox roofs are not appropriate. Pitched roofs may include overhangs. At Fort Campbell, rooflines should be strong and create a clear terminating appearance. Where appropriate, flat roofs should have a pitch of ½" per foot and feature a continuous parapet. Appropriate roof materials include asphalt shingles, membrane roofing (for "flat" areas), but the preferred option is standing seam metal, as approved.

Lighting

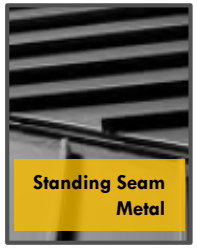
Building-mounted and exterior lighting shall be incorporated as part of the overall architectural style of the building(s). Lighting should highlight interesting architectural features, surroundings, and signage, however lighting of full facades or roofs is prohibited. Accent lighting, when provided, should complement the building color and materials. A common issue with installation is the lack of an overall coordinated lighting system.

Lighting shall be directed away from the observer with the use of low glare, fully shielded luminaries with exposed bulbs being prohibited. The most energy efficient light source suitable for the application should be used. Lighting fixtures selected should incorporate technical and operational energy conservation concepts. Lighting selection should address lifecycle cost comparisons, not just initial cost comparisons.

All lighting shall meet "dark sky" compliance standards due to use of night vision goggles and to minimize the overall impact to light pollution. Lighting sources include shielded exterior luminaries.

Warrior Transition Unit (WTU)
Town Center District

Membrane Roofing



Standing Seam Metal

Asphalt Shingles

Street Lighting Along Michigan Avenue
Town Center District

Color Palette

The Standards Color Palette is currently being developed. The Color Palette is expected to be completed after the Planning Board Working Group's review.

Please refer to the Fort Campbell Technical Design Guide (TDG): Appendix D: Finishes, Exterior and Interior.

Site Planning

The goal of site planning for the Installation is to produce functional, attractive, sustainable development. Sustainability requires the built environment to be designed and constructed to preserve and enhance the cultural and natural resources, and appropriately consider environmental constraints on Fort Campbell.

Plan with Natural Features

Future development should minimally disturb topography and existing woodlands. Better site planning concepts can be viewed as both water quantity and water quality management tools and can reduce the size and cost of required structural stormwater controls. The site plan approach can better mimic the natural hydrologic conditions of the site, have a lower maintenance burden, and provide for more sustainability.

Better site planning includes:

- Conserving natural features and resources, such as topography, hydrology, and vegetation;
- Using lower impact site planning techniques;
- Reducing impervious cover; and
- Utilizing natural features for stormwater management.

Distribute the features throughout the site to minimize infrastructure requirements and water quality impacts. Fort Campbell's intent is to preserve existing open space. When siting future development, these areas should be avoided.

Using more natural site planning can also have a number of benefits that support the Real Property Vision of Fort Campbell, such as:

- Reduced construction costs;
- Added open space for recreation or training;
- Enhanced pedestrian friendly environments;
- Protected sensitive habitats; and
- Creating an aesthetically pleasing and naturally attractive landscape.

The landscape section of this report includes a more detailed discussion on stormwater management.

Building Orientation

Buildings should be oriented to face the street or outdoor space by including walkways, prominent entrances, distinctive building features, and entry plazas in clear view of the street or outdoor space. Facilities should be sited with consideration of climatic conditions such as wind, solar, and microclimate.

For campus developments, ensure that buildings are also oriented toward activity and gathering areas, such as a central quad. Minimizing the visual impact of parking areas can be done by providing several smaller parking areas instead of one large area, providing minimal landscaped buffers, or located parking to the side or rear of a building.

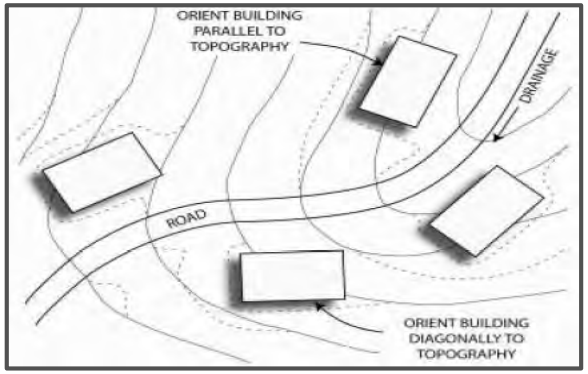
All new developments should be planned to include activity and gathering areas, including:

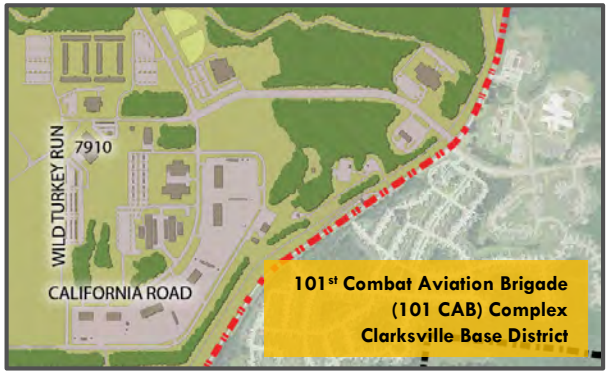
- Courtyard;
- Entry plazas;
- Pocket parks;
- Outdoor seating and dining areas;
- Outdoor terraces; and
- Focal points and water features.

Building Arrangement

Encourage clustered development of barracks, physical training areas, and support facilities in close proximity to promote walkability. Maintenance, storage, and service areas should be located away from public view. In addition, Fort Campbell should continue to expand on existing site patterns, so future roads and buildings are arranged in a similar manner consistent with existing development.

Little West Fork Creek
Clarksville Base District





101st Combat Aviation Brigade
(101 CAB) Complex
Clarksville Base District

Sustainability

Department of Army Policy

Sustainability is a critical enabler in the performance of the Army's mission, as its importance and benefits cut across the entire Army enterprise. As a foundation, the Army is integrating sustainability into its four lines of operation — materiel, military training, personnel, and services and infrastructure. By implementing sustainability principles and practices, the Army is decreasing future mission constraints, increasing operational flexibility and resilience, safeguarding human health and the environment, and improving quality of life for Soldiers and local communities.

Senior Leaders of today's Army are making a directed effort to embed sustainability into Army culture, from both the top-down and the bottom-up. Launching the Army Net Zero Initiative, as well as establishing the Senior Energy and Sustainability Council (SESC), both in 2011, are two examples of key sustainability efforts stemming from the Office of the Deputy Assistant Secretary of the Army for Energy and Sustainability (ODASA(E&S)).

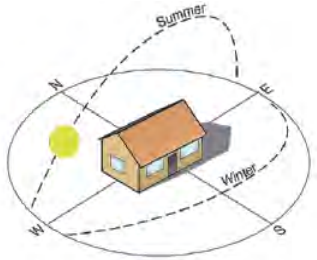
Net Zero Program

The Army's Net Zero (NZ) Initiative is built upon the Army's long-standing energy efficiency and sustainability practices. It is a strategy for managing existing energy, water, and solid waste programs with the goal of exceeding minimum targets, where fiscally responsible, to provide greater energy and water security and increase operating flexibility. The intent of the NZ Pilot Installation Initiative originated from energy-related federal mandates, including Executive Order (EO) 13514 Federal Leadership in Environmental, Energy, and Economic Performance, the Energy Policy Act of 2005 (EPAct05) and the Energy Independence and Security Act (EISA) of 2007. In response to EO 13514, the Department of Defense (DoD) initiated a collaborative effort with the Department of Energy (DOE) to study Net Zero Energy Installation (NZEI) pilot sites for each service. The Army took a broader approach, expanding beyond energy to incorporate water use and solid waste generation. The Army will transition the lessons learned from the NZ Installations to embed an integrated approach of sustainability and resource security for all Installations and all design, planning, service, and investment decisions.

Fort Campbell

Fort Campbell is located in a hot and humid climate which requires energy to effectively cool facilities. However, much of those energy costs could be reduced by planning buildings in a different manner, considering the natural environment first. Additionally, solar and geothermal power could contribute to energy use reductions for the installation. Fort Campbell should implement the following strategies.

- Design buildings in clusters to preserve land use and reduce construction and maintenance costs.
- Consolidate functions in one building to reduce the footprint and more efficiently use land.
- Design buildings to include more floors in a vertical structure that results in a smaller footprint and more efficiently uses limited installation land areas.
- Reduce the need for mechanical and electrical climate control by using passive solar orientation in which windows, walls, and floors collect, store, and distribute solar energy in the form of heat in the winter and reject solar hear in the summer.
- Orient and design buildings to include natural day-lighting.
- Use roof space for energy collection and promote the use of green roofs and cool roofs.
- Design and construct buildings and development for longevity and potential reuse.
- Use natural, recycled, sustainably produced, and other "green" building materials whenever feasible.
- Incorporate U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) guidelines, even if the building or development will not be officially certified.



Right: Passive Solar Orientation Diagram
Below: Net Zero Hierarchy

Fort Campbell's five-megawatt Solar Array Project sited on 20 acres of a previously abandoned landfill. This effort was a collaboration with multiple partnerships.

Building Principles Overview

Building Principles are the next step in defining the Building Standards for Fort Campbell. They establish 'precepts' for buildings. A precept is defined as a general rule intended to regulate behavior – in the case of planning standards, these are the specific principles or precepts that should regulate building development at Fort Campbell. They are to be used in tandem with the Real Property Objectives at the start of any building project – renovation or new construction – to implement Fort Campbell's Real Property Vision.

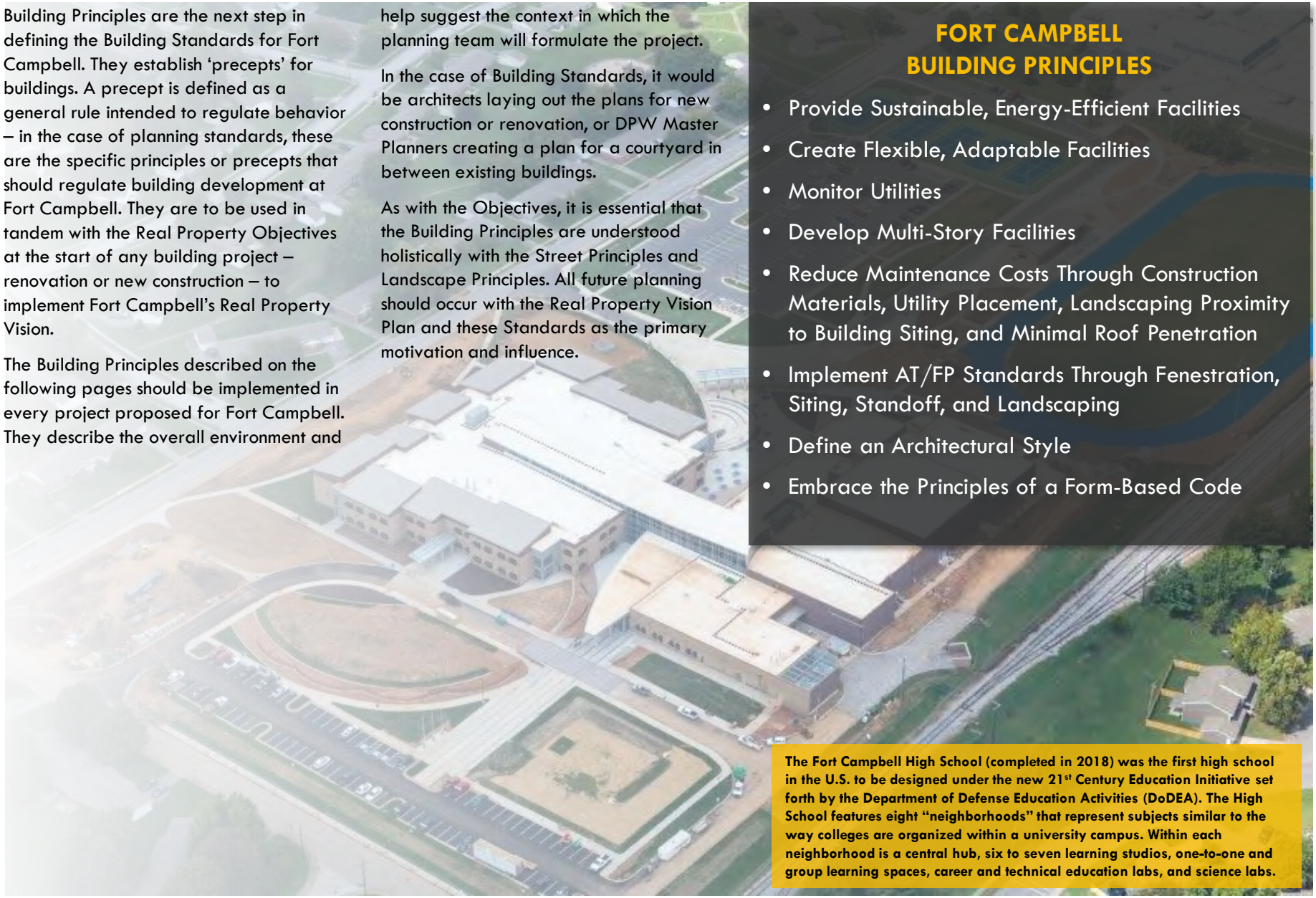
The Building Principles described on the following pages should be implemented in every project proposed for Fort Campbell. They describe the overall environment and help suggest the context in which the planning team will formulate the project.

In the case of Building Standards, it would be architects laying out the plans for new construction or renovation, or DPW Master Planners creating a plan for a courtyard in between existing buildings.

As with the Objectives, it is essential that the Building Principles are understood holistically with the Street Principles and Landscape Principles. All future planning should occur with the Real Property Vision Plan and these Standards as the primary motivation and influence.

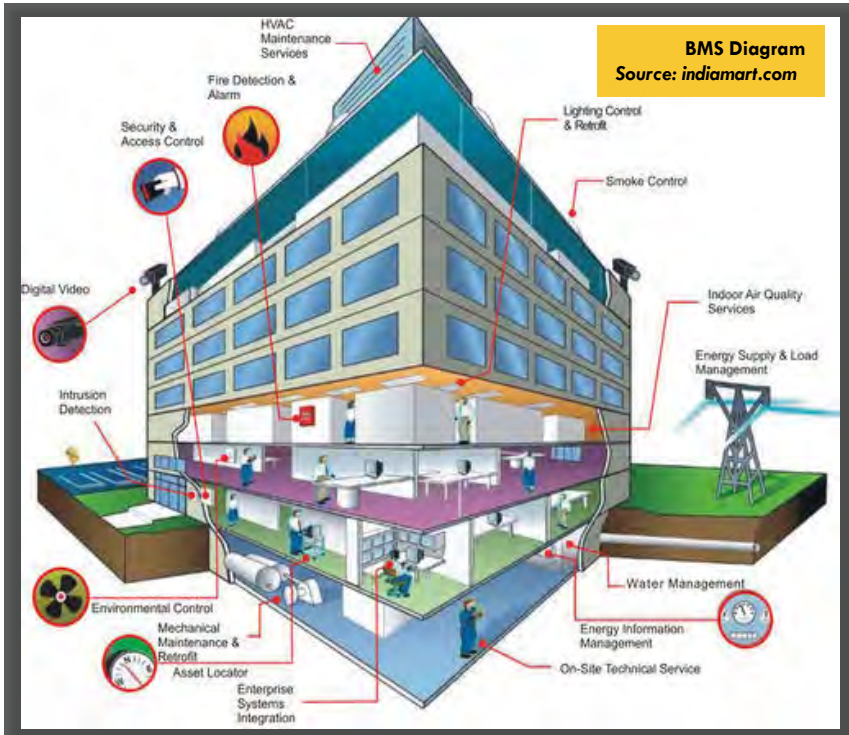
FORT CAMPBELL BUILDING PRINCIPLES

- Provide Sustainable, Energy-Efficient Facilities
- Create Flexible, Adaptable Facilities
- Monitor Utilities
- Develop Multi-Story Facilities
- Reduce Maintenance Costs Through Construction Materials, Utility Placement, Landscaping Proximity to Building Siting, and Minimal Roof Penetration
- Implement AT/FP Standards Through Fenestration, Siting, Standoff, and Landscaping
- Define an Architectural Style
- Embrace the Principles of a Form-Based Code



The Fort Campbell High School (completed in 2018) was the first high school in the U.S. to be designed under the new 21st Century Education Initiative set forth by the Department of Defense Education Activities (DoDEA). The High School features eight "neighborhoods" that represent subjects similar to the way colleges are organized within a university campus. Within each neighborhood is a central hub, six to seven learning studios, one-to-one and group learning spaces, career and technical education labs, and science labs.

Building Principles



BMS Diagram
Source: indiamart.com

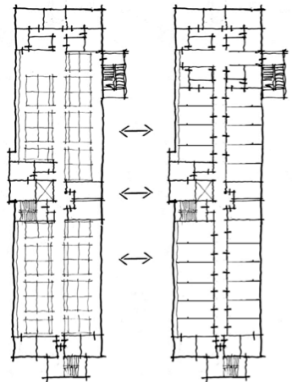
Provide Sustainable, Energy-Efficient Facilities

Energy-efficient buildings aim to reduce the impact of development by employing environmental control strategies that decrease the energy demand of buildings. Of the various approaches geared towards reducing environmental degradation, passive technologies such as natural ventilation and daylighting can be implemented with relative east and operate with little maintenance. For these reasons, passive technology offers the greatest benefit-cost ratio when planning for energy efficiency.

New building construction and existing building rehab should strive to achieve sustainable standards, such as those laid out by LEED. This applies even if the building or development will not go for certification. It is crucial to utilize natural, recycled, sustainability produced, and other "green" building materials, whenever feasible.

Efforts should be made to build-up connectivity and upgrade building and infrastructure performance. For example, Building Management Systems (BMS) computer-based control systems installed in buildings to monitor and control a building's mechanical and electrical equipment such as ventilation, lighting, power systems, fire systems, and security systems. These capabilities will reinforce physical security while further strengthening Fort Campbell's sustainable initiatives.

New and rehabilitated buildings following these standards will result in lower energy usage and maintenance costs.



Flexible Facility Sketch

Create Flexible, Adaptable Facilities

Spaces designed for a single, fixed purpose are limited in their use. The mission cannot function without an adequate quantity and quality of facilities. Mission changes, technology upgrades, and personnel changes all affect how a space can be used or configured. Thus, new construction at Fort Campbell should be flexible and adaptable and focus on providing facilities capable of supporting various units and tenants and their equipment. Flexible building layouts will allow the installation to maximize the life of its buildings by enabling easy reconfiguration or rehabilitation when mission needs change. Maintaining an assessment of current and future operational considerations can help identify requirements of each unit to accomplish its mission. Space utilization assessments can help to justify continued use of facilities and determine acquisitions of new facilities. Planning with room for growth in mind makes meeting unit and department needs faster, cheaper, and more efficient.

Monitor Utilities

As utility infrastructure is upgraded and restored, utility metering systems must be standardized to accurately track energy consumption in real-time. Most meters are still analog and require manual readings. Smart Meters offer detailed feedback on energy use, which allows users to adjust habits and lower energy bills. All new meters should be submitted to a data collection center for consideration. Refer to TDG Appendix F: Utility Procedures section F-3 for metering requirements.

Building Principles

Above: The WTU Barracks (4 stories) effectively uses its footprint resulting in outdoor space and growth capacity. Right: Blanchfield Army Community Hospital, Cole Park District

Develop Multi-Story Facilities

Filling the landscape with single-story buildings is not advantageous. The resulting low-density environment consumes valuable land, which can limit future training and mission development opportunities. For Fort Campbell, Districts such as Screaming Eagle, Town Center, Campbell Army Airfield (CAAF), and Sabre are built-up and any new development would require demolition or consolidation to expand growth capacity. Going vertical by constructing multi-story facilities results in a smaller footprint and more efficiently uses limited land areas. In addition, this brings a more definitive aesthetic to the Installation, and in some cases, enhances the natural environment.

Mixed-use, such as warehouses with storage located on the lower floors and administrative offices on the upper floors, conserves valuable training land and increase the developable area. It is crucial the Form-Based Code be referenced and followed in all new construction to dictate maximum height requirements.

Left: Building 71371 is constructed with brick and incorporates a low pitch roof. The mechanical system is located to the side of the facility and is screened and fenced for safety and aesthetics. Below: Appropriately sited landscaping outside the 5th Special Force Group (SFG) Barracks ensures limited maintenance and provides a healthy environment for the tree to mature and grow.

Reduce Maintenance Costs Through Construction Materials, Utility Placement, Landscaping Proximity to Building Siting, and Minimal Roof Penetration

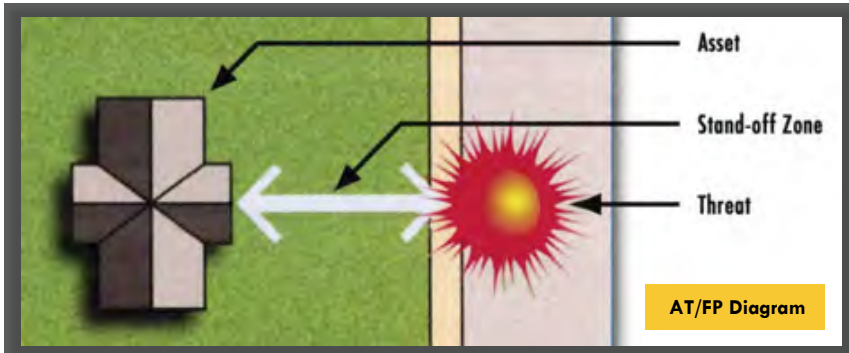
The installation should work to reduce the costs of upkeep for existing buildings and infrastructure. Buildings should be of the highest structural quality to reduce maintenance costs and to support the vehicles and equipment they house and service. Materials should also be adequate for the climate. Solid building materials, like brick and stone commonly used, can hold up well where moisture is retained in then slowly dry. Concrete also provides excellent thermal mass, allowing heat absorption during the day and cooling in the evening.

The placement of utilities and mechanical equipment affects maintenance costs. Utilities and equipment should be located at the rear of a building and away from views of streets, gathering areas, and building entrances. Equipment should also not be located on the building's roof for safety concerns.

Although aesthetically-pleasing and beneficial to health, often tree and shrubbery growth is not considered and landscaping interferes with the building. Maintenance is required to prevent tree branches and shrubbery from going through or screening windows. This maintenance is continuous and requires significant funding.

Lastly, the amount of penetrations through a building's roof are challenges for accessibility and snow fall.

Building Principles



AT/FP Diagram


Protective Elements to Buffer a Facility in the CAAF District


Fort Campbell Perimeter Wall

Implement AT/FP Standards Through Fenestration, Siting, Standoff, and Landscaping

AT/FP measures must be considered integral components of planning and siting. The current Unified Facilities Criteria (UFC) rules state that primary-occupied facilities (buildings with 50 or more occupants) must be located away from roads and parking depending on the type of building material used. It is a common mistake, however to site facilities in ways that increase standoff distances and contribute to sprawl, instead of optimizing appropriate standoff.

Training and storage facilities must incorporate required AT/FP based on materials and operations.
The DoD minimum standards, when applicable, may be supplemented by more stringent force protection building standards to meet specific threats inherent in the geographical area. Implementation of the mandatory standards is obligatory for all new construction.

Multi-story buildings minimize standoff distances. Using construction standard of wood studs with brick or better will allow facilities to be sited safely away from roads, parking, and the perimeter to protect personnel.

Protective elements should seek to visually enhance and complement the design of the facility. Site elements such as fences, courtyards, screen walls, swales, berms, planters, and retaining walls can be used effectively. As stipulated in the current UFC, blast resistant window systems should be included in building fenestration design.

Right: This structure provides an excellent example of material, color, and form commonly found on Fort Campbell. Below: Barkley Elementary School was completed in 2016 and incorporates Fort Campbell's color palette but introduces modern, contrasting materials that blend well with the entire Installation.

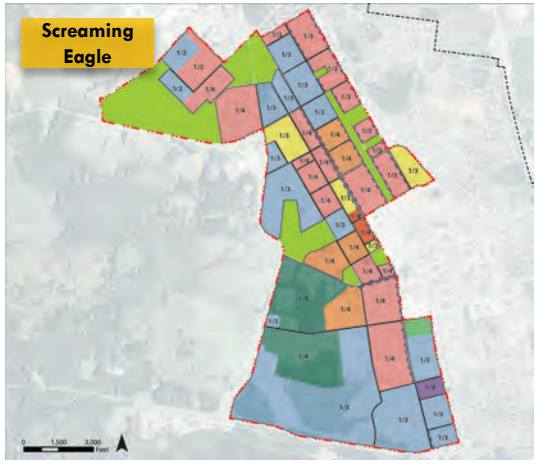
Define an Architectural Style

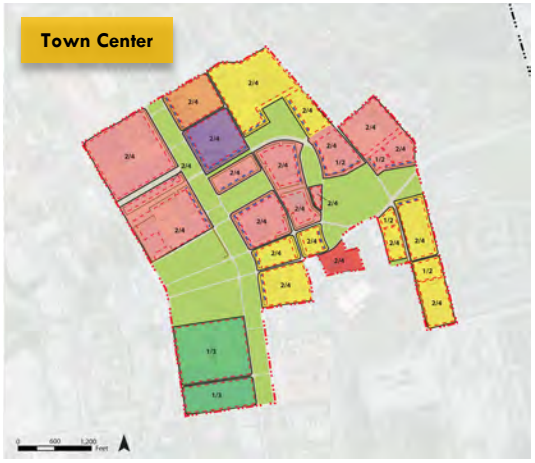
To create an efficient and modern Installation while respecting the historical character of structures, Fort Campbell must balance the architectural style throughout the Installation and region.

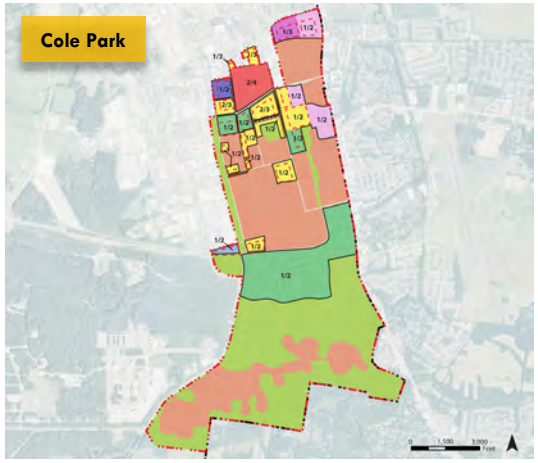
Development should be compatible in scale, color, and material. While modern buildings should respect and reflect the light tan to brown brick materials and low-pitched roofs, contrast should be incorporated in an appropriate way to avoid visual monotony. Fort Campbell is expansive and providing contrast and highlighting specific landmark facilities significantly helps with wayfinding for Soldiers, Families, Civilians, and visitors.

Architectural elements include solid stone bases, strong roof lines, low- to moderate-pitched roofs, prominent and building entrances, minimal overhangs, and use of the Army standard colors. Overall, an identity should be created to the let the population know they are on Fort Campbell.

Building Principles





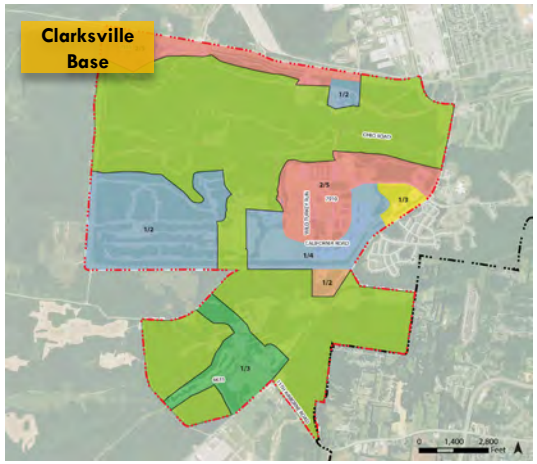


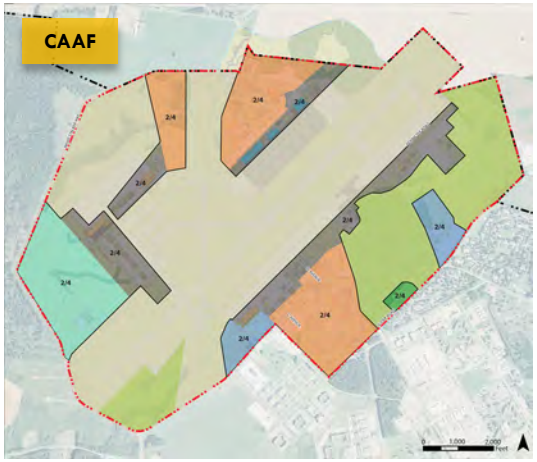
Embrace the Principles of a Form-Based Code

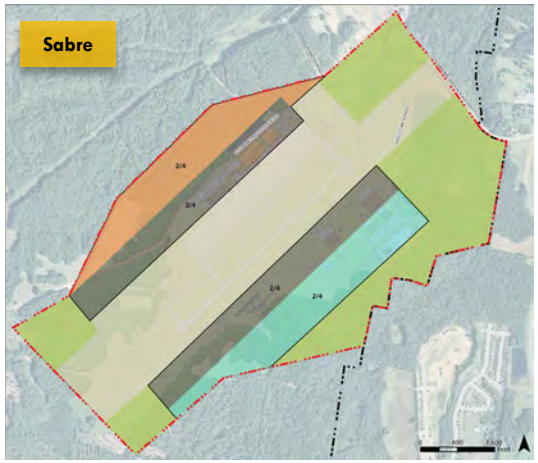
A form-based code refers to a development regulation standard that prioritizes the physical character of a development over the separation of land uses. When using a form-based code, building requirements are tailored to the style and physical context of a proposed site while the interior use remains flexible. By nature, a form-based code encourages mixed-use development, essentially providing the shell in which a variety of operations can co-exist.

Throughout the ADP process a Regulating Plan was created for each District. Components include BES, build-to lines, parking zones, and entry zones to maintain a physically uniform installation in addition to a consistent architectural style.

The following pages describe the form-based code and Building Envelope Standards, including building use, minimum and maximum building heights, access points, and setback details. For an in-depth review of each District's Regulating Plan, please see the corresponding ADP.







Building Form Overview

As noted earlier, the IPS supports the Regulating and Illustrative Plans in each of Fort Campbell District's ADP by specifying Building, Street, and Landscape Standards. These Standards create the basis for a **form-based code**. Implementation through form-based coding allows installations to exercise more control in the development process. It provides a tool to ensure that building development supports the Fort Campbell's Vision, Goals, and Objectives. Form-based codes promote mixed-use, compact, and walkable development patterns, not traditional auto-oriented, segregated land uses. Form-based codes emphasize spatial principles that support sustainable development, making building form and character the most important factor, and specific building use secondary.

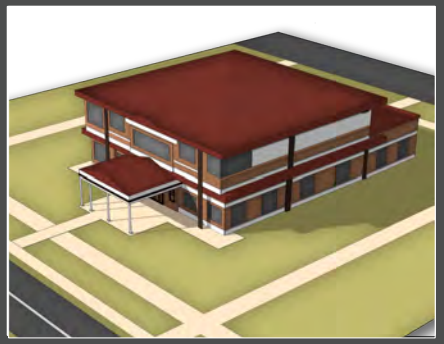
The code is a graphic tool that condenses the Fort Campbell Vision, Goals, and Objectives into a clear, readable, enforceable plan for development. The code provides clear parameters for height, massing, siting, and basic building elements for each District on the Installation.

The form-based code includes the following components:

- **Regulating Plans** that regulate only the most important elements of the Illustrative Plan such as Required Build-To Lines (RBLs), required entry and/or parking locations, and minimum and maximum building heights. The Regulating Plan refers the users to Building and Street Standards. Regulating Plans are created as part of the ADP planning process for each District.
- **Building Envelope Standards** that specify acceptable massing, height, fenestration, and uses.
- **Illustrative Plans** that graphically illustrate potential development outcomes that support the overarching planning Vision.
- **Street Standards** that graphically demonstrate street design requirements in section.

The following pages identify a full range of Building Standards that are applied on Fort Campbell based on the completed ADPs.

Regulating Plan



Building Standards

Illustrative Plan

Street Standards

Fort Campbell
Building Envelopes

- Installation Boundary
- 1/3 Minimum/Maximum Building Height
- Non-Buildable
- Aviation Standard
- General Administrative Standard
- Community Support Standard
- Industrial Standard
- Medical Standard
- Mission Set Standard
- Training Standard
- Recreation Standard
- Leased Land
- Open Space
- No Data

0 1,600 3,200 Ft.

Clarksville Base

Sabre

101ST AIRBORNE DIVISION ROAD

CAAF

MARKET GARDEN ROAD

Screaming Eagle

Town Center

KENTUCKY AVENUE

BASTOGNE AVENUE

Cole Park

Bastogne

ADP Not Complete

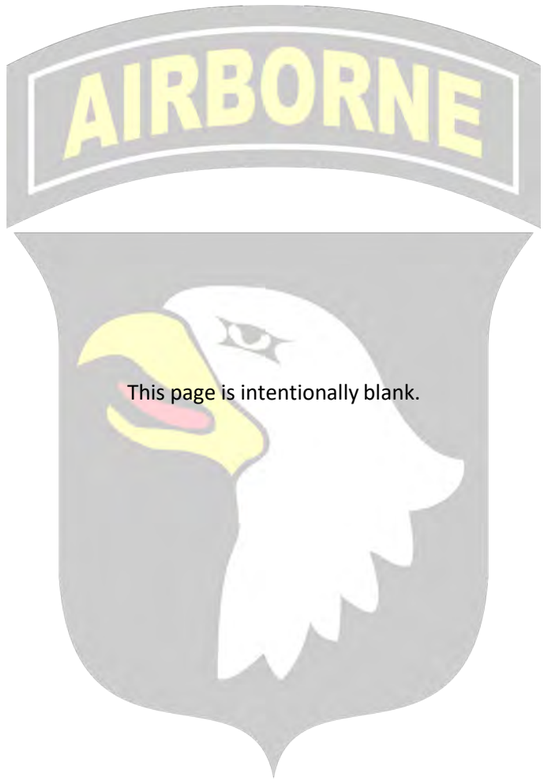
66002

7257

1012

180

The Building Envelope Standards are one component of the form-based code. These Standards assist DPW Master Planning with siting new projects or highlighting where a unit or organization can plan for growth depending on function while considering constraints. Areas such as the Town Center and Cole Park Districts are zoned for community support functions such as commercial, education, medical, and Family support services. Clarksville Base and Screaming Eagle Districts are Soldier-centric with industrial and mission functions. CAAF and Sabre Districts consist of the airfield and airfield support and are limited in development. The Bastogne District consists of Family housing administered by the Residential Communities Initiative (RCI) housing partner, therefore an ADP was not completed. Details of each Standard are provided on the following pages.



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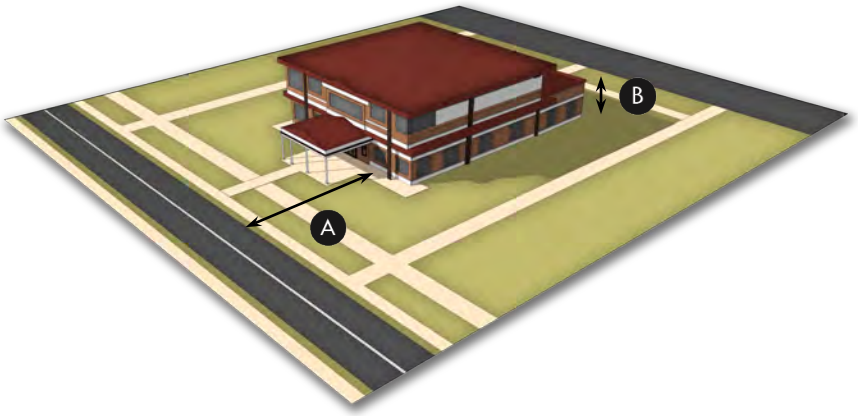
General Administrative Building Standard

Representational Model



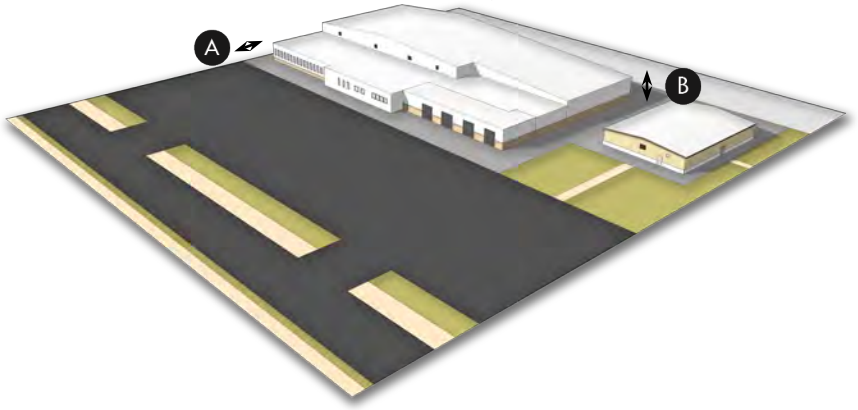
Corresponding Regulating Plan

Parking
Incorporate shared parking between facilities where possible
Parking drive width shall be maximum of 15' per lane
If access is controlled, government vehicle parking is not subject to setbacks
Max. 3 spaces per 1,000 sf of floor space

Use		
	Ground Floor	Administrative
	Upper Floors	Administrative
Placement		
A	RBL setback from roads/parking	Refer to current UFC to meet AT/FP standards
	Setback from roads/parking	Refer to current UFC to meet AT/FP standards
Shape		
	Building frontage along RBL	70% min.
	Building width	50' max.
	Building length	No max.
Height		
B	Minimum number of floors	1 Floor
	Maximum number of floors	4 Floors
	Finish ground floor level	18" above sidewalk
	First floor ceiling height	9' min. clearance, 20' max. based on building type, size, and design
	Floor-to-floor height	14' max.
Fenestration		
	Percent of façade area	40%-90%
Notes		

Aviation Building Standard

Representational Model



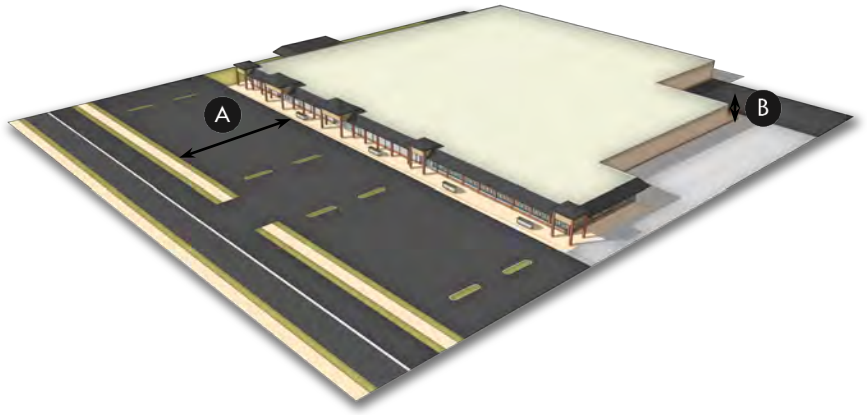
Corresponding Regulating Plan

Parking
If access is controlled, government vehicle parking is not subject to setbacks
Parking drive width shall be maximum of 15' per lane
Parking lots shall be located in rear of building with minimum of two entry/exit points
Parking: Max. 4 spaces per 1,000 sf of floor space

Use		
	Ground Floor	Aviation
	Upper Floors	Aviation, Operational
Placement		
A	RBL setback from roads/parking	Refer to current UFC to meet AT/FP standards
	Setback from roads/parking	Refer to current UFC to meet AT/FP standards
Shape		
	Building frontage along RBL	70% min.
	Building width	100' max.
	Building length	No max.
Height		
B	Minimum number of floors	2 Floors
	Maximum number of floors	4 Floors
	Finish ground floor level	18" above sidewalk
	First floor ceiling height	No max.
	Floor-to-floor height	No max.
Fenestration		
	Percent of façade area	60%-90%
Notes		

Community Support Building Standard

Representational Model



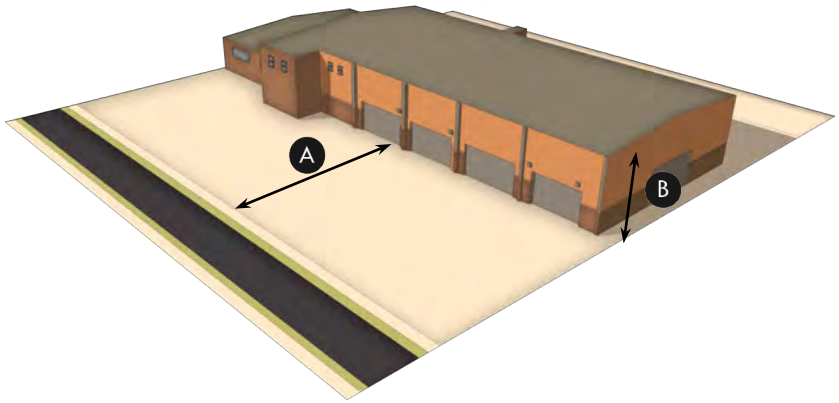
Corresponding Regulating Plan

Parking
If access is controlled, government vehicle parking is not subject to setbacks
Parking drive width shall be maximum of 15' per lane
Parking should be sufficient to handle peak occupancy hours
Construct sidewalks where appropriate

Use		
	Ground Floor	Commercial, Administrative
	Upper Floors	Administrative
Placement		
A	RBL setback from roads/parking	Refer to current UFC to meet AT/FP standards
	Setback from roads/parking	Refer to current UFC to meet AT/FP standards
Shape		
	Building frontage along RBL	70% min.
	Building width	No max.
	Building length	No max.
Height		
B	Minimum number of floors	1 Floor
	Maximum number of floors	4 Floors
	Finish ground floor level	18" above sidewalk
	First floor ceiling height	9' min. clearance, 20' max. based on building type, size, and design
	Floor-to-floor height	No max.
Fenestration		
	Percent of façade area	10%-50%
Notes		

Industrial Building Standard

Representational Model



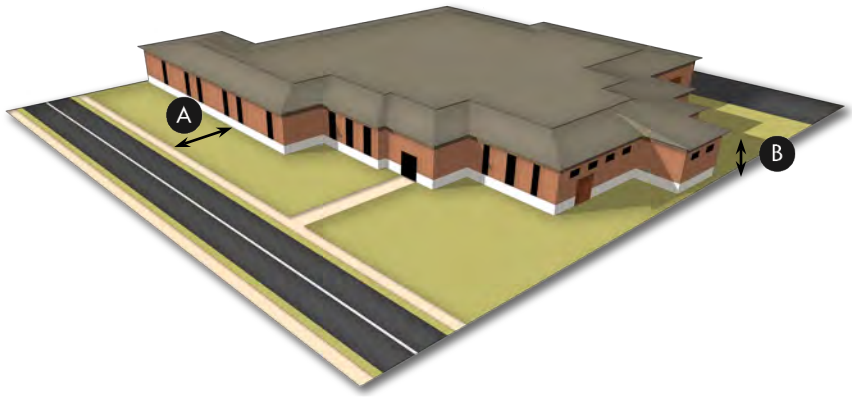
Corresponding Regulating Plan

Parking
If access is controlled, government vehicle parking is not subject to setbacks
Large parking lots can be broken up through curvilinear design
Parking drive width shall be maximum of 15' per lane to accommodate large vehicles
Parking: Max. 2 spaces per 1,000 sf of floor space

Use		
	Ground Floor	Industrial
	Upper Floors	Industrial
Placement		
A	RBL setback from roads/parking	Refer to current UFC to meet AT/FP standards
	Setback from roads/parking	Refer to current UFC to meet AT/FP standards
Shape		
	Building frontage along RBL	70% min.
	Building width	No max.
	Building length	No max.
Height		
B	Minimum number of floors	1 Floor
	Maximum number of floors	4 Floors
	Finish ground floor level	18" above sidewalk
	First floor ceiling height	9' min. clearance, 20' max. based on building type, size, and design
	Floor-to-floor height	No max.
Fenestration		
	Percent of façade area	8%
Notes		

Medical Building Standard

Representational Model



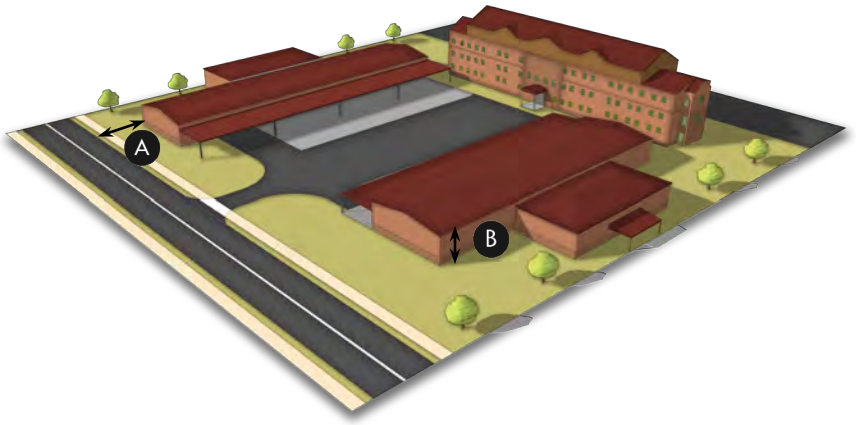
Corresponding Regulating Plan

Parking
If access is controlled, government vehicle parking is not subject to setbacks
Parking drive width shall be maximum of 15' per lane
Streets should be physically separated from medical uses
Parking: Max. 4 spaces per 1,000 sf of floor space

Use		
	Ground Floor	Medical, Commercial
	Upper Floors	Medical
Placement		
A	RBL setback from roads/parking	Refer to current UFC to meet AT/FP standards
	Setback from roads/parking	Refer to current UFC to meet AT/FP standards
Shape		
	Building frontage along RBL	70% min.
	Building width	No max.
	Building length	No max.
Height		
B	Minimum number of floors	1 Floor
	Maximum number of floors	4 Floors
	Finish ground floor level	18" above sidewalk
	First floor ceiling height	9' min. clearance, 20' max. based on building type, size, and design
	Floor-to-floor height	9' min. clear, 12' max.
Fenestration		
	Percent of façade area	30%-70%
Notes		

Mission Set Building Standard

Representational Model



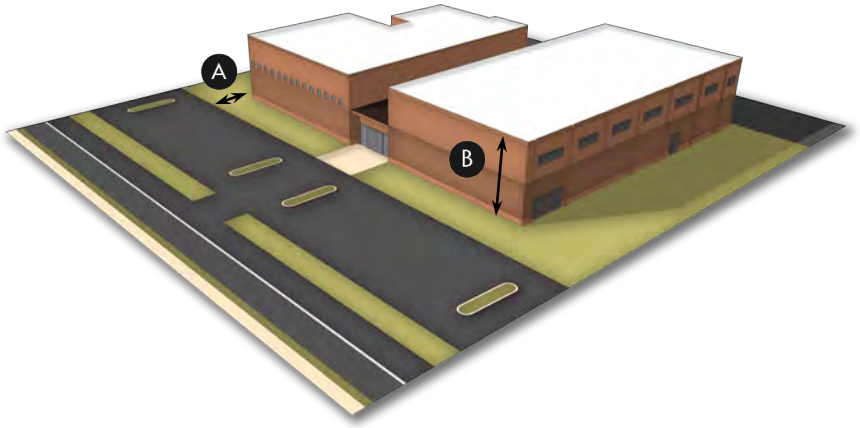
Corresponding Regulating Plan

Parking
If access is controlled, government vehicle parking is not subject to setbacks
Parking drive width shall be maximum of 15' per lane
Streets should be physically separated from mission set uses
Parking: Max. 4 spaces per 1,000 sf of floor space

Use		
	Ground Floor	Mission, Operational, Administrative
	Upper Floors	Mission
Placement		
A	RBL setback from roads/parking	Refer to current UFC to meet AT/FP standards
	Setback from roads/parking	Refer to current UFC to meet AT/FP standards
Shape		
	Building frontage along RBL	70% min.
	Building width	200' max.
	Building length	500' max.
Height		
B	Minimum number of floors	1 Floor
	Maximum number of floors	4 Floors
	Finish ground floor level	18" above sidewalk
	First floor ceiling height	9' min. clearance, 20' max. based on building type, size, and design
	Floor-to-floor height	9' min. clear, 12' max.
Fenestration		
	Percent of façade area	30%-70%
Notes		

Recreation Building Standard

Representational Model



Corresponding Regulating Plan

Parking
If access is controlled, government vehicle parking is not subject to setbacks
Parking drive width shall be maximum of 15' per lane
Streets should be physically separated from recreation uses
Parking: Max. 4 spaces per 1,000 sf of floor space

Use		
	Ground Floor	Recreation, Training, Parks, Fitness Centers, MWR Facilities
	Upper Floors	Recreation, Training, Parks, Fitness Centers, MWR Facilities
Placement		
A	RBL setback from roads/parking	Refer to current UFC to meet AT/FP standards
	Setback from roads/parking	Refer to current UFC to meet AT/FP standards
Shape		
	Building frontage along RBL	70% min.
	Building width	No max.
	Building length	No max.
Height		
B	Minimum number of floors	1 Floor
	Maximum number of floors	4 Floors
	Finish ground floor level	18" above sidewalk
	First floor ceiling height	9' min. clearance, 20' max. based on building type, size, and design
	Floor-to-floor height	No max.
Fenestration		
	Percent of façade area	8%
Notes		

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PART II
STREET STANDARDS

Kentucky Avenue
Cole Park District

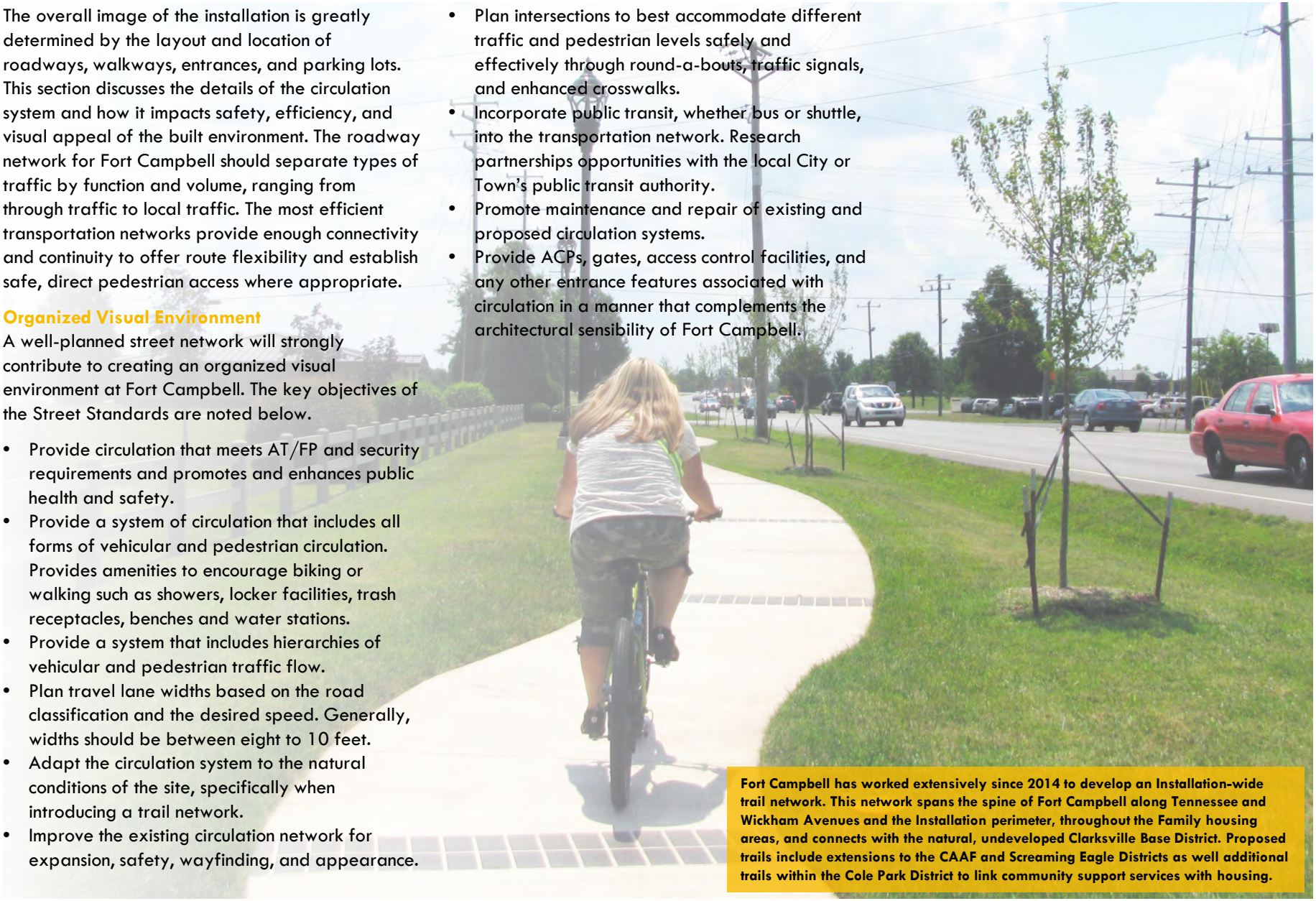
Street Standards Overview

The overall image of the installation is greatly determined by the layout and location of roadways, walkways, entrances, and parking lots. This section discusses the details of the circulation system and how it impacts safety, efficiency, and visual appeal of the built environment. The roadway network for Fort Campbell should separate types of traffic by function and volume, ranging from through traffic to local traffic. The most efficient transportation networks provide enough connectivity and continuity to offer route flexibility and establish safe, direct pedestrian access where appropriate.

Organized Visual Environment

A well-planned street network will strongly contribute to creating an organized visual environment at Fort Campbell. The key objectives of the Street Standards are noted below.

- Provide circulation that meets AT/FP and security requirements and promotes and enhances public health and safety.
- Provide a system of circulation that includes all forms of vehicular and pedestrian circulation. Provides amenities to encourage biking or walking such as showers, locker facilities, trash receptacles, benches and water stations.
- Provide a system that includes hierarchies of vehicular and pedestrian traffic flow.
- Plan travel lane widths based on the road classification and the desired speed. Generally, widths should be between eight to 10 feet.
- Adapt the circulation system to the natural conditions of the site, specifically when introducing a trail network.
- Improve the existing circulation network for expansion, safety, wayfinding, and appearance.
- Plan intersections to best accommodate different traffic and pedestrian levels safely and effectively through round-a-bouts, traffic signals, and enhanced crosswalks.
- Incorporate public transit, whether bus or shuttle, into the transportation network. Research partnerships opportunities with the local City or Town's public transit authority.
- Promote maintenance and repair of existing and proposed circulation systems.
- Provide ACPs, gates, access control facilities, and any other entrance features associated with circulation in a manner that complements the architectural sensibility of Fort Campbell.



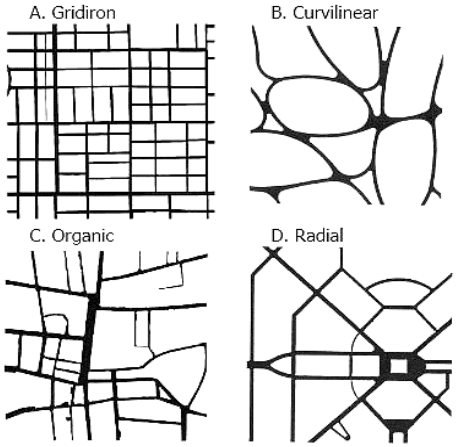
Fort Campbell has worked extensively since 2014 to develop an Installation-wide trail network. This network spans the spine of Fort Campbell along Tennessee and Wickham Avenues and the Installation perimeter, throughout the Family housing areas, and connects with the natural, undeveloped Clarksville Base District. Proposed trails include extensions to the CAAF and Screaming Eagle Districts as well additional trails within the Cole Park District to link community support services with housing.

Street Character

Connectivity

Connectivity refers to a system of streets with multiple routes and connections serving the same origins and destinations. Research has shown that providing a strong connected network of roads and pedestrian facilities can help distribute traffic, reduce travel distances and times, improve routing for transit, and reduce walking distances. A connected system permits traffic to diffuse across the larger network when demand is high. It has also been proven to reduce emergency response times. As demonstrated below, there are many ways to achieve a connected network of streets besides a grid. The primary consideration is the number of intersections and means of multiple paths to the same destination.

In Fort Campbell's densest Districts - Screaming Eagle, Town Center, and northern Cole Park - connectivity is high due to the grid road network. Fort Campbell's street network must support a wide range of vehicles and modes, including Privately-Owned Vehicles (POVs), tactical vehicles, pedestrians, bicyclists, and public transit. A strong transportation network is required to safely and efficiently integrate multiple modes of transportation.



Road Network Diagrams

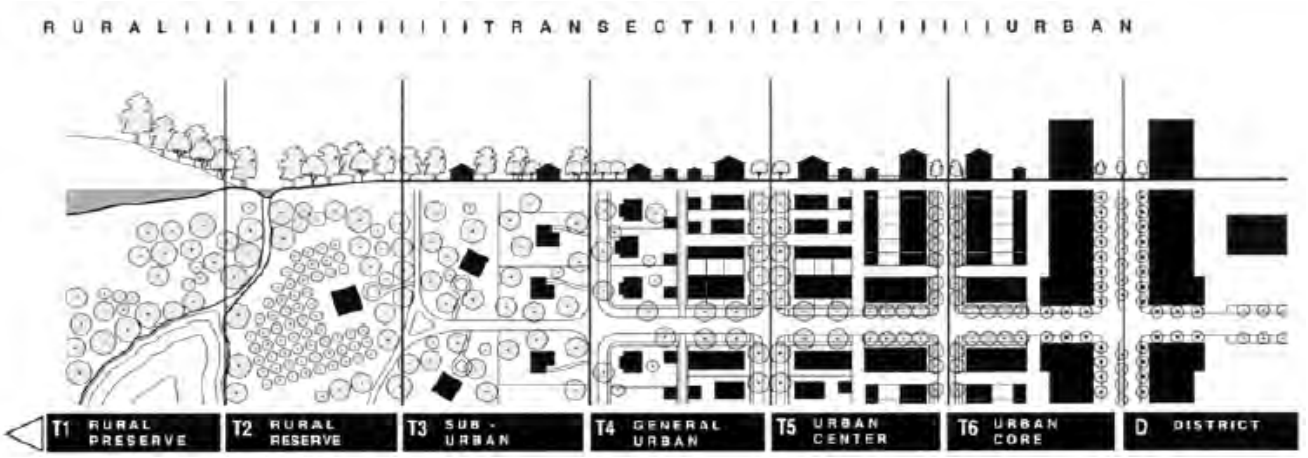
Hierarchy

The road network should follow a clear hierarchical order. The Transportation Network Plan identifies the streets that should conform to the three functional classifications of **Arterial**, **Collector**, and **Local**. It is important to note that the detailed planning of each road will vary based on the **context** of the **District area**. Later in this section is an overview for each of the three classifications and the forms they should take.

To help clarify the delineation of areas, the context is often defined by the idea of a transect. Like building elements, street elements should change along the transect (a typical transect is demonstrated on the right below). Elements that could change include the number of lanes, planting strips, center medians, and sidewalks.

The Transportation Network below highlights the 101 CAB complex. Internal circulation consists of Local Streets. A proposed Collector Street would continue north to the extents of the Installation. The development north and east of the complex, the traffic occurring on 101st Airborne Division Road, and the proximity to a Gate requires the introduction of an Arterial Street. The blue line represents District boundaries.

Below Right: The example shows the transect spanning between the urban district to the rural preserve. The pedestrian and vehicular routes and the building form created from the road layout distinctively change across the spectrum.

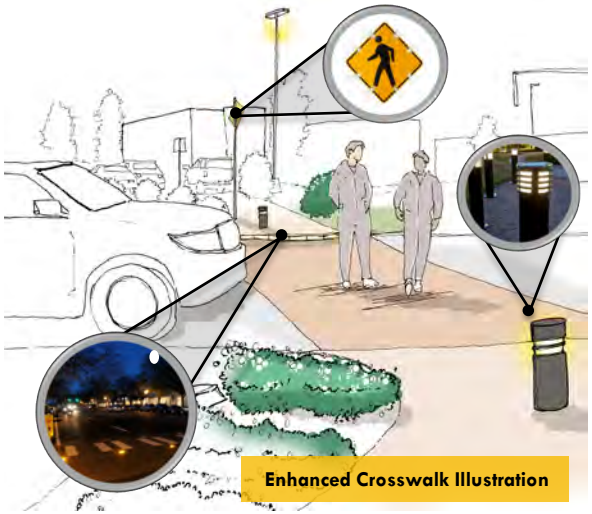


Street Character

Intersections

Intersections should be designed in a fashion that safely conveys traffic at points where circulation flows intermix. Intersections are to be designed in a similar fashion as the road hierarchy. The intersections should clearly reflect the road hierarchy and direction of traffic flow. Turning lanes should be provided at most intersections with Collector or Arterial Streets to reduce conflict and promote safety.

When planning construction of new intersections, avoid dangerous, complex intersections of more than two streets intersecting at one point or offset intersections. They should be no closer than a minimum distance of 100 feet (30 meters). All roadways should intersect at right angles (90 degrees). Crosswalks should feature high visibility materials such as paint, vinyl strips, contrasting pavers, lighting, or timed signals. Although the Street Standards encourage connectivity, intersections should be minimized along Arterial Streets to reduce points of conflict and increase safety. Connectivity should be balanced with safety. At potentially dangerous crossings, install additional elements to increase safety such as flashing crosswalk indicators, lights, or striping.



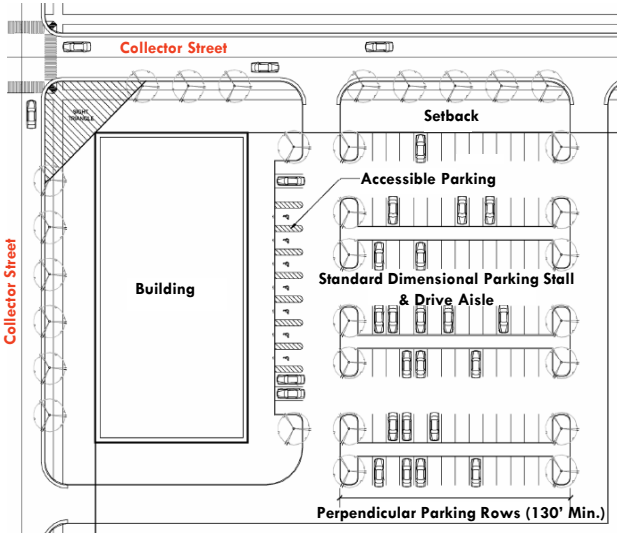
Enhanced Crosswalk Illustration

Parking

Parking areas can be designed and enhanced to provide a more pleasing impact and a more comfortable physical experience for the user. The following strategies shall be used in their design and placement.

- Parking lots should be placed between and/or behind buildings to reduce the visual impact from prominent public areas.
- Parking lots should be efficient in the design and placement of access drives and parking spaces. All drives providing direct access to parking spaces should provide space on both sides of the drive.
- Low Impact Development (LID) and stormwater management must be incorporated as part of the landscape amenities.
- Parking space requirements of a facility can be minimized by selecting a site that will allow shared parking. For example, sharing parking lots that have different peak demand times such as an administrative building sharing parking with a bowling alley.
- For initial planning and programming, allocate 400 square feet of parking lot area per car. The total provides adequate minimum space for the parking spaces, access drives, and planting islands that make up a parking lot. This allocation is not withstanding tactical military vehicles.
- All parking lots will be accessible to persons with disabilities and number in conformance with the required minimum spaces found in the TDG.
- Large parking lots can be broken up through curvilinear designs or the introduction of large planting islands.

Existing Parking Within Fort Campbell Demonstrating Appropriate Setbacks and Landscaping



Sidewalks and Trails

Sidewalks

Pathways, or sidewalks, are dedicated circulation routes for troops and pedestrians, in order to minimize conflicts with vehicles. Sidewalks are classified to conform to the designated road hierarchy. Non-roadway oriented sidewalks should be sized and placed where people will use them. They should be planned to meet the following objectives.

- Provide pathways that are designed at a pedestrian scale to be comfortable and pleasant.
- Provide safe and secure pedestrian facilities that are separate from vehicular and railroad traffic.
- Provide amenities for pedestrians.
- Provide accessibility to all users, including physically impaired or challenged persons. All street and driveway crossings shall be ramped, marked, and accessible to persons with disabilities in accordance with requirements of the Uniform Federal Accessibility Standards (UFAS).
- Provide links to major attractions and generators of pedestrian traffic.
- Curbs should not be provided along sidewalks to eliminate the need for additional storm drainage facilities, unless otherwise approved.

Trails

Trails provide direct routes between primary traffic and destinations within the Installation as well as access to scenic open space and recreation areas. The Network should be continuous and minimize conflicts between bikes, pedestrians, and vehicles. The Trail Network should be planned according to the level of separation they maintain from roadways, and provide a comfortable, enjoyable experience for the user.

Trails also provide a desirable alternative to total dependence on motor-driven vehicles as a means of circulation. This reduced dependence on motor vehicles has health benefits and promotes sustainability by conserving energy, reducing air pollution, and potentially decreasing the land requirement for parking.

Fort Campbell has continually planned and executed its Trail Network Plan, constantly building throughout the ADP process. This trail has circulated the perimeter of the Installation as well as internally within the entire cantonment area.

These trails integrate sidewalks, pathways, and crosswalks and not only follow along roadways, but also within undeveloped areas. The Installation has also incorporated abandoned railroads into the network through rails-with-trails and rails-to-trails. A rails-to-trails network is a trail system that is proposed within inactive railways. A rails-with-trails network is a trail system that is proposed along active rails. Trails should be 10 feet wide and incorporate route identifiers such as route signs and maps.

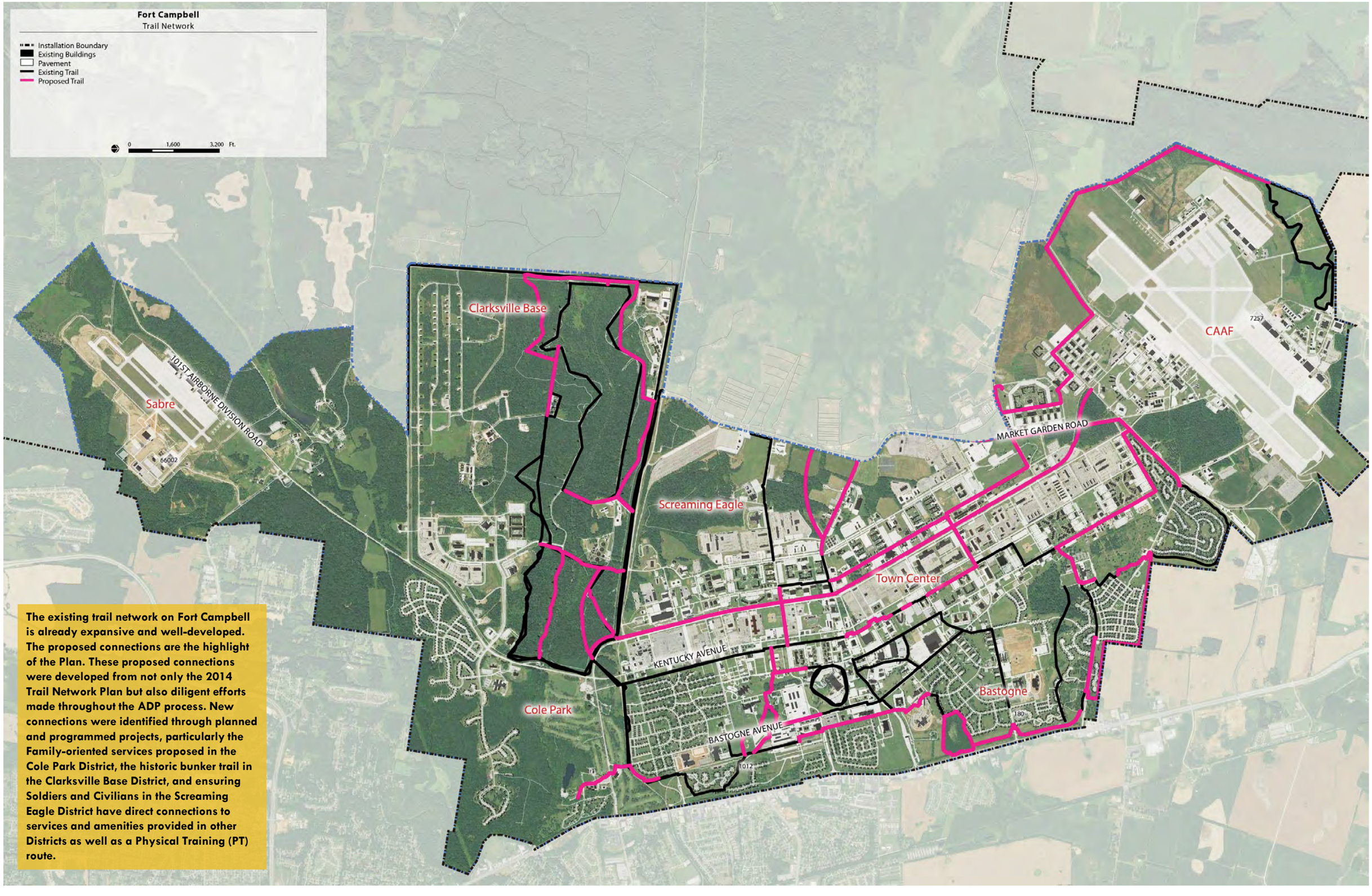
All trails must meet the following criteria:

- Mix off-road paths that assume their own alignment, and on-road trails that parallel streets.
- Provide trails that are designed at a pedestrian scale to be comfortable and pleasant.
- Provide safe and secure pedestrian facilities that are separate from vehicular and railroad traffic as much as possible.
- Provide amenities for pedestrians such as benches and tables; trash and recycle receptacles, drinking fountains, bicycle racks, exercise stations, and restrooms and showers.
- Provide accessibility to all users, including physically impaired or challenged persons. All street and driveway crossings must be ramped, marked, and accessible to persons with disabilities in accordance with requirements of the UFAS.
- Provide links to major attractions and generators of pedestrian traffic.

The following page highlights the Trail Network including existing and proposed routes.

Sidewalk along Michigan Avenue along playgrounds and leading to the 101st Air Assault Headquarters Town Center District

Proposed Rails-with-Trails along Harper Village Housing in the Cole Park District



The existing trail network on Fort Campbell is already expansive and well-developed. The proposed connections are the highlight of the Plan. These proposed connections were developed from not only the 2014 Trail Network Plan but also diligent efforts made throughout the ADP process. New connections were identified through planned and programmed projects, particularly the Family-oriented services proposed in the Cole Park District, the historic bunker trail in the Clarksville Base District, and ensuring Soldiers and Civilians in the Screaming Eagle District have direct connections to services and amenities provided in other Districts as well as a Physical Training (PT) route.

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Sustainability

Triple Bottom Line

Transportation projects and programs serve many different, and sometimes competing objectives. Sustainability is a concept that enables decision-makers to make balanced choices around these objectives. The three principles of the "triple bottom line" upon which sustainability is based—social, economic, and environmental—capture the broad range of transportation goals and objectives. In times of diminishing economic and natural resources, using sustainable approaches in transportation infrastructure will help Fort Campbell to continue to enhance quality of life and serve the transportation needs of the present without compromising the ability of future generations to meet their needs.

The emerging focus on planning sustainable streets reflects the diversity of demands on our installation's street networks. In response, the practice of design is changing as Federal, State, and Local policies and objectives increasingly require integration of livability, and sustainability features such as multimodal facilities, space for social interaction, and natural landscaping elements.

Impacts

Streets have impacts on sustainability beyond the materials used and the runoff generated. There is the heat island effect which increases the ambient air temperature requiring additional energy demands for air conditioning and reducing the comfort of pedestrians. This in turn pushes people to drive rather than walk, using more fossil fuels and reducing air quality. There is also the social aspect to sustainability that should be considered. As discussed earlier, streets should be planned for more than just vehicles – they are places for people.

Available Tools

The Federal Highway Administration (FHWA) developed INVEST (Infrastructure Voluntary Evaluation Sustainability Tool) as a practical, web-based collection of voluntary best practices, called criteria, designed to help transportation agencies integrate sustainability into their programs (policies, processes, procedures and practices) and projects. It can be used by transportation agencies, such as Departments of Transportation (DOTs), Metropolitan Planning Organizations (MPOs), Council of Governments (COGs), DPWs, and their consultants and partners, to evaluate and aid the integration of sustainability into their programs and projects. Fort Campbell should consider the use of this free resource to evaluate its transportation program.

Bioswale Buffer Between Building and Parking
Cole Park District

Pervious Pavement on Fort Campbell

FHWA Sustainability Initiative

Street Principles Overview

Street Principles are the next step in defining the Street Standards for Fort Campbell. They establish precepts for the Transportation Network. These Street Principles are to be used in tandem with the Real Property Objectives at the start of any transportation project to implement Fort Campbell's Real Property Vision.

The Street Principles described on the following pages should be implemented in every project proposed for Fort Campbell. They describe the overall environment and help suggest the context in which the planning team will formulate the project.

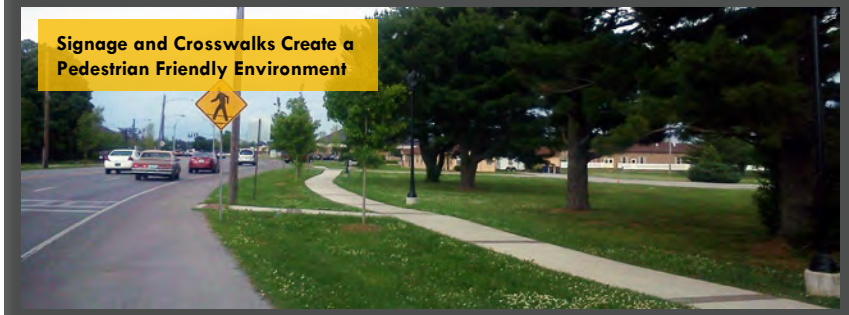
FORT CAMPBELL STREET PRINCIPLES

- Develop a Hierarchy of Streets That Is Easily Identifiable of Arterial, Collector, and Local Streets
- Construct Sidewalks Where Appropriate
- Limit Street Trees to Reduce Maintenance Costs and Improve Safety
- Invest in Partnerships With the City of Clarksville to Increase Public Transit

The City of Clarksville Transit's Bus Route 1 line has designated stops on Fort Campbell. These stops include Gates 1, 2, 3 and 4 and the PX. The Installation should continue to seek partnerships with the City of Clarksville for additional transit stops or to further develop an Installation line that intersects with Route 1 to increase overall ridership. Lighting, benches, and landscaping should also be enhanced at all shelters to encourage use.

Street Principles

Forrest Avenue and Reed Avenue Intersection With Turning Lane Bastogne District



Signage and Crosswalks Create a Pedestrian Friendly Environment

Develop a Hierarchy of Roads That Is Easily Identifiable of Arterial, Collector, and Local Streets

Street hierarchy allows users to understand a street's purpose. Adequate sizing, along with proper signage assists with controlling speed, safety, and priority of roadways across the Installation.

Although Fort Campbell has a strong gridded layout, many of the roads do not support the current traffic levels or include sidewalks where needed. For example, roads at Gate entrances do not include complete sidewalks which are needed particularly for the transit stops. Also, roads such as Wickham Avenue and Mabry Road need to support the heavy traffic and many intersections with a central turning lane.

The existing Collector Street system is generally complete, however the Clarksville Base District ADP proposes extending California Road. In order to reduce maintenance and construction costs, Fort Campbell has thoroughly examined its pedestrian network, specifically on Arterial Streets, and noted where sidewalks and landscaping are required.

Applying standard signage, whether vehicular speeds, pedestrian crossings, and streets, can significantly help on- and off-post populations navigate the system.

Above: Sidewalks Should be Linked to the Road Stormwater Drainage System to Avoid Duplicating Systems
Right: Sidewalks Can Be Used to Direct Visitors to Landmarks and as a Wayfinding System

Construct Sidewalks Where Appropriate

Sidewalks should be connected in order to enable wayfinding and to provide a sense of direction and purpose to a destination. At minimum, a sidewalk should be five feet wide and separated from the road with a planting strip. Depending on the pedestrian activity level and adjacent services and facilities, some sidewalks may need to be widened to accommodate Families, PT, and larger groups. Connected sidewalks are crucial to creating a pedestrian friendly community, which will reduce environmental impacts, increase a sense of Installation cohesion, and provide health benefits. Sidewalks are either not continuous or are non-existent. The Installation has a large population and provides many Family services such as the Family, Morale, Welfare, and Recreation (FMWR), schools, retail, parks, and medical facilities that require a safe walk for all ages. Sidewalks should also be included within complexes and leading to prominent facilities.

Street Principles

Mature Trees Located too Close to Electrical Lines

Heavy Vegetation Along a Trail

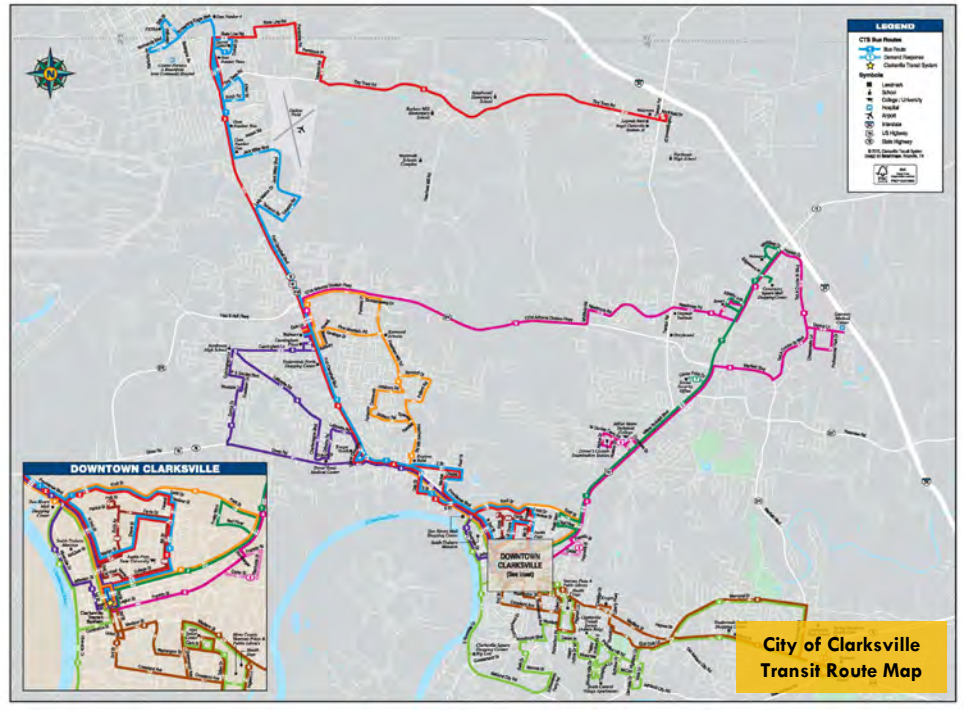
Limit Street Trees to Reduce Maintenance Costs and Improve Safety

Similar to the Building Principle to limit landscaping in proximity to buildings, street trees along roads should be introduced where necessary or required.

On post, trees interfere with utility lines or require pruning due to overgrowth. Trees should be planted in outdoor gathering areas and protected in open spaces. If placed along roadways, trees must have appropriate setbacks from the travel lane. Specific guidance on planting trees along streets or utility corridors is contained in the TDG.

Later in this section, one of the three Arterial Streets consisting of four, 12-foot travel lanes and a five to 10-foot sidewalk can include landscaping. This classification is currently limited to Bastogne Avenue.

Other roads classifications should consider easily maintainable vegetation such as bushes or other native species. Trees along trails in undeveloped areas are more appropriate and are more manageable due to lack of utility lanes and minimal interference with buildings and vehicular traffic.



City of Clarksville Transit Route Map

Invest in Partnerships With the City of Clarksville to Increase Public Transit

Transit is a healthy community strategy that reduces the deleterious effects of over-reliance on POV travel, including congestion, safety hazards, emissions, lower water quality, and sedentary lifestyles. Currently, there are no additional Route 1 stops planned. However, Fort Campbell should meet with the City of Clarksville's Transit Authority to discuss opportunities to extend or add stops Route 1 line or integrate an Installation-wide shuttle line.

The transit line should include park and ride lots, arrival/departure stations, and shelters. Connections are crucial to alleviate congestion and to encourage compact, walkable areas and healthy living. The transit line also assists the on-post population in accessing services and amenities within the local community.

It is important to provide enough stops to sufficiently serve major destinations without making service impractical. Signage should indicate the route number and transit map, at a minimum, with a bench or shelter. Shelters should be a minimum of three feet from the sidewalk with a dimension of five by eight feet and seven feet tall.

Street Form Overview

As noted earlier, the IPS supports the Regulating and Illustrative Plans in each of Fort Campbell District's ADP by specifying Building, Street, and Landscape Standards. These Standards create the basis for a form-based code. Implementation through form-based coding allows installations to exercise more control in the development process.

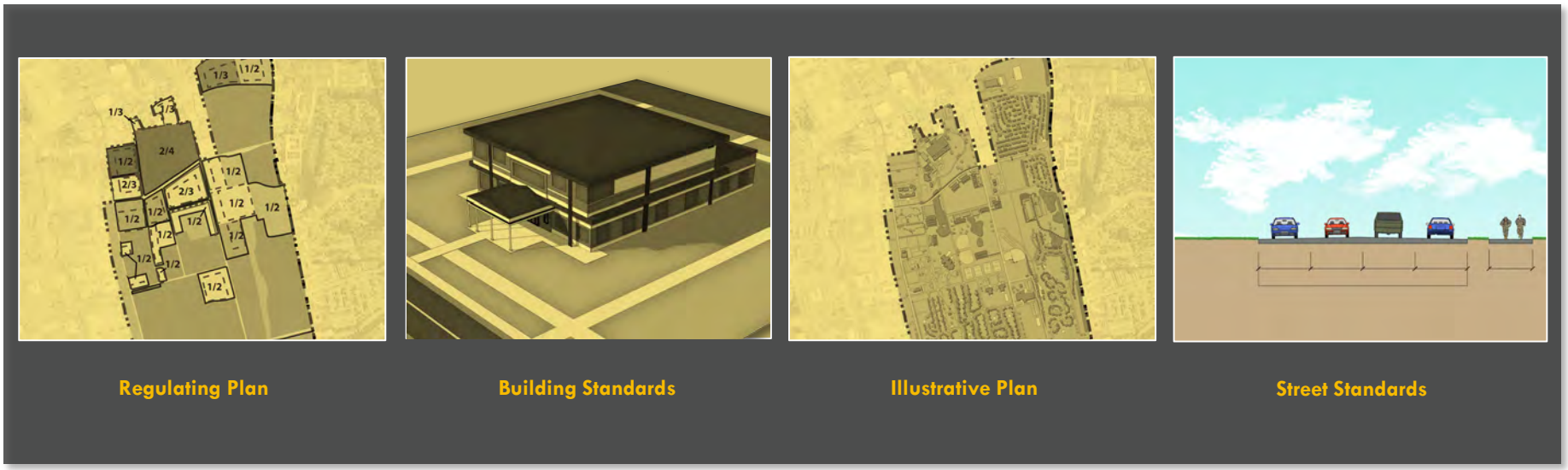
The code is a graphic tool that condenses the Fort Campbell Vision, Goals, and Objectives into a clear, readable, enforceable plan for development. The code provides clear parameters for how each of three functional classifications – Arterial, Collector, and Local – should be planned. These parameters outline the size and placement of the street features:

- Travel lanes;
- Planted medians;
- Planting strips; and
- Sidewalks.

The Arterial Streets consist of three variations, however all travel lanes measure 12 feet.

- Arterial With Sidewalks and Landscaping;
- Arterial With Sidewalk on One Side; and
- Arterial Without Sidewalks and One Turning Lane.

The following pages review how each street on Fort Campbell was classified, as well as the specific form Standards for each classification.



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Fort Campbell
Transportation Network

- Installation Boundary
- Existing Buildings
- Pavement
- Existing Collector
- Exisiting Local
- City of Clarksville Transit Stop
- Parking
- Arterial With Proposed Sidewalk and Landscaping
- Arterial With Proposed Sidewalk on One Side
- Arterial Without Sidewalk

0 1,600 3,200 Ft.

Clarksville Base

Sabre

101ST AIRBORNE DIVISION ROAD

66002

CAAF

7257

MARKET GARDEN ROAD

Screaming Eagle

Town Center

KENTUCKY AVENUE

Cole Park

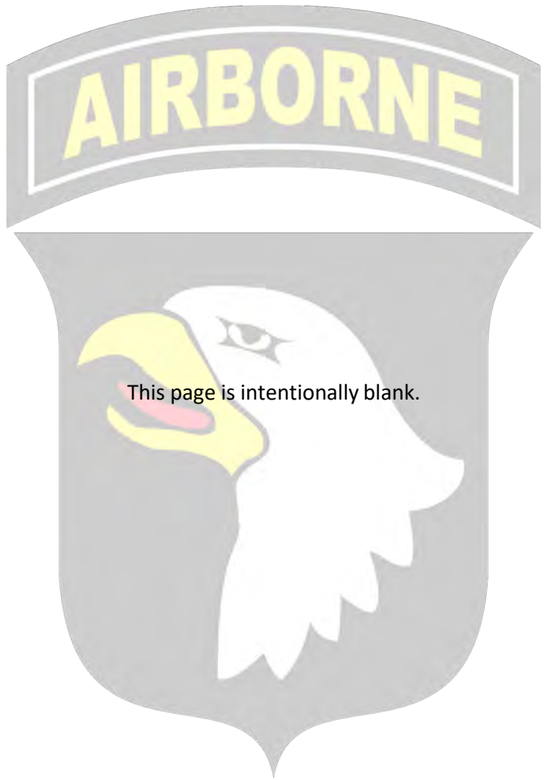
BASTOGNE AVENUE

1012

Bastogne

180

The Transportation Network highlights the classifications of roadways. The first Arterial Street incorporates landscaping and only applies to Bastogne Road. Arterials requiring a sidewalk on one side consist of mostly west-east roads from gate entrances; and Arterials with no sidewalks are on roads with higher vehicular speeds, limited pedestrian activity, and turning lanes. Collector Streets mostly consist of thoroughfares running north-south and west-east. All Local Streets are existing and are limited mostly to the housing areas. The Plan also incorporates applicable projects from the ADPs including road realignments and extensions to create an organized, efficient network. Existing City of Clarksville bus stops are shown along Fort Campbell Boulevard and the PX within the Town Center District.



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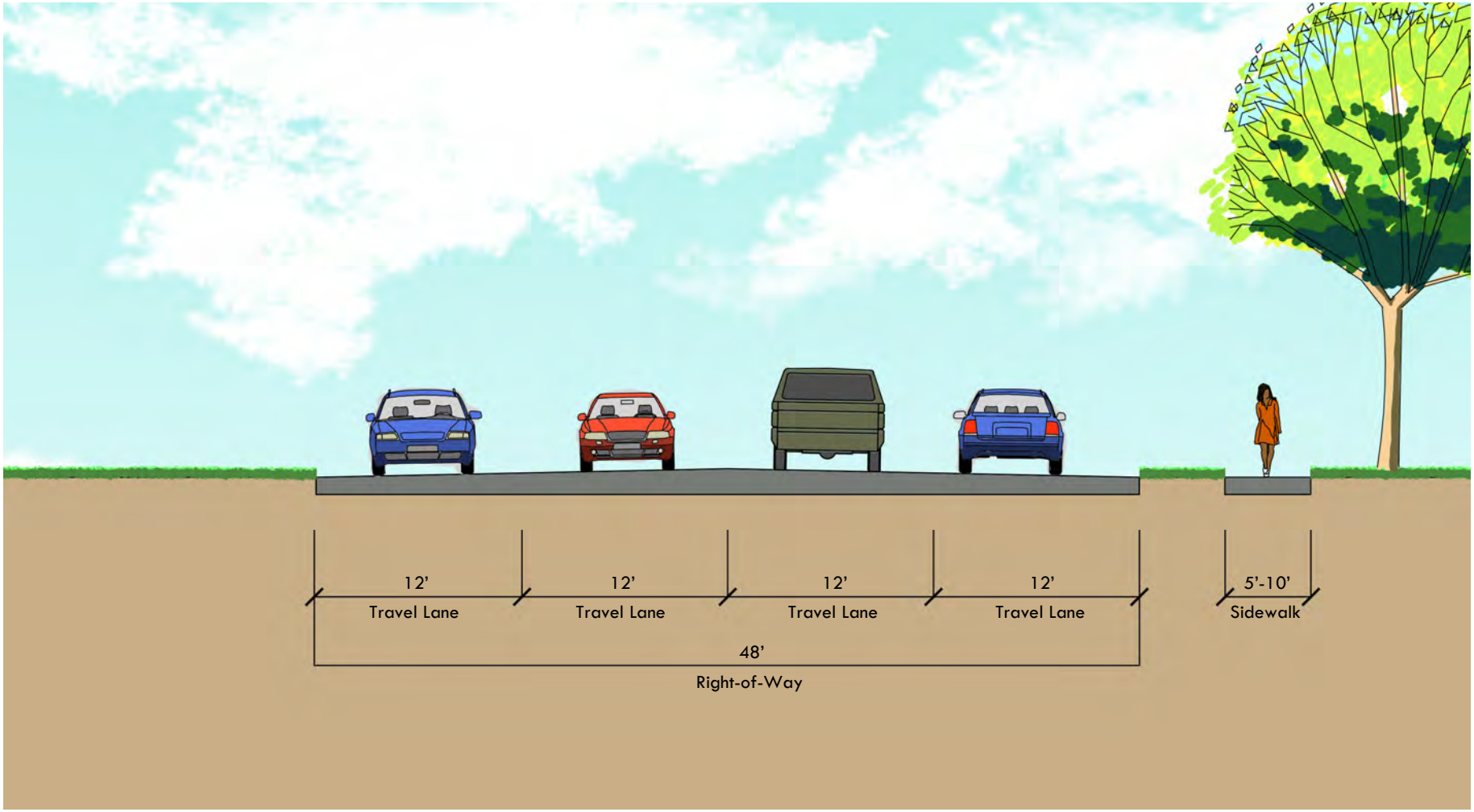
Arterial Street With Sidewalk and Landscaping

Arterial Street With Sidewalk and Landscaping

Arterial Streets connect major activity centers and provide the primary access through the Installation. These Streets often traverse the entire installation and carry the heaviest volume of traffic that results in high speed and high visibility corridors. Direct access to this type of road should be restricted to crossing at major intersections. Arterial Streets are often designated as boulevards in urban areas and avenues in rural and suburban areas.

The image below depicts an example of one of three Arterial Streets proposed for Fort Campbell and is currently limited to the southern portion of Bastogne Avenue mainly due to its proximity to housing. It is a heavily traveled road for both vehicles and pedestrians, therefore it is crucial to provide landscaping through planting strips and landscaping to create a more aesthetically-pleasing roadway.

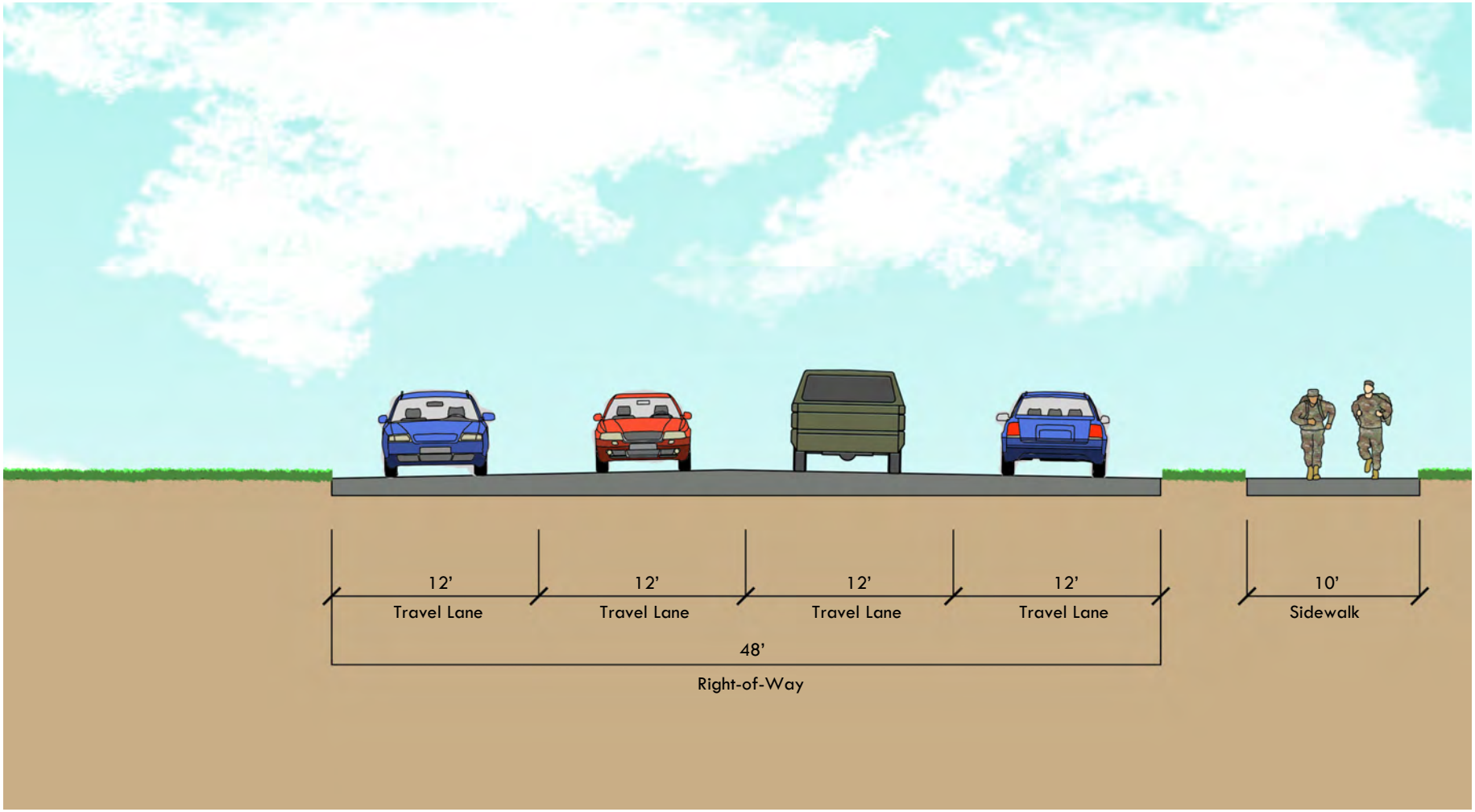


Arterial Street With Sidewalk on One Side

Arterial Street With Sidewalk and Landscaping

Arterial Streets connect major activity centers and provide the primary access through the Installation. These Streets often traverse the entire installation and carry the heaviest volume of traffic that results in high speed and high visibility corridors. Direct access to this type of road should be restricted to crossing at major intersections. Arterial Streets are often designated as boulevards in urban areas and avenues in rural and suburban areas.

The second Arterial Street proposed for Fort Campbell does not include planted landscaping but has a minimum 10-foot sidewalk with a three-foot planting strip requirement for safety. As mentioned previously, this Arterial Street extends from Gate entrances for transit safety and also along roads for PT and larger groups. This Standard is proposed for Morgan, Jackson, and William C. Lee Roads; Screaming Eagle Boulevard; Air Assault Street; and the northern portion of Bastogne Avenue.

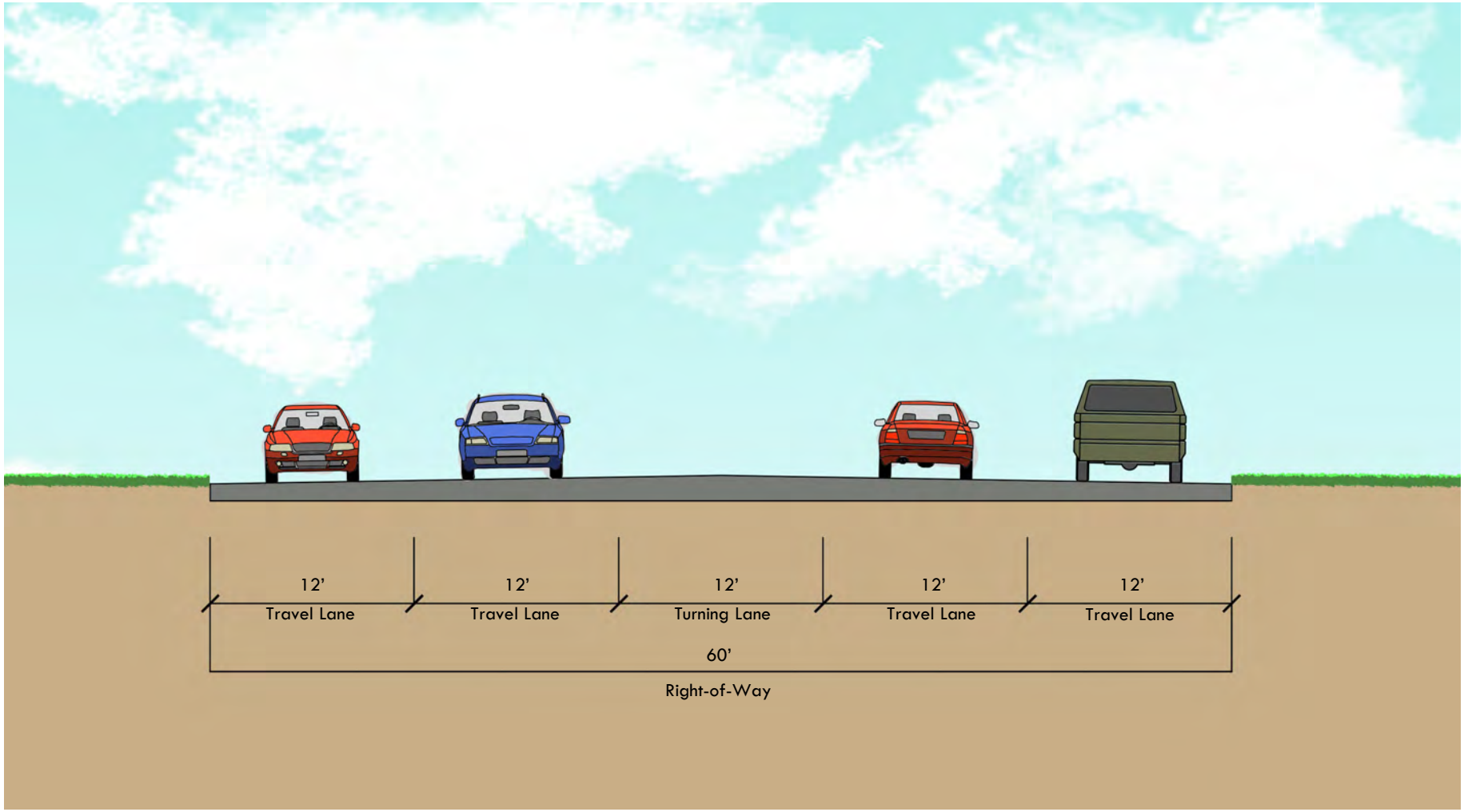


Arterial Street Without Sidewalk

Arterial Street Without Sidewalk

Arterial Streets connect major activity centers and provide the primary access through the Installation. These Streets often traverse the entire installation and carry the heaviest volume of traffic that results in high speed and high visibility corridors. Direct access to this type of road should be restricted to crossing at major intersections. Arterial Streets are often designated as boulevards in urban areas and avenues in rural and suburban areas.

The third Arterial Street proposed for Fort Campbell does not include landscaping or sidewalks but incorporates a turning lane. As mentioned previously, this Arterial Street is proposed to span the length and width of the Installation with more vehicular traffic at higher speeds and limited to non-existent pedestrian activity. This Standard is proposed for Glider, Mabry, and 101st Airborne Division Roads and Wickham Avenue.

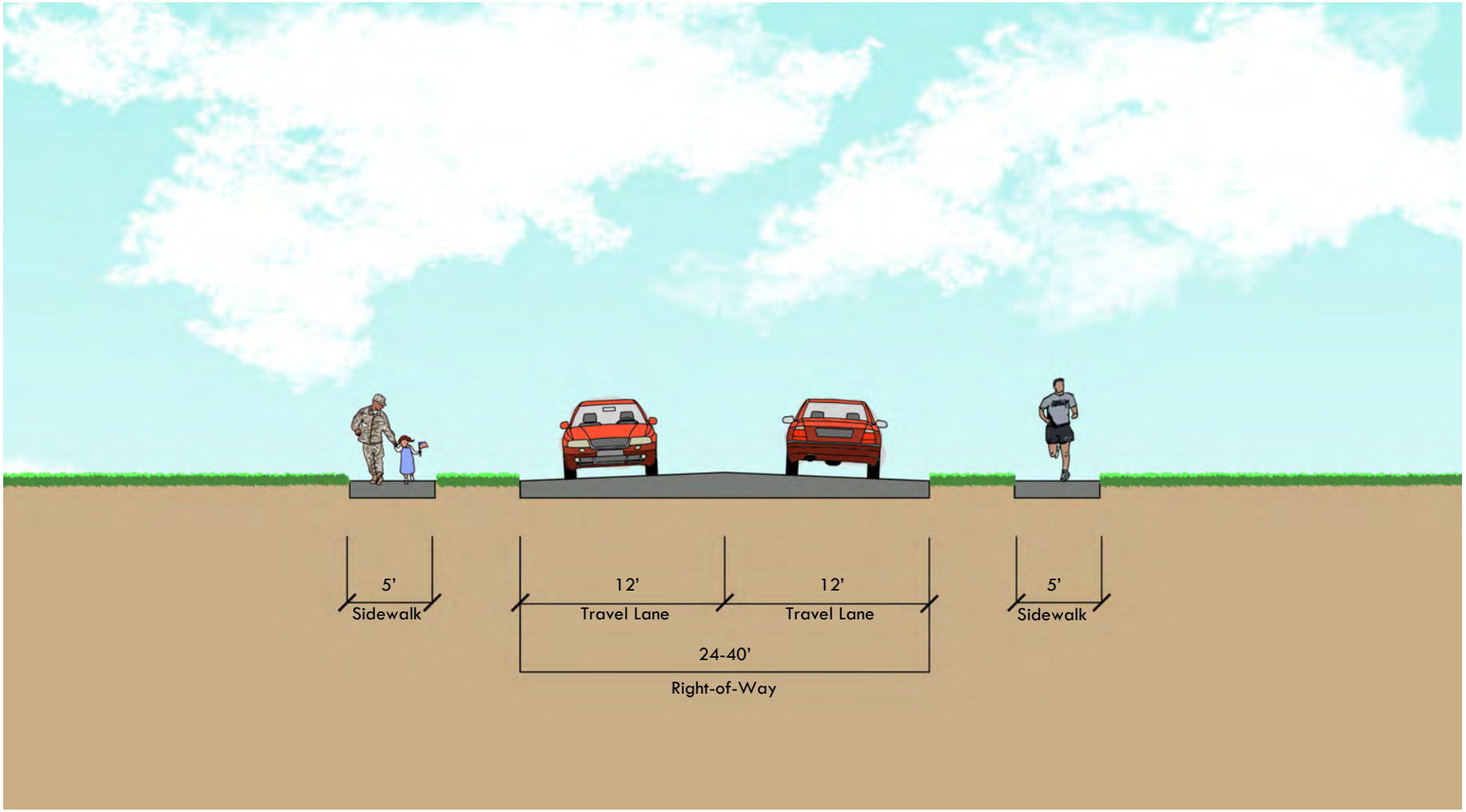


Collector Street

Collector Street

Collector Streets connect between Arterial and Local Streets, and often connect Arterial Streets to adjacent land uses. These streets accommodate moderate to slow traffic speeds and often have one lane of traffic in each direction. On-street parking is normally not provided. Collector Streets should include two or three 12-foot travel lanes with or without five-foot sidewalks on both sides. Sidewalks should be separated from traffic by a three-foot planting strip.

Curbs should not be provided along sidewalks to eliminate the need for additional storm drainage facilities, unless otherwise approved. Most of the Collector Streets are existing and located central to the Installation and running north-south and east-west with the exception of the proposed California Road extension linking Clarksville Base District to the Screaming Eagle District. This link provides growth opportunities and better access between the two Districts.

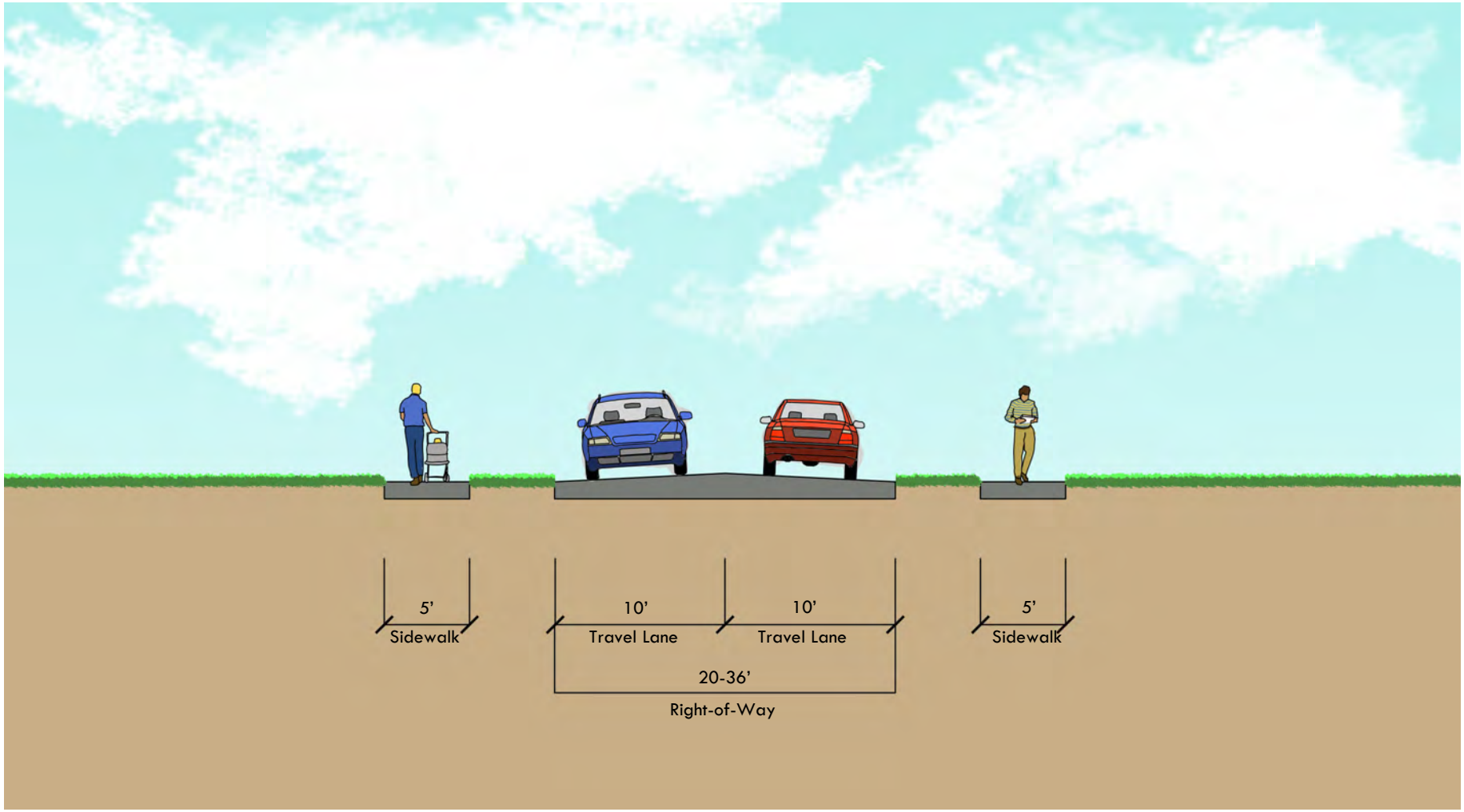


Local Street

Local Street

Local Streets provide access to individual facilities, parking, and service areas. These Streets accommodate low vehicle speeds and low volumes of traffic and usually have one lane in each direction. These Streets are not generally planned as through streets and may include "T" intersections.

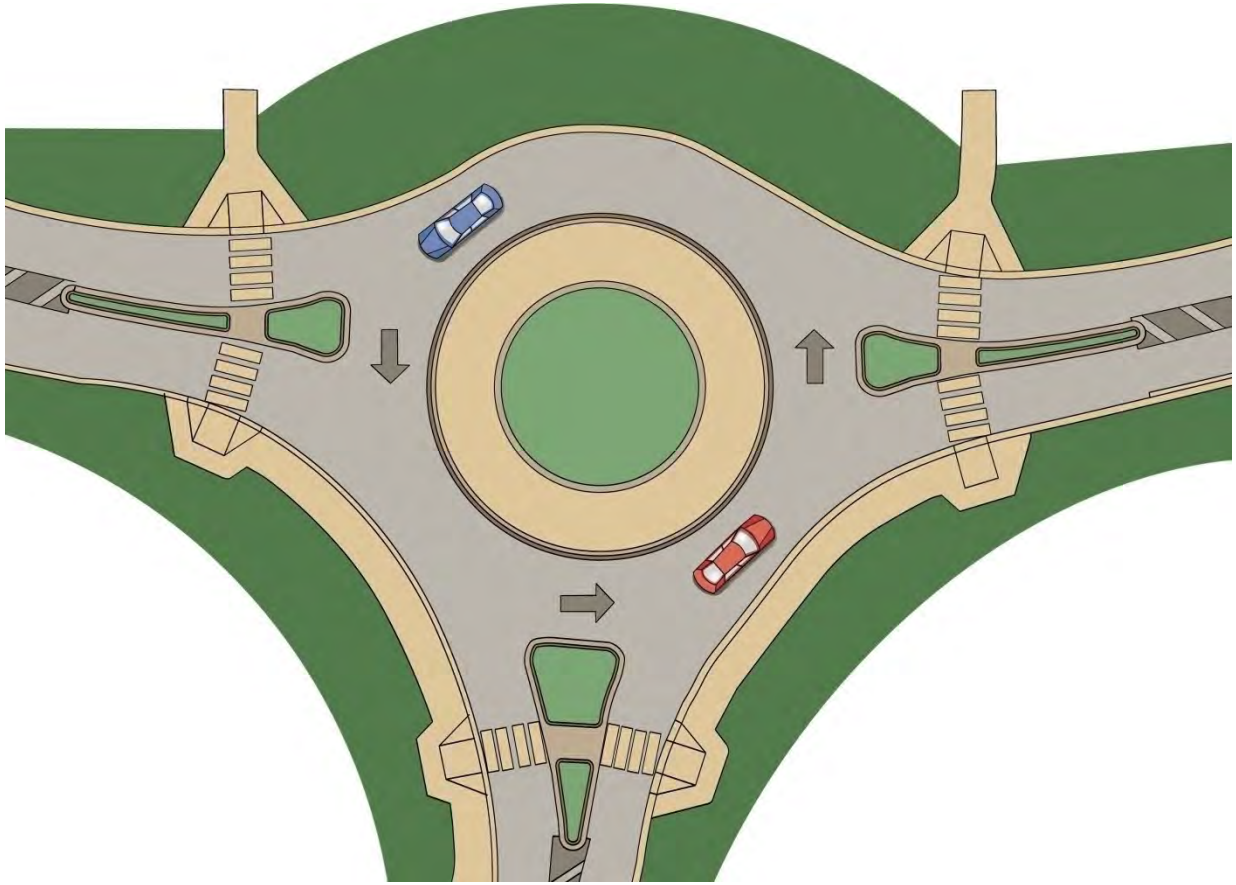
These Streets should include sidewalks on one or both sides, planting strips, and more narrow travel lanes measuring 10 feet as most are located within the housing areas of the Bastogne and Cole Park Districts. All Local Streets in the Transportation Network are existing and mostly internal to compact areas of the Town Center and Cole Park District as well as the mission set areas of Screaming Eagle, Clarksville Base, CAAF, and Sabre Districts.



Roundabouts

Roundabouts

A roundabout is a circular intersection in which traffic travels in one direction around a central island. While widely used in traffic engineering in other countries, roundabouts are not as common in the United States or on military installations. The primary benefit is safety, as roundabouts are a traffic calming device. In an intersection with a traffic light, vehicles with a green light, or at times a yellow light, maintain or increase their speed. A roundabout requires vehicles to slow down, but is convenient and efficient as traffic moves more smoothly and continuously. Where appropriate, Fort Campbell has planned roundabouts such as the one constructed on William C. Road in the Cole Park District. Incorporating roundabouts on roads such as 101st Airborne Division Road would improve traffic congestion or prominent intersections.



Vehicular Circulation	Urban Single Lane
Max Entry Speed	20 mph
Design Vehicles	Bus + 2'
Inscribed Circle Diameter	60'-75'
Entry Lane	9'
Departure Width	9'
Truck Apron	8'
Yield Line	
Directional Area	
Pedestrian Circulation/Medians	
Crosswalk	8'
Crosswalk from Main Circulation	20'
Pedestrian Refuge Island	10'

Notes:

- All roadways shall be designed in accordance with the safe and sound engineering standards of American Association of State Highway and Transportation Officials (AASHTO), Federal Highway Administration (FHWA), Kentucky Transportation Cabinet, Unified Facilities Criteria and Department of Defense.
- Setback from roadways and other buildings must conform to minimum current anti-terrorism/force protection guidance.

PART III
LANDSCAPE STANDARDS

Landscape elements include not only trees and other vegetation but also site furnishing such as benches and tables, signage, monuments, and water features.
Town Center District

Landscape Standards Overview

The Landscape Standards include the selection, placement, and maintenance of plant material on the Installation. Landscape plantings provide a simple and cost effective enhancement, when done appropriately, to the general appearance of an installation. The visual image conveyed by a military installation is defined not just by architectural character and site organization, but also by an attractive, organized landscape plan.

The presence of plant material on Fort Campbell greatly enhances the visual character and environmental quality of the Installation. If important visual zones, such as entrance zones, lack planting and screening it detracts from the overall impression. Plantings add an element of human scale to open spaces and can be used functionally to screen undesirable views, buffer winds, reinforce the hierarchy of the circulation system, or provide a visual transition between dissimilar land uses.

Landscaping is an important element in the design of outdoor spaces. Overall, the goals for plant material use include:

- Improving the physical and psychological well-being of those living and working on the Fort Campbell;
- Contributing to the preservation and restoration of natural resources on the Installation; and
- Increasing sustainability of developments (through use of native plants for energy conservation, climate modification, erosion control, air purification, and noise abatement).

When planning site landscaping it is important to:

- Incorporate native, drought-tolerant plant species, when feasible;
- Utilize bioswales throughout parking lots and open spaces to minimize impervious surfaces, provide additional landscaping, and facilitate the natural collection and filtration of stormwater;
- Design landscaping to create comfortable microclimates and to reduce the urban heat island effect; and
- Consider the mature size, root characteristics, and water needs of landscaping when selecting, locating, and maintaining species.

In addition to plant material, Landscape Standards also include man-made elements such as proper signage, lighting, and pedestrian-scaled objects. These elements also improve the visual and mental environment of Fort Campbell. These amenities would likely be integrated with any vegetation or plantings in outdoor gathering spaces such as parks, playgrounds, and recreation spaces.

159 CAB Memorial on Memorial Row
Screaming Eagle District

Landscape Character

The overall objective of the use of plant material within the Installation is to improve the physical and psychological well-being of the people who live and work on Fort Campbell. This is achieved through the following objectives.

Unity

The selection and placement of plant material can be used to blend, screen, and soften incompatible architectural or other unattractive visual impacts. Plant material as a unifying element can be placed in front of a building or view to frame and enhance the visual impact.

Balance

Plant material can be selected and placed to provide visual equilibrium or balance through the use of either a symmetrical or asymmetrical planting scheme. Symmetrical plantings are generally more formal while asymmetrical plantings are informal.

Contrast

Plant material can be selected and placed to provide differences in size and shape that add interest to the environment. Plants can be located to provide a backdrop for other plants such as a hedge behind a bed of annuals or perennials.

Tranquility Garden Within the WTU
Cole Park District

Rhythm

Repetition of a single plant or a mass of plants provides visual interest and formality to the landscape. Rhythm produces emphasis and unity and is especially effective in articulating main circulation routes.

Color and Texture

Plants can be selected and placed to provide visual interest according to their color and texture. Colors are classified as either warm (red, orange, yellow) or cool (violet, blue, green). Texture is classified as either coarse or fine.

Simplicity

Landscape plans should be broad and simple in form to limit excessive maintenance. Plant material should be grouped in beds with simple edges that are easy to mow. Small turf areas that require mowing by push mower should be avoided because of the increased labor required. The use of annuals should be minimal because of the high maintenance involved.

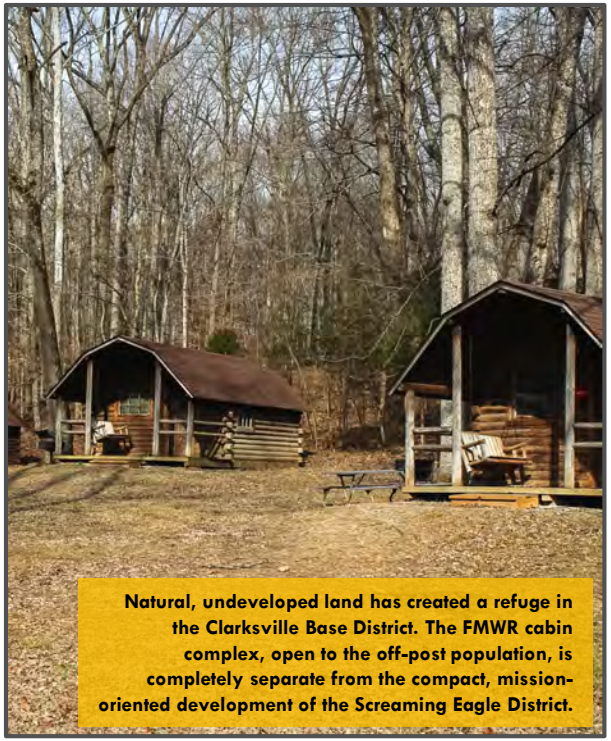
Ultimate Effect

The landscape plan should be prepared with consideration for the mature size of all plants. The spacing of all material should utilize nursery industrial standards for mature material to account for spread as well as height. The ultimate height and width of the material should also be considered in relation to windows, doors, sidewalks, and other areas.

Werner Park Family Housing Area Street Trees
Cole Park District

Spatial Articulation

Plants can be selected and placed to create enclosed spaces or to separate spaces from one another. They can also be used to direct people by visually defining and reinforcing patterns of movement. The degree of enclosure, separation, or movement is dependent upon the density, form, and type of plants used.



Natural, undeveloped land has created a refuge in the Clarksville Base District. The FMWR cabin complex, open to the off-post population, is completely separate from the compact, mission-oriented development of the Screaming Eagle District.

Site Elements

Site furnishings refer to outdoor amenities, such as furniture, small structures, monuments, fencing, signage, and lighting. Through the use of style, scale and color, a well-selected palette of site elements will support the unique character of Fort Campbell. With an established palette of site elements, DPW can ensure that a consistent and uniform visual character is maintained throughout the installation.

Selection will be governed in part by the existing conditions, so as to match or conform to the current standard of style, color, and materials. To this end, site elements should meet the following objectives.

- Provide site elements that are appropriate to their intended function.
- Establish a coordinated system of site elements that provides consistency and continuity throughout Fort Campbell to convey a sense of organization.
- The design and location of the various site elements should express an image, character, and scale appropriate to the Installation.
- Locate site elements to meet AT/FP requirements.
- Use recycled/salvaged materials wherever possible.
- Minimize maintenance and repair by selecting items that are of durable materials and finishes, reflect quality workmanship that will endure many years of use, and are vandal-resistant.
- Minimize negative visual impacts of all utility systems.
- Minimize environmental impacts of all utility systems.

Furnishings

Implement a strategy of installing site furnishings near highly-used areas, common gathering spaces, and recreation facilities throughout the theme. Site furnishings should maintain a consistent palette of similar materials and styles. Furniture entails an array of amenities that improve the comfort of the outdoor environment. These include benches and seat walls, picnic tables, waste/recycling receptacles, potted plants, interactive and interpretive elements, ash urns, and bicycle racks.

Fort Campbell currently has a wide variety of furniture that assumes many styles, colors, and materials. It is desirable to standardize new furniture so that future additions will contribute to a cohesive appearance throughout.

Structures

Structures are larger site elements that can accommodate groups of users, and include covered open-sided shelters and pavilions, bus shelters, and playground and recreation equipment. Shelters assume many designs and configurations depending on their intended use.

- The design of structures may be primarily metal and wood construction; masonry is permitted as a secondary material.
- Shelters should have metal posts or brick masonry columns with standing seam metal roofs.
- Shelters shall not have more than three colors or materials. Acceptable colors include: black, dark bronze, white, or the color of the natural material.
- Playground equipment must be primarily of metal pipe construction with a durable finish. Playground equipment colors may vary but should be a maximum of four colors.

Playground With Shelter
Town Center District

Playground, benches, and pavilion with a view of the 101st Air Assault Headquarters
Town Center District

Trash Receptacle, Bench, and Mile Marker Along Fort Campbell Trail

Site Elements

Walls and Fences

Wall and fence height should be kept as low as possible to avoid a "fortress" appearance, while allowing the structure to perform its intended function. The appearance of walls and fences should be consistent with the overall aesthetics of the adjacent buildings and development and have an articulated design. For example, fence posts could be regularly spaced, have changing height, or incorporate different materials on the base, posts, or cap of the fence/wall. Walls constructed with stone or brick may be unpainted to display the natural color of the materials.

Signage and Markings

Wayfinding is the ability to find one's way in an unfamiliar environment. There are several ways to improve wayfinding with mapping or signage, governed by UFC 3-120-01. Large, simple lettering on signs is easy to read for those in vehicles who cannot stop to read elaborate fonts. Using color coding provides a consistent medium across Fort Campbell. Clear symbols are much easier to read compared to text.

The Installation has been developing the 'Fort Campbell Exterior Signage and Markings Plan' to regulate the authorization, design, fabrication, placement, and maintenance of signs and markings. The Plan organizes signage into the following categories: Identification; Directional and Wayfinding; Regulatory; Motivational; Temporary; and Real Property/Real Estate Markers. Please reference the Plan for general guidance and each category's importance, locations, challenges, approval process, design, and materials.

Noncommissioned Officer (NCO) Academy Directory Signage, Clarksville Base District

Bollards

Bollards are streetscape elements of concrete or steel that typically prevent traffic from encroaching in pedestrian areas. Besides being a necessary safety element, bollards can also be aesthetically pleasing and a well-planned component of a streetscape. Bollards can also be used to protect streetlights, street trees, memorials and displays, and around sensitive buildings and sites.

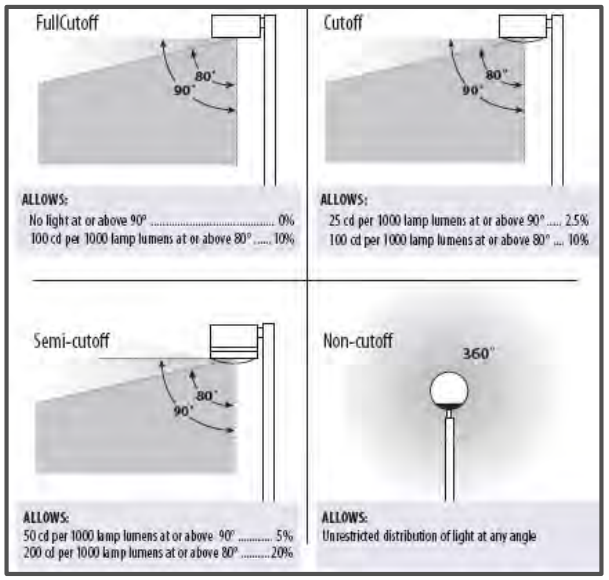
"The Voice" Structure Placard, Clarksville Base District

Lighting

Lighting should be planned to attain the recommended light level, distribution, and glare control. Light fixtures should be physically strong and resistant to vandals, weather, and the environment. Use fully shielded or IES U0 luminaries to eliminate direct light above the horizontal plane.

To minimize impacts on birds, it is critical that lights are fully cutoff and directed down. This can be demonstrated with a photometric report of luminaires demonstrating that no light is emitted above 90 degrees from the straight down in their final installed position. When designing exterior lighting, DPW Engineering Division should follow applicable UFC guidelines. All exterior lighting, for both street and landscaping lighting, must be cut-off and face down. Illumination levels should follow these general guidelines:

- 0.2 footcandles for aidewalks and trails in residential areas;
- 1.0 footcandles in community support and commercial areas; and
- 5.0 footcandles near building entrances.



Site Elements

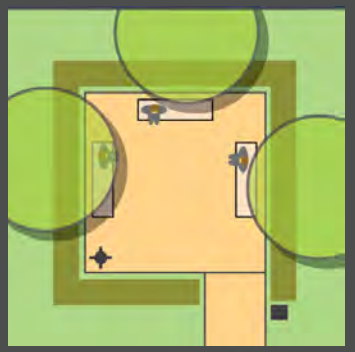
Monuments and Static Displays

Honoring the legacy of Fort Campbell and the 101st Airborne Division can be further emphasized through the placement of memorials, monuments, or plaques in historically significant areas. The inclusion of signage serves to educate people on the history of a building or space, resulting in a greater sense of pride throughout the Installation. Fort Campbell incorporates these elements throughout the Installation and should continue to do this through memorials, displays, and placard.

Public information regarding the historic legacy can be emphasized through standard architectural styles and materials used in construction, reuse of structures, and maintaining the existing landscape. Maintaining historic assets when feasible and emphasizing Fort Campbell's history has been a priority throughout the overall master planning process.

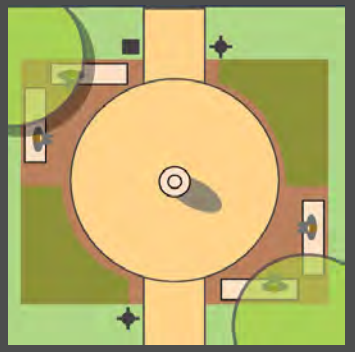
Memorial Row, a corridor running north-south between Tennessee and Kentucky Avenues, incorporates park-like spaces with various monuments and displays honoring Fort Campbell.

Furnishing Arrangement Diagrams



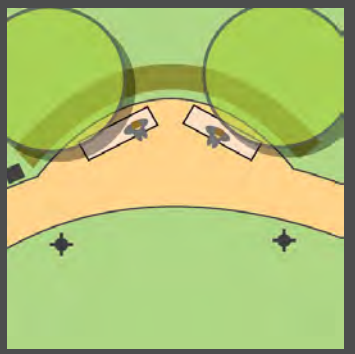
Small Gathering Areas

When planning small furnished areas, it is important to consider the scale of a space. The dimensions of a paved area inform the size and separation of furnishings. Key components to these spaces can include seating, lighting, and waste receptacles. All areas on an installation should be easily visible for security. Low, deciduous shrubs can provide a semi-private atmosphere, while tree canopy can provide shade and permit views in and out.



Park Rest Areas

Trails through a park should be planned to include "bump outs" that include seating and other furnishings like waste receptacles. Waste should always be located at least several feet from a seating area to minimize odors and debris in the resting zone. Small deciduous shrubs behind benches give a feeling of enclosure that enhances the feeling of security. Lighting should always be included in these zones.



Monument Areas

When a space is being planned to include a monument, the figure should be highlighted first with the public space planned around it. This ensures respect to the monument. An additional space around the monument area can create separation for comfortable viewing. These spaces can be denoted by a change in pavement color or texture and with fixed furnishings. Arranging furnishings in an "L" shape encourages conversation and activity in a space that could otherwise be just another statue location.

Low Impact Development

LID is a stormwater management approach to achieve natural resource protection objectives and fulfill environmental regulatory requirements by maintaining and restoring the natural hydrologic functions. The use of LID is mandated by the Army.

LID uses natural and structural facilities to reduce the rate of runoff, filter out pollutants, and promote infiltration of water into the ground. Examples of LID techniques are discussed below.

Conservation of Natural Features and Resources

LID practices conserve undisturbed natural areas on a site, thereby retaining their pre-development hydrologic and water quality characteristics. Examples of LID techniques include:

- Preserving Undisturbed Natural Areas;
- Preserving Riparian Buffers;
- Avoiding Floodplains;
- Avoiding Steep Slopes; and
- Minimizing Siting on Porous/Erodible Soils.

Lower Impact Site Planning Techniques

Limiting the impact of construction takes careful planning. Planners and engineers should carefully evaluate sites to map out conservation areas and opportunities to use open space as both an amenity and a stormwater facility. Use the following objectives to limit the impact of construction during the site planning phase.

- Fit Design to the Terrain.
- Locate Development in Less Sensitive Areas.
- Reduce Limits of Clearing and Grading.
- Utilize Open Space Development.
- Consider Creative Development Design.

Reduction of Impervious Cover

A key component to managing stormwater is reducing the amount of impervious area which generates stormwater. Reducing the impervious areas on a site also reduces construction and maintenance costs. The following objectives should be visited to reduce the impervious areas.

- Reduce Roadway Lengths and Widths.
- Reduce Building Footprints.
- Reduce the Parking Footprint.
- Reduce Setbacks and Frontages.
- Use Fewer or Alternative Cul-de-Sacs.
- Create Parking Lot Stormwater "Islands."

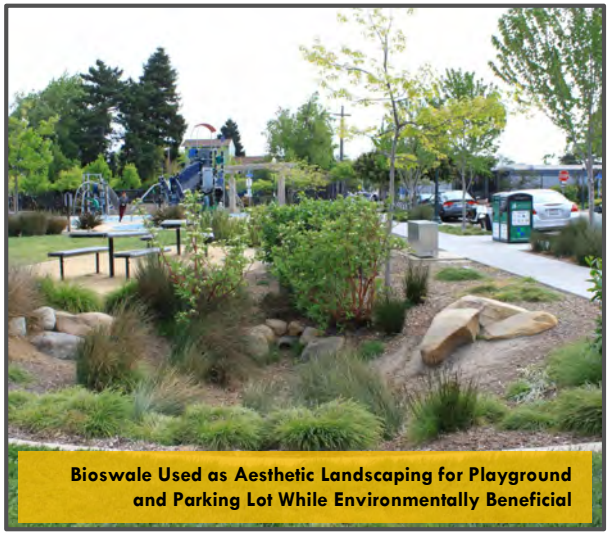
Utilization of Natural Features for Stormwater Management

By using natural rather than 'hard' infrastructure methods to convey stormwater, LID can improve water quality and overall infiltration rates. The following examples should be considered.

- Use Buffers and Undisturbed Areas.
- Use Natural Drainageways Instead of Storm Sewers.
- Use Vegetated Swale Instead of Curb and Gutter.
- Drain Rooftop Runoff to Pervious Area.

Retention Pond

Rain Garden Incorporated into the Sidewalk and Planter Bed

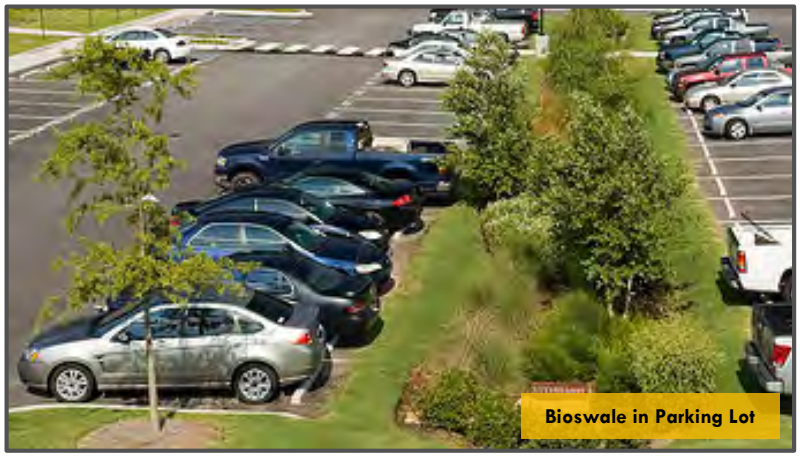


Bioswale Used as Aesthetic Landscaping for Playground and Parking Lot While Environmentally Beneficial

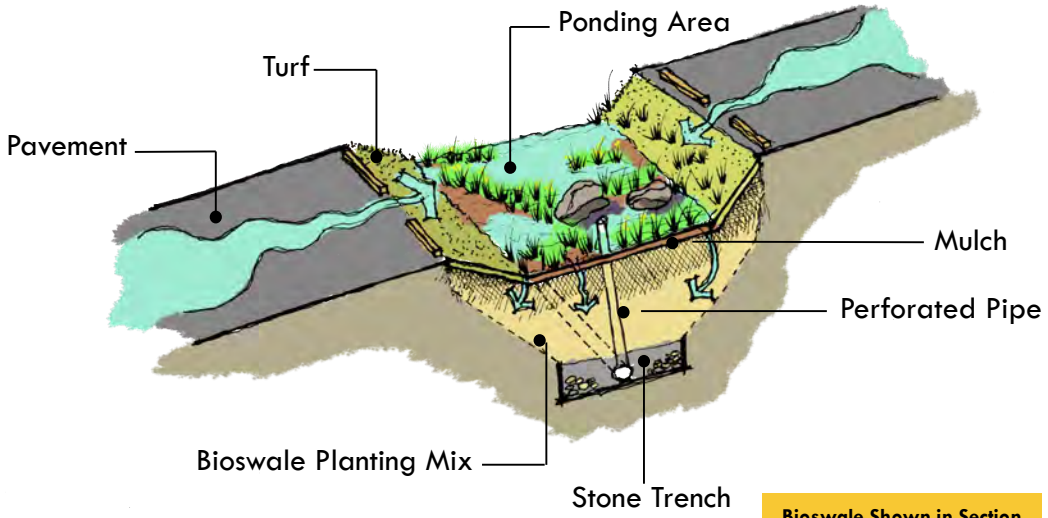
Low Impact Development

Fort Campbell should carry on in its tradition of environmental awareness and sustainable development. Currently the Installation maintains culverts and deals with drainage issues from curbs along sidewalks. Implementing these LID techniques will help to improve water quality, reduce erosion, and create attractive natural spaces for all to enjoy. This type of LID requires less maintenance due to its non-structural methods.

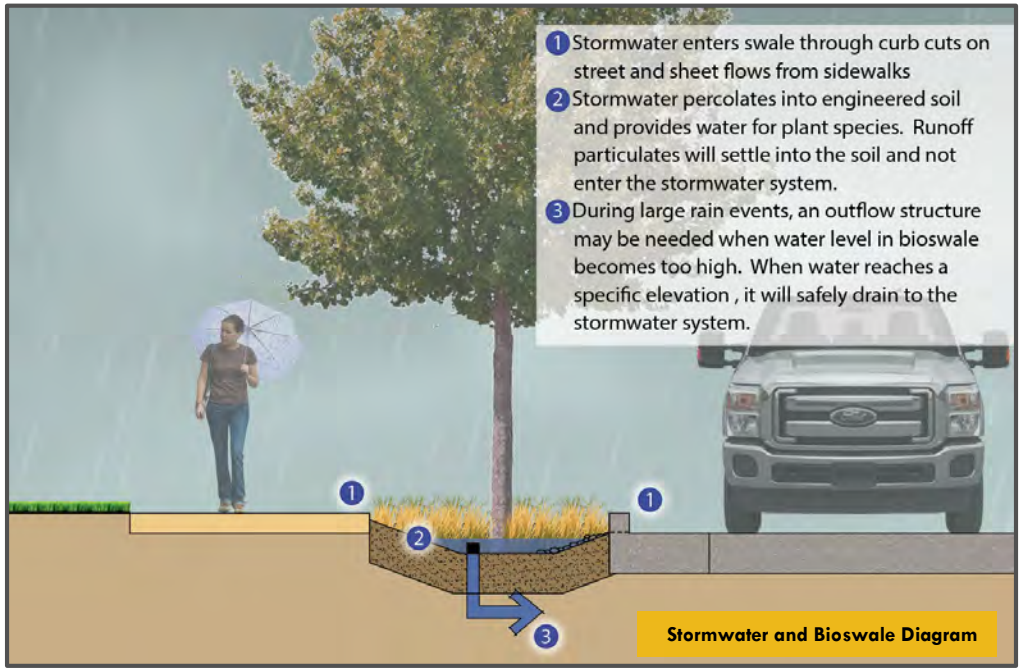
Low Impact Stormwater Mitigation



Bioswale in Parking Lot



Bioswale Shown in Section



Stormwater and Bioswale Diagram

Landscape Principles Overview

Landscape Principles are the next step in defining the Landscape Standards for Fort Campbell. They establish precepts for the landscape and green infrastructure elements. These Landscape Principles are to be used in tandem with the Real Property Objectives at the start of any open space, building, or transportation project to implement Fort Campbell's Real Property Vision.

The Landscape Principles described on the following pages should be implemented in every project proposed for Fort Campbell. They describe the overall environment and help suggest the context in which the planning team will formulate the project.

FORT CAMPBELL LANDSCAPE PRINCIPLES

- Preserve Training and Open Space
- Use Natural Screening and Buffers Between Industrial and Community Support Areas
- Implement Bird/Wildlife Aircraft Strike Hazard (BASH) Guidelines
- Honor the Legacy of Fort Campbell With Native Landscaping, Monuments, and Displays (Past and Future)

Fort Campbell is home to a number of different Family housing areas, each unique in style and well-maintained. Like Werner Park, each neighborhood has a variety of playgrounds ranging from passive to more interactive. In addition to site landscape amenities for children, outdoor gathering areas are provided for adults through pavilions, grills, general outdoor gathering spaces, and trails. All areas are appropriately landscaped with mature trees or vegetation found in the Plant Palette. When integrating plant-life and man-made landscaping elements on Fort Campbell, planners should look to the neighborhoods for inspiration and guidance.

Landscape Principles

Cole Park District's large open spaces provide a perfect buffer between housing and more developed areas of the District and Installation.

Field Training on Fort Campbell

Screaming Eagle Bike Trail
Clarksville Base District

Preserve Training and Open Space

Unplanned or poorly planned construction can lead to unnecessary sprawl and encroachment of training capabilities. Sprawl can severely limit capacity on an installation and must be guarded against. Planning for future real property of Fort Campbell must ensure that new construction does not encroach on open and forested training capabilities.

In addition to the operational constraints and setbacks, open areas should be preserved for field training and tactical vehicle driving.

It is important to protect the native landscape when future development is being planned. An essential part of creating a high quality, visually diverse, and attractive installation is maintaining a healthy balance between human benefits relating to both mission requirements and quality of life. By removing these resources, Fort Campbell misses an opportunity to connect with nature.

Fort Campbell is unique in that it has many existing forested areas, wetlands and floodplains, and preservation areas, such as along Little West Fork Creek, that must be protected from future development. Fortunately through this preservation, the Installation will provide vegetated buffers, a beautiful natural environment, recreation opportunities, and expanded potential training areas.

Preserving non-constrained, open spaces minimizes sprawl and encourages compact development.

Above: Landscaping used at the entrance of Building 5384.
Right: Landscaping and masonry wall outside Building 6204, Screaming Eagle District used to screen exterior utility systems.

Use Landscaping to Screen and Buffers For Industrial and Unsightly Views

Natural or planted landscaping can be used to screen unsightly views such as dumpsters or utility systems or as a buffer between industrial and community support areas.

In addition to wood fencing and masonry walls, plantings can be used to screen dumpsters and utilities adjacent to facilities. Views from prominent facilities and landmarks should obscure parking, laydown space, and service entrances. Maintaining security and screening views cab be accomplished through a mix of evergreen and deciduous trees and shrubs.

Landscape Principles

Various agencies have employed BASH programs that work to reduce incidents of collision between birds and aircraft. The Peregrine Falcon pictured above is trained to deter local birds from wandering into airfields and flight paths.

Implement Bird/Wildlife Aircraft Strike Hazard (BASH) Guidelines

Like many DOD Airfields, the CAAF and Sabre Districts have to deal with potential wildlife on runways and taxiways. Each year, aircraft strike thousands of birds. These occurrences are mostly attributed to aircraft using the same low altitudes as large concentrations of birds.

One of these programs is the BASH prevention program. The military, air operations, aviation safety, and natural resources personnel work together to reduce the risk of bird and wildlife strikes through the Operational Risk Management process. Landscaping recommendations include:

- Wiring streams and ponds;
- Removing brush and trees;
- Enhancing wetlands and grasslands located away from the Airfield to attract wildlife elsewhere; and
- Changing the grass mowing program.

AH-1 Cobra Attack Helicopter, Don F. Pratt Museum Exhibit Screaming Eagle District

Gander Memorial Town Center District

Fort Campbell Gate 4 1945

Honor the Legacy of Fort Campbell With Native Landscaping, Monuments, and Displays (Past and Future)

Incorporating native landscaping along with man-made elements such as benches, monuments, and displays create an all-seasonal, interactive way of honoring the legacy of Fort Campbell. New development must respect and celebrate existing historic character. This can be emphasized through standard architectural styles and materials used in construction, reuse of structures, and maintaining the existing landscape.

Often memorials or displays do not provide information to visitors. Including such information, as has been done throughout the Installation, will help educate people and result in a greater sense of pride throughout the Installation.

Providing seating, picnic areas, water features, and interactive displays creates all-seasonal spaces ensuring these areas are continually visited throughout the year.

Fort Campbell should use many of its current examples, such as Memorial Row and the Don F. Pratt Museum, and Gander Memorial, when creating past and future spaces.

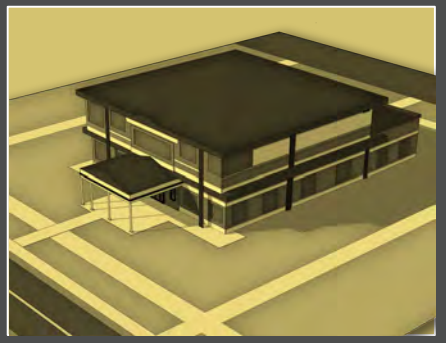
Landscape Form Overview

As noted earlier, the IPS supports the Regulating and Illustrative Plans in each of Fort Campbell District's ADP by specifying Building, Street, and Landscape Standards. These Standards create the basis for a form-based code. Implementation through form-based coding allows installations to exercise more control in the development process.

The code is a graphic tool that condenses the Fort Campbell Vision, Goals, and Objectives into a clear, readable, enforceable plan for development. The code provides clear parameters for the type of plants allowed at Fort Campbell and their proper placement.

- The Green Infrastructure Network Plan identifies areas where development is prohibited. These areas include operational constraints and functions as well as wetlands.
- The Plant Palette is provided to help planners choose the best plant for each particular set of requirements. The plants that appear on the Palette were selected for their hardiness and their ability to survive in this geographical area.
- The Plant Palette should be used in conjunction with a thorough investigation of the microclimate of the specific planting project. The listed plants are recommended species and their listing does not preclude selection of other species based on availability, cost, or other factors.
- The Plant Palette is organized by plant category: Evergreen Trees; Deciduous Trees; Shrubs; Perennials; and Groundcover. The following information is provided for each category:
    - Origin (Native or Introduced);
    - Foliage (Deciduous, Coniferous, and/or Evergreen/Semi);
    - Growth (Slow, Medium, and/or Fast);
    - Form (Irregular, Oval/Round, Upright, Pyramidal, and/or Vase);
    - Feature (Fragrance, Fruit/Nut/Herb, Fall or Bark Color, and/or Flower);
    - Condition (Sun, Partial Shade, Shade, Drought, and/or Wet Conditions);
    - Height (Small, Medium, or Large); and
    - Function (Street Tree, Accent/ Residential, Woodland Infill, Barrier or Buffer/Screen, and/or Erosion Control).

Regulating Plan



Building Standards

Illustrative Plan

Street Standards

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Fort Campbell
Green Infrastructure Network

- Installation Boundary
- Existing Buildings
- Pavement
- Existing Trail
- Proposed Trail
- Recreation
- Open Space
- Memorial/Parade Field

0 1,600 3,200 Ft.

Clarksville Base
Sabre
101ST AIRBORNE DIVISION ROAD
66002
CAAF
7257
MARKET GARDEN ROAD
Screaming Eagle
Town Center
KENTUCKY AVENUE
Cole Park
Bastogne
180
BASTOGNE AVENUE
1012

The Green Infrastructure Network depicts areas of existing recreation and open space. Major recreation areas include the Cole Park Golf Course, FMWR complex in the Clarksville Base District, and athletic fields through the Screaming Eagle and Bastogne Districts. Open spaces protect undeveloped areas as either buffers due to operational constraints or restrict development due to significant environmental concerns such as flood zones from the Little West Fork Creek. The Green Infrastructure Network also identifies Memorial and Parade Fields as separate areas due to their ceremonial status. The existing and proposed trail connections are highlighted on the Green Infrastructure Network due to their reliance on integrating with open and recreation space. Currently, there are no proposed projects for additional green spaces.

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Plant Palette

Plant Material Suitability Matrix		Origin		Foliage			Growth			Form					Feature				Condition					Height			Function				
		Native	Introduced	Deciduous	Coniferous	Evergreen/Semi	Slow	Medium	Fast	Irregular	Oval/Round	Upright	Pyramidal	Vase	Fragrance	Fruit/Nut/Herb	Fall or Bark Color	Flower	Sun	Partial Shade	Shade	Drought	Wet Conditions	Small	Medium	Large	Street Tree	Accent/Residential	Woodland Infill	Barrier, Buffer/Screen	Erosion Control
Botanical Name	**Common Name**	**Characteristics**																								**Use**				
Evergreen Trees																														
Ilex opaca	American Holly	●				●	●			●			●			●			●	●					●			●	●	●	
Juniperus virginiana	Eastern Red Cedar	●			●			●					●						●	●		●			●			●		●	
Picea abies	Norway Spruce		●		●			●					●						●						●			●			
Pinus enchinata	Shortleaf Pine	●			●				●				●			●	●		●	●						●			●			
Pinus virginiana	Virginia Pine	●				●			●	●			●			●			●						●				●		●
Pinus strobus	White Pine	●			●			●	●				●		●				●	●						●			●	●	
Taxodium distichum	Bald Cypress	●		●	●			●				●	●			●			●	●						●		●	●		
Tsuga canadensis	Hemlock	●			●	●	●	●					●						●						●	●		●		●	

Eastern Red Cedar

Shortleaf Pine

White Pine

Hemlock

Plant Palette

Plant Material Suitability Matrix		Origin		Foliage			Growth			Form					Feature				Condition					Height			Function				
		Native	Introduced	Deciduous	Coniferous	Evergreen/Semi	Slow	Medium	Fast	Irregular	Oval/Round	Upright	Pyramidal	Vase	Fragrance	Fruit/Nut/Herb	Fall or Bark Color	Flower	Sun	Partial Shade	Shade	Drought	Wet Conditions	Small	Medium	Large	Street Tree	Accent/Residential	Woodland Infill	Barrier, Buffer/Screen	Erosion Control
Botanical Name	**Common Name**	**Characteristics**																								**Use**				
Deciduous Trees																														
Acer ginnala	Amur Maple		●	●					●		●				●	●	●		●	●				●				●		●	
Acer negundo	Box Elder	●		●					●	●	●						●		●	●		●			●			●			
Acer rubrum	Red Maple	●		●				●	●		●					●	●		●	●						●	●		●		
Aesculus flava	Yellow Buckeye	●		●				●			●					●	●		●	●						●		●			
Amelanchier	Serviceberry	●		●				●			●	●				●		●	●	●			●	●				●			
Betula nigra	River Birch	●		●				●		●	●						●			●			●		●			●	●	●	
Betula papyrifera	White Birch	●		●				●					●			●	●		●	●			●		●			●			
Caya cordiformis	Bitternut Hickory	●		●			●					●					●		●	●	●					●		●	●		
Celtis occidentalis	Hackberry	●		●				●			●						●		●	●		●		●				●			
Cercis canadensis	Eastern Redbud	●		●				●			●					●	●	●	●	●				●				●			

Red Maple

Yellow Buckeye

Serviceberry

Hackberry

Plant Palette

Plant Material Suitability Matrix		Origin		Foliage			Growth			Form					Feature				Condition					Height			Function					
		Native	Introduced	Deciduous	Coniferous	Evergreen/Semi	Slow	Medium	Fast	Irregular	Oval/Round	Upright	Pyramidal	Vase	Fragrance	Fruit/Nut/Herb	Fall or Bark Color	Flower	Sun	Partial Shade	Shade	Drought	Wet Conditions	Small	Medium	Large	Street Tree	Accent/Residential	Woodland Infill	Barrier, Buffer/Screen	Erosion Control
Botanical Name	**Common Name**	**Characteristics**																								**Use**					
Deciduous Trees																															
Chionanthus virginicus	Fringetree	●		●				●			●						●	●	●	●				●				●	●			
Cotinus coggygria	Smoketree		●	●				●			●						●	●	●					●				●				
Cornus florida	Flowering Dogwood	●		●			●	●			●					●	●	●	●	●			●	●				●	●			
Crataegus phanopyrum	Washington Hawthorn	●		●				●			●	●				●	●		●	●					●		●	●		●		
Diospyros virginiana	Perisimmon	●		●				●			●	●				●	●		●	●			●		●			●	●			
Fagus grandifolia	American Beech	●		●				●	●			●					●		●	●			●			●						
Fraxinus americana	White Ash	●		●			●				●	●	●				●		●						●	●			●	●		
Fraxinus pennsylvanica	Green Ash	●		●					●		●	●					●		●	●						●	●					
Ginko biloba	Ginko		●	●			●					●					●		●	●					●		●	●				
Gleditsia triacanthos	Imperial Honeylocust	●		●				●			●						●		●						●		●					

Smoketree

Flowering Dogwood

Green Ash

Imperial Honeylocust

Plant Palette

Plant Material Suitability Matrix		Origin		Foliage			Growth			Form					Feature				Condition					Height			Function				
		Native	Introduced	Deciduous	Coniferous	Evergreen/Semi	Slow	Medium	Fast	Irregular	Oval/Round	Upright	Pyramidal	Vase	Fragrance	Fruit/Nut/Herb	Fall or Bark Color	Flower	Sun	Partial Shade	Shade	Drought	Wet Conditions	Small	Medium	Large	Street Tree	Accent/Residential	Woodland Infill	Barrier, Buffer/Screen	Erosion Control
Botanical Name	**Common Name**	**Characteristics**																								**Use**				
Deciduous Trees																														
Gymnocladus dioicus	Kentucky Coffeetree	●		●				●				●					●		●				●			●			●		
Liquidambar styraciflua	Sweetgum	●		●				●	●				●		●	●	●		●							●			●		
Liriodendron tulipifera	Tulip Poplar	●		●					●		●	●					●	●	●						●				●		
Magnolia soulangiana	Saucer Magnolia		●	●				●			●							●	●				●			●			●		
Magnolia stellata	Star Magnolia		●	●			●				●				●		●	●	●				●			●			●		
Magnolia virginiana	Sweetbay Magnolia	●		●				●			●	●			●	●		●	●	●	●		●	●			●			●		
Malus floribunda	Flowering Crabapple		●	●				●			●				●	●		●	●					●			●				
Morus rubra	Red Mulberry	●		●					●	●						●	●		●	●			●			●		●			
Platanus occidentalis	Sycamore	●		●					●			●	●				●		●	●		●	●			●	●	●			
Populus deltoids	Eastern Cottonwood	●		●					●			●								●			●		●	●			●		●

Kentucky Coffeetree

Tulip Poplar

Star Magnolia

Flowering Crabapple

Plant Palette

Plant Material Suitability Matrix		Origin		Foliage			Growth			Form					Feature				Condition					Height			Function				
		Native	Introduced	Deciduous	Coniferous	Evergreen/Semi	Slow	Medium	Fast	Irregular	Oval/Round	Upright	Pyramidal	Vase	Fragrance	Fruit/Nut/Herb	Fall or Bark Color	Flower	Sun	Partial Shade	Shade	Drought	Wet Conditions	Small	Medium	Large	Street Tree	Accent/Residential	Woodland Infill	Barrier, Buffer/Screen	Erosion Control
Botanical Name	**Common Name**	**Characteristics**																								**Use**				
Deciduous Trees																														
Prunus cerasifera	Purpleleaf Plum		●	●				●	●						●		●	●	●					●				●	●		
Prunus sargentii	Sargent Cherry		●	●				●			●	●	●				●	●	●	●						●		●			
Pyrus calleryana	Peartree		●	●					●		●	●	●				●	●	●	●		●			●		●	●			
Quercus alba	White Oak	●		●			●	●			●	●	●				●	●	●	●						●	●	●			
Quercus bicolor	Swamp White Oak	●		●			●	●			●	●	●			●	●		●			●	●			●			●		
Quercus palustrus	Pin Oak	●		●					●				●			●	●		●				●			●	●	●			
Quercus phellos	Willow Oak	●		●				●				●				●			●	●						●			●		
Quercus rubra	Northern Red Oak	●		●					●		●	●				●	●		●							●	●				
Salix nigra	Black Willow	●		●				●			●						●		●	●			●		●			●			
Sassafras variifolium	Sassafras	●		●				●	●	●			●		●		●		●	●						●		●	●		

Purpleleaf Plum

White Oak

Willow Oak

Sassafras

Plant Palette

Plant Material Suitability Matrix		Origin		Foliage			Growth			Form					Feature				Condition					Height			Function				
		Native	Introduced	Deciduous	Coniferous	Evergreen/Semi	Slow	Medium	Fast	Irregular	Oval/Round	Upright	Pyramidal	Vase	Fragrance	Fruit/Nut/Herb	Fall or Bark Color	Flower	Sun	Partial Shade	Shade	Drought	Wet Conditions	Small	Medium	Large	Street Tree	Accent/Residential	Woodland Infill	Barrier, Buffer/Screen	Erosion Control
Botanical Name	**Common Name**	**Characteristics**																								**Use**				
Deciduous Trees																														
Tilia cordata	Little Leaf Linden	●		●				●				●	●				●		●	●					●		●				
Ulmus Americana	American Elm	●		●					●		●						●		●			●				●		●			
Zelkova serrata	Green Vase Zelkova		●	●				●					●	●			●		●							●		●		●	

Little Leaf Linden

American Elm

Green Base Zelkova

Plant Palette

Plant Material Suitability Matrix		Origin		Foliage			Growth			Form					Feature				Condition					Height			Function				
		Native	Introduced	Deciduous	Coniferous	Evergreen/Semi	Slow	Medium	Fast	Irregular	Oval/Round	Upright	Pyramidal	Vase	Fragrance	Fruit/Nut/Herb	Fall or Bark Color	Flower	Sun	Partial Shade	Shade	Drought	Wet Conditions	Small	Medium	Large	Street Tree	Accent/Residential	Woodland Infill	Barrier, Buffer/Screen	Erosion Control
Botanical Name	**Common Name**	**Characteristics**																								**Use**				
Shrubs																														
Abelia grandiflora	Glossy Abelia		●			●		●			●							●	●	●				●				●			
Aronia arbutifolia	Red Chokeberry	●		●				●			●			●		●		●	●	●		●	●		●			●	●	●	
Azalea	Azalea		●	●		●		●			●						●	●	●	●						●		●	●	●	
Buxus sempervirens	Boxwood		●			●	●				●				●				●	●						●		●		●	
Chaenomeles speciosa	Flowering Quince		●	●				●				●				●		●	●	●					●			●		●	
Cornus amomum	Silky Dogwood		●	●	●				●			●	●					●		●	●	●				●			●	●	
Cotoneaster	Rock Spray		●	●			●			●	●					●	●	●	●					●				●			●
Forsythia x intermedia	Border Forsythia		●	●					●	●		●						●	●						●			●	●	●	●
Hamemalis virginiana	Witch Hazel	●		●				●			●							●	●		●							●	●	●	
Hibiscus syriacus	Rose of Sharon		●	●				●		●		●				●		●	●	●						●		●	●	●	

Azalea

Boxwood

Rock Spray

Witch Hazel

Plant Palette

Plant Material Suitability Matrix		Origin		Foliage			Growth			Form					Feature				Condition					Height			Function				
		Native	Introduced	Deciduous	Coniferous	Evergreen/Semi	Slow	Medium	Fast	Irregular	Oval/Round	Upright	Pyramidal	Vase	Fragrance	Fruit/Nut/Herb	Fall or Bark Color	Flower	Sun	Partial Shade	Shade	Drought	Wet Conditions	Small	Medium	Large	Street Tree	Accent/Residential	Woodland Infill	Barrier, Buffer/Screen	Erosion Control
Botanical Name	**Common Name**	**Characteristics**																								**Use**				
Shrubs																														
Hydrangea quercifolia	Oakleaf Hydrangea	●		●				●			●						●	●	●	●					●			●	●	●	
Ilex glabra	Inkberry	●				●		●			●	●				●			●	●	●		●		●	●		●		●	
Ilex vertixillata	Winterberry	●		●			●				●	●				●			●	●					●	●		●		●	
Itea virginiana	Virginia Sweetspire	●		●				●			●				●		●	●	●	●	●		●	●	●			●	●		
Juniperus chinensis	Chinese Juniper		●		●		●	●			●	●							●			●		●	●	●		●	●	●	
Kalmia latifolia	Mountain Laurel	●				●		●			●	●						●		●	●				●			●	●		
Leucothoe catasbaei	Drooping Leucothoe	●				●	●	●		●							●	●	●	●	●			●		●		●			
Lindera benzoin	Spicebush	●		●			●	●			●				●	●	●	●		●	●		●		●	●			●		
Mahonia aquifolium	Oregon Grape	●				●	●	●				●			●	●		●		●	●				●	●		●		●	
Myrica pennsylvanica	Northern Bayberry	●		●				●	●		●			●	●	●		●	●	●	●	●				●		●	●	●	

Oakleaf Hydrangea

Virginia Sweetspire

Mountain Laurel

Oregon Grape

Plant Palette

Plant Material Suitability Matrix		Origin		Foliage			Growth			Form					Feature				Condition					Height			Function				
		Native	Introduced	Deciduous	Coniferous	Evergreen/Semi	Slow	Medium	Fast	Irregular	Oval/Round	Upright	Pyramidal	Vase	Fragrance	Fruit/Nut/Herb	Fall or Bark Color	Flower	Sun	Partial Shade	Shade	Drought	Wet Conditions	Small	Medium	Large	Street Tree	Accent/Residential	Woodland Infill	Barrier, Buffer/Screen	Erosion Control
Botanical Name	**Common Name**	**Characteristics**																								**Use**				
Shrubs																														
Viburnum plicatum	Doublefile Viburnum			●				●			●					●	●	●	●	●						●	●	●	●		
Viburnum prunifolium	Blackhaw Viburnum	●		●				●	●			●				●	●	●	●	●	●	●				●	●	●	●		
Viburnum rhytidophyllum	Leatherleaf Viburnum		●	●			●	●					●					●	●	●	●					●	●				

Doublefile Viburnum

Blackhaw Viburnum

Leatherleaf Vibrunum

Plant Palette

Plant Material Suitability Matrix		Origin		Foliage			Growth			Form					Feature				Condition					Height			Function				
		Native	Introduced	Deciduous	Coniferous	Evergreen/Semi	Slow	Medium	Fast	Irregular	Oval/Round	Upright	Pyramidal	Vase	Fragrance	Fruit/Nut/Herb	Fall or Bark Color	Flower	Sun	Partial Shade	Shade	Drought	Wet Conditions	Small	Medium	Large	Street Tree	Accent/Residential	Woodland Infill	Barrier, Buffer/Screen	Erosion Control
Botanical Name	**Common Name**	**Characteristics**																								**Use**				
Shrubs																														
Nandina domestica	Harbor Nandina		●			●		●				●				●	●	●	●	●	●	●	●		●			●		●	
Pyracantha coccinea	Scarlet Firethorn		●			●		●	●	●	●					●		●	●	●						●		●		●	
Sambucus canadensis	American Elderberry	●		●				●	●		●					●		●		●			●			●			●		
Rhododendron sp.	Rhododendron		●			●		●			●	●				●		●	●	●	●			●				●	●	●	
Rosa	Scarlet Meidiland Rose		●	●					●	●	●					●		●	●					●				●	●	●	●
Rhus typhina	Sumac	●		●					●		●					●	●		●	●						●			●		●
Taxus sp.	Yew		●			●			●			●				●			●	●				●	●	●		●		●	
Thuja occidentalis	American Arborvitae		●		●		●	●					●			●			●			●	●			●			●		
Viburnum dentatum	Arrowwood	●		●				●		●	●							●	●	●					●	●		●	●	●	
Viburnum opulus	Cranberry Viburnum		●	●				●			●					●		●	●	●			●		●	●		●	●	●	

Scarlet Firethorn

Rhodoendron

Scarlet Meidiland Rose

American Arborvitae

Plant Palette

Plant Material Suitability Matrix		Origin		Foliage			Growth			Form					Feature				Condition					Height			Function				
		Native	Introduced	Deciduous	Coniferous	Evergreen/Semi	Slow	Medium	Fast	Irregular	Oval/Round	Upright	Pyramidal	Vase	Fragrance	Fruit/Nut/Herb	Fall or Bark Color	Flower	Sun	Partial Shade	Shade	Drought	Wet Conditions	Small	Medium	Large	Street Tree	Accent/Residential	Woodland Infill	Barrier, Buffer/Screen	Erosion Control
Botanical Name	**Common Name**	**Characteristics**																								**Use**				
Perennials																														
Hemerocallis	Daylily sp.		●	●					●			●			●			●	●	●				●	●			●	●		
Hosta sieboldiana	Hosta sp.	●		●					●		●				●			●		●	●			●	●	●		●	●		

Daylily

Hosta

Plant Palette

Plant Material Suitability Matrix		Origin		Foliage			Growth			Form					Feature				Condition					Height			Function				
		Native	Introduced	Deciduous	Coniferous	Evergreen/Semi	Slow	Medium	Fast	Irregular	Oval/Round	Upright	Pyramidal	Vase	Fragrance	Fruit/Nut/Herb	Fall or Bark Color	Flower	Sun	Partial Shade	Shade	Drought	Wet Conditions	Small	Medium	Large	Street Tree	Accent/Residential	Woodland Infill	Barrier, Buffer/Screen	Erosion Control
Botanical Name	**Common Name**	**Characteristics**																								**Use**				
Groundcover																														
Chimaphila maculate	Wintergreen	●		●				●				●						●	●	●				●				●			●
Lirope muscari	Lilyturf		●			●		●				●						●	●	●	●			●				●			●
Mitchella repens	Partridgeberry	●		●				●	●		●							●		●				●				●	●		
Pachysandra terminalis	Pachysandra		●			●	●				●									●	●			●				●			●
Phlox subulata	Moss Phlox	●				●			●		●	●						●						●				●			●
Senecio auerus	Golden Ragwort	●		●								●						●						●				●			

Lilyturf

Partridgeberry

Moss Phlox

Golden Ragwort

APPENDIX A
IPS TEAM CHECKLIST

IPS Team Checklist

An IPS Checklist should be completed for all projects that affect the appearance of Fort Campbell. The Master Planner shall provide the checklist to all teams designing new facilities, additions, or renovations to existing facilities, or maintenance on the installation. The Design Team IPS Checklist is to be completed by the design team to assure the guidelines and standards have been considered and complied with in the design process and during project review.

The Designer of Record or Design Agent will provide a copy of the completed checklist, together with a signed certification statement with each design submittal (10% [pre-concept], 35%, 60%, and 95% for each MILCON project). The Designer of Record will complete the checklist and verify compliance in the space provided. In the case of Design Build, all agents e.g. the Corps of Engineers, NAF, AAFES, tenants, etc. shall have the prospective design build contractors submit a completed IPS Checklist as part of their proposal. The completed checklist will be provided to the Master Planner for review with concurrence or denial. Upon a determination of concurrence by Planning Staff, the plan and the signed checklist are forwarded to the installation Master Planner for review and final approval. The accepted checklist shall become a part of the project record files.

If plans are denied for non-compliance at the installation or command level (where applicable) of review, an explanation of the denial will be provided to the Designer of Record. The plan and checklist can be resubmitted with revisions as indicated in the Explanation of Denial.

IPS Team Checklist

1. PROJECT TITLE AND DESCRIPTION:

Project Number:

Title:

Description:

2. PROJECT JUSTIFICATION:

Purpose & Need:

3. SUSTAINABLE DESIGN:

3.1 Has Leadership in Energy and Environmental Design (LEED) Checklist been attached? (If not, obtain completed checklist)

Yes__ No__ (If not, obtain completed checklist)

Does project meet or exceed Silver level?

Yes__ (Review project as submitted)

No__ (Return submittal to design team for revisions to meet LEED Silver Requirement).

4. SITE PLANNING:

4.1 Was the site plan prepared for the proposed project utilizing the IPS Design Process?

Yes__ No__

4.2 Does the site plan include Site Planning Design Components as stated in the IPS?

Yes__ No__

4.3 Does the site plan meet AT/FP requirements?

Yes__ No__

Design Comments On Site Planning:

4.4 Does the site plan comply with the IPS?

Yes__ No__ (If not, provide justification)

4.5 Does the site plan meet approved installation master plan siting compliance?

Yes__ No__ (If not, provide justification)

4.6 Has National Environmental Policy (NEPA) been initiated for the construction effort in accordance with AR 200-2?

Yes__ No__

4.7 Has airspace criteria been considered relative to airfield accident potential zones?

Yes__ No__

5. BUILDINGS:

5.1 Does the building exterior design meet the Building Design Objective defined in the IPS?

Yes__ No__

5.2 Is the exterior building designed to meet the Structural Characteristics defined in the IPS?

Yes__ No__

5.3 If the project is a renovation or addition, does the proposed renovation or addition meet IPS Building Design and Structural Characteristics?

Yes__ No__

5.4 If the project is a renovation or addition to a historic building, does the renovation or addition maintain the design integrity of the original building or meet Historical Approval Agencies' requirements for any other deviations?

Yes__ No__

5.5 Does the building exterior design meet Anti-Terrorism/Force Protection (AT/FP) requirements (if applicable)?

Yes__ No__

IPS Team Checklist

Designer comments on exterior building design:

5.6 Does building design comply with the IPS?
Yes__ No__ (If not, provide justification)

6. CIRCULATION:

6.1 If the project includes roadway construction, does the proposed plan meet Federal Highway and/or Local Guidelines?
Yes__ No__

6.2 If the project includes roadway construction, does the proposed plan meet AT/FP Roadway Setback Requirements?
Yes__ No__

6.3 If the project includes roadway construction, does the proposed plan include applicable Roadway Alignment and Intersection Guidelines?
Yes__ No__

6.4 If the project is an entrance gate, does the proposed plan include Entrance Gate Guidelines and Standards?
Yes__ No__

6.5 If the project includes parking, does the proposed plan meet the Parking Lot Location/Design Guidelines?
Yes__ No__

6.6 If the project includes pedestrian circulation, does the proposed plan meet the Walkways and Pedestrian Circulation Guidelines?
Yes__ No__

6.7 If the project includes bicycle circulation, does the proposed plan meet the Bikeway Guidelines?
Yes__ No__

Designer comments on circulation design:

6.8 Does circulation design comply with the IPS?
Yes__ No__ (If not, provide justification)

7. PLANT MATERIAL:

7.1 All projects for new construction should include the planting of trees shrubs and/or groundcover. Does the proposed project include a planting plan?
Yes__ No__

7.2 Does the proposed planting plan meet AT/FP requirements?
Yes__ No__

7.3 Does the proposed planting plan include material recommended in selected Plant Palette Matrix included in the IPS?
Yes__ No__

Design comments on landscape design:

7.4 Does landscape design comply with the IPS?
Yes__ No__ (If not, provide justification)

8. SITE ELEMENTS:

8.1 If the project includes site furnishings, does the proposed plan follow the guidelines in the IPS?
Yes__ No__

8.2 If the project includes signs, does the proposed plan meet the Sign Standards in the IPS?
Yes__ No__

8.3 If the project includes exterior lighting, does the proposed plan meet the Exterior Lighting Guidelines?
Yes__ No__

IPS Team Checklist

8.4 Will all transmission/ distribution and service lines be located underground?
Yes__ No__

8.5 Will all substation and transformers be designed and located as to minimize their visual impact?
Yes__ No__

8.6 Will all sewer and water lines to be located underground?
Yes__ No__

8.7 Are all storm drains systems designed to meet guidelines?
Yes__ No__

Designer comments on site elements design:

8.8 Does site elements design comply with IPS?
Yes__ No__ (If not, provide justification)

9. ANTITERRORISM (SECURITY):

9.1 Have installation boundary setbacks been included?
Yes__ No__

9.2 Have building setbacks from road, parking, and other buildings been included?
Yes__ No__

9.3 Do site plans and landscape plans include the criteria outlined for AT/FP?
Yes__ No__

Designer comments on AT/FP compliance:

9.4 Does AT/FP Design comply with the IPS?
Yes__ No__ (If not, provide justification)

I hereby certify that the information provided is in compliance with the guidelines of the installation or applicable IPS, except as justified as non-compliance.

_____ _____
Designer of Record (Print and Sign) Date
Concur____ Deny____ (Explanation of denial is attached)

_____ _____
IPS Staff Reviewer (Print and Sign) Date
Concur____ Deny____ (Explanation of denial is attached)

_____ _____
Command Review (If applicable) Date