U.S. AIR FORCE

AIR EDUCATION & TRAINING COMMAND

EXECUTIVE SUMMARY

To understand architectural compatibility and how it affects the Air Force, an understanding of the term is necessary. Compatible is generally defined as “the ability to exist and perform in harmonious combination”. Architectural compatibility results from designing and building facilities in harmony with their natural and man-made surroundings and environment. Architectural compatibility is concerned not only with the physical appearance of buildings, but with site planning, landscape development, security and sustainability.

Military installations should provide efficient and pleasant physical environments conducive to attracting and retaining skilled and motivated personnel. The design, location and maintenance of individual elements such as buildings, roads, parking lots, signs and landscaping establish the quality of the environment. Each of the elements should be functional, attractive and harmonious with each other. This helps to create an environment that enhances the capability of the installations to support their mission and fosters pride in and a commitment to military service.

Adoption of these guidelines by base leadership will ensure compliance and result in a homogeneous community fabric that improves overall installation appearance and mission effectiveness.

Specific study objectives include:

- Promote the sense of a unified community by strengthening the prevailing character of the base
- Define goals and objectives leading to more consistency for leadership decision-making
- Provide a view of the base in terms of Visual Districts
- Discuss recommended architectural themes for each Visual District

EXECUTIVE SUMMARY

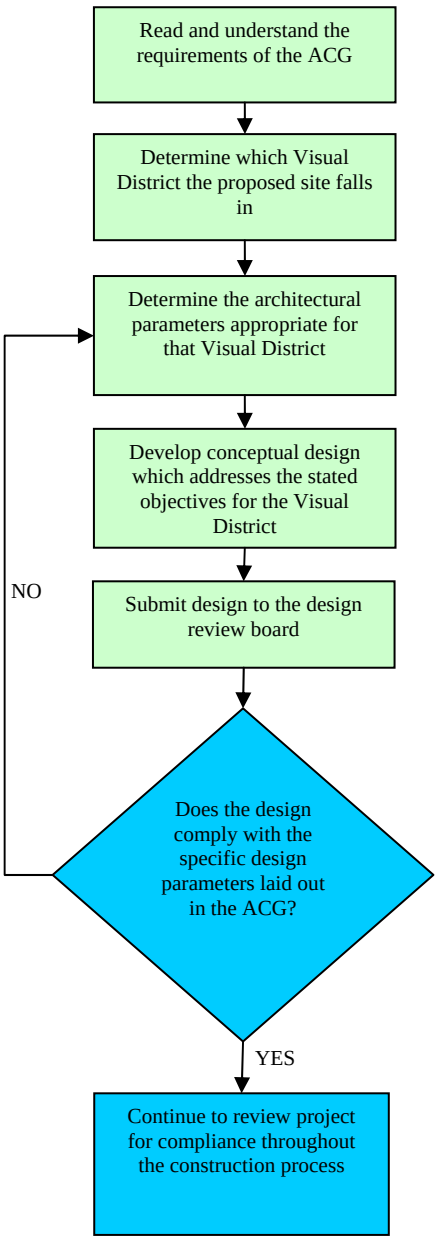
1 Introduction

1.1 PURPOSE

The purpose of the Architectural Compatibility Guide (ACG) is to establish and document installation-specific standards and provide a tool to assure these standards are consistently applied. The ACG strives to recognize the cultural, environmental, climatic and existing facility conditions particular to Little Rock AFB and define the appropriate styles, finishes, and materials to be used to achieve the best facility life-cycle costs and still retain the appropriate environment for people to achieve their highest productivity and efficiency.

- Provide a record of established goals, objectives, and decisions leading to more consistent decisions when a change in installation leadership occurs.
- Improve the environment through the installation's construction projects.
- Provide a mechanism for environmental design continuity.
- Develop a baseline for review and, if necessary, for changes that may occur as a result of redirection in goals and objectives.
- Establish consistency in installation development which takes into account all elements of the environment.
- Influence design expression. These principles should not be so specific that design freedom is restricted. A designer should have sufficient latitude for creativity.
- Provide clear and consistent communication between the Air Force and designers, whether they are in-house or contracted professionals.
- Improve programming and budgeting by limiting the range of options and promoting consistency.
- Impart a sense of pride, organization, vitality, and good management. The installation should convey the feeling that it is a good place to work and live. It should reflect a leadership that cares about its people.

1.2 USE & IMPLEMENTATION



The ACG is a tool to chart a course towards installation excellence and provides a means to assess the installation's progress in achieving that end. The ACG is intended to be used at all stages of the facility delivery process from programming through construction, and even operations and maintenance. It is essential that the ACG be provided to the design agent and AE consultants early in the design process to assure that the entire design team understands the applicable design standards and objectives for the project.

The ACG is by no means a stand-alone document. It should always be used in conjunction with the planning and design resources found in chapter 4 of this document to ensure compliance with Base standards and goals.

Implementing a strict design review process is important to ensure the Architectural Compatibility Plan is followed as projects are conceived, designed, and constructed. The flowchart to the left outlines the typical process for ensuring compliance with this guide.

2 Base Information

2.1 INSTALLATION PROFILE

2.1.1 LOCATION

Located in central Arkansas, Little Rock Air Force Base resides 17 miles northeast of the capital city, Little Rock, and adjacent to the city of Jacksonville.

2.1.2 MISSION SUMMARY

Little Rock Air Force Base is the home of the 314th Airlift Wing, the 463rd Airlift Group, the U.S. Air Force Mobility Weapons School and the 189th Airlift Wing (Arkansas Air National Guard), which all reports to Air Education and Training Command.

The 314th Airlift Wing is composed of three C-130 flying squadrons—the 48th, 53rd and 62nd Airlift Squadrons. It is the premier C-130 training base in the Department of Defense, training C-130 crew members from all branches of the service and the U.S. Coast Guard, as well as students from 28 allied nations.

The 463rd Airlift Group is composed of two flying squadrons—the 50th and 61st Airlift Squadrons. These squadrons are operational and deploy throughout the world. The U.S. Air Mobility Weapons School provides C-130 aircrew members with graduate-level instruction in C-130 tactical employment. The 189th Airlift Wing works in conjunction with the 314th Airlift Wing.

2.1.3 HISTORY OF BASE

In late 1951, after learning of the Air Force's desire for a new base in the central United States, local leaders sent a letter to the Secretary of the Air Force urging serious consideration of the Little Rock area. In an ambitious move, the local leaders convinced Pentagon officials that funds would be raised locally, and the land would be purchased and donated to the Air Force. In January 1952, the Air Force agreed to the proposal, and local citizens went to work.

In September 1955, the base was opened to air traffic. In a special ceremony, local leaders and assigned personnel welcomed the arrival of the RB-47 aircraft. The initial reconnaissance mission eventually switched to a purely training mission.

While Little Rock AFB was still home to two Stratojet wings, The Air Force decided to base 18 Titan II Intercontinental Ballistic Missiles in underground silos around the base. Work began on the silos in January 1961. Once construction was completed, crews supported the ICBM mission for over 23 years.

In 1962, the Arkansas Air National Guard became a presence at Little Rock AFB. The Air Force moved the Lockheed C-130 Hercules aircraft to Little Rock AFB in 1970.

In April 1997, the 314th Airlift Wing, as it is now called, transferred to Air Education and Training Command. The 463d Airlift Group was activated at the base as a tenant under AMC, and the 50th and 61st Airlift Squadrons were reassigned from the 314 AW to the 463 AG. Finally, CADS was realigned under AMC's Air Mobility Warfare Center. The purpose of these changes was to move the C-130 schoolhouse under AETC while retaining AMC's control over operational aspects of C-130 operations.

Since its official opening in October 1955, Little Rock AFB has been a valuable component of US air power. From the first day a B-47 went on alert in 1956 until the final Titan II went off alert in 1987, the men and women of The Rock were on the front lines of the Cold War and played a vital role in winning it. Peace is protected through readiness, and Little Rock AFB has always been ready.

2.2 LOCAL CHARACTERISTICS

2.2.1 CLIMATE & WEATHER

Arkansas has a temperate climate, warmer and more humid in the southern lowlands than in the mountainous regions. At Little Rock, the normal daily temperature ranges from 40°F (4°C) in January to 81°F (27°C) in July.

Average yearly precipitation is approximately 45 inches in the mountainous areas and greater in the lowlands; Little Rock receives an annual average yearly precipitation of 50.9 inches, with an average relative humidity ranging from 84% at 7 AM to 57% at 1 PM. Snowfall averages 5.2 inches a year.

2.2.2 PREVAILING ARCHITECTURAL CHARACTER

There are two predominant architectural styles of the buildings at Little Rock AFB, brick buildings and industrial buildings with painted siding.

The brick buildings range in height from one to three stories. Most of these buildings are simple in form with punched windows and sloped metal roofs. The industrial buildings vary in size from small one-story buildings to large airplane hangers.

2.2.3 TOPOGRAPHY

The Boston Mountains (an extension of the Ozark Plateau, sometimes called the Ozark Mountains) in the northwest and the Ouachita Mountains in the west-central region not only constitute Arkansas's major uplands but also are the only mountain chains between the Appalachians and the Rockies. Aside from the wide valley of the Arkansas River, which separates the two chains, the Arkansas lowlands belong to two physiographic regions: the Mississippi Alluvial Plain and the Gulf Coastal Plain. The highest elevation in Arkansas, at 2,753 ft (840 m), is Magazine Mountain, standing north of the Ouachitas in the Arkansas River Valley. The state's lowest point, at 55 feet (17 meters), is on the Ouachita River in south-central Arkansas.

At LRAFB, the surface topography is generally gently rolling hills with a mix of deciduous and evergreen vegetation.

3 Architectural Design Guidelines

3.1 LANDSCAPE/SITE DESIGN

3.1.1 INTRODUCTION

Landscaping and site design should provide developed outdoor spaces to promote social interaction and foster a sense of community on the base. Existing features, such as trees, and views should be capitalized on whenever possible.

3.1.2 INSTALLATION BOUNDARIES

The appearance of installation boundaries can be enhanced by providing simple and low maintenance plantings. These plantings can also serve to limit sight lines into the facility, thus improving security.

3.1.3 CIRCULATION

Views of streetscape

Views of streetscape

Views of streetscape

STREETS

While we consider the quality of a base's facilities of utmost importance, the street system serves as a framework that can either complement or detract from that quality.

Beyond providing a basic mode of circulation for vehicles, streets are an indirect basis of our perception of quality. Installation aesthetics are impacted by many of the elements that make up the vehicular circulation system. These indirect impacts may include pavement surfaces, traffic-related street equipment, street furniture, the actual roadway shapes and the focuses or views that street systems create.

Street Patterns

Where an expanded roadway system is under consideration, the street pattern should attempt to respond to site conditions and create focal interest. Street alignments that draw one's eye to significant elements of the base help provide orientation and contextual hints as to one's location within the base. Where medians are used, these should be landscaped appropriately.

A properly laid out street system should support uncomplicated movement throughout the base. It can suggest the location of important buildings, entry gates, structures, monuments, etc. Landscape materials used along streets can also aid in advising

drivers when making logical progressions from one use area to another. There are numerous examples at LRAFB where street patterns have been successfully used in this manner, notably in the approach to Building 1250.

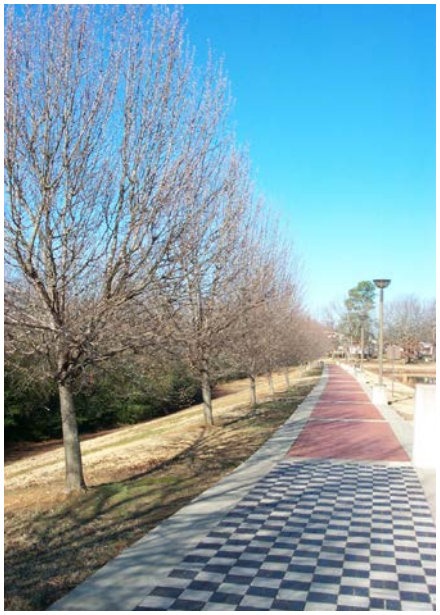
Signage at entry

The main entrance to an installation should represent one of the most carefully crafted components of the base. Accommodating all anticipated traffic including delivery vehicles and pedestrians should be considered in terms of flow and staging. Thematic materials and architectural style can be established by the guardhouse, entry monument, fencing, and other entrance amenities. Overall, the roadway system, beginning with the gate entry, should establish a positive visual image of the installation and at LRAFB it does this very well.


Crosswalk at Laughlin AFB

Pavers/Other Materials

Non-traditional paving materials, such as pavers, may be used at key intersections or adjacent to significant base facilities. These can help notify drivers or pedestrians of an area or location of significance. Use of such materials should be limited to locations of high importance (major intersections, Wing Command Headquarters, Heritage Park). Material selection should be consistent and limited to one material type and no more than two colors. The selected material must be installed in such a manner that it is able to withstand virtual neglect and constant vehicular abuse.


Special paving feature

WALKS

Walkways define the pedestrian experience on a base. They are an indicator of quality in the installation infrastructure and of the commitment to ease of circulation. While they are similar to streets in that way, placement and scale are very different and must be addressed in a manner that recognizes the pedestrian perspective.

Sidewalks

Consideration should be given to the pattern of pedestrian traffic between buildings when planning sidewalk routes. Sidewalks should be sufficiently wide to comfortably allow two pedestrians to cross paths. Generally, a 6 to 8 foot wide sidewalk is preferred, but it should never be less than 4 feet wide along secondary streets. Primary sidewalks should be lighted for nighttime safety. Lighting in other areas is recommended.

Placement of sidewalks immediately adjacent to street curbs is discouraged. Instead, a "green zone" between the street and the sidewalk is encouraged where possible. Sidewalks need not be parallel to adjacent streets. Curvilinear sidewalks create visual interest and provide landscape pocket planting opportunities that enhance the pedestrian experience. LRAFB has paired its existing rolling terrain with this sidewalk concept to create a pleasant pedestrian experience in many areas. Future sidewalk development should build on the start already made.

Sidewalks should be located on both sides of a street, especially along main thoroughfares, to afford pedestrians the maximum circulation options and to minimize the need to cross a street to access a sidewalk. The number of curb cuts that occur where sidewalks are located should be kept to a minimum. Sidewalk materials at major vehicular crossings should signal to drivers that a pedestrian zone is being crossed, and brick or concrete pavers, as previously suggested, are a good option.

Paving feature at Heritage Park

Sidewalks should be a part of all new construction projects. Sidewalk configurations should preserve any significant existing landscape. Sidewalks leading to a building should increase in width as they approach a main entrance. Borders of brick or concrete pavers are appropriate at major building entrances and the red-brown color already in use is very appropriate.

Consideration should be given to economical alternatives to gray concrete walks including the addition of a small amount of red or brown pigment in the concrete mix.

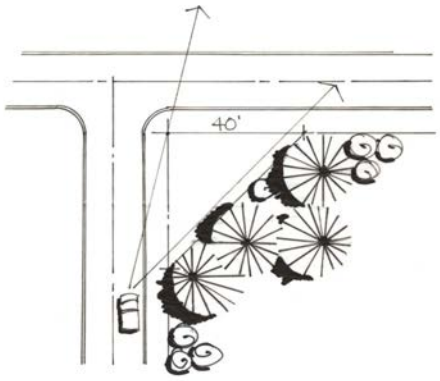
Bicycle paths

Bicycle transportation is an efficient alternative to traditional vehicular travel and should be given consideration as an integral part of the base circulation system. Bicycle paths can serve as a convenient and safe alternative mode of travel between base facilities that also promote exercise.

Curvilinear layouts are preferred over linear configurations. Pathways should be sufficiently wide to allow for two-way bicycle traffic to be easily accommodated. Where sidewalks double as bicycle paths, they should be made sufficiently wide to allow

comfortable use of this facility for both activities and have a designated side for each. When expanding existing facilities, planners should consider building sections of what can become a complete loop of the entire campus.

PARKING



Keep landscape away from roadway intersections

Access to Parking
When approach aprons are used by heavy trucks, curb cuts leading into parking areas should use concrete aprons to minimize the maintenance associated with vehicular turns on asphalt. At other areas, concrete aprons are recommended if within the project budget. Landscape clusters flanking these entrances are encouraged and should be installed at the appropriate setbacks to allow for adequate sightlines for driver. The height of mature plant materials should be considered. Landscape clusters help to signal the entrance of parking areas and "soften" the increased pavement area associated with curb cuts. A triangular setback of a minimum of 40 feet from the curb must be kept clear of obstacles that can prohibit obstructing a driver's line of site in either direction of an intersection.

Accessing parking areas from main thoroughfares, especially off of the entry roadway, is discouraged. To the extent possible, parking areas should be accessed from secondary roadways in order to minimize the impact on vehicular flow on main thoroughfares where speeds are higher.

Parking Locations
The preferred locations for vehicular parking are across the street from a main building entrance or at the side or rear of the building. Buildings should never be viewed from the street across a parking lot. Where parking in front of a building is required it should be limited to visitor spaces, located so as to not block the view of the building entrance. Vehicular drives within these parking areas should be oriented so that they are perpendicular to the building façade.

Designated handicap parking stalls should be located as close to the accessible entry as possible.

Force Protection
Refer to the section on force protection for information regarding parking and building adjacencies.

Screening at Little Rock AFB

Screening at Maxwell AFB

Screening/Planting
Where dedicated parking across a street from a facility is possible, special care should be taken to set back the parking lot sufficiently to allow for landscape planting opportunities between the lot and the street. The intent of this standoff distance zone is for security, to screen or mask the parking lot from the street and to improve the pedestrian and vehicular views from the street or sidewalks.

This zone can be used to place sidewalks. A minimum of 20' from the edge of the street curb to the edge of the parking lot curb should be set aside for this zone. Berms with low level plantings and trees will completely screen the view of parked cars.

Trees must not be planted in utility easements. When easements are located in front of parking areas, an increased depth of the setback will be required to keep trees out of the easement area.

Parking lot medians should be planted with trees, located so that they do not come into contact with overhanging truck bumpers. A goal of shading 20 percent of the parking area with trees at the lot perimeter or medians is not unreasonable. Medians with trees should generally be the width of the tree's mature canopy to minimize pavement damage from root growth. Verify the width requirements based upon selected species with the landscape architect.

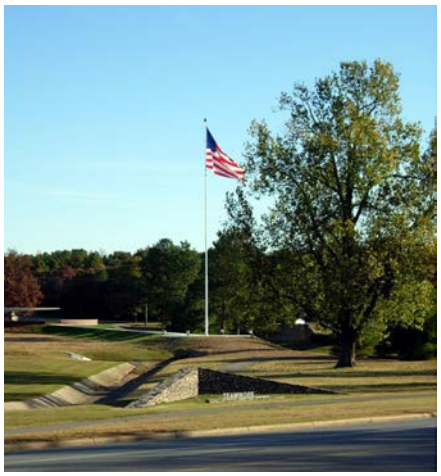
Pedestrian Considerations
Pedestrian walks that lead toward a building entrance should be located within the medians in large parking areas. Texture or material changes should be considered for delineating paths where pedestrians must cross traffic lanes as they traverse the parking lot. Appropriate ramps at curb approaches to accommodate ADA requirements are to be provided.

Heritage Park display

3.1.4 OPEN SPACES

HERITAGE PLAZAS & CEREMONIAL SPACES

When planning future improvements to this important base element, key vistas, axial and spatial relationships and circulation should all be considered. Through art and the landscape, the plaza seeks to convey a sense of the base history and distinguished military accomplishments.



Monument in Heritage Park

Smaller monuments, landmarks and artworks should be sited and scaled so that they are highly visible yet subordinate to the overall plan and concept of the Plaza. LRAFB has achieved a good balance between the design of the overall ceremonial space and smaller commemorative monuments. To maintain this quality, it is recommended that a review committee be established on base to assist the designers in the development of new monuments.

Where seating is to be integrated into the plaza design, it should take advantage of the principal view and be oriented for thermal comfort in both winter and summer. Where practical, the planting of trees is encouraged to provide shade and atmosphere. Heritage Plazas should highlight favorable views while screening those that are undesirable.

Berms can be used to define open spaces and emphasize desired views. They can protect the central ceremonial area in the winter while directing prevailing winds into the space in the summer. Berms can also help mitigate traffic noise that could be disruptive during ceremonial events.

RECREATION SPACES

Outdoor recreation offerings enhance quality of life by promoting healthful activities. Open recreational areas must be well conceived and maintained to be successful. Spaces such as parks, playgrounds, baseball fields or other sports fields, gardens, etc. all can serve as recreation sources. These are best located where they are convenient to all base residents and this suggests a somewhat central location. Space in this area should be set aside for future growth of recreational facilities.

SPACES BETWEEN BUILDINGS

Large turf areas near dormitories are encouraged to promote informal recreational activities.

Plaza paving

PLAZAS/COURTYARDS/PATIOS

Plazas and courtyards should be an integral component of the overall base planning effort. When grouping buildings, the spaces between buildings should be as carefully designed as the buildings. Plazas and courtyards should be designed to encourage group gatherings and, in the Little Rock area, they can serve this purpose most months of the year. The courtyard

Courtyard seating

outside Building 864 is a good example of courtyard design, although without major trees for shade, and the open space partially defined by Buildings 1222, 1230 and 1231 has promise.

The design of plazas or courtyards should be relatively simple and flexible enough to accommodate a variety of events. Ideally, they can be terminus points for pedestrian walks or other approaches.

Landscape materials used in these spaces should be carefully selected. Trees of sufficient height and width at maturity should be used to ensure that shading of seating areas will be afforded during warmer weather. Deciduous trees are recommended over evergreens since they allow sunlight and warmth to penetrate the area in the winter months.

Paving material selections should complement the surrounding facilities and take into consideration all drainage requirements implied. Paving patterns or borders in these areas are appropriate, but should be kept relatively simple in design. Divider strips of either brick or concrete pavers are encouraged, as they add interest at relatively little additional cost.

PLAY AREAS

Play areas are an important element of family housing areas, schools, child development and recreational facilities and too often these are placed where space is available, without proper planning. The Consumer Products Safety Commission (CPSC) Handbook for Playground Safety, 1978 and later, provides valuable guidance in the planning of play areas, the design of play equipment and the selection of ground surfacing. ADA guidelines address design to accommodate children with disabilities.

For active play, a good rule of thumb is 75 square feet per child. Space limitations will dictate how many children can safely use a play area at any one time and research has shown that accidents increase with overcrowding. The ages of children using the play equipment is particularly important when the range extends from toddlers through pre-teens. Where toddlers are anticipated, the best practice is to develop a separate area to address their needs in order to minimize injuries to these younger children.

The CPSC defines a use zone around each piece of play equipment, consisting of a fall zone and no-encroachment zone. The fall zone is the area around a piece of equipment where a child falling or jumping from the equipment could be expected to land and where impact-absorbing ground surfacing is required. The no-encroachment zone provides an additional area where children using the equipment can be expected to move about.

Only play equipment that meets the safety requirements established by CPSC should be considered. Safety considerations include entrapment, crush and pinch points, protrusions and edges, multiple exits, guardrails and barriers. The most durable equipment is of steel with a high-performance coating. Plastics have a shorter life expectancy; wood splinters and is subject to decay.

Selecting play equipment that looks like a rocket ship or castle has adult appeal, but non-thematic structures better support and stimulate dramatic play activities and are more adaptable for informal activity. While bright colors are appropriate there is no evidence that children respond best to primary colors.

The most important component of a play area in terms of reducing injuries is the selection of the ground surfacing material. CPSC establishes impact-absorbing criteria. Positive drainage of the ground surface is essential and play equipment footings must be recessed so that the surface material extends over them. Sand and gravel are undesirable because they do not absorb impact readily. Wood bark decays and, when dry, becomes an airborne irritant. Three types of surfacing material have proven successful.

- Fiber Mulch: This engineered wood product is installed with a depth of 12 inches over a geotextile fabric. The installation requires a network of porous drain lines below the fabric to carry away subsurface water. The mulch is easily worn away in areas of frequent impact and requires on-going maintenance to maintain a uniform depth.
- Poured-in-Place Rubber Matting: The rubber is poured over a thick bed of loose rubber fill placed over a concrete slab. A substantial edger is required to keep the loose material from migrating.

- Interlocking Rubber Tiles: The tiles, 3 or 4 inches thick, are installed over a concrete slab. The tiles have short legs that raise them above the slab so that water drains through and is carried away.

3.1.5 PLANTING/LANDSCAPE

Clusters and columns of Pine trees

GENERAL

Landscape can be used to direct circulation, provide shade, screen or mask undesirable views, mitigate noise and wind, control erosion, contribute to energy conservation through shading and cooling, establish hierarchical order, emphasize or deemphasize building architecture, define space, improve air and water quality and serve as part of AT/FP design.

A landscape theme that takes into account Little Rock's climatologic patterns, native plant materials, topographic characteristics and the base general plan will set a baseline for future landscape installations. The success of LRAFB's formal and informal pine tree clusters base-wide is a very strong landscape concept, providing visual screening between building groupings, and should be expanded.

Limiting landscape specimen installations to those listed on the approved plant list for the Little Rock region is important as it increases the chances for long-term survival of installed materials. The need for supplemental watering and maintenance is greatly reduced. At the design stage, an expectation for a plant specimen's anticipated timeframe for achieving maturity needs to be realistic so that natural growth patterns are compatible with desired goals. Do not allow the planting of any invasive species of plants.

Screening

Plantings requiring higher maintenance

Landscape materials are an effective method of screening undesirable views of things like storage yards, utility lines or sub-stations, mechanical equipment, electrical transformers, dumpsters, docks and others, when an architectural screening device is unwarranted. When selecting a plant to perform as a screening, be careful to select species that will remain dense close to the ground.

LRAFB, like other installations, incurs substantial cost for landscape maintenance and a lot of this goes toward pruning shrubbery. In selecting new and

replacement shrubs, look for species whose growth habit and mature size minimize, or better yet eliminate, the need for pruning. These appear more natural than the pseudo-geometric shapes of pruned shrubs. Though this is presently not the norm at LRAFB, the cost savings will be substantial.

New planting at Wing Command

Planting beds of shrubs and flowering plants should be minimized, used only at the main gate, in the Heritage Park and adjacent to principal building entrances. Elsewhere, the emphasis should be on trees, not shrubs. To reduce weed intrusion, planting beds should be lined with a mesh fabric and heavily mulched, both at planting and as part of on-going maintenance.

Masking

Landscape used to mask views is different from full screening in that the intent is to soften rather than to completely block a view. Applications for masking could be to break up long expanses of fencing or along force protection cable barriers. The intent is to soften the hard lines and to improve visual appeal.

Noise Control

Strategic planting of landscape materials can be a good approach for controlling noise and are especially effective when paired with masonry fences or berms. This application can be particularly useful where buildings or other public spaces are located adjacent to a busy roadway. The most effective installations for noise control will include plant materials with very dense foliage, planted to create a continuous screen and be of sufficient height to moderate noise. It is important to note that plant materials of all heights have the ability to absorb reflected sound. Evergreen plants are preferred when installed for this purpose since their foliage is beneficial for mitigating noise throughout the year.

Shade

Providing shade is one of the many benefits of landscape plantings. During the summer, they help to reduce the ambient temperature by a substantial amount to provide comfort and encourage use of outdoor spaces. In the winter, deciduous trees allow light and warmth to penetrate their canopy. The use of deciduous trees around buildings helps to shield them from the full effect of the summer sun while allowing its warmth to penetrate in the winter.

Approximately 75 percent of all heat gain in a building is through windows. The proper use of deciduous shade trees can dramatically reduce the cost of cooling in the summer and heating in the winter by strategically placing them to shield windows. Tree planting also reduces the amount of turf area which requires significantly more water to maintain.

Shade from trees also improves the ambience of patios and courtyards by extending their usability into summer. They also help to lessen the heat island effect of roadways or parking lots when placed in medians. Tree planting can also increase the life of pavement. When planting shade trees on circulation corridors, adequate clearance between the tree and other structures as well as beneath the tree where traffic occurs is critical. The specific growth patterns of a selected species needs to be thoroughly understood in order to avoid future problems.

Definition of Functional Areas
The massing of landscape beds and the logical sequencing of landscape patterns can frame views, buffer pedestrians from vehicular traffic and provide separation of distinct activities.

Examples of attractive landscaping

If the intent is to create an atmosphere of order, regular spacing of trees and shrubs is most appropriate. Formal repetition and contrast to reinforce edges and borders represents the most appropriate application for a sense of coherency. When a formal setting is desired, trees with upright trunk patterns are most appropriate. Their vertical canopy clearance should be a minimum of seven feet to allow views underneath.

Irregular spacing of landscape materials must be carefully implemented so that there is a sense of overall composition and balance in the final configuration. Informal settings are most appropriate in areas where a diversity of unplanned activities may occur.

Glare
Trees, shrubs and other vegetation can effectively reduce glare and reflection when placed between the light source and the observer. This is especially true where reflections from paved areas are being bounced into windows or where sunlight is directly penetrating a window.

Pollution Control

The most significant way for landscape to control water pollution is to control erosion. Landscaping can play a very important part in this goal by holding soil in place and thus reducing the amount of "runoff" during rain events that would otherwise find its way to fresh water sources. Whether runoff events are rapid and dramatic or slow and imperceptible, the materials that storm water comes into contact with are potential sources of pollution. Trees can play a very significant role in pollution prevention and storm water control.

On steeply sloped terrain where erosion threats are the greatest, planting vigorous ground cover will stabilize the area and mitigate runoff. Planting grass in these areas is discouraged as it proves difficult and even dangerous to maintain. The use of mulch materials also helps stabilize soil. Because of the quantity and availability of fallen pine tree needles that exist in the Little Rock area, their use as an organic mulch material in planting beds is highly encouraged. This application is highly beneficial to the soil and also helps control weeds that tend to infiltrate planting beds.

In areas that are mowed, leaving the clippings on the lawn is encouraged. These add nutrients to the soil that in turn reduce the need for fertilization. Clippings also add organic matter to the soil which reduces the amount of runoff.

Landscaping at Maxwell AFB

Where installing plant materials to control erosion is difficult if not impossible, the use of rip-rap should be considered.

Landscape & Architecture

Landscape materials can be used to emphasize a building's entry or to mask or screen building walls that lack detail or otherwise detract from the entry. Formal planting patterns add to the drama created when approaching an important installation facility or important base landmark. This is particularly effective when the landscape helps to frame the entrance of prominent facilities. The use of shade trees along walks and drives, paired with low level ground covers, help to lower the thermal load on adjacent facilities.

VQ at Little Rock AFB

In addition to emphasizing the entry, installing plant materials along the foundation of a facility adds to the

visual interest of the building by softening hard edges and adding depth to the building façade.

WALLS AND FENCES

Retaining Walls

The primary function of retaining walls is to stabilize soil where elevation changes are severe and where controlling erosion is necessary. They are of most benefit where extensive grading of soil is not possible due to limited area requirements or where excessive grading would be detrimental to the surrounding landscape or roadway system. Where these conditions exist, retaining walls are recommended over extensive grading.

Retaining wall at Building 1250

A maximum vertical height of 3 feet for individual retaining walls is preferred over taller solutions if the specific condition allows. The retaining wall installation at Building 1250 is a good example of this. Terracing of battered retaining walls not only creates visual interest and potential seating areas, it also enhances soil stability and keeps individual retaining walls at a manageable scale to facilitate landscape maintenance. They can also be used effectively as a component of force protection.

Concrete masonry retaining wall at Building 952

Using the appropriate masonry material is important. At LRAFB, a concrete masonry unit with a textured face of a color that complements the vernacular reddish-brown brick would be appropriate. The retaining wall at Building 952 is a good example.

The use of landscape materials in and around retaining walls is encouraged to soften a wall's rigid appearance and to ensure that the installation fits naturally within the character of its surroundings. Landscape selections should be made from an approved landscape materials list for the Little Rock area. Modified drainage patterns created when using retaining walls should be considered during the planning stage.

Landscape wall separates parking and courtyard areas

Landscape Walls

Landscape walls are freestanding walls used to screen or mask undesirable views. Their material, texture and color applications should follow the suggestions provided in the retaining wall section. The brick wall with cast stone cap used at the courtyard dining area at Building 854 is a good example. A wall cap of a

material other than brick is important, as brick caps tend to foster efflorescence from the wall below.

Effective screening

Equipment Screens

Dumpsters and major pieces of mechanical equipment should be completely screened from view. The base preference for three-sided brick enclosures with gates of tubular steel represents a major commitment to the elimination of visual clutter. Wall caps should not be of brick and sheet steel should be considered as a backing to the steel gate frames to provide total visual screening.

In some cases, metal-clad enclosures will still be permissible. These enclosures should fully conceal the contents from view and be painted or anodized a dark bronze color.

Screening should hide equipment from view

Size dumpster enclosures to accommodate the largest dumpster in use or contemplated for use.

Mechanical equipment screens are best designed as somewhat taller than the tallest piece of equipment to be screened. Mechanical equipment has a finite lifespan and there is every likelihood that replacement pieces will be taller than the original.

Simple volumetric equipment acceptable unscreened

Equipment like electrical transformers, that are typically ground-mounted and simple volumetric forms are best left unscreened. LRAFB uses a dark brown-gray paint for these and when, so treated, they visually recede into the landscape. Use Sherwin Williams “SW Satin Bronzetone” paint for all electrical transformers and equipment.

Designers should determine if recycling containers will be required on site and provide enclosures if necessary.

Security fencing at Maxwell AFB

Fences

Chain link fences are strongly discouraged and wood or metal slats in chain link fencing is not allowed. Where they are essential for security, vinyl clad chain link material and posts should be used, in a dark green or black color. Powder coated finishes are also allowable. This should be supplemented with landscape screening wherever possible.

The preferred design for security fencing is steel or aluminum picket fencing in a dark color, six feet or taller as required for security, with brick piers at 12 to 16 feet on center. The brick piers should be a minimum of 16 inches square and have cast stone caps. An alternative to brick piers is circular concrete piers, with a rubbed finish and a cast stone or precast concrete cap.

PLANT LIST

Botanical Name	**Common Name/*Variety***
NATIVE TREES:	
Acer rubrum	Red Maple
Acer saccharum	Southern Sugar Maple/ *floridanum*
Amelanchier arborea	Serviceberry
Betula nigra	River Birch/ *single item*
Carpinus caroliniana	American Hornbeam
Cercis canadensis	Eastern Redbud
Chionanthus virginicus	White Fringetree
Cornus florida	Flowering Dogwood/ *site specific*
Crataegus phaenopyrum	Washington Hawthorne
Fraxinus pennsylvanica	Green Ash
Gleditsia triacanthos	Moxraine Locust/ *inermis moraine*
Gleditsia triacanthos inermis	Thornless Honeylocust
Ilex x attenuata Fosteri*	Foster Hybrid Holly
Ilex opaca*	American Holly
Juniperus virginiana	Eastern Red Cedar/ *canaerti*
Liquidambar styraciflua	Sweetgum/ *rotundiloba*
Liriodendron tulipifera L	Tulip Poplar
Magnolia grandiflora	Southern Magnolia
Magnolia soulangeana	Saucer Magnolia/ *white*
Malus angustifolia (Ait.) Michx	Southern Crabapple
Nyssa sylvatica	Black Gum
Ostrya virginia	Hophornbeam
Pinus taeda	Loblolly Pine
Pinus echinata	Shortleaf Pine
Platanus acerifolia	London Plane Tree
Platanus occidentalis	American Sycamore
Quercus alba	White Oak
Quercus falcata	Cherrybark Oak/ *pagodaefolita*
Quercus niqra	Water Oak

PLANT LIST - CONTINUED

Botanical Name	**Common Name/*Variety***
NATIVE TREES (continued):	
Quercus palustris	Pin Oak
Quercus Phellos	Willow Oak
Quercus rubra maxima	Northern Red Oak
Quercus shumardii	Shumard's Oak
Sassafras albidum	Sassafras
Taxodium distichum	Common Baldcypress
Tilia cordata	Littleleaf Linden
SHRUBS:	
Ceanothus americanus	Mountain snowball
Corylus americana	American hazelnut
Diervilla sessililfolia	Bush honeysuckle
Hypericum prolificum	Saint-John's-wort
Hydrangea quercifolia	Oak-leaved Hydrangea
Ilex vomitoria	Yaupon Holly
Kalmia latifolia	Mountain laurel
Mahonia aquifolium	Oregon Holly-grape
Myrica cerifera	Wax Myrtle/ *dwarf varieties-species*
Rosa carolina	Carolina rose
Viburnum rafinesquianum	Downy arrowwood
EXOTIC SHRUBS:	
Acer ginnala	Amur Maple
Acer palmatum	Japanese Maple
Berberis thunbergi	Japanese Barberry/ *standard and minor*
Chaenomeles Lagenaria	Flowering Quince/ *scarlet*
Elaeagnus pungens	Thorny Elaeagnus
Forsythia intermedia	Border Forsythia/ *spectabilia*
Forsythia suspensa sieboldi	Siebold Forsythia
Juniperus chinensis pfitzeriana	Pfitzer's Juniper
Juniperus sabina	Savin Juniper
Lagerstroemia indica	Crape-myrtle/ *cold hardy varieties*
Photinia glabra	Smooth Photinia
EXOTIC TREES:	
Ginkgo biloba	Maidenhair Tree
Ulmus parvifolia**	Lacebark Elm
Koelreuteria paniculata	Goldenrain-Tree
Prunus serrulata	Japanese Cherry
Pyracantha coccinea	Laland Firethorn/*lalandi*

PLANT LIST - CONTINUED

Botanical Name	**Common Name/*Variety***
EXOTIC TREES (continued):	
Pyrus calleryana	Bradford Pear
Rosa virginiana	Virginia Rose
Taxus baccata	Irish Yew/*stricta*
Taxus cuspidata	Japanese Yew/ *densa, expansa or nana*
Thuja orientalis	Oriental Arbor-vitae/ *globosa and stricta*
Viburnum rufidulum	Southern Black Haw
Vitex agnus-castus	Lilac Chaste-tree
Yucca filamentosa	Adams Needle

* Do not use in housing areas
**(DO NOT accept Siberian Elm-Ulmus pumila)

3.1.6 XERISCAPING

GENERAL

The word “xeriscape” is derived from the Greek word “xeros”, meaning dry. Xeriscape philosophy embodies landscape principles that apply to any region or climate and challenges landscape designers and those responsible for maintenance to create landscapes that achieve a sense of region in the selection and placement of plant materials while minimizing the use of water.

Mulch in new planting beds

For Air Force installations, adherence to the principles of xeriscaping reduces water consumption and lowers maintenance costs. Water use for a traditional landscape can be as much as 40 percent of total water use and, though irrigation cannot be eliminated, it can be greatly reduced with the appropriate design techniques and maintenance practices. An attractive appearance need not be sacrificed, as a properly-designed xeriscape can incorporate abundant planting and take on, if desired, even a lush appearance.

Water Budgeting

In landscape design, water use zones can be created by concentrating plants with similar water-use requirements. This simplifies both irrigation design and maintenance. There are three typical zones.

Inner Zone
This zone is the smallest, concentrated in areas that are highly visible, like principal building entrances, heritage parks, main gates and functional outdoor spaces like courtyards and patios. The densest planting is reserved for this zone and, even in a climate like Little Rock with relatively plentiful rainfall, supplemental irrigation will likely be required.

Intermediate Zone
This transitional zone includes other areas immediately adjacent to buildings, park areas, medians in divided streets and parking lots and strips bordering major streets. In Little Rock a broad variety of plant materials are available for use in this zone that will require no supplemental water, though some may be desired in limited areas. This can be minimized at streets and parking areas by diverting some runoff from paved areas and around buildings by distributing runoff from roof drains.

Outer Zone
The outer zone is everything else. LRAFB is exemplary in the manner in which it has treated these areas, with swaths of pine and other trees, together with natural understory growth requiring no supplemental water and almost no maintenance.

Turf Areas
Turf has the highest water and maintenance requirements of all plantings. The size and location of turf areas should be carefully considered in the inner and intermediate zones. At the inner zone, there will reasonably be some turf areas that suggest a green appearance throughout the growing season, regardless of rainfall, requiring irrigation. These should be minimized. Turf areas in the other zones at LRAFB are typically, and appropriately, Bermuda grass that brown out in dry periods. In the intermediate zone, efforts should be considered to divert some runoff to turf areas to keep them green.

Soil Improvement
Most native and adapted plants in any region do well without soil improvements, but the addition of organic matter to any soil is beneficial. Plants grow better and use water more effectively if organic matter is added. Further, rainfall will be more readily absorbed by the soil, reducing runoff, erosion and the frequency of supplemental irrigation. Organic matter should be

added to the soil in all new plantings in the inner zone and, as feasible, in the intermediate zone as well.

Irrigation
Different soils absorb water at different rates. Slow irrigation allows proper soil moisture to be maintained in the root zone, providing the best growing conditions, while deep watering promotes deeper roots, reducing irrigation requirements. In all but the very hottest weather, one deep soaking a week should suffice. Drip irrigation should be considered for planting beds as there is no loss to evaporation.

Rainwater Harvesting
For new construction projects, rainwater collection tanks should be considered. While the initial cost is significant, the long-term benefits are very substantial. The benefits of brief and intense rain can be extended by designing the grading around buildings to direct some runoff from roofs and paved areas onto landscaped areas, encouraging limited ponding in planting beds and turf areas for subsequent absorption.

Plant Selection
The Little Rock area has a large number of native trees, shrubs and groundcovers that have demonstrated their hardiness and ability to thrive without supplemental water. These have been used to good advantage by the base and their continued use should be encouraged. The native plant list should be supplemented with plant materials that have proven themselves adaptable to the Little Rock climate.

Mulches
Organic mulches reduce both water needs and weed growth. The Little Rock area has at hand excellent mulch material in pine needles. These should be placed directly on the soil around all plant materials, to a depth of two or three inches. The use of mulch for a foot or two around trees makes mowing turf easier and eliminates the need for trimming with a weed eater that can damage the tree.

Inorganic mulches like gravel or river rock are discouraged as inappropriate to this area.

Maintenance
Established xeriscape planting requires less fertilizer and insecticides than a landscape with non-native or adapted materials. The use of systemic contact

herbicides on Bermuda grass around planting beds, along with regular applications of pre-emergent herbicides will greatly reduce maintenance labor requirements in the long run.

Mowers should be set higher, particularly in very hot and dry periods. Irrigation sprinkler heads should be regularly inspected and mulch around trees and in planting beds should be replenished on a regular schedule.

3.1.7 EXTERIOR SIGNS

Effective and visually-appealing signs are an important aspect of installation excellence, identifying location and function and providing directions to important facilities. The number of signs at any installation should be held to the minimum required to get people where they need or want to go.

GENERAL STANDARDS

Exterior signs are to have a standard installation format, color and size as specified in the United Facilities Criteria (UFC) 3-120-01, Air Force Sign Standard (www.hnd.usace.army.mil/techinfo/UFC/UFC3-120-01.pdf), supplemented by the AETC Policy Memorandum on Signs, dated 11 January 2005. Also refer to LRAFB Sign Request – Fact Sheet. Air Force guidance requires that, except for traffic control and airfield signage, all signs are to be in a shade of brown consistent with each installation's architectural guidelines. The typical signage at LRAFB, with a dark brown sign face and steel tube posts in the same color, with white graphics and text, are consistent with this guidance.

Text on vehicular signs should be scaled appropriate to vehicle speed and the distance from which it is to be viewed, and the UFC provides detailed guidance.

The amount of information provided on signs to be viewed from vehicles should be limited to that which can readily be comprehended as the vehicle approaches the sign. As a general rule there should be no more than six lines of text on any vehicular sign.

Use of Logos

Guidance for the use of the Air Force symbol is provided in Section 2.13 of the Air Force Sign

Gate entry sign

Electronic marquee signage

Building numbers

Pylon signage

Standard. Guidance for the use of shields and emblems is provided in Section 2.14. Overuse of emblems on signs and buildings is discouraged.

Gate Entry Signs
The main gate sign at LRAFB, a large monument sign with a buff cast stone base, red brick ground, cast stone cap and silver tone letters and logo mounted away from the ground; is in accordance with Air Force guidance and should be used as a model for additional gate signs.

Marquee Signs
Electronic marquee signs, with dynamic messaging, are to be located only at the principal base entrance and base operations runway entrance. The marquee signs at LRAFB have both a brick plinth base, which is preferred, or metal column base. The placement and size of these signs is appropriate but the number of them installed is not in conformance with the guidance.

Building and Area Identification
Building numbers are typically prominently displayed in an appropriate size at LRAFB. In a few instances, building numbers take the form of metal letters mounted to the façade and the lack of contrast in tone between the metal and the brick façade makes them difficult to spot. Air Force guidance requires street addresses as well and these are typically not provided.

In some areas, pylon-type signs are used at LRAFB, in standard colors and construction. These are well-scaled and this pattern of use of these signs is encouraged.

Where buildings are identified by function, raised individual metal letters in a dark brown color are typically used and this pattern of use should be continued where it is appropriate to identify user or function. Font size should be appropriate for readability, not to impart a monumental appearance.

Directional Signs
Install directional signs only at locations where decisions as to how to proceed must be made, e.g. street intersections and driveway entrances. Directional signs should not be mounted on the same pole or sign base as traffic control or other regulatory signs.

Directional signage

Traffic Control Signs
Use typical warning colors (red and yellow) as the accent, not as the sign ground color. Install traffic control signs on their own mountings, coordinated in placement with directional signs so that neither type obscures the other.

Street signs
Street signs at LRAFB, with brown ground and displaying the street name in white together with the AETC logo, are appropriate and the established pattern of use should be continued.

Monument Signs
This type sign is limited to use at marquees and at important buildings like the Wing Command headquarters. This pattern of use of this type of sign at LRFAFB is consistent with Air Force guidance except at the Air National Guard area, where most buildings have a monument sign.

FPCON Signs
The size, format and display of FPCON signs is set forth in the AETC Policy Memorandum on Signs, dated 11 January 2005, and these should be standardized at all LRAFB buildings.

Seating at plaza adjacent to Buildings 1222 and 1231

Airfield Signs
Airfield signage is to comply with the requirements of AFI 32-1044, Visual Air Navigation Systems.

Parking Lot Signage
Reserved parking signage must comply with LRAFB's Sign Request – Fact Sheet. Handicapped parking signage must comply with ADAAG regulations.

3.1.8 SITE FURNITURE

GENERAL
In a relatively benevolent climate like Little Rock outdoor areas are inviting a large portion of the year and a number of buildings have been designed with well-developed outdoor spaces. Site furniture encourages greater use of any outdoor space.

Seating and Tables
There are several very good examples of well-designed benches at LRAFB, particularly at the plaza

Courtyard adjacent to Building 864

Trash receptacle

Bicycle rack at Laughlin AFB

Tensile structure at Building 1080

west of Buildings 1222 and 1231. These are of a dark color that blends in, well-designed for durability and appearance and comfortable. The courtyard at Building 864 has well-designed benches attached to dining tables.

Some benches appear to be placed more for formal symmetry and appearance than for encouraging interchange, and consideration should be given in the future to slightly less formal arrangements. The benches at Buildings 1222 and 1231 could serve as a model for selections for future projects.

At the flightline area there are numerous examples of simple wood-and-steel picnic tables with attached benches, located under simple shade pavilions, that serve well as break areas.

Trash Receptacles

A variety of trash receptacles are present on the base and an effort to standardize them for future projects is encouraged. Open steel mesh receptacles, as used at outside Buildings 1222 and 1231 and also, to some extent at the dining patio at Building 864 are well designed and, in addition, are self-ventilated and can be easily washed down with a hose. These appear more permanent and fit in better than lightweight plastic receptacles. Trash receptacles should be anchored into place.

Bicycle Racks

Bicycle usage at Little Rock is currently very minimal. The installation of racks, compatible in appearance and construction with the fixed benches cited above, is encouraged in areas where students congregate. Better-designed and more plentiful bicycle racks, similar to those used at Laughlin AFB, will encourage more use of bicycles.

Shade Devices

Lightweight fabric shade structures have a proven value in areas with long, hot summers. There are presently two types at LRAFB – the light steel frames with the low dome-shaped cover at Building 874 and the tensile structure at Building 1080. The tensile structure has a more dynamic form, but both types are architecturally compatible. The blue fabric used at Building 656 is in jarring contrast to both the background landscape and the palette of building materials, whereas the off-white tensile structure is

Blue canopy incompatible with landscape

more neutral. Fabric shade screening base-wide should range in color from off-white to beige.

Loose Planters
Large, heavy planters can serve a minor function as force protection. Otherwise, their use is best limited to accenting major building entrances or as landscape elements in somewhat enclosed outdoor spaces. Plastic and precast concrete are both durable materials for these and the color range should be limited to buff and terra cotta.

Butt Cans
The standard vase-shaped butt cans will blend into their surroundings somewhat better if they are painted the medium-dark brown used on service elements elsewhere on base.

3.1.9 LIGHTING

EXTERIOR LIGHT LEVELS

Light levels for roadways and public areas are governed by Air Force standards and the Illuminating Engineering Society. Overlapping of light scallops is recommended to avoid dark areas. Higher lighting levels around the main gate and other high activity areas may be required.

"Shoebox" style light fixtures

LIGHT QUALITY

Although high pressure sodium lighting is widely used at Little Rock, it is recommended that new building facades, entries, gathering spaces and pedestrian walkways be illuminated by metal halide-lamped fixtures. Metal halide lamps that provide cool white light are preferred over high pressure sodium because they provide better and more accurate color rendition on lighted surfaces. Further, people perceive areas lighted with metal halide to be lighter than those with sodium, even though the foot-candle level is the same.

PARKING LOT LIGHTING

Parking lot light fixtures should be located to avoid contact with any portion of a moving or parked vehicle. Light poles should be located within landscape medians and on a concrete pedestals if there is any possibility of damage from truck bumpers.

Parking lot light fixtures should be standardized base-wide. Poles should be dark bronze anodized and set at a uniform elevation above the parking lot surface.

Fixtures can be rectilinear “shoebox”, cylindrical “hockey puck” or other simple and well-designed shape, anodized dark bronze or painted dark brown, with a high cutoff angle to minimize light spillage.

Where “cobra head” lighting fixtures are present, a plan should be developed for their phase-out base-wide.

Effective roadway lighting

ROADWAY LIGHTING

Roadway light fixtures should match the look of fixtures in parking areas. Pole height will be dictated by the type of roadway and existing conditions. Consistency is key; whatever installed pole height is determined to be appropriate should be adopted base-wide for corresponding conditions.

PEDESTRIAN LIGHTING

Pedestrian lighting addresses lighting needs on a different level. The proximity of the fixture to pedestrians, spacing and the areas to be lit suggest fixtures somewhat different than for other areas. Whereas a high cut-off angle is desirable for relatively tall lights at parking areas and roads, pedestrian-scale fixtures in some areas may disperse light over a wider area and can even spill light on building facades.

Fixture types should vary from area to area. In some instances the areas to be lit consist of open spaces and sidewalks between buildings and, in these areas, fixtures can be scaled-down versions of roadway fixtures or some other simple and well-designed shape. In other areas, like family housing, more decorative fixtures are appropriate, as currently used at LRAFB, but these fixtures should also be relatively simple and not overly stylistic. Unshielded globes should not be used. Consistency of fixture type within each visual district is highly desirable. Designers should consider the use of fixtures lamped with light emitting diodes which are becoming prevalent for step lights and other specialty uses.

Because these fixtures are meant to assist pedestrians, mounting height should be between 10 and 12 feet above the surface it illuminates. For ease of landscape maintenance, it is suggested that the pole be installed on the sidewalk, if it is wide enough, or on a small extension of the sidewalk, to minimize any damage from mowers, etc. Fixture and pole colors should be in the dark brown to bronze range.

Bollard lighting should be placed in paving for ease of landscape maintenance

Bollard lighting as general pedestrian lighting is discouraged due to its inefficient lighting patterns and relative high cost for the lighting achieved. When used in landscapes, they complicate landscape maintenance especially when placed in turf areas.

Bollard lights can, however, be used quite effectively to supplement lighting where pedestrian sight hazards exist. In these conditions they help accentuate steps, ramps and elevation changes. Bollard lighting is also an effective way to visually draw attention to major building entrances and to define important outdoor areas like Heritage Plazas. When placing bollard lights, erring on the side of too few is preferable to too many.

Bollard lights should be selected for durability, secure anchorage devices and simple, uncluttered appearance. They should be no more than 42 inches high and should direct light down somewhat toward the ground plane so they don't blind pedestrians. They should not be mounted in planting areas but on a deepened edge of the adjoining paved surface so that mowers can pass by. The light source should be metal halide with a maximum wattage of 70.

LANDSCAPE LIGHTING

Landscape lighting can be very effective in extending the visual impact of plant materials past sunset. It can also provide a sense of security. Landscape lighting is encouraged in prominent locations such as main gates, the Wing Command Headquarters Building, the Heritage Park and other areas where nighttime functions are common. Application should be limited elsewhere for economy.

Landscape lighting fixtures should be inconspicuous, discreetly located and lamped according to their intent. "Hot spots" should not be visible. Care should be exercised in properly aiming these fixtures to create the desired effect without overlighting the plant materials, making them appear washed out. Mercury vapor is the light source most desirable for landscape lighting.

Unscreened dumpsters detract from adjacent landscape

Power lines contribute to visual clutter

3.1.10 VISUAL CLUTTER

Visual clutter doesn't happen all at once; it usually creeps in over time. It is often the result of no more than the uncoordinated placement of necessary and appropriate site elements – light poles, signs, trash receptacles, dumpsters and mechanical-electrical equipment such as transformers and switchgear. It is also the result of the poor selection of elements like trash receptacles, improper screening of dumpster enclosures and inconsistent color of light poles, signs and transformer boxes.

The elimination of visual clutter doesn't mean removal of any of the elements cited above. It does mean that there should be a plan for their placement. Start with the elements that can't be moved, like signal light and street light poles. Then locate those elements whose placement is discretionary in an orderly pattern, spaced out where possible.

LRAFB has done an exemplary job of uniform painting of light poles and simple service elements like transformers. Dumpsters are, for the most part screened, though the screening devices are not yet consistent. Sign mountings and graphic and text messages are typically well done. These initiatives should be supplemented by the selection of simple, well-designed elements that appear repeatedly, like trash receptacles and benches.

3.2 FORCE PROTECTION

Attractive force protection

GENERAL

Force protection for Air Force facilities is based on the philosophy that comprehensive protection against the range of possible threats may be cost prohibitive but that an appropriate level of protection can be provided at a reasonable cost. The full implementation of force protection measures impacts base planning, facility site planning and building design.

This implementation has the potential for enormous, and negative, visual impact on Air Force installations. Any negative impact can be eliminated if design guidelines for force protection become part of the architectural programming documentation so that the appropriate measures are integrated into the basic design – including building siting, site planning and the interior and exterior design of the building itself. Air Force buildings need not become fortress-like, nor need they retreat behind visually-obtrusive barriers.

As in other installations, temporary AT/FP measures were, of necessity, implemented hastily at LRAFB. The use of jersey barriers is particularly objectionable. Planning for their orderly removal and replacement with better-designed architectural and site design elements is required. LRAFB is well advanced in the construction of permanent well-designed barriers to achieve standoff distances.

AT/FP design requirements are set forth in UFC 4-010-01, “DoD Minimum Antiterrorism Standards for Buildings”.

Site Planning

Activities with large visitor populations represent opportunities for potential aggressors. The separation between new buildings with such potential populations and other existing buildings should be as large as possible.

Entrances

Though this is an unlikely scenario at LRAFB, new buildings should be sited so that main entrances do not face installation perimeters, where those entering or leaving the building could be subject to attack from vantage points beyond the perimeter. Entrances at existing buildings facing the perimeter should be screened or the entrance moved to a safer location.

New landscape will enhance force protection measures

High-Speed Approaches
The site plan should preclude unobstructed vehicle approaches that are perpendicular to a new building within the required standoff distance. Building 1250 is a good example of how this type of approach has been eliminated.

Vantage Points
Natural or man-made positions from which potential aggressors can observe people in and around a building should be minimized by carefully positioning building entrances or by screening them with walls, vegetation or another form of screening.

Drive-Up/Drop-Off
Drive-up or drop-off areas should be positioned away from large areas of glazing to minimize the danger of explosion-propelled broken glass. The overall geometry of the building should be configured so that these areas are located where they do not allow concentrated blast forces. There are a number of covered drop-off areas at LRAFB that are in close proximity to large glazed areas.

Vehicular Standoff
In addition to the design of individual buildings, vehicular standoff distances have an impact on base-wide planning. If standoff distances are not "reserved" or accounted for during planning, there is a danger that they will be encroached upon and therefore not be available in the event of a higher threat environment.

UFC 4-010-01 establishes minimum standoff distances for parking and roadway. The typical minimum is 25 meters; though in some instances distances of as little as 10 meters are acceptable.

UFC 4-010-01 also establishes minimum standoff distances between buildings of various types and between buildings and ancillary elements such as uninhabited buildings and trash dumpsters.

Incursions into required standoff distances can be prevented with a variety of architectural elements. These include the following, any one of which can be well-designed to complement the base environment.

Bollards

Removable bollards

Attractive walls

Mature landscape will screen cable barriers

- Permanent Bollards: Bollards have been used architecturally for hundreds of years for purposes not unlike force protection. Typical materials are steel or concrete. Steel bollards are best used in service areas and other non-public areas. A wide variety of architectural treatments are possible with concrete bollards.
- Pop-Up Bollards: These are already in use at roadways at LRAFB. Though cumbersome, they are ideal for use where passage is typically required and eliminated or restricted only during certain hours or in certain situations.
- Landscape Walls, Knee Walls or Screen Walls: Walls of concrete, brick or CMU are effective and provide material continuity from building facades into site development. A wall similar to the patio wall at Building 854 could be designed as a barrier.
- Retaining Walls or Landscape Terraces: On sloped sites, these provide a natural alternative to sloped ground planes and can provide an appealing foreground for buildings. Though not intended for force protection, the terraces at Building 1250 would serve this function.
- Berms: If correctly designed, berms can provide a partial barrier and are a very versatile landscape element.
- Fences/Gates: Steel fences and gates of tube or bar stock have traditionally been used as barriers to entry and, if properly designed, work for force protection as well.
- Cable Barriers: LRAFB has made very effective use of well-designed cable barriers with anchor piers of concrete that are clad in brick and cast stone. By including plantings between piers, the cables virtually disappear. These are an excellent model for other installations.

At existing buildings, where relocating parking areas or roadways or where hardening of the building is impractical, access control can be implemented in the parking areas at the required minimum standoff distance.

At all areas, care in design should be exercised to ensure that standoff distances cannot be easily breached. Fences, bollards and walls are all effective barriers, but are of no value if a vehicle can jump the curb some distance away to circumvent them.

Building Design

UFC 4-010-01 provides guidance for the design of major building components. The following are examples of recommendations that can affect the character and appearance of a building.

- Unobstructed Space: Within 10 meters (33 feet) on all sides of a building there should be a relatively clear zone so that building occupants will be able to observe potentially dangerous objects six inches in height. This does not preclude landscape development or the placement of site furniture in this zone, but will affect the design and selection of these.
- Equipment Locations: From a security perspective, major pieces of mechanical or electrical equipment are best located on the roof. This, however, creates visual as well as maintenance and roof penetration problems. If equipment is placed on the ground within the 10 meter (33 foot) unobstructed space, it should be configured to preclude concealment of explosive devices.
- Equipment Enclosures: Within the 10 meter (33 foot) unobstructed space, screening construction for mechanical and electrical equipment must enclose the equipment on all four sides and the top, with no opening or gap in the screening larger than six inches and with secured gates.
- Glazing: Wherever possible, glazed openings should be limited in size to 3 square meters (32 square feet). Generally, punched openings are preferable to large areas of glazed curtain wall. Laminated glass is required to minimize the hazard from flying glass fragments and glazing and frame must be designed to work as a system for their hazard mitigation to be effective.
- Exterior Doors: All exterior doors into inhabited areas must open outward to preclude them from being propelled into the building by the force of an explosive blast.
- Building Overhangs: Do not design multi-story buildings that have overhangs with inhabited space above them, where access can be gained to the space underneath, without incorporating mitigating design measures.
- Overhead Architectural Features: Overhead features weighing 14 kg (31 pounds) or more are to be designed and mounted to minimize the possibility that they will fall as the result of an explosion.

3.3 SUSTAINABLE DESIGN

GENERAL

Sustainability refers to the responsible stewardship of our natural, human and financial resources through a practical and balanced approach. Sustainability dictates an approach to facility design that ensures the "best fit" of the built environment to the natural environment. Through conservation, improved maintainability, recycling, reduced material use, reuse and other actions and innovations, we can meet today's needs without compromising the ability of future generations to meet their own.

Once a fringe phenomenon, sustainable design is now the mainstream. There's nothing esoteric about it and in many ways, sustainable practices are only common sense. In other ways it revives practices from decades ago, before our society came to believe that any design could be justified by throwing more resources at it—more and bigger machines, more energy and more technology.

The Air Force has adopted the US Green Building Council's Leadership in Energy and Environmental Design (LEED) as an achievement metric for sustainable design and construction. The goal is to have all MILCON projects designed to comply with LEED requirements by FY 09. LEED certification of these is at the discretion of LRAFB.

Design guidance, in the form of a phase-by-phase project checklist, is provided in the "US Air Force Environmentally Responsible Facilities Guide", http://www.afcee.brooks.af.mil/dc/dchome.asp. This Architectural Compatibility Guide concentrates on those elements of sustainability that affect the design and function of a project, but construction, commissioning, operations and maintenance are equally important elements of sustainable design, as is the reuse of material from demolished buildings.

Planning

Sustainable practices don't begin with design, but should be considered in the initial phases of project analysis and budgeting.

- Look for opportunities to restore neglected sites for new facility use and limit the negative impact on undeveloped sites.

Renovated facility

Renovated facility

- Where it is determined to be cost-effective to retrofit, consider the possibility of reuse of an existing facility instead of building new, as this represents the ultimate in recycling. LRAFB has an impressive track record of doing this and the student dormitory renovations provide a good model for other bases.
- Identify environmental goals and requirements to be implemented in the design phase. The LEED Building Rating System provides a good outline for a project's environmental targets.
- In establishing the project budget, allow for energy-efficient equipment systems and consider establishing a budget to fund passive and/or active solar strategies.

Pre-Design

It is at this requirement analysis phase, working with the design team, that program requirements can be finalized. Consensus is developed, issues prioritized and specific environmental goals for the project identified.

- Don't program or build more than you really need. Provide joint use of common spaces wherever possible.
- Many buildings will serve more than one function over their useful lives. A requirement for clustering fixed elements like restrooms, mechanical rooms and stairs results in more flexible open space that allows for easier adaptability to a new use in the future.
- Develop an overall budget for the facility's total energy usage as well as individual energy budgets for lighting, heating, cooling, plug loads and pumps and motors.
- Establish criteria for HVAC systems design, soliciting input from CE maintenance shops.
- Evaluate the potential for passive solar load reduction based on whole facility energy performance and passive solar and climate-responsive strategies (refer to USAF Passive Solar Handbook, Volume 1).
- Determine lighting levels for all programmed areas based on Illuminating Engineering Society recommendations.
- Document Indoor Air Quality -related site characteristics, taking into account typical facility-related air pollutant emissions sources.

- Determine fresh air rates based on ASHRAE Standard 62-1989, taking care to not underestimate occupant densities by taking visitors into account as well as possible future requirements.

Site Planning and Development

- Orient the building to maximize the positive effects of solar and wind conditions. The preferred solar orientation will have the building's longer sides, and most glazing, facing north and south.
- Minimize disturbances to existing trees and natural drainage patterns. Building 952 is noteworthy for its siting where the pine trees on its south side have been preserved.
- Design landscape and select plant materials using Xeriscape strategies as set forth elsewhere in this Guide.
- Provide tree cover in parking lots to minimize the heat island effect.
- Design the project to retain as much storm water run-off on-site as possible to replenish ground water and minimize flooding and erosion.
- Deciduous trees should be used on the western and southern exposures of buildings. Evergreen trees can be used on the north/northwest corners to block northern winds
- Specify the reuse of on-site materials to the greatest extent possible. Shred wood for use as mulch and crush rock for gravel if quantities required justify the cost. Stockpile existing topsoil for reuse.

Overhang reduces solar heat gain

Building Material Selection

- Choose environmentally preferable product types where supporting information is available; the AIA Resource Guide is a good source. Selection criteria can include raw materials that are non-toxic, recycled or salvaged material content, production process that minimize the use of energy and water and products that come with minimal disposable packaging.

- Carefully evaluate the use of wet-applied materials, which typically release chemical contaminants as they cure, and fleecy materials that also contribute emissions and absorb, and re-emit, other contaminants over time.
- Give preference to locally-manufactured materials as they reduce shipping costs and energy used in transport.
- Avoid the use of finish materials where they are not necessary for performance or aesthetics.
- Use materials with integral finish that do not require finishing after installation.
- Take full advantage of recycling programs offered by product manufacturers. The carpet industry is currently in the lead, but others will follow.
- Design for disassembly, especially for facilities that may have a short service life. Consider snap release connections, friction or other joints that do not require sealants.
- Design for future recycling. Select materials that are recyclable. Avoid composite materials, like reinforced plastics, that are generally more difficult to recycle than homogenous materials.

Shading above windows

Ceiling fans provide comfort

Good day lighting reduces need for artificial lighting

Design for Energy Conservation

- Incorporate shading and sun control of windows through the use of horizontal and/or vertical projections, sunscreens, shutters or trellises. Exterior sun control is far more energy-conserving than interior devices to control light and heat gain. The renovated dorms in Little Rock are a good example of where this concept has been incorporated successfully. The large overhangs at Little Rock are effective methods of sun control.
- Use operable windows at all housing facilities and consider these at office buildings as well. Also evaluate the use of ventilated window frames for office buildings. Use insulated low-e glass at all windows in all buildings.
- Install ceiling fans at all housing facilities and encourage their use in offices as well.
- In determining the most cost-effective quantity of insulation for roof and walls, evaluate benefits of heat retention vs. heat rejection based on results of energy modeling.
- Thermal comfort can be enhanced through careful design of the facility envelope to limit radiant heating and cooling, drafts and temperature gradients.

- Thermal mass in exterior wall construction saves energy in hot climates by reducing energy use during peak periods. Thermal mass can also act as a heat sink for direct or indirect passive solar heating strategies.
- Though dark metal and shingle roofs are the norm at LRAFB, lighter colors reflect light and heat, reducing cooling requirements and diminishing the facility's contribution to heat islands. Low-slope roofs should be white or off-white in color. Industrial buildings along the flight line area typically have light colored roofs and this should not be changed.
- Detail walls and roofs to avoid "cold spots", which cause discomfort and can lead to condensation, and subsequent mold growth, on the cold surfaces.
- Provide air barrier and vapor retarder to control air and moisture flow through exterior wall construction. The correct placement of vapor barriers and the design of tight exterior walls are major contributing factors in the prevention of mold.
- Implement daylighting strategies. The design of the building envelope, the quantity and type of glazing, inclusion of sun-shading and/or light shelves, and the layout of interior partitions will influence how far light will penetrate into the facility interior. It can be as much as 13 meters.
- Use high-efficiency electric lighting with high-efficiency lamps and ballasts to supplement daylight.
- Evaluate options for lighting control, such as daylight dimming, occupancy sensors or time clocks. Implement the best option.
- Evaluate HVAC equipment with airside economizer, waterside economizer and heat recovery for cooling and heating cycles.
- Eliminate or reduce the amount of reheating or mixing of conditioned air streams for comfort control. All fans and air distribution systems should utilize temperature reset controls.
- Use variable frequency drives for pumps and fans and variable volume boxes for air distribution, unless a design analysis demonstrates that other equipment is more cost-effective considering the life cycle.
- Implement solar hot water systems and heat recovery – these are proven and mature technologies.

- Fully insulate hot water systems. Re-circulating systems should have pumps with automatic control to cycle pumps off during hours of non-use.

Design for Water Conservation

- Consider storm water retention tanks, in addition to on-grade retention swales, where buildings require landscape irrigation systems.
- Minimize the use of curb and gutter for parking areas. Open drainage reduces drainage velocity and increases vegetative variety. Extensive use of uncurbed parking areas exists at LRAFB and this pattern should be continued.
- Where parking areas are not intensively used, the use of permeable materials such as porous asphalt or open-celled concrete pavers are encouraged.
- Consider the use of infrared lavatory faucets or those with delayed action shut-off or automatic mechanical shut-off valves and shower heads with flow rates less than EPACT requires.

3.4 BUILDING DESIGN STANDARDS

3.4.1 INTRODUCTION

Form, massing, material, texture, color, rhythm and other characteristics all contribute to an observer's assessment of the quality and appeal of a building. These are the tools that architects employ to create not just good buildings but installation environments that reinforce the mission and are pleasant places in which to live and work.

The intent of these guidelines is to set forth design objectives that support the installation's values while achieving excellence in design through the built environment. The recommended design approaches are meant to be used as a reference tool for design professionals, staff and decision-makers when evaluating proposed development on the installation. The desired results of consistent application of these guidelines are well conceived design solutions that enhance the quality of life on LRAFB.

3.4.2. CONTEXT

Geographic location, climate, topography, vegetation and the existing built environment -- buildings and site development – when taken together, provide the "context" for any new development. Context is a powerful force in shaping our perception of where we are, whether this is a neighborhood, town, city or Air Force base. Each place is unique because the combination of elements that define the context is never the same. We value this uniqueness and devalue places that try to appear like somewhere else or something that they are not.

The design of new buildings can respect or ignore those elements of context that pertain to the natural environment, but buildings that respect those elements are almost always more successful, particularly when viewed over time. Respect for the elements of context relating to the built environment is appropriate where the quality of that environment is desirable. Where an improved level of quality is desired, context can, over time, be changed by a well conceived, and consistently executed, design departure from what was built previously.

3.4.3 BUILDING SITING

The way a building or groups of buildings are placed on the site is as important as the design of the buildings themselves. The building function must be compatible with the site and adjoining buildings and the building function and the site must jointly reinforce the goals of the base general plan.

There are a number of other considerations to be taken into account in establishing the site composition. Among them are the following.

- Access requirements for user and service vehicles.
- Pattern of surrounding streets
- Footprint and height of surrounding buildings
- Utility infrastructure.
- Standoff distance and other setback requirements.
- Topography.
- Existing vegetation.
- Solar orientation.
- Summer breeze and winter wind.
- On-site parking requirement.
- Views to and from the site.
- Building height and its impact on its neighbors in terms of shading.
- Potential for creating developed outdoor spaces.

Balancing these and other like considerations will ensure building footprints that best fit the site. Basic site design should be the result of an iterative process involving base planners, designers, users, authorities having jurisdiction and neighbors.

3.4.4 BUILDING FORM & MASS

Form, massing and scale are inter-related design elements that establish the overall volume, real or perceived, of a building. They do much to define the general character of a building and these elements can be manipulated to change this character and to make a building more, or less, compatible with its neighbors and the general architectural context.

A building can be as simple in form as a box or as complex as an ornate Victorian courthouse. Simple forms are economical to build and lend themselves very well to flightline, industrial and service buildings. Buildings with simple forms can also be arranged in groups so that the visual impression is of the overall complex and not the simple form of each building. The student dormitory complex at LRAFB is composed of relatively simple buildings, simply grouped, and the entire grouping has some architectural distinction.

Generally, buildings where people gather or interact are found to be more appealing if the form – or overall volume – has some degree of complexity. This can take many forms – a central element with projecting wings, forms that begin to define outdoor spaces like an "L" or "U", or modeling as simple as a few slightly projecting elements.

The terms form and mass are often used interchangeably. The mass of a building can also refer to the form defining its volume. A building that is described as having complex massing has, as described above, something more complex than a simple rectangular form. Symmetrical massing suggests formality whereas anything that is non-symmetrical connotes some degree of informality. Form and mass are unrelated to size – the terms pertain equally to something very large, like a hangar, or as small as a picnic pavilion.

However, a building can be described as massive and this pertains to its size, or perceived size. To be so described often suggests some incompatibility with the size of neighboring buildings.

3.4.5 SCALE

Scale in architecture relates to the size of a building or building element and its appropriateness as seen in context. Buildings which are of approximately the same size and with similar massing are perceived as being "in scale" with one another. A six-story building in a grouping of two-story buildings, or a building with a 300-foot long façade in a grouping of 100 foot-long buildings would not be perceived as being in scale.

Form and massing can be employed to mask disparities in scale. If the six-story building has a two-story base, with the upper floors stepped back, the perception of disparity in scale is lessened, possibly even eliminated. Likewise, the modeling of the 300 foot façade with a series of elements that project or recede alters our perception of its scale.

Masonry wainscot improves human scale of large building

We subconsciously look for elements in a building that indicate scale. We are accustomed to entrance doors ranging in height from seven to ten feet. We subconsciously see a building entrance as an indicator of the overall scale of a building. Windows, wainscot height, cornice treatments, roof overhangs and other various trim elements can also be scale indicators, giving us visual clues as to the size of the building from a distance. Any of these elements can be manipulated in size to alter our perception of a building's size.

At Building 276, the masonry wainscot is proportional to the overall height of the building but the hangar is extremely tall. From a distance, however, we perceive it as smaller than it is because we've used the wainscot height as a scale indicator. The wainscot height has been used by the architect to manipulate scale and this has been successful. The true size of the building becomes apparent only when one is close to the building.

Gables at Fitness Center

Another good example of mitigating scale is the Fitness Center. The series of small gables along the length of the building help us to perceive it as a somewhat smaller, less imposing facility than it is.

3.4.6 FACADES

GENERAL

Building facades and roofs together establish architectural character and facades, in a setting like an Air Force base, can visually tell us a lot about a building's relative importance, its quality and, to some extent, its function. Our initial impression of a building is formed by the facades – we find it appealing or not, friendly or intimidating, imposing or engaging – all from a look at the façade.

Materials play a big role in façade design, but there are other inter-related composition devices that can be used to create architectural character and manipulate scale to advantage. The rules of façade composition apply to hangars, industrial and support buildings and dormitories alike. Visual order and interest can be achieved in any building façade and a largely windowless façade need not be uninteresting or dull.

Pattern of wall elements

Pattern

Pattern can be created by expressing the structural framing elements of a building on the façade, through the pattern or grouping of window openings, entrances, combinations of materials, horizontal or vertical banding using one or more of the façade materials, the expression of mechanical elements like vents on the façade, the expression of joints in materials like metal panels and any number of other devices. Generally, a uniform pattern of façade elements is most pleasing, but that doesn't mean that these should be uniformly repetitive. Variations in pattern, while maintaining a uniform coherent order, create interest and enliven a composition.

Uniform rhythm of window openings

Rhythm

Uniformly expressed pilasters or uniformly spaced windows create a uniform rhythm as they move across a façade. These same elements, and others, can be varied in placement to create other rhythm patterns. Pilasters can be varied in width or depth or spaced irregularly; windows can be paired or arranged in non-uniform but still orderly groupings. Facades with uniform rhythm tend to take on a formal quality, whereas varied patterns of rhythm have more visual interest, particularly on large buildings.

Articulation

Whereas pattern and rhythm deal with façade elements in two dimensions, articulation brings in the third dimension. A façade composition in two dimensions, no matter how well-conceived, will always appear flat. There are some situations where this may be desirable, but in the vast majority of projects making the building façade a three-dimensional composition will produce a far more desirable result.

Articulation can be achieved subtly or boldly. It can be as minor as a slightly recessed or projected brick course delineating a floor or sill line, or it can be as bold as projecting sections of the façade by a number of feet. Building overhangs articulate a façade as do projecting cornice or coping elements. Recessed windows or entrances, pilasters, projecting sills or lintels, wainscot caps, projecting or recessed horizontal or vertical banding are all effective devices to give three-dimensional life and vitality to a building façade.

Shade and Shadow

A two-dimensional façade appears flat because there is no shadow on it. Shadow is the result of the articulation of a building façade. The greater the third dimensional relief is, the bolder the shadow will be. Historically, much shadow was present on a façade because the exterior wall was thick and windows were typically set to the inner face of the wall. With today's thin exterior walls we have to be more creative to achieve the significant and bold patterns of shadow that bring so much vitality to a façade.

Effective shading

In order to achieve shadow, the elements that give shade must be created. The sun does the rest. The same material used on a façade, parallel to a façade, perpendicular to a façade and as a horizontal soffit will appear as a different tone in each situation. This reinforces the impact of even relatively minor articulation of façade elements and this effect can be heightened by subtle color changes in elements perpendicular to the facade.

It's important to remember that while sunlight reinforces apparent depth where relief exists, it can also reinforce flatness where it does not.

Clearly identified entries

PORTALS

The ability to identify a building's principal entrance from a distance is important. Making an architectural feature of the entrances of symbolically-important buildings by creating portal-like structures is very appropriate. Making architectural features of a large number of building entrances dilutes this concept. Entrance portals with pediments have been in architectural vogue in recent years and there is concern that over time these will come to appear dated.

GABLE ENDS

A variety of materials are used on building facades which expose a triangular gable form above the eave line.

At buildings with metal wall panels, the metal panels typically fill the gable form and this is visually successful. At brick buildings the gable form is sometimes also brick but EIFS and dark brown metal roofing panels are also used. The gable form, particularly on large buildings, is most successful if the basic wall material is extended up to fill the triangular form.

Dividing the gable façade into two materials at the eave line yields two awkwardly-proportioned forms. Using a dark material like the metal roofing material increases the visual bulk of the roof form to the point where it appears to be bearing down on the brick mass below.

Buildings with gabled ends

3.4.7 ROOFS AND RELATED ELEMENTS

GENERAL

Metal sloping roofs are the stated AETC preference and this guidance has been followed at LRAFB. These work well for buildings of two types—large flight line and industrial buildings that have relatively low slopes in the range of 1:12. They also work well for classroom, office and residential buildings up to a certain size. Where the building depth to be spanned by a gable form is fairly large – 100 feet or greater – the roof form becomes so massive that it tends to overwhelm the building elevations below. This is particularly true in one or two-story buildings. Building 1222 is an example of this. For buildings with very large footprints, ultra-low-sloped standing-seam metal roofs may be possible. Little Rock has also had success with well-designed single-ply roofing.

Metal roofs on LRAFB have typically utilized field-fabricated standing seam roofing. These perform well in high winds and the seams present a better pattern for typical-scale buildings than larger batten seams.

Hip roof

Both gable and hip roofs are in general use as well as a combination hip-gable forms which rises from the eave on the narrow end of the building in a hip configuration and transitions to a gable closer to the ridge. This is the typical roof form used on the renovated dormitories. Gable roofs, except at large hangar and industrial buildings, work better for buildings where the width of the gable ends are 60 feet or less. Wider gable ends with roof slopes in the 4:12 range appear to be too much roof with not enough building below. For buildings with these larger footprints hip roofs and the hip-gable combination are preferable.

Gable roof

Roof mounted equipment should generally be avoided. When required, this equipment should be painted to match the roof color and whenever possible, should be located on the back of the building. When roof-mounted equipment requires servicing, safety tie-offs for personnel must be provided.

In Little Rock there is relatively plentiful rainfall and the rain can be very heavy at times. Overhangs serve distinct functional purposes. Adequate overhangs protect the building walls below from moisture

penetration and from weathering. They also save energy by shading at least some of the windows below. Overhangs measured in inches, though, provide neither benefit. Overhangs in the range of two feet are appropriate for one-story buildings, with proportionally larger overhangs beneficial for two-story buildings. For buildings higher than two stories, the same width of overhang appropriate for a two-story building generally works. Overhangs on all buildings are strongly encouraged.

Example of well scaled fascia

Fascias

Traditionally, building fascias, the vertical surface at the outer edge of the overhang, have been relatively thin – less than 12 inches. They have also been of a color that contrasts with that of the roof. At a number of installations, including LRAFB, there has been a tendency toward ever-thicker fascias, and the fascias are often made of the same roofing material. Some of the buildings at Little Rock were constructed this way because the roof and facades were renovations and these fascias hid previous construction. There is no functional justification for a standing seam fascia and no architectural justification for an overly-deep fascia – taking what is no more than the edge of the extended roof plane and making it a design statement itself. The effect, particularly on low buildings, is visually top-heavy and that is further reinforced by the dark brown color. For new projects, the fascia on the fire station is an example of an appropriately scaled fascia.

Top-heavy fascia

Attractive soffit

Soffit

The soffit – the horizontal surface of a roof overhang – is traditionally horizontal or follows the slope of the roof. Soffits are typically smooth, except where roof framing members are extended as part of the overhang structure, and they are typically relatively light in color – lighter than the wall surface below – because they are always in shadow and so will always appear darker than they really are. Building 952 is a good example of a desirable soffit in both configuration and color. Its material is a pre-finished metal in a plank pattern with perforations for ventilation. A number of more recent buildings have made design departures from this traditional configuration. Many have soffits of the same dark brown material as the roof and fascia. In some instances, soffits are made of the adjacent standing seam roof material. The roof surface-becomes fascia-becomes soffit design approach increases the visual weight of the roof form even

Heavy fascia/soffit

more—making it a thing apart from the building below. Architecturally, the building façade should be the key design element, not the roof form that caps it. The roof material may be brown but as a soffit it looks black, so dark and bulky that it seems to be bearing down on the building.

Brick wall in two colors and sizes

Brick above split-face CMU

3.4.8 MATERIALS

There is impressive continuity of material use at LRAFB on buildings dating back to the original base construction. A number of bricks in the red-brown range have been used along with a variety of mortar colors and, while the variety is discernible, the overall impression is of a single tone.

At the flightline, clear-span buildings typically have metal roof and wall panels. The configuration and type of wall panel used has evolved from corrugated to flat panels with barely-discernible joints. Again, there is a sense of continuity.

In recent years the palette has been diversified. EIFS has been introduced as has split-face concrete block. Façade trim materials in use include square-format brick, cast stone, more split-face CMU and dark brown roof panels used as gable ends and fascias. For the most part brick still dominates, for continuity, and the introduction of other trim materials, with the exception of the dark brown metal panels as fascia or soffit, provides variety in color and texture as well as visual interest.

Recommendations elsewhere in this Guide are made for the future use of brick and mortar colors. Brick as a wainscot and trim material has been used to very good effect at Building 952.

Split-face CMU is in use both as a basic façade material and, more typically, as a wainscot or as trim banding in brick walls. Both uses have been successful and a good texture contrast to the brick masonry. Building 827 is a good example of CMU wall surfaces, Building 1231 of a wainscot and banding and Building 276 of a large metal building with a wainscot.

EIFS, as a substitute for cement plaster, is a perfectly good material when installed correctly and may be a cost-effective alternative in the Little Rock area. EIFS

should never be used less than four feet above the ground as it is subject to severe damage from landscape maintenance equipment, and is best if used at eight feet and above. EIFS should be "drainable" and mechanically adhered.

Metal wall panels used at newer flightline buildings, notably Buildings 266 and 276, are crisp in configuration and detail, yet still in context with the material used on older buildings. Dark brown metal panels used as gable ends and, to a lesser degree as wall surfacing above brick, are less successful and make even small buildings appear ponderously top heavy.

Metal wall panels

Wood and wood panel products are in use in kind of a board-and-batten pattern on some older buildings between Second and Fourth streets. Though relatively costly to maintain, these have been well maintained and blend in with nearby metal panel buildings. Wood has also been used at the covered walks that visually tie together older community buildings, including 959, 960, 966,970 and 980, rendering the bland older buildings virtually invisible yet maintaining them in use.

Painted wood arcade

Standing seam metal roofs are addressed elsewhere in this Guide. Metal roofs, typically in configurations similar to the wall panels, are typical at large flightline buildings. Most are a light tan color and this color is encouraged for these buildings that are not climate-controlled.

3.4.9 TEXTURE

Texture, as well as color, has been touched on in the previous section on materials, as it's difficult to address one without the other. Texture is also related to shade and shadow, as sun on textured surfaces highlights the effect of surface roughness and reinforces surface smoothness.

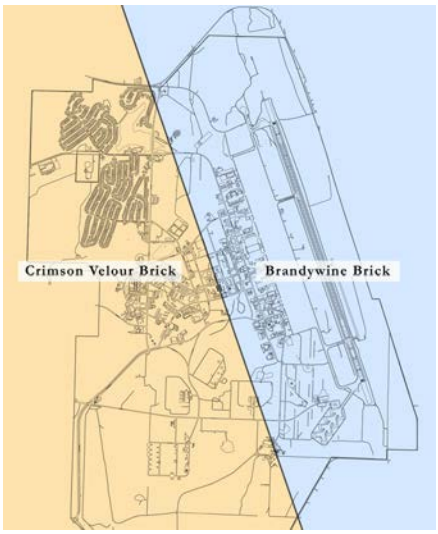
Smooth textured metal wall panels

The variety of textures used on LRAFB buildings is generally pleasing. Brick can be thought of as having a very fine texture. Split-face CMU, used with brick, provides a distinct and pleasing contrast in texture. By contrast, materials like cast stone and EIFS are relatively smooth by comparison to brick.

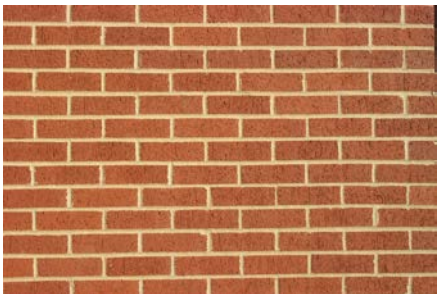
The corrugated surface of older metal-walled buildings have a fine corduroy-like texture whereas the metal panels used on newer buildings like 276 appear almost without texture except for very fine, widely-spaced panel joints. The metal material and its color provide continuity.

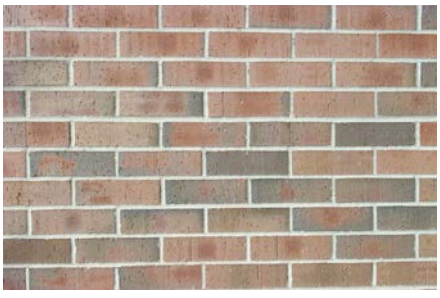
Standing seam metal roofs, like the corrugated metal wall panels on older building, have a fine linear texture. The alternative would have been batten seam roofs which, by contrast, would have bolder lines that would be generally out of scale with the brick buildings.

Designers should consider the combination of textures that they're planning for new facilities and also consider the appropriateness of how these selections will fit in adjacent to nearby buildings.



Brick line


Crimson Velour brick


Brandywine brick

3.4.10 COLOR

The first overall impression of color at LRAFB is of red-brown buildings with dark brown roofs against the tall, solid backdrop of dark green foliage—a very favorable impression. The relatively dark building colors would appear uncomfortably hot in other installations, but it is the topography and tree cover that makes them right for this setting.

Brick

Two brick ranges are in current use at LRFAB and, historically, there have been others as well. The overall range of brick color is quite consistent. The mortar color traditionally has been a natural gray or white. On some recent projects, the mortar has been tinted. Even subtle tinting of mortar color has the potential to substantially alter the overall hue and tone of a masonry wall. A dividing line has been established half way between 4th Street and 5th Street for the use of the two brick types (see drawing). The two brick ranges currently in use should be continued. These are Acme "Brandywine" and Acme #240 "Crimson Velour." The Brandywine brick should be set in a gray or natural mortar. The Crimson Velour brick should be set in a gray/natural or red colored mortar. The red mortar makes the wall appear darker, but may be appropriate to highlight applied signage. It is recommended that sample brick panels, that meet the LRAFB design expectations for brick range and mortar color, be constructed in the CE yard, under roof

for protection. These could serve as control samples for new projects. Mock-ups for new projects could be built next to these, for comparison, and demolished when the project is complete.

Roofs
Sloped roofs, except in the flight line/industrial area are dark brown metal or composition shingles and this range works very well with the red-brown brick range. Flight line roofs are finished to match Sherwin Williams SW 2080 “Naturel”.


Out-of-scale EIFS banding

Trim
Masonry trim in general use consists of brick in a contrasting color, cast stone and split-face CMU. These vary in color from buff to a fairly dark tan and this entire range is visually compatible with the general use brick. Split face, smooth face and center scored CMU are acceptable face treatments.

EIFS, where used, is typically a buff color. There are instances where this forms too bold a contrast with the brick surfaces, whereas a cast stone trim element in the same color blends. This is due to EIFS surfaces being large compared to surface areas where cast stone is used. It is recommended that consideration be given to a darker shade of tan for EIFS surfaces.


Attractive detailing

Windows are typically dark bronze anodized, though a lighter shade is also used, as in Building 952. The darker color tends to disappear in the window openings with the result that windows appear as dark holes in the facades. The lighter shade provides more contrast with the brick wall surfaces and the patterns of window frames and mullions are more distinct, providing beneficial visible detail.

Fascia and soffit materials are typically the same dark brown as the roofs and, as has been noted earlier, this is not visually successful. It is recommended that the fascia color be somewhat lighter than the roof and that soffits be lighter than the masonry wall surfaces below.

Flight line/Industrial Buildings
The roofs and walls of these buildings are typically of metal panels with relatively unarticulated joints or seams. These are typically a light tan though there is considerable variety in shade and tone. All tan walls shall be painted to match Sherwin Williams SW 2080

"Naturel". These should be specified on large new buildings and also used when repainting existing buildings.

Screening
Screening elements are typically painted a medium-dark brown that has a slightly gray cast. This color is very effective for blending elements into the landscape and works far better than a very dark brown. Components like transformer enclosures painted this color appear so discreet in the landscape that screening is not necessary. If not already done, a single manufacturer's color number, which can be matched by other manufacturers, should be established for this painting of these components.


Infrastructure elements

Infrastructure Elements
Infrastructure elements like light poles and traffic signal mountings are typically painted the same color as the screening elements. This too has proven to be a successful approach. The use of this color should be codified.


Brick pavers in concrete walkway

Paving
Paving is mostly simple broom-finished concrete. In some areas use has been made of brick pavers or unit concrete pavers. These are typically red or dark gray. Both of these colors provide contrast to the predominantly gray paving and are consistent with the architectural color palette.

Incompatible Colors
Colored architectural or landscape elements that stand out boldly from their surroundings are discouraged unless there is genuine, and justifiable, design intent to call attention to that particular element. The bright blue fabric used at some shade structures is an example of a color that should not be used.


Brick accents in concrete paving


Blue canopy incompatible with landscape

3.4.11 INTERIOR DESIGN

Atrium spaces at Maxwell AFB

Interior design contributes to the Air Force quality of life. Well-designed working, living, and recreational facilities attract and retain good people, sustaining the Force. Attractive and comfortable work environments enhance productivity. Good design contributes to the health and sense of well being of building users.

The configuration and finishing of interior spaces comprises Structural Interior Design (SID) and Comprehensive Interior Design (CID) consists of moveable and loose furniture and equipment. SID includes building related design elements and components generally part of the building itself such as walls, ceiling, floor covering and built-in casework. CID is the selection, layout, specification and documentation of workstations, seating, storage, filing, visual display items, accessories, window treatments, and artwork.

Designers must consider interior design compatibility with the local environment, functional requirements, ergonomics, and economy of construction, accessibility, safety, energy conservation, interior details, sustainable design and life cycle costs. Additionally, facilities must be designed in harmony with the architectural character of existing facilities that are to remain, especially those that are considered historically or architecturally significant. Design excellence must not add to project costs but balance the functionality, aesthetics, quality, sustainability and maintainability of facilities.

Designs must comply with these guidelines and all military requirements. The Unified Facilities Criteria, UFC 3-120-10, has information on the interior design process and specific requirements for some room finishes. It can be found at: http://www.afcee.brooks.af.mil/DC/DCD/Interior/indespubs/requirements.pdf.

The Air Force Interior Design Guides provide comprehensive guidelines. They are located at: http://www.afcee.brooks.af.mil/dc/dcd/interior/intdespu.asp.

3.4.12 INTERIOR MATERIALS & COLORS

All materials should be selected with an eye towards low life cycle costs and ease of maintenance.

Conference room

Ceiling Systems
Ceiling systems should be selected to perform the function of light reflectance, acoustical sound attenuation, access to overhead building systems, and appearance. Generally provide a continuous 2x2 fissured tile suspended acoustical ceiling, white in color with matching grid.

Lighting
Light levels must provide the appropriate foot-candles for the required task, in accordance with Air Force standards. General lighting should normally be accomplished with recessed troffer fixtures with electronic ballasts and T8 32 watt lamps. Maintain consistent color temperature by use of warm white standard lamps. For ease of maintenance, limit the number of lamp types required to achieve design objectives. Limited use of decorative and point source wall and ceiling lighting may be used in special areas, such as lobbies, conference rooms, and command areas.

Wall Finishes
Due to its flexibility, durability, and inexpensive nature, paint should be used as the primary wall finish. Neutral colored eggshell or satin latex enamel paint should be used for all walls, ceilings, and hollow metal elements. Trim paint color should remain consistent throughout individual buildings. Vinyl coated wall covering may be sparingly utilized in areas of extreme wear and as a decorative element in special areas. Heavy traffic areas should utilize Type II wall covering. Fabric wall coverings and wood paneling are not approved wall finishes.

Carpet Floor Finishes
Carpet is to be commercial broadloom or modular type, selected in accordance with AETC standards. Contrasting color borders and insets may be used to visually break up long expanses.

Tile
Floor Finishes Resilient and hard tile flooring shall be used in entry areas, stairwells, bathrooms, cleaning supply closets, & high traffic corridors. Ceramic or

vitreous china tiles shall be used in public restrooms, with tile wainscots required behind all water closets and urinals. Sheet vinyl products may be used as an alternative to resilient tile where appropriate. Shower areas and other areas of high use or moisture content, must have cement board backup behind the tile.

Window Treatments
Horizontal 1" metal "mini" blinds and 3" vertical blinds are approved for office usage. Blinds shall include valances and shall utilized the inside mounting method where appropriate. Draperies shall be used sparingly. Draperies shall be lined, with valance or cornice treatments. No open weave fabrics should be specified. All window treatments are to have uniform neutral colors on the exterior side.

Systems Furniture
Every effort should be made to coordinate systems furniture to assure interchangeability and standardization within buildings. Electrical and plumbing connections must be coordinated with building systems. Coordinate with HVAC entities when using full height panels. All furniture, systems and otherwise, that require electrical and plumbing connections shall have prior approval of the Base Interior Designer. Power poles should be avoided.

Hardware
All hardware shall have removable cores compatible with the base standard Best lock system.

Murals
Large scale painted or printed murals require prior approval of the Base CES.

3.5 VISUAL DISTRICTS

3.5.1 INTRODUCTION

The term “Visual District” is used to define an area where there is some similarity of building function, building scale or general architectural character – or a combination of some or all of these. Streets have usually been used to define the edges of districts to the extent possible. The edges of the defined districts are somewhat imprecise – a building on one side of the street may be in one district and have more in common with those in the next district across the street. Overall, though, there are some elements of continuity within each defined visual district and each has an architectural and landscape character that is to some degree unique.

Little Rock AFB has been divided into seven visual districts.

District 1 is the Headquarters and Training district.

District 2 is the Student Life district.

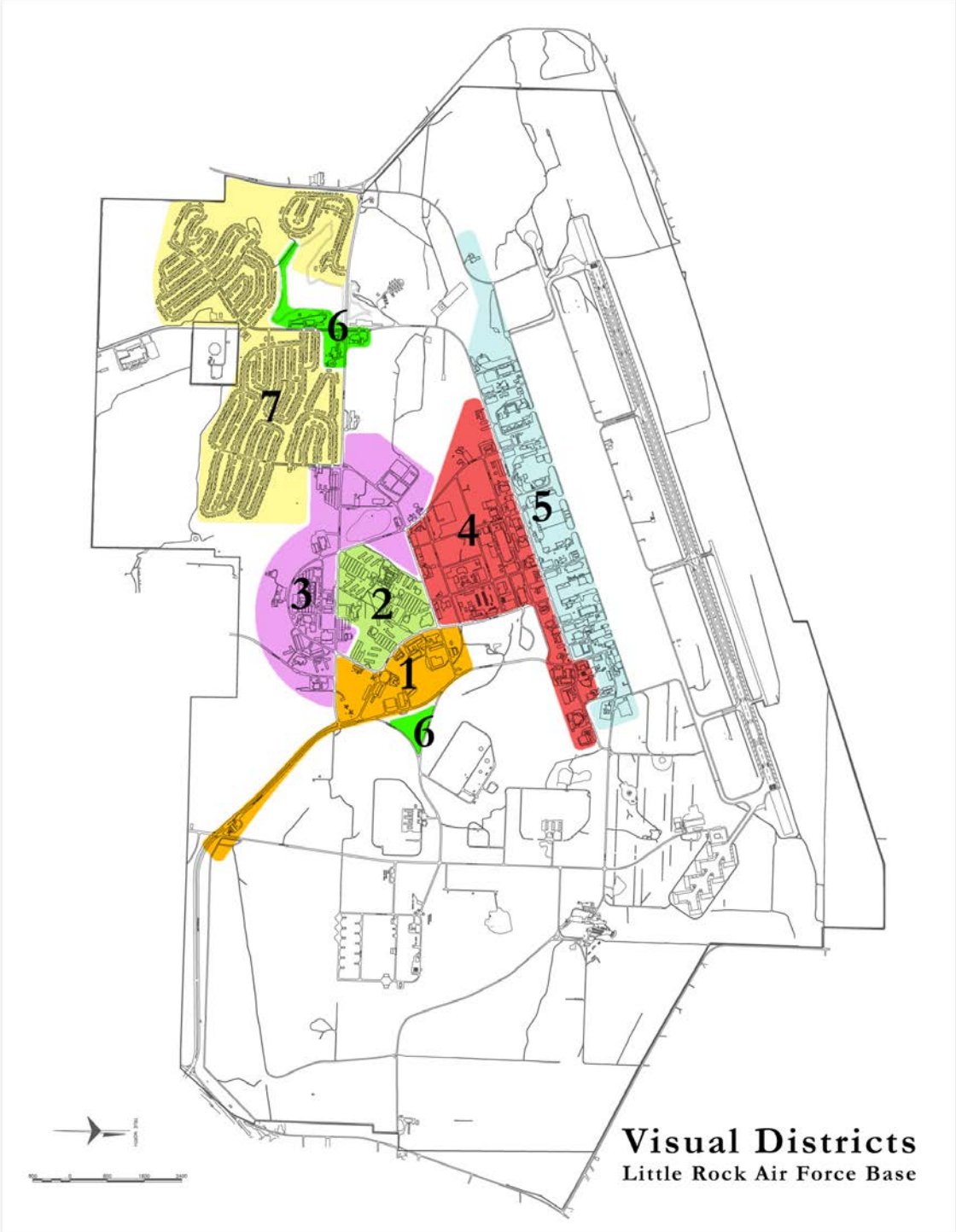
District 3 is the Community district.

District 4 is the Mission Support Facilities district.

District 5 is the Flightline district.

District 6 is a small Community Support district.

District 7 is the Family Housing district.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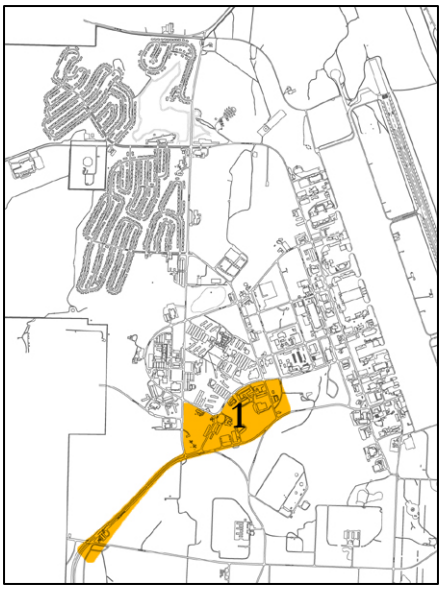
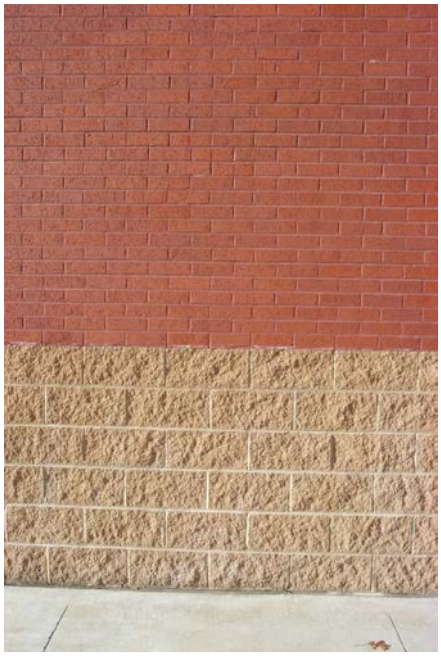
Visual Districts
Little Rock Air Force Base



District 1


Building 1250


Brick and split-face CMU

3.5.2 HEADQUARTERS & TRAINING DISTRICT
District 1

LOCATION
This district is bounded on the east by Vandenberg Boulevard, on the west by Thomas Avenue and Cannon Drive, on the north just north of Sixth Street and on the South by Arnold Drive. It includes the extension of Vandenberg Avenue south to the main gate.

It includes the Wing Command, classroom/lab complex, the Heritage Park and a number of other buildings of educational or administrative functions.

CHARACTER
The buildings in this area are typically two stories in height. Some are relatively new; others are older structures, most of which have been renovated in a manner so that they blend in. The land is rolling and substantial stands of native trees have been retained, partially dividing the area visually.

The approach to the main gate is a great natural asset and it has been treated in a sensitive manner; it's impressive by any standard. The signage and display at the main gate is distinguished and the design of the new gate complex shows promise. The Heritage Park is well designed, incorporating a number of monuments that are handsome but have wisely been kept low-key.

The overall character of this district is that of a very well maintained campus with a relatively low density of building. As the "front door" of the installation the district is visually very appealing.

Design and Planning Assets

- Buildings are generally compatible in scale and design
- Façade materials are consistent and good use has been made of wainscots, masonry banding and architectural devices to break down, to some extent, the scale of some of the larger buildings. Several materials and shading of tans are used and this variety is good.
- There are the beginnings of defined open spaces of good potential in the grouping of Buildings 1222, 1230 and 1231 and additional construction at the

Heritage Park

Landscaping and force protection

Excessive fascia

Landscaping requiring higher maintenance

corner of Sixth and Thomas Avenue could reinforce this.

- The siting of some buildings, particularly Building 1250 is excellent and the foreground for this important structure is well conceived and executed.
- The retainage of large swaths of native trees, here as elsewhere on the installation, represents the very best in natural landscape design.
- Parking areas are generally well located in relation to the buildings, particularly at Building 1250.
- Site elements including lights, exterior signs and service equipment screening are generally well handled. The site furniture in the plaza space adjoining Buildings 1222 and 1231 is well selected.
- Force protection construction is well integrated into the landscape and is visually discreet.

Recommended Improvements

- Buildings, though well sited in the landscape, are generally sited to the street and there is relatively little relationship between buildings except in the classroom complex.
- Some buildings make excessive use of large dark brown fascias which do not contribute to design distinction.
- Older buildings of disparate design, like Building 1230B, will be better integrated if painted a tan color similar to some of the split-face masonry banding in use in this area.
- The plaza created between Buildings 1222, 1230 and 1231 has great potential but needs more shade than will ever be provided by the small trees that have been planted.
- Some parking areas, particularly near Vandenberg Blvd. and Sixth Street, would benefit from landscape screening and medians with trees.
- The installation finds landscape maintenance costs excessive, yet there are a lot of precisely pruned shrubs in this area. In landscape replacement, plant materials that have growth habits not requiring this care should be selected.

District 2


Housing

Fitness Center


Courtyard seating

3.5.3 STUDENT LIFE DISTRICT
District 2

LOCATION
This District is bounded by Sixth Street on the north, Thomas Avenue on the east, partially by Arnold Drive on the south and partially by Cannon Drive on the west. In the northwest corner, the playing fields are excluded from the district and in the southeast corner Buildings 868 and 874 are also excluded.

The District includes the student dormitories, married student housing, the Student Dining Facility, the Fitness Center and a few related buildings.

CHARACTER
The three-story dormitories are the dominant building type in this district and do much to establish its character. These old buildings have been very successfully renovated with hip-gable roofs and new windows. The dining hall and a few other one-story buildings are also older, similar in general character to the dormitories and blend well with them as do the married student housing buildings. The fitness center is the largest building in the district – one of the largest on base – sitting somewhat away from the dormitories and of compatible materials.

The rolling landscape is a distinct asset to this district as is the native vegetation. The general character of this district is much like a college campus.

Design and Planning Assets

- The overall feeling in this district is pleasant, with abundant open space. The topography of the site contributes to this.
- The uniform three-story dormitory buildings are the predominant architectural element, ensuring continuity.
- The grouping of the dormitories in groups of three gives a sense of uniformity, while the irregular disposition of these groups on the site gives, as well, a sense of informality.
- The Fitness Center, though large, is set some distance away from the dormitories and appears in scale. This well-designed building is consistent in material use but also represents an appropriate stylistic departure.
- The courtyard of the existing Dining Facility is well-designed and furnished.

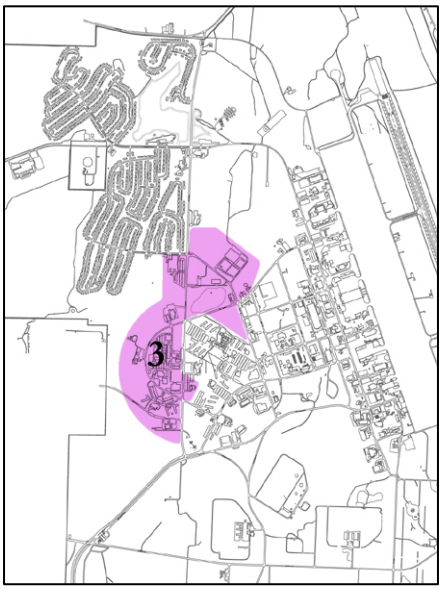
- The design of the new Dining Facility appears to fit well into the context and will be in scale.
- A number of mature native trees have been retained.

Opportunity to improve open space

Dumpsters should be screened

Recommended Improvements

- More developed open spaces between dormitory buildings would be welcome. These could be both for recreation and social interaction.
- Additional landscaping around the dormitory buildings is needed.
- Landscaping of the parking areas would be highly desirable.
- Dumpster screening is not handled as well here as in other districts on-base.
- Screening of mechanical equipment at the dormitories is needed.
- There are some overhead power lines, though the base has an aggressive program for removing these incrementally.
- The sidewalk system is not particularly well developed. An informal pattern of curvilinear walks corresponding to heavily used paths of travel would be an asset.



District 3


Attractive landscape at VQ


Pavilion

Appropriate signage

3.5.4 COMMUNITY DISTRICT
District 3

LOCATION
This District is somewhat gerrymandered to encompass a range of common use facilities, including recreational fields that adjoin the student dormitory complex.

At its east end, this District takes in the areas south of Arnold Drive but takes in the area north or Arnold Drive to include Buildings 868 and 874. West of Cannon Drive it takes in areas both north and south of Arnold west to Texas Blvd. to take in the clinic. North of Arnold, in this area, it takes in the Commissary and the site for the new commissary, then turns south again, extending east (south of Sixth Street) east of Cannon Drive to take in the playing fields.

CHARACTER
The District includes a great diversity of building use, age and scale as well as a great deal of open space.

The relatively tightly-clustered buildings defined by Arnold Drive on the north and the loop of Cannon Drive, including the Consolidated Club, constitute the "town center" of the base, even though the buildings vary substantially in scale and character. The buildings between Cannon Drive and Redmond Road, including the Shoppette (No. 1035) are more consistent in general character and scale, set in a more tranquil landscape. The Clinic and Commissary are set well apart from other buildings and, though similar in scale, are unrelated in character to the other buildings on-base.

The developed open spaces in the District include the golf club, playing fields and running track.

Design and Planning Assets

- The "town center" buildings are grouped fairly densely and there is opportunity here for further in-fill to create a genuine pedestrian-scale community activities center.
- The parking in the "town center" is dispersed into several lots that are not overwhelming in scale. Even the BX has parking to its side instead of between the building and the road.
- Signage in the "town center" area is discreet, informative and well done.

Well scaled arcade

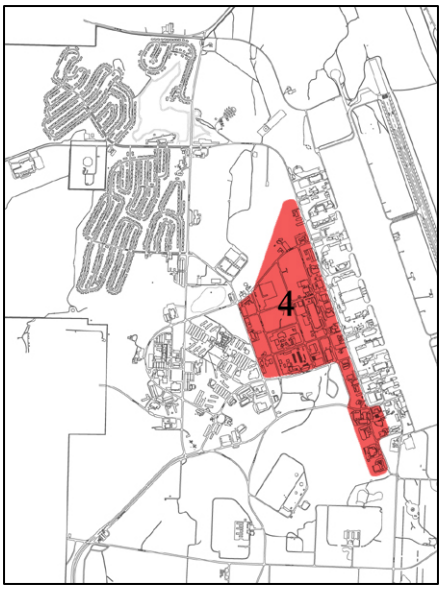
Attractively detailed façade

Commissary doesn't fit with architectural vocabulary of other buildings

- The construction of the paired covered walks that front on Buildings 959,960, 966, 976 and 980 was a great design move, though construction of more durable materials would be beneficial. The buildings that these walks visually unite date from the early construction at LRAFB and are fairly nondescript. The walkways have become the main visual event here and one is not really aware of what the buildings fronting on the walks look like.
- Building 952 is a very good building by any standard. It takes the basic materials vocabulary and combines these materials in different and visually appealing ways. The lighter brown aluminum windows are a big plus as is the siting to preserve a row of pine trees.
- The setting for Buildings the VQ and conference center is extremely handsome and the renovated VQ buildings are well done and well landscaped. The parking, located across the drive from the buildings, is softened by native trees.
- The conference center shares a bit of the architectural character of other base buildings, but is a pretty good modernist update. Toning down the whiteness of the EIFS would be beneficial. The landscaping is very handsome.
- The Shoppette (Bldg. 1035) blends into the context far better than the BX or Commissary. The sign on Arnold Drive is well done and site elements like the dumpster enclosure are compatible with others on-base.
- The golf clubhouse has a beautiful setting, though the building is not distinctive. It is hoped that the setting can be preserved when the new clubhouse is built.

Recommended Improvements

- Better landscaping in the "town center" area, including the BX, would be very desirable.
- The large parking lot in front of buildings 868 and 874 are unfortunate. These should be mitigated with landscape screening and medians with trees. Additional landscaping in front of and around these buildings would be an improvement.
- The Commissary is a very handsome building, but it would be difficult to imagine a design less in context with LRAFB. The large, bare parking lot between the building and the street represents the worst in retail planning. Every effort should be made to ensure better compatibility with the design of the new commissary.



District 4

Combat Engineering


Building 486


Building 320

3.5.5 MISSION SUPPORT FACILITIES DISTRICT
District 4

LOCATION
This District is bounded on the north by CMSgt. Williams Drive, bumping north just east of Vandenberg Blvd. to include Buildings 112, 115,116 and a new unnumbered building. It includes the area between Williams Drive and Second Street east of Vandenberg and is generally bounded on the east by Vandenberg and on the south by Sixth Street. On the west the edge is somewhat west of Cannon Drive and it encompasses the buildings on the west side of Cannon.

CHARACTER
The District has a number of primarily one-story brick buildings, a number of metal-walled buildings (including the CE shop complex), and a number of older buildings that have panel-and-batten siding. East of Vandenberg Blvd. the district consists of a campus of Air National Guard buildings that are predominantly of brick and one or two stories in height.

Except for the ANG buildings, the Combat Engineering building and several others, the buildings are typical background buildings, simple in form and material and appropriate for their support role. There is little natural tree cover in this district except at the east end and landscaping is relatively modest. The overall appearance is that of a well-maintained industrial park of generally small buildings. Abundant land is available for future development.

Design and Planning Assets

- At undeveloped areas, the land is left as mown natural turf, an environmentally friendly approach.
- Building 486 has facades that are a combination of masonry wainscot, metal panel walls, a metal roof with overhang and thin fascia, and Kalwall clerestories. The metal panels extend up into the gable ends of the building. The overall composition is simple, but has some distinction and is very appealing for a building with a pre-engineered frame. The use of a material like Kalwall is encouraged for clerestories. The material has a distinctive pattern, is maintenance free and brings daylight into industrial buildings, reducing the requirement for artificial lighting.

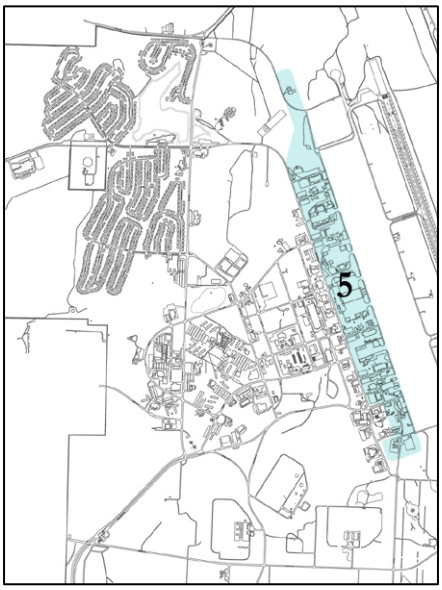
Parachute drying tower

Effective screening enclosure

- The Air National Guard buildings are an architecturally coherent grouping. They exhibit a great deal of finesse in the façade detailing while generally respecting the architectural vernacular of LRAFB. The architectural treatment of the parachute drying tower, in unarticulated dark brown metal panels, is handsome and blends in very well with the background of native trees.
- Some of the vehicle parking sheds are very well conceived, simple and finished in a dark brown color.

Recommended Improvements

- There are overhead power lines which it is assumed will be eliminated over time.
- A program of implementing consistent parking area and street lighting is recommended.
- Chain link fencing is present at a number of buildings, some with barbed wire. A program of replacement of this is recommended, as is screening of the fencing.
- This area contains several buildings where the dark brown metal roofing is extended down over the brick walls as part of the wall surface. This material is also used as the gable end. Buildings 366 and 368 are examples. This pattern of façade development on future buildings is discouraged.
- Dumpster and equipment screening is, in some areas, deteriorated and metal slat screening is used in others. This is not base standard, though brick enclosures may not be warranted in this area. Integral-color CMU is an option for enclosure walls.



District 5

Aircraft hangars with masonry wainscot

3.5.6 FLIGHTLINE DISTRICT
District 5

LOCATION
This District is located between the edge of the aircraft apron on the north CMSgt. Williams Drive, extending the east-west length of the developed area.

CHARACTER
Buildings in this District range from mammoth hangars for C-130 aircraft to small ancillary structures. The hangar structures vary in age and typically have low-slope gable roofs in buff-colored metal and metal walls in the same color.

A number of brick buildings are also present, typically located closer to Williams Drive. These are typically free-standing, but are in some instances attached to a metal building as an office wing. There is always a certain vitality to flightline areas and this results, to some degree, from varying scale, configuration and placement of buildings. At LRAFB this is a very coherent district.

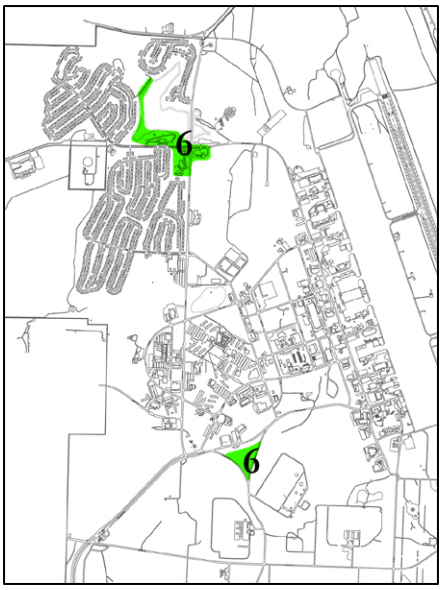
Design and Planning Assets

- The generally uniform pale tan color successfully pulls the large industrial and hangar buildings together visually. This Guide makes recommendations for standardizing the shade of tan to be used on future buildings and for repainting.
- The simplicity and similarity of form of the large-scale buildings is an equally unifying element.
- Building 276 is an elegantly-designed hangar, from the masonry wainscot to the very fine pattern of the small metal panel joints. On south and west side downspouts, provide pattern and articulation, the orderly placement of mechanical vents provides pattern and shade and the intermittent bands of clerestory windows break up the large metal surfaces.
- The extension of Building 282 is equally successful architecturally. The exposed stairs on the south side give clues as to scale. The large sloping roof surface is enlivened by well-placed mechanical equipment and the catwalks that serve it. This is a very good example of exposed mechanical elements exposed to visual advantage, whether this was the intent or not.

- The fire station is composed of well-proportioned forms with bold apparatus door openings. The dormitory-office wing has a good roof treatment, with dormers, eaves and fenestration.
- The brick buildings, typically subordinate in scale to the large metal buildings, provide a visual link to the palette of materials used elsewhere on base.
- The general absence of landscaping in this area is appropriate.

Recommended Improvements

- A few of the large-scale metal buildings have dark metal roofs. It is recommended that the standard remain the light tan.
- There is no continuous AOA fence.
- A lot of chain link fence that does not comply with AETC guidance and a program to phase this out is recommended.
- A number of temporary concrete barriers are in place throughout this area and it is assumed that these will be phased out as permanent FP barriers are implemented.
- Some dumpsters are not enclosed and enclosures should be installed. A less architectural enclosure than the brick walls used elsewhere on base should be considered – split-face or burnished CMU is an option.
- Parking area and roadway lighting should be standardized as is being done elsewhere on base.
- Add sidewalks along the south side of CMSgt. Williams Drive.



District 6

Child Development Center


Shoppette

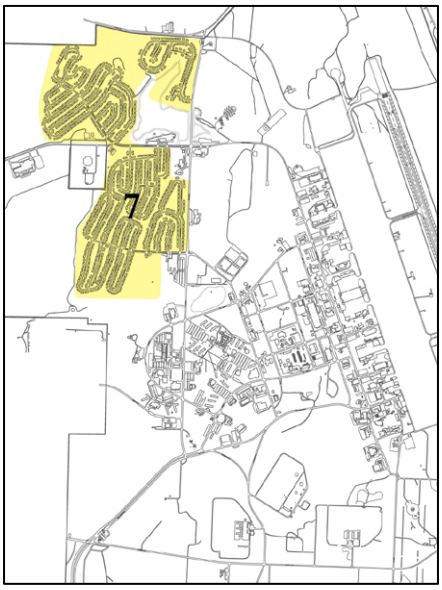
3.5.7 COMMUNITY SUPPORT DISTRICT
District 6

LOCATION
This small district is located around the intersection of CMSgt. Williams Drive, extending south somewhat along Arkansas Blvd.

CHARACTER
There are relatively few buildings in this district. Buildings 1990 and 1995 are seen together and are of the typical LRAFB materials and general form. Building 1992, further south, is somewhat away from the first two. The fourth building in the district is the Shoppette (No. 1996). The district also includes a lake-front park, extending north and south of the Youth Center
Though this may be identified as a district there is relatively little coherence, even within the relatively small area.

Design and Planning Assets
- The Youth Center (No. 1992) is sited spectacularly on the edge of the lake.
- The low-key lakefront park, intended for passive recreation, is very pleasant and well used.
- The walkway across the dam is very well executed with handsome light fixtures and good paving patterns.
- Buildings 1990 and 1995 are well sited in the landscape and blend together.

Recommended Improvements
- The Youth Center, or another building on this site, could take better advantage of the site.
- The Shoppette is a completely insensitive, from its architecture to the exposed dumpster on Arnold Drive. Renovate or replace this facility and site installation.



District 7


Lake view

3.5.8 FAMILY HOUSING DISTRICT
District 7

LOCATION
This District encompasses the entire site presently used for family housing south of Cannon Drive, on both sides of Arkansas Avenue.

Since all housing structures are to be replaced, this Guide deals only with site and siting considerations.

CHARACTER
The general character of the housing area, is very pleasant and would do credit to any subdivision in any city in the country. The natural assets of this area are outstanding.

Design and Planning Assets
- The rolling land, coupled with the somewhat curvilinear streets, provides constantly changing vistas. It is recommended that minimal changes, if any, be allowed in the street pattern.
- The mature trees are irreplaceable and should be retained.
- The lake is an incredible asset and does much to establish the feeling of the place.

Recommended Improvements
- Ensure that the designs for new residential structures are as good as the site warrants.
- Generous sidewalks should be provided, routed around trees where necessary.
- Consider an alternate to the existing pedestrian-scale streetlights.
- Mature shrubbery that requires extensive maintenance should be removed.

4 Planning & Design Resources

Refer to the following resources for additional information:

USAF

- AETC Installation Excellence Guide
- AFM 88-43 Installation Design (Mar 81)
- AFP 86-10 Landscape Planning and Design (Apr 86) p. (Publications found at: http://afpubs.hq.af.mil)
- AF123-1024 Standard Facility Requirements (May 94) r. AFH 32-1084 Facility Requirements (Sep 96)
- AFI 32-7062 Air Force Comprehensive Planning (Oct 97)
- Air Force Environmental Responsibility Facilities Guide
- http://www.afcee.brooks.af.mil/dc/dchome.asp

Design Guides

- http://www.afcee.brooks.af.mil/dc/products/dcproducts.asp

Unified Facilities Criteria (UFC) Documents

- http://65.204.17.188//report/doc_ufc.html
- UFC 3-120-01 Air Force Sign Standard (Feb 02)

Anti-terrorism/Force Protection

- UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings
- Air Force Protection Design Guide
- http://www.hnd.usace.army.mil/techinfo
- http://criteria.navfac.navy.mil/
- http://www.ccb.org/

General

- The Whole Building Design Guide (http://www.wbdg.org/index.php)
- ADAAG- Americans with Disabilities ACT Accessibility Guidelines
- UFAS- Uniform Federal Accessibility Standards
- MTMC- Military Traffic Management Commander

Laughlin AFB design documents

- Laughlin AFB General Plan
- Laughlin AFB approved plant list