

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

UNITED STATES AIR FORCE ACADEMY, CADET AREA

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United States Department of the Interior, National Park Service

National Register of Historic Places Registration Form

1. NAME OF PROPERTY

Historic Name: United States Air Force Academy, Cadet Area

Other Name/Site Number:

2. LOCATION

Street & Number: Roughly between Cadet Drive and Faculty Drive

Not for publication:___

City/Town: U.S. Air Force Academy

Vicinity:___

State: Colorado County: El Paso Code: 041

Zip Code: 80840

3. CLASSIFICATION

Ownership of Property
Private: ___
Public-Local: ___
Public-State: ___
Public-Federal: X

Category of Property
Building(s): ___
District: X
Site: ___
Structure: ___
Object: ___

Number of Resources within Property

Contributing
10
1
1
12

Noncontributing
1 buildings
0 sites
1 structures
objects
2 Total

Number of Contributing Resources Previously Listed in the National Register: 0

Name of Related Multiple Property Listing: N/A

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4. STATE/FEDERAL AGENCY CERTIFICATION

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this ____ nomination ____ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ____ meets ____ does not meet the National Register Criteria.

Signature of Certifying Official

Date

State or Federal Agency and Bureau

In my opinion, the property ____ meets ____ does not meet the National Register criteria.

Signature of Commenting or Other Official

Date

State or Federal Agency and Bureau

5. NATIONAL PARK SERVICE CERTIFICATION

I hereby certify that this property is:

- ____ Entered in the National Register
- ____ Determined eligible for the National Register
- ____ Determined not eligible for the National Register
- ____ Removed from the National Register
- ____ Other (explain): _____

Signature of Keeper

Date of Action

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6. FUNCTION OR USE

Historic:	Education	Sub:	College
	Defense		Military Facility
	Religion		Religious Facility
Current:	Education	Sub:	College
	Defense		Military Facility
	Religion		Religious Facility

7. DESCRIPTION

Architectural Classification: Modern Movement

Materials:

Foundation: Concrete
Walls: Glass, Metal (aluminum and steel), Stone (Marble)
Roof: Asphalt
Other:

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Describe Present and Historic Physical Appearance.

The United States Air Force Academy (USAFA) is located adjacent to the city of Colorado Springs, Colorado, in a magnificent setting at the foot of the Rampart Range of the Rocky Mountains in El Paso County. Containing 18,455 acres, the property extends roughly seven miles north to south and four miles east to west. The Academy covers most of Township 12 South and Ranges 66 and 67 West, 6th Principle Meridian. The Cadet Area is located approximately four miles west of the Academy's north entrance off U.S. I-25. The Cadet Area is approached from the northeast by North Gate Boulevard, from the south by Academy Drive, and from the east by the Parade Loop.

The Historic District encompasses the buildings and landscapes that constitute the core educational mission of the institution. It consists of ten contributing buildings, one contributing structure, and one contributing site with is made up of significant components. The architectural firm of Skidmore, Owings and Merrill (SOM) designed the Cadet Area, completed in 1963. Within two years, the Cadet Wing expanded to nearly 2,000 students, requiring additional quarters and classroom space. This second construction phase, completed by the architectural firms of Leo A. Daly, Inc. and Henningson, Durham, and Richardson, included a new dormitory and additions to Fairchild Hall (Academic Building) and Mitchell Hall (Dining Hall). Following the expansion, completed in 1968, the Cadet Area has undergone few changes. The major exception was a library addition in 1981 that filled in an open section of Fairchild Hall.

The district retains a high degree of integrity in regards to location, design, setting, materials, workmanship, feeling and association.

The U.S. Air Force Academy Campus

The site has distinct landforms extending eastward from the mountains, consisting of ridges, separated by five broad valleys. Jack's Valley lies on the northern boundary, south of which a narrower ridge overlooks Cathedral Rock. Continuing south are Lehman Valley, Lehman Ridge, South Lehman Valley, Douglass Ridge, Douglass Valley, Pine Ridge, and at the southern boundary, Pine Valley. These ridges drop down to rolling hills and Monument Creek on the eastern edge of the property, with nearly level terrain in the property's southeastern corner. US Interstate-25 runs north to south along the eastern edge, linking Colorado Springs and Denver. Elevations range from 6,235 to 7,900 feet from the lowest to highest point.

Due to the topography, much of the land remains open in a park-like setting, interrupted only by the road system. The visitor frequently encounters roaming herds of deer and flocks of wild turkeys in the quiet wooded valleys. To the west, the peaks of the Rampart Range loom over the entire campus. The campus master plan used the alternating ridges and valleys to group functional areas, including the Cadet Area, the Community Center, the Service and Supply Area, the Airfield, and two housing areas. The use of open space as a transitional buffer between the built environment and the natural surroundings enhances the visual separation of these functioning areas.

The Cadet Area

The Cadet Area is immense, covering about a fifth of a square mile and is the heart of the USAFA campus, sited on the highest of the ridges. As a review in *Architectural Forum* stated:

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The Academy proper— “cadet academic area “—has been given the most dramatic situation of all [on] a natural mesa in the northwest corner of the site... that makes a “veritable Acropolis” . . . for the spiritual center of the project.’¹

SOM pressed for the site despite the strong opposition of Lieutenant General Henry Harmon, the first Academy Superintendent, who preferred a site in Douglass Valley. Although the reviewer described the land as a natural mesa, it is better understood as a relatively flat high ridge, requiring extensive site preparation with a series of concrete retaining walls, finished with gray granite slabs, to create artificial terraces at the ridge crest. There are more than 10,000 linear feet of retaining walls, some as high as thirty-six feet, as well as massive earth embankments. Site preparation cost nearly \$2.3 million dollars in 1958.

The retaining walls accentuate the height of the plateau. Those gray granite slabs, combined with the marble, concrete and aluminum in the buildings, visually blend to create a sense of monumentality. Considering an alternative, SOM partner John Merrill told a congressional committee that they might use “a warm, brown-colored stone.” Rather than blend the retaining walls into the colors of the earth, SOM chose to create an almost temple-like appearance. *Architectural Forum* declared that the architects “shaped the slopes as powerfully as the Babylonians, the Incas, and the Greeks once did.”²

The architectural team designed the academic complex with extraordinary care to the daily life of the cadet. Based on detailed traffic flow studies, SOM created a plan that placed every activity within a ten minute walk from the cadet's quarters. Meals, classes, and athletics are on a north-south axis, linking the dining hall to the dormitories and the athletic fields. The east-west axis organizes special events: chapel, parades, and social affairs.

On top of the mesa, two intersecting rectangular plazas form an open space, enclosed by the principal buildings. The higher plaza, known as the Court of Honor, lies at 7,176 feet above sea level. Laid out in a north-south orientation, it anticipated space for public interaction with the Cadet Area while limiting interference on the Terrazzo level. It is bordered on the north by Arnold Hall, on the west by Harmon Hall, and on the east by a granite retaining wall.

The other plaza, known as the Terrazzo (from the Italian word for terrace), is thirteen feet lower and is laid out with an east-west orientation, framed by Vandenberg Hall on the north, Fairchild Hall on the east, and Mitchell and Sijan Halls on the south. A wide masonry ramp between the Chapel and the Court of Honor—permitting cadets to march in formation—and flanking stair cases on the west end of the Terrazzo connects the two spaces. Both areas have expansive exposed aggregate paved walkways, delineated with rows of marble tile reflecting the Cadet Area design grid of twenty-eight feet. The architects applied a seven-foot grid or module to the entire Cadet Area. The module times four produced the dimension of the width of the buildings structural bay and size of the beams and structural units. Times two, the module established the width of the Cadet room. The module, or its subdivisions, determined the sizes of windows and detailing of façades and organization of building and landscape features.

Dropping sharply away from this high flat area, the land falls into a relatively flat valley to the north. The physical education building, fields, and courts are situated on this level, approximately seventy-two feet

¹ “The United States Air Force Academy,” *Architectural Forum* (June 1955): 103.

² Testimony of John Merrill before the Subcommittee of the Committee on Military Construction Appropriations, U.S. Congress, House, 84th Cong., 1st sess., 30 June 1955, 204-5; Welton Becket, one of three architectural consultants appointed by the Air Force, supported the use of native rock for the walls. “The Air Age Acropolis,” *Architectural Forum* (June 1959): 159.

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below the Court of Honor. The Cadet Parade Ground is also located at this lower level, just east of the Terrazzo, which is accessible via two long masonry ramps.

SOM demonstrated several themes throughout the design and plan of the Cadet Area; one is the sense of floating or delineation of different planes. The most obvious demonstration of this theme is the extensive use of columns, or pilotis, making the buildings themselves appear to be floating over open space. The theme continued within the details of the buildings through the separation of planes and materials. Emphasized by the use of reveals and separations, the impression is one of floating architectural elements. Marble appears to float within an aluminum frame, spiral staircases seem to float in space, and ceilings seem to float above rooms and corridors. Another theme SOM utilized was to visually reduce the mass of the buildings and the monumentality of the Cadet Area. Arnold Hall, Vandenberg Hall, Fairchild Hall, and Mitchell Hall (as well as the later Sijan Hall) are all viewed from the Terrazzo level at their mid point in height. Fairchild, for instance appears to be a four-story building from the Terrazzo, even though two additional stories extend below that level. Another technique that SOM utilized to balance the monumental scale of the Cadet Area was to make one large building appear as if it were two buildings. The quarter-mile long Vandenberg Hall, for instance, is made to look like two buildings by created a void in a section of the upper floors. Fairchild Hall also demonstrated that technique by making the classroom section of the building appear to be separate from the library section of the building. Another theme is the consistent choice of materials SOM used in the Cadet Area: opaque building materials were light in color and presented an image of permanence (for example, white marble, clear (natural) aluminum, granite). Clear glass was used on entrance levels, while smoke colored glass is used elsewhere. Accent colors, typically on vertical walls, are Venetian glass, used to indicate building entries and functions. Red indicates administrative functions, blue indicates academic functions, and yellow indicates housing areas.

Contributing Resources:**Contributing Site: Cadet Area**

Walter Netsch, Jr., SOM's director of design for the Academy, stated: "These open spaces and those of any serious architecture are integrated with the buildings and must be treated just as seriously as the building materials and techniques."³ The Cadet Area has several elements that contribute to the significance of the overall site. These include the designed landscape of the Terrazzo, the Court of Honor, and the Parade Grounds, as well as the system of roads and pathways that provide circulation within the district.

Terrazzo (1959)

The Terrazzo is an open space enclosed by four buildings that form the core of daily cadet life and is used for daily musters of the entire Cadet Wing. The western half is a grassy field with a wide border of exposed aggregate walkways, delineated with rows of marble tile reflecting the Cadet Area design grid of twenty-eight feet. There is a small hill in the middle of this field, created in 1956 as part of the landscape plan developed by Dan Kiley. Hired by SOM on the recommendation of Eero Saarinen, Kiley was a widely respected landscape architect. His design created a wooded sloping hill from the middle of the Terrazzo extending south to the valley below, balanced visually with a rise on the higher plateau of a

³ "A Conversation about the U.S. Air Force Academy between Walter Netsch and John Burchard, in *Modernism at Mid-Century: The Architecture of the United States Air Force Academy*, ed. Robert Bruegmann (Chicago: University of Chicago Press, 1994), 179.

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mountain to the south of the Cadet Area. A masterful blend of nature and man-made environments, this feature was eliminated in 1968 with the construction of Sijan Hall, which served to enclose the Terrazzo. The hillock on the southeast corner of the grass field remains, although now without trees, which were recently removed.

The east quarter of the Terrazzo, parallel to the long west elevation of Fairchild Hall, features another distinctive Kiley landscape. Called the "Air Garden," the 700-foot long space held an ordered geometry of lighted pools, lowered grass sections and maze-like walkways. The Academy filled and leveled the feature in 1975 following perceived drainage problems. Kiley chose geometric forms as symbols of the cadet's life- geometrical and disciplined. The walkways, separated by spaces of lowered turf grass at the same height of the water, connect the pools and the Terrazzo grid. Rows of honey locust trees flank the pools on the east and west sides of the garden. In recent years, both north and south ends of the garden have been excavated and the terminating fountains and lighted pools restored.

Contributing features include:

- spatial arrangements based on the central twenty-eight foot organizing grid of the Cadet Area.
- paving, especially its delineation of the grid.
- all views, including spatial gaps between buildings.
- the Air Garden and tree planting arrangements.
- flag pole in the northeastern quarter of the Terrazzo.

The system of paths, walkways, roads and parking areas within the Cadet Area district contribute to the designed landscape of the site. Elements include the road leading down to the Athletic fields and Field House parking areas, the road between Fairchild Hall and Terrazzo, and the stairs and ramps that connect the Terrazzo and other upper levels with the lower athletic fields and buildings.

Contributing Structure: Retaining Walls (1958)

The retaining walls are an essential feature of the Cadet Area, creating the monumentality required for its reputation as a "new Acropolis." The site required extensive preparation that included construction of a series of retaining walls, finished with gray granite slabs, to create artificial terraces at the crest of the mesa. With more than 10,000 linear feet of concrete retaining walls, some as high as thirty-six feet, as well as massive earth embankments, this structure contributes to the district.

Contributing Buildings

1. Vandenberg Hall, or Cadet Quarters (1958), Base #2360

Vandenberg Hall, named after General Hoyt S. Vandenberg, frames the northern edge of the Terrazzo. According to the architectural team, the site and design of the Cadet Quarters was the crucial decision in planning the academic area. "The dormitories were the heart," said Walter Netsch Jr., "and. . . their relationships to the Dining Hall and the Headquarters and the Social Hall and ballrooms and the Administration Building, the Physical Education Building, the playing fields, and the Library were fundamental, in a way they might not normally be."⁴

⁴ "A Conversation about the U.S. Air Force Academy between Walter Netsch and John Burchard," 179.

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Working from a design directive to build a single dormitory for all cadets, the architects used the quarter-mile long quarters to set the scale and architectural vocabulary for the whole Cadet Area. The siting takes advantage of the dramatic elevation change in the Cadet Area. Nestled into the north side of the ridge, Vandenberg Hall, viewed from the ground floor, stands six stories high. However, from the Terrazzo level, it appears to be only three stories with a height of thirty-two feet. The first and fourth floors are open loggias. Floors two, three, five, and six contain cadet rooms. Thus, the cadets were only two floors up or two floors down from the Terrazzo, with quick access to the rest of the academic area. In particular, the design is sensitive to the surrounding environment. The Terrazzo level is predominately open, allowing for dramatic vistas from the Cadet Area. Slender columns, or pilotis, on the Terrazzo level support the upper floors of the building. The large rectangular building is arranged around six open landscaped courtyards. While the landscaping is minimal in these courtyards, Kiley's original design included extensive "free-form" plans, providing relief from the order and geometric tension of the Cadet Area architecture. In one section, the building height drops to three stories, opening a view from the Terrazzo level out to the surrounding valleys and peaks. The effect makes it appear as if there are two separate buildings, breaking the 1337-foot long façade.

The building is of flat-plate construction, with reinforced concrete floors and flat roofs supported on steel columns spaced twenty-eight feet on center. The columns are hollow rectangles formed by welding together a pair of channels. At their base, the columns are founded on drilled caissons. Because of its great length, Vandenberg Hall is divided into three parts by transverse expansion joints. Each joint is located seven feet from a row of columns, dividing the twenty-eight-foot bay into two segments. A shelf built into the edge of the seven-foot segment supports the end of the twenty-one-foot segment. Both edges of the slabs at the joint are reinforced with a steel angle, and a graphite sheet is placed between the bearing surfaces to reduce friction. This method eliminated the need for double columns.

The exterior uses modern architectural elements with a horizontally flush skin of rectangular glass windows and dark glass spandrel panels within an aluminum-clad structural frame. A typical window unit consists of a large spandrel panel with flanking sliding window units and fixed panels below. The flat, clean roofline consists of five-ply composition and gravel. Ornamentation is minimal, although the building uses a striking motif by covering the walls surrounding the entry vestibules with yellow Venetian glass tiles (indicating a housing function).

Adding to the significance of this resource, the interior remains in an excellent state of integrity. Long interior hallways provide access to 1,320 rooms for 2,640 cadets, organized by Cadet Squadron. A Charge of Quarters (CQ) desk is located at the end of each hallway. The current desks are recent and are not from the period of significance. Walls are painted white, with the exception of special images that Cadets have painted signifying squadrons or other Academy-related themes. Some of these paintings may be newer than the period of significance. Access to the cadet rooms is via the original wood doors. The two-person cadet rooms measure 18'6" by 13'4" (with a 14' center). In recent years, the USAFA has reproduced—with minor improvements—the original furnishings designed by Walter Dorwin Teague Associates. The building also contains auxiliary squadron rooms, various activity and recreation rooms, store, post office, barber shop, tailor shop and storage rooms.

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2. Fairchild Hall, or Academic Building (1959), Base #2354

Fairchild Hall serves as the primary academic building of the Cadet Area, incorporating academic administration offices, library, classrooms, and laboratories. It is named for General Muir S. Fairchild, the first commander of the Air University, at Maxwell Air Force Base, Montgomery, Alabama. It forms the eastern border of the Terrazzo.

Like the Cadet Quarters, the Academic Building extends below the level of the Terrazzo to diminish the massive scale of a six-story building with 905,075 square feet. The building complex is 786 by 282 feet, slightly wider than the Cadet Quarters, but approximately half as long. Unlike that building, there is a clear break between Fairchild Hall and the Terrazzo, created by a road at a level thirty feet below the primary Cadet Area. Fairchild Hall is reached from the Terrazzo via two wide pedestrian bridges. This permits ground-level circulation around the building, allowing access to lower level garage and service facilities.

Similar to Vandenberg Hall, the building height originally dropped to two stories in one section, opening a view from the Terrazzo out to the surrounding valleys and peaks. Appearing to be two distinct buildings from the Terrazzo, the design demarcated interior spaces for the library and academic administration offices (on the north) and the academic classrooms and laboratories (on the south). The exterior uses modern architectural elements with a rectangular plan terminating in a flat, clean roofline. The southern wing has a glare-reducing glass wall on the north elevation. The west elevation, seen from the Terrazzo level, has glare-reducing glass walls on the third floor (which appears to be the first floor from the Terrazzo) and also on the sixth floor. The fourth and fifth floors, which contain classrooms, are clad in white Georgia marble. The Air Force Academy instruction method typically placed an entire class of twelve to sixteen cadets at a blackboard simultaneously. In response, SOM created windowless classrooms with blackboards on all walls, which, in turn, influenced the exterior design since surface glass was limited. The southern elevation shows a glass wall that extends one level below the Terrazzo level, with dark tinted glass and dark spandrel panels.

The library wing's north elevation is white marble on both ends, with the center portion being dark glass. The third floor, at the Terrazzo level, has an open colonnade one bay deep, then a glass wall. The west elevation, facing the Terrazzo, repeats the open colonnade treatment on the third floor, but the fourth and fifth floors are glass walls.

Grounded on drilled caissons, Fairchild Hall has structural steel framing with twenty-eight foot columns. A steel frame, with a floor system of lightweight concrete over a steel span with concrete joists, spans the twenty-eight feet between steel girders. In some portions of the building where it was necessary to omit a line of columns, fifty-six foot welded steel trusses span the gap. As was done for Vandenberg Hall, the design eliminates double columns at the four expansion joints needed in the long academic complex.

The third floor (Terrazzo level) features two large breezeways, with the upper floors supported by pilotis in those areas. Walls covered with blue Venetian glass (indicating academics) accent the third floor entrances. The fourth, fifth and sixth floors feature an interior two-level courtyard, utilizing the third floor breezeways and the top of the 1,000 seat auditorium on the third level. This results in a rectangular floor plan and circulation pattern, which is a character-defining feature of the second, fourth and fifth floors. There, wide hallways are placed along the exterior glass walls, ringing the rectangular building. Perpendicular interior hallways on the second, fourth and fifth floors create large grids between sections of classrooms, lecture halls and offices.

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Adding to the significance of this building, the interior retains an excellent degree of integrity. It features science and humanities classrooms, plus laboratories, lecture halls, library, dispensary and office space for the Commandant of Cadets and staff. The ground floor contains a large parking garage, mechanical rooms, storage space and some offices. The science and engineering laboratories are on the second level, which also contains the lower portions of several auditoriums, including two 250-seat lecture halls, two 450-seat lecture halls, and one 1000-seat lecture hall. These lecture halls extend two stories, into the third level. Opening to the Terrazzo, the third floor is also the entry level for the library at the northern end of the building. The southern end of the third level is currently being remodeled. From the third floor up, the rooms decrease in size. The fourth and fifth floors (but only two up from the Terrazzo level) contain classrooms in clusters of five oriented around vestibule coatrooms. The top floor holds departmental and faculty offices; this floor has been partially reconfigured from the original layout.

Fairchild's acoustically tiled hallway ceilings were designed to float. In the exterior hallways there is a recessed light band along the interior wall at the ceiling, and another recess by the window. Interior walls are constructed of hollow clay tile on plaster, painted white. Flooring in the building's hallways are predominately white vinyl, with black vinyl tile on both the outer margins and forming grid lines to break up the appearance of the long corridors. The colors of the doors is consistent within each cross hallway, with each hall showing an Academy class color of yellow (gold), red, or blue. The colored doors are outlined by black metal frames. Stairways have polished white terrazzo risers and treads, black steel railings with aluminum hand rails. Several stairways in the building were remodeled after the period of significance; the changes included placing 12" white marble tiles on the walls. Two interior bridges connect the second floor of Fairchild to the newer Consolidated Education Training Facility, to the east. Since they were constructed after the period of significance, they are not contributing features of the building.

The library is located on the north end of Fairchild Hall, appearing to be a separate building from the outside. The library received its own name only recently: the Robert F. McDermott Library, honoring the dean of faculty from 1956 to 1968. Originally, the library's main entrance was on the southern elevation, facing the other portion of Fairchild Hall. However, in 1981, the Academy built an addition in the open space between the library and academic rooms. This addition placed a new library entrance on the west elevation, facing the Terrazzo. The new clerestory addition contains the circulation desk, reference area and a large reading room. The upper interior portion of the room features exposed painted trusses, surrounded by glass walls. This upper glass-enclosed portion of the room can be seen from the nearby fourth floor hallway of the classroom portion of Fairchild. The library's most distinctive feature is a three-story geometrical staircase with no central post, on the north of the main reading room, leading from the main floor to the stacks and main reading rooms. While the staircase originally was a focal feature upon entering the library, the 1981 addition placed it well within the middle of the library. The staircase sits on a large square of polished brown terrazzo. West of the stair on the main floor, the wall is covered with gold Venetian glass. The stair's risers and treads are white marble, with a black metal railing and a wooden hand rail. Centered in the ceiling at the top of the staircase is a dome-shaped skylight. The fourth floor (one floor up from the Terrazzo level) has walls that are two-story high, with the fifth floor being a gangway mezzanine in the center of the room. The floating ceiling features an open grid drop ceiling, with fluorescent lights above the plastic grid over the gangway. The two-story walls are covered with white marble on the east and west, and are glass on the south and north. The glass walls are covered inside by two-story blue curtains. The fourth floor contains stacks and a reading room, and the fifth floor contains stacks. The sixth floor, containing stacks, also features a floating open grid dropped ceiling, with fluorescent lights above the grid. The Air Force Academy retained one of the country's largest industrial

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design firms, Walter Dorwin Teague Associates, to handle the interior furnishings of the Academy buildings. As interior designer, the firm chose or designed all the furnishings and selected the colors, fabrics, and floor coverings. In the library, they chose the Eames desk and lounge chairs covered in Academy colors.

The library addition closed off the view from the Terrazzo to the rolling hills and plains to the east.

In addition to the library addition, Fairchild Hall also underwent another addition. In 1965, the classroom portion of the building was extended to the south, using plans by the architectural firm of Leo A. Daly that mirrored the existing SOM design and is virtually indistinguishable today. This work was completed during the period of significance.

3. Mitchell Hall, or Dining Hall (1958), Base #2350

Mitchell Hall is the cadet dining facility, named for Brigadier General William "Billy" Mitchell. It is located on the southeast corner of the Terrazzo between Fairchild Hall and Sijan Hall. The exterior is box-like, roughly 308 feet by 308 feet, with a flat roof and a cantilevered overhang of twenty-one feet surrounding the building. There are two main entrances facing the Terrazzo, each approximately fifty-six feet wide- to accommodate cadet formations.

Academy planners directed SOM to build a dining hall capable of seating the entire Cadet Wing, with nearly 3,000 students, in one sitting. To create such a large space with no columns to impede visibility, SOM's architectural team, headed by Gertrude Kerbis, developed innovative design and construction plans. The two-acre structure features a steel span roof of 266 feet, resting on sixteen exterior columns. The roof span consists of twenty-three warren trusses, intersecting at right angles fourteen feet on center. The prefabricated trusses were assembled on the ground and jacked into place utilizing equipment and techniques normally reserved for precast concrete lift slab construction—the first long-span steel structure to be lifted into place. All joints, splices, and intersections were welded to provide structural continuity. The site slopes downward away from the Terrazzo level, so the floor that is accessed from the Terrazzo is approximately three stories above grade at the rear of the building. Below the Terrazzo level, the dining hall is of reinforced concrete construction. SOM's early design drafts employed a glass curtain wall on all four sides, with the kitchen, staging area, and services below the main dining floor, connecting the two levels by elevators and using heated dining carts for serving food. With this plan, however, the architects were unable to provide the required level of food service, as expressed by the Academy Board, that they "serve two eggs sunny side up at the same temperature to all cadets." This requirement forced the team to include kitchen facilities on the main floor. To hide these functions, the architects designed the north façade to be finished with precast exposed aggregate concrete panels and aluminum fascia panels. The other elevations show grey tinted plate glass in aluminum frames.

The interior, which adds significance to this resource, remains in an excellent state of integrity. The main entrance from the Terrazzo level features a freestanding geometrical staircase in the lobby, leading to a mezzanine level. The staircase displays white marble treads and a black steel open railing with an aluminum hand rail. The primary interior room, the dining hall, is a vast open space with a twenty-four foot height, featuring a coffered camp ceiling (a ceiling having the form of a truncated pyramid) on a 14' grid. The room is framed by gray tinted glass walls on the north, east, and west. The recently added shades can be drawn over the bottom half of the window walls. The flooring is polished brown terrazzo set in aluminum strips, which follows the grid pattern on the Terrazzo outside. On the north elevation, it features a three-quarter-length mezzanine, raised approximately twelve feet from the main floor, providing

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an eating area for senior Academy personnel and guests. Often called the Staff Tower, it provided a platform for the announcement of daily orders and campus activities. The mezzanine floor is comprised of polished white terrazzo squares, outlined by narrow aluminum bands, following the grid pattern on the main floor. The railing around the mezzanine features frosted glass with a geometric pattern; this "modesty panel" was added after the period of significance. At the center of the mezzanine, a lobby extends toward the north wall with windows overlooking the Terrazzo.

Under the mezzanine are serving, kitchen, scullery and dishwasher facilities. A service floor is eighteen feet below the dining floor. It provides space for freezers and food storage, bakery and employee facilities. There are loading docks and other food-receiving departments at this lower level. On the north side of the service floor, under the Terrazzo, is a dining/banquet area that can be used for smaller functions and more formal dining events. An alternate exit/entrance leads from the service floor to the Terrazzo, to the west of the main entrance.

To accommodate more than 4,000 Cadets, in 1966, Mitchell Hall was expanded on the east and west sides based on designs by Leo A. Daly, Inc. and Henningson, Durham and Richardson. The result interrupted the open interior space with supporting pillars and blocked the open view toward the mountains. The changes, however, were completed within the period of significance and do not change the overall integrity of the resource.

4. Sijan Hall, or Cadet Quarters (1968), Base #2348

In 1965, Congress authorized an expansion of the Cadet Wing from 2,529 to 4,417 students, requiring additional quarters. The Army Corps of Engineers (COE), who was in charge of the expansion, awarded the architect/engineer contract to the team of Leo Daly and Henningson, Durham and Richardson, firms known to the Omaha COE office based on previous contracts at Offutt Air Force Base, Nebraska.

Working from a design directive, Sijan Hall used forms and materials virtually identical to Vandenberg Hall. Completed in two phases, the USAFA named the new dormitory for Captain Lance P. Sijan, the first and only Academy graduate to receive the Medal of Honor. Cadets first occupied the new quarters in January 1968.

Sijan Hall is a six-story building with a rectangular plan, approximately 497 by 273 feet, and flat roof located on the southwest corner of the cadet area. Sijan Hall is designed in the modern vocabulary, constructed primarily of glass and porcelain enamel spandrel panels set flush within aluminum-clad structural frame, exposed aggregate concrete clad columns, and bright yellow glass mosaic tiles on stair/elevator cores. The yellow tiles on this later building are not Venetian glass, but do follow the use of yellow to indicate a housing function. Levels one, two and three are in the shape of four rectangles surrounding four interior courtyards. The fourth level, on the Terrazzo level, is primarily open, with the upper floors supported on pilotis; stairwell cores lead to the other levels. As seen from the Terrazzo level, the fifth and sixth levels appear to be two separate buildings, since only three of the four rectangles of the lower levels continue on the upper floors. This mimics the same technique used in Vandenberg and Fairchild, to break up the immense size of the buildings.

The interior layout has remained the same since construction. Cadet rooms are on half of level two, and all of levels three, five and six. Interior hallways around each of the rectangles provide access to the dorm rooms, which thus have exterior windows, facing either the interior courtyards or outward from the building. A Charge of Quarters (CQ) desk is located at the end of each hallway; the current desks are recent and are not from the period of significance. The original vinyl flooring, and the carpet that replaced

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it, wore where the freshman cadets pivoted on one foot to turn corners in the hallways. The Academy recently installed 12" resilient white terrazzo patterned flooring. The white flooring is periodically interrupted by a black tile in a hollow square pattern, filled with tile in a class color of red, blue or yellow (gold). Walls are painted white, with the exception of special images that Cadets have painted signifying squadrons or other Academy-related themes. These paintings are newer than the period of significance. Access to the cadet rooms is via the original wood doors. The wooden closet doors in the rooms are also original. Walls are painted white in the rooms. In the past, the original metal furniture had been replaced with wooden furniture, and that is now being replaced with metal furniture more reminiscent of the original design.

5. Arnold Hall, or Cadet Social Hall (1959), Base #2302

Arnold Hall creates the north boundary of the Court of Honor. Named in honor of General of the Air Force, Henry "Hap" Arnold, the building is a performing arts and Cadet social center that includes a 3,000-seat theater, ballroom, lounges, game room, bowling alley, and cafeteria. Arnold Hall encompasses 178,604 square feet. Although it is a four-story building, the first floor is much larger than the smaller three-story block in the center. Only the upper portion of the building can be seen from the Court of Honor, and there is no direct access to the building from that terrace.

The primary entrance faces west one story lower than the Court of Honor, at the parking lot level. The first floor displays 56-foot bays in an alternating pattern of granite, glass, granite, double bay glass entrance, granite and glass. The entrance bays are recessed one bay under the Court of Honor. Beyond the entrance, two bays extend upward an additional three stories; that west façade is comprised of a glass wall set in aluminum framing. This section of the building, containing the auditorium, is clad in white marble set in an aluminum-faced frame of columns on the twenty-eight foot grid on the north, east and south elevations. The east façade of the first floor is primarily granite-clad walls, with a centered glass and aluminum entrance. A portion of the south end of the first floor sits underneath the Court of Honor. An open-air interior courtyard sits between the south end and the auditorium.

Most aspects of the interior retain an excellent state of integrity. On entering Arnold Hall the visitor steps into a long lobby/corridor, running north-south, with a relatively low acoustic floating tile ceiling. The polished brown terrazzo flooring with aluminum dividing strips, and white marble bands form a grid pattern that echoes the grid pattern outside. Original aluminum and glass display cases are built into the east wall of the lobby. Also on the east, steps lead to the foyer of the auditorium. This foyer features two geometrical staircases with no central newels that strikingly break the rigid angles of the basic planning grid. The white marble treads cantilever over a black recess that gives a floating appearance. The stairs lead to a mezzanine. The high ceiling of the foyer/mezzanine area is sloped and covered with acoustical tile. The upper half of the two-story west wall is glass. The floor of the foyer is white terrazzo, with the marble banding continued from the corridor. The mezzanine accesses the projector room and the auditorium's balcony stairs. The auditorium, seating approximately 3,000, features the original seats and interior finishes. The walls are covered with a distinctive brass-colored acoustic metal mesh. The multi-angled ceiling is covered with acoustic tile.

On the north side of the building, the ballroom exhibits a superb blending of the exterior and interior. The fully glazed north wall looks out on an outdoor terrace, transitioning the interior floor pattern (based on the campus grid) to the marble bands in the exterior exposed aggregate paving. The interior flooring consists of light-colored wood parquet separated by darker bands of parquet wood forming the campus grid lines. The glass wall provides a sweeping view of Cathedral Rock, a dramatic rock outcropping to the northwest.

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The room also features two self-supporting spiral staircases; these are pivotal architectural features in this space. The ceiling is covered with acoustic tiles.

In 1966, an expansion of the Hall led to the enclosure of the courtyard between the auditorium and the ballroom and construction of a cafeteria-lounge. The changes, however, were completed within the period of significance and do not change the overall integrity of the resource.

6. Harmon Hall, or Administration Building (1959), Base #2304

Harmon Hall, named for Lieutenant General Hubert Harmon, serves as the primary administration offices for the United States Air Force Academy. Located on the Court of Honor, it is the primary entryway for the public into the complex. It has a general appearance of being long and slender, raised in the air, with a predominate glass and aluminum appearance. The building is raised on aluminum-clad pilotis, permitting a visual transition from the parking lot (which is west of the building) into the Court of Honor.

Harmon Hall is a narrow, rectangular building, measuring 58 by 534 feet; the length is divided into nineteen 28-foot bays, aligned along the grid. Like the other Cadet Area buildings, it uses standard elements of modern architecture with its aluminum-clad structural frame (which defines the bays) with infill panels of glass and dark glass spandrel panels. The first floor consists of two stair/elevator cores, which use red Venetian glass tiles (to indicate an administrative function) on the east and west façades. The north façade of the south core has a glass wall, and is the formal entrance to the building. A visitor approaching from the parking lot is directed toward this rather unobtrusive entrance by the use of a simple aluminum clad portico extending over the roadway. The portico is positioned off center, in the seventh bay from the south. The north and south façades of the north core, as well as the south façade of the south core have been infilled with grey panels. The mass of the building, in the second and third floors sits upon slender pilotis. Within each bay on the east and west façades a typical window unit consists of twelve panes of coated glass in a 1-3-1 arrangement; the lower being dark spandrel panel. The north and south façades are clad with white marble. The flat, clean roofline consists of five-ply composition and gravel.

The east elevation has a cantilevered balcony at the third floor, providing a place where the Superintendent stepped outside to review the Cadet Wing as it gathered on the Court of Honor. However, after the expansion of the Cadet Wing in 1965, daily formations moved to the lower Terrazzo level.

The interior of the building is accessed from the Court of Honor through two secured stair/elevator lobbies. The interior of the south lobby is enclosed on the east and west walls by red Venetian glass. The north wall is glazed, and the south wall features display cases. The flooring is terrazzo, predominately brown colored, with white and black secondary colors; thin aluminum strips divide the terrazzo slabs. The elevator core is paneled with light grey paneling set in steel, mimicking the exterior of the feature.

The second floor and third floors both feature double-loaded central corridors running most of the length of the building. Doors are wood, with wood transoms; some transoms are solid, and others are slatted to provide ventilation. Doorways are outlined with black steel frames. The plaster walls are painted white. The south end of the second floor includes a courtroom with wood wainscot, and a law library. The north end of that floor has been configured with open office space furniture. Offices currently located on this floor include the judge advocate, legal offices, comptroller, and admissions. The focus of the third floor is the block of office suites located south of center, housing the superintendent's office. The block interrupts the central corridor, causing the hall to jog to the west around the offices. The central corridor continues south from the superintendent's offices. The north and south walls of the office block facing the corridor

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are covered with red Venetian glass, an especially dramatic sight in this closed space. The main entrance to the block is from the west side, and is comprised of a glass wall with double glass doors. This block of office suites continues the asymmetrical design of the exterior, being aligned with the off-center main entrance and the exterior balcony.

7. Chapel (1963), Base #2306

The Chapel, completed in 1963, is the focal point of the Cadet Area with its triangular row of seventeen spires dramatically set against the backdrop of the peaks of the Rampart Range. Certainly the most visible Academy landmark from I-25 and the most photographed building on the campus, its spectacular architecture has made it an icon representing the entire Academy. The chapel is located in a north-south orientation on the southeast corner of the level of the Court of Honor. However, when one is near the building, it can be seen that the building is visually separated from the remainder of the Court of Honor by different surface treatments, a wide ramp, and dissimilar landscaping to the west.

The structure is a tubular steel frame of 100 identical tetrahedrons, each 75 feet long, weighing five tons, and enclosed with clear aluminum panels. The primary members are six-inch tubes with four-inch secondary cross-braces. Fabricated in Missouri, they were shipped by rail to the site. The tetrahedrons are spaced a foot apart, creating gaps in the framework that are filled with one-inch thick colored glass. Although the tetrahedrons are generally filled by triangular clear aluminum panels, the tetrahedrons between the spires at the chapel level are filled with a mosaic of colored glass in aluminum frame. It rises 150 feet from hinge to pinnacle, has an overall length of 280 feet and width of eighty-four feet from hinge to hinge. The front façade, on the south, has wide granite stairway with steel railings capped by aluminum handrails leading up one story to a landing. At the landing is a band of gold anodized aluminum doors, and gold anodized aluminum sheets apparently covering original windows. Above the doors is a glass wall. The triangular north façade consists of a glass curtain wall in aluminum frame.

The interior, remains in an excellent state of integrity. Its plan responded to a design directive to create three distinct worship areas under a single roof. Inspired by chapels at Saint-Chapelle in France and the Church of St. Francis of Assisi in Italy, SOM architect Walter Netsch Jr. stacked the spaces on two levels.

The Protestant Chapel, designed to seat 900 cadets, is located on the main floor, reached by ascending exterior stairs. Entering through central doors on the south elevation, the visitor passes through a wood-paneled narthex into the nave, measuring 64 by 168 feet, reaching up ninety-four feet to the highest peak. The center aisle terminates at the altar. The diffused light of the space creates the dominant impression, alternating between the soft sheen of aluminum and the color of the stained glass windows. The colored glass strips are composed of twenty-four hues and range in general tonality from violet at the narthex through red and blue to gold at the altar. The gable ends are glazed with amber glass. Above the narthex, in the rear, is a choir balcony and organ, built by M. P. Moller Company of Hagerstown, Maryland. Harold E. Wagoner designed the liturgical furnishings for the Protestant and Catholic chapels.

Below the Protestant Chapel, the Catholic Chapel, with a nave fifty-six feet wide, 113 feet long and nineteen feet high, is essentially horizontal in character, seating 500. Its prestressed concrete ceiling is coffered in a diamond pattern to recall the tetrahedron shape. Looking through the tinted glass side walls, one sees the concrete abutments rising from sloping walls of triangular-patterned concrete inset with sandblasted granite. Historically, cobble filled the triangular area now covered by granite. Luman Martin Winter designed the nickel silver crucifix and reredos of Venetian glass mosaic.

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Also on the lower level, the Jewish Chapel, seating 100, is circular in shape, with a diameter of forty-two feet and a height of nineteen feet. It is enclosed by a vertical grill with inserts of clear glass opening to the foyer. The circular form and transparent walls were used to suggest a tent-like structure. The floor is paved with Jerusalem brownstone, donated by Israeli Defense Forces.

8. Planetarium (1959), Base #2120.

The Planetarium is located on the western edge of the Cadet Area, northwest from Harmon Hall and adjacent to a parking lot. Completed in 1959, its primary purpose is a classroom for navigational instruction, employing a Spitz celestial coordinate projector. Classes in military studies, world history, aviation training, survival, evasion, rescue and escape training, astronomy, aeronautics, and astronautics use the Planetarium as well.

The Planetarium is a one-story circular building, 96 feet in circumference, with a one-quarter inch thick steel dome. It is buried into the hillside under bermed landscaping and a granite retaining wall. The entrance is approached up granite stairs with black steel railing capped with an aluminum handrail to an aluminum frame entrance with double glass doors. The interior dome, 50' in diameter, is covered with finely perforated aluminum panels. A recent remodel of the interior replaced the seats, carpets and wall coverings.

9. Physical Education Building (1962), Base #2170

The building is located on the lowest level of the Cadet Area, north of Vandenberg Hall. It is rectangular with a flat clean roofline, with a structural frame covered by asphalt roofing. Welded trusses spaced 28 feet and spanning 112 feet support the roof. Steel purlins spaced seven feet center to center span between trusses and carry a precast, lightweight concrete deck. The initial drawings showed the gymnasium as a glass wall building, but the design was later modified. The exterior is faced with white marble and aluminum panels with a central curtain wall section of anodized aluminum framed sliding windows over porcelain panels. There are two primary entrances on the south elevation with glass doors. This primary entrance is at ground level, with two levels below that. However, since the site slopes down to the north, the lower levels are above grade on the north end of the building.

The finishes of the interior of the building demonstrate the more utilitarian nature of the facility, distinct from most other Cadet Area buildings. In hallways--and anywhere where specialized finishes are not required--the floors are polished concrete, and walls are made of approximately 12 x 4" glazed white tiles that display a subtle flecked pattern. Floating ceilings are covered with acoustic tile.

At the ground level, the building is 534 x 226 ft. That level houses three large basketball/volleyball areas with four courts in each, a boxing area, gymnastic area, and bleachers for the swimming pool. Below ground level, the building measures 534 x 282 feet. It provides space for both a larger and a smaller swimming pool, wrestling room, handball and squash courts, pistol and rifle ranges, lockers, showers and storage.

During the expansion program of the mid-sixties (within the period of significance), an addition to the east end of the Physical Education Building increased locker rooms, shower facilities, handball courts, and teaching stations. The addition followed the design vocabulary of the original building; none of the changes detract from the architectural integrity of the building.

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10. Aerospace Laboratory (1959), Base #2410

The Aerospace Laboratory is located below the Terrazzo level, fifty feet south of Fairchild Hall. It is a two-story structure with a rectangular floor plan of 225 by 43 feet. The exterior uses precast concrete panels with an aluminum-clad structural frame. The flat roof is built-up over rigid insulation. Columns are located on a twenty-eight foot grid. The roofline and wall panels are flush enclosing a rectangular box except for some columns, or pilotis, on the first floor of the south side. The primary entrance is on the north elevation with two sets of double glass doors.

The Air Force Academy established the country's first Department of Astronautical Engineering. This building functions as the center for aeronautic testing, containing wind tunnels and jet propulsion laboratories. Originally conceived as part of the larger Academic Building, acoustic problems forced SOM to place these facilities in this separate building. A *National Geographic* writer wrote:

Fantastic machinery in the "heavy laboratory" building outside the quadrangle positively terrified me. There was, for example, a trisonic wind tunnel in which air could scream through a pipe the size of my waist at 2,100 miles an hour. Steel-and-concrete test chambers for jet engines had viewing ports of bulletproof glass. Exhaust gases lost their noise in muffling systems that culminated in great story-high steel stacks outside the building.⁵

Currently the facility houses five large wind tunnels, three operational jet engines, a rocket test cell, and a wide variety of smaller testing laboratories, classrooms and offices. The equipment for most applications is updated as technology changes. Generally, the equipment is within large bays with concrete floors and either concrete or concrete block walls. Ceilings tend to be either open concrete floor trusses (from the floor above) with exposed pipes and dropped fluorescent lights, or dropped acoustical tile with inset fluorescent light fixtures. An interesting design feature placed a portion of the south wall on tracks; the wall can thus be moved away from the building, allowing large jet engines to be moved in and out of the jet engine test cells. The test cells are designed to be explosion-proof with walls approximately a foot thick and heavily reinforced. Large exhaust stacks for the test cells can be seen to the east end of the main building.

In the 1980s, SOM designed a major addition, which extends to the south (rear) of the building, and also extends one level lower northward under the street. Although it added considerable floor space, the extension was designed to be sensitive to the original building, so the addition is mostly virtually indistinguishable today and thus the building retains architectural integrity.

Noncontributing Resources**1. Consolidated Education Training Facility (1997), Base #2355**

A new academic building—the Consolidated Educational Training Facility or CETF—was constructed at the eastern end of the Cadet Area in 1997. Designed by Henningson, Durham and Richardson, the CETF building was located next to the existing Fairchild Hall. The roof of the CETF building was an extension of the Terrazzo level, preserving the visual connection from the Terrazzo through Fairchild Hall to the

⁵ Nathaniel T. Kenney, "Where Falcons Wear Air Force Blue," *National Geographic* (June 1959), 849.

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natural landscape. The two-story building employs the modern architectural elements of the older structures, with its rectangular form, flat roof, and use of a curtain wall. The CETF is 336,393 square feet.

2. Tennis Courts (1959).

The Tennis Courts to the south of the Physical Education building are considered a noncontributing feature due to loss of integrity. Courts have been reconfigured for other recreational uses and resurfaced.

Summary

Individually, the Cadet Area buildings stand as remarkable examples of the use of the architectural vocabulary of the modern movement responding to the special needs of a client—in this case, the United States Air Force Academy—and the demands of the site. To truly understand the architecture of the Cadet Area, however, it must be seen as a carefully interrelated whole, set in one of the most breathtaking sites of any major building group in the country. The overall effect creates a dramatic sense of openness. As a reviewer in *Architectural Forum* stated, “The Air Force cadets will live with the sky.” Historian Kristen Schaffer described the sense:

*looking eastward down its entire length, one finds that its long, low proportions and great horizontal dimension create a sense of rapid movement. With increasing momentum, the eye rushes along the façade of the building, moving faster and faster eastward until the pavement falls away, while the eye continues out over the parade ground below and, ultimately, off the end of the mesa and eastward into the distance. This is not a representation of the forms associated with flight, but an evocation of its sensation.*⁶

The Cadet Area is a well-preserved example of a complex that employed modern movement architectural vocabulary in its general plan, its buildings, and its landscape features.

⁶ Kristen Schaffer, “Creating a National Monument: Planning and Designing the Academy,” ed. Robert Brueggemann, *Modernism at Mid-Century: The Architecture of the United States Air Force Academy* (Chicago: University of Chicago Press, 1994), 16, 19.

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United States Air Force Academy, Cadet Area, Historic District**Contributing resources****Buildings**

<i>Base#</i>	<i>Site No.#</i>	<i>Resource Name</i>	<i>Construction Date</i>
2120	5EP 3878	Planetarium	1959
2170	5EP 3880	Physical Education Bldg	1961
2302	5EP 3888	Arnold Hall	1959
2304	5EP 3889	Harmon Hall	1959
2306	5EP 3890	Cadet Chapel	1962
2348	5EP 3896	Sijan Hall	1968
2350	5EP 3897	Mitchell Hall	1958
2354	5EP 3899	Fairchild Hall	1959
2360	5EP 3900	Vandenberg Hall	1958
2410	5EP 3901	Aerospace Laboratory	1959

Site

Cadet Area	
Terrazzo	1958
Court of Honor	1958
Parade Grounds	1958
Circulation System	1958

Structure

Retaining walls	1958
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Noncontributing resources**Buildings**

2355	5EP 3911	Consol. Ed. Tr. Facility	1997
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Structure

Tennis courts	1959
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8. STATEMENT OF SIGNIFICANCE

Certifying official has considered the significance of this property in relation to other properties:

Nationally: X Statewide: Locally:

Applicable National

Register Criteria: A X B C X D

Criteria Considerations A X B C D E F G X

NHL Criteria: 1 and 4, Exceptions 1 and 8

NHL Theme(s): III: Expressing Cultural Values
 1. Educational and intellectual currents
 5. Architecture, landscape architecture, and urban design
 IV. Shaping the Political Landscape
 3. Military institutions and activities

Areas of Significance: Architecture
 Military
 Education

Period(s) of Significance: 1958-1968

Significant Dates: N/A

Significant Person(s): N/A

Cultural Affiliation: N/A

Architect/Builder: Skidmore, Owings and Merrill, Architects
 Leo A. Daly, Architect
 Henningson, Durham, and Richardson, Architects

Historic Contexts: IX. Political and Military Affairs after 1945
 XVI. Architecture
 Z. Modern

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State Significance of Property, and Justify Criteria, Criteria Considerations, and Areas and Periods of Significance Noted Above.

Born in the first decade of the Cold War, the United States Air Force Academy provided the new military service with a trained and educated officer corps at a time when national policy placed unprecedented emphasis on air power. Its campus, set in magnificent surroundings at the foot of the Rampart Range in Colorado, ranks among the finest examples of modern movement architecture commissioned by federal agencies during the post-World War II era.

The United States reorganized its military under the National Security Act of 1947, establishing the Air Force as an independent service equal to the Army and Navy. In 1954, the federal government authorized the creation of the United States Air Force Academy (USAFA) to serve as the primary undergraduate educational institution of that new service, and at present continues to serve as an important military educational institution. It joined the other two major U.S. academies—the United States Military Academy at West Point, New York, and the United States Naval Academy at Annapolis, Maryland—as the nation’s undergraduate military schools.⁷

Following World War II, the United States entered into a forty-five year confrontation with the Soviet Union known as the Cold War. Although it was the newest service, the Air Force emerged as the nation’s primary military arm, resulting in a major expansion of its ranks. The new service required an influx of officers, leading to the establishment of the United States Air Force Academy. In the face of technological advances, including a burgeoning nuclear arsenal, the new service academy educated those officers for the increasingly complex demands of military leadership. In addition, it helped to define the Air Force's identity as distinct from the Army and Navy. Within this context, the Air Force Academy, Cadet Area is nationally significant under NHL Criterion 1.⁸

Its campus, designed by Skidmore, Owings and Merrill (SOM), broke from the traditions of West Point and Annapolis with its architectural vocabulary to become “the first U.S. national shrine to be designed in the modern style,” according to *Architectural Forum* magazine. Its buildings stirred a national debate in Congress, professional journals, and the popular media during the early years of the Cold War. In a survey of federally-built architecture, Lois Craig declared, “Perhaps no architectural debate over government buildings in the 1950s equaled the discussion about the design of the new U.S. Air Force Academy.” The responses encapsulate many of the significant issues surrounding architecture in the postwar era. Additionally, the Cadet Chapel is significant as an exceptional example of postwar modern movement architecture, designed by Skidmore, Owings and Merrill. As such, the Air Force Academy, Cadet Area is significant under NHL Criterion 4.⁹

The United States Air Force Academy, Cadet Area Historic District includes the properties associated with the Academy during a period of significance that extends from completion of the first buildings in 1958 through 1968, with the completion of the expansion of the Cadet Wing to its present size. Although less than fifty years old, the district is eligible under Exception 8 due to its exceptional significance.

⁷ The federal government operates two other service academies, the U.S. Coast Guard Academy in New London, Connecticut and the U.S. Merchant Marine Academy in Kings Point, New York.

⁸ The new international conflict was named the “Cold War” by American statesman Bernard Baruch in 1946, a term popularized by Walter Lippmann's 1947 book entitled *The Cold War: A Study in U.S. Foreign Policy* (New York: Harper, 1947).

⁹ Lois Craig, et al., *The Federal Presence: Architecture, Politics, and Symbols in United States Government Building* (Cambridge, MIT Press, 1978), 477; *Architectural Forum* (June 1955): 102.

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The district includes the Cadet Chapel, which is eligible under Exception 1.¹⁰ Although the Cadet Chapel is used for religious purposes, it qualifies under Exception 1 in that it derives its primary national significance from its historical importance and its architectural distinction.

The Chapel is significant for its role in the education of the United States Air Force Academy cadet. In the 1950s, while the United States engaged in the Cold War, American civil religion stood in contrast with “godless Communism.” Historian Sydney Ahlstrom remarked of the decade, “There seemed to be a consensus that personal religious faith was an essential element in proper patriotic commitment.” President Dwight Eisenhower summarized the non-sectarian attitude, stating, “Our government makes no sense unless it is founded on a deeply felt religious faith—and I don’t care what it is.”

The Academy carefully embraced three major beliefs with distinct worship spaces in the chapel for Catholics, Protestants, and Jews, expanding in recent years to include Muslim, Buddhist, and other faiths.¹¹

Criterion 1: Significance as a U.S. Military Academy

Establishment of the United States Air Force Academy

The key precondition for the establishment of the United States Air Force Academy came on 26 July 1947, when President Harry S. Truman signed the National Security Act, authorizing a new National Military Establishment, later redesignated as the Department of Defense. Among other provisions, it created a separate Air Force equal with the Army and the Navy. A central piece of Cold War legislation, the same law created the Central Intelligence Agency and the National Security Council.¹²

From 1907, when the War Department first established military aviation in the Army Signal Corps, until 1947, the air arm held a subordinate position in the armed forces. Through the 1930s, top military brass at the War and Navy Departments opposed any kind of independence for Army aviation, seeing its role merely as support for ground troops. Younger airmen, like Billy Mitchell, argued for an independent Air Force with its own strategic mission. World War II gave Army aviation the opportunity and resources needed to demonstrate real air power and win its independence in 1947.¹³

Throughout its history, the air arm constantly pressed for its own educational institution equivalent to the Army's West Point and the Navy's Annapolis. A member of a 1918 Committee on Training argued:

As the Military and Naval Academies are the backbone of the Army and Navy, so must the Aeronautical Academy be the backbone of the Air Service. No service can flourish without some such institution to

¹⁰ Kristen Schaffer, “Creating a National Monument: Planning and Designing the Academy,” in *Modernism at Mid-Century: The Architecture of the United States Air Force Academy*, ed. Robert Bruegmann (Chicago: University of Chicago Press, 1994), 47; Walter Netsch Jr., project Director of Design for SOM, referred to the Cadet Area as “the Academy proper,” a term also used by “United States Air Force Academy,” *Architectural Record* 117 (July 1955). “Oral History of Walter Netsch,” interview by Betty J. Blum, Chicago Architects Oral History Project, The Art Institute of Chicago, 1997, 134.

¹¹ Sydney Ahlstrom, *A Religious History of the American People* (New Haven: Yale University Press, 1972), 954-55.

¹² James F.C. Hyde, interview. Hyde, a Bureau of the Budget staff member who worked closely with the USAFA legislation, recalled, “The National Security amendments, which established a separate Air Force, is really the beginning of a time when you can talk reasonably about the establishment of an Academy.”

¹³ The air arm’s new status was officially recognized on 20 June 1941 with the establishment of the Army Air Forces, the equal of the Army Ground Forces in the organizational structure.

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*inculcate into its embryonic officers love of country, proper conception of duty, and highest regard for honor.*¹⁴

The Air Corps Act of 1926 authorized expansion of the air arm, then known as the Army Air Service, and renamed it as the Army Air Corps. It operated several training programs, the most important being the Air Corps Training Center at Randolph Field, Texas. Although often called the “West Point of the Air,” Randolph Field was primarily a pilot training school, as opposed to a four-year college to educate officers.¹⁵

The Army’s first school for the professional education of its air officers opened at Langley Field, Virginia, in November 1920. Called the Air Service Field Officers School, then the Air Service Tactical School, and the Air Corps Tactical School, the institution’s basic mission was to educate air officers in the tactics and techniques of air power. It also played a critical role in the development of Army air doctrine, especially following its relocation to Maxwell Field, Alabama, in 1931.

In November 1945, the Army Air Forces School transferred to Maxwell Field and was renamed Air University in March 1946. Air University remains the USAF’s center for professional military education, providing graduate education and professional continuing education for officers and enlisted personnel to prepare them for command, staff, leadership, and management responsibilities. It is more comparable to a graduate school education in contrast to the undergraduate degree offered by the USAFA.¹⁶

At its inception, then, the Air Force had no undergraduate school for the education of officers comparable to the Army and the Navy. The first Secretary of the Air Force, Stuart Symington, stated in his 1948 annual report:

The Air Force lacks an adequate source of officer personnel trained as professional Air Force officers from the beginning of their college careers. All leading professions recognize the requirement for formal college career training as the principal source of new blood in that profession. The Air Force is no exception.

Symington recommended that the Air Force draw one-third of its officer corps from the U.S. Military Academy, one-third from the U.S. Naval Academy, and one-third from Reserve Officers Training Corps (ROTC) units at civilian colleges.

In the immediate post-war years, a reorganization of the two existing major academies to serve all three services seemed a strong possibility. After experiencing interservice rivalries during World War II, many leaders sought a more unified military structure, beginning at the Academy level. General Douglas MacArthur, for example, recommended the adoption of a single uniform for all services. When questioned specifically about West Point and Annapolis, he replied, “I wouldn’t have those schools.”¹⁷

¹⁴ Lt. Col. A.J. Hanlon to Lt. Col. William C. Sherman, 26 November 1918. Quoted in George V. Fagan, *The Air Force Academy: An Illustrated History* (Boulder: Johnson Books, 1988), 6; Edward A. Miller, Jr., “The Struggle for an Air Force Academy,” *Military Affairs* 27 (winter 1963-64): 163-173.

¹⁵ John F. Shiner, “The Coming of the GHQ Air Force, 1925-1935,” in *Winged Shield, Winged Sword: A History of the United States Air Force*, vol. 1, ed. by Bernard C. Nalty (Washington, D.C.: United States Air Force, 1997), 110-112.

¹⁶ For a discussion on the early flight and officer training, see Fagan, chap. 1; Also, M. Hamlin Cannon and Henry S. Fellerman, *Quest for an Air Force Academy* (Colorado Springs: United States Air Force Academy, 1974) and Lt. Col. Edgar A. Holt, Dr. M. Hamlin Cannon, and Dr. Carlos R. Allen, Jr., eds., *History of the United States Air Force Academy: 27 July 1954 to 12 June 1956* (Colorado Springs: U.S. Air Force Academy, 1 August 1957), 1, 2-3, 9-11.

¹⁷ *The New York Times*, 2 November 1945, 8.

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Air Force leadership echoed the sentiment, at least initially. General Henry H. (Hap) Arnold, Commanding General, Army Air Forces, believed that the system of education for career officers in the armed forces should start with a program of undergraduate study at a “National Combined Services Academy for the Army, Navy, and Air Force.” The combined service academy was necessary, he thought, to “bring about a common military vocabulary and grounding in all the military services...and a reduction of interservice friction.” The first Air Force Chief of Staff, General Carl A. Spaatz, supported Arnold’s view, calling for the transformation of the two existing service academies into unified “U.S. Defense Academies.”¹⁸

The Major Service Academies

Congress established the United States Military Academy in 1802 for the education of its officers. Colonel Sylvanus Thayer served as Superintendent from 1817-1833, and established the curriculum and codes of conduct that earned him the sobriquet of “father of the Military Academy.” Thayer made civil engineering the foundation of the curriculum, and for the first half-century, USMA graduates were largely responsible for the construction of the nation's railway lines, bridges, harbors and roads. The development of other technical schools in the post-Civil War period allowed the school to broaden its curriculum beyond a strict civil engineering focus. West Point claimed many of America’s great military heroes as alumni, from Robert E. Lee and Ulysses S. Grant to Dwight D. Eisenhower and Douglas MacArthur. It was designated as a National Historic Landmark in 1960.¹⁹

Secretary of the Navy George Bancroft established the Naval School—without specific federal authorization—at a ten-acre Army post named Fort Severn in Annapolis, Maryland, on 10 October 1845, with a class of fifty midshipmen and seven professors. In 1850, the Naval School became the United States Naval Academy and introduced a curriculum that required midshipmen to study at the Academy for four years and to train aboard ships each summer. In 1933, Congress authorized the Naval Academy to award Bachelor of Science degrees. As the U.S. Navy grew over the years, the Academy campus expanded from ten acres to 338. It was designated as a National Historic Landmark in 1962.²⁰

After World War II, the expectation that these two schools would meet the demand for officer education quickly fell apart. The Navy and the Army never fully embraced the Symington plan, complaining that they lost some of their best students to the Air Force. Seeing an opportunity, the Secretary of the Navy pressed for expansion of the Annapolis campus and the addition of an airfield, stating that Annapolis could only offer the Air Force seven percent of its yearly graduating class without more space. This undercut the argument that existing facilities would meet the needs of all three services. In response, Symington declared, “It will be necessary to provide some alternative—perhaps an air academy comparable to West Point and Annapolis.” By late 1948, Symington announced his support for an independent Air Force Academy.²¹

Movement in this direction was already underway. Less than six weeks after Truman signed the National Security Act, Senator Thomas Connally and Representative Paul Kilday of Texas introduced bills providing for an Air Force Academy to be built at Randolph Field, Texas, followed by similar bills from other legislators

¹⁸ Gen. Henry H. Arnold, Memorandum, Attn: Special Planning Division, subj: System of Education for Career Air Force Officers, 18 September 1944, USAF Archives; Gen. Carl Spaatz, “National Defense Academies,” *Newsweek*, 21 February 1949.

¹⁹ Theodore J. Crackel, *West Point: A Bicentennial History* (Lawrence: University of Kansas Press, 2002); Stephen E. Ambrose, *Duty, Honor, Country: A History of West Point* (Baltimore: Johns Hopkins University Press, 1966).

²⁰ Jack Sweetman, *The U.S. Naval Academy: An Illustrated History* (Annapolis: Naval Institute Press, 1995).

²¹ Edward A. Miller Jr., “The Founding of the Air Force Academy: An Administrative and Legislative History” (PhD diss., University of Denver, 1969), 165.

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designating their home state or district as the Academy's permanent site. However, Congress did not authorize the USAFA for another seven years as it resolved several contentious issues.²²

The critical turning point came in March 1949, when Defense Secretary James Forrestal formed a Service Academy Board, charged to review the methods of training officers in the armed forces, and "to recommend a general system of education for the three services." Robert E. Stearns, President of Colorado University, chaired the Board, but the selection of General Dwight D. Eisenhower as vice-chair, was the key appointment. General Eisenhower added prestige to the Board's recommendation, while linking his name to the Truman administration's defense policies. In its final report, the Stearns Board recommended the establishment of an Air Force Academy, "without delay," as a four-year program equal to that of West Point and Annapolis."²³

Site selection was a principal barrier to congressional approval. Given the iconic status of West Point and Annapolis, House and Senate leaders recognized that the new school would be a major political plum. Congressmen introduced a parade of bills between 1947 and 1954, designating their state or district as the home for the new Academy. Although the Air Force attempted to resolve the issue with a Site Selection Committee, formed in November 1949 by Secretary of the Air Force Symington, key legislators insisted that the authorizing bill designate its location. By the summer of 1950, the Korean War began, bringing the drive for an Academy to a standstill.²⁴

General Eisenhower became President in 1953 and renewed pressure for a separate air academy. At his first press conference, when asked whether he supported a new school, he noted his service on the Stearns Board, and bluntly said, "I thought it was all settled." Within weeks, he gathered key Defense Department leaders at the White House to work out the final wording of the authorizing legislation. Congress raised few objections in its hearings on the bill, although some legislators such as Senator Lyndon Johnson of Texas pressed for congressional approval of the Academy's location. As James F.C. Hyde Jr., a Bureau of the Budget staff member, said, "I think what was probably the most important factor of all was recognition that the Air Force was here to stay."²⁵

In March 1954, Congress passed a bill authorizing an Air Force Academy, signed into law by Eisenhower on 1 April. The final bill left the selection of the Academy's site to an advisory board, appointed by the Air Force Secretary. This board sorted through a list of 582 sites, selecting sixty-seven for additional study. Among the siting criteria, the board placed greatest emphasis on the site's natural beauty and its potential to provide a setting for a "future national monument." In the words of one member, retired Brigadier General Charles A. Lindbergh, "the Commission should recommend a site which was adequate for the creation of an Air Force

²² See Miller, "Founding of the Air Force Academy," for a complete discussion.

²³ Gen. Dwight D. Eisenhower to Louis Johnson, 10 August 1949, Denver, Colorado. Eisenhower gave Johnson a summary of the board's conclusion, stating, "The Board...unanimously believes that we must have three Academies, one each for Air, Ground, and Navy. The course in each should be collegiate, of four years duration." U.S., Secretary of Defense, *A Report to the Secretary of Defense by the Service Academy Board*, Washington, D.C., Jan. 1950; *Quest*, 113, 116; Holt, Cannon, and Allen, *History*, 15-17 and 451-53; C. W. Borklund, *Men of the Pentagon: From Forrestal to McNamara* (New York: Praeger, 1966), chap. 5.

²⁴ The first Site Selection Board, chaired by recently retired General Spaatz, did not reveal its final recommendation, placing it in a sealed envelope. Representative Carl Vinson (D-Ga.), chair of the House Armed Services Committee, wanted a particular site identified in subsequent Air Force Academy bills. Fagan, 19-20, 28-29; *Quest*, 90-91 and 128.

²⁵ Miller, "The Struggle for an Air Force Academy," 172; *Christian Science Monitor*, 20 March 1953; James F.C. Hyde, interview by Edgar Holt, 19 October 1956, Academy Oral History Collection, USAFA Special Collections, Denver, Colorado.

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tradition just as West Point has served in that respect for the Army and Annapolis for the Navy.” In his opinion, “the Colorado Springs site . . . filled this requirement very well.”²⁶

After visiting dozens of potential sites, this group recommended three final options, leaving the ultimate choice to Secretary of the Air Force Harold Talbott. He selected a site near Colorado Springs over the final alternates of Alton, Illinois, and Lake Geneva, Wisconsin. The USAFA opened in the summer of 1955 at a temporary location at Lowry Air Force Base in nearby Denver. Upon the completion of the Cadet Area, with the exception of the Chapel, the cadets moved into campus in September 1958, permitting the first graduating class to spend their final year at Colorado Springs.²⁷

Filling the Ranks with Air Force Officers

In its first catalogue, the school clearly stated its purpose:

*The mission of the Air Force Academy is to provide instruction, experience, and motivation to each cadet so that he will graduate with the knowledge and the qualities of leadership required of a junior officer in the United States Air Force, and with a basis for continued development throughout a lifetime of service to his country, leading to readiness for responsibility as a future air commander.*²⁸

Viewed within its stated mission, the USAFA is historically significant in that (a) it supplied the Air Force with officers—meeting the need for 1,200 new junior officers a year; (b) provided the knowledge and qualities of leadership required for its graduates to meet the challenges of the early Cold War years; and c) encouraged a “lifetime of service” through the Academy’s adoption of traditions and symbols that helped to build service cohesiveness and loyalty.

The United States Air Force Academy was significant as a major source of the officers needed to fill the service’s ranks following the expansion of the service during the 1950s. Although it was the newest service, the Air Force emerged as the primary military arm during the first decade of the Cold War. A 1947 Air Force paper, “Strategic Implications of the Atomic Bomb in Warfare,” argued that future wars using atomic bombs would be cheaper and shorter. The atomic bomb would deliver more “bang for the buck,” reducing the need for massive ground forces. Moreover, the destructive power of the bomb would deter attacks. The following year, President Truman’s Air Policy Commission, chaired by Thomas K. Finletter, formally endorsed the concept of nuclear deterrence.²⁹

Quickly, the Air Force took its place at the heart of American defense plans. The Eisenhower administration, anxious to trim military expenditures by reducing conventional forces, formulated a new policy called the “New Look” based on the concept of massive retaliation. In essence, this doctrine stated that the United States would respond to communist aggression anywhere in the free world with atomic strikes on the Soviet Union and China. In implementing the policy in his 1955 budget, Eisenhower called for a \$4 billion cut in the Army’s

²⁶ Quoted in Cannon and Fellerman, *Quest for an Air Force Academy*, 231; Quoted in Schaffer, “Creating a National Monument,” 26.

²⁷ It appears that President Eisenhower strongly supported the Colorado site. “Eisenhower Favored Colorado Springs Site,” *New York Times*, 6 September 1954, 3.

²⁸ AFR 23-23, USAFA, 2 February 1955, quoted in Holt, Cannon, and Allen, *History*, 2-3.

²⁹ Bernard Brodie, *The Atomic Bomb and American Security* (Yale University, Memorandum No. 18, 1945) in *U.S. Nuclear Strategy: A Reader*, ed. by Philip Bobbitt, Lawrence Freedman, and Gregory F. Treverton (New York: New York University Press, 1989), 66-84; George F. Lemmer, *The Air Force and the Concept of Deterrence* (Washington, D.C.: U.S. Air Force, Historical Division Liaison Office, 1963), 17; *Survival in the Air Age: A Report by the President’s Air Policy Commission* (Washington, D.C.: Government Printing Office, 13 January 1948).

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budget, a \$1.5 billion cut for the Navy, but an increase of \$800 million for the Air Force. Throughout the 1950s, the Air Force received forty percent of the country's military budget. The new defense policies required trained leadership for the Air Force as the service grew from 305,827 in 1947 to nearly 1,000,000 personnel by 1954.³⁰

Simply stated, the Air Force needed a major infusion of junior officers to meet the demands placed on it by the defense policies of the 1950s. In 1954, the Air Force required approximately twelve hundred new second lieutenants a year to fill its ranks, with a goal to supply fifty percent of all officers from the USAFA. A 1955 report compared the services:

Service	Number of Officers
Army	122,200
Navy	73,822
Air Force	143,130

By 1957, new defense policies created the demand for an additional 27,000 Air Force officers.³¹

A major argument for the Academy was that it developed career officers, while ROTC educated personnel tended to serve the minimum required years. At a 1958 Senate Appropriations Committee hearing, Air Force Secretary James Douglas noted:

We get excellent pilot officers out of ROTC training with good liberal educations, and after a year and a half, they are pretty competent young pilots, but what happens in that program is that after their three-year term, we keep, until recently, something under twenty percent. . . The Air Force retains approximately twenty-five percent of ROTC trained pilots and approximately seventy-five percent of pilots who are graduates of a service academy.³²

Unlike the Army, the Air Force had no outside network to augment the development of career officers. As General Nathan Twining, Air Force Chief of Staff, testified, "There are no civilian military institutions whose courses of study create a desire for a career in the Air Force in the same way that such military colleges as Virginia Military Institute, Norwich University, Texas A&M, the Citadel, and others."³³

³⁰ Walter LaFeber, *America, Russia, and the Cold War, 1945-1975* (New York: John Wiley and Sons, 1976), 144 and 170; Admiral Arthur W. Radford, "The New Look," in *The Impact of Air Power*, ed. by Eugene M. Emme (New York: D. Van Nostrand, 1959), 655-61; David Halberstam, *The Fifties* (New York: Villard Books, 1993), 395-397; J. Ronald Oakley, *God's Country: America in the Fifties* (New York: Dutton Books, 1986), 211-214.

³¹ Testimony of Harold E. Talbott, Secretary of the Air Force, U.S. Congress, House of Representatives, Committee on Armed Services, *Hearings on H.R. 5337 to Provide for the Establishment of a United States Air Force Academy*, 83rd Cong., 2nd sess. (Washington, D.C.: Government Printing Office, 1954), 14-15; *Army, Navy, Air Force Journal* (19 February 1955): 3779.

³² Testimony of James Douglas, Secretary of the Air Force, U.S., Congress, Senate, *Hearings before the Committee on Appropriations on H.R. 9131*, 85th Cong., 1st sess. (Washington, D.C.: Government Printing Office, 1958), 371-72.

³³ Testimony of General Nathan Twining, *Hearings before the Committee on Armed Services on H.R. 5337*, Senate, 83rd Cong., February 18 and 19, 1954 (Washington, D.C.: Government Printing Office, 1954), 34.

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The service academies provided a steady stream of junior officers, but the dominance of graduates in the upper military ranks shows their importance as a source of senior career officers. A 1964 study showed that all eleven of the Army's four-star generals were graduates of the U.S. Military Academy, as were ninety-five percent of the lieutenant generals (three-star), seventy-eight percent of all major generals (two-star), and sixty-eight percent of all brigadier generals (one-star). In the Navy, every fleet admiral and vice admiral came from the academy. Only among rear admirals were there non-Academy graduates, and then only thirteen percent. In 1964, two-thirds of Air Force's three and four-star generals were West Point or Annapolis graduates.³⁴

Improving the Education of Air Force Officers

In terms of sheer numbers, the USAFA played a significant role once it began supplying officers in 1959. The Air Force required not only more officers, but better-educated leaders to keep pace with the changing nature of the military in the early Cold War.

Fifty years separated the first flight of the Wright brothers at Kitty Hawk and the founding of the United States Air Force Academy. In that brief span, technology advanced from a simple plane that traveled a few hundred feet to jet aircraft and missiles whose trajectories spanned the globe. These changes paralleled an exponential growth of the destructive power of weapons systems delivered through the air, culminating in the atomic bombs that sealed the end of World War II. At its inception, however, the Air Force lagged behind the other services in the number of college-educated officers. A 1951 survey indicated that only forty-seven percent of the regular Air Force officers had college degrees, compared with seventy-one percent of the Army and eighty-seven percent of the Navy regular officers. The proportion of college graduates among Air Force officers was actually dropping in the years after World War II.³⁵

The complexity of the Cold War demanded a curriculum that included politics, economics, and science, rather than the restrictive "vocational" flight training of the prewar years. As General Arnold said in 1944, "For the last twenty years, we have built and run the air force on pilots. But we can't do that any more." One study, completed in 1957, described the change:

*National objectives appeared less simple and the methods of obtaining them more complex. They were pursued by diplomatic action, by trade and aid policies, by propaganda, by strategic maneuvers, and by sustained technological and industrial development. Military officers were thus forced to pay closer attention to the political, economic, and scientific aspects of national security matters as never before.*³⁶

In addition, handed the burden of nuclear power, the Air Force believed that the Academy educated officers who held responsibilities far beyond those of the Army and Navy. Lieutenant General Hubert Harmon, the first Superintendent of the Academy, noted, "Responsibilities borne by individual human beings have been multiplied enormously by the power and complexity of present day weapons. Today a single officer in the

³⁴ Morris Janowitz, *Sociology and the Military Establishment* (New York: Russell Sage Foundation, 1964), 98.

³⁵ "AF Renews Plea for Own Service Academy," *Army, Navy, Air Force Journal*, 3 November 1951.

³⁶ Quoted in Herman S. Wolk, "The Quest for Independence," in *Winged Shield, Winged Sword*, 372; John W. Masland and Laurence I. Radway, *Soldiers and Scholars: Military Education and National Policy* (Princeton: Princeton University Press, 1957), 19-20.

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United States Air Force may be called to carry out a mission, which, during World War II, would have required crews of a thousand planes.”³⁷

That theme recurred throughout congressional hearings. For example, Congressman Mendel Rivers of South Carolina, stated:

*When an Air Force navigator leads a bomber formation into combat over an enemy target, who is there to gainsay the fact that he is not assuming and discharging a tremendous responsibility? Who is there who will deny the fact that the greatest leadership that can be demonstrated is exemplified by the men of the United States Air Force who stand on guard night and day to defend the 150,000,000 Americans from an attack by enemy planes and the catastrophe that would follow in the wake of such atomic attack?*³⁸

To match its unprecedented mission, the USAFA broke from West Point and Annapolis in the basic cadet curriculum, responding to the diversity of education required for the postwar era. The concern, Colonel (later Brigadier General) Robert F. McDermott, Dean of Faculty, expressed was that “a West Point rigor mortis might set in.” One member of the academic planning committee drew a similar comparison, stating, “It was a feeling in the service...that a new look was needed.”³⁹

Under the West Point system, every cadet took exactly the same courses, although, in the cases of some men who had already attended college for a semester or two, it meant taking similar courses twice. In 1957, the USAFA launched an enrichment program, implemented largely under the direction of Col. McDermott. Under this plan, a cadet could validate courses by taking exams, or transfer credits from civilian colleges and universities, allowing him to take elective courses beyond the prescribed curriculum. Among the service academies, the USAFA was first to offer fine arts and music appreciation courses. The cadets could pursue academic majors and begin master’s degree work while at Colorado Springs. The Academy established the nation’s first Department of Astronautics in 1957, with promotional brochures referring to the school as the “Gateway to Aerospace.”⁴⁰

Unlike the other two academies, the Air Force offered air-related instruction, although its extent was limited for educational and budgetary reasons. The first curriculum studies recommended that the school offer an academic curriculum alone and leave air training to post-graduate technical schools. However, Air Force Secretary Stuart Symington reversed this decision with an eye to garnering congressional support, arguing that the Air Force could not justify another academy unless it demonstrated a unique mission for the school. Lt.

³⁷ Speech by Lt. Gen. Hubert Harmon, 17 November 1955, Radio and Television News Directors’ Association, Denver, Clark Special Collections Branch, USAFA Academic “Cadet Library,” Denver, Colorado.

³⁸ Statement by Mendel Rivers, U.S. Congress, House of Representatives, *Congressional Record, Proceedings and Debates of the 82nd Cong., 2nd sess.*, 5864-5866.

³⁹ Col. Robert F. McDermott, Dean of Faculty, Memorandum, subject: “Enrichment of the Curriculum,” typewritten (USAFA, 5 Dec. 1956); Lt. Gen. Idwal H. Edwards, interview, 26 October 1956, 4, Clark Special Collections Branch, USAFA Academic “Cadet Library,” Denver, Colorado.

⁴⁰ William Truman Woodyard, “A Historical Study of the Development of the Academic Curriculum of the United States Air Force Academy” (PhD diss., University of Denver, 1965), 102; J. Arthur Heise, *The Brass Factories: A Frank Appraisal of West Point, Annapolis, and the Air Force Academy* (Washington, D.C.: Public Affairs Press, 1969), 41-42; Robert F. McDermott, Brig. Gen. USAF, “The USAF Academy Program,” *Air University Review* 20 (Nov.-Dec. 1968): 12; David Boroff, “Inside the Air Force Academy,” *Harper’s Magazine*, 94-98.

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Gen. Harmon assured Congress that although flight training would be limited, the cadets would be “air-minded and thoroughly indoctrinated in all aspects of air operations.”⁴¹

Many administrators and officers strongly supported additional air instruction, not so much for the practical knowledge but as a means to inculcate the cadets with the spirit of the Air Force. Testifying before a congressional hearing in 1956, Air Force Secretary James Douglas (who replaced Talbott) stated:

*It is right that we are really giving the boys a general education at this Academy. We have felt all along, however, that you can't take future Air Force officers and give them little or no contact with the business of flying while they are in the four years' course.*⁴²

In the end, the school taught navigational instruction rather than actual pilot training, permitting the cadet to focus on general education courses while still providing an early air-related experience.

McDermott summarized the general feeling of the staff and faculty toward the new curriculum when he said:

*There was a general excitement and pride too in beginning this new institution. We wanted the [Air Force] cadets to be smarter, stronger, better educated, better in every way than their counterparts at USMA and USNA.*⁴³

Building Air Force Traditions

The new Academy fulfilled a third significant role through the creation of an *esprit de corps* among officers of the newest military service. In a 1954 editorial, *The New York Times* explained:

*There is no homogeneity in the officer corps today . . . but the Air Force is worse off in this respect than the Army and Navy because it is young, because it has little historical background and because it has no Academy of its own. The Army and the Navy—chiefly because of West Point and Annapolis—had kept their traditions and their discipline as a living part of their organization.*⁴⁴

To create traditions that distinguished it from West Point and Annapolis, the Air Force Academy carefully manufactured visible symbols.⁴⁵

While West Point cadets paraded in Napoleonic tunics and traditional shakos, the Air Force cadets wore uniforms designed under the guidance of Cecil B. DeMille. The Hollywood director, fresh from filming *The Ten Commandments*, worked with his costume department to create five different uniform ensembles. When his designs received enthusiastic response, DeMille declared, “These are uniforms that the cadets themselves

⁴¹ Holt, Cannon, and Allen, *History*, 469-96.

⁴² U.S. Congress, Senate, *Committee on Armed Services, Hearings on H.R. 9131*, 365-366.

⁴³ John P. Lovell, *Neither Athens nor Sparta?: The American Service Academies in Transition* (Bloomington: Indiana University Press, 1979), 76.

⁴⁴ Hanson W. Baldwin, “Air School Plan Hailed,” *The New York Times*, 9 March 1954.

⁴⁵ Lovell, *Neither Athens nor Sparta?*, 3.

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will want to wear. If the man in the uniform is happy with them, that is the main thing. If his girl admires them, that is even more important.”⁴⁶

The Air Force seized on the architectural style of the new campus as its most visible symbol in comparison with the United States Military Academy at West Point and the United States Naval Academy at Annapolis. As Secretary of the Air Force Talbott told a congressional hearing, “We want the Academy to be a living embodiment of the modernity of flying and to represent in its architectural concepts the national character of the Academy. . . We want our structures to be as efficient and as flexible in their design as the most modern projected aircraft.”⁴⁷

At West Point, the buildings surrounded parade grounds at the base of the Hudson River bluffs, creating the sense of a medieval fortress. The Academy grew in a piecemeal manner, mixing older Gothic Revival style structures with newer classical revival buildings designed by New York architects Richard Morris Hunt and McKim, Mead, and White. To create a more cohesive style, West Point sponsored an architectural competition in 1903, won by Cram, Goodhue, and Ferguson of New York. That firm developed a plan that called for a simple Gothic style using local stone, culminating in the dominant chapel, located on the hill above the parade grounds. Although the firm designed only seven buildings, most succeeding architects remained within this style, creating a dramatic, unified complex rising up above the Hudson.⁴⁸

In contrast to West Point’s Gothic style, the United States Naval Academy owes its central design elements to architect Ernest Flagg. Beginning in 1898, Flagg directed a massive building project that included a vast courtyard facing Annapolis Harbor with an imposing structure, Bancroft Hall, at its center. A second courtyard, placed at a right angle, culminated in a French Baroque domed chapel. Although there were subsequent alterations and additions, the Naval Academy still reflects Flagg’s Beaux Arts taste and classical vision.⁴⁹

The Air Force Academy, with its spectacular mountain backdrop, employed a new style of architecture that reflected a kinship to the airplane through its use of aluminum, steel, and glass. Lieutenant General Bradley Hosmer, a member of the first graduating class and later Superintendent, described the attitude among the cadets:

*An early saying . . . was that the Army and West Point represented two hundred years of tradition untrammelled by progress. I think my classmates and I had the sense that we were doing something new and different, unencumbered by tradition, unencumbered by old baggage, and that West Point and Annapolis represented the worst of all that . . . The architecture was absolutely consistent with our sense of what was core about the Air Force Academy.*⁵⁰

⁴⁶ Heise, *The Brass Factories*, 15-16; Sheri Olson, “A Comprehensive Design Vision,” in *Modernism at Mid-Century*, 139-40.

⁴⁷ Testimony of Harold E. Talbott, Secretary of the Air Force, U.S. Congress, House of Representatives, *Hearings before the Subcommittee of the Committee on Appropriations*, 84th Cong., 1st sess., 1955, 224.

⁴⁸ Theodore J. Crackel, *The Illustrated History of West Point* (1991); Rod Miller, *U.S. Military Academy: An Architectural Tour* (New York: Princeton Architectural Press, 2002).

⁴⁹ Jack Sweetman, *The U.S. Naval Academy: An Illustrated History*; Mardges Bacon, *Ernest Flagg: Beaux-Arts Architect and Urban Reformer* (Cambridge: MIT Press, 1986).

⁵⁰ Lt. General Bradley Hosmer, interview, in *Modernism at Mid-Century*, 192-93. In turn, West Pointers labeled the USAFA as “Disneyland East.”

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At the first graduation, held in June 1959, the Academy used the occasion to invent traditions, while reinforcing its links to the past. The widows of aviation heroes Billy Mitchell, Hap Arnold, Muir Fairchild, Hoyt Vandenberg, and Hubert Harmon attended to watch the dedication of campus buildings named after their husbands. Then, in “a little twist to identify the age,” as Dean McDermott said, he handed out diplomas made of aluminum rather than parchment.⁵¹

Criterion 4: Significance as Federally Commissioned Modern Architecture

The Air Force Academy Cadet Area ranks among the most significant building ensembles of modernist design commissioned by federal agencies during the post-World War II era.⁵²

Skidmore, Owings and Merrill

President Dwight D. Eisenhower signed the legislation authorizing the USAFA in early April 1954. Anticipating congressional approval, the Air Force began preparations for the selection of an architectural firm, using a fast-track schedule rather than a design competition. A special selection board, composed of military officers and staff architect-engineers, made the choice following a series of interviews. More than 300 firms applied for the commission, including such prestigious names as Philip Johnson, Albert Kahn, Mies van der Rohe, Richard Neutra, William Lescaze, and Eero Saarinen. In July, Air Force Secretary Harold Talbott awarded the contract to the firm of Skidmore, Owings and Merrill (SOM).⁵³

Louis Skidmore and his brother-in-law, Nathaniel Owings, founded a partnership in 1936, having worked together on the 1933 Chicago World’s Fair. The pair quickly built on their success, adding a New York office in 1937, and then bringing in architect-engineer John Merrill as a limited partner in 1939. SOM gained a reputation for its ability to attract talent to the “firm with the future.” In 1949, they added four new partners, including Gordon Bunshaft, an architect who became, Owings wrote, the firm’s “acknowledged designer.”⁵⁴

By 1954, SOM was one of the few American design firms that was large and diversified enough to complete a project on the scale of the Academy within a short time span. It had government building experience, having completed several large-scale contracts during World War II, including the Manhattan Project town of Oak Ridge, Tennessee, much of the Great Lakes Naval Training Station in Illinois, and the Middle River, Maryland, housing area for the Martin Company. In the postwar years, SOM won additional government jobs, such as the Monterey, California, campus of the United States Naval Graduate School and multiple Foreign Service buildings in Germany.⁵⁵

⁵¹ Interview with Briggs quoted in Lovell, *Neither Athens or Sparta?*, 76.

⁵² *Architectural Forum* (June 1955): 102; Bruegmann, *Modernism at Mid-Century*, 11; Robert Allen Nauman, “The United States Air Force Academy: A Case Study of Rhetoric and Reality in the Making of Modernism,” (PhD diss., University of New Mexico, 1999), 2.

⁵³ Holt, Cannon, and Allen, *History of the United States Air Force Academy*, 90-92; Nauman, *Case Study*, 67-74. SOM teamed with two engineering firms in their winning proposal: Moran, Proctor, Mueser and Rutledge; and Syska and Hennessy, Inc.

⁵⁴ Nathaniel Owings, *The Spaces in Between: An Architect’s Journey* (Boston: Houghton Mifflin Co., 1973), 75.

⁵⁵ Carol Herselle Krinsky, *Gordon Bunshaft of Skidmore, Owings & Merrill* (New York: The Architectural History Foundation, 1988), 18-19; “Atom City,” *Architectural Forum* 83, no. 4 (October 1945): 103-116; Ernst Danz, *Architecture of Skidmore, Owings and Merrill, 1950-62* (N.Y.: Frederick A. Praeger, 1963); also see Jane C. Loeffler, *The Architecture of Diplomacy: Building America’s Embassies* (New York: Princeton Architectural Press, 1998), 81-101.

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To the architecture selection committee, though, the clinching argument was the promised ability of SOM to complete the campus in time for the Academy's first graduating class. The firm served as the model for the corporate architectural office that included specialists from many disciplines. In an influential 1949 article, "The Architecture of Bureaucracy and the Architecture of Genius," Henry-Russell Hitchcock praised SOM as a representative of the first category. He intended the term to be complimentary, indicating a firm that brought diverse talents together and permitted them to work as a team. SOM's corporate style was suited to the era and won recognition from professional and business journals. In 1953, for example, *Architectural Review* lauded the firm as the best example of a group practice.⁵⁶

In the corporate business world, SOM gained widespread praise for its landmark Lever House in New York City (1951-52) and Manufacturers' Hanover Trust Company building (1953-54). Secretary of the Air Force Talbott told Louis Skidmore that SOM won the USAFA contract in large part based on the recommendation of Frazer Wilde, president of the Connecticut General Life Insurance Company, who was pleased with SOM's work on their corporate headquarters. Horace Flannigan, Chairman of the Board of Manufacturers' Hanover, wrote a letter to Talbott praising the effect of SOM's design of the work force, noting "improvements in employee morale and efficiency."⁵⁷

The SOM Team

Following the award of the contract, SOM established a project team, headed by Nathaniel Owings. Two men shaped the eventual look of the Academy, Gordon Bunshaft, the Partner in Charge of Design, and Walter A. Netsch, Jr., director of the design office. Bunshaft attended SOM team and client meetings during the first year of the project, assisted with site selection decisions, reviewed preliminary drawings, and then gradually withdrew once construction began. Netsch played the most important role, selecting the other team members and overseeing every aspect of the Academy's design.⁵⁸

Born in 1909 in Buffalo, New York, Gordon Bunshaft studied architecture at the Massachusetts Institute of Technology (MIT), earning his bachelor's degree in 1933 and his master's degree in 1935. In 1937, he took a job in SOM's New York office, where he worked until 1942. He rejoined the firm in 1946 after serving in the United States Army Corps of Engineers. Bunshaft's designs included the Lever House and Chase Manhattan Bank in New York City as well as Connecticut General Insurance Headquarters in Bloomfield, Connecticut. Later significant projects include the Beinecke Rare Book Library at Yale University; the Lyndon B. Johnson Library in Austin, Texas; and the Haj Terminal in Jeddah, Saudi Arabia. His honors included the Gold Medal from the American Academy and Institute of Arts and Letters (1984), the Medal of Honor from the New York

⁵⁶ Henry-Russell Hitchcock, "The Architecture of Bureaucracy and the Architecture of Genius," *Architectural Review* 4 (April 1949): 3-6; "Group Practice," *The Architectural Review* 114, no. 681 (September 1953): 145-151; "The Architects from 'Skid's Row,'" *Fortune* 57:1 (January 1958): 137-40.

⁵⁷ See *Architectural Forum* (June 1952): 101-111, for a review of the Lever House; also, *Architectural Record* (November 1954): 149-156, for a review of the Manufacturers' Hanover Trust Company Building, and, "Rural Insurance Plant," *Architectural Forum* 117 (September 1954): 212-13, for comments on the Connecticut General Life Insurance Building; "Recollections of Gordon Bunshaft," in Bruegmann, *Modernism at Mid-Century*, 186.

⁵⁸ For first-person accounts of the SOM team, see Owings, *The Spaces in Between: An Architect's Journey*, 75; "Oral History of Walter Netsch," interview by Betty J. Blum, 116-117; "Oral History Interview with Mr. Walter A. Netsch, Jr.," interview by Colonel James C. Gaston, 15-16 May 2002 (transcript, USAFA Archives), 4-6; "Oral History of Gertrude Kerbis," interview by Betty J. Blum, Chicago Architects Oral History Project, The Art Institute of Chicago, 1997, 61-65; "Oral History of Gordon Bunshaft," interview by Betty J. Blum, Chicago Architects Oral History Project, The Art Institute of Chicago, 1990; "Recollection of Gordon Bunshaft," in Bruegmann, 186-189.

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chapter of the American Institute of Architects, and the 1988 Pritzker Prize. He died in 1990 in New York City.⁵⁹

Walter Netsch Jr. was born in 1920 in Chicago and studied architecture at MIT. In 1947, he joined the San Francisco office of Skidmore, Owings and Merrill. In 1951, he transferred to the Chicago office of SOM, where he became partner in 1955. Although only thirty-four years old at the start of the Academy project, Netsch had just successfully completed the design of the U.S. Naval Postgraduate School in Monterey, California. His later career included such important commissions as the University of Illinois, Chicago; The Art Institute of Chicago's East Wing; and the Regenstein Libraries at the University of Chicago. Netsch worked at SOM until retiring in 1979.⁶⁰

Although Netsch managed all the design team, he took primary personal responsibility for the Court of Honor Buildings—the Administration Building, the Cadet Social Center, and the Chapel. Other team leaders included Stanislaw Gladych, the master plan; Ralph Youngren, the Academic Building; William Rouzie, the Cadet Quarters; Gertrude Peterhaus, the dining hall; Carl Kohler, enlisted men's housing; John Weese, Senior Officer housing; John Hoops, Airfield and Service and Supply; and Don Ryder, Officers Club and Quarters.⁶¹

Advisory Committee

Secretary Talbott appointed a distinguished architectural advisory committee to review and comment on SOM's plans. Generally, their role was to ask questions, but Eero Saarinen is credited with the siting of the Cadet Area. In addition, the Board provided the Air Force with additional professional stature in case of criticism. The committee included:

- Eero Saarinen, one of the period's most prominent architects, was among the final competitors for the design contract. Well-known for his design of the Jefferson National Expansion Memorial, better known as the Gateway Arch, Saarinen was familiar with the issues of a large campus following his work on the General Motors Technical Center in Warren, Michigan.
- Wallace K. Harrison, from the firm of Harrison and Abramovitz, served briefly on the advisory committee. Like Saarinen, he was among the final round of architects considered for the Academy's design. Harrison is best known for his work on the United Nations headquarters and Philharmonic Hall at the Lincoln Center for the Performing Arts in New York City.
- Welton Becket, the third member of the advisory committee, also entered the competition for the design contract. Like SOM, Welton Becket and Associates grew into a major corporate design firm. Known for his design of the Beverly Hilton and the Capitol Records tower, his firm, based in Los Angeles, also served as master planners for the University of California at Los Angeles (UCLA).

After Harrison resigned, Talbott appointed Pietro Belluschi, Dean of Architecture and Planning at the Massachusetts Institute of Technology (MIT), to replace him. In 1951, following a distinguished career with his own firm, Belluschi sold his office to SOM and was technically a partner over the subsequent five years.

⁵⁹ Carole Herselle Krinsky, *Gordon Bunshaft of Skidmore, Owings & Merrill*, 12; Martha Thorne, ed., *The Pritzker Architecture Prize: The First Twenty Years* (New York: Harry N. Abrams, Inc., 1999), 106-111.

⁶⁰ "Oral History of Walter Netsch," interview by Betty J. Blum, 1-2.

⁶¹ Schaffer, "Creating a National Monument," 63.

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The Master Plan

As SOM began the design process in the summer of 1954, the firm faced two crucial decisions: the general location of the buildings and their architectural style.

Even before the selection of Colorado Springs as the site for the USAFA, the Academy developed plans to cluster facilities by function. In early 1954, the Academy Board hired Ellery Huston of Gugler, Kimball and Husted of New York (in association with Harbeson, Hough, Livingston and Larson of Philadelphia) to draft an “ideal layout” for the Academy on a hypothetical site. This Academy development plan foresaw six distinct areas: the Cadet Area, the Community Center, the Service and Supply Area, the Airfield, and two housing areas.

Handed a magnificent 18,000-acre property, SOM’s master plan used the alternating ridges and valleys of the site to create clear spatial separation between functions. They also arranged the program areas according to their level of access. That is, areas with the most contact with the civilian world were located on the more level southern part of the site, whereas, the most restricted area—the Cadet Area—was located on the highest mesa in the northwest corner. Midway between them and nestled on valley floors were the two residential neighborhoods.

The SOM planning team selected Lehman Mesa as the site of the Cadet Area because it created a powerful visual effect. As Nathaniel Owings said, “How could one oppose such a magnificent site? The Acropolis-like top of the great mesa jutted out from the twelve-thousand-foot backdrop. The buildings would fit the mesa, framed by the Rampart Range of the awe-inspiring Rocky Mountains.” It also had relatively even terrain in the surrounding valleys for the athletic fields and parade ground.⁶²

Within the Cadet Area, SOM began with a series of flow charts, based on the anticipated volume of cadet pedestrian circulation. To the cadets, the proximity of buildings would be paramount, because the extreme demands on their time permitted no room for wasted movement. The Cadet Quarters served as the focus of the plan with all other Cadet facilities within a ten-minute walk.

Beginning with the Cadet Quarters, the plan for the Cadet Area fell into place. Anticipating heavy foot traffic, the Academic Building was placed next to the Quarters. At the southeast corner of the mesa, opposite the Cadet Quarters, the Dining Hall provided a long approach for the daily ceremonial formation of Cadets as they marched to mess. The location of these buildings determined the size and shape of the paving for the academic plaza, known as the Terrazzo. The flow diagrams provided access from the lower level of the Quarters to the gymnasium and athletic fields, while massive ramps permitted Cadets to march from the Terrazzo down to the Parade Grounds to the east. Separated on a higher level to the west, two buildings—the Social Center and the Administration building—frame the Court of Honor. Finally, the Chapel, located on the upper level, visually anchors the Cadet Area.⁶³

To bring the diverse elements together, the SOM team developed a spatial grid of twenty-eight feet that created dimensional continuity and compatibility of building forms and exterior spaces. Modern movement architects

⁶² Owings, *Space in Between*, 155; Schaffer, “Creating a National Monument,” 38.

⁶³ Schaffer, “Creating a National Monument,” 40-41.

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often employed a grid, working off the design principles of one of the movement's founders, Le Corbusier. Other examples include Mies van der Rohe's design of the Illinois Institute of Technology (Chicago), Eero Saarinen's plan for the General Motors Technical Center (Warren, Michigan), and several SOM projects such as the Connecticut General Insurance Headquarters. The grid governed building orientation, size, shape, placement, and columniation. Within that grid, SOM utilized a seven-foot module. Multiplied by four, it equaled the planning grid. Doubled, the module defined the width of the standard, two-cadet room. Vertically, it determined the size of windows, spandrel panels, façade details, and railings. Divided in half, it is used in items such as mullions and joints in the granite. Divided in half again to 1' 9", it defines each marble paver.

The result creates a coherent vision that makes the whole more than the sum of its parts. In a review in *Progressive Architecture*, George A. Sanderson wrote that the SOM architects "have developed one of the most remarkable and natural accommodations of an architectural complex to terrain that has ever been achieved in any major project." In 2001, the master plan and architectural design won a Heritage Award in the Excellence in Planning Awards Program, a joint effort between the Society for College and University Planning and the American Institute of Architects' (AIA) Committee on Education.⁶⁴

Architecture

SOM worked within an era when the modern movement became the dominant style within the architectural community. The modern movement emerged in many Western countries in the decade after World War I. It was based on the "rational" use of modern materials, the principles of functionalist planning, and the rejection of historical precedent and ornament. Its roots can be traced from Sir Joseph Paxton's Crystal Palace in London (1851) to William Le Baron Jenney's Home Insurance Company in Chicago (1883-85) to Louis Sullivan's Guaranty Trust in Buffalo (1896).

Following Sullivan's famous aphorism that "form follows function," there was a growing belief in the architectural community that predetermined design ideas—such as "styles" with applied ornamentation—should give way to "the production of buildings well formed and comely in the nude." The center of the revolution was the use of a structural skeleton, generally of steel, covered by a thin, non-structural skin. Rather than seeing buildings as a heavy mass of materials, advocates of modern architecture saw them as a volume of space enclosed by light, thin curtain walls and resting on slender piers.⁶⁵

Swiss architect Charles-Edouard Jeanneret, better known as Le Corbusier (1887-1965), popularized the new movement through his periodical, *L'Esprit Nouveau*, and through publications, beginning with *Vers une Architecture* in 1923. In his writing, he described the "five points of architecture," a list of qualities essential to the new architecture: columns, roof terraces, free plans, strip windows, and free façades. Other early leaders of the modern movement included Walter Gropius, Ludwig Mies van der Rohe, Marcel Breuer, and Ernst May in Germany, Gerrit Rietveld, Mart Stam, and J.J.P. Oud in Holland, and Raymond Hood, Albert Kahn, Richard J. Neutra, William Lescaze, and George Howe in the United States.

The "new tradition" reached mainstream America in the late 1920s with the publication of Henry-Russell Hitchcock's *Modern Architecture* (1929), followed by a landmark exhibition at the Museum of Modern Art,

⁶⁴ George A. Sanderson, "Air Academy: U.S. Air Force Exhibits Plans at Colorado Springs," *Progressive Architecture* 36 (June 1955): 90.

⁶⁵ Louis H. Sullivan, *The Autobiography of an Idea* (New York: Dover Publications, 1956), 257-58; also by Sullivan, "Ornamentation in Architecture," *The Engineering Magazine* (August 1892).

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New York City (1932), organized by Hitchcock and Philip Johnson. In the exhibition book, these two men popularized the term “International Style” with its three underlying characteristics:

- Perception of architecture as volume rather than mass;
- Regularity instead of symmetry;
- Avoidance of extraneous ornamentation.

Following the emigration of Gropius, Mies, and Breuer from Germany during the 1930s, the United States became a stronghold of modern architecture. In 1937, Gropius and Marcel Breuer took teaching positions at Harvard University and in the following year, Mies van der Rohe became the dean of architecture at Armour Institute in Chicago, soon renamed the Illinois Institute of Technology (IIT).⁶⁶

From this position, Mies directed the construction of the IIT campus and other “Miesian” landmark buildings such as 860-880 Lake Shore Drive on Chicago’s North Side and the Seagram Building in New York. His oft-quoted phrase, “Less is more,” found expression in buildings stripped to a spare elegant frame that relied on the relationships of structural elements and the quality of materials for their aesthetic impact. Suggesting his broad cultural influence, in June 1954, one month before SOM won the USAFA contract, Mies graced the cover of *Time* magazine.

Many architectural historians, such as Robert Stern, categorize SOM as “Mies’ leading corporate disciples,” while Vincent Scully termed the USAFA buildings as “Americanized Mies.” To apply a simple label, though, does not do justice to SOM’s contributions to the modern movement. By 1954, when the USAFA project began, the firm had won wide recognition for the Lever House, of which one writer said, “In 1952, there was nothing quite like [it]. . . . Lever House was the prototype for a new era.” Architectural historian Robert Twombly described the Manufacturer’s Hanover Trust Building (1954) as “a crisp jewel of metal, glass, and light, possibly the most visually arresting bank (at the time of its construction) since Louis Sullivan’s in the 1900s and 1910s.”⁶⁷

There was a complex interplay of architectural influences. Walter Netsch, calling himself “the only non-Miesian at SOM,” attributed a greater influence to Louis Sullivan, William LeBaron Jenney, Le Corbusier, and Gropius. Indeed, the campus’s signature building, the Chapel, scarcely fits the “Miesian” idiom. On the other hand, team members Gertrude Kerbis and John Weese trained at IIT. Kerbis participated in a graduate workshop with Mies that developed preliminary designs for a proposed Chicago Convention Center that used a revolutionary double span. Although the Center was not built, she drew on those discussions in the construction of Mitchell Hall. That work, in turn, found its way into Mies’s design for the Berlin National Gallery, including the technique of building the roof structure on the ground and raising it into place.⁶⁸

⁶⁶ See Deborah Pokinski, *The Development of the American Modern Style* (Ann Arbor: UMI Research Press, 1982).

⁶⁷ Robert A.M. Stern, *Pride of Place: Building the American Dream* (Boston: Houghton Mifflin Company, 1986), 67-74; Vincent Scully, *American Architecture and Urbanism* (NY: Frederick A. Praeger, 1969), 190; William J. R. Curtis, *Modern Architecture Since 1900* (London: Paidon Press, 1982), 566; Carter Wiseman, *Shaping a Nation: Twentieth Century American Architecture and Its Makers* (New York: W.W. Norton & Company), 320; Robert Twombly, *Power and Style: A Critique of Twentieth-Century Architecture in the United States* (New York: Hill and Wang, 1995), 75-76. SOM did not permit attribution of its designs to individual architects until Netsch’s recognition for the chapel.

⁶⁸ “Oral History of Gertrude Kerbis,” interview by Betty J. Blum, 80-81; Scully, *American Architecture and Urbanism*, 189. In an ironic twist, Netsch designed the first new building for IIT after Mies resigned his position in 1957.

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Apart from general architectural issues, the Cadet Area owes its design and engineering to the modern movement's embrace of new technology and materials. SOM partner William Hartmann expressed the attitude:

The modern architecture that [SOM] identified with eliminated decoration. Basically it was an evolution from a handicraft kind of building technology to an industrialized building technology. That was the key to it.

Determined to use the high profile of the Air Force Academy project to press for technological advances, SOM established a materials research office headed by Robertson Ward, a 1951 graduate of Harvard Graduate School of Design. The team pushed aluminum manufacturers to double the width of standard extrusions to make the column covers and horizontal frame covers. They experimented with anodizing, a then-emerging process for aluminum which overcame the metal's susceptibility to pitting and discoloration. The team convinced glass makers Libbey-Owens Ford and Pittsburgh Plate Glass to produce a gray tinted glass to absorb the heat and light of the Colorado surroundings. The extensive use of vinyl-asbestos tile at the USAFA opened the door for wider commercial acceptance. For the Cadet Area's massive retaining walls, SOM experimented with new finishing techniques for granite.⁶⁹

Daniel Kiley and Landscape Architecture

To complete the project team, SOM contracted landscape architect Daniel Kiley in late 1955 after the completion of the general site plans. He came strongly recommended by Eero Saarinen, who worked with Kiley on the Jefferson National Expansion Monument [1947 (NHL, 1987)] and the J. Irwin Miller house in Columbus, Indiana [1954 (NHL, 2000)]. In addition, he collaborated with Pietro Belluschi on several projects in the mid-50s.

For over sixty years and in more than a thousand projects, Dan Kiley transformed the landscape of private houses, public institutions and vast urban spaces into magnificent places of natural beauty. In September 1997, Kiley was awarded the National Medal of Arts, the highest honor that can be bestowed upon an artist in the United States. Kiley's work includes the Lincoln Center, NYC, NY; The J. Irwin Miller Garden, Columbus, IN; Rockefeller University in New York City, the Oakland Museum in Oakland, CA and the John F. Kennedy Library in Boston, Massachusetts.

Born in Boston in 1912, Kiley attended Harvard's Graduate School of Design in the mid-1930s. In 1939, with fellow landscape architects Garrett Eckbo and James Rose, he published a seminal manifesto on modern landscape architecture, declaring that,

A natural scene is the result of a very complicated and delicately balanced reaction of very numerous natural ecological forces. Man, himself a natural force, has power to control these environmental factors to a degree, and his reorganizations of them are directed by a conscious purpose toward a

⁶⁹ James S. Russell, "Learning from Industry: Architectural Technology at the U.S. Air Force Academy," in Bruegmann, *Modernism at Mid-Century*, 149-155; "Air Force Academy," in Reynolds Aluminum Company, *Aluminum in Modern Architecture 2* (1960): 47-51.

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conscious objective. To endeavor to make the result of such a process 'unconscious' or 'natural' is to deny man's natural place in the biological scheme.⁷⁰

This view would find a sympathetic listener in Walter Netsch, Jr., who shared his view of “man as nature.” In turn, Kiley wrote, “The steel and architecture [at the USAFA] were so strong in relationship to the site. I could really build on it.”⁷¹

In 1956, Kiley developed plans for four major spaces within the Cadet Area. First, following SOM's general plan, he created a wooded slope from the Terrazzo down to Lehman Valley to the south. He described the transition, writing:

Fully cognizant of the power created by a harmonizing of built form and land form, the architects placed the classrooms, dining and administrative offices into an L-shaped configuration that opens up to the existing landscape, an aspect of the design that I found to be crucial. This move allowed a small hillock beside the terrace to play an integral role in the spatial definition of the complex. In this way, nature's erosive forces, slowly subtracting and transposing the earth's surface over millennia would intersect with a comparatively instantaneous human transformative act of construction.⁷²

The construction of Sijan Hall in the late 1960s greatly altered this landscape feature, with only the small hillock remaining on the Terrazzo.

Second, he developed designs for “Cadet Gardens” within the courtyard spaces of Vandenberg Hall. Kiley wrote:

Within this stringent order, I felt it was necessary—and only fair to the cadets—to inject lightness and room for maneuvering outside the bounds of military discipline. With this in mind, we designed the Cadet Gardens, housed within courtyards of the Cadet Quarters, as loose arrangements of plants and small pools. A variety of materials were used for lushness of foliage, bloom and texture, not only to contrast with the dry Eastern Slope ecosystem but also to be quite different from the unadorned clarity and eminent scale of the rest of the compound.⁷³

These designs remained unimplemented due to financial constraints. In a letter to Kiley date 21 March 1958, Walter Netsch Jr. wrote, “It will be impossible to win both quadrangle and the air gardens. In addition, Kiley

⁷⁰ Rose, James C., Daniel Kiley and Garrett Eckbo, “Landscape Design in the Primeval Environment.” *Architectural Record* (February 1940): 74-79. Reprinted in Treib, Marc, ed. *Modern Landscape Architecture* (Cambridge: MIT Press, 1991); Rose, James C., Garrett Eckbo and Daniel Kiley, “Landscape Design in the Rural Environment,” *Architectural Record* (August 1939). Reprinted in Treib, Marc, ed. *Modern Landscape Architecture* (Cambridge: MIT Press, 1991); Rose, James C., Daniel Kiley and Garrett Eckbo, “Landscape Design in the Urban Environment,” *Architectural Record* (May 1939): 70-76. Reprinted in Treib, Marc, ed., *Modern Landscape Architecture* (Cambridge: MIT Press, 1991).

⁷¹ Quoted in Jory Johnson, “Man as Nature,” in Robert Bruegmann, *Modernism at Mid-Century*, 110.

⁷² Kiley and Amidon, *Dan Kiley: The Complete Works*, 28-31.

⁷³ *Ibid.*, 30-31.

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developed plantings for the Court of Honor that used a gradual merging of the formal grid into the natural landscape. These fell by the wayside as well.⁷⁴

Finally, he drew plans for a seven hundred foot landscape, called the Air Garden, on the east quarter of the Terrazzo level. Kiley noted:

Plantings in the central Air Garden are highly structured, with overt geometric rhythms and modular proportions that represent intuitive links to nearby buildings. Yet the Air Gardens subvert the overarching uniformity and introduce intricacy and playfulness into the heart of the campus.

The central axis of the pools is raised out of two dimensions by hedge segments of clipped American holly. . . Behind the hedge, four parallel lines of honey-locusts, fourteen feet on center, further increase the volumetric dimensionality of the garden, yet they do so delicately as an overlay second in visual importance to the graphic field below. It is not clear if the pools are recessed or if the walkways that partition the water plane are extruded; somehow in this spot, one loses one's certain knowledge of where solid earth is.⁷⁵

These pools were buried in 1976 due to maintenance issues. The general configuration, however, remains intact, and in recent years, major sections have been restored.

Although much of Kiley's plan for the Cadet Area remained unfulfilled or altered, the Air Garden, even with sections currently buried, stands as an example of the work of "arguably the most important American landscape architect of the second half of the twentieth century."⁷⁶

The Public Debate

SOM unveiled the design of the Academy in May 1955 when the Air Force sponsored an exhibition, held at the Colorado Springs Fine Arts Center. Congressmen, the press, and select guests viewed the master plan and architectural models, supplemented by stunning photographs of the site taken by master landscape photographer Ansel Adams. The Colorado Springs exhibition opened the door to a broad public discussion that did not subside for five years. In a survey of federally-built architecture, Lois Craig declared, "Perhaps no architectural debate over government building in the 1950s equaled the discussion about the design of the new U.S. Air Force Academy." The responses encapsulate many of the significant issues surrounding architecture in the postwar era.⁷⁷

⁷⁴ Jory Johnson, "Man as Nature," in Robert Brueggemann, *Modernism at Mid-Century*, 113; Netsch to Kiley letter quoted in Joseph Disponzio, "Introduction," in *Daniel Urban Kiley: The Early Gardens*, William S. Saunders, ed. (New York: Princeton Architectural Press, 1999), 15.

⁷⁵ Kiley and Amidon, *Dan Kiley*, 31.

⁷⁶ Disponzio, "Introduction," 8; Also see Elisabeth Kassler, *Modern Gardens and the Landscape* (New York: Museum of Modern Art, 1964); Gordon Bleam, "Modern and Classical Themes in the Work of Dan Kiley," in *Modern Landscape Architecture, A Critical Review*, Marc Treib, ed. (Cambridge: MIT Press, 1993); *The Work of Dan Kiley: A Dialogue on Design Theory*. [Proceedings of the First Annual Symposium on Landscape Architecture, the University of Virginia, School of Architecture, Division of Landscape Architecture, Campbell Hall, February 6, 1982], Warren T. Byrd and Reuben M. Rainey, eds. (Charlottesville: The Division of Landscape Architecture, 1983); and Melanie Simo, *Invisible Gardens: The Search for Modernism in the American Landscape* (Cambridge: MIT Press, 1994);

⁷⁷ Lois Craig, et al., *The Federal Presence*, 477.

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The professional architectural journals praised SOM's design. *Architectural Forum* pronounced the Academy "the first great national monument in the modern style." It noted, "With the new embassies abroad and the Air Academy at home, the U.S. has come to grips with architectural reality." The *New York Herald Tribune* trumpeted, "Just as West Point with its medieval fortress-like appearance symbolizes the traditions of land warfare, so does the sharp-lined and soaring Air Force Academy represent the newest and swiftest military science."⁷⁸

However, the plans came under severe criticism from several quarters. Many rejected the architectural style as inappropriate for a national monument. Congressman Porter Hardy of Virginia said that he heard one spectator saying, "It looks like a modernistic cigarette factory." Another viewer called the Academy model a "mammoth drug store on stilts." Others said the model reminded him of "a glorified supermarket."⁷⁹

In response, supporters, such as the *Christian Science Monitor*, generally derided critics as "laymen" who let their "predilections and prejudices run away with them. . . . The Parthenon was once an innovation." The *San Francisco Chronicle* took the same tack, complaining that the criticism, "that had little validity outside the curious doctrine which holds that election to Congress automatically transforms the electee into an infallible authority on every art, technology and method of doing business."⁸⁰

The New York Times drew a comparison to modern art, stating:

*To the congressional mind, untutored in the recondite processes of modern art . . . [modern] suggests such radical images as Pablo Picasso, one-eyed women, and melting watches. . . . A plan for the jet age it may be, but the suspicion in Washington is that Congress would breathe easier if the architects would come back with a variation blending Chartres Cathedral and Independence Hall.*⁸¹

A second phalanx of critics argued that the buildings failed to use appropriate building materials. A parade of special interest groups marched before congressional committees, toting the benefits of masonry, marble, and stone. Representative John E. Fogarty (D-R.I.), formerly president of the Rhode Island Bricklayers Union declared that SOM's design was "not American in conception and is unworthy of the traditions of this nation."⁸²

SOM countered by linking the use of metals in the architecture with the jet airplane and the missile. Asked during the initial interviews if he would use sandstone for the Academy, Nathaniel Owings responded, "General, would you build an airplane of sandstone?" In addition, he appealed to budgetary constraints, telling a Senate hearing, "If we tried to reproduce a Gothic or Colonial architecture, we would have to ask for almost double the appropriation."⁸³

Other opposing voices were not so easy to dismiss. At the unveiling in May 1955, Owings declared that the architecture was "a national, not a regional character...as style-less in their architectural concept, as efficient

⁷⁸ "The United States Air Force Academy," *Architectural Forum* (June 1955): 102; "The Air Age Acropolis," *Architectural Forum* (June 1959): 158; *New York Herald Tribune*, 16 May 1955.

⁷⁹ Cannon, Hamlin and Fellerman, *Quest*, 80-81.

⁸⁰ *Christian Science Monitor*, July 1955; "Air Academy Design Brawl," 13; *San Francisco Chronicle* quoted in Holt, Cannon, and Allen, *History*, 302-303.

⁸¹ *The New York Times*, 17 July 1955.

⁸² U.S. Congress, Senate, *Hearings before the Committee on Appropriations on H. R. 7278*, 84th Cong., 1st sess., 340-353.

⁸³ Nathaniel Owings, *Spaces in Between*, 152.

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and as flexible in their basic layout as the most modern projected aircraft.” For that very reason, some argued, the design failed because it did not address its surrounding contexts. *Architectural Record* raised the central issues:

*Are the buildings appropriate to their site? Are the buildings an appropriate expression of their purpose? Do they have the character suitable to the great national monument they will in fact be? Do they signify merely the latest expression of what some observers have chosen to call a SOM style . . . an expression of a corporate esthetic rather than of intrinsic purpose?*⁸⁴

Frank Lloyd Wright was among the most vocal critics, testifying before a House subcommittee in July 1955. He labeled the architectural firm as “Skiddings, Owe More, and Sterile,” and called the buildings, “a glassified box on stilts which is practiced abroad and has now become fanatic with certain of our commercial architects.” The major architectural journals, however, discounted Wright’s critique as the rant of a competitor — and one past his prime.⁸⁵

Walter Netsch voiced SOM’s contrary view of regionalism, asking an interviewer what constituted Colorado architecture:

*The dismal shacks of the silver towns? The Victorian opera house? The fire station in Georgetown? The imported Swiss chalets of the motels of Aspen, or the imported modern architecture of Herbert Bayer in the same town? There is no such thing as Colorado architecture in the sense that there is New England architecture or even Prairie architecture. The mountains are the architecture of Colorado.*⁸⁶

The Chapel became a lightning rod for the Academy as a whole. The building, after all, combined a potent mix of political, military, and religious symbols during the very years that the United States adopted the motto, “In God We Trust,” and added the phrase, “Under God” to the Pledge of Allegiance. The Academy Chapel presented Congress with the nation’s first major government-supported combination of religion and modern movement architecture.

The initial model, as shown at the exhibition, was a folded plate building set on a slightly higher terrace than the Court of Honor with an east-west orientation. It drew withering criticism from many sources, including Colorado Governor Edwin Johnson, who declared, “The paganistic distortion conceived by them as a place of religion is an insult to religion and Colorado.” Senator A. Willis Robertson bemoaned, “You don’t seem to hear the rustling sound of angels’ wings when you look at the chapel.” Congressman John Fogarty complained, “This glass and metal creation was variously described as an accordion lying on its side and as a line of telescoped Indian tepees.” The Air Force and SOM quickly withdrew these plans and promised revisions.

⁸⁴ “The Air Age Acropolis,” *Architectural Record* (June 1959): 153-54.

⁸⁵ Holt, Cannon, and Allen, *History*, 298; Wright’s “continuing eagerness to do the job himself” was also observed, casting doubt on the objectivity of his criticism. John Knox Shear, Editorial, *Architectural Record* 118 (August 1955): 132a. Wright spoke before the House Appropriations Committee on 7 July 1955.

⁸⁶ “A Conversation about the U.S. Air Force Academy between Walter Netsch and John Burchard,” in Bruegmann, *Modernism at Mid-Century*, 184.

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Congress approved initial construction funds in September 1955, settling the design debate except for the chapel, which needed a separate appropriation.⁸⁷

Walter Netsch continued to work on a new chapel design, taking off several months for a tour of European cathedrals. He presented his revised plans to the Secretary of the Air Force in May 1957 and received an enthusiastic response. It failed to quiet every critic, especially when it came before Congress, where Representative E. P. Scrivner of Kansas, chairman of the subcommittee of the House Appropriations Committee, led the opposition. He complained that it looked “like a row of polished tepees upon the side of the mountains.” However, opposition was not universal. Congressman Alfred Sieminski of New Jersey offered a contrary view, telling one hearing, “As for aluminum, the boys fight and die in aluminum planes. They can worship in aluminum if they can die in it, can they not?”⁸⁸

In August 1957, Scrivner persuaded the House of Representatives to vote, 102 to 53, to withhold funds for the chapel’s construction. The architectural advisory board, the American Institute of Architects, and the Academy leaders closed ranks behind SOM and the House relented and approved funding. The bill passed easily in the Senate. However, budget overruns and contentiousness between the U.S. Air Force Construction Agency (USAFCA) and SOM delayed the start of construction until August 1959.⁸⁹

In the midst of the debate over the chapel, SOM and the USAFCA pressed forward with construction of the remainder of the site. The Cadet Wing moved into the new buildings in the summer of 1958, permitting the Academy’s first graduating class to spend their final year at the Colorado Springs site. An extended strike in the steel industry further delayed construction on the chapel, finally completed in the summer of 1963. In its review of the finally completed Cadet Area, *Architectural Record* noted:

*The new chapel at the Air Force Academy creates a compelling focal point for the entire complex in its mountain setting, reminiscent of the cathedral over a medieval town. . . By means of a different kind of architecture, and at a different time, this chapel appears likely to become a national shrine, as did the chapel at West Point. . . The cohesiveness of the chapel has brought into being a unifying symbol for its several creeds that is particularly appropriate for our democracy in a world of conflict.*⁹⁰

Those words encapsulate the importance of the chapel as an architectural masterpiece and as cultural symbol.

Post 1963 construction

Although the dedication of the Chapel in September 1963 marked the end of the first phase of construction, a major expansion began the following year. On March 3, 1964, President Johnson signed Public Law 88-276,

⁸⁷ For a general discussion, see Paul A. Carter, “Under God: By Act of Congress,” in *Another Part of the Fifties* (New York: Columbia University Press, 1983), 114-40; “Chapel ‘Insult to Religion’ Governor Says,” *Colorado Springs Gazette Telegraph*, 17 May 1955.

⁸⁸ “Gothic Tetra-Hedra: SOM’s Chapel at U.S. Air Force Academy,” *Architectural Review* (April 1961): 222; “Tubular Tetrahedrons, Air Force’s New Chapel,” *Progressive Architecture* (September 1961): 182-87; “Air Force Academy Chapel,” *Architectural Record* (December 1962): 85-92; “Air Chapel Design Hit,” *New York Times*, 17 January 1958; “Controversy over a Chapel,” *U.S. News & World Report*, 17 January 1958.

⁸⁹ U.S. Congress, “Approval of Design of U.S. Air Force Academy Chapel,” *Congressional Record* 104, pt. 1, 85th Cong. 16 January 1958, 543.

⁹⁰ *Architectural Record*, December 1962.

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authorizing the expansion of the Air Force Cadet Wing from 2,529 to 4,417. The 1965 Military Appropriations Bill approved construction of new Cadet Quarters to accommodate the growing student body, as well as a new Gymnasium. It funded additions to Mitchell Hall, Fairchild Hall, Arnold Hall, and the Academy Hospital. The government bypassed Skidmore, Owings and Merrill, hiring an architectural team of Leo A. Daly, Inc. and Henningson, Durham, and Richardson to design the new dormitory and additions.

The Leo A. Daly Company began in 1915, when Leo A. Daly, Sr. opened his firm in Omaha, Nebraska. Leo Anthony Daly, Sr. initially established his practice by designing churches for Nebraska's Catholic communities in the 1920s, 1930s, and 1940s, such as St. Margaret Mary's Church in Omaha, Nebraska (1945). However, in 1947, Daly achieved world renown by designing many of the buildings on the campus for Boys Town, Nebraska, a shelter for homeless children started west of Omaha by Father Flanagan in 1921. Daly designed most of the Boys' Town campus, including the auditorium, field houses, trade school, stadium, dining hall, high school and administration building. Although the Boys Town campus had grown considerably, Daly's contributions are still evident in the campus.⁹¹

The Leo A. Daly Company grew dramatically in the 1950s, after his son, Leo A. Daly, Jr., took over the firm. Born 29 July 1917, Leo A. Daly, Jr. received his Bachelor of Arts in Architecture degree from Catholic University and joined the firm in 1939. Daly, Jr. expanded the firm nationally by undertaking defense-related projects for the armed forces. In 1954 Leo A. Daly Company served as the architect for the Strategic Air Command Headquarters. In 1963, the Leo A. Daly Company received an Air Force Exceptional Service Medal from SAC Commander in Chief Curtis LeMay for his design on the SAC Headquarters extension and addition.⁹²

In the 1960s primary works completed by Leo A. Daly's firm in the Midwest include the United Life Insurance Company Building (Fort Wayne, Indiana, 1965), Bergan-Mercy Hospital (Omaha, Nebraska, 1968), and Woodmen of the World Life Insurance Society Building (Omaha, Nebraska, 1969). Other important buildings completed by Daly's firm in the 1960s, include the California Chamber of Commerce Building and McKeon Office Complex (Sacramento, California, 1967) and the Habib Bank, (Karachi, Pakistan 1969).⁹³

Although Daly's plan for the new dormitory carefully mirrored Vandenberg Hall, its placement dramatically altered SOM's master plan, sealing off the Terrazzo and Court of Honor, leaving an enclosed courtyard. The Academy named the new cadet quarters—completed in 1968—after Captain Lance P. Sijan, a Medal of Honor winner in Vietnam, and member of the Class of 1965. The Daly firm also designed several new buildings for the Community Center Area, including the chapel.⁹⁴

Federal Architecture During the Early Cold War (1945-1968)

⁹¹ "Omaha's St. Mary Margaret Church," *Architectural Record* 98 (September 1945): 96-97; Brooks Peters, "Leo A. Daly III and the Intellectual Appeal of Architectural Models," *Architectural Digest* 47, no. 13 (December, 1990): 82, 84, and 86-87; "New Buildings for Boys Town, Nebraska," *Architectural Record* 101 (January 1947): 66-73.

⁹² *Cold War Infrastructure for Air Defense: The Fighter and Command Missions* (Langley AFB, Virginia: Air Combat Command, 1999), 12-13.

⁹³ John F. Gane, ed., *American Architects Directory*, 3rd ed. (New York: R. R. Bowker Company, 1970), 199; and Brooks Peters, "Leo A. Daly III and the Intellectual Appeal of Architectural Models," *Architectural Digest* 47 (December, 1990): 82, 84, and 86-87.

⁹⁴ Fagan, *Air Force Academy*, 148-149.

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To fully understand the significance of the USAFA, the historian must place it within the context of post World War II federal architecture. Few federally commissioned projects from the period are “signature” buildings but typically reflected traditional idioms, such as the mammoth Rayburn House Office Building (1962) and the Colonial Revival chapel at the U.S. Merchant Marine Academy (1961). Other projects used a generic vocabulary of the modern movement, including numerous Department of Defense projects such as the Strategic Air Command Headquarters at Offutt Air Force Base, Nebraska. In the 1950s, architectural historian Lois Craig notes, “Of the two popular business façades—the glass box and the masonry box—government preferred the masonry box with its sympathetic vestiges of public power.”⁹⁵

There are several notable exceptions, however, including two major federal construction programs. The State Department embarked on a building campaign between 1946 and 1958. Managed by the Office of Foreign Buildings Operations (FBO), it contracted for new embassies, diplomatic and consular office buildings, and staff housing throughout the world. The program proved a showcase for modern architecture, employing such well-known architects as Wallace K. Harrison, Ralph Rapson, Walter Gropius, Eero Saarinen, Harry Weese, and Richard Neutra. In an early review of the FBO building program, *Architectural Forum* stated:

*No country can exercise political world leadership without exercising a degree of cultural leadership as well. Whether consciously or not, the U.S. Government had now made U.S. architecture a vehicle of our cultural leadership.*⁹⁶

The magazine illustrated its article with two photographs contrasting the modern American consulate in Bremen, designed by Skidmore, Owings and Merrill, with the classically designed Soviet Monument in Berlin.⁹⁷

The FBO awarded the contract for its German building program to SOM, including five consulates, plus American information centers (called America Houses) in six cities. Completed under the direction of Gordon Bunshaft just before the award of the USAFA contract, the buildings employed many of the same design elements: a series of rectangular forms, often raised on columns, extensive use of glass, bands of horizontal casement windows and colored panels, and outdoor plazas.

Another major federal construction project that embraced the modern movement architectural vocabulary was the National Park Service’s Mission 66—the largest program for park improvements and expansion ever initiated by the park service. By 1966, Mission 66 completed 107 visitor centers, 221 administrative buildings, 36 service buildings, 1,239 employee-housing units, and 584 comfort stations. Mission 66 designers and planners embraced modern architecture. Unlike the State Department’s FBO program, however, NPS awarded only a few Mission 66 commissions to architects of international reputation such as Richard Neutra.⁹⁸

⁹⁵ Robert Twombly, *Power and Style: A Critique of Twentieth-Century Architecture in the United States* (New York: Hill and Wang, 1995), 3. Twombly describes three categories of buildings: signature, generic, and vernacular. The first category includes buildings designed by highly visible architects that establish the stylistic vocabulary of the period.

⁹⁶ “U.S. Architecture Abroad,” *Architectural Forum* 98 (March 1953): 101.

⁹⁷ Jane C. Loeffler, *The Architecture of Democracy*, 8.

⁹⁸ See Sarah Allaback, *Mission 66 Visitor Centers: A History of a Building Type* (Washington, D.C.: Department of the Interior, 2000).

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Other federal commissions reflect the influence of the modern movement. In the late 1940s, the Jefferson National Expansion Memorial Association held a design competition for its proposed monument in Saint Louis, Missouri. The winning entry, by Eero Saarinen, was the parabolic Gateway Arch. The Memorial fell victim to budget constraints until completed under the auspices of the National Park Service in 1965. Saarinen received another significant commission from the Federal Aeronautics Administration for the terminal at Dulles National Airport (1962). The USS *Arizona* Memorial in Pearl Harbor stands among the most striking federal commissions of the era, designed by Johnson & Perloms & Preis and completed in 1962.⁹⁹

The United States Air Force Academy, Cadet Area, is an important representative of federally commissioned modern movement architecture and especially notable as a planned group. From the beginning, the Air Force, the architectural community, and the public understood that the Colorado Springs campus would become a national landmark. While controversial in its early years, the USAFA gained public acceptance in the intervening years and has come to represent the Air Force as much as Annapolis stands as a symbol for the Navy, and West Point for the Army.

The soaring spires of the much-debated chapel now appear in regional tourism advertisements. Critic Bradford Perkins, writing in a 1981 edition of *Architectural Record*, called the Chapel, “one of the most important works of modern American architecture built during the 1950s.” It earned the 1996 American Institute of Architects Twenty-Five Year Award given to buildings designed by an American architect that “exemplify design of enduring architectural significance.”¹⁰⁰

Architectural historians recognize the campus as a highly visible example of post World War II America. As Robert Stern, dean of the Yale University School of Architecture, wrote, “Skidmore, Owings and Merrill’s Air Force Academy is one of the defining institutions of the post World War II era. . . . In its way, the Academy campus is as grand an expression of American values as any building group we have.” Robert Bruegmann, professor of architectural history at the University of Illinois at Chicago, adds:

It is one of the grandest . . . most intact ensembles of that era to be seen anywhere in the world. It functions as one of the great monuments of an era that seems so near to us in time but in other ways appears to belong to a past almost beyond recall.

The United States Air Force Academy, Cadet Area, is of extraordinary national significance as a representative of federal architecture of the period.¹⁰¹

⁹⁹ For surveys of the postwar federal architecture, see Lois Craig, *The Federal Presence*, 450-474; also Carole Rifkind, *A Field Guide to Contemporary American Architecture* (New York: Dutton, 1998), 104-145.

¹⁰⁰ Bradford Perkins, “Preserving the Landmarks of the Modern Movement,” *Architectural Record* (July 1981): 108; Roger Shepherd, *Structures of Our Time: 31 Buildings That Changed Modern Life* (New York: McGraw-Hill, 2002), 216-221. Other National Historic Landmarks that have won this prestigious award include the Rockefeller Center, the Crow Island School, Taliesin West, and the Philip Johnson Residence (“The Glass House”).

¹⁰¹ Robert A. M. Stern quoted in “The United States Air Force Academy: Preserving a Heritage,” pamphlet, Skidmore, Owings and Merrill, 2002; Robert Bruegmann, “Military Culture, Architectural Culture, Popular Culture,” in Bruegmann, *Modernism at Mid-Century*, 97.

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sess., 1955.

U.S. Congress. House of Representatives. Committee on Armed Services. *Hearings on H.R. 5337 to Provide for the Establishment of a United States Air Force Academy*, 83rd Cong., 2nd sess., 1954.

U.S. Congress. Senate. *Hearings before the Committee on Appropriations on H.R. 9131*, 85th Cong., 1st sess., 1958.

U.S. Congress. Senate. *Hearings before the Committee on Armed Services on H.R. 5337*, 83rd Cong., February 18-19, 1954.

U.S. Secretary of Defense, *A Report to the Secretary of Defense by the Service Academy Board*, Washington, D.C., Jan. 1950.

Wiseman, Carter. *Shaping a Nation: Twentieth Century American Architecture and Its Makers*. New York: W. W. Norton & Company.

Woodyard, William Truman. "A Historical Study of the Development of the Academic Curriculum of the United States Air Force Academy." PhD diss., University of Denver, 1965.

Previous documentation on file (NPS):

- Preliminary Determination of Individual Listing (36 CFR 67) has been requested.
- Previously Listed in the National Register.
- Previously Determined Eligible by the National Register.
- Designated a National Historic Landmark.
- Recorded by Historic American Buildings Survey: #
- Recorded by Historic American Engineering Record: #

Primary Location of Additional Data:

- State Historic Preservation Office
- Other State Agency
- Federal Agency
- Local Government
- University
- Other (Specify Repository):

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List of Photographs

The following information is the same for all photographs:

Property: United States Air Force Academy, Cadet Area
Location: El Paso County, Colorado
Photographer: Daniel J. Hoisington
Date: March 2003

1. Cadet Area, view to S
2. Retaining Wall and ramp to Terrazzo, Cadet Chapel (#2306) in background. View to W
3. Vandenberg Hall (#2360), view across Terrazzo to NE
4. Vandenberg Hall (#2360), view across Terrazzo to NW
5. Vandenberg Hall (#2360), courtyard, view to SW
6. Vandenberg Hall (#2360), Cadet quarters, reproductions of original Walter Dorwin Teague Associates furnishing, view to S
7. Vandenberg Hall (#2360), second floor hallway, view to E
8. Vandenberg Hall (#2360), second floor hallway station, view to E
9. Fairchild Hall (#2354), flagpole, view to SE
10. Fairchild Hall (#2354), library wing and 1981 entrance, view to NE
11. Fairchild Hall (#2354), academic wing, view to SE
12. Fairchild Hall (#2354), library, circular staircase, view to NW
13. Fairchild Hall (#2354), library, circular staircase
14. Fairchild Hall (#2354), coat room outside classroom, designed by Walter Dorwin Teague Associates
15. Fairchild Hall (#2354), lecture room
16. Fairchild Hall (#2354), classroom
17. Mitchell Hall (#2350), retaining wall and bridge to Terrazzo, view to SW
18. Mitchell Hall (#2350), view to SE Fairchild Hall in background.
19. Mitchell Hall (#2350), south elevation, view to NW, Sijan Hall in background
20. Mitchell Hall (#2350), main dining hall, view from mezzanine to SE
21. Mitchell Hall (#2350), Air Garden, view to S
22. Sijan Hall (#2348), view to SW
23. Sijan Hall (#2348), south elevation, view to NW
24. Cadet Chapel (#2306), from Terrazzo, view to NW
25. Court of Honor, Arnold Hall (#2302), view to N
26. Arnold Hall (#2302), main entrance on west elevation, view to NE
27. Arnold Hall (#2302), east elevation, and retaining wall, view to W
28. Arnold Hall (#2302), ballroom, view to E
29. Arnold Hall (#2302), spiral staircase in foyer to theater, view to SE
30. Harmon Hall (#2304), view to SE
31. Harmon Hall (#2304), north elevation, view to S
32. Harmon Hall (#2304), entrance, view to S
33. Cadet Chapel (#2306), view across Court of Honor, view to SE
34. Cadet Chapel (#2306), primary entrance, view to N

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35. Cadet Chapel (#2306), view to N
36. Cadet Chapel (#2306), Protestant Chapel, view to N
37. Cadet Chapel (#2306), Catholic Chapel, view to NNW
38. Cadet Chapel (#2306), Jewish Chapel, view to E
39. Planetarium #2120, view to NE
40. Physical Education Building (#2170) from Vandenberg Hall, view to N
41. Physical Education Building (#2170) view to W
42. Aerospace Laboratory (#2410), view to SE
43. Parade Ground, view E from Fairchild Hall
44. Lower road between Mitchell Hall and Fairchild Hall, view to N
45. Consolidated Education Training Facility (#2355), view to NW

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Historic photographs from the collections of USAFA, Special Collection

- Photograph # H-1. Aerial view of Academy, ca. 1984. The Airfield is located in the lower left corner. In the upper right, the Cadet Area sits on Lehman Ridge.
- Photograph # H-2. Aerial view of Academy, ca. 1962. View to southeast. Note the open slope on the edge of the Terrazzo, filled by Sijan Hall in 1968.
- Photograph # H-3. Aerial view of Academy, ca. 1962. View to north.
- Photograph # H-4. Mitchell Hall and the Air Garden, ca. 1962. View to south. In 1975 the Air Garden pools were filled and the shrubbery removed. Sections have been restored in recent years.
- Photograph # H-5. Mitchell Hall, 1958. View to northwest. Construction workers are preparing the steel truss roof structure to be raised.
- Photograph # H-6. Interior of Mitchell Hall, ca. 1962. View to northeast. The dining hall was designed to serve 3,000 at one sitting. Note the mezzanine on the north wall.
- Photograph # H-7. Cadet Chapel, 1960. View to south. Construction workers have erected the tetrahedron frame of the Chapel.

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List of Slides

The following information is the same for all slides:

Property: United States Air Force Academy Cadet Area
Location: El Paso County, Colorado
Photographer: Daniel J. Hoisington
Date: March 2003

1. Cadet Area from Overlook #1, Academy Drive, looking SSW
2. Cadet Chapel (#2306) from Court of Honor, view to SE
3. Court of Honor, Arnold Hall (#2302), view to N, Cathedral Rock in distance
4. Harmon Hall (#2304), view to SE
5. Arnold Hall (#2302), view to NE
6. Interior, Arnold Hall (#2302), stairs in theater foyer, view to SE
7. Vandenberg Hall (#2360), Harmon Hall (#2304) in distance, view to W
8. Cadet Room, Vandenberg Hall (#2360), reproductions of original Walter Dorwin Teague Associates furnishings, view to SW (Chapel seen through window.)
9. Sijan Hall (#2348), view to W
10. Mitchell Hall (#2350), Air Garden in foreground, Sijan Hall in rear, view to SW
11. Planetarium (#2120), view to NW
12. Aerospace Laboratory (#2410), view to SW
13. Physical Education Building (#2170), view to NE from Vandenberg Hall
14. Parade Ground, view to E from Fairchild Hall
15. "Bring Me Men" Ramp, Cadet Chapel in distance, view to W

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10. GEOGRAPHICAL DATA

Acreage of Property: approximately 25 acres

UTM References:	Zone	Easting	Northing
1.	13	509295	4317840
2.	13	509860	4318123
3.	13	510710	4317560
4.	13	509478	4316940

Verbal Boundary Description:

The boundary of the nominated property is shown as the dotted line on the accompanying map entitled “United States Air Force Academy, Cadet Area, National Historic Landmark District.”

Boundary Justification:

The boundary includes the buildings, structures, and sites historically associated with the United States Air Force Academy, Cadet Area during the period of significance, 1958-1968. Although the USAFA encompasses more than 18,000 acres, the Cadet Area has historically been viewed as the “the Academy proper.” As *Architectural Record* noted in a 1955 article, “The Cadet Academic Area is the center of cadet life, where the cadets live, eat, study and relax; it is also the administrative center and the public image of the Academy.”¹⁰²

The historic district boundaries include those resources historically associated within the Cadet Area that retain a high degree of integrity. It excludes the Cadet Field House (Base #2169), which was built during the period of significance (1968), but no longer meets the standards of high integrity.

¹⁰² Walter Netsch Jr., project Director of Design for SOM, referred to the Cadet Area as “the Academy proper,” a term also used by “United States Air Force Academy,” *Architectural Record* 117 (July 1955). “Oral History of Walter Netsch,” interviewed by Betty J. Blum, Chicago Architects Oral History Project, The Art Institute of Chicago, 1997, 134.

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DESIGNATED A NATIONAL HISTORIC LANDMARK
April 01, 2004