

US Army Corps
of Engineers

Office of the Chief
of Engineers

SPECIAL
EDITION

Engineer Update

Vol. 12 Special Edition

Design and Environmental Awards 1987

Winners of the 1987 Chief of Engineers Design and Environmental Awards Program were announced Dec. 17 in Washington, D.C.

Thirty-four Corps of Engineers projects were selected for awards by juries of distinguished professionals in the respective design disciplines. The Corps had entered 132 projects in the worldwide competition.

All civil works and military construction projects completed in the past four years were eligible for entry in four competition categories: architecture, engineering,

landscape architecture, and environment.

Entries judged worthy of recognition received one of four awards. In ascending order of importance they are:

Honorable Mention Award: This award may be given to any number of projects to recognize superior features or concepts that overall do not qualify for a higher award.

Award of Merit: This award may be given to projects that exhibit outstanding design or

environmental achievement. (Maximum of three per category).

Honor Award: This award may be given to one project in each category to recognize an exceptionally distinguished accomplishment.

Chief of Engineers Award of Excellence: This award goes to one project. To be considered for this award, a project has to receive an Honor Award or Award of Merit in at least one category and exhibit design excellence in more than one category.

The Chief of Engineers Design

and Environmental Awards Program is a biannual competition that started in 1965. The program supports the Federal Design Improvement Program.

The object of the program is to encourage design and environmental professionals to develop projects which exhibit excellence in function, economy, resource conservation, aesthetics and creativity, while being in harmony with the environment.

The next competition will be held in December 1989.



Chief of Engineers Award of Excellence: Evans U.S. Army Community Hospital

The best of the best

The \$90 million Donald E. Evans Community Hospital at Fort Carson, near Colorado Springs, Colo., received the highest award of the competition—the Chief of Engineers Award of Excellence.

One of the most modern medical facilities in the Army, the hospital replaces a set of World War II buildings.

Set in the foothills of the Rocky Mountains with Cheyenne Mountain and Pikes Peak as a backdrop, the visual prominence of the site presented a special challenge.

The scale of the surroundings was immense. Therefore mass, color, and earth forms were used

to blend the facility into the natural environment.

A glassed-in commons area sits like a rectangular crystal box between the clinic and the hospital. This area contains a barber shop, pharmacy, information desk, chapel, and flower shop.

Its design incorporates solar panels which reduce energy use by 59 percent. Earthberms, skylights, and a computerized energy management system further enhance energy conservation.

The hospital also received an Honor Award in the architecture category and an Award of Merit in the landscape architecture category.

from the editor

The Design and Environmental Awards Program recognizes the best projects that the Corps has built. This year submittals included everything from child development centers and troop housing areas to floodwalls and locks.

These projects are our agency's reason for being. Of the Corps 44,000 employees only 9,800 are engineers or architects. But everyone in the Corps contributes to the process that builds these projects.

Entries competed in four categories: engineering, architecture, landscape architecture, and environmental.

The architects design the buildings, the engineers make them structurally sound, the landscape architects plan the site, and the environmentalists do their best to improve or protect the natural or man-made environment.

Commanders submitted more than 130 entries in this competition.

Jurors for this contest were distinguished professionals in the field relative to the category of competition. To the Corps credit, they selected 71 percent more awards than the last contest held two years ago.

It's a thrill to see such professional recognition on the rise. But the winners must not rest on their laurels. And the also-rans must not lose their drive to excel.

Even as this issue is being printed and distributed, all sorts of new achievements are on the horizon.

This edition is devoted to the concrete and bricks, the steel and two-by-fours, the process of site designs, and the presentation of the environment. It is also dedicated to the talent that put the pieces together to serve our Nation and our Armed Forces.

Landscape Architecture

A landscape architecture project is defined as either a site development project or a landscape planting project.

Entries are judged on the basis of ingenuity and quality of landscape design and site planning concepts, efficient functional and spatial relationships of the solution, aesthetics,

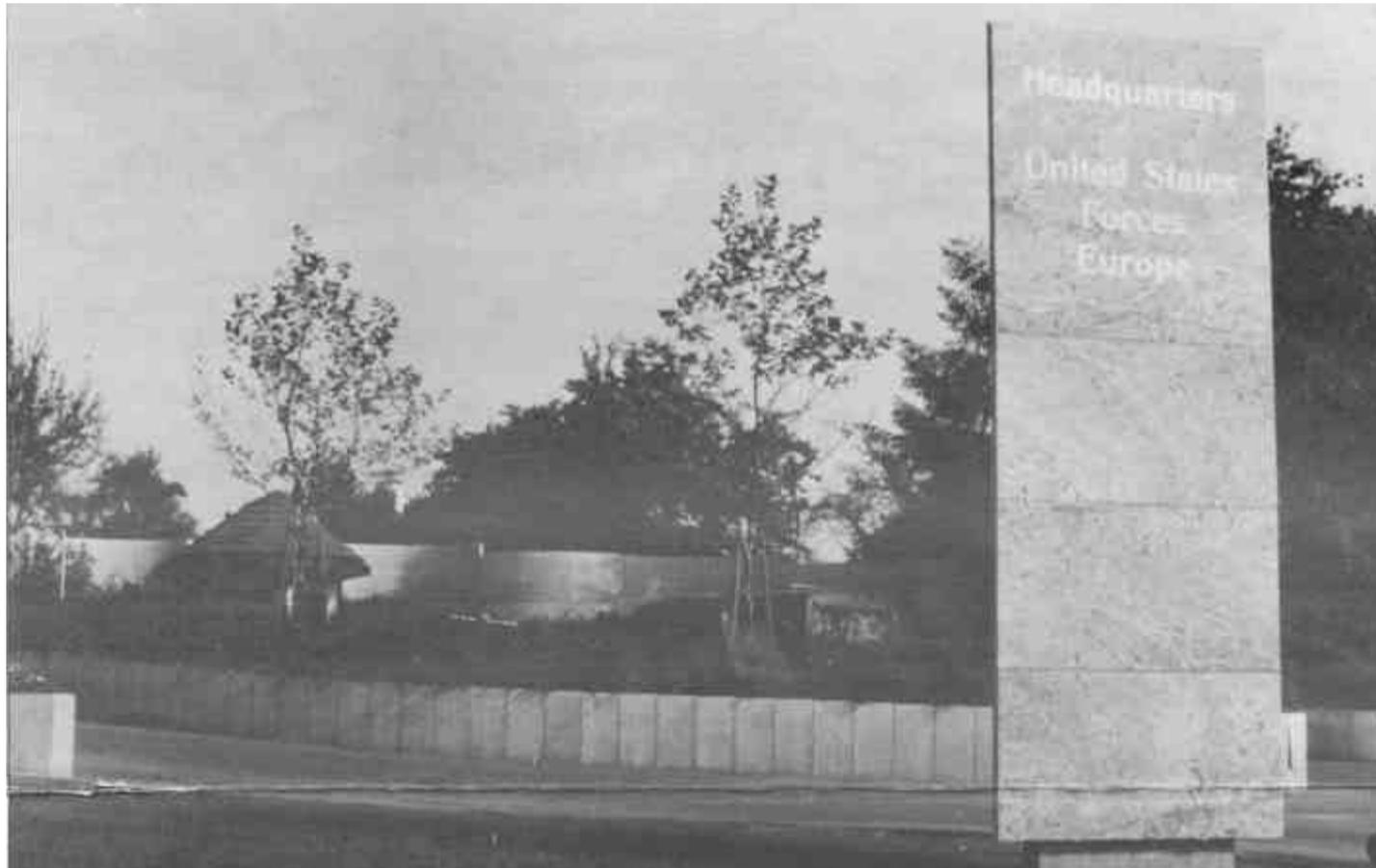
economy of design and compatible relationship with the surrounding environment. In addition, a landscape planting project is judged on the basis of the selection of plants in terms of landscape design principles, seasonal interest, low maintenance, the application of the plants to the design, and the use of mate-

rials other than plants in the landscape.

This category has one Honor Award, three Awards of Merit, and five Honorable Mention Awards.

Landscape architecture jury members: Roger B. Martin, president and fellow, American Society of Landscape Architects, Martin

and Pitz Associates, Inc., Minneapolis, Minn.; Grant Jones, fellow, American Society of Landscape Architects, Jones & Jones, Seattle, Wash.; L.E. Coffin Jr., fellow, American Society of Landscape Architects, Washington, D.C.



Honor Award: Upgrade Physical Security at Patch Barracks, Stuttgart, Federal Republic of Germany. Design firm: Brenner & Partners. Supervised by: Europe Division.

The project, requirement was to hinder vehicular terrorist attack against the U.S. European Command by redesign of Patch Barracks front gate area and the street area around the headquarters buildings. Front gate redesign objective was to prohibit straight vehicular access to the barracks, provide enough space for control and search of cars and trucks, and to provide security measures such as treadle barriers, hardened guard houses, and security walls.

Jurors' comments: *A unique solution to a difficult problem. Great architectural and engineering skills are integrated.*

The use of walls, berms, and retaining walls creates a bold architectural statement which contributes to the urban design of the community and yet clearly solves the engineering requirements for ballistic distances and vehicle penetration in regard to terrorist attack.

Honor Award: Upgrade Physical Security at Patch Barracks

Award of Merit: New Morgan City Area Floodwalls, Morgan City and Berwick, La. Design firms: Fromherz Engineers, Inc. and Greiner Engineering Science, Inc. Supervised by: New Orleans District.

Morgan City and Berwick, La., are at the lower end of the Atchafalaya Basin Floodway. The floodwalls protecting Morgan City and Berwick are part of an extensive levee system lining the floodway. Corps structural design engineers and local interests were greatly concerned about the visual impact of a monolithic concrete structure 17 feet high running along more than a mile of riverfront.

Both the aesthetics of the structure and the overall landscape design were some of the primary considerations in floodwall design.

There were three design objectives: (1) reduce the visual impact of the structures 17-foot height, (2) make the wall aesthetically pleasing, (3) incorporate the floodwall into the overall environment.

Jurors' comments: *A well executed urban landscape design scaled down to allow two major engineering structures to become a harmonious part of the town. Its massive scale is effectively ameliorated by height differences, offsets, and angular variations.*



Award of Merit: New Morgan City Area Floodwalls

This is a special edition of ENGINEER UPDATE, an unofficial publication authorized under the provisions of AR 360-81. The special edition is published by offset for the Headquarters, U.S. Army Corps of Engineers. Editorial views and opinions expressed are not necessarily those of the Corps of Engineers or the Department of the Army.

Letters to the editor are welcome.

Subscriptions are available free of charge but must be requested in writing. Circulation: 35,000.

Address mail to: EDITOR, ENGINEER UPDATE SPECIAL EDITION, CEPA-C,

Washington, D.C., 20314-1000. Telephone (202) 272-0015. Photographs are U.S. Army photos unless otherwise credited.

Commander, USACE Lt. Gen. E.R. Heiberg III
 Chief, Public Affairs Col. Jay B. Martin
 Editor William R. Drobnick
 Assistant Editors Helen Garamone, APR
 Editorial Assistant Sharon Murphy Odle, Linda Beail
 Becky Zimmerman



Award of Merit: Evans U.S. Army Community Hospital

Award of Merit: Evans U.S. Army Community Hospital, Fort Carson, Colorado Springs, Colo. Design firm: Smith, Hinchman & Grylls Associates, Inc. Supervised by: Omaha District.

Visual prominence of the site, its seasonal extremes, and the owner's desire that this facility become a dominant focus for the region presented a challenge and opportunity for dynamic and creative solutions.

The site plan nestles the linear facility into the sidehill landscape which is in a transition zone between rugged mountains to the west and the rolling foothills and flatlands to the east. Views are directed towards the mountains and plains from each of its two major entrances at opposite ends of the central atrium. The site development of the facility complements the simplicity of the structure in its rugged landscape.

Jurors' comments: *The sensitive site design manipulated land and building elements to create an overall composition which is striking in its own right, harmonious in its land use, and presents the architecture in a most effective way. The result is a clear integration of building and landscape architectural elements using bold geometric forms to create unity. Crisp detailing strongly reinforces the backdrop of the front range of the Rocky Mountains.*

Honorable Mention: Tennessee-Tombigbee Waterway Visitor Center, Aliceville Lake, Ala. Designed and supervised by: Mobile District.

Project conception and design was done in house. The \$3.5 million complex consists of a 9,000 square foot building, a wharf area accommodating an old stern-wheel steamboat, and grounds landscaped in keeping with a historical context.

The primary design intent was to creatively portray the character and atmosphere depicting the period of time in the southeast when its waterways were vital to the economy. The visitor center design was conceived in an effort to portray the combination of early 19th century river use and the style of life it allowed.

Juror's comments: *This center reinforces the value of historic replication, illustrating how this approach is applicable to a variety of Corps projects. This project exhibits careful well-executed detailing of paving and fences.*



Honorable Mention: Tennessee-Tombigbee Waterway Visitor Center



Award of Merit: Unaccompanied Enlisted Personnel Housing Complex

Award of Merit: Unaccompanied Enlisted Personnel Housing Complex, Fairchild Air Force Base, Wash. Design firm: Environmental Concern, Inc., P.S. Supervised by: Seattle District.

Before development, the highly visible site was relatively flat and largely surfaced with asphalt, concrete, and gravel. A coal storage plant was a visual eyesore and spewed objectionable dust in the vicinity. Only a few small deciduous and mature spruce trees existed near one corner of the site. A major design objective was to provide a functional, pleasant, living environment with maximum individual privacy.

Jurors' comments: *The environment is a result of a well organized site plan which deserves recognition for its sensitive grading of land forms and sinuous paths which lay on the land comfortably while reinforcing the topography.*

The building elements are organized to create a dynamic composition of spaces which flow together comfortably, creating a sense of place with pleasant sight lines. The total complex is linked to the adjacent community open space and recreation facilities while buffering the housing area from industrial and military uses.



Honorable Mention: Nashville Riverfront Park

Honorable Mention: Nashville Riverfront Park, Nashville, Tenn. Design firms: Sasaki Associates, Inc.; Barge, Waggoner, Sumner, Cannon Engineers, Architects and Planners; and Miller/Wihry, Inc. Supervised by: Metropolitan Nashville and Davidson County Metropolitan Development and Housing Authority; Nashville District.

The riverfront, once a vital part of the community, had decayed because of changes in transportation patterns that no longer rely on water and rail. The solution was to eliminate obsolete structures on the riverbank and replace them with a people oriented multi-use open space that would again attract the citizens to a historically important part of the city.

Jurors' comments: *The project creates a major community asset and brings the city to the river's edge. This cooperative effort with local city agencies is commended. The planted and grass terraces make a gracious line to the shoreline.*



Honorable Mention: Chapel Center

Honorable Mention: Chapel Center, Lackland Air Force Base, Texas. Design firms: V. Aubry Hallum Architects/Planners, AIA; Fort Worth District. Supervised by: Fort Worth District.

Natural plantings are arranged to represent the relationships of spiritual and worldly values, and provide a suitable setting for mankind's search for peace. The chapel exemplifies the importance attached to quality of life for Air Force personnel and their families.

Jurors' comments: *The courtyard is a well organized architectural space which reinforces the qualities of the architecture. The design provides opportunities for individual and group use.*



Honorable Mention: Recreation Facilities Improvement Project

Honorable Mention: Recreation Facilities Improvement Project, Pearson-Skubitz Big Hill Lake, Cherryvale, Kansas. Designed and supervised by: Tulsa District.

This project provides 138 camper pullouts, designed for and constructed on heavily forested rolling terrain with hillside slopes of 20 to 40 percent. Where topography would permit, camper pullouts were located as closely as possible to the

water's edge to allow maximum visitor use of the lake.

Jurors' comments: *This project exhibits the imposition of a heavily used recreation facility within a delicate environment. The unique site solution integrates 138 camper pullouts into difficult terrain by respecting the topography and reducing potential erosion. The resulting camping facility retains most of the existing vegetation.*



Honorable Mention: Sawtooth Fish Hatchery

Honorable Mention: Sawtooth Fish Hatchery, Stanley, Idaho. Design firm: CH2M Hill. Supervised by: Walla Walla District.

This project site is at an elevation of more than 6,400 feet and had a design temperature of 50 F. Facilities are sited to eliminate tree removal and to minimize major topographic changes that might change the scenic beauty of the site.

Jurors' comments: *A good exam-*

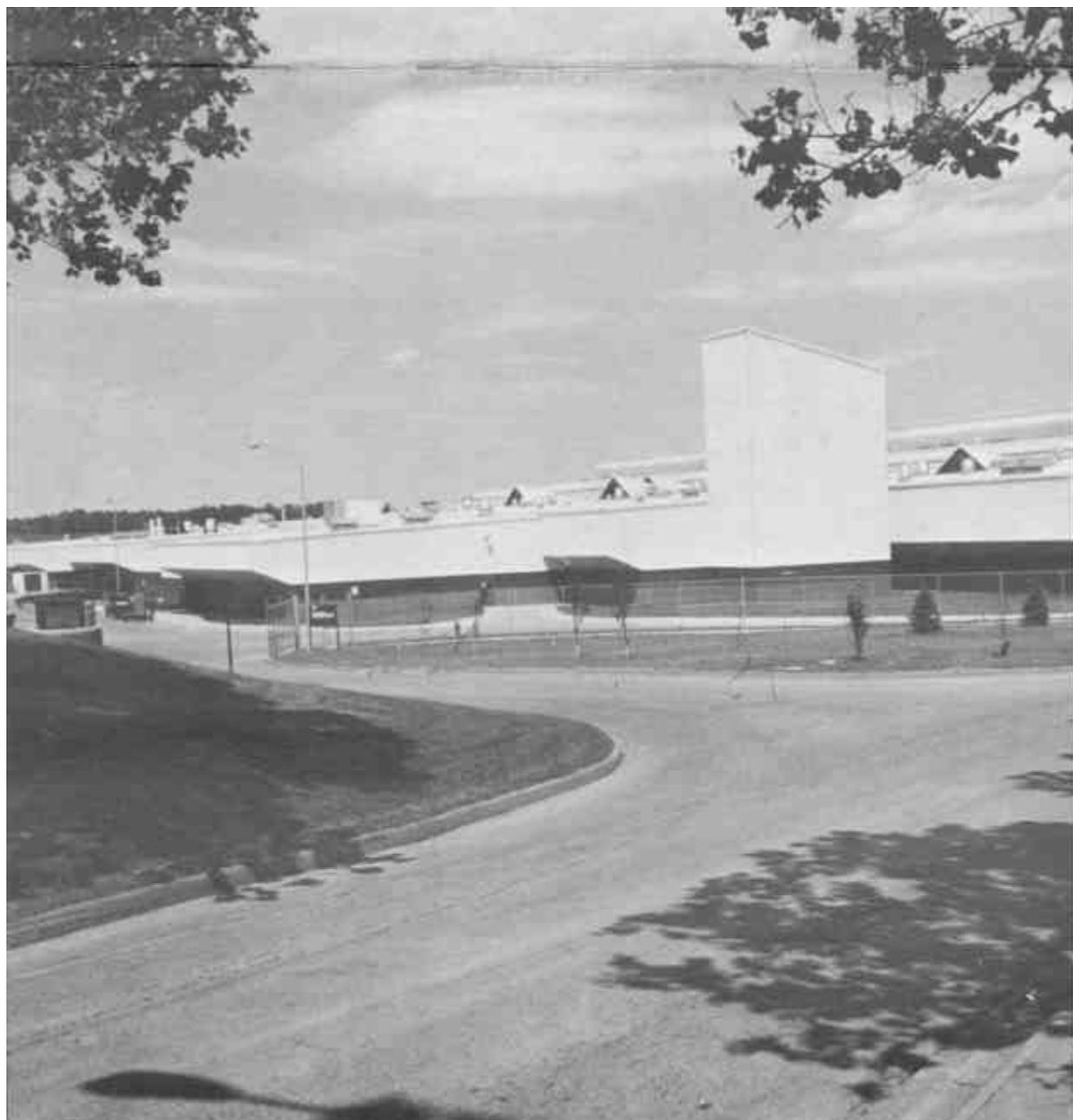
ple of integrating major construction into a dramatic and sensitive natural environment with specific site elements selected to respect the sweep of the river. Building and site features support local vernacular design expression of the region.

It is unfortunate that there is an excessive amount of paved surface but the natural plantings of trees, shrubs and native grasses carry the day.

Architecture



Honor Award: Evans U.S. Army Community Hospital



Award of Merit: Aircraft Maintenance Facility

Architectural projects are defined as buildings or groups of buildings designed to provide a functional solution for the activities they house.

Entries are judged on the basis of architectural concept, satisfactory solution to functional problems, appearance, and harmony with the surrounding environment.

This category has one Honor Award, three Awards of Merit, and seven Honorable Mention Awards.

Honor Award: Evans U.S. Army Community Hospital, Fort Carson, Colo. Design firm: Smith, Hinchman & Grylls Associates, Inc. Supervised by: Omaha District.

Located at the Foothills of the Rocky Mountains, this hospital includes 195 beds with an expansion capability of up to 295 beds.

The facility is designed as two distinct buildings (clinic and hospital) united by a commons area.

The building takes advantage of its surroundings, using design and color to fit into the vast western landscape. Extremely energy-efficient, it combines passive solar energy, heat recovery, and radiant panel heating and cooling systems for energy conservation at high altitude.

Jurors' comments: *Dramatic siting. Sculptural quality and nature of building. Pleasurable environment for sick people.*

Award of Merit: Aircraft Maintenance Facility, Offutt Air Force Base, Neb. Design firm: Dana Larson Roubal and Associates. Supervised by: Omaha District.

This facility consolidates all RC 135 aircraft maintenance under one roof. It features a 29-foot-wide corridor from the hangar bays to work-shops, allowing trucks and trailers to transport large aircraft parts between shops.

Building layout minimizes unauthorized traffic through shop or office spaces by segregating squadron functions. This also establishes unit identity.

Jurors' comments: *Most direct, straightforward reflection of building function. Well organized.*

Award of Merit: Chapel Center, Lackland Air Force Base, Texas. Design firm: V. Aubry Hallum, Architects/Planners. Supervised by: Fort Worth District.

This multifaith chapel is used not only for worship services but also for religious education classes, counselling, individual meditation, conferences, social activities, weddings, baptisms, and funerals. These many different needs were met by creating a strong, simple pyramid design that combines a central sanctuary with overflow space and a landscaped courtyard.

The chapel was designed with its Texas location in mind. The building is situated with protection from the hot west sun and cold north wind. Windows allow the use of low winter sun while concrete louvers block the intense rays of summer.

Jurors' comments: *Appropriate unique symbol. Bold expression. Inspirational. Quiet haven of a courtyard.*

Award of Merit: Management Center, Falls Lake, Raleigh, N.C. Design firm: Clark Tribble Harris & Li, Architects, P.A. Supervised by: Wilmington District.

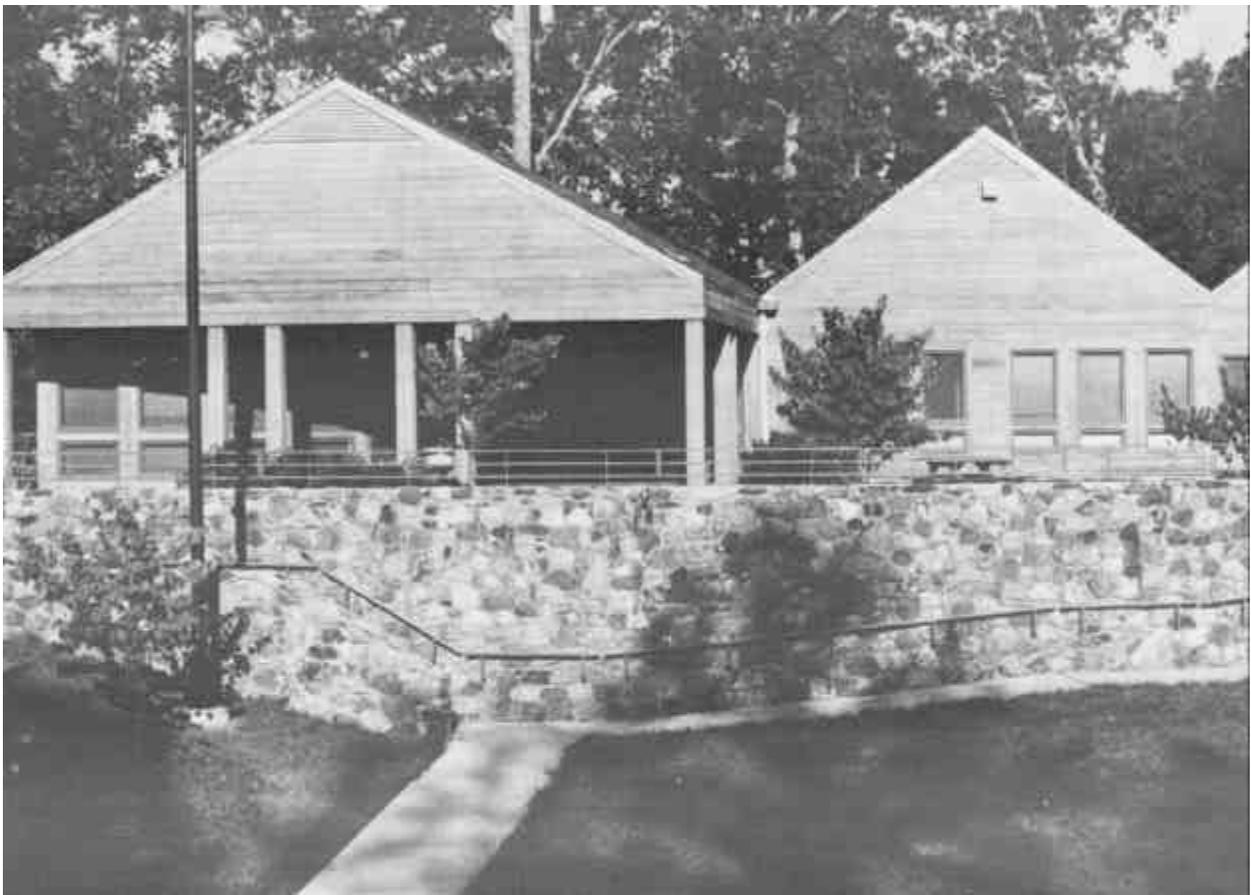
The primary goal in planning the lake management center was to enhance and conform to the environment, and allow the lake to dominate the setting. Constructed with rustic wood materials, the center operates efficiently by separating the visitor exhibitions, administrative services, and office space into three distinct building areas.

Jurors' comments: *Reflects rural idiom of the South. Sophisticated simplicity. Excellent use of materials. Good siting. Appropriate architectural expression.*

Honorable Mention Award: Eighteen-Lane Bowling Facility, Karlsruhe, Federal Republic of Germany. Design firm: Staatliches Hochbauamt II. Supervised by: Europe Division.

The folded-plate aluminum roof mimics the jagged hills of the region and reflects the image of the sky as it fluctuates daily. The earth slopes up the sides of the bowling alley to roof level to reduce noise, and the landscaped grounds provide picnic areas, a small pond, and a grassy pyramid for outdoor enjoyment.

Jurors' comments: *Consistent total concept. Unique materials. Well organized. Good technical expression.*



Award of Merit: Management Center



Honorable Mention: Eighteen-Lane Bowling Facility



Award of Merit: Chapel Center



Honorable Mention: Hausberg Ski Center

Honorable Mention Award: Hausberg Ski Center, Garmisch, Federal Republic of Germany. Design Firm: Finanzbauamt Muenchen I. Supervised by: Europe Division.

This ski center for U.S. military personnel in Europe combines traditional chalet atmosphere with a functional tri-level layout for equipment rental, offices, ski instruction school, and restaurant.

Jurors' comments: *Excellent recognition of local and vernacular traditions. Good organization of interior spaces.*

Honorable Mention Award: Enlisted Personnel Dining Facility, Fairchild Air Force Base, Wash. Design firm: WMFL, P.S., Architects & Engineers. Supervised by: Seattle District.

The earth-sheltered design of this dining hall saves energy and integrates well with a nearby housing complex. The primary challenge was to overcome the tendency of the earth-sheltered structure to have a basement atmosphere. Designers overcame this through the integration of skylights, windows, and orientation of the building.

Jurors' comments: *Sculptural expression. Great merit to interior. Good siting. Above average, all around.*

Honorable Mention Award: Consolidated Community Center, Aliamanu Military Reservation, Hawaii. Design firms: Arrowstreet Inc., Architects & Planners; Chapman Dessai Sakata, Inc., Architects. Supervised by: Pacific Ocean Division.

This linked series of pavilions incorporates physical fitness facilities, a multipurpose auditorium/



Honorable Mention: Enlisted Personnel Dining Facility

chapel/gym, snack bar area, meeting space, and a child care center in a single community support facility.

The buildings take advantage of the mild climate and traditional island forms of architecture, using pavilions with large sloping roofs, vented at their tops for cooling and overhanging at their edges to shelter open walkways and lanais.

The openness and flexibility of the center add to its function of providing many different activities, promoting a sense of community in an isolated housing area.

Jurors' comments: *Good vernacular architecture. Forms are derivative of local building heritage. Good use of natural materials. Natural ventilation.*



Honorable Mention: Consolidated Community Center



Honorable Mention: Tennessee-Tombigbee Waterway Visitor Center



Honorable Mention: Command and Control Facility



Honorable Mention: Troop Medical Clinic

Honorable Mention Award (Interior Design): Tennessee-Tombigbee Waterway Visitor Center, Aliceville Lake, Ala. Designed and supervised by: Mobile District.

This regional visitors center not only provides information and exhibits on the development of the Tombigbee River into the Tennessee-Tombigbee Waterway, it also recreates 19th century river life in the region. The architecture and interior decorating reflect the style and mood of life during the river days that the exhibits deal with.

Along with the visitors center, the complex also includes a wharf with an old stern-wheel steamboat and grounds landscaped in keeping with the historical context.

Jurors' comments: *Thorough, total expression of the traditional heritage of the South.*

Honorable Mention Award: Troop Medical Clinic, Fort Jackson, SC. Design firm: Odell Associates, Inc. Supervised by: Savannah District.

The long, clean lines of this clinic emphasize the functional organization inside, with a central spine for reception and waiting areas. The sloping roof adds visual interest while earthberms around the sides

help tie the building to its site.

Jurors' comments: *Simple. Strong expression. Straightforward.*

Honorable Mention Award (Interior Design): Command and Control Facility, Fort McPherson, Ga. Design firm: Kling-Lindquist Partnership, Inc. Supervised by: Savannah District.

This building has office space for 1,850 people in its three diamond-shaped segments. Each segment is connected at the corners, providing maximum exterior surface for sunlight and view, and centered around an open atrium. Easy access to all parts of the building makes the headquarters efficient.

Jurors' comments: *Strong interior statement. Interesting controlled environment. Simple yet bold interior.*

Architecture jury members: Ted P. Pappas, president and fellow, American Institute of Architects, Pappas Associates, Architects, Jacksonville, Fla.; Benjamin E. Brewer Jr., first vice president and fellow, American Institute of Architects, Sikes, Jennings, Kelly & Brewer, Houston, Texas; Sylvester Damianos, vice president for design and fellow, American Institute of Architects, Damianos & Associates, Pittsburgh, Pa.

Engineering

An engineering project is defined as a structure or complex that is primarily engineering in character.

Entries are judged on the basis of ingenuity and quality of engineering concepts, satisfactory solution to functional problems, economy of

design and construction, customer satisfaction, attractive appearance, and harmony with the surrounding environment.

This category has one Honor Award, three Awards of Merit, and three Honorable Mention Awards.

Engineering jury members: Dan Barge Jr., P.E., immediate past president, American Society of Civil Engineers, Barge, Waggoner, Sumner, Cannon, Nashville, Tenn.; Lester H. Poggemeyer, P.E., immediate past president, American Con-

sulting Engineers Council, Poggemeyer Design Group, Bowling Green, Ohio; Charles H. Samson, P.E., president, National Society of Professional Engineers, Civil Engineering Department, Texas A&M College Station, Texas.



Honor Award: New Morgan City Area Floodwalls

Honor Award: New Morgan City Area Floodwalls, Morgan City and Berwick, La. Design firms: Fromherz Engineers, Inc.; Greiner Engineering Science, Inc. Supervised by: New Orleans District.

In Morgan City, the floodwall passes through the downtown retail area on the land side. At Berwick, development is largely residential. In both communities, land use of the floodside is chiefly industrial. The new 17-foot-high wall blocked the view of the river.

To provide a river view, a pedestrian walkway was incorporated into the wall and overlook platforms were constructed above several vehicular access gates.

Jurors' comments: To reduce visual impact of such a massive structure, engineers designed functional floodwalls pleasing in appearance and in harmony with the environment. To minimize the walls apparent height, fracture-fin textured concrete was used with horizontal bands at the top and bottom. Overlook areas were developed with a walkway on top of the wall near downtown sections in both cities to allow views of the river and bay.

Fifty-five 12 by 40-foot graphic motifs of local culture and economy were cast into the wall in all areas of high visibility to create interest. This project is innovative, blends well with the environment, and has good cost results.



Award of Merit: John Day Powerhouse Juvenile Fish Bypass System

Award of Merit: John Day Powerhouse Juvenile Fish Bypass System, Columbia River, Oregon-Washington. Designed and supervised by: Portland District.

The Columbia River System historically has supported a large migratory run of salmon and steelhead. Construction of dams created obstructions, requiring juvenile salmonids migrating downstream to pass over the spillway and through turbines.

Jurors' comments: This new system is designed to collect migrating

juvenile salmon before they enter the turbine intakes and transport the fish around the powerhouse to the tailrace as quickly as possible, with a minimum amount of injury or disorientation.

The system consists of four basic components; submerged traveling screens, vertical barrier screens, a transportation conduit, and an out-fall chute.

This project is found to have ingenuity, good planning, effective cost control, and at the same time preserve functional integrity.



Award of Merit: Red River Army Depot Steam Plant

Award of Merit (Energy Conservation): Red River Army Depot Steam Plant, Texarkana, Texas. Design firm: Pope Engineers. Supervised by: Fort Worth District.

The steam plants location was dictated by the existing steam distribution system, railroad access for coal delivery and adjacent industrial complex.

Innovative layout of the material conveyance systems and other major components overcame the problems of the relatively small site.

Jurors' comments: This project solved several engineering problems; replacement of inefficient, over-worked, and outdated boilers; extra capacity for new production line facilities; resolution of a moratorium on natural gas purchases by use of low-cost coal; and useful steam production from scrap wood and paper products that were being buried in a landfill.

To sum up, this project has good environmental considerations, effective cost control, efficient function, and a good design layout.



Award of Merit: Solar Addition to Hillsdale Lake Visitor Center

Award of Merit: Solar Addition to Hillsdale Lake Visitor Center, Hillsdale Lake, Kansas. Designed and supervised by: Kansas City District.

This project's free standing collectors require no shade because they

are separate from the building and can exhaust heat directly to the outside air during the cooling season. Cost was estimated at \$122,000, but actual expenditure was \$110,746.

Jurors' comments: In response to an Executive Order for a 25 percent

reduction in federal energy use, a Department of Energy grant was obtained to add a solar heating system to the project's administration building. The solar collectors are east of the building and parallel to it. A flower garden disguises the

subsurface rock bin needed for heat storage.

An attractive appearance, favorable environmental considerations, good cost control, and high energy efficiency are highlights of this project.



Honorable Mention: The Main Lock Cofferdam, Lock and Dam No. 26 (Replacement)

Honorable Mention: Main Lock Cofferdam: Lock and Dam No. 26 (Replacement), Mississippi River, Missouri and Illinois. Designed and supervised by: St. Louis District.

The main lock cofferdam was constructed as part of the second stage work for the Lock and Dam No. 26 (Replacement) project.

Jurors' comments: This macro project, built under adverse geological and hydrological conditions, has creativity, ingenuity, and good environmental considerations.

Several engineering approaches were developed to meet the challenges of the Mississippi River. A design and testing program determined the minimum embedment of cofferdam cells in the scoured riverbed. Construction of the cofferdam cells was sequenced for safe navigation. Flow deflectors were designed and used. The floodway was scour-resistant. Backup cells provided added stability.



Honorable Mention: Renovation of Armament Manufacturing (REARM) Part 1

Honorable Mention: Renovation of Armament Manufacturing (REARM) Part 1, Rock Island Arsenal, Rock Island, Ill. Design firm: SSOE, Inc. Supervised by: Louisville District.

This project involved the consolidation and modernization of Army manufacturing operations on a major scale. For many years, seven separate buildings of different age and construction served the production of light weapons and ammunition.

Jurors' comments: The design solution integrated three of the existing buildings with 160,000 square feet of new construction, including 30,000 square feet of manufacturing support offices to consolidate the entire manufacturing process into a modern facility.

Good design, effective cost control, economy, practicality, and function are all considered appropriate reasons for recognizing the project.



Honorable Mention: Gums to Graysport Crossing Road Repairs

Honorable Mention: Gums to Graysport Crossing Road Repairs, Grenada Lake, Mississippi. Designed and supervised by: Vicksburg District.

The Gums to Graysport Crossing road serves as a major traffic connector between the north and south sides of Grenada Lake. Disastrous rains and flooding have inconvenienced and in some cases endangered school buses, mail delivery, visitors, and local traffic in two counties.

Jurors' comments: This project incorporated the use of steel bin walls to provide a solution to the periodic flooding and closure of this major traffic artery between the north and south sides of Grenada Lake. The use of the bin walls as an alternative to more expensive conventional designs and construction methods made funding of this project possible by reducing the amount of fill and construction time required.

Environmental



Award of Merit: Applegate Single Wet-Well Blending Study

An environmental project is defined as a site area, project development or project program which preserves ecological, aesthetic, cultural values; conserves or wisely uses natural resources; restores, maintains or enhances the natural or man-made environment; creates opportunities for people to use and enjoy their environment.

An entry may also be research that has contributed to environmental quality or knowledge.

Factors used by the jury were the significance of the contribution, the unique or innovative aspects of the effort, and the change resulting from the previous conditions.

This category has one Honor Award, two Awards of Merit, and three Honorable Mention Awards.

Honor Award: Wildlife Resources Management Manual for the U.S. Army Corps of Engineers. Developed by: Waterways Experiment Station.

This manual consists of 60 reports, with 20 more still being prepared, of updated technology and information on managing wildlife resources. This handbook and its supplemental newsletter have helped Corps users discover more biologically sound, technically reliable, cost-effective ways to protect natural habitats and populations on more than 11 million acres of projects.

More than 1,200 other federal, state and private agencies have taken advantage of this resource, including several universities.

Jurors' comments: *Information in the manual has tremendous potential for improving stewardship and management of wildlife in public as well as private lands and waters.*

Award of Merit: Heat Recovery Incinerator, Fort Dix, N.J. Design firms: Sanders and Thomas, Inc.; Clean Air, Inc./American Bridge. Supervised by: Philadelphia District.

This multipurpose facility demonstrates that solid wastes can be a resource to produce steam, rather than strictly a waste requiring disposal in landfills. Burning this solid waste eliminates 80



Honor Award: Wildlife Resources Management Manual for the Army Corps of Engineers



Award of Merit: Heat Recovery Incinerator

percent of the volume typically landfilled and produces steam to supplement the present fuel-oil-burning boiler facility.

Jurors' comments: *This process reduces the need for fuel oil to generate steam, thereby helping to conserve oil—a nonrenewable source of energy.*

Award of Merit: Applegate Single Wet-Well Blending Study, Jackson County, Ore. Designed and Supervised by: Portland District.

This study demonstrated that selective withdrawal of water from two or more different elevations into a single wet well discharges mixed water of better quality than the traditional fixed, low-level withdrawal system.

Maintaining prescribed temperature and oxygen levels creates environmental conditions downstream that promote growth and survival of aquatic plants and valuable anadromous fishes such as fall chinook and coho salmon.

In addition to these important environmental benefits, money can be saved in construction. By using one wet well, instead of two, the cost of water intake structures is reduced substantially and hydropower generation can be incorporated into the design.

Jurors' comments: *In the Jury's view, potential usefulness of the one wet well system is considerable and should be encouraged throughout the Corps.*



Honorable Mention: Lake Chicot Pumping Plant



Honorable Mention: Milan, Illinois, Local Flood Protection Project



Honorable Mention: New Morgan City Area Floodwalls

Honorable Mention: Lake Chicot Pumping Plant, Lake Village, Ark. Designed and supervised by: Vicksburg District.

By diverting agricultural runoff from a 350-square-mile drainage area, the Lake Chicot Pumping Plant has substantially reduced turbidity, sediments, pesticides, metals, and other pollutants in the lake.

The largest natural lake in Arkansas, Lake Chicot's water quality problems began in 1920 when a Mississippi River levee caused increased drainage into the lake. It was also used to store flood runoff and regulate downstream flow. As flooding increased in the area, the lake became

more and more polluted.

The plant pumps contaminated water away from the lake, assisted by two dams that control water flow both upstream and downriver from the lake. According to EPA standards the lake water is now extremely clear, and populations of fish are thriving.

Jurors' comments: *Ecological integrity, biological productivity, and recreational attributes of this 4,800-acre oxbow lake are restored by the pumping plant and two associated dams. Together they divert inflow of runoff waters carrying heavy loads of sediments, pesticides, heavy metals, etc., largely from agricultural areas.*

Reduction of turbid/polluted water inflow and consolidation of sediments through periodic drawdowns, enhanced the lake's water quality, fish habitats and populations, recreational opportunities, and the local economy.

Honorable Mention: Local Flood Protection Project, Milan, Illinois. Designed and supervised by: Rock Island District. Sponsor: Village of Milan.

This 10.8-mile levee system on the Rock River provides urban flood control while cooperating with the State of Illinois requirements. The levees are situated to create lake, marsh and grassland habitats for wildlife to include an endangered species.

The levee alignment was carefully chosen to avoid disturbing an area rich in historical and cultural resources.

A scenic bike path is being developed along the top of the levee.

Jurors' comments: *The sensitive project design included maintaining and enhancing natural, archeological and recreational resources, while simultaneously providing flood protection.*

Through cooperative federal/state planning, levees were aligned to maintain prehistoric archeological sites, woodlands, and marshes. Recreational and educational opportunities are enhanced.

Honorable Mention: New Morgan City Area Floodwalls, Morgan City and Berwick, La. Design firms: Fromherz Engineers, Inc.; Greiner Engineering Science, Inc. Supervised by: New Orleans District.

Designers of the 17-foot high floodwalls along more than a mile of urban riverfront incorporated artwork images on the floodwall faces, innovative landscaping, and a walkway atop the walls to meet aesthetic as well as functional needs.

The 55 images, each 12 feet by 40 feet, feature the cities natural resources, culture, and industry. They include drawings of water, birds, shellfish, swampland, and oil platforms.

The walls receive enthusiastic response from the community and are an impetus for urban renewal.

Jurors' comments: *By integrating aesthetic concepts with structural features, potential adverse visual impacts of the massive concrete floodwalls are minimized.*

Environmental jury members: Dr. Tudor T. Davies, director, Office of Marine and Estuarine Protection, Environmental Protection Agency, Washington, D.C.; Col. Robert M. Brantly, executive director, Florida Game and Freshwater Fish Commission, Tallahassee, Fla.; Dr. Laurence R. Jahn, president, Wildlife Management Institute, Washington, D.C.