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A STUDY OF
UNITED STATES ARMY FAMILY HOUSING
STANDARDIZED PLANS
(PX-0001-5-0835)

VOLUME 1

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May 1986

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This report was completed for the Assistant Chief of Engineering, Office of the Chief of Engineers (OCE) U.S. Army Corps of Engineers under contract issued by the National Park Service. Department of the Interior as part of the inventory and documentation of historic family quarters.

The purpose of this study was to gather information regarding the number, type genesis and prevalence of standardized designs for Army family quarters up to World War II. It is intended to provide necessary background data for the determination of historic and architectural significance of quarters. This report is part of a larger study currently under way to assist the U.S. Army in identifying and maintaining its historic family housing units and the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER), Dr. Robert J. Kapsch, Chief, in obtaining documentation on these quarters for their collection at the Library of Congress.

The OCE project leader is Alex Houtzager (DAEN-ZCH-F); the OCE Historic Preservation Officer is Constance Werner Ramirez (DAEN-ZCF-E); Sally Kress Tompkins served as Contracting Officer's Technical Representative for the National Park Service.

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Bethanie C. Grashof
May 5, 1986
Atlanta, Georgia

This study identifies the family housing plans standardized by the US Army between ca 1860 and 1940 and documents the development of their standardization. For the purposes of this study a standardized plan is defined as one that was used at more than one post, as a result of a formal, organized program or because plans were passed back and forth between posts in an informal manner.

Three periods of standardization have emerged during this period of study; ca. 1866 to 1890, 1890 to 1917, and 1917 to 1940. The first period covers the years "from the beginning" to 1890, during which time both the Quartermaster Corps and The Corps of Engineers, the primary construction agencies of the Army, were building Army housing. The exact beginning of this period is difficult to determine. Vague notions of standardized housing existed in the late 1850s but little documentation is available. More conscious standardization did not appear to begin much before the mid-1860s but it rapidly grew to be an established program by about 1890, the beginning of the second period. In 1890, and lasting until the declaration of war in 1917, a long series of building designs appeared. Designs for housing, barracks, headquarters, gymnasiums, storehouses, post exchanges and others poured out of the Quartermaster's office in Washington, D.C. For family housing alone, there were 82 different plans with anywhere from 1 to 15 variations-- and this does not include the special plans assigned to a specific location, some of which were actually ultimately used at more than one post. Aside from the temporary structures from World Wars I and II, these earlier ubiquitous building designs are probably what most people associate with standardized Army construction. Shortly after the first World War another massive housing program was initiated and lasted until the beginning of World War II and the transfer of all construction activities to the Corps of Engineers. This is the third period of standardized construction and the final phase with which this paper is concerned.

Throughout all three periods, numerous temporary structures were built to house the various activities of the Army. The unprecedented mobilization begun in 1917 produced thousands upon thousands of such structures, built in response to a national emergency and not meant to be used beyond three years. These buildings have not been included in this study. However, the temporary structures built during the 1860s and 1870s are included as an important part of this

study. They provide the foundation upon which some of the earliest standard designs were based. Hundreds of them still stand, apparently temporary only in name, a condition forced upon the Army by Congress. (This does not include temporary structures built during the Civil War, apparently none of which were for family housing.) [1]

While a considerable amount of research was undertaken as part of this study, it is certain that more facts remain to be unearthed. The roots of this design concept are obscure, buried deep, primarily in the drawings and papers of the National Archives and within the drawing files at the various Army posts throughout the country. For a general history of the Army, troop movements, soldiers' duties, etc., and a general history of construction activities, secondary sources have been useful. For specific information on early standardization, primary sources, such as original drawings, historic photographs and the Annual Reports of the Secretary of War and the Quartermaster General have proved invaluable. For information concerning standardized design and construction in the twentieth century, both secondary and primary resources have been of equal value.

The evolving nature of the data base should be recognized by users of this study. Over 300 plans have been identified as standard but it is highly unlikely that these are the only standard plans. All of the pre-1890, and many of the 1890 to 1917 standardized plans were discovered by comparing hundreds of original drawings and several dozen historic photographs at the National Archives. Not every drawing that was ever produced during this time can be found at the National Archives. Those that have been found, matched with any drawings which individual posts might have in their files, might identify additional standard plans. As posts were abandoned, drawings might have been lost or destroyed. It was not unknown for the entire records of a post to perish in a fire of the headquarters building or a similar office facility and records may have been irretrievably lost. The third period of standardization suffers from a similar problem. Again, all of the listed plans were

1/ U.S. War Department, "Annual Report of the Quartermaster General," Annual Report of the Secretary of War, 1862. (Hereafter cited as Annual Report of the Secretary of War, (date).)

identified by comparing photographs at the National Archives. The published proceedings of the 1932 Congressional Committee on Military Affairs mentions a large folder which apparently contained plans of the housing to be built. [2] Efforts to locate this volume were not successful, though one or two drawings found at the National Archives may be from this volume. They are noted in the listing of standardized plans to follow.

It was necessary, however to draw conclusions from the available data to properly organize and interpret the material which follows. The author has sought to create a framework in which additional data could be added and absorbed. Nevertheless, a large number of plans have been identified and a greater understanding of standardized construction has been achieved.

This report has been organized into several volumes to facilitate its use. Volume I contains the history of standardized family housing and its bibliography. Volumes II, III, IV and V present the standard plans. Support data, such as the scope of work, methodology and appendices are in Volume VI.

Each standard plan has been given a unique number. Standard plan numbers preceded by OQ-, NCO-, or HSQ- have been assigned by the author. Any other number was the official or "Regular" number assigned by the Army.

2/ U.S., Congress, House, Committee on Military Affairs, 1932 Increment Army Housing Program and Technical Air Corps Construction. 71st Cong., 2nd sess., 1930, p. 4.

Construction Responsibilities

Throughout the history of the United States, the primary construction activities of the Army have been the responsibility of the Quartermaster Corps and the Corps of Engineers. The Quartermaster Department was established in 1775 as the Quartermaster Corps with the primary responsibility of providing the Army with necessary supplies. At first it existed only in times of war but with the reorganization of the Army in 1818 [3], the Quartermaster Corps became a permanent organization and was given the added responsibility of transporting the troops from one location to another and limited housing of the troops. By 1884 the combined tasks of the Quartermaster Corps seemed almost overwhelming. The Annual Report of the Secretary of War for that year stated that the Quartermaster provided the following:

" . . . constructs and repairs roads for military purposes; pays tolls; and builds all necessary military bridges. Provides and distributes lumber, straw for bedding for men and animals, and all materials for camps and for shelter of troops and stores; tables and lockers; heating and cooking stoves for use in public barracks and quarters; tools for mechanics and laborers in the Quartermaster Department, and lights for all military posts and buildings. Builds barracks, quarters, storehouses and hospitals; provides by hire or purchase, grounds for military encampments and buildings . . . " [4]

The Army Corps of Engineers was also established, as part of the Corps of Artillerists and Engineers, in 1775 to operate both in peace and war. The United States Military Academy was established in 1802, partly to educate engineers for

3/ Erna Risch, Quartermaster Support of the Army. A History of the Corps 1775-1939, (Washington, D.C.: Quartermaster Historian's Office, Office of the Quartermaster General, 1962) p. 733. (Hereafter cited as Risch, Quartermaster Support.)

4/ Annual Report of Secretary of War, 1884.

public service. It was at this time that the Corps of Engineers split from the Corps of Artillerists. The Corps of Engineers built the seacoast fortifications and associated structures which proved so important in the War of 1812, and as the United States frontier pushed further and further west, the Engineers explored, surveyed and mapped the rivers and streams, built roads, canals and bridges, planned and carried out harbor and river improvements, and built public buildings.

During the early years of the nineteenth century, the division of construction responsibilities between the Quartermaster Corps and the Corps of Engineers is unclear. They appear to have been divided between temporary construction and permanent construction. Prior to the Civil War, on the constantly changing and expanding frontier, the troops themselves were responsible for the construction of their own quarters and any other structures required by the post. Construction was supervised by the local quartermaster or the commanding officer. At this time, the Quartermaster Corps was responsible for all construction at temporary posts [5], no small undertaking since all but a handful of the western posts were temporary, and three quarters of the United States Army was located in the west. [6]

The earliest identifiable, official assignment of quarters construction to the Corps of Engineers appears to be General Order 41, issued on 1 March 1860. In it, the construction of all quarters for officers and soldiers at permanent fortifications was given to the Engineer's Department. [7] However, prior to this time the Corps of Engineers may have already had responsibility for permanent quarters since nearly all of the drawings at the National Archives dated prior to the Civil War are marked with the Engineers' Department stamp or signed by a member of the Corps. The exact date when the Quartermaster Corps began taking over the construction of permanent quarters is unknown, though the takeover was accomplished by 1884. In addition to the 1884 Annual Report of the Secretary of War already cited, which lists among the tasks of the Quartermaster

5/ Risch, Quartermaster Support, p. 487.

6/ Annual Report of Secretary of War, 1852.

7/ Risch, Quartermaster Support, p. 440.

Corps the construction of barracks, quarters, etc., the 1885 "Annual Report of the Quartermaster General", included in the Annual Report of the Secretary of War quotes an Act of Congress dated 5 July 1884. In it the duties of the Barracks and Quarters Branch of the Quartermaster Corps were further defined, including a passage dealing with the preparation of drawings:

" . . . receipt, recording and analysis, and disposal of all applications, projects and requisitions touching the construction, improving, and repair of Army shelter, such as barracks, officers' quarters, storehouses, stables, guardhouses, hospitals, etc., wharves, bridges, targets, etc., hire and purchase of grounds for military encampments, improving of water supply, drainage, and sewage at military posts, care and preservation of post cemeteries and other misc. duties, including the preparation of drawings, specification, estimates and studies for various work under heads above noted."

As the Quartermaster Corps took over most of the construction on Army posts, the Corps of Engineers concentrated on public works. After 1900, construction within the Army became the center of heated debates as to which organization should have full responsibility of all Army construction, the Corps of Engineers or the Quartermaster Corps. Though the Corps of Engineers tried a number of times to have this responsibility deeded to them, the Quartermaster General maintained the primary responsibility for Army construction until 1941 when the Corps of Engineers finally emerged as the sole Army builder.

Throughout the years prior to 1940, the Ordnance Department and the Signal Corps exercised limited responsibility for construction activities on various Army posts. Their influence in the overall development of standardized construction of family housing within the United States Army was not included in this report. (Certain constraints in this project led to the decision to concentrate on the records of the Quartermaster General and the Corps of Engineers. Further study into the construction activities of the Ordnance Department and the Signal Corps will certainly lead to a broader understanding of the impact of standardization in the area of family housing. Since

research for this project was completed, an addition source of standardized plans has been found by another researcher. Plans for Arsenals and Armories, published in 1875 by the General Printing Office in Washington, D.C., contains some 12 to 15 designs for family quarters. It contains mostly floor plans, though some elevations are illustrated too. The plans from this publication should be compared with those plans identified in this report to determine any similarities.)

Early Construction Needs

Provisions for officers' families were made as early as 1782 when a major general and his family were given a covered four-horse wagon and a two-horse wagon. Family quarters were provided as early as 1826 at Ft. Monroe, Virginia, and in 1849 at Ft. Leavenworth, Kansas. [8] The need for family housing in the Army was brought about by a number of things. The expansion of the boundaries of this young country proved important as it made necessary the need for an army. Troop strength and location dictated how much, what type, and where housing would be constructed and economics limited construction costs.

In the early days of the United States, housing requirements for the Army were few. After the Revolution the Army was reduced in size to only about 80 men [9] and the Articles of Confederation, effective from 1781 to 1787, did not provide for a standing army during times of peace. It was not until the Constitution was ratified that a standing national army was created. At that time, housing needs appear to have been limited; maintenance of the seacoast fortifications was

8/ Misc. 240- Quarters, Family, "TAG to DCSPER, 10 Jan 1958", United States Army, Center for Military History, Historical Records Branch.

9/ Ellis L. Armstrong, ed., History of Public Works in the United States, 1776-1976, (Chicago: American Public Works Association, 1976), p. 586. (Hereafter cited as Armstrong, History of Public Works.)

done through contracts with civilian engineers. [10] In 1795, the Corps of Artillerists and Engineers was created to maintain and direct most work at the coastal fortifications. [11] In 1794 the First System of Seacoast Fortifications had authorized fortifications to be built at most of the strategic ports and harbors of the United States; a second System was established in 1807 and lasted until about 1815. A Third System was established in 1821 and continued for approximately 30 years, ending in about 1850. The earliest quarters built to house the American Army were associated with these fortifications and were the responsibility of the Corps of Engineers. [12]

In addition to the increase in seacoast fortifications, the acquisition of new lands, beginning in 1803 with the Louisiana Purchase, required occupation by more and more Army troops who, in turn, needed shelter. By 1848, The United States had added Texas, California, Utah, Nevada, New Mexico, Arizona and part of Wyoming to its territory.

The westward movement of settlers, fur traders and fortune seekers added to Army mobilization, chiefly directed against native Indian tribes. As early as the 1790s Indians in the Ohio territory were resisting the western movement of the settlers. [13] Between 1820 and 1845, these Indians were forced into the "Permanent Indian Frontier", an area west of Arkansas and Missouri. [14] To prevent fighting between the Indians and the settlers the Army established a line of posts running from Ft. Snelling in Minnesota to Ft. Jesup in Louisiana.

As the United States continued to expand its western boundaries, the Army also pushed westward, maintaining a line of posts just ahead of the settlers and providing protection to the settlers and the Indians alike. The Army also explored new territories and river valleys and estab-

10/ Armstrong, History of Public Works, p. 586.

11/ *ibid.*

12/ *ibid.*, p. 588-589.

13/ *ibid.*, p. 586.

14/ *ibid.*, p. 590.

lished overland transportation routes. Because this line was in a constant state of flux, posts were continually being abandoned and new ones built.

At first, as stated, construction at the western posts was left to the enlisted troops. [15] The buildings tended to be temporary, crude in design, expensive to build (since materials often had to be transported long distances) and in constant need of repair. [16] Their construction was supervised either by the local quartermaster or, more often, by inexperienced officers. [17] During the 1830s and 1840s civilian mechanics and laborers were sometimes used when available [18], but the 1850s saw a return to troop labor as a result of an effort by the United States Army to reduce its expenses. [19]

According to the 1852 Annual Report of the Secretary of War many of the western posts were also renting space or occupying buildings already in existence on post property, such as old mission structures. The 1856 Annual Report of the Secretary of War stated that the posts in Texas and New Mexico were on rented land and that those posts in California, Oregon and Washington were in temporary locations and, except for Benicia and Vancouver, using temporary buildings as well. At many eastern fortifications quarters were rented as well.

The predominant use of temporary quarters was not solely the result of an Army constantly on the move, or of a troop labor force inexperienced in the building arts. Both the Congress of the United States and the Secretary of War placed strict limits on what could and could not be built and how much it would cost. Appropriations for quarters and barracks were never large. Throughout the 1850s (and

15/ Francis Paul Prucha, Broadax and Bayonet, (Lincoln: University of Nebraska Press, 1953), p. 105.

16/ Risch, Quartermaster Support of the Army. p. 304.

17/ *ibid.*, p. 487.

18/ Francis Paul Prucha, Broadax and Bayonet, (Lincoln: University of Nebraska Press, 1953), p. 110, 116.

19/ *ibid.*, p. 117.

indeed, through the entire period under study) the Quartermaster General complained yearly to the Secretary of War about the small amount of money available for the repair of existing buildings and the construction of new ones. That financial constraints were stronger on the erection of permanent structures than on temporary ones is evident from General Order 95, issued on 23 November 1868:

"No permanent barracks, quarters, hospitals, storehouses, offices, stables, piers or wharves, shall be erected but by order of the Secretary of War, and according to the plans directed by him, and in consequence of appropriations made by law. And no alterations shall be made in any such public building without authority from the War Department. These restrictions do not extend to temporary huts . . . ; but no contracts shall be entered into, nor purchases of material made, for the erection of such temporary buildings, unless specially authorized by the War Department." [20]

Such restrictions may have been a part of Army regulations since 1859, Erna Risch, in her history of the Quartermaster Department, states that "such had been the law since 1859, until Congress put a limit of \$20,000 on the cost of permanent buildings in 1872." [21] General Order 95 does not restrict itself to western fortifications but it was issued in response to past construction excesses at some of those posts.

The rapid growth of the United States throughout the 1840s and 50s saw the Army increase to around 18,000 men by the eve of the Civil War. By the end of the Civil War over 1 million men, most of them volunteers, were in the Army. General Order 77, issued in 1865, required all departments to reduce themselves to absolute minimums. [22] By 1868 this number had been cut to just over 48,000 men, with a

20/ Annual Report of the Secretary of War, 1868. See also Risch, Quartermaster Support, footnote #118, p. 457.

21/ Risch, Quartermaster Support of the Army, p. 487.

22/ Annual Report of the Secretary of War, 1865.

further reduction expected to bring the number to 43,000 men by January 1869. [23]

Dispite the often difficult and dangerous conditions found on the frontier, officers' families often followed the Army. The practice was frowned upon as it was believed to destroy the officer efficiency. Only at the established, permanent fortifications, were families a usual occurrence. The need for family housing was firmly established at an early date but the use of standardized house plans does not appear before 1866. When a post was established, quarters would be needed quickly. A standard design, regardless of how simple, that would be suitable for a variety of building materials and conditions would certainly have made the task of providing housing an easier one.

23/ U.S. War Department, Annual Report of the Secretary of War, 1868.

First Period of Standardization - 1866 to 1890

Early Designs

Housing for families was provided with varying degrees of suitability until minimum standards began to be recognized in the 1860s. In 1861, the U.S. War Department published regulations on barracks and quarters.[24] The regulations had been developed in 1858 by Don Carlos Suel, Assistant Adjutant General, but they were never formally adopted. [25] In fact, the existence of the publication was known to only a few people.

Barracks seem to have been the first building type to be standardized. As early as 1847 Henry Rosecrans developed standards for barracks, which were used for nearly 30 years. In 1863 Army regulations gave 225 square feet per man for posts located north of 38 degrees North latitude and 256 square feet per man for posts located south of that line. The height of the rooms was to be 10 feet, giving a man north of 38 degrees North latitude 375 cubic feet of space and a man south of 38 degrees North latitude 426 cubic feet. If, however, the number of officers and soldiers made it necessary, a commanding officer could reduce these amounts-- and he usually did. [26]

24/ U.S. War Department. Regulations Concerning Barracks and Quarters for the Army of the United States. (Washington: Geo. W. Bowman. 1861).

The card catalogue entry at the Library of Congress states that the regulations were unofficial hints-- they had never been adopted. The number UG463R34 is assigned to this title but it could not be located. The only designs found from these regulation are for soldiers' quarters and a guard house, not for family housing.

25/ Clarence G. Beardslee. "Development of Army Camp Planning," Civil Engineering, September 1942, p. 490; See also Clary, "These Relics of Barbarism", p. 114.

26/ Risch, Quartermaster Support of the Army. p. 488.

It was not until about 1866 that standard plans for officers and non-commissioned officers and their families began to appear. The The Annual Report of the Secretary of War for that year also gives an indication that standard plans might have been developed. In 1866 a new post was established with "huts and shelters made by the labor of enlisted men with materials at hand. Dimensions of huts for officers will be furnished to the Commanding Officer by Colonel Babbitt..." [27] (Just who furnished the plans is unknown.) From 1866 to 1872 a number of plans were issued that would prove to be important in the later development of standardized designs.

The first of these designs are represented here by OQ-2, 3, 4 and NCO-1, plans which are illustrated in Volume II of this report. The earliest date for which is 1866. They are part of a larger series which included plans for a school house, mess hall, bakery, jail, chapel and barracks. The board and batten siding and lattice porch columns, typical in the 1866 series, are similar to design details of the 1861 regulations barracks design, figure 1, but no evidence whatsoever has been found to connect the 1861 regulations and the 1866 series. It is highly unlikely that the 1866 series were copies of the 1861 designs; the 1861 regulations were never adopted and drawings of the plans from the 1866 series only were found in the files of a number of posts.

Another set of designs, OQ-5, 6 and 7 may also be from this very early period. Though no date was found on the drawings, they might be as early as 1866. These drawings are clearly marked "for use in the Great Plains and Mountains". An 1867 magazine article from the Army and Navy Journal addresses the condition of barracks and quarters and in several paragraphs specifically mentions "the Plains":

"Secretary Stanton, in his last Report, says that 'measures have been adopted for the purpose of providing suitable shelter for the troops now stationed on the Plains, and for those which may be ordered thither, and to prevent suffering during the Winter.'" [28]

27/ Annual Report of the Secretary of War, 1866.

28/ "Barracks and Quarters", Army and Navy Journal, 23 March 1867, p. 462.

The "last report" referred to was the 1866 "Annual Report of the Quartermaster General" found in the Annual Report of the Secretary of War. This emphasis on "the Plains" leads the author to believe that the designs represented by QO-5, 6 and 7 may be the "measures" that were being referred to rather than the designs of QO-2, 3, 4 and NCO-1. These latter standard plans were found in the files of a number of posts not located on the Plains.

Throughout the entire period encompassed by this report, Quartermaster Generals had continually complained of having too little money to provide the necessary quarters for the Army. Figure 2 illustrates one way the Quartermaster General's Office tried to cope with this situation in 1871. Whether this plan was ever used is unknown.

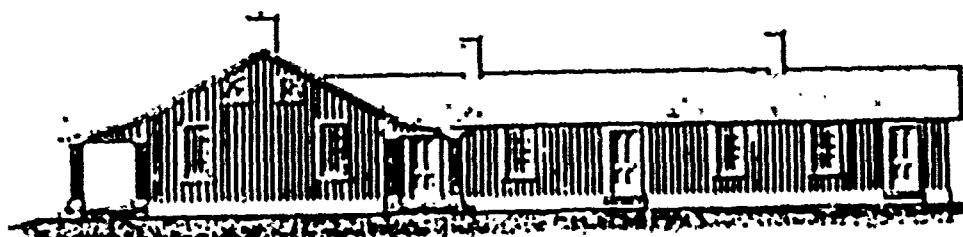
Living Conditions

Despite these early attempts to provide adequate housing, by the 1870s the Army was being severely criticized for the conditions under which its men lived. Troops lived in quarters in constant need of repairs with little money appropriated by Congress each year for the repairs. Quartermaster General Montgomery C. Meigs, touring the frontier post of Texas in the winter of 1869-1870 was appalled at the conditions he found. Officers pleaded that the laws prohibiting all but temporary quarters from being built in the west be repealed. At seacoast fortifications soldiers were living in unsanitary conditions within the casements of the forts. But perhaps the strongest criticism came from the Army doctors. Dr. John Shaw Billings published, in 1870, A Report on Barracks and Hospitals with Descriptions of Military Posts blasting the conditions under which the Army was housed. In relation to standardized construction, Billings most significant comments assailed the Army for not issuing any sort of standard plans or guidelines to be used at military posts. He further questioned why the 1861 regulations had never been issued. At least (he thought) the plans developed for officers' quarters were good. Such criticism, no doubt, led to an action by Quartermaster General Meigs in 1872.

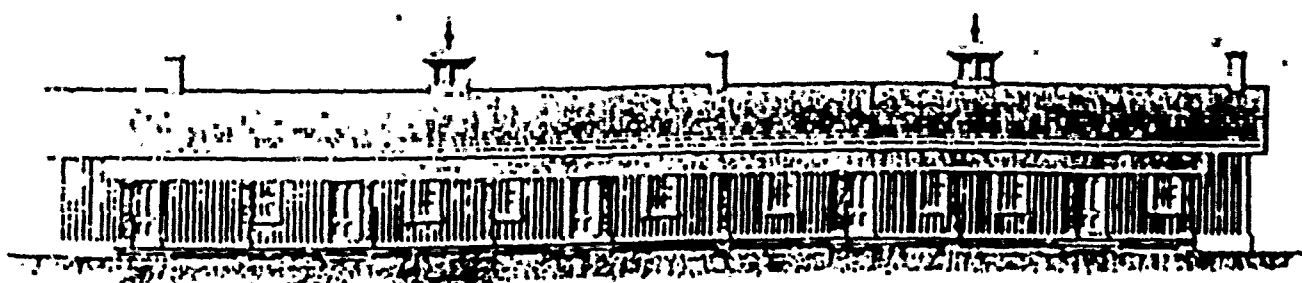
SOLDIER'S
QUARTERS
FOR
ONE COMPANY.

1860 Barracks

Fig. 1.



SIDE ELEVATION.



FRONT ELEVATION.

Fig. 1. 1860 Barracks, from David A. Clary. "These Relics of Barbarism: A History of Furniture in Barracks and Guardhouses of the United States Army. 1800 - 1880." Prepared by David Clary and Associates for the Harpers Ferry Center. National Park Service.

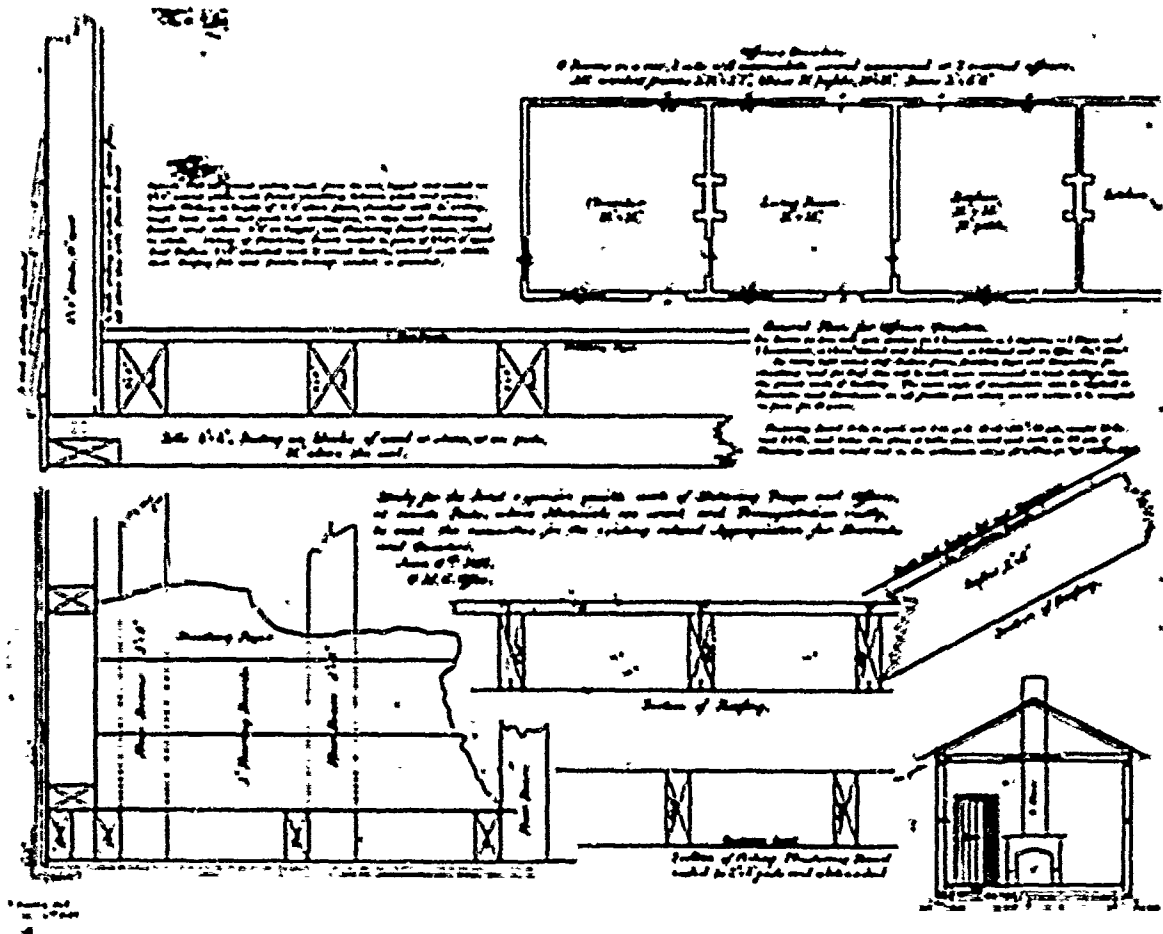


Fig. 3. Study for . . . , June 2, 1871.
From NARS- Cartographic and Architectural Branch,
RG 92 Post & Reservation File, Map 135B-30.

Meigs Standard Plans

Several passages in the 1872 Annual Report of the Quartermaster General seem to indicate that major changes in policy and organization had recently taken place;

"The rude and temporary character of the buildings or huts erected hastily in the wilderness for

shelter of troops sent to occupy positions far from all markets and settlements, has led officers, in many cases, to neglect sending to the War Department full and intelligible plans of posts long occupied. I have constantly endeavored to remedy this defect in the records of this office, and have now, I believe, succeeded in completing a set of plans for every military post... Standard plans for temporary barracks and quarters at military posts in the West have been prepared and distributed." [29]

This set of standard plans, recommended by the Board on Revisions of the Army Regulations, was issued on 14 September 1872 and included a design for quarters for a commanding officer and a double set of quarters for two company officers. In an 1882 article in the Journal of the Military Service Institution of the United States a writer indicated that there was "a general disapproval of the plans recommended by the Board of Revisions [sic] . . ." [30] The biggest complaints being the objection to double houses and the half story or attic. Double houses often cut off prevailing winds and sunlight from one set of quarters in the pair and as to the use of an attic story, it was thought to be an "official evasion of the regulation limiting the number of rooms" allowed officers of the different ranks. And while that regulation was fine in the past, "the conditions under which the old regulations were made have passed away; no Commanding Officer thinks now of confining company officers to the legal allowance of rooms if more can be given, neither should it be necessary to call a second-story an attic." [31] Despite these objections, Meigs' plans were widely used, often with variations. One of the most common variations was the use of the design for a commanding officer as quarters for line officers. In doing this the rooms were simply made smaller. These plans were not, however, built only in the west. Governors Island and Madison Barracks in New York State and Ft. Adams, Rhode

29/ Annual Report of the Secretary of War, 1872.

30/ Lt. Col. Thomas M. Anderson, "Army Posts, Barracks and Quarters," Journal of the Military Service Institution of the United States, Vol. 11, No. 8, 1882, p. 434.

31/ ibid, p. 435

Island had several sets of these quarters. Nor do they appear to have been particularly temporary for they still exist at such locations as Governors Island and Ft. Huachuca, Arizona.

The source, or sources, for Meigs designs is unknown. At this time there were a number of draftsmen in the Quartermaster's office working on the revisions of plans and estimates for new buildings. More important, however, they were also employed in:

"...making for the files of this office tracings of all plans and drawings of structures authorized during the year to be erected, and in collecting and properly marking and filing the old plans, drawings and maps on hand at this office, and systematizing the records of the same. The importance of having at this office a full description, with copies of the plans of construction, of all buildings throughout the country in charge of the Quartermaster Department is apparent...it is believed that there are now in this office the necessary plans and drawings, or descriptions, to give an intelligent idea of the dimension, character, and capacity of nearly all the public buildings..." [32]

Meigs obviously had access to a number of building designs. Figures 3 and 4, from Ringgold Barracks Texas, dated 1870, are clear forerunners of Meigs' design for company officers quarters. Also from the Division of the Missouri, OQ-11, 22 and 23, dated 1869, share Meigs' floor plans. As early as 1867, a similar design at Fort Independence, Mass. was planned, figure 5.

In 1874, the Quartermaster General's office issued instructions for the preparation of plans and estimates for the construction of permanent buildings at seacoast fortifications. Except for the 1874 Annual Report of the Quartermaster General, no other mention of these plans has been found; what they may have been is unknown.

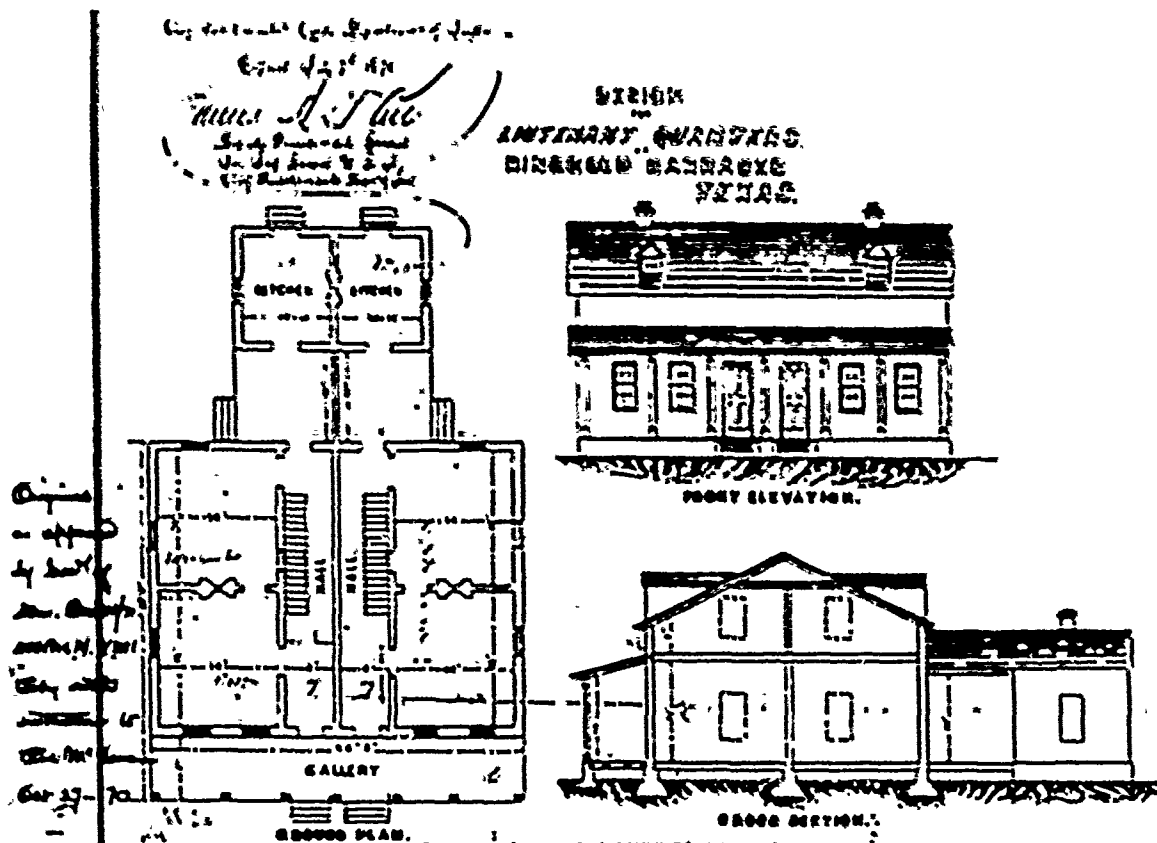


Fig. 3. NARS- Cartographic and Architectural
 Branch, RG 77 Misc Fortifications File, Ft.
 Ringgold, Texas #7.

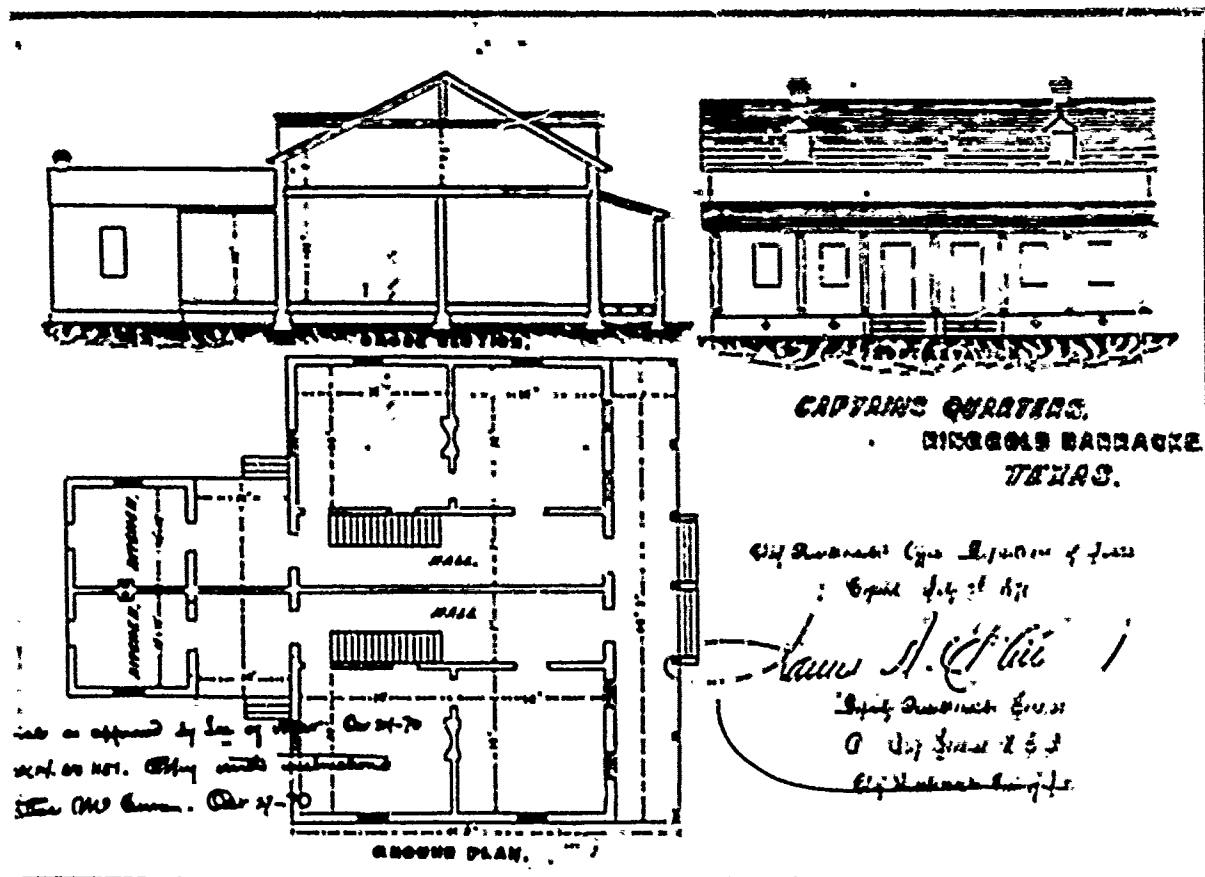


Fig. 4. NARS- Cartographic and Architectural
 Branch, RG 77 Misc Fortifications File, Ft.
 Ringgold, Texas #6.

Unlike the period of standardization that was to follow in 1890, much of the standardization at this time took place within regional military departments. The Departments of the Dakota and the Platte seem to have been especially active and many of their designs were variations on Meigs 1872 plans. The Department of the East, located on Governors Island in New York Harbor also issued a number of plans. Meigs plans, however, seem to have been the most universal of the standardized designs at this time.

Non-commissioned Officers/Hospital Stewards

Standardized designs for quarters for families of commissioned officers are much more prevalent than for non-commissioned officers (NCO). A few standard plans for NCO family housing have surfaced but NCO family quarters seem to have been non-standard more often than not. The commissary sergeant, the ordnance sergeant and the quartermaster sergeant were most likely to get their own quarters. By the 1880s the various plans were generally designated simply as non-commissioned staff officers quarters.

Besides officers and non-commissioned officers, hospital stewards were also given their own quarters, but as late as 1885 regulations still only gave the hospital steward a room in the post hospital:

"Under existing regulations allowance for quarters for stewards is 1 room; this accommodation has been provided for in all hospitals built in conformity with plans and specifications of Circular #10, S.G.O., 1877, approved by the Secretary of War, October 20, 1877, but is found to be inadequate, especially since as the greater number of stewards are married and have families." [33]

The construction of separate steward's quarters is first mentioned in the 1888 "Annual Report of the Quartermaster General"; on September 22, 1888 Congress approved an act which set limits on the construction costs of hospital stewards quarters to \$800, except near cities with a

33/ U.S. War Department, "Annual Report of the Surgeon General", Annual Report of the Secretary of War, 1885.

population greater than 50,000 where the limit was set at \$1,200. On December 1, 1888 the Surgeon General's Office issued an Appendix to Circular No. 10, War Department, S.G.O., 1877 which provided additional approved plans and specifications for both hospital stewards' quarters and hospitals. Two plans for hospital steward's quarters may have been issued. A copy of these specifications was found at the Military Reference Branch of the National Archives. (See Volume V, Appendix 3.) At the Cartographics and Architectural Branch of the National Archives, drawings for this same design were found for Ft. Sheridan. This design is HSQ-2. According to the specifications there were two versions of this design; a \$1200 cottage with a tower, as represented at Ft. Sheridan; and an \$800 cottage without a tower, as represented at Ft. Porter, NY. In the same files, however, a different design, HSQ-1, from Boise Barracks, is also labeled "According to Appendix Cir. 10. S.G.O. Dec.1. 1888." [34]

Space Allocation

While looking through these early drawings it became apparent that there was a direct relationship between an officer's rank and his authorized quarters and there were two basic ways to make this distinction. The first way gave all ranks the same number of rooms but varied their size according to rank. For example, an officer would be given a number of rooms in which to live; for a lieutenant, each room might be 14 ft x 14 ft while a captain or major would have rooms that were 16 ft square, and so on. Figures 3 and 4 from Ringgold Barracks illustrate this concept. Commanding officers were, of course, given more space. Possibly more prevalent at this time, was the second practice that of providing the sized rooms but increasing the number of rooms allotted each higher rank. Figure 6 exemplifies this concept. To further illustrate this second

34/ NARS- Cartographic and Architectural Branch, RG 77
Misc Fortifications File, Boise Barracks, Idaho, #15.

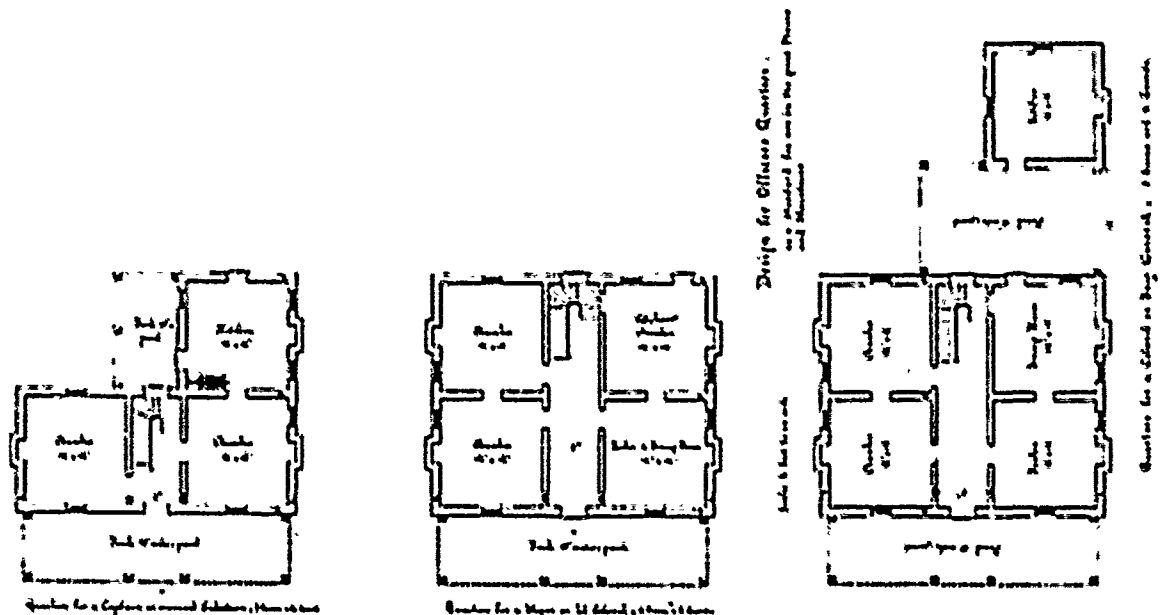


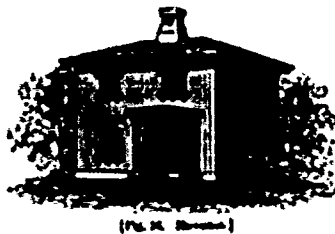
Fig. 6. NARS- Cartographic and Architectural Branch, RG 92- Post & Reservation File, Map 135-B, #9, 10.

method of space allocation comes at Forts Davis and Stockton, Texas in 1868 where three types of quarters were being constructed: 1) officers quarters, 48 ft x 21 ft; 2) officers quarters, 48 ft x 21 ft plus wing 18 ft x 19 1/2 ft; 3) commanding officer's quarters, 48 ft x 21 ft plus wing 18 ft x 41 ft. [35] Both methods of space allocation according to rank are important because they carried through all three periods of standardization and are still valid today.

Architectural Context

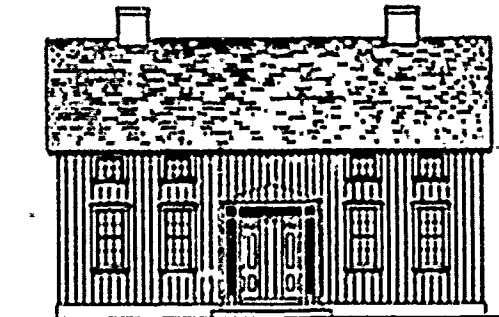
When the first period of standardization began, builder's handbooks, style books and pattern books were extremely popular. Examples include John Haviland's The Builder's Assistant (1818-1821), A Series of Select and Original

Modern Designs for Dwelling Houses (1840), by John Hall. and Victorian Cottage Residences (1842, with reprints into the 1870s), and The Architecture of Country Houses (1850) both by Andrew Jackson Downing. Between 1797 and 1860, 188 such books were available through American publishers alone. [36] After the Civil War these books were supplemented by mail-order catalogues for plans and entire houses. From these books came inspiration for many early designs. The small cottage in figure 7, with its lattice porch, vertical wood siding and trebeated window frames remind one of the board and batten frame cottages of OQ-2, 3, 4 and NCO-1, figure 8.



(Pl. 24. Downing)

Fig. 7. From A.J. Downing, The Architecture of Country Houses. New York: D. Appleton & Company, 1850; reprint ed., New York: Dover Publications, Inc., 1969.), p. 129, fig. 52.



'Front Elevation'

Fig. 8. OQ-4 from NARS- Cartographic and Architectural Branch, RG 77- Misc. Fortifications File, Camp Harney, Oregon- #3. 1866

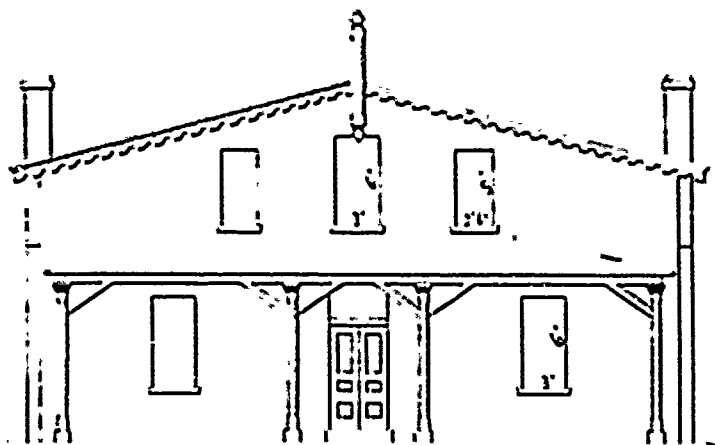
36/ Dell Upton. "Pattern Books and Professionalism: Aspects of the Transformation of Domestic Architecture in America, 1800-1860," Winterthur Portfolio 19 (Summer/Autumn 1984):108.

Similarly, Downing's "Southern Country House", figure 9, and OQ-13, figure 10, and OQ-6 and 7 also share elevation details.



[Pl. 142. Exterior of Southern Country House.]

Fig. 9. From A. J. Downing, The Architecture of Country Houses (D. Appleton & Company, 1850), p. 316, fig. 142.



General Front Elevation

Fig. 10. OQ-5 from NARS- Cartographic and Architectural Branch, RG 92- Post & Reservation File, Map 135-B #10. Possibly 1866.

Elements of the "French-Roofed Farm-House", figure 11, from George E. Woodward's Woodward's Architecture and Rural Art. No. 11, 1868, can be found in some of the designs of the Department of the Dakota. Figure 12, of OQ-28, is an example.

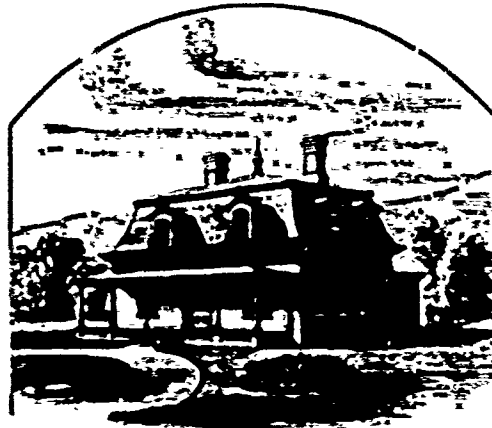


FIG. 11. FARM-HOUSE, FRENCH-ROOFED.

Fig. 11. From George E. Woodward, Woodward's Architecture and Rural Art. No. II (New York: Geo. E. Woodward, 1868), p. 112.



Front Elevation

Fig. 12. OQ-28 from NARS- Cartographic and Architectural Branch, RG 77- Misc. Fortifications File, Ft. Meade, Dakota Terr. #23. 1878.

Similarities between the designs in these books and the housing of the Army abound. But perhaps more important are the sources of the plans themselves. Of all the plans identified from the first period of standardization, two plan types for commissioned officers have emerged as being the most prevalent. One has a central hall with two rooms, generally of equal size, on each side. OQ-12 best illustrates this plan type. The other is more or less one half of this; two rooms stacked, with a hall along one side, combined with its mirror image to form a double set of quarters. This second plan type is best illustrated by OQ-24. The root for each of these plans can be found in the Georgian structures of eighteenth century America. Figure 7 illustrates examples of this plan from Massachusetts, Virginia, and South Carolina. It is not surprising that the

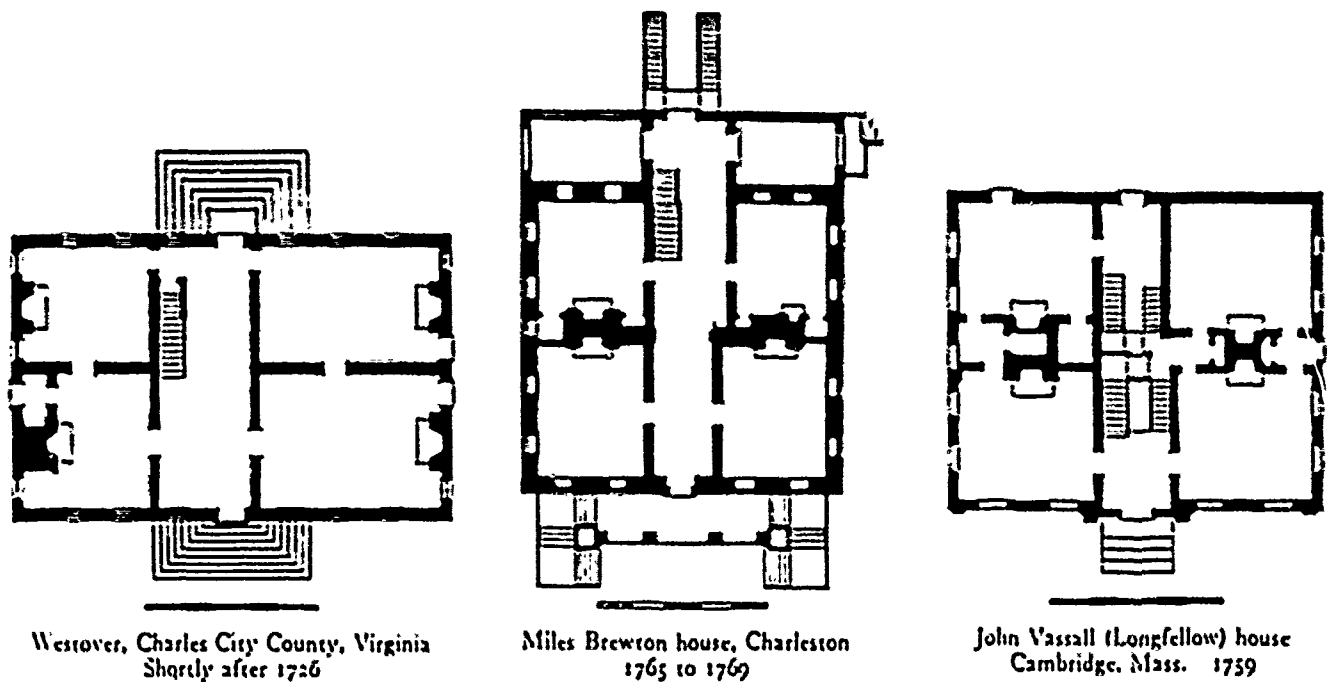


Fig. 13. From Fiske Kimball, Domestic Architecture of the American Colonies and of the Early Republic, (New York: Charles Scribner's Sons, 1922; reprint ed., New York: Dover Publications, Inc., 1966), Figure 46, p. 73.

Army should choose these as the basis for their designs for the full Georgian block, in both plan and elevation, was the most popular form presented by the architectural publications. [37] Despite this adherence to certain Georgian design principals, the architects of both the Army and the private sector were not adverse to dressing up their buildings in the latest Gothic, French, or Italian garb, as illustrated in figures 14, 15, while still maintaining their Georgian floor plan.

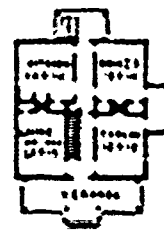
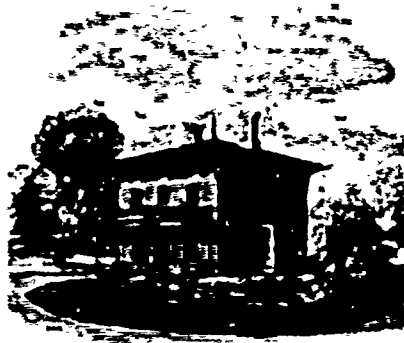


FIG. 114.—FIRST FLOOR.

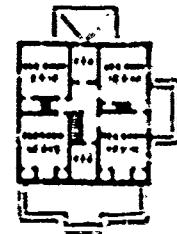


FIG. 115.—SECOND FLOOR.

Fig. 14. From George W. Woodward, Woodward's Architecture and Rural Art, No. I (New York: Geo. E. Woodward, 1867), p. 84.



AN OMBASSETAL FASH HOUSE.

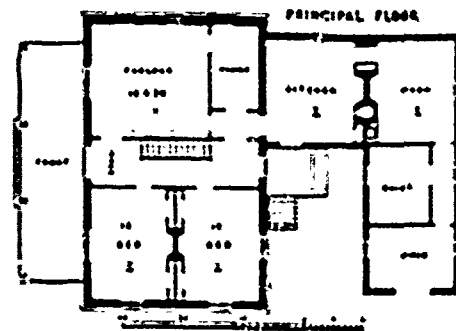


Fig. 15. From A.J. Downing, Victorian Cottage Residences (New York: John Wiley and Son, 1873), Design IV, p. 81.

37/ Dell Upton, "Pattern Books and Professionalism: Aspects of the Transformation of Domestic Architecture in America, 1800-1860", Winterthur Portfolio 19, Summer/Autumn 1984, p. 131.

The partial Georgian plan, typical of the double sets of quarters, was a common urban plan in late seventeenth century England, and was later used throughout the United States for both urban and rural locations. It was, in fact, a standard eighteenth century plan in urban Philadelphia and Baltimore and was used into the twentieth century. [38] John Hall showed it in 1840 as an urban row house, figure 16. In 1849, William Ranlett presented it as a rural cottage, figure 17. And in 1868, George Woodward proposed to remodel "the old house" as "it is the same thing a thousand times repeated, in almost every densely populated street". [39] Henry Glassie, in his book, Folk Housing in Middle Virginia calls this the two-thirds Georgian. [40]

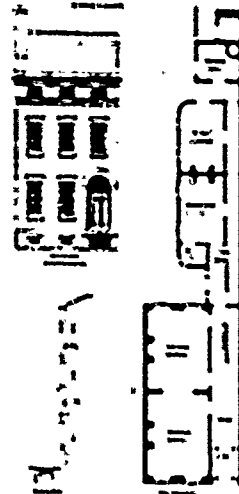


Fig. 16. From Upton, "Pattern Books and Professionalism" (Winterthur Portfolio, Summer/Autumn 1984), Fig. 3, p. 116.

Fig. 16. From Upton, "Pattern Books and Professionalism" (Winterthur Portfolio, Summer/Autumn 1984), Fig. 3, p. 116.

38 Upton, "Pattern Books and Professionalism", p. 131.

39/ Geo. E. Woodward, Woodward's Architecture and Rural Art, No. I - 1867, p. 99.

40/ Henry Glassie, Folk Housing in Middle Virginia, (Knoxville: University of Tennessee Press, 1975), p. 91.

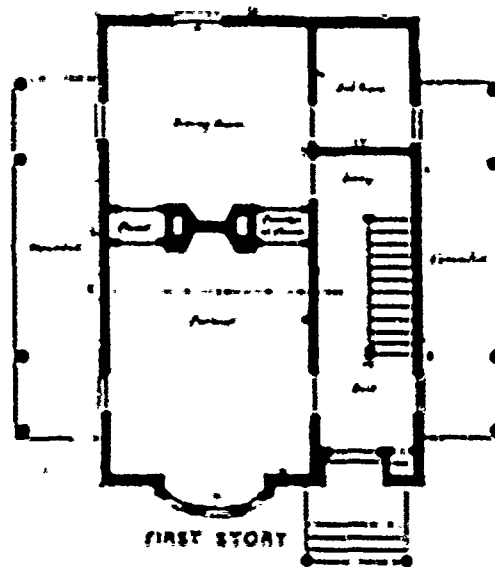


Fig. 14. First-floor plan, rural cottage. From William Ranlett, *The Architect*, vol. 1 (New York: Dewitt & Davenport, 1849), des. 3 pl. 14.

Fig. 17. From Dell Upton, "Pattern Books and Professionalism", p. 133.

Conclusion of First Period of Standardization

Despite the strides taken to improve the lot of the Army, severe criticism continued, throughout the 1880s, of living conditions. The Surgeon General's Office continued to condemn the conditions of quarters, the lack of adequate heating and sanitary systems, and the poor ventilation. In 1886 monthly reports to the Surgeon General's Office were instituted which included a section on the condition of quarters and barracks, to be included in the medical history of the posts. With mounting criticism and rising construction costs, (and an inadequate budget), the Quartermaster Department embarked upon an ambitious program of standardization.

Second Period of Standardization - 1890 to 1917

A Major Program of Standardization

The beginning of the second period of standardization is based not on any announcement by the Quartermaster General of a major program of standardization but on the earliest date, 1890, found on the massive series of standard plans found at the Cartographic and Architectural Branch of the National Archives. This series carries through to 1917, the beginning of World War I, and includes everything from chapels to gymnasiums, to quarters, etc. It should be noted that there is nothing in the Annual Reports of the Quartermaster General in 1890 or any of the years immediately before or after 1890 that would indicate the beginning of a program of this magnitude. It is possible that the program began gradually and built up momentum as the needs of the Army grew. It is also possible that it has its roots earlier, in the 1880s.

In 1886, President Grover Cleveland set up the Endicott Board under the direction of Secretary of War William Endicott to review coastal defenses. The Board's findings recommended twenty-six coastal fortifications and three fortifications on the Great Lakes. [41]

In 1888 and 1889 a large number of quarters were being built, mostly on the east coast and in San Antonio along with special projects such as Ft. Sheridan and Ft. Logan in the mid-west and west. It is probably safe to assume that much of the building activity at this time was the result of the recommendations made by the Endicott Board.

While private architectural firms were responsible for the designs of many of these western posts, the Office of the Quartermaster General was still ultimately responsible for their construction and it continued to design its own buildings as necessary. As with every Quartermaster General before him, General R.N. Batchelder, in his 1890 Annual Report to the Secretary of War, spoke of insufficient

41/ Elis L. Armstrong, ed., History of Public Works in the United States, 1776-1976, (Chicago: American Public Works Association, 1976), p. 593.

appropriations for the Quartermaster Department. Of a total budget of \$620,000, only \$241,875 was spent on new construction, the remaining having been spent on repairing the existing structures, most of which were inadequate to begin with but which were, nevertheless, "altered and enlarged over the years to meet the needs of the occupants but with unsatisfactory results." [42] The drain on the Quartermaster General's budget brought on by what may have been higher costs for architect designed buildings may have prompted the Quartermaster General to initiate a program of standardization in an effort to bring construction costs under control, just as General Order 95, issued in 1868 and restricting the construction of permanent buildings, had been in response to excessive construction costs.

A paragraph in a report on Ft. Hancock, New Jersey alludes to some regulation that may also have initiated the program.

"Major Edward Davis of Maj. Gen. Nelson Miles's staff was delegated to the task of replying to Carrere and Hastings's letter for the secretary of war. He explained that the department was unable to employ outside assistance in the preparation of plans. Structures at the U.S. Military Academy, however, are governed by different regulations. They, unlike barracks and quarters, were covered by specific appropriations. All estimates for West Point buildings were covered by specific appropriations." [43].

This correspondence is dated in 1896. No specific reference is given, however, to the regulations governing West Point versus the other Army posts.

Though the vast majority of standard plans from this period came out of the Washington Office of the Quartermaster General, individual military departments continued to issue their own standard plans. The quantity of standardized designs from the individual military departments, however, does not approach that of the first period and this element

42/ Annual Report of the Secretary of War, 1890.

43/ Bearss, Edwin C., Historic Resource Study, Ft. Hancock, 1895 to 1948, (Denver: Denver Service Center/NPS, 1981), p.

of the second period of standardization may more appropriately be a continuation of practices from the first period.

Construction Needs

The thesis proposed earlier, that the second period of standardization grew gradually, out of necessity, is borne out by the activities of the Army itself. Prior to the Spanish-American War in 1898, the strength of the Army was about 25,000 troops. Throughout the 1890s, rarely had more than 100 buildings of all types been built in any one year. Congress authorized an increase in the strength of the Army, which could be varied as necessary. For the next 10 years the strength of the Army averaged 65,000. [44] With this increase there was a great and sudden need for quarters. In addition, the war prompted a rapid completion of the coastal defenses begun in 1888. A new review board, the Board of General Officers, was convened late in 1901 to review the inland posts that accommodated the mobile Army. The recommendations of the Board included the permanent occupation of 52 of the 65 existing posts, the temporary occupation of the remaining 13, and the establishment of 7 new regimental posts. A second board was appointed by the Secretary of War to consider coastal defenses in Hawaii, the Philippines and, later, the Panama Canal. The flurry of activity that followed prompted the Quartermaster General to comment "that a vastly greater amount of construction work was planned, undertaken, and contracted for during the fiscal year 1902-03 than during any previous year in the history of the Army." [45]

44/ Risch, Quartermaster Support of the Army. p. 580.

45/ Annual Report of the Quartermaster General. 1903.

Office Organization

As a result of this increase in construction responsibilities there was a need for additional personnel within the Quartermaster Department. In his annual report for fiscal year 1903-04, the Quartermaster General spoke of an urgent need for additional experienced civilians to aid the officers of the Division of Construction and Repair. An architect, two architectural and structural draftsmen, as well as an experienced specifications writer and cost estimator were needed; as the volume of work over the last six years had increased some three-fold.

The Division of Construction and Repair was divided into two separate branches. The most important, with respect to this report, was the Barracks and Quarters Branch which was responsible for the construction, repair and rent of buildings as well as the construction and repair of roads, walks, bridges, flagstaffs, wharves, grading, etc., [46] as well as other non-construction duties. The second branch was the Reservation Branch whose duties included the purchase of land, and the construction and repair of water, sewer, lighting and heating systems. By order of the Quartermaster General, in February 1911, the Construction and Repair Division was reorganized into four branches; 1) Construction; 2) Miscellaneous- annual and special repairs, remodeling and alterations; 3) Mechanical; and 4) Reservation. [47]

Construction Costs

While annual reports from the 1870s, 80s, and 90s concentrated on the poor condition of the quarters and the general lack of sufficient funds to accomplish proper repairs and new construction, the annual reports from the early 1900s were increasingly concerned with ways to lower the cost of

46/ NARS- Military History Branch, RG 92, E. 1058-
"Annual Reports of the Construction and Repair Division, FY
1903-04.

47/ *ibid*, FY ending June 30, 1911.

new construction and cope with rising construction costs. For the years 1903 through 1905, Congress was comparatively liberal with its appropriations. [48] Nevertheless, according to the 1905 Annual Report of the Quartermaster General, an architect was hired to supervise the revision of drawings and specifications, not only to improve the appearance of the buildings, but also to bring down the general costs involved. From 1902 to 1905 construction costs rose 36%. Between 1905 and 1906, there was an increase of 12%. [49] From the 1909 Annual Report of the Quartermaster General:

"In pursuance of the policy outlined in the last annual report, and in accordance with desires of the Secretary of War, this office has been constantly endeavoring to reduce the cost of construction for barracks and quarters to the lowest possible point, consistent with good construction and reasonable accommodations . . . "

[50]

Average construction costs throughout the United States for a single field officer's quarters, either brick or reinforced concrete, with slate or tile roof was \$12,000; a similar building for a captain was \$9,000. A brick, double captains' quarters cost \$16,000, while a double lieutenants' quarters was \$15,000. [51] These costs were a 16% reduction over previous costs for officers' quarters. Later in 1909, Congress set limits on the amount of money which could be spent for each rank. Quarters for a general were limited to \$15,000; \$12,000 for a field officer; and \$9,000 for a company officer. Though not decreed by law, enlisted men's quarters were limited to about \$800. [52] Cost reductions

48/ Risch, Quartermaster Support of the Army, p. 581.

49/ 1) Risch, Quartermaster Support of the Army, p. 581. 2) Annual Report of the Quartermaster General, 1903.

50/ Annual Report of Quartermaster General, 1909.

51/ *ibid.*

52/ 1) L. M. Leisenring, "Quarters for the Army", The Federal Architect, July 1937, p. 15-16. 2) U.S., Congress, House, Committee on Military Affairs, H.R. 10275- A Bill to

were achieved by rearranging the existing plans to eliminate wasted space and enable a smaller building without sacrificing convenience; modifying exterior trim; and changing the specifications so that material of standard dimensions could be used. There was also an increased use of concrete after 1910 which afforded a 33% decrease in costs over brick. [53]

Architects

Other than the need for a civilian architect, as stated in the 1904 Annual Report of the Quartermaster General, no mention has been found of the architect or architects involved in the designs of the buildings from this period. The drawings offer no clues. The only signature that ever appears is that of the Quartermaster General. Unidentified initials only appear after "drawn by" and "checked by". There are, however, three designs, all from 1888, which later appear as standard designs.

In 1888 planning for Ft. Sheridan and its construction began with Holabird and Roche of Chicago as the architects. One of their designs for officers quarters, figure 18, is later seen as Commanding Officer's Quarters at Ft. Slocum, David's Island, NY. According to files at the Military History Branch of the National Archives, Commanding Officer's Quarters Ft. Davis [sic] were virtually complete in October 1893 and plan #69 from the Quartermaster General's office was used. [54] These plans are missing from the files at the Cartographic and Architectural Branch of the National Archives but the photograph from the Still Photos Division

Authorize Appropriations for Construction at Military Posts.
69th Cong., 1st sess., 1926, p. 49.

53/ NARS- Military History Branch, RG 92, E. 1058-
"Annual Report of the Construction and Repair Division,
FY 1910".

54/ NARS- Military History Branch, RG 92, E. 1061-
"List of Construction Contracts Made for Various Posts 1885-
99".



Fig. 18. NARS- Still Photos Division, RG 92 - F Series, Ft. Sheridan.

shows a building similar to those at Ft. Sheridan. [55] A second identified standard design may also be by Holabird and Roche. HSQ-2 was built at Ft. Sheridan in 1888. This is the same design that appears in the Surgeon General's Appendix to Circular No. 10, issued in December 1888. Though the firm's name does not appear on any of the plans for this building, nor in the specifications, Holabird and Roche was responsible for the initial designs at Ft. Sheridan. Whether they designed the building first and the Surgeon General adopted it, or vice versa, is unknown at this time. There may be others from Holabird and Roche for William Holabird was the son of General Samuel B. Holabird, Quartermaster General from 1884 to August 1890.

55/ NARS- Still Photos Division, 92-F-19-3, Davis [sic] Island, see Volume III, US Army Regular Number 69.

In 1887 the establishment of a new post, Ft. Logan, near Denver, Colorado was authorized. In 1888 F.J. Grodavent designed a set of Field Officers Quarters, which later appeared in 1897 as special plan 3-162, and designated for Ft. Logan. At least three buildings with this same design were also built at West Point, and still remain today.

Architectural Context

Though the periods of standardization are given distinct time frames, an architectural style cannot. Tastes in architectural styles do not abruptly end and fresh ones begin; more often than not, they coexist. As a result, though the standard plans can be organized and presented in three distinct and logical sections, a discussion of their architectural development cannot be forced into such neat time frames.

The two-thirds Georgian, doubled up on itself to form two sets of quarters within one building, was used with increasing frequency during the second period of standardization, though with a greater variety between the different plans than was shown during the first period. At the same time, other stylistic influences were beginning to be reflected in the plans. The end of the nineteenth century found the Queen Anne, Shingle and Craftsman styles growing in popularity. The grand entry hall and occasionally a small alcove, typical of these styles, were now beginning to replace the straight run hallway of the strict Georgian plans of the previous period. George F. Barber, a popular pattern book architect, published two such designs, figures 19, 20, in one of his pattern books, The Cottage Souvenir No. 2. Compare these two plans to the Army's Regular Numbers 3, 10, 17, 45, 90, 95, 120 and 145 (among others) from the second period of standardization. The basic organization of spaces of the two-thirds Georgian took on a different character with the addition of a gracious reception hall. At this time, however, the similarities between Army housing and what was generally being built in the private sector end with the plan. A quick glance is all that is needed to see that the elevations of the housing designs of the Army share little of the exuberance found in Barber's houses. This was a direct result of the Army's constant attempts to keep

building costs within the statutory limits set by Congress. As the second period progressed the elevations tended to become more and more austere as the Army designers took a widely diverging path from the mainstream architects in private practice.

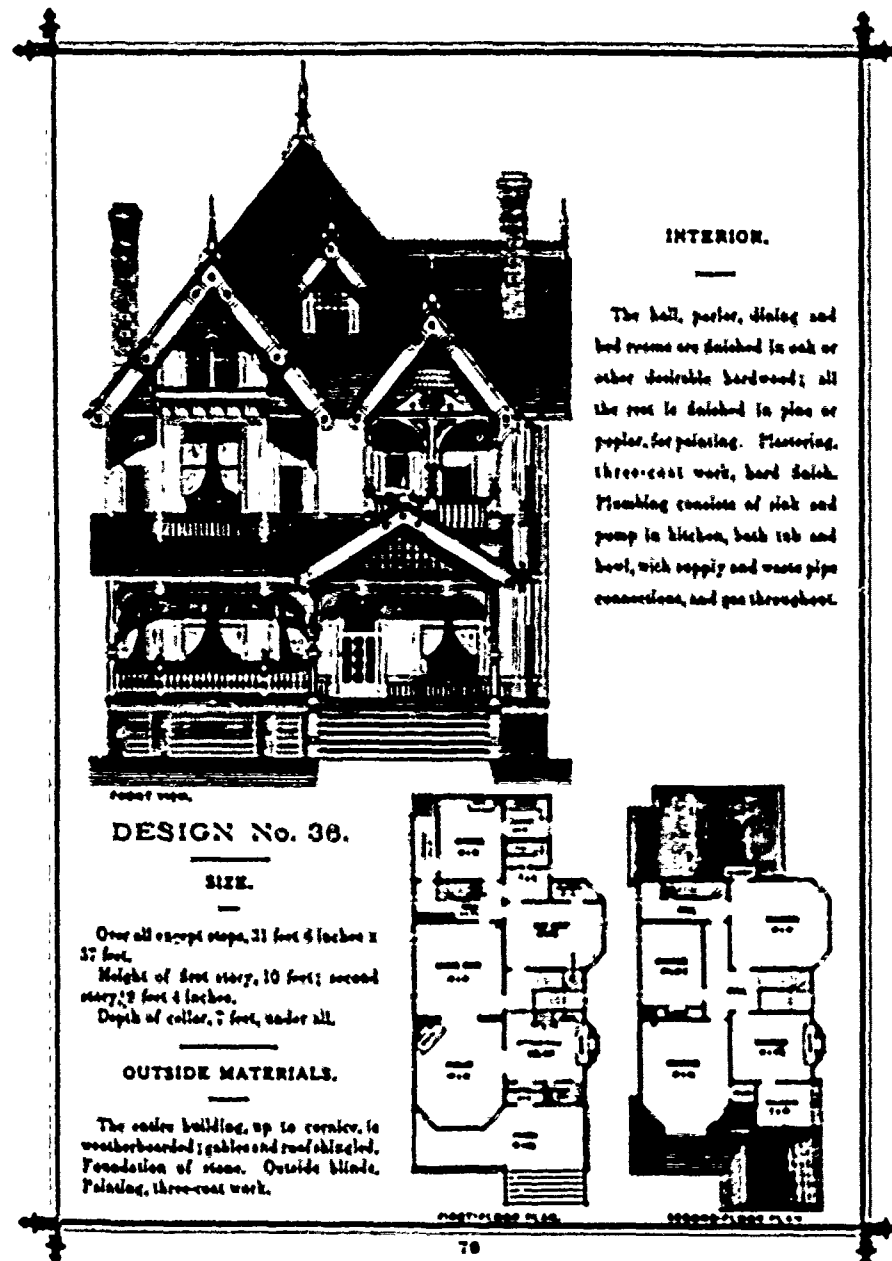


Fig. 19. Design #36, from George Barber, The Cottage Souvenir No. 2, (Knoxville: S.B. Newman & Co., 1891; reprint ed., Watkins Glen, NY: American Life Foundation, 1982.)

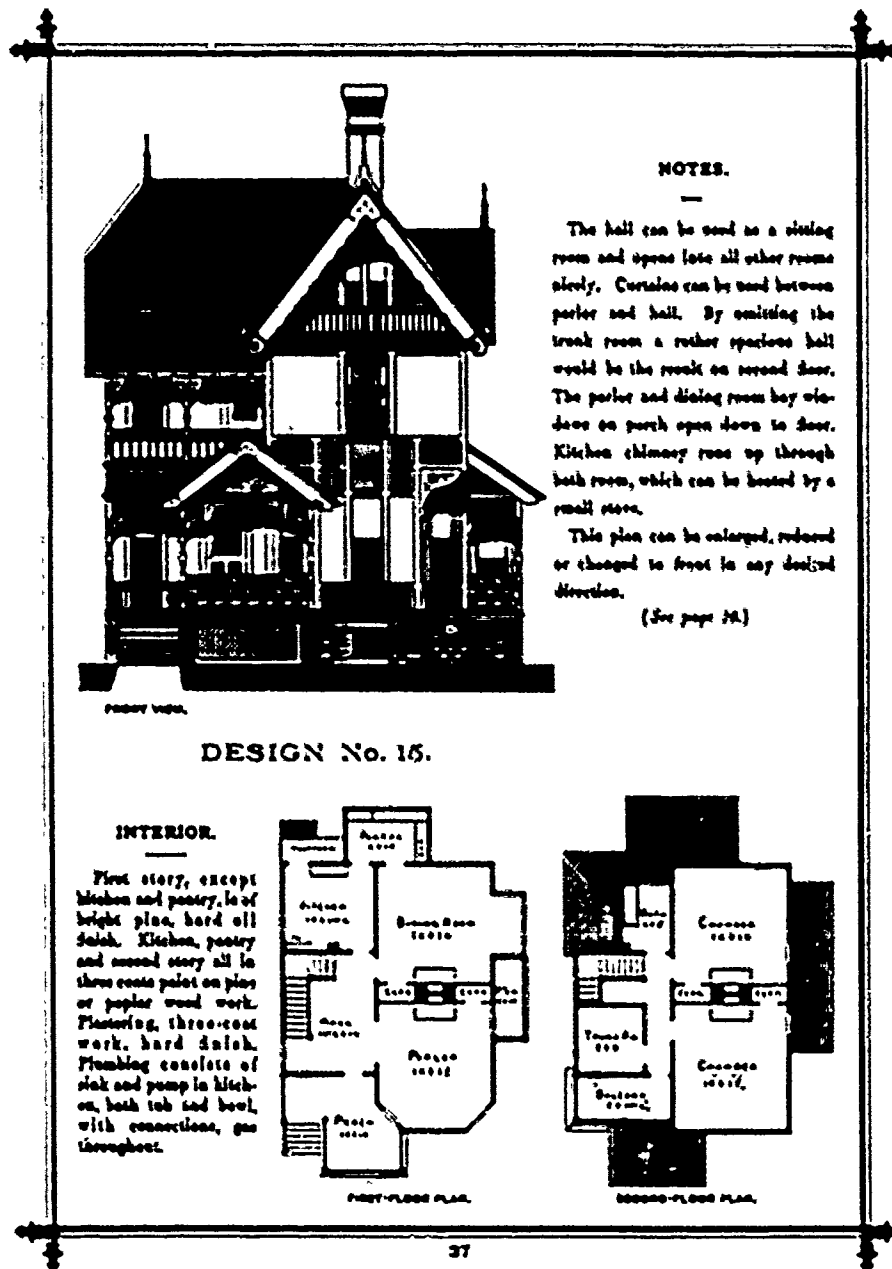


Fig. 20. Design #15 from George F. Barber, Cottage Souvenir No. 2. (Knoxville: S.B. Newman & Co., 1891; reprint ed., Watkins Glen, NY: American Life Foundation, 1982.)

Perhaps even more significant is the relative lack of considerations for regional variations in architectural styles and building traditions within the United States. Granted, a standard design was generally shown in both brick and wood frame, with an occasional stone variation, and, later concrete, but by and large the same design, built out of the same building material, could be built from Washington state to Georgia and Massachusetts to Alabama or Texas. It is this seeming lack of imagination that prompted the planners of the third period of standardization to call Army posts monotonous.

End of the Second Period

This tremendous and prolific period of standardized housing came to an abrupt end in 1917 with the beginning of US participation in World War I. How many of each design were ever built is unknown as is a complete listing of the locations. Whether all of the designs, especially those issued in 1917, were ever even used is also unknown. The locations that have been identified were discovered when copies of the plans were found in the National Archives files from a particular post, or if there was a photograph of it in one or other of the files at the National Archives. Various other Archives files would occasionally tell what plan was used to build a particular building at a particular location. (These files are noted in the Bibliography.)

Third Period of Standardization - 1926 to 1940

Living Conditions

The end of World War I in 1918 once again saw a reorganization of the United States Army and found much of it still living in less than desirable housing. A 1931 magazine article showed some of the shacks used as quarters in places such as Ft. Benning, Georgia, fig. 21. Other soldiers at Ft. Benning were living in tents. Of the 650 officers stationed there, permanent quarters were available for only



Fig. 21. Ft. Benning, Georgia. From "Housing the Army," Quartermaster Review, March-April, 1931, p. 12.

70 families. Unfortunately, this was more the norm than the exception. Over one-half of the entire Army in the continental United States was living in temporary structures built in 1917, or in even older structures, many of which dated from the Civil War. In general, existing quarters were dilapidated, crowded, inefficient and hazardous. In some locations extra space had to be rented, or existing structures were converted for use as quarters, generally with unsatisfactory results. Posts along the Mexican border fared the worst. Despite such deplorable conditions, yet

another period of austerity was imposed upon the Army in 1921. Secretary of War, John W. Weeks limited expenditures on any buildings to \$500 without his approval. Shortly thereafter he announced the policy of:

"No permanent construction will be undertaken where permanent construction can be postponed, and only such repairs and temporary construction necessary will be considered." [56]

From 1921 to 1926 the average yearly construction budget was \$755,893 with most of the money earmarked for a few large projects such as Camp Benning, Camp Lewis in Washington State, Edgewood Arsenal in Maryland, and others.

Such constraints were reflected in several articles of The Quartermaster Review. In 1923 The Review began a series of special departments "for everyone of the principal activities of the Quartermaster Corps." [57] The first was "Construction Hints and Helps" conducted by Major William Draper Brinckloe of the Quartermaster Reserve Corps and Architectural Editor of The Farm Journal. His first article was on building a sun-porch from salvage materials, a temporary measure to make some of the existing quarters "more homelike and comfortable", figure. 22. [58] The following year, in the September-October 1924 issue, he proposed plans for a temporary bungalow for junior lieutenants, warrant officers, field clerks, and senior non-commissioned officers, fig. 23. From 1923 to 1925 Major Brinckloe continued to make suggestions covering everything from how the Quartermaster Corps might best organize itself to carry out the planning and design of new quarters, to features which might be included in a home, to complete

56/ Lenore Fine and Jesse A. Remmington, The Corps of Engineers: Construction in the United States, United States Army in World War II, The Technical Services series, (Washington, D.C.: Office of the Chief of Military History, 1972), p. 44. (Hereafter cited as Fine, The Corps of Engineers: Construction in United States.)

57/ Major William Draper Brinckloe, "Construction Hints and Helps," Quartermaster Review, September-October, 1923, p. 14.

58/ *ibid.*

designs for entire houses. He pushed for regional designs which would reflect such things as the climatic differences between different areas of the country.

Program Initiation

By the time the third period of standardization began, the housing situation was at a critical stage. In March 1926, Congress enacted Public Law No. 45 which authorized the Secretary of War to dispose of 43 military reservations, or portions thereof, and to deposit the money received from those sales into a special fund designated the "Military Post Construction Fund", which money would remain available for permanent construction at military posts until it had been fully expended. [59] The Act further requested the submission of annual estimates along with a statement of the specific construction projects covered under each estimate. It also removed the \$20,000 limit on the cost of a single building.

The program was designed to take care of the housing and hospitalization needs of the Army. Construction would be done in each of the Corps areas so that each arm of the service would receive some of the benefits from the fund. Because of climatic conditions, the temporary structures in the northern part of the country were scheduled to be replaced first. In 1928 the new units of the Air Corps were also made priority locations. Published proceedings from the United States Congressional Committees on Military Affairs, both House and Senate, offer a more detailed account of the beginnings of this program.

59/ Brig. Gen. William E. Horton, "The Work of the Construction Service, Quartermaster Corps," Quartermaster Review, September-October 1928, p. 7.

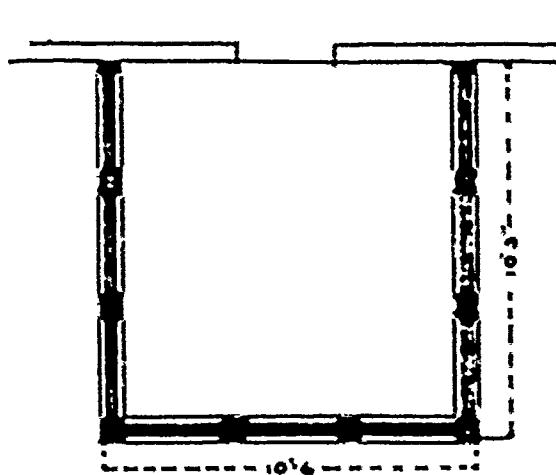


Fig. 1. Plan.

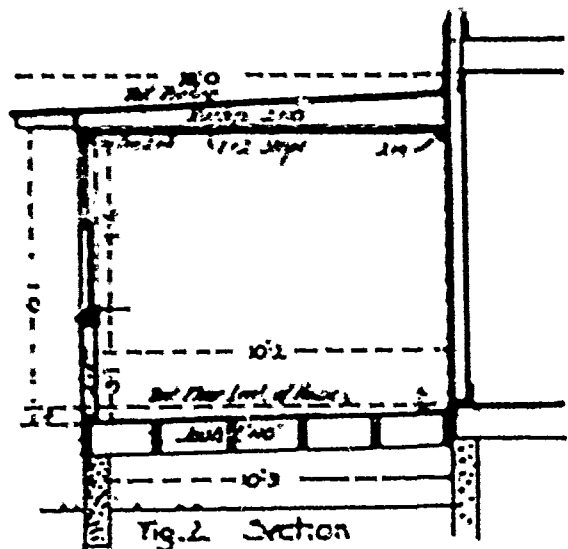


Fig. 2. Section

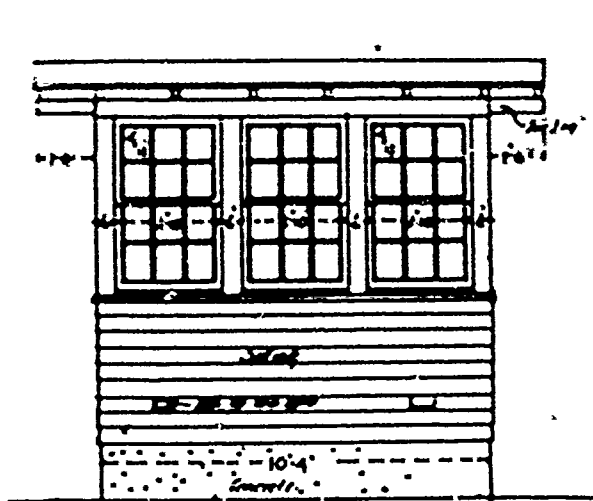


Fig. 3. Front

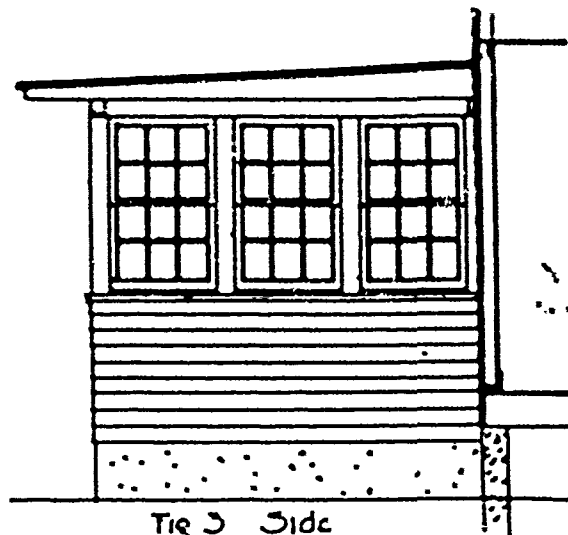


Fig. 3. Side

Fig. 22. Sun-porch from Brinckloe, "Construction Hints and Helps," Quartermaster Review, September-October 1923, p. 14, 15.

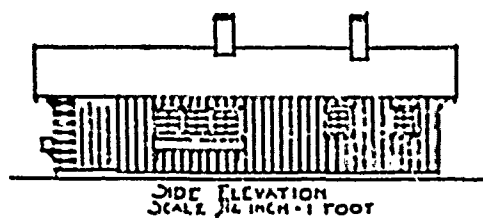
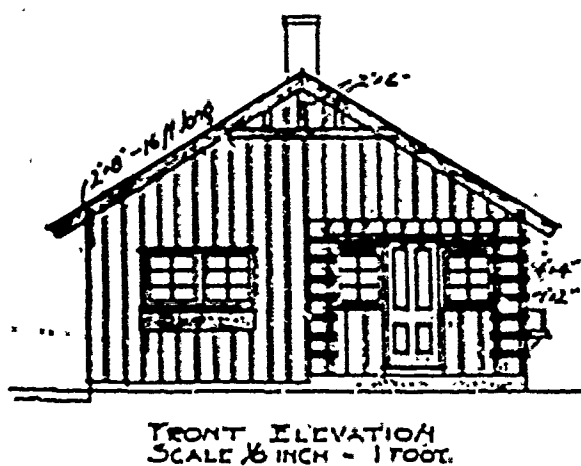
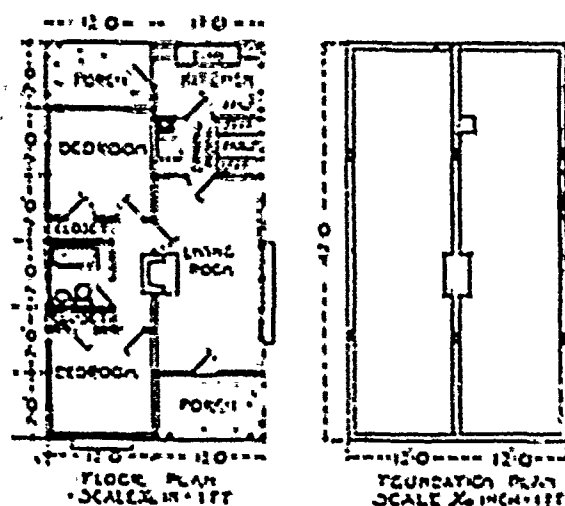


Fig. 23. Temporary bungalow from Brinckloe, "Construction Hints and Helps," Quartermaster Review, September-October 1924, p. 43-44.

Program Funding/Building Numbers

As initially planned, the program was to cost \$110 million over ten years. In 1927 the first \$7 million was made available, primarily for barracks and hospitals, though quarters were authorized at Edgewood Arsenal, Schofield Barracks, Selfridge Field, Maxwell Field and the Panama Canal Zone. The following year found 121 sets of quarters authorized (among other types of buildings) and in 1929, 164 quarters, both commissioned and non-commissioned. By February 1931, within the continental United States, permanent housing had been provided for 19,800 enlisted men, 304 non-commissioned officers, and 292 commissioned officers. [60] Construction to that date totaled just over \$30 million, with \$16 million under contract, and advertisements out on about \$3 million more. [61] By 1933, the total appropriations under this program were nearly \$80 million. [62]

In September 1933 additional money was made available as a result of the National Industrial Recovery Act (NIR) passed the previous March, to grant funds to assist the building trades and industries affected by the Great Depression. Approximately \$61 million were received for 660 projects at 65 posts. Of the 1636 buildings, structures and installations built, 1138 buildings were constructed containing a total of 1509 sets of quarters. [63]

The final monies that were added for construction during this period were from WPA and PWA funds. Title I of the Work Relief and Public Works Appropriation Act, 1938, gave \$13,942,572 in WPA funds, and \$52,283,400 in PWA funds for

60/ "Housing the Army," Quartermaster Review, March-April 1931, p. 11.

61/ *ibid.*

62/ Lt. Col. Hugo E. Pitz, "Construction Activities of the Quartermaster Corps," Quartermaster Review, January-February 1936, p. 9.

63/ *ibid.*, p. 9

Army housing. [64] This money was spent at sixty-four posts. Of the 285 projects, 1091 sets of quarters were built. WPA employees were used whenever possible and all the projects had to be substantially completed by January 1, 1940.

Post Planning and Building Design

As with all previous periods, the Construction Division found it extremely difficult to keep building costs within the statutory limits set by Congress. In 1925, the limits were still those that had been set in 1909, and the Service found it impossible to provide adequate quarters at those prices. Finally, in 1927 or 1928, Congress raised the limits to \$12,500 for company officers, \$14,500 for field officers, and \$5-7,000 for non-commissioned officers. [65]

Throughout the meetings of the Sub-committee on Military Affairs, both Congressmen and Army officials expressed a concern that the designs that were to be developed for this program respond appropriately to the different climatic conditions and architectural styles of the country. And, indeed, a great deal of attention was given not only to the individual building designs, but also to the general planning of the posts. Though it was generally felt that the old posts were efficient, they tended to be rather monotonous. In laying out the new posts the main objective was to create "one great social organization" [66] which would provide healthful conditions and positive social interaction as well as the more practical needs to properly train the troops. City planning had successfully been used

64/ Maj. E.G. Thomas, "Housing for the Army," Quartermaster Review, May-June 1940, p. 27.

65/ 1) Brig. Gen. Louis H. Bash, "Construction- Present and Future," Quartermaster Review, November-December 1929, p.13. 2) "Housing the Army," Quartermaster Review, March-April 1931, p.13.

66 1st Lieut. H.B. Nurse, "The Planning of Army Posts," Quartermaster Review, September-October 1928, p. 14.

in the American cities, it was time to apply the same principals to an Army post.

In an effort to provide these things, input into the planning process was sought from a number of diverse groups. Quartermaster General Cheatham requested, through the military journals, recommendations for the new housing program. He had suggested that apartments, instead of houses, be provided for living quarters with a central mess for meals to relieve the wife of the labor of cooking. [67] The response from the wives of both commissioned and non-commissioned officers was a resounding no! on both counts. It was largely because of this response, that the building designs developed as they did. Small apartment buildings, housing four to five families, were generally limited to the Army schools where a large number of student officers would be living for short periods of time. Each apartment unit would have a separate entrance and would contain a living room, dining room, kitchen, two bedrooms and a bath, and provisions for servants. Where double and single sets of quarters were planned, single sets of quarters were by far preferable but double sets were acceptable where site constraints were such that single sets were impossible.

Commissioned officers received base pay and quarters, with certain allowances for heat, light, and subsistence. The number of bedrooms, bathrooms and the size of the rooms varied among the different grades of officers. Though two buildings might have the same elevation, the plan would be different depending on whether it was for a company officer or a field officer. Company officers, Captains and below, were allotted a living room, dining room, kitchen, three bedrooms (one of which could be used as a study), two baths where possible, a maid's room and bath, and the necessary closets and storage. Field and General officers were given an additional bedroom and always received a second bath. Regardless of rank, sleeping porches were often provided for additional space.

Non-commissioned officers were also entitled to quarters and allowances if they were married and in the upper three grades. Quarters were set apart from commissioned officers and also from the "business areas of the post". They were

67/ Lt. Col. John S. Chambers, "Quarters For Our Army," Quartermaster Review, March-April 1928, p.25.

given a living room, kitchen, two bedrooms, a bathroom, closets and storage. During the 1930s, an effort was made to provide additional space. A two story double set was found to be the most economical because it provided an additional bedroom and a dining room. Non-commissioned officers' quarters often included a sleeping porch as well.

The Army was not only concerned with providing convenient, efficient quarters. From a purely practical standpoint, it also wanted designs which successfully used local materials and which were appropriate for local climatic conditions and construction. Aesthetically, it wanted an architecture that would be familiar, that would be properly national in character, yet reflect the architectural styles of the various regions within the United States. Two primary styles, Georgian (or Colonial) and Spanish Mission, were adapted for use throughout the country. From New England down to Virginia, regional variations of the Georgian style were used as models. Here brick and slate were familiar sights, though stucco and tile were used at Langley. Virginia (as were non-regional styles such as English Tudor). In California, Texas and along the Mexican border, the Spanish Mission style prevailed. A variation of this style found its way to Ft. McClellan, Alabama and Ft. Bragg, North Carolina. Other influences appeared as well. Ft. Belvoir and Bolling Field, in and around Washington, D.C., adapted a "Mount Vernon" style [68] with both a garden front and an entrance front. Further south, at Barksdale Field, Louisiana, and Maxwell Field, the French influence could be seen in the French Provincial styles used. In the northern, central and northwestern parts of the country, the architecture took its cue from those styles that predominated in the area. In California, exposed reinforced concrete was widely used due to the threat of earthquakes. At the Air Field in Sacramento, the quarters were built with flat roofs to harmonize with the large concrete and steel technical buildings also being built.

While it was admirable to respect the regional characteristics of the various parts of the country, the Army was still not able to overcome the monotony it so disliked about the earlier posts. The same building design was still repeated as necessary, one after another, on any given post.

68/ L.M. Leisenring, "Quarters for the Army," The Federal Architect, July 1937. p.44.

Granted, one would certainly not want the same building design used in New England to be used in the Panama Canal Zone, Hawaii or even California, but this almost strict adherence to regionalism came at a time when the rest of the United States was losing its regionalism. Throughout the decades leading up to the second World War, neighborhoods across the country were becoming melting pots of architectural styles. Colonial Revival homes, were built next to English Manor houses as easily as a Spanish or Italianate house sat next to an adaptation of a French Chateau or Craftsman Bungalow. The quarters the Army did design, however, would have fit comfortably within any of these civilian neighborhoods. The residential areas of a post were as carefully designed as any urban neighborhood--perhaps even more.

The Great Bungalow Controversy

Early in this period of standardization, in 1930, discussion began as to the appropriateness of bungalow type quarters, one-story, single family residences. A brief discussion is in order here because its outcome played an important part in determining the types of quarters that would eventually be built throughout the United States.

The first mention of such a controversy is a memorandum for the Adjutant General, dated 29 April 1930. [69] discussing types of Officers' Quarters and using those at Ft. Bragg, NC as the example. Figure 24 is probably the quarters design being discussed. There are five main points to this memorandum.

1) The quarters at Ft. Bragg had proven to be the minimum and anything less was unsatisfactory. As a result, the Ft. Bragg dimensions were to be adopted as standard;

69/ NARS- Military History Branch, RG 407- Records of the Adjutant General's Office, 1917---, Central Decimal File, 620.



Company Officers' Quarters—Fort Bragg, N. C.

Fig. 24. OQ-51. From The Quartermaster Review,
November-December 1929, p. 9.

- 2) Because the automobile had become such a necessary part of military life, garages would be provided for all officers and non-commissioned officers. Porches would also be provided;
- 3) Only the basic dimensions of the spaces at Ft. Bragg would be standard. The plan, and particularly the elevations would not be suitable for all locations so that variations in these would need to be adopted;
- 4) Concerning building materials, the tile with stucco used at Ft. Bragg was relatively new and its durability was unknown. As a result it was thought that since brick had long been a standard material, it should continue to be used where possible;
- 5) These bungalow quarters were thought to be more expensive than other forms due to its larger roof area and foundations. As a result it was directed that no more of these bungalows be built until further study could be done. Those already under contract or out for bids would be allowed. (This point also mentioned that the rooms were small and no porches were provided.)

The Quartermaster General's Office responded to this memo with their own dated 12 May 1930. [70] In it they listed all of the posts where such quarters had already been built, were under contract, or were planned for FY 1931 and FY 1932. The memo also compared costs of a one-story bungalow versus a two-story double set. At Ft. Bragg, where both types had been built, the two-story building provided 45,112 cubic feet of space at 27.5 cents per cubic foot while the one-story structure provided 37,983 cubic feet of space at 31 cents per cubic foot. Ft. Benning, Georgia also had both types. Here again, the two-story double set proved cheaper, 25.8 cents per cubic foot versus 27.5 cents per cubic foot for the single-story structure. The memo warned against making any definite conclusions in favor of the two story structures, however, because there were too many individual circumstances which would affect the contract. Also, the bungalow was well suited for southern and tropical climates and the past policy had been to use it in the southern states, along the Texas border, in southern California, and

70/ ibid., "Memorandum For the Chief of Staff: 29 May 1930."

in Panama, Puerto Rico and the Philippines. Single-story bungalows used for non-commissioned officers were, in reality, 1 1/2 story structures with finished attics and were also well suited for this use as the number of rooms allotted NCO's could not be economically provided by a two-story building unless it was a double set.

The recommended action approved by the Secretary of War in June, stated that:

" . . . the two-story type of officers' quarters will be given primary consideration in all construction in the United States and the Bungalow type will be adopted only after it has been demonstrated in each specific case that the two-story type is unsuitable at the location being considered. Specific authority of the Secretary of War to depart from the two-story type will be obtained in each case before the design of the quarters is initiated . . . " [71]

Though two-story quarters were now the preferred building type, single-story bungalows continued to be built throughout the third period of standardization.

Policy Concerning NCO Quarters

Perhaps an outgrowth of the bungalow controversy, was the policy enacted by the Secretary of War on 8 November 1930 concerning the selection of NCO quarters to be built in the United States. [72] Three different plan types were identified and their locations designated:

- 1) The Ft. Bliss type, to be built in the souther United States as far north as North Carolina and Oklahoma. This is probably NCO-10.

71/ ibid.

72/ ibid.

2) The Ft. Monmouth type, to be built in the north as a general rule. This is a double two-story building, probably NCO-9.

3) The Ft. Humphries (Ft. Belvoir) type, to be built in the middle latitudes or in the north where single sets were allowed. This is probably NCO-11.

The author had identified a specific plan with each of the three types named by the Army based on what is known to have been built with great frequency at the three posts listed.

Office Organization

It is not unexpected that careful planning should have taken place. The Quartermaster Corps was not operating within a vacuum; it was a group of highly professional architects, engineers and designers. In addition to the civilian architects employed through the civil service, two civilian architects, George B. Ford and Arthur Loomis Harmon, acted as planning and architectural advisors respectively and provided advice as necessary as to the suitability of the various designs. The first Chief of the Engineering Division of the Construction Service was Lt. Col. Francis B. Wheaton who had worked at McKim, Meade and White. Luther M. Leisenring, Supervising Architect, O.Q.M.G. in 1937 studied at the University of Pennsylvania and had worked with Cass Gilbert. The credentials of the other Army architects and engineers were equally impressive. Despite the talent that was apparent in the office, no one person can be singled out as the primary designer of the standard plans for this period.

The organization of the Quartermaster's office at this time was quite different from the previous two periods of standardization. In April of 1917 war had been declared against Germany and The Construction and Repair Division of the Quartermaster General's office was plunged into the task of providing buildings for over 1,000,000 men within an extremely short period of time. During this time, a reorganization of the military construction resulted in the creation of the Construction Division, a staff corps completely separate from the Quartermaster Corps or the

Corps of Engineers. After the war, there were bitter arguments as to who should be responsible for construction activities, the Quartermaster General, the Corps of Engineers, or the separate Construction Division. On July 15, 1920 it was finally decided to place construction back into the hands of the Quartermaster General and the Construction Division became the Construction Service of the Quartermaster Corps. [73] Unlike the nineteenth century when a quartermaster was expected to perform all of the various duties of the department, the Construction Service was completely separate from the rest of the Quartermaster Corps.

The Construction Service was responsible for:

"...all matters pertaining to the construction, maintenance and repairs of buildings, structures, and utilities, other than fortifications connected with the Army; to operation of utilities; the acquisition and disposal of all real estate, and issue of licenses in connection with government reservations; the keeping of adequate records of all storage space and office space, excepting in the District of Columbia, owned or leased by the War Department, including its disposition and utilization." [74]

To carry out these duties, the Service was divided into three divisions: 1) Engineering Division; 2) Administrative Division; 3) Real Estate Division. It was the responsibility of the Engineering Division to prepare all of the estimates, plans and specifications for any construction projects needed for housing, equipment and stores of the Army, in connection with transportation for the personnel and stores, and of plants for manufacturing and maintenance. It also provided to all other branches of the Construction Service technical information pertaining to construction and maintenance. These duties were divided among the Design

73/ Fine, The Corps of Engineers: Construction in the United States, p. 43.

74/ Brig. Gen. William E. Horton, "The Work of the Construction Service, Quartermaster Corps," Quartermaster Review, September-October 1928, p. 5.

Branch, Building Branch and Maintenance and Operations Branch. [75]

In the early 1930s the Construction Service was renamed the Construction Division, and the architectural services were reorganized into the Planning Branch, New Construction Branch, Repairs and Utilities Branch, Real Estate Branch, and Memorial Branch, figure 25. The Planning Branch consisted of the Post and Layout Section and the Plans and Estimates Section. It was responsible for preparing initial plans and estimates and supporting data for all Army construction projects. Local constructing quartermasters at five of the major bases also prepared some of the plans and specifications, and occasionally private architects, under the supervision of the Chief of Construction, were employed. When a post submitted a construction request, the needs would be compared with existing plans and specifications. A new plan would be drawn up only if none of the existing designs were appropriate.

The New Construction Branch was the equivalent of the Engineering Division of the Construction Service and included the Design Section and the Building Section. The Design Section prepared all final plan, specification, and working drawings for all construction projects and acted as as an architectural/construction advisor to all of the branches of the office. The Building Section was responsible for supervising the actual construction and handling all of the contract administration.

End of the Third Period

The Construction Service put forth a tremendous effort to provide the best possible housing for the Army. These efforts, however, were not to go beyond the conclusion of the WPA and PWA funding programs in 1940. On June 15, 1940 a directive was issued by the Adjutant General's Office. The third main point of the "War Department Construction Policy" stated that all construction of family quarters for married officers and NCOs would be stopped "for the time being". As early as 1938, the Quartermaster Corps was set

to task to prepare for the coming emergency. At the same time, there was a renewal of the fight to transfer all construction activities to the Corps of Engineers. On December 1, 1941 the construction functions of the two Corps were consolidated under the Corps of Engineers.

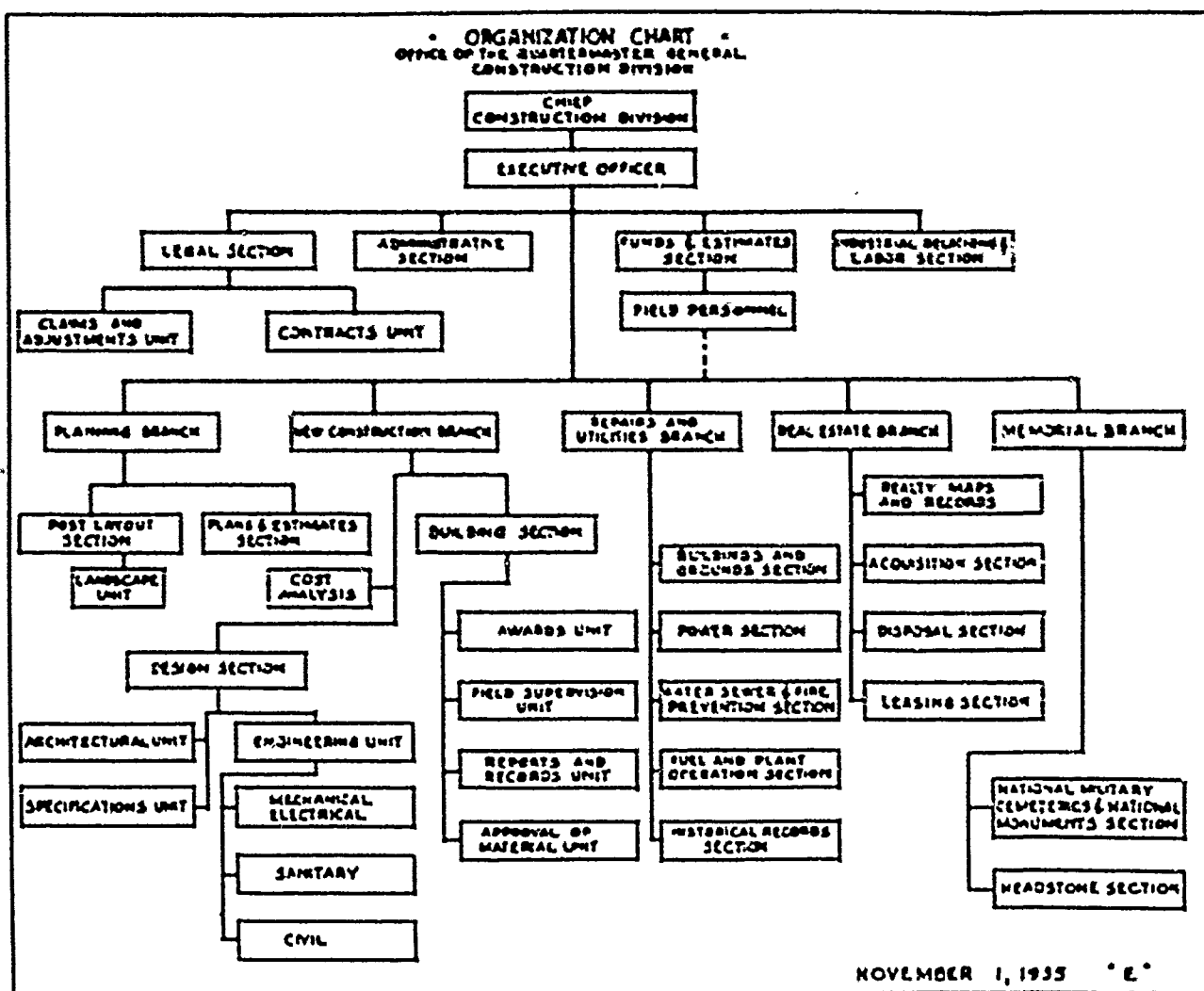


Fig. 24. Organization Chart, QMGO from Pitz, "Construction Activities of the Quartermaster Corps," Quartermaster Review, January-February 1936, p. 7.

PLAN ANALYSIS

The final point of analysis of this report will be between the plans themselves. A chart has been developed that will present these relationships. Standard plan numbers preceded by OQ-, NCO-, or HSQ- have been assigned by the author. Any other number was the official or "Regular" number assigned by the Army.

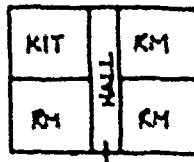
The standardization of building plans seems to have developed concurrently along two paths. The first path was a sort of additive design where a module was repeated as necessary to accommodate the different grades of officers. It generally took on a linear form and is best represented by OQ-8, OQ-9, OQ-10 and NCO-3 and NCO-4. This form seems to be a direct result of the early conditions found on the Plains where building materials were scarce and all construction was tedious, expensive and often built by unskilled labor. A simple, linear form was quick and easy to erect and provided an officer with the necessary quarters in a relatively short period of time with little or no thought to the overall architectural design apparent. This path was quickly superseded, however, for after about 1880 it disappears.

A more important path led to the organization of spaces according to functional relationships-- an idea decidedly architectural. Two basic plans for officers' quarters grew out of the 1860s and continued to be used, with variations, for the next 40 to 50 years. One was the traditional Georgian plan built as a single set of quarters. The second was the two-thirds Georgian, built as a double set of quarters. OQ-2, OQ-3, OQ-4 and OQ-6 are examples and are from the earliest formal program of building standardization. The evolution of a single set of officer's quarters began with OQ-2 and OQ-6, while double sets began with OQ-4. A direct relationship exists between these plans and the majority of the standardized plans from the first period of standardization, and there are commonalities between OQ-2, OQ-3 and OQ-4 and some of the plans from the second and third periods of standardization.

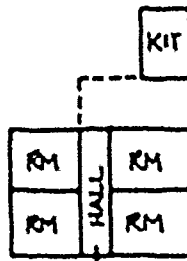
The standard designs have been broken down into basic units where some sort of relationship exists between the different plans. Not every standard plan, however, fits into one of these basic units. The elevations of the standard designs

were not used as part of this evaluation as a single plan design could have several different elevation designs. A "basic unit" is a layout of spaces common to a number of plans. Each is assigned a different letter of the alphabet to aid in its identification. (The letters I and O will not be used.) The basic units illustrated represent the first floor only. They are schematic layouts and do not represent actual room sizes. Only major spaces are shown and their relationship to one another. The sketch of the basic unit is not meant to be an exact representation of every plan to which it relates. Variations will exist and are identified by a number after the letter that identifies the basic unit. Variations are further noted in the written description of each type and occasionally with a sketch of the plan layout. While there is some overlap of basic units between the three periods of standardization, each period generally has its own unique set of units.

A
1866



BASIC UNIT: Built as a single set of quarters, there are two rooms, generally equal in size, on each side of a center stair hall- a full Georgian plan. There is a second floor. There were at least three variations of this unit. It is first represented, in 1866, by OQ-2. At the rear of the space marked HALL are two closets, one for each of the rear rooms. Stairs to the second floor take up part of the closet serving the kitchen.

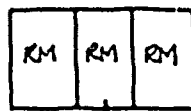


The second and third examples are OQ-6 and OQ-7, possibly dating to as early as 1866. They are a pure representation of the basic unit with no closets to interrupt the hall. Stairs to the second floor are at the rear of the hall. OQ-7 is distinguished by a separate kitchen at the rear, which is connected to the basic unit by a porch. This basic unit serves as the prototype for one of the two most prevalent plans used during the first period of standardization.

Plan Nos: OQ-2; OQ-6; OQ-7.

RELATED BASIC UNITS: U

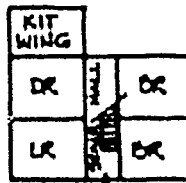
B
1870



BASIC UNIT: Linear arrangement of spaces. Number of rooms varies according to needs of occupant and grade of officer. Size of the rooms could vary as well. The most common dimensions found for the first period were 14, 15, or 16 feet square. No related basic units.

Plan Nos: OQ-8; OQ-9; OQ-10.

C
1866-
1909



BASIC UNIT: Two rooms, generally equal in size, on each side of a center stair hall, with a kitchen wing at the rear. Built as a single set of quarters with one, two or three stories.

C-1
1869-
1889

Basic unit as a one, two or three story residence.

Plan Nos: OQ-5; OQ-16; OQ-20;
OQ-23; OQ-25; OQ-27; OQ-34; OQ-46.

C-2
1906

Basic unit with stair hall expanded to the rear.

Plan Nos: 178.

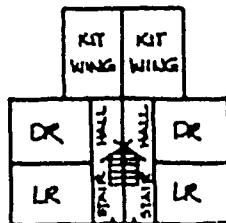
C-3
1908-
1909

Basic unit with variation in the four rooms of the main block.

Plan Nos: 242; 242-A, B, D, E; 243;
243-A, B.

RELATED BASIC UNITS: A, B

D
1866-
1889



BASIC UNIT: Two main spaces opening onto a stair hall along one side. The stair hall leads to a rear kitchen wing. Built as a double set of quarters with the stair hall and kitchen wing of the two units sharing a common wall. The result was a "T" shaped building. This was the most commonly used plan during the first period of standardization. Two-thirds Georgian.

- | | |
|--------------------------|--|
| D-1a
ca. 1869 | Basic unit built; as a single story structure

Plan Nos: OQ-22; OQ-23. |
| D-1b
1884 | Basic unit built as a single story structure but with the addition of a bedroom wing off each side. The kitchen wing becomes more elaborate.

Plan Nos: OQ-35. |
| D-2
1870-
1873 | Basic unit with a single story kitchen wing and a two story main block.

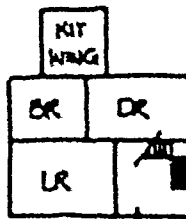
Plan Nos: OQ-8; OQ-9; OQ-24; OQ-25; OQ-26; OQ-27. |
| D-3
1873-
1885 | Basic unit with a second story on both the main block and kitchen wing.

Plan Nos: OQ-23; OQ-27; OQ-29; OQ-31; OQ-32; OQ-34; OQ-36; OQ-38. |
| D-4
ca. 1878-
1889 | Basic unit built as a three story residence.

Plan Nos: OQ-37; OQ-38 (Governors Island); OQ-39. |

RELATED BASIC UNITS:

E
1880-
1882

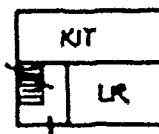


BASIC UNIT: Rectangular main block with the stair hall in a front corner quadrant. A parlor occupies the remaining front half of the block and a dining room and bedroom are in the back half. A kitchen wing is centered on the back. There are four bedrooms on the second floor.

Plan Nos: OQ-40; OQ-41.

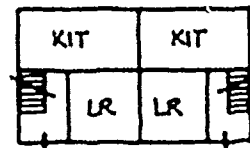
RELATED BASIC UNITS:

F
1857-
1909



BASIC UNIT: Living room and stair hall in the front half and kitchen across the rear. There are two bedrooms and a bath on the second floor. This unit first appeared in 1857 as officer's quarters, OQ-1. Later, this plan was used for non-commissioned officers. Generally arranged as both a single and double set of quarters.

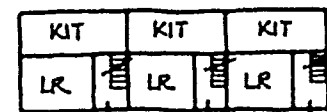
F-1
1857-
1909



Basic unit built as a double set of quarters. Living room/kitchen wall forms the common wall between the units.

Plan Nos: OQ-1; 82; 82-A, B, C, D, E, G, H, K, L, M; 3-427 spl.

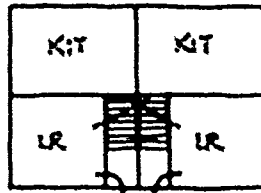
F-2
1894



Basic unit built as a triple set of quarters with plan simply lined up.

Plan Nos: 3-16 spl.

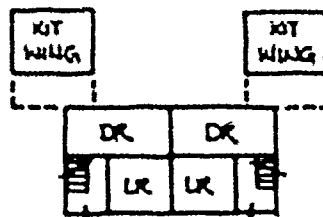
F-3
1909-
1914



Basic unit built as a double set of quarters. The stair hall, with access to the kitchen, has been eliminated. The stair/kitchen wall now becomes the common wall between the two units.

Plan Nos: 82-N; 330.

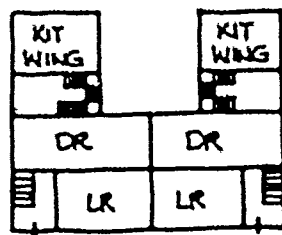
F-4.1
1900



Basic unit built as a double set of quarters. Organization of spaces is the same but with a single story, offset kitchen wing connected to the basic unit by a porch.

Plan Nos: 82-F.

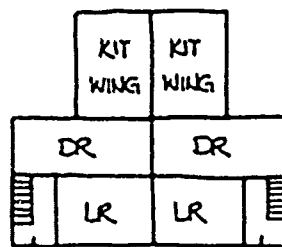
F-4.2
1905



Basic unit built as both a double and triple set of quarters. Organization of spaces is the same but with the addition of a two story kitchen wing to the rear on the same side of the unit as the stairs. As a result, the kitchen of the basic unit becomes a dining room and a third bedroom is added to the second floor.

Plan Nos: 85; 85-B.

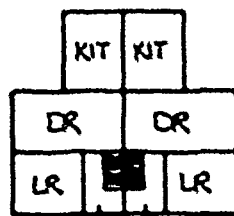
F-4.3a
1907



Basic unit built as a double set of quarters. Organization of spaces is the same but with the addition of a single story kitchen wing. The living room and dining rooms, plus the kitchens of the two quarters share the common wall.

Plan Nos: 85-C.

F-4.3b
1910



Basic unit built as a double set of quarters. Organization of spaces is the same but with the addition of a single story kitchen wing. The stair hall, dining room and kitchen of the two quarters share the common wall. Unlike F-3, however, the hallway to the dining room (kitchen in F-3) is maintained.

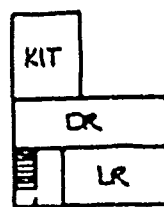
Plan Nos: 85-P.

F-5.1
1898

Basic unit built as a single set of quarters. Plan given the number 87-C. At some point, a single story kitchen wing was added, at which time the plan was the same as 87-D, Basic Unit F-5.2.

Plan Nos: 87-C.

F-5.2
1900-
1906



Basic unit built as a single set of quarters. Organization of spaces is the same but with the addition of a single story kitchen wing. As a result, the kitchen wing of the basic unit becomes a dining room.

Plan Nos: 87-D, G, H.

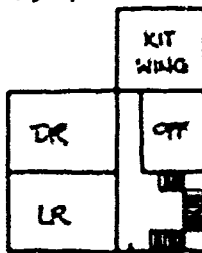
F-5.3
1906-
1907

Basic unit built as a single set of quarters. Organization of spaces is the same but with the addition of a two story kitchen wing. A third bedroom is added to the second floor.

Plan Nos: 185; 185-A.

RELATED BASIC UNITS: P

G
1900-
1907



BASIC UNIT: An entry/reception/stair hall provide access to the major first floor spaces and kitchen wing to the rear. The layout of the kitchen wing and office area varies. The main block of the house is three stories while the kitchen wing varies in the number of stories. Built as both a single and double set of quarters. Variation on two-thirds Georgian.

G-1
1900

Basic unit built as a single set of quarters. The kitchen wing is a single story. There are three bedrooms and one bath on the second floor.

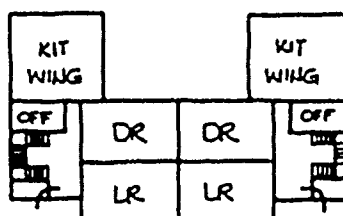
Plan Nos: 136-A.

G-2
1900-
1906

Basic unit built as a single set of quarters. Both the main block and kitchen wing are three stories. There are four bedrooms and two baths on the second floor.

Plan Nos: 136-B; 143; 144; 145;
145-A; 149; 160; 160-A; 161.

G-3
1900-
1907

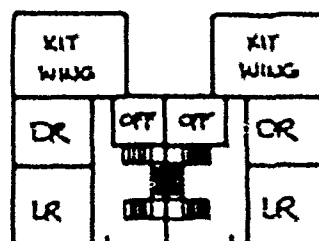


Basic unit built as a double set of quarters with the dining and living rooms of the two sets of quarters having the common wall. The building that results forms a "U" shape. The kitchen wing is three stories. The reception hall is more formal with a separate entry vestibule. There are five bedrooms and two baths on the second floor.

Plan Nos: 142; 142 rev; 142-A, F.

G-4

1909



Basic unit built as a double set of quarters. Organization of spaces is the same but with the hall and office area of the two set of quarters sharing the common wall. (The kitchen wing has been shifted to maintain the "U" shape building form.) The kitchen wing is a single story and the office area of the basic unit has changed function. There are three bedrooms and one bath on the second floor.

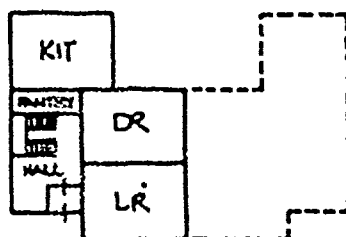
Plan Nos: 256-B, L.

RELATED BASIC UNITS: H, J.

H

1892-

1906



BASIC UNIT: Formal reception/stair hall with separate vestibule entry. A parlor (living room) and dining room open off the hall. Behind the stair hall, and within the main block of the house, is the pantry area. A kitchen wing is beyond this. The result is a "U" shaped building form. There are three stories to the building with four bedrooms and a bath on the second floor and generally two more bedrooms and a bath on the third, or attic, floor.

H-1

1892-

1897

Basic unit built as a double set of quarters.

Plan Nos: 10; 45; 45-A, B, C; 90; 90-A.

H-2
1902

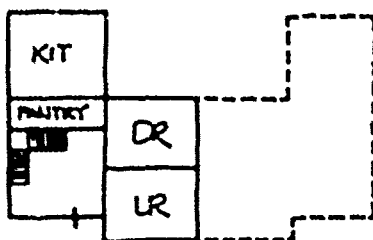
Basic unit built as a single set of quarters. The pantry and kitchen of the basic unit have been shifted somewhat, and the third floor is one open room.

Plan Nos: 153; 153-A.

RELATED BASIC UNITS: G, J.

J
1898-
1906

BASIC UNIT: Formal reception/stair hall with a parlor (living room) and dining room opening off the hall. Behind the stair hall, and within the main block of the house, is the pantry area which includes a service stair. A kitchen wing is beyond this. The result is a "U" shaped building form. There are three stories to the building with three bedrooms and a bath on the second floor and generally an open third, or attic floor.



J-1
1898-
1903

Basic unit built as a double set of quarters.

Plan Nos: 120; 120-A, C, D, E.

J-2
1905

Basic unit built as a double set of quarters but with a single story kitchen wing. Service stairs to the second floor connect the kitchen to the main block.

Plan Nos: 2-625 spl.

J-3
1905-
1906

Basic unit built as a single set of quarters. Two stories with a single story kitchen wing.

Plan Nos: 172; 2-624 spl.

J-4
1902

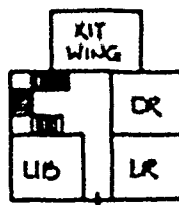
Basic unit built as a double set of quarters. The pantry has been eliminated and the kitchen wing is no longer distinct from the main block.

Plan Nos: 3-394.

RELATED BASIC UNITS: G, H.

K
1904-
1907

BASIC UNIT: A central hall leads to the kitchen wing at the rear. Three major living spaces and the main stairs are arranged on each side of the hall. The arrangement of the kitchen wing varies.



K-1
1905

Basic unit built as a three story double set of quarters. There are four bedrooms and a bath on the second floor and two bedrooms and a bath on the third, or attic floor.

Plan Nos: 3-656 spl.

K-2
1904-
1907

Basic unit built as a three story, single set of quarters. It has a separate entry vestibule. There are four bedrooms and two baths on the second floor. The attic floor varies.

Plan Nos: 145-B, C, D, E, F, G;
3-145 spl.

K-3
1905

Basic unit built as a three story, single set of quarters. The kitchen wing is more extensive.

Plan Nos: 2-623 spl.

K-4
1904-
1906

Basic unit built as a single set of quarters. The main block is three stories but the kitchen wing is a single story. There are three bedrooms and a bath on the second floor and a single open space in the attic.

Plan Nos: 163; 164; 164-B; 171.

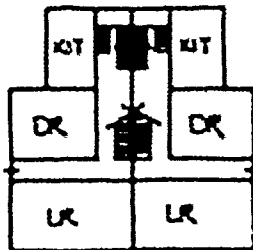
K-5
1896-
1907

Basic unit built as a three story, single set of quarters. The kitchen wing is more extensive. There are four to five bedrooms and one to two baths on the second floor. The attic floor varies.

Plan Nos: 108; 109; 110; 163-B, C.

RELATED BASIC UNITS:

L
1891-
1908



BASIC UNIT: Side entry into the short leg of an L-shaped stair hall with rooms on either side of this leg. The long leg of the hall is divided into a front and a rear stair hall. The rear hall, kitchen and pantry are in a rear kitchen wing. This unit is always built as a three story, double set of quarters with the long leg of the hall and the front room of each set of quarters forming the common wall.

L-1
1891-
1905

The basic unit with a single front room projecting toward the front of the building. The result is a cross shaped building. There are three bedrooms and one bath on the second floor and two bedrooms and another bath on the third, or attic floor.

Plan Nos: 28; 120-F, G, H, K.

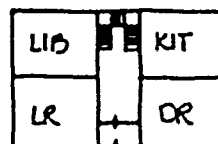
L-2
1905-
1908

Basic unit but two front rooms. There are four bedrooms and one bath on the second floor and two bedrooms and one bath on the third, or attic floor.

Plan Nos: 142-B, C, D, G.

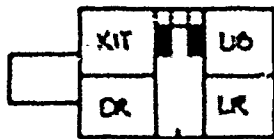
RELATED BASIC UNITS:

M
1908-
1914



BASIC UNIT: Generally a rectangular building with two rooms on either side of a central hall. There is a separate entry vestibule. Built as a single set of quarters.

M-1
1914



Basic unit with a servant's wing to one side, off of the kitchen. There are five bedrooms and two baths on the second floor.

Plan Nos: 328.

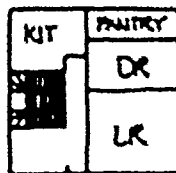
M-2
1908

Basic unit built as a three story building. There are five bedrooms and two baths on the second floor. The servant's quarters occupy the third floor.

Plan Nos: 235; 235-A, B, C, D.

RELATED BASIC UNITS:

N
1909-
1917



BASIC UNIT: A rectangular building with four major spaces or areas. The hall-stairs and kitchen occupy one side while the living and dining rooms and a small pantry occupy the other side of the unit.

N-1.1
1909

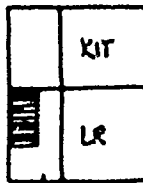
Basic unit built as a two story, single set of quarters. There is a bedroom and bath, probably servant's quarters, off the rear. There are four bedrooms and one bath on the second floor.

Plan Nos: 236-A.

N-1.2 1908- 1910	Basic unit built as a three story, single set of quarters. There are four bedrooms and one bath on the second floor and a single bedroom and bathroom on the third floor. Plan Nos: 236; 236-B, D.
N-2.1 1909-	Basic unit built as a two story structure with servant's quarters off of the kitchen. There are three bedrooms and one bath on the second floor. Plan Nos: 256-A.
N-2.2 1909- 1915	Basic unit built as a three story structure. Servant's quarters are on the third floor. Plan Nos: 256; 256-C, D, F, G, H, K, M, N, P.
N-3.1 1909- 1915	Basic unit built as a three story structure. The pantry has now been incorporated into the kitchen. The servant's quarters occupy the third floor. Plan Nos: 259; 400; 401; middle units of 270, 270-A.
N-3.2 1915- 1917	Basic unit built as a two story structure. The pantry has now been incorporated into the kitchen. The servant's quarters are in the basement. Plan Nos: 406; 406-A, B.

RELATED BASIC UNITS:

P
1893-
1910

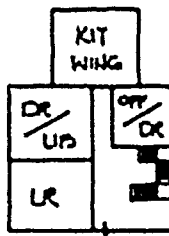


BASIC UNIT: A living room and stair hall in the front half with a kitchen area in the rear half of the unit. A pantry, bath and/or second entry occupy part of the kitchen area. Always built as a two story, single family residence. There are two bedrooms and one bath on the second floor.

Plan Nos: 87; 87-A; 87-A rev; 97-B, E, F, K, N.

RELATED BASIC UNITS: F.

Q
1891-
1905

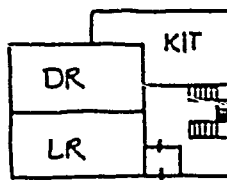


BASIC UNIT: A three story, single family residence with a formal reception/stair hall in the front portion of the main block and a library/office and dining room occupying the rear. A narrow hall separates these last two spaces and leads to the kitchen. There is generally a separate entry vestibule.

Plan Nos: 3; 95; 95-A, C; OQ-51.

RELATED BASIC UNITS: R.

R
1891-
1909



BASIC UNIT: Entry is into a separate vestibule then a formal reception/stair hall. A kitchen is beyond the hall to the rear. A parlor (living room) and dining room are to the sides of these spaces. There are four bedrooms and one bath on the second floor. Built as both a single and double set of quarters.

R-1
1891-
1892

Basic unit built as a single set of quarters. There is a third, or attic floor.

Plan Nos: 17, 20 or 20-A

R-2
1909

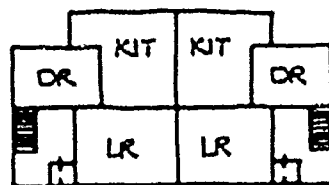
Basic unit built as a double set of quarters with the stairs and kitchens of the two sets having the common wall.

Plan Nos: 260.

R-3
1897-
1899

Basic unit built as a double set of quarters with the stair hall and living room reversed.

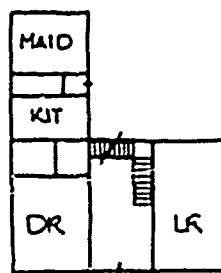
Plan Nos: 115; 115-A



RELATED BASIC UNITS: Q.

S
ca. 1931

BASIC UNIT: An "L" or "T" shaped building with a central entry/stair hall. One side of the hallway is a large living room. A porch opens off the living room. A dining room is on the other side of the hall. A pantry and closet separate the dining room from the kitchen and servant's wing.



S-1
ca. 1931

Basic unit built as an "L" shaped building with the porch opening off the rear of the dining room. The second floor is only over the dining/kitchen half of the third floor and contains three bedrooms and a bath. Company Officers' Quarters.

Plan Nos: OQ-59.

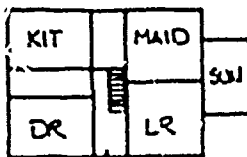
S-2
ca. 1931

Basic unit as a "T" shaped building with the porch in the front of the house. There is a full second story with four bedrooms and two baths. Field Officers' Quarters.

Plan Nos: OQ-58.

RELATED BASIC UNITS:

T
1908-
ca. 1934

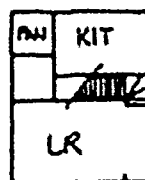


BASIC UNIT: A four-square Georgian plan and elevation with a central stair hall. A living room, with maid's room beyond, is on one side of the hall. A sun porch also opens off of the living room. A dining room with a pantry and kitchen beyond is on the other side of the hall. There are four bedrooms and two baths on the second floor.

Plan Nos: 241; OQ-48; OQ-49; OQ-50.

RELATED BASIC UNITS: A

U
1914-
1916



BASIC UNIT: A rectangular set of quarters with a living room across the front half and a kitchen and pantry in the rear half. A stair hall and closets divide the living room from the rear spaces. There are two bedrooms and a bath on the second floor.

Plan Nos: 379; 422.

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All of the Annual Reports from 1852 to 1912 were reviewed. In them, "The Report of The Quartermaster General" was by far the most helpful, though occasionally "The Report of the Surgeon General" was also of use. The reports of the Quartermaster General are also published separately as The Annual Report of the Quartermaster General. The information in the Quartermaster General's reports included budget figures, where monies were spent and for what type of structure; the number of troops in the Army for the given year; General Orders as might relate to construction; authorization for the establishment, abandonment or sale of Army posts; and numerous other issues which relate to the workings of the Quartermaster Department.

MILITARY HISTORY BRANCH (Formerly Navy/Old Army)

RG 77, E. 393- Completion Reports (located at Suitland)

The most valuable series for identifying standard plans from the third period of standardization, 1926-1940. This file consisted mostly of photographs, but quite often plans were also included. There were also numerous photographs of buildings from the second period of standardization, 1890-1917. This is a very large series arranged by post name. In selecting records to review, posts were chosen that were known to have had a great deal of construction activity during the 1920s and 1930s. A total of 116 boxes were identified but time allowed only 55 to be reviewed.

It was in this series for Fort Lewis, Washington that some single photographs of floor plans were found that may have been from the bound volume of housing plans mentioned in the House Committee on Military Affairs meeting on the 1932 Increment Army Housing Program.

Boxes inspected: 18, 19, 22, 27-30, 53, 54, 57, 58, 75, 77, 78, Oversize Box 6, 81, 85-95, 102, 103, 105, 109-114, 120-122, 124, 134-140, 153-156, 158-161.

Still to be inspected: 14-17, 163, 164, 172, 173, 178, 179, 192, 193, 201-204, 211-218, Oversize Box- Randolph Field, 221, 224-226, 230-234, 238-250, 260, Oversize Box- Ft. Sill, 262, 263, 266-269, 278-280, 293, 294.

RG 77, E. 412- Plans for all types of buildings 1903-10.

A small bound volume of drawings in 8 1/2" x 14" format. This is a much condensed version of RG 77, P.I. NM-19 located at the Cartographic and Architectural Branch. See entry below.

RG 77, E. 1975- Completion Reports 1917-1938. (Suitland)

Plans and photographs of buildings at various posts. Proved quite helpful in identifying standard designs from the third period.

RG 77, E. 1976- Completion Reports, 1917-1938. (Suitland)

No value. Dealt with temporary buildings from 1918-1919 only.

RG 92, E. 215- Consolidated Correspondence Files, 1794-1890. Arranged by subject.

Potentially one of the most valuable files, and definitely one of the most frustrating to work with. It is an extremely large file. Since it is arranged by subject, the subjects barracks, quarters, officers' quarters, housing, family housing, plans, design, architecture, anything that might yield information standardized construction, were requested. The response was that the file was generally arranged according to people, places and posts, though there are a number of boxes labeled Maps and Drawings. Unfortunately, these were reviewed too early in the research so that no standard plans could be recognized. These boxes should be reviewed again to see if any of the plans can be matched with any of the standard plans identified by this

report. Also requested was information on the various Military Departments and Quartermaster Generals. Little of value was found relating to standardized construction under these subject heads. With a number of plans identified from the early period, the next search in this file should be of the specific posts. There are usually plans included in these files which may or may not duplicate those at the Cartographic and Architectural Branch, and also specifications. This search would prove quite valuable.

RG 92, E. 1046- Subject index to part of Series (E) 42 relating to barracks and quarters 1871-1883.

A listing of letters concerning plans and specs for buildings at posts, requesting standard plans, concerning housing policy, etc. None of the entries which sounded promising were never researched, however, as research staff advised that they would probably not be of much use. A few random letters were checked and they were not of much value. Most of the drawings mentioned would have been sent to the Cartographic and Architectural Branch. If time had permitted this series would have been researched.

RG 92, E. 1058- "Annual Reports of the Construction and Repair Division, 1903-1915".

These are mimeographed or typed copies of the reports that were eventually published (sometimes in abridged form) in the annual reports of the Quartermaster General and Secretary of War. One entry, Statement A from the report for the fiscal year ending June 30, 1906, listed post names, types of buildings, their costs and the QMGO plan number that was used in its construction.

RG 92, E. 1061- List of construction contracts made for various posts, 1885-99.

List of posts with the types of buildings built and their cost, and often, the QMGO plan number used.

RG 92, E. 1062- Scrapbook of General Orders of the Adjutant General and correspondence relating to Congressional approval for construction of buildings at various posts 1887-88. Primarily Barracks and Quarters- Construction and Repairs.

Of little value. Listed posts, what type of quarters were built, i.e. officer's quarters of field officer's quarters, etc., the year they were built and how much they cost. No indication of any standard plan, or plans in general, were mentioned.

RG 92, E. 1064- Register of estimates submitted for construction and repairs at various stations, 1889-90.

Of little value. Listed posts, what type of buildings were built, their date and cost. No indication of any standard plans was given.

RG 92, E. 1065- List of construction work started at various posts, 1899-1900. Memorandum Index- Construction projects commencing July 26, 1899.

No value. Listed posts, types of quarters and bid dates. No indication of standard plans.

RG 92, E. 1066- Brief description of buildings at various posts, ca 1904.

No value. These were standard forms listing post name, date established, the types of buildings on the post and their building material. All of the entries seemed to be from 1901. No indication of any plans or design.

RG 92, E. 1069- List of contracts let relating to barracks and quarters, 1911-12.

No value.

RG 92, E. 1071- Specifications for buildings at Fort Sheridan, 188-1912.

Primarily concerned with Holabird and Roche buildings, however, the specs for the 1888 Hospital Steward's Quarters from S.G.O. Circular No. 10, QMGO #120-D and QMGO #82-N were found in this file.

RG 94- Records of the Adjutant General's Office, 1917----, Central Decimal File, 620-625, 630.

Unpublished series of memorandums and numerous other documents concerning various topics. The numbers 620-625, which covered barracks and quarters, officers quarters, etc. were requested. Only a portion of 620 was received, however, so there is much information still to be reviewed. Number 630- Post Buildings might also prove helpful. There does not appear to be any organization, other than chronologically by date, within the boxes of documents.

CARTOGRAPHIC AND ARCHITECTURAL BRANCH

RG 77- Fortification File
EG 77- Misc. Fortification File
RG 92- Blue Print File
RG 92- Post and Reservation File
RG 156- Office of the Chief of Ordnance
RG 393- Posts

For the convenience of the researcher, a series of over 40 loose-leaf notebooks have been organized alphabetically by post name. Under each post is a listing of all of the drawings from that post within these files.

RG 77- P.I. NM-19 (E. 411)
RG 92- Post and Reservation File - Fort Anyplace

The drawings in these two files are not for any specific post. RG 77- P.I. NM-19 is especially important because it contains all of the drawings for all types of post buildings from the second period of standardization. E. 411 is the bound index for this series and also contains written descriptions of each of the designs. RG 92- Fort Anyplace contains blueprint copies of the drawings within P.I. NM-19.

All of the files at the Cartographic and Architectural Branch are extremely important in identifying Army architecture to about 1917. After World War I their records are sparse.

STILL PHOTOS DIVISION

RG 77-A and RG 77-AA- Prints and negatives from Washington Barracks (Ft. McNair) and Willet's Point (Ft. Totten). Some of the negatives are for prints in the 92-F series. Some photographs of quarters built from standard designs are included in this series.

RG 77-CA- Completion photographs of housing from the second period of standardization. The photographs were taken at posts across the country, from Ft. Terry, New York to Ft. Stevens, Oregon. These were used to identify some of the locations where the various plans from this period were built. An occasional standard design from the first period was also illustrated.

RG 77-CC- Completion Photos of Military Housing Projects 1927-1936. 3 volumes. There is no volume 1.

Excellent source for third period designs. Most of the standard designs from this period were identified by looking through this series of photographs. Plans were then found at Suitland in RG 77, E. 393. Be diligent if these volumes are requested. Volumes 2 and 3 have been taken apart and are now in 2 large archival boxes. Volume 4 is still bound and is sometimes difficult to find.

RG 77-SD- Military Installations of the Southern Dept. 1920.

Photographs from posts in Texas, New Mexico and Arizona. Of little value except to show where already identified standard plans were built.

RG 77-SFA- Photographs of the posts around San Francisco Harbor, especially Ft. Scott (Presidio). Good photographs of housing built from the standard plans of the second period of standardization.

RG 92- F Series- U. S. Military Posts of the late 19th Century.

Excellent resource for early photographs of all building types not just quarters. Arranged by Post. It was through this series that a number of the first period standard designs were identified before the actual plans were found. These photos were also used to identify some of the locations where the various plans from the second period were built.
