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Structural Wood Products in Onshore Buildings at Naval Station Norfolk, 2000

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Abstract

As of December 31, 2000, there were 603 buildings at Naval Station (NAVSTA) Norfolk with a combined floor area of nearly 17.3 million ft^2. In one-third of these buildings, structural wood products were used in one or more major structural building applications, utilizing an estimated 11.6 million board feet of lumber, 0.4 million ft^2 (3/8-in. basis) of structural panels, and 0.1 million ft^2 (3/8-in. basis) of fiberboard. Wood buildings, on average, were about 40% smaller than their nonwood counterparts. They were also older. Half of all the buildings and three-fourths of all wood buildings pre-date 1950. The role of wood has greatly diminished at NAVSTA Norfolk over the past 50 years.

Keywords: lumber, softwood plywood, OSB, fiberboard, military construction, nonresidential construction, U.S. Navy, NAVSTA Norfolk

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SI conversion factors

English unit	Conversion factor	SI unit
inch (in.)	25.4	millimeters (mm)
foot (ft)	0.3048	meter (m)
board-foot (BF)	2.36×10^{-3}	cubic meter (m^3)
acre	0.4047	hectare (ha)

Cover

Buildings typical of NAVSTA Norfolk buildings and structural applications using wood products.

Left—Building SP89, single-story, barrel-roofed, wood-framed general warehouse; (top) exterior, (bottom) interior; lumber framed and sheathed exterior walls and roof, wood roof trusses; 120,000 ft^2 floor area; built in 1943.

Right—Building T26, three-story, concrete and masonry administration building; (top) exterior, (bottom) interior of attic; lumber framing and sheathing used to support original slate roof; 73,274 ft^2 floor area; built in 1932.

Highlights

There were 603 buildings at NAVSTA Norfolk in 2000, with a combined floor area of 17.3 million ft^2. The typical building averaged 28,700 ft^2. Buildings span more than 100 years of age, with nearly one-third built during the 1940s.

The 166 buildings in facility category 700–Housing accounted for more than one-fourth of all buildings and had a total floor area of 3.3 million ft^2, about one-fifth of all floor area. Facility category 200–Maintenance was second highest in total number of buildings. If combined, Housing and Maintenance would account for more than half of all buildings and about one-third of total floor area.

Approximately one-third (204) of all buildings contained structural wood products in one or more structural building applications. Housing and Maintenance buildings ranked first and second in the number of wood buildings, accounting for two-thirds of all wood buildings.

Wood buildings tended to be smaller than nonwood buildings, averaging 20,000 ft^2 per building compared to 33,000 ft^2 per nonwood building.

About half of all buildings and three-fourths of all wood buildings were constructed prior to 1950. Wood buildings constructed prior to 1950 accounted for more than 90% of the floor area in all wood buildings.

About 11.6 million board feet of lumber, 0.4 million ft^2 (3/8-in. basis) of structural panels, and 0.1 million ft^2 (3/8-in. basis) of fiberboard were used in buildings at NAVSTA Norfolk, or about 700,000 ft^3 of solid wood. The wood product used in the greatest volume was lumber, accounting for 98% of total cubic foot volume of wood used. Structural panels were primarily used in buildings constructed after 1950.

Roof systems were the most intensive wood-using structural application. Nearly three-fourths of each wood product, except for fiberboard, was used for roofs. Floors constituted the second highest use of wood.

The "average" building contained about 0.67 board feet of lumber, 0.02 ft^2 (3/8-in. basis) of structural panels, and less than 0.01 ft^2 (3/8-in. basis) of fiberboard per square foot of floor area. These figures translate to about 19,300 board feet of lumber, 600 ft^2 (3/8-in. basis) of structural panels, and 140 ft^2 (3/8-in. basis) of fiberboard per building.

Housing was the largest facility category for lumber use and contained just under one-third of all lumber used. Three facility categories—Operations, Supply, and Housing—accounted for 85% of all structural panel use, 97% of which was softwood plywood. Nearly three-fourths of all structural panels were used in roofs. Of the little fiberboard used, nearly all was used for exterior wall sheathing.

Based on measures of adequacy defined by the Navy, nearly three-fourths of all floor area in buildings was considered to be adequate. Nonwood buildings were rated higher than were wood buildings; 80% of nonwood buildings were rated adequate compared with less than 50% of wood buildings.

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Introduction

The U.S. Navy is currently engaged in the Advanced Wood Composites for Naval Facilities Project sponsored by the Office of Naval Research. The principal objective of this initiative is to identify areas and applications where newly developed wood–plastic composites can be used to extend the service life of buildings while reducing required maintenance. As part of this initiative, the Naval Facilities Engineering Service Center at Port Hueneme, California, is charged with conducting a timber structure inventory and assessment of all onshore Navy buildings. Two on-site surveys were performed to quantify and evaluate the use of wood in buildings at "typical" coastal Navy bases—the Construction Battalion Center (CBC) Naval Base in Ventura County, Port Hueneme, California, and the Naval Station (NAVSTA) in Norfolk, Virginia. This report describes the findings from the NAVSTA Norfolk survey.

NAVSTA Norfolk occupies about 4,300 acres of land on the Sewells Point peninsula in Virginia. It is the world's largest naval station, and, based on supported military population, the largest military station in the world.[1] Detailed information on each building at the base is maintained by the Naval Facilities Engineering Command Headquarters in the Navy Facility Assets (NFA) database, which is accessible online through the Navy Shore Installations homepage.[2] Information includes the building type, date of construction, dimensions, floor area, number of stories, overall physical condition, and other data regarding current use. According to a query of the NFA database made through Navy Shore Installations, there were a total of 603 buildings with a combined total floor area in excess of 17 million ft^2 at Activity UIC 62688 NAVSTA Norfolk in 2000. This query was based on the July 5, 2002 update of the NFA database. In addition to the NFA database, the Navy Public Works Center at NAVSTA Norfolk maintains the Facility Condition Assessment (FCA) database as part of their long-range maintenance plan. This database, which is not publicly available, includes much of the information in the NFA database, as well as detailed structural information collected during periodic building inspections. Included are qualitative descriptions and evaluations of the overall condition of the buildings and the condition of the foundations, floors, walls, ceilings, roofs, and other building components. Version 3.3 of the FCA database (December 5, 2001) contains detailed structural information on 379 of the 603 buildings identified in the NFA database for NAVSTA Norfolk. No structural data were available for the remaining 224 buildings.

Appendix A provides definitions of all wood products referenced in this report. Appendix B is an annotated bibliography of studies on wood used in new construction. The characteristics of the 603 buildings at NAVSTA Norfolk are described in Appendix C.

Objectives

The overall objective of this study was to quantify, describe, and assess the current status of structural wood products in buildings at NAVSTA Norfolk. Specific objectives were as follows:

- For buildings where structural data are available, identify the extent to which the buildings were constructed with structural wood products. To be counted as a wood

[1] History of Naval Station Norfolk. www.navstanorva.navy.mil/INFO/ABOUT_US/HISTORY/history.htm

[2] www.nsi.navfac.navy.mil/

building, a building must have structural wood in one or more structural applications.[3]

- Estimate the total amount of wood in each identified wood building by type of wood product and structural application.
- Estimate wood use factors based on the total floor area for all buildings where structural data are available. Wood use factors define the average amount of a specific wood product used in a specific structural application per square foot of floor area.
- Apply wood use factors to all remaining buildings where no structural data are available.
- Estimate the total amount of wood used in all buildings by type of wood product.
- Describe how the use of wood has changed in buildings over time and assess the overall condition of buildings with and without wood.

On-Site Inspection

In August 2001, an on-site inspection trip was made to NAVSTA Norfolk. The aims of the inspection trip were to

- become familiar with the types and characteristics of buildings present at the base and current levels of building activity,
- identify specific building types and applications where wood would have been most likely used for construction, and
- closely examine and measure typical buildings that contain wood to develop estimates of total wood use and use per square foot of floor area.

Prior to the on-site inspection, we were provided with a list of buildings at NAVSTA Norfolk from the NFA database. From this list, 72 buildings were chosen for inspection. Of these buildings, nearly 20% had been recently demolished, were abandoned awaiting demolition, or were still in use but scheduled for demolition. Nearly all had been built entirely or partially from wood. Personnel from the Navy Public Works Center informed us that a very aggressive demolition program was in place at NAVSTA Norfolk, and many older wood-framed buildings had been or would soon be demolished. Demolition was considered to be the most expedient way to remove buildings that were no longer functional as a result of their age, condition, or changes in building requirements. Deconstruction was not considered to be a viable removal alternative.

During the on-site inspection, several important observations were made about the overall use of wood at the base. Buildings erected during the late 1930s and 1940s had a much higher incidence of wood use than those built in other years. Many low-rise, office, and administration-type buildings erected during this period were entirely wood framed and sheathed. Many concrete and masonry buildings for housing and related buildings had slate roofs supported entirely by lumber framed and sheathed roof systems. Many concrete and steel hangars had lumber roof sheathing over steel framing, and many warehouses were built with large wood trusses supporting lumber rafters and sheathing. Very few buildings had wooden floor systems, especially one-story buildings. In nearly all instances, exterior wood siding had been covered or replaced by a more durable, lower maintenance siding material.

Study Procedure

A database of all buildings assigned to the NAVSTA Norfolk activity was downloaded from the NFA database using the query function on the Navy Shore Installations homepage. The NFA database was dated July 5, 2002, and contained a total of 619 buildings. Of these, 440 buildings were located at Norfolk and 179 at six special areas[4] assigned to NAVSTA Norfolk. Buildings constructed after 2000 were removed from the list, as were buildings known to have been recently demolished. The resulting database contained a total of 603 buildings, of which 178 were in special areas. Data of interest for each building included the property number, facility number, name and category code, year built, length, width, height, number of stories, total area, area adequacy (adequate, inadequate, or substandard), and special area code. See Appendix C for a listing of the 603 buildings at NAVSTA Norfolk included in this study.

Data from the FCA database version 3.3 (December 5, 2001) were combined with the data from the NFA database. Data of interest from the FCA database were qualitative structural comments regarding the overall construction system, foundations, floors, exterior and interior walls, roofs, and ceilings, as well as additional structural data on the primary and secondary construction type of the building, and primary, secondary, and tertiary type of floors, walls, roofs and ceilings. Although these structural data could not be used to

[3] Structural wood products are softwood and hardwood lumber, softwood plywood and oriented strandboard, and fiberboard sheathing. Structural applications include first and upper floor framing and decking, exterior and interior wall framing and sheathing, and roof (and/or ceiling) framing and sheathing. Millwork, exterior siding, interior wall paneling, and hardwood flooring are not structural applications.

[4] A special area may be remote, contiguous to, or located within the activity and is identified for functional, operational, or administrative reasons.

directly estimate incidence and amounts of wood products used in a particular building, they did provide valuable insights into the likelihood of wood being used. Of the 603 buildings in the downloaded NFA database, 379 had corresponding structural data records in the FCA database. No structural data were available for the remaining 224 buildings.

The data were then stratified by type of building as determined by the three-digit facility category code and by the presence of FCA structural data. Each building that had structural data was then carefully examined to determine the likelihood that wood products were used in one or more structural applications. This determination was based in part on qualitative structural comments and on additional structural data from the FCA database, information and insights acquired during the on-site inspection trip to NAVSTA Norfolk, typical building practices used for similar nonmilitary nonresidential building construction, and the age, size, intended use and other characteristics of the building. For each building determined to have one or more wood-based structural building applications, the floor area corresponding to each application was estimated. For example, a two-story Unattached Enlisted Personnel Housing facility with 24,000 ft^2 of total floor area built in the late 1930s had a concrete column and slab construction system, a raised concrete slab foundation, brick exterior walls, and slate shingles over a gable roof system. Based on the age of the building and its use, the on-site inspection, and conventional building practices, the roof system would typically be lumber framed and sheathed, and since the building is two stories and rectangular, the roof covered about one-half the total floor area. The estimated floor area assigned to the wood-framed roof was therefore 12,000 ft^2.

Next, wood use factors were developed to convert square feet of floor area for each wood-based structural application to specific amounts of wood products. The limited number of past studies of wood products used in military construction were based on the value of new construction, and buildings were classified as primarily wood (if one or more structural building applications were wood-based) or nonwood. Past studies of nonresidential construction were also based on the value of construction and buildings categorized as either wood or nonwood. All of these studies were conducted at a single point in time, and all were conducted since the late 1960s. See Appendix B for an annotated bibliography of these and other studies related to new construction and related wood use.

Buildings at NAVSTA Norfolk span more than 100 years of age, with nearly one-third being built during the 1940s. For these reasons, wood use factors per square foot of application floor area had to be developed specifically for this study. The wood use factors were based on (1) measurements of wood use made during the on-site inspection at NAVSTA Norfolk, (2) typical floor, wall, and roof framing practices using a variety of lumber sizes, spacing, and heights, (3) types of materials available at the time of construction, and (4) limited published information on new residential and nonresidential construction. Use factors appropriate to each building were multiplied by the floor area for each wood-based structural application, resulting in estimated amounts of wood products, by type, for each building with one or more wood-based structural applications.

Wood products use was then summed for each building and for all buildings with FCA structural data. Total floor area of all FCA buildings, with or without wood-based structural applications, was also summed. Total wood use was then divided by total floor area, resulting in the estimated average amount of wood products, by type of product and facility, used per square foot of floor area in the 379 NAVSTA Norfolk buildings with FCA structural data. These wood use factors were then multiplied by the total floor area of all NAVSTA Norfolk buildings, by facility type, resulting in estimates of the total amount of wood, by type of product, in all existing buildings at NAVSTA Norfolk.

Description of Buildings

NAVSTA Norfolk includes the base proper and six special areas: St. Julien's Creek Annex, Elizabeth River Channel, Portsmouth YMCA, and Diamond Hill Road in Virginia, and Harvey's Point and Radio Island in North Carolina. For the purposes of this study, all buildings were treated as if they were located at Norfolk, Virginia, with no assumptions of structural or architectural differences based on geographic location.

Number and Size of All Buildings

Of the 603 buildings at NAVSTA Norfolk in December 2000, 379 were located at the base proper and 224 at the six special areas. These 603 buildings had a combined total floor area of nearly 17.3 million ft^2 and averaged 28,700 ft^2 per building (Table 1).

Buildings at NAVSTA Norfolk, as well as those at all Navy bases, are classified according to their principal use by a three-digit facility category code. Table 2 lists the facility category codes and the abbreviations for the codes used in this report.

There were more Housing buildings at NAVSTA Norfolk than any other single facility type. The 166 Housing buildings accounted for more than one-fourth (28%) of all buildings and had a total floor area of 3.3 million ft^2, or about one-fifth (19%) of total floor area (Table 3, Fig. 1). However, unlike the housing at CBC Port Hueneme, the housing at NAVSTA Norfolk did not contain stand-alone single-family houses, with the exception of 16 historical houses on Dillingham Boulevard built by individual States as part of

Table 1—Buildings at NAVSTA Norfolk, Dec. 31, 2000

Building type	Buildings (no.)	Floor area	
		Total ($\times 10^6$ ft^2)	Average ($\times 10^3$ ft^2)
Wood	204	4.1	20.0
Nonwood	399	13.2	33.1
Total, all buildings	603	17.3	28.7

Table 2—Facility categories of buildings at NAVSTA Norfolk

Code	Description	Abbreviation
100	Operational & training	Operations
200	Maintenance & production	Maintenance
300	Research, development, & testing	R&D
400	Supply	Supply
500	Hospital & medical	Hospital
600	Administrative	Administrative
700	Housing & community	Housing
800	Utilities & ground improvements	Utilities

Table 3—Number and floor area of NAVSTA Norfolk buildings by facility category, 2000

Facility category and building type[a]	Buildings			Floor area			
		Percentage of		Total	Percentage of		Average
	(no.)	Category	All facilities	($\times 10^3$ ft^2)	Category	All facilities	(ft^2)
Operations							
Wood buildings	25	26	12	565	27	14	22,600
Nonwood buildings	71	74	18	1,556	73	12	21,900
Total, all buildings	96	100	16	2,120	100	12	22,100
Maintenance							
Wood buildings	51	34	25	1,188	45	29	23,300
Nonwood buildings	100	66	25	1,460	55	11	14,600
Total, all buildings	151	100	25	2,648	100	15	17,500
R&D							
Wood buildings	0	0	0	0	0	0	0
Nonwood buildings	4	100	1	295	100	2	73,700
Total, all buildings	4	100	1	295	100	2	73,700
Supply							
Wood buildings	14	14	7	408	6	10	29,200
Nonwood buildings	85	86	21	6,763	94	51	79,600
Total, all buildings	99	100	16	7,172	100	41	72,400
Hospital							
Wood buildings	0	0	0	0	0	0	0
Nonwood buildings	4	100	1	148	100	1	37,100
Total, all buildings	4	100	1	148	100	1	37,100
Administrative							
Wood buildings	27	52	13	648	44	16	24,000
Nonwood buildings	25	48	6	836	56	6	33,400
Total, all buildings	52	100	9	1,484	100	9	28,500
Housing							
Wood buildings	84	51	41	1,273	38	31	15,200
Nonwood buildings	82	49	21	2,055	62	16	25,100
Total, all buildings	166	100	28	3,327	100	19	20,000
Utilities							
Wood buildings	3	10	1	1	1	0	200
Nonwood buildings	28	90	7	98	99	1	3,500
Total, all buildings	31	100	5	99	100	1	3,200
Total, all facilities							
Wood buildings	204	34	100	4,083	24	100	20,000
Nonwood buildings	399	66	100	13,211	76	100	33,100
Total, all buildings	603	100	100	17,294	100	100	28,700

[a]Wood buildings include any building with structural wood products in one or more structural building applications.

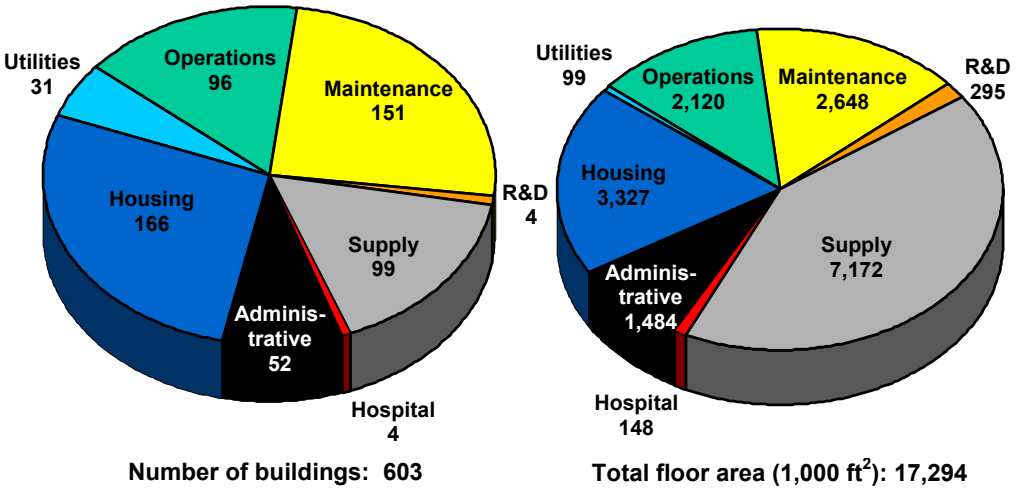

Figure 1—Number and floor area of all buildings by facility category.

the 1907 Jamestown Exposition.[5] Many of these houses were disassembled from locations throughout the country and reassembled at the naval base. They are commonly referred to as "Admiral's Row" because many are now residences of high-ranking Navy officers. These houses are somewhat of an anomaly because they are not representative of typical buildings at NAVSTA Norfolk and, although they are primarily wood-framed structures, they were not included in this study.

The 166 Housing units averaged 20,000 ft^2 per building, about 8,700 ft^2 below the average size of all buildings. Maintenance buildings were second highest in number (151), and when combined with Housing, accounted for more than one-half the total number of all buildings. Maintenance buildings had a total of 2.6 million ft^2 of floor area and averaged 17,500 ft^2; they were about 13% smaller on average than Housing buildings and 40% smaller than the average of all buildings. The next largest facility types, Supply and Operations, with 99 and 96 buildings, respectively, accounted for about one-third of all buildings. Although the numbers of Supply and Operations buildings were very close, the size of the buildings was not. The 99 Supply buildings had a total floor area of 7.2 million ft^2 and averaged 72,400 ft^2, compared to 2.1 million ft^2 floor area and 22,100 ft^2 average floor area for Operations buildings. The largest building at NAVSTA Norfolk was a 1,828,868-ft^2 Supply warehouse. The remaining four facility categories (R&D, Hospital, Administrative, and Utilities) accounted for 15% of all buildings and 12% of total floor area.

[5] Maddry, L. When the world came to town. www.navstanorva.navy.mil/INFO/ABOUT_US/HISTORY/EXPO/expo.htm

Number and Size of Wood Buildings

Approximately one-third (204) of the 603 buildings at NAVSTA Norfolk in 2000 were considered to be wood buildings (Table 3). A wood building was defined as any building with structural wood products in one or more structural applications. Thus, a building with wood framed and sheathed floors, walls, and roof was considered a wood building, as was a building with concrete and masonry floors and walls and a wood framed and sheathed roof. Incidental wood use for nonstructural applications such as doors, windows and other millwork, exterior siding, interior wall paneling, finished flooring over a nonwood subfloor, wheelchair access ramps, and other interior and exterior uses did not qualify a building to be classified as a wood building.

Housing and Maintenance buildings ranked first and second in the number of wood buildings (84 and 51 buildings, respectively) (Table 3, Fig. 2). These 135 buildings accounted for two-thirds of all wood buildings. Administrative and Operations ranked third and fourth, with 27 and 25 buildings, respectively. The remaining 17 wood buildings were used for Supply (14) and Utilities (3). There were no R&D and Hospital wood buildings. It is interesting to note that more than half of the Maintenance, Administrative, and Housing buildings were categorized as wood buildings.

Consistent with the findings of Spelter and Anderson (1985) for new nonresidential construction, wood buildings at NAVSTA Norfolk tended to be smaller, on average, than their nonwood counterparts. The 204 wood buildings had a total combined floor area of 4.1 million ft^2 and averaged 20,000 ft^2 per building (Table 3). Thus, although wood buildings accounted for about one-third of all buildings, they only accounted for about one-fourth the total floor area.

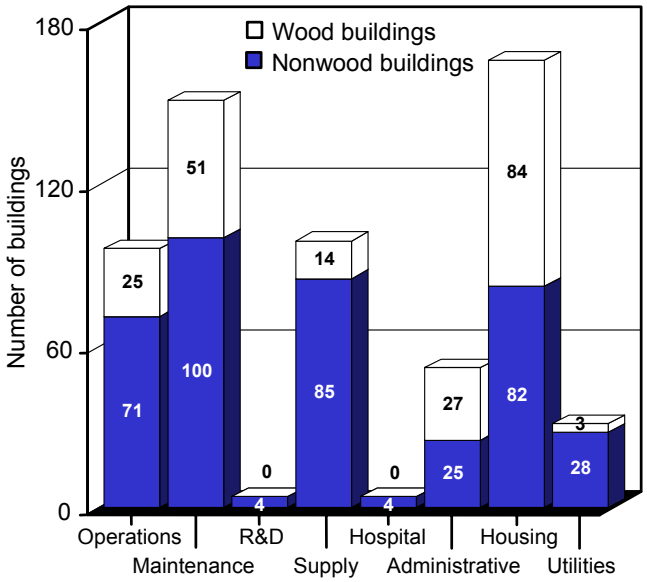

Figure 2—Number of wood and nonwood buildings by facility category.

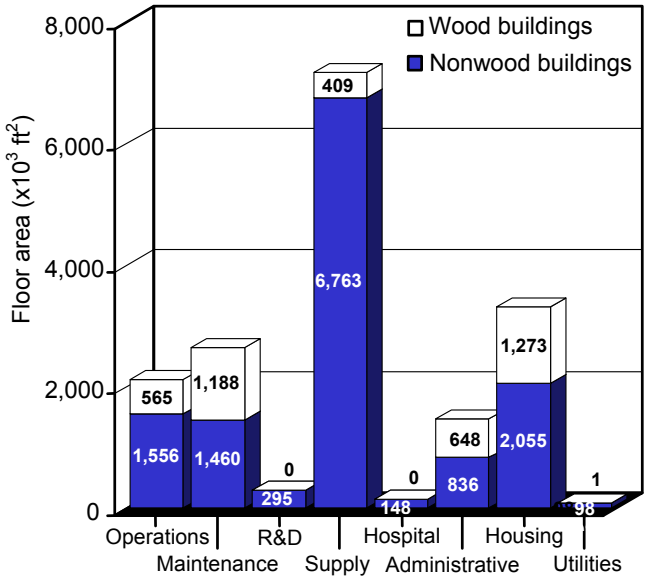

Figure 3—Floor area of wood and nonwood buildings by facility category.

In contrast, the 399 nonwood buildings had a total combined floor area of 132.2 million ft^2 and averaged 33,000 ft^2 per building; these buildings were about 65% larger than the average wood building. Floor area distribution between facility types closely followed the distribution of number of buildings. Within wood buildings, Housing and Maintenance buildings had more floor area than did other facility types (1.3 million and 1.2 million ft^2, respectively) and accounted for 60% of all floor area in wood buildings (Fig. 3). Total area in wood buildings in these two facility types was about two times that of any other facility type. Maintenance was the only type in which average floor area in wood buildings exceeded that in nonwood buildings.

The floor area in wood Administrative, Operations, and Supply buildings was 0.65, 0.57, and 0.41 million ft^2, respectively, less than one-half the average for Housing and Maintenance. The Utilities, R&D, and Hospital categories had little or no floor area in wood buildings. The largest wood building at NAVSTA Norfolk in 2000 was a 212,560- ft^2 Operations transit shed.

Number and Size of Buildings by Year of Construction

The oldest buildings at NAVSTA Norfolk are four Operations buildings at the St. Julien's Creek Annex, which date to 1897. Many new buildings have been constructed over the years, while others have been demolished. Of the 603 buildings now at NAVSTA Norfolk, 196 or about one-third were built during the 1940s (Table 4). This is about three times as many buildings as now exist from the 1950s, the decade with the second highest number of buildings constructed. The 196 buildings constructed in the 1940s had a combined floor area of nearly 7.7 million ft^2, 44% of the total floor area of all buildings (Table 5, Fig. 4). Total floor area was no more than 12% for any other decade. Sixty percent of the buildings from the 1940s were classified as wood buildings, accounting for more than half (57%) of all existent wood buildings.

The combined floor area of wood buildings constructed in the 1940s was in excess of 3 million ft^2 (Fig. 5). However, wood buildings tended to be smaller, on average, than other buildings. The average wood building constructed in the 1940s had about 26,000 ft^2 of floor area, compared to 38,000 ft^2 for all buildings.

The large number of buildings constructed during the 1940s is most likely attributable to World War II, when there was an urgent need to quickly construct facilities to support the war effort. Wood construction is typically faster than concrete and masonry construction, and it does not require the large amounts of steel and other metals needed for military equipment and munitions. The Navy defines three types of construction for naval bases: permanent, semi-permanent, and temporary. Permanent and semi-permanent construction requires the use of highly or moderately durable exterior structural framing of building materials such as masonry, concrete, or steel. Permanent buildings are expected to last at least 50 years with minimal maintenance, and semi-permanent buildings are expected to remain useful for 25 years with moderate maintenance. Temporary buildings are constructed with a nondurable exterior structural framing of materials such as wood or light gauge steel and are expected to be functional for 5 years without regard to the degree of maintenance required. Wood-framed buildings are considered by the Navy to be temporary structures and as

Table 4—History of building construction at NAVSTA Norfolk

	Number of buildings constructed and floor area by decade									
Building type	<1910	1910s	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990+
All										
Number	17	59	6	22	196	78	34	61	77	53
Floor area ($\times 10^3$ ft^2)	174	1,258	581	585	7,683	1,200	559	1,778	2,096	1,381
Wood										
Number	9	12	2	12	117	19	9	0	11	13
Floor area ($\times 10^3$ ft^2)	93	112	49	440	3,050	66	39	0	231	3

such would have likely been favored for the quick construction of military facilities.

The buildings at NAVSTA Norfolk are old. About half of all buildings (300) were constructed prior to 1950 (Table 5, Fig. 6). These buildings account for nearly 60% of the total floor area for all buildings. Three-fourths (152) of wood buildings were built prior to 1950; these buildings account for more than 90% of the floor area in all wood buildings. Thus, although wood is still a viable building product, its use has diminished dramatically in the past 50 years at NAVSTA Norfolk. Less than 10% of the total floor area in wood buildings is less than 50 years old.

The distribution of buildings by year of construction for each facility category closely follows that for all buildings, with the exception of those facility categories in which there are few or no wood buildings (Utilities, R&D, and Hospital) (Table 5).

Structural Wood Products

In 2000, the 603 buildings at NAVSTA Norfolk contained about 11.6 million board feet (BF) of lumber (6 million BF framing lumber and 5.6 million BF sheathing lumber), 0.4 million ft^2 (3/8-in. basis) of structural panels, and 0.1 million ft^2 (3/8-in. basis) of fiberboard (Fig. 7). (Throughout this report, all structural panel (softwood plywood and OSB) and fiberboard volumes are reported on a 3/8-in. basis, unless otherwise indicated.) These wood products were used for structural applications, such as floors, exterior and interior walls, and roof framing and sheathing, and are equivalent to more than 700,000 ft^3 of solid wood.[6] Lumber was by far the wood product used in greatest amount, accounting for 98% of all wood used. The use of a large amount of lumber, as compared with the amount of softwood plywood, is correlated to the average age of wood buildings at NAVSTA Norfolk. Softwood plywood did not become an important construction sheathing material until the 1950s, and 92% of the total floor area in wood buildings was constructed prior to 1950 (Fig. 6).

Small amounts of glued laminated timbers were used for roof and floor beams and were included with framing lumber. See Appendix A for definitions of these and other structural wood products. Other engineered wood products, such as structural composite lumber (for example, laminated veneer lumber and wood I-joists), are fairly new products and were not evident in any examined buildings. Particleboard, hardboard, and hardwood plywood are typically used for nonstructural applications. Any negligible amounts that may have been used for structural applications were neither measured nor estimated here.

The construction of an average new single-family house in the United States in the 1990s required about 14,000 BF of lumber and 11,000 ft^2 of structural panels. At this rate of use, the structural wood in buildings at NAVSTA Norfolk is equivalent to about 585 new houses. In 2000, about 1.2 million new single-family houses were built in the United States.

Structural wood products have been present to a greater or lesser extent in nearly every type of building at NAVSTA Norfolk, but a large proportion of all wood has been used in four types of building construction:

1. Wood framed buildings with conventionally framed and sheathed roofs, exterior walls, and upper story floors, and wood-framed interior walls—Large amounts of lumber and lesser amounts of structural panels and fiberboard have been used in this type of construction. Some buildings have first story wood floor systems, but many do not. These buildings tend to have three or fewer stories and are primarily Administrative. Facility A67 is typical of this type of construction (Fig. 8).

[6] Based on 60 ft^3 of softwood lumber per 1,000 BF and 31.25 ft^3 of panel products per 1,000 ft^2, 3/8-in. basis.

Table 5—Number and floor area of NAVSTA Norfolk buildings by facility category and construction date, 2000

Facility category and building type[a]	Buildings constructed and floor area by decade									
	<1910	1910s	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990+
Operations										
All buildings (no.)	4	0	1	1	32	15	6	11	22	4
Total floor area ($\times 10^3$ ft^2)	20.3	0	23.2	2.0	671.8	220.6	156.6	225.7	694.7	105.3
Average floor area ($\times 10^3$ ft^2)	5.1	0	23.2	2.0	21.0	14.7	26.1	20.5	31.6	26.3
Wood buildings (no.)	4	0	1	0	17	2	0	0	1	0
Total floor area ($\times 10^3$ ft^2)	20.3	0	23.2	0	506.2	7.3	0	0	7.5	0
Average floor area ($\times 10^3$ ft^2)	5.1	0	23.2	0	29.8	3.7	0	0	7.5	0
Maintenance										
All buildings (no.)	6	36	1	4	55	10	9	7	16	7
Total floor area ($\times 10^3$ ft^2)	34.6	303.8	0.4	7.1	966.5	329.6	144.6	134.3	443.4	283.6
Average floor area ($\times 10^3$ ft^2)	5.8	8.4	0.4	1.8	17.6	33.0	16.1	19.2	27.7	40.5
Wood buildings (no.)	0	5	0	0	39	0	5	0	2	0
Total floor area ($\times 10^3$ ft^2)	0	46.9	0	0	891.5	0	36.3	0	213.4	0
Average floor area ($\times 10^3$ ft^2)	0	9.4	0	0	22.9	0	7.3	0	106.7	0
R&D										
All buildings (no.)	0	0	0	0	1	1	0	1	1	0
Total floor area ($\times 10^3$ ft^2)	0	0	0	0	175.1	109.0	0	8.2	2.3	0
Average floor area ($\times 10^3$ ft^2)	0	0	0	0	175.1	109.0	0	8.2	2.3	0
Wood buildings (no.)	0	0	0	0	0	0	0	0	0	0
Total floor area ($\times 10^3$ ft^2)	0	0	0	0	0	0	0	0	0	0
Average floor area ($\times 10^3$ ft^2)	0	0	0	0	0	0	0	0	0	0
Supply										
All buildings (no.)	0	16	2	5	43	7	0	5	7	14
Total floor area ($\times 10^3$ ft^2)	0	888.8	433.0	135.7	4,087.7	211.2	0	601.5	165.4	648.3
Average floor area ($\times 10^3$ ft^2)	0	55.6	216.5	27.1	95.1	30.2	0	120.3	23.6	46.3
Wood buildings (no.)	0	0	0	0	12	2	0	0	0	0
Total floor area ($\times 10^3$ ft^2)	0	0	0	0	404.9	3.6	0	0	0	0
Average floor area ($\times 10^3$ ft^2)	0	0	0	0	33.7	1.8	0	0	0	0
Hospital										
All buildings (no.)	0	0	0	0	1	0	0	1	2	0
Total floor area ($\times 10^3$ ft^2)	0	0	0	0	3.0	0	0	65.8	79.6	0
Average floor area ($\times 10^3$ ft^2)	0	0	0	0	3.0	0	0	65.8	39.8	0
Wood buildings (no.)	0	0	0	0	0	0	0	0	0	0
Total floor area ($\times 10^3$ ft^2)	0	0	0	0	0	0	0	0	0	0
Average floor area ($\times 10^3$ ft^2)	0	0	0	0	0	0	0	0	0	0
Administrative										
All buildings (no.)	5	3	2	4	24	5	2	0	5	2
Total floor area ($\times 10^3$ ft^2)	68.2	31.8	124.3	139.6	931.6	94.7	21.9	0	69.7	2.6
Average floor area ($\times 10^3$ ft^2)	13.6	10.6	62.2	34.9	38.8	18.9	11.0	0	13.9	1.3
Wood buildings (no.)	3	3	1	4	16	0	0	0	0	0
Total floor area ($\times 10^3$ ft^2)	22.5	31.8	25.6	139.6	428.9	0	0	0	0	0
Average floor area ($\times 10^3$ ft^2)	7.5	10.6	25.6	34.9	26.8	0	0	0	0	0
Housing										
All buildings (no.)	2	4	0	8	40	26	16	31	18	21
Total floor area ($\times 10^3$ ft^2)	50.7	33.1	0	300.2	847.2	230.1	234.6	741.9	550.3	339.4
Average floor area ($\times 10^3$ ft^2)	25.4	8.3	0	37.5	21.2	8.9	14.7	23.9	30.6	16.2
Wood buildings (no.)	2	4	0	8	33	15	4	0	5	13
Total floor area ($\times 10^3$ ft^2)	50.7	33.1	0	300.2	818.2	55.5	2.8	0	9.4	2.8
Average floor area ($\times 10^3$ ft^2)	25.4	8.3	0	37.5	24.8	3.7	0.7	0	1.9	0.2
Utilities										
All buildings (no.)	0	0	0	0	0	14	1	5	6	5
Total floor area ($\times 10^3$ ft^2)	0	0	0	0	0	4.8	0.8	0.7	90.7	1.8
Average floor area ($\times 10^3$ ft^2)	0	0	0	0	0	0.3	0.8	0.1	15.1	0.4
Wood buildings (no.)	0	0	0	0	0	0	0	0	3	0
Total floor area ($\times 10^3$ ft^2)	0	0	0	0	0	0	0	0	0.7	0
Average floor area ($\times 10^3$ ft^2)	0	0	0	0	0	0	0	0	0.2	0
Total, all facilities										
All buildings (no.)	17	59	6	22	196	78	34	61	77	53
Total floor area ($\times 10^3$ ft^2)	173.8	1,257.5	580.9	584.6	7,682.8	1,200	558.5	1,778.2	2,096.1	1,381.1
Average floor area ($\times 10^3$ ft^2)	10.2	21.3	96.8	26.6	39.2	15.4	16.4	29.2	27.2	26.1
Wood buildings (no.)	9	12	2	12	117	19	9	0	11	13
Total floor area ($\times 10^3$ ft^2)	93.5	111.8	48.8	439.8	3,049.6	66.4	39.1	0	231.0	2.8
Average floor area ($\times 10^3$ ft^2)	10.4	9.3	24.4	36.7	26.1	3.5	4.3	0	21.0	0.2

[a]Wood buildings include any building with structural wood products in one or more structural building applications.

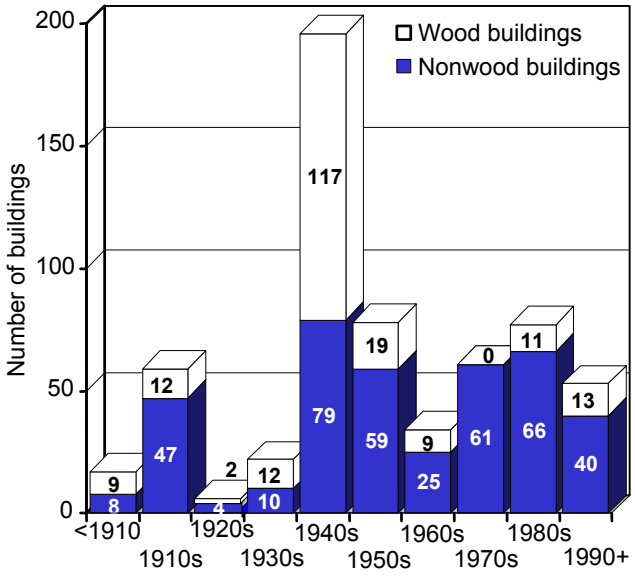

Figure 4—Number of wood and nonwood buildings by decade of construction.

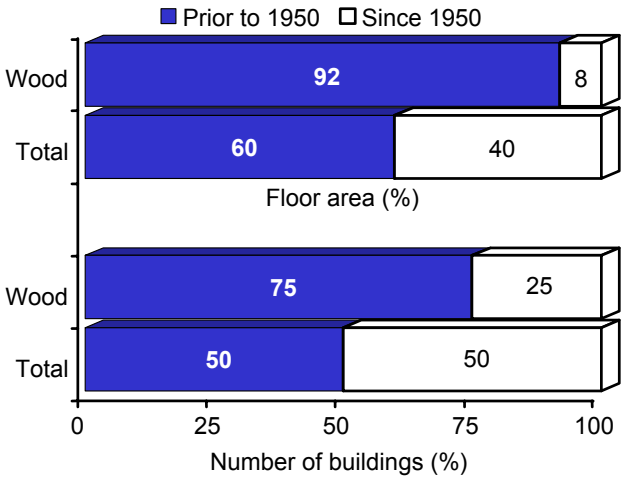

Figure 6—Number and floor area of all buildings and wood buildings by time of construction.

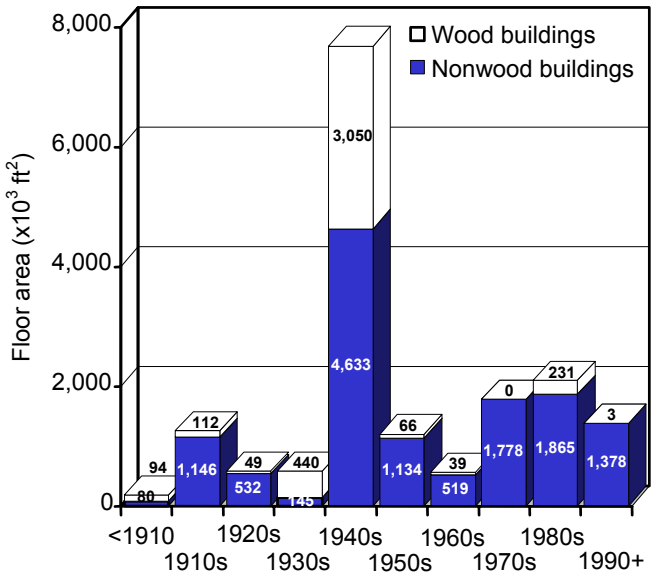

Figure 5—Floor area of wood and nonwood buildings by decade of construction.

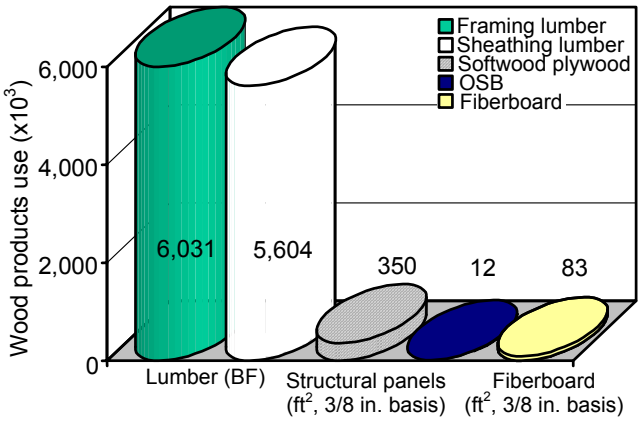

Figure 7—Wood products use by product type.

Figure 8—Primary types of buildings at NAVSTA Norfolk that contain wood: (top to bottom) conventional wood-framed construction (Facility A67), concrete and masonry with lumber framed and sheathed roof (A51), concrete and steel-framed with lumber-sheathed roof (LP4), and wood-framed walls and roofs with wood roof trusses (SP89).

2. Concrete and masonry buildings with lumber framed and sheathed gable roof systems—Because many of these buildings were originally made with slate roof shingles, the roof systems were designed to carry the extra weight of these shingles and were thus lumber intensive. The remaining concrete and masonry buildings with lumber framed and sheathed roofs had asphalt shingles or copper roofing. These buildings are primarily Housing and Administrative (Fig. 8, Facility A51).

3. Concrete and steel-framed hangars with lumber roof sheathing and lumber nailing strips attached to a steel-framed roof—End walls and office areas inside the hangars are commonly lumber framed and sheathed. These buildings are primarily in the Maintenance facility category (Fig. 8, Facility LP4).

4. Warehouses with lumber framed and sheathed walls and roofs—Many large warehouses built in the 1940s had massive wood roof trusses supporting a roof system of lumber rafters and lumber sheathing. Roofs were generally barrel-shaped and were supported by large wood columns and posts. Lumber framed interior office areas were typically added and removed as needed. Many warehouses of this type were recently demolished (Fig. 8, Facility SP89).

Wood Products in All Buildings

In 2000, the 603 wood buildings at NAVSTA Norfolk contained an estimated 6,031 thousand BF of framing lumber, 5,604 thousand BF of sheathing lumber, 350 thousand ft^2 of softwood plywood, 12 thousand ft^2 of OSB, and 83 thousand ft^2 of fiberboard. All the softwood plywood and OSB were used for floor decking and wall and roof sheathing. The fiberboard was used primarily for wall sheathing. Roof systems were by far the most intensive structural application utilizing wood, using more than 70% of each wood product except fiberboard. This was due in part to a fairly large number of concrete and masonry buildings with lumber framed and sheathed gable roof systems (construction type 2), warehouses with lumber framed and sheathed roofs (construction type 4), hangars with steel-framed and lumber-sheathed roofs (construction type 3), and wood-framed buildings with conventional roof systems (construction type 1). In addition to lumber and structural panels, small undetermined amounts of fiberboard were used as a base for built-up flat roof systems, particularly on buildings where the roofs were repaired or replaced.

The second highest total wood use was for floors. About 14% (1,627 thousand BF) of all lumber and 11% (41 thousand ft^2) of structural panels were used for floors. More than half the lumber for floors was used for framing. Nearly 90% of all buildings had either a concrete slab on grade or a raised concrete slab ground level floor system. This very high incidence of concrete slab floor systems resulted in

lesser amounts of wood being used for floor framing and decking. Of the total area of wood floor systems, 70% was used in upper story floors.

Exterior wall systems used an estimated 577 thousand BF of lumber, 44 thousand ft^2 of structural panels, and 83 thousand ft^2 of fiberboard; interior walls used 217 thousand BF of lumber and 12 thousand ft^2 of structural panels. The combined volume of wood used in exterior and interior walls was equivalent to about 7% of all lumber, 15% of all structural panels, and 100% of all fiberboard used. Interior wall framing and sheathing may be somewhat underestimated. Many buildings were moderately or extensively remodeled over the years. Much of this remodeling involved the addition, replacement, or removal of interior walls and partitions. Estimates of wood used for interior walls were based on a percentage of the wood used in exterior walls, adjusted for each specific building type. For example, buildings in the Administrative category tended to be partitioned into offices, while those in Supply and Maintenance had more large open areas.

The "average" building at NAVSTA Norfolk contained about 0.67 BF of lumber, 0.02 ft^2 of structural panels, and less than 0.01 ft^2 of fiberboard per square foot of floor area (Fig. 9). This was equivalent to about 19,300 BF of lumber, 600 ft^2 of structural panels, and 140 ft^2 of fiberboard per building (Fig. 10).

Lumber Use by Facility Category

A total of 11.6 million BF of lumber was used in all buildings at NAVSTA Norfolk in 2000 (Table 3). Housing, the largest facility category for lumber use, contained more than 3.7 million BF, or just under one-third of all lumber (Fig. 11). Two categories of facilities used no lumber (R&D and Hospital), and one had negligible use (Utilities). Lumber use in the remaining four facility categories ranged from a low of 1.5 million BF in Operations to a high of 2.4 million BF in Maintenance.

Overall, nearly 80% of all lumber (9.2 million BF) was used in roofs, 14% in floors, and 5% and 2% in exterior and interior walls, respectively (Table 3). Large variations existed in the distribution of lumber in structural applications by facility category. Total lumber use in roofs, for example, ranged from a high of nearly 90% of all lumber in Supply buildings, to just over half in Administrative buildings. Exactly 80% (3.0×10^6 BF) of lumber in Housing was used in roofs. Similar variations existed for other structural applications between facility categories. However, since so much of the total amount of lumber in each facility category was used for roofs, roof characteristics within a facility category dictated, to a large extent, the total amount of lumber used and the proportions for framing and sheathing.

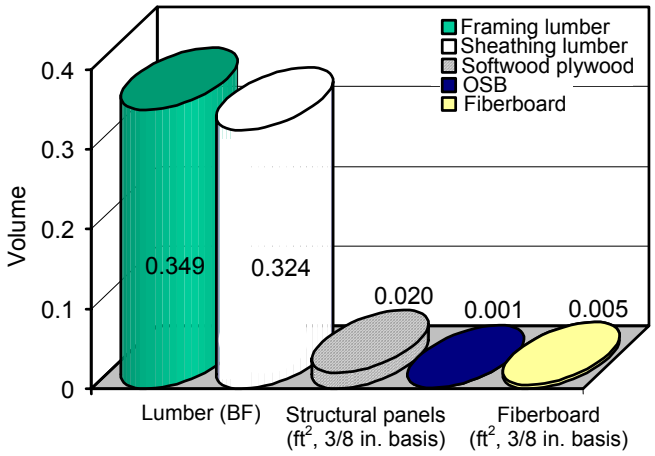

Figure 9—Wood products use per square foot of floor area by product type.

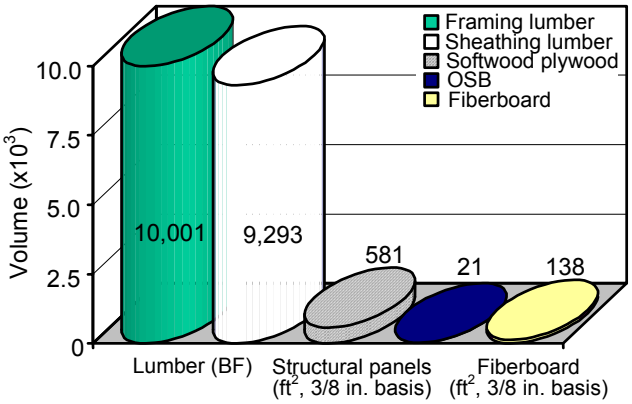

Figure 10—Wood products use per building, by product type.

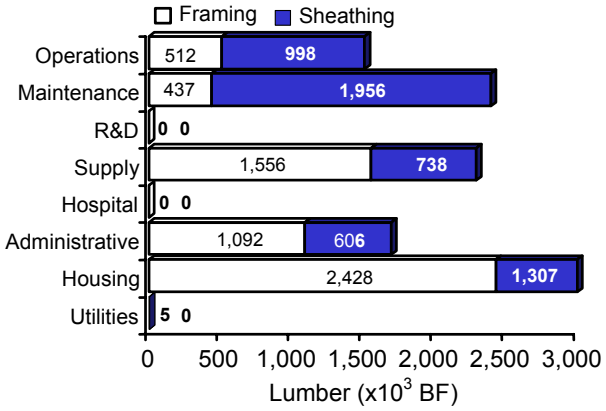

Figure 11—Lumber use, by facility category.

Lumber use in all buildings combined was nearly equally divided between framing (52%) and sheathing/decking (48%). However, this average is misleading. In facility categories with a fairly high incidence of lumber framed and sheathed roofs, such as Supply, Administrative, and Housing, about two-thirds of the lumber was for framing and the remainder for sheathing (Fig. 11). In facility categories in which lumber sheathing was typically used on a nonwood roof system, such as Operations and Maintenance, the percentage of framing lumber fell to 25% or less.

The fairly high level of lumber use for sheathing/decking at NAVSTA Norfolk is directly correlated to the age of the buildings. Lumber was a common sheathing material up through the 1940s. Softwood plywood rapidly captured market share from lumber for floor, wall, and roof sheathing in the 1950s and 1960s. In the past 10 years or so, there has been a shift to the use of more OSB in sheathing markets. Currently, lumber accounts for only about 1% of total area of floor, wall, and roof sheathing in new residential construction and only slightly more in new nonresidential construction where lumber sheathing is occasionally used for aesthetics.

Structural Panel Use by Facility Category

A total of 363 thousand ft^2 of structural panels was used in all buildings at NAVSTA Norfolk in 2000 (Table 6). Nearly all of this wood (97%) was softwood plywood; the remaining 3% was OSB. Since OSB use was so small compared to softwood plywood use, the following discussion of structural panel use is essentially a discussion of softwood plywood use. Three facility categories, Operations, Supply, and Housing, accounted for 85% of all structural panel use—118, 104, and 84 thousand ft^2, respectively (Fig. 12). No structural panels were used in two facility categories, R&D and Hospital, and only negligible amounts in Administrative and Utilities categories. Maintenance fell between the high and low use of structural panels; structural panels constituted 12% (45 thousand ft^2) of total use.

Overall, nearly three-fourths (73%) of all structural panels were used in roofs (265 thousand ft^2) (Table 6). The remainder were used for exterior walls (12%), floors (11%), and interior walls (3%). Variations occurred in the distribution of structural panel use by structural application and facility category. In general, for facility categories that used the greatest overall amount of structural panels (Operations, Supply, and Housing), three-fourths or more of panels were used in roofs. Structural panels in roofs ranged from a high of more than 90% of all structural panels in Supply buildings to 75% in Housing. In comparison, Maintenance buildings used only 8% of total structural panel use in roofs. For the remaining facility categories, either no structural panels or negligible amounts were used. As was the case with lumber, similar variations existed for the other structural building applications between facility categories. However, since so much of total use in each facility category was in roofs, roof characteristics within a facility category largely determined overall structural panel use.

The fairly low level of structural panel use in general and of OSB use in particular was directly related to the age of the buildings. As previously discussed, lumber was the predominant sheathing and decking material prior to the 1950s. Softwood plywood rapidly became the sheathing material of choice in the 1950s, 1960s, and 1970s, and OSB in the 1980s and 1990s. Since three-fourths of all wood buildings at NAVSTA Norfolk predate 1950, the low overall use of structural panels was not unexpected.

Fiberboard Use by Facility Category

Total fiberboard use at NAVSTA Norfolk was small, just 83 thousand ft^2 (Table 6). All fiberboard was used for exterior wall sheathing. Fiberboard is sometimes chosen for wall sheathing when insulation benefits, rather than structural benefits, are desired. Additional amounts of fiberboard may have been used as sound deadening panels in interior partitions and as a base for flat, built-up roofs, especially for replacement and repairs.

More than two-thirds of total fiberboard use was in two facility categories, Housing and Operations (39% and 32%, respectively). Administrative and Supply used 1% and 8%, respectively. Negligible amounts were used for Maintenance and Utilities. No fiberboard was used in R&D and Hospital buildings.

Adequacy, Condition, and Durability of Buildings

The Navy estimates and reports measures of adequacy for each of its buildings. Three levels of adequacy are defined in the NFA database—adequate, inadequate, and substandard. Floor area assigned to each category is reported for each building. “Adequate” defines an area “capable of supporting the designated function without a need for capital improvements.” “Inadequate” defines an area that has “deficiencies due to physical deterioration, functional inadequacy, or hazardous location which prohibit or severely restrict, or will prohibit or severely restrict within the next five years, the use of a facility for its designated function.” Inadequate is further defined as “having deficiencies, which cannot be economically corrected (compared with replacement) to meet the requirements of the designated function.” “Substandard” is an intermediate classification. It defines an area with “deficiencies that prohibit or severely restrict, or will prohibit or severely restrict within the next five years due to expected deterioration, the use of a facility for its designated function.” Substandard includes deficiencies that can be economically corrected, compared to replaced.

Table 6—Wood used in NAVSTA Norfolk buildings by facility category and application, 2000

Facility category and wood use[a]	Lumber (board feet)			Structural panels (ft^2, 3/8 in. basis)			Fiberboard (ft^2, 3/8 in. basis)
	Framing	Sheathing	Total	Softwood plywood	OSB	Total	
Operations							
Wood use ($\times 10^3$)							
Floors	154.8	69.8	224.6	3.8	0.1	3.9	0
Exterior walls	33.0	9.7	42.7	11.8	2.3	14.0	26.6
Interior walls	18.0	0.8	18.9	0.4	0	0.4	0
Roofs	306.3	917.7	1,224.0	95.1	4.7	99.9	0
Total	512.2	998.0	1,510.2	111.1	7.1	118.2	26.6
Use per ft^2 floor area	0.242	0.471	0.712	0.052	0.003	0.056	0.013
Use per building ($\times 10^3$)	5.34	10.40	15.73	1.16	0.07	1.23	0.28
Maintenance							
Wood use ($\times 10^3$)							
Floors	201.8	76.1	277.8	33.8	0	33.8	0
Exterior walls	19.9	2.0	22.0	0.4	0	0.4	0.8
Interior walls	32.6	15.1	47.7	7.6	0	7.6	0
Roofs	183.0	1,862.8	2,045.8	2.5	0.8	3.4	0
Total	437.3	1,956.0	2,393.3	44.3	0.8	45.1	0.8
Use per ft^2 floor area	0.165	0.739	0.904	0.017	0	0.017	0
Use per building ($\times 10^3$)	2.90	12.95	15.85	0.29	0.01	0.30	0.01
Supply							
Wood use ($\times 10^3$)							
Floors	0	0	0	0	0	0	0
Exterior walls	103.2	107.1	210.3	3.3	0	3.3	6.7
Interior walls	24.5	8.1	32.6	4.0	0	4.0	0
Roofs	1,428.6	622.5	2,051.1	96.7	0	96.7	0
Total	1,556.2	737.7	2,293.9	104.0	0	104.0	6.7
Use per ft^2 floor area	0.217	0.103	0.320	0.015	0	0.015	0.001
Use per building ($\times 10^3$)	15.72	7.45	23.17	1.05	0	1.05	0.07
Administrative							
Wood use ($\times 10^3$)							
Floors	441.6	208.6	650.2	0	0	0	0
Exterior walls	57.4	45.7	103.2	8.0	0	8.0	16.0
Interior walls	44.9	0	44.9	0	0	0	0
Roofs	548.4	351.2	899.6	0	0	0	0
Total	1,092.3	605.6	1,697.8	8.0	0	8.0	16.0
Use per ft^2 floor area	0.736	0.408	1.144	0.005	0	0.005	0.011
Use per building ($\times 10^3$)	21.01	11.65	32.65	0.15	0	0.15	0.31
Housing							
Wood use ($\times 10^3$)							
Floors	323.9	150.7	474.6	3.0	0	3.1	0
Exterior walls	111.5	86.6	198.1	17.1	0.2	17.3	32.4
Interior walls	72.4	0.5	72.9	0.3	0	0.3	0
Roofs	1,920.4	1,068.6	2,989.0	60.0	3.4	63.4	0
Total	2,428.2	1,306.5	3,734.6	80.4	3.7	84.1	32.4
Use per ft^2 floor area	0.730	0.393	1.122	0.024	0.001	0.025	0.010
Use per building ($\times 10^3$)	14.63	7.87	22.50	0.48	0.02	0.51	0.19
Utilities							
Wood use ($\times 10^3$)							
Floors	0	0	0	0	0	0	0
Exterior walls	1.1	0	1.2	0.8	0.3	1.2	0.5
Interior walls	0	0	0	0	0	0	0
Roofs	3.3	0	3.3	1.5	0.5	2.0	0
Total	4.5	0	4.5	2.3	0.8	3.1	0.5
Use per ft^2 floor area	0.045	0	0.046	0.023	0.008	0.032	0.005
Use per building ($\times 10^3$)	0.14	0	0.15	0.07	0.03	0.10	0.02
Total, all facilities							
Wood use ($\times 10^3$)							
Floors	1,122.0	505.2	1,627.2	40.6	0.2	40.8	0
Exterior walls	326.2	251.2	577.4	41.4	2.8	44.2	83.0
Interior walls	192.4	24.5	216.9	12.3	0	12.3	0
Roofs	4,390.0	4,822.8	9,212.8	255.8	9.5	265.3	0
Total	6,030.6	5,603.8	11,634.4	350.1	12.5	362.6	83.0
Use per ft^2 floor area	0.349	0.324	0.673	0.020	0.001	0.021	0.005
Use per building ($\times 10^3$)	10.00	9.29	19.29	0.58	0.02	0.60	0.14

[a]No wood was used in R&D and Hospital buildings.

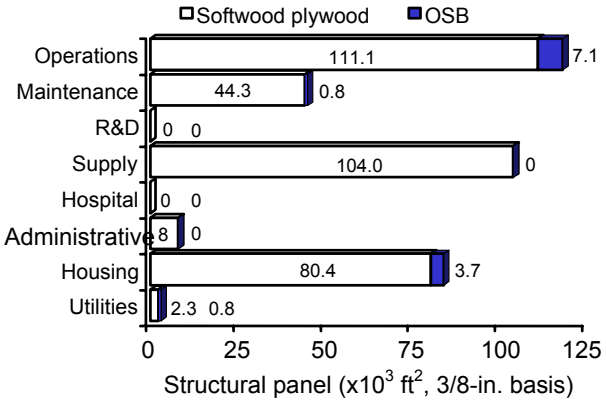

Figure 12—Structural panel use, by facility category.

Based on these definitions, 73% of the total area of all buildings at NAVSTA Norfolk was classified as adequate, 12% as inadequate, and 15% as substandard (Table 7, Fig. 13). Nonwood buildings tended to be "better" on average; 82% of the floor area was rated as adequate and just 6% as inadequate. In contrast, less than half (43%) the area in wood buildings was adequate and more than one-third (34%) inadequate. The adequacy of wood buildings by facility category was about the same. Disregarding Utilities, which had a total area of less than 1,000 ft^2 in wood, Housing had the largest percentage of adequate area (59%), followed by Supply (54%) and Maintenance (25%). In comparison, 90% of the floor area of nonwood Maintenance buildings was adequate. This was second only to the Hospital category, which had no wood buildings and was rated 100% adequacy for nonwood buildings.

Reasons for classifying a given building as inadequate or substandard are many and varied. Physical deterioration is only one reason, but based on observations, probably the mostly likely reason that one-third of all wood buildings are classified as inadequate and nearly one-fourth as substandard. Many wood buildings had some type of physical deterioration due to postponed maintenance, physical damage during normal use of the building, or damage caused by natural forces such as high wind, torrential rain, and insects.

Postponed or infrequent maintenance was responsible for much of the deteriorated and rotted wood, especially in exposed areas. Causes included blocked rain gutters and downspouts, blocked and leaky plumbing fixtures and pipes, inadequate surface drainage away from buildings, and infrequent painting of exposed wood surfaces. Figure 14 shows damage to fascia, roof, and walls resulting from poor maintenance.

Many warehouses had physical damage to posts and columns supporting wood roof trusses as well as damage to doorways and walls from careless use of equipment when moving palletized materials. In many cases, wood posts had been either repaired or replaced with steel posts and then protected to prevent further damage. The few remaining 1940s wood-framed warehouses (for example, SP89) also had damage to posts caused by settling and cracking. Damage from natural agents such as termites, high wind, and heavy rain was evident, but not common.

The overall condition of wood buildings at NAVSTA Norfolk varied by the type of building and structural application. The wood in buildings that were primarily concrete and masonry and had wood-framed gable roof systems was generally in very good condition. Some instances of minor leakage were found, primarily in Housing and Administrative buildings, but maintenance seemed to be performed in a timely manner. In Maintenance buildings, lumber roof sheathing attached to lumber nailing strips on steel framed roofs appeared to be in good condition.

Buildings that were entirely wood-framed or that had wood-framed walls and roofs did not fare nearly as well as buildings where wood was used only in the roof system. The overall condition of many Administrative, Supply, and Operations buildings was fair to poor. Many of these buildings had poorly maintained roofs and windows through which water had penetrated, uneven and settled floors, and incidental physical damage from both careless use of the building and postponed maintenance. The construction type of many of these buildings was temporary, and many have recently been demolished.

Conclusions

Wood was once an important building material in the construction of onshore facilities at NAVSTA Norfolk. Today, very few buildings are constructed with structural wood products. Those that are tend to be small structures such as sheds, smoking shelters, gatehouses, and other temporary buildings. About three-fourths of all wood buildings were constructed prior to 1950, and these account for over 90% of current floor area in all wood buildings. An aggressive demolition program over the past several years has resulted in the removal of a large number of wood-framed buildings. Removal of buildings using deconstruction techniques to salvage wood and nonwood building materials was not considered to be a viable removal alternative at the time of building demolition. Many existent wood-framed buildings are in fair to poor condition. It is recommended that deconstruction be considered if, and when, these remaining wood-framed buildings are scheduled for removal.

This is not to say that wood does not have a place in the construction of buildings at NAVSTA Norfolk. Recent advances in the development of engineered wood products and composite wood products designed to meet exacting performance and durability requirements in new residential and nonresidential construction enable architects and designers to use wood in new and varied ways. New building systems, such as pre-framed and panelized wood roof

Table 7—Adequacy of wood buildings compared to nonwood buildings, 2000

Facility category and building type[a]	Floor area by adequacy measure: Adequate — Floor area ($\times 10^3$ ft^2)	Adequate — Within construction type (%)	Inadequate — Floor area ($\times 10^3$ ft^2)	Inadequate — Within construction type (%)	Substandard — Floor area ($\times 10^3$ ft^2)	Substandard — Within construction type (%)	Total floor area ($\times 10^3$ ft^2)
Operations							
Wood buildings	256.0	45	40.6	7	267.9	47	564.6
Nonwood buildings	1,266.6	81	140.1	9	149.0	10	1,555.7
Total, all buildings	1,522.6	72	180.7	9	417.0	20	2,120.3
Maintenance							
Wood buildings	299.6	25	692.0	58	196.6	17	1,188.1
Nonwood buildings	1,320.4	90	105.4	7	34.0	2	1,459.9
Total, all buildings	1,620.0	61	797.4	30	230.5	9	2,648.0
R&D							
Wood buildings	0	0	0	0	0	0	0
Nonwood buildings	202.5	69	2.8	1	89.4	30	294.7
Total, all buildings	202.5	69	2.8	1	89.4	30	294.7
Supply							
Wood buildings	220.5	54	187.9	46	0	0	408.5
Nonwood buildings	5,755.7	85	194.0	3	813.3	12	6,763.1
Total, all buildings	5,976.3	83	381.9	5	813.3	11	7,171.6
Hospital							
Wood buildings	0	0	0	0	0	0	0
Nonwood buildings	148.4	100	0	0	0	0	148.4
Total, all buildings	148.4	100	0	0	0	0	148.4
Administrative							
Wood buildings	214.2	33	242.5	37	191.7	30	648.4
Nonwood buildings	680.4	81	148.8	18	6.8	1	836.0
Total, all buildings	894.6	60	391.2	26	198.5	13	1,484.4
Housing							
Wood buildings	754.1	59	229.8	18	288.8	23	1,272.6
Nonwood buildings	1,485.3	72	51.4	3	518.2	25	2,054.9
Total, all buildings	2,239.4	67	281.1	8	807.0	24	3,327.5
Utilities							
Wood buildings	0.7	100	0	0	0	0	0.7
Nonwood buildings	3.6	4	94.4	96	0.1	0	3.6
Total, all buildings	4.3	4	94.4	96	0.1	0	4.3
Total, all facilities							
Wood buildings	1,745.1	43	1,392.8	34	945.0	23	4.082.9
Nonwood buildings	10,862.9	82	736.9	6	1,610.9	12	13,210.7
Total, all buildings	12,608.1	73	2,129.6	12	2,555.9	15	17,293.6

[a] Wood buildings include any buildings with structural wood products in one or more structural building applications.

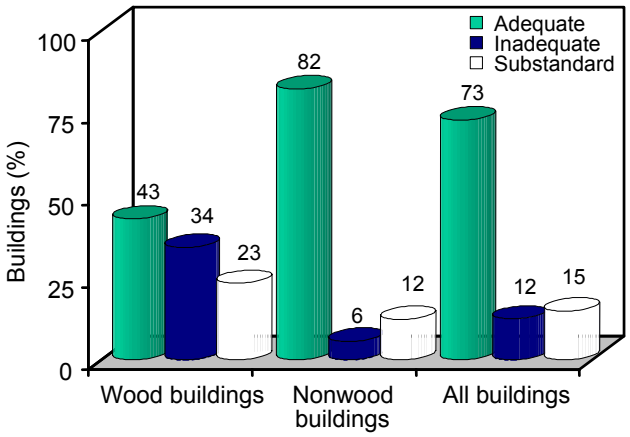

Figure 13—Adequacy of floor area in wood and nonwood buildings.

Figure 14—Results of poor maintenance: (top) damage to fascia and roof; (bottom) damage to inside of exterior walls caused by leaky plumbing.

systems, provide cost savings coupled with design flexibility and durability (APA—The Engineered Wood Association 1996). Recent changes in national building codes have eased size and height restrictions in wood-framed buildings with properly equipped fire suppression systems (Goetzl and McKeever 1999). These developments make wood now, even more than before, an attractive, cost-competitive alternative to steel and concrete construction, an alternative that should be considered for new construction at NAVSTA Norfolk.

Appendix A—Glossary of Wood Products

Engineered wood. Composite wood products designed to substitute directly for dimension lumber in many building and structural applications. Engineered wood includes prefabricated wood I-joists, glued laminated timber and structural composite lumber (laminated veneer lumber, parallel strand lumber, and oriented strand lumber).

Glued laminated timber (glulam). Engineered, stress-rated product created by adhesively bonding individual pieces of lumber with thickness of 2 in. or less. Glulam is versatile and can be shaped into forms ranging from straight to complex curved beams. Uses include headers, girders, purlins, beams, and arches.

Laminated veneer lumber (LVL). Structural composite lumber product made by adhesively bonding thin sheets of wood veneer into a large billet. The grain of the veneers is oriented parallel in the "long" direction. The billet is then sawn to desired dimensions. Uses include headers, beams, rafters, scaffold planking, and flanges for prefabricated wood I-joists.

Lumber. Solid sawn timber, including dimension, boards and squares.

Nonstructural panels. Wood-based panels not specifically designed for structural applications. Includes particleboard, medium density fiberboard, hardboard, insulation board, and hardwood plywood. Uses include siding, floor underlayment, interior wall paneling, and numerous industrial applications.

Oriented strandboard (OSB). Performance rated wood panels consisting of layered and oriented wood strands adhesively bonded. Both softwood and hardwood species are used. OSB may include small amounts of waferboard (wood panels made from randomly oriented wood wafers adhesively bonded.)

Oriented strand lumber (OSL). Structural composite lumber product made from flaked wood strands with a high length-to-thickness ratio. The strands are oriented with the grain in the long direction, shaped into a billet, and the billet sawn to desired dimension. Uses include millwork parts, studs, and flanges for prefabricated wood I-joists.

Parallel strand lumber (PSL). Structural composite lumber product made by adhesively bonding veneer that has been chopped into strands to remove knots and other imperfections. A billet is formed with the grain of the strands in the long direction and then sawn. Uses include beams and garage door headers.

Prefabricated wood I-joists (I-joists). Structural load-carrying members designed for roof and floor joist applications, offering long lengths with low material weight. The I-joist flange is typically dimension lumber or structural composite lumber; the web material, softwood plywood or oriented strandboard.

Softwood plywood. Performance rated wood panels made from softwood veneers arranged in perpendicular layers and adhesively bonded.

Structural composite lumber (SCL). Composite products designed to be substitutes for dimension lumber. Products include laminated veneer lumber, parallel strand lumber, and oriented strand lumber.

Structural panels. Wood panels suitable for structural building applications such as floor decking, wall and roof sheathing, exterior siding, and concrete forming. Products include softwood plywood and oriented strandboard.

Wood–plastic composite. Product formulated from wood fiber or flour, thermoplastic polymers, and additives such as coupling agents, processing lubricants, and UV stabilizers. The product is commonly manufactured through the process of extrusion for use in decking, molding, fencing, and window and door profiles.

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Appendix C—Buildings at NAVSTA Norfolk

The following table lists all buildings at NAVSTA Norfolk as of December 31, 2000. Buildings are sorted by three-digit facility category. Within each category, buildings are sorted by whether or not they are included in the facility condition assessment (FCA) database of the NAVSTA Norfolk Public Works Center. Buildings in the FCA database are then sorted by whether or not structural wood products are present in one or more structural building applications. Finally, the table lists buildings with indeterminate wood use, which are not included in the FCA database.

Boldface type in conjunction with **"+"** use code indicates buildings with structural wood products listed in FCA database. Normal type in conjunction with "0" use code indicates buildings without structural wood products listed in FCA database. Italic type in conjunction with "–" use code indicates buildings with indeterminate wood use not listed in FCA database. Special areas: AE, Radio Island, North Carolina; AG, St Julien's Creek Annex, Virginia; DH, Diamond Hill Road, Virginia; YD, Elizabeth River Channel, Virginia; YM, Portsmouth YMCA, Virginia; ZG, Harvey's Point, North Carolina.

Table C1—Buildings at NAVSTA Norfolk by facility category, 2000

Seq no.	Use code	Facility number	Prop record number	Facility name	Year built	Stories (no.)	Area				Spec area	Con-struc type	Facility category
							Total	Adeq	Inadeq	Substd			
1	+	L31	200006	Storage building	1942	1	836	0	836	0		P	100
2	+	E26	200055	Chief Petty officers housing	1942	2	21,654	0	0	21,654		P	100
3	+	W3	200175	Transit shed	1942	1	120,979	114,370	0	6,609		P	100
4	+	W4	200177	Transit shed	1942	1	212,560	0	0	212,560		P	100
5	+	LAG57	200583	Boathouse	1949	1	4,340	0	0	4,340		S	100
6	+	DS9	200824	Operations	1955	2	7,104	7,104	0	0	YD	T	100
7	+	DS11	200826	Gear locker storage	1955	1	240	240	0	0	YD	T	100
8	+	LAG27	200966	Quarters and boatshop	1944	1	3,610	0	0	3,610		S	100
9	+	W7	200982	Port services repair	1920	1	23,190	23,190	0	0		P	100
10	+	DS31	201072	Operations	1981	2	7,511	7,511	0	0	YD	P	100
11	+	U40	220013	Multipurpose	1941	2	67,584	38,563	13,663	15,358		P	100
12	+	SP45	220113	Conference center training	1942	2	23,517	23,517	0	0		P	100
13	+	SP63	220120	Explosives ordinance disposal	1942	2	3,264	0	3,264	0		P	100
14	+	SP63A	220121	Explosives ordinance disposal	1942	1	480	0	480	0		T	100
15	+	SP70	220126	Atlantic fleet band	1942	2	17,224	0	17,224	0		S	100
16	+	V50A	220252	Smallcraft berth shelter	1942	1	12,025	12,025	0	0		P	100
17	+	NM37	220280	Auto vehicle shop	1942	1	4,601	0	4,601	0		P	100
18	+	MB29	220410	Storage-covered-activity	1946	1	10,499	10,499	0	0		P	100
19	+	16	240005	Applied instruction	1903	1	5,000	5,000	0	0	AG	P	100
20	+	17	240006	Applied instruction	1905	1	5,000	5,000	0	0	AG	P	100
21	+	18	240007	Operational trainer	1905	1	5,315	5,315	0	0	AG	P	100
22	0	CEP162	200004	Training	1976	2	90,262	90,262	0	0		P	100
23	0	CEP41	200009	Training	1960	1	16,651	16,651	0	0		P	100
24	0	CEP86	200010	Operational trainer facility	1962	2	24,612	24,612	0	0		P	100
25	0	CEP195	200015	Applied instruction	1981	2	14,865	14,865	0	0		P	100
26	0	N30	200035	Technical training	1984	2	90,831	89,020	1,811	0		P	100
27	0	O26	200037	Engineering applied instruction	1986	4	90,563	83,893	6,670	0		P	100
28	0	L30	200046	Applied instruction	1942	1	6,422	0	6,422	0		P	100
29	0	C9	200048	Recreation	1942	2	81,633	81,633	0	0		P	100
30	0	N25A	200076	Electronics technical training	1967	2	86,712	7,500	14,116	65,096		P	100
31	0	O25	200092	Electronics school	1985	4	37,807	32,434	5,373	0		P	100
32	0	CEP201	200119	Transit shed	1984	1	181,740	181,740	0	0		P	100
33	0	Q57	200923	Degaussing	1972	2	4,650	4,650	0	0		P	100
34	0	CEP183	200996	Nuclear weapons facility	1977	2	50,850	0	0	50,850		P	100

Table C1—Buildings at NAVSTA Norfolk by facility category, 2000—con.

Seq no.	Use code	Facility number	Prop record number	Facility name	Year built	Stories (no.)	Area				Spec area	Con-struc type	Facility category
							Total	Adeq	Inadeq	Substd			
35	0	CEP113	200997	Reg/pub/issue office	1966	1	15,476	15,476	0	0		P	100
36	0	LP210	201039	Terminal building	2000	2	63,600	63,600	0	0		P	100
37	0	CEP166	201144	Operational trainer building	1986	3	45,317	45,317	0	0		P	100
38	0	CEP172	201159	Diesel/dyno trainer facility	1989	2	3,343	3,343	0	0		P	100
39	0	CEP171	201160	Firefighting/training facility	1990	2	20,460	20,460	0	0		P	100
40	0	W388	201608	Operations/sampling/test building	1984	1	6,720	6,720	0	0		P	100
41	0	R43	220000	Fire station no. 2	1942	2	6,654	6,654	0	0		S	100
42	0	V50	220058	Boathouse	1942	2	3,423	3,423	0	0		P	100
43	0	V64	220064	Photography	1942	2	26,638	0	0	26,638		P	100
44	0	LP1	220071	Operations communication	1940	3	20,195	0	20,195	0		P	100
45	0	LP17	220081	Pumphouse gasoline	1941	4	1,141	1,141	0	0		P	100
46	0	LP19	220082	Pol opn/sampling/test building	1941	1	269	269	0	0		P	100
47	0	LP44	220092	Valve-meter house	1943	1	1,394	1,394	0	0		P	100
48	0	LP54	220093	Office-oil pumphouse	1944	1	1,980	1,980	0	0		P	100
49	0	SP383	220100	Helicopter training	1989	2	29,280	29,280	0	0		P	100
50	0	SP238	220148	Defense mapping	1953	1	6,000	6,000	0	0		P	100
51	0	SP241	220149	Aircraft spares storage	1953	1	14,820	0	14,820	0		S	100
52	0	SP235	220151	Substation	1953	1	154	0	154	0		P	100
53	0	LP25	220153	Lox cart storage shed	1983	1	600	600	0	0		S	100
54	0	SP12A	220154	Lox cart storage shed	1983	1	768	768	0	0		S	100
55	0	LP84	220161	Terminal building	1956	1	18,957	0	18,957	0		S	100
56	0	SP254	220164	Applied instruction building	1957	2	27,476	15,486	11,990	0		P	100
57	0	SP256	220166	Training	1958	2	25,509	25,509	0	0		P	100
58	0	SP257	220167	Weapons training/office	1958	2	11,480	11,480	0	0		P	100
59	0	LP82	220173	Courier service detachment	1957	1	3,945	3,945	0	0		P	100
60	0	NM71	220174	Air operations transmitter	1957	1	9,792	9,792	0	0		P	100
61	0	NM74	220177	Air operations receiver	1957	1	702	702	0	0		P	100
62	0	LP166	220276	Fire and crash station	1969	1	12,960	11,770	0	1,190		P	100
63	0	U117	220284	Fleet meteorology	1973	1	27,632	27,632	0	0		P	100
64	0	U119	220286	Modulator building	1972	1	128	128	0	0		P	100
65	0	SP362	220302	Lamps weapons trainer	1974	1	3,250	3,250	0	0		P	100
66	0	LAG110	220317	Helicopter control tower	1976	4	2,011	0	0	2,011		P	100
67	0	SP366	220325	E2c operational flight training	1977	2	8,869	8,869	0	0		P	100
68	0	SP367	220337	Aviation technical training	1980	2	26,530	26,530	0	0		P	100
69	0	NM154	220348	Reaction force facility	1978	1	2,304	96	2,208	0		P	100
70	0	NM176	220360	Ordinance operations	1980	1	8,040	8,040	0	0		P	100
71	0	LP205	220363	Air freight terminal	1980	1	61,750	61,750	0	0		P	100
72	0	SP77	220370	TACAN building	1982	1	506	506	0	0		P	100
73	0	SP381	220375	Training complex	1983	3	68,647	68,647	0	0		P	100
74	0	LP117	220387	Air cargo terminal	1973	1	34,749	0	34,749	0		P	100
75	0	SP364	220425	H-2 lamps training facility	1988	1	15,300	15,300	0	0		P	100
76	0	SP124	220432	Aviation physiology training	1990	1	21,000	21,000	0	0		P	100
77	0	M51	250078	Communication center/800kv	1953	2	93,291	93,291	0	0		P	100
78	0	M125	250543	Calibration laboratory	1974	1	1,000	0	0	1,000		P	100
79	0	2083	250627	Telephone exchange	1944	1	504	0	504	0		P	100
80	0	W150A	250658	Telephone cable house	1943	1	176	176	0	0		P	100
81	*-*	*W61*	*200213*	*Pumphouse*	*1942*	*1*	*2,036*	*0*	*0*	*2,036*		*P*	*100*
82	*-*	*W69*	*200214*	*Pumphouse*	*1931*	*1*	*1,972*	*1,972*	*0*	*0*		*P*	*100*

Table C1—Buildings at NAVSTA Norfolk by facility category, 2000—con.

Seq no.	Use code	Facility number	Prop record number	Facility name	Year built	Stories (no.)	Area				Spec area	Con-struc type	Facility category
							Total	Adeq	Inadeq	Substd			
83	*-*	*LP66*	*220007*	*Dispatchers office*	*1984*	*1*	*192*	*192*	*0*	*0*		*T*	*100*
84	*-*	*LP116*	*220423*	*NAVMTO transit storage*	*1988*	*1*	*2,400*	*0*	*2,400*	*0*		*P*	*100*
85	*-*	*SP234A*	*220439*	*Lox storage facility*	*1991*	*1*	*288*	*288*	*0*	*0*		*P*	*100*
86	*-*	*P116*	*220478*	*Remote receiver building*	*1959*	*1*	*702*	*702*	*0*	*0*	*ZG*	*P*	*100*
87	*-*	*160*	*220484*	*Control tower*	*1958*	*1*	*441*	*441*	*0*	*0*	*ZG*	*P*	*100*
88	*-*	*6AG*	*240000*	*Ship services support*	*1899*	*1*	*5,000*	*5,000*	*0*	*0*	*AG*	*P*	*100*
89	*-*	*209*	*240113*	*Applied instruction*	*1942*	*1*	*165*	*165*	*0*	*0*	*AG*	*P*	*100*
90	*-*	*202*	*240120*	*Ship services support*	*1942*	*1*	*3,931*	*0*	*3,931*	*0*	*AG*	*P*	*100*
91	*-*	*240*	*240136*	*Applied instruction*	*1944*	*2*	*2,467*	*0*	*2,467*	*0*	*AG*	*P*	*100*
92	*-*	*307*	*240150*	*Waverly Sykes environment*	*1943*	*1*	*7,381*	*7,381*	*0*	*0*	*AG*	*S*	*100*
93	*-*	*318*	*240152*	*Transmitter building*	*1943*	*1*	*2,169*	*0*	*2,169*	*0*	*AG*	*P*	*100*
94	*-*	*358*	*240264*	*Transmitter building*	*1969*	*1*	*220*	*0*	*220*	*0*	*AG*	*P*	*100*
95	*-*	*295*	*240330*	*Telephone exchange building*	*1989*	*1*	*100*	*100*	*0*	*0*	*AG*	*P*	*100*
96	*-*	*510*	*242106*	*Applied instruction*	*1989*	*1*	*1,920*	*1,920*	*0*	*0*	*AG*	*P*	*100*
97	**+**	**KCC**	**200286**	**Officer's shop**	**1942**	**1**	**4,904**	**4,904**	**0**	**0**		**P**	**200**
98	**+**	**W130**	**200936**	**Warehouse/admin/training**	**1941**	**2**	**65,178**	**61,178**	**0**	**4,000**		**S**	**200**
99	**+**	**CEP200**	**201096**	**Shore intermediate maintenance**	**1983**	**2**	**205,633**	**205,633**	**0**	**0**		**P**	**200**
100	**+**	**V10**	**220055**	**Small craft boathouse**	**1919**	**1**	**500**	**0**	**500**	**0**		**S**	**200**
101	**+**	**LP2**	**220072**	**Hangar/maintenance**	**1941**	**2**	**64,992**	**0**	**64,992**	**0**		**P**	**200**
102	**+**	**LP3**	**220073**	**Hangar/maintenance**	**1941**	**2**	**66,846**	**0**	**0**	**66,846**		**P**	**200**
103	**+**	**LP4**	**220074**	**Hangar/maintenance**	**1941**	**2**	**65,921**	**0**	**65,921**	**0**		**P**	**200**
104	**+**	**LP10**	**220077**	**Flammables storehouse**	**1942**	**1**	**492**	**0**	**492**	**0**		**P**	**200**
105	**+**	**LP12**	**220078**	**Hangar/maintenance**	**1941**	**2**	**69,730**	**0**	**69,730**	**0**		**P**	**200**
106	**+**	**LP13**	**220079**	**Hangar/maintenance**	**1941**	**2**	**66,846**	**0**	**66,846**	**0**		**P**	**200**
107	**+**	**LP14**	**220080**	**Airframes shop**	**1942**	**2**	**64,200**	**0**	**64,200**	**0**		**P**	**200**
108	**+**	**LP32**	**220086**	**Flammable storehouse**	**1942**	**1**	**392**	**0**	**392**	**0**		**P**	**200**
109	**+**	**SP1**	**220098**	**Hangar/maintenance**	**1941**	**2**	**108,840**	**0**	**108,840**	**0**		**P**	**200**
110	**+**	**SP2**	**220099**	**Helo hangar/maintenance**	**1941**	**2**	**107,426**	**0**	**0**	**107,426**		**P**	**200**
111	**+**	**SP10**	**220106**	**Recip engine repair shop**	**1941**	**1**	**10,442**	**0**	**10,442**	**0**		**P**	**200**
112	**+**	**SP31**	**220110**	**Hangar/maintenance**	**1942**	**2**	**104,579**	**0**	**104,579**	**0**		**P**	**200**
113	**+**	**SP67**	**220125**	**Driver education**	**1942**	**1**	**1,280**	**0**	**1,280**	**0**		**S**	**200**
114	**+**	**U106**	**220235**	**Exchange sign shop**	**1965**	**1**	**964**	**0**	**964**	**0**		**P**	**200**
115	**+**	**SP313**	**220269**	**Engineering maintenance**	**1969**	**1**	**10,800**	**0**	**10,800**	**0**		**P**	**200**
116	**+**	**V47**	**220392**	**Construction equipment**	**1941**	**1**	**34,922**	**0**	**34,922**	**0**		**P**	**200**
117	**+**	**47**	**241019**	**Overhaul shop**	**1916**	**1**	**22,680**	**0**	**22,680**	**0**	**AG**	**T**	**200**
118	0	CEP209	200091	SIMA expansion building	1998	2	44,765	44,765	0	0		P	200
119	0	CEP57	200111	POV processing facility	1988	1	4,916	4,916	0	0		P	200
120	0	CEP160	200960	Fleet landing bldg	1966	2	15,873	15,873	0	0		P	200
121	0	Z216	201021	Warehouse	1945	1	3,280	0	3,280	0		P	200
122	0	LF59	220006	Helicopter maintenance hangar	1988	2	69,356	69,356	0	0		P	200
123	0	LP6	220075	Flammables storehouse	1942	1	225	0	225	0		P	200
124	0	LP8	220076	Flammable storehouse	1942	1	220	0	220	0		P	200
125	0	LP28	220084	Flammables storehouse	1942	1	126	0	126	0		P	200
126	0	LP30	220085	Ammunition ready locker	1942	1	126	0	126	0		P	200
127	0	LP61	220095	Equipment storage	1944	1	973	0	0	973		T	200
128	0	LP65	220096	Refueling vehicle shop	1945	1	1,169	0	1,169	0		P	200
129	0	SP5	220101	Flammables storehouse	1942	1	222	0	222	0		P	200

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Seq no.	Use code	Facility number	Prop record number	Facility name	Year built	Stories (no.)	Area				Spec area	Con-struc type	Facility category
							Total	Adeq	Inadeq	Substd			
130	0	SP6	220102	Flammables storehouse	1942	1	225	0	225	0		P	200
131	0	SP7	220103	Ready ammunition locker	1942	1	225	0	225	0		P	200
132	0	SP8	220104	Ammunition storage locker	1942	1	225	0	225	0		P	200
133	0	SP9	220105	Administration/storage	1941	1	10,455	0	10,455	0		P	200
134	0	SP66	220124	Paint & oil storage	1941	1	130	0	130	0		P	200
135	0	SP105	220134	Flammable storage	1942	1	126	0	126	0		P	200
136	0	SP234	220150	Parachute shop	1953	1	6,920	0	6,920	0		P	200
137	0	LP100	220169	Air freight terminal	1957	1	16,000	7,410	8,590	0		S	200
138	0	SP267	220185	Storage	1958	1	4,000	0	4,000	0		T	200
139	0	LP7	220265	Flammables storehouse	1942	1	225	0	225	0		P	200
140	0	LP9	220266	Flammables storehouse	1942	1	225	0	225	0		P	200
141	0	LP11	220267	Ammunition locker	1942	1	220	0	220	0		P	200
142	0	SP312	220271	Avionics shop	1969	1	46,600	46,600	0	0		P	200
143	0	LF60	220316	Helicopter maintenance hangar	1976	1	40,116	40,116	0	0		P	200
144	0	LF62	220333	Paint locker	1977	1	120	120	0	0		T	200
145	0	NM175	220361	Air & underwater weapons shop	1980	1	720	720	0	0		P	200
146	0	LF18	220383	Ship services support	1955	2	278,573	278,573	0	0		P	200
147	0	V45	220397	Battery shop	1938	1	1,343	0	1,343	0		P	200
148	0	U127	220403	In-flight refueling system	1976	1	5,680	0	5,680	0		P	200
149	0	SP123	220426	Ground support equipment shed	1988	1	12,040	12,040	0	0		P	200
150	0	SP356	220427	AIMD GSE shop	1987	1	21,716	21,716	0	0		P	200
151	0	SP357	220428	Ground support holding shed	1987	1	4,300	4,300	0	0		P	200
152	0	SP358	220429	Ground support equipment shed	1987	1	8,600	8,600	0	0		P	200
153	0	LP33	220433	Aircraft maintenance hangar	1992	2	52,610	52,610	0	0		P	200
154	0	V61	220436	Materials & standards lab	1992	2	60,000	60,000	0	0		P	200
155	0	LP76	220437	Logistics facility	1991	2	5,400	0	5,400	0		S	200
156	0	LP34	220446	Aircraft maintenance hangar	1994	2	77,668	77,668	0	0		P	200
157	0	38	240013	Ships/spares storage	1913	1	11,654	0	11,654	0	AG	P	200
158	0	146	240064	Ships/spares storage (misc)	1934	1	5,635	5,635	0	0	AG	P	200
159	0	186	240097	Ships/spares storage (misc)	1941	1	18,688	0	0	18,688	AG	P	200
160	0	M52	250124	General warehouse Navy	1963	1	13,040	13,040	0	0		P	200
161	*-*	*CD23*	*200050*	*Battery charging shop*	*1990*	*1*	*480*	*480*	*0*	*0*		*P*	*200*
162	*-*	*Y202*	*200147*	*Equipment garage*	*1944*	*1*	*14,616*	*0*	*0*	*14,616*		*T*	*200*
163	*-*	*W126*	*200148*	*Container assembly*	*1941*	*1*	*7,623*	*0*	*0*	*7,623*		*T*	*200*
164	*-*	*NM92*	*220199*	*Operational storage*	*1960*	*1*	*20,000*	*20,000*	*0*	*0*		*S*	*200*
165	*-*	*V95*	*220221*	*Fire alarm shop*	*1944*	*1*	*2,560*	*0*	*2,560*	*0*		*P*	*200*
166	*-*	*9906*	*220287*	*Maintenance/storage*	*1972*	*1*	*54,667*	*54,667*	*0*	*0*		*P*	*200*
167	*-*	*LF38*	*220395*	*Hazardous materials storage*	*1962*	*1*	*5,292*	*0*	*5,292*	*0*		*T*	*200*
168	*-*	*LF34*	*220396*	*Aircraft surface finishing*	*1966*	*1*	*30,960*	*30,960*	*0*	*0*		*P*	*200*
169	*-*	*LF53*	*220400*	*Corrosion treatment hangar*	*1972*	*2*	*33,558*	*33,558*	*0*	*0*		*P*	*200*
170	*-*	*164*	*220492*	*Public works shop*	*1958*	*1*	*10,392*	*10,392*	*0*	*0*	*ZG*	*P*	*200*
171	*-*	*7AG*	*240001*	*Ships services support*	*1899*	*1*	*5,000*	*5,000*	*0*	*0*	*AG*	*P*	*200*
172	*-*	*34*	*240012*	*Electronics spares storage*	*1944*	*1*	*1,260*	*0*	*1,260*	*0*	*AG*	*T*	*200*
173	*-*	*54*	*240014*	*Shore intermediate maintenance*	*1916*	*1*	*1,015*	*1,015*	*0*	*0*	*AG*	*T*	*200*
174	*-*	*40*	*240015*	*Ships/spares storage (misc)*	*1913*	*1*	*8,325*	*0*	*8,325*	*0*	*AG*	*P*	*200*
175	*-*	*41*	*240016*	*Vacant warehouse*	*1913*	*1*	*7,200*	*7,200*	*0*	*0*	*AG*	*S*	*200*

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Seq no.	Use code	Facility number	Prop record number	Facility name	Year built	Stories (no.)	Area				Spec area	Con-struc type	Facility category
							Total	Adeq	Inadeq	Substd			
176	-	53	240020	Shore intermediate maintenance facility	1918	1	1,984	1,984	0	0	AG	P	200
177	-	56	240021	Shore intermediate maintenance facility	1917	1	12,500	0	12,500	0	AG	T	200
178	-	59	240023	Electronics spares/misc storage	1918	1	9,950	0	9,950	0	AG	P	200
179	-	60	240024	Magnetic/electronic spares storage	1918	1	9,950	0	9,950	0	AG	P	200
180	-	61	240025	Electronics spares/misc storage	1918	1	9,950	0	9,950	0	AG	P	200
181	-	64	240028	Warehouse	1918	1	8,745	0	8,745	0	AG	P	200
182	-	347	240031	Ships services support	1918	2	15,848	5,136	0	10,712	AG	S	200
183	-	70	240032	Electronics spares/misc storage	1919	1	12,000	0	12,000	0	AG	P	200
184	-	71	240033	Electronics spares/misc storage	1918	1	9,950	0	9,950	0	AG	P	200
185	-	72	240034	Electronics spares/misc storage	1918	1	9,950	0	9,950	0	AG	P	200
186	-	73	240035	Electronics spares/misc storage	1918	1	9,950	0	9,950	0	AG	P	200
187	-	76	240037	Ship services support	1918	1	9,950	0	9,950	0	AG	P	200
188	-	77	240038	Electronics spares/misc storage	1919	1	9,950	0	9,950	0	AG	P	200
189	-	78	240039	Electronics spares/misc storage	1919	1	10,000	0	10,000	0	AG	P	200
190	-	79	240040	Electronics spares/misc storage	1919	1	12,000	0	12,000	0	AG	P	200
191	-	82	240043	Ship services support	1918	1	2,120	0	2,120	0	AG	T	200
192	-	96	240053	Warehouse	1918	1	2,378	0	2,378	0	AG	S	200
193	-	124	240057	Shore intermediate maintenance facility	1942	1	4,900	4,900	0	0	AG	S	200
194	-	138	240060	Shore intermediate maintenance facility	1946	1	192	0	192	0	AG	P	200
195	-	141	240062	Electronics spares/misc storage	1928	1	414	0	414	0	AG	P	200
196	-	176AG	240088	Ships/spares storage (misc)	1942	1	5,151	5,151	0	0	AG	P	200
197	-	185	240096	Ship services support	1941	2	7,700	7,700	0	0	AG	P	200
198	-	187	240098	Ship services support	1942	1	3,200	0	3,200	0	AG	P	200
199	-	193	240103	Shore intermediate maintenance facility	1942	1	1,932	1,932	0	0	AG	T	200
200	-	203	240107	Ship services support	1942	3	11,340	0	11,340	0	AG	P	200
201	-	211	240115	Shore intermediate maintenance facility	1942	1	165	165	0	0	AG	P	200
202	-	212	240116	Ships services support	1942	1	2,184	2,184	0	0	AG	P	200
203	-	213	240117	Electronics spares/misc storage	1943	1	1,328	0	1,328	0	AG	P	200
204	-	216	240119	Shore intermediate maintenance facility	1943	1	3,624	0	3,624	0	AG	S	200
205	-	226	240123	Shore intermediate maintenance facility	1942	2	6,780	2,240	4,540	0	AG	S	200
206	-	235	240132	Ship service support	1943	1	336	336	0	0	AG	P	200
207	-	236	240133	Shore intermediate maintenance facility	1919	1	150	0	150	0	AG	P	200
208	-	237	240134	Electronics spares/misc storage	1938	1	63	0	63	0	AG	P	200
209	-	238	240135	Electronics spares/misc storage	1938	1	63	0	63	0	AG	P	200
210	-	252	240146	Ship service support	1945	1	620	620	0	0	AG	P	200
211	-	83	240172	Magazine	1918	1	2,150	2,150	0	0	AG	P	200
212	-	74	240175	Electronics spares/misc storage	1918	1	9,950	0	9,950	0	AG	P	200
213	-	26	240176	Ship services support	1914	1	3,072	3,072	0	0	AG	S	200
214	-	66	240177	Warehouse	1918	1	9,128	0	9,128	0	AG	P	200
215	-	67	240178	Warehouse	1918	1	9,128	0	9,128	0	AG	P	200
216	-	1AG	240181	Ship services support	1897	1	5,000	5,000	0	0	AG	P	200
217	-	4AG	240182	Administration	1897	1	3,000	3,000	0	0	AG	P	200
218	-	13	240186	Shore intermediate maintenance facility	1903	1	13,469	13,469	0	0	AG	S	200
219	-	46	240187	Machine & boiler shops	1916	2	15,530	0	0	15,530	AG	S	200
220	-	2AG	240188	Ship services support	1897	1	3,000	3,000	0	0	AG	P	200
221	-	H	240191	Ship services support	1918	3	5,564	5,564	0	0	AG	P	200
222	-	3AG	240192	Ship services support	1897	1	5,126	5,126	0	0	AG	P	200

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Seq no.	Use code	Facility number	Prop record number	Facility name	Year built	Stories no.	Area				Spec area	Con-struc type	Fac-ility cate-gory
							Total	Adeq	Inadeq	Substd			
223	*-*	*43*	*240194*	*Ship services support*	*1912*	*1*	*4,877*	*4,877*	*0*	*0*	*AG*	*S*	*200*
224	*-*	*51*	*240195*	*Ships/spares storage (misc)*	*1918*	*2*	*10,120*	*10,120*	*0*	*0*	*AG*	*T*	*200*
225	*-*	*201*	*240196*	*Shore intermediate maintenance facility*	*1942*	*1*	*15,146*	*15,146*	*0*	*0*	*AG*	*P*	*200*
226	*-*	*194*	*240203*	*Ships spares storage (misc)*	*1942*	*1*	*1,580*	*0*	*1,580*	*0*	*AG*	*S*	*200*
227	*-*	*130*	*240204*	*SIMA*	*1919*	*1*	*5,746*	*0*	*5,746*	*0*	*AG*	*S*	*200*
228	*-*	*278*	*240208*	*Shore intermediate maintenance facility*	*1954*	*1*	*5,820*	*5,820*	*0*	*0*	*AG*	*S*	*200*
229	*-*	*279*	*240209*	*Shore intermediate maintenance facility*	*1954*	*1*	*5,820*	*5,820*	*0*	*0*	*AG*	*S*	*200*
230	*-*	*272*	*240211*	*Ships/spares storage (misc)*	*1953*	*1*	*1,920*	*0*	*1,920*	*0*	*AG*	*S*	*200*
231	*-*	*273*	*240212*	*Ships services support*	*1953*	*1*	*81*	*81*	*0*	*0*	*AG*	*P*	*200*
232	*-*	*274*	*240213*	*Paint locker*	*1953*	*1*	*81*	*81*	*0*	*0*	*AG*	*P*	*200*
233	*-*	*55*	*240226*	*Shore intermediate maintenance facility*	*1917*	*1*	*12,500*	*0*	*12,500*	*0*	*AG*	*T*	*200*
234	*-*	*356*	*240262*	*Shore intermediate maintenance facility*	*1968*	*1*	*1,080*	*0*	*1,080*	*0*	*AG*	*S*	*200*
235	*-*	*1458*	*240300*	*Ground house*	*1972*	*1*	*132*	*132*	*0*	*0*	*AG*	*P*	*200*
236	*-*	*1456*	*240301*	*Ground building*	*1972*	*1*	*38*	*38*	*0*	*0*	*AG*	*P*	*200*
237	*-*	*500*	*240325*	*Waterfront service support*	*1988*	*1*	*970*	*970*	*0*	*0*	*AG*	*P*	*200*
238	*-*	*501*	*240326*	*Waterfront service support*	*1989*	*1*	*970*	*970*	*0*	*0*	*AG*	*P*	*200*
239	*-*	*502*	*240327*	*Waterfront service support*	*1989*	*1*	*970*	*970*	*0*	*0*	*AG*	*P*	*200*
240	*-*	*503*	*240328*	*Waterfront service support*	*1989*	*1*	*970*	*970*	*0*	*0*	*AG*	*P*	*200*
241	*-*	*504*	*240329*	*Ocean construction*	*1989*	*1*	*970*	*970*	*0*	*0*	*AG*	*P*	*200*
242	*-*	*247*	*240334*	*Waterfront service support*	*1989*	*1*	*4,492*	*4,492*	*0*	*0*	*AG*	*P*	*200*
243	*-*	*248*	*240335*	*Shore intermediate maintenance facility*	*1989*	*1*	*4,858*	*0*	*4,858*	*0*	*AG*	*P*	*200*
244	*-*	*RDYSTR1*	*280002*	*Maintenance ships ready storage*	*1987*	*0*	*101,966*	*101,966*	*0*	*0*	*DH*	*P*	*200*
245	*-*	*39*	*280014*	*Warehouse*	*1913*	*1*	*7,300*	*0*	*7,300*	*0*	*AG*	*S*	*200*
246	*-*	*CEP198*	*280086*	*Controlled industrial facility*	*1998*	*2*	*42,717*	*42,717*	*0*	*0*		*P*	*200*
247	*-*	*254*	*280148*	*Electronics spares/misc storage*	*1945*	*1*	*156*	*0*	*156*	*0*	*AG*	*P*	*200*
248	0	CEP177	200981	NISO forensic lab/visitor center	1970	1	8,235	2,766	2,140	3,329		P	300
249	0	V53	220061	Storehouse, offices	1942	3	175,101	88,391	667	86,043		P	300
250	0	U132	220390	Administrative office	1958	1	109,031	109,031	0	0		P	300
251	0	CEP210	280073	Fleet digital communications test facility	1986	1	2,346	2,346	0	0		P	300
252	**+**	**X70**	**200143**	**Storage /administration**	**1942**	**1**	**43,600**	**6,200**	**37,400**	**0**		**P**	**400**
253	**+**	**X16**	**200191**	**Warehouse**	**1940**	**1**	**58,245**	**58,245**	**0**	**0**		**T**	**400**
254	**+**	**NM52**	**220054**	**Inert storehouse**	**1944**	**1**	**151**	**0**	**151**	**0**		**P**	**400**
255	**+**	**LP26**	**220083**	**Engine component storage**	**1943**	**1**	**120,600**	**120,600**	**0**	**0**		**P**	**400**
256	**+**	**SP89**	**220132**	**General warehouse**	**1943**	**1**	**120,000**	**0**	**120,000**	**0**		**S**	**400**
257	**+**	**LP73**	**220147**	**Converter house**	**1950**	**1**	**144**	**0**	**144**	**0**		**P**	**400**
258	0	SP86A	200038	General storage shed	1990	1	16,800	16,800	0	0		P	400
259	0	SP86B	200039	General purpose warehouse	1990	1	21,000	21,000	0	0		P	400
260	0	SP86C	200040	General purpose warehouse	1990	1	21,000	21,000	0	0		P	400
261	0	SP86D	200041	General purpose warehouse	1990	1	21,000	21,000	0	0		P	400
262	0	SP86E	200042	General purpose warehouse	1990	1	21,000	21,000	0	0		P	400
263	0	SP86F	200043	General purpose warehouse.	1990	1	21,000	21,000	0	0		P	400
264	0	Z101	200059	Warehouse	1919	6	352,922	0	0	352,922		P	400
265	0	X218	200061	Flammables warehouse	1983	1	81,154	81,154	0	0		P	400
266	0	W127	200132	Warehouse	1941	1	223,489	223,489	0	0		S	400
267	0	W135	200133	Transit shed	1942	1	278,124	278,124	0	0		P	400
268	0	W143	200136	Warehouse	1943	6	1,828,868	1,774,483	22,750	31,635		P	400
269	0	CD8	200163	Biohazardous waste	1996	1	320	320	0	0		P	400
270	0	X132	200192	Warehouse	1940	5	367,452	352,452	0	15,000		P	400

Table C1—Buildings at NAVSTA Norfolk, by facility category, 2000—con.

Seq no.	Use code	Facility number	Prop record number	Facility name	Year built	Stories no.	Area				Spec area	Con-struc type	Fac-ility cate-gory
							Total	Adeq	Inadeq	Substd			
271	0	X134	200193	Warehouse	1940	1	176,723	0	0	176,723		P	400
272	0	X137	200195	Warehouse	1940	1	58,804	58,804	0	0		P	400
273	0	W128	200566	Warehouse	1941	1	57,248	57,248	0	0		S	400
274	0	CEP126	200876	Outfitting/soap	1970	1	8,640	8,640	0	0		P	400
275	0	CEP204	201094	Outfitting/soap	1983	2	9,446	9,446	0	0		P	400
276	0	W154	201216	Shed	1941	1	224	224	0	0		T	400
277	0	CEP156	201292	Cold storage warehouse	1975	1	238,274	151,674	86,600	0		P	400
278	0	X380	201310	General storage shed	1983	1	58,717	58,717	0	0		P	400
279	0	W148	201634	Warehouse	1998	1	141,400	141,400	0	0		P	400
280	0	NM25	220041	Storage inert	1942	1	10,000	10,000	0	0		P	400
281	0	NM33	220048	Storehouse inert	1943	1	10,000	10,000	0	0		P	400
282	0	NM45	220052	Inert storehouse	1943	1	1,500	0	1,500	0		P	400
283	0	V52	220060	Aviation storehouse	1942	1	62,992	62,992	0	0		P	400
284	0	SP83	220129	Maintenance aircraft spares storage	1942	1	61,779	24,517	34,762	2,500		P	400
285	0	SP236	220155	Supply storehouse	1954	1	113,760	113,760	0	0		P	400
286	0	SP237	220156	Aviation warehouse/packaging-crating	1954	1	76,617	76,617	0	0		P	400
287	0	V146	220277	Warehouse	1970	1	23,150	23,150	0	0		P	400
288	0	V88	220394	Warehouse	1944	4	259,415	235,217	527	23,671		P	400
289	0	V147	220399	Warehouse	1971	3	179,630	179,630	0	0		P	400
290	0	LP167	220401	Warehouse/aircraft	1971	2	151,798	151,798	0	0		P	400
291	0	1556	240017	Shore intermediate maintenance facility	1994	2	106,043	106,043	0	0	AG	P	400
292	0	80	240041	Integrated logistics overhaul/outfitting	1919	1	12,000	12,000	0	0	AG	P	400
293	0	168	240080	Storage	1942	1	10,251	0	0	10,251	AG	P	400
294	0	LF50	280012	Hazardous materials storage	1989	2	12,219	12,219	0	0		P	400
295	*-*	*CD20*	*200044*	*General storage shed*	*1990*	*1*	*49,491*	*49,491*	*0*	*0*		*P*	*400*
296	*-*	*CD21*	*200047*	*General storage shed*	*1990*	*1*	*40,044*	*40,044*	*0*	*0*		*P*	*400*
297	*-*	*CD22*	*200049*	*General storage shed*	*1990*	*1*	*15,390*	*15,390*	*0*	*0*		*P*	*400*
298	*-*	*Y108*	*200051*	*Warehouse*	*1991*	*1*	*161,757*	*161,757*	*0*	*0*		*P*	*400*
299	*-*	*Z103*	*200057*	*Warehouse*	*1919*	*6*	*313,434*	*0*	*0*	*313,434*		*P*	*400*
300	*-*	*SP113*	*200090*	*Bachelor enlisted quarters warehouse*	*1998*	*1*	*12,080*	*12,080*	*0*	*0*		*P*	*400*
301	*-*	*Z206*	*200124*	*Cylinder shed*	*1945*	*1*	*37,499*	*37,499*	*0*	*0*		*S*	*400*
302	*-*	*W131*	*200126*	*Warehouse*	*1941*	*1*	*49,920*	*0*	*0*	*49,920*		*S*	*400*
303	*-*	*Z107*	*200127*	*Warehouse*	*1920*	*3*	*422,980*	*0*	*0*	*422,980*		*P*	*400*
304	*-*	*Y100A*	*200138*	*Warehouse-shops*	*1939*	*1*	*132,500*	*132,500*	*0*	*0*		*P*	*400*
305	*-*	*X136*	*200194*	*Warehouse*	*1940*	*1*	*190,707*	*0*	*0*	*190,707*		*P*	*400*
306	*-*	*W131A*	*200536*	*Yard office*	*1941*	*1*	*120*	*0*	*120*	*0*		*S*	*400*
307	*-*	*162ZG*	*220489*	*General warehouse*	*1958*	*1*	*20,000*	*20,000*	*0*	*0*	*ZG*	*P*	*400*
308	*-*	*63*	*240027*	*Recompression storage*	*1918*	*1*	*8,745*	*8,745*	*0*	*0*	*AG*	*P*	*400*
309	*-*	*65*	*240029*	Shore intermediate maintenance facility	*1918*	*1*	*9,128*	*0*	*9,128*	*0*	*AG*	*P*	*400*
310	*-*	*75*	*240036*	*Integrate log OH & outfit*	*1918*	*1*	*9,950*	*0*	*9,950*	*0*	*AG*	*P*	*400*
311	*-*	*81*	*240042*	Shore intermediate maintenance facility	*1919*	*1*	*12,000*	*12,000*	*0*	*0*	*AG*	*P*	*400*
312	*-*	*84*	*240044*	*Integrate log OH & outfit*	*1919*	*1*	*10,000*	*0*	*0*	*10,000*	*AG*	*P*	*400*
313	*-*	*86*	*240046*	*Integrate log OH & outfit*	*1920*	*1*	*10,000*	*0*	*10,000*	*0*	*AG*	*P*	*400*
314	*-*	*87*	*240047*	*Integrate log OH & outfit*	*1919*	*1*	*10,000*	*10,000*	*0*	*0*	*AG*	*P*	*400*
315	*-*	*88*	*240048*	*Integrate log OH & outfit*	*1919*	*1*	*10,000*	*0*	*0*	*10,000*	*AG*	*P*	*400*
316	*-*	*89*	*240049*	*Integrate log OH & outfit*	*1919*	*1*	*16,077*	*0*	*16,077*	*0*	*AG*	*S*	*400*
317	*-*	*152*	*240068*	*Hazardous flammables storage*	*1934*	*1*	*800*	*800*	*0*	*0*	*AG*	*P*	*400*

Table C1—Buildings at NAVSTA Norfolk by facility category, 2000—con.

Seq no.	Use code	Facility number	Prop record number	Facility name	Year built	Stories no.	Area				Spec area	Con-struc type	Fac-ility cate-gory
							Total	Adeq	Inadeq	Substd			
318	*-*	*153*	*240069*	*Hazardous flammables storage*	*1934*	*1*	*800*	*800*	*0*	*0*	*AG*	*P*	*400*
319	*-*	*154*	*240070*	*Hazardous flammables storage*	*1934*	*1*	*800*	*800*	*0*	*0*	*AG*	*P*	*400*
320	*-*	*155AG*	*240071*	*Hazardous flammables storage*	*1934*	*1*	*800*	*800*	*0*	*0*	*AG*	*P*	*400*
321	*-*	*160AG*	*240072*	*General warehouse Navy*	*1942*	*1*	*1,250*	*1,250*	*0*	*0*	*AG*	*P*	*400*
322	*-*	*161AG*	*240073*	*Integrate log OH & outfit*	*1942*	*1*	*1,250*	*1,250*	*0*	*0*	*AG*	*P*	*400*
323	*-*	*162*	*240074*	*Integrate log OH & outfit*	*1942*	*1*	*1,250*	*1,250*	*0*	*0*	*AG*	*P*	*400*
324	*-*	*163AG*	*240075*	*Hazardous flammables storage*	*1942*	*1*	*1,250*	*1,250*	*0*	*0*	*AG*	*P*	*400*
325	*-*	*173AG*	*240085*	*DLA-DRMO precious metals*	*1942*	*1*	*5,151*	*5,151*	*0*	*0*	*AG*	*P*	*400*
326	*-*	*177*	*240089*	*Naval undersea warfare warehouse*	*1942*	*1*	*5,151*	*5,151*	*0*	*0*	*AG*	*P*	*400*
327	*-*	*188*	*240099*	*Integrate log OH & outfit*	*1942*	*1*	*11,461*	*0*	*0*	*11,461*	*AG*	*P*	*400*
328	*-*	*198*	*240105*	*Hazardous materials storage(PCB)*	*1942*	*1*	*5,151*	*0*	*5,151*	*0*	*AG*	*P*	*400*
329	*-*	*207*	*240111*	*Integrate log OH & outfit*	*1942*	*1*	*165*	*165*	*0*	*0*	*AG*	*P*	*400*
330	*-*	*208*	*240112*	*Integrate log OH & outfit*	*1942*	*1*	*165*	*165*	*0*	*0*	*AG*	*P*	*400*
331	*-*	*215*	*240118*	*Integrate log oh & outfit*	*1943*	*1*	*1,600*	*0*	*1,600*	*0*	*AG*	*S*	*400*
332	*-*	*234*	*240131*	*Integrate log OH & outfit*	*1943*	*1*	*1,161*	*0*	*1,161*	*0*	*AG*	*P*	*400*
333	*-*	*241*	*240137*	*Miscellaneous storage*	*1944*	*1*	*144*	*0*	*144*	*0*	*AG*	*P*	*400*
334	*-*	*242*	*240138*	*Storage*	*1944*	*1*	*144*	*0*	*144*	*0*	*AG*	*P*	*400*
335	*-*	*243*	*240139*	*Storage*	*1944*	*1*	*144*	*0*	*144*	*0*	*AG*	*P*	*400*
336	*-*	*251*	*240145*	*Bunker*	*1945*	*1*	*1,134*	*1,134*	*0*	*0*	*AG*	*P*	*400*
337	*-*	*258*	*240167*	*General warehouse*	*1947*	*1*	*432*	*432*	*0*	*0*	*AG*	*S*	*400*
338	*-*	*269*	*240180*	*Disposal/salvage/scrap building*	*1953*	*1*	*468*	*0*	*468*	*0*	*AG*	*S*	*400*
339	*-*	*159*	*240183*	*General warehouse Navy*	*1942*	*1*	*1,250*	*1,250*	*0*	*0*	*AG*	*P*	*400*
340	*-*	*190*	*240201*	*Integrate log OH & outfit*	*1942*	*1*	*21,714*	*0*	*21,714*	*0*	*AG*	*P*	*400*
341	*-*	*275*	*240214*	*Integrate log OH & outfit*	*1953*	*1*	*81*	*0*	*81*	*0*	*AG*	*P*	*400*
342	*-*	*276*	*240215*	*Integrate log OH & outfit*	*1953*	*1*	*81*	*0*	*81*	*0*	*AG*	*P*	*400*
343	*-*	*M1*	*240292*	*Integrate log OH & outfit*	*1918*	*1*	*51,750*	*0*	*51,750*	*0*	*AG*	*S*	*400*
344	*-*	*M2*	*240293*	*Old warehouse*	*1918*	*1*	*16,000*	*0*	*16,000*	*0*	*AG*	*S*	*400*
345	*-*	*M3*	*240294*	*Integrate log OH & outfit*	*1918*	*1*	*6,200*	*0*	*6,200*	*0*	*AG*	*S*	*400*
346	*-*	*M4*	*240295*	*Warehouse*	*1918*	*1*	*13,420*	*0*	*13,420*	*0*	*AG*	*S*	*400*
347	*-*	*M5*	*240296*	*Warehouse*	*1918*	*1*	*37,200*	*0*	*37,200*	*0*	*AG*	*S*	*400*
348	*-*	*401*	*240321*	*Disposal/salvage/scrap building*	*1988*	*1*	*1,572*	*1,572*	*0*	*0*	*AG*	*P*	*400*
349	*-*	*400*	*240331*	*Disposal/salvage/scrap building*	*1989*	*1*	*2,000*	*2,000*	*0*	*0*	*AG*	*P*	*400*
350	*-*	*CEP174*	*280339*	*Maintenance shed*	*1980*	*1*	*300*	*0*	*0*	*300*		*S*	*400*
351	0	CD2	201048	Medical clinic	1978	1	65,800	65,800	0	0		P	500
352	0	CD3	201070	Dental clinic	1981	2	67,400	67,400	0	0		P	500
353	0	CD4	201071	Dental support center	1981	1	12,200	12,200	0	0		P	500
354	0	U121	220389	Veterinary clinic	1948	1	2,992	2,992	0	0		S	500
355	**+**	**W153**	**200129**	**Administration building**	**1943**	**1**	**1,477**	**0**	**1,477**	**0**		**P**	**600**
356	**+**	**KBB**	**200285**	**Administration building**	**1940**	**2**	**90,364**	**68,414**	**0**	**21,950**		**P**	**600**
357	**+**	**KN**	**200534**	**Unaccompied enlisted female housing**	**1939**	**2**	**23,983**	**23,983**	**0**	**0**		**P**	**600**
358	**+**	**IA**	**200547**	**Administration building**	**1932**	**2**	**21,200**	**0**	**21,200**	**0**		**P**	**600**
359	**+**	**IE**	**200548**	**Administration building**	**1932**	**2**	**21,185**	**0**	**21,185**	**0**		**P**	**600**
360	**+**	**W5**	**200585**	**Administration building**	**1920**	**3**	**25,591**	**20,852**	**0**	**4,739**		**P**	**600**
361	**+**	**A67**	**200693**	**Red Cross/02P-SFD**	**1944**	**2**	**17,627**	**0**	**0**	**17,627**		**S**	**600**
362	**+**	**X71**	**200962**	**Submarine monitoring**	**1942**	**2**	**4,250**	**0**	**4,250**	**0**		**P**	**600**
363	**+**	**N26**	**200964**	**Headquarters/cafe/post office**	**1941**	**3**	**170,660**	**21,780**	**83,409**	**65,471**		**P**	**600**
364	**+**	**T26**	**220018**	**Administration building**	**1932**	**3**	**73,274**	**2,099**	**0**	**71,175**		**P**	**600**

Table C1—Buildings at NAVSTA Norfolk by facility category, 2000—con.

Seq no.	Use code	Facility number	Prop record number	Facility name	Year built	Stories no.	Area				Spec area	Con-struc type	Fac-ility cate-gory
							Total	Adeq	Inadeq	Substd			
365	**+**	**LP37**	**220087**	**Office building**	**1943**	**1**	**798**	**798**	**0**	**0**		**P**	**600**
366	**+**	**SP47**	**220115**	**Administration headquarters**	**1943**	**2**	**21,446**	**0**	**21,446**	**0**		**P**	**600**
367	**+**	**SP48**	**220116**	**Administration headquarters**	**1943**	**2**	**21,446**	**0**	**21,446**	**0**		**P**	**600**
368	**+**	**SP64**	**220122**	**Administration headquarters**	**1942**	**2**	**26,764**	**0**	**26,764**	**0**		**P**	**600**
369	**+**	**SP65**	**220123**	**Administration space**	**1942**	**2**	**20,070**	**0**	**20,070**	**0**		**P**	**600**
370	**+**	**SP122**	**220136**	**Applied instruction**	**1943**	**1**	**1,994**	**0**	**1,994**	**0**		**T**	**600**
371	**+**	**SP129**	**220138**	**Administration building**	**1943**	**2**	**7,128**	**0**	**7,128**	**0**		**T**	**600**
372	**+**	**S29**	**220334**	**Old dispensary administration building**	**1941**	**2**	**41,506**	**41,506**	**0**	**0**		**P**	**600**
373	**+**	**V9**	**220391**	**Offices**	**1919**	**1**	**8,160**	**5,237**	**0**	**2,923**		**P**	**600**
374	**+**	**12**	**240004**	**Ship services support**	**1902**	**1**	**10,000**	**10,000**	**0**	**0**	**AG**	**P**	**600**
375	**+**	**14**	**240193**	**Ship service support**	**1907**	**1**	**10,791**	**10,791**	**0**	**0**	**AG**	**S**	**600**
376	**+**	**10**	**240290**	**Telephone exchange building**	**1918**	**1**	**2,179**	**0**	**2,179**	**0**	**AG**	**S**	**600**
377	0	Z133	200064	Administration	1945	5	299,660	299,660	0	0		P	600
378	0	L28	200077	Administration, training	1942	2	53,570	0	49,778	3,792		P	600
379	0	H9	200079	Fitness center	1945	1	7,462	7,462	0	0		P	600
380	0	CEP170	200108	Pierside procurement facility	1989	1	3,000	3,000	0	0		P	600
381	0	Q71	200109	Pierside procurement facility	1988	1	3,000	3,000	0	0		P	600
382	0	Z357	200290	Administration	1954	2	9,696	0	9,696	0		P	600
383	0	W62	200589	Yard office/maintenance shop	1949	1	2,756	2,756	0	0		P	600
384	0	Z86	200871	Administration	1941	2	14,472	0	14,472	0		P	600
385	0	N23	200965	Naval command	1907	2	21,120	21,120	0	0		P	600
386	0	A48	201035	Administration	1942	3	60,021	40,850	19,171	0		P	600
387	0	N21	201069	Administration headquarters	1907	2	21,281	0	21,281	0		T	600
388	0	A50	201075	Legal clinic	1943	3	42,553	42,553	0	0		P	600
389	0	V29	220056	Administrative office	1929	3	98,717	98,717	0	0		P	600
390	0	V82	220067	Administration	1943	2	10,763	10,763	0	0		P	600
391	0	U111	220273	Family advocacy building	1969	2	18,640	18,640	0	0		P	600
392	0	V48	220393	Flag housing office	1941	1	2,408	0	0	2,408		P	600
393	0	SP12	220421	Naval air reserve building	1986	2	16,319	0	16,319	0		P	600
394	0	SP91	220424	Naval safety center	1987	3	45,351	45,351	0	0		P	600
395	0	277	240217	Fire training/special operations	1955	1	26,146	21,569	4,577	0	AG	P	600
396	0	M113	250406	Public works administration	1967	1	3,300	3,300	0	0		P	600
397	*-*	*SIDE1*	*200379*	*Unaccompanied enlisted personnel hous.*	*1958*	*3*	*39,942*	*0*	*0*	*39,942*		*P*	*600*
398	*-*	*SP233*	*200934*	*Administration/helicopter training*	*1952*	*1*	*18,600*	*18,600*	*0*	*0*		*P*	*600*
399	*-*	*Q99*	*201607*	*Metals recovery yard*	*1984*	*1*	*2,000*	*0*	*0*	*2,000*		*P*	*600*
400	*-*	*1470*	*202027*	*YMCA (Portsmouth)*	*1916*	*3*	*21,445*	*0*	*0*	*21,445*	*YM*	*P*	*600*
401	*-*	*SP69*	*220128*	*Electronics maintenance shop*	*1991*	*1*	*2,160*	*2,160*	*0*	*0*		*P*	*600*
402	*-*	*8*	*240002*	*Administrative office*	*1899*	*1*	*5,000*	*5,000*	*0*	*0*	*AG*	*P*	*600*
403	*-*	*169*	*240081*	*Administration, naval undersea warfare*	*1942*	*1*	*10,251*	*10,251*	*0*	*0*	*AG*	*P*	*600*
404	*-*	*189*	*240100*	*Administration building*	*1942*	*1*	*2,116*	*0*	*0*	*2,116*	*AG*	*P*	*600*
405	*-*	*319*	*240227*	*Administrative office*	*1955*	*1*	*286*	*0*	*286*	*0*	*AG*	*P*	*600*
406	*-*	*SP86G*	*280340*	*Administrative office*	*1998*	*1*	*441*	*441*	*0*	*0*		*P*	*600*
407	**+**	**G29**	**200011**	**Museum/memorial building**	**1907**	**2**	**9,346**	**9,346**	**0**	**0**		**P**	**700**
408	**+**	**G29C**	**200013**	**Museum storage/shop**	**1944**	**2**	**3,108**	**3,108**	**0**	**0**		**S**	**700**
409	**+**	**A51**	**200027**	**Unaccomp. enlisted personnel housing**	**1943**	**2**	**25,632**	**25,632**	**0**	**0**		**S**	**700**
410	**+**	**A52**	**200028**	**Unaccomp. enlisted personnel housing**	**1943**	**2**	**24,478**	**24,478**	**0**	**0**		**S**	**700**
411	**+**	**A54**	**200030**	**Unaccomp. enlisted personnel housing**	**1943**	**2**	**18,080**	**18,080**	**0**	**0**		**S**	**700**
412	**+**	**C7**	**200045**	**Chapel**	**1942**	**2**	**22,038**	**22,038**	**0**	**0**		**P**	**700**

Table C1—Buildings at NAVSTA Norfolk by facility category, 2000—con.

Seq no.	Use code	Facility number	Prop record number	Facility name	Year built	Stories	Area				Spec area	Con-struc type	Fac-ility cate-gory
							Total	Adeq	Inadeq	Substd			
413	+	FRP12	200063	Pool, bathhouse & heater	1943	1	25,955	0	0	25,955		P	700
414	+	FRP14	200065	Warehouse/special services	1943	2	15,520	0	15,520	0		S	700
415	+	FRP15	200066	Public toilet	1943	1	1,104	0	1,104	0		S	700
416	+	FRP21	200070	Public toilet & septic tank	1943	1	180	0	180	0		S	700
417	+	IAA	200080	Warehouse/Galley/Administration	1940	2	94,950	89,233	0	5,717		P	700
418	+	KK	200093	UEPH	1939	2	23,983	0	23,983	0		P	700
419	+	N24	200106	Gymnasium	1907	2	41,368	41,368	0	0		P	700
420	+	P64	200120	Navy exchange/garage	1942	1	12,240	12,240	0	0		P	700
421	+	W146	200128	Fire house no. 1	1942	2	7,591	0	7,591	0		P	700
422	+	W193	200130	Cooperative cafeteria	1944	1	20,616	0	20,616	0		T	700
423	+	X360	200153	Norfolk live CPO club	1942	2	44,947	3,583	0	41,364		P	700
424	+	SC413	200154	Gatehouse pier 5	1996	1	172	172	0	0		P	700
425	+	CA500	200159	Gatehouse pier 22	1996	1	172	172	0	0		P	700
426	+	KM	200219	UEPH	1939	2	23,983	23,983	0	0		P	700
427	+	KQ	200221	UEPH	1939	2	24,584	24,584	0	0		P	700
428	+	E13	200251	Retail warehouse	1918	1	9,193	3,164	6,029	0		P	700
429	+	CEP58	200254	Recreation building	1955	1	50,881	50,881	0	0		P	700
430	+	CEP66	200268	Navy ex-filling station	1956	1	1,080	0	0	1,080		P	700
431	+	FRP33	200278	Public toilet & septic tank	1950	1	200	0	200	0		S	700
432	+	IF	200532	Unaccomp. enlisted personnel housing	1932	2	21,185	0	21,185	0		P	700
433	+	KJ	200533	Unaccomp. enlisted female housing	1939	2	24,655	24,255	0	400		P	700
434	+	KL	200539	Unaccomp. enlisted personnel housing	1939	2	32,985	32,985	0	0		P	700
435	+	CEP89	200545	Nx outlet (laundromat)	1963	1	2,223	0	2,223	0		P	700
436	+	CEP63	200560	Sentry house	1953	1	48	48	0	0		S	700
437	+	M47	200689	Senior house	1939	2	13,884	13,313	0	571		S	700
438	+	P4	200699	Craft hobby shop	1918	2	20,870	0	20,870	0		P	700
439	+	C5	200851	Religious education	1917	1	2,295	2,295	0	0		S	700
440	+	CEP53	201004	Bus shelter	1958	1	144	0	0	144		P	700
441	+	CEP55	201006	Bus shelter	1958	1	144	144	0	0		P	700
442	+	CEP73	201007	Bus shelter	1958	1	200	200	0	0		S	700
443	+	X228	201012	Bus shelter	1953	1	128	128	0	0		S	700
444	+	W355	201017	Bus shelter	1968	1	128	128	0	0		P	700
445	+	CEP202	201082	McDonalds (restaurant-pier 26)	1982	1	3,129	3,129	0	0		P	700
446	+	Q96	201090	Public toilet	1982	1	381	381	0	0		P	700
447	+	CEP205	201097	Security bldg	1983	1	550	550	0	0		P	700
448	+	U86	201112	Sentry house/gate 3a	1951	1	51	51	0	0		T	700
449	+	CEP181	201129	Truck checking facility	1984	1	120	0	120	0		T	700
450	+	U16	220011	Unaccomp. enlisted personnel housing	1939	2	134,938	9,720	0	125,218		P	700
451	+	U20	220012	Unaccomp. enlisted personnel housing	1940	2	133,623	124,211	9,412	0		P	700
452	+	U53	220014	Chapel	1943	1	5,464	0	0	5,464		P	700
453	+	V57	220063	Convenience food store	1943	1	18,622	18,622	0	0		P	700
454	+	SP17	220108	UOPH	1941	2	93,735	0	93,735	0		P	700
455	+	SP29	220109	Unaccomp. enlisted personnel housing	1942	2	129,992	63,674	0	66,318		P	700
456	+	SP28	220111	McDonalds restaurant	1985	1	5,200	0	0	5,200		P	700
457	+	SP46	220114	Swimming pool/officers/	1943	1	7,715	7,715	0	0		P	700
458	+	SP53	220119	Bathhouse	1943	1	6,208	0	6,208	0		T	700
459	+	SP108	220135	Chapel #2	1944	1	4,860	0	0	4,860		P	700
460	+	U107	220142	Public toilet	1947	1	1,300	1,300	0	0		S	700

Table C1—Buildings at NAVSTA Norfolk by facility category, 2000—con.

Seq no.	Use code	Facility number	Prop record number	Facility name	Year built	Stories	Area				Spec area	Con-stuc type	Fac-ility cate-gory
							Total	Adeq	Inadeq	Substd			
461	**+**	**SP271**	**220186**	**Public toilet/press box**	**1958**	**2**	**600**	**600**	**0**	**0**		**T**	**700**
462	**+**	**SP314**	**220274**	**Boathouse**	**1948**	**1**	**4,275**	**4,275**	**0**	**0**		**S**	**700**
463	**+**	**U120**	**220282**	**Aircraft container**	**1948**	**1**	**5,474**	**0**	**0**	**5,474**		**S**	**700**
464	**+**	**SP246**	**220309**	**Bus stop shelter**	**1955**	**1**	**320**	**320**	**0**	**0**		**P**	**700**
465	**+**	**SP376**	**220364**	**Public toilet/press box**	**1965**	**2**	**240**	**240**	**0**	**0**		**S**	**700**
466	**+**	**MB28**	**220411**	**Unaccomp. enlisted personnel housing**	**1944**	**3**	**78,157**	**78,157**	**0**	**0**		**P**	**700**
467	**+**	**MB43**	**220416**	**Physical fitness facility**	**1948**	**1**	**11,400**	**11,400**	**0**	**0**		**P**	**700**
468	**+**	**W133**	**200155**	**Gatehouse pier 7**	**1996**	**1**	**172**	**172**	**0**	**0**		**P**	**700**
469	**+**	**Q76**	**200156**	**Gatehouse pier 10**	**1996**	**1**	**172**	**172**	**0**	**0**		**P**	**700**
470	**+**	**CEP74**	**200157**	**Gatehouse pier 20**	**1997**	**1**	**195**	**195**	**0**	**0**		**P**	**700**
471	**+**	**CEP75**	**200158**	**Gatehouse pier 21**	**1997**	**1**	**172**	**172**	**0**	**0**		**P**	**700**
472	**+**	**CEP77**	**200160**	**Gatehouse pier 23**	**1996**	**1**	**172**	**172**	**0**	**0**		**P**	**700**
473	**+**	**CEP78**	**200161**	**Gatehouse pier 24**	**1997**	**1**	**172**	**172**	**0**	**0**		**P**	**700**
474	**+**	**CEP79**	**200162**	**Gatehouse pier 25**	**1996**	**1**	**172**	**172**	**0**	**0**		**P**	**700**
475	**+**	**O18**	**201009**	**Bus shelter**	**1952**	**1**	**360**	**360**	**0**	**0**		**P**	**700**
476	0	CEP87	200019	Administration / Navy college	1986	2	23,331	23,331	0	0		P	700
477	0	IB	200020	Bachelor enlisted quarters	1997	5	156,825	156,825	0	0		P	700
478	0	E25	200054	Navy exchange facilities	1942	1	17,456	0	17,456	0		P	700
479	0	J50	200378	Administration/rehab center	1958	3	168,072	26,760	0	141,312		P	700
480	0	LAG50	200393	Flammables storehouse	1944	1	64	64	0	0		P	700
481	0	E30	200575	Gatehouse #2	1989	1	104	104	0	0		P	700
482	0	P86	200696	Bowling center	1968	1	21,780	21,780	0	0		P	700
483	0	D29	200700	Navy exchange/retail	1968	1	61,515	61,515	0	0		P	700
484	0	W313	200705	Fleet services	1968	2	44,176	44,176	0	0		P	700
485	0	M112	200728	Golf course equipment shed	1964	1	1,200	1,200	0	0		S	700
486	0	P82	200745	Beverage sales/exchange	1958	1	1,324	1,324	0	0		S	700
487	0	P81	200750	Navy exchange vehicle repair/service	1992	1	440	440	0	0		P	700
488	0	M110	200752	Bathhouse/	1942	1	2,000	2,000	0	0		P	700
489	0	LAG77	200757	Sailing center	1965	1	2,700	2,700	0	0		P	700
490	0	M114	200861	Fitness center	1970	1	3,759	3,759	0	0		P	700
491	0	P28	200880	Wife's club	1941	1	5,512	0	5,512	0		P	700
492	0	J53	200883	UEPH	1970	4	131,681	0	0	131,681		P	700
493	0	CEP127	200886	Bowling center	1971	1	22,612	0	22,612	0		P	700
494	0	A125	200896	BOQ	1971	4	47,458	47,458	0	0		P	700
495	0	O22	200932	UEPH	1973	6	129,433	0	0	129,433		P	700
496	0	CEP161	200961	Security building	1967	1	24,909	7,200	0	17,709		P	700
497	0	CD1	200970	Navy exchange warehouse	1976	2	188,880	188,880	0	0		P	700
498	0	L38	200973	Class VI package store	1975	1	13,047	12,823	224	0		P	700
499	0	M127	200974	Grounds equipment shed	1972	1	960	960	0	0		P	700
500	0	FRP64	200975	Grounds equipment shed	1972	1	960	960	0	0		P	700
501	0	FRP65	200976	Grounds equipment shed	1972	1	960	960	0	0		P	700
502	0	CEP168	200980	Exchange laundromat	1965	1	4,025	4,025	0	0		P	700
503	0	A128	200983	BOQ w/mess	1975	8	108,671	108,671	0	0		P	700
504	0	Q75	200986	Fleet recreation facility	1975	1	41,456	0	0	41,456		P	700
505	0	CEP182	201023	Gatehouse #1	1989	1	104	104	0	0		P	700
506	0	CEP184	201025	Nuclear weapon facility	1977	1	200	200	0	0		P	700
507	0	C13	201053	Bus shelter	1976	1	44	44	0	0		S	700
508	0	CD5	201054	Bus shelter	1976	1	44	44	0	0		S	700

Table C1—Buildings at NAVSTA Norfolk by facility category, 2000—con.

Seq no.	Use code	Facility number	Prop record number	Facility name	Year built	Stories	Area				Spec-area	Con-struc type	Fac-ility cate-gory
							Total	Adeq	Inadeq	Substd			
509	0	N31	201055	Bus shelter	1976	1	44	44	0	0		S	700
510	0	W387	201056	Bus shelter	1976	1	44	44	0	0		S	700
511	0	CEP194	201057	Bus shelter	1976	1	44	44	0	0		S	700
512	0	Z395	201059	Bus shelter	1976	1	44	44	0	0		S	700
513	0	Z396	201060	Bus shelter	1976	1	44	44	0	0		S	700
514	0	J54	201061	Bus shelter	1976	1	44	44	0	0		S	700
515	0	R61	201102	Schamberger Hall UEPH	1984	6	101,837	101,837	0	0		P	700
516	0	R62	201111	Mechanical equipment	1984	1	1,056	1,056	0	0		P	700
517	0	CD14	201113	Applebee's restaurant	1998	1	4,370	4,370	0	0		P	700
518	0	CD13	201125	Navy exchange mall	1989	2	189,983	189,983	0	0		P	700
519	0	M30	201136	Handball courts	1987	1	3,450	3,450	0	0		P	700
520	0	R63	201142	Penn Hall UEPH	1987	6	123,000	123,000	0	0		P	700
521	0	CD7	201146	Commissary	1988	1	78,649	78,649	0	0		P	700
522	0	CD11	201161	Navy exchange gas station	1989	1	5,680	5,680	0	0		P	700
523	0	CD10	201162	Exchange package/beverages	1989	1	6,498	6,498	0	0		P	700
524	0	Z309	201831	Trash transfer facility	1967	2	39,924	0	0	39,924		P	700
525	0	S30	220008	Bachelor quarters	1996	6	147,640	147,640	0	0		P	700
526	0	SP128A	220137	Boathouse	1943	1	493	493	0	0		P	700
527	0	NM151	220182	Sentry gatehouse 22	1972	1	140	140	0	0		P	700
528	0	U93	220200	Family services center	1960	1	20,498	20,498	0	0		P	700
529	0	U110	220268	Exchange store/beverages	1969	1	8,919	4,900	4,019	0		P	700
530	0	NM116	220272	Comfort station for picnic area	1970	1	267	267	0	0		P	700
531	0	U113	220275	Exchange filling station/oil change	1970	1	7,115	7,115	0	0		P	700
532	0	U112	220278	UEPH	1970	2	24,704	10,768	0	13,936		P	700
533	0	U115	220281	Hobbyshop craft	1971	2	16,406	16,406	0	0		P	700
534	0	U124	220288	Exchange installation warehouse	1973	1	1,280	0	1,280	0		S	700
535	0	U129	220303	Auto hobbyshop	1948	1	2,512	2,512	0	0		S	700
536	0	LP81	220305	Bus stop shelter	1954	1	156	156	0	0		P	700
537	0	LP88	220306	Bus stop shelter	1956	1	156	156	0	0		P	700
538	0	U85	220312	Bus stop shelter	1955	1	159	159	0	0		P	700
539	0	NM124	220323	Grounds maintenance storage	1975	1	986	986	0	0		S	700
540	0	U42	220430	Handball courts	1987	1	3,450	3,450	0	0		P	700
541	0	SP372	220431	Bowling center	1990	1	22,612	22,612	0	0		P	700
542	0	CD9	280072	Vehicle pass office	1986	1	3,745	3,745	0	0		P	700
543	0	CEP58A	280079	Handball courts	1992	1	2,193	2,193	0	0		P	700
544	*-*	*STSWR04*	*200012*	*Navy exchange warehouse*	*1950*	*1*	*256*	*0*	*0*	*256*		*P*	*700*
545	*-*	*Q48A*	*200023*	*Gazebo salt marsh park*	*1997*	*1*	*300*	*300*	*0*	*0*		*P*	*700*
546	*-*	*Q48B*	*200024*	*Gazebo salt marsh park*	*1997*	*1*	*300*	*300*	*0*	*0*		*P*	*700*
547	*-*	*9YG*	*200025*	*Gazebo salt marsh park*	*1997*	*1*	*1,200*	*1,200*	*0*	*0*		*P*	*700*
548	*-*	*331*	*200094*	*Refreshment building*	*1942*	*1*	*120*	*120*	*0*	*0*	*AG*	*S*	*700*
549	*-*	*380*	*200095*	*Recreation area public toilet*	*1975*	*1*	*80*	*80*	*0*	*0*	*AG*	*T*	*700*
550	*-*	*X365*	*200196*	*Gate sentry house*	*1996*	*1*	*400*	*400*	*0*	*0*		*P*	*700*
551	*-*	*100*	*201411*	*Gatehouse*	*1962*	*1*	*36*	*36*	*0*	*0*	*AE*	*P*	*700*
552	*-*	*U79B*	*220143*	*Filling station/underground fuel tanks*	*1948*	*1*	*55*	*55*	*0*	*0*		*S*	*700*
553	*-*	*U89*	*220179*	*Sentry house gate 3*	*1958*	*1*	*72*	*72*	*0*	*0*		*P*	*700*
554	*-*	*SP59*	*220180*	*Sentry house gate 4*	*1943*	*1*	*182*	*182*	*0*	*0*		*S*	*700*
555	*-*	*535*	*220307*	*Bus stop shelter*	*1951*	*1*	*72*	*72*	*0*	*0*		*P*	*700*

Table C1—Buildings at NAVSTA Norfolk by facility category, 200—con.

Seq no.	Use code	Facility number	Prop record number	Facility name	Year built	Stories	Area				Spec area	Con-struc type	Fac-ility cate-gory
							Total	Adeq	Inadeq	Substd			
556	*-*	*A*	*220311*	*Bus stop shelter (a)*	*1951*	*1*	*156*	*156*	*0*	*0*		*P*	*700*
557	*-*	*B*	*220313*	*Bus stop shelter (b)*	*1952*	*1*	*109*	*109*	*0*	*0*		*P*	*700*
558	*-*	*C*	*220314*	*Bus stop shelter (c)*	*1956*	*1*	*758*	*758*	*0*	*0*		*S*	*700*
559	*-*	*D*	*220329*	*Bus shelter/gate 4 (d)*	*1973*	*1*	*320*	*320*	*0*	*0*		*P*	*700*
560	*-*	*E*	*220330*	*Bus stop shelter (e)*	*1960*	*1*	*84*	*84*	*0*	*0*		*P*	*700*
561	*-*	*F*	*220332*	*Bus stop shelter (f)*	*1942*	*1*	*162*	*162*	*0*	*0*		*T*	*700*
562	*-*	*91*	*240051*	*Public toilet*	*1919*	*1*	*780*	*0*	*780*	*0*	*AG*	*S*	*700*
563	*-*	*94*	*240052*	*Public toilet*	*1943*	*1*	*361*	*361*	*0*	*0*	*AG*	*P*	*700*
564	*-*	*305*	*240151*	*Police station*	*1943*	*1*	*972*	*0*	*972*	*0*	*AG*	*S*	*700*
565	*-*	*262*	*240168*	*Main gate sentry house*	*1943*	*1*	*72*	*0*	*0*	*72*	*AG*	*P*	*700*
566	*-*	*224*	*240200*	*Magazine*	*1954*	*1*	*512*	*0*	*512*	*0*	*AG*	*T*	*700*
567	*-*	*271*	*240202*	*Fire station*	*1953*	*1*	*4,024*	*4,024*	*0*	*0*	*AG*	*P*	*700*
568	*-*	*280*	*240210*	*Cradock gate sentry house*	*1952*	*1*	*126*	*0*	*126*	*0*	*AG*	*S*	*700*
569	*-*	*357*	*240263*	*Fire station*	*1968*	*1*	*2,214*	*0*	*2,214*	*0*	*AG*	*S*	*700*
570	*-*	*383*	*240320*	*Fire station*	*1977*	*1*	*160*	*0*	*160*	*0*	*AG*	*P*	*700*
571	*-*	*SP310*	*280087*	*Public restroom*	*1999*	*1*	*731*	*731*	*0*	*0*		*P*	*700*
572	*-*	*NM114*	*280088*	*Public restroom*	*1999*	*1*	*809*	*809*	*0*	*0*		*P*	*700*
573	**+**	**DS32**	**201073**	**Sewage pump station**	**1981**	**1**	**198**	**198**	**0**	**0**	**YD**	**P**	**800**
574	**+**	**DS29**	**201077**	**Backflow prevention/shelter**	**1981**	**1**	**24**	**24**	**0**	**0**		**P**	**800**
575	**+**	**DS30**	**201079**	**Water tank shelter**	**1981**	**1**	**504**	**504**	**0**	**0**	**YD**	**S**	**800**
576	0	LAG115	200586	Marina sewage pumphouse	1990	1	144	144	0	0		P	800
577	0	X368	200931	Generator house/62.5 kV	1955	1	294	294	0	0		P	800
578	0	DS28	201076	Magnetic flow meter/shelter	1981	1	28	28	0	0		P	800
579	0	LP23	220010	Metal shop	1986	3	88,738	0	88,738	0		P	800
580	0	NM72	220175	Standby generator plant	1957	1	384	384	0	0		P	800
581	0	NM75	220178	Standby generator plant	1957	1	176	176	0	0		P	800
582	0	NM79	220195	Gatehouse	1958	1	117	0	0	117		P	800
583	0	LP112	220203	Standby generator building	1960	1	759	759	0	0		P	800
584	0	LP209	220336	Standby generator building	1981	1	1,171	1,171	0	0		P	800
585	0	NM155	220349	Entry control facility	1978	1	400	400	0	0		P	800
586	*-*	*W147*	*200137*	*Generator house 387 kV*	*1996*	*1*	*484*	*484*	*0*	*0*		*P*	*800*
587	*-*	*NM81A*	*220450*	*Standby generator building*	*1997*	*1*	*200*	*200*	*0*	*0*		*P*	*800*
588	*-*	*157*	*220473*	*District pipeline facility*	*1955*	*1*	*87*	*87*	*0*	*0*	*ZG*	*P*	*800*
589	*-*	*158*	*220474*	*District pipeline facility*	*1953*	*1*	*87*	*87*	*0*	*0*	*ZG*	*P*	*800*
590	*-*	*P121*	*220481*	*Small generator building*	*1959*	*1*	*176*	*176*	*0*	*0*	*ZG*	*P*	*800*
591	*-*	*161ZG*	*220485*	*Standby generator*	*1958*	*1*	*1,302*	*1,302*	*0*	*0*	*ZG*	*P*	*800*
592	*-*	*165*	*220496*	*Water pumping station*	*1958*	*1*	*1,456*	*1,456*	*0*	*0*	*ZG*	*P*	*800*
593	*-*	*172*	*220500*	*Gravel packed well*	*1956*	*1*	*150*	*150*	*0*	*0*	*ZG*	*P*	*800*
594	*-*	*173ZG*	*220501*	*Gravel packed well*	*1958*	*1*	*150*	*150*	*0*	*0*	*ZG*	*P*	*800*
595	*-*	*174*	*220502*	*Gravel packed well*	*1958*	*1*	*150*	*150*	*0*	*0*	*ZG*	*P*	*800*
596	*-*	*175*	*220503*	*Gravel packed well*	*1958*	*1*	*150*	*150*	*0*	*0*	*ZG*	*P*	*800*
597	*-*	*176ZG*	*220504*	*Gravel packed well*	*1958*	*1*	*150*	*150*	*0*	*0*	*ZG*	*P*	*800*
598	*-*	*360*	*240297*	*Guard tower*	*1970*	*1*	*144*	*0*	*144*	*0*	*AG*	*P*	*800*
599	*-*	*CEP213*	*280081*	*Guard tower, east side*	*1972*	*1*	*64*	*64*	*0*	*0*		*S*	*800*
600	*-*	*CEP211*	*280082*	*Guard tower, north side*	*1972*	*1*	*64*	*64*	*0*	*0*		*S*	*800*
601	*-*	*CEP212*	*280083*	*Guard tower, northwest side*	*1972*	*1*	*64*	*64*	*0*	*0*		*S*	*800*
602	*-*	*Q11*	*280084*	*Pier #11 security building*	*1992*	*1*	*496*	*496*	*0*	*0*		*P*	*800*
603	*-*	*Q12*	*280085*	*Pier #12 security building*	*1992*	*1*	*496*	*496*	*0*	*0*		*P*	*800*