A photograph of the U.S. Capitol dome in Washington, D.C. The dome is white with a large, ornate dome and a statue on top. It is surrounded by green trees and bushes. In the top left corner, there are orange and yellow autumn leaves. The sky is a clear, bright blue.

# BUILDING STONES OF OUR NATION'S CAPITAL

U.S. Department of the Interior  
U.S. Geological Survey

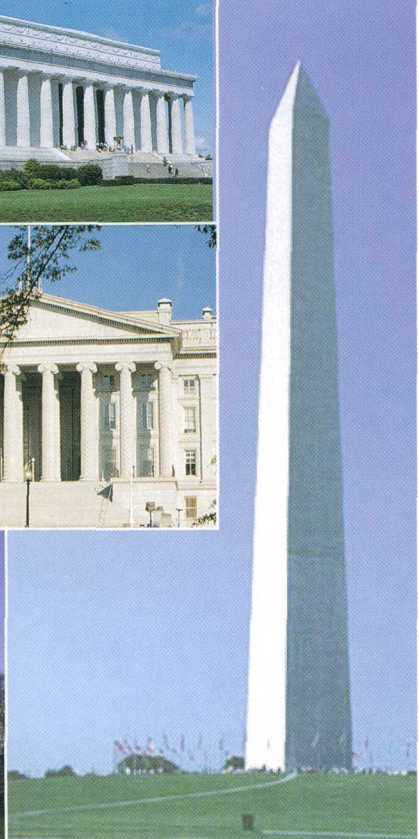
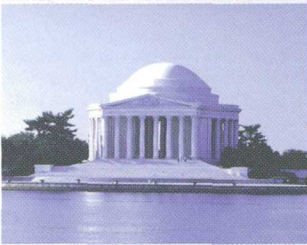
 **USGS**  
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# BUILDING STONES OF OUR NATION'S CAPITAL

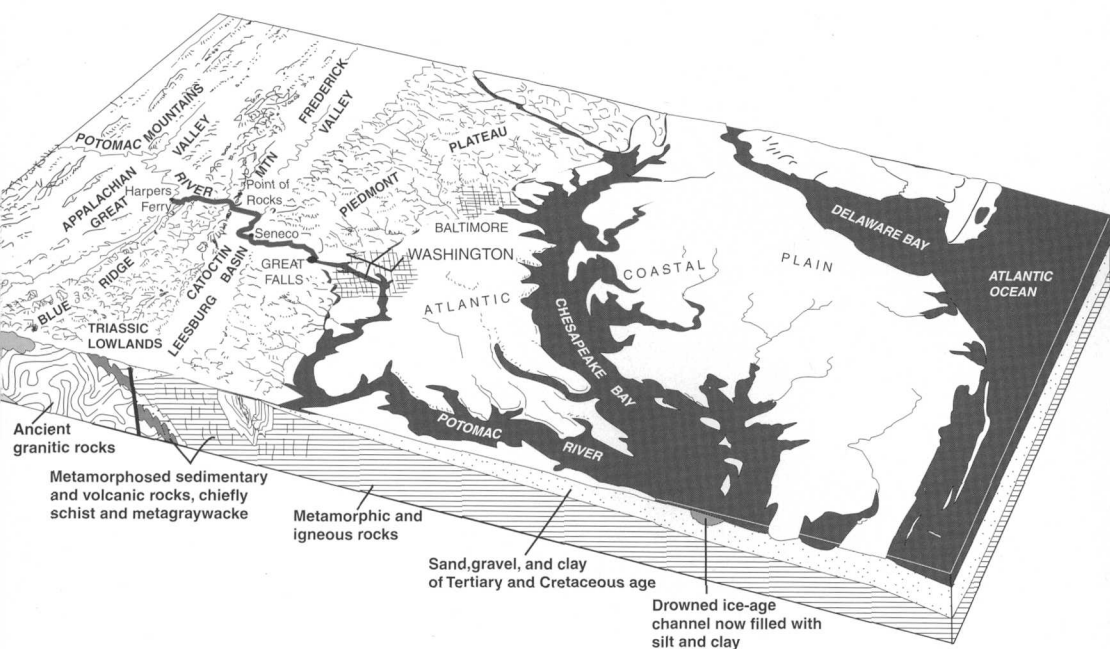
The U.S. Geological Survey has prepared this publication as an earth science educational tool and as an aid in understanding the history and physical development of Washington, D.C., the Nation's Capital.



The buildings of our Nation's Capital have been constructed with rocks from quarries throughout the United States and many distant lands. Each building shows important features of various stones and the geologic environment in which they were formed.

This booklet describes the source and appearance of many of the stones used in building Washington, D.C. A map and a walking tour guide are included to help you discover Washington's building stones on your own.

When choosing a building stone, architects and planners use three characteristics to judge a stone's suitability. It should be pleasing to the eye; it should be easy to quarry and work; and it should be durable. Today it is possible to obtain fine building stone from many parts of the world, but the early builders of the city had to rely on materials from nearby sources. It was simply too difficult and expensive to move heavy materials like stone before the development of modern transportation methods like trains and trucks.



Physiographic Provinces and Geologic and Geographic Features of the District of Columbia region.



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## Washington's Geologic Setting

Metropolitan Washington incorporates parts of four physiographic provinces—areas in which the rocks and topography are similar but differ considerably from those of the neighboring provinces. From east to west, these provinces are the Coastal Plain, the Piedmont, the Triassic Lowland, and the Blue Ridge. In addition, the area on the Mall south of the Lincoln Memorial and Washington Monument to the Potomac River was originally swampland, which was reclaimed by filling it with material dredged from farther down the river.

The Atlantic Coastal Plain province borders the Atlantic Ocean and consists of gravel, sand, silt, clay, and marl. Deposition of these sediments began 100 million years ago and continues to the present time. The oldest rocks in the Coastal Plain are poorly consolidated (that is, easily crumbled) gravel, sand, silt, and clay derived from the weathering of rocks to the north and west that were carried to the Coastal Plain by southflowing rivers. Younger rocks consist of sands and clays containing the minerals glauconite and mica, which were deposited in estuaries and on the Continental Shelf at a time when water covered the present Coastal Plain to depths of as much as 200 feet.

The Piedmont Plateau province lies west of the Coastal Plain. The

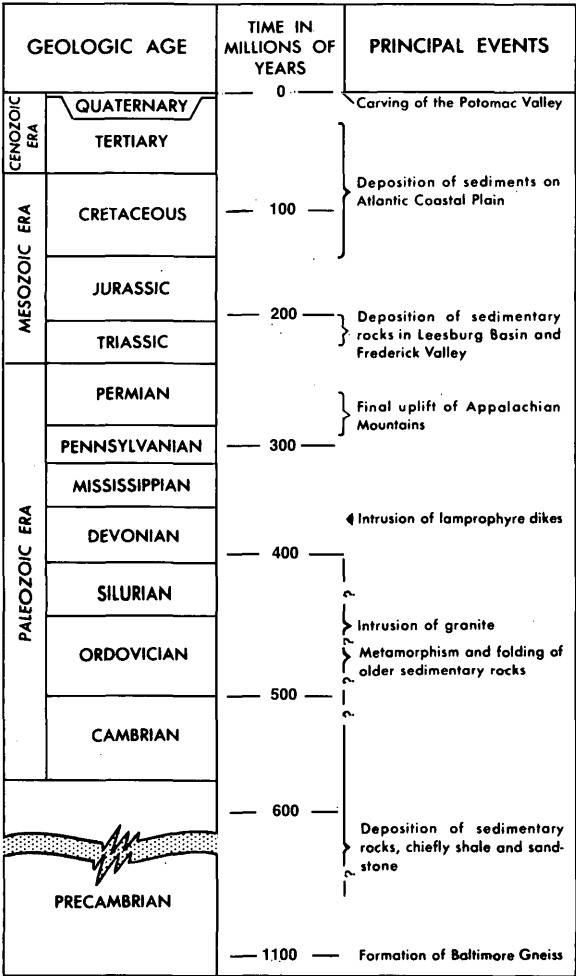
Piedmont rocks in and near Washington, D.C., are crystalline metamorphic rocks that are quite hard and resist weathering; they contain veins of quartz and pegmatite and in many places have been intruded by igneous rock (formed from molten rock from inside the Earth). These crystalline rocks can be seen most easily in valleys where the soil cover has been stripped away by erosion. Most of the crystalline rocks on the uplands were deposited about 550-600 million years ago; over the ages, they have weathered to saprolite, a porous, spongy, red-brown clay-rich material, as much as 200 feet thick. The final product of weathering, seen near the surface throughout much of the Piedmont, is a sticky clay, generally having a reddish color.

The rocks of the Triassic Lowland province, deposited about 200 million years ago, are red shales and red and gray sandstones and conglomerates, which weather to a reddish soil. Near Washington these sedimentary rocks are as much as 5,000 feet thick. In some places, they have been intruded by trap rock (resistant fine-grained igneous rock). At the western edge of the Triassic Lowland is a series of alluvial fans that mark the mouths of ancient rivers. These deposits are made up of rounded to angular masses of limestone, quartz, and quartzite,

which range in size from sand grains to boulders as much as 1 foot in diameter, that are cemented by calcite.

The Blue Ridge province, lying west of the Triassic Lowland, is a region of north- and northeast-trending valleys and ridges underlain by folded metamorphic and igneous rocks that were formed more than

500 million years ago. Near Washington, the rocks consist predominantly of granite, greenstone (metamorphosed by great heat and pressure from basaltic lava flows), and quartzite. Sharp north-trending ridges, formed by steeply dipping quartzite that resists weathering, rise more than 1,000 feet above sea level.



GEOLOGIC TIME CHART



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## Washington's Building Stones

The building stones used by the earliest European settlers were the crystalline rocks of the Piedmont, which were quarried from outcrops along the Potomac River and Rock Creek. One type, known to geologists as Sykesville Formation, is still quarried west of the city and used for flagstone.

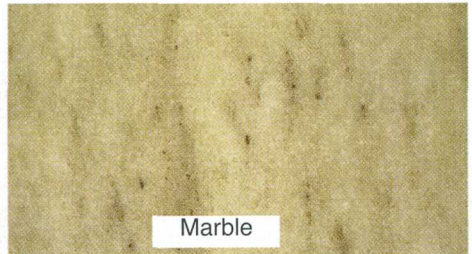
In colonial days, the first solid ground on the marshy north shore of the Potomac, now just north of the Lincoln Memorial, was an outcrop of Piedmont rocks that jutted into the river. This promontory served as the starting point for surveys establishing property lines for the early settlers. It was called Braddock's Rock, because the British General Edward Braddock

and his red-coated soldiers, accompanied by Lt. Col. George Washington, are thought to have landed there in 1755 on their way to Fort Duquesne (now Pittsburgh). In time Braddock's Rock became a quarry, and it may have furnished stone for the foundations of both the White House and the Capitol.

Many other quarries supplied rocks from the Piedmont province to the young city. One of the most important was the Little Falls Quarry on the Maryland shore of the Potomac, just beyond the District of Columbia. Much of the stone for the foundations and the backing for the marble of the Washington Monument came from this quarry in the Sykesville



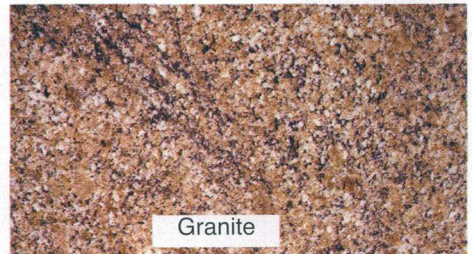
Sandstone



Marble



Limestone



Granite

Samples of stones used in the Nation's Capital. Sandstone and marble could be obtained from nearby quarries and were used frequently. Limestone and granite were little used before this century.

Formation. An engraved stone from the Little Falls Quarry appears among the various commemorative stones from all over the world that line the interior walls of the monument.

One of the oldest houses remaining in the Washington area, the Old Stone House at 3051 M Street NW, in Georgetown, is made of rock from Little Falls Quarry. The house was built in 1764 by Christopher Layman, a cabinetmaker. A good example of pre-Revolutionary architecture, this historic house has been restored to show the life of working-class people of that period; it is open to visitors.

Several buildings at the National Zoo on Connecticut Avenue NW, including the Panda House, the Elephant House, and the Mane Restaurant, are also built of these crystalline rocks.

Between 1825 and 1850 when the Chesapeake and Ohio Canal was



Little Falls Quarry on the Potomac River, Montgomery County, Maryland

planned and built, Georgetown was still a distinct town, separated from Washington by 2 miles of farmland and swamps. Piedmont crystalline rock was used for most of the construction, including the walls and locks of the canal, the bridges over it, and the abutments and piers of the Aqueduct Bridge, which carried canal boats across the Potomac River to the Alexandria Canal on the other side.



Old Stone House



The bridge was abandoned in 1923, and in 1962 the piers were blasted out to a depth of 12 feet below the water-line. The massive north abutment of the Aqueduct Bridge and a part of the pier nearest the Maryland shore can still be seen upstream from Key Bridge. In Georgetown, the walls and locks of the Chesapeake and Ohio Canal, and one of the original bridges crossing it, are preserved. The bridge, built in 1831, carries Wisconsin Avenue across the canal. It is of local crystalline rock faced with blocks of Aquia Creek sandstone, another of the important building stones in early Washington.

Aquia Creek sandstone (called Potomac Group by geologists) was also popular for public buildings between 1790 and 1840. This stone is composed principally of quartz sand, pebbles, and clay pellets, cemented by silica; it was formed during the Early Cretaceous period, about 100-110 million years ago. The sandstone received its name from Aquia Creek in Stafford County, Va., near where it was quarried. This is the only place near Washington where the Coastal Plain sediments are cemented sufficiently to be useful as a building stone. This stone is also called "Virginia free-stone," a term applied to sandstone that splits with equal ease in any desired direction and is easily shaped.

Aquia Creek sandstone, although easier to work than the Piedmont

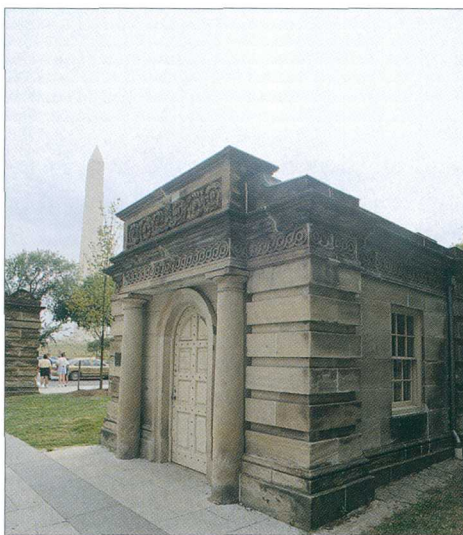


#### Canal building stones

rocks, was ill suited for use as building stone because it was full of troublesome flaws. It was popular simply because there was no other readily available building material in the Washington area. Furthermore, the quarries were situated near water transportation, the best available at that time, and were only about 40 miles from Washington on the Virginia shore of the Potomac.

Poor-quality Aquia Creek sandstone was used in the Capitol gatehouses and gateposts built by Charles Bulfinch about 1829. These deteriorating structures show how rapidly the stone decays when it is exposed to the elements. They were moved from the Capitol grounds in 1874. One gatehouse and three gateposts are located at 15th Street and Constitution Avenue NW, and another gatehouse is farther west at 17th Street NW. Two more of the gateposts are in Fort Totten Park in northeast Washington. Aquia Creek sandstone of better quality was used for the original section of the National Portrait Gallery, which stands between 7th and 9th Streets and F and G Streets NW and was built between 1836 and 1840.

The best places to see the Aquia Creek sandstone as it was used indoors are in the older parts of the Capitol and in the National Portrait Gallery courtyard. The sandstone gallery of the National Portrait Gallery, with its plain squat columns, is particularly impressive. In the Capitol Building, Aquia Creek sandstone may be seen in the walls and columns of the rooms adjoining the rotunda and in the spiral staircase. The graceful Little Rotunda tobacco column colonnade in the Senate wing on this floor, designed by architect Benjamin Latrobe, is especially attractive. Downstairs, the simple Doric sandstone columns of the crypt have a



Capitol Gatehouse

brownish cast, while the famous corn-stalk columns in a nearby entrance hall are decidedly gray.

“Calico Rock,” a limestone conglomerate in the Leesburg Member of the Balls Bluff Siltstone, is the most striking building stone quarried near Washington, D.C. This stone was deposited at the mouths of ancient rivers in a series of alluvial fans in the western edge of the Triassic Lowland province in Maryland and Virginia. Called Potomac marble by builders, it is not marble but rather consists mainly of limestone and quartz pebbles and multicolored fragments, as much as 12 inches across, naturally cemented together. Samples of Potomac marble from various localities show marked differences in color. The Potomac marble in the Capitol is predominantly



gray but shades to a rich reddish brown. The inclusions are gray, beige, yellow, black, white, brown, orange, and reddish brown in an indescribable variety of combinations. White veins of calcite accentuate the effects of the different colors.

Potomac marble was first used in 1815 by Benjamin Latrobe, who was then at work restoring the Capitol after it was burned by the British during the War of 1812. Latrobe described this stone as a very hard but beautiful marble and arranged to quarry it for the interior of the Capitol. Unfortunately, the beautiful conglomerate proved to be extremely difficult to work. The hard pebbles tended to break away from the softer matrix in which they were embedded. An apparently perfect block often contained flaws and would fall to pieces when worked. The columns of the Old Hall of Representatives in the Capitol are worth studying both for the stone itself, with its varied and richly colored inclusions, and for the long story of frustration the columns reveal. Instead of the monoliths envisioned by Latrobe, the columns are made up of drums of irregular lengths. No two columns are divided in the same way; each seems to have been treated as an individual problem. Black patches of wax cover voids where pebbles broke away, serving as a further reminder of the painstaking labor expended on these colorful columns.

During the "brownstone era," from about 1840 to about 1880, red Seneca sandstone (called Manassas Sandstone by geologists) was extremely popular in Washington. This stone of Triassic age (more than 200 million years old) crops out along the Potomac River in the Triassic Lowland province from Seneca to just east of Point of Rocks, Md. Red Seneca sandstone ranges from reddish brown to a deep purplish brown. It is brightly colored and fairly easy to carve when cut but darkens and hardens on exposure to air. Seneca sandstone is generally fine grained and uniform, and it does not scale when exposed to weather.



Statuary Hall, U.S. Capitol. The columns in the background are made of Potomac marble.

Several quarries supplied this red sandstone to the city. The best known is about 20 miles up the Potomac on the Maryland shore just west of Seneca Creek. The remains of the quarry and of the adjacent Seneca Basin, where canal barges were loaded with stone for shipment up or down the canal, may still be seen, although they are on private land. The ruins of a quarry building, which housed saws and machinery for finishing the stone, stand nearby.

The masonry locks of George Washington's "Patowmack" Canal at Great Falls, Va., are largely constructed of this Seneca red sandstone, as are many of the locks, lockhouses, and other structures of the Chesapeake and Ohio Canal, which were built between

1828 and 1850. The three-arched aqueduct that carries the C&O Canal over Seneca Creek is built of this stone cut near the site, as are the capstones on the Union Bridge that carries the aqueduct and MacArthur Boulevard over Cabin John Creek in the Washington suburb of Glen Echo, Md. Seneca sandstone was also used for some of the backing for the marble of the Washington Monument.

The first important government building to be constructed of the sandstone was the carved and turreted main building of the Smithsonian Institution (the Castle), designed by James Renwick. The sandstone quarried for the Smithsonian building was described originally as lilac gray; now it is a dark red. This building, in the



Old quarry building site at Seneca Creek, Montgomery County, Maryland, built of red Seneca sandstone

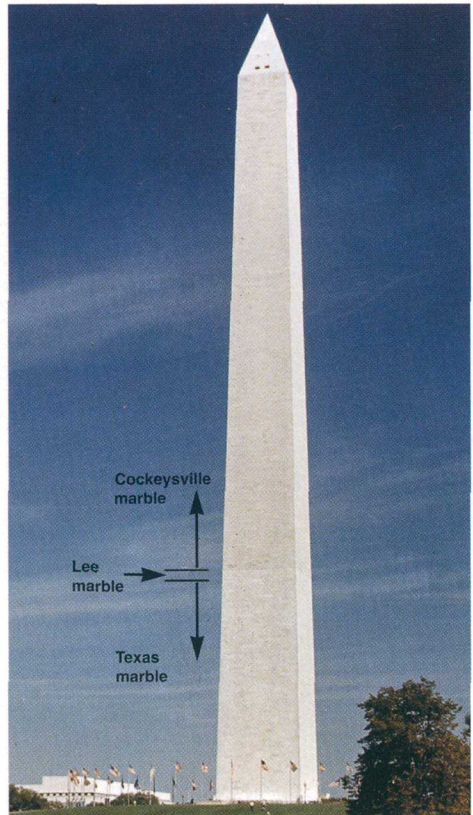


romantic style, was constructed between 1847 and 1857. Seneca sandstone is also prominent in the Capitol floors and Rotunda door frames.'

Marble subsequently replaced sandstone as the most popular building stone in Washington. The first marble came from a layer of stone called Cockeysville Marble, from quarries in the Piedmont province at Cockeysville and Texas, Md., just north of Baltimore. The marble at Cockeysville is fine grained and contains significant amounts of magnesium. It is a clear white stone with a few pale streaks or bands, which give an effect of pale gray. The marble from the Texas quarry is white and coarser grained and is nearly pure calcium carbonate. Some specimens of both marbles contain veins and pockets of mica and pyrite, which can stain the marble if it is exposed to the elements.

Three different kinds of marble were used in the construction of the Washington Monument, which was delayed by several problems. According to the city plan drawn up by Pierre L'Enfant, the site for the Washington Monument was at the intersection of an east-west line through the center of the Capitol and a north-south line through the center of the White House. This site was quickly abandoned because it was too swampy to support an adequate foundation for the monument. Instead the monument was built slightly east of

the original location; a small granite marker stands on the original site proposed by L'Enfant. The first 152 feet of the monument, built between 1848 and 1854, is faced with marble from Texas, Md. Work stopped when funds ran out. When construction was about to resume in 1876, the builders discovered that the foundations were inadequate and the monument was sinking and tilting. To stabilize and straighten the monument, wider



Arrows indicate use of three different kinds of marble

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subfoundations were constructed to a depth of nearly 37 feet.

In 1879 work began again on the upward projection of the monument, and four courses or rows of white marble from Lee, Mass., were laid above the Texas marble. However, Lee marble proved too costly, so the upper part of the monument was finished with Cockeysville marble. The three marbles used in the monument can be distinguished by color differences.

The white Maryland marbles were the first building stones to be shipped in quantity into Washington by rail. After 1840, as the expanding railway system increased the accessibility of stone from other parts of the country, the use of local building stone declined although Seneca sandstone continued to be shipped down the C&O Canal until the 1890's. The Federal Government contracted for marble from a quarry in Hawkins County, Tenn., in 1848. Marble from this quarry, one of the first areas in the country where marble was quarried commercially, was used in many buildings in Washington, most notably in three interior stairways in the wings of the Capitol built around 1855. Marble from Lee, Mass., was also used in the two wings of the Capitol built in the mid-1850's. The columns of these wings are made from Maryland marble.

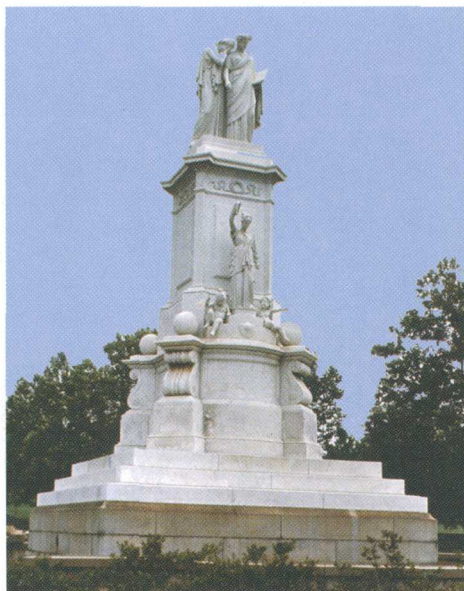
Starting in the 1850's, granite quarried at Dix Island, Maine, was shipped by sea to Washington and was used for facings and columns in the Treasury Building. Granites from New England, Georgia, and North Carolina and marbles from Vermont, Tennessee, and Georgia were used for almost all government buildings after the Civil War until the First World War.

Around 1900, limestone of Mississippian age (about 345 million years old) from near Bedford, Ind., was introduced. The first government building to be faced with this stone was the old Department of the Interior building at 18th and F Streets NW (now the General Services Administration), which was completed in 1917. Indiana limestone has become the most popular building stone of official Washington because it is relatively easy to work and is resistant to weathering. It is used in all Federal buildings in the area called "Federal Triangle," between Pennsylvania and Constitution Avenues and 14th Street.

Minnesota granite, rarely seen in Washington's government buildings before World War II, is now being used more frequently. This material serves as steps and trim around the Museum of American History of the Smithsonian Institution and is used in fountains in the Ellipse on Constitution Avenue. Some of these

granites have been dated by the U.S. Geological Survey as 3.5 billion years old, the oldest rocks in North America.

Other building stones used in Washington include a white marble from Carrara, Italy, which has been used in statuary such as the Peace Monument at Pennsylvania Avenue on the west side of the Capitol. The Italian government made a gift of 3,000 tons of three different types of marble from the Carrara district for use as facing for the Kennedy Center for the Performing Arts. Travertine from Italy is used as facings and trim for office buildings, such as those on the south side of Pennsylvania Avenue between 17th and 18th Streets NW.



Peace Monument

## Acid Rain in Washington

The problem of urban pollution and acid precipitation (often called acid rain) is of increasing concern in the Washington metropolitan area. Pure, distilled water has a neutral pH of 7. Normal, unpolluted rain is slightly acid, with a pH of 5.6, because the carbon dioxide in air combines with water to form small amounts of a weak acid called carbonic acid. Rainfall in the Washington area has an average pH of 4.2 to 4.4, more than 10 times as acid as unpolluted rain. The main source of pollution here is exhaust from automobiles, trucks, and other forms of transportation. Vehicle

exhaust contains nitrogen oxides and sulfur dioxide, which combine with water to form strong acids.

Limestone and marble, the stones that form many of the buildings and monuments in Washington, are especially vulnerable to acid precipitation because they are predominantly made of the mineral calcite (calcium carbonate), which dissolves easily in acid. Many exposed areas on buildings and statues show roughened surfaces and loss of detail in carvings. In other areas, the calcite in the stone may react with sulfur dioxide and moisture in the air to form the mineral gypsum





The marble balustrade on the west side of the Capitol building shows damage from acid rain dissolving the mineral calcite.

(hydrated calcium sulfate). The gypsum crystals grow into a network of thin blades that traps particles of dirt, resulting in a dark crust on the surface. This gypsum crust dissolves in water, so it accumulates only in sheltered areas protected from rainfall.

Questions still remain about acid rain and building stone in the Washington area. Weathering (deterioration caused by exposure to the environment) is a natural part of the normal geologic cycle. For example, the process of weathering has turned the hard rocks of the Piedmont Plateau into the soft sediments washed downriver to form the Coastal Plain. Similar weathering processes affect

the stones in buildings and monuments. Has this normal process been accelerated by human actions and urban pollution? Geologists at the U.S. Geological Survey are working with scientists at other Federal agencies, including the National Park Service, to learn more about the connections between acid rain and the deterioration of our buildings and monuments through laboratory experiments and studies of the building stones themselves. In order to protect our historically and culturally significant buildings, we need to understand how the various processes of weathering and deterioration can affect the stones from which they were built.

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## Descriptions and Origins of Selected Principal Building Stones of Washington

### **SANDSTONE**

*Maryland*—Seneca Creek, Montgomery County. Red, reddish-brown, and gray. Coarse- to fine-grained angular quartz; some fragments of feldspar and mica. Fine-grained. Durable building stone. Triassic age.

*Example:* Original Smithsonian Institution Building.

*Virginia*—Aquia Creek, Stafford County. Brown to light-gray. Rounded, coarse to fine grains of quartz. Cemented with silica and containing scattered pellets of clay as much as 1 inch in diameter. Cretaceous age.

*Example:* Crypt and Rotunda of the U.S. Capitol Building.

### **LIMESTONE**

*Alabama*—Colbert County. Similar to Indiana limestone. Has large isolated shells and other fossils. Mississippian age.

*Example:* Interior gallery walls of the National Gallery of Art.

*Indiana*—Bedford, Lawrence County. Light tan buff to nearly white. Rounded grains of calcite. Shell fragments also present. Firm and compact. Mississippian age.

*Example:* Washington National

Cathedral, Department of the Interior Building, and all Federal buildings in Federal Triangle along north side of Constitution Avenue from Department of Labor at 14th Street NW to Federal Trade Commission Building.

### **GRANITE**

*Connecticut*—Stony Creek, New Haven County. Coarse-grained, with large pink feldspar crystals in a gray mass of smaller crystals. Precambrian age.

*Example:* Exterior of Commerce Department.

*Massachusetts*—Milford, Worcester County. Light pinkish to greenish gray, with spots of black biotite mica that may form bands. Medium to coarse textured. Precambrian age.

*Example:* Zero Milestone.

*Minnesota*—Redwood and Renville Counties. Greenish-gray medium-grained biotite gneiss; pale-pink biotite granite or quartz diorite; and a granite gneiss with distinct banding, black knots of biotite, and large isolated feldspar crystals. Precambrian age.

*Example:* Fountains on the Ellipse at Constitution Avenue.

*North Carolina*—Mount Airy, Surry County. Very light gray. Medium textured. Biotite granite. Biotite is

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unequally distributed; some rock contains almost no biotite. Probably Paleozoic age.

*Example:* Arlington Memorial Bridge.

*Vermont*—Barre, Washington County. Gray to white. Medium to fine grained. Contains about 65 percent feldspar, 27 percent quartz, and 8 percent biotite mica. Ordovician age.

*Example:* Steps to the west front of the Capitol.

### **MARBLE**

*Colorado*—West Elk Mountains, Gunnison County. White with gray markings. Fine grained. Contains scattered grains of pyrite. Excellent building stone. Mississippian age.

*Example:* Exterior of the Lincoln Memorial.

*Georgia*—Pickens County. White, blotched with black and gray. Coarser grained than Vermont white marble. Called "White Cherokee marble." Precambrian age.

*Example:* East-central front of the Capitol.

*Maryland*—Texas and Cockeysville, Baltimore County. White to light gray. Medium to coarse textured. Precambrian age. *Example:* Bottom 152 feet and upper 390 feet of the Washington Monument.

*Massachusetts*—Lee, Berkshire County. White to light gray. Medium fine textured. Ordovician age. *Example:* Exterior of Senate and House wings of the Capitol.

*Missouri*—Carthage district, Jasper County. White to light gray with bluish-gray tint. Coarse grained. Some stylolites (wavy, thin, dark lines formed when minerals in the rock dissolve under pressure). Mississippian age.

*Example:* Interior of Commerce Department Building.

*Tennessee*—Knox and Blount Counties. Pink, light pink, and gray. Fine textured. Stylolites, known locally as crowfeet, in beds. Ordovician age. *Example:* National Gallery of Art.

*Tennessee*—Hawkins County. Dark chocolate to red with white streaks and masses. Coarse. Has some fossils. Ordovician age.

*Example:* Stairways in the Senate and House wings of the Capitol, Tennessee Memorial Stone.

*Vermont*—Rutland County. Snowy white. Fine grained. Other types light-blue-gray and black with highly contorted stylolites. Ordovician age. *Example:* Jefferson Memorial.



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## BUILDING STONES OF WASHINGTON WALKING TOUR

The following section is a guidebook for a walking tour of some of the building stones used in the Nation's Capital. The tour covers an area roughly bounded by Pennsylvania Avenue on the north, the Jefferson Memorial on the south, the U.S. Capitol on the east, and the Lincoln Memorial on the west, with some side trips to describe especially interesting buildings outside the area. The numbers are keyed to the locations on the accompanying map.

### **1 Name: Zero Milestone**

*Location:* Ellipse, north edge

*Building Stone:* Milford, Mass., granite

*Remarks:* The Zero Milestone is a substitute marker for a column planned by Pierre L'Enfant. The column was to be placed 1 mile east of the Capitol, "from which all distances of places through the continent were to be calculated."

Today's marker provides a point from which distances may be measured on U.S. highways that radiate from Washington.



### **2 Name: Organization of American States (Pan American Union Building)**

*Location:* 17th Street and Constitution Avenue NW

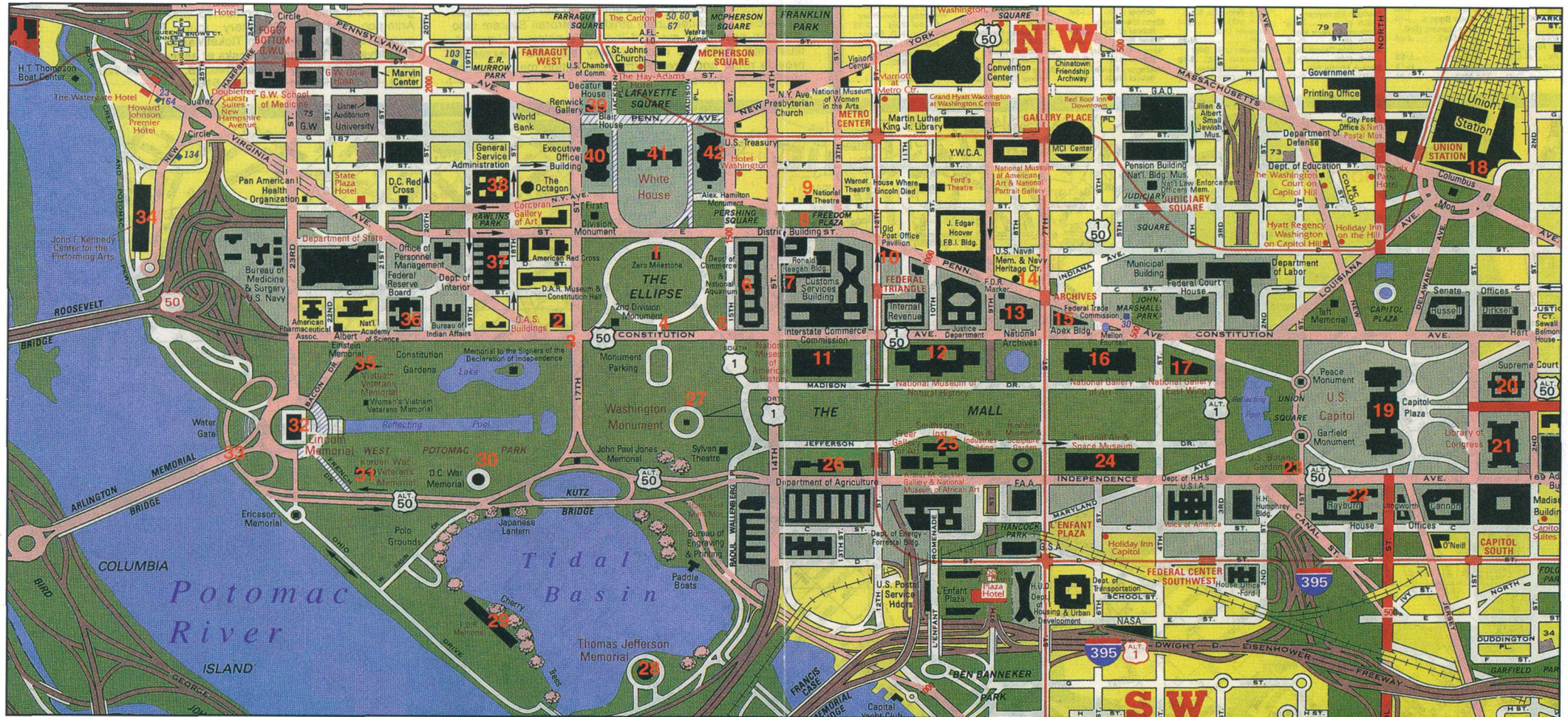
*Building Stones:* Exterior, Georgia marble; steps and foundation, Tennessee marble (two types); steps at rear of patio, green Italian marble

*Remarks:* The building was designed to blend the architectural styles of North and South America by combining Aztec, Incan, Mayan, and European themes and motifs. Construction was begun May 11, 1908, and the building was dedicated April 26, 1910.





# BUILDING STONES OF WASHINGTON FIELD TRIP



- |   |   |  |  |
|---|---|--|--|
| 1 Zero Milestone  | 12 Museum of Natural History              | 23 Botanic Gardens                           | 34 John F. Kennedy Center for the Performing Arts              |
| 2 Pan American Union Building                           | 13 National Archives Building             | 24 National Air and Space Museum             | 35 Vietnam Veterans Memorial                                   |
| 3 Lock House  | 14 U.S. Navy Memorial                     | 25 Smithsonian Institution Main Building     | 36 Federal Reserve Building                                    |
| 4 Haupt Fountains                                       | 15 Apex Building/Federal Trade Commission | 26 Department of Agriculture, North Building | 37 Department of the Interior Building                         |
| 5 Gateposts   | 16 National Gallery of Art West Building  | 27 Washington Monument                       | 38 General Services Administration Building                    |
| 6 Commerce Department Building                          | 17 National Gallery of Art East Building  | 28 Jefferson Memorial                        | 39 Renwick Gallery   |
| 7 Ronald Reagan Building and International Trade Center | 18 Union Station                          | 29 FDR Memorial                              | 40 Old Executive Office Building (Old State-War-Navy Building) |
| 8 Freedom Plaza   | 19 The U.S. Capitol                       | 30 District of Columbia World War Memorial   | 41 White House   |
| 9 National Theatre                                      | 20 Supreme Court Building                 | 31 Korean War Veterans Memorial              | 42 Treasury Building   |
| 10 Post Office Pavilion and Nancy Hanks Center Tower    | 21 Library of Congress                    | 32 Lincoln Memorial                          |  |
| 11 Museum of American History                           | 22 Rayburn Building                       | 33 Arlington Memorial Bridge                 |  |



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### 3 Name: **Lock House**

*Location:* 17th Street and Constitution Avenue NW

*Building Stone:* Crystalline metamorphic rocks, Piedmont of Maryland

*Remarks:* The site of Lock House was once the western end of the Washington City Canal, where Tiber Creek emptied into the Potomac River. The structure was built in 1833 when the extension of the C&O Canal was completed and joined the two canals.



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### 4 Name: **Haupt Fountains**

*Location:* The Ellipse at Constitution Avenue NW

*Building Stone:* Granite-gneiss, Minnesota

*Remarks:* These fountains, built in 1967, clearly show the structure of the original rock; note the large, light-red crystals of the mineral feldspar. The fountains were constructed from blocks of the oldest rock in the United States—3.5 billion years old.



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### 5 Name: **Gateposts**

*Location:* Southeast and northwest corners of 15th Street and Constitution Avenue NW and southwest corner of 14th Street and Constitution Avenue

*Building Stone:* Aquia Creek sandstone, Virginia

*Remarks:* These posts, originally at the Capitol, were constructed about 1829. On the post on the northwest corner of 15th Street and Constitution Avenue NW, two lines chiseled into the stone about 3 feet from the bottom indicate the heights of flooding of the Potomac River in the 1930's and 1940's.





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**6 Name: Commerce Department Building**

*Location:* 14th Street between E Street and Constitution Avenue NW.

*Building Stones:* Exterior, first and second floors, Stony Creek granite, Connecticut; interior, Georgia and Missouri marble

*Remarks:* The heights of buildings in Washington are restricted by the Federal Height Act of 1910, to avoid obstructing the view of landmarks like the Capitol and the Washington Monument. Instead of the skyscrapers found in most modern cities, most of Washington's large office buildings spread out to cover a city block or more.



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**7 Name: Ronald Reagan Building and International Trade Center**

*Location:* 13th and 14th Streets and Pennsylvania Avenue NW

*Building Stones:* Exterior, Indiana limestone; interior, various granites, chunk of the Berlin Wall in the main entrance foyer (14th Street)

*Remarks:* The Ronald Reagan Building and International Trade Center is the second largest federal building in size—3.1 million gross square feet. Formal opening of the building was in the spring of 1998.



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**8 Name: Freedom Plaza**

*Location:* 13th and 14th Streets and Pennsylvania Avenue NW

*Building Stones:* Border, red-pink granite from Llano, Tex.; interior, L'Enfant's original plan for Washington portrayed with streets of Georgia marble, waterways of New York sandstone, and city blocks of California granite

*Remarks:* The park was dedicated in 1980; its southwest end contains a time capsule honoring Dr. Martin Luther King, Jr. The western end has a small pool.



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**9 Name: National Theater**

*Location:* 1321 Pennsylvania Avenue, NW

*Building Stones:* Exterior, Indiana limestone; interior, fossil-bearing Indiana limestone

*Remarks:* This building was completed in 1923; four other theaters have occupied this site since 1835, making it the oldest continually operating theater in the United States.



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**10 Name: Post Office Pavilion and Nancy Hanks Center Tower**

*Location:* 12th Street and Pennsylvania Avenue NW

*Building Stones:* Exterior, Maine granites; interior mezzanine floor, white and orange marble with green serpentine

*Remarks:* This building, an example of Romanesque architecture, was completed in 1899. The bells in the central tower are replicas of the bells at Westminster Abbey, London, England, and were a gift from England for the Nation's bicentennial.





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**11 Name: Museum of American History, Smithsonian Institution**

*Location:* Constitution Avenue between 12th and 14th Streets NW

*Building Stones:* Exterior, mainly Tennessee light-pink marble; curbs and fountain steps, Minnesota pearl pink granite. Note light-red irregularly shaped feldspar crystals

*Remarks:* Dedicated January 22, 1964, this 7-acre structure contains 50 exhibition halls that display an amazing range of items, from the flag that inspired our national anthem to Muhammad Ali's boxing gloves. Fossils can be seen in places in the interior walls.



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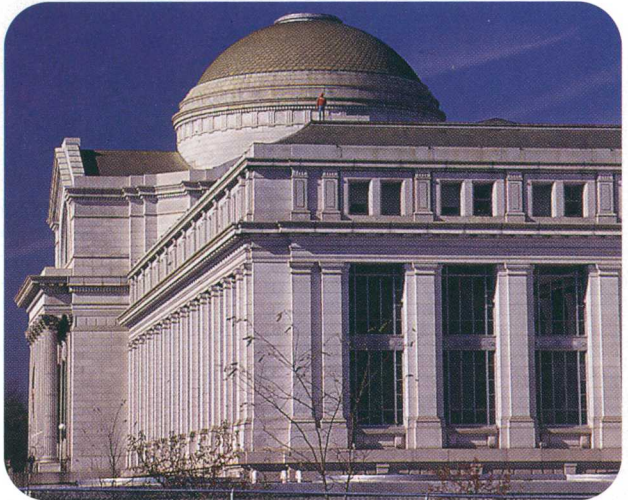
**12 Name: Museum of Natural History, Smithsonian Institution**

*Location:* 10th Street and Constitution Avenue NW

*Building Stones:* Exterior, ground floor, Massachusetts pink granite;

two main floors, Vermont white granite; top floor, Mount Airy, N.C., white granite; doorway on Mall side, greenish-pink granite

*Remarks:* The central part of the building was completed in 1911; two wings were added in 1963 and 1965 to hold the ever-increasing collections.



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### 13 Name: National Archives Building

*Location:* Pennsylvania Avenue and 8th Street NW

*Building Stones:* Exterior, Milford, Mass., granite and Indiana limestone; interior, Missouri golden vein marble; foyer, Tennessee marble

*Remarks:* This building, completed in 1938, is a fine example of Greek Revival architecture. It contains the original copies of the Declaration of Independence, the Constitution, and the Bill of Rights.



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### 14 Name: U.S. Navy Memorial

*Location:* 800 block of Pennsylvania Avenue NW

*Building Stones:* Quebec, Canada, black granite, Rhode Island light-gray granite; patio, Catskills, N.Y., green sandstone; border, Deer Isle, Maine, lavender granite

*Remarks:* The oceans and continents on this massive globe (100 feet in diameter) were cut by computer-controlled water jets and glued together. The compass at the south entrance contains a mosaic of white marble, bronze, and polished black granite. The monument was dedicated in 1987.





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**15 Name: Apex Building/Federal Trade Commission**

*Location:* Pennsylvania Avenue and 6th Street NW

*Building Stones:* Exterior base, Milford, Mass., granite; exterior, Indiana limestone

*Remarks:* This building, completed in 1937, serves as the apex of the Federal Triangle, which is the area between 14th Street, Constitution Avenue, and Pennsylvania Avenue, NW, that contains many of the Federal Government's office buildings.



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**16 Name: National Gallery of Art West Building**

*Location:* 6th Street and Constitution Avenue NW

*Building Stones:* Exterior, Tennessee light-pink marble; floors, Vermont verde antique marble; columns in rotunda, Carrara, Italy, brecciated marble; restrooms, Missouri marble; fountains at each end, Jasper County, Mo., Ozark

travertine marble; walls of galleries, fossil-bearing Alabama limestone

*Remarks:* Completed in 1941, the gallery was designed by J.R. Pope, who also designed the National Archives Building and the Jefferson Memorial. The pink marble at the base becomes lighter pink toward the nearly white dome; this subtle color shift is seen most clearly when the marble is wet.



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**17 Name: National Gallery of Art East Building**

*Location:* 4th Street and Constitution Avenue NW

*Building Stone:* Tennessee light-pink marble; street, driveway, and border of several granites

*Remarks:* This building, designed by I.M. Pei, opened in 1978 to house changing exhibits and the museum's collection of 20th century art. The main part of the building is an isosceles triangle, containing two sides of equal length.





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### 18 Name: Union Station

*Location:* Massachusetts Avenue and First Street NE

*Building Stones:* Vermont granite

*Remarks:* Union Station was built to consolidate Washington's passenger train traffic into one location; it was opened to service in 1907. The station, modeled after the Baths of



Caracalla in Rome, is 720 feet long; the waiting room is 120 feet wide and 219 feet long, and the vaulted ceiling reaches 96 feet above the floor. A major renovation was completed in 1989, and the building now serves as a National Visitor Center, in addition to being a terminal for train and subway service.

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### 19 Name: The U.S. Capitol

*Location:* Capitol Hill, between Constitution Avenue and Independence Avenue

*Building Stones:* Center building, Virginia Aquia Creek sandstone; Senate and House wings, Lee, Mass., dolomitic marble;

Rotunda floor, Seneca, Md., sandstone; columns of wings, Cockeysville, Md., white marble; center steps, Renville, Minn., granite; west elevation steps, Mount Airy, N.C., granite; west elevation balustrade, Vermont



marble; interior balustrades and columns of stairs leading to House and Senate galleries and wall of Marble Room, Tennessee marble; east front exterior, Georgia White Cherokee marble (covering original Aquia Creek sandstone); 24 exterior columns, Georgia marble; interior columns, Statuary Hall, Old Senate Chamber and foyer, Maryland Potomac marble; columns in Crypt and those with corn and tobacco leaves, Virginia Aquia Creek sandstone; columns, ground floor east front addition, Colorado brecciated marble

*Remarks:* President Washington laid the southeast cornerstone of the main building September 18, 1793, on the site chosen by L'Enfant. The north wing was completed in 1800; the south wing in 1807. Both wings were burned by the British during the War of 1812 but were restored by 1829. The dome and wings are examples of the Greek Revival style. New wings, built in the 1850's, doubled the length of the building.

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**20 Name: Supreme Court Building**

*Location:* East Capitol and First Streets NE

*Building Stones:* White marble

*Remarks:* This building, the first permanent home of the U.S. Supreme Court, was completed in 1935. Its central portion is in the style of a Greek temple with Corinthian columns and enormous sculptured bronze doors.



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**21 Name: Library of Congress**

*Location:* East Capitol and First Streets, SE

*Building Stone:* Concord, N.H., granite

*Remarks:* The main building, named in honor of Thomas Jefferson, is of Italian Renaissance design and was completed in 1897. The library has more than 86 million items in its collections, including one of the three existing copies of the Gutenberg Bible (the first book printed with movable type) and a large collection of books printed before 1501; numerous Civil War photographs; recordings of American folk music; and letters, papers, and drafts from many Presidents.



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**22 Name: Rayburn Building**

*Location:* Independence and 1st Street SW.

*Building Stones:* Exterior walls, Georgia White Cherokee marble and Vermont marble; perimeter base, New Hampshire pink granite; east and west courts and paving borders, pink granite (note large, regularly shaped pink feldspar crystals); inner court, base of Salisbury, North Carolina, pink granite with Indiana limestone above

*Remarks:* William H. Livingston designed the building, which contains 169 suites for Congressmen. The nine-story building was completed in April 1965.





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**23 Name: Botanic Gardens**

*Location:* First Street and Maryland Avenue SW

*Building Stones:* Indiana limestone; patio, Pennsylvania sandstone

*Remarks:* The present conservatory was built when the Botanic Gardens was relocated on the Mall in 1933.



**24 Name: National Air and Space Museum, Smithsonian Institution**

*Location:* Independence Avenue between 4th and 7th Streets, SW

*Building Stones:* Tennessee marble

*Remarks:* This museum, opened in 1976, is one of the world's most popular museums. The interior is designed to resemble an airplane hangar, with huge open spaces and high ceilings to display aircraft.

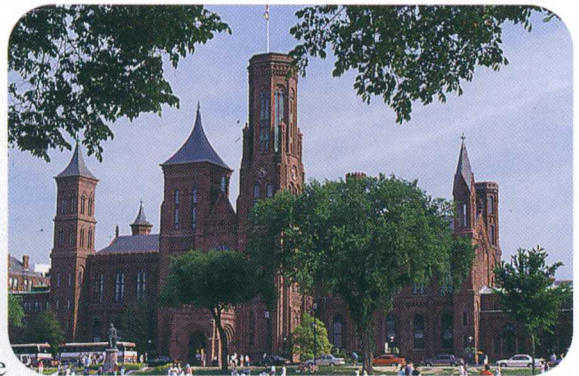


**25 Name: Smithsonian Institution Main Building (the Castle)**

*Location:* 1000 Jefferson Drive SW

*Building Stones:* Seneca, Md., sandstone

*Remarks:* The Smithsonian Institution was founded in 1829 with a bequest of James Smithson, a British mineralogist and chemist, who had never been to this country. This building, now the administrative headquarters, is the oldest of the Smithsonian buildings on the Mall. It was designed by James Renwick in the Gothic Revival or Romantic style and was completed in 1855.





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**26 Name: Department of Agriculture, North Building**

*Location:* Independence Avenue and 12th Street SW

*Building Stones:* Central part, Georgia white Cherokee marble; wings, Vermont marble; foundation, Massachusetts granite; interior, Tennessee marble

*Remarks:* The main administration building between the east and west wings was designed by Rankin and Kellogg of Philadelphia. The entire building has a floor space of 300,000 square feet.



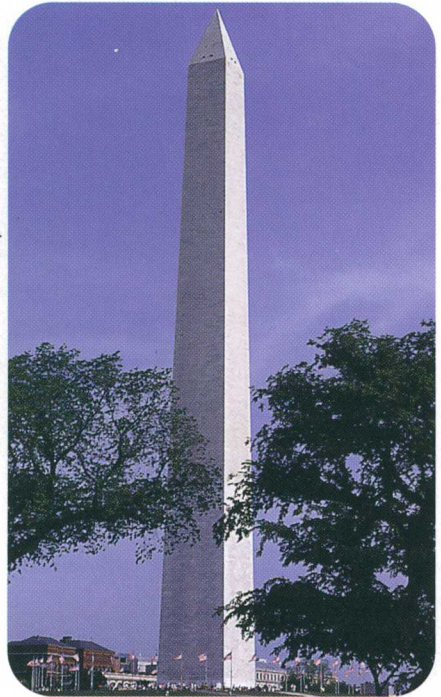
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**27 Name: Washington Monument**

*Location:* On the Mall, Constitution Avenue and 15th Street NW

*Building Stones:* Exterior, upper part, Cockeysville, Md., marble; lower part, Texas, Md., marble; courses in between, Lee, Mass., marble; interior backing, Seneca, Md., sandstone and Maryland crystalline rocks; foundation, Little Falls, Md., crystalline rocks

*Remarks:* Designed by Robert Mills, who also designed the Treasury Building, the monument stands at more than 555 feet and is one of the tallest masonry structures in the world. Because of delays and complications, which included lack of money, difficulties with the original foundation, and the theft of books and records of the society that was funding and supervising the building, the construction spanned 37 years and was not completed until 1885.



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**28 Name: Jefferson Memorial**

*Location:* On the Tidal Basin, East Potomac Park

*Building Stones:* Exterior columns and walls, Vermont white marble; foundation and circular terraces, Georgia granite; floors, Tennessee pink and gray marble; interior dome, Indiana limestone



*Remarks:* Following L'Enfant's design for the Capital City, the memorial forms the southern end of a cross whose other ends are marked by the Capitol, the Lincoln Memorial, and the White House. The building's architecture reflects Jefferson's preference for the classical style, as shown in his home at Monticello and the buildings he designed for the University of Virginia. It was dedicated April 13, 1943, on the 200th anniversary of Jefferson's birth.

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**29 Name: FDR Memorial**

*Location:* On the Tidal Basin, West Potomac Park

*Building Stones:* Carnellan granite, quarried in South Dakota, with a small amount of "Academy Black" granite, quarried in California and fabricated in Cold Spring, Minnesota



*Remarks:* Designer Lawrence Halprin started work on the project in 1974. More than 6,000 tons of granite, enough to erect an 80-story building, is used in the construction of the FDR Memorial. That includes 75,000 square feet of granite pavers and 31,000 pieces of stone. The FDR Memorial is also the first presidential memorial to honor a First Lady.



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**30 Name: District of Columbia World War Memorial**

*Location:* on the Mall south of 19th Street NW, West Potomac Park

*Building Stone:* Vermont marble

*Remarks:* The memorial was a gift of the citizens of Washington to honor those who died during World War I; it was authorized in 1924 and dedicated on November 11, 1931.



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**31 Name: Korean War Veterans Memorial**

*Location:* The National Mall between Independence Avenue and the Reflecting Pool

*Building Stones:* Wall was made of "Academy Black" granite from California, sand blasted in Cold Spring, Minnesota, with more than 2,500 photographic, archival images from the war; on the base of the pool highly reflective black granite from Canada



*Remarks:* A design was created by a team from State College, Pennsylvania, and later revised by Cooper-Lecky Architects. The memorial was dedicated on July 27, 1995, the 42nd anniversary of the armistice that ended the Korean War.

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**32 Name: Lincoln Memorial**

*Location:* Between Independence Avenue SW and Constitution Avenue NW in West Potomac Park at 23d Street NW

*Building Stones:* Reflecting pool, North Carolina granite; foundation steps, Massachusetts granite; memorial building, Colorado marble; statue, Georgia marble; base of statue and floors, Tennessee marble; columns and lintels, Indiana limestone

*Remarks:* The structure was designed in the style of a Greek temple, with 36 Doric columns representing the 36 States of the Union at the time of Lincoln's death; the statue of Lincoln was by Daniel Chester French. More than 50,000 people attended the dedication ceremonies in 1922, including Robert Todd Lincoln, the President's only surviving son.

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**33 Name: Arlington Memorial Bridge**

*Location:* Crosses the Potomac at the Lincoln Memorial

*Building Stones:* Piers, Georgia granite; facing of spans, granite from Georgia, Vermont, North Carolina, New Hampshire, and Maine

*Remarks:* A bridge was proposed at this point as early as 1851. The present bridge, begun in 1932 and completed 6 years later, is now one of Washington's major traffic routes.

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**34 Name: John F. Kennedy Center for the Performing Arts**

*Location:* New Hampshire Avenue at Rock Creek Parkway, NW

*Building Stones:* Carrara marble from Italy

*Remarks:* The opening of the Kennedy Center in 1971 fulfilled the dream of President George Washington, who proposed a national cultural center for the Nation's capital. The Carrara marble was a gift from Italy to honor the memory of President Kennedy. Gifts from other nations include crystal chandeliers from Austria, Ireland, Norway, and Sweden.





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### 35 Name: Vietnam Veterans Memorial

*Location:* Constitution Gardens, between Constitution Avenue and the Reflecting Pool

*Building Stone:* Black granite quarried near Bangalore, India; cut and fabricated in Barre, Vermont; and sandblasted in Memphis, Tennessee

*Remarks:* A competition was held to select the design for this memorial to men and women who served during the Vietnam War; the winning design was created by Maya Ying Lin, a 21-year-old architecture student at Yale University. The memorial was dedicated in 1982. In 1984, an American flag and a sculpture showing three servicemen were added to the memorial. In 1993, the Vietnam Women's Memorial was added to represent the work of the women veterans.



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### 36 Name: Federal Reserve Building

*Location:* Constitution Avenue, between 20th and 21st Streets NW

*Building Stones:* Exterior, Georgia marble; foundation, Massachusetts granite; fountains, Pennsylvania black diabase

*Remarks:* The Federal Reserve System was established in 1913 to serve as the central banking system of the United States. The building was designed by Paul P. Cret, who was also one of the designers of the Pan American Union Building, and construction began in 1936 in the wave of construction that followed the Depression.



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### 37 Name: **Department of the Interior Building**

*Location:* C Street between 18th and 19th Streets NW

*Building Stones:* Foundation and steps, Milford, Mass., granite; exterior, Indiana limestone; interior, Tennessee marble

*Remarks:* The Department of the Interior has responsibility for most of our nationally owned public lands and natural resources; the U.S. Geological Survey is one of its bureaus. The building hallways contain outstanding examples of Depression-era paintings, murals, frescoes, and relief sculptures commissioned by the Work Projects Administration.



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### 38 Name: **General Services Administration Building**

*Location:* F Street between 18th and 19th Streets NW

*Building Stones:* Exterior, Indiana limestone; interior, Maryland marble

*Remarks:* This building, completed in 1917, was the first Federal Government building to use Indiana limestone, which has become one of the most popular building stones of Washington. The original design called for an exterior of brick, but the Secretary of the Treasury changed the specifications to give the building a more formal appearance.



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### 39 Name: **Renwick Gallery**

*Location:* 17th Street and Pennsylvania Avenue NW

*Building Stones:* Exterior, brick and Belleville, N.J., sandstone, replaced in part with synthetic stone in 1970

*Remarks:* Designed by James Renwick and completed in 1859, this building was originally constructed by William Corcoran to house his art collection. The government took possession of the building during the Civil War. It is now part of the Smithsonian Institution and houses displays of the decorative arts and crafts and changing exhibits of 20th century American art.





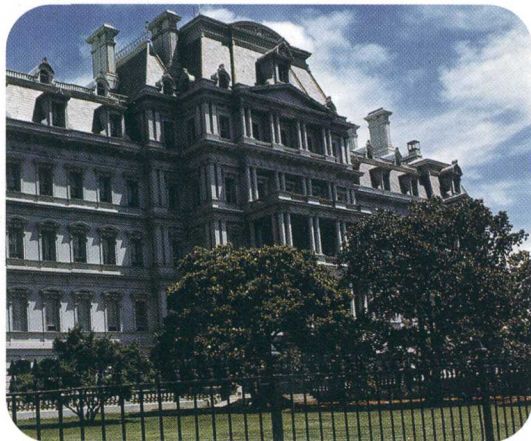
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**40 Name: Executive Office Building (Old State-War-Navy Building)**

*Location:* 17th Street and Pennsylvania Avenue NW

*Building Stones:* Exterior, granite from Virginia, Maine, and Massachusetts; subbasement, Maryland sandstone

*Remarks:* When this building was completed in 1888, it was the largest office building in the world. Its mansard roof, its 900 Doric columns, and its exuberant decorations show the influence of the Beaux Arts style of architecture.



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**41 Name: White House**

*Location:* 1600 Pennsylvania Avenue NW

*Building Stones:* Exterior, Virginia Aquia Creek sandstone refinished with Maryland marble and other marbles; fence base, north side, Montgomery County, Maryland crystalline rocks; fence capping, Aquia Creek sandstone

*Remarks:* Designed by James Hoban and begun in 1792, the

White House was the first public building to be erected in Washington. It was first occupied in 1800 by President and Mrs. John Adams; after being burned by the British in 1814, it was rebuilt and reoccupied by 1818. The interior was completely rebuilt in 1948-52 to repair structural weaknesses.



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## 42 *Name:* Treasury Building

*Location:* 15th Street and Pennsylvania Avenue NW

*Building Stones:* Exterior, the original part along 15th Street was originally built of Virginia Aquia Creek sandstone, replaced in large part by Dix Island, Maine, granite; remainder, Dix Island and

Milford, Mass., granite; foundation, Maryland crystalline rocks. Patio, Seneca, Md., red sandstone; Catskill, N.Y., green sandstone; and concrete

*Remarks:* The present building is the third one on this site to house the Treasury Department; two earlier buildings were destroyed by fires. An example of Greek Revival style, it was begun in 1836 and completed 30 years later.



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As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering sound use of our lands and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation.

The Department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.