

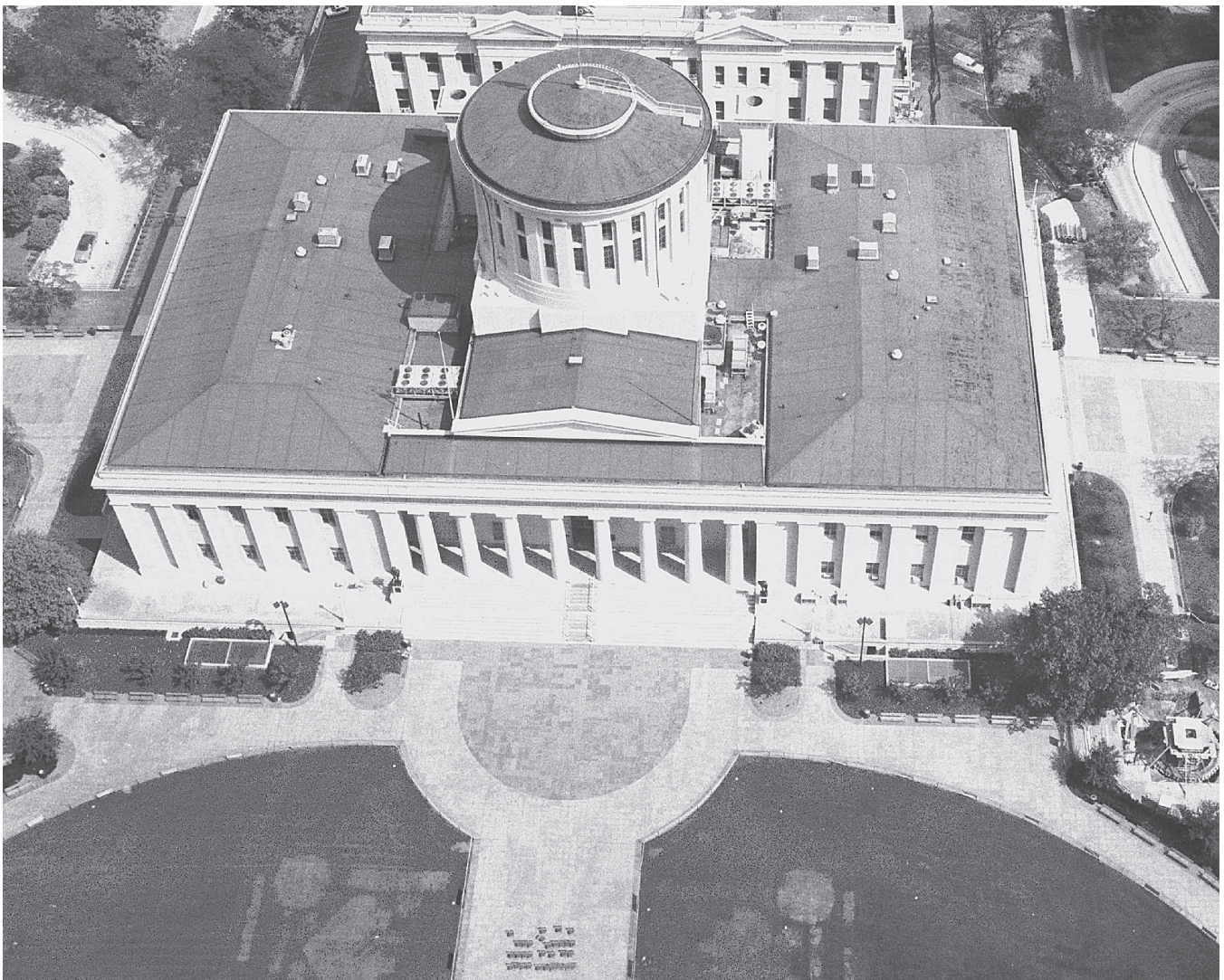
BUILDING STONES IN THE VICINITY OF CAPITOL SQUARE, COLUMBUS, OHIO

A walking tour in celebration of Earth Science Week 2000

Tour Leaders: Garry D. McKenzie and Dale M. Gnidovec

Sponsors:

American Institute of Professional Geologists
Ohio Department of Natural Resources, Division of Geological Survey
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October 10, 2000

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Dale M. Gnidovec, Curator, Orton Museum, The Ohio State University

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Division of Geological Survey, and The Ohio State University

AIPG Coordinator: Robin E. Roth, Ohio Petroleum Underground Storage Tank Release Compensation Board

Brochure produced by Merrienne Hackathorn and Lisa Van Doren,
Ohio Department of Natural Resources, Division of Geological Survey

INTRODUCTION

The buildings and monuments in downtown Columbus provide an opportunity for study of a variety of geologic materials and for discussion of the formation, geologic history, and weathering of rocks. The rock materials, both locally quarried and imported from various parts of the world, encompass the three major rock types—igneous, metamorphic, and sedimentary. Other geologic materials such as concrete, brick, and various metals also have been used. The stones are referred to by two types of terms: a formal geologic rock name, such as Salem Limestone, and a trade name, such as *Indiana limestone*, which in this brochure is *italicized*.

Early builders used local stone, such as limestone from quarries on the west side of the city, and sandstone from Fairfield and Licking Counties. One of the most used buildings stones of the late 1800's and early 1900's in Ohio and around the world is the Berea Sandstone, named for the city of Berea, southwest of Cleveland. This sandstone (also called the Berea Grit) was quarried in Berea and other areas in Ohio. The largest quarries are in the South Amherst area in Lorain County. One of these quarries is said to be the deepest sandstone quarry in the world. This quarry first opened in 1869 and is 240 feet deep, 600 feet wide, and 1,800 feet long.

Most of the information in this brochure came from *Guide to the building stones of downtown Columbus: a walking tour*, by Ruth W. Melvin and Garry D. McKenzie (1992). See the Further Reading section of this brochure.

OHIO STATEHOUSE

The Ohio Statehouse occupies the Capitol Square block in the center of downtown Columbus. The original capitol on the site was brick and was occupied in 1816. The cornerstone of the current capitol was laid in 1839 but the building was not completed until 1861. Restoration of the Ohio Statehouse was completed in 1996.

The Statehouse is constructed of large blocks of Columbus Limestone procured from state quarries west of the Scioto River. The Columbus Limestone is of Devonian age, about 380 million years old, and was deposited in a warm, tropical, relatively calm sea. Abundant fossils evident in the columns and the outside steps include corals,

brachiopods, cephalopods, and gastropods.

The interior floors are black, white, and pink stone. The black stone is *Champlain Black marble*, from the Crown Point Limestone, quarried in Vermont. This rock is of Ordovician age, about 470 million years old. A prominent fossil in the Crown Point Limestone is the snail *Maclurites*. The white stone is *Italian marble*, and the pink stone is a marble from Portugal. The floor of the rotunda consists of nearly 5,000 pieces of hand-cut marble from around the world. The star pattern includes green *Verde Antique* marble from Vermont and a purple breccia marble. The plaster walls have pilasters of Columbus Limestone.

Stairs in the north and south halls are Columbus Limestone. The turned balustrades are alternating dark *Tennessee marble* from the Holston Formation quarried near Knoxville, Tennessee, and white *Italian marble*.

On the ground floor is a county map of Ohio that uses six types of stone, none native to Ohio. The six types and a county example are *Clear Carthage* (Franklin County), a gray fossiliferous limestone (Carthage Limestone) from Carthage, Missouri; *Dark Cedar* (Union County), a reddish limestone variety from the Holston Formation; *Pink Tennessee* (Licking County), another variety of the Holston Formation, that contains stylolites (natural, dark-colored, irregular seams); *Verde Oriental* (Delaware County), a green marble from Taiwan more commonly known as *Verde Antique*. *Breccia Oniciata* (Fairfield County) from Lombardia, Italy, a light-brown travertine (a limestone deposited by fresh-water springs) that show broken rotated blocks that have multicolored banding; *Light Emperador* (Pickaway County), a dark-brown marble quarried in Spain that contains numerous blebs of white calcite.

In the southwest quadrant of Capitol Square is the Christopher Columbus Fountain. The base of the fountain is *Carnelian granite* (Milbank Granite; see description of Rhodes Tower). Most of the exterior of the fountain is rose-colored *Sunset Red* or *Texas Pearl granite*, from the Town Mountain Granite of Precambrian age, quarried in Burnet County, Texas. The inner portion over which the water flows is *Academy Black granite* from Raymond, California; it is of early Cretaceous age, about 140 million years old. Twenty small blocks of black slate from the Liguria, Italy, region are set into the black granite. Liguria is the home state of Christopher Columbus and one of Ohio's sister states. The walkways on Capitol Square are Town

Mountain Granite, bordered by Milbank Granite. The curbs at the edge of the road are *Rockville White granite*, of Precambrian age, quarried in Rockville, Minnesota.

OHIO THEATRE



This ornate movie palace opened in March 1928. The theatre was saved from demolition in 1969 and restored in the 1970's. The exterior is primarily brick, in places covered by a terra-cotta (kiln-fired clay) or stone façade. *Indiana limestone* is on either side of the north entrance below the terra-cotta and above a granite. *Indiana limestone* is the Salem Limestone, quarried in southern Indiana. This fossiliferous rock was deposited in warm shallow seas in Mississippian time, about 340 million years ago. Beneath the store window on either side of the north entrance is a breccia marble, probably *Red Levanto marble* from Italy. The walls of the entry, both inside and outside the main doors, are covered in white *Vermont marble*. Just above the door is a green marble. The ticket booth is *Verde Antique*. The exterior of the east entrance has large columns that look like limestone from a distance. However, they are concrete, poured as one unit on site by injection from the base into a mold that contains reinforcing iron.

The interior of the Ohio Theatre is mainly plaster and stucco. Most of the interior floors that are not carpeted are terrazzo (stone chips set in a cement matrix). The salmon-colored marble used beside the sinks and for the partitions of the washrooms in the addition on the east side is *Etowah marble*. This rock is the Murphy Marble, quarried in the Tate, Georgia, area, and is of Cambrian age, about 550 million years old.

THE OLD U.S. POST OFFICE AND COURTHOUSE



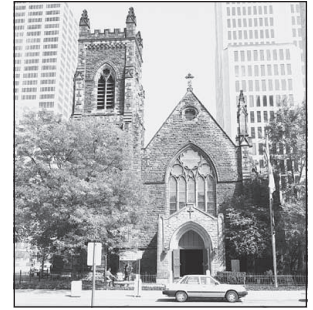
This building was completed in 1887 and enlarged in 1912. Restoration of the building was completed in 1988 in a joint venture of the City of Columbus and the law firm of Bricker and Eckler LLP, which currently occupies the building. The exterior is golden-tan rock-faced (rough-finished) Berea Sandstone, of Mississippian age, about 350 million years old. This rock is composed mostly of pure quartz grains, which are interpreted as river or beach deposits and sand dunes. The stone in this building may have come from the quarries at South Amherst in Lorain County. During the restoration in the 1980's, the exterior was chemically washed by hand, rather than sand blasted, to protect the delicate structure. The matching four-story addition was erected to house modern wiring and plumbing systems.

White, green, and red marbles are used in the interior of the building. During the restoration, marble masons and master carpenters skillfully plugged old doorways.

TRINITY EPISCOPAL CHURCH

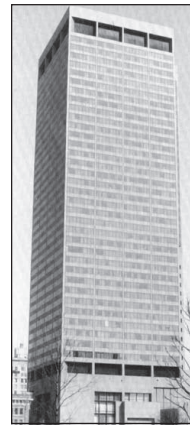
This building was completed in 1869, eight years after the State Capitol, and reflects the early trend to use local or close-at-hand materials for construction. The founda-

tion is Columbus Limestone. The main part of the exterior is the Black Hand Sandstone Member of the Cuyahoga Formation, quarried near Sugar Grove in Fairfield County, Ohio. The Black Hand is a deltaic deposit of Mississippian age, about 345 million years old; it occurs in lobes throughout southeastern and eastern Ohio. The rock's hydrous iron oxide cement makes it very durable. This stone was extensively quarried for the construction of bridges and canal locks in the early 1800's.



The rock facing is set as ashlar, rectangular pieces of stone that are set randomly in a wall and finished using very thin mortar joints. The exterior was cleaned and waterproofed in 1992. The altar inside the church is of white *Italian marble*, patterned after a fifth-century altar preserved in Ravenna, Italy.

JAMES A. RHODES STATE OFFICE TOWER

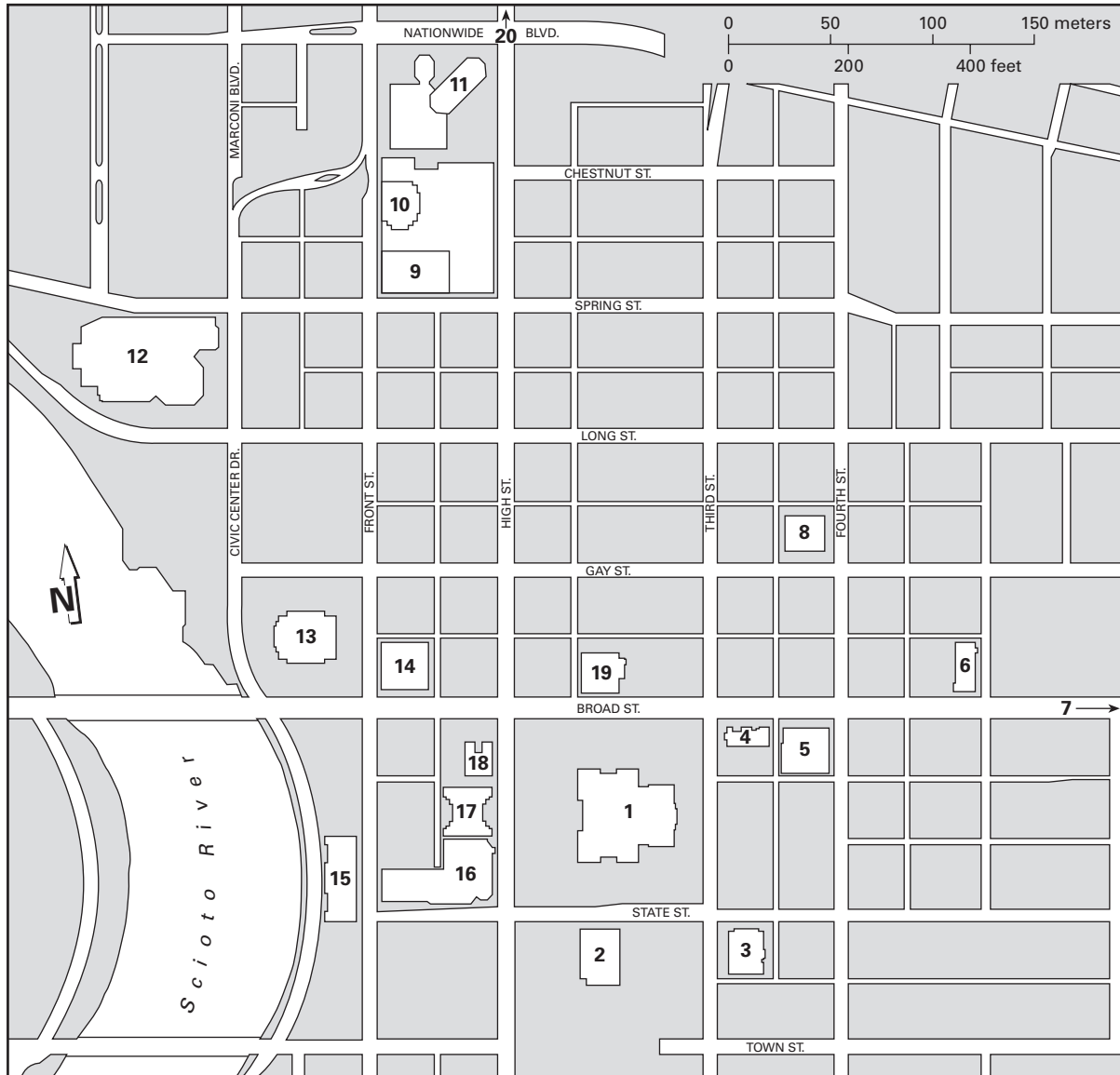


This building is 629 feet high, has 41 floors, and was completed in 1975. It is connected to the Statehouse by an underground tunnel. The outside of the structure, the sidewalk area, and the lower part of the interior are *Carnelian granite*, the trade name for the Milbank Granite, which is thought to be more than 2 billion years old. The stone was quarried in Milbank, South Dakota, and is also known by the trade name *Sequoia granite*. The Milbank Granite is composed of microcline (pink feldspar), white plagioclase feldspar, quartz, biotite, and hornblende. Individual mineral grains are easily distinguished.

FURTHER READING

Except for Bownocker's Bulletin 18, which is out of print, the books below are available from the Ohio Department of Natural Resources, Division of Geological Survey, 4383 Fountain Square Drive, Columbus, OH 43224-1362, telephone 614-265-6576. They also may be consulted in many libraries across Ohio.

- Bownocker, J. A., 1915, Building stones of Ohio: Ohio Division of Geological Survey Bulletin 18, 160 p.
- Hannibal, J. T., 1998, Geology along the towpath: stones of the Ohio & Erie and Miami & Erie Canals: Ohio Division of Geological Survey Guidebook 14, 60 p.
- Hannibal, J. T., and Davis, R. A., 1992, Guide to the building stones of downtown Cincinnati: a walking tour: Ohio Division of Geological Survey Guidebook 7, 44 p.
- Hannibal, J. T., and Schmidt, M. T., 1992, Guide to the building stones of downtown Cleveland: a walking tour: Ohio Division of Geological Survey Guidebook 5, 33 p.
- Melvin, R. W., and McKenzie G. D., 1992, Guide to the building stones of downtown Columbus: a walking tour: Ohio Division of Geological Survey Guidebook 6, 33 p.
- Sandy, M. R., 1992, Geologic glimpses from around the world—the geology of monuments in Woodland Cemetery and Arboretum, Dayton, Ohio: a self-guided tour: Ohio Division of Geological Survey Guidebook 8, 29 p.



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| *1) Ohio Statehouse and Senate Building | 11) One Nationwide Plaza |
| *2) Ohio Theatre | 12) American Electric Power Building |
| *3) Old U.S. Post Office and Courthouse | 13) Columbus City Hall |
| *4) Trinity Episcopal Church | 14) LeVeque Tower |
| 5) BancOhio National Plaza | 15) Departments of State Buildings |
| 6) Saint Joseph Cathedral | 16) The Vern Riffe Center for Government and the Arts |
| 7) Broad Street United Methodist Church | 17) Huntington Center |
| 8) Ohio Bell (Ameritech) Building | 18) Huntington National Bank |
| 9) William Green Building | *19) James A. Rhodes State Office Tower |
| 10) Three Nationwide Plaza and the Atrium | 20) Orton Hall |

MAP OF DOWNTOWN COLUMBUS SHOWING STOPS DESCRIBED IN OHIO DIVISION OF GEOLOGICAL SURVEY GUIDEBOOK 6

***LOCATIONS DESCRIBED IN THIS BROCHURE**

Illustration on front cover: Capitol Square as viewed from the west. Photo by Philip J. Celnar.