

BUILDING STONES IN THE VICINITY OF FOUNTAIN SQUARE, CINCINNATI, OHIO

A walking tour in celebration of Earth Science Week 2000

Tour Leader: R. A. Davis

Sponsors:

American Institute of Professional Geologists
Ohio Department of Natural Resources, Division of Geological Survey
The College of Mount St. Joseph



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AIPG Coordinators: Robin E. Roth, Ohio Petroleum Underground Storage Tank Release Compensation Board, and Mark Mersmann, Hull & Associates, Inc.

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

INTRODUCTION

Many types of stone from quarries in Ohio and from other areas of North America and the world have been used for buildings and other structures in downtown Cincinnati. Examples of all three major rock types—igneous, metamorphic, and sedimentary—can be seen in downtown Cincinnati. The specific stones were selected by architects and others because of a number of factors, including durability, color, availability, and cost. 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*.

The building stones first used in Cincinnati were locally quarried or were stones that could be transported easily to Cincinnati by river or canal. *Cincinnati limestone*, also called *blue limestone*, was quarried from hillside outcrops of the Fairview Formation. *Buena Vista sandstone* or *freestone* was quarried from sandy layers of the Cuyahoga Formation in Adams and Scioto Counties and sent to Cincinnati via the Ohio River. *Dayton limestone* was shipped to Cincinnati from Montgomery County on the Miami and Erie Canal.

Most of the information in this brochure came from *Guide to the building stones of downtown Cincinnati: a walking tour*, by Joseph T. Hannibal and Richard Arnold Davis (1992). See the Further Reading section of this brochure.

FOUNTAIN SQUARE

Fountain Square is Cincinnati's most famous landmark. Its centerpiece, the Tyler Davidson Fountain, was dedicated in October 1871. The metallic portion was cast in Munich, Germany; the bronze came from Danish cannon. The rim of the basin and the base of the fountain are *Bavarian porphyry*, a dark-brownish-blue igneous rock that has large crystals (phenocrysts) in a finer matrix. The stone was quarried and polished in Bavaria, Germany. Large paving stones directly surrounding the fountain are probably *Cold Spring Black granite*, a Precambrian stone quarried at Alma, Québec.

Several other types of stone are used in the fountain area. The benches around the fountain are polished slabs of *Opalescent granite*, a dark-colored granite quarried in Minnesota. Most of the paving stones in the plaza area are also *Opalescent granite*, but these have a roughened surface known as a thermal finish. The stage at Fountain

Square is *Carnelian granite*, a variety of Milbank Granite from South Dakota. *Rockville granite* is used for stairs, railings, and trim around Fountain Square. This stone is a quartz monzonite quarried in Rockville, Minnesota. Much of this stone is unpolished, but that used for the large, round railing is polished, making it easier to see the crystals in the rock.

WESTIN HOTEL



The 17-story Westin Hotel was completed in 1981. Town Mountain Granite is used for the exterior facing and for parts of the interior. This light-red granite is Precambrian in age, approximately 1.1 billion years old, and was quarried in Burnet County, Texas. Its trade name is *Sunset Red granite*. This stone is composed of pink microcline, white plagioclase feldspar, clear quartz, and the dark minerals biotite and hornblende. The exterior stone is unpolished and has a wire-sawn finish, that is, it is used just as it came out of the mill after being cut into slabs with a wire saw. Most of the granite in the interior also is unpolished, but some is polished to create a contrasting effect.

CAREW TOWER/OMNI NETHERLAND PLAZA HOTEL



The 48-story Carew Tower, at 574 feet, is the tallest building in Cincinnati. It was completed in 1930 and includes the Omni Netherland Plaza Hotel. This Art Deco building was one of the first buildings designed for mixed use—hotel, offices, shops, parking garage, etc. The lower portion of the building is faced primarily with black “granites” and Salem Limestone. The Salem Limestone is known by several trade names: *Indiana limestone*, *Bedford stone*, or *Indiana Oolitic limestone*. It is of

Mississippian age, about 340 million years old, and is quarried in south-central Indiana. This limestone consists of fossils of small, whole marine organisms and broken pieces of larger marine fossils. The Salem Limestone was deposited in fairly shallow sea water. The black "granites" (none of these rocks are true granites) are interspersed among the windows and doors on the ground floor. One black stone that has large crystals may be *Rosetta Black granite*, which is quarried at Mellen, Wisconsin. A black stone with smaller crystals may be *Andes Black granite*, quarried in South America. *Péribonka granite*, quarried in the Lac St.-Jean area of Québec, also is used.

TOWER PLACE



Two interesting stones, including one from Ohio, are used for portions of Tower Place. Red *Briar Hill sandstone* is used around the entranceways, and beige Oneota Dolostone is used for other facing. The *Briar Hill sandstone* was quarried in Coshocton County, Ohio, from

the Massillon sandstone, part of the Pottsville Group of Pennsylvanian age, and is about 325 million years old. The Massillon sandstone has been quarried from several locations in Knox, Holmes, and Coshocton Counties since 1857. This geologic unit was deposited in very shallow water, probably in a fluvial environment. Plant fossils and mud cracks have been found in the Massillon.

The Oneota Dolostone is marketed under the trade names *Mankato-Kasota stone* and *Minnesota stone* and is quarried in southeastern Minnesota. This rock is Early Ordovician in age (about 480 million years old). Burrows made by marine invertebrates can be seen in some slabs. The burrows have diameters of 1 to 3 cm and are circular in cross section and elongate in top and bottom views. The shape of the burrow depends on whether the stone slabs were cut horizontal or perpendicular to natural bedding. The burrows in this stone are accentuated by weathering.

CENTRAL TRUST BANK TOWER



This 38-story building was completed in 1913 and, when dedicated, was the fifth largest building in the world and the tallest outside of New York City. The facing on the lower part of the building is a finely crystalline white marble from Vermont. The upper floors are faced with white terra-cotta, a kiln-fired clay. The facing on the base of the building is a gray igneous rock. The steps leading down under the east side of the building (on Vine Street) are made of Morton Gneiss. This

pink-and-black banded rock contains both igneous and metamorphic minerals and is termed a granite-gneiss migmatite. Its geologic history is complex, but it is essentially a granite that has been metamorphosed. It is quarried in Morton in southwestern Minnesota and is marketed under several trade names, especially *Rainbow granite* and *Minnesota Rainbow*. The pink mineral is feldspar, and most

of the black material is biotite. This stone is a popular stone for cemetery headstones and monuments.

A wonderful variety of stones is used in the interior of this building. At the two main entrances is *Roman travertine* quarried in Tivoli, Italy. See the guidebook by Hannibal and Davis for more information on the interior stone.

INGALLS BUILDING



This 15-story building was completed in 1903 and was the first reinforced-concrete skyscraper in the world. The exterior of the first three stories is *Vermont marble*, a fine-grained white marble that has grayish-green streaks. This stone was probably quarried in Vermont from the Shelburne Formation of Early Ordovician age (about 480 million years ago). The Fourth Street entranceway has travertine walls and a ceiling of a cream-colored marble that has golden to black veining. (Travertine is a fresh-water limestone

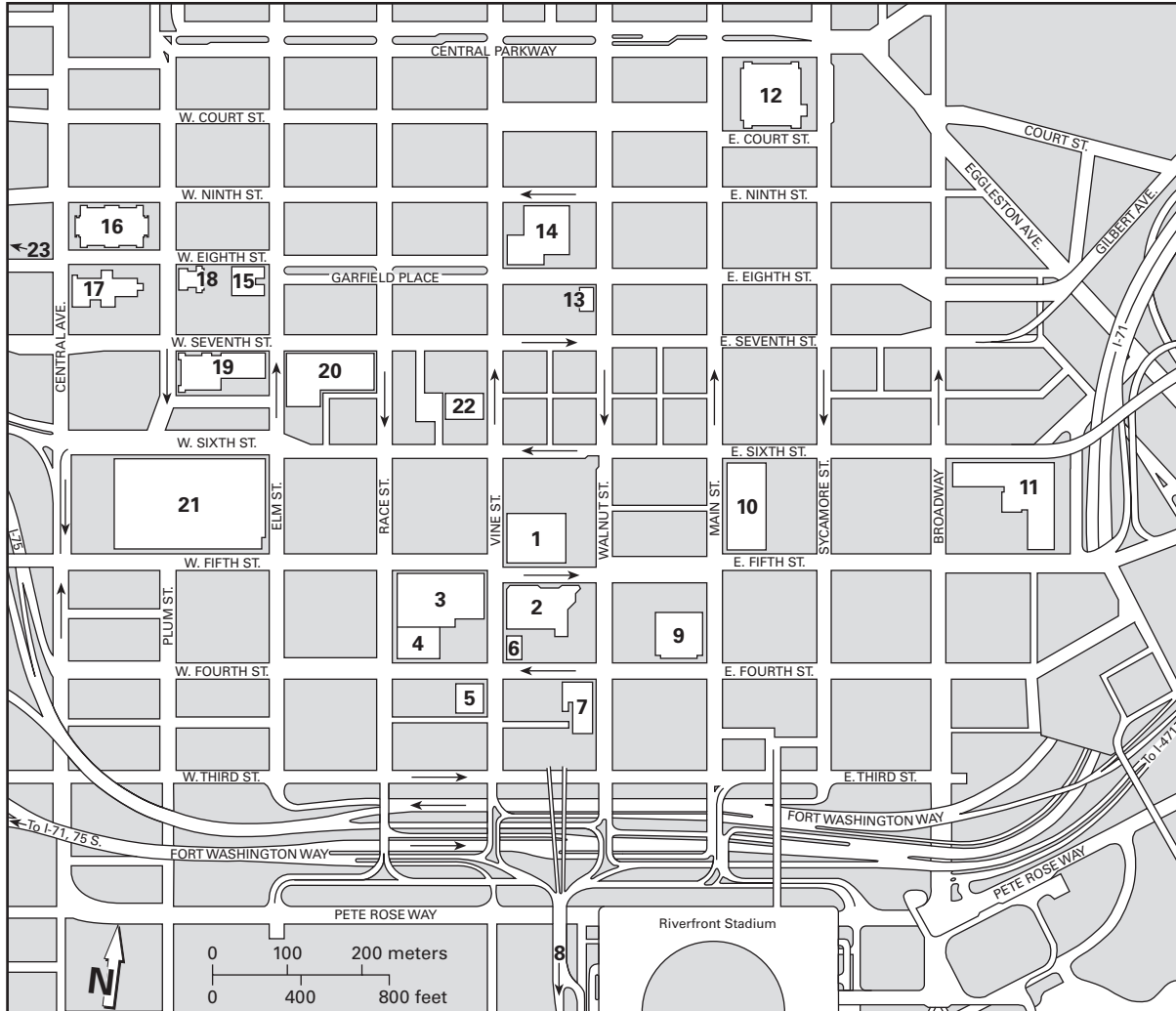
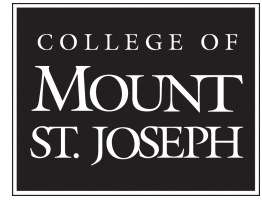
deposited by springs and in caves.)

The use of concrete for such a large building was strikingly revolutionary for the time. Some expected the building would collapse upon completion. Although concrete buildings do not require stone or other types of facing, concrete facing is not as aesthetically pleasing as stone. For example, the concrete of the original 1967 section of the Cincinnati Convention Center, two blocks west of Fountain Square, was so unpopular it sparked protests. When the Convention Center was remodeled in the 1980's, stone cladding was added.

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.
- Haneberg, W. C., Riestenberg, M. M., Pohana, R. A., and Diekmeyer, S. C., 1992, Cincinnati's geologic environment: a trip for secondary-school teachers: Ohio Division of Geological Survey Guidebook 9, 23 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) Fountain Square | 13) St. Louis Church |
| *2) Westin Hotel | 14) Public Library of Cincinnati and Hamilton County |
| *3) Carew Tower | 15) Covenant-First Presbyterian Church |
| *4) Tower Place | 16) City Hall |
| *5) Central Trust Bank Tower | 17) St. Peter in Chains Cathedral |
| *6) Ingalls Building | 18) Plum Street Temple |
| 7) Dixie Terminal Building | 19) Cincinnati and Suburban Bell Telephone Building |
| 8) Roebling Suspension Bridge (off map) | 20) John Shillito Company Building |
| 9) Federal Reserve Bank | 21) Convention Center |
| 10) Federal Building | 22) Cincinnati Enquirer Building |
| 11) Procter and Gamble Company Headquarters | 23) Union Terminal (off map) |
| 12) Hamilton County Courthouse | |

MAP OF DOWNTOWN CINCINNATI SHOWING STOPS DESCRIBED IN OHIO DIVISION OF GEOLOGICAL SURVEY GUIDEBOOK 7

***LOCATIONS DESCRIBED IN THIS BROCHURE**

Illustration on front cover: Tyler Davidson Fountain in Fountain Square.
Photo credits: Carew Tower, circa 1940's, by Paul Briol; all other photos, 1992, by Joseph T. Hannibal.