THE GEOLOGY OF SIGNBOARD HILL AND THE CONSTRUCTION OF THE CROWN CENTER COMPLEX, KANSAS CITY, MISSOURI

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Prepared for the Geological Society of America combined South-Central, North-Central and Rocky Mountain Section Meeting, Manhattan, Kansas, March 25-27, 2019.

The major purpose of this poster is to re-examine the geologic history of Signboard Hill and to place this re-examination in its context as the excavation of the Crown Center Complex in 1971-72. For over 50 years the Main Street reference section was visited by numerous field trip participants to gain a better understanding of the Pennsylvania stratigraphy of the Central United States.

THE CROWN CENTER COMPLEX

Crown Center consists of four large office complexes, two major hotels, a large retail center, an international marketplace, and a variety of restaurants, hospital gardens apartments and condominiums. The hotel with the tallest part of the building is the 750 room Westin Crown Center Hotel.

CONSTRUCTION OF THE CROWN CENTER COMPLEX

The Main Street cut became inaccessible shortly after completion of the Crown Center complex and is covered by vegetation and slope stability structures. (photo taken from Liberty Memorial, 1971-72).

CONSTRUCTION OF THE WESTIN CROWN CENTER HOTEL AT MAIN STREET AND PERSHING ROAD

Limestone is capable of supporting large buildings. Its contact shale is much workable for sawing which is important when faced with the large amounts of weight. Plans to support the beam pass through the shale and form the base of the crown center foundation. The beam is cut loose by the shelf by pan drill horizontally 12 in (30 cm) into bed of limestone. (photo taken April, 1972).

WATERFALL AND GARDEN, WESTIN CROWN CENTER HOTEL LOBBY

The rock section that underlies the garden and waterfall is the Westin Crown Center Hotel lobby as it appeared during construction of the hotel, April 1972. The Compton City limestone forms the lobby and is seen from the Chouteau-Shale that is partly covered by the ladders.

GEOLOGY OF THE WATERFALL AND GARDEN

A cross section of the Westin Crown Center Hotel at the north base of Signboard Hill. C. Cut away view shows the interior garden along from the Compton City limestone to the Raytown Limestone to the Argentine Limestone. (photo courtesy and permission from Kansas City Star Books, 2000).

COLLECTING FOSSIL SPECIMENS FROM THE ROCK STRATA EXPOSED IN THE EXCAVATION FOR THE CROWN CENTER COMPLEX

A paleontological study of Signboard Hill was initiated and funded by the late Joyce C. Hall; founder of Hallmark Cards, Inc. Ms. Hall envisioned the Crown Center complex as a museum of the geological period. The main street section was visited by numerous field trip participants to gain a better understanding of the Pennsylvania stratigraphy of the Crown Center.

A skyline view from the Liberty Memorial Hill shows the section of Pennsylvanian strata exposed in the excavation for Main Street. Photo is undated but it was probably taken circa 1950. The Main Street cut is well exposed in the photograph and accessible to geologists. (photo courtesy Kansas City Star Books, 2000).

THE MAIN STREET CUT

A major attraction in the Crown Center complex is the waterfall and garden, as they are carved from the hill’s alternating limestone and shale beds. The waterfall, located at the north base of Signboard Hill, is a common fossil found in the Raytown Limestone. The waterfall and garden are carved from the hill's alternating limestone and shale beds.

THE MAIN STREET CUT AND THE CREATION OF SIGNBOARD HILL, 1913

The excavation for Main Street divided a northwest slanted hill into two hills, Signboard and Memorial. The Memorial Hill, the 85 ft hill, is the hill to the right and was designated in 1913 as the location for the U.S. Army base. An unsightly assemblage of signs greeted passengers disembarking from trains at Union Station, and the leaves of ancient trees were visible out in relief on a weathered surface and resemble potato chips, hence the informal name potato chip hill.

SELECTION REFERENCE


Gentile, Richard J., 2015, Rocks and fossils of the Central United States, with special emphasis on the Greater Kansas City area; University of Kansas, Department of Geology and Paleontological Institute, Lawrence, Special Publication #8, 271 p.

Hall, Joyce E., with Carl Anderson, 1976, Archaeological: When You Can’t Use It: Hallmark Cards, Inc., Kansas City, Missouri, 269 p.


