

# Surgery Expansion Phase 1

## Children's National Medical Center

111 Michigan Avenue, NW • Washington, DC 20010

Andrea Klein • Construction Management • Advised By Dr. Messner

### Building History

*A Glance at CNMC*

The original building was built in the 1970s, with the addition of the west wing in the 1990s, and the east wing and decontamination building in the last two years.

Owner/Occupant	<b>Children's Hospital</b>
Square Footage	<b>902,972 gsf</b>
Floors	<b>6 occupied</b> <b>5 interstitial</b> <b>4 below grade parking</b>

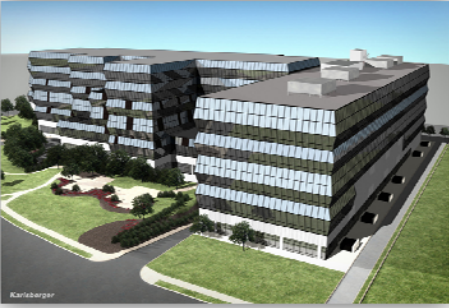
### Site Location

Children's National Medical Center is located in the Northwest corner of the District of Columbia. It is on the same campus as the Washington Hospital Center. **Figure A.1** below shows the local vicinity of the building.

Figure A.1: Vicinity Map



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### Building Systems Summary

#### Structure

Original Building – The structure of the original building is structural steel with composite one-way concrete slabs. The bays are 60' x 30' typical with the 60' dimension spanning east to west. Typical finish floor to finish ceiling height is 10'-0" with 3'-6" of plenum space to the bottom of the interstitial decking. Interstitial floor to ceiling height is 7'-7". The typical slab thickness is 6.25" concrete on metal deck for the occupied floors. The interstitial floors have a 7 ½"-7.5 DC 16/16 cellular metal roof deck with no concrete or finished flooring.

West Wing – The west wing is of identical construction to the original building with exception to a few bays of size 30' x 30' in the most northwest corner of the building.

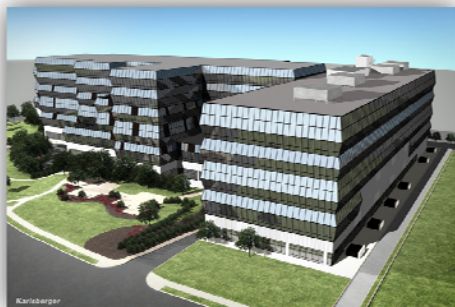
East Wing – The newest addition of the east wing is composed of 30' x 30' typical bays. The columns are all of W14 type. The smallest interior beam is a W14x22 and the smallest structural member is a W8x10 beam supporting a 6'-0" cantilever. A north-south moment frame structure is created by moment connections in the structural steel. The slabs are 3 ¼" lightweight concrete of 3000 psi strength on 3" (20 Ga) metal deck.

#### Mechanical System

The original mechanical system in the building is complex due to the major changes it has gone through since its conception. It was designed to use interstitial floor levels to house all the components of the HVAC system and allow for more flexibility in changing the layout of each floor. This arrangement has remained primarily intact with the exception of a research lab housed on level 3.5.

#### Electrical System

The primary feed into the building is 480Y/277 V 3Ø. Main electrical feeds for the hospital are located on the fifth floor. Power is dispersed throughout the building with the use of 2500 KVA network transformers and 4000A network substations housing 3P-800A circuit breakers. The largest emergency generator is 1360 KW, and is supported with multiple 900 KW backup emergency generators.



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### **Curtain Wall**

An especially unique feature of the hospital is its accordion style glass curtain wall. Using glass as a façade is atypical in the DC area, and the shape provides a distinct look. All the glass units are fully tempered insulating glass units approximately 2 1/4" thick. Spandrel units are located at the interstitial levels to hide the unfinished spaces, and all the units are tinted.