

The Hauptman-Woodward Medical Research Institute

Section 1: Project Background



HWI and the Buffalo-Niagara Medical Research Campus

1.01: Program History and Growth

The Hauptman-Woodward Medical Research Institute was founded in the 1950's as the Medical Foundation of Buffalo (MFB). In the 1960's, research began to focus intensely on the science of crystallography. The development of improved drugs requires knowledge of 3-D structures of the biological substances found in disease processes. During that time period, the goal of the MFB was to establish itself as a world-class crystallographic laboratory in Buffalo.

At the forefront of the crystallography field, Dr. Herbert Hauptman has since become the principal investigator and continues to today to build upon the foundation of the MFB. In the 1980's Hauptman received the Nobel Prize for his research in the field of chemistry and the foundation changed its name to the Hauptman-Woodward Institute (HWI) in 1994.

Over the past decade, HWI has become a founding partner of the Buffalo-Niagara Medical Research Campus and has created the Department of Structural Biology at the University of Buffalo. As the University and Roswell Park Cancer Institute began to



construct new facilities, HWI decided to relocate to best serve the collaborative culture of the research campus.

In April 2005, the brand-new 73,000 square foot, 3-story building opened its doors to provide a full service biomedical research lab and supporting office and classroom space to the Buffalo-Niagara Medical Campus in Buffalo, New York. Not only does it serve as a center for research and development, the large atrium and classroom spaces make the Hauptman-Woodward Institute a prime gathering place for seminars and gatherings on the Medical Campus.

The main design objective at the Hauptman-Woodward Medical Research Institute is to provide a safe, accommodating atmosphere for improving human health through molecular studies of the causes and potential cures of many diseases. In contrast to clinical research, the focus of Hauptman-Woodward's basic research is to determine the structures of individual substances such as proteins that play a role in the development of specific diseases. In order to achieve this task, the Institute required a biomolecular research lab that would minimize outside contamination, in addition to office, library and classroom space that would support the program faculty, staff and students who frequent the facility on a daily basis. In addition to these strict requirements, the not-for-profit organization wanted to make an architectural design statement in the heart of downtown Buffalo, while at the same time reducing total building cost so that the focus of their efforts could be on research. One of the typical laboratory spaces within the finished building is shown in Figure II, below. As you can see, the laboratory overlooks the glass atrium, giving visitors a prime view of what's happening at the Institute.



Figure II: Typical Laboratory Space at HWI



1.02: Architecture

As stated in the previous section, the architecture of the new 73,000 square foot building for the Hauptman-Woodward Medical Research Institute expresses one overriding idea: *openness*. Jane Griffin, Principal research scientist at the institute, explained it best. “We were very interested in having a very open building so people in the surrounding community could see what was going on inside, and a building where no one could hide inside.”

To achieve this feeling of “openness”, the Institute sought out the expertise of architect Mehrdad Yazdani of Cannon Design. Yazdani’s vision consisted of a three-part complex, comprised of a block laboratory wing lined with transparent channel glass, an aluminum-clad curved office wing and a three-story glass atrium that connects them (Figure III). According to Yazdani, the glass allows transparency throughout all the spaces. In addition, visibility is maintained between the offices and labs through channel and vision glass. “A visitor could get glimpses of scientists working in the labs right upon entering the atrium,” he noted in a July 2006 article to Glass Magazine.



Figure III: Atrium at the Hauptman-Woodward Medical Research Institute, as viewed from main entrance

From the atrium, one can branch into the many different areas of the complex. On the first floor, executive offices and the Board Room are found to the south. To the north is the main lecture/assembly hall, followed by several specialized laboratories, storage rooms and shipping and receiving for the facility.



Housed in the second floor atrium are the employee's lunchroom and kitchen, plus a large central area furnished with chairs and other seating for informal meetings. To the south are offices for scientists and study tables for students. To the north is the Crystal Growth Lab, a number of individual labs and central shared equipment and research support rooms.

The third floor atrium houses research library at HWI. To the north are additional cold rooms, laboratories, and shared research and support facilities. To the south are more offices for research scientists and technicians as well as additional areas for student research.

1.03 Building Envelope

In addition to providing transparency, interior and exterior glazing throughout the research center provides ample natural lighting. "Their previous building was three stories of all brick with tiny windows," Yazdani says. "If you drove by, you would not know there were Nobel Laureates working inside. Now, the channel glass, interrupted with portions of vision glass, allows diffused natural lighting to enhance the quality of the lab space...I've been told they don't turn the lights on at all in some of the labs." [1]

The Institute features numerous wall systems, the most prominent being a translucent Pilkington Profilit channel glass system application on the laboratory façade (Figure IV). The atrium glass is held by a combination of vertical structural support members and horizontal mullions. Clayton B. Obersheimer Inc. located in Buffalo served as the glazing contractor and was responsible for the installation of all channel and vision glass. The office wing consists of an aluminum-clad curtain wall. This panel system integrates windows of varying sizes to enhance the buildings façade.

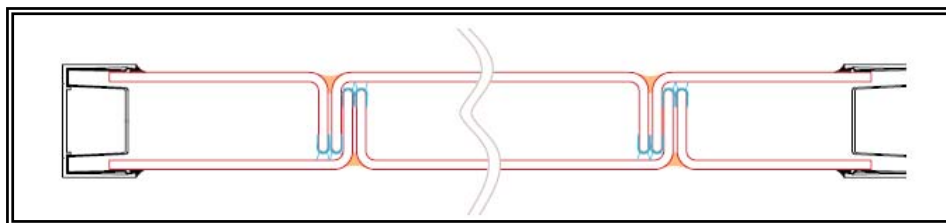


Figure IV: Pilkington Profilit Channel Glass System Horizontal Cross-Section