



Brendon J. Burley  
Structural Option  
Advisor:

Submitted: Sept. 8, 2004

## Building Statistics Part I

### General Project Information

Name: Medical Office Building

Location: Malvern, PA

The site of the Medical Office Building is 116 acres and spans two townships. One hundred eleven (111) acres reside in East Whiteland Township; the remaining five (5) acres are in Tredyffrin Township.

Function Types: The Medical Office Building is a commercial office for several departments. The functions of the spaces vary based on the needs of the department occupying them. Most departments have a mix of traditional and open planned office spaces, but certain departments have areas set aside as show rooms and conference rooms. A dividable auditorium, located in the basement, is available to all departments and is used for conferences and stock holder meetings. There is also a cafeteria and food service area on the ground floor which all departments share.

Size: 235,000 sq. ft.

Stories: (above\total) 4 \ 6

Project Team: Architect & Engineer - Ewing Cole Cherry Brott  
100 North 6<sup>th</sup> Street  
Philadelphia, PA 19106  
<http://www.ewingcole.com/>

Site Engineer - Engineering Design Consultants  
211 Willowbrook Lane  
West Chester, PA 19382

Construction Manager - Torcon, Inc.  
214 East Grove Street  
West Field, NJ 07091  
<http://www.torcon.com/>

Dates of Construction: Started - November 21, 1997

Finished - April 1999, December 1999 (Auditorium)

Cost: The total project cost was \$37 million. This included a \$7 million parking garage, \$1.7 million in furniture and a \$1.35 million architecture and engineering fee. The remaining \$26.5 million was spent on the office building, which includes \$1.2 million dollars worth of cabling costs.

Project Delivery Method: Initially the project was slated as a design build project. A construction manager (CM) was hired during the design process to run cost estimates and give advice on the design. As the design neared completion, the owner felt that the CM's estimates were too high and had bid documents issued to selected contractors. Torcon, Inc. won the bid and became both the CM and General Contractor (GC) under a guaranteed maximum

price contract (GMP). The project was finally completed as a design bid build project with a CM agent assisting in design.

## Architecture

### Architecture:

The Medical Office Building is both conservative and unique in its design. Because it is the third building of a larger complex that was started in 1979, it was desirable for the Medical Office Building to match the style of its predecessors. In fact, it was built to be connected to its neighbor. This decision limited the floor to floor heights and the exterior façade design since they had to match those of the existing building. However, the interior of the building was modifiable.

One of the new features of the Medical Office Building was the use of raised floors. The idea was to create a sturdy plenum for data and electrical cables which were causing sagging ceilings in two of the older buildings in the complex. Another new idea was the placement of the atrium along an exterior wall; the previous buildings had interior atriums. By placing the atrium on the outside, the architects were able to use tiling to tie the interior court with an exterior court, effectively blending the building into with its exterior. The large windows on the outside wall also flood the interior with daylight, which proves to be very refreshing for occupants who are typically trapped in open planned 'bullpens'.

### Major Codes:

The controlling township code was that of East Whiteland. Their established standard as of this writing is BOCA 1996 edition with local amendments. One such amendment is that floor drains are forbidden in commercial and industrial construction. This code is due to East Whiteland's position in the Chesapeake Bay watershed and concerns of accidental draining of dangerous chemicals.

### Zoning and Historical:

The site of the building is in a large, exclusively commercial, corporate complex. Prior construction on the site includes two office buildings and an information facility. The Commonwealth of Pennsylvania also classifies this site as having a "stream of exceptional value." This status meant that a National Pollutant Discharge Elimination System (EPDES or NPDES) permit had to be obtained before construction could begin.

### Building Envelope:

The building envelope of the Medical Office Building is composed of pre-cast concrete panels, a brick cavity wall, and windows. The windows are single paned and run in bands around nearly the entire building. They are separated from each other by bands of pre-cast concrete panels. The brick wraps around the bottom part of the building rising to the first floor windows, it continues to rise to the second floor in the back and to the third floor just near the atrium.