

HEALTHCARE / PHARMECEUTICAL CLIENTS

Selective Project History

Ellis Hospital, Niskayuna Campus / Dalpos Architects & Integrators in Association with Schunkewitz Architects
Additions & Alterations to Bellevue Woman's Center, Niskayuna, NY

Glens Falls Hospital / MWH (Design Phase Services) & Glens Falls Hospital / Francis Cauffman Foley Hoffmann Architects (Construction Phase Services)
Northwest Tower Addition & Renovations, Glens Falls, New York

Otsego County / MWH (Design Phase Services) & Glens Falls Hospital / Francis Cauffman Foley Hoffmann Architects (Construction Phase Services)
Otsego County Skilled Nursing Facility (Otsego Manor), Cooperstown, NY

SUNY Upstate Medical University Hospital / Francis Cauffman Foley Hoffmann Architects
Main Lobby Expansion – Demolition of existing lobby & entrance canopy & construction of replacement, Syracuse, New York

SUNY Upstate Medical University Hospital / ME Engineering
Upgrade Emergency Power, Phase 2 – Conversion of existing low roof to new penthouse floor w/ vertical expansion, Syracuse, New York

SUNY Upstate Medical University Hospital
Gamma Knife Building Addition and Alterations, Syracuse, New York

Dormitory Authority, State of New York (DASNY) / Francis Cauffman Foley Hoffmann Architects
Hutchings Psychiatric Center – Feasibility Study for the Reconfiguration and Modifications of Buildings 1, 2, 8, 15 & 17, Syracuse, New York

Dormitory Authority, State of New York (DASNY) / Francis Cauffman Foley Hoffmann Architects
Hutchings Psychiatric Center – Feasibility Study, Preliminary & Final Design for Reconfiguration and Modifications of Building 7 and repair of Building 2, Syracuse, New York

Structural Engineering Consultants

Our Philosophy...

We approach our projects with the goal of providing the client with structurally innovative solutions to their project needs within established budgetary constraints and take pride in putting forth the necessary effort to meet project delivery deadlines. IESolutions' staff utilizes extensive in-house experience and lessons learned from past projects as a basis to design structurally aggressive and state-of-the-art facilities for a variety of clients. Our investigation and structural design methods utilize state-of-the-art computer software and computational methods to be able to perform "what-if analysis" resulting in cost effective and functionally minded facilities.

First Columbia Development Corporation*Assisted Living Facility, Albany, New York***Dorothy & Martin Prager Developer***Millenium Assisted Living Community, Freehold, New Jersey***St. Luke's Memorial Hospital***Client: Mental Health Unit Addition, New Hartford, New York***Lewis County General Hospital/ Francis Cauffman Foley Hoffmann Architects***Emergency Department Addition and Renovation, including structural evaluation of existing roof & floor framing for support of proposed new medical equipment, Lowville, New York***Lewis County General Hospital/ Francis Cauffman Foley Hoffmann Architects***Diagnostic Imaging Addition and Renovation, including structural evaluation of existing roof & floor framing for support of proposed new medical equipment, Lowville, New York***Samaritan Medical Center / Utility Services Group, Inc***Elevated Chiller Room Addition, Watertown, New York***Upstate Homes for Children and Adults***Office and Facility Expansion, Oneonta, New York***Novartis (Sandoz) Pharmaceuticals Corporation / FCL Management, Inc.***Building 430 Renovation Project – Evaluation of existing roof and floor framing load carrying capacity, East Hanover, New Jersey***Novartis (Sandoz) Pharmaceuticals Corporation***Quality Assurance and Compliance Laboratory (Building 430) East Hanover, New Jersey***Novartis (Sandoz) Pharmaceuticals Corporation***Chemical R&D Laboratory Facility (Building 423), East Hanover, New Jersey***Novartis (Sandoz) Pharmaceuticals Corporation***Prep Plant Facility (Building 424), East Hanover, New Jersey***Novartis (Sandoz) Pharmaceuticals Corporation***Site Potable Water VOC/Hardness Treatment System, Additions to Buildings 710 and 718A, East Hanover, NJ***Novartis (Sandoz) Pharmaceuticals Corporation***Automated Storage/Retrieval System (AS/RS) Facility, East Hanover, New Jersey***Novartis (Sandoz) Pharmaceuticals Corporation***Building 401 East Warehouse Renovation, East Hanover, New Jersey***Novartis (Sandoz) Pharmaceuticals Corporation***Structural Quality Assurance & Constructability Review, East Hanover, New Jersey***Schering-Plough Corporation***Quality Control Laboratory, Building U-22, Union, New Jersey*

Procter & Gamble Pharmaceuticals / ME Engineering

Building 56 Steam Pipe Replacement - Pipe Bridge Addition & Modifications, Woods Corners Facility, Norwich, New York

Procter & Gamble Pharmaceuticals

Chilled Water System Upgrades – Phase 2, Pipe Bridge Foundations & Structural Steel, Building 206 to Building 46, Woods Corners Facility, Norwich, New York

Procter & Gamble Pharmaceuticals

Chilled Water System Upgrade, Woods Corners Facility, Norwich, New York

Procter & Gamble Pharmaceuticals

Solvent Storage Building Addition, Building 64 – Phase 2, Woods Corners Facility, Norwich, NY

Procter & Gamble Pharmaceuticals

Tie-off Beam Design, High Rise Warehouse Building, North Norwich Plant, North Norwich, NY

Procter & Gamble Pharmaceuticals

Foundation Pad for Temporary Oil Tank & Containment Dike, Woods Corners Facility, Norwich, New York

Procter & Gamble Pharmaceuticals

Building 42 – AC-22 Renovations, Woods Corners Facility, Norwich, New York

Merck-Medco Managed Care, L.L.C.

Boiler Replacement, Franklin Lakes, New Jersey

Merck-Medco Managed Care, L.L.C.

Cooling Tower #3 Replacement, Franklin Lakes, New Jersey

Medco Healthcare Solutions, Inc. / ME Engineering

Cooling Tower #2 Replacement, Franklin Lakes, New Jersey



The Dormitory Authority of the State of New York (DASNY) retained the services of Francis Cauffman Foley Hoffmann Architects (FCFH) and their building system consultants to prepare contract documents for the reconstruction and modifications of existing Building 7 to house the new “Children and Adolescents Unit” at the Hutchings Psychiatric Center campus located in Syracuse, NY. The scope of work for Building 7 includes major reconstruction of all three floors, complete MEP system’s replacement, elevator replacement & upgrades, and a new 3,000 square foot, single story, steel framed addition. The project also includes cosmetic upgrades of finishes and complete replacement of existing MEP systems in existing Building 2 to facilitate the temporary housing of the current occupants of Building 7 displaced during the reconstruction of Building 7.

The addition to Building 7 is programmed to house a new entrance to the facility with a larger secure area as well as offices, conference rooms, and support spaces. The addition will also provide an enclosure for a landscaped courtyard that will be utilized by visitors and for other quite activities.

The major structural modifications for existing Building 7 featured the following:

- “Overbuild” areas on the east side of the existing building which converted existing low roofs into program space. The construction and structural framing for the overbuild areas are of similar construction to that of the existing facilities (load bearing masonry walls and precast concrete plank with structural topping) in order to maintain the low floor to floor levels.
- Four (4) new “mechanical chases” constructed exterior to the existing exterior walls located in each corner of the existing building. These individual chases allowed for vertical distribution of the mechanical utilities into the various areas of the existing building while minimizing the need for new floor penetrations through the existing precast concrete floor plank.

The exterior shell of the new chases are constructed utilizing a structural steel framing system that ties back horizontally at each floor and will support the exterior finish material as required to suit the architectural features.

- Construction of 4- new single story, structural steel framed, enclosures to house new mechanical equipment located on the existing roof.

RECONFIGURATION & MODIFICATIONS TO BUILDINGS 2 & 7

DASNY Hutchings Psychiatric Center

Syracuse, New York

architect

**Francis Cauffman Foley
Hoffmann Architects,
Ltd.**

structural engineer

IESolutions

Features

- Total estimated cost: \$7.3 million
- Existing construction: 3- story existing load bearing masonry walls w/ precast concrete roof & floor plank (approx 10,000 sq-ft per floor)
- 3,000 sq-ft, single story entrance addition w/ offices and support space
- Elevator Replacement and upgrades
- Complete MEP system replacements
- 4 - new mechanical room enclosures on existing roof
- “Overbuild” areas to convert low roofs into usable program space.
- New exterior mechanical chases





TERESIAN AVILA INDEPENDENT LIVING CAMPUS

First Columbia Developmental Corporation

Albany, New York

architect

DSA HealthCare
Systems Architects

structural engineer

MWH

Features

- 60-bed ALC facility
- Wing for Alzheimer's patients
- Chapel

The new Assisted Living Facility featured two (2), 4 - story, 41,000-square-foot structures with 60-bed apartments / residence rooms, lounges, chapel, conference rooms, and a nurses' station with associated support spaces. The structural system includes concrete masonry bearing/shear walls, a large, steel-framed commons area, and several separate wood framed "cottage" apartments.

Professional Experience – Douglas R. Cahill, PE

While employed at MWH Global, Inc., Mr. Cahill was the Project Structural Engineer of Record for the new facility, directly responsible for all aspects of the structural design calculations, preparation of the contract documents, staff management, QA/QC and all construction phase submittals during construction of the facility.

Professional Experience – Carl A. Nordberg, PE

As principal of Interactive Engineering Solutions, Mr. Nordberg provided MWH Global, Inc. structural consulting engineering services for this project and was responsible for preparation of the structural design calculations and development of the structural design details of the building structural components, including the framing and foundation systems. The work included calculation of the seismic loads and design of the vertical and lateral load systems.





The Millennium Assisted Living Community located in Freehold, New Jersey, provides housing for senior citizens who need aid in daily living. This new 120-bed, community consists of five residence “neighborhood” buildings each with a gathering area / lounge and nurses’ station with associated support spaces. Two courtyards with landscaping and walking paths are formed by the spaces between the buildings. In addition, the facility provides a “commons” with dining area, conference rooms, library, a chapel, and auditorium. The facility also has a wing for the care of Alzheimer’s patients.

Professional Experience – Carl A. Nordberg, PE

As an independent consultant and later while employed by Harza Northeast, Inc., Mr. Nordberg was structural project manager responsible for the structural design and preparation of contract documents for the construction of this facility.

The structural system included reinforced concrete foundations, cold formed steel bearing walls, and concrete floor systems with composite steel bar joists. Standard steel bar joists supported the roof deck.

The lateral analysis for the two and three story residence buildings included wind and seismic loading. To resist these loads, X-braced shear walls were employed throughout the facility.

Professional Experience – Douglas R. Cahill, PE

While employed by Harza Northeast, Inc., Mr. Cahill was the engineer of record for the project providing engineering quality control as well as developing the written specifications for the project. This included ensuring drawings were prepared in accordance with HUD guidelines to enable the owner to secure HUD financing.

MILLENNIUM ASSISTED LIVING COMMUNITY

**Dorothy & Martin
Prager Developer**

Freehold, New Jersey

architect

**TSP HealthCare
Systems Architects**

structural engineer

HARZA Northeast

Features

- Estimated construction cost: \$38 million
- 120-bed ALC facility
- Wing for Alzheimer’s patients
- Five neighborhoods
- Two courtyards
- Chapel





HOSPITAL RENOVATION & NORTHWEST TOWER ADDITION: DESIGN PHASE

Glens Falls Hospital

Glens Falls, New York

architect
MWH
structural engineer
MWH

Features

- Estimated construction cost: \$38 million
- 148,000 sq-ft addition
- New Cardiac-Vascular Center
- New Inpatient Oncology Unit, with private rooms
- New Critical Care Unit, combining ICU and CCU in one location
- C.R. Wood Cancer Care Center with new Linear Accelerator (Linac)
- New consolidated Surgical Recovery Center, for both inpatient and day surgery
- Two new 41-bed units replace the outdated South and Central wings
- New registration area, lobby, and bistro

Glens Falls Hospital needed to upgrade and expand in order to meet the community's growing needs. The time had come to invest in important patient care areas that were located in buildings dating back to the early 1900's. Today's standards of healthcare require contemporary facilities with updated infrastructure and spacious patient rooms. These improvements not only ensure better care for patients and their families, but also provide a better working environment to attract and retain qualified staff in this Upstate New York community.

Professional Experience – Douglas R. Cahill, PE

While employed by MWH Global, Inc., Mr. Cahill was the structural engineer of record for the new 6-story addition.

The framing system is structural steel and utilized special moment resisting frames and special concentrically braced frames to resist lateral loads. The Federal Emergency Management Agency's "Recommended Seismic Design Criteria for New Steel Moment-Frame Buildings" (FEMA 350) was used for the seismic detailing requirements prescribed by the 2002 NYS code. The floor framing consists of concrete, metal deck and steel beams with headed studs for composite action, which reduces undesirable "foot-traffic" vibrations while providing an economical system.

Professional Experience – Carl A. Nordberg, PE

As principal of Interactive Engineering Solutions, Mr. Nordberg provided MWH Global, Inc. with assistance in designing the lateral force resisting systems. Site soil conditions, combined with recent building code changes, required that significant analysis and detailing be completed for this Seismic Use Group III hospital. The lateral force resisting system was selected as special moment resisting frames in the East-West direction while utilizing a dual system of special concentrically braced frames and special moment resisting frames in the North-South direction. This arrangement allowed the wide-flange columns to be oriented to greatest effect to create a cost-effective system for resisting the seismic loads.



HOSPITAL RENOVATION & NORTHWEST TOWER ADDITION: CONSTRUCTION PHASE

Glens Falls Hospital

Glens Falls, New York

architect

Francis Cauffman
Foley Hoffmann
Architects, Ltd.

structural engineer

IESolutions

In the fall of 2003, MWH Global Inc. decided to divest its building structures group in Utica, NY. At that time Mr. Douglas Cahill joined Mr. Carl Nordberg at Interactive Engineering Solutions, PC (IESolutions). The schedule for construction of the hospital project coincided with the closing of MWH's Utica office. IESolutions was therefore well suited to provide continuity of personnel working on the project through the construction phase of the structural work.

Time and space constraints, as well as the necessity to limit the impact on the function of the hospital greatly affected the design and construction of the addition. The existing hospital, two parking lots, and a city street bound the construction site and limited the lay down area. The steel deliver and erection was therefore carefully sequenced. The foundation work was successfully completed with cold weather procedures of the American Concrete Institute (ACI) as required during winter months.

The new tower addition connected to two different wings of the existing hospital at various floor levels. In order to match the existing floor elevations and corridor locations the new construction needed to be accurately laid out and constructed. The Owner requested an additional connector level from the existing to the new building. IESolutions provided the design and construction documents as well as the construction phase services for this additional work.

The structural steel frame included numerous joints that were required to meet the AISC Seismic and FEMA criteria for welded moment connections. The QA/QC regimen included a substantial weld NDT program. IESolutions provided oversight for the testing and made several site visits for special structural observations of the work.

Part of the renovation work required that a LINAC machine be moved from one location in the existing hospital to another. IESolutions provided structural evaluation to confirm the existing structure could support the loads from this relatively heavy equipment.

Structural aspects of the project and the final fit-out of the interior is was completed in 2005.

