

SINAI HOSPITAL

South Tower Vertical Expansion

2401 West Belvedere Avenue | Baltimore, Maryland

Project Team

- › **Owner** » Lifebridge Health
- › **Architect** » Hord Coplan Macht, Inc.
- › **MEP** » Leach Wallace Associates, Inc.
- › **Civil** » Rummel, Klepper & Kahl, LLP
- › **Structural** » Morabito Consultants
- › **Interior Design** » Arris, A Design Studio, Inc.
- › **General Contractor** » Whiting-Turner

Statistics

- › **Size** » 120,000 Square Feet
- › **Total Levels** » 3 Additional
- › **Dates Of Construction** » November 2007 – February 2009
- › **Cost Of Work** » \$28,477,681

ARCHITECTURE

The South Tower Vertical Expansion at Sinai Hospital will add three stories onto the existing three-story tower, retaining the shape of the existing footprint. In addition, a six-story link enclosing a four-story atrium lobby will connect the South Tower to the North Tower. The exterior façade will consist of a water-managed exterior insulation finishing system (EIFS) and resemble the existing façade. Glazed aluminum framing will be used on part of the vertical expansion and on a majority of the link. Exterior glass will be double pane, low-e, and heat-strengthened. Roof construction will consist of a roof membrane on rigid insulation and metal decking. In addition, the fourth floor will have a green roof garden.



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MECHANICAL OPTION



MECHANICAL

Two new custom air handling units serve the expansion. A chilled water plant in the penthouse consisting of a 2,000 ton centrifugal chiller, cooling tower, and chilled and condenser water distribution pumps is required to provide additional infrastructure. Existing heating hot water, steam, domestic water, and medical gas mains are extended to the new air handling units. Air systems for both supply and return are variable air volume and medium pressure. Infectious isolation rooms have a dedicated isolation exhaust system.

LIGHTING / ELECTRICAL

The penthouse will house a double-ended 3,000 kVA, 13.2 kV 480Y/277V substation to provide power for the three additional levels of the vertical expansion. A 2,500 kVA 13.2 kV 480Y/277V substation serves the chiller and associated cooling tower and pumps. Normal power to each floor is distributed at 480V and steps down to 208Y/120V via dry-type transformers. All lighting fixtures are 120V, primarily fluorescent.

STRUCTURAL

The South Tower vertical expansion will be supported by the existing grade beam foundation system. The frame construction is concrete, consisting of post-tensioned beams, reinforced walls, and structural slabs. The link is also supported by a grade beam foundation system. Its frame is concrete as well with tendon support.

<http://www.engr.psu.edu/ae/thesis/portfolios/2009/ail5002/>