

Holy Cross Hospital, Bed Tower Addition

'Room with a View' | Creating a secluded hospital next to a noisy highway

Location: Silver Spring, Maryland

Category: Institutional

A design response to complex challenges. The site context is defined by single family housing on three sides, and the capital beltway to the south. Years of campus expansion had filled up the site, the only developable area left was occupied by the central plant and critical vehicle access routes on the southern edge of the property. To serve the community of patients whose care and lives are dependent upon the hospital, it needed to remain operational during construction. Holy Cross Hospital's 150-bed expansion of its Silver Spring Campus embraced and utilized these challenges to drive the design solution.

Context. The 235,000 sf bed tower addition was added onto the existing hospital on the southern edge of the site abutting the capital beltway. The location takes advantages of the project's height to create a signature architectural statement visible to thousands of drivers every day while minimizing the tower's impact on the surrounding residential neighborhood by using the existing hospital massing and setbacks to mask the scale of the addition.

Technical Challenges. Delivery required careful planning and phasing to ensure hospital operations were not disrupted. A new central plant to serve both the existing hospital and new tower was designed and split between the basement and roof levels of the new tower, then tied back to the existing hospital. The segregation allowed loads to be transferred to the new plant in phases to reduce the duration of outages. This design also anticipates planned expansion of operating rooms, radiology, and other primary care areas by establishing expandable corridor systems, egress pathways, and shell space.

Functional Requirements. Connecting the new bed tower back to main entry and concourse was a unique challenge requiring episodic vertical transitions to elevate the promenade from the entry level to the second floor and over the hospital's operating rooms via a connector bridge, 40 feet of which is cantilevered from the rear of the tower, connecting the addition back to the existing hospital.

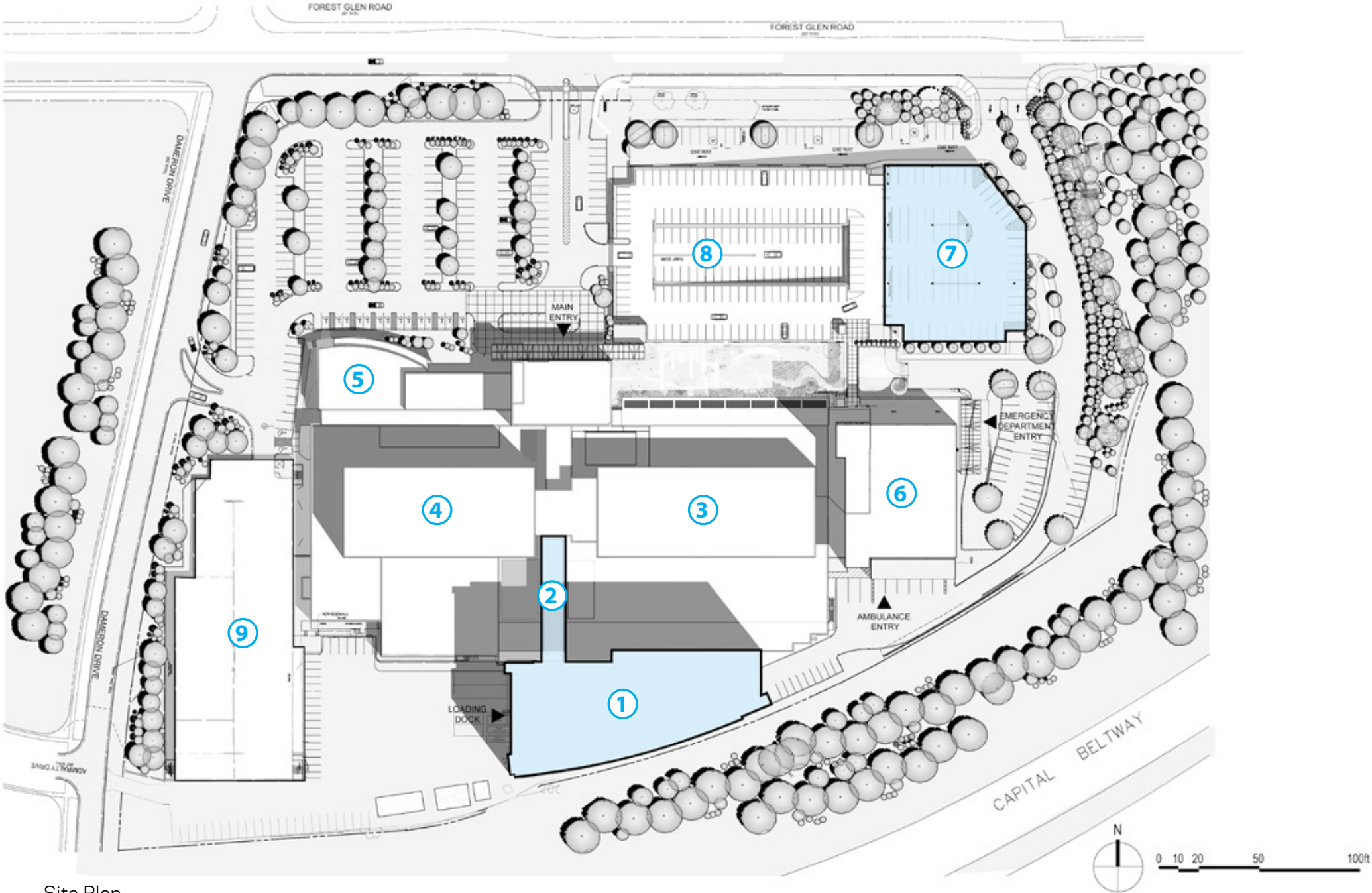
Formal Resolution. The promenade features an undulating wood ceiling unifying a series of discreet spaces distinct in character and activated with extensive daylighting, varied seating arrangements, and artwork, to guide visitors from the existing entry lobby to the new tower.

Cultural Identity. The entry facade of the existing hospital features a pattern of colored glass, an abstracted reference to stained glass found in historic churches and emblematic of the hospital's healing mission. The taut, curving facade of the new tower references the existing color glass and magnifies it to a scale legible from the beltway. The facade is punctuated by a glass enclosed stair, pushed to the corner of the building to improve internal circulation and reduce travel distances on patient floors. The stair showcases the hospital's iconic shade of blue, applied to the interior railing and amplified with LED lighting, to create a towering landmark on the edge of the beltway. The stair is an active vertical circulation route, affording staff traveling between floors fantastic views of the surrounding parks and distant skylines.

Sustainability. The bed tower project achieved LEED Gold Certification, a rare achievement given the amount of energy required to operate a hospital.

A new landmark on the edge of the capital beltway, the stair showcases the hospital's iconic shade of blue.



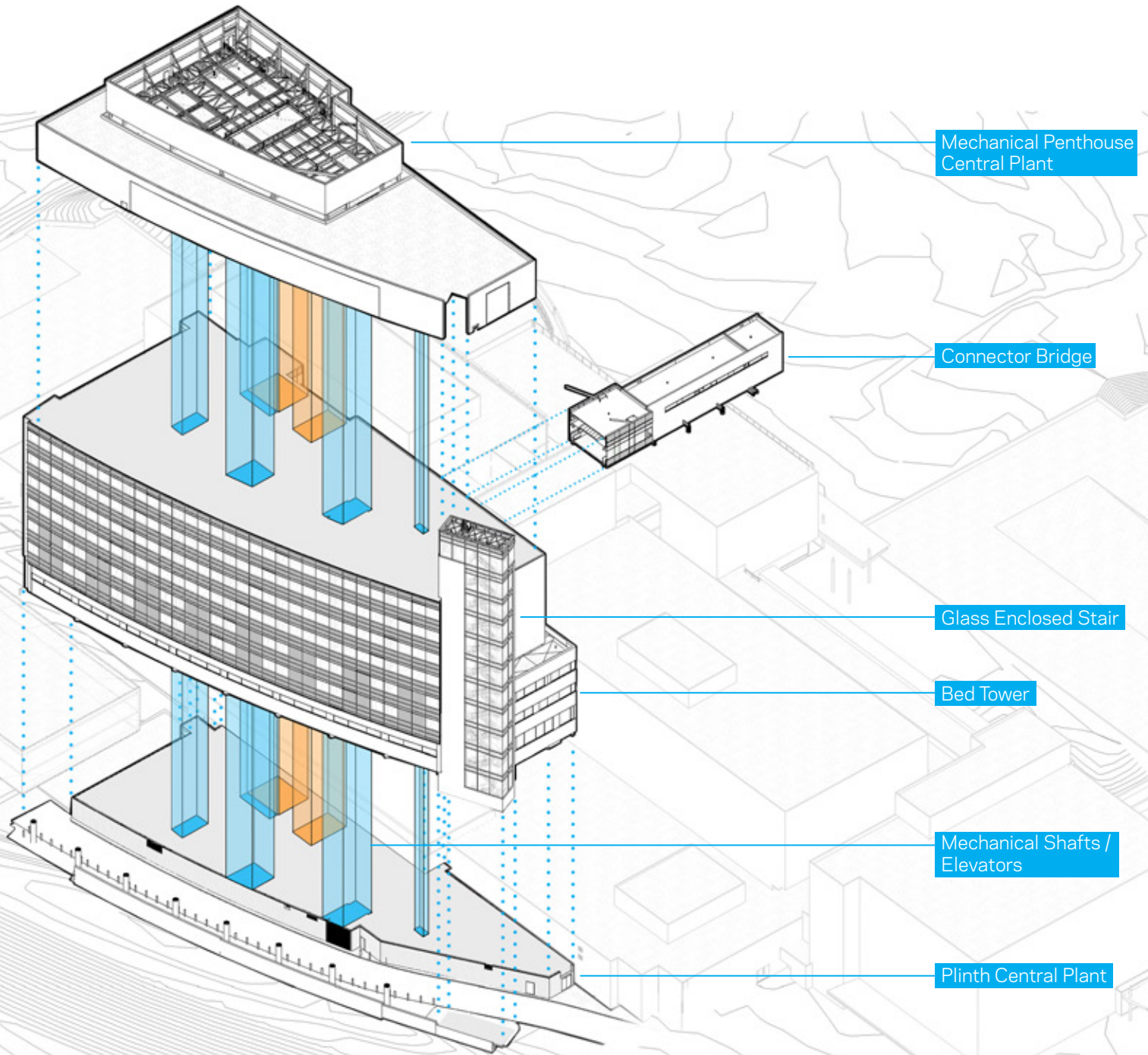


Site Plan

- 1** New Bed Tower
- 2** Connector Bridge
- 3** East Wing
- 4** West Wing
- 5** Professional & Community Education Center
- 6** Emergency Department & Physician Specialists Wing
- 7** Proposed Garage Expansion
- 8** North Parking Structure
- 9** West Parking Structure Expansion

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A new central plant to serve both the existing hospital and new tower was designed and split between the basement and roof levels of the new tower, then tied back to the existing hospital.



Alternative Transportation



Indoor Environmental Quality



Energy Performance



Green & Low Albedo Roofing



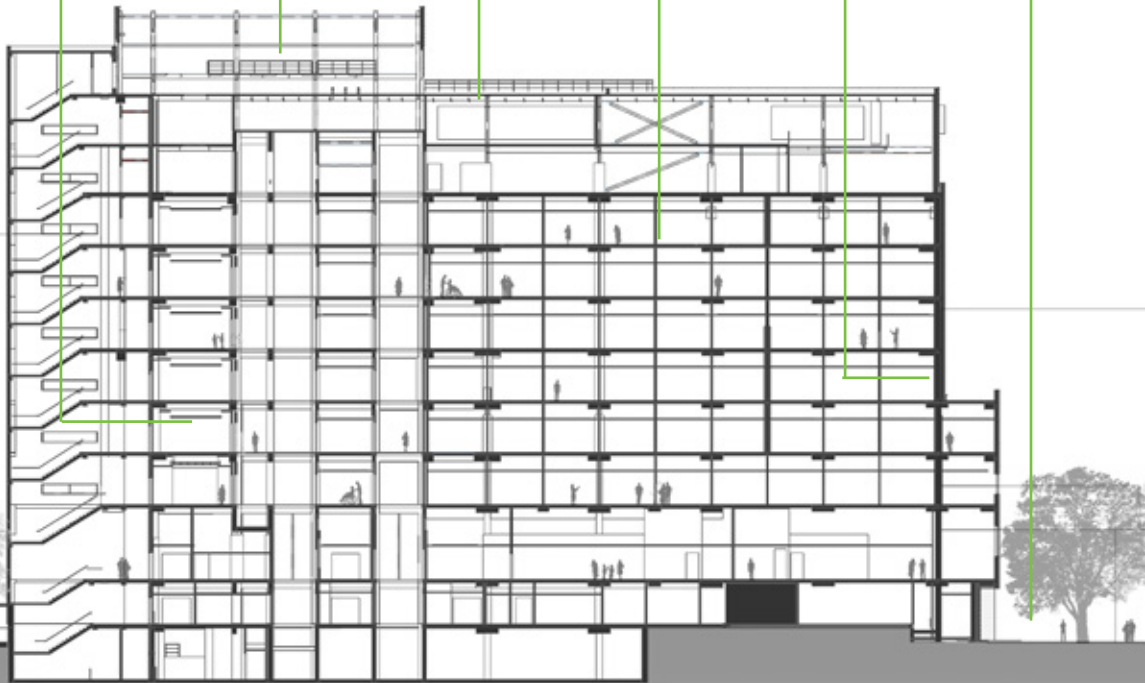
Recycled Materials



Energy Efficient Envelope



Water Efficient Landscaping



Holy Cross Hospital achieved **LEED Gold** certification. A few sustainable strategy highlights include:

Sustainable Site

- Access to regional bus and Metro system
- Covered parking
- Priority parking for low-emitting and fuel-efficient vehicles
- Green and low-albedo roofing
- Sustainable stormwater design

Water Efficiency

- Water-Efficient Landscaping
- 30% Water Use Reduction

Energy & Atmosphere

- Enhanced commissioning
- Enhanced refrigerant management
- Purchasing of carbon offsets

Materials & Resources

- 75% diversion of construction waste from disposal
- 10% recycled content of materials
- 10% regional materials
- FSC Certified wood

Indoor Environmental Quality

- Outdoor air delivery monitoring
- Construction IAQ Management plan
- Low-emitting adhesives, paints and carpets
- Controllability of lighting and thermal systems

Sustainability

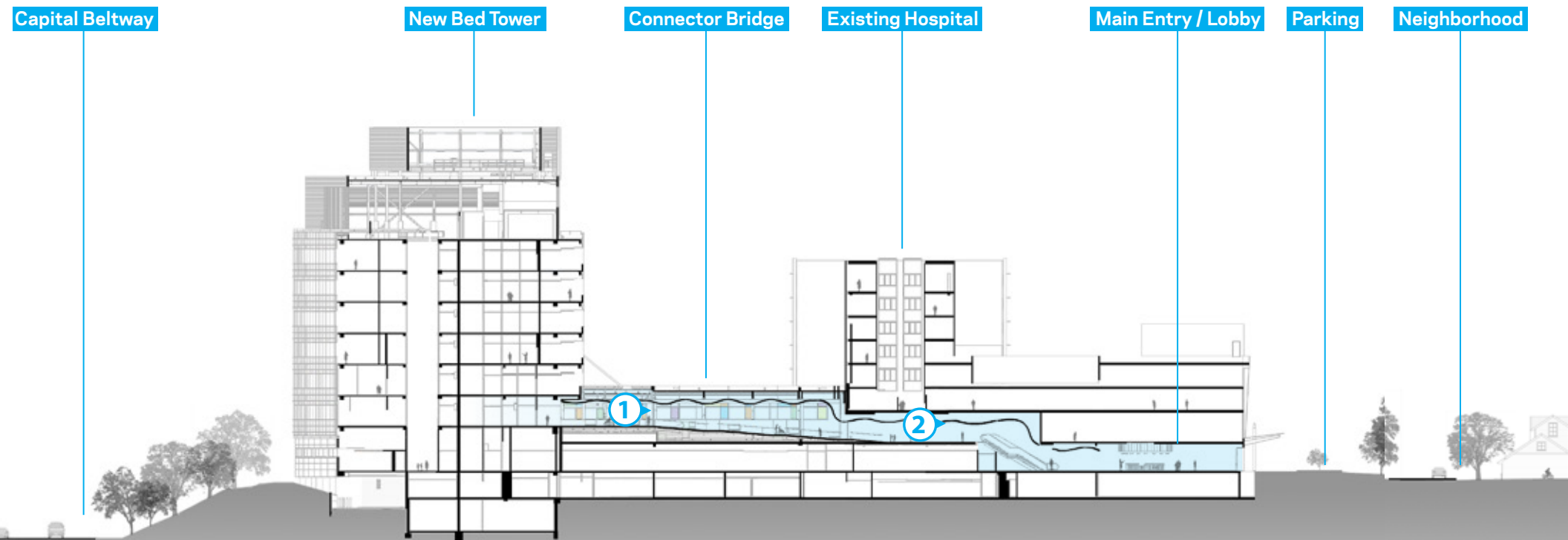
The mechanical and electrical systems associated with the addition and renovation result in a 25% reduction in energy use



1 An undulating wood ceiling unifying a series of discreet spaces



2 Connecting the new bed tower back to main entry and concourse



Building Section



The stair is an active vertical circulation route that offers fantastic views.



Patient rooms with a view



The external views to nature are reinforced with interior design.



Amber colored lighting normalizes circadian rhythms and assists patients in normalizing their recuperative rest cycles.



The curtain wall was acoustically designed to ensure patient comfort and mitigate noise generated by beltway traffic.



The curving facade of the new tower references the existing color glass and magnifies it to a scale legible from the beltway.