

Webb Embry
Vice President – Facilities, Design & Construction
Acadia Healthcare
6100 Tower Circle, Suite 1000
Franklin, TN 37067

RE: Adaptive Reuse Evaluation
Capitol Boulevard Site formerly known as Bethesda Hospital
St. Paul, Minnesota

09 May 2022 [REVISED 31 MAY 2022]

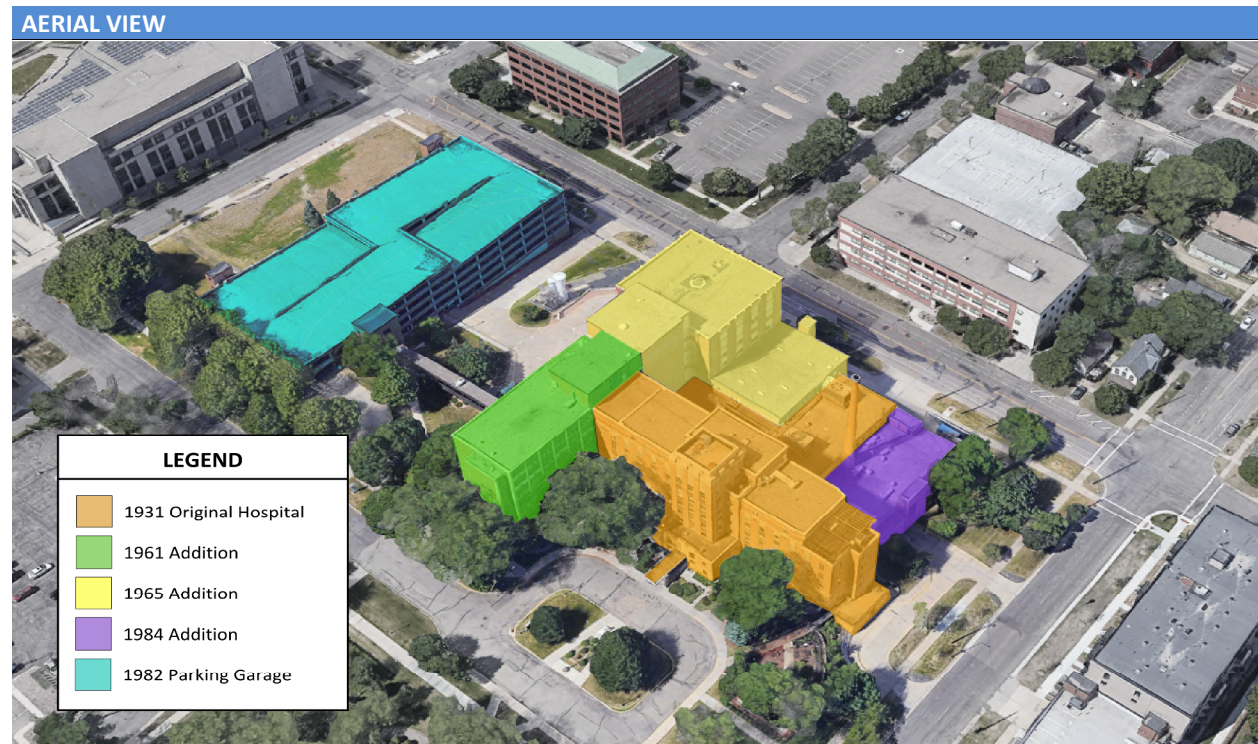
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Webb,

The following Adaptive Reuse Evaluation summarizes architectural and engineering observations of existing conditions at the Capitol Boulevard Site formerly known as Bethesda Hospital in St. Paul, Minnesota on 20 October 2021 and 01 April 2022. This information is intended to evaluate the potential for conversion of the existing facility into an Inpatient Behavioral Health Hospital, including Outpatient Psychiatric Services.

SUMMARY OF EXISTING FACILITIES

The Capitol Boulevard Site formerly known as Bethesda Hospital - located at 559 Capitol Boulevard, St. Paul, MN, 55103 – previously housed a ~355-bed acute care hospital and was most recently used to treat long-term acute care patients. The facility was constructed in multiple building periods which are depicted and described as follows:



DESCRIPTION OF BUILDING PERIODS

- The 1931 Original Hospital is a 10-story, ~97,139 sf building designed by Ellerbe and Company Architects. The Main Entrance is located on Capitol Boulevard at Level 1 – with three levels below (C/B/A) and six levels above (2-7). Typical Patient Floors (Floors 2-6) are ~9,371 sf and originally accommodated ~30 beds each with an original total complement of 150 beds.
- The 1961 Addition is an 8-story, ~51,570 sf building designed by Magney, Setter, Leach, Lindstrom & Erickson, Inc. This Addition connects to the south end of the 1931 Original Hospital. Typical Patient Floors (Floors 2-6) are ~6,440 sf and originally accommodated ~24 beds each with an original total complement of ~120 beds.
- The 1965 Addition is a 9-story, ~105,848 sf building designed by Thos. F. Ellerbe Architect. This Addition connects to the west end of the 1961 Addition as well as to Levels C/B/A of the 1931 Original Hospital. Typical Patient Floors (Floors 3-6) are ~9,082 sf and originally accommodated ~24 beds each with an original total complement of ~96 beds.
- The 1984 Addition is a 3-story, ~18,510 sf building housing service and support components of the Hospital. This addition connects to Levels C/B/A of the Original Hospital.
- The total existing facility is 10-stories in height and ~273,167 sf in usable area.
- The 1982 Parking Garage is a 6-level, ~174,245 sf, 436 space facility designed by James M. Cooper and Associates Architects. The Parking Garage is connected to the south end of Level 1 of the 1961 Addition via an elevated Pedway Connector.

SUMMARY OF REGULATORY REQUIREMENTS

Minnesota behavioral health care facilities are subject to compliance with Minnesota Rules noted below as administered by the Minnesota Department of Health (MDH) unless noted otherwise. The primary adopted healthcare and building codes are as follows:

- MN Rules, Chapter 4640 – Hospital Licensing and Operation.
- MN Rules, Chapter 4645 – Hospital Construction and Equipment.
- In addition to Rules above, MDH recommends compliance with the 2018 FGI Guidelines for Design and Construction of Hospitals, Chapter 2.5 – Specific Requirements for Design of Psychiatric Hospitals.
- 2012 NFPA-101 Life Safety Code (LSC) for CMS Medicare Reimbursement.
- 2020 Minnesota Building Code (based on 2018 International Building Code) as administered by the City of St. Paul.

Note that the potential conversion of the existing facility would be regulated as a new behavioral health hospital from a healthcare code perspective since it will be under a new hospital license – i.e. – all new Code provisions would be required to be addressed.

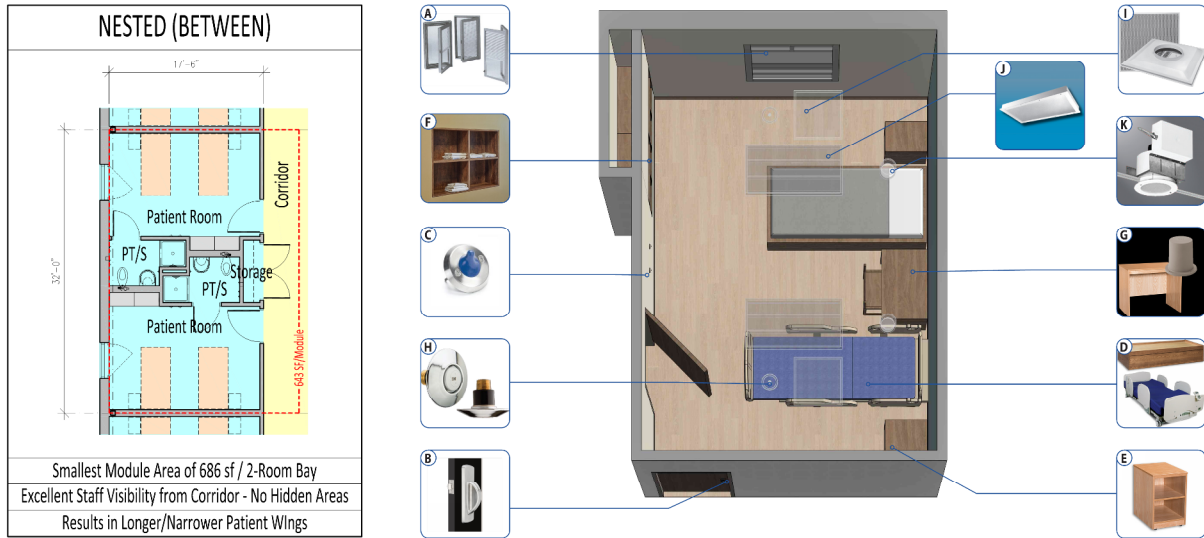
REVIEW OF BEST PRACTICE BEHAVIORAL HEALTH DESIGN STANDARDS

Stengel Hill Architecture is a national leader in the design of behavioral health hospitals and has worked with Acadia Healthcare over many years to develop and refine prototypical standards based on industry best practices for the design of behavioral health hospitals. The behavioral health patient care environment must be safe for patients and staff as well as a place for healing.

Particular attention is paid to the design of the patient room and patient toilet/shower room environment because patients are alone in these spaces for extended periods of time. The standard patient room module utilized by Acadia Healthcare is the product of years of research and implementation – deviation from this proven/standard design to fit into unfavorable existing conditions is not recommended to lessen the risk to patients and staff.

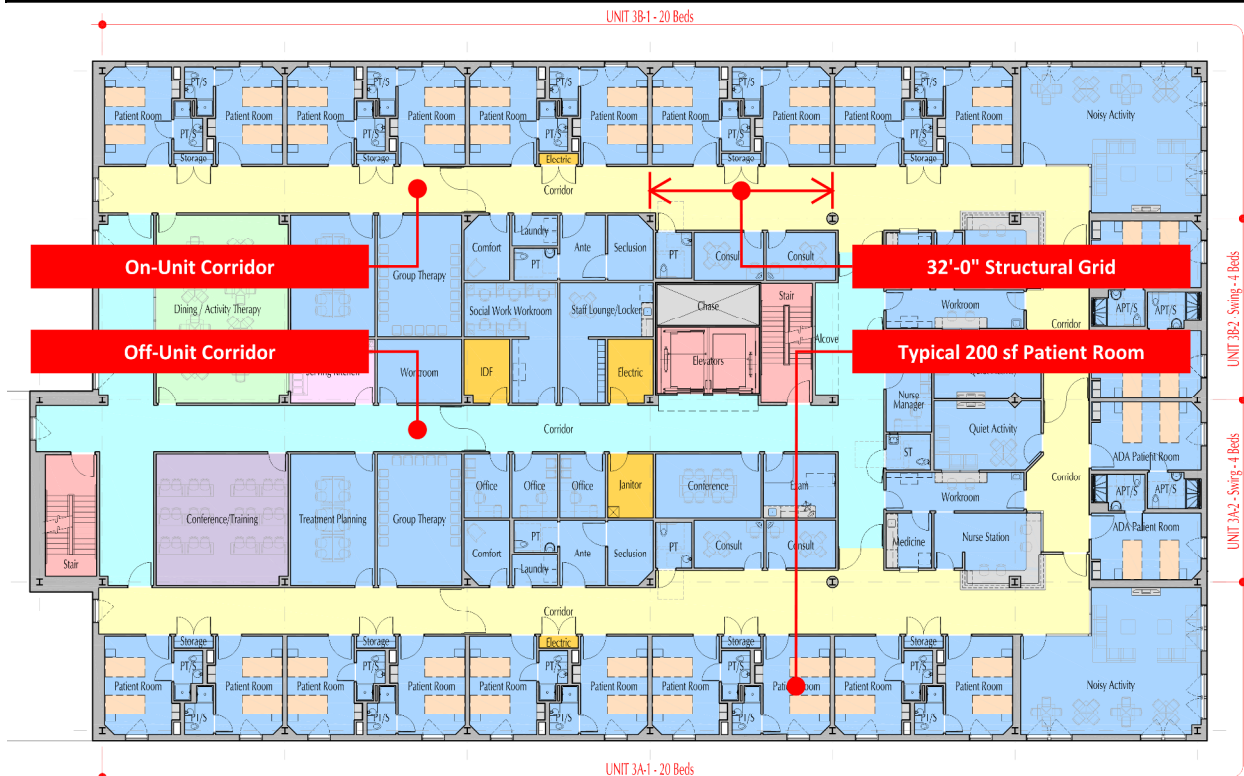
The Acadia-standard patient room module is bedded semi-private and utilizes a nested patient toilet/shower arrangement to improve staff visualization of patient rooms during rounds. The module requires a structural grid of 32'-0" in width and a room depth of ~17'-6".

PATIENT ROOM DESIGN



Equally important to patient room design is the assembly of patient room modules into functional and safe nursing units. Behavioral health nursing units should always be configured to avoid through-traffic by incompatible patient populations, thus Acadia-standard prototypical nursing units include off-unit corridor systems to provide access to each individual nursing unit without traversing other nursing units. Clear line of sight of all on-unit corridor systems and activity spaces is also required. The typical Acadia-standard nursing unit size is 24 beds to facilitate efficient nursing staff / caregiver ratios, and ~475 sf/bed is required to meet minimum Code standards – i.e. – a 24-bed nursing unit requires ~11,400 sf.

NURSING UNIT DESIGN



A purpose-built, state-of-the-art behavioral health hospital includes many other design elements that are difficult to incorporate within the constraints of an existing facility conversion project – e.g. – activity spaces with generous natural light, adequate space for on-unit dining to avoid vertical movement of patients, a full complement of patient therapy and staff support spaces, swing bed capability to segregate subset patient populations on nursing units, etc.

Additionally, a more robust set of sustainable design strategies can be accommodated in a new behavioral health hospital compared to an existing facility conversion project, including high-performance spray-foam insulation systems in exterior wall systems, high-efficiency exterior window/glazing systems, fluid-applied air/weather barriers at exterior sheathing, low-energy use HVAC and electric systems, low-water use plumbing fixtures, etc.

EXISTING BETHESDA HOSPITAL OBSERVATIONS

The Capitol Boulevard Site formerly known as Bethesda Hospital is 10-stories in height and ~273,167 sf in usable area. Observations regarding the existing facility are as follows:

- A new purpose-built, 144-bed behavioral health hospital requires ~106,000 sf – far less than the area of the existing facility. A scenario of renovation of only a portion of the existing facility and then maintenance of ~167,000+ sf of unoccupied space is not operationally viable, and selective demolition of portions of the facility to reduce unoccupied space would reduce area available for behavioral health nursing units since the area most appropriate for demolition – old surgery, emergency, and radiology spaces that have no applicability to a behavioral health hospital – are below existing upper floor nursing units.
- The existing facility is served by legacy HVAC systems supplied from massive and inefficient boiler and chiller systems. New behavioral health hospitals are typically served by energy-efficient forced air HVAC systems with hot water boilers and DX cooling systems.
- Relative to HVAC systems and energy efficiency / sustainability, 93% of the existing facility was constructed between 1931 and 1965, and 7% was constructed in 1984. It is assumed that central plant systems have been maintained and replaced as equipment aged beyond useful life. Even with good maintenance, a typical Energy Use Index (EUI) for a facility of this size and vintage would be in the range of 135 kbtu/sf-yr. New Acadia behavioral health hospitals operate in similar climate zones at an EUI of 80 kbtu/sf-yr. The estimated annual energy savings for operating systems within a purpose-built new behavioral health hospital versus continued operation of the existing facility is 4,400 MWh/yr - equivalent to 3,100 metric tons of carbon dioxide emissions. Assuming a blended rate of \$1.03/therm for natural gas and \$0.13/kwh for electricity, the estimated annual energy cost savings of a new purpose-built behavioral health hospital versus continued operation of the existing facility is \$123,448/yr. As noted below, installation of new forced air mechanical systems in the existing facility is not viable due to the extremely low floor-to-floor structural heights. Continued operation of legacy mechanical systems is not consistent with the sustainability goals of this project.

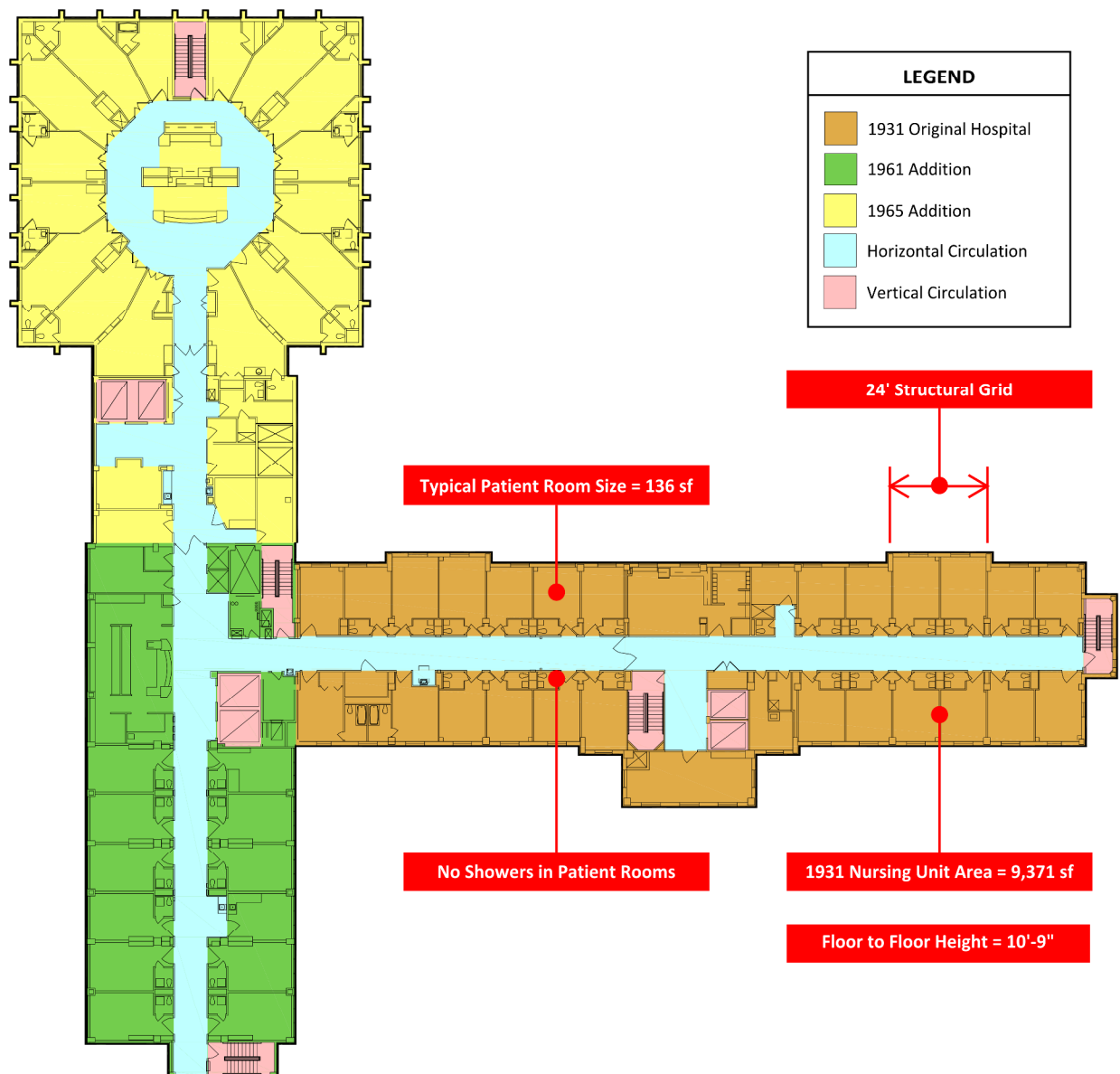
REVIEW OF TYPICAL NURSING UNIT OF BETHESDA HOSPITAL

A typical nursing unit floor of the existing facility consists of three acute care nursing units organized by the original periods of construction. Observations regarding this configuration are as follows:

- Existing nursing units were originally configured for 24-30 beds in a combination of private and semi-private patient rooms, and the units range in area from 6,440 sf (1961) to 9,371 sf (1931). Per the 475 sf/bed metric stated earlier, a 24-bed nursing unit requires ~11,400 sf in an ideal configuration. The larger area requirement for behavioral health nursing units compared to acute care nursing units is due to additional activity and support space requirements. Each behavioral health nursing unit must include a Noisy Activity Room, a Quiet Activity Room, a Group Therapy Room, Consult Rooms, a Comfort Room, an Exam Room, etc. Based on these programmatic requirements and the limited available floor area, conversion of the existing acute care units to behavioral health nursing units of an appropriate bed capacity (24 beds) is not viable. Combination of two or more existing acute care nursing units to attain one larger behavioral health nursing unit is also not viable due to the geometry of the existing building – central observation of all corridor systems from one nursing control point cannot be achieved.

- The acute care nursing units of the existing facility are configured with patient rooms on both sides of central corridor systems. With the exception of the 1965 Addition, there are no off-unit corridor systems to facilitate access to individual nursing units without traversing other nursing units.
- Existing nursing units contain many private patient rooms with a typical floor area of ~136 sf and a structural grid width of ~24'-0". As stated earlier, semi-private patient rooms are typical in behavioral health nursing units, and the Acadia-standard patient room module requires a 32'-0" wide structural grid and a floor area of 200 sf. Conversion of existing private acute care patient rooms to semi-private behavioral health patient rooms is therefore not viable.
- Existing patient toilet rooms within patient rooms do not contain showers – i.e. – central showers must be used. Contemporary best practice behavioral health nursing unit design includes showers within patient toilet rooms for the dignity of patients. Incorporation of showers within existing patient rooms is not viable due to a lack of available floor area in the adjacent patient rooms to facilitate the enlargement of patient toilet rooms.
- The existing structural height throughout the nursing unit floors of the existing facility is ~10'-9" floor-to-floor, and fan coil units are used in patient rooms for heating/cooling. New hospital construction requires ~14'-0"+ of floor-to-floor height to accommodate required above-ceiling forced-air mechanical systems.

EXISTING ACUTE CARE NURSING UNIT PLAN



PARTIAL DEMOLITION + ADDITION ADAPTIVE REUSE SCENARIO

Observations regarding a potential scenario where all portions of the existing facility are demolished with the exception of the 1931 Original Hospital are as follows (with comparisons to a complete new build Behavioral Health Hospital scenario):

- As noted above, the 1931 Original Hospital is not viable for behavioral health nursing units due to structural grid, floor-to-floor height, and area limitations, thus this adaptive reuse scenario would involve construction of an Addition to accommodate all required behavioral health nursing units adjacent to the 1931 Original Hospital building.
- The north end of the 1931 Original Hospital is significantly closer to Como Avenue than the north end of the complete new-build behavioral health hospital scenario, thus the future (Phase 2) Addition planned for the complete new-build scenario would no longer be viable. This would necessitate the construction of shell space within the Addition project scope under the adaptive reuse scenario to address the long-term need for 48 additional beds (192 beds total). An Addition to the 1931 Original Hospital to accommodate 192 beds - per the 475 sf/bed metric stated earlier - would total 91,200 sf - an increase of 22,800 sf over the complete new build scenario - a significant cost increase that is not viable from a financial pro forma perspective.
- While the tower-only portion of the 1931 Original Hospital totals ~60,000 sf - more area than is required for the complement of Administrative and Support Spaces for a new behavioral health hospital, there is an insufficient amount of existing area on the First Floor to accommodate spaces that must be at grade - i.e. - Admissions, Service/Loading Areas, Mechanical/Electrical Spaces, Outpatient Spaces, etc. This condition would require the further expansion of the Nursing Unit Addition under the adaptive reuse scenario to address at grade spaces, which would further exacerbate the surplus of unusable space in the 1931 Original Hospital.
- The Nursing Unit Addition under the adaptive reuse scenario would be required to be separated from the 1931 Original Hospital by ~25'-0" to provide exterior windows for all new patient rooms. There is not sufficient area available on the west (Park Street) side of the 1931 Original Hospital to accommodate the required Nursing Unit Addition of the size described above, thus the adaptive reuse scenario is not viable.

SUMMARY AND CONCLUSIONS

This Adaptive Reuse Evaluation summarizes architectural and engineering observations of existing conditions at the Capitol Boulevard Site formerly known as Bethesda Hospital in St. Paul, Minnesota relative to the potential for conversion of the existing facility into an Inpatient Behavioral Health Hospital, including Outpatient Services.

The total existing facility is 10-stories in height and ~273,167 sf in usable area.

The converted existing facility under this adaptive reuse scenario would be regulated as a new behavioral health hospital from a healthcare code perspective since it will be under a new hospital license - i.e. - all new Code provisions would be required to be addressed.

Best practice behavioral health design standards coupled with Acadia Healthcare prototypical standards recommend specific proven/standard patient room and nursing unit designs to create a safe and healing environment for patients and staff.

The existing nursing unit floors are too small to accommodate required 24-bed behavioral health nursing units, the existing structural grid and patient rooms are too small to accommodate best practice semi-private patient room layouts, and the floor-to-floor height is too short to accommodate required new forced-air mechanical systems, thus the use of any portion of the existing facility for new inpatient behavioral health nursing units is not viable.

The existing facility is far larger than what is required for a purpose-built new behavioral health hospital and includes legacy HVAC systems that are energy inefficient and incompatible with the sustainability goals of this project. A scenario of renovation of only a portion of the existing facility coupled with maintaining a massive amount of unoccupied space is not viable - nor is selective demolition of portions of the facility to reduce unoccupied space without the construction of an addition to accommodate new behavioral health nursing units.

A scenario where all portions of the existing building are demolished with the exception of the 1931 Original Hospital is not viable due to a lack of available site area west of the 1931 Original Hospital to accommodate the required new nursing unit addition.

For these reasons, adaptive reuse of the Capitol Boulevard Site formerly known as Bethesda Hospital is not viable and cannot meet the stated goal of the Fairview Health / Acadia Joint-Venture to create a purpose-built, state-of-the-art behavioral health hospital to serve the community need for mental health services.

If you have any questions or comments regarding this information, please do not hesitate to contact our office at your convenience.

Thank you,

A handwritten signature in black ink, appearing to read 'CHILL', is positioned above a thin yellow horizontal line.

Charles A. Hill, AIA, LEED AP
Principal
Stengel Hill Architecture
Minnesota Architect License #59662

copy:	Garrett Smith	Acadia Healthcare
	Paul Onufer	Fairview Health
	Kristian Thonvold	Fairview Health
	Brad Lipsey	Crunk Engineering
	Kevin Sandrella	CMTA