Washington University in St. Louis
School of Medicine

Neuroscience Research Building

Sustainability Report

April 2021

Project Number: 181478

Construction Manager: McCarthy

Architect: Cannon/Perkins & Will

Washington University in St. Louis
School of Medicine

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SECTION 1 – SUSTAINABILITY

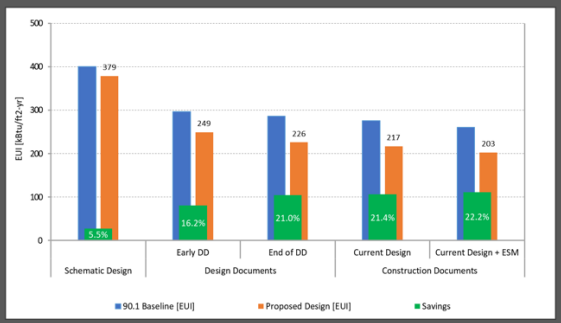
Establishing the LEED Strategy

In 2020, the School of Medicine and the WU Office of Sustainability met with the US Green Business Certification, Inc. (GBCI) to discuss the opportunity to form a "trusted partnership," a relationship offered to owners with outstanding performance developing LEED projects. The conversation included a specific exploration of the university's experiences with the program, elements of LEED versions 4.0 and 4.1, and how they may impact the NRB project. A second meeting occurred on February 12, 2021, to continue this exploration, including a more specific investigation of the LEED points and strategies available to the NRB project.

Project Sustainability Key Performance Indicators

University goals for new construction projects
- LEED Silver (minimum)
- 30% more efficient than ASHRAE 90.1-2010 energy efficiency standard

Project sustainability stakeholder sessions to date
- Prior to Schematic Design
- During Design Development
- During Construction Documentation



Neuroscience Research Building LEED 4.0 Performance Criteria	Anticipated Points
Integrative Process	1
Location and Transportation	14
Sustainable Sites	3
Water Efficiency	5
Energy and Atmosphere	12
Materials and Resources	7
Indoor Environment Quality	8
Innovation	6
Regional Priority	3
TOTAL (LEED Silver)	**59**

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Section 1 - Sustainability

Parksmart Certification

- The School of Medicine is pursuing the Parksmart Certification Standard for the new parking garage adjacent to the NRB. The project's goal is Parksmart Silver, and, as of April 2021, the point score is 119 points (Parksmart Bronze).
- As with LEED, the Parksmart program offers options for enhancing the sustainability of a parking structure (building and operation). Points are assigned to measures based on the environmental impact, achievability for new and existing systems, and relevance to the asset's economics. A total of 248 points are available, and Parksmart Certification meets minimum thresholds for existing and new parking structures.

Parksmart Certification by Category

Component Category	Points Available	Able to Achieve – Yes	Under review – Maybe
Management	90	52	18
Programs	64	34	12
Technology and Structure	88	33	23
Innovation	6	0	1
Total Points	**248**	**119**	**54**

Parksmart Award Levels/New Construction

Certification Level	Points
Bronze	110 – 134
Silver	135 – 159
Gold	160+

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Section 2 - Appendix 1 Sustainability Briefing Document

Neuroscience Research Building Sustainability Briefing Document April 2021

Neuroscience Research Building Sustainability Briefing Document

May 26, 2021

This narrative memorializes Neuroscience Research Building (NRB) design progress on sustainability elements made in winter 2020/21 and spring 2021 and constitutes an update to the WUSM presentation of November 2020. It summarizes an April 26, 2021 meeting of the project's sustainability stakeholders[1], the fourth in the series of such sessions.

1. **Building construction.** The NRB is under construction. Concrete decks and columns are being poured, the utility plant foundation is under construction, and underground utility construction has started. Recently, architectural and MEPFPT drawings and specifications were bid for construction. Base building awards and products are being confirmed, and furnishings are being selected and procured.

2. **Sustainable building operations**. As the NRB construction advances, WUSM is preparing for its opening. Specifically, it is putting steps in place to make this building the university model for sustainable operations. WUSM offers NRB building occupants a $5,000 financial incentive to retire old and inefficient ultra-low temperature freezers rather than bring them to the new building. This effort is calculated to reduce building energy by more than 300,000 kWh per year. WUSM created and filled a position responsible for sustainability planning and program management. Key to this position's responsibilities is maturing the Green Labs program, advancing equipment planning, and offering various sustainability programs to building occupants and operations and maintenance staff and documenting WUSM's progress with these initiatives.

3. **Building energy performance.** The NRB is a vital energy benchmark for WUSM and the design of similarly designed research buildings. More than 60% of the NRB is lab space, making it the most lab space-intensive research building on campus. Despite this energy burden (lab space is among the most energy-intensive of all space types), the NRB's energy model shows it to have the lowest energy use intensity of all WUSM research buildings. It is 63% below the WUSM average energy use intensity for its animal research buildings and 30% below that of the lowest WUSM animal research facility.

The design's energy model calibrates an energy use intensity of 209 kBtu/sf/yr. Representing a 22% reduction from the ASHRAE 90.1 2010 baseline. The design team has submitted documents to the City of St. Louis establishing that the building's energy model outperforms the city's standards: 10.7% below the energy code baseline for energy cost and 16.5% better than the city's energy code baseline for energy consumption.

[1] James Kolker (not in attendance at the November 16 meeting), Mary Ann Lazarus, Railesha Tiwari and Phil Valko.

4. **USGBC LEED status.** The project LEED checklist has a credit score of 60, which puts it at the bottom of LEED Gold. The design team believes that 13 elements of the checklist might be converted from a "maybe" status to a certain point. Experience shows that the third-party review that is part of the LEED certification process typically strips a proponent of topics, so the design team is endeavoring to enable up to 5 points from the "maybe" to the "yes" status. The checklist allows for 6 points for innovation, and this project intends to earn each of those. This winter, WUSM introduced a new LEED administrator to the NRB design process. The design team and new administrator are meeting more regularly, and this is having the desired result of improving the project sustainably.

5. **Strategic Partnership**. WUSTL has an emerging relationship with Green Building Certification, Inc., the entity that guides third-party certification of USGBC LEED programs. As such, the two dialogue about the university's experiences with the LEED programs to better understand GBCI and propose review advantages that WUSTL seeks to recognize its outstanding performance in the design and construction of LEED buildings. In February 2021, the university and GBCI met to discuss several topics, some of which were specific to the NRB project. The outcome was positive for the NRB in that the two agreed to an interpretation of one-through cooling equipment standards that will reduce NRB water use substantially.

6. **Materials selection.** The project team reported on continued success with their approach to materials selection. We are focused on extensive volume materials selections that rank well on durability, safety (appropriate to the animal research setting), promoting health in the indoor environment, and reducing impacts to health and the environment during manufacturing. The large volume purchases of environmentally superior products will include approximately 80,000 sf of carpet tile, 100,000 sf of flooring, 180,000 sf of acoustical ceiling tile, and zero-VOC paint in 80% of the building and low VOC paint in the remainder. The design team is researching the options – cost, performance, and availability – for procuring two more large-volume materials: metal studs and gypsum board. Wood is used in the building for paneling, doors, casework, and lab casework. The design team will soon recommend environmentally superior product choices for these.

Washington University School of Medicine
4370 Duncan Research Facility
Senior Project Leadership at Construction Documents Development
Updated April 2021

Representative	Title	Company
Design Team		
James Walsh	Project Principal	Cannon Design
Mike Ness	Project Manager	Cannon Design
David Polzin	Design Principal	Cannon Design
Brian Hicks	Project Manager	Cannon Design
Trevor Calarco	Senior Vice President	Cannon Design
Bryan Schabel	Design Principal	Perkins + Will
Bridget Lesniak	Management Principal	Perkins + Will
Laura Halverson	Engineer Principal	Affiliated Engineers Inc
Willa Kuh	Director of Planning	Affiliated Engineers Inc
Shana Scheiber	Building Performance Consultant	Affiliated Engineers Inc
Construction Team		
Andrew Poirot	Project Executive	McCarthy
Mike Bax	Cost Estimator - Preconstruction Director	McCarthy
Fred Bakarich	Senior Project Manager	McCarthy
Mike Null	Senior Superintendent	McCarthy
Matt Sauer	Senior Project Manager	McCarthy
WUSM Project Team		
Melissa Hopkins	Project Executive - Asst VC/Asst Dean - Facilities	WUSM
Steven Sobo	Executive Project Manager - Senior Technical Director	WUSM
David Lott	Lab and Lab Support Design - Senior Project Manager	WUSM
Mitch Snyder	Construction Manager - Senior Project Manager	WUSM
Mariah Harris	Director of Space Planning - Utilization & 5-year space planning	WUSM
Hannah Jefferies	Senior Planner - Activation and Logistics	WUSM
Patrick Brinker	Senior Project Manager – Fish Facility and WUCCI	WUSM
Erika Wade	Equipment Planning - Senior Planner	WUSM
Alicia Hubert	Equipment Planning - Sustainability Coordinator	WUSM
Michelle Lewis	Project Communications & Support - Planner II	WUSM
Stephanie Simonic	Project Communications & Support - Program Coordinator	WUSM