

University of Cincinnati, Gardner Neuroscience Institute
Cincinnati, Ohio



SQ FT
114,000 BGSF



OWNER/AFFILIATION
University of Cincinnati Health



ARCHITECT(S)
Perkins+Will, Inc.



COMPLETION DATE
April 2019



ABOUT | DESIGN INTENTIONS

With the goal to consolidate all modalities into a single facility, expand neuroscience services and improve the patient experience, UC Health embarked on a state-of-the-art outpatient facility that provides innovative care to neurological patients. A light filled, welcoming space that is sensitive to patient healing, leverages technology and draws upon hospitality-based elements was envisioned.

UCGNI is a leading treatment, research and teaching center for complex neurological conditions. The outpatient facility is a research-based design solution that brings together 125 faculty into a new regional home for neurological care, education, and research for those in the community with neurological conditions through application of neuro-architectural principles which influences how specific design elements can help improve the patient experience.



Image Sources: <https://perkinswill.com/project/gardner-neuroscience-institute/>

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Research-Base Design

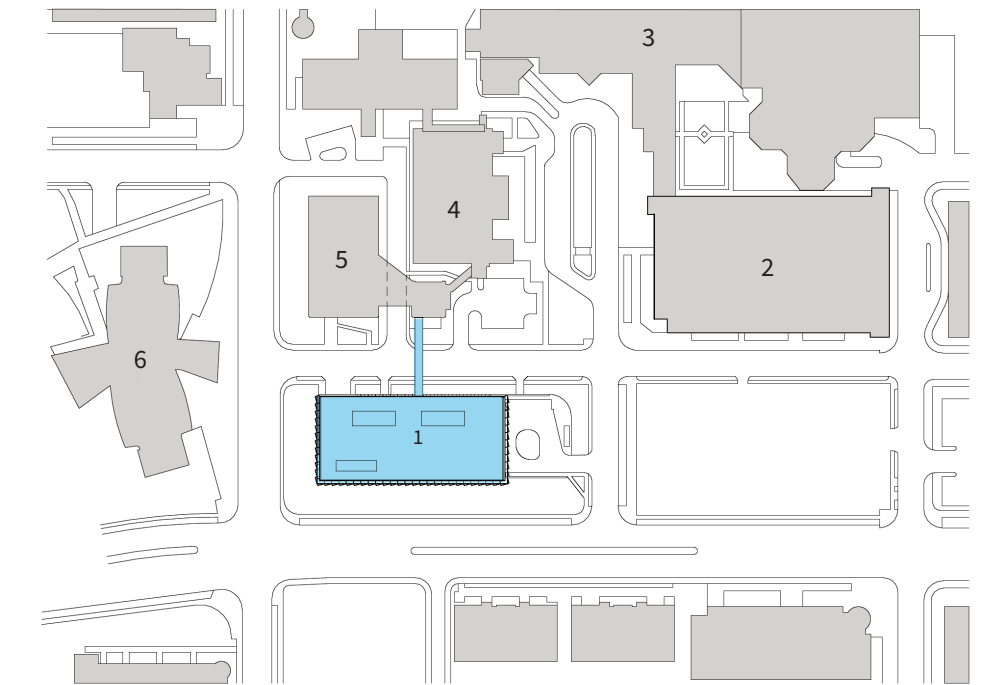
To increase patient comfort, insight from users, patients and their families drove design decisions. Unique to the building is the tensile fiber mesh wrapping the facade, which **reduces solar loads by 56%**. Combined with the low-e glazing that makes up the inner envelope, a high-performance facade was created. Although the screen reduces energy consumption, its **main intent was to provide comfort to users**. This outer veil protects patients sensitive to high contrast light while maintaining panoramic views and daylit interiors.

UC Health wanted the facility to be a second home for patients with neurological diseases where they not only received the best possible care, but where research was integrated into the patient experience and educational facilities were as much for patients and families as for physicians and students. UC Health wanted to ensure it was a place of belonging for patients and their caregivers, a true home for neurological outpatient care, designed specifically for their unique, and often varied, symptoms. The carefully planned facility improves delivery of services by providing a more functional, aesthetic environment for patients and staff. The design team and clinical operations staff performed a Post Occupancy Evaluation (POE) which included observation, interviews, and a Patient Advisory Group feedback session. The POE revealed that overall, the building was well received by all users and primary goals were met.



Image Sources: <https://healthcaresnapshots.com/projects/7377/university-of-cincinnati-gardner-neuroscience-institute/>

SITE PLAN



- 1 Gardner Neuroscience Institute
- 2 Parking Garage
- 3 University of Cincinnati Medical Center
- 4 UC Health Barrett Cancer Center
- 5 University of Cincinnati Physicians Office
- 6 Vontz Center

Ecological Impact

The 1.628 acre site previously contained a multi-family residential building with two surface parking lots. The amount of impervious surface area was 69% of the site previously. The new neuroscience building reduces the amount of impervious area by 14% to 56% of the total site. The new building is also set back from MLK Boulevard 40' further than the previous residential building. This additional setback allows for a continuation of the landscaped park area of the University to the west. The building's unique mesh facade is **bird friendly** and greatly **improves the energy performance of the building**. In addition to the sustainable aspects of the building and giving back green space, the building has community spaces on level 1 and provides outreach to the neighborhood and region supporting mental health.

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Lobby

The lobby, with its monolithic epoxy terrazzo of recycled content, contains soft, curved corners of wood paneling and sustainable acoustical wood ceilings to help reduce noise. The lobby is a gesture to community and contains a museum, multi-purpose conference center, and waiting areas for nourishment, learning, and socializing separated by glass panels highlighting local art. There is a spacious rehab gym with an outdoor terrace and active daily living suite for patient therapy.

DEPARTMENTAL GROSS SQUARE FOOT TAKE-OFFS

FUNCTIONAL PROGRAM		SF
DEPT	Clinic	534
	Rehabilitation	6841
	Registration/Waiting	3823
	Conference/ Education	2404
	Total NSF	13602
Net-to-Gross Multiplier		1.46
Total DGSF		19858
BUILDING	Building Support	1575
	Vertical Circulation	913
	DGSF-to-BGSF Multiplier	1.26
	Total Building BGSF	25057



Note: "Departmental Square footages take-off based on 'Analysis of Departmental Area in Contemporary Hospitals calculation methodologies & Design Factors Report, 2014

Image Sources: Provided by Perkins +Will

TRAVEL DISTANCE ANALYSIS



KEY SPACES:

- Blood Draw (48sf)
- SLP Therapy (108sf)
- PT Treatment (109sf)
- Work Room (262sf)
- Rehab Gym (2441sf)
- Auditorium (2221 sf)
- Breakout Space (869sf)

TRAVEL DISTANCE ANALYSIS

- Patient Waiting to Blood Draw 12ft - 30ft
- Patient Rehab Lounge to Treatment 32ft - 88ft
- Staff Skybridge to Blood Draw 78ft - 96ft
- Staff Skybridge to Rehab Suite 80ft - 183 ft

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Infusion Suite

DEPARTMENTAL GROSS SQUARE FOOT TAKE-OFFS

FUNCTIONAL PROGRAM		SF
DEPT	Infusion	4080
	Spine Care	3213
	Imaging	4320
	Staff Support	2411
	Registration/Waiting	2511
BUILDING	Total NSF	16535
	Net-to-Gross Multiplier	1.51
	Total DGSF	24967
	Building Support	249
	Vertical Circulation	854
	DGSF-to-BGSF Multiplier	1.18
	Total Building BGSF	29372

SECOND LEVEL:



Scale: 1/8" = 1' - 0"

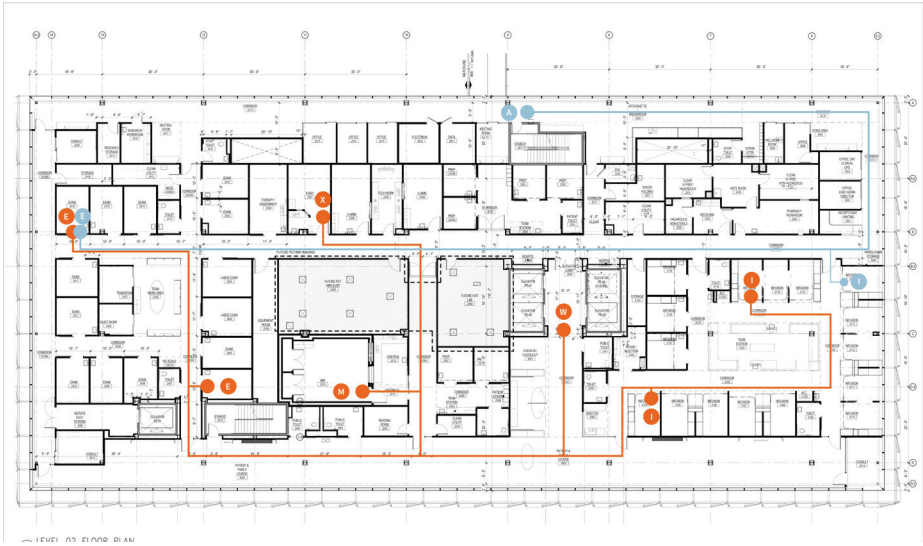
KEY

- Infusion Suite
- Spine Care / Physical Medicine / Rehab
- Imaging
- Staff Support
- Registration/Waiting
- Building Support

Note: "Departmental Square footages take-off based on 'Analysis of Departmental Area in Contemporary Hospitals calculation methodologies & Design Factors Report, 2014

Image Sources: Provided by Perkins + Will.

TRAVEL DISTANCE ANALYSIS



Scale: 1/8" = 1' - 0"

- E - Exam Room
- W - Patient Waiting
- M - MRI
- X - X-Ray
- I - Infusion
- A - Work Area

KEY SPACES:

- Exam Rooms (130sf)
- MRI room (452sf)
- Team Work Area (324sf)
- X-Ray Room (245sf)
- Infusion (110 sf)
- Meeting Room (109sf)
- Office (100sf)
- Pharmacy Workroom (222sf)

TRAVEL DISTANCE ANALYSIS

- Patient Waiting Area to Exam Room 50ft - 140ft
- Patient Waiting Area to Imaging 45ft - 105ft
- Patient Waiting Area to Infusion 48ft - 149ft
- Staff Work Area to Clinic Space 69ft - 282ft

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Exam Room

DEPARTMENTAL GROSS SQUARE FOOT TAKE-OFFS

FUNCTIONAL PROGRAM		SF
DEPT	Clinic	8046
	Clinic Support	1186
	Work Station	733
	Registration/Waiting	2370
	Conference/Education	265
	Staff Support	1421
	Total NSF	14021
Net-to-Gross Multiplier		1.58
Total DGSF		22153
BUILDING	Building Support	313
	Vertical Circulation	854
	DGSF-to-BGSF Multiplier	1.32
	Total Building BGSF	29372



KEY

- Clinic
- Clinic Support
- Work Station
- Registration/ Waiting
- Conference/ Education
- Staff Support
- Building Support

Note: "Departmental Square footages take-off based on 'Analysis of Departmental Area in Contemporary Hospitals calculation methodologies & Design Factors Report, 2014

TRAVEL DISTANCE ANALYSIS



W - Patient Waiting
E - Exam Room
A - Work Area

KEY SPACES:

- Exam Rooms (130sf)
- Team Work Area (323sf)
- Office (90sf)
- Meeting Room (102sf)
- Consult Rooms (117 sf)

TRAVEL DISTANCE ANALYSIS

- Patient Waiting Area to Exam Room 107ft - 277ft
- Staff Work Area to Exam Room 170ft - 291ft

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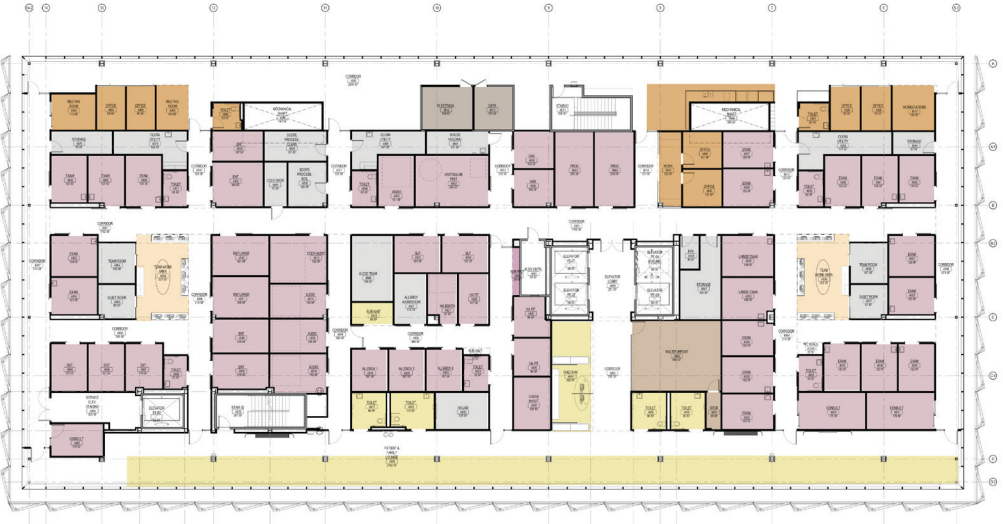


Staff Support Space

DEPARTMENTAL GROSS SQUARE FOOT TAKE-OFFS

FUNCTIONAL PROGRAM		SF
DEPT	Clinic	7602
	Clinic Support	2475
	Work Station	733
	Registration/Waiting	2639
	Conference/Education	476
	Staff Support	2836
BUILDING	Total NSF	16761
	Net-to-Gross Multiplier	1.55
	Total DGSF	25644
BUILDING	Building Support	313
	Vertical Circulation	854
	DGSF-to-BGSF Multiplier	1.15
	Total Building BGSF	29372

FOURTH LEVEL:



Scale: 1/8" = 1' - 0"

KEY

- Clinic
- Clinic Support
- Work station
- Registration/Waiting
- Conference/ Education
- Staff Support
- Building Support

Note: "Departmental Square footages take-off based on 'Analysis of Departmental Area in Contemporary Hospitals calculation methodologies & Design Factors Report, 2014

TRAVEL DISTANCE ANALYSIS



Scale: 1/8" = 1' - 0"

W - Patient Waiting
E - Exam Room
A - Work Area

KEY SPACES:

- ▶ Exam Rooms (130sf)
- ▶ Large Exam Room (150sf)
- ▶ Team Work Area (323sf)
- ▶ Office (90sf)
- ▶ Meeting Room (102sf)
- ▶ EMT Room (118sf)
- ▶ Allergy (105sf)
- ▶ Consult Rooms (117 sf)

TRAVEL DISTANCE ANALYSIS

- Patient Waiting Area to Exam Room 107ft - 289ft
- Staff Work Area to Exam Room 171ft - 302ft

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DESIGN STRATEGIES

Increase Patients Comfort

The building accommodates patients with susceptibility to nausea, dizziness, fatigue, or movement disorders and responds to those needs along every step of the patient's journey. Circulation in the building is designed to be incredibly simple, with patients moving along the south façade always able to orient themselves with the views to the outside, before being escorted to the central clinical spaces.

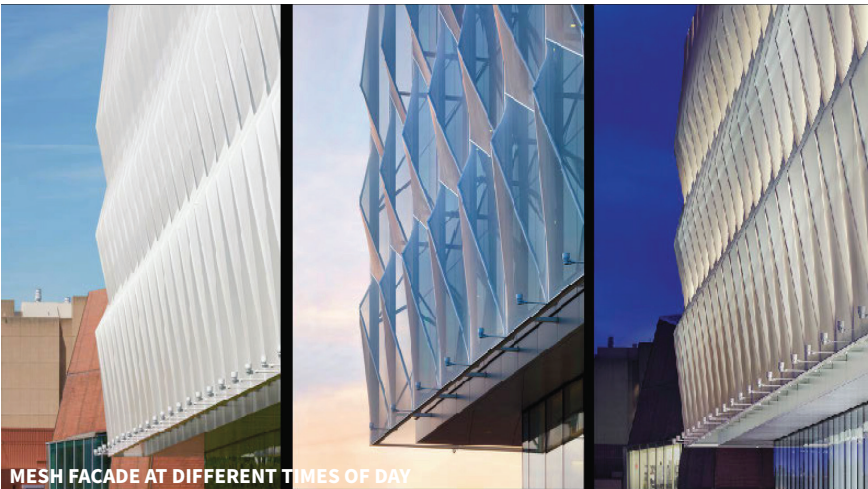
The unique façade was derived from a desire to protect sensitive patients and improve energy performance, but the mesh façade has also become a symbol for UC health. The advanced facade speaks to the technical excellence of UC Health's program while the soft organic geometries reflect the humane personal care UC Health gives to its patients.

PROJECT SUMMARY:

Project: Gardner Neuroscience Institute
Project location: Cincinnati, Ohio
Owner/Client: University of Cincinnati Health
Architect: Perkins+Will, Inc.
Construction manager: Hplex Solutions, Inc
Structural engineer: Shell + Meyer Associates, Inc
General contractor: Messer Construction Company
MEP engineer: Heapy Engineering
Photographs/Illustrations:
Construction cost: \$51.4 million
Building area GSF: 114,000 square foot
Cost per square foot: 451 per square foot
Construction start date: 6/1/2017
Substantial completion date: 4/1/2019



PATIENTS CIRCULATION



MESH FACADE AT DIFFERENT TIMES OF DAY

AIA/AAH DESIGN AWARD WINNER

Category: Innovations in Planning and Design Research, Built and Unbuilt

JURY COMMENT

- ▶ A simple bar building resolves research-based health concerns of the potential patient, energy, and architectural articulation through one tensile scrim. It epitomizes the notion of purposeful and research/knowledge-driven design to improve care and outcomes.
- ▶ Truly a project that can be appropriately described as a single stroke of genius.



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<https://healthcaredesignmagazine.com/featured-firms-projects/university-of-cincinnati-health-gardner-neuroscience-institute/#slide-9>

UNIVERSITY OF CINCINNATI, GARDNER NEUROSCIENCE INSTITUTE | CASE STUDY ANALYSIS

AIA Academy of Architecture for Health | Research Initiatives Committee