



Evaluating data-driven design of a patient-centered, multi-specialty clinic

UWHealth

UW Health, Pleasant T. Rowland Transplant Clinic
Post Occupancy Evaluation

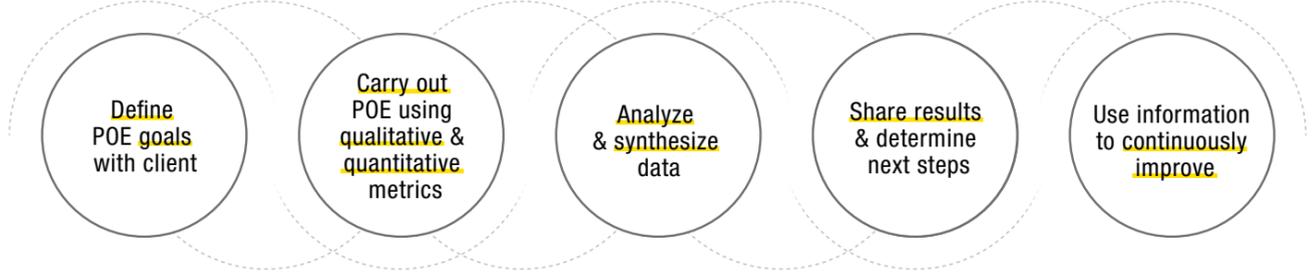
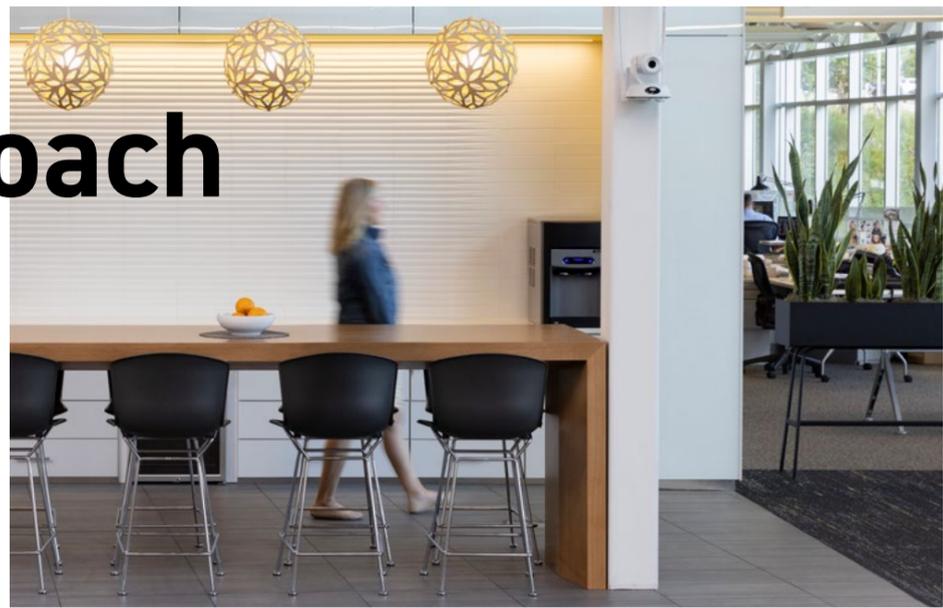
Flad

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our approach

We believe it is our responsibility as architects and planners to promote the health, well-being, safety, and productivity of users of the buildings Flad designs. Just as we plan, detail, document, and monitor the construction of our projects with great care, we also approach evaluating our buildings after delivery with careful attention to provide the best possible outcomes for our clients. For this performance assessment, Flad utilizes a post occupancy evaluation (POE).



What is a POE?

A post occupancy evaluation is defined as “the process of systematically and rigorously evaluating buildings after occupancy and providing feedback for improvement.”
- Preiser, Rabinowitz, & White (1998).

Why conduct a POE?

Conducting a POE is a mutually beneficial activity that allows clients, building occupants, and firms to:

- Measure how well the building meets established guiding principles and overall project goals
- Inform and enhance future facility designs
- Promote a culture of continuous improvement and ongoing learning
- Foster a high level of engagement by hearing directly from building occupants



[Learn more >](#)

the project

**UW Health,
Pleasant T. Rowland Transplant Clinic**

With the goal of creating a streamlined experience for everyone involved in the crucial life-giving process of organ transplantation, UW Health partnered with Flad to design a new clinic, hospital entry, and supporting spaces for UW Health's world-class transplant program.

The project vision was to "provide the best patient, provider, and staff experience and to remain one of the top transplant centers in the country."

To reduce patient travel throughout the hospital, the project moved patient care areas from the hospital's lower level to a prominent location, adjacent to the main floor entry of University Hospital. Opening in October 2022, the 16,000-square-foot Pleasant T. Rowland Transplant Clinic provided a new home and much-needed space for growth for the transplant program.

 **Madison, WI**

 **23,564 SF**

 **January 2023
Completion**

 **Design Awards**

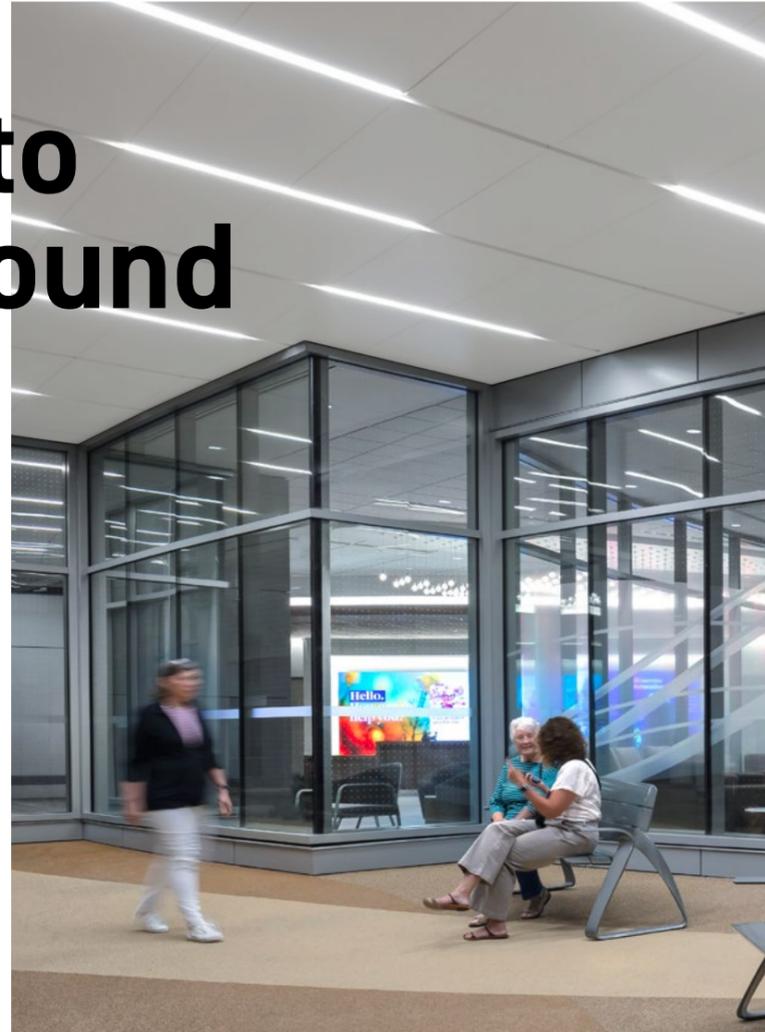
*In Business Magazine
Commercial Design Award*

*Center for Health Design
Silver Touchstone Award*

introduction to study background

To achieve the goal of providing a better experience for patients, providers, and staff, the design team adopted a data-driven approach to inform design and technology implementation.

Study Completed: February 2024



Purpose

One-year post occupancy, Flad and UW Health sought to determine the clinic's level of success in meeting the overall project vision to "provide the best patient, provider, and staff experience and to remain one of the top transplant centers in the country."

Goal

The level of success of the project would be measured by evaluating outcomes as they relate to the project's five guiding principles with the goal of producing measurable, actionable data and uncovering opportunities for improvement.

a tailored process

Flad's POEs are customized to the individual goals of each study and the information the client is interested in gathering. Project-specific POE goals:

Observe

user's behaviors, activities, and flow occurring in the clinic.

Measure

how spaces are being utilized and if users' needs are met.

Evaluate

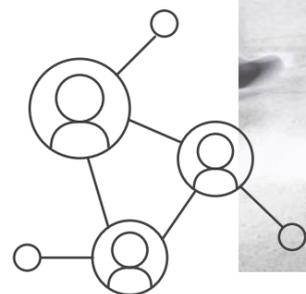
current layout, adjacencies, and flow in order to identify advantages or deficiencies.

Assess

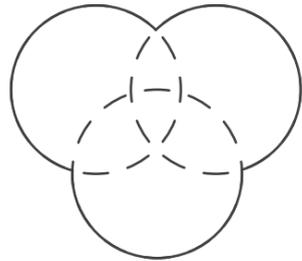
how effectively interior environmental conditions, furnishings, tools, and technology support patient care delivery.

Analyze

how the space aids patient, physician, and staff efficiencies and workflow.



data collection methods



Surveys

- Outpatient and Ambulatory Surgery Consumer Assessment of Healthcare Providers and Systems (OAS CHAPS)
- Staff questionnaires (six weeks and one year post move) to understand user satisfaction with the designed environment and technology integration
- 65-90 total surveyed across all roles that have experience with the clinic (mix of roles/departments)
- Departments included: Heart, Liver, Living Donor, Lung, Kidney, Pancreas, Renal Autotransplant

On-site Observation

- Center for Health Design Audit
- Time-and-Motion App
- Bluetooth Sensors

Volume Data

- Patient visit volume since opening, broken down by program and visit type



topics evaluated



Consolidated Care



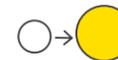
Patient & Family Centered Care



Collaborative Care Module



Innovation Through Technology Integration



Increase Program Volumes

space overview

- A Clinic Entry*
- B Staff Entry
- C Information/Greeter Desk*
- D Transport Clinic Reception Desk*
- E Living Donor Wall*
- F Waiting Area*
- G Education Room*
- H Blood Draw*
- I Clinic Team Station*
- J Typical Exam Room*
- K Prep/Recovery/Infusion Team Station
- L Typical Prep/Recovery Room
- M Infusion Rooms
- N Typical Procedure Room
- O Check-Out & Consult Rooms*
- P Clinic Exit*

*Spaces that were evaluated for study

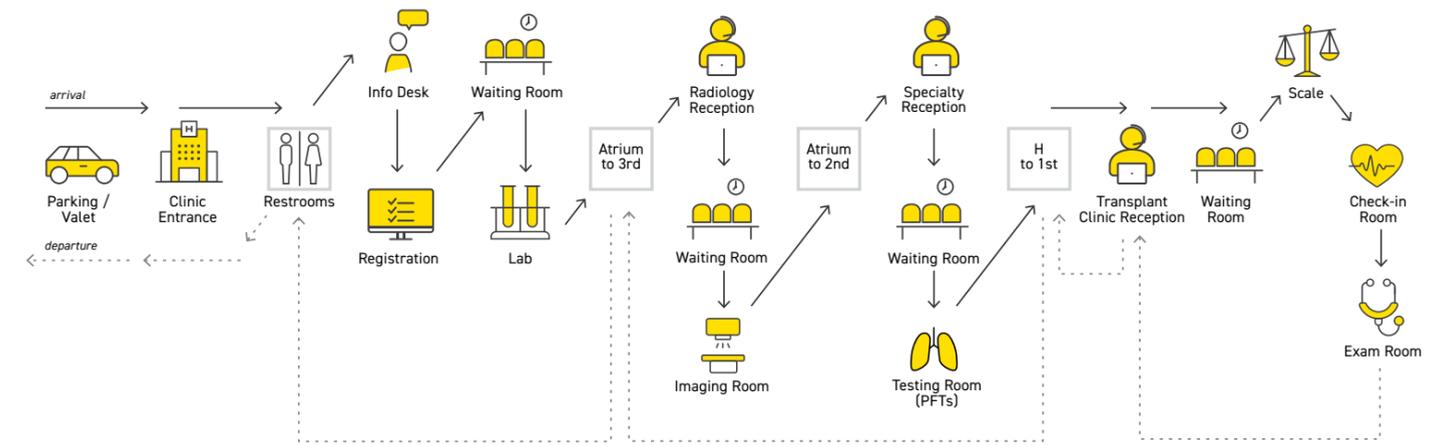


consolidated care

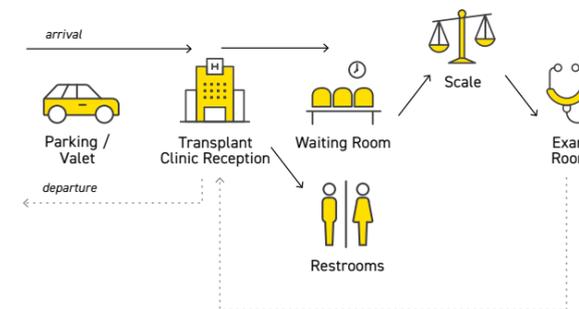


Visualizing Patient Flows

Pre-consolidated services patient flow sequence: **18 locations**



Consolidated services patient flow sequence: **6 locations**



reduced patients walking distance by **40-60%**

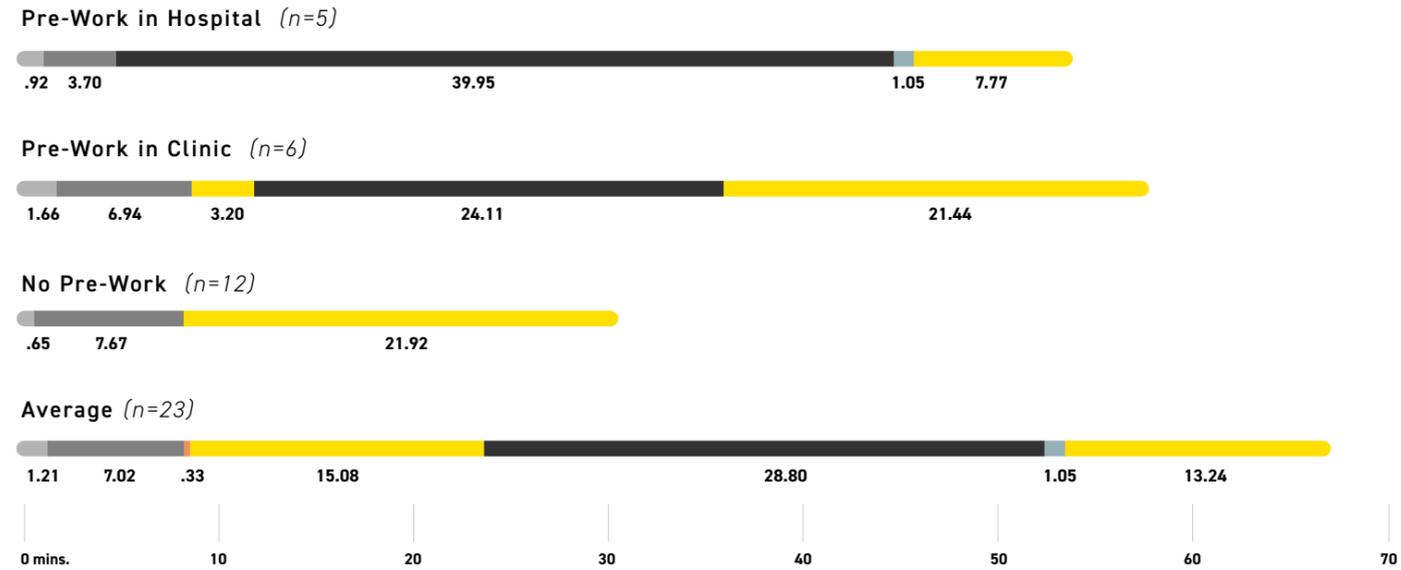
Design Solutions / Interventions

- Co-locate services
- Streamline entry sequence

Design Hypotheses

- Streamlined and efficient (e.g., flow and time spent) patient sequence
- Increase patient satisfaction
- Reduce patient travel (walking) distance and wait time

Patient Entry Sequency Times with Consolidated Services:



- wait for receptionist
- checking-in
- left for pre-work
- receptionist
- sit in waiting area
- donor wall



Success Outcome

- It was calculated that patients walk **40-60% less in the new consolidated model**
- Average entry sequence is **30 minutes when no pre-work** and **60 minutes with pre-work**; meeting predicted assumptions
- **90% patient satisfaction** OAS CHAPS "Likelihood to recommend"



patient & family centered care



seating provides patients / family a sense of choice

Design Solutions / Interventions

- All-inclusive entry, separate from other clinic services
- Use of technology through art to recognize living donors
- Variety and selection of furniture groups to provide a sense of control in the waiting room
- Universal exam rooms that are open, large, and flexible

Design Hypotheses

- Waiting room furniture accommodates users' needs and provides flexibility
- Viewership and use of the donor wall and education materials
- High rating of exam room design features

Success Outcome

- Self check-in kiosks in addition to registration desks support patient flow
- Large waiting room with natural light and a variety of comfortable seating options give patients a sense of choice
- Donor wall is a positive distraction for patients and family members but partially impedes patient view from registration
- With 30-45% of patients using walking or medical devices, some pinch points in furniture layout observed

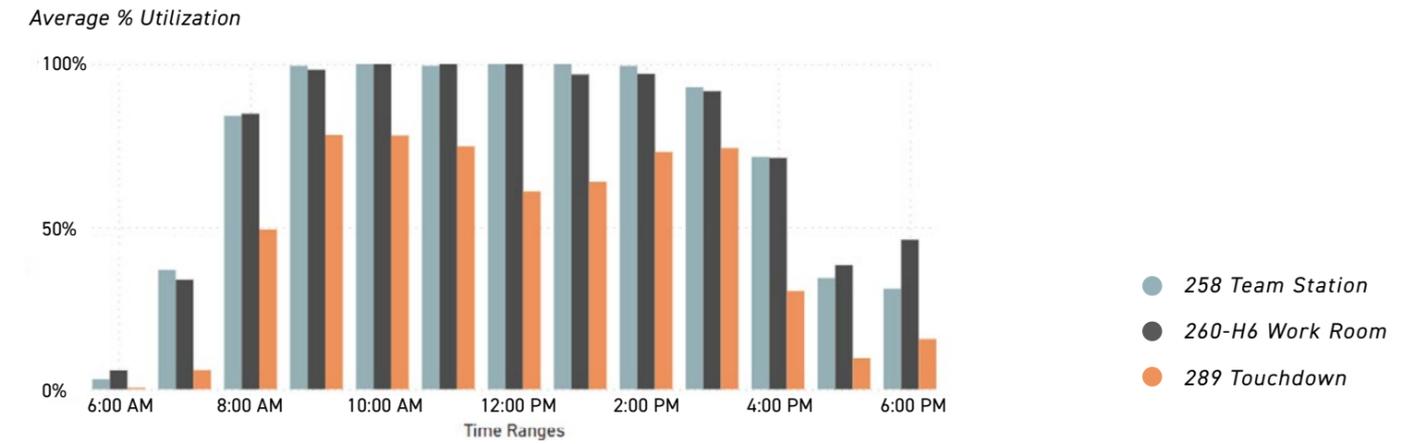


collaborative care module



Visualizing Data

Workroom Utilization - Sensor Analysis 6am - 6pm, Time of Day:



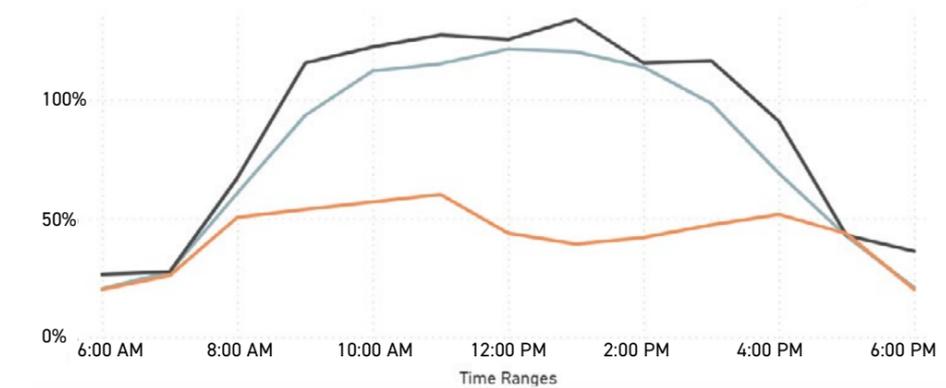
Design Solutions / Interventions

- Flexible, semi-enclosed team workstations, that accommodate efficiency, privacy, and cross collaboration

Design Hypotheses

- Team workstations centrally located among the exam rooms promotes utilization
- Co-location of team workstations increases staff and patient satisfaction

Average Seat Fill Rate

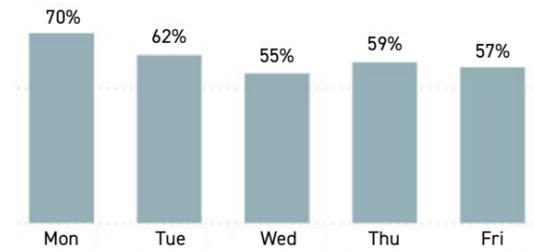


80-94%
seat fill rate for
team station &
work room

Workroom Utilization - Sensor Analysis 6am - 6pm, Day of Week:

258 Team Station

Utilization Rate (% of time occupied)

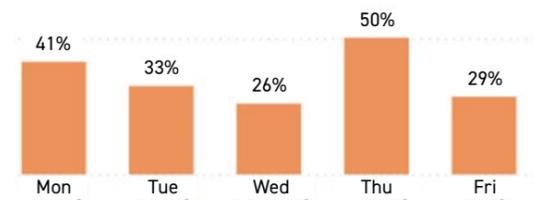


Seat Fill Rate When Utilized



289 Touchdown

Utilization Rate (% of time occupied)

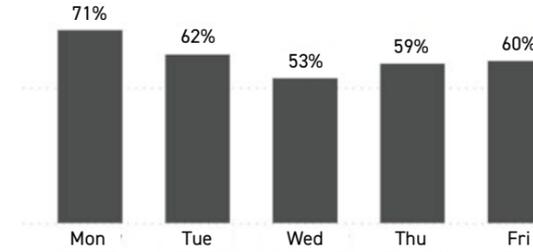


Seat Fill Rate When Utilized



260-H6 Workroom

Utilization Rate (% of time occupied)



Success Outcome

- **84-94% seat fill rate** of team station and provider workroom
- **85-90%** OAS CHAPS patient satisfaction score for “staff worked together to care for you”
- **7/10 staff satisfaction** of team workstations

innovation through technology integration



Design Solutions / Interventions

- Technology applications for enhanced real-time staff communication and patient tracking
- Five eSynch boards are placed among a pod of 4-5 exam rooms throughout the clinic corridor
- eSynch boards display anonymous information about patient visits, and clinic staff frequently update the displays by moving 'tags' along the continuum of patients' appointments

Design Hypotheses

- Integration of technology increases workflow efficiency and patient throughput

eSynch Board Usage:



Came from:



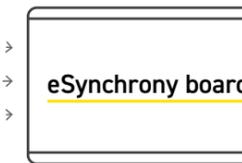
25% Exam Room



25% Team Station



24% Workroom



Went to:



50% Exam Room



17% Team Station



12% Workroom

Success Outcome

- eSynch boards are highly integrated into staff workflows; roughly 75-80 percent interactions with eSynch boards involve going to/from exam rooms, team station, and workrooms
- Two eSynch boards positioned to the front of the clinic (A & E) received the most usage (54%)
- 7.4/10 staff satisfaction with eSynch board integration

increase program volumes



Design Solutions / Interventions

- Planned for volume increase with pre-work data analytics assessment and predictions

Design Hypotheses

- Increase in patient volumes over time



62%
increase in
office visits

Success Outcome

- 62% increase in office visits since opening
- 1-2% increase in volume monthly

continuous improvement opportunities

Measuring the results of thoughtful and effective design illustrates opportunities to build upon successes and further improve the care environment. Below are areas noted for continuous improvement.

1

Reconfigure furniture if necessary based on varying patient volumes in waiting room.

2

Accommodate for high utilization of staff team stations, especially during peak clinic hours.

3

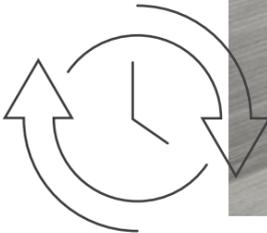
Reduce traffic at the clinic corridor entrance and door by operationalizing both the in-clinic pre-work appointment return to waiting and the check-out journey to the back door.

4

Create recessed alcoves to tuck the eSynch off the corridor thoroughfare, eliminating obstacles and increasing privacy and safety concerns.

5

Find ways of providing staff access to natural light.



innovation & analytics

Our multidisciplinary innovation and analytics team leverages leading-edge and novel technology, predictive tools, applied research, and data science to explore, test, and implement enhanced design solutions that help our clients do what they do best. This integrated team brings together architects, researchers,

data analysts, industrial engineers, computer scientists, developers, and computational designers to collaborate on innovative, sustainable, and client-centric outcomes.

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