

TESTING FOR LIFE ADVANCING CLINICAL OPERATIONS



CLINICAL DIAGNOSTIC TESTING EXPERTISE



CONTENTS

- 04 WHO WE ARE
- 10 HOW WE WORK
- 22 SELECT PROJECTS





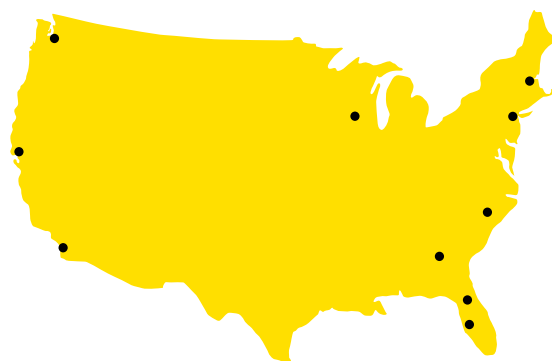
WHO WE ARE

FIRM AND EXPERTISE

95+

years of experience in planning and architecture

we create environments that enhance human potential®



Atlanta, GA · Boston, MA · Gainesville, FL · Madison, WI · New York, NY
Raleigh, NC · San Diego, CA · San Francisco, CA · Seattle, WA · Tampa, FL

320+

dedicated staff to serve our clients

10

offices nationwide

30+

planners: laboratories, healthcare

- Strategic and Master Planning
- Programming and Campus Planning
- Academic, Research and Medical Planning
- Site Planning and Landscape Architecture
- Architectural Design
- Structural Engineering
- Interior Design

350+

design awards

National Rankings

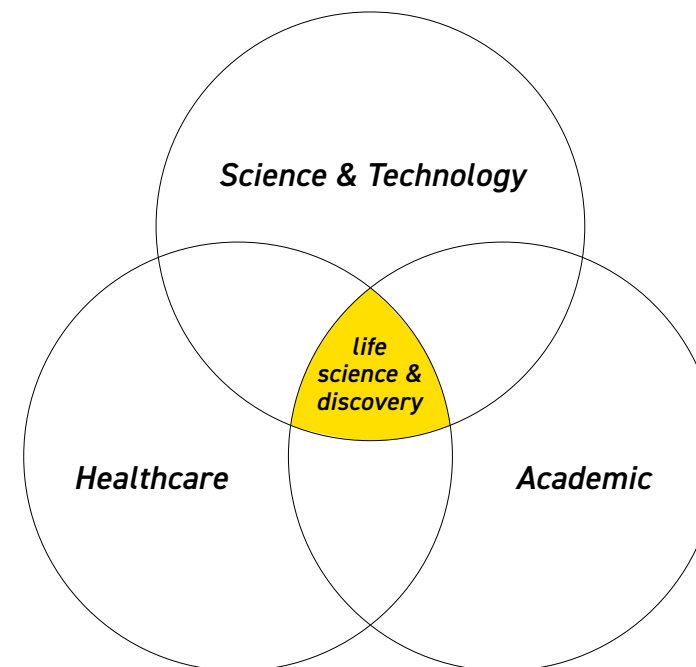
Building Design+Construction Giants // 2025

- 20 Overall
- 2 Laboratory Architecture
- 5 Science & Technology

350+

design awards

- 100 AIA Awards
- 39 IIDA Awards
- 8 Lab of the Year Awards
- 5 ISPE Facility of the Year Awards



SUSTAINABLE DESIGN

Becoming an industry leader by incorporating people, planet, and prosperity into all designed environments

We are committed to transforming how buildings are designed and built to support sustainability, resiliency, and human wellness. Regardless of whether clients seek certification, we encourage incorporating safe, healthy, and quality materials and offer sustainability visioning, energy modeling, and life-cycle cost analysis. As evidence of our focus, we have endorsed The 2030 Challenge to achieve dramatic reductions

in greenhouse emissions, reaching toward carbon neutrality on all of our projects by the year 2030.

Flad was an early adopter of the Leadership in Energy and Environmental Design standards, achieving several LEED firsts for the research, science, and healthcare facilities in which we specialize.



Recognized Industry Firsts

- ⤵ **4 Green Globes Hospitals in North America**
 UF Health Heart & Vascular Hospital and UF Health Neuromedicine Hospital
- ⤵ **LEED® Platinum Laboratory in New York**
 Stony Brook University
- ⤵ **LEED® Platinum Process Science Facility**
 University of California – Davis
- ⤵ **LEED® 2.2 Gold Laboratory**
 Johnson & Johnson
- ⤵ **LEED® Gold Hospital in Florida**
 UF Health, Cancer Hospital
- ⤵ **LEED® Gold Food Production Facility**
 Kettle Brand Foods
- ⤵ **LEED® Gold Research Institute in Seattle**
 Seattle Children's Research Institute, Building Cure
- ⤵ **LEED® Gold Laboratory**
 Pharmacia
- ⤵ **LEED® BD+C: Core and Shell Platinum***
 BioMed Realty, Gateway of Pacific Phase 1

* Highest certification level recognized by the USGBC



**HOW
WE WORK**

PUTTING PEOPLE FIRST

Creative thinking and the joys of delivering a solution based on shared values produces powerful results. Every time.

Every project is founded in an understanding that there is an important need and a promise of transformation. We are driven to build a collaborative of people that form a high-performance team, setting the stage for confidence and the belief that we will deliver the right project for long-term success. Aligning the principal stakeholders with capable professionals who want the best for their institution and are willing to work hard to achieve that is key. We gather principal stakeholders together to focus on purpose, vision, facts, goals, needs, and concepts that define the greater truth for the project,

shaping the right design solutions. A communication plan is equally essential to every project, ensuring stakeholders feel their voice is heard and that they can shape their future. It also helps manage expectations and provides a framework for decision making, conflict resolution, creating an audit trail for the work, and ensuring that the status of the project is shared accurately with everyone on campus over time.



LIVING OUR VALUES



We honor the creative spirit and innovation in all things.



We foster an environment of trust, integrity, and respect.



We embrace both individual initiative and collaboration.



We are trusted partners to our clients.



We are committed to the health and well-being of our communities and the planet.

In partnership with leading research organizations, universities, healthcare institutions, and science-based companies, we design beautiful, innovative environments that enable our clients to make revolutionary discoveries that have a profound impact on society. We are dedicated to providing exemplary service to our clients. Fostering this collaborative approach allows us to challenge

assumptions, solve unique problems, and help our clients achieve their mission through the lens of design. Our environments are an extension of our client's enterprise, celebrating their talent and reinforcing their brand and culture. Our solutions are customized, mission-driven, and transparent – increasing efficiency, productivity, and identity.



HEALTH SCIENCE

Personalized Medicine and Public Health

Emerging science and technologies often produce new functional relationships in research and diagnostic facilities not seen in traditional laboratory environments.

The boundaries between science and medicine continue to blur, and our healthcare and research staff work collaboratively on translational laboratories and facilities for precision medicine. Flad's work in healthcare, clinical trial facilities, and research lab environments allows us to understand these types of facilities and the community of research and medical specialists they support.

Our focus on healthcare and research offers advantages for our clients who are seeking solutions to the challenges of high-throughput testing, such as public health and private diagnostic organizations. To safeguard the public's health, these facilities need to provide safe, efficient, and effective clinical testing. We understand the complexities and challenges of programming, planning, and designing these highly technical spaces.



DIAGNOSTIC TESTING

Influencing Human Health

Clinical test facilities are a specialty of Flad. We have designed more than 75 million square feet of laboratories including academic health, pharmaceutical, biomedical, biotech, energy, biocontainment, food, and agricultural industries. A laboratory is more than merely a place to test samples. The environment must stimulate efficient sample processing, assure accurate results, provide traceability for the specimen, and allow for high productivity.

Planning and function, aligned with excellent design, is an inherent part of our practice. Our laboratory planners and designers are adept at incorporating these principles to create environments that are comfortable, productive, efficient, and inspiring. The depth of our national and international experience enables us to benchmark critical issues of flexibility, functionality, cost, and operations—while providing the insight our clients need to make informed decisions about their project and the future of their organization.



Flad Hosted an Inspiring Roundtable Discussion
*Testing for Life: Future-proofing Clinical
Diagnostics for Improved Patient Care*

[View the recap >>](#)

DIAGNOSTIC TESTING FACILITY PLANNING



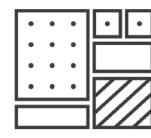
Establishment of the operational concept

Programming begins with understanding staffing models, operational hours, safety protocols, and cleaning procedures, alongside a comprehensive logistics plan for sample management across the full chain of custody. Capacity modeling, throughput analysis, equipment strategy, and consumables planning inform an operational framework designed to support efficiency, reliability, and future growth.



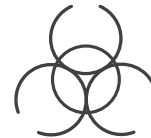
Organization of flows

Using 3P Lean principles and Kaizen-based collaboration, the team evaluates workflows, equipment use, and spatial organization to optimize personnel, sample, and waste flows. Flow analysis supports contamination control, sample integrity, and operational efficiency while identifying opportunities to reduce bottlenecks and improve coordination within laboratory, office, and support spaces.



Modular planning for flexibility

An open lab planning approach maximizes adaptability while maintaining necessary functional separations. Flexible utility distribution and a coordinated planning grid support evolving technologies, automation, and equipment upgrades. Structural performance, serviceability, and calibration requirements are evaluated to ensure long-term flexibility, efficient workflows, and reliable performance for sensitive instrumentation.



Develop safety / containment strategy

Safety and containment planning establishes appropriate biosafety levels and safeguards for personnel, products, and operations. The team evaluates containment approaches, gowning strategies, and isolation requirements while conducting hazard and operability reviews to confirm alignment with intended procedures and standard operating protocols.



Cross-contamination control

Design strategies support cross-contamination prevention through functional separation, pressure relationships, and specialized environmental requirements. Cleanroom considerations, cleanable finishes, airflow zoning, and environmental monitoring approaches are evaluated to maintain sample integrity and operational cleanliness aligned with testing protocols and performance standards.



Regulations

Laboratory planning integrates applicable regulatory and industry standards alongside building codes to support compliance and accreditation. Considerations may include CDC and WHO guidance, CLSI recommendations, ASHRAE and NFPA standards, and requirements associated with CAP accreditation and CLIA certification.



Special systems and security

Special systems planning addresses controlled access, equipment monitoring, data management, and secure reporting platforms. Strategies for redundancy, uninterruptible power, validation, and data backup are balanced with operational efficiency to protect sensitive information and maintain continuity of testing operations.



SELECT PROJECTS

improved processing



Offering the most extensive clinical testing network in the United States, Quest Diagnostics operates laboratories in most major metropolitan areas as well as internationally. Their capabilities include routine biological testing, complex and specialized molecular and gene-based testing, and anatomic pathology testing.

Designed in collaboration with Mark Cavagnero Associates, Flad has developed a 250,000-square-foot regional testing lab, one of the largest diagnostic testing facilities in the country. In order to support clinical testing, the project includes 175,000 square feet of laboratory space and areas for sample receipt, visitor entry, and warehousing on the main floor. The facility includes fully automated, semi-automated, and manual operations. The second floor features a cafeteria, town hall spaces, offices, and a viewing platform above the automated processing lines.

Lean/3P design sessions held as part of Flad's pre-programming and lab/design planning services helped the client provide layout solutions not only for this facility, but also for future labs in its network. The architectural and engineering design incorporates state-of-the-art elements in the laboratory, laboratory support, business support, and overall mechanical system design. The goal of the project is to lower facility costs, lower labor costs through automation, improve productivity, lower the cost of supplies, and create operational flow efficiencies.

Programmatic Components

250,000 SF

Laboratory Program

Office / Workplace Program



extended capabilities, lowered costs



Northwell Health, on Long Island, NY, made the decision to build an expanded core lab during a period of (ongoing) intense growth, which included three hospital mergers and numerous physician practice acquisitions over two years. The now 21-hospital system, which has nearly doubled the number of physicians it employs to 3,000, has acquired both redundant lab spaces and a ledger carrying large expenditures for outsourced lab services.

Northwell's existing, 60,000-square-foot core lab in Lake Success, NY, has been replaced by two automated facilities: The Core Lab, a new 36,000-square-foot building that is devoted to biological testing and functions as the hospital system's immediate connection to New York City, and 120,000 renovated square feet, devoted to chemistry-related testing, within a 1 million-square-foot building housing Northwell's Center for Advanced Medicine, six miles away. The dual facilities enhance performance while lowering costs.

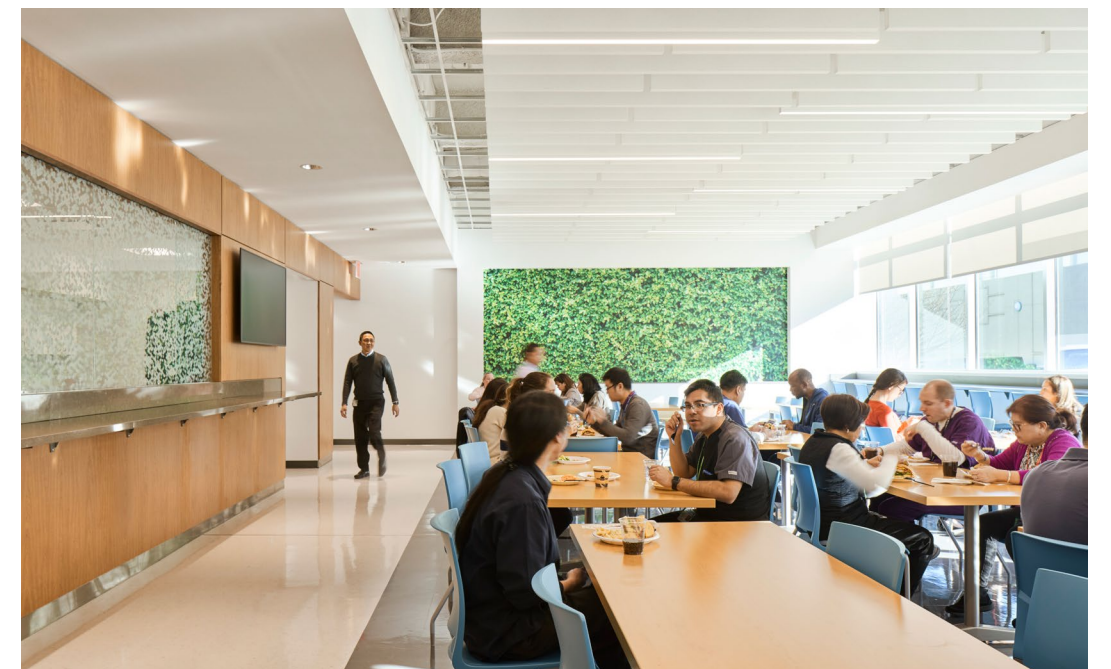
Given that Northwell anticipated its testing growth at between 250 and 400 percent, a fully automated workflow and testing system was created by several different collaborating manufacturers in response to Northwell's particular needs. The nation's largest private health institution will now be able to process up to 20 million tests annually, around the clock, utilizing the platform's various analyzer modules.

Programmatic Components

- 60,000 SF – New Construction
- 101,000 SF – Renovation
- Laboratory Program
- Office / Workplace Program

Certification

- LEED Gold
- LEED Gold (ID+C)



enabling faster, high-quality diagnostics



As one of only a few laboratories owned by physician groups in the nation, Summit Health's new clinical testing and pathology medicine lab enables timely, accurate diagnostic testing to inform medical decisions for residents in New Jersey and the New York metropolitan area.

The Woodland Park laboratory uses cutting-edge, highly automated technology typically only found at large reference labs offering high-throughput testing. The 50,000-square-foot site features a core lab, microbiology, molecular and anatomic pathology departments, and shell space to accommodate future growth. This new facility expands testing offerings for Summit Health providers beyond routine tests to now include allergy, autoimmune, urine drug toxicology for pain management, advanced women's health diagnostics, and oncologic support to identify hard-to-detect illnesses.

Operating 24-hours a day and 365 days of the year, the lab offers faster turnaround times and optimal quality control for the full menu of tests performed on site, meeting Summit Health's long-standing commitment to providing the highest quality care at low cost to its patients.

Flad designed the lab, conference rooms, offices, and staff amenity and support spaces to optimize workflows; support space adjacencies; meet safety/containment, security, and regulatory standards; and enhance flexibility of space for future shifts and growth.

Programmatic Components

- 50,000 SF
- Laboratory Program
- Office / Workplace Program



advancing clinical operations through strategic design



Striving to provide faster and more efficient clinical test results to patients and doctors, Quest Diagnostics partnered with Flad to transform key areas within their Lenexa testing facility. Focused on maximizing operational efficiency, Flad designed a 45,750-square-foot renovation that relocated manual lab functions and backfilled the space with state-of-the-art automation lines.

The renovation was accomplished through carefully planned phases, allowing Quest Diagnostics to maintain uninterrupted operations throughout the 21-month construction period. By combining strategic phasing with thoughtful spatial planning, the team delivered a flexible, future-ready environment that enables Quest Diagnostics to provide accurate, rapid results to their customers.

To support the installation of a new testing line, Flad reimagined microbiology lab space. By selectively removing walls and installing ceiling utility panels, the design created a more open, adaptable environment equipped for advanced automated workflows.

Additional renovations were completed to house automated clinical testing equipment, including a barcode tracing system for specimen tracking and storage. The design seamlessly integrated key infrastructure improvements, such as a raised flooring system, to accommodate the new technology.

Programmatic Components

45,750 SF
Laboratory Program
Office / Workplace Program



early cancer detection



Dedicated to providing molecular diagnostic services for early cancer detection, Abbott Cancer Diagnostics needed to accommodate a rise in demand for their stool DNA-based Cologuard® cancer screening test. To increase processing beyond their previous volume, the new Nexus One Clinical Laboratory Expansion fills 210,500 square feet of existing shell space at their Discovery Campus in Madison.

The new facility provides multiple clinical testing laboratories, cGMP warehousing, equipment maintenance facilities, a collaboration hub, and a range of support spaces, while also incorporating a variety of automated clinical testing capabilities, including accessioning, sample processing, and DNA capture processes. As a result, the Nexus One expansion enables Abbott Cancer Diagnostics to increase testing, as needed.

In addition, the expansion enables Abbott Cancer Diagnostics to host a wide pipeline of other life-changing early cancer detection products as they are developed and receive regulatory approval.

Meeting rooms and a kitchenette are strategically located at the core of the infill, offering convenient access to collaboration and communication space adjacent to each of the new laboratories.

Programmatic Components

- 210,500 SF
- Testing Laboratories
- cGMP Warehousing
- Equipment Maintenance Facilities
- Collaboration Hub
- Support Spaces
- Office / Workplace





**State of Connecticut,
Public Health Laboratory** [↗](#)

**a collaborative
environment
for public health**

To accommodate new programs and an expansion of services, the State of Connecticut’s new Public Health Laboratory provides a collaborative environment for the medical center, the department of public health, and many other groups – creating a cohesive public health community within an environment that balances technologically advanced building systems and equipment.

The laboratory conducts studies in epidemiology, salmonellosis, group A streptococcal infection, rucellosis, rabies, Lyme disease, Ehrlichia and West Nile virus, childhood lead poisoning prevention, maternal and child health, HIV/AIDS, tuberculosis control, environmental health and pollutant control, and safe food and drinking water programs.

The facility also provides a full array of testing in both environmental and occupational chemistry and evaluates procedures developed by the Environmental Protection Agency, National Institute of Occupational Safety and Health, and the Environmental Research Institute at the University of Connecticut, Storrs.

Currently operating with a staff of 128 full-time employees, the laboratory conducts over 350 types of tests, processes approximately 250,000 specimens, and performs over one million analyses annually.

Programmatic Components

- 110,000 SF
- Laboratory Program
- Workplace Program



**Mayo Clinic Laboratories,
Core Mass Spectrometry
Testing Laboratory**

**expanding testing
functions**

Mayo Clinic Laboratories expanded clinical testing functions at its existing 225,000-square-foot support facility to enhance their operations which included specimen receipt, processing, and accessioning.

Positioned on the south side of the existing facility, this 60,000-square-foot, two-story expansion houses clinical testing reference and development laboratories, laboratory support functions, offices, and building amenities and ancillary support. Programmatic components are organized to optimize adjacencies of an open and flexible lab concept, with each space located to support Lean operations. Material, sample, and personnel flows were carefully considered for seamless and efficient integration within the Lean operational framework.

Samples processed in the accessioning area move directly into the new addition via a clear and direct path of travel that does not interfere with primary personnel flows. The new entry and intersection create an informal collaboration space while efficiently circulating personnel to both floors of the addition, the existing lab building, and a possible future addition.

Programmatic Components

- 70,000 SF
- Laboratory Program
- Office / Workplace Program



**Stanford Health Care,
Clinical Lab & Anatomic Pathology Master Plan**

**enabling scalable,
multi-site lab operations**

Stanford Health Care engaged Flad to lead the long-range master plan for clinical lab and anatomic pathology services, encompassing over 24 sections across the entire Bay Area real estate portfolio. This plan aims to align and anticipate growth for optimal future success.

The strategic goals, based on the organization's objectives, pinpoint areas for growth, identify obsolete facilities, and provide a phasing and implementation plan that can accommodate the growth projections for the SHC, Lucille Packard Children's Hospital (LPCH), ValleyCare, and SHC Reference Labs through fiscal year 2030.

Together with SHC lab operation leaders, Flad's planning and data teams examined and analyzed the existing lab data, validated methodology for future demand projection, and developed a detailed lab space requirement/program aligned with the forecasted FY2030 demand.

Through a collaborative effort with SHC, Flad produced current and future-state assessments, gap analysis, scenario planning, and implementation planning. The team also engaged a cost estimator to project budget and construction timelines for each real estate scenario for SHC to anticipate risks and costs involved for the build-outs.

Programmatic Components

- 500,000 SF
- Laboratory Program
- Master Planning



**Confidential Client 18394,
Planning Services for Pathology
& Laboratory Medicine Institute (PLMI)**

optimizing for future growth

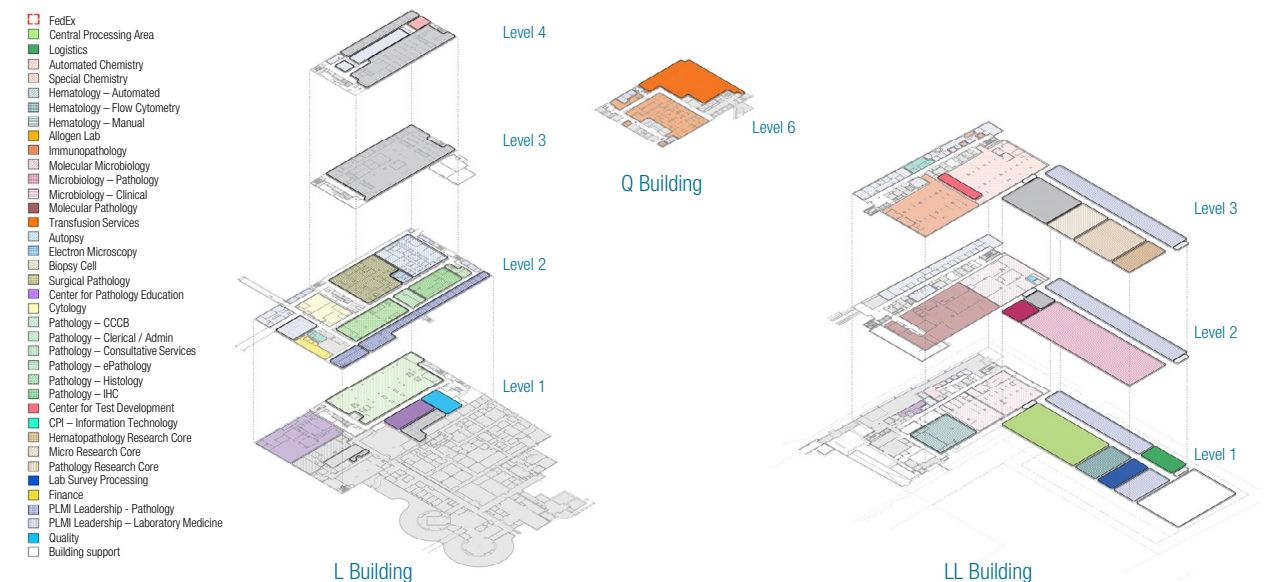
The PLMI touches every patient within this confidential client's organization. With approximately 1,400 caregivers testing more than 19 million samples annually, PLMI plays a vital role in diagnosing, treating, and monitoring disease.

To support long-term business needs, Flad assessed PLMI's operational and physical space requirements, providing a comprehensive overview of clinical diagnostic services. The enterprise assessment evaluated laboratory space, operational workflows, regulatory compliance, and utilization of manual and automated analytical equipment. Recommendations addressed space decompression, operational efficiencies, workload models, and material and sample flows. Historical requisitions were analyzed with the Institute's financial team to project future growth, informing programmatic space planning and real estate strategies while accounting for potential acquisitions and affiliations.

Flad also completed a master plan analysis of existing facilities to evaluate clinical pathology lab space and potential relocation strategies. Recommendations focused on improved operational flow, increased capacity, optimized turnaround times, new core laboratories, and centralized pre- and post-analytic functions to enhance efficiency and coordination.

Programmatic Components

- 240,000 SF
- Laboratory Program
- Master Planning



CLIENT LIST

- | | | |
|---|--|--|
| Abbott Cancer Diagnostics | Healthpeak Properties | Samsung Biologics |
| Abbott Laboratories | Influenza Research Institute | Sarasota Memorial Health System |
| Adaptive Biotechnologies | Johns Hopkins All Children's Hospital | Seagen |
| AdventHealth | Juno Therapeutics,
A Bristol Myers Squibb Company | Seattle Children's Research Institute |
| Allergan | Lee Health | Seqirus |
| Amgen | Mayo Clinic | Stanford Health Care |
| Atlantic Health System | Mass General Brigham | State of Connecticut
Department of Public Health |
| Bayer | MilliporeSigma | Summit Health |
| Beckman Coulter | Moffitt Cancer Center | Takeda Pharmaceuticals |
| BioMed Realty | Momentive | Texas Biomedical Research Institute |
| Catalent | Mount Sinai Hospital | The Jackson Laboratory |
| Centers for Disease Control
and Prevention | National Institute of
Environmental Health Sciences | Tufts University Regional
Biocontainment Laboratory |
| Children's Healthcare of Atlanta | National Institutes of Health | UF Health |
| Cleveland Clinic | Nektar Therapeutics | University of Chicago Medicine |
| Columbia University Medical Center | Novartis | University of Mississippi
Medical Center |
| Connecticut Department
of Public Health | Northwell Health | University of Wisconsin
School of Medicine |
| Duke University | NYU Langone Health | UW Health |
| Eisai | The Ohio State University | Wake Forest Baptist Medical Center |
| Fujifilm Cellular Dynamics | Penn State Health | Washington University Medical Center |
| Genentech | Quest Diagnostics | Wisconsin State Lab of Hygiene |
| GlaxoSmithKline | Regeneron Pharmaceuticals, Inc. | |



Flad Architects is a national planning and design firm committed to creating environments that enhance human potential. In partnership with leading research organizations, universities, healthcare institutions, and science-based companies, Flad designs innovative facilities that enable revolutionary discoveries that have a profound impact on society.

Over 95 years of passionate and rigorous focus on buildings devoted to the sciences has earned Flad consistently high rankings among the top 20 architectural firms, both overall and in the specific areas of science & technology, academic, and healthcare design.

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