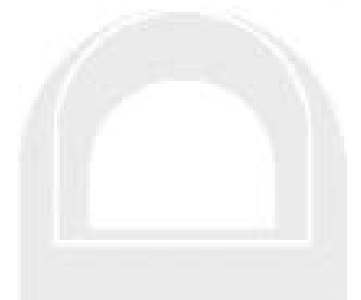
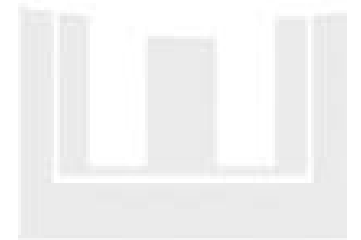
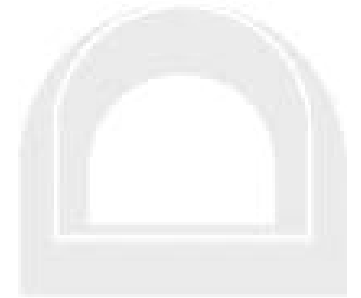


Laboratories





“DEDCC engineers provide technical expertise, respond immediately to our needs, and they do so while focusing on our budgetary constraints. I would recommend DEDCC.”
- Senior Facilities Manager

Profile + Services

About Us

Established in 1965, DEDCC is a privately owned, full-service, multidisciplinary engineering and design firm. We offer in-house expertise in mechanical HVAC, electrical, plumbing, process/chemical, electrical, structural and instrumentation/control engineering and design services. Our organization is structured to meet the challenges of projects of different sizes and complexities. Our practice has been built upon the quality of our people, the depth of our client base, and strength of our relationships, coupled with a diverse resume of design experience.

Culture

We believe that everything in business and life is about relationships. We strive to develop and maintain good business relationships with our clients. We value each member of our staff and strive to provide a quality work environment in which each professional benefits from experiences and opportunities on a continuous basis. We believe that internal clients are as important as the external client. We encourage each member of our firm to treat others with the same respect and attention that an external client receives. Each engineer and project manager is encouraged to make decisions. We encourage each member of the firm to market and promote DEDCC and our services.

Commitment to You

DEDCC is dedicated to providing excellence in engineering and service. We will provide the highest level of technical expertise for your project. We will use our creativity to solve complex problems. We will be customer focused and flexible in all of our interactions. It is our challenge to ensure that the skills and talents of our staff meet your needs.

We believe that teamwork, communications and partnering are key to making any relationship successful. By consistently listening to you, we will understand your needs and objectives. Our goal is to become an extension of your organization. Our focus is the relationship, not simply the project.

We Build Relationships

DEDCC is fortunate to have long standing relationships with a number of clients who are leaders in their industries. The quality of our offering is exemplified by the quality of our clients. Our success has come from listening, understanding and responding to the needs of our clients. Their satisfaction is measured by their desire to work with us again.



“DEDCC engineers and project managers always make themselves available to answer questions, provide alternatives and solve problems. DEDCC is a customer-focused organization.”

- Project Manager

Profile + Services

Engineering and Design Services

Mechanical HVAC

Plumbing

Electrical

Chemical/Process

Structural

Instrumentation

Engineering Evaluations

Feasibility Analysis

Cost Estimating

Front-End Loading

Sustainable Design

LEED Energy Modeling

LEED Design

Energy Star

Commissioning Services (DEDCC-Cx)

Energy Audits and Modeling

On-Demand Utility Production Evaluations

Energy Consumption Evaluations

Life Cycle Cost Analysis

Building Optimization Programming Analysis

Utility Master Planning

Campus

Building

On Site Resources

Project Management

Engineering and Design

Renewable Energy Design

CAD



Laboratories

The goal of corporate research is to gain knowledge that will further develop or enhance products of commercial value. This may come in the form of a new device to treat heart disease, a new drug that slows the progression of Alzheimer's, or a product that enhances agricultural products. This may also come in the form of new electronic devices, medical diagnostic equipment or materials for everyday life. While the type of research may vary, our clients count on DEDC as a partner for the design of the engineered systems that support their highly complex research facilities and the specialized spaces within them.

DEDC's engineers and design staff are experts in creating sophisticated and unique system designs for complex research spaces. These systems protect the researcher, the integrity of the research and the other occupants of the facility. Due to the complexity and uniqueness of each research and development space, our design process is a highly interactive and proactive approach that enables us to understand the requirements for each unique project.

We are proud to play a small role in bringing research to life.

Our experience includes:

- Animal Laboratories
- Biochemistry Laboratories
- Biology Laboratories
- Biomedical Laboratories
- Biosafety Level-2 Laboratories
- Biosafety Level-3 Laboratories
- Biotechnology Laboratories
- Blood Processing Laboratories
- Chemistry Laboratories
- Clean Rooms
- Clinical Laboratories
- Dental Laboratories
- Medical Device Manufacturing Facilities
- Molecular Immunology Laboratories
- Neurobiology Research Facility
- Pharmaceutical Laboratories
- Pilot Plants
- Plant Biology Laboratories
- General Research Laboratories
- Teaching Laboratories



CASE STUDY

New Performance Coatings

Solutions R&D Center

Wilmington, Delaware

Project Facts

- A Performance Coatings Solutions business relocated their research and development laboratory and resin pilot plant facility from Philadelphia, PA, to Wilmington, DE.
- This \$35 million project required design and construction of sophisticated mechanical and electrical systems.
- The objective was to create a new, state-of-the-art Technology Center that focuses on research and development with new spaces for chemistry, product testing and aging laboratories, office and collaborative areas, paint spray facilities and a resin pilot plant.
- The resin pilot plant is a tool for process development for new resins formulation and includes two reactors to maximize its capabilities.
- Project safety activities were extensive, especially requirements for HVAC systems.
- DEDC provided mechanical and electrical engineering and design services for the project, participating in all planning and programming activities and safety reviews.
- The project was recently completed and is in operation.





CASE STUDY

Proprietary Laboratory
SMVA Production Area

Newark, Delaware

Project Facts

- This Proprietary Laboratory manufactures a spectrum of immunoassay, chemistry, hematology, molecular, urinalysis and blood gas testing systems that serve the needs of laboratories all over the world.
- This project created a new SMVA (semi mono-clonal blocking antibodies) Production Area, involving the installation of bio reactors and associated piping, controls and pumps, as well as support utilities such as ASTM Class 1 deionized water, high purity oxygen and medical grade nitrogen.
- DEDC’s design also required HEPA-filtered air managed to meet specific pressurization control requirements.



Project Facts

- Incyte Corporation, a biopharmaceutical company that develops drugs for oncology and inflammation, has outgrown their research and development facilities and are relocating to a new facility.
- The project involved creating 190,000 square feet of new laboratory, vivarium and office/collaborative space that will become Incyte's new headquarters and primary research and development facility.
- DEDC provided mechanical and electrical engineering design services, working with Turner using "design/build" delivery.
- This \$42 million project required all new mechanical and electrical infrastructures to meet the needs of the lab and vivarium programs.
- The design incorporated sustainable principles and employed the latest laboratory mechanical and electrical systems technology.



CASE STUDY

A.I. duPont Children's Hospital, Rockland Laboratory Upgrade
Wilmington, Delaware

Project Facts

- This project included the renovation of a facility for offices, medical testing and a Research and Development laboratory.
- Funded by federal grants, the project included replacement of building central systems, including ventilation and laboratory exhaust systems.
- DEDC's mechanical, electrical and plumbing engineering and design services included conceptual design, construction cost estimate, construction documents, and construction and start-up assistance.

CASE STUDY

Seed Treatment Laboratory

Wilmington, Delaware

Project Facts

- A new laboratory was designed as a small-scale, state-of-the-art seed treatment facility to simulate and study commercial-scale processes.
- The new facility includes an environmental chamber that will simulate temperature and humidity conditions in most regions of the world as well as coating, drying and dust collection equipment.
- New mechanical and electrical infrastructure such as new air handlers, exhaust fans, dust collectors and electrical gear were also installed.
- DEDCC was responsible for all aspects of engineering and design, including assistance during construction, and commissioning.
- The project was completed on schedule to meet the market's demand for research.





CASE STUDY
Photovoltaic Materials
Testing Facility

Wilmington, Delaware

Project Facts

- A North American Photovoltaic Applications Laboratory was constructed to support materials development for the photovoltaic, solar energy market. This lab was designed to advance state-of-the-art solar module design, accelerate time to market in photovoltaic innovation, and deliver cost-effective, high-performance solutions.
- This new 30,000-square-foot material testing facility includes multiple Class 1000 clean rooms that use fan power, ceiling-mounted HEPA filters and a soft-wall, clean room structure. The project included installing new testing equipment, well as building and services modifications, to support the new equipment.
- The components and structure were designed to be modular to allow for clean room configuration changes.
- DEDC was responsible for engineering design, including engineering analysis and calculations, preliminary drawings, equipment specifications for estimating, bidding and construction, and also provided construction, start-up and commissioning services.

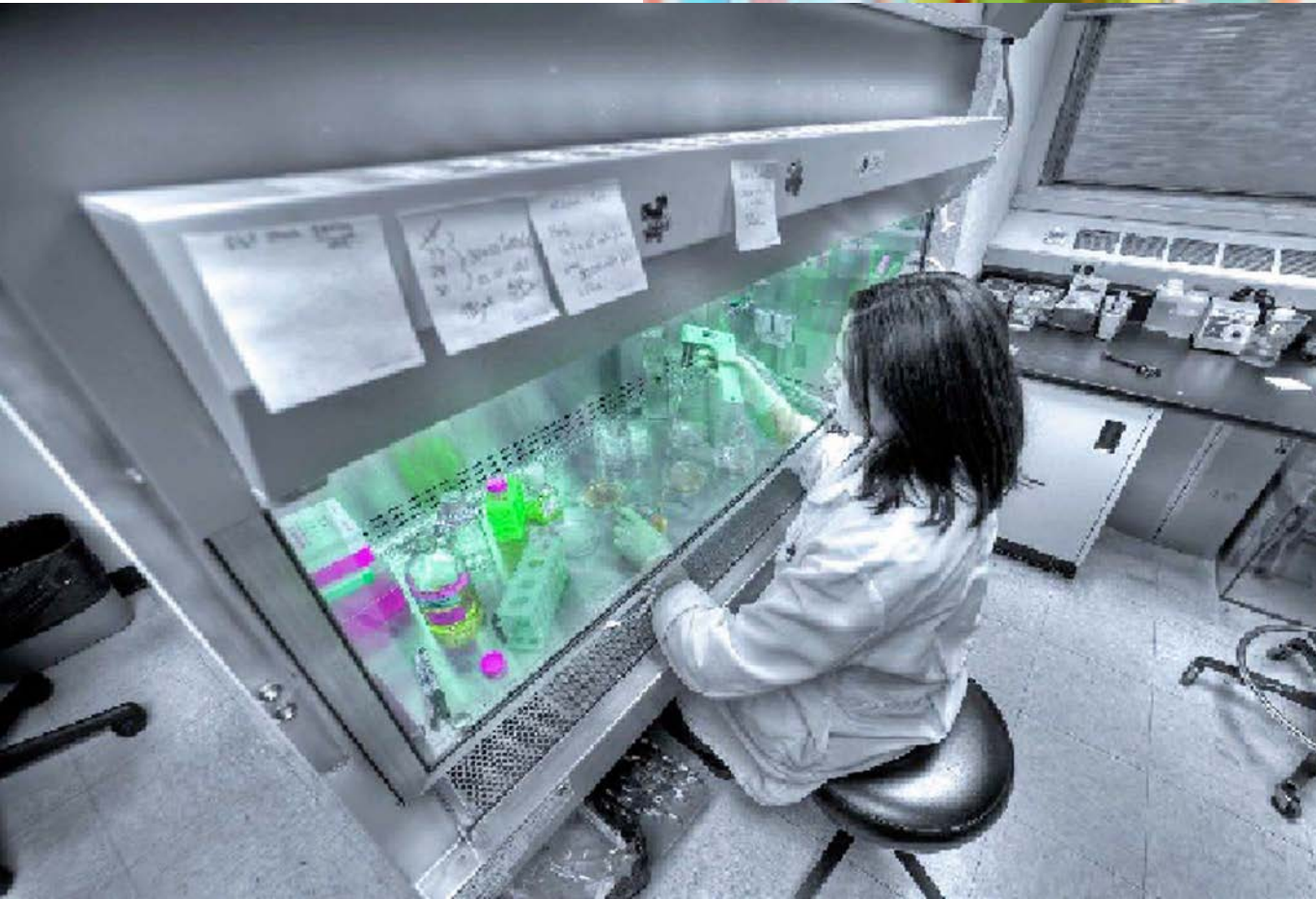


Laboratories

CASE STUDY

Toxicology Laboratory Relocation

Newark, Delaware



Project Facts

- DEDC recently completed a project to relocate a 75,000-square-foot Health and Environmental Sciences Lab from an older building complex to an existing vacant building.
- The goal of the program was to create laboratory and support spaces to enable collaborative research for teams of scientists with varying expertise forming interdisciplinary research units in a modern space.
- This renovation created new research and development spaces to accommodate the program, creating wet chemistry and toxicology labs, tissue culture labs, and animal science facilities and support spaces.
- Many of the labs were equipment intensive and required as much bench space as possible. Other labs required significant space for fume hoods and ventilated enclosures.
- The project required significant modifications and upgrades to the building mechanical and electrical infrastructure including the HVAC systems, service piping and plumbing systems, power distribution and lighting systems.



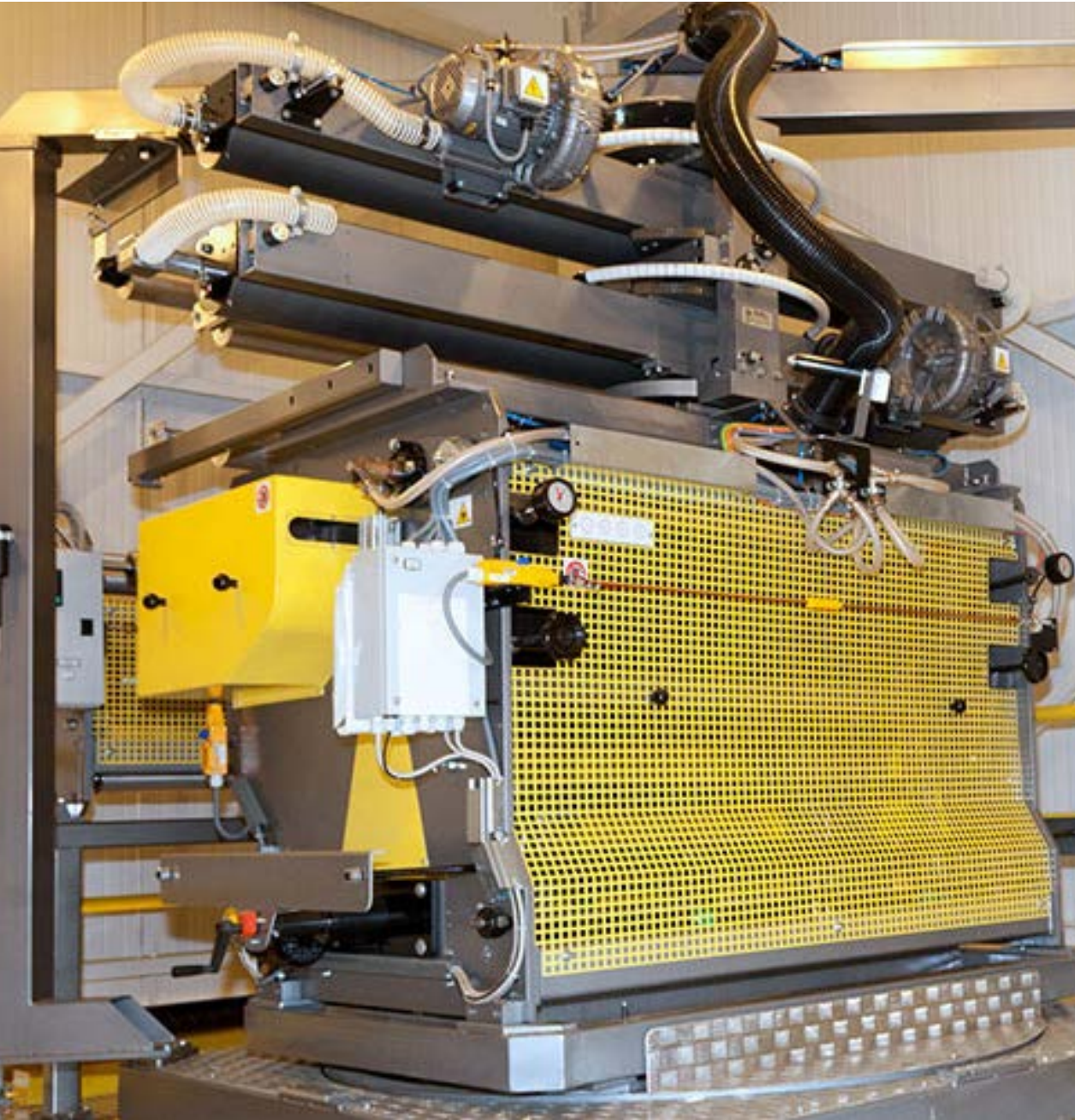
CASE STUDY

University of Delaware, Cannon Laboratory HVAC & Electrical Upgrades

Lewes, Delaware

Project Facts

- University of Delaware’s Cannon Laboratory was constructed in 1975 and serves multiple functions, including research by Marine Scientists, undergraduate and graduate studies, and office space for research and administrative personnel. Most of the mechanical and electrical infrastructure dated to the original construction, and systems had exceeded their useful life.
- DEDC was contracted to perform a detailed analysis of five combinations of heating and cooling technologies, including direct expansion split systems, air-cooled chillers and water-cooled chillers. Heating systems included electric resistance heaters, electric boilers, gas-fired water boilers and oil-fired water boilers.
- DEDC and the University selected a new HVAC system that combines good engineering practices, energy savings and acceptable first costs.
- DEDC has completed construction documents for the project.



CASE STUDY

Packaging & Industrial Polymers Laboratory
Wilmington, Delaware

Project Facts

- Packaging and Industrial Polymers serve the global packaging, safety glass and polymer compounding industries, providing material-based solutions to help protect people, food and the environment.
- This project involved the installation of a pilot-scale, nine-layer blown film line to better serve customer needs for quick and cost-effective product packaging within this Packaging & Industrial Polymers Laboratory and Semiworks facility.



Project Facts

- West-Ward Pharmaceuticals is one of the 20 largest generic prescription medication providers in the United States and develops, manufactures and markets generic prescription medication and therapeutic products.
- DEDCC was responsible for engineering and design to integrate two new filling suites into an operating pharmaceutical manufacturing facility, including demolition of existing suites, construction of filling lines and support spaces totaling 17,000 square feet.
- DEDCC designed systems for power, UPS and lighting, a new air handler and associated exhaust, WFI, clean steam, nitrogen, OFPA and domestic water and sanitary systems, as well as particulate monitoring and pressurization control.
- DEDCC provided conceptual engineering and design, strategic planning, construction cost estimating, completion of drawings for permit and construction, and assistance during start-up and commissioning.

CASE STUDY

DeIDOT Laboratory, HVAC Systems Upgrade

Dover, Delaware



Project Facts

- The Materials and Research Laboratory is part of DeIDOT's Division of Transportation Solutions that functions to inspect, test, document and make recommendations concerning the suitability of all materials used in the construction and maintenance of state highways and bridges.
- The objective of this project was to replace the existing HVAC system serving the 15,000-square-foot laboratory. DEDC was selected as the lead design professional and first completed lifecycle cost and system selection analysis to select a mechanical system that combines energy efficiency and acceptable first cost.
- The HVAC renovation included replacement of the central air handlers, boilers and chillers, ductwork and piping. The electrical distribution equipment and Building Automation System were replaced to provide state-of-the-art HVAC system control. A new rooftop packaged mechanical room was specified, allowing an accelerated schedule for the project.
- DEDC provided drawings and specifications for bidding and construction, as well as assistance during construction, commissioning and project start-up. The project was completed on time and within budget.



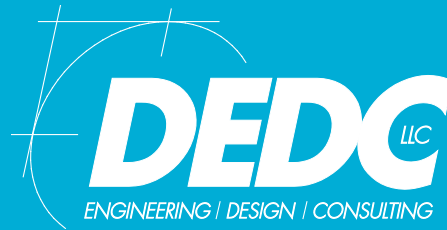
CASE STUDY

DuPont Chestnut Run Plaza,
Solar Power Research Facility

Wilmington, Delaware

Project Facts

- This 10,000-square-foot laboratory is dedicated to increasing the efficiency and durability of materials used in solar cells while reducing manufacturing and installation costs.
- This lab uses specialized equipment that can simulate real-world conditions, including how effectively a cell converts sun rays into electricity, as well as equipment that can simulate the aging process to gauge how a product will hold up over time. This lab also includes a large, class 1000 clean room. Electrical and HVAC modifications were designed to accommodate modifications to the existing clean room. Service piping to new lab equipment and new exhaust fan installations were also included in the final design.



Thank You.

Lynn M. Everhart
Executive Director
DEDCC, LLC
O: 267.386.4885
C: 302.985.3262
leverhart@dedc-eng.com
www.dedc-eng.com