

progress

2011 CORPORATE/INDUSTRIAL ISSUE

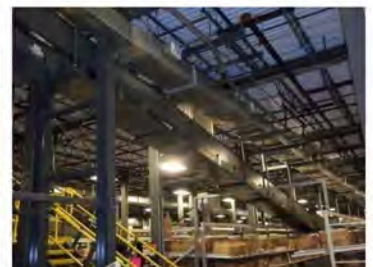
Design / CM Services for Distribution Center A/C System



AVON recently completed the construction of a new 1M sq.ft. warehouse and distribution facility located in Zanesville, OH. The warehouse/receiving and distribution/shipping areas of the building were originally served only by heating and ventilation systems. El Associates was retained by AVON to provide engineering design and construction management services for a new

comfort control air conditioning system to serve the approximately 600,000 GSF of distribution/shipping areas of the building. This project included the design and installation of two prefabricated water-cooled central plant systems provided by two 425-ton penthouse air conditioning units. Over 10,000 lineal feet of fabric ductwork was installed. This avoided the requirement for roof

steel reinforcement and significantly reduced the overall construction costs. El provided all engineering design, procurement and construction management services to execute the project without disruption to on-going critical shipping activities.

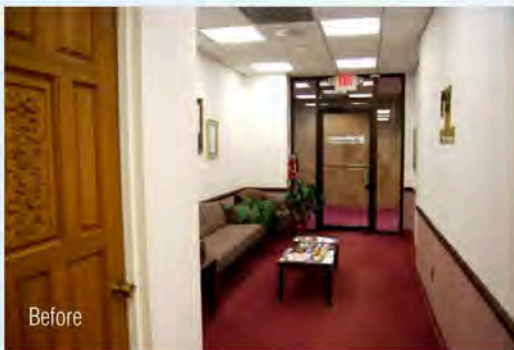


Design/Build Headquarters Renovation

The New Jersey Bankers Association, headquartered in Princeton, NJ, and the New Jersey League of Community Bankers, headquartered in Cranford, NJ elected to merge to form one stronger, unified trade association. The decision was also made to relocate the Princeton offices to the two-story Cranford facility. To accommodate the increase in staff, achieve optimum operating efficiencies, and promote the professional image of the Association, this relocation required a reorganization of space and renovation of the first and second floors. El Associates was retained by the NJ Bankers Association to perform the entire renovation project on a design/build basis.

To meet the NJBA's operational, marketing and budgetary requirements El conducted interviews with the key staff members to obtain operational objectives and work-station requirements. Existing furniture systems and moveable furniture at the Princeton office were evaluated to determine their suitability for re-use and relocation. ADA, security and privacy issues were also addressed.

The approved project scope involved a phased plan to accommodate ongoing activities. Initially, the first floor was renovated to provide swing space for the partial relocation of second floor employees to permit multi-phased renovations of the second floor. The second floor offices were then remodeled and upgraded to accommodate the increased Administrative and Operations staff. The Lobby/Reception Area was renovated to accommodate a custom-designed Reception Desk and an expanded Waiting Area. The existing Conference Room and the Employee's Lounge were also remodeled and upgraded. Working with NJBA's input, an updated interior design was developed that conveyed and enhanced the professional image.



Data Center Energy Reduction: Free Cooling Heat Exchanger



With the ever rising cost of fuel, energy conservation is a critical component to profitability. As a leader in sustainable design practices, our firm is frequently retained to identify and implement Energy Conservation Measures (ECM's) on behalf of our clients. For the world's largest international transportation company based in NJ, El recently performed an energy study to identify ECM's associated with a 2,000-ton Data Center and Office HVAC system. Our study evaluated several cooling options based on the introduction of a plate/frame heat exchanger located between the existing condenser water and chilled water systems. Ideally the heat exchanger would be capable of utilizing cold condenser water from the cooling towers as a way to produce chilled water without the need for mechanical cooling. Ultimately El developed a "free cooling" heat exchanger option (as a waterside economizer) in a series arrangement with the existing electrical centrifugal chillers which were upgraded with variable speed chillers as part of this project. This series exchanger configuration, which can provide full cooling or pre-cooling to the chillers, increased the annual available hours of free cooling operation from 2,800 hours to approximately 5,000 hours.

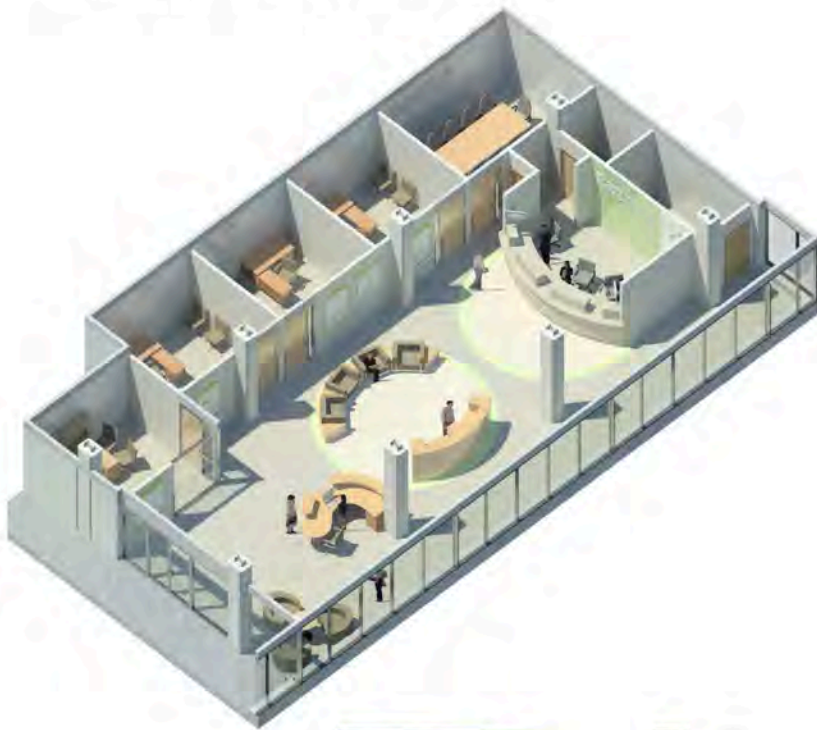
The proposed free cooling heat exchanger improvements were calculated to provide less than a 2 year payback, with anticipated energy savings of \$260,000/year. El has provided all detailed design and construction administration phase services for the implementation of the project which was completed in January 2011.

Brand-Inspired Design for Proponent FCU at Hoffmann-La Roche

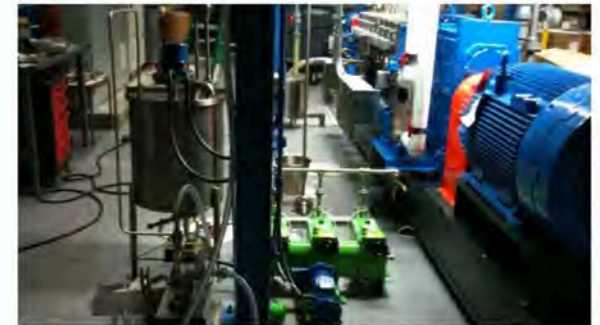
Proponent Federal Credit Union was recently provided 3,050 sq.ft. of space within Building 76 at the Hoffmann-La Roche (its Sponsor) Nutley, NJ campus for the relocation of its branch facility. El's challenge was to develop an operationally efficient design that would convey their brand, be compatible with their established image and promote the cross-selling of their products and services while meeting the building requirements of Hoffmann-La Roche.

Following interviews with the Credit Union's management team, El Associates formed an understanding of their operational, business and marketing objectives for the project. El's designers also reviewed the Credit Union's website, marketing material and graphics to fully appreciate the Credit Union's Brand and determine how to incorporate it into the design.

The new branch's floor and ceiling plans take cues from the Credit Union's logo. Elements of the logo are reflected in the color palette as well as in the carpet, stone flooring patterns and the millwork design of the teller counter, the reception and waiting areas. To accurately visualize the design and facilitate the client's decision making process, El designed the entire project utilizing AutoCAD REVIT, a form of 3-D BIM software. The interior design successfully promotes the Credit Union's mission in a sophisticated and integrated manner.



Design/Build Polymer Extruder



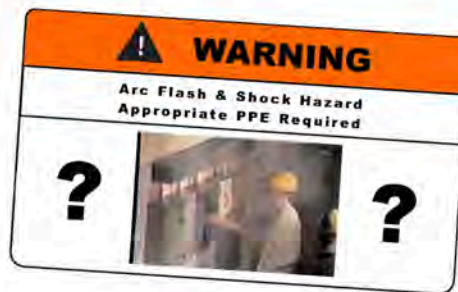
With the demand for polymer-fragrance products steadily increasing, El prepared a productivity and capacity analysis of IFF's existing extruder process to determine the ability of the existing system to accommodate increased production levels. Based upon El's Cycle Time and Bottleneck analysis, IFF decided to purchase and install a new, larger extruder to increase capacity, provide more manufacturing flexibility, and to improve product quality.

El executed this project on an accelerated Design/Build basis, initially evaluating equipment lead times, coordinating all fabrication to secure bids for the new extruder, and tabulating the advantages/disadvantages for each proprietary extruder system. El also evaluated the capacity of the existing building, materials handling and utility systems and designed and constructed all required system improvements.

Arc Flash Safety – Are You Protected?

EI is assisting several of our corporate clients by performing Arc Flash studies to identify hazards within existing plants. Arc flash, an explosion generated when electrical current short-circuits through the air, can cause serious injury or death.

An Arc Flash study involves gathering existing electrical data including wire sizes, cable lengths, loads and panel information. Once the proper information is obtained a comprehensive analysis of the existing electrical systems is performed to identify potential Arc Flash and other Shock Hazards. The collected data is used to model the existing electrical system and determine the location and severity of latent arc flash hazards. Using SKM Powertools for Windows software, EI engineers can calculate incident energy and flash protection boundaries. From this, labels can be prepared and provided at each device location to alert our client's personnel to the use of appropriate PPE as required by NFPA 70E.



Do you know your hazards?

Call: Thomas B. Mullarkey, P.E.

EI Associates

973-775-7777 ext. 258

tom_mullarkey@eiassociates.com

News, Notes & Events

New Projects

- Avon, Zanesville, OH
– Distribution Center Air Conditioning & Emergency Generator Installation
- BMW North America, Port Jersey, NJ – Spray Booth Installation
- Colgate, Morristown, NJ – Microlab Expansion
- Hemispherx Biopharma, Inc., New Brunswick, NJ
– Process Scale-Up Expansion
- IFF, Hazlet, NJ – Spray Dryer Installation
- Maquet Cardiovascular, Wayne, NJ
– Training Area Renovations
– Blending Room Hazard Use Study & Renovations
- Par Pharmaceuticals, Spring Valley, NY
– Parking Expansion
– Formulation Suite Upgrades
- Pepsi Cola Co., Valhalla, NY – Security Improvements
- Pfizer, Pearl River, NY – Arc Flash Study
- Princeton University, Princeton, NJ – Network Core Study
- Stepan, Maywood, NJ – Process Upgrades
- Township of Denville, NJ – Police Headquarters Expansion
- UPS, Mahwah, NJ – Cooling Tower Upgrades
- Confidential, King of Prussia, PA – Corporate Office Renovations
– Manufacturing Area Expansion

Friability, Dust Control and Containment: Challenges of Dry Solids Material Handling

EI Associates recently completed the planning, design and equipment procurement for an \$8 million new production facility for a major manufacturer of household goods. The facility was installed inside a 600,000 sq.ft. existing manufacturing facility in central Pennsylvania. Reorientation of the rail siding was required along with the design of conveying systems to minimize the creation of dust. Our design covered all material handling aspects of the project from bulk material truck and rail unloading stations, to process mixing and blending, to container filling and palletizing of the finished product. From the development of process flow diagrams thru detailed engineering, EI handled all design aspects of this project.

Special material handling requirements were addressed due to the extremely friable nature of the process ingredients. The constituents of the materials restricted the amount of handling which could be performed, resulting in the decision to locate large storage silos within an existing high-bay facility in close proximity to the new process operations. Belt conveyors and bucket elevators were used for all material handling in order to avoid compression and agglomeration.

To prevent the escape of fugitive dust and to avoid contamination of an adjacent liquid-based product manufacturing area, all mixing and blending of the dry solids which was performed through the use of new ribbon blenders was contained within a separate, dust-tight process room which is kept under negative pressurization. Process automation and control systems were designed flexibly to address large and small capacity production campaigns for individual product sub-categories.

Due to the combustible dusts created during the process, explosion-resistant dust collection systems were specified. To minimize the costs associated with providing electrical area classification as a result of the addition of alcohol-based fragrances during the process, flammable liquid use within the process room was restricted to code-exempt quantities, while bulk storage of the material was maintained in a separate room.