

ARCHITECTURE

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Spring 2006

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Effective Engineering Expertise

STAFF PROFILE - STUART WHITE, P.E.



STUART WHITE, P.E.
Senior Vice President
Director of M/E/P Engineering

Environmental considerations coupled with growing energy costs make efficient mechanical, electrical, plumbing, HVAC and safety systems more important than ever. An innovative engineer is key to designing systems that meet the demands of today's environmentally sensitive client.

Stuart White, P.E., Epstein's senior vice president and director of MEP engineering, is keenly aware of the changing

demands placed upon various building systems and designs environmentally-aware solutions to meet these challenges.

"Today's client wants not only an aesthetically-pleasing or even a cutting-edge architectural design, but also internal building systems that are energy efficient and as green as possible," noted White.

As a LEED® accredited professional, White is well-versed in sustainable engineering approaches that meet the challenges of today's commercial and industrial facilities. With more than 20 years experience, he manages and directs Epstein's engineers in the design of mechanical and electrical utility systems, including refrigeration, HVAC, steam, compressed air, water and fire protection. He is particularly well-versed in developing efficient ammonia refrigeration and HVAC systems for Epstein's industrial clients.

"The days of simply being 'up to code' with MEP systems are long past. Our

clients are very aware of the ecological implications of engineered systems and want efficient approaches that are both cost-effective and respect the surrounding environment. We strive to develop systems that are as sustainable as possible."

One particular area of concentration for White and his team is the industrial utility audit. As energy costs continue to increase, industrial clients, especially those working in older, existing facilities, recognize the value in analyzing their MEP systems and assessing where cost-effective and energy-efficient upgrades can take place.

"We are assessing existing facilities more frequently to pinpoint improvements to save on electricity, water and other energy uses," said White. "By making existing facilities more energy-efficient, we in turn bolster our client's production or distribution capabilities by making their operation more cost-effective and increasingly greener."

Recent Epstein M/E/P Engineering Projects



ARAMARK UNIFORM SERVICES
Chicago, Illinois
Utilized Energy Efficient Hot Water Recovery System



W.W. GRAINGER DISASTER RECOVERY CENTER
Kansas City, Missouri
Provided N+1 Backup Capability



MEDLINE INDUSTRIES INC.
Aberdeen, Maryland
T5 Lighting Reduces Energy Costs

Utility Audits - The First Step to Energy Use Reduction

Utility audits or energy surveys assess how companies are using power and find ways to make this process more sustainable and in turn more cost effective. Epstein engineers analyze all aspects of energy consumption from the types of machinery being used to heating and air conditioning systems to lighting types and frequency of use. They then suggest ways to modify an existing building to make these systems as efficient as possible.

While alternative energy sources such as wind or solar-based systems may seem extreme and not immediately workable for many companies, something as simple as placing lights in intermittently-used areas on motion-activated sensors can result in noticeable energy savings. And even with increasing costs, the use of natural gas rather than diesel or traditional petroleum products to power these machines can be more environmentally correct.

Energy use can become even more efficient when combined with a heat and power (CHP) system whereby waste heat from generators is actually used within a facility to power dehumidification equipment which reduces the amount of electricity needed for HVAC equipment or to provide domestic or process hot water. Prior to utilizing a CHP system, HVAC, control and lighting systems should be optimized to determine the size of the CHP system. Initial energy savings could reduce the need for a larger system.

Utility audits can determine simple and eventually more advanced ways of reducing energy use and in turn costs ranging from 5% to 25% of existing energy budgets. Over several years, this initial investment can result in substantial savings to a company's operating budget and in turn have positive affects on the environment.

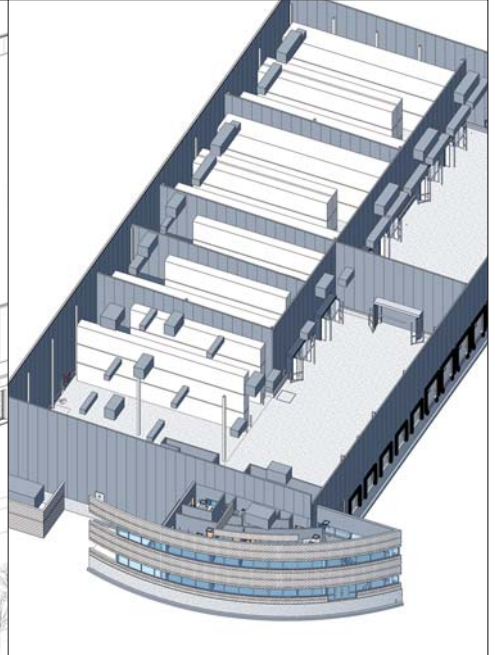
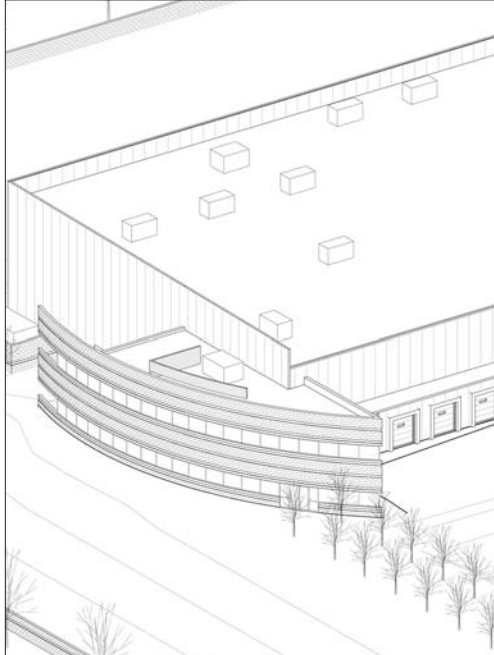
FruGasa Distribution Center: True 3D Design

UTILIZING AUTODESK® REVIT® BUILDING MODELING SOFTWARE

Epstein's design of FruGasa's new refrigerated distribution center in Chihuahua, Mexico is notable not only for meeting the needs of the client but also for being the firm's first project using the 3-dimensional building modeling software Autodesk® Revit® for the architectural design of the project. We provided full architectural and engineering design services for this 30,000 square foot refrigerated fruit and vegetable distribution center including civil, structural, mechanical, electrical, plumbing, fire protection, refrigeration and material handling design.

The building's design and detailing were developed to obtain optimal operational efficiency, easy construction techniques and long-term building performance. Existing

SEE *FRUGASA DISTRIBUTION CENTER* PAGE 4



3-D VIEWS OF THE FRUGASA DISTRIBUTION CENTER
Chihuahua, Mexico
30,000 square foot, refrigerated fruit & vegetable distribution center

Epstein Again Ranked #1 Midwest Design Firm

With strong ongoing growth and a number of high-profile projects, Epstein recently was ranked by Midwest Construction magazine as the #1 design firm in Illinois, Indiana, Wisconsin and eastern Missouri.

This year marks the first time Midwest Construction released a composite list for these four Midwestern states, with Epstein rankings tops for all four. Epstein was ranked #1 in Illinois for the past four years when firms were listed by state only and this year maintains that ranking for the state of Illinois plus the top spot for the entire region.

"We're always pleased to see Epstein ranked the top design firm in Illinois, but are doubly pleased to see that we lead the entire Midwest region," stated John Patelski, Epstein president and director of business development. "We have always been a key player for many major architectural and engineering projects in the Midwest, beyond other major projects in the US, Europe, Israel and China."

Epstein ranked equally high in a number of breakout categories and was ranked #1 in the region for general building, #2 for manufacturing and industrial facilities and #2 for interiors.

"We are moving into 2006 with a very strong backlog of major projects," noted Patelski. "Our goal is to stay the top firm in the Midwest and one of the leading A/E firms throughout the US and internationally."



ARAMARK UNIFORM SERVICES
Chicago, Illinois
161,000 square foot, laundry processing facility



TRIUMPH FOODS LLC
St. Joseph, Missouri
625,000 square foot, \$130 M pork processing facility



MEDLINE INDUSTRIES, INC.
Covington, Louisiana
220,000 square foot, medical supplies distribution center



GREATER CHICAGO FOOD DEPOSITORY
Chicago, Illinois
200,000 square foot, office & grocery distribution center

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FruGasa Distribution Center

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operations were analyzed and a plan was developed by Epstein's Strategic Services Group to create a new facility that optimized all systems. The refrigeration design emphasized minimal maintenance with units separated for each space so that if one system failed for one room, it would not affect other areas.

An important consideration was the facility's desert locale. Several systems were implemented to maintain operations during water or power shortages. For example, a dual compartment 83,000 gallon domestic water cistern was included to supply water for up to 5 days in the event of no incoming water service. A reserve osmosis filtration system was included to supply clean water for the 10,000 pounds per day of ice for refrigeration use.

The architecture of the facility was modeled in 3D to create the two dimensional drawings and bridged any language barriers with the client by providing an instant picture of the interior and exterior of the facility. Changes were made relatively quickly and easily, and the designs could be integrated with engineers' schematics created in AutoCAD to coordinate all aspects of the project development. The use of Autodesk Revit enabled designers to integrate their designs three dimensionally prior to finalizing placement and use in the facility.



CONSTRUCTION SHOTS OF FRUGASA
Chihuahua, Mexico
February 2006