



Long Island Chapter 86 of the



Institute of Industrial Engineers

NEWS-LETTER

IIE-Vol.105 Issue 07

Gold Award Winner for 8 Straight Years (1997-2005)

Sept., 2006

Calendar of Events

Sept. 20, 2006 (Wednesday)

IIE Monthly Meeting

Topic: Details on right

Oct. 18th, 2006 (Wednesday)

Topic: Tour of Automat (Car restoration)

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Visit IIE Long Island Chapter on the web at:
www.iienet.org/long_island



SEPT. MEETING / TOUR

Wednesday, Sept. 20th, 2006

Time: 6:30pm

Place: Farmingdale, NY

Preregistration Required, by Sept. 18th - space is limited (see back page)

This is a joint event with the Long Island Chapters of **IIE**, & **SME**
Meeting - no fee, Lite buffet/dinner/refreshments will be provided

Topic: Tour of Marotta Dental Studio
(Advanced Manufacturing & Engineering for Precision Medical Applications)

Host: Leonard Marotta MDT, CDT, President of MDS



MDS started as a Dental lab, creating crowns, bridges, and implants. They have expanded from this base using leading edge technology to recreate structures in the human body. What they can do goes beyond art, process, manufacturing, and engineering - they can restore a person's life! The following sums up their can-do philosophy: "In times of turmoil, when there is a crisis that needs a swift decisive response, they send in the Marines. In times of distress, when a restoration is in peril with no hope of success, they send in Marotta".

What you will see and learn on the tour:

- ✦ MDS's new spacious facility acquired in Jan. 2005.
- ✦ Magnetic Resonance Image (MRI) used to determine how to attach a prosthetic for best fit
- ✦ See how prototyping techniques are used to create a model, which is then used to create the mold the prosthetic is made from
- ✦ See how the actual prosthetic is made, usually in titanium, using the state of the art procedures and methods developed and mastered by MDS.
- ✦ Drilling, other secondary processes, and detail finishing that are performed to create the finished piece.

(See page 2 for more about MDS and this tour)

Preregistration for this event is required. Refer to the back page for registration form / instructions or logon to www.iienet.org/Long_Island. Please be sure to include a phone number that you may be reached on the afternoon of the tour in case of a cancellation.

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PRESIDENT'S MESSAGE



I had a very memorable summer. I live on the block in Queens that was shown on television with the flames licking off the overhead wires. We had power for awhile, then it went away. We got it back, then lost it. Intermittent & weakened power for 10 days. There was enough voltage to light up one nightlight in the hallway, so at least I didn't fall down the stairs.

I found myself getting a bit tired of the well meaning words of sympathy from friends. "You never realize how much your life depends on electricity. You take it for granted." Not me. I absolutely know and appreciate it all the time. Every work activity and most of my hobbies depend on electricity. I don't take any engineering achievement or maintenance of technology for granted. I spend a lot of time sympathizing with, not bashing, the hard working people struggling to set it right again. Sometimes repairing the same cabling more than once.

I do not claim to know all the details, but I assume this is very much like the grid problem behind the Blackout of 2001. I assume that equipment is just not up to par to support the present usage let alone an extreme temperature condition. Yet, no one is jumping up with the money to replace it. Perhaps the cabling has not changed, but electronic belongings have changed in my (and every) neighborhood. When the original equipment was installed, how many people had cell phone chargers, personal computers, and air conditioners for every room? Nobody wants to pay more for utilities, but if you want more, you have to pay for the infrastructure to support it.

Chapter 86, President

Carolyn Chen

Attention Metro Chapter Members

As always, New York Metro Chapter Members are welcome at all Long Island Chapter Meetings and Tours scheduled September thru June. Contact Bob Schroter if you require transportation / information to the Sept. tour in Farmingdale, NY
email: rschroter@cs.com
Phone: 516-489-4017

MEMBERSHIP

Current Active Membership = 65

About IIE

Founded in 1948, IIE is the premier society dedicated to serving the professional needs of industrial engineers and all individuals involved with improving quality and productivity. IIE has over 15,000 members and more than 280 chapters worldwide

Who benefits from membership?

There are hundreds of job titles given to people, who manage, design, install, or maintain integrated systems of people, machinery, and information. No matter what your job title, if you are the person called upon for solutions when there is an issue that requires your attention, you belong in IIE.

To become a member of IIE call

1-800-494-0460

or log onto to

**www.iienet.org & click on Join IIE & then
on IIE Professional Members**

(Continued from page 1)

If you were among the fortunate 40 people who visited MDS several years ago, you are urged to revisit, because they have a completely new and larger facility. Now, they have a fully equipped dental office where patients' prosthetic teeth needs can be determined immediately, and converted into computer input; the replacement can be made on site and fitted, usually less than an hour! MDS has made great advances in creating critical and vital human body replacements parts. They now have direct computerized precision scanning connections with three prestigious New York City hospitals, so that they may expedite the construction of critically needed replacement parts. MDS is the leader in computer guided restorations and sterolithographic modeling techniques.

Our host Leonard Marotta (Lenny) is one of the most enthusiastic persons you will ever meet. He has a intense passion for his work and the techniques used to create his company's products. Lenny has established a stringent company policy that every product or service used by Marotta must be Made in America. He is adamant against out-sourcing. It has worked well for him and has fostered a high level of employee morale. Just meeting Lenny and sharing his positive attitude and thirst for state-of-the art technology is worth the effort to attend this tour! MDS now employs over 50 people and has been in business for over 35 years with three generations of Dental Engineers!

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Review of the Sept. Meeting / Raising a Roof to Increase an Industrial Building's Space / Value

By: Carolyn Chen

The June meeting was given by Jeffrey Allen of Space Technology, Inc. The company has a patented technique of raising roofs, which expands usable space. Building owners and real estate agents can double warehouse storage capacity, increase efficiency and building value. This can be achieved without demolition costs and without increased taxes (based on square footage).

A building's footprint determines storage capacity, parking, and taxes. If you need more space, expanding horizontally is more expensive



than expanding vertically. Distribution Centers and "big box" retailers have long understood the value of vertical space. "Big Box" retailers want to impress people with their size and want the look of a warehouse.

Examples are BJ's, Best Buy, or Costco. Retail chains also like all their sites to have the same look. Across the nation, they may find good locations, but existing buildings are not tall enough. Before STI, their options were limited to some very expensive approaches to expanding upwards: (1) Rip off the old roof, raise the walls and re-roof. The costs include taking apart structures, discarding materials then re-building the structures or (2) Build an additional floor over the existing roof.

STI has a more economical and minimally disruptive method with their patented E-Z-Riser roof technology. The building is never separated from its structure. They raise the original deck, structure, and all attachments such as sprinklers HVAC ductwork, roof mounted equipment or lighting all at once. Most of the utilities are kept intact while the entire roof is elevated at rate of 1 foot / hour. Only vertical structures are disturbed by adding temporary extensions to drain systems, temperature control systems or wiring. Wiring can be first spliced to all the lighting, then the roof is raised. Therefore, it is possible to keep a warehouse operating while STI raises the roof. You cannot occupy office space if the roof is being raised. Sprinkler systems do have to be shut off on lifting day, therefore, some clients set up interim sprinkler systems. At the end of the lift, elbows and pipes are permanently added to the vertical structures.

STI has its own steel plant located in New Jersey and proprietary manufacturing processes. The following is a general description of the roof raising process using support columns. Sleeves manufactured 1 1/4" larger than the existing columns and are placed around each column. Holes are pre-drilled through the sleeves to the column. As the roof rises, the original column gets raised within the sleeve. The sleeve

remains at the base to provide a stronger lower support. The taller building will be more susceptible to wind shifts, thus, there is a need for wind blow reinforcement. In a Perimeter Lift, two piece welding columns are used instead. STI lifts the edge of the roof off of its original columns.

STI has developed a clamping system and simple, yet reliable lifting system. At every lifting point, clamps connect to the top, and two pitons serve as the jacks. A hydraulic pump is used to raise 1 foot of travel then stop. (All the lifting points / columns are operated simultaneously.) At the 1 foot stop, pins are added to secure the additional travel. STI comes in with a crew of 25-30 people and a truckload of spare parts. One crew member is assigned to each column to monitor the pump. If a pump were to leak, the lifting stops until it can be replaced.

The following is a sampling of STI's projects:

Case Study 1: Client needed to increase warehouse space only, however his office and warehouse shared the same roof. The best solution was to lift the entire roof. They added a wall front to plan ahead for more office space.

Case Study 2: Ruby Costume Company on Route 110, Long Island

Ruby's roof was raised from 16' high to 29' high. The Upper wall section was filled in with insulation and a new vinyl wall. This allowed the company to install racks 7 high.

Case Study 3:

Client was going to demolish a building and completely rebuild. STI raised their roof, using sleeves that were capable of supporting a second floor. So, STI provided all they needed without hiring a second company to put a floor on.

Case 3: Scranton, PA

A Scranton warehouse originally planed to raise their roof from 18' to 32'. They learned they could consider expanding to 45' or 48'. The new plan was driven by the ability of forklifts that can go higher, and rising real estate prices. They could make the most of the existing footprint by purchasing new material handling equipment.

Case 4: Chester, NY, AMscam paper goods has a 24 hour warehouse operation. They never had to stop operating during their roof lift.

Case 5: BEFORE: The client's warehouse was a mouse maze with skinny aisles. Workers and inventory would often get lost. AFTER: Racks are mere inches wider than the forklifts, which travel on wire guided tracks. The client experienced much better productivity.

In one case study a 14' clear building was too short to be used commercially. Since sleeves over columns must have a 3' overlap, the building can only go up 11 additional feet. STI took another technical approach and designed a stronger, double sleeve. This allowed the building roof to go from 14' clear, to 25' clear, to a final 35' clear. This is one case where a pre-lift enclosure structure (like paneling) was added to protect against the elements. It gets installed prior to the lift, and the wall slide up serving as an enclosure.

The audience asked about pricing and zoning. Since there is such a wide range of conditions, the answer is that there is a wide pricing range. As a ballpark range, consider \$5 / sq. ft to \$35 sq ft. The price is usually a quarter of the price of buying the horizontal space. Remember, no parking spaces are lost, so that is a cost avoidance. As for zoning, warehouse height additions do not really attract to zoning issues. However, the addition of a second floor office would. Another consideration for the client is the existing roof condition. If the roof leaks now, it will leak in the same places after the lift. Roof repair is not STI's scope of work.

STI limits its technology to raising the roof. Then, other engineering firms such as chapter members Roop Tawney & Dan Ruppert of National Storage can come and add Mezzanines. If the project (continued on page 4)

(Continued from page 3) includes adding a second floor, there are additional issues to consider. If you add a free standing mezzanine, then more support columns are required. They are usually put next to the original columns. Or, the original columns could be built up by making them wider and broader. If the client wants extended brickwork to add to the raised building façade, they need another contractor. STI coordinates the project, but STI is not the General contractor. Across the country, everyone will have their own local contractors that they prefer to use.

A typical project schedule would be as follows: Monday: Prime the equipment. Tuesday: Perform a 1" lift, then walk around with all contractors to see if anything was overlooked. Fix any identified problems. Wednesday: Continue with the regular lift rate of 1 foot / hour. The project milestones that STI will deliver are: Design, Preparations, Lift and Enclosures. STI will provide new drawings, designs that satisfying building codes, and steel specifications. The structural drawings can be reviewed to assure clients that it will be safe. An engineer also checks the building after the lift to make sure it meets the drawing.

STI's target market is real estate brokers and developers who need to make existing warehouse buildings more attractive to buyers. STI's projects are mostly industrial warehouses but they have done some work for high schools and synagogues. Today's clients go way higher than 35'. Forklifts are going higher, clearance is need for sprinklers, and people want higher buildings. The following conditions cannot be raised with the STI technology. Multilevel buildings, Butler buildings (which are wider at top). No all wood or all concrete structure. STI needs to use a steel structure.

For more information and photos of actual projects, look on web site: www.rooflift.com. Space Technology Inc. ,21 Beaumont Drive, Melville, NY 11747 , Phone: (631) 491-8500 Jeffrey R. Allen

*Next IIE meeting: **Tour of Marotta Dental Studio***

Reserve Now for: The Sept 20. Meeting/Tour Wednesday evening, at 6:30pm

Reservation must be received no later than **Sept 18^h** Fax to: **Tom Fiorella, 631-843-5939**, or Mail to: **Bob Schroter, 423 Elm St, West Hempstead, NY 11552-3226** or email: **Tom Fiorella at tfior9651@msn.com with: Name, Title, Company, email address, and day phone for yourself and each guest.** For inquiries call Bob at (516) 489-4017.

<u>NAME</u>	<u>TITLE</u>	<u>COMPANY</u>

Send Directions to:

Address: _____

City, St, Zip:

Phone Eve. _____

Fax: _____

email: _____

Include fax or email for a speedy reply.

You will receive complete directions and instructions from Bob.

Institute of Industrial Engineers

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