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(GCB&O)

**Consulting Engineers**
**Mechanical and Electrical**

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# ENGINEERING WITH THE MASTER ARCHITECTS FROM THE PAST

*Many of our friends are surprised at the number of challenging projects we work on, so we decided to update you. For this newsletter, we are focusing on some of our landmark projects currently in design.*

*As you may know, last year we completed the comprehensive redesign of the mechanical/electrical engineering systems at Carnegie Hall. Our first-of-a-kind chiller interconnect at New York University Medical Center also performed better than anticipated. Of course, we continue to work on many projects for our architectural and real estate clients. The latter include the Mendik Company, Weinstein Organization, Met Life, Israel Taub, and E.S. Gordon. Currently, hospital and laboratory work is being designed at New York University Medical Center, Albert Einstein College of Medicine, Brookdale Hospital, Westchester County Medical Center, Methodist Hospital, Maimonides Medical Center, and Flushing Hospital.*

***The Brooklyn Museum - McKim Mead and White (1894-1897)***

*This $20 million project, which will be completed in 1990, posed two unusual challenges stemming from the need to preserve the Museum's art collection: 1) to create a state-of-the-art HVAC design featuring a filtration system that will filter air as pure as an operating room's, and 2) to design a sophisticated building management system to maintain the critical archival artwork storage. This was accomplished through a direct digital control system.*

***Grand Central Terminal - Reed & Stem/Warren Wetmore (1913)***

*Possibly the nation's most famous rail center, the 75-year-old Terminal is undergoing a comprehensive engineering and architectural renovation throughout its 2,000,000-square-foot plant. At GCB&O, we're responsible for all HVAC, smoke control and plumbing. Our work, which could amount to over $50,000,000 in construction, will take approximately three years to design. It will encompass the renovation of the entire mechanical and electrical infrastructure. Electrical work is under design by another firm. Our work also includes the underground "Train Shed", which extends from Madison to Lexington Avenues and up to 57th Street.*

*Plans also call for providing cooling for retail areas and some modest cooling of the huge Terminal building itself. We are also redesigning the entire steam system and completely upgrading the plumbing system.*

*All existing conditions and drawings are being electronically digitized with our AutoCad system, which will be of great help to Metro North, allowing*

them to easily reproduce drawings without having to delve into the thousands of existing documents.

One of the exciting aspects of this project is the airflow predictive model we are now preparing. The model uses our own equations connected to MathCad and integrated into a three dimensional wire frame display computer model. Its results are being confirmed by empirical testing of the enormous seasonal air flows within the Terminal. Because the great height of the main concourse level causes a chimney-like effect, smoke control and comfort problems occur due to uncontrolled air movement.

**University Club - McKim Mead & White (1900-1917)**

One of the ten premier architectural gems of New York City's building heritage (according to architectural critic Paul Goldberger) is undergoing a complete upgrade of its mechanical/electrical systems. As usual, this type of work requires a special engineering effort to weave these systems through the landmark fabric of the building. Two major rooms on the first floor have already been completed along with basic mechanical services for the plant. Shortly, a major program of upgrading the guest rooms will begin.

**Seneca Falls National Park - Womens Rights Park - M.L. Van Kirk and Son**

The site of the historic 1848 convention on Women's Rights that launched the suffrage movement will be brought into year-round use as part of a major renovation. GCB&O will be engineering new mechanical/electrical systems for the new visitor's center, Wesleyan Chapel, outdoor amphitheater and a water wall commemorating the Women's Suffrage Movement. One of the requirements of working on the project is to take a complete tour of the site. As a result, all of the engineers on this job have become "experts" on the Womens' Suffrage Movement.

**The Shubert Alley Theaters - Various turn-of-the-century Architects**

Over the next five years, we will be renovating many of the HVAC systems of this major-theater complex in the heart of New York's theater district. A chilled water interconnect, designed this past summer, is also being constructed at this time to serve the theater complex. As usual, each theater renovation will present a challenge because of its landmark status.

**OTHER NEWS**

GCB&O recently won two more awards: A regional ASHRAE award was received for our NYU Medical Center interconnect design, which has now been submitted as a candidate for a national award and we have been honored for our energy conserving plumbing design for the replacement hot water systems at Met Life's Stuyvesant Town.

We have also made a greater commitment to our computer aided drafting (CAD) effort, adding a new 386 Compaq computer and upgrading all of our other computers with 386 technology. In addition, we've added a high speed JDL printer/plotter as well as electronic interface equipment to all hardware. Approximately, 40% of our work is now prepared through CAD. We believe the long term advantage of CAD to our clients will be for Facilities Management. Clients will find it simpler to put a disk into a PC to study a drawing rather than to struggle through a maze of drawings. Moreover, it allows a client to up-date existing drawings more easily.

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