The Computer Penetrates Construction Management Thinking More Deeply as Logistics Becomes Target of Study

An unexceptional looking computer tucked unobtrusively away in a Park Avenue office in New York is on the threshold of making construction history.

For the next five years, the computer will be orchestrating the logistics of material handling for some 8 million square feet of construction within the world’s largest single commercial development.

The computerized scheduling system will have its first live or “Beta” test, as it’s called in trade jargon, on the 14-acre site of World Financial Center in lower Manhattan, later this year.

The system, with its more than 3,000 programmed functions, will schedule and remember every delivery in and every load going out of the Hudson River site.

With four 33 to 51 story towers, two nine-story buildings, a Winter Garden and a four-acre plaza to be built more or less simultaneously, the scheduling will run to hundreds of thousands of programmed stops being made throughout the various entry points and levels within the project.

John Norris, the vice-president in charge of building World Financial Center for Olympia & York, as well as other company developments in the United States, wanted the kind of control that only a computer can deliver.

Joseph Weinstein’s Autocomp Systems Corp. was recommended and the match was made in October, 1981. Mr. Weinstein and Mr. Norris have an intriguing synergy.

Mr. Norris was in the Royal Horse Guards, the household cavalry regiment that conducts the Royal family on their ceremonial processions in and out of Buckingham Palace and an armored corps gunnery instructor before he turned to construction. Mr. Weinstein was the National Broadcasting Company’s director of business systems when he left to establish his own company in 1979.

While they were working up the feasibility of the computerized construction scheduling system, they installed Olympia & York’s computerized accounts payable and general ledger system at the company’s U.S. headquarters on Park Avenue.

Mr. Norris speaks of the scheduling system as “logistical control” that directs the movement of men, materials and equipment to and from specific docks and gates at precise times.

“The deliveries will be handled in an orderly fashion . . . there will be no congestion and the construction trades will be able to plan their work more effectively.

“There are also advantages in keeping track of deliveries for invoicing purposes. We’re expecting the system to give us the kind of control, speed, accuracy and elimination of human error that we’ve never had before,” he said.

The system will not only coordinate shipments with a particular construction activity, it will also keep track of what cranes, hoists, elevators and other equipment are in use and the hours they will be available, Mr. Norris added.

Mr. Weinstein said the system’s efficiency in streamlining construction
time will more than pay for the cost of its development and the equipment.

“Sub-contractors will be saving money as well because their workers won’t have to wait for deliveries. It’s to everyone’s advantage to make the system work,” he continued.

How is it different from the conventional system for people, rather than computers, tracking all the moves on a major construction project? he was asked.

“It is virtually impossible to efficiently keep track of all the deliveries on a manual basis. There are costly delays, congestion at the construction site and constant re-scheduling.

“With this system, we intend to have everything scheduled in advance. Every time a contract is signed, the date is entered into the computer and a series of scheduled deliveries are coordinated with the progress of construction.”

If equipment becomes unavailable due to mechanical failure, the system will automatically provide a list of deliveries which must be re-scheduled and the best alternatives offered.

The system will be refined, on the site, to work out any wrinkles and test how people at the gates, docks, and in the truck cabs react to it.

Mr. Norris is keenly interested in another aspect of the system. The average length of time it takes to unload materials and equipment has a bearing on the progress of construction, which, in the end comes down to time, labor, and cost.