

## MINNEAPOLIS-ST. PAUL INTERNATIONAL AIRPORT PARKING GARAGE

This is one of the largest cast-in-place post-tensioned garages in the U.S. An unbonded mono-strand post-tensioning system was chosen for its economical life-cycle cost, speed of construction and long-term durability. The architect and structural engineer of record were the Cunningham Group and Palanisami & Associates Inc., respectively.

The framing system consists of 7-in. slab, spanning 27 ft, over 16 by 33-in. beams. The beams span 55 ft. The structure has a total of four helical covered ramps for efficient entry and exit. These helixes have post-tensioning tendons in the radial direction.

AMSYSCO Inc. of Addison, IL, supplied 4.6 million ft of tendons over a period of 17 months to M. A. Mortenson Co. of Minneapolis, the project's general contractor. Steve DeGroot, the senior executive of M. A. Mortenson Co. in charge of construction, says, "This project was an ideal application of post-tensioning. It provided the space savings, perfor-

mance and cost benefits the project needed. The project's aggressive schedule was coupled with significant liquidated damage provisions. Our post-tensioning supplier, AMSYSCO, was a great asset in successfully completing the project on schedule. Their systems met the specifications and were delivered on time."

### POST-TENSIONING HELPS CONDO DEVELOPER MEET COST GOALS

In looking for a way to translate an architect's vision for a highly styled condominium building into the project's budget, a post-tensioning system was found to be the solution. The Village Green Condominium structure in Arlington Heights, IL, has won high praise from building residents and the community.

In view of the complicated layout of columns and other requirements, the original framing utilized a 10-in.-thick concrete slab with many beams. This system was driving up the cost of the structure. For a solution, the construction team called AMSYSCO Inc. AMSYSCO developed a new approach using a 6.5-in.-thick post-tensioned flat plate—eliminating all beams and thereby reducing the cost of the structure.

The redesign was executed concurrently with the actual construction and continuous architectural enhancements, allowing the original construction schedule to be met. AMSYSCO assisted the construction team in developing complete structural design and drawings. Although only six floors, a post-tensioning system proved its value to the project.

