

1994 NOVA AWARD WINNER**Smart System Automates Building Construction**

The SMART system is a self-elevating assembly factory for high-rise building construction that demonstrates that automated building assembly using both technical and logistical innovations can streamline the construction process. In SMART construction, the building core and shell are assembled floor-by-floor from a covered, self-elevating construction platform that provides safety screens, scaffolding, and weather protection. As each floor is completed, computer controlled jacks lift the work platform to the elevation of the next story in about 90 minutes. A central control room is housed above the traveling work platform where a highly integrated system for scheduling and ordering all major subassemblies of the building is operated. Documents, CAD drawings, and delivery information are communicated via high-speed network links with all members of the building team: owner, designer, contractors, and suppliers. The 20-story Nagoya Juroku Bank, Nagoya, Japan, was constructed using the SMART SYSTEM. On-site manpower was reduced by 30%, and 70% of construction waste was eliminated.

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