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# Reinforced Cage Robot for Concrete Beams and Columns

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## REINFORCED CAGE ROBOT FOR CONCRETE BEAMS AND COLUMNS

### THE NEED

Improved field productivity is needed as a hedge against the labor shortages that are beginning to occur in the market. Machines improve safety and enhance the quality of the construction working environment. There are also competitive reasons behind these technological developments. In order to compete companies must maintain a level of quality equivalent to other international competitors.

### THE TECHNOLOGY

The robot or machine, which builds reinforcing cages required for concrete beams and columns, places the longitudinal bars on a jig, then places and ties the hoop reinforcing bars to the longitudinal bars automatically. All the operator must do is turn the machine on, align the hoop bars on the machine, and attach the necessary rigging to the cage for removal after the machine has finished.



FIGURE 1 AUTOMATED CONSTRUCTION OF BUILDING  
(OHYASHI CORPORATION)

### THE BENEFITS

This machine replaces two of the three craftsmen required to construct a twenty-foot-long reinforcing bar cage and is able to complete the cage fabrication in approximately 30 minutes at about one half of the original cost.



## **STATUS**

Prototype already developed and in use by Taisei Corp. (Japanese firm).

## **BARRIERS**

Capital costs of initial investment must be considered. High initial disbursement can be offset by associated economies of scale or mass production to reduce costs, recover the investment and have profitable operations. Since U.S. contractors typically rely upon steel fabricators to provide reinforcement, little interest has been shown in cutting costs in this area.

## **POINT OF CONTACT**

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## **REVIEWERS**

Peer reviewed as an emerging construction technology

## **DISCLAIMER**

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## **PUBLISHER**

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