

CATEGORY

POTENTIAL TECHNOLOGY – INCUBATION : GHTC-INDIA



PRODUCT / TECHNOLOGY



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Technology Detail

**AUTOMATIC BLOCK LAYING MACHINE (ROBOTIC)**

*Alternate to conventional construction system*



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Video

CONTACT DETAILS

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**FAVO ROBOTICS**

Construction Automation made Accessible

BRIEF

Automation solutions for construction industry using an assistive block laying machine and a robotic platform capable of automatic block laying for construction of walls. The block-laying machine automatically builds walls by picking up solid/ hollow concrete blocks, AAC blocks etc., and leveling and placing it according to specified plan. Agency is a robotics start-up developing a collaborative robot called Auto-Mason to automate onsite brick masonry work to increase the quality of work, productivity and reduce the cost of construction. A 4 axes mobile robot works in collaboration with 3 helpers to automatically build walls.



## SALIENT FEATURES

- Robot does automatic placing, mortar application, leveling, and building of walls without any undulations & unevenness
- Can increase the quality & productivity of the work significantly
- Compatible with any factory-made bricks/blocks of any size and shape
- Robot can lift heavy concrete blocks, which weigh upto 45 kgs.
- Completely made out of Extruded Aluminum profiles to optimize weight and performance. Almost 80% of the components are made in India.
- Significant speed of construction with very high daily output. Can build up to 60 running meters of ACC brick wall of 8 feet height or can lay a minimum of 1200 bricks per day (8 hrs of operation ) with the help of 3 helpers
- Suitable for low rise buildings

## ECONOMIC ASPECTS

- A saving of minimum 20% in brick masonry work can be achieved.
- Economic viability increases and the cost of construction decreases as the volume of the project increases.



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### SUSTAINABILITY ASPECTS

Helps build a superior construction with better workmanship & no human error. Very little or no wastage is ensured.

### SUITABILITY & AVAILABILITY

- Suitable in any climatic conditions, however, electricity needs to be available.
- The final testing in open environment is in progress

### LIMITATIONS, IF ANY

- The first and last layers should be done manually
- Bricks at the edges of the wall smaller than the robot gripper need to be placed manually
- Not compatible with country bricks or 3rd class bricks

### MARKET LINKAGES

- Presently in proto-type/ demonstration stage & also under incubation at IIT Kharagpur.



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### MAJOR PROJECTS:

No projects at this stage, the final testing in an open environment is in progress, however, some projects scheduled in future, include;

- Demo projects scheduled in Bangalore and Hyderabad towards the last week of October 2021
- Pilot project scheduled to begin in Bangalore during 2nd week of November 2021
- The official launch and available for commercial use on rental basis from January, 2022

### CERTIFICATION/INDIAN STANDARD/ ENDORSEMENT

- o Under incubation at IIT, Kharagpur.

