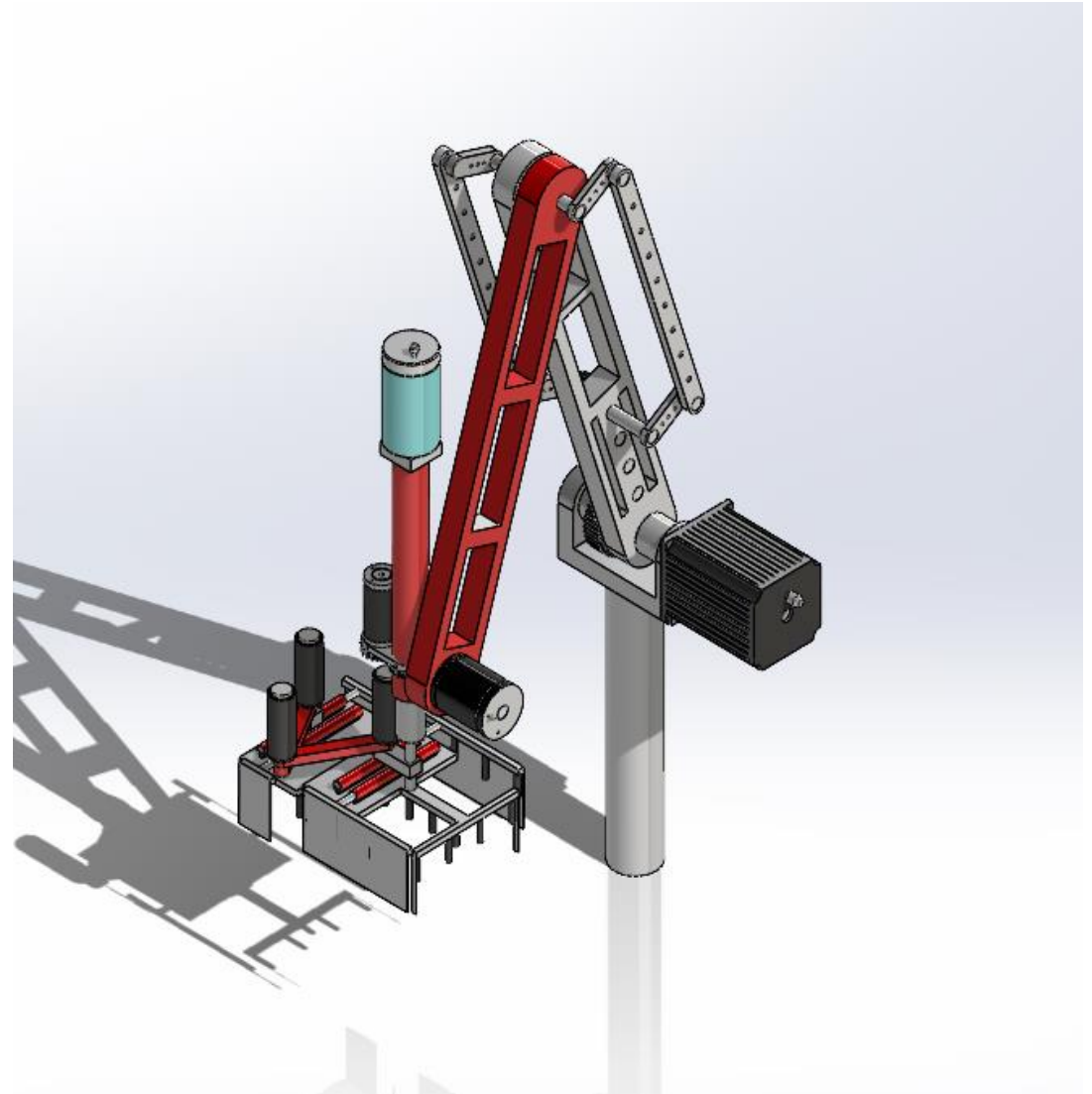
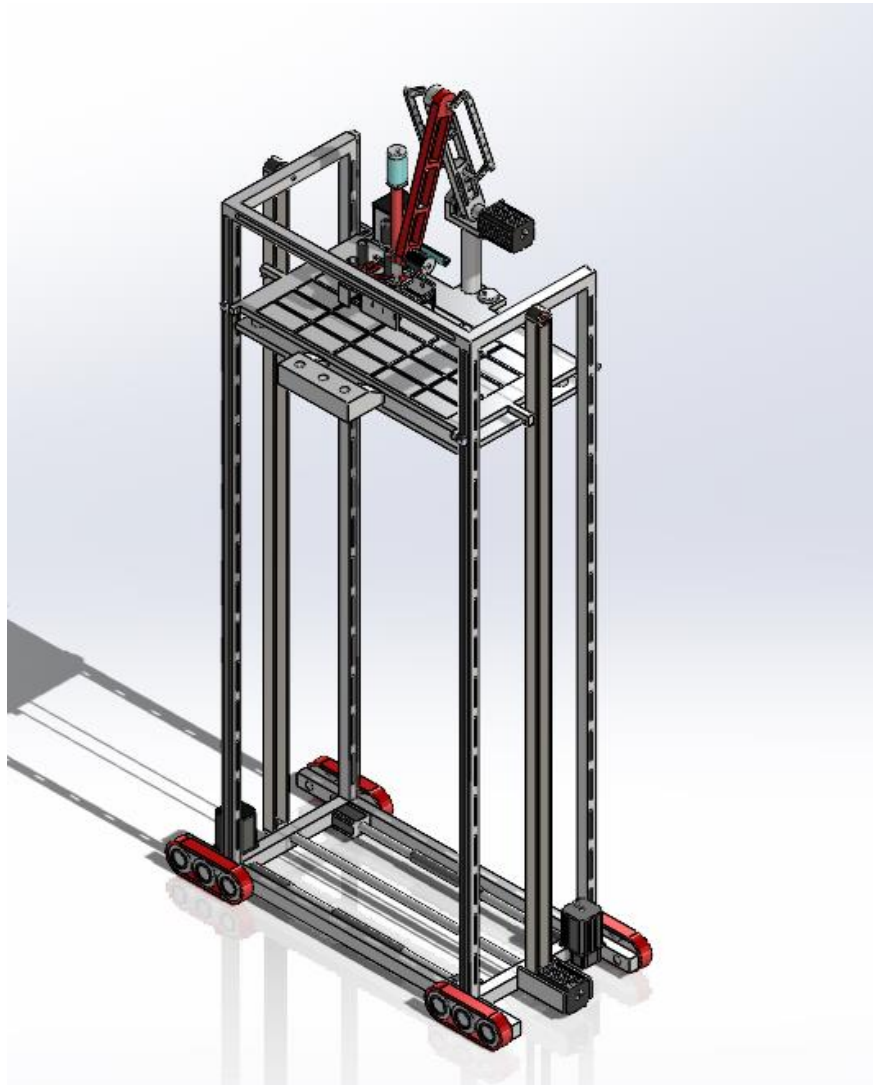
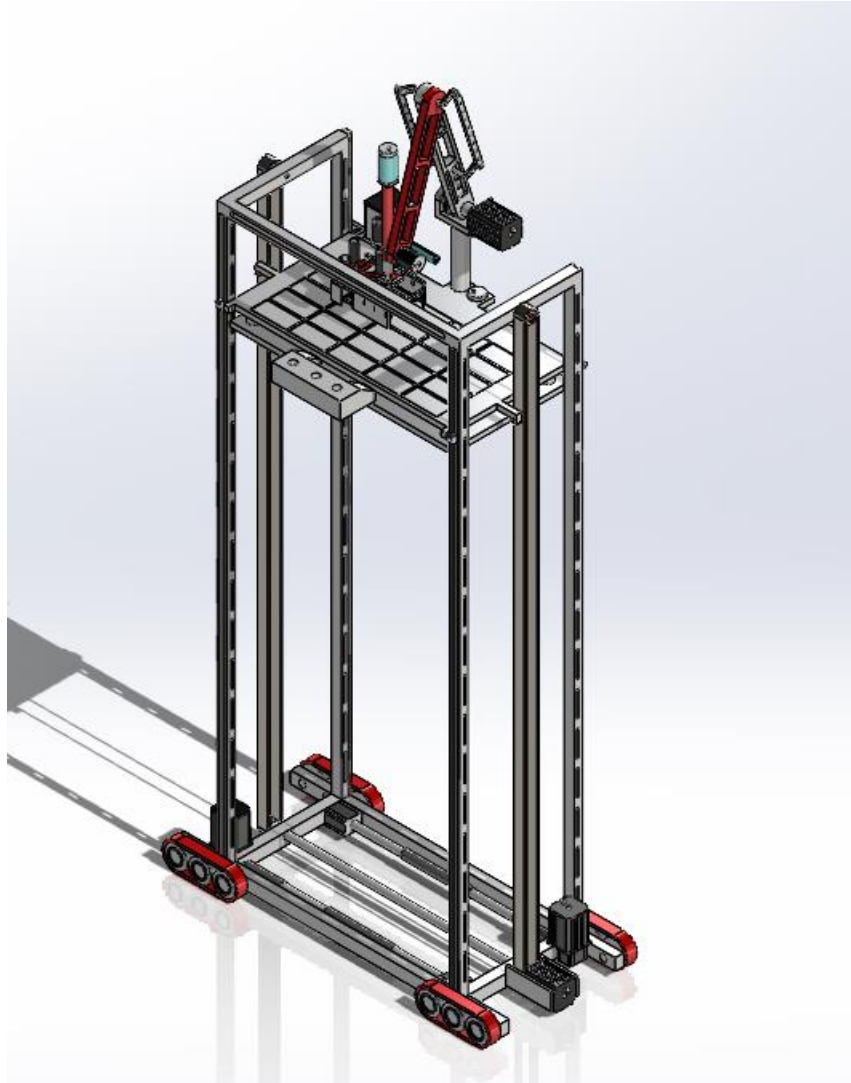


A ROBOTS-AR3



DESIGN & TECHNICAL WORKING



- ❑ A path trajectory will be made considering the size and design of the house
- ❑ After each section trajectory has been defined and designed according to working volume of robot, it will be fed into control unit
- ❑ **2 labors** will be required. One to make cement paste and one to put bricks on the tray. An operator will also be on the construction site.
- ❑ Following the above procedure, our automated assembly can make walls of single portion of **2720 square feet** house by bricks in just **2 days** with 10–12 hours of working daily with base cost of PKR 35–40k (\$125–142)

BUILDING COST & TIMELINE

- ❑ **Building cost:** The base price for building AR3 is about **PKR 2.5–3 million (\$8876–10650)**
- ❑ **Time:** To make AR3 and do proper testing for finally introducing them to market, initially it will take about **3 months** maximum. But after everything is complete, it will take just **7–10 days** to make their copy.
- ❑ **Connections with Experts:** The models are being iterated many times for making them easy to build too. We have connections with many robotic experts with years of expertise in this field and have iterated the designs under **Dr. Shahbaz Khan**, who has more than **10 years of experience in advance robotics** and **Phd** in it. So **A ROBOTS** is not going to face any technical issue. Today, softwares are too good and we have a great team expertise in this field, we can just directly go for the complete assembly.

UNIQUENESS & UNPARALLEL BUSINESS MODEL

- ❑ **Uniqueness:** Our models AR1, AR2 and especially AR3 are so unique in their design that they are compatible in cost, innovation and accuracy with models of any other bricklaying robotic company like **Construction Robotics, FBR, etc**
- ❑ **Potential:** Our innovative model has a huge potential to operate in Europe, Middle East, South America, North America, Australia, South East Asia, South Asia and Central Asia. Its unparallel and innovative design allows it to **assemble in any place** with the locally available materials. Moreover as we are doing just a conventional work quickly, we are not going to face extra rules and regulations regarding to new technique like 3D Concrete Printing.
- ❑ **Unparallel Business Model:** It can act as a perfect business model in a country like Pakistan where labour is very cheap. No doubt that this model will be far more profitable in Europe, Middle East, North America, Australia and other developed countries where labour is **10–15 times** expensive than in Pakistan

AR3 FOR AMERICA (MOST IMPORTANT)

- ❑ **Building cost:** I have talked with a construction company owner in USA with the reference of my friend there. I have discussed it with him and he has also given a rough estimate for this assembly considering materials used and workers for making it. The base price for building AR3 in USA will be about \$20–30k.
- ❑ **Business model:** The company owner was excited to hear about my stats. I collected data from him that making base of a house from concrete blocks take about **5–8 days** for skilled workers and labour cost is about \$13–16k. But AR3 can do that work in just **2 days** in about \$5–6k considering its crew and working conditions. So you can offer that service in \$10k with profit of \$4–5k in just **2 days!** AR3 can easily cover its cost in max **16 working days**. The construction company owner was amazed. He is ready to become our first customer and in collab with him, we aim to start our company in USA where it can become a **billion dollar company in 3–5 years** if we properly collab with construction giants like D.R. Horton as concrete blocks have generated a revenue of **\$23.1 billion in 2022** in USA according to Grand View Research and wherever are concrete blocks or bricks, there is AR3.

COMPARISON WITH 3D CONCRETE PRINTING

- ❑ **Durability:** We first started with 3D concrete printing and did a deep research. No house with 3D concrete printing is 40–50 years old to examine the condition of the walls printed and internet is full of research papers which have discussed the problem of **thermal cracking and seeping of 3D printed walls within 2–3 years**. While in bricklaying, the durability of bricks is very clear.
- ❑ **Cost:** The material of concrete printing is still in research phase and it is a myth that it is less expensive than conventional material. It is as expensive or even more in some cases than conventional building material. It just saves cost by reducing labour and so do we.
- ❑ **Speed:** Our **AR3** is designed to lay about **4 bricks** at a time and **16/min**. So our speed is compatible with 3D concrete printing and it is even more for concrete or AAC blocks as it lays **4 of them per minute**.
- ❑ **People's Perception:** The most important thing, even if 3D concrete printing beats automated brick laying in stats, people are not going to choose a technique with so much myths for the house for which they usually take a significant amount of loan.

EASE OF ADOPTION

- ❑ **Conventional Work:** As we are using the exact same material with not even an addition of a single gram and just doing the conventional work fast and cost effectively, it is very likely for people to adopt this. People hesitate to accept something new on this scale because they cannot take a risk of their money being wasted for something which is in research phase.
- ❑ **Cost:** AR3 is being iterated about 12 times to use maximum locally available material to make it more cost effective.
- ❑ **Survey:** I myself did the survey to know the thoughts of contractors. I asked them what if I made you the walls of the house with bricks in just 2 days and PKR 80k or \$285 (adding 40k to base price of 40k, hence 50% profit margin) instead of paying PKR 120k–130k (\$426–462) and waiting for 10–15 days. They still asks me again and again that when I am going to do that. The profit in developed countries USA is much more. About \$4–5k in just 2 days and the construction company owner there is ready to collab with us.