

# kobi

## USE CASE

**MEANGREEN**  
M O W E R S





# “Traditional gas mowers are noisy and hurt the environment”

Joe Conrad  
Mean Green Mowers' President

As the very open-minded and ‘outside the box’ thinker that he is, Joe Conrad was very receptive to the idea of developing a solution for the labor shortage problem and decided to look at our technology. “Traditional gas mowers are noisy and hurt the environment,” exclaimed Joe. Mean Green Mowers; the leading commercial e-Mower manufacturer builds superior electric mowers for those that care about the future of the planet and want to save money. Founded in 2010, Mean Green Mowers is owned by father and son Co-Founders Joe and Matt Conrad and headquartered in Ross, Ohio.



After thoroughly reviewing our technology and several meetings later, Mean Green Mowers and The Kobi Company subsequently agreed to move forward with a collaboration. With Mean Green's expertise in utilizing aluminum alloys and their patented mower designs, and our cutting-edge technology, we were confident this would be a great collaboration. We mutually decided that the final product would be an environmentally friendly, quality, cost-effective, autonomous, commercial, electric zero-turn (ZT) mower, the first of its kind, that would eliminate the labor shortage problem. This was the birth of the ATOM!



For the landscaping companies, both large and small, we wanted to provide a solution that would offer flexibility. Leaving the ATOM on a property, as necessary, or driving it on and off a truck to get the mowing done should not be a problem for the landscaper. **Disrupting the existing landscaping process was not an option, and the ATOM must work in collaboration with the rest of the crew.** With the mowing taken care of, the team will have more time to focus on other value-added and less monotonous tasks.

The ATOM will create new efficiencies by reducing a two or three-man crew to a one or two-man team, respectively. This efficiency will reduce the cost of labor and can add up to savings of approximately \$20-\$30 per hour for the landscaper. These savings also account for the elimination of the traditional maintenance of a gasoline powered ZT, which includes:

- Checking the oil before each use
- Changing the oil
- Replacing oil filters
- Checking and cleaning spark plugs
- Examining/Replacing air filters/elements
- Replacing fuel filters
- Checking belts
- Monitoring cooling systems
- Watching for fuel leaks

There is no doubt that a gas-powered ZT will deliver a green lawn; however, with the high emissions rate, we are moving further away from a green future. A single three horse-power gas-powered mower can produce as much emission as eleven new cars. Electric mowers cost less to operate and have a higher efficiency rate, approximately 80% - 90%, compared to the approximate 20% - 30% of gas-powered mowers.

We have designed our autonomous mowing module with safety, accuracy and mower speed in mind. By using the latest in computer vision technology and artificial intelligence, we have been able to produce a system that can easily navigate any environment, even below trees and up close to buildings.

### **Why computer vision?**

We tested beacon, and GPS solutions prior and discovered their limitations, particularly, the inability of each technology to incorporate artificial intelligence. Computer vision was a more robust and efficient solution for the labor problem at hand.

Our technology continuously calculates the position of the ZT with **an accuracy of within half an inch!** Utilizing computer vision provides several advantages over autonomous systems based on wires, beacons and or GPS. First, it is typically more accurate, more reliable and faster. Second, it does not require wire or beacon installations, nor does it depend on a base station, open skies or a good satellite reception as do GPS-based solutions.

“We are proud to be working with The Kobi Company to convert our latest electric mowers to quiet, zero-emission autonomous mowing machines,” said Mean Green Mowers’ President Joe Conrad. “It’s a natural fit to combine our latest commercial electric mowers with high tech robotic automation”.



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