

# Cutting-edge tech: The robot that can take care of all garden chores

Reluctant gardeners' dreams have come true as scientists develop the perfect machine to do the



job, reports **Jody Harrison**

MOST gardeners agree that there is little more rewarding than sitting down at peace on a freshly mowed lawn amid manicured borders and well-maintained shrubbery.

However, getting to that stage is the hard part, with hours of back-breaking toil often required to make sure everything is blooming and under control.

But now scientists say that technology could be the solution to keeping a garden in check, with help coming in the form of a green-fingered robot which can prune roses and trim bushes, making light work of gardening chores.

Dubbed the Trimbot, the machine is capable of doing the busywork which can make gardening a daunting task.

Using mapping software to find its way around the garden, the busy robot performs horticultural tasks with an advanced toolkit of blades attached to a flexible robot arm.

Capable of navigating even difficult corners thanks to its five camera "eyes", the robot is based on an automated lawnmower already in production by electronics company Bosch.

It can even understand when it is time for foliage to get a trim, thanks to a computer memory of what the "ideal"

shape should look like, and it is capable of handling delicate flowers with incredible precision.

Researchers created algorithms which enables the robo-gardener to compare overgrown bushes with a perfect template as it cuts, and it can prune roses

by pinpointing the exact part of each plant's stem that should be chopped.

The team behind the Trimbot project, co-ordinated by University of Edinburgh researchers, said prototypes could be used to maintain communal green spaces, support farmers and help people with mobility issues tend their gardens.

Professor Bob Fisher, from the University's School of Informatics, said: "Getting the robot to work reliably in a real garden was a major feat of engineering.

"The eight partner teams developed new robotics and 3D computer vision technology to enable it to work outdoors

in changing lighting and environmental conditions."

The four-year project was funded by the European Union's Horizon 2020 programme and involved scientists from Bosch and universities in the Netherlands, Germany and Switzerland.

However, experts said that while any help in the garden is welcome, it is not yet time for reluctant gardeners to hang up their trowels and surrender their green spaces before a rise of the robots just yet.

Guy Barter, chief horticulturist at the Royal Horticultural Society, said: "It sounds interesting and definitely serves a purpose in commercial crops where timing is vital, such as where ripe fruit must be picked quickly.

"It could also be very useful in cases where gardeners have mobility issues, where they are dealing with thorny plants such as Berberis or where there is an actual cost saving in repetitive work.

