

CIRCUIT

AT A GLANCE

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From the MD



Hello, and welcome to Issue 9 of The News Circuit.

Our three divisions - Electronic Design, Bare PCB Fabrication and PCB Assembly - continue to invest in the best machines, practices and processes available. Such investment enables us to enhance quality and reduce costs.

We are running out of space at our PCB Fabrication plant and we are embarking on the construction of a 6,700 sq ft factory and office extension which should be complete by late Spring 2024.

Our Electronic Design team continues to grow at Newbury Innovation. See the back page for a recent shot. We are planning a move for the electronic design team to much larger laboratories and we expect to finalise this soon.

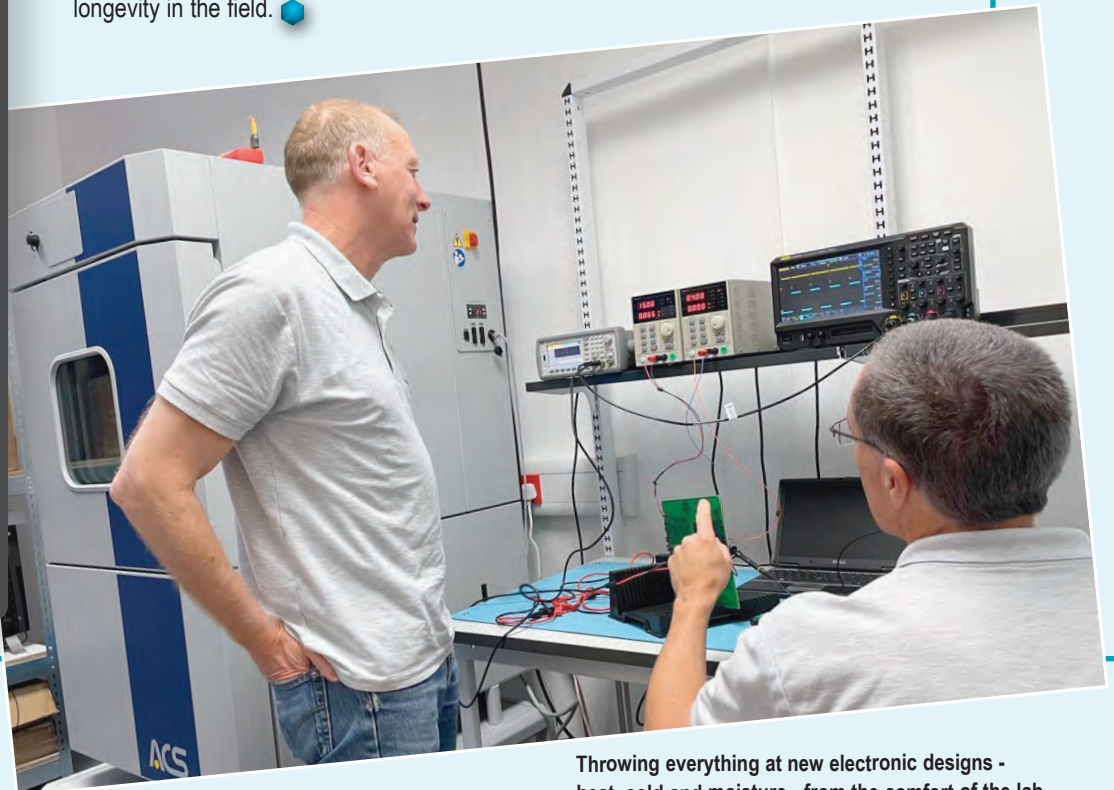
Set out in this edition are some snapshots of the significant capital investments we have recently made.

Philip King
Managing Director.

Severe-weather warning for new products - the Climatic Test Chamber DY110

An electronic design may work fine on the testbench, but will it still be working after 10 years exposure to arctic, desert or monsoon conditions?

That's the purpose of this environmental test chamber. Successful testing prevents premature new product field failure. We are constantly expanding our in-house testing resources, primarily to accelerate development projects by keeping control of essential design processes. This machine complements exceptional design with proof of longevity in the field.

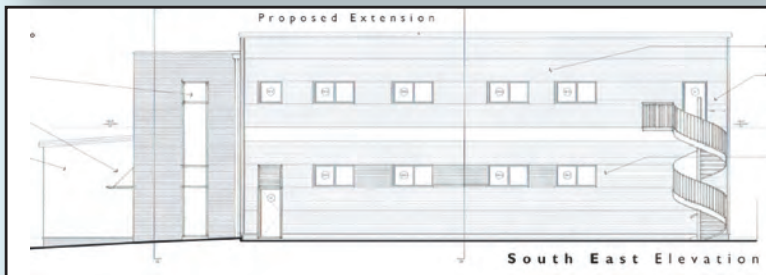
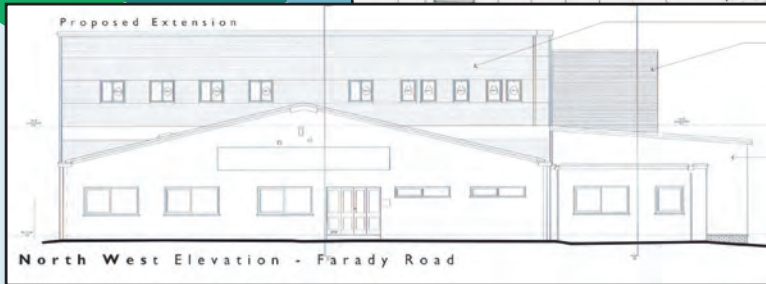
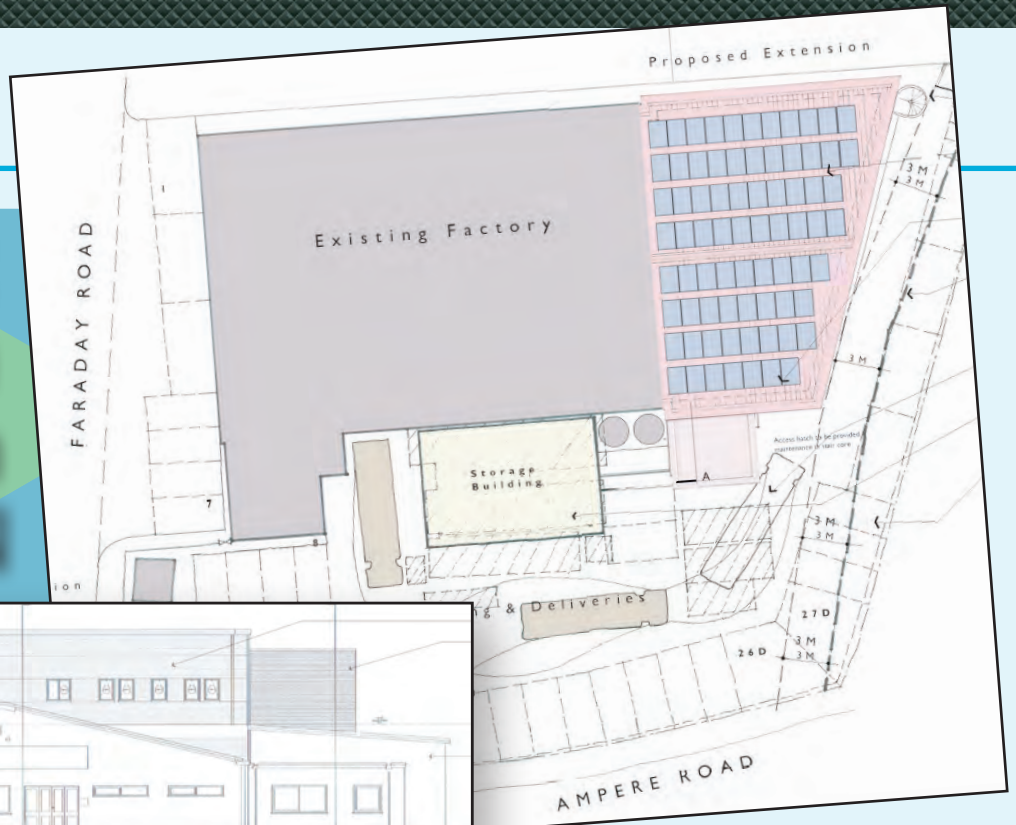


Throwing everything at new electronic designs - heat, cold and moisture - from the comfort of the lab.

Follow us on:



6,700 sq ft
expansion
coming in
2024



We have had the first planning meeting with the contractors and the building works are due to commence in February 2024, with completion expected 16 weeks later.

New investments in staff and machinery have led to this expansion programme for both the PCB fabrication factory and office facilities.

Lenz DRB 610-1+1 AL

We are upgrading our bare PCB drill routing capability with three of these new machines from Lenz.

They have vacuum beds for drilling thin material, lubrication systems for cutting aluminium clad PCBs, and extremely small hole drilling capability down to 100 microns. They have twin cutting heads allowing drilling and routing on the same machine, and include auto-load and unload for "lights-out" drilling of up to 20 panels at a time, each of which can have different drill patterns. Intelligent camera systems achieve alignment to fiducials, and optimise multi-layer drilling registration for best fit after analysis of internal layer targets. Drill run-times and hole positional accuracy are considerably improved over previous generation machines.

Blind via drilling, back drilling, cavity routing. The integral tool change belt carries a vast inventory of 2500 drills.

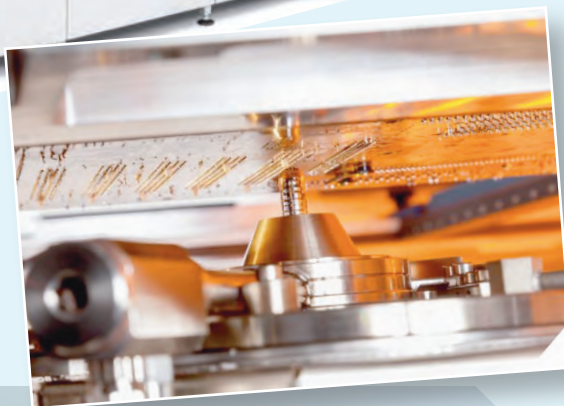
A laser drill check system reduces production failures by measuring diameter, length and radial run-out of every tool. These are exceptionally capable state-of-the-art machines.



New high-end intelligent autoloading machine for selective soldering



Selective Soldering with VERSAFLOW 4/55 gives us the highest flexibility for PCBAs.



Following the installation of our brand new Ersaflo 4/55 selective soldering machine, whole PCBAs can now be soldered.

SMD components are soldered en-masse within a convection or vapour phase reflow machine, whereas Thru-hole parts are soldered in a wave soldering machine. Unfortunately, most PCBAs incorporate mixed technology of both SMD and Thru-hole components. One or other of these component types is incompatible with the aforementioned methods of soldering. The preferred solution is to reflow SMD parts first and after placement, solder individual Thru-hole connections selectively with a CNC controlled solder head. Our new machine is a conveyerized autoloader and unload selective soldering machine with four independently mobile solder heads, two for lead-free solder and two for leaded solder, with inline fluxing and preheat stations. This replaces our two existing manual loaded batch process machines. Production is enhanced by x8 higher throughput, improved process control, and significantly better labour efficiency.



Schunk SAR 1300 milling machine

De-paneling PCBAs from handling frames can be achieved in many ways.

Some methods used include snap-off tabs, sharp knives, hack-saw blades, and disk cutters. All these methods are inelegant at best, and dangerous at worst, both to the operator and for the integrity of the PCBA.

This new CNC controlled router is specifically designed for de-paneling with an integrated automated tooling system. No custom fixtures are required. Multiple magnetically located pins are robotically placed on the machine bed allowing very fast set-up and changeover for hi-mix PCBA production. This machine is a polished solution for a messy task and a welcome addition to our plant list.



Visit the website and view the video.

GO



What makes Newbury Innovation so special?

It's got to be the energy, the excitement and the passion to engineer the right solutions for the challenges you set. Introducing the team (left) which brings you the technical knowledge, resources and experience to make your electronic, electrical, firmware, software or app development project a true success.

Compaclean III PCBA cleaning machine

PCBA cleaning improves the reliability of electronic devices and this traditional dishwasher-style machine has perfect filtration to eliminate cross-contamination.

In this replacement machine, which uses multiple-pass processing, the PCBAs are fixed in an oscillating basket to eliminate masking of the spray head and washed from top and bottom by a water-based cleaning agent using a system of fixed spray nozzles in a fully closed-loop mechanical filtration system. Next, a first rinse is performed to a low conductivity level using integrated 16L carbon and mixed bed filters. Then, a second rinse is performed with high purity deionized water down to the required conductivity. Water is continuously reclaimed through integrated 16L carbon and mixed bed filters. Finally, the PCBAs are dried by a convection hot air oven system. When absolutely clean PCBAs are required, this machine is the perfect solution.



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