

## Engineering and Maintenance Department

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The Engineering and Maintenance Department offers a technical design and maintenance service throughout the Institute. Preservation of Institute assets is of paramount importance and careful, skilled inspections are frequently carried out. Corrective maintenance work takes place to ensure the expected performance and life of equipment, vehicle, plant or building is achieved. The Department is divided into sections that specialise in a variety of engineering disciplines such as electrical, electronic, refrigeration, heating and mechanical engineering. It provides an engineering design and maintenance service to cover scientific and ancillary equipment, and building services, including heating, ventilation and air conditioning. There is also a farm workshop section providing maintenance facilities for a substantial fleet of tractors and agricultural machinery. The Department provides a general stores facility and a cleaning and security service. The workshops are generally well equipped to deal with the maintenance tasks assigned to them.

The rapidly changing and wide ranging scientific aims of the Institute ensure that laboratory alterations will always be a part of the Engineering Department's work. With this in mind, services to laboratories must be as flexible and adaptable as possible. Over the last few years, systems have been introduced which allow the Department to respond quickly and efficiently when changes are necessary, thus reducing laboratory disruption to a minimum. Scientists can now confidently bring new and diverse projects to the Institute knowing that a team is on hand to ensure the facilities will meet whatever requirement they may have.



Adding the finishing touches to a refurbished laboratory.

During 1997, several areas of the Institute were refurbished to either enable new and expanded areas of work to be carried out or to simply improve the existing facilities. The main projects undertaken were as follows:-

**Building V** This project involved the conversion of an 850 m<sup>2</sup> building, previously used for crop storage, to a purpose-designed facility incorporating fourteen laboratories and six offices to accommodate the Institute's Unit for Soil-Plant Dynamics.

To minimise costs, Engineering and Maintenance staff carried out all the electrical, plumbing and heating services work, the telephone and Category 5 computer network cabling, and all joinery works, including the fitting out of laboratories and all painting works.

This was by far the largest refurbishment project ever undertaken which involved such a scale of dependence on our own staff and required several months of work. During this time, normal duties also had to be carried out and an extremely heavy burden was placed on the staff. It is to their credit, and a measure of their commitment to the Institute, that services were maintained during this time and that such a noticeably high standard of work was achieved within this project.

**Building B** This project involved the refurbishment of much of the ground floor of this 1300 m<sup>2</sup> building. Seven laboratory areas and three offices were upgraded and the confocal and electron microscopes relocated to enable the Institute's microscopy unit to be housed in a single location.

Upstairs, two laboratories were combined to form a single laboratory with over 80 m<sup>2</sup> of floor space. The new laboratory is now being used by a scientific unit within the Virology Department.

This project also relied heavily on engineering staff, with several areas of the work being carried out entirely in-house.

**Mylnefield Research Services - New Facility** Engineering and Maintenance staff's involvement in this project included site clearance, provision of site services and installation of a structured telephone and data cabling system.

**Buildings D and N** One of the main laboratories within this building, used by the Fungal and Bacterial Plant Pathology Department, was completely refurbished along with a major upgrading of the Department's quarantine facility within their glasshouse building.

**Building M** Prior to the previously described conversion work within Building V, a suite of elderly cold rooms occupied part of that building. Relocating such rooms was not economically viable and, as a result, a section of Building M was re-wired to house a new suite of seven cold rooms.

**Building P** This in-house project involved the refurbishment of two of the Nematology Department's insect rooms. New air conditioning units were installed, along with more energy efficient and higher output lighting systems.

**Telephone System and Internal Wiring** The Institute's electronic exchange was upgraded and digital telephone lines installed.

Problems were also being encountered with the main telephone cabling within the Institute, due to water

ingress. Over 1997, our own engineering staff replaced many of these cables, resulting in much clearer lines throughout the site. Provision for future expansion of the telephone system has also been catered for within the new cables.

**Computer Networking** Apart from the areas previously described, several additional areas were either added to the Institute's network using Category 5 installation standards or upgraded from the previous network wiring arrangements. This process is ongoing and, despite budget restraints, will continue over the next few years.

The Department is also responsible for negotiating utility contracts with electricity, gas, water and telephone companies, and economies have been gained in these areas through reducing tariffs and lowering consumption where possible.

A number of external service contracts have also been discontinued, or the cover provided reduced. In-house maintenance cover has been extended to counter-balance such measures and to minimise any reduction in the service provided to staff.