New lab continues 100-year history

The National Biocontainment Laboratory Project continues more than 100 years of animal disease diagnostics on the Wallaceville site. The first facility was built in 1905 and was the first veterinary lab in the southern hemisphere.

Staff outside the original 1905 laboratory at Wallaceville. The photo was taken in 1914.

Recent work at Wallaceville

- In 2013 the MPI laboratory at Wallaceville carried out more than 30,000 tests on a wide range of samples from farm animals to companion animals and other species. Results were used in 286 exotic disease investigation cases, surveillance work and certifying animals as disease-free for trade.
- In April 2009, the United States and Mexico notified the World Health Organisation of an outbreak of a novel influenza A H1N1 virus. By late June, New Zealand had confirmed more than 500 cases. MPI helped ESR to ramp up the processing of samples. This work, carried out under exceptional circumstances, provided critical information to public health authorities to help in patient and public health management.
- New Zealand recently celebrated freedom from Equine Viral Arteritis (EVA). EVA is a serious cause of abortion in horses and has significant trade implications for the horse breeding industry. Eradication of EVA was made possible by more than 20 years of work at Wallaceville, testing breeding horses and preventing further spread of the disease.
- In 2013 an epidemic of anaemia in Northland cattle was identified at Wallaceville as being caused by Theileria orientalis Ikeda. This led to a major disease control programme involving MPI and the beef and dairy industries. Wallaceville scientists developed new, faster and more accurate tests for the new strain. This test has now been distributed to commercial veterinary laboratories around the country to help with ongoing disease management.

Construction timeline

Construction of the new high-level biocontainment laboratory runs from 2015 – 2018. The new lab is expected to start operating in early 2019. MPI will institute a rigorous programme of testing during and after construction. Once construction is completed, the lab must be approved and certified as a high-containment facility before any material is transferred from the existing lab and the new facility starts operating.

- Enabling works (preparing site) October 2014 – December 2015
- Contractor approved and construction starts July - October 2015
- Commission and certify 2017 – 18
- Transition to new lab Early 2019

For more information

More information about MPI's Investigation and Diagnostic Centre and the National Biocontainment Laboratory Project can be found on our website: **www.mpi.govt.nz/new-lab**.

If you have any questions about the project please contact **info@mpi.govt.nz** or phone **0800 00 83 33**.

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Ministry for Primary Industries
Manatū Ahu Matua

National Biocontainment Laboratory

New Zealand Government

National Biocontainment Laboratory

New Zealand's only approved laboratory for containing and diagnosing serious veterinary diseases is being phased out and replaced.

The laboratory is based at the National Centre for Biosecurity and Infectious Disease at Wallaceville, Upper Hutt, and is used by the Ministry for Primary Industries (MPI) and Environmental Science and Research (ESR).

Work started on the construction of a new high-level biocontainment laboratory in August 2015 and it should be finished in 2018. The new lab is expected to open in 2019, following rigorous testing.

The Wallaceville facilities and skilled staff play an essential role in responding to animal disease outbreaks, protecting public health and providing international trade assurances about New Zealand's animal disease status.

Having a high-level biocontainment laboratory is about being prepared. Exotic and high-impact diseases are investigated frequently, so laboratory testing for these diseases occurs almost every day.

Safely and rapidly confirming the absence or presence of a disease with sophisticated diagnostic tests helps us to clearly identify what is present and, if a high risk disease is identified, confirm where the infection is, control the spread of the disease, and protect agriculture and human health.

The laboratory is also important for our international trade. MPI's active surveillance and routine investigation testing gives our trading partners assurance that New Zealand is free from serious diseases.

The opening of the new laboratory won't change the work we carry out at Wallaceville, but it will ensure work can be done more efficiently and more modern scientific methods can be used into the future.

There are no live animals held at Wallaceville for testing or research. Nor is live foot and mouth disease virus held at the site. This will continue to be the case when the new laboratory is built.

Why build a new biocontainment lab?

New Zealand's current high-level biocontainment laboratory at Wallaceville opened in 1999. The lab has an excellent safety record but its age means it's increasingly expensive, complex and time-consuming to maintain.

A strategic assessment in 2012 found:

- it wasn't designed to cope with the extra workload expected during a major disease outbreak;
- the size, design and layout of the laboratory don't support modern lab testing methods.

For these reasons, MPI is taking proactive steps to maintain safety and provide the level of diagnostic service New Zealand needs for both public health and maintaining trade in primary products.

Designing the new laboratory

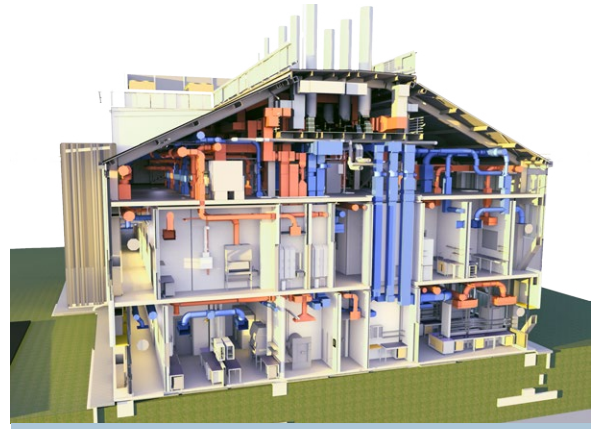
MPI has worked with local and international design experts over the last three years to plan the new lab which will meet international best practice for handling animal and human pathogens.

The design was led by Merrick & Co., an international company based in North America, which has designed and built many similar high-containment laboratories worldwide.

The company has been supported by leading New Zealand designers and consultants including Dunning Thornton, CCM and Beca. Senior laboratory staff and an international team of engineering and biosafety experts have also been extensively involved in reviewing and improving the design. The lab is being built by the Fletcher Construction Company.

Total capital investment in the project is $87 million.

The new facility will sit in the middle of the existing buildings at Wallaceville.



This cross section shows the laboratory's complex air management, hydraulic, and electrical systems that make sure organisms can be handled safely and remain contained.

Features of the new lab

The new laboratory will meet international best practice for handling animal and human pathogens and contain some of the most sophisticated systems and safety features in the world.

The lab has also been designed to be as flexible and adaptable as possible so that spaces can be used for different diagnostic tests and new technologies can be introduced as needed.

Design features include:

- improved seismic protection – the lab will be able to withstand a "one in 2500 year" earthquake;
- negative pressure and air filtration systems to ensure no contaminated air can escape the laboratory;
- decontamination of all liquid effluent and other materials leaving the lab;
- exit showers for staff;
- increased security;
- the integration of high and medium containment areas to improve capacity.

The new laboratory will have a floor area of more than 3,400 square metres. Construction will require 440 tonnes of structural steel and 680 cubic metres of concrete. Complex biocontainment requirements mean that 83 kilometres of electrical and data cabling will be needed to run the building's systems and support laboratory equipment.